CITY OF West Linn

22500 Salamo Road
West Linn, OR 97068

STAFF REPORT
FOR THE PLANNING COMMISSION

FILE NUMBER:	SUB-13-03/VAR-13-10/VAR-13-11
HEARING DATE:	November 6, 2013
REQUEST:	7-lot subdivision at 1485 Rosemont Road, with a Class I Variance and a Class II Variance for lot depth
APPROVAL CRITERIA:	Community Development Code (CDC) Chapter 11, Single-Family Detached Residential R-10; Chapter 75, Variance; Chapter 85, Land Division
STAFF REPORT PREPARED BY:	Tom Soppe, Associate Planner

Planning Director's Initials for J. Sonnen Development Review Engineer's Initials KQL

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STAFF ANALYSIS AND RECOMMENDATION

EXHIBITS

GENERAL INFORMATION

OWNER/APPLICANT:	Kelly Pyrch, 1332 Stonehaven Dr., West Linn, OR 97068
CONSULTANT:	Ralph Henderson, Group Mackenzie, 1515 SE Water Ave., Ste. 100, Portland, OR 97214
SITE LOCATION:	1485 Rosemont Road
LEGAL DESCRIPTION:	Clackamas County Assessor's Map 2-1E-25BD, tax lots 1000, 1001, and 1002
SITE SIZE:	Approximately 1.94 acres/1.86 after dedication
ZONING:	R-10, Single-Family Detached Residential
COMP PLAN DESIGNATION:	Low Density Residential
120-DAY PERIOD:	This application was deemed complete on August 28, 2013. The 120-day maximum application-processing period ends on December 26, 2013.
PUBLIC NOTICE:	Public notice was mailed to the Rosemont Summit and Parker Crest neighborhood associations and affected property owners on October 16, 2013. The property was posted with a sign on October 17, 2013. In addition, the application has been posted on the City's website and was published in the West Linn Tidings on October 24, 2013. The notice requirements have been met.

BACKGROUND

This property consists of three taxlots owned by the applicant, with an existing house built in 1950 per County data on City GIS. The applicant requests approval to divide the site into seven lots, with the existing house preserved on its own lot and variances regarding lot depth of two lots. Originally the applicant requesting variances for lot depth for Lot 4 and front yard wall height. The applicant no longer requests these variances and the latest plans, attached to this staff report, reflect a lot depth of over 90 feet for Lot 4.

Site Conditions: The site is accessed from Rosemont Road. There is a single family home at the 1485 Rosemont Road address and two accessory structures on the site. The property is relatively flat and slopes gently downhill from Rosemont Road. It is predominantly grass with

several small trees scattered around the site. Nearly all of the significant trees are along the edges of the property.

Aerial Site View

Existing house

Rear of site

Site from Rosemont

Western edge of site and Gregory Heights subdivision

Project Description: The applicant requests approval for a seven-lot subdivision on a 1.93-acre parcel. Nearly all of the surrounding properties have previously been developed as

subdivisions. The applicant plans to retain the existing house on Lot 3. The lots would be accessed from two proposed driveways within proposed access easements. Both of these would be dead ends off of Rosemont Road. Four lots, including the lot with the existing house, would be accessed from a driveway located to the east of the existing house. The other three would be accessed from a driveway to the west. All three of the lots that do not front onto Rosemont Road have flag lot stems within these access easements. Proposed lots 6 and 7 do not meet the minimum lot depth of 90 feet so variances are requested for those lots. Stormwater is to be treated on site in infiltration raingardens (identified as infiltration basins on the site plan , Sheet C 3.0) . The applicant would dedicate an additional six feet of right-of-way (ROW) and complete half-street improvements on Rosemont Road, including a six-foot sidewalk and 5.5-foot landscaping swale. The private drives would each have an access easement of 20 feet of width with 16 feet of pavement and a four-foot wide water quality swale.

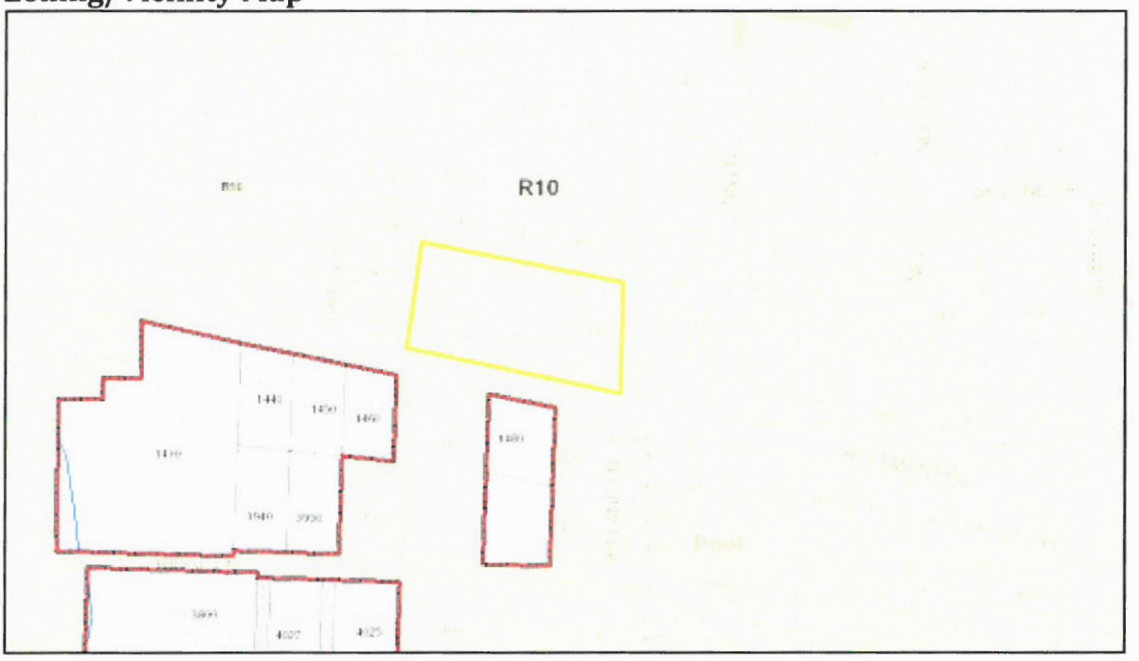
Surrounding Land Use and Zoning: The site is situated in the Rosemont Summit neighborhood in a heavily residential part of the City, with some nearby County islands.

Table 1: Surrounding Land Use and Zoning

DIRECTION FROM SITE	LAND USE	ZONING
North	Single-family residential detached	R-10
East	Single-family residential detached	R-10
South	Single-family residential detached	R-10, Unincorporated County
West	Single-family residential detached	R-10, Unincorporated County

Source: West Linn GIS, 2013

Zoning/Vicinity Map



Approval Criteria

As previously noted, the applicant requests a 7-lot subdivision and two variances for lot depth.

Therefore the applicable approval criteria include:

- Chapter 11, R-10 zoning district;
- Chapter 75, Variance
- Chapter 85, Land Divisions

Analysis

For variances for lot depth, Subsection 75.020(A)(2)(c) specifies that a Class I Variance is required for a reduction of lot depth less than 10 feet below the zoning standard, and a Class II Variance is required when the request is for a difference of greater than 10 feet. The variance for Lot 6 qualifies as a Class I variance as it is for a depth less than 10 feet smaller than the standard 90 foot minimum (approximately 1.5 feet less than 90 feet), whereas the variance for Lot 7 has a larger difference than this (an average of approximately 17.5 feet difference on average) and is a Class II variance. Staff recommends approval for the variances.

The applicant requests Variances for lot depth for lots 6 and 7. These are variances to CDC Subsection 11.070(4), as affected by Subsection 85.200(B)(7)(d) which requires that the lot depth of 90 feet be measured on a flag lot perpendicular to the street from which the flag lot takes access. . If proposed lots 6 and 7 were not flag lots and could be measured based on orientation rather than CDC 85.200(B)(7)(d), both would meet the requirements of the underlying zone (See addendum, staff responses 5 and 10).

Section 75.060(A) requires that the need for a variance arise from an extraordinary or exceptional set of circumstances. Staff determined that this applies due to the need to how the property is wide but not deep. Section 75.060(B) requires variances arise from a need to

fulfill a basic property right. Staff determined these did meet this criterion for as they need to have this depth in for the property to be developed to its potential in this zone, as other developments nearby in this zone have already done.

Section 75.060(C) requires that a variance be compatible with the Comprehensive Plan and other applicable plans and codes. The only applicable Comprehensive Plan policy supported flexibility in lot design, so staff determined that the variances are compatible with the Comprehensive Plan and other applicable codes. Section 75.060(D) requires that the requested variances be the minimum variances necessary. Staff determined that the proposed lot proportions are the minimum variances necessary to fit these lots into the development and develop the property to its potential in this zone.

Section 75.060(E) requires that the variances not arise from a code violation, and Section 75.060(F) requires that a variance not interfere with the =usability of surrounding properties. Staff determined that the variances meet these criteria.

The applicant originally requested a variance to Subsection 44.020(A)(1)(a) which requires walls in a front setback area to be a maximum of three feet in height. This is because on the applicant's submitted plans, the applicant requests that proposed masonry screening walls be six feet in height all along the Rosemont Road frontage except in required clear vision triangle areas (see Chapter 42) near the intersections of the shared driveways/private streets. See Tentative Subdivision Plan Sheet 3.0 on Page 46 of Exhibit PC-5.

The applicant is no longer requesting the wall height variance because staff determined that changing certain aspects of the plan including the lot lines, as now reflected in the Tentative Subdivision Plan, eliminated the need for the variance. The proposed private streets can be considered streets for the purpose of house orientation because in Chapter 2 Definitions "Street" is defined as, "A public or private way that is created to provide ingress or egress for persons to one or more lots, parcels, areas or tracts of land, and the placement of utilities and including the terms 'road,' 'highway,' 'lane,' 'avenue,' 'alley,' 'place,' 'court,' 'way,' 'circle,' 'drive,' or similar designations." Also in Chapter 2 "Front of House on Corner Lot" is defined as "The side of the house that incorporates features such as front door, driveway, garage, large amount of glazing relative to other sides of house and other design features. The rear of the house that is functionally the main activity area typically includes the family room and/or dining room, etc. The functional front and rear do not have to be opposite from one another." Because of this, the new houses on lots 1, 2, and 4 can front to the proposed private streets. This would mean that the side of the houses facing Rosemont Road would be the side, so per Subsection 44.020(A)(1)(c) they can be six feet tall outside the "front" 20 feet of the lot, which is close to where they are proposed to begin this height anyway due to the location of the required clear vision area triangles at the intersections of Rosemont and the private streets. Lot 3 is the only other lot affected by this issue. The front of the existing house to remain on Lot 3 faces Rosemont Road. However there is also a porch and door on the east side of the house which will face the private street. Also the driveway will access the private street, and there are other windows on this side as well. Therefore this can be considered the front of the house for the purpose of orientation and setbacks, as the new reconfiguration of lot lines places the east lot line of Lot 3 more than 20 feet from the existing house. While the west side opposite this does not have 20 feet between the house and the west property line of Lot 3, Chapter 2 defines "Lot line, rear" for corner lots as "... either (but not both) interior lot line

separating one lot from another... The City shall determine the rear lot line for corner lots." Therefore the City can determine that the rear lot line for Lot 3 is to the north (which is the functional rear of the house) even if the front lot line is the east. The north lot line of Lot 3 is 20 feet from the existing house as required for a rear. Therefore both the setback provisions and the fence location provisions (as proposed with the six-foot wall along Rosemont) can be met as proposed for Lot 3 as well. For the reasons explained in this paragraph staff determined that the requested variance for wall height along Rosemont was not needed to fulfill the applicant's proposal, and the applicant no longer requests it.

Section 85.200(J)(9) requires that significant trees be protected per the provisions of Section 55.100(B)(2). Section 55.100(B)(2) allows significant trees to be removed for street grading but requires they be mitigated for on an inch-per-inch basis. One significant tree is to be removed for street grading, and this is required to be mitigated for on an inch-per-inch basis by proposed Condition of Approval 2A. All but one of the other significant trees on site are proposed to be preserved. One of the tree to be preserved is located on northwest area of proposed Lot 4. To put a house on Lot 4 the house will likely have to overlap the dripline-plus-10-foot area of this preserved tree. To ensure its survival, Condition of Approval 2C requires that I-beam foundation construction be used in any areas of the house that overlap the dripline-plus-10-foot area of this tree. The remaining undeveloped significant tree area in the dripline-plus-10-foot areas of all remaining significant trees must be preserved in a tract or easement per Subsection 55.100(B)(2). Separate tracts are not proposed and would take away from the base size of the proposed lots, so recommended Condition of Approval 2D requires that conservation easements be placed on the plat for all of these dripline-plus-10-foot areas. (See the Addendum, staff responses 21 and 22).

Subsections 85.200(A) (17) allows respectively for planter strips to be narrowed as needed for significant tree preservation. At the southeast corner of the site there is a sequoia tree with a dripline-plus-10-feet area that overlaps where the sidewalk and planter strip are proposed. The City Arborist cannot be sure if narrowing the planter strip is needed for the health of the tree until field analysis can be done at the construction stage. Therefore, recommended Condition of Approval 2B provides for the City Arborist to perform this analysis at that stage, and for his recommendations be followed to possibly narrow the sidewalk and planter strip.

Subsection 85.200(B)(4) requires new subdivisions to meet the provisions of Chapter 48, Access. This includes satisfying the Tualatin Valley Fire & Rescue (TVFR) standards. TVFR's only concern in their comments (see Page 42 of Exhibit PC-4) was that a fire flow test be performed. Recommended Condition of Approval 3 requires this.

Staff has determined that with the modifications to the approval as discussed above, the subdivision application and the application for the two lot depth variances for lots 6 and 7 meet the criteria of chapters 12, 75, and 85.

Public comments:

See Pages 40-41 of Exhibit PC-3 for comments submitted from Myron and Joan Wallace of 1515 Rosemont Road, which is the property adjacent to the east. Much of their concern pertained to the applicant's then-planned use of the sewer easement through their property.

This concern is now moot at the applicant plans infiltration raingardens, instead of a storm sewer system that would use the easement. However the submittals also include concern about absorbtion of raingardens and whether this would affect drainage onto the Wallace property. Raingardens are required by Public Works standards to be designed to handle a 25-year storm event without drainage onto neighboring properties.

RECOMMENDATION

Staff recommends approval of SUB-13-03/VAR-13-10/VAR-13-11, subject to the following conditions:

1. Site Plan. With the exception of modifications required by these conditions, the project shall conform to the Tentative Subdivision Plan, Sheet C3.0, dated October 9, 2013, on Page 46 of Exhibit PC-5.

2. Significant Trees.
   A) The significant 24-inch cedar tree proposed for removal along the south edge of Lot 4 shall be mitigated for on an inch-per-inch basis on site, or if that would result in excess trees on site at maturity, as determined by the City's Arborist, then off-site in City-owned land.

   B) At the construction phase, the City Arborist shall do a field analysis as to whether it is necessary to move the sidewalk closer to the street with the City Engineer's approval, within the dripline-plus-10 area of the sequoia tree on Lot 4. The City Arborist's recommendations regarding the planter strip and sidewalk width and location at that time shall be followed.

   C) The house on Lot 4 shall have I-beam construction for the foundation in the areas where it overlaps with the dripline-plus-10-feet area of the 36-inch significant cedar tree to be preserved at the north edge of this lot, as necessary for tree survival, as determined by the City Arborist.

   D) All preserved significant trees and all of their dripline-plus-10-feet areas not to be developed with a house, street, or sidewalk/planter footprint shall be placed in a conservation easement shown on the final plat, using the City's standard language for conservation easements for trees.

3. Fire Flow Test. The applicant shall perform a fire flow test and achieve results that meet TVFR standards .

Notes to Applicant.

- Expiration of Approval. This approval shall expire three years from the effective date of this decision.

- Additional Permits Required. Your project may require the following additional permits:
  - Public improvement permit: contact Engineering at (503) 723-5501 or mcoffie@westlinnoregon.gov
  - Public works permit: contact Engineering at (503) 723-5501 or mcoffie@westlinnoregon.gov
  - Building permit, the final permit after others are completed and conditions of approval are fulfilled. Contact the Building Division at (503) 656-4211, jnomie@westlinnoregon.gov.
- Final inspection: Call the Building Division's Inspection Line at (503) 722-5509.

ADDENDUM
PLANNING COMMISSION STAFF REPORT
November 6, 2013

STAFF EVALUATION OF THE PROPOSAL'S COMPLIANCE WITH APPLICABLE CODE CRITERIA

Chapter 11
SINGLE-FAMILY RESIDENTIAL DETACHED, R-10

11.030 PERMITTED USES

The following are uses permitted outright in this zoning district

1. Single-family detached residential unit.

(...)

Staff Response 1: One of the seven proposed lots has an existing single-family detached residential unit which will remain. The other six lots are proposed for single-family detached residential development. Staff determines the criterion is met.

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.

(...)

Staff Response 2: As shown on the Tentative Subdivision Plan, Sheet C3.0, on page 46 of Exhibit PC-5, all proposed lots are at least 10,000 square feet in size. Staff determines that the criterion is met.

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

Staff Response 3: As shown on the Tentative Subdivision Plan, Sheet C3.0, on page 46 of Exhibit PC-5, all proposed lots have a front lot line that is greater than 35 feet in length. Staff determines that the criterion is met.

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

Staff Response 4: As shown on the Tentative Subdivision Plan, Sheet C3.0, on page 46 of Exhibit PC-5, all proposed lots have a minimum average width of at least 50 feet. Staff determines that the criterion is met.

4. The lot depth comprising non-Type I and II lands shall be less than two and one-half times the width, and more than an average depth of 90 feet.
(...)

Staff Response 5: While the front orientation of all lots bordering Rosemont Road (1-4) will be considered to be towards the proposed private streets as discussed in the Analysis section, Subsection 85.200(B)(7)(d) requires flag lots such as 5-7 be measured parallel to Rosemont Road regardless of whether the side towards Rosemont is considered the front. While they border Rosemont Road, lots 1-4 essentially function as flaglots as well since they will take vehicular access from the private streets just as proposed lots 5-7 will. As they function this way and lie between lots 5-7 and Rosemont Road, their depth should be measured from Rosemont Road as well. As measured from Rosemont Road all of these lots have an average depth of 90 feet or greater. Lot 5 also meets this standard. Lots 6 and 7 do not. The applicant has applied for variances regarding the depth of lots 6 and 7. Compliance with the variance criteria is reviewed below under staff responses 7-12.

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

Staff Response 6: Lots 5-7 do not border the public street, but do not have accessway stems as they employ access easements across the front lots as allowed by Subsection 85.200(B)(7)(f). The easements are proposed to be 20 feet wide. Staff determines the criterion is met.

II. CHAPTER 75, VARIANCES REQUESTED TO SECTION 11.070(4) FOR LOT DEPTH FOR TWO LOTS

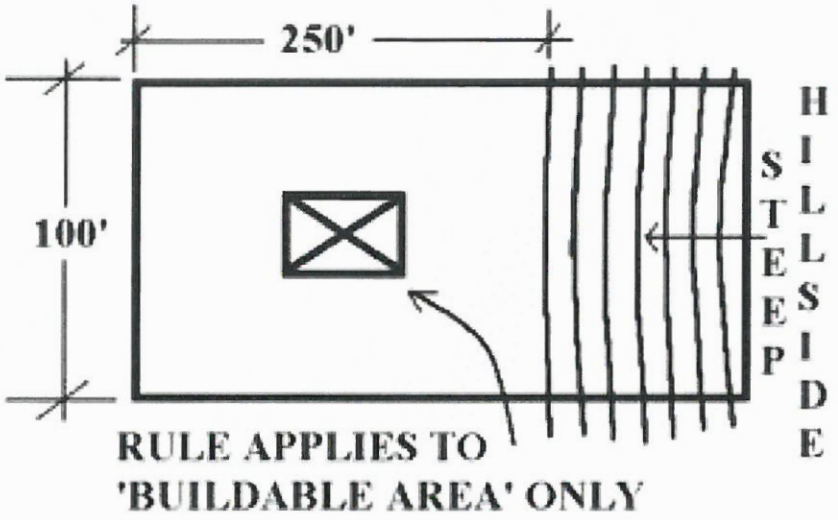
75.060 APPROVAL CRITERIA

The appropriate approval authority shall approve a variance request if all the following criteria are met and corresponding findings of fact prepared. The approval authority may impose appropriate conditions to ensure compliance with the criteria. The approval authority shall deny the variance if any of the criteria are not met.

A. Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zone or vicinity, and result from lot size or shape, legally existing prior to the date of this code, topography, or other circumstances over which the applicant has no control.

Staff Response 7: The applicant requests variances to the average lot depth of 90 feet called for by CDC 11.070(4) for proposed lots 6 and 7. This standard is explained in CDC 11.070(4):

"4. The lot depth comprising non-Type I and II lands shall be less than two and one-half times the width and more than an average depth of 90 feet. (See diagram below.) "



Per CDC 85.200(B)(7)(d) flag lots must be measured "from the rear property line of the parcel which substantially separates the flag lot from the street from which the flag lot gains access." This requires lots 6 and 7 to have a depth of 90 feet north-to-south, even though all other lot dimensions on flaglots are allowed to be measured north-to-south or east-to-west as long as they are consistent with each other. The property is shallow in depth and is one of the last to develop in the area. The consequence of the measurement requirement for flag lots, the degree to which the surrounding area is already developed, and the shallow depth of the property leaves limited options for developing the site. Although the applicant ultimately has control over how the property is divided into lots, and therefore, the lot depth, the applicant does not have control over the location of the existing subdivisions around the property and the depth of the existing lot.

Staff determines that the need for the variance stems from measurement requirement for flag lots, rather than the actual orientation of the house, this property's position as the last to develop, and the shallow depth of the property compared to its width. The combination of these elements is an exceptional and extraordinary circumstance in West Linn. Staff determines that this criterion is met for lots 6 and 7.

B. The variance is necessary for the preservation of a property right of the applicant, which is substantially the same as a right possessed by owners of other property in the same zone or vicinity.

Staff Response 8: Staff finds that the applicant's property right and reasonable expectation is to develop residential lots at a density consistent with the Comprehensive Plan and the R-10 zone. Development at this density is consistent with zoning of the area and the lot sizes in recent developments. Lots 6 and 7 will be accessed from a private driveway and will be minimally visible from the public right-of-way. Staff determines the criterion is met.

C. The authorization of the variance will not be materially detrimental to the purposes and standards of this code, will not be inconsistent with all other regulatory requirements, and will not conflict with the goals and policies of the West Linn Comprehensive Plan.

Staff Response 9: Excerpted from the Comprehensive Plan:

> Goal 10 Housing, Policy 5: Allow for flexibility in lot design, size, and building placement to promote housing variety and protection of natural resources.

The requested variance is for flexibility in lot depth, and is therefore compatible with the policy above which encourages flexibility in lot size. Staff finds no other policies or goals in the Comprehensive Plan that are applicable. Therefore, the criterion of Section (C) is met with regards to the Comprehensive Plan. Therefore, staff determines that the variance is consistent with the comprehensive plan and is not inconsistent with all other regulatory requirements or the purposes and standards of this code.

D. The variance request is the minimum variance which would alleviate the exceptional and extraordinary circumstance.

Staff Response 10: The area around the proposed subdivision is substantially developed and connections to adjacent properties are not possible. The proposed lot shapes and depth are dictated by the depth of the existing lot and house. Given the shallow depth of the site and the surrounding pattern of development access driveways are required. If proposed lots 6 and 7 were not flag lots and could be measured based on orientation rather than CDC 85.200(B)(7)(d), both would meet the requirements of the underlying zone. The applicant has made the depth of these lots as wide as possible while having the remaining lots in compliance with this and the other dimensional requirements. Staff determines that the criterion is met.

E. The exceptional and extraordinary circumstance does not arise from the violation of this code.

Staff Response 11: The circumstances leading to the application for the variance do not arise from a violation of this code. The property is not yet developed as a subdivision. Staff determines the criterion is met.

F. The variance will not impose physical limitations on other properties or uses in the area, and will not impose physical limitations on future use of neighboring vacant or underdeveloped properties as authorized by the underlying zoning classification.

Staff Response 12: The proposed variances will not impose physical limitations on surrounding sites. There are developed subdivisions to the west, north, and southeast. The proposed variances will not affect land division to the property on the east. Staff determines the criterion is met.

IV. CHAPTER 85, LAND DIVISION GENERAL PROVISIONS

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 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.

To accomplish this, the emphasis should be upon a connected continuous pattern of local, collector, and arterial streets rather than discontinuous curvilinear streets and cul-de-sacs. Deviation from this pattern of connected streets should only be permitted in cases of extreme topographical challenges including excessive slopes (35 percent-plus), hazard areas, steep drainageways, wetlands, etc. In such cases, deviations may be allowed but the connected continuous pattern must be reestablished once the topographic challenge is passed. Streets should be oriented with consideration of the sun, as site conditions allow, so that over 50 percent of the front building lines of homes are oriented within 30 degrees of an east-west axis.

Internal streets are the responsibility of the developer. All streets bordering the development site are to be developed by the developer with, typically, half-street improvements or to City standards prescribed by the City Engineer. Additional travel lanes may be required to be consistent with adjacent road widths or to be consistent with the adopted Transportation System Plan and any adopted updated plans.

An applicant may submit a written request for a waiver of abutting street improvements if the Transportation System Plan prohibits the street improvement for which the waiver is requested. Those areas with numerous (particularly contiguous) under-developed or undeveloped tracts will be required to install street improvements. When an applicant requests a waiver of street improvements and the waiver is granted, the applicant shall propose a fee amount that will be reviewed by the City Manager or the Manager's designee. The City Manager or the Manager's designee will revise the proposed fee as necessary and establish the amount to be paid on a

case-by-case basis. The applicant shall pay an in-lieu fee for improvements to the nearest street identified by the City Manager or Manager's designee as necessary and appropriate. The amount of the in-lieu fee shall be roughly proportional to the impact of the development on the street system as determined in subsection (A)(22) of this section.

Streets shall also be laid out to avoid and protect tree clusters and significant trees, but not to the extent that it would compromise connectivity requirements per this subsection (A)(1), or bring the density below 70 percent of the maximum density for the developable net area. The developable net area is calculated by taking the total site acreage and deducting Type I and II lands; then up to 20 percent of the remaining land may be excluded as necessary for the purpose of protecting significant tree clusters or stands as defined in CDC 55.100(B)(2).

Staff Response 13: No new streets are proposed. The applicant will be installing half-street improvements. Staff determines that the criterion is met.

2. Right-of-way and roadway widths. In order to accommodate larger tree-lined boulevards and sidewalks, particularly in residential areas, the standard right-of-way widths for the different street classifications shall be within the range listed below. But instead of filling in the right-of-way with pavement, they shall accommodate the amenities (e.g., boulevards, street trees, sidewalks). The exact width of the right-of-way shall be determined by the City Engineer or the approval authority. The following ranges will apply:

Street Classification	**Right-of-Way**
Minor arterial	60 – 80

Additional rights-of-way for slopes may be required. Sidewalks shall not be located outside of the right-of-way unless to accommodate significant natural features or trees.

Staff Response 14: The applicant proposes six feet of right of way dedication along Rosemont Road. This will match the right of way boundary line on this side of Rosemont along the Gregory Heights subdivision immediately to the west. This will result in a ROW width of approximately 65 feet along the western two-thirds of the project site and approximately 72 feet along the eastern one-third of the site. Staff determines the criterion is met.

3. Street widths. Street widths shall depend upon which classification of street is proposed. The classifications and required cross sections are established in Chapter 8 of the adopted TSP. Streets are classified as follows.

(...)

Arterial streets serve to interconnect the City. These streets link major commercial, residential, industrial and institutional areas. Arterial streets are typically spaced about one mile apart to assure accessibility and reduce the incidence of traffic using collectors

or local streets for through traffic in lieu of a well-placed arterial street. Access control is the key feature of an arterial route. Arterials are typically multiple miles in length.

(...)

The following table identifies appropriate street width (curb to curb) in feet for various street classifications. The desirable width shall be required unless the applicant or his engineer can demonstrate that site conditions, topography, or site design require the reduced minimum width.

City of West Linn Roadway Cross-Section Standards

Street Element	Characteristic	Width/Options
Vehicle Lane Widths (minimum widths)	Arterial Collector Neighborhood Local Turn Lane	11 feet 10 feet 10 feet 12 feet 10-14 feet
On-Street Parking	Arterials Collectors Neighborhood Local	Limited (in commercial areas) Some (unstriped) Some (8 feet) Some (unstriped)
Bicycle Lanes (minimum widths)	New Construction Reconstruction	5 to 6 feet 5 to 6 feet
Sidewalks (minimum width) (See note below)	Arterial Collector Neighborhood/Local	6 feet 6 feet 6 feet
Landscape Strips	Can be included in all streets	6 feet
Medians	5-Lane 3-Lane 2-Lane	Optional Optional Consider if appropriate
Neighborhood Traffic Management	Arterials Collectors Neighborhood Local	Not recommended Under special conditions Should consider if appropriate Should consider if appropriate
Transit	Arterial/Collectors Neighborhood Route Local	Appropriate Only in special circumstances Not recommended

(...)

Sidewalk Location	Sidewalk Width
Residential Development	6 feet (+ 6-foot planter strip)

Staff Response 15: The half-street improvements will result in a pavement width of 24 feet, a vehicle lane width exceeding the above standards, a 6-foot bike lane, a 6-foot sidewalk, and a 6-foot planter strip. Staff determines the criterion is met.

4. The decision-making body shall consider the City Engineer's recommendations on the desired right-of-way width, pavement width and street geometry of the various street types within the subdivision after consideration by the City Engineer of the following criteria:
   a. The type of road as set forth in the Transportation Master Plan.
   b. The anticipated traffic generation.
   c. On-street parking requirements.
   d. Sidewalk and bikeway requirements.
   e. Requirements for placement of utilities.
   f. Street lighting.
   g. Drainage and slope impacts.
   h. Street trees.
   i. Planting and landscape areas.
   j. Existing and future driveway grades.
   k. Street geometry.
   l. Street furniture needs, hydrants.

5. Additionally, when determining appropriate street width, the decision-making body shall consider the following criteria:
   (...)
   d. Arterials should have two travel lanes. On-street parking is not allowed unless part of a Street Master Plan. Bike lanes are required as directed by the Parks Master Plan and Transportation Master Plan.

Staff Response 16: The half-street improvements are detailed above. A 6-foot wide bike lane is required and a six-foot sidewalk and these are provided. Staff determines that the criterion is met.

6. Reserve strips. Reserve strips or street plugs controlling the access to streets are not permitted unless owned by the City.

(...)

Staff Response 17: No reserve strips are proposed or street plugs are proposed. Staff finds that the criterion is met.

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.

(...)

Staff Response 18: The applicant proposes six feet of ROW dedication along Rosemont Road. This will match the ROW boundary line on this side of Rosemont along the Gregory Heights subdivision immediately to the west. This will result in a ROW width of approximately 65 feet along the western two-thirds of the project site and approximately 72 feet along the eastern one-third of the site. Staff determines the criterion is met.

13. Grades and curves. Grades shall not exceed 8 percent on major or secondary arterials, 10 percent on collector streets, or 15 percent on any other street unless by variance. Willamette Drive/Highway 43 shall be designed to a minimum horizontal and vertical design speed of 45 miles per hour, subject to Oregon Department of Transportation (ODOT) approval. Arterials shall be designed to a minimum horizontal and vertical design speed of 35 miles per hour. Collectors shall be designed to a minimum horizontal and vertical design speed of 30 miles per hour. All other streets shall be designed to have a minimum centerline radii of 50 feet. Super elevations (i.e., banking) shall not exceed four percent. The centerline profiles of all streets may be provided where terrain constraints (e.g., over 20 percent slopes) may result in considerable deviation from the originally proposed alignment.

Staff Response 19: The proposed improvements to Rosemont Road will have a grade of 8 percent or less. Rosemont Road is straight along this frontage. Staff determines the criterion is met.

14. Access to local streets. Intersection of a local residential street with an arterial street may be prohibited by the decision-making authority if suitable alternatives exist for providing interconnection of proposed local residential streets with other local streets. Where a subdivision or partition abuts or contains an existing or proposed major arterial street, the decision-making authority may require marginal access streets, reverse-frontage lots with suitable depth, visual barriers, noise barriers, berms, no-access reservations alongside and rear property lines, and/or other measures necessary for adequate protection of residential properties from incompatible land uses, and to ensure separation of through traffic and local traffic.

(...)

Staff Response 20: The site is along an arterial street but no local streets are proposed. Due to the existing pattern of development access drives off of the arterial are necessary.

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.

Staff Response 21: The applicant proposes a six-foot wide sidewalk. The sidewalk at the east end of the site overlaps with the dripline area of the significant sequoia tree on Lot 4. The City Arborist is unsure at this time whether it will be necessary to move the sidewalk closer to the street in this area. Recommended Condition of Approval 2B provides for the City Arborist to analyze in the field whether the sidewalk should be brought closer to the street in this area via field analysis during the construction stage. Staff determines the criterion is met upon the inclusion of Condition of Approval 2B.

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.

Staff Response 22: The planter strip is proposed to be six feet wide and matches the existing conditions to the west. See staff response 21 above regarding whether the planter strip may have to be narrowed near the sequoia tree depending on the City Arborist's analysis in the field at the construction stage. Staff determines the criterion is met upon the inclusion of Condition of Approval 2B as discussed in Staff Response 21.

18. Streets and roads shall be dedicated without any reservations or restrictions.

Staff Response 23: The applicant is dedicating six feet for increased ROW on Rosemont Road with no reservations or restrictions. Staff determines the criterion is met.

19. All lots in a subdivision shall have access to a public street. Lots created by partition may have access to a public street via an access easement pursuant to the standards and limitations set forth for such accessways in Chapter 48 CDC.

(...)

Staff Response 24: The proposed lots will have access to Rosemont Road, a public street, via proposed private streets/shared driveways. Access easements for these are proposed to be 20 feet wide, meeting Chapter 48 standards. As seen in their comments on Page 42 of Exhibit PC-4, TVFR does not require further reconfiguration of the proposed shared driveways. Staff determines the criterion is met.

21. Entryway treatments and street isle design. When the applicant desires to construct certain walls, planters, and other architectural entryway treatments within a subdivision, the following standards shall apply:

a. All entryway treatments except islands shall be located on private property and not in the public right-of-way.
b. Planter islands may be allowed provided there is no structure (i.e., brick, signs, etc.) above the curbline, except for landscaping. Landscaped islands shall be set back a minimum of 24 feet from the curbline of the street to which they are perpendicular.
c. All islands shall be in public ownership. The minimum aisle width between the curb and center island curbs shall be 14 feet. Additional width may be required as determined by the City Engineer.
d. Brick or special material treatments are acceptable at intersections with the understanding that the City will not maintain these sections except with asphalt overlay, and that they must meet the Americans with Disabilities Act (ADA) standards. They shall be laid out to tie into existing sidewalks at intersections.
e. Maintenance for any common areas and entryway treatments (including islands) shall be guaranteed through homeowners association agreements, CC&Rs, etc.
f. Under Chapter 52 CDC, subdivision monument signs shall not exceed 32 square feet in area.

Staff Response 25: The applicant is proposing a wall on private property. Its maintenance will be provided through an HOA, CC&Rs, or similar. Staff determines the criterion is met.

22. Based upon the determination of the City Manager or the Manager's designee, the applicant shall construct or cause to be constructed, or contribute a proportionate share of the costs, for all necessary off-site improvements identified by the transportation analysis commissioned to address CDC 85.170(B)(2) that are required to mitigate impacts from the proposed subdivision. The proportionate share of the costs shall be determined by the City Manager or Manager's designee, who shall assume that the proposed subdivision provides improvements in rough proportion to identified impacts of the subdivision. Off-site transportation improvements will include bicycle and pedestrian improvements as identified in the adopted City of West Linn TSP.

Staff Response 26: The proposed half-street improvements are proportionate in that all new subdivisions and partitions are required to complete half-street improvements for the existing public streets adjacent to the property; this property is no different. The half street improvements to Rosemont Road are proportionate to the impacts of a seven lot subdivision that adds a net total of six new residential units to the City. Staff finds that the criterion is met.

B. Blocks and lots.

1. General. The length, width, and shape of blocks shall be designed with due regard for the provision of adequate building sites for the use contemplated; consideration of the need for traffic safety, convenience, access, circulation, and control; and recognition of limitations and opportunities of topography and solar access.

Staff Response 27: The subdivision is proposed along an arterial street in an area where there is not an opportunity to connect to other streets. The subdivision is proposed as an infill project mid-block with no new public streets. Staff determines the criterion is met.

2. Sizes. The recommended block size is 400 feet in length to encourage greater connectivity within the subdivision. Blocks shall not exceed 800 feet in length between street lines, except for blocks adjacent to arterial streets or unless topographical conditions or the layout of adjacent streets justifies a variation. Designs of proposed intersections shall demonstrate adequate sight distances to the City Engineer's specifications. Block sizes and proposed accesses must be consistent with the adopted TSP.

Staff Response 28: Rosemont Road is an arterial and this block between Gregory Lane and Linn Lane is approximately 725 feet long. Therefore the applicant is not obligated to propose a new street here to break up the existing block. Staff determines the criterion is met.

3. Lot size and shape. Lot size, width, shape, and orientation shall be appropriate for the location of the subdivision, for the type of use contemplated, for potential utilization of solar access, and for the protection of drainageways, trees, and other natural features. No lot shall be dimensioned to contain part of an existing or proposed street. All lots shall be buildable, and the buildable depth should not exceed two and one-half times the average width. "Buildable" describes lots that are free of constraints such as wetlands, drainageways, etc., that would make home construction impossible. Lot sizes shall not be less than the size required by the zoning code unless as allowed by planned unit development (PUD).

Depth and width of properties reserved or laid out for commercial and industrial purposes shall be adequate to provide for the off-street parking and service facilities required by the type of use proposed.

Staff Response 29: The proposed lots meet the minimum lot size and width requirements except for lots 6 and 7 which do not meet the required depth of 90 feet. The applicant has applied for variances for lot depth for these two lots, which is addressed above in staff responses 7-12. The lots do not contain part of an existing or proposed street. The lots do not have wetlands or drainageways and are considered "buildable".

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

Staff Response 30: The proposed subdivision fronts an arterial street. Single lots will not take access off of the arterial. Instead, the applicant is proposing access for clusters of three and four lots via two access driveways, which is the minimum permitted for seven lots. Both shared driveways access from Rosemont Road which is the only street bordering the site.

The access driveways are 16 feet in width and the grade will be less than 15%. The applicant has not provided detail on the proposed houses, but given the length of the access easement, the residences on the rear lots may be more than 150 feet from Rosemont Road. On Page 42

of Exhibit PC-4, TVFR requires a fire flow test but does not have further requirements for this project to meet its standards. Condition of Approval 3 states that the applicant must fulfill this requirement.

The curb cuts of the access driveways comply with 48.060(D)(1) and are over 150 feet apart. Gregory Court is over 200 feet from the western driveway and Linn Lane is approximately 300 feet from the eastern driveway. Subsection 48.025(B)(6) requires new developments use the access spacing standards in Chapter 8 of the TSP. Table 8-3 recommends 300 feet between private driveways on arterials. The TSP states that new developments "should meet the recommended access spacing standards" in the table. This wording indicates that this is a recommendation that applies wherever it can, and the wording regarding this table in the TSP also indicates that this is more easily done in newly developed areas of the City. This is an infill development along an existing arterial in a part of the City that is already developed. Development of this subdivision to the minimum required 70% density (rounds up to six lots) would require at least two private driveways as only four lots can access any one driveway. There is one existing driveway on site; therefore one additional driveway is needed to meet the minimum density. The development cannot meet the recommendation, but since this is a recommendation that new developments "should" meet if possible (the TSP does not say they "shall" meet this), no variance is needed from 48.025(B)(6) for the driveway spacing.

The block length on Rosemont is less than the maximum 1,800 feet. The applicant has submitted plans that comply with CDC Chapter 92. Staff determines that the criteria of Chapter 48 are met upon the inclusion of Condition of Approval 3.

> 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.

Staff Response 31: The lots are at right angles except on the eastern and western edges of the property, which are not at right angles to Rosemont Road.

> 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:
>
> 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 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 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.

(...)

Staff Response 32: The applicant is proposing three lots (5-7) that do not have direct frontage to Rosemont Road and have access driveways with a paved width of 16 feet. The proposed lots meet the 10,000 square feet minimum exclusive of the access driveway. As previously stated, lots 6 and 7 do not meet the lot depth requirements in (d) and the applicant has applied for variances for these lots, which are addressed in staff responses 7-12.

C. Pedestrian and bicycle trails.

(...)

Staff Response 33: The sidewalk and bicycle lane proposed for Rosemont Road are part of the street improvements, not a separate proposed trail. There are no separate proposed trails in the project.

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

1. All cuts and fills shall comply with the excavation and grading provisions of the Uniform Building Code and the following:

a. Cut slopes shall not exceed one and one-half feet horizontally to one foot vertically (i.e., 67 percent grade).

b. Fill slopes shall not exceed two feet horizontally to one foot vertically (i.e., 50 percent grade). Please see the following illustration.

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. Where landslides have actually occurred, where the area is identified as a hazard site in the West Linn Comprehensive Plan Report, or where field investigation by the City Engineer confirms the existence of a severe landslide hazard, development shall be prohibited unless satisfactory evidence is additionally submitted by a registered geotechnical engineer which certifies that methods of rendering a known hazard site safe for construction are feasible for a given site. The City Engineer's field investigation shall include, but need not be limited to, the following elements:

a. Occurrences of geotropism.
b. Visible indicators of slump areas.
c. Existence of known and verified hazards.
d. Existence of unusually erosive soils.
e. Occurrences of unseasonably saturated soils.

The City Engineer shall determine whether the proposed methods or designs are adequate to prevent landslide or slope failure. The City Engineer may impose conditions consistent with the purpose of these ordinances and with standard engineering practices including limits on type and intensity of land use, which have been determined necessary to assure landslide or slope failure does not occur.

6. All cuts and fills shall conform to the Uniform Building Code.
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 (as described in subsection (G)(5) of this section).
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.
(...)

Staff Response 34: The proposed plans comply with the cut and fill requirements above and the Uniform Building Code. Cuts shall not exceed one and one half foot horizontal to one foot vertical and fills shall not exceed 50%. Any grading more than four feet will comply with CDC Section 85.170(C). All grading will be the minimum necessary. Staff determines the criteria are met.

F. Water.

1. A plan for domestic water supply lines or related water service facilities shall be prepared consistent with the adopted Comprehensive Water System Plan, plan update, March 1987, and subsequent superseding revisions or updates.
2. Adequate location and sizing of the water lines.
3. Adequate looping system of water lines to enhance water quality.
(...)
5. A written statement, signed by the City Engineer, that water service can be made available to the site by the construction of on-site and off-site improvements and that such water service has sufficient volume and pressure to serve the proposed development's domestic, commercial, industrial, and fire flows.

Staff Response 35: The applicant proposes to obtain water from the existing line under Rosemont Road. Lateral extensions will be provided to serve each individual lot. Looping is not required for the extensions. The Development Review Engineer's sign off on this staff report for the Engineering Division fulfills Subsection (5) above. As seen on Page 42 of Exhibit PC-4, TVFR requests a fire flow test to be performed. Condition of Approval 3 requires this. Staff determines the criteria are met.

G. Sewer.

1. A plan prepared by a licensed engineer shall show how the proposal is consistent with the Sanitary Sewer Master Plan (July 1989). Agreement with that plan must demonstrate how the sanitary sewer proposal will be accomplished and how it is gravity-efficient. The sewer system must be in the correct basin and should allow for full gravity service.
2. Sanitary sewer information will include plan view of the sanitary sewer lines, including manhole locations and depth or invert elevations.
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 avoid disturbance of wetland and drainageways. In those cases where that is unavoidable, disturbance shall be mitigated pursuant to Chapter 32 CDC, Water Resource Area Protection, all trees replaced, and proper permits obtained. Dual sewer lines may be required so the drainageway is not disturbed.
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 DEQ, City, and Tri-City Service District sewer standards. The design of the sewer system 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.
9. A written statement, signed by the City Engineer, that sanitary sewers with sufficient capacity to serve the proposed development and that adequate sewage treatment plant capacity is available to the City to serve the proposed development.

Staff Response 36: The applicant proposes to utilize the existing sewer line that is located in an easement near the rear of the property. Laterals will provide service to each individual lot. The Development Review Engineer's sign off on this staff report for the Engineering Division fulfills Subsection (9) above. Staff determines that the criteria are met.

H. Storm.

1. A stormwater quality and detention plan shall be submitted which complies with the submittal criteria and approval standards contained within Chapter 33 CDC. It shall include profiles of proposed drainageways with reference to the adopted Storm Drainage Master Plan.

2. Storm treatment and detention facilities shall be sized to accommodate a 25-year storm incident. A registered civil engineer shall prepare a plan and statement which shall be supported by factual data that clearly shows that there will be no adverse off-site impacts from increased intensity of runoff downstream or constriction causing ponding upstream. The plan and statement shall identify all on- or off-site impacts and measures to mitigate those impacts. The plan and statement shall, at a minimum, determine the off-site impacts from a 25-year storm.
3. Plans shall demonstrate how storm drainage will be collected from all impervious surfaces including roof drains. Storm drainage connections shall be provided to each dwelling unit/lot. The location, size, and type of material selected for the system shall correlate with the 25-year storm incident.
4. Treatment of storm runoff shall meet municipal code standards.

Staff Response 37: The applicant proposes treating and detaining the stormwater through rain gardens (identified as infiltration basins on the site plan, Sheet C 3.0) located on each individual lot. The stormwater report on pages 73-158 of Exhibit PC-5 shows how this meets all City standards. Staff determines that the criteria are met.

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.

Staff Response 38: The applicant proposes two 20- foot access and utility easements, a 15-foot utility easement split between lots 5 and 6, a 10-foot utility easement on Lot 6, and a 7.5-foot utility easement on Lot 7. The Development Review Engineer's sign off on this staff report for the Engineering Division fulfills this requirement. Staff determines that the criteria are met.

J. Supplemental provisions.
(...)
3. Street trees. Street trees are required as identified in the appropriate section of the municipal code and Chapter 54 CDC.

Staff Response 39: The applicant proposes six street trees. Staff determines that the criterion is met.

4. Lighting. To reduce ambient light and glare, high or low pressure sodium light bulbs shall be required for all subdivision street or alley lights. The light shall be shielded so that the light is directed downwards rather than omni-directional.

Staff Response 40: The applicant proposes two Cobra head LED street lights in accordance with PGE practices. Staff determines that the criterion is met.

5. Dedications and exactions. The City may require an applicant to dedicate land and/or construct a public improvement that provides a benefit to property or persons outside the property that is the subject of the application when the exaction is roughly

proportional. No exaction shall be imposed unless supported by a determination that the exaction is roughly proportional to the impact of development.

Staff Response 41: As required for appropriate street improvements, the applicant proposes to dedicate a six-foot strip along the existing ROW of Rosemont Road. Staff determines the criterion is met.

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.

Staff Response 42: The applicant proposes to underground all utilities. Staff determines the criterion is met.

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.

Staff Response 43: There are no Type I and II lands on site. The site minus the ROW dedication has 81,185 square feet. Minus the proposed private ROW , which staff calculates to be 4,480 square feet, the net site area is 76,705. Therefore the maximum number of lots is 7.670. Seventy percent of that is 5.37. Rounding up, minimum density is 6 lots. Seven are proposed. Therefore minimum density is exceeded. Staff determines the criterion is met.

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.

Staff Response 44: There are no heritage trees on site. Significant trees comprise 17% of the site and are concentrated on Lot 4. The applicant proposes retaining eight of the 10 significant trees on the site for an area of 15%. One of the two significant trees proposed for removal, the cedar tree along the front of Lot 4, is to be removed for street grading. This is

acceptable as long per 55.100(B)(2) as long as it is mitigated for on an inch-per-inch basis. Condition of Approval 2A requires this. The other significant tree proposed for removal is the Japanese cedar along the east edge of Lot 4. For Lot 4 to be developed, the dripline-plus-10-feet area of the 46-inch cedar at the north end of the lot will have to be encroached upon. For this tree to be preserved and for the dripline-plus-10-foot area to successfully count towards required preservation land, Condition of Approval 2C requires I-beam construction for the areas of the house on Lot 4 that are within the dripline-plus-10-feet area of this tree. To fulfill the requirement that preserved significant trees be in a conservation easement or a dedicated tract, Condition of Approval 2D requires these be placed in a conservation easement. Staff determines that the criterion is met upon the inclusion of Condition of Approval 2.

EXHIBITS PC-1 THROUGH PC-4
AFFIDAVIT AND NOTICE MAILING PACKET, COMPLETENESS LETTER, PUBLIC COMMENTS, TVFR COMMENTS

FILE NUMBER: SUB-13-03/VAR-13-10/VAR-13-11

REQUEST: REQUEST FOR 7-LOT SUBDIVISION WITH A CLASS I AND A CLASS II VARIANCE REQUEST FOR LOT DEPTH AT 1485 ROSEMONT ROAD

AFFIDAVIT OF NOTICE

We, the undersigned do hereby certify that, in the interest of the party (parties) initiating a proposed land use, the following took place on the dates indicated below:

GENERAL
File No: SUB-13-03 / VAR-13-10 / VAR-13-11 Applicant's Name Kelly Pyrch
Development Name 1485 Rosemont Rd 4-lot Subdivision
Scheduled ~~Meeting~~/Decision Date 11-6-13

NOTICE: Notices were sent at least 20 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. **(check below)**

TYPE A ✓

A.	The applicant (date) 10-16-13		(signed) S. Shroyer
B.	Affected property owners (date) 10-16-13		(signed) S. Shroyer
C.	School District/Board (date)		(signed)
D.	Other affected gov't. agencies (date)	P.C.H.A	(signed)
E.	Affected neighborhood assns. (date) 10-16-13	R.S. & All	(signed) S. Shroyer
F.	All parties to an appeal or review (date)		(signed)

At least 10 days prior to the scheduled hearing or meeting, notice was published/posted:

Tidings (published date) 10-24-13 (signed) S. Shroyer
City's website (posted date) 10-18-13 (signed) S. Shroyer

SIGN

At least 10 days prior to the scheduled hearing, meeting or decision date, a sign was posted on the property per Section 99.080 of the Community Development Code.

(date) 10-17-13 (signed) [signature]

NOTICE: Notices were sent at least 14 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. **(check below)**

TYPE B _____

A.	The applicant (date)	(signed)
B.	Affected property owners (date)	(signed)
C.	School District/Board (date)	(signed)
D.	Other affected gov't. agencies (date)	(signed)
E.	Affected neighborhood assns. (date)	(signed)

Notice was posted on the City's website at least 10 days prior to the scheduled hearing or meeting.
Date: _____ (signed) _____

STAFF REPORT mailed to applicant, City Council/Planning Commission and any other applicable parties 10 days prior to the scheduled hearing.

(date) 10-25-13 (signed) S. Shroyer

FINAL DECISION notice mailed to applicant, all other parties with standing, and, if zone change, the County surveyor's office.

(date) _____ (signed) _____

p:\devrvw\forms\affidvt of notice-land use (9/09)

CITY OF WEST LINN
PLANNING COMMISSION
PUBLIC HEARING NOTICE
FILE NO. SUB-13-03/VAR-13-10/VAR-13-11

The West Linn Planning Commission is scheduled to hold a public hearing, on Wednesday, November 6, 2013, **starting at 7:00 p.m.** in the Council Chambers of City Hall, 22500 Salamo Road, West Linn, to consider a request for a 7-lot Subdivision, with a Class II Variance for reduced lot depth on one lot and a Class I Variance for reduced lot depth on one other lot. The site is located at 1485 Rosemont Road.

Criteria for subdivisions are found in Chapter 85 of the Community Development Code (CDC). Criteria for variances are found in Chapter 75 of the CDC. Approval or disapproval of the request by the Planning Commission will be based upon these criteria and these criteria only. At the hearing, it is important that comments relate specifically to the applicable criteria listed.

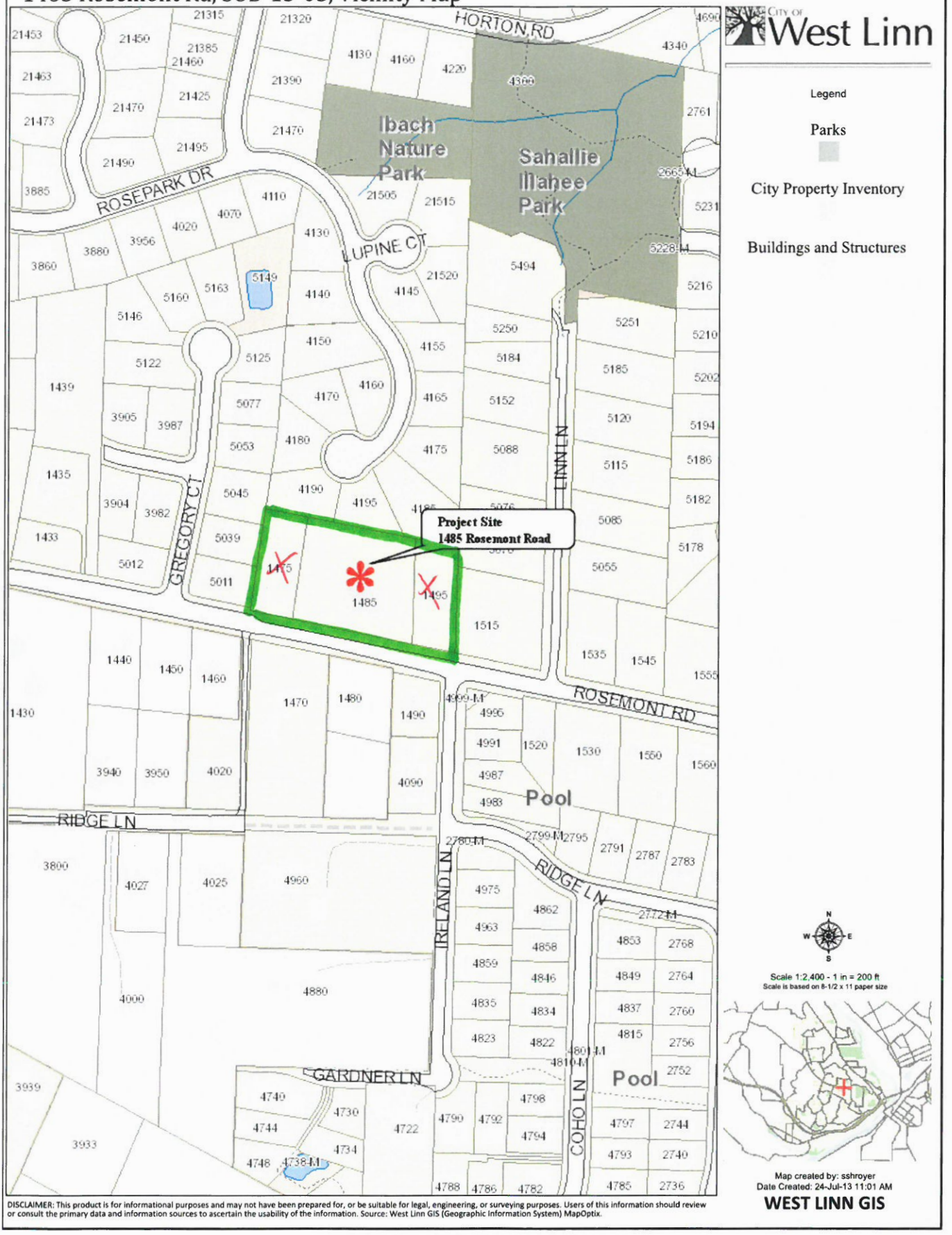
You have been notified of this proposal because County records indicate that you own property within 500 feet of the affected site on tax lots 1000, 1001, and 1002 of Clackamas County Assessor's Map 2-1E-25BD and/or as required by Chapter 99 of the CDC.

The complete application in the above noted file is available for inspection at no cost at City Hall or via the web site at http://westlinnoregon.gov/planning/1485-rosemont-road-7-lot-subdivision-2-variances, or copies can be obtained for a minimal charge per page. At least ten days prior to the hearing, a copy of the staff report will be available for inspection. For further information, please contact Associate Planner Tom Soppe at tsoppe@westlinnoregon.gov or 503-742-8660. Alternately, visit City Hall, 22500 Salamo Road, West Linn, OR 97068.

The hearing will be conducted in accordance with the rules of Section 99.170 of the CDC. Anyone wishing to present written testimony on this proposed action may do so in writing prior to, or at the public hearing. Oral testimony may be presented at the public hearing. At the public hearing, the Planning Commission will receive a staff presentation, and invite both oral and written testimony. The Planning Commission may continue the public hearing to another meeting to obtain additional information, leave the record open for additional evidence, arguments, or testimony, or close the public hearing and take action on the application as provided by state law. Failure to raise an issue in person or by letter at some point prior to the close of the hearing, or failure to provide sufficient specificity to afford the decision maker an opportunity to respond to the issue, precludes an appeal to the Land Use Board of Appeals (LUBA) based on that issue.

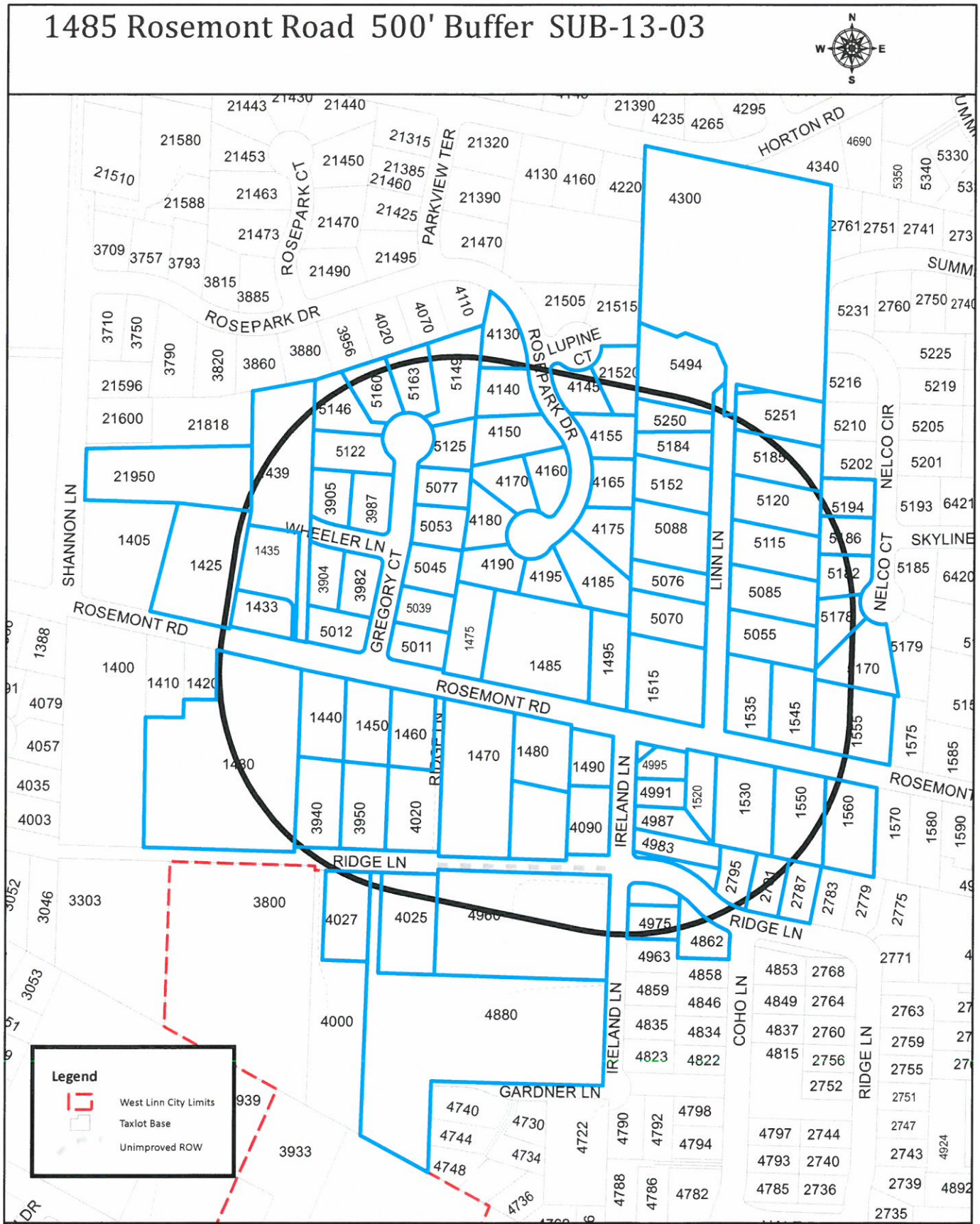
SHAUNA SHROYER
Planning Administrative Assistant

1485 Rosemont Rd, SUB-13-03, Vicinity Map



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. Source: West Linn GIS (Geographic Information System) MapOptix.

1485 Rosemont Road 500' Buffer SUB-13-03



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.

Taxlot Base Source: Clackamas County GIS

NOT TO SCALE

SNAPNOTIFY.MXD / AHA APP 3-24-2011

West Linn GIS GEOGRAPHIC INFORMATION SYSTEMS

User Name:

Map Creation Date: Sep 26, 2013

ANDERSEN O JERRY & ANDREA R
5055 LINN LN
WEST LINN, OR 97068

BASEMAN RITA M
5152 LINN LN
WEST LINN, OR 97068

BEATY JAMES R & DEBORAH A
5186 NELCO CIR
WEST LINN, OR 97068

BEZIO WILLIAM A
4170 ROSEPARK DR
WEST LINN, OR 97068

BOILEAU LAMONT D JR & NANCY J
2795 RIDGE LN
WEST LINN, OR 97068

BONOFF MICHAEL B & KAREN R
5115 LINN LN
WEST LINN, OR 97068

BOUCHARD JEFFREY B
5122 GREGORY CT
WEST LINN, OR 97068

BOWERLY HEATHER J & TODD D
1440 S ROSEMONT RD
WEST LINN, OR 97068

BREN JASON
3905 WHEELER LN
WEST LINN, OR 97068

BURNS JERRY W & CHRISTINE C
1430 S ROSEMONT RD
WEST LINN, OR 97068

BUTH-HALL STEPHANIE
18699 NE MARINE DR SLIP K-7
PORTLAND, OR 97230

CASSELLA LAURIENNE J
5250 LINN LN
WEST LINN, OR 97068

CITY OF WEST LINN
22500 SALAMO RD #600
WEST LINN, OR 97068

CLARKE ALLISON
4195 ROSEPARK DR
WEST LINN, OR 97068

CLARKE RONALD L & JUDY R
5178 NELCO CIR
WEST LINN, OR 97068

DAGOSTINO MARK & ANN
1530 ROSEMONT RD
WEST LINN, OR 97068

DE CLERCK RICHARD A & LINDA L
4145 ROSEPARK DR
WEST LINN, OR 97068

DUNN LEROY E & DONNA J
5170 NELCO CT
WEST LINN, OR 97068

EASTON ROBERT E & SUE A
21520 LUPINE CT
WEST LINN, OR 97068

EKERSON BERNARD ALLEN TRUSTEE
1550 ROSEMONT RD
WEST LINN, OR 97068

FRANK JAMES D & PAMELA J
4165 ROSEPARK DR
WEST LINN, OR 97068

FREUND WILLIAM E & JACQUELINE R YOUNG
4175 ROSEPARK DR
WEST LINN, OR 97068

FROMHERZ SCOTT D & CRISI
2791 RIDGE LN
WEST LINN, OR 97068

FRYSINGER JOHN F & SHANNON L
4185 ROSEPARK DR
WEST LINN, OR 97068

GEFFEL JOHN M & CYNTHIA J
3982 WHEELER LN
WEST LINN, OR 97068

GRANT BRIAN
4090 IRELAND LN
WEST LINN, OR 97068

GRANT CLEM & BETTY
3987 WHEELER LN
WEST LINN, OR 97068

GRIESER GERHARD M & MARLENE
5011 GREGORY CT
WEST LINN, OR 97068

GRIMMETT JARETT J
5012 GREGORY CT
WEST LINN, OR 97068

GUERCHON MICHAEL FOREST TRUSTEE
5045 GREGORY CT
WEST LINN, OR 97068 Ret

GUEST CLAUDIA B TRUSTEE
4027 S RIDGE LN
WEST LINN, OR 97068

GULATI RAJEEV
5160 GREGORY CT
WEST LINN, OR 97068

HANSON RALPH A TRUSTEE
1480 S ROSEMONT RD
WEST LINN, OR 97068

HARKIN DAVID E & PAULA A
5163 GREGORY CT
WEST LINN, OR 97068

HEARON TERESA
4130 ROSEPARK DR
WEST LINN, OR 97068

HEISTERKAMP STEVEN T
4190 ROSEPARK DR
WEST LINN, OR 97068

HOOGESTRAAT TAMARA L & DALE L
4155 ROSEPARK DR
WEST LINN, OR 97068

HUFFMAN GARY D
4025 S RIDGE LN
WEST LINN, OR 97068

JACKSON BRUCE L TRUSTEE
5185 LINN LN
WEST LINN, OR 97068

JENSEN JAMES DONALD & KATHLEEN L
5088 LINN LN
WEST LINN, OR 97068

JOHNSON DALE N & NATALIE J
1555 ROSEMONT RD
WEST LINN, OR 97068

JONES JEFFREY & KATHERINE
4862 COHO LN
WEST LINN, OR 97068

JONES MARCUS B & JULIE M
5194 NELCO CIR
WEST LINN, OR 97068

JUDD JAMES M & NANCY G
5251 LINN LN
WEST LINN, OR 97068

KIELY G KEVIN & KIMBERLY ANN
4150 ROSEPARK DR
WEST LINN, OR 97068

KNAPICK RANDY J & STEPHANIE V
4975 IRELAND LN
WEST LINN, OR 97068

KOTT DAVID G & CYNTHIA K
5039 GREGORY CT
WEST LINN, OR 97068

LATHRAM LORNA
5184 LINN LN
WEST LINN, OR 97068

LIDDELL CRAIG J & JANIS C
3950 SW RIDGE LN
WEST LINN, OR 97068

LONGTAIN JEFFREY LEE & LISA MARIE
3904 WHEELER LN
WEST LINN, OR 97068

MCKENZIE A GREGORY & SUSAN
1470 S ROSEMONT RD
WEST LINN, OR 97068

MCLEOD RODERICK G & JANELLE PINKNEY
1425 ROSEMONT RD
WEST LINN, OR 97068

MCQUEEN FAM TRUST
21950 SHANNON LN
WEST LINN, OR 97068

MCVICKER KATHLEEN A
1490 ROSEMONT RD
WEST LINN, OR 97068

MUMFORD DAVID G & DEBORAH L
4180 ROSEPARK DR
WEST LINN, OR 97068

MURPHY TIM
4960 IRELAND LN
WEST LINN, OR 97068

MYERS DYANN MARIE KNUTSON
5077 GREGORY CT
WEST LINN, OR 97068

NESS MELVIN G & MARLENE
PO BOX 32
WEST LINN, OR 97068

NICHOLS J BRENDAN & ANGELA M
5085 LINN LN
WEST LINN, OR 97068

NORRIS CRAIG A TRUSTEE
1520 ROSEMONT RD
WEST LINN, OR 97068

OLIVER AMY L
5125 GREGORY CT
WEST LINN, OR 97068

PAMFILE VALERIU
2022 SE 138TH AVE
PORTLAND, OR 97233

PANTOJA JULIO & CHARLOTTE
2787 RIDGE LN
WEST LINN, OR 97068

PARSON RICHARD A TRUSTEE
4880 S IRELAND LN
WEST LINN, OR 97068

PIXTON J THOMAS TRUSTEE
5070 LINN LN
WEST LINN, OR 97068

PURO GLENN E & NANCY A
4160 ROSEPARK DR
WEST LINN, OR 97068

PYRCH WILLIAM J CO-TRUSTEE
1485 ROSEMONT RD
WEST LINN, OR 97068

RASMUSSEN MARK LEROY & AMANDA
5120 LINN LN
WEST LINN, OR 97068

REIS THOMAS A & SHERYL L
4140 ROSEPARK DR
WEST LINN, OR 97068

RENAISSANCE CUSTOM HOMES LLC
16771 BOONES FERRY RD
LAKE OSWEGO, OR 97035

ROSEMONT POINTE HOMEOWNERS ASSN
NO MAILING ADDRESS AVAILABLE,

SCHIEFELBEIN STEVE J & JULIE A
1450 ROSEMONT RD
WEST LINN, OR 97068

SHANNON SWIM CLUB INC
1590 ROSEMONT RD
WEST LINN, OR 97068

STONEKING MELINDA
3940 S RIDGE LN
WEST LINN, OR 97068

STUART JEFFERY R & LORI J
5053 GREGORY CT
WEST LINN, OR 97068

TUDORACHE CONSTANTIN & FLOARE
1535 ROSEMONT RD
WEST LINN, OR 97068

ULBRICHT MARGORY E
1460 S ROSEMONT RD
WEST LINN, OR 97068

WALLACE MYRON M & JOAN M
1515 ROSEMONT RD
WEST LINN, OR 97068

WELSH JAMES N III
5182 NELCO DR
WEST LINN, OR 97068

WITT CARL H & BARBARA E
PO BOX 272
WEST LINN, OR 97068

WOOD RANDY SCOTT
5146 GREGORY CT
WEST LINN, OR 97068

KELLY PYRCH
1332 STONEHAVEN DR
WEST LINN, OR 97068

RALPH HENDERSON
GROUP MACKENZIE
1515 SE WATER AVE, #100
PORTLAND, OR 97214

RICK SAITO
2607 HILLCREST CT
WEST LINN, OR 97068

MARK PYRCH
208 3RD AVE
OREGON CITY, OR 97045

DEAN SUHR
ROSEMONT SUMMIT NA
21345 MILES DR
WEST LINN OR 97068

WEST LINN CHAMBER OF COMMERCE
1745 WILLAMETTE FALLS DR
WEST LINN OR 97068

STEVE GARNER
BHT NA PRESIDENT
3525 RIVERKNOLL WAY
WEST LINN OR 97068

SALLY MCLARTY
BOLTON NA PRESIDENT
19575 RIVER RD # 64
GLADSTONE OR 97027

ALEX KACHIRISKY
HIDDEN SPRINGS NA PRESIDENT
6469 PALOMINO WAY
WEST LINN OR 97068

JEF TREECE
MARYLHURST NA PRESIDENT
1880 HILLCREST DR
WEST LINN OR 97068

BILL RELYEA
PARKER CREST NA PRESIDENT
3016 SABO LN
WEST LINN OR 97068

ANTHONY BRACCO
ROBINWOOD NA PRESIDENT
2716 ROBINWOOD WAY
WEST LINN OR 97068

KEN PRYOR
SAVANNA OAKS NA VICE PRES
2119 GREENE ST
WEST LINN, OR 97068

ED SCHWARZ
SAVANNA OAKS NA PRESIDENT
2206 TANNLER DR
WEST LINN OR 97068

TRACY GILDAY
SKYLINE RIDGE NA PRESIDENT
1341 STONEHAVEN DR
WEST LINN OR 97068

TROY BOWERS
SUNSET NA PRESIDENT
2790 LANCASTER ST
WEST LINN OR 97068

JULIA SIMPSON
WILLAMETTE NA PRESIDENT
1671 KILLARNEY DR
WEST LINN OR 97068

ALMA COSTON
BOLTON NA DESIGNEE
PO BOX 387
WEST LINN OR 97068

SUSAN VAN DE WATER
HIDDEN SPRINGS NA DESIGNEE
6433 PALOMINO WAY
WEST LINN OR 97068

KEVIN BRYCK
ROBINWOOD NA DESIGNEE
18840 NIXON AVE
WEST LINN OR 97068

DOREEN VOKES
SUNSET NA SEC/TREAS
4972 PROSPECT ST
WEST LINN OR 97068

MAILED
10-16-13

CITY HALL 22500 Salamo Rd. West Linn Oregon 97068 telephone: (503) 657 0331 fax: (503) 650 9041

City of West Linn

VIA U.S. MAIL AND EMAIL

September 5, 2013

Kelly Pyrch
1332 Stonehaven Dr.
West Linn, OR 97068

SUBJECT: SUB-13-03 application for 7-lot Subdivision at 1485 Rosemont Rd.

Dear Mr. Pyrch:

The application you submitted on July 12, 2013 (SUB-13-03) and was declared complete on August 28 based on your submittal of needed information. The City has 120 days (until December 26, 2013) to exhaust all local review per state statute. In the near future staff will schedule a Planning Commission hearing for this application. At least 20 days before the hearing you will be sent a copy of the hearing notice.

While the application is complete, staff notes that the variance narrative references the rain garden tracts, which are no longer proposed, instead of the storm water treatment on each lot. In addition, Khoi Le in Engineering previously forwarded the following concerns:

- Infiltration test results are marginal. Not all infiltrations are over 2 in/hr.
- Some of the infiltration tests are not at the same locations as rain gardens.
- Rain gardens are located right next to the adjacent properties; any overflow to adjacent properties will create up-roar since this area is known of having storm-water issue.
- Is the drywell approach considered as a mean for overflow?
- Would like to have the storm report prepared referencing exact sections from the Portland Stormwater Management Manual so that the design can be verified

These issues should be addressed at this time so they can be reflected in the staff recommendation.

If you have any questions or comments, or if you wish to meet with staff regarding these issues please contact me at 503-722-5512 or by email at sjavoronok@westlinnoregon.gov, or Khoi Le at 722-5517 or by email at kle@westlinnoregon.gov.

Sincerely,

Sara Javoronok

Sara Javoronok
Associate Planner

cc: Ralph Henderson, Group Mackenzie, 1515 SE Water Ave., #100, Portland, OR 97214
cc email only: Eric Saito; Mark Pyrch; Matt Butts; Megan Goplin

July 15. 2013

City of West Linn
Planning Department
22500 Salamo Road
West Linn, OR 97068

re: Pyrch property development
at 1485 Rosemont Rd

Attn: Mr. Peter Spir

Dear sir:

We attended the Rosemont Summit Neighborhood Association meeting on July 10th at which our neighbor, Kelly Pyrch, discussed his intention to develop property at 1485 Rosemont Rd. and who is seeking approval from the City to subdivide the land into seven lots. The Pyrchs have also told us that Mr. Peter Spir is the city official involved in permitting that development and accordingly we are sending this letter to his attention. If he is not, please forward this to the appropriate official and contact us in order that we might inform her or him of our position. Mr. Spir and I spoke by phone about this matter and I voiced some of our objections to him in March of this year.

The Pyrch's have asked us for our permission (which we have refused) to allow them to place a storm drain in the sanitary sewer easement voluntarily granted in 1970 by the former owner of our property, Adene Robnette, the only compensation for which was the benefit to the grantor and her successors and assigns, of the construction by the City of a public sanitary sewer and the connection thereto of the house at 1515 Rosemont Rd. (formally numbered 2885 Rosemont Rd.) which we purchased from her in 1973, with the understanding stated herein. By the City's own definitions embodied in its regulations, a sewer is not a storm drain and vice versa. Using the sewer easement for additional purposes without our permission would seem to constitute a taking of our property without compensation.

Under the terms of the easement "Grantors reserve the right to use the surface of the land for walkways, driveways, planting, and related purposes; and all sewer facilities shall be at a depth consistent with these purposes. No building shall be placed upon the granted property, however, without the written permission of the City." This clause is, in our opinion, further evidence that grantors never contemplated that the easement could be used for any other purpose than the one sanitary sewer, except perhaps for replacements of that one sanitary sewer if ever necessary. Certainly, adding another pipe in the area would defeat the grantor's intent that buildings could be placed upon the easement with the permission of the City, which one could assume could not be unreasonably withheld if requested by the property owners. (As an aside, the survey plans they showed the meeting attendants and which they will probably submit to you, are incorrect as to the northern boundary of our property, the easement boundary, and the depiction of the trees involved – our tall firs are not in the easement.)

Furthermore and most importantly, we believe on good authority that disturbing the ground for a storm drain in that easement or building a catch basin (is that the right term?) at their roots could disturb the roots and foundation of the grove of tall firs planted in the strip of our property just north of the easement and along the northern boundary of our property, and could cause them to fall in a windstorm, damaging adjacent houses and perhaps resulting in injury to persons including ourselves and or our neighbors. Several years ago, another neighbor voiced her concern to us that damage could occur to her property if the trees were to fall in a windstorm. we then engaged a licensed arborist who reassured us that the trees were safe if they were left undisturbed and remained in the grove with its interconnected root system. Following his advice, the trees remain undisturbed.

We are further concerned that putting next to the trees, a "rain garden" to absorb the water that must flow off the seven houses and drives, etc., planned to replace the one house on nearly two acres of grass and trees now on the Pyrch property and now absorbing rainfall, may create a wet area that will further endanger the root system of the trees on our property. We agree, if this subdivision is to proceed, proper drainage is essential; but it should not be done as proposed. We have asked the Pyrch's to find another solution to draining their development. Perhaps fewer lots are necessary, thus relying on more natural absorption. They said that the development then wouldn't be economically viable. They once said that it could be drained directly to the north of their property, or instead of rain gardens at the north boundary, that they might be able to drain it to the south and down Ireland Lane with its many existing catch basins. If so, any alternative would seem to be a much better and safer solution.

However they work it out and we sincerely hope they do, we respectfully submit that the City should not permit the Pyrch's to place a storm drain in the sewer easement nor rain gardens at the base of our trees. If despite our protest, the City does permit the Pyrch's to do so, we respectfully remind the City, the Pyrch's and their consulting experts on whom they may rely, to be aware of the consequent liability, to persons living nearby, that they assume by their actions. The City should also consider that such permission may effectively usurp rights reserved to us under the cited clause of the easement, diminishing the usefulness of our property, by imperiously expanding the terms of the sewer easement deed for the unintended and uncompensated use of the sewer easement for a storm drain of a private development. Furthermore, the City and the Pyrchs should also be aware that we bear no responsibility for damages nor injuries that should occur from such placement of storm drainage through or catch basins adjacent to our property, if the developers are nevertheless permitted by the City and do so.

Therefore, respectfully and earnestly, we strongly object to the use of the easement on our property for storm drainage and to the placement of a catch basin at the roots of our trees as proposed by the Pyrch development. As our representative, too, we depend upon you for good judgement and fairness, and thank you in advance for your diligence as you deliberate upon this matter.

Very truly yours,

Myron and Joan Wallace
1515 Rosemont Rd.
West Linn, OR 97068

Javoronok, Sara

From: Darby, Ty M. [Ty.Darby@tvfr.com]
Sent: Wednesday, September 18, 2013 8:29 AM
To: Javoronok, Sara
Subject: RE: West Linn SUB-13-03

Follow Up Flag: Follow up
Flag Status: Flagged

Sara,

Good morning. I took a look at the site plan. Fire apparatus access looks good. We would ask that a fire flow test be conducted from the closest existing fire hydrant. If the proposed homes are 3,600 sq. ft. or less we will only need a fire flow of 1,000 gallons per minute. The proposed location of the new fire hydrant is acceptable to TVF&R. We have no further comments for this project. Let me know if you have any questions. Thank you.

Ty Darby | Deputy Fire Marshal
Tualatin Valley Fire & Rescue
Direct: 503-259-1409
www.tvfr.com

From: Javoronok, Sara [mailto:sjavoronok@westlinnoregon.gov]
Sent: Tuesday, September 17, 2013 4:45 PM
To: Darby, Ty M.
Subject: West Linn SUB-13-03

Hi Ty,

I'm working on a subdivision at 1485 Rosemont Road for Tom Soppe while he's out on vacation. I don't see any comments from TVF&R in the file and wanted to check with you before proceeding. The application and supplemental information is located on our website here: http://westlinnoregon.gov/planning/1485-rosemont-road-7-lot-subdivision-2-variances.

Please let me know if you have any questions or issues.

Thanks!

Sara

City of West Linn
100 Years
1913 - 2013

Sara Javoronok
sjavoronok@westlinnoregon.gov
Associate Planner
22500 Salamo Rd
West Linn, OR 97068
P: (503) 722-5512
F: (503) 656-4106
Web: westlinnoregon.gov

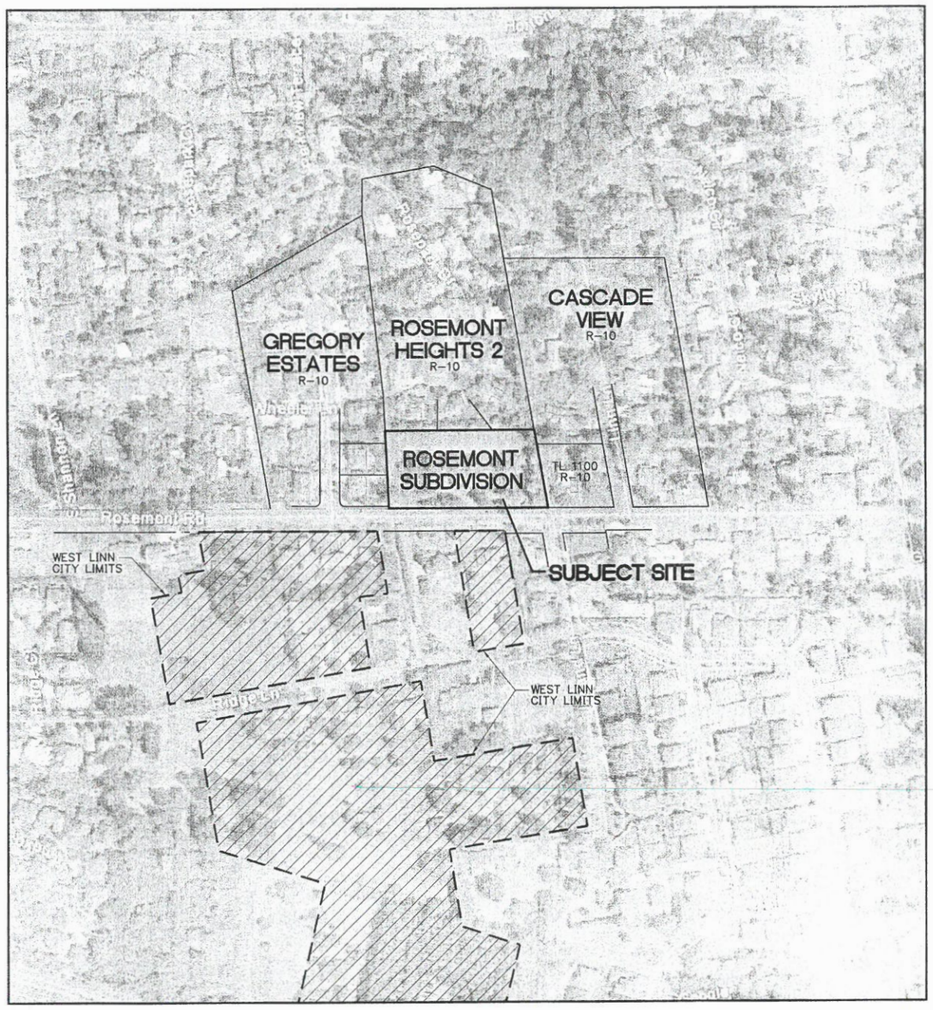
EXHIBIT PC-5
APPLICANT'S SUBMITTAL

FILE NUMBER: **SUB-13-03/VAR-13-10/VAR-13-11**

REQUEST: **REQUEST FOR 7-LOT SUBDIVISION WITH A CLASS I AND A CLASS II VARIANCE REQUEST FOR LOT DEPTH AT 1485 ROSEMONT ROAD**

ROSEMONT TENTATIVE SUBDIVISION PLAN

WEST LINN, OREGON



VICINITY MAP

0 100 200 400

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: ANDY PARIS & ASSOCIATES, INC. DATE: 3/20/13

SHEET INDEX

OWNER

KELLY PYRCH
C.O. R&H CONSTRUCTION
1530 SW TAYLOR STREET
PORTLAND, OR 97205
PHONE: 503-228-7177

SURVEYOR

ANDY PARIS AND ASSOCIATES, INC.
CONTACT: HAROLD P. SALO
16057 BOONES FERRY ROAD
LAKE OSWEGO, OR 97035
PHONE: 503-636-3341

CIVIL ENGINEER

GROUP MACKENZIE
CONTACT: RALPH HENDERSON
1515 SE WATER AVE. #100
PORTLAND, OR 97214
PHONE: 503-224-9560

PROPERTY DESCRIPTION

TAX LOTS 1000, 1001 & 1002
TAX MAP 2-1E-25BD
IN NW 1/4 SECTION 25, T.2S, R.1E, W.M.
CITY OF WEST LINN
CLACKAMAS COUNTY, OREGON
ZONING: SINGLE-FAMILY RESIDENTIAL DETACHED, R-10

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
LOT LINE		
EASEMENT		
TREE TO REMAIN		
REMOVE EXISTING TREE		
MAIL BOX		
WATER METER		
FIRE HYDRANT		
WATER VALVE		
SANITARY MANHOLE		
STORM MANHOLE		
CATCH BASIN		
OVERFLOW INLET		
POWER POLE		
STREET TREE		
STREET LIGHT		
DOMESTIC WATERLINE		
FIRE WATERLINE		
SANITARY SEWER LINE		
STORM SEWER LINE		
GAS LINE		
TELEPHONE LINE		
OVERHEAD POWER		
VERTICAL CURB		
STORMWATER FACILITY		
CONCRETE PAVEMENT		
ASPHALT PAVEMENT		

RECEIVED
OCT 10 2013

SUBDIVISION RESUBMITTAL - OCTOBER 9, 2013

GROUP MACKENZIE
Architecture
Interior Design
Land Use Planning
Civil Engineering
Structural Engineering
Transportation Planning
Landscape Architecture

Client
R+H CONSTRUCTION

Project
ROSEMONT SUBDIVISION
WEST LINN, OREG

REGISTERED PROFESSIONAL ENGINEER
#56660
OREGON
JULY 11, 2000
RALPH J.R. HENDERSON
EXPIRES: 6/30/1

REVISIONS:

REVISION NO.	REVISIONS THIS SHEET	REVISION DA CLOSING DAT

SHEET TITLE:
COVER SHEET

DRAWN BY: MAG
CHECKED BY: RJH
SHEET:
C1.0
JOB NO. 2130073

2130073\00\CIVIL\073-C1.0.DWG MAG 10/09/13

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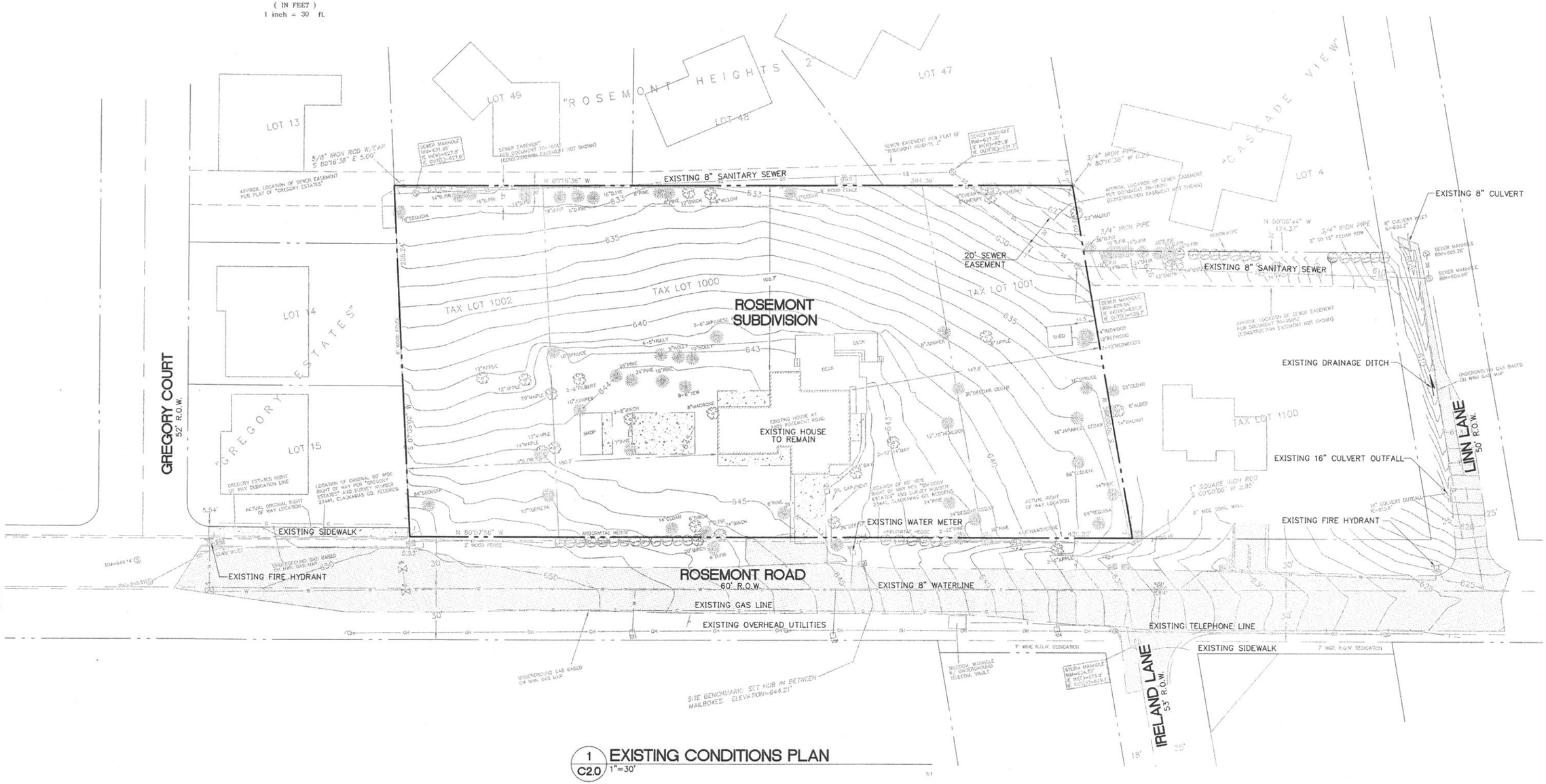
(IN FEET)
1 inch = 30 ft.

LEGEND

SEE SHEET C1.0 FOR LEGEND



1 C2.0 EXISTING CONDITIONS PLAN 1"=30'

SURVEYED BY:
ANDY PARIS AND ASSOCIATES, INC.
16057 BOONES FERRY ROAD
LAKE OSWEGO, OREGON 97035
PH: 503-636-3341

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: ANDY PARIS & ASSOCIATES, INC. DATE: 3/20/13

SUBDIVISION RESUBMITTAL - OCTOBER 9, 2013

2130073\00\CIVIL\073-C2.0.DWG MAG 10/09/13 11:4

GROUP MACKENZIE
Architecture
Interior Design
Land Use Planning
Civil Engineering
Structural Engineering
Transportation Planning
Landscape Architecture

Client
R+H CONSTRUCTION

Project
ROSEMONT SUBDIVISION

WEST LINN, OREGO

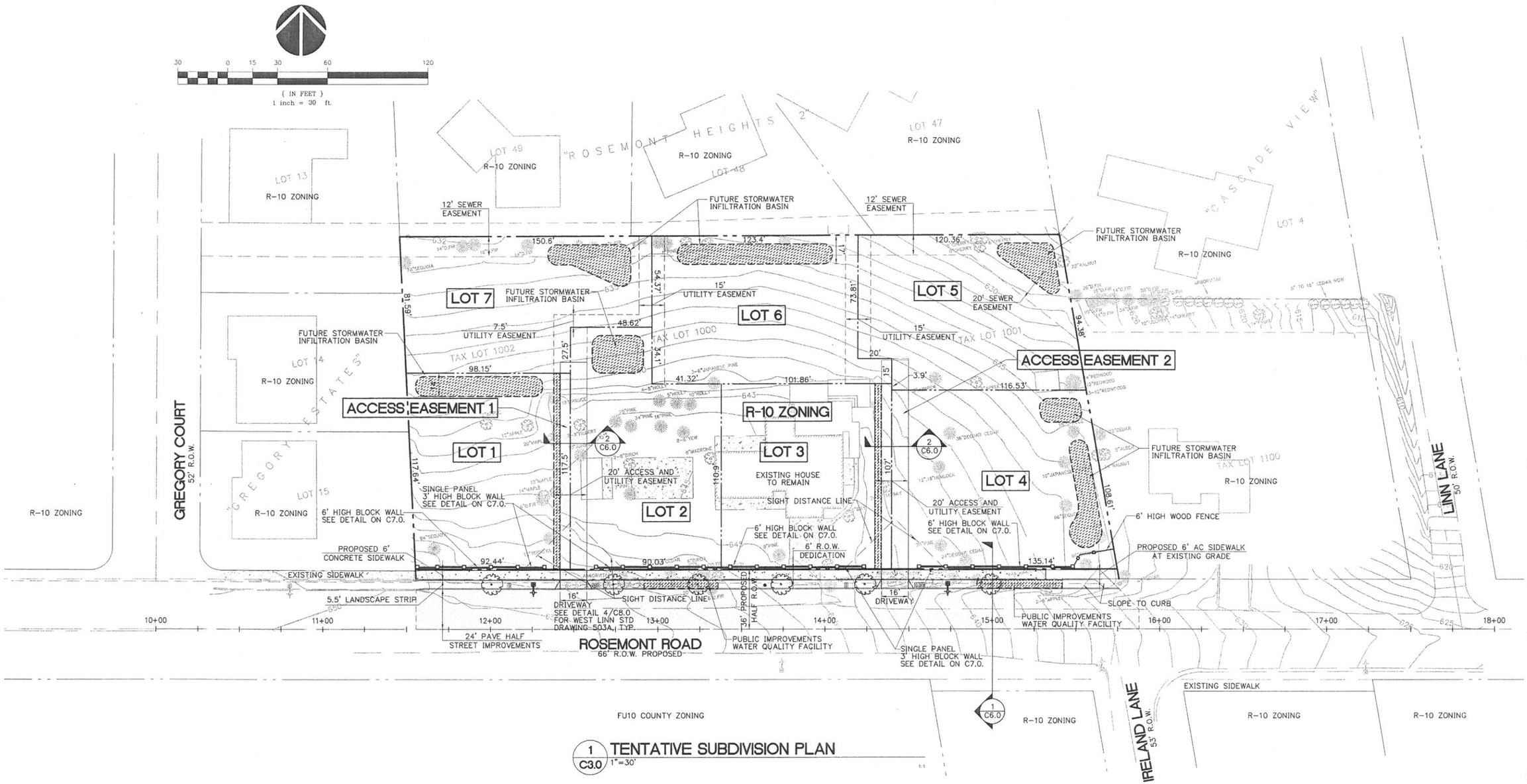
REGISTERED PROFESSIONAL ENGINEER #58660 OREGON JULY 11, 2000 RALPH J.R. HENDERSON
EXPIRES: 6/30/15

REVISIONS:

REVISION NO.	REVISIONS ON THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
EXISTING CONDITIONS PLAN

DRAWN BY: MAG
CHECKED BY: RJH
SHEET: C2.0
JOB NO. 2130073.0



1 C3.0 TENTATIVE SUBDIVISION PLAN
1"=30'

SITE DATA TABLE

LOT 1	11,197 SF (0.26 AC)
LOT 2	11,644 SF (0.27 AC)
LOT 3	11,296 SF (0.26 AC)
LOT 4	13,464 SF (0.31 AC)
LOT 5	11,548 SF (0.27 AC)
LOT 6	11,227 SF (0.26 AC)
LOT 7	10,810 SF (0.25 AC)
TOTAL SITE AREA (AFTER 6' DEDICATION)	81,186 SF (1.86 AC)
ACCESS EASEMENT 1	2,900 SF (0.07 AC)
ACCESS EASEMENT 2	2,518 SF (0.06 AC)

TREE INFORMATION

PERCENTAGE OF SITE COVERED BY SIGNIFICANT TREE PROTECTION AREA:	15.5%
PERCENTAGE OF NON-TYPE I AND TYPE-II LANDS COVERED BY SIGNIFICANT TREE PROTECTION AREA (NO TYPE I AND TYPE-II LANDS ON SITE):	15.5%

LEGEND

SEE LEGEND ON SHEET C1.0

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: ANDY PARIS & ASSOCIATES, INC. DATE: 3/20/13

SUBDIVISION RESUBMITTAL - OCTOBER 29, 2013

GROUP MACKENZIE
Architecture
Interior Design
Land Use Planning
Civil Engineering
Structural Engineering
Transportation Planning
Landscape Architecture

Client
R+H CONSTRUCTION

Project
ROSEMONT SUBDIVISION

WEST LINN, OREGON

REGISTERED PROFESSIONAL ENGINEER #56680 OREGON JULY. 11, 2006 RALPH J.R. HENDERSON
EXPIRES: 6/30/15

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
TENTATIVE SUBDIVISION PLAN

DRAWN BY: MAG
CHECKED BY: RJH
SHEET:
C3.0
JOB NO. 2130073.00

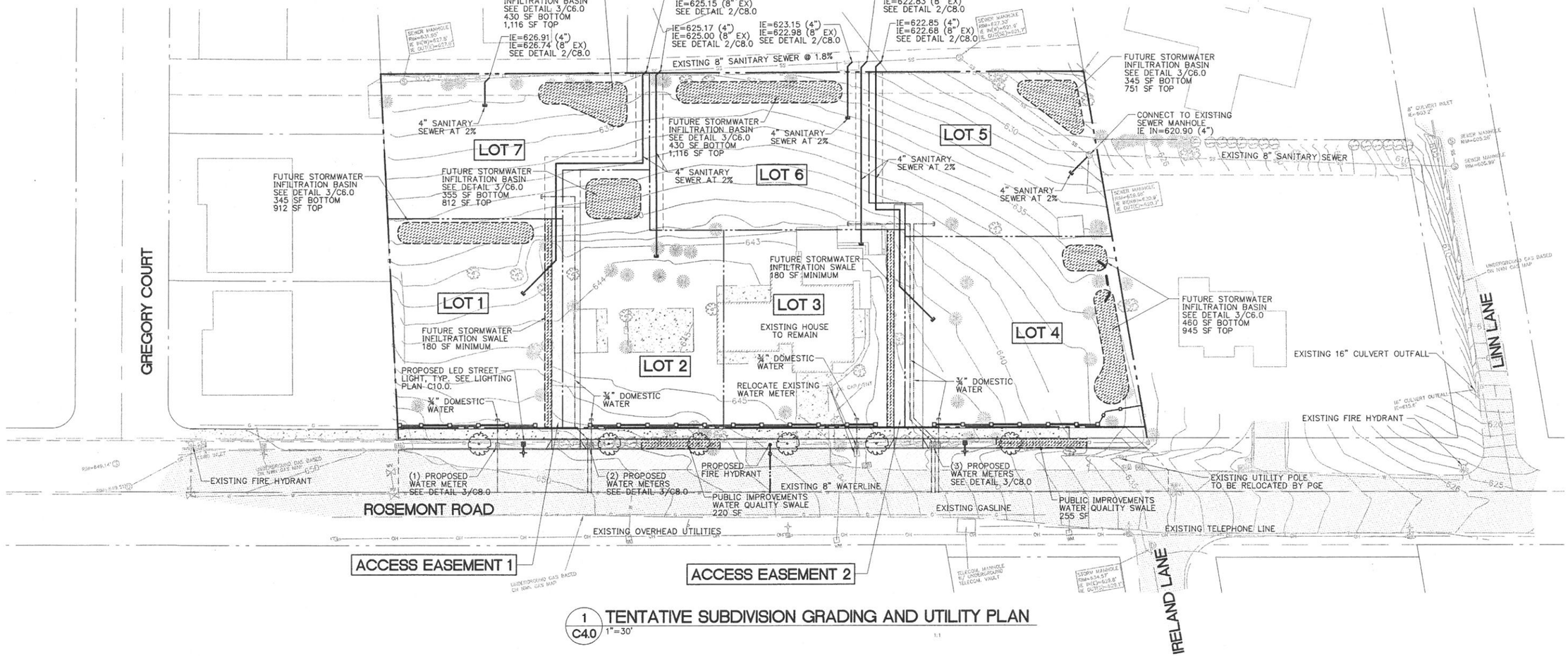
2130073.00\CIVIL\073-C3.0.DWG MAG 10/09/13 11:4

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

LEGEND

SEE LEGEND ON SHEET C1.0



1 C4.0 TENTATIVE SUBDIVISION GRADING AND UTILITY PLAN 1"=30'

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: ANDY PARIS & ASSOCIATES, INC. DATE: 3/20/13

GROUP MACKENZIE
Architecture
Interior Design
Land Use Planning
Civil Engineering
Structural Engineering
Transportation Planning
Landscape Architecture

Client
R+H CONSTRUCTION

Project
ROSEMONT SUBDIVISION

WEST LINN, OREGO

REGISTERED PROFESSIONAL ENGINEER #56680 OREGON JULY 11, 2000 RALPH J.R. HENDERSON
EXPIRES: 6/30/15

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
TENTATIVE SUBDIVISION GRADING AND UTILITY PLAN

DRAWN BY: MAG

CHECKED BY: RJH

SHEET:
C4.0

JOB NO. 2130073.0

SUBDIVISION RESUBMITTAL - OCTOBER 9, 2013

2130073\00\CIVIL\073-C4.0.DWG MAG 10/09/13 11:4

LEGEND

SIGNIFICANT TREE PROPOSED TO BE REMOVED

SIGNIFICANT TREE CANOPY

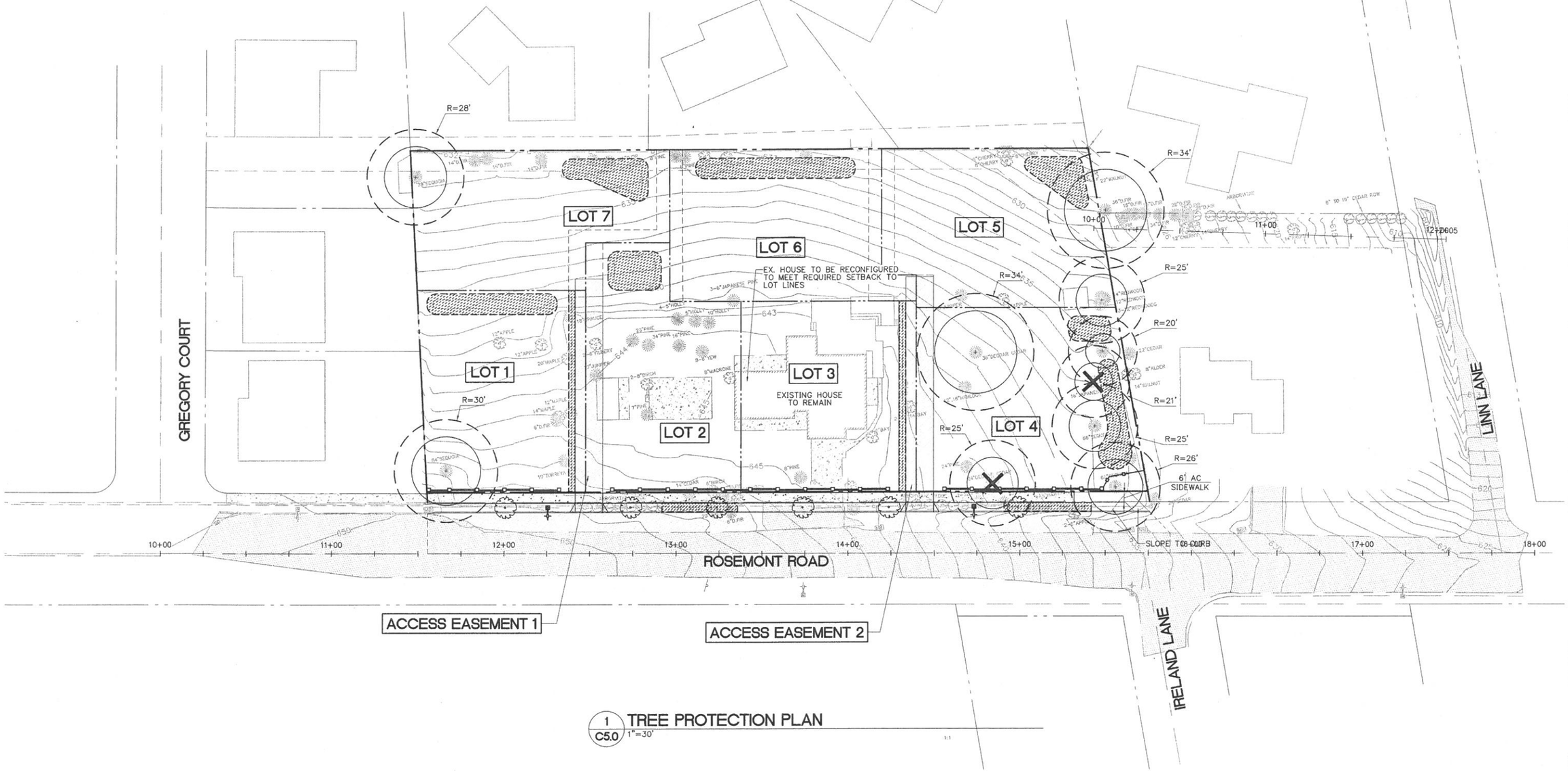
10' BEYOND TREE CANOPY

TREE INFORMATION

TOTAL SIGNIFICANT TREE AREA ON SITE (CANOPY PLUS 10 FT):	14,049 SF
TOTAL SITE AREA (NET OF DEDICATION):	81,185 SF
PERCENTAGE OF SITE COVERED BY SIGNIFICANT TREE AREA:	17%
TOTAL SIGNIFICANT TREE AREA TO REMAIN ON SITE:	12,558 SF
PERCENTAGE OF SITE COVERED BY SIGNIFICANT TREE PROTECTION AREA:	15.5%
PERCENTAGE OF NON-TYPE I AND TYPE-II LANDS COVERED BY SIGNIFICANT TREE PROTECTION AREA (NO TYPE I AND TYPE-II LANDS ON SITE):	15.5%

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.



1 C5.0 TREE PROTECTION PLAN
1"=30'

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: ANDY PARIS & ASSOCIATES, INC. DATE: 3/20/13

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Project
ROSEMONT SUBDIVISION

WEST LINN, OREGO

REGISTERED PROFESSIONAL ENGINEER #56660 OREGON JULY, 11, 2000 RALPH J.R. HENDERSON
EXPIRES: 6/30/15

REVISIONS:

REVISION #	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
TREE PROTECTIO
PLAN

DRAWN BY: MAG

CHECKED BY: RJH

SHEET:
C5.0

JOB NO. 2130073.0

SUBDIVISION RESUBMITTAL - OCTOBER 9, 2013

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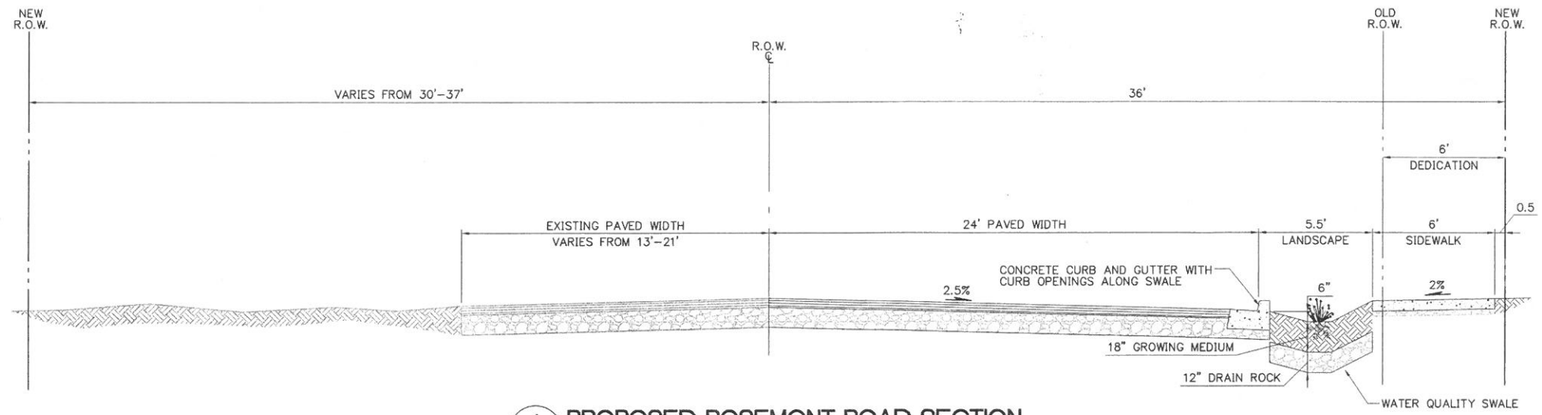
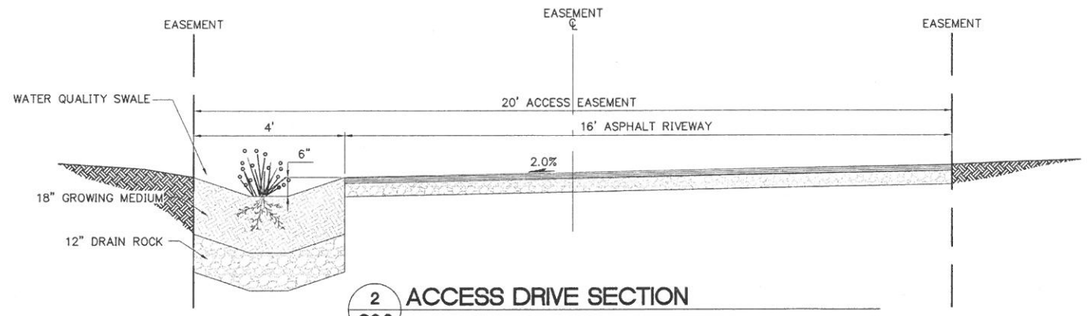
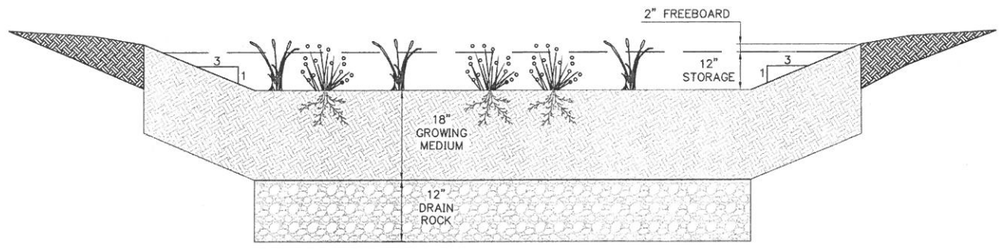


1 C6.0 **PROPOSED ROSEMONT ROAD SECTION**
N.T.S.



2 C6.0 **ACCESS DRIVE SECTION**



3 C6.0 **INFILTRATION BASIN TYPICAL SECTION**

GROUP MACKENZIE
Architecture
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Land Use Planning
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Structural Engineering
Transportation Planning
Landscape Architecture

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Project
ROSEMONT SUBDIVISION

WEST LINN, OREGO

REGISTERED PROFESSIONAL ENGINEER
#56600
Ralph J.R. Henderson
OREGON
JULY 11, 2000
RALPH J.R. HENDERSON
EXPIRES: 6/30/15

REVISIONS:

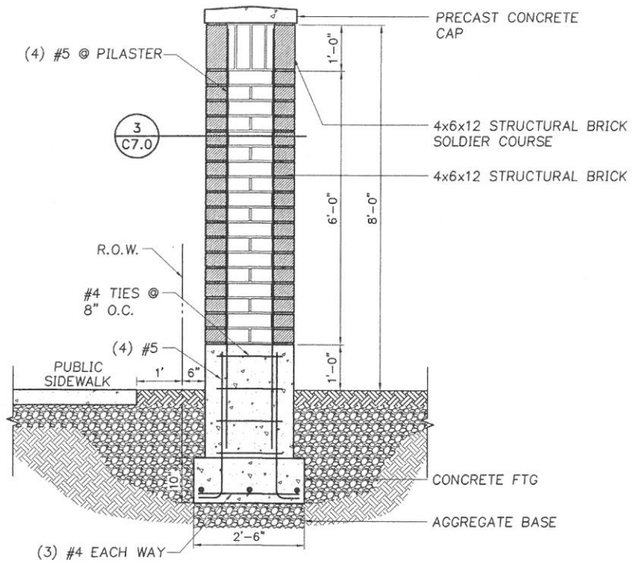
REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
SECTION DETAILS AND LIGHTING PLA

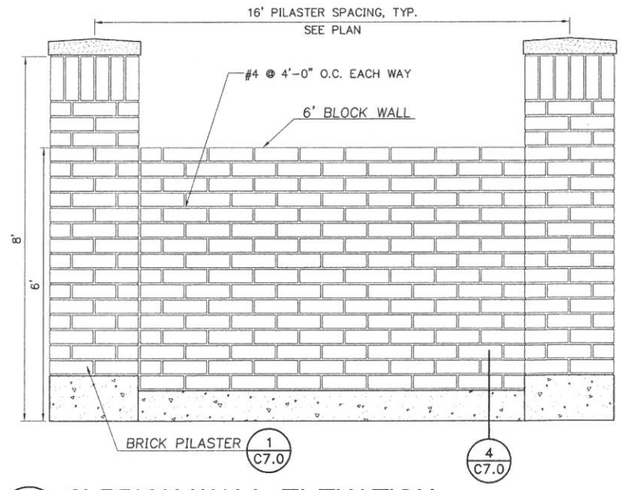
DRAWN BY: MAG
CHECKED BY: RJH
SHEET:
C6.0
JOB NO. 2130073.0

SUBDIVISION RESUBMITTAL - OCTOBER 9, 2013

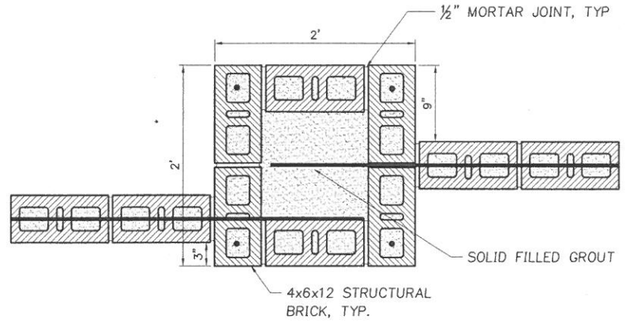
2130073\CIVIL\073-C6.DWG MAG 10/09/13 11:5



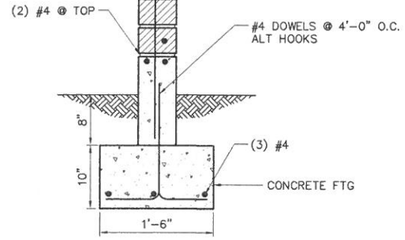
1 C7.0 **6' BRICK PILASTER** N.T.S.



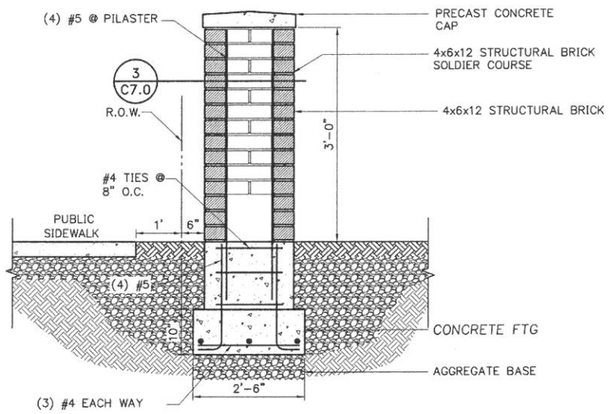
2 C7.0 **6' BRICK WALL ELEVATION** ELEVATION N.T.S.



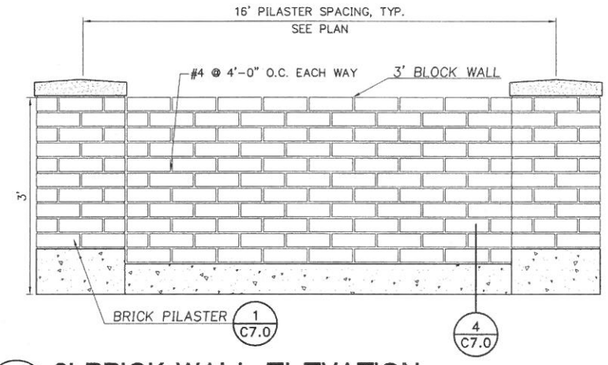
3 C7.0 **BRICK PILASTER** N.T.S.



4 C7.0 **BLOCK WALL FOOTING** N.T.S.



5 C7.0 **3' BRICK PILASTER** N.T.S.



6 C7.0 **3' BRICK WALL ELEVATION** ELEVATION N.T.S.

GROUP MACKENZIE
Architecture
Interior Design
Land Use Planning
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Structural Engineering
Transportation Planning
Landscape Architecture

Client
R+H CONSTRUCTION

Project
ROSEMONT SUBDIVISION

WEST LINN, OREGO

REGISTERED PROFESSIONAL ENGINEER #50000 OREGON JULY 11, 2000 RALPH J.R. HENDERSON

EXPIRES: 6/30/15

REVISIONS:

REVISION DESCRIPTION	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

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CHECKED BY: RJH
SHEET:
C7.0
JOB NO. 2130073.0

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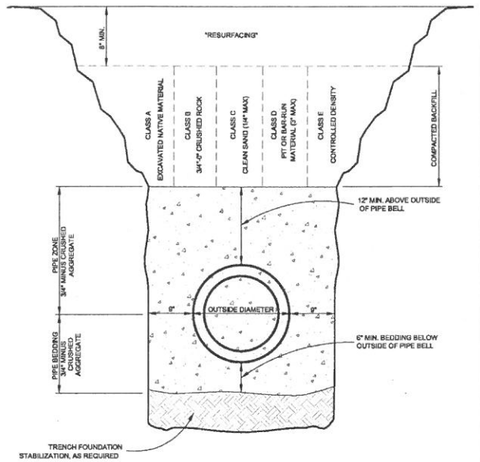
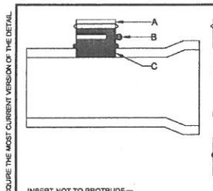
2130073\00\CIVIL\073-C7.0.DWG MAG 10/09/13 11



TRENCH BACKFILL BEDDING AND PIPE ZONE

1 / C8.0

DATE: 2010
DRAWING NO. WL-200
FILE NO.



A. PVC HUB SHALL CONFORM TO ASTM 3034, SDR 35 DRIVE INTO CENTER OF RUBBER SLEEVE AFTER SLEEVE IS PLACED IN HOLE.

B. STAINLESS STEEL BAND SECURES UPPER HALF OF RUBBER SLEEVE TO THE PVC HUB. STAINLESS STEEL BAND SHALL BE 300 SERIES, 9/16" BAND WIDTH, CADMIUM PLATED CARBON STEEL, AND ATTACHED WITH HEX HEAD SLOTTED SCREW.

C. COMPLETE RUBBER SLEEVE INCLUDES A MOLDED SEGMENT THAT HOLDS IT IN PLACE.

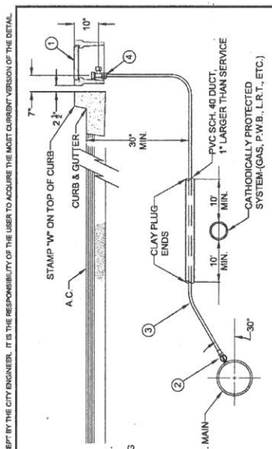
NOTE:

1. TAP SHALL BE LOCATED A MINIMUM OF 12" FROM EXISTING PIPE JOINTS AND 12" FROM OTHER TAPS.
2. CORE DRILL THE SEWER MAIN IN THE UPPER QUARANT OF THE PIPE SO THE LATERAL CAN BE PLACED AT A 45° ANGLE AND PRESENT THE CORE-DRILLED "COUPON" TO THE INSPECTOR AT TIME OF THE INSERT-A-TEE INSPECTION. THE TAP SHALL BE INSPECTED BEFORE THE SIDE SEWER CONNECTION IS MADE.
3. INSERT-A-TEE SHALL BE USED TO CONNECT LATERAL TO MAIN. TAP SHALL BE INSTALLED WATER TIGHT, WITHOUT PROTRUSION INTO OR DAMAGE TO EXISTING SEWER. PROVIDE INSERT-A-TEE PACKAGING TO INSPECTOR SHOWING TYPE OF INSERT-A-TEE INSTALLED.
4. LATERAL SHALL BE 4" (FOR STANDARD SINGLE FAMILY HOMES) GREEN ASTM3034 AND PLACE AT 2% SLOPE TO THE PROPERTY LINE. PLACE A TEST TEE WITHIN 3 FEET OF THE TAP.
5. PLACE GREEN TRACER WIRE OVER CENTERLINE OF SERVICE LATERAL.
6. COMPACT 6" OF 3/4-0" ROCK UNDER THE PIPE. HAUNCH WELL UNDER LATERAL.
7. ONCE APPROVED BY CITY INSPECTOR, PLACE 12" OF 3/4"-ROCK ABOVE THE TOP OF THE PIPE.
8. BACKFILL ABOVE THE PIPE ZONE (ABOVE 12" OF ROCK) SHALL BE CDF (DELIVER CDF RECEIPT TO THE ENGINEERING DEPT). ALTERNATELY, 3/4-0" GRAVEL BACKFILL MAY BE USED. COMPACTION TESTING BY A CERTIFIED TESTING AGENCY MUST OCCUR IN LIFTS AS SPECIFIED BY THE CITY INSPECTOR (DELIVER TEST RESULTS TO THE ENGINEERING DEPT). CITY RESERVES THE RIGHT TO FURTHER SPECIFY BACKFILL BASED ON SITE CONDITIONS.
9. T.V. INSPECTION OF THE LATERAL AND/OR MAIN MAY BE REQUIRED FOLLOWING BACKFILL, PRIOR TO FINAL APPROVAL.
10. 4" MAXIMUM TAP FOR 8" MAIN (CUT IN TEE TO BE USED FOR 6" LATERAL ON 8" MAIN).
11. ALL CONNECTIONS SHALL BE MADE WITH HARD FITTINGS, INCLUDING TRANSITIONS BETWEEN DISSIMILAR MATERIALS.

SEWER SERVICE TAP TO EXISTING SEWER FOR HOUSE LATERALS

2 / C8.0

DATE: 2010
DRAWING NO. WL-303
FILE NO.



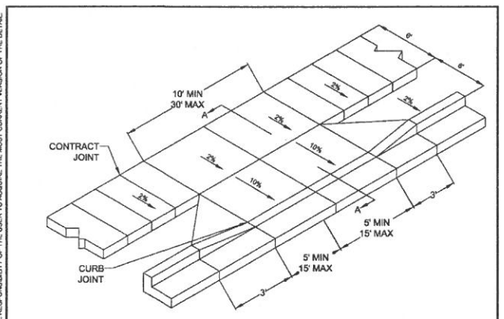
MATERIAL:
1. BROOKS METER BOX, BODY NO. 37, LID AND COVER NO.37-S.
2. MUELLER CORP. STOP NO. H-15008 OR FORD F1000-4Q CORP. STOP WITH OPERATING NUT AT 3 OR 9 O'CLOCK.
3. 1" SOFT TEMPER, TYPE "K" COPPER TUBING COMPLYING WITH ASTM B-88.
4. MUELLER ANGLE METER STOP NO. H-14258 (FORD NO. KV43-444W-Q)

NOTE:
1. MACHINE DRILLED AND TAPPED ONLY. NO HAND DRILLING IS ALLOWED.
2. SUBSTITUTES FOR ANY MATERIALS SHOWN SHALL BE APPROVED BY THE CITY ENGINEER.
3. ALL PIPE AND STRUCTURE ZONE SHALL BE BACKFILLED USING 3/4" MINUS CRUSHED AGG. AND COMPACTED TO 95% MAX DENSITY AS DETERMINED BY AASHTO T-180.
4. WHEN AN ACTIVE CATHODIC PROTECTED SYSTEM IS ENCOUNTERED, SCH. 40 PVC SHALL BE INSTALLED AS SHOWN ABOVE WITH CLAY PLUG.
5. METER BOX SHALL BE CENTERED OVER THE COMPLETED METER ASSEMBLY.
6. TAPS INTO MAIN TO HAVE 18" SEPARATION ON CENTER MINIMUM.
7. ANGLE METER STOPS TO BE 18" FROM PROPERTY LINE AND NOT IN DRIVEWAY APPROACH.
8. METER BOXES IN CURB TIGHT SIDEWALK AND THOSE SUBJECT TO INCIDENTAL AUTO TRAFFIC MUST HAVE METAL LIDS AND BE TRAFFIC RATED.

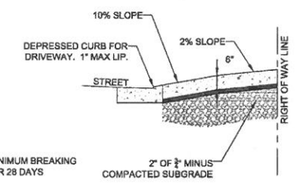
STANDARD 1" WATER SERVICE

3 / C8.0

DATE: 2010
DRAWING NO. WL-402
FILE NO.



SIDEWALK AWAY FROM CURB



SECTION A-A

NOTE:
1. CONCRETE SHALL HAVE A MINIMUM BREAKING STRENGTH OF 3300 PSI AFTER 28 DAYS 6 SACK MIX
2. CURB SHALL BE TROWELED JOINT WITH MIN. 1/2" RADIUS ALONG BACK OF CURB
3. DRIVEWAY SHALL BE A MINIMUM 6" THICK
4. DRIVEWAY CURB CUT SHALL COMPLY WITH THE CONDITIONS OF 5.0070, "WIDTH AND LOCATION OF CURB CUTS"
5. FOR REPLACEMENT OF EXISITNG APPROACH:
   A. MUST MEET CURRENT ADA REQUIREMENTS TO GREATEST DEGREE POSSIBLE.
   B. DAMAGED ROADWAY MUST BE SAWCUT AND REPAVED WITH CLASS C HOT MIX ASPHALT

RESIDENTIAL DRIVEWAY WITH SIDEWALK AWAY FROM CURB

4 / C8.0

DATE: 2010
DRAWING NO. WL-503A
FILE NO.

GROUP MACKENZIE
Architecture
Interior Design
Civil Engineering
Structural Engineering
Land Use Planning
Transportation Planning
Landscape Architecture
Portland, OR Vancouver, WA

Client
R+H CONSTRUCTION

Project
ROSEMONT SUBDIVISION

WEST LINN, OREGON

REGISTERED PROFESSIONAL ENGINEER #56660 OREGON JULY 11, 2000 RALPH J.R. HENDERSON

EXPIRES: 6/30/15

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
DETAIL SHEET

DRAWN BY: MAG
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SHEET: C8.0
JOB NO. 2130073.00

SUBDIVISION RESUBMITTAL - OCTOBER 9, 2013

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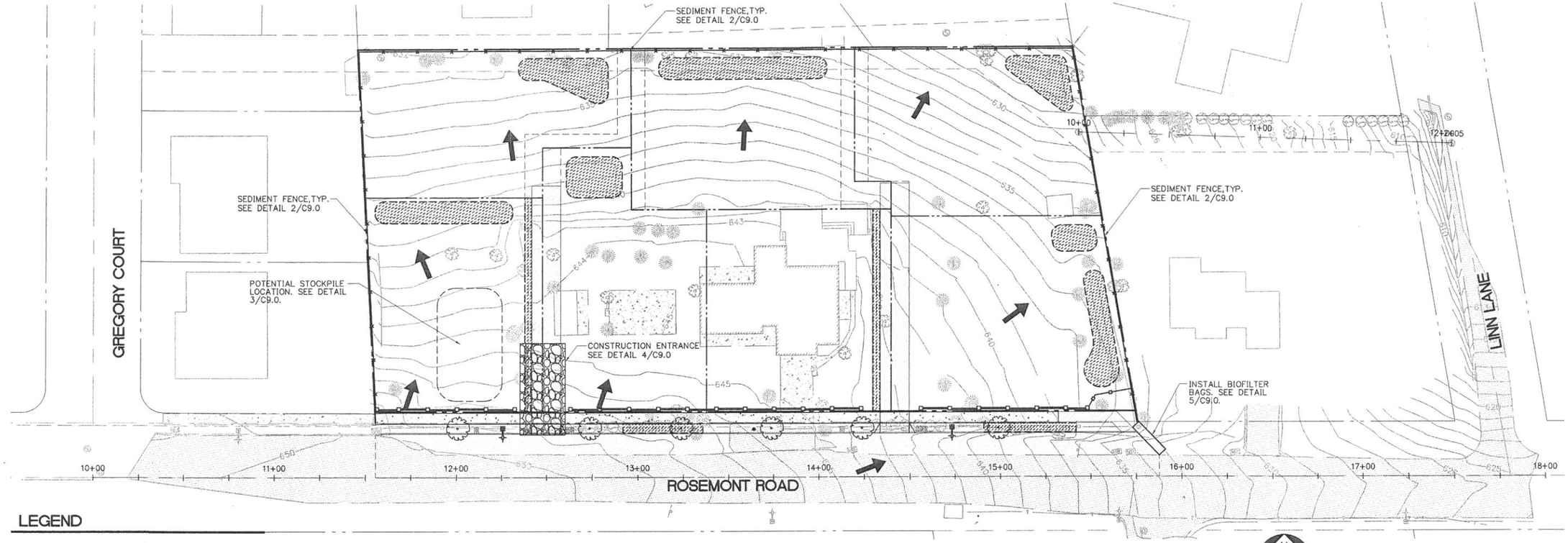


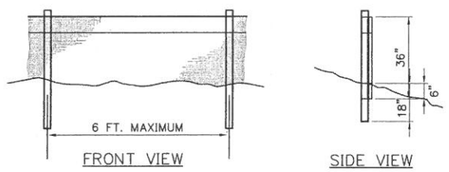
LEGEND

- BIOFILTER BAG PROTECTION
- DRAINAGE FLOW DIRECTION
- SEDIMENT FENCE
- CONSTRUCTION ENTRANCE
- POTENTIAL STOCKPILE LOCATION

1 / C9.0 **EROSION CONTROL PLAN** 1"=30'

30 0 15 30 60 120

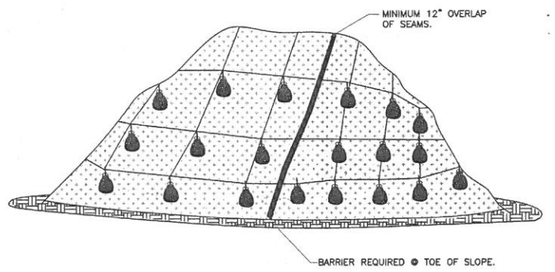
(IN FEET)
1 inch = 30 ft.



NOTES:

1. BURY BOTTOM OF FILTER FABRIC 6" MIN. VERTICALLY BELOW GRADE.
2. 2" x 2" FIR, PINE, OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED UPHILL SIDE OF SLOPE.
4. COMPACT NATIVE FILL IN ALL AREAS OF FILTER FABRIC TRENCH.

2 / C9.0 **SEDIMENT FENCE** N.T.S.

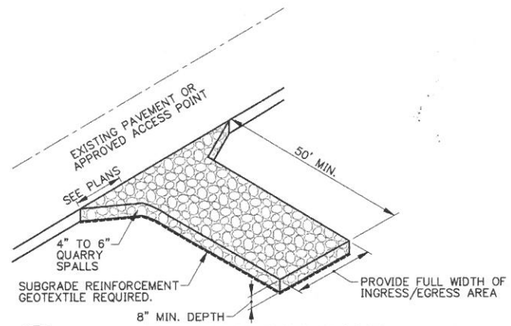


PLASTIC SHEETING

NOTES:

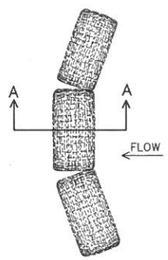
1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED @ TOE OF STOCK PILE.
   COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A
3. MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

3 / C9.0 **PLASTIC SHEETING** N.T.S.



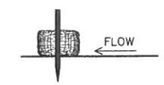
4 / C9.0 **CONSTRUCTION ENTRANCE** N.T.S.

E-ENTRY



PLAN

NOTE:
STAKING OF BAGS REQUIRED
USING (2) 1"X2" WOOD STAKES



SECTION A–A

5 / C9.0 **BIOFILTER BAG PROTECTION** N.T.S.

E-BIOBAG

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Landscape Architecture

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R+H CONSTRUCTION

Project
ROSEMONT SUBDIVISION

WEST LINN, OREGO

REGISTERED PROFESSIONAL ENGINEER #56660 OREGON JULY 11, 2000 RALPH J.R. HENDERSON
Ralph J.R. Henderson
EXPIRES: 6/30/15

REVISIONS:

REVISION DELTA	REVISIONS	REVISION DELTA THIS SHEET	CLOSING DATE

SHEET TITLE:
EROSION CONTRO
PLAN

DRAWN BY: MAG

CHECKED BY: RJH

SHEET:

C9.0

JOB NO. 2130073.0

SUBDIVISION RESUBMITTAL - OCTOBER 9, 2013

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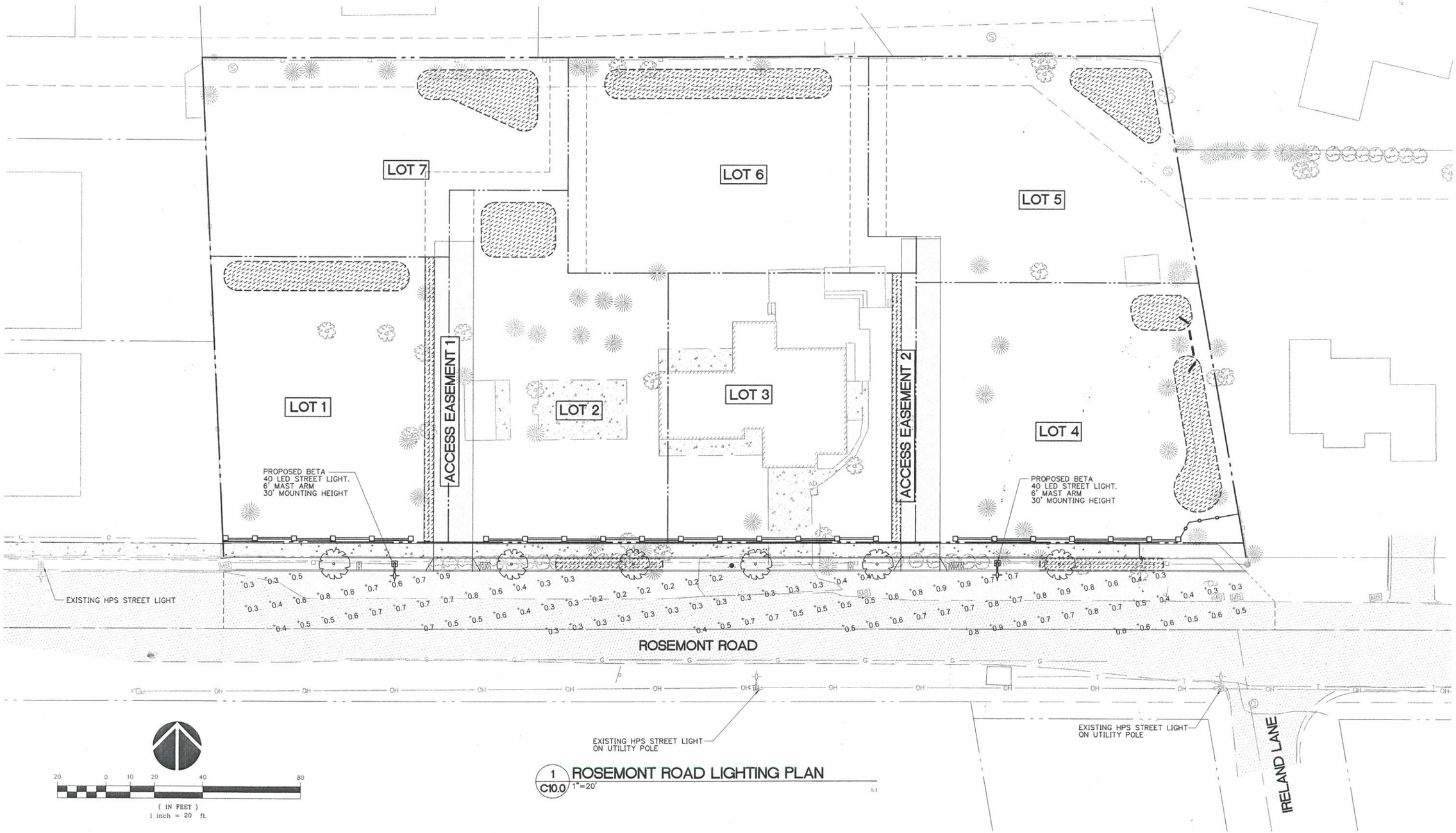

1 C10.0 ROSEMONT ROAD LIGHTING PLAN
1"=20'

LEGEND

SEE LEGEND ON SHEET C1.0

ROSEMONT ROAD HALF STREET PHOTOMETRICS SUMMARY

	REQUIRED	PROVIDED
AVERAGE	0.6 fc	0.5 fc
MINIMUM	--	0.2 fc
UNIFORMITY (AVG:MIN)	4:1	4.5:1

* ROSEMONT ROAD IS A COLLECTOR STREET IN RESIDENTIAL AREA

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SUBDIVISION RESUBMITTAL - OCTOBER 9, 2013

2130073001\CIVIL\073-C10.0.DWG MAG 10/09/13 11:

GROUP MACKENZIE
Civil Engineering
Structural Engineering
Transportation Planning
Landscape Architecture
Architecture
Interior Design
Land Use Planning

Client
R+H CONSTRUCTION

Project
ROSEMONT SUBDIVISION

WEST LINN, OREGON

REGISTERED PROFESSIONAL ENGINEER
#56080
OREGON
JULY 11, 2006
RALPH J.R. HENDERSON
EXPIRES: 6/30/15

REVISIONS:

REVISION NO.	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
ROSEMONT ROAD LIGHTING PLAN

DRAWN BY: MAG

CHECKED BY: RJH

SHEET:
C10.0

JOB NO. 2130073.0

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

August 28, 2013

City of West Linn
Attention: Tom Soppe
22500 Salamo Road
West Linn, OR 97068

Re: **Rosemont Subdivision**
Response Letter
Project Number 2130073.00

Dear Mr. Soppe:

In response to your plan review checklist dated July 30, 2013, we have addressed the items below, with our responses following your comments.

General

1. *Submit 11 x 17 size of the "Topographic Survey..." that you submitted in 24 x 36 size, and provide electronic copy. Submit electronic copy of paper neighborhood meeting materials.*

Response: An 11x17 Topo Survey (C2.0 in plan set) has been provided. Kelly Pyrch has provided the electronic copy of the neighborhood meeting materials.

Section 85.160(A):

2. *Provide city-wide map identifying the site.*

Response: The 8.5 x 11 City Map with site identified has been provided.

Section 85.160(B):

3. *Provide engineer or surveyor stamp on tentative site plan.*

Response: A stamped tentative site plan has been provided.

Section 85.160(E)(2):

4. *Provide these contours on tentative subdivision plan.*

Response: Contours are now shown on the tentative plan.

Section 85.160(E)(5):

5. *Tell on tentative plan the percentage of land that is significant tree protection area and the percentage of Non-Type I and II lands that are significant tree protection areas.*

Response: Percentage of land in significant tree protection area have been added to the tentative plan. No Type-I or Type-II lands on the site.

Section 85.160(E)(8):

6. *Show on tentative plan the zoning of this and surrounding properties including county zoning across the street.*

Response: Zoning of subject property and surrounding properties are now shown on the tentative plan.

Section 85.160(E)(9):

7. *Show on tentative plan the buildings on adjoining property.*

Response: Buildings on adjoining property are now shown on the tentative plan.

Section 85.160(F)(7):

8. *Show proposed street trees.*

Response: Proposed street trees are now shown.

Section 85.200(J)(9):

9. *This section addresses significant trees, not just heritage trees. Respond regarding significant trees.*

Response: Significant tree information is now shown on tree plan and tentative site plan. A variance regarding the site trees has been provided to the City, but is not expected to be needed.

Section 99.038(E)(1-2):

10. *Submit copies of the letters sent to the neighborhood associations and property owners.*

Response: Kelly Pyrch has provided copies of these letters to the City.

ENGINEERING COMMENTS

11. *Address the following*
    - *Storm discharge pipe shall be 12" minimum.*
    - *Storm report also needs to address downstream conveyance system on Linn Ln for 100 year storm event*
    - *Provide improvement plan for downstream system on Linn Ln for 100 year storm event*

Response: The stormwater system has been revised to use smaller facilities on each lot rather than 2 large facilities. These basins have been sized using the City of Portland Simplified Approach. The City has confirmed that piped overflows will no longer be needed with the smaller basins. The discharge pipe to Linn Lane has been removed.

12. *Provide street lighting plan*

Response: See C10.0 for proposed street lighting plan on Rosemont Road.

13. *Provide a cross section for Rosemont Rd improvement*

Response: A cross section of Rosemont Road improvements has been added to C6.0.

14. *Currently storm drainage facility is proposed to be on top of sanitary sewer main. Provide individual rain garden on each lot will avoid this situation.*

Response: The stormwater system has been revised to use smaller facilities on each lot rather than 2 large facilities. There is no longer a stormwater facility over the top of the existing sanitary main.

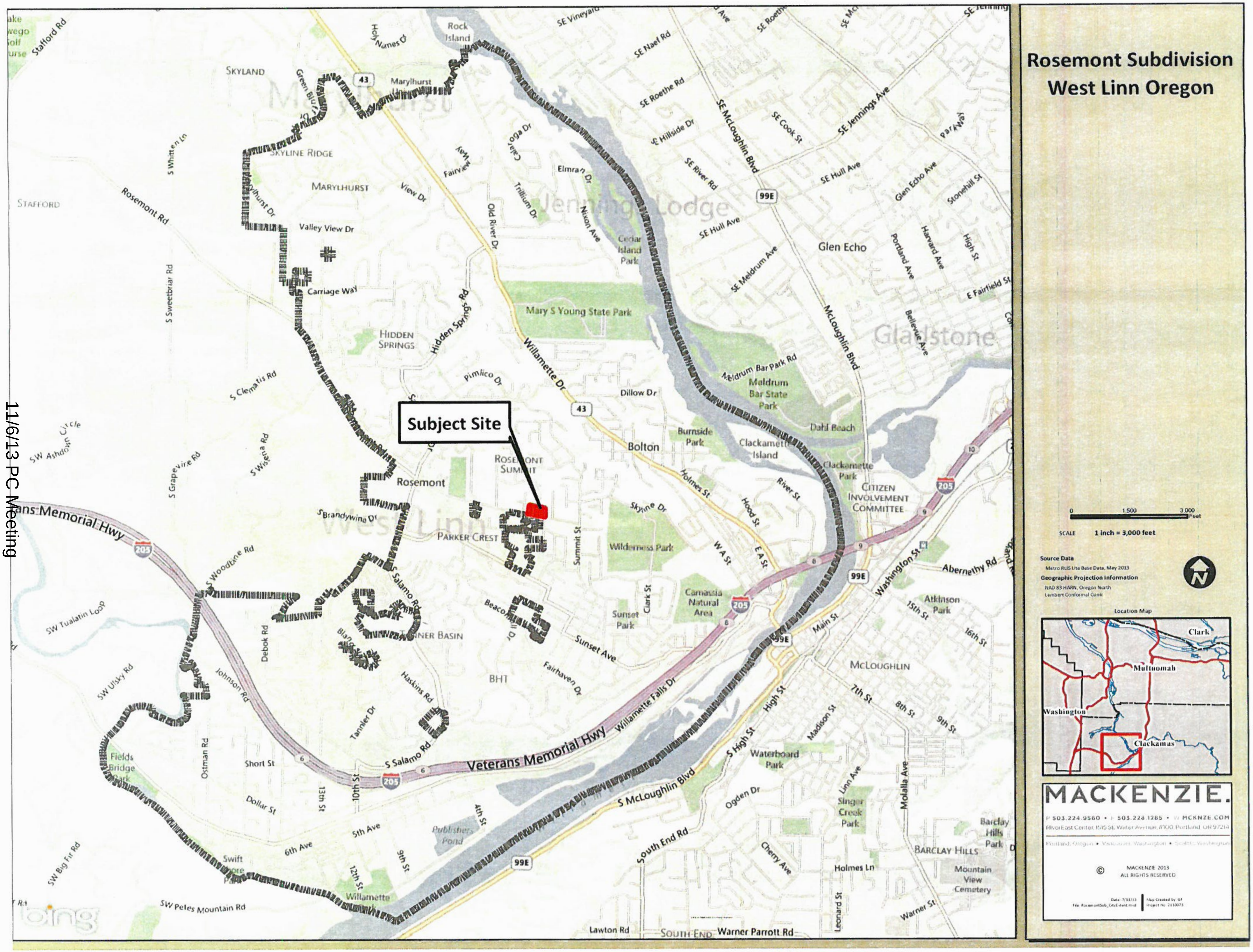
Please contact me if you have any questions.

Sincerely,

Matthew Butts, P.E., LEEP AP

Enclosures: Tentative Subdivision Plans
Storm Report
City Map

c: Ralph Henderson, Megan Goplin - Mackenzie



Rosemont Subdivision
West Linn Oregon
Subject Site
Rosemont
Rosemont Summit
Parker Crest
West Linn
Marylhurst
Skyland
Skyline Ridge
Stafford
Hidden Springs
Bolton
Jennings Lodge
Glen Echo
Gladstone
Citizen Involvement Committee
McLoughlin
Barclay Hills
Tanner Basin
BHT
Willamette
Mary S Young State Park
Wilderness Park
Veterans Memorial Hwy
Willamette Dr
Salamo Rd
Rosemont Rd
Sunset Ave
S McLoughlin Blvd
SCALE
1 inch = 3,000 feet
Source Data
Geographic Projection Information
Location Map
Clark
Multnomah
Washington
Clackamas
MACKENZIE.
MACKENZIE 2013
ALL RIGHTS RESERVED

WEST LINN SUBDIVISION – PYRCH PROPERTY 5/17/13, Revised 10/17/13
SUPPLEMENTAL INFORMATION FOR SUBDIVISION APPLICATION

85.170 SUPPLEMENTAL SUBMITTAL REQUIREMENTS FOR TENTATIVE SUBDIVISION OR PARTITION PLAN

A. General

1. Narrative: The following narrative states how the plan meets each of the applicable approval criteria and each subsection below.
2. The attached statement (***attachment A***) of ownership includes the County Assessors map and tax lot number(s).
3. The attached (***attachment B***) is a legal description of the tract.
4. The project is not intended to be phased.
5. The land to be subdivided is all of the contiguous land owned by the developer.
6. The land for the proposed subdivision does not include hillsides where potential erosion hazard exists, nor does it include Type I or II lands as defined in CDC 02.030. the site does not include any lands identified as a hazard site in the West Linn Comprehensive Inventory Plan Report, the standards and requirements of Chapter 24 CDC, Planned Unit Development. Erosion control will be provided per CDC 85.160(F)(2). This will include sediment fence, a construction entrance, and protection of the rain garden inlets and ditch outfall.
7. The attached Table (on sheet C3.0) indicates the allowable number of lots and the number of proposed lots.
8. No slopes on the site exceed the first category of zero to 15 percent slopes. Therefore the entire site falls within the zero to 15 percent classifications as identified in CDC 55.110(B)(3).

B. Transportation

1. Centerline profiles with extensions will be provided beyond the limits of the proposed subdivision to the point where grades meet, showing the finished grade of Rosemont Road and the nature and extent of street construction. The Rosemont Road centerline profile will remain as existing. Public improvement plans are not part of this application.
2. Traffic Impact Analysis (TIA)
   The proposed subdivision does not meet the criteria that would require a Traffic Impact Statement (TIA) (85.170 (B)(2)(c).

C. Grading

1. A grading plan has been submitted that shows location of and detail of cuts for the Rain Gardens for each lot.

In addition, grading design is provided to show how the large Sequoia Tree at the SE corner of the site is to be preserved adjacent to the Rosemont Road half street improvement. This design has been completed with the consultation of and help of the City Staff (engineering, planning and arborist). Also, a project arborist has been retained and his report and recommendations are attached.

2. The grading plan demonstrates that the grading meets the roadway standards as well as create appropriate building sites with as minimal grading as necessary.

D. Water

1. A plan for domestic water supply and related service facility as prepared by a licensed engineer is included in the submittal. This plan is consistent with the adopted Comprehensive Water System Plan and the most recently adopted updates and amendments.
2. The plan shows on site and off site extensions, and street stud outs. It has been determined by the City Engineer that the onsite extensions will not be required to be in the form of a looped system.
3. The off site system in Rosemont Road is adequately looped as determined by the City Engineer.
4. N/A .... Single family development.

E. Sewer (Sanitary)

1. A plan is included in the submittal by a licensed engineer that shows that the proposed system is consistent with the Sanitary Sewer Master Plan and subsequent updates and amendments. Agreement of the plan demonstrates how the proposal is efficient and in the correct zone.
2. The plan includes plan view, existing manhole locations and depths, and how each lot is provided with sewer.
3. The main sanitary sewer line for the project is provided by a system extension completed in approximately 1970. The line is located in the general North edge of the site and is located within an existing 20ft easement that was established for sewer lines. Subsequent branches to connect proposed lots to this line will be located within the individual lot or in easements as approved by the City.
4. The depth of the sanitary sewer is existing and of a sufficient depth to serve the property. There is no intent to extend the line to serve property other than that which was approved in 1970 and proposed herein.

5. The system as designed in 1970 results in the minimum amount of lineal feet to serve the proposed lots.
6. The extension of the system will simply consist of connecting seven lots to the pre-existing sanitary sewer main. These connections will be done with no disturbance of natural areas.
7. The sanitary sewer will not be extended for the purpose of serving adjacent properties as they have been developed ahead of the subject property.
8. The sanitary sewer is already built (about 1970)

F. Storm Sewer

1. The proposal, as revised, addresses the most recently adopted Storm Drainage Master Plan and includes all profiles, calculations, and other details of the specific proposed system.
2. Group Mackenzie, licensed engineer for the project, has prepared a statement and provided factual data relative to the impacts of the proposal, particularly during a 25 year and 100 year storm event.
3. The plans for the storm system are described in the attached documents and demonstrates how each lot will address the requirements of the 25 year storm as described in the section above (F)(2). Although not required in this section, the design addresses the 100year storm as well in lieu of overflows.
4. Group Mackenzie has designed the detention system for the project to meet City standards, including vegetation plans, as well as any applicable ordinances (Ord. 1382, 1995; Ord. 1401, 1997; Ord. 1425, 1998; Ord.1442, 1999; Ord. 1584, 2008; Ord. 1604 & 65, 2011). The rain gardens were designed with 12" of potential surface storage. Rain gardens collect runoff from the impervious surfaces on site and allow the storm water to infiltrate through layers of topsoil and subsurface drain rock. Storm water pollutants such as debris, oils, sediment, and chemical pollutants are collected, filtered, and retained in the topsoil and broken down and digested by bacteria in the soil, plants and their roots as it percolates through the soil. Filtered storm water is collected in the subsurface drain rock layer and 100% of the storm water (up to and including the 100 year storm event) is infiltrated into the ground from this rock layer.

85.180 REDIVISION PLAN REQUIREMENT .... Not applicable. No redivision is proposed.

85.190 ADDITIONAL INFORMATION REQUIRED AND WAIVER OF REQUIREMENTS

A. No additional information has been required as part of this application by the Planning Director (CDC 99.035)(A).
B. No waiver of any requirements has been requested for this application CDC 99.035(B)&(C).

85.200 APPROVAL CRITERIA

All public services are available or will be made available prior to final plat approval.

A. Streets
   1. General. The site consists of (3) individual tax lots all with frontage on Rosemont Road with nearest adjacent cross streets being Gregory and Linn Lane. The site is on the North side of Rosemont Rd. By utilizing the two private accesses, (one serving three lots and one serving four lots) traffic from the access points are minimal and we preserve a better access spacing on Rosemont (two versus three).

      This proposed street/access system will preserve the integrity of Rosemont and provide the private access streets with minimal length (approximately 100 ft). the property depth (from Rosemont) is shallow enough that there is only a two lot depth from the North to Rosemont on the South. This enables the circulation and connectivity of pedestrians and cyclists to utilize Rosemont and its proposed new half street improvement (including sidewalk).

      Due to the long axis of the property in the East West direction, all of the sites will enjoy favorable passive solar orientation either on the front lines of the lots or on the long dimension of the lot.

      The street system is already established with the long frontage (420 ft on Rosemont). The access streets are located to preserve existing trees where possible. Close coordination with the City Planning and engineering staff and the City arborist has occurred to accommodate the required half street improvement (along with additional ROW dedication) of Rosemont and to preserve two large Sequoia trees located at the SW and SE corners of the site adjacent to Rosemont. The plans attached describe the modified half street and other precautions that have been agreed to in order to best preserve these large trees. ***These include a tree protection plan with significant trees as noted by the City arborist and the project arborist (see arborist's report and recommendations).***

2. Right-of-way and roadway widths. Rosemont Road will be modified to include a half street improvement and ROW widening per the direction of the City Engineer. The private access roads will have 16ft of pavement width and 4 ft shoulder for storm treatment..
3. Street Widths. As noted, Rosemont Road will be improved and widened according to the City Engineer's requirements. This will include sidewalk and the capability for a future 73ft ROW. The access roads will be private and they will meet the width requirements of local streets (16 ft).
4. The development & design team for this project has met with City Staff on numerous occasions to prepare for the pre-application conference, the pre-app conference itself, and subsequently on the site in preparation for our submittal of subdivision documents.

   In all cases where there has been discussion with staff, their recommendations regarding : (Transportation Master Plan, traffic generation, parking requirements, sidewalk and bikeway, utility placement, street lighting, drainage and slope impacts. Street trees, landscaping, existing and future driveway grades, street geometry, and street needs, hydrants) have been understood and the resulting engineering and design reflects these recommendations.

5. Additionally, regarding street width:
   a. The street serving the residential area is Rosemont Rd, an arterial , not a local street.
   b. Rosemont will be widened to the standards of the City and to match/align with adjacent and recent street improvements.
   c. There is no collector street adjacent to the property.
   d. Arterial street standards will be met.
6. No reserve strips or street plugs are proposed in this application.
7. Rosemont Rd will be aligned with the established centerline and maximum spacing is proposed on Rosemont for the two private streets. (in excess on 100ft).
8. No future extension of streets is contemplated since all adjacent land is either already developed with approved access or is adjacent to public street (Linn Lane).
9. There are no intersections created with this proposal. All driveways shall intersect Rosemont at right angles with driveway cuts to meet City standards.
10. There are no existing street ROW's on the property.
11. No Cul-de Sacs are proposed.
12. No street names shall be used which will duplicate or be confused with the name of existing streets within the City.

13. Grades for Rosemont shall conform to the existing grades of the street. The proposed private streets shall not slope more than 8%.
14. The proposal calls for two private streets accessed from Rosemont.
15. No alleys are proposed.
16. Sidewalk on Rosemont Rd will be provided per CDC 92.010(H) with the exception of the walkway adjacent to the SouthEast corner of the site. After meeting on site with City staff (planning, engineering and arborist)and the project arborist, the proposed modification of sidewalk in this area is the result of preserving a large (66" diameter) Sequoia.
17. Planter strip will be provided to match the existing to the west on Rosemont Rd.
18. No dedication of the private roads is anticipated. The land to widen Rosemont Rd will be dedicated.
19. All lots in the subdivision will have access to Rosemont Rd (see subdivision plan)
20. No gated streets are proposed.
21. Wall treatment along Rosemont Rd will be on private land. No landscaped islands are proposed. Maintenance of the entryway wall treatment shall be guaranteed through HOA, CC&R's, etc. No subdivision monument signs are proposed.
22. With the widening of Rosemont Rd and the extension/provision of all utilities, the application proposes to exceed the rough proportion of impacts associated with a a subdivision that will result in creating four additional lots beyond the three that now exist.

B. Blocks and Lots

1. General. No blocks are proposed as the project will only have seven lots. Traffic safety, convenient access, circulation and control along with solar access have been regarded and reflected in the proposal.
2. Block size N/A
3. Lot size and shape. The lot configuration utilizes the proportions of the entire property along with the natural slope. All lots are within the proportion of max one and one half width to average depth and Meet the size requirements of the R10 zone.
4. Access. Access conforms to chapter 48 CDC
5. No through lots are proposed
6. Lot and Parcel Side Lines. Where possible all lot lines are proposed to be parallel to or at right angles to Rosemont Rd.
7. Flag Lots. Three flag lots are proposed in order to address street access requirements. Additionally, private streets will be created so that all seven lots can share access from one of them and eliminate

the necessity of creating seven curb cuts on Rosemont Rd. Lot sizes are calculated exclusive of the access strip. Lot proportions will be maintained per CDC and there will be a minimum 12 wide accessway (CDC 48.030).

8. No large lots are proposed

C. Pedestrian and Bicycle Trails.

1. Sidewalk and bicycle path area will be provided with the widening of Rosemont Rd. This will be done consistant with the improved widened Rosemont Rd to the West and in compliance with City requirements. No trails are required per the Parks Master Plan.
2. No trails are proposed nor required.
3. No trails are proposed nor required.
4. No Bicycle or pedestrian trail is proposed that will traverse multi-family or commercial property.
5. N/A
6. N/A

D. Transit Facilities.

1. No Transit stops, pullouts are required nor recommended.
2. N/A
3. N/A
4. N/A

E. Lot Grading. Grading of building sites shall conform to the standards of this section of the CDC (85.200 E). With the exception of construction of the storm rain garden areas and minor street grading (existing contours will be utilized) all other grading will be accomplished with individual lot/residence construction. This grading will be proposed, reviewed and regulated with each individual permit to construct on each lot and is not proposed at this time.

1. All cuts and fills shall comply with the provisions of the Uniform Building Code.
   a. Cuts shall not exceed one and one half horizontal to one foot vertical.
   b. Fills shall not exceed 50%
2. Fill soil shall be suitable for the purpose intended.
3. Any grading more than 4 ft shall comply with CDC 85.170(C).
4. All grading shall be held to the minimum necessary
5. No landslides nor identification as a hazard site in the West Linn

Comp Plan Report.

6. All cuts and fills shall conform to the Uniform Building Code.
7. No land in this proposal with the exception of the rain garden in the NE corner of the site exceeds 12% slope. (see the detailed treatment of the NE corner in the engineering drawings attached)
   a. Toes of cuts shall be set back per this section CDC 85.200 E7a
   b. Cuts shall not remove the toe of any slope where a severe landslide or erosion hazard exists.
   c. Any structural fill will be designed by a registered Engineer in a manner consistent with this code and standard engineering practices.
   d. Retaining wall shall be constructed pursuant to section 2308(b) of the Oregon State Structural Specialty Code.
   e. Roads will be of a width to provide safe vehicle access (16ft) with minimal cut and fill and positive drainage.
8. No land on the site is over 50% slope. This section will not apply.

F. Water

1. The attached Water plan complies with the comprehensive Water System Plan updated March 1987 and subsequent revisions or updates
2. Adequate size and location of water lines are provided.
3. Looping is not proposed nor required for the short extensions of approx 100ft from Rosemont Rd
4. There are no non single family development proposed
5. The pre-application conference notes by the City engineer regarding availability of water is attached.

G. Sanitary Sewer

1. The attached plans describe a proposal that is consistent with the Sanitary Sewer Master Plan (July 1989). The plan is gravity efficient and relies on the existing sewer lines which were previously constructed (about 1970) for this specific site.
2. The attached plans show plan view of the Sewer lines with manhole locations and depth (invert elevations).
3. The existing sanitary sewer line shown on the plans is located in an existing easement given to the City (1970) for the purpose of providing sewer connections as lots develop.
   Sanitary lead connections to individual residences will be placed in similar easements as required.

4. The connection depths for this property are predetermined since the Sanitary line was constructed in 1970. The depths and connections will not impact the systems ability to serve down system properties.
5. The sanitary sewer line exists and is efficient both in terms of gravity (Slope of the site) and length.
6. The existing line does not disturb wetland (none present) nor drainageways.
7. The Sanitary sewer exists and already provides access for the adjacent properties to the East which may be redeveloped.
8. The system additions were designed by a licensed engineer pursuant to the DEQ, City, and Tri-City Service District sewer standards.
9. The pre-application conference notes by the City engineer regarding availability of sewer are attached. The sanitary sewer has sufficient capacity to serve the proposed development and adequate sewage treatment plant capacity is available to the City to serve this proposal.

H. Storm Sewer/Treatment

1. The attached storm water plan demonstrates compliance with submittal criteria and approval criteria of Chapter 33 CDC.
2. The attached plans demonstrate how the detention facility is sized to accommodate a 25 and 100 year storm event. The design is provided by a licensed engineer who has also provided factual data that shows there will be no adverse off-site impacts.
3. The plans demonstrate how storm drainage is collected treated and infiltrated on each site.
4. The storm system is a variation of the rain garden system and utilizes standards of other jurisdictions where such efficient systems have been is use for some time. These standards have previously been provided to the City engineering staff for review. The system is efficient and not only provides treatment and detention but does so in a manner that exceeds the City requirements. We have included a table in the storm calculations showing that the rain garden sizes provided exceed the minimum needed to provide the required water quality treatment. The system consists of individual (per lot) collection / treatment / detention / infiltration areas.
   WEST LINN SUBDIVISION – PYRCH PROERTY
   5/17/13 SUPPLEMENTAL INFORMATION
   FOR SUBDIVISION APPLICATION (cont'd)

I. Utility Easements. Utility easements will be provided to accommodate the required service providers including cable.

J. Supplemental Provisions

1. Wetland and natural drainage ways are protected (drainage) or are not present (wetlands) per chapter 32 CDC..
2. The site is not located in the Willamette or Tualatin greenways.
3. Street trees will be provided per chapter 54 CDC
4. If required, street lighting will comply with this section.
5. The applicant understands that the City will require additional property dedication for the widening of Rosemont Rd.
6. All utilities are intended to be provided underground.
7. Density is provided at nearly 100% of the maximum allowed for this site. No density transfers are used.
8. The project is not subject to the mix requirement.
9. There are no Heritage trees present on the site.
10. The Site is within the City of West Linn. No annexation is required.

85.210 Lot Line Adjustments – Approval Standards ..... no lot line adjustments are requested.

WEST LINN SUBDIVISION – PYRCH PROPERTY 7/14/13
VARIANCE REQUESTS Revised 10/17/13

Concurrent to the review and approval of a subdivision application for a property known as the Pyrch Property in West Linn OR, the following is a description of and request for variance approvals for code items related to the development.

Project Description:

The 2 acre site is located on the North edge of Rosemont Rd between Gregory and Linn Lane. The house of the original owner and longtime West Linn citizen (Dr Pyrch) is located on the property.

The existing site is rectangular with the long axis along Rosemont Rd (420Ft) and the shorter axis in the North South direction (205 Ft). (see attached site plan sheet C3.0 Subdivision Application)

Several trees have been planted on the property in the past and a significant tree plan has been established by the City arborist. The developer generally agrees with the tree plan, will attempt to preserve as many of the trees as possible, and has retained a project arborist to provide recommendations as to how to best preserve the trees. (see attached tree plan (sheet C5.0 Subdivision Application)and arborist report)

The four lots to the East of the site are provided access by a single private drive. This provides the opportunity to implement a small grouping of homes that will vary from the norm of two story, larger homes in the newly developed R10 zones of the City. Along with the preservation of as much of the original family home as possible, a grouping will be provided to accommodate single level, moderate sized homes that can be used by families and are also conducive to senior living.

The homes will have less emphasis on "back yards" and more emphasis on more compact yard areas or shared areas and the provision of added security by having all entries to the homes as visible as possible to one another. Active outdoor areas will be provided in the "fronts" of the homes and entries will often be incorporated into them.

A strong sense of immediate neighborhood will be achieved and the added security of more "eyes" will be welcomed by the four families.

The site is designed with storm water treatment and infiltration on each lot. These systems are designed to accommodate a 100 year storm event.

The proposed private drives that serve the seven lots will reduce access points on Rosemont Road and help insure that the Road may function as an

arterial. To provide further clarity and eliminate the addition of six mailboxes on the North side of Rosemont Road adjacent to the site (all mail boxes for residences on the North and South side of Rosemont Rd are located on the North side) , although not a variance, the Applicant requests that the This will result in Seven less mailboxes and mail stops on Rosemont Road.

The applicate agrees to work with staff to properly name these access ways and will not propose "Street", Road", "Avenue" or other such terms after the names that would serve to confuse these areas as public streets.

Variance Item Number 1 : Lot Depth

CDC Chapter 11.070 (4) requires that lots in an R10 zone have an average depth of more than 90 feet.
CDC Chapter 85.200(7)(d) requires that, for flaglot configurations, the depth be considered perpendicular to the main access street and parallel to the "stem" of the flag lot.

Under these interpretations, the two of the proposed lots do not comply. Lot No. 7 has an average depth of 78.5 ft, Lot No. 6 has an average depth of 88.5 ft.

Request: Lots No 6, and 7 be approved as submitted with the lot depths described above. Approval for Lot 7 is more than a 10 foot variance and therefore requires a Class II variance while approval of Lot 6 are less than 10 feet and can be granted as a Class I variance.

Approval Criteria for Variance Number 1: Lot Depth (CDC Chapter 75.060)

A. "Exceptional or extraordinary circumstances...."

As described above, the proposed subdivision plan has seven R10 lots along with individual rain gardens and two private access ways servicing the lots. Due to the topography which dictates where the Rain Gardens will work best , the rectilinear existing parcel with a narrow depth, the desire to preserve as much of the existing residence as possible, and a desire to preserve as many significant trees as possible, the depth variance is necessary.

The rectilinear and existing depth of the property also limits the options of providing North South 90 foot deep lots. By preserving the existing residence and most of th significant trees, a further limitation is created

B. "... Preservation of Property Right....."

The requested variance is necessary to allow the subdivision of requirements of the CDC. The proposed design will allow the creation of lots of a quality similar to those which have been created to the North and West of the property on similarly zoned land.

Failure to grant the request for relief of the Lot Depth will result in one or more of the following: less lots, water treatment of a less preferred nature, less preservation of significant trees, and or no preservation of the existing home.

C. "... the Variance will not be materially detrimental to the Purposes and Standards of this Code."

The subject property is bordered on two sides (West and North) by previously subdivided and developed property. The adjacent property to the South has been substantially developed and there are two existing residences to the East on properties that may support further development.

Due to the relative small nature of this subdivision, its position as a "last to be, or later" development, and the fact that there are no internal connections from this property to the existing neighboring developments, granting of this variance will have no material detriment to the adjacent properties.

The granting of the variance will actually allow for a better design response that better meets the material Purpose and Standards of the Community Development Code as describe in item B above.

D. " The Variance Request is the Minimum Variance which would Alleviate....."

As described above the dimensional variances requested are for a total of three lots, with the largest variance at 12.8% of the required 90 feet and the smallest variance at 1.7% of the requirement.

Efforts have been made to keep the designed lots as close to the standards as possible while still allowing for the quality of lots that meet or exceed the standards for the community.

E. "The Exceptional and Extraordinary Circumstances does not Arise from a Violation of this Code"

None of the exceptional and extraordinary circumstances described above in item A arise from a violation of the CDC. Rather, these circumstances arise from the location of the existing residence, the location of natural storm collection and treatment areas, the desire to preserve significant trees and the shallow depth of the property.

F. "The Variance will not Impose Physical Limitations on other properties or uses in the area...."

Care has been taken to insure that the variance request will not impose limitations on other properties or on future use of neighboring vacant or undeveloped properties.

Variance Item Number 2 : Fence or Wall Height

Formerly requested variances for fence and wall heights has been withdrawn as they are no longer necessary due to redesign of the lots and consultation with Staff.

Variance Number 3: Significant Trees, Preservation and Removal

Formerly requested variances for removal of significant trees has been withdrawn as they are no longer necessary due to redesign of the lots and Consultation with Staff.

TOPOGRAPHIC/SITE SURVEY

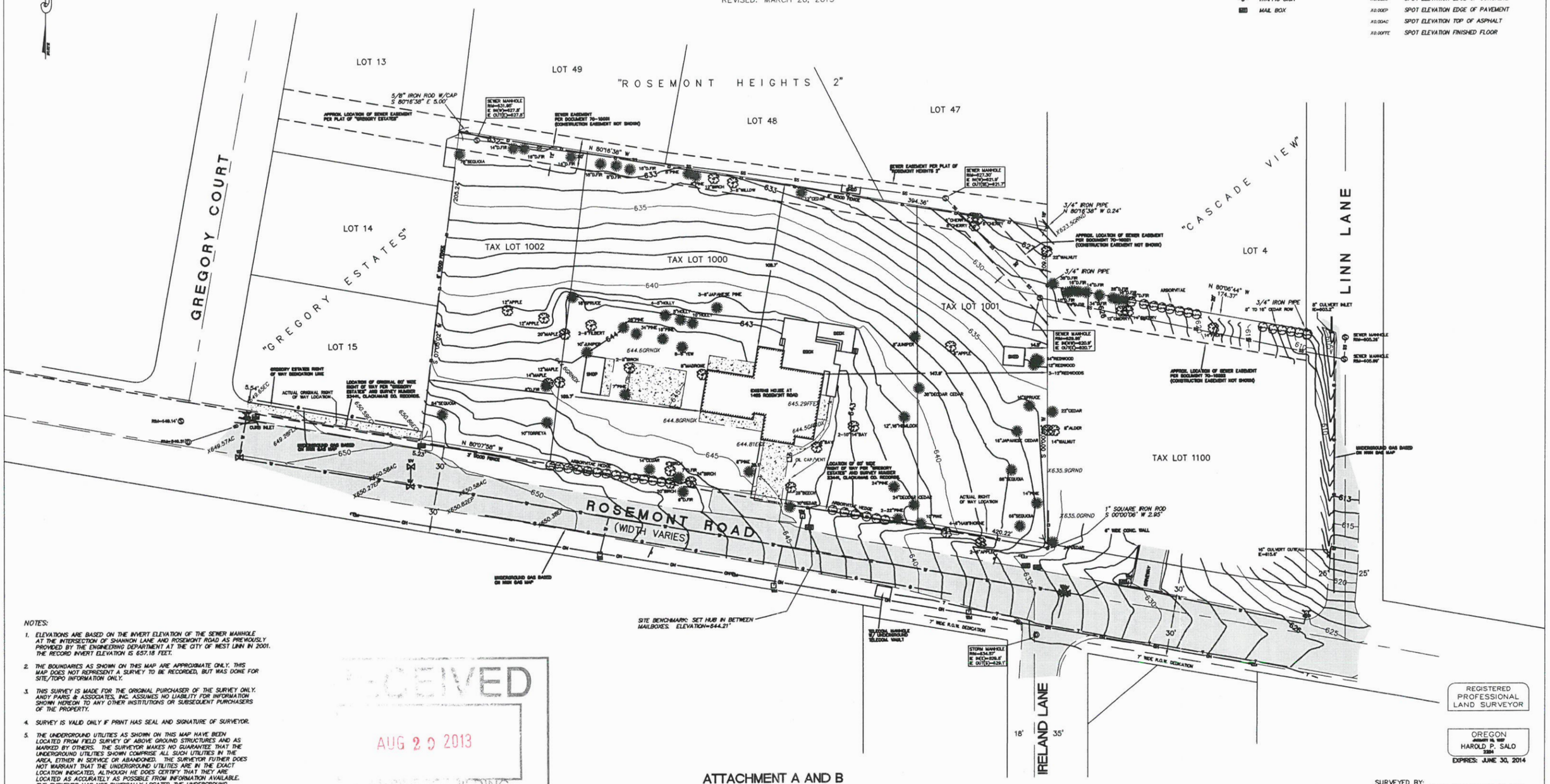
FOR:
MARK PYRCH CONSTRUCTION

BEING TAX LOTS 1000, 1001 & 1002, TAX MAP 2-1E-25BD
IN THE NW 1/4 SECTION 25, T.2S., R.1E., W.M.
CITY OF WEST LINN
CLACKAMAS COUNTY, OREGON

MARCH 4, 2013
REVISED: MARCH 7, 2013
REVISED: MARCH 20, 2013

LEGEND:

●	FOUND MONUMENT AS NOTED	—W—	WATER LINE
WM	WATER METER	—G—	NATURAL GAS LINE
WV	WATER VALVE	—SS—	SANITARY SEWER LINE
FH	FIRE HYDRANT	—SD—	STORM DRAINAGE LINE
SMH	SANITARY SEWER MANHOLE	—OH—	OVERHEAD UTILITY LINES
AD	AREA DRAIN	—T—	UNDERGROUND TELPHONE LINE
UP	UTILITY POLE	X.0.GRND	SPOT ELEVATION GROUND
TS	TRAFFIC SIGN	X.0.GRCC	SPOT ELEVATION EDGE OF CONCRETE
MB	MAIL BOX	X.0.GREP	SPOT ELEVATION EDGE OF PAVEMENT
		X.0.GRAC	SPOT ELEVATION TOP OF ASPHALT
		X.0.GRFFE	SPOT ELEVATION FINISHED FLOOR



NOTES:

1. ELEVATIONS ARE BASED ON THE INVERT ELEVATION OF THE SEWER MANHOLE AT THE INTERSECTION OF SHANNON LANE AND ROSEMONT ROAD AS PREVIOUSLY PROVIDED BY THE ENGINEERING DEPARTMENT AT THE CITY OF WEST LINN IN 2001. THE RECORD INVERT ELEVATION IS 657.18 FEET.
2. THE BOUNDARIES AS SHOWN ON THIS MAP ARE APPROXIMATE ONLY. THIS MAP DOES NOT REPRESENT A SURVEY TO BE RECORDED, BUT WAS DONE FOR SITE/TOPO INFORMATION ONLY.
3. THIS SURVEY IS MADE FOR THE ORIGINAL PURCHASER OF THE SURVEY ONLY. ANDY PARIS & ASSOCIATES, INC. ASSUMES NO LIABILITY FOR INFORMATION SHOWN HEREON TO ANY OTHER INSTITUTIONS OR SUBSEQUENT PURCHASERS OF THE PROPERTY.
4. SURVEY IS VALID ONLY IF PRINT HAS SEAL AND SIGNATURE OF SURVEYOR.
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ATTACHMENT A AND B

GRAPHIC SCALE

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JANUARY 15, 1987
HAROLD P. SALO
2284
EXPIRES: JUNE 30, 2014

SURVEYED BY:
ANDY PARIS AND ASSOCIATES, INC.
16057 BOONES FERRY ROAD
LAKE OSWEGO, OREGON 97035
PH: 503-636-3341

PROJECT: 13019
DRAWING: 13019TP1.DWG
DRAFTED: A.M. 030413

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

STORMWATER REPORT

TREATMENT AND DETENTION DESIGN

To
City of West Linn
Department of Engineering

For
Rosemont Subdivision
West Linn, Oregon

Prepared
August 28, 2013

Revised
September 10, 2013

Project Number
2130073.00

MACKENZIE
Since 1960

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TABLE OF CONTENTS

ATTACHMENTS

STORM PLAN
SECTIONS
PAC OUTPUT
HYDRAFLOW REPORT
GEOTECHNICAL REPORT

1. SITE AND SYSTEM DESCRIPTION

The proposed subdivision will divide the existing 1.86 AC property to create 7 residential lots and two access easements for private driveways. The proposed subdivision is located at 1485 Rosemont Road in West Linn, Oregon.

The city of West Linn follows the City of Portland Stormwater Management Manual (SWMM). For projects with less than 10,000 SF of new or redeveloped impervious area, the Simplified Approach may be used to size stormwater facilities (SWMM Section 2.2.1). However, in order to infiltrate up to the 100-year storm event, the Presumptive Approach was used.

Vegetated surface infiltration facilities are required on sites with a field infiltration rate of at least 2 in/hr. For sites with infiltration rates of less than 2 in/hr infiltration is allowed (SWMM Section 2.2.2). Infiltration testing was done near the proposed stormwater facility locations using the Encased Falling Head test method. All test locations had infiltration rates above 2in/hr, accept on lot 4, where the infiltration rate was 1.8 in/hr. A factor of safety of 3 was applied to the field infiltration rates to meet the SWMM requirements for Encased Falling Head infiltration tests (SWMM Appendix F.2).

In order to design so that all the facilities will infiltrate the 100-year design storm event and to address concerns about stormwater overflow, additional stormwater calculations were performed, beyond what is required by the simplified approach. Basins will be used to treat and infiltrate stormwater from impervious area on each residential lot. Swales along the sides of the driveways will manage stormwater from these paved areas. Water quality swales will be used to treat stormwater from the Rosemont Road half street improvements.

The City of Portland's Presumptive Approach Calculator (PAC) (SWMM Appendix C.3) was used to size the swales and basins for water quality. The PAC output is included in this report.

AutoCAD's Hydraflow Hydrographs Extension was used to size the basins for detention and infiltration. Hydraflow results show that each basin was sized to detain and infiltrate the 100-yr storm event, even on lot 4 where infiltration rates are just under 2 in/hr. This considerably upsized this facility.

Each new lot will be about 0.23 AC with an assumed impervious area of 4,400 sf per lot. Each access drive will be 16'-wide x 145'-long resulting in 2,000 sf of impervious area each. The half street improvements along Rosemont Road will result in 11,800 sf of impervious area. See the Table 1 below for a summary of the catchments for each stormwater facility.

The basin design has 12" of drain rock under the bottom of the basins. There is no rock under the side slopes of the basins.

Table 1: Catchment Summary

Contributing Basin	Stormwater Facility Type	Field Infiltration Rate (in/hr)	Design Infiltration Rate with Safety Factor of 3 (in/hr)	Contributing Impervious Area (SF)	Required Facility Bottom Area (rock area) (SF)	Facility Top Area (SF)
Lot 1	Basin	3.15	1.05	4,400	345	912
Lot 2	Basin	2.93	0.98	4,400	355	812
Lot 3	None	N/A	N/A	4,400	None	None
Lot 4	Basin	1.80	0.60	4,400	460	945
Lot 5	Basin	3.15	1.05	4,400	345	751
Lot 6	Basin	2.08	0.69	4,400	430	1116
Lot 7	Basin	2.08	0.69	4,400	430	1116
Access Drive 1	Swale	2.00	0.67	2,000	-	445
Access Drive 2	Swale	2.00	0.67	2,000	-	445
Rosemont Half Street	Swale	2.00	0.67	11,800	-	475

2. FACILITY DESIGN

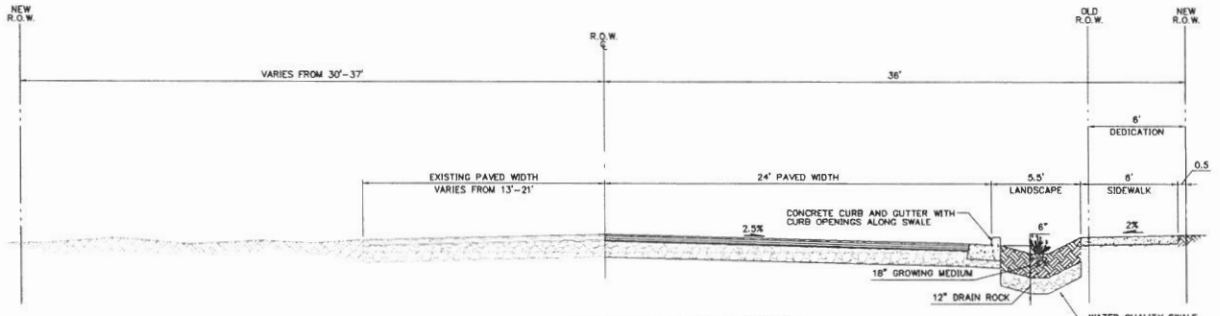
Basins have been sized for each new residential lot using the PAC and Hydraflow. The PAC was used to confirm that water quality requirements were being met. Hydraflow was used to the size the facility for detention and infiltration of the 100-yr storm. The basins will have 18" of growing medium over 12" of drain rock. There will be 12" of storage capacity above ground with 2" of freeboard.

The two 16'-wide driveways will sheet flow to an infiltration swale on one side. The swales will extend the full length of the driveway, which is larger than would be required using the Simplified Approach. The Simplified Approach applies a sizing factor of 0.09 to the impervious area or 2,000 SF*0.09=180 SF. The proposed swales are 450 SF, 150% more than required. The swales will have 18" of growing medium over 12" of drain rock. The swales will be 6"-deep and slope to match the driveways at no more than 6%.

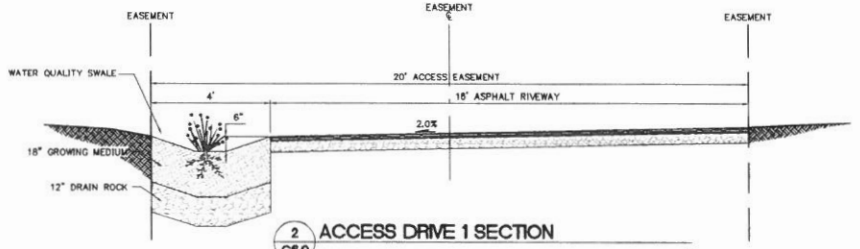
Runoff from the Rosemont Road half street improvements will drain to 2 swales located between the curb and the sidewalk. Openings in the curb adjacent to the swales will allow water to drain into the swales. Stormwater is treated as it flows through the swales and infiltrates into the ground. Any excess water overflows through the curb breaks and flows to the next downstream inlet. Since the new impervious area along Rosemont exceeds 10,000 SF, the PAC was used to size the swales. The swales will have 18" of growing medium over 12" of drain rock. The swales will be 6"-deep and slope to match the roadway.

STORM PLAN

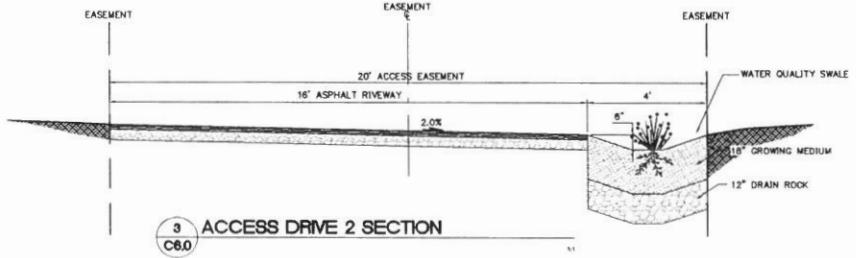
0 20 40 80



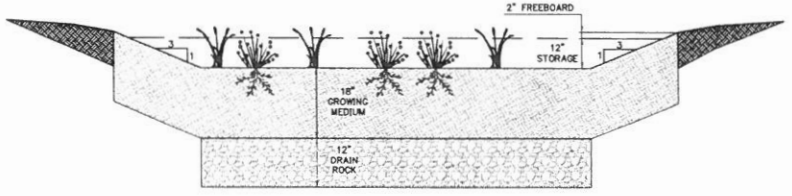
1 C6.0 **PROPOSED ROSEMONT ROAD SECTION** N.T.S.



2 C6.0 **ACCESS DRIVE 1 SECTION**



3 C6.0 **ACCESS DRIVE 2 SECTION**



4 C6.0 **INFILTRATION BASIN TYPICAL SECTION**

Presumptive Approach Calculator ver. 1.2

Catchment Data

Catchment ID: Lots 1&5

Project Name: Rosemont Subdivision
Project Address: 1485 Rosemont Road
West Linn, OR
Designer: Megan Goplin
Company: Mackenzie

Date: 09/11/13
Permit Number: 0

Run Time 9/13/2013 7:32:42 AM

Drainage Catchment Information

Catchment ID	Lots 1&5	
	Catchment Area	
Impervious Area	4,400	SF
Impervious Area	0.10	ac
Impervious Area Curve Number, CN_{imp}	98	
Time of Concentration, Tc, minutes	5	min.

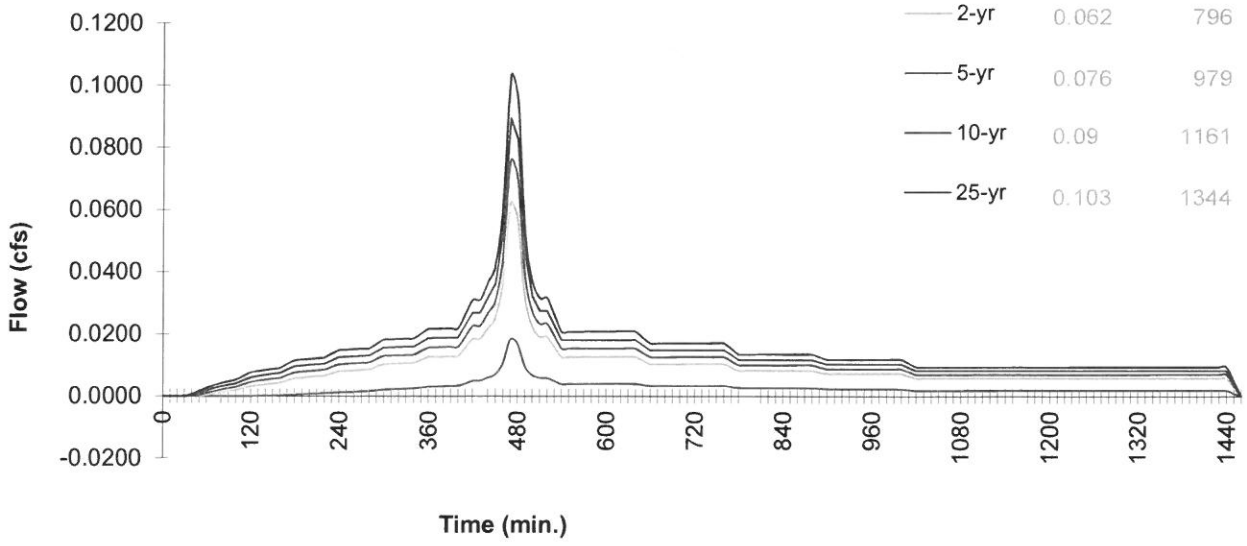
Site Soils & Infiltration Testing Data

Infiltration Testing Procedure:	Encased Falling Head		Field infiltration rate was manually adjusted down to model as safety factor of 3.
Native Soil Field Tested Infiltration Rate (I_{test}):	2.1	in/hr	
Bottom of Facility Meets Required Separation From High Groundwater Per BES SWMM Section 1.4:	Yes		
Correction Factor Component			
CF_{test} (ranges from 1 to 3)	~~2~~ 3		
Design Infiltration Rates			
I_{dsgn} for Native (I_{test} / CF_{test}):	1.05	in/hr	
I_{dsgn} for Imported Growing Medium:	2.00	in/hr	

Execute SBUH

SBUH Results

	Peak Rate (cfs)	Volume (cf)
PR	0.018	230
2-yr	0.062	796
5-yr	0.076	979
10-yr	0.09	1161
25-yr	0.103	1344



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Presumptive Approach Calculator ver. 1.2

Catchment ID: Lots 1&5

Run Time 9/13/2013 7:32:42 AM

Project Name: Rosemont Subdivision **Catchment ID:** Lots 1&5 **Date:** 9/11/2013

Instructions:

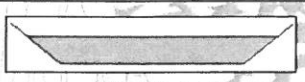
1. Identify which Stormwater Hierarchy Category the facility.
2. Select Facility Type.
3. Identify facility shape of surface facility to more accurately estimate surface volume, except for Swales and sloped planters that use the PAC Sloped Facility Worksheet to enter data.
4. Select type of facility configuration.
5. Complete data entry for all highlighted cells.

Catchment facility will meet Hierarchy Category: 1

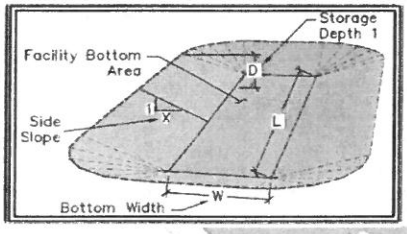
Goal Summary:

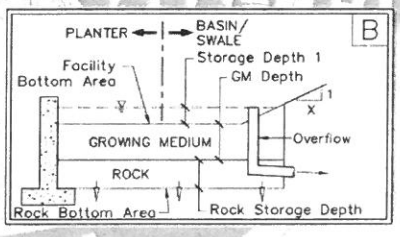
Hierarchy Category	SWMM Requirement	RESULTS box below needs to display...	
		Pollution Reduction as a	10-yr (aka disposal) as a
1	On-site infiltration with a surface infiltration facility.	PASS	PASS

Facility Type = Basin



Facility Shape: Rectangle/Square **Facility Configuration:** B





Calculation Guide
Max. Rock Stor. Bottom Area 813 SF

DATA FOR ABOVE GRADE STORAGE COMPONENT

Facility Bottom Area =	345	sf
Bottom Width =	5.0	ft
Facility Side Slope =	3	to 1
Storage Depth 1 =	12	in
Growing Medium Depth =	18	in
Freeboard Depth =	2	in
Surface Capacity at Depth 1 =	579	cf
Infiltration Area at 75% Depth1 =	696	SF
GM Design Infiltration Rate =	2.00	in/hr
Infiltration Capacity =	0.032	cfs

BELOW GRADE STORAGE

Rock Storage Bottom Area =	345	sf
Rock Storage Depth =	12	in
Rock Void Ratio =	0.3	
Rock Storage Capacity =	104	cf
Native Design Infiltration Rate =	1.05	in/hr
Infiltration Capacity =	0.008	cfs

RESULTS

		Overflow Volume		
Pollution Reduction	PASS	0 CF	0% Surf. Cap. Used	Run PAC
			13% Rock Cap. Used	
10-yr	PASS	0 CF	66% Surf. Cap. Used	
			100% Rock Cap. Used	

FACILITY FACTS

Total Facility Area Including Freeboard =	912 SF
Sizing Ratio (Total Facility Area / Catchment Area) =	0.207

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Presumptive Approach Calculator ver. 1.2

Catchment Data

Catchment ID: Lot 2

Project Name: Rosemont Subdivision
Project Address: 1485 Rosemont Road, West Linn, OR
Designer: Megan Goplin
Company: Mackenzie

Date: 09/11/13
Permit Number: 0
Run Time 9/11/2013 3:27:00 PM

Drainage Catchment Information

	Lot 2 Catchment Area	
Impervious Area	4,400	SF
Impervious Area	0.10	ac
Impervious Area Curve Number, CN_{imp}	98	
Time of Concentration, Tc, minutes	5	min.

Site Soils & Infiltration Testing Data

Infiltration Testing Procedure:	Encased Falling Head		
Native Soil Field Tested Infiltration Rate (I_{test}):	1.96	in/hr	Field infiltration rate was manually adjusted down to model as safety factor of 3.
Bottom of Facility Meets Required Separation From High Groundwater Per BES SWMM Section 1.4:	Yes		

Correction Factor Component

CF_{test} (ranges from 1 to 3)	~~2~~ 3	

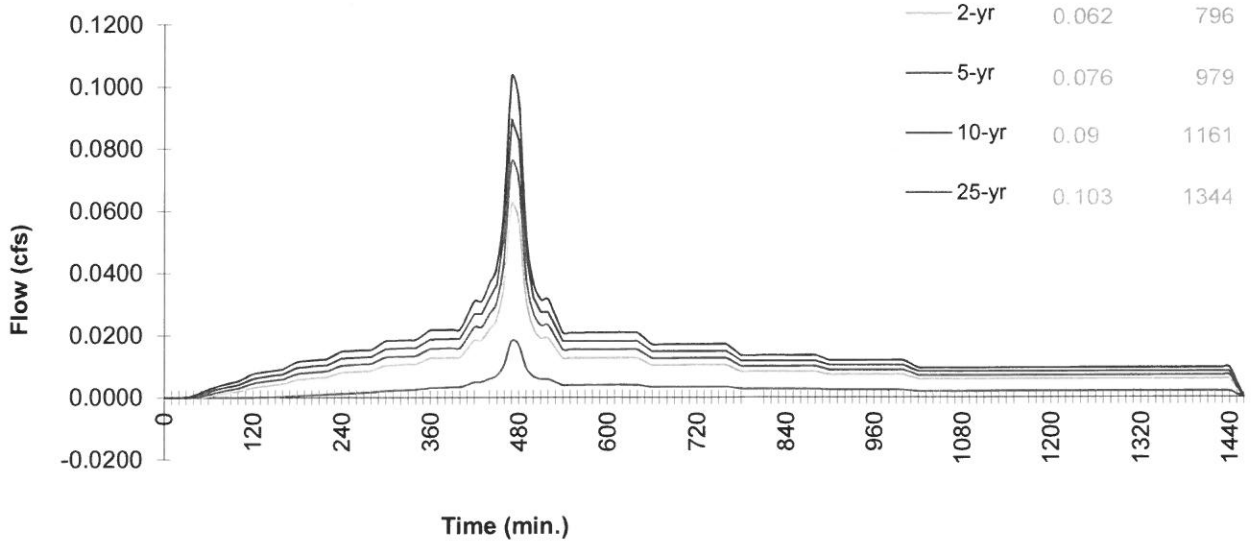
Design Infiltration Rates

I_{dsgn} for Native (I_{test} / CF_{test}):	0.98	in/hr
I_{dsgn} for Imported Growing Medium:	2.00	in/hr

Execute SBUH

SBUH Results

	Peak Rate (cfs)	Volume (cf)
PR	0.018	230
2-yr	0.062	796
5-yr	0.076	979
10-yr	0.09	1161
25-yr	0.103	1344



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Presumptive Approach Calculator ver. 1.2

Catchment ID: Lot 2

Run Time 9/11/2013 3:27:00 PM

Project Name: Rosemont Subdivision **Catchment ID:** Lot 2 **Date:** 9/11/2013

Instructions:

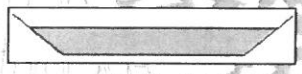
1. Identify which Stormwater Hierarchy Category the facility.
2. Select Facility Type.
3. Identify facility shape of surface facility to more accurately estimate surface volume, except for Swales and sloped planters that use the PAC Sloped Facility Worksheet to enter data.
4. Select type of facility configuration.
5. Complete data entry for all highlighted cells.

Catchment facility will meet Hierarchy Category: 1

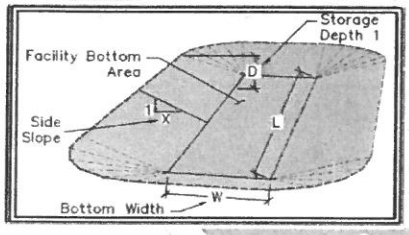
Goal Summary:

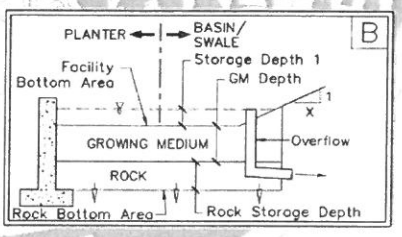
Hierarchy Category	SWMM Requirement	RESULTS box below needs to display...	
		Pollution Reduction as a	10-yr (aka disposal) as a
1	On-site infiltration with a surface infiltration facility.	PASS	PASS

Facility Type = Basin



Facility Shape: Rectangle/Square **Facility Configuration:** B





Calculation Guide
Max. Rock Stor. Bottom Area 835 SF

DATA FOR ABOVE GRADE STORAGE COMPONENT

Facility Bottom Area =	355	sf
Bottom Width =	5.0	ft
Facility Side Slope =	3	to 1
Storage Depth 1 =	12	in
Growing Medium Depth =	18	in
Freeboard Depth =	2	in
Surface Capacity at Depth 1 =	595	cf
Infiltration Area at 75% Depth1 =	715	SF
GM Design Infiltration Rate =	2.00	in/hr
Infiltration Capacity =	0.033	cfs

BELOW GRADE STORAGE

Rock Storage Bottom Area =	355	sf
Rock Storage Depth =	12	in
Rock Void Ratio =	0.3	
Rock Storage Capacity =	107	cf
Native Design Infiltration Rate =	0.98	in/hr
Infiltration Capacity =	0.008	cfs

RESULTS		Overflow Volume			
Pollution Reduction	PASS	0 CF	0%	Surf. Cap. Used	Run PAC
			13%	Rock Cap. Used	
10-yr	PASS	0 CF	67%	Surf. Cap. Used	
			100%	Rock Cap. Used	

FACILITY FACTS

Total Facility Area Including Freeboard =	936 SF
Sizing Ratio (Total Facility Area / Catchment Area) =	0.213

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Presumptive Approach Calculator ver. 1.2

Catchment Data

Catchment ID: Lot 4

Project Name: Rosemont Subdivision
Project Address: 1485 Rosemont Road, West Linn, OR
Designer: Megan Goplin
Company: Mackenzie

Date: 09/11/13
Permit Number: 0
Run Time 9/11/2013 3:41:14 PM

Drainage Catchment Information

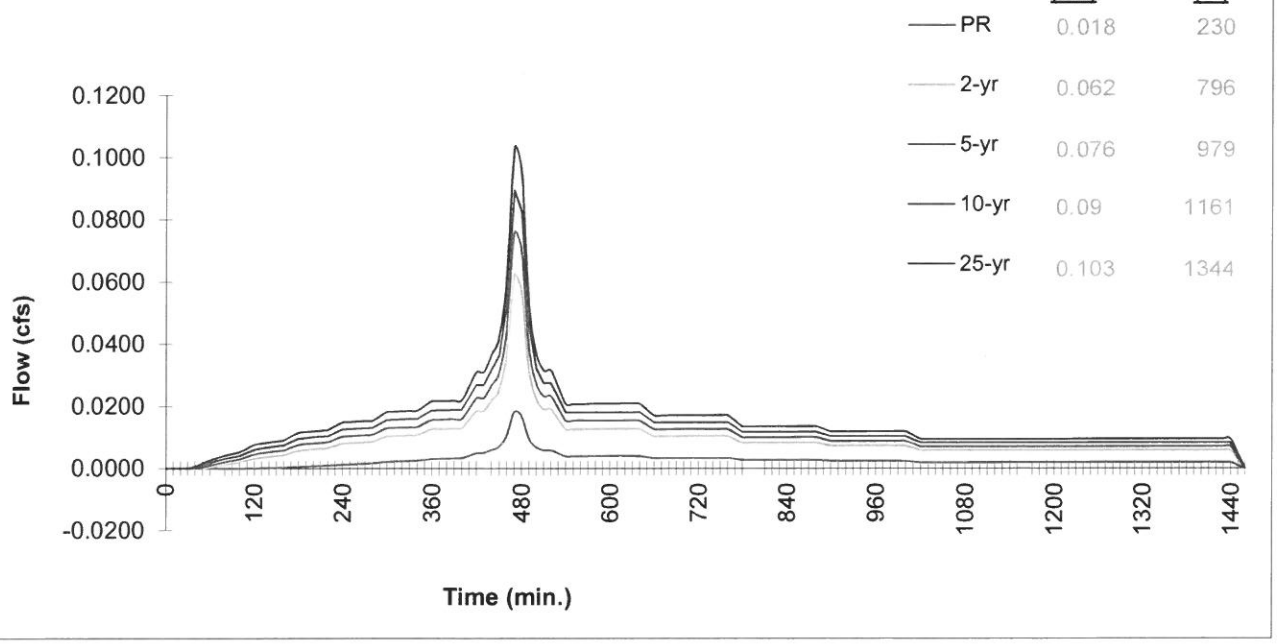
Catchment ID	Lot 4	
	Catchment Area	
Impervious Area	4,400	SF
Impervious Area	0.10	ac
Impervious Area Curve Number, CN_{imp}	98	
Time of Concentration, Tc, minutes	5	min.

Site Soils & Infiltration Testing Data

Infiltration Testing Procedure:	Encased Falling Head		
Native Soil Field Tested Infiltration Rate (I_{test}):	1.2	in/hr	Field infiltration rate was manually adjusted down to model as safety factor of 3.
Bottom of Facility Meets Required Separation From High Groundwater Per BES SWMM Section 1.4:	Yes		
Correction Factor Component			
CF_{test} (ranges from 1 to 3)	~~2~~ 3		
Design Infiltration Rates			
I_{dsgn} for Native (I_{test} / CF_{test}):	0.60	in/hr	
I_{dsgn} for Imported Growing Medium:	2.00	in/hr	

Execute SBUH

SBUH Results



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Presumptive Approach Calculator ver. 1.2

Catchment ID: Lot 4

Run Time 9/11/2013 3:41:14 PM

Project Name: Rosemont Subdivision **Catchment ID:** Lot 4 **Date:** 9/11/2013

Instructions:

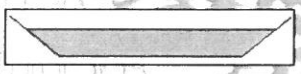
1. Identify which Stormwater Hierarchy Category the facility.
2. Select Facility Type.
3. Identify facility shape of surface facility to more accurately estimate surface volume, except for Swales and sloped planters that use the PAC Sloped Facility Worksheet to enter data.
4. Select type of facility configuration.
5. Complete data entry for all highlighted cells.

Catchment facility will meet Hierarchy Category: 1

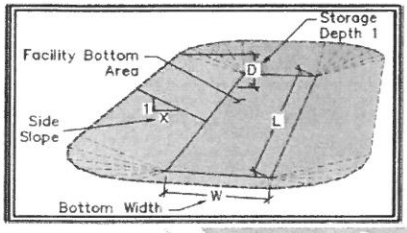
Goal Summary:

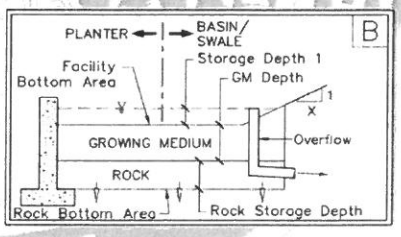
Hierarchy Category	SWMM Requirement	RESULTS box below needs to display...	
		Pollution Reduction as a	10-yr (aka disposal) as a
1	On-site infiltration with a surface infiltration facility.	PASS	PASS

Facility Type = Basin



Facility Shape: Rectangle/Square **Facility Configuration:** B





Calculation Guide
Max. Rock Stor. Bottom Area
1,066 SF

DATA FOR ABOVE GRADE STORAGE COMPONENT

Facility Bottom Area =	460	sf
Bottom Width =	5.0	ft
Facility Side Slope =	3	to 1
Storage Depth 1 =	12	in
Growing Medium Depth =	18	in
Freeboard Depth =	2	in
Surface Capacity at Depth 1 =	763	cf
Infiltration Area at 75% Depth1 =	914	SF
GM Design Infiltration Rate =	2.00	in/hr
Infiltration Capacity =	0.042	cfs

BELOW GRADE STORAGE

Rock Storage Bottom Area =	460	sf
Rock Storage Depth =	12	in
Rock Void Ratio =	0.3	
Rock Storage Capacity =	138	cf
Native Design Infiltration Rate =	0.60	in/hr
Infiltration Capacity =	0.006	cfs

RESULTS		Overflow Volume			Run PAC
Pollution Reduction	PASS	0 CF	0%	Surf. Cap. Used	
			13%	Rock Cap. Used	
10-yr	PASS	0 CF	65%	Surf. Cap. Used	
			100%	Rock Cap. Used	

FACILITY FACTS

Total Facility Area Including Freeboard =	1,188 SF
Sizing Ratio (Total Facility Area / Catchment Area) =	0.270

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Presumptive Approach Calculator ver. 1.2

Catchment Data

Catchment ID: Lots 6&7

Project Name: Rosemont Subdivision
Date: 09/11/13
Project Address: 1485 Rosemont Road
Permit Number: 0
West Linn, OR
Run Time 9/13/2013 7:35:00 AM
Designer: Megan Goplin
Company: Mackenzie

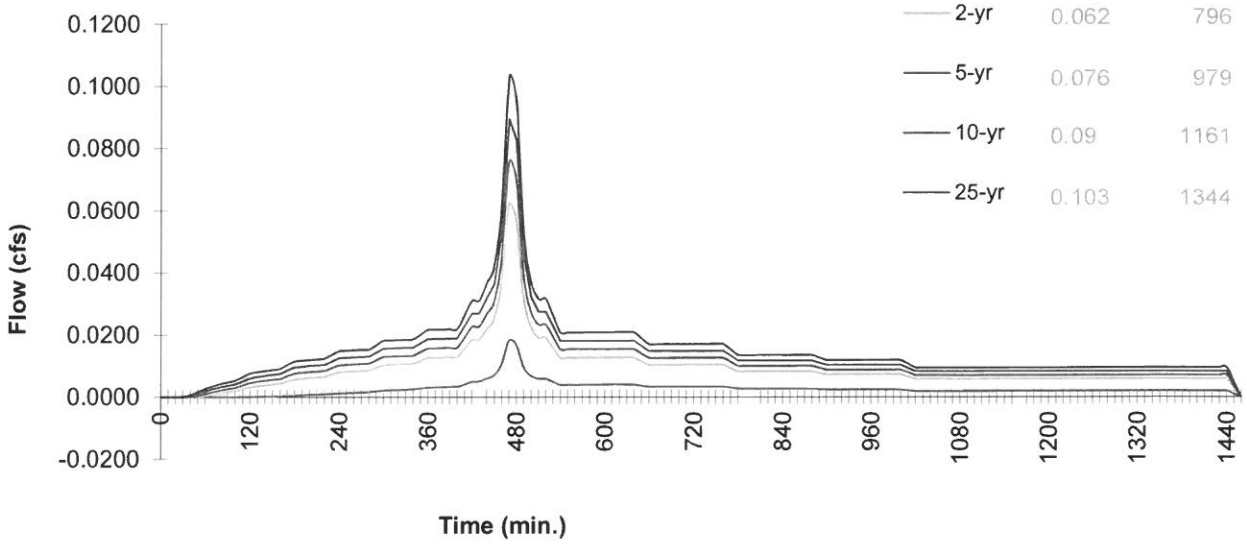
Drainage Catchment Information		
Catchment ID	Lots 6&7	
	Catchment Area	
Impervious Area	4,400	SF
Impervious Area	0.10	ac
Impervious Area Curve Number, CN_{imp}	98	
Time of Concentration, Tc, minutes	5	min.
Site Soils & Infiltration Testing Data		
Infiltration Testing Procedure:	Encased Falling Head	
Native Soil Field Tested Infiltration Rate (I_{test}):	1.38	in/hr
Bottom of Facility Meets Required Separation From High Groundwater Per BES SWMM Section 1.4:	Yes	
Correction Factor Component		
CF_{test} (ranges from 1 to 3)	~~2~~ 3	
Design Infiltration Rates		
I_{dsgn} for Native (I_{test} / CF_{test}):	0.69	in/hr
I_{dsgn} for Imported Growing Medium:	2.00	in/hr

Field infiltration rate was manually adjusted down to model as safety factor of 3.

Execute SBUH

SBUH Results

	Peak Rate (cfs)	Volume (cf)
PR	0.018	230
2-yr	0.062	796
5-yr	0.076	979
10-yr	0.09	1161
25-yr	0.103	1344



Printed: 9/13/2013 7:35 AM

Presumptive Approach Calculator ver. 1.2

Catchment ID: Lots 6&7

Run Time 9/13/2013 7:35:00 AM

Project Name: Rosemont Subdivision **Catchment ID:** Lots 6&7 **Date:** 9/11/2013

Instructions:

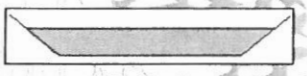
1. Identify which Stormwater Hierarchy Category the facility.
2. Select Facility Type.
3. Identify facility shape of surface facility to more accurately estimate surface volume, except for Swales and sloped planters that use the PAC Sloped Facility Worksheet to enter data.
4. Select type of facility configuration.
5. Complete data entry for all highlighted cells.

Catchment facility will meet Hierarchy Category: 1

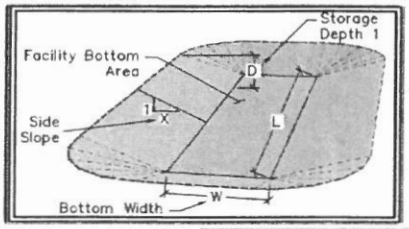
Goal Summary:

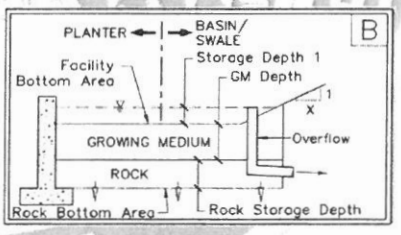
Hierarchy Category	SWMM Requirement	RESULTS box below needs to display...	
		Pollution Reduction as a	10-yr (aka disposal) as a
1	On-site infiltration with a surface infiltration facility.	PASS	PASS

Facility Type = Basin



Facility Shape: Rectangle/Square **Facility Configuration:** B





Calculation Guide
Max. Rock Stor. Bottom Area 1,000 SF

DATA FOR ABOVE GRADE STORAGE COMPONENT

Facility Bottom Area =	430	sf
Bottom Width =	5.0	ft
Facility Side Slope =	3	to 1
Storage Depth 1 =	12	in
Growing Medium Depth =	18	in
Freeboard Depth =	2	in
Surface Capacity at Depth 1 =	715	cf
Infiltration Area at 75% Depth1 =	857	SF
GM Design Infiltration Rate =	2.00	in/hr
Infiltration Capacity =	0.040	cfs

BELOW GRADE STORAGE

Rock Storage Bottom Area =	430	sf
Rock Storage Depth =	12	in
Rock Void Ratio =	0.3	
Rock Storage Capacity =	129	cf
Native Design Infiltration Rate =	0.69	in/hr
Infiltration Capacity =	0.007	cfs

RESULTS		Overflow Volume			Run PAC
Pollution Reduction	PASS	0 CF	0%	Surf. Cap. Used	
			13%	Rock Cap. Used	
10-yr	PASS	0 CF	66%	Surf. Cap. Used	
			100%	Rock Cap. Used	

FACILITY FACTS

Total Facility Area Including Freeboard =	1,116 SF
Sizing Ratio (Total Facility Area / Catchment Area) =	0.254

Printed: 9/13/2013 7:35 AM

Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	15.2592	11.5000	0.8471	--------
3	0.0000	0.0000	0.0000	--------
5	25.3747	13.0000	0.9061	--------
10	25.8093	12.4000	0.8784	--------
25	36.8956	14.0000	0.9212	--------
50	48.4310	15.1000	0.9560	--------
100	34.2017	11.7000	0.8567	--------

File name: Newberg.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1.42	1.13	0.95	0.82	0.72	0.65	0.59	0.54	0.50	0.47	0.44	0.41
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	1.85	1.48	1.24	1.07	0.94	0.84	0.76	0.70	0.64	0.59	0.55	0.52
10	2.10	1.68	1.41	1.22	1.07	0.96	0.87	0.80	0.74	0.68	0.64	0.60
25	2.45	1.98	1.66	1.43	1.26	1.13	1.02	0.94	0.86	0.80	0.75	0.70
50	2.75	2.22	1.87	1.61	1.42	1.27	1.15	1.05	0.97	0.89	0.83	0.78
100	3.07	2.45	2.05	1.77	1.56	1.40	1.27	1.16	1.08	1.00	0.94	0.88

Tc = time in minutes. Values may exceed 60.

Precip. file name: Newberg.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	2.20	0.00	3.00	3.20	3.80	4.30	4.45
SCS 6-Hr	0.00	1.10	0.00	1.30	1.60	1.80	1.80	1.95
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.006	2	482	175	------	------	------	Pre-Developed Lot
2	SCS Runoff	0.004	2	484	105	------	------	------	Pre-Developed Drive
3	SCS Runoff	0.048	2	470	671	------	------	------	Post-Developed Lot
4	SCS Runoff	0.024	2	470	336	------	------	------	Post-Developed Drive
5	Reservoir	0.000	2	300	0	3	100.64	103	RG Lot 1 & 5
6	Reservoir	0.000	2	262	0	3	100.64	108	RG Lot 2
7	Reservoir	0.000	2	244	0	3	100.66	143	RG Lot 4
8	Reservoir	0.000	2	284	0	3	100.65	132	RG Lot 6 & 7

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.018	2	480	349	------	------	------	Pre-Developed Lot
2	SCS Runoff	0.011	2	482	200	------	------	------	Pre-Developed Drive
3	SCS Runoff	0.067	2	470	942	------	------	------	Post-Developed Lot
4	SCS Runoff	0.033	2	470	471	------	------	------	Post-Developed Drive
5	Reservoir	0.000	2	170	0	3	100.94	176	RG Lot 1 & 5
6	Reservoir	0.000	2	168	0	3	100.95	183	RG Lot 2
7	Reservoir	0.000	2	158	0	3	100.96	237	RG Lot 4
8	Reservoir	0.000	2	156	0	3	100.95	220	RG Lot 6 & 7

Hydrograph Report

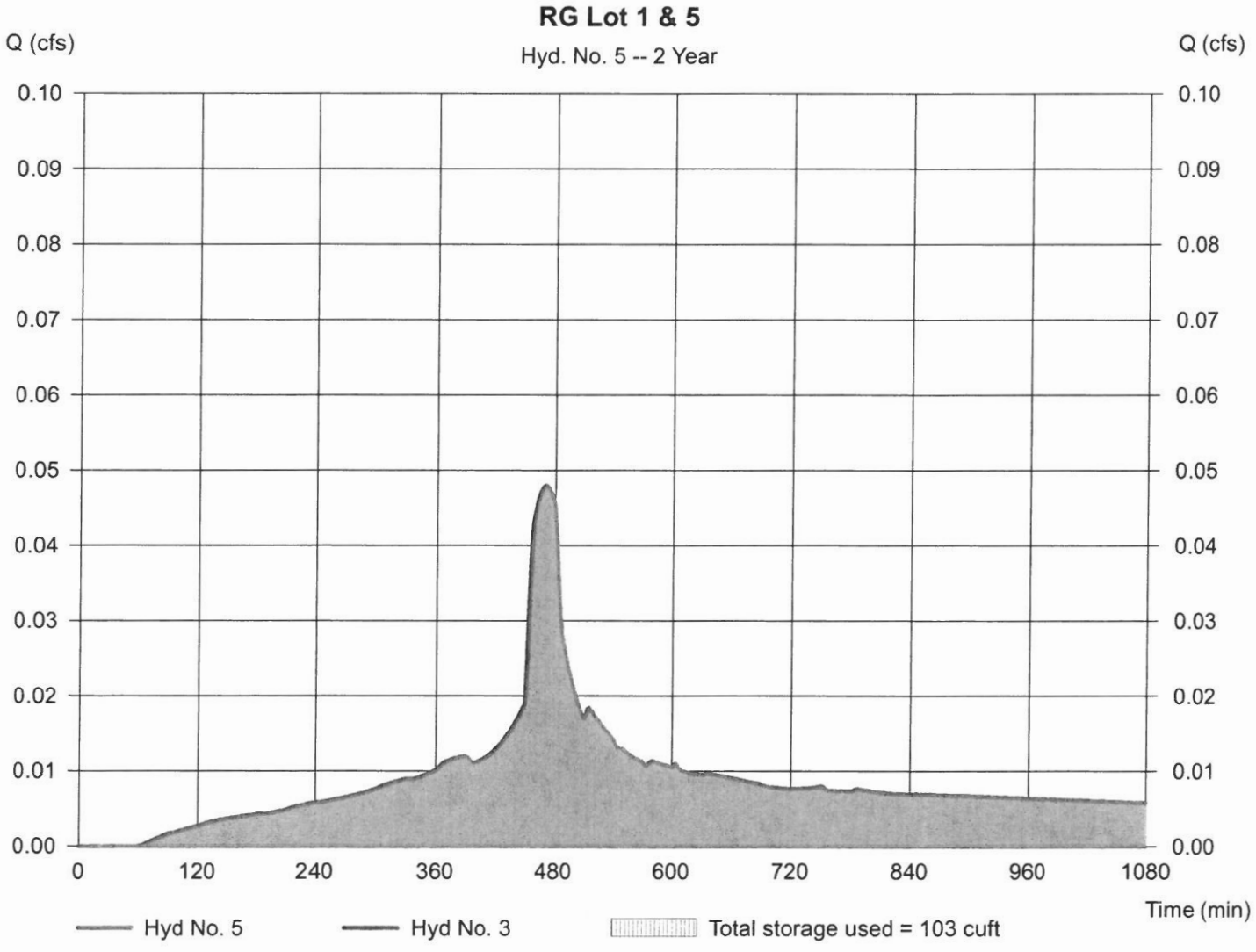
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Friday, Sep 13, 2013

Hyd. No. 5

RG Lot 1 & 5

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 300 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 100.64 ft
Reservoir name	= RG Lot 1 & 5	Max. Storage	= 103 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



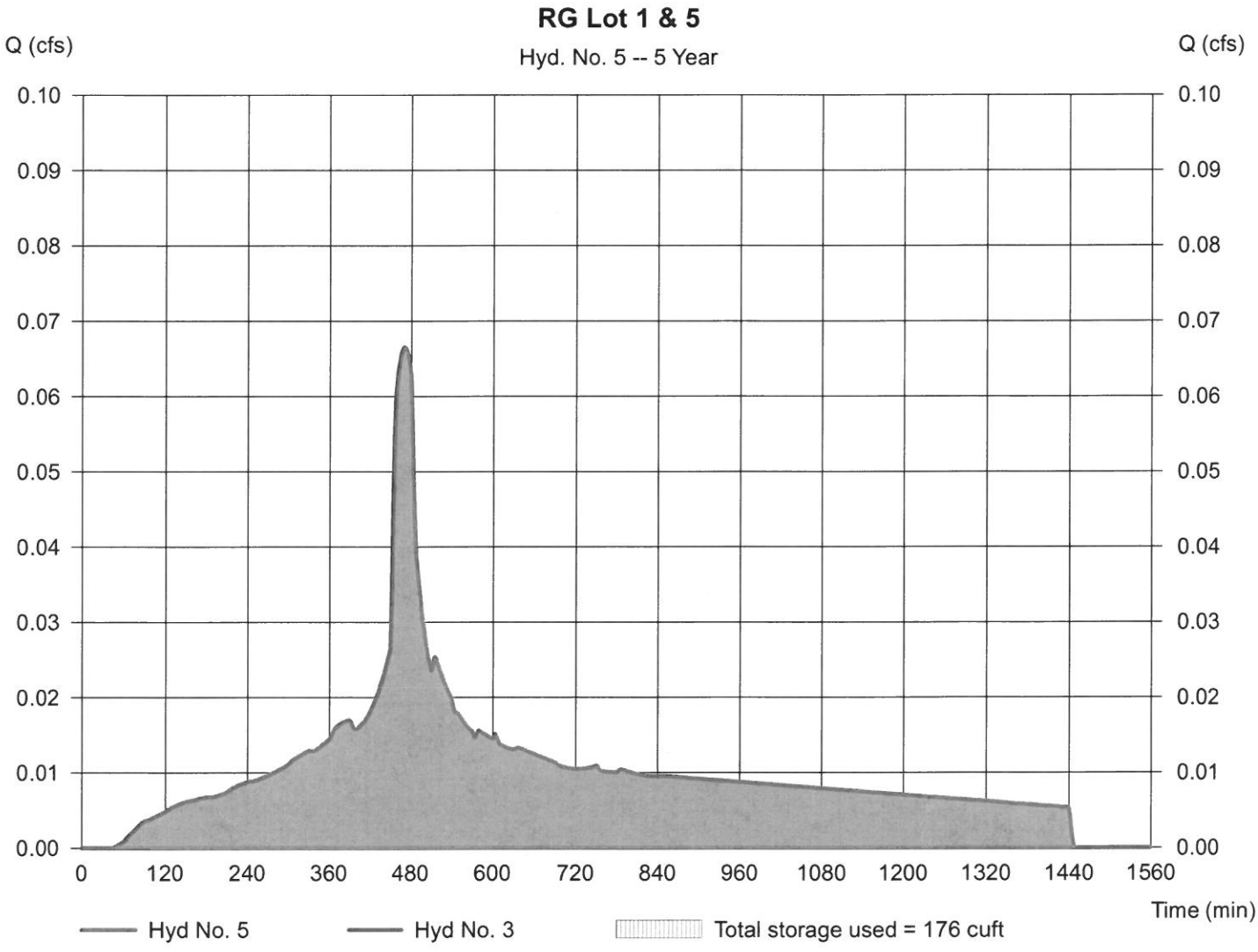
Hydrograph Report

Hyd. No. 5

RG Lot 1 & 5

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= 170 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 100.94 ft
Reservoir name	= RG Lot 1 & 5	Max. Storage	= 176 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

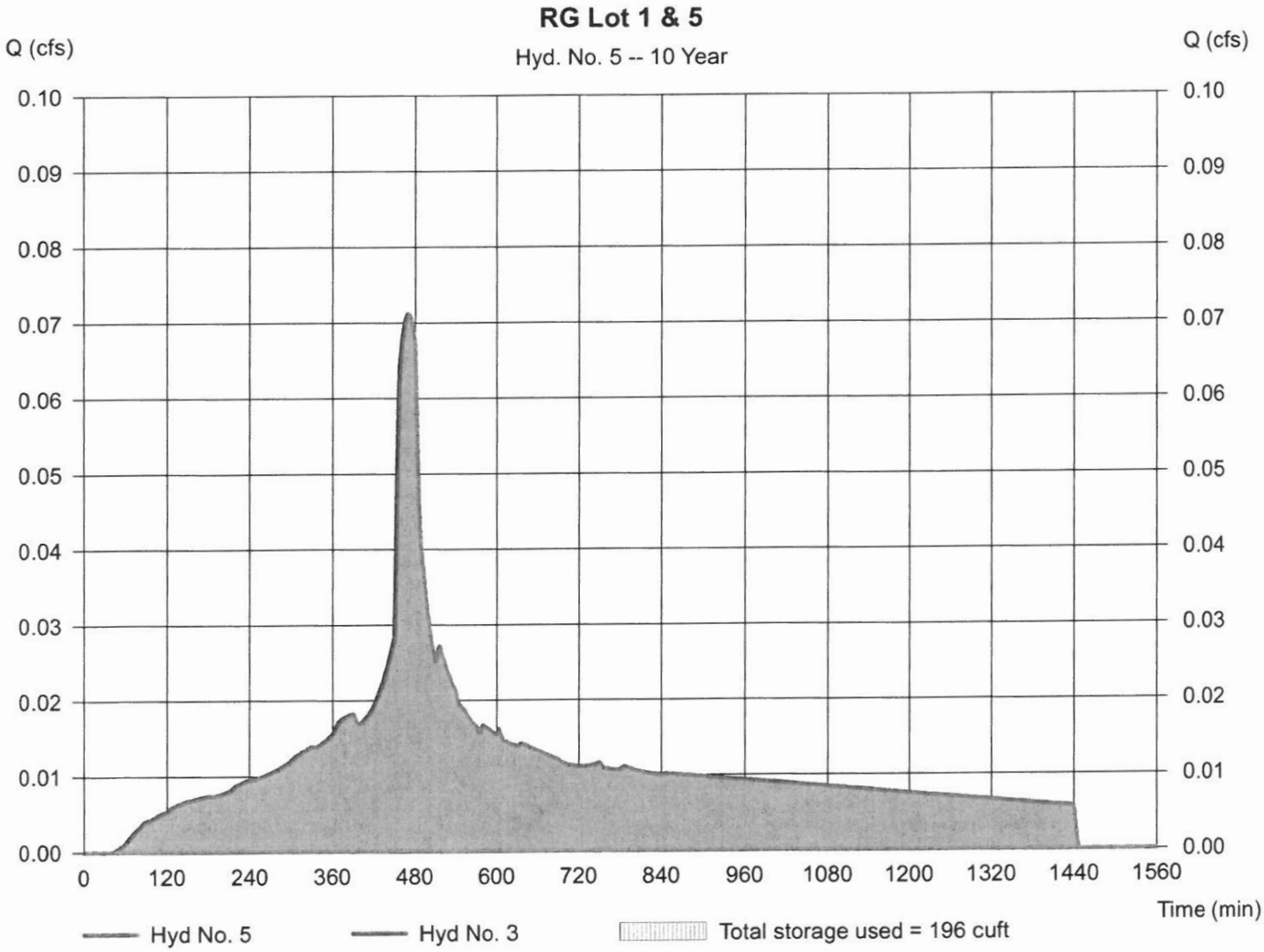
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 — Friday, Sep 13, 2013

Hyd. No. 5

RG Lot 1 & 5

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= 162 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 102.50 ft
Reservoir name	= RG Lot 1 & 5	Max. Storage	= 196 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

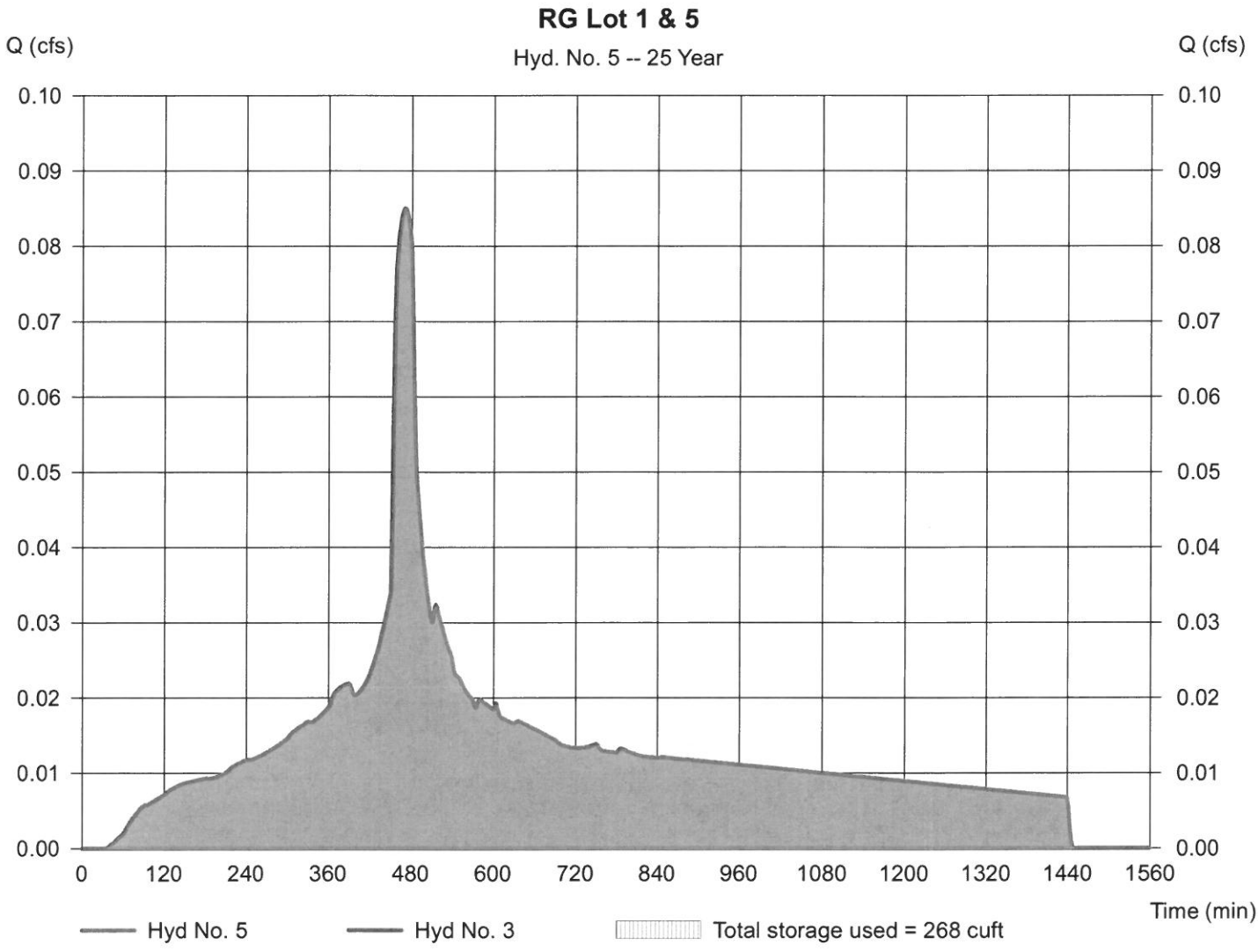
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Friday, Sep 13, 2013

Hyd. No. 5

RG Lot 1 & 5

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 25 yrs	Time to peak	= 126 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 102.92 ft
Reservoir name	= RG Lot 1 & 5	Max. Storage	= 268 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

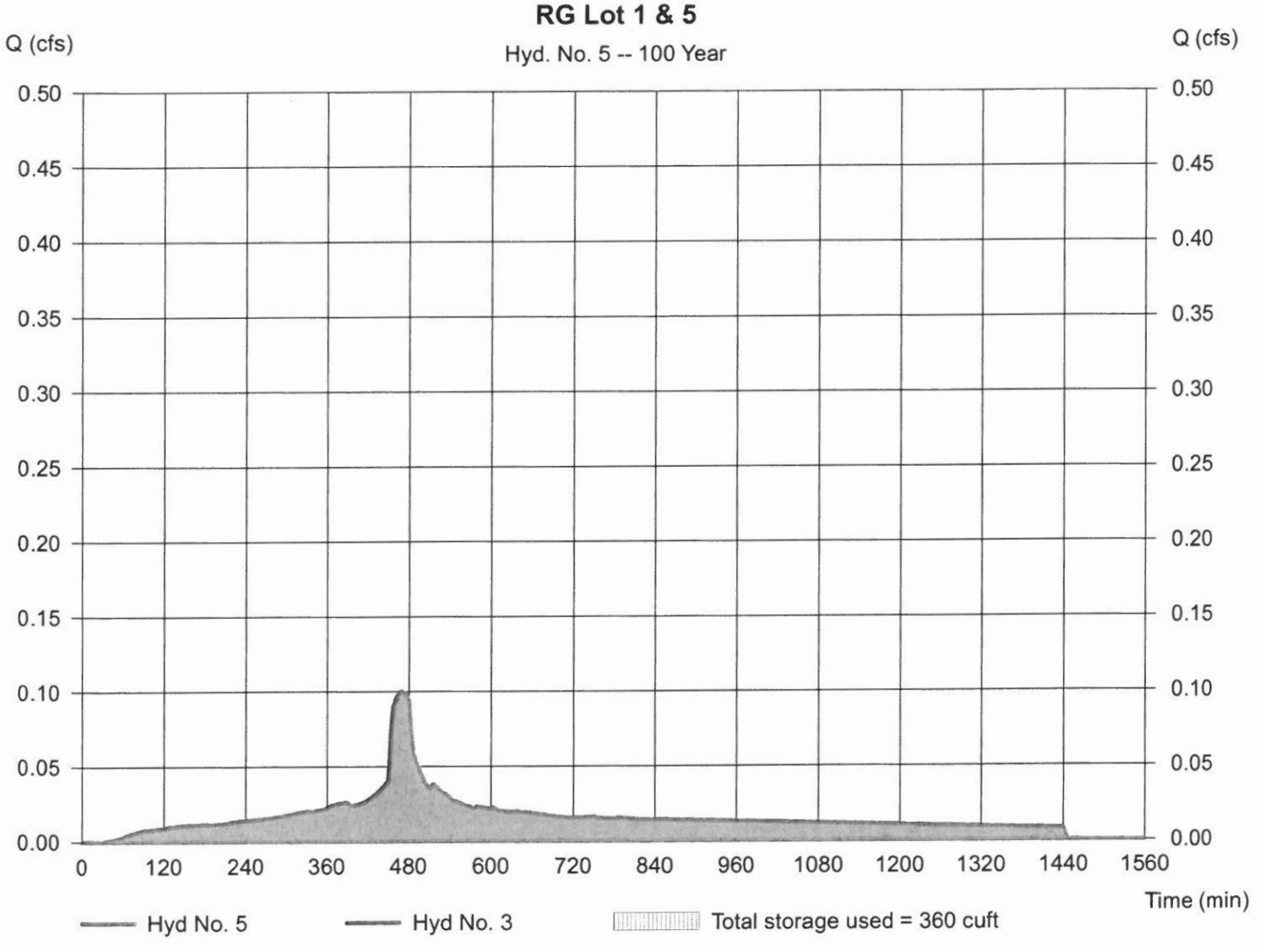
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Friday, Sep 13, 2013

Hyd. No. 5

RG Lot 1 & 5

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= 104 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 103.46 ft
Reservoir name	= RG Lot 1 & 5	Max. Storage	= 360 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Pond No. 2 - RG Lot 2

Pond Data

Trapezoid - Bottom L x W = 71.0 x 5.0 ft, Side slope = 3.00:1, Bottom elev. = 100.00 ft, Depth = 1.00 ft, Voids = 33.00%
Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 101.01 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	100.00	355	0	0
0.10	100.10	401	12	12
0.20	100.20	448	14	26
0.30	100.30	495	16	42
0.40	100.40	543	17	59
0.50	100.50	592	19	78
0.60	100.60	642	20	98
0.70	100.70	692	22	120
0.80	100.80	743	24	144
0.90	100.90	795	25	169
1.00	101.00	847	27	196
1.01	101.01	00	4	201
2.50	102.50	00	0	201
3.50	103.50	355	178	378

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	Inactive	Inactive	Inactive	Inactive
Span (in)	= 6.00	1.10	1.50	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 629.30	628.80	630.60	0.00
Length (ft)	= 10.00	10.00	10.00	0.00
Slope (%)	= 2.00	2.00	2.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 632.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.980 (by Contour)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	100.00	0.00	0.00	0.00	---	0.00	---	---	---	0.000	---	0.000
0.10	12	100.10	0.00	0.00	0.00	---	0.00	---	---	---	0.009	---	0.009
0.20	26	100.20	0.00	0.00	0.00	---	0.00	---	---	---	0.010	---	0.010
0.30	42	100.30	0.00	0.00	0.00	---	0.00	---	---	---	0.011	---	0.011
0.40	59	100.40	0.00	0.00	0.00	---	0.00	---	---	---	0.012	---	0.012
0.50	78	100.50	0.00	0.00	0.00	---	0.00	---	---	---	0.013	---	0.013
0.60	98	100.60	0.00	0.00	0.00	---	0.00	---	---	---	0.015	---	0.015
0.70	120	100.70	0.00	0.00	0.00	---	0.00	---	---	---	0.016	---	0.016
0.80	144	100.80	0.00	0.00	0.00	---	0.00	---	---	---	0.017	---	0.017
0.90	169	100.90	0.00	0.00	0.00	---	0.00	---	---	---	0.018	---	0.018
1.00	196	101.00	0.00	0.00	0.00	---	0.00	---	---	---	0.019	---	0.019
1.01	201	101.01	0.00	0.00	0.00	---	0.00	---	---	---	0.019	---	0.019
2.50	201	102.50	0.00	0.00	0.00	---	0.00	---	---	---	0.019	---	0.019
3.50	378	103.50	0.00	0.00	0.00	---	0.00	---	---	---	0.019	---	0.019

Hydrograph Report

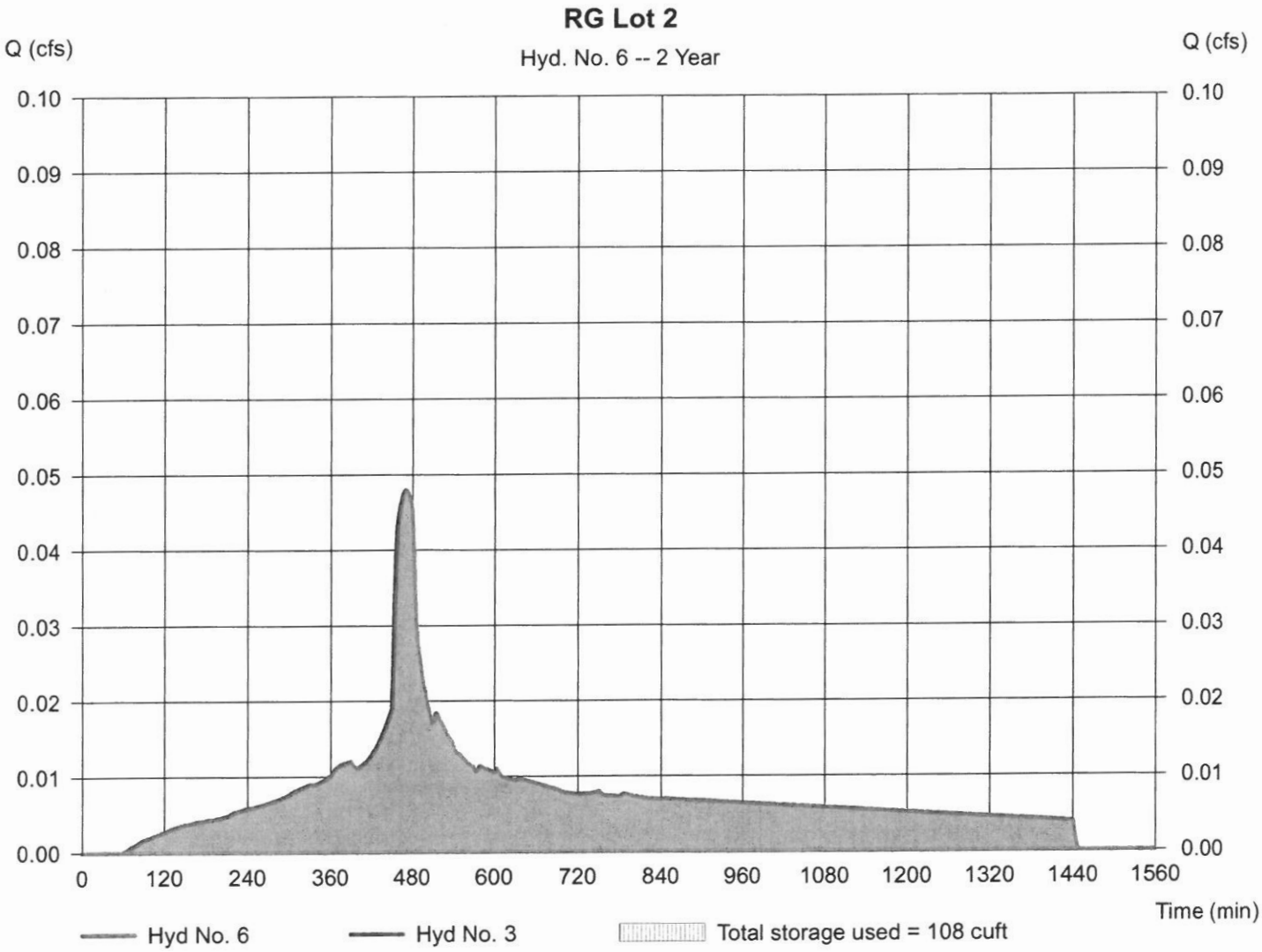
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Friday, Sep 13, 2013

Hyd. No. 6

RG Lot 2

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 262 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 100.64 ft
Reservoir name	= RG Lot 2	Max. Storage	= 108 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



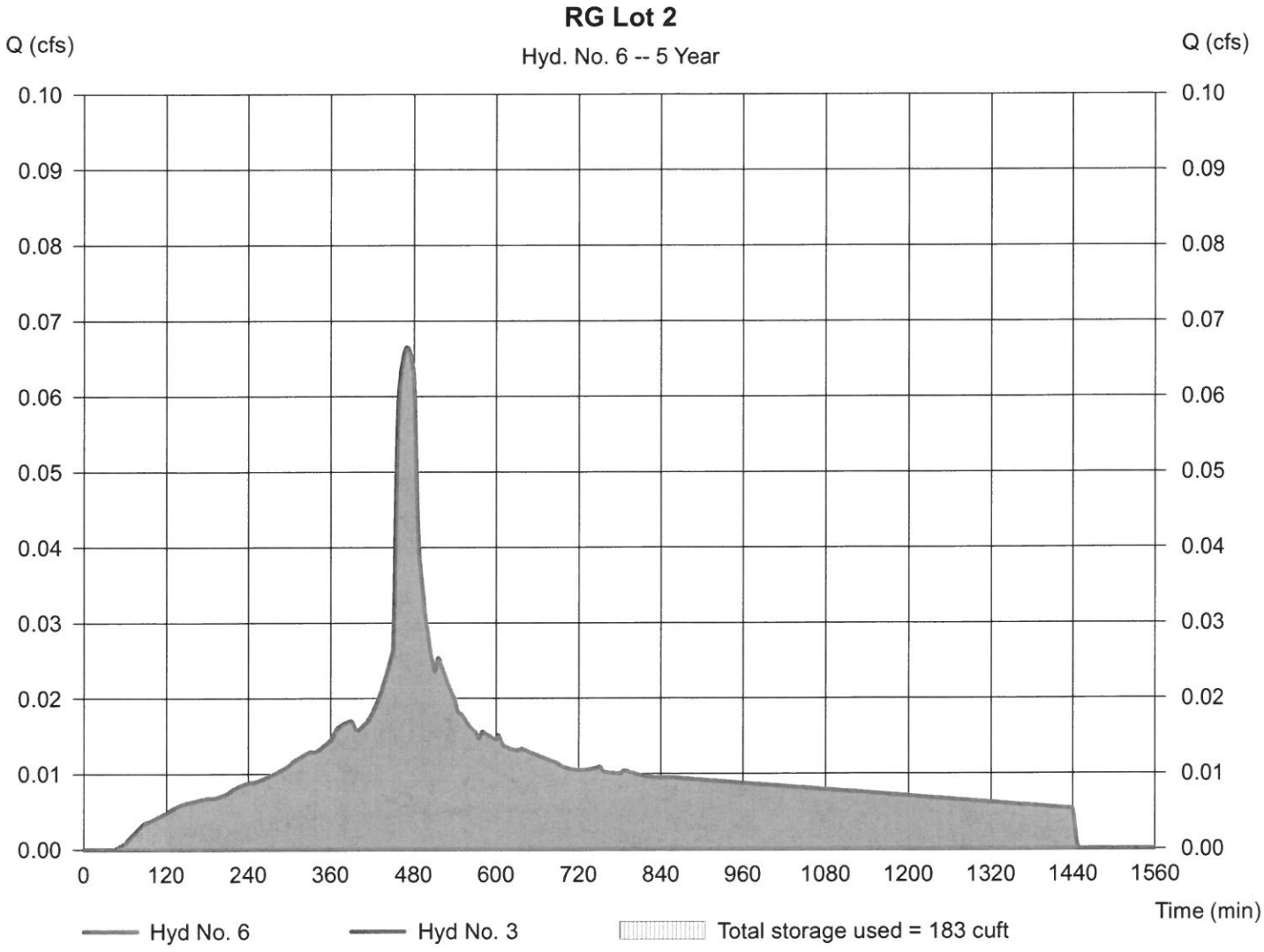
Hydrograph Report

Hyd. No. 6

RG Lot 2

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= 168 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 100.95 ft
Reservoir name	= RG Lot 2	Max. Storage	= 183 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

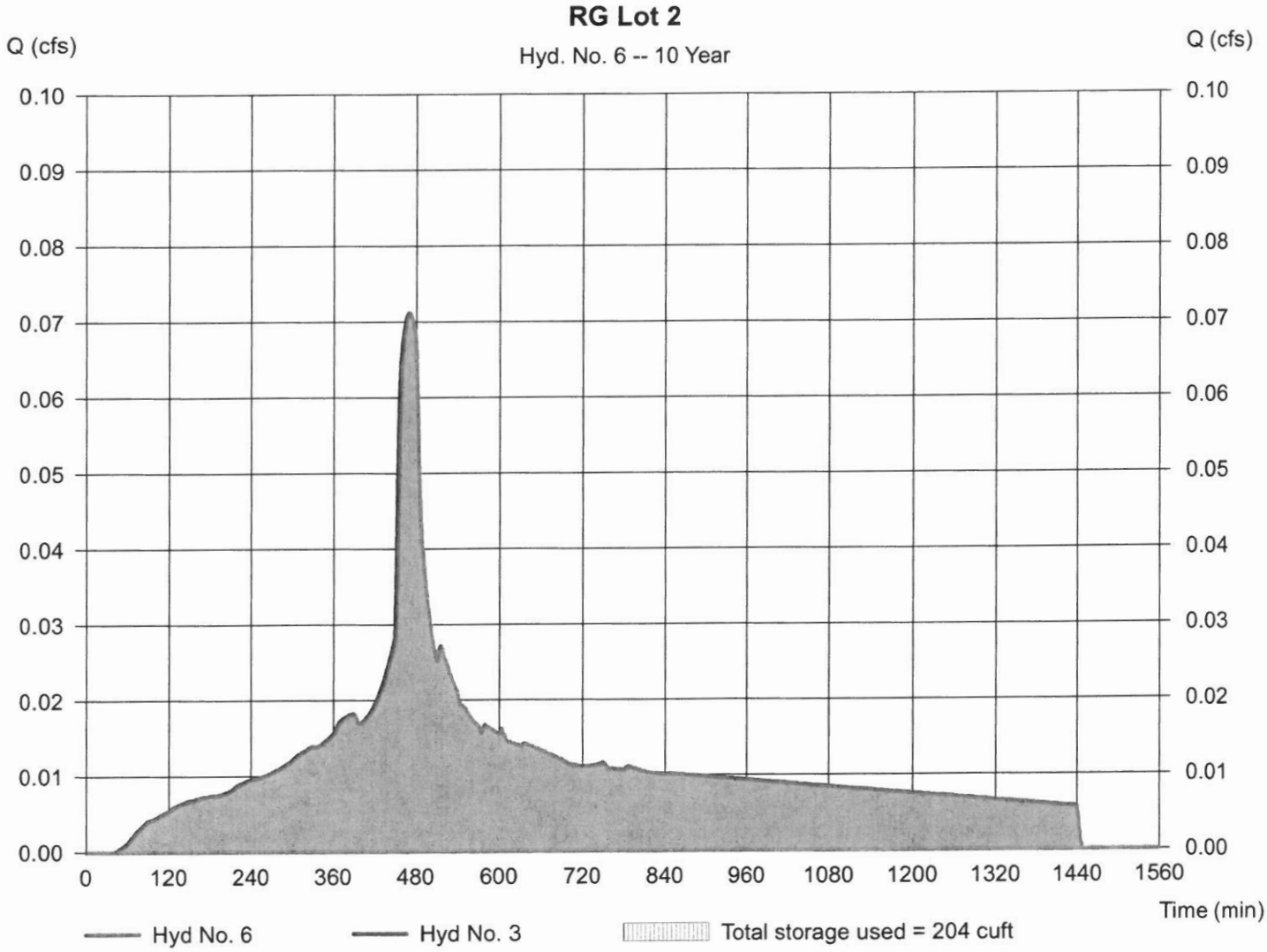
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Friday, Sep 13, 2013

Hyd. No. 6

RG Lot 2

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= 142 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 102.52 ft
Reservoir name	= RG Lot 2	Max. Storage	= 204 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



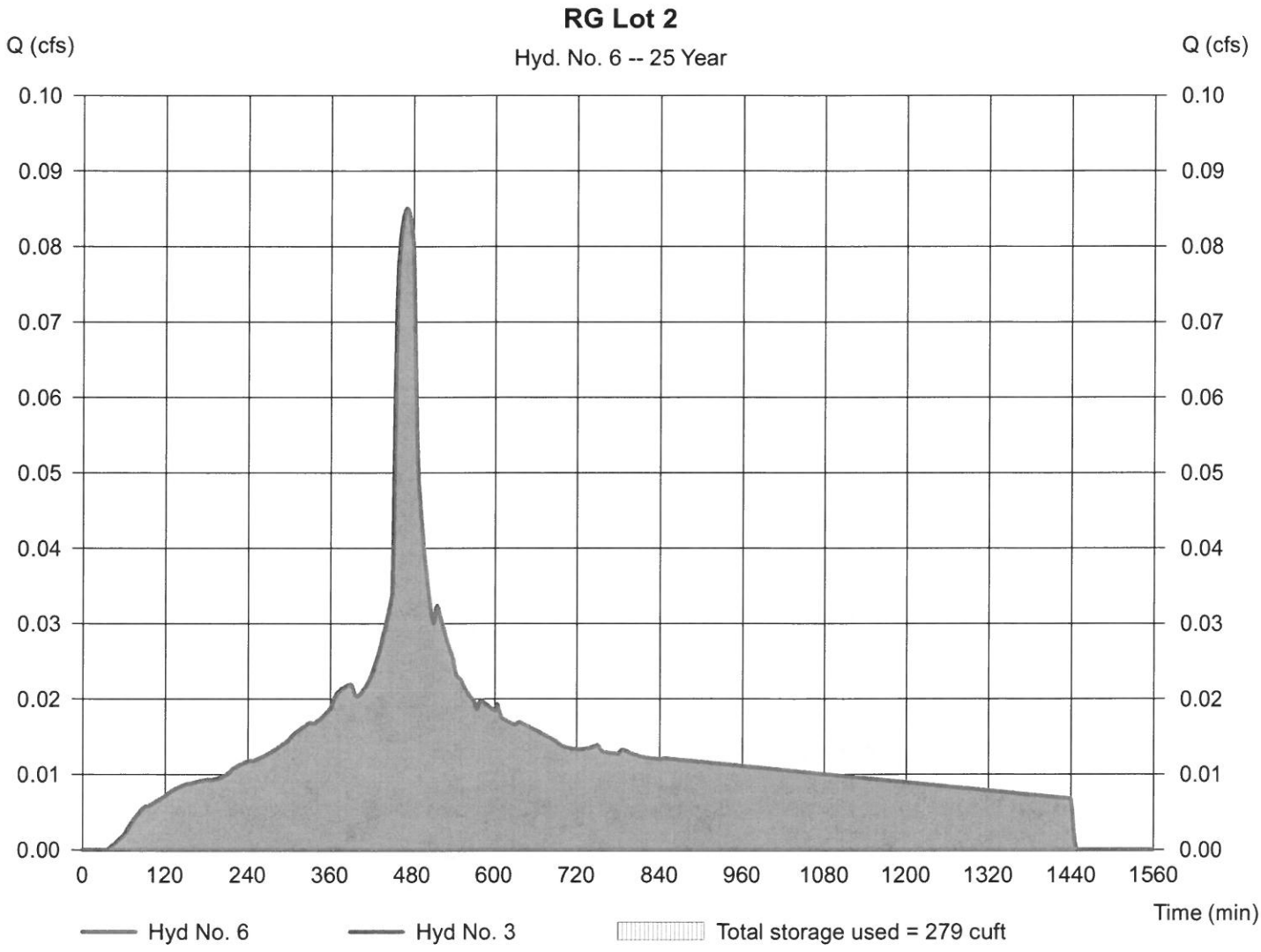
Hydrograph Report

Hyd. No. 6

RG Lot 2

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 25 yrs	Time to peak	= 136 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 102.94 ft
Reservoir name	= RG Lot 2	Max. Storage	= 279 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

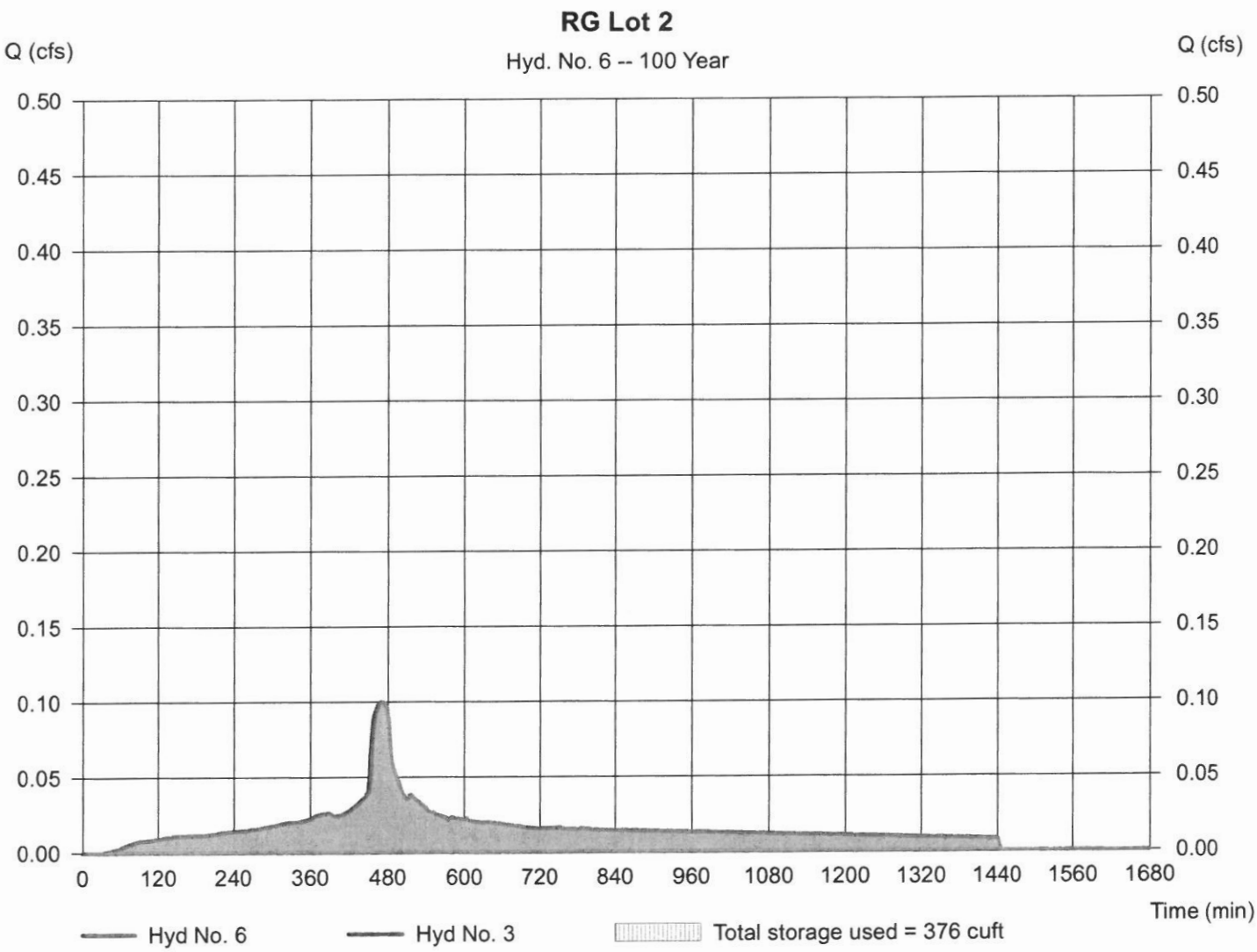
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Friday, Sep 13, 2013

Hyd. No. 6

RG Lot 2

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= 100 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 103.49 ft
Reservoir name	= RG Lot 2	Max. Storage	= 376 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Pond No. 3 - RG Lot 4

Pond Data

Trapezoid - Bottom L x W = 92.0 x 5.0 ft, Side slope = 3.00:1, Bottom elev. = 100.00 ft, Depth = 1.00 ft, Voids = 33.00%
Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 101.01 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	100.00	460	0	0
0.10	100.10	519	16	16
0.20	100.20	578	18	34
0.30	100.30	638	20	54
0.40	100.40	699	22	76
0.50	100.50	760	24	100
0.60	100.60	822	26	127
0.70	100.70	885	28	155
0.80	100.80	949	30	185
0.90	100.90	1,013	32	217
1.00	101.00	1,078	34	252
1.01	101.01	00	5	257
2.50	102.50	00	0	257
3.50	103.50	460	230	487

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	Inactive	Inactive	Inactive	Inactive
Span (in)	= 6.00	1.10	1.50	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 629.30	628.80	630.60	0.00
Length (ft)	= 10.00	10.00	10.00	0.00
Slope (%)	= 2.00	2.00	2.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 632.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.600 (by Contour)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	100.00	0.00	0.00	0.00	---	0.00	---	---	---	0.000	---	0.000
0.10	16	100.10	0.00	0.00	0.00	---	0.00	---	---	---	0.007	---	0.007
0.20	34	100.20	0.00	0.00	0.00	---	0.00	---	---	---	0.008	---	0.008
0.30	54	100.30	0.00	0.00	0.00	---	0.00	---	---	---	0.009	---	0.009
0.40	76	100.40	0.00	0.00	0.00	---	0.00	---	---	---	0.010	---	0.010
0.50	100	100.50	0.00	0.00	0.00	---	0.00	---	---	---	0.011	---	0.011
0.60	127	100.60	0.00	0.00	0.00	---	0.00	---	---	---	0.011	---	0.011
0.70	155	100.70	0.00	0.00	0.00	---	0.00	---	---	---	0.012	---	0.012
0.80	185	100.80	0.00	0.00	0.00	---	0.00	---	---	---	0.013	---	0.013
0.90	217	100.90	0.00	0.00	0.00	---	0.00	---	---	---	0.014	---	0.014
1.00	252	101.00	0.00	0.00	0.00	---	0.00	---	---	---	0.015	---	0.015
1.01	257	101.01	0.00	0.00	0.00	---	0.00	---	---	---	0.015	---	0.015
2.50	257	102.50	0.00	0.00	0.00	---	0.00	---	---	---	0.015	---	0.015
3.50	487	103.50	0.00	0.00	0.00	---	0.00	---	---	---	0.015	---	0.015

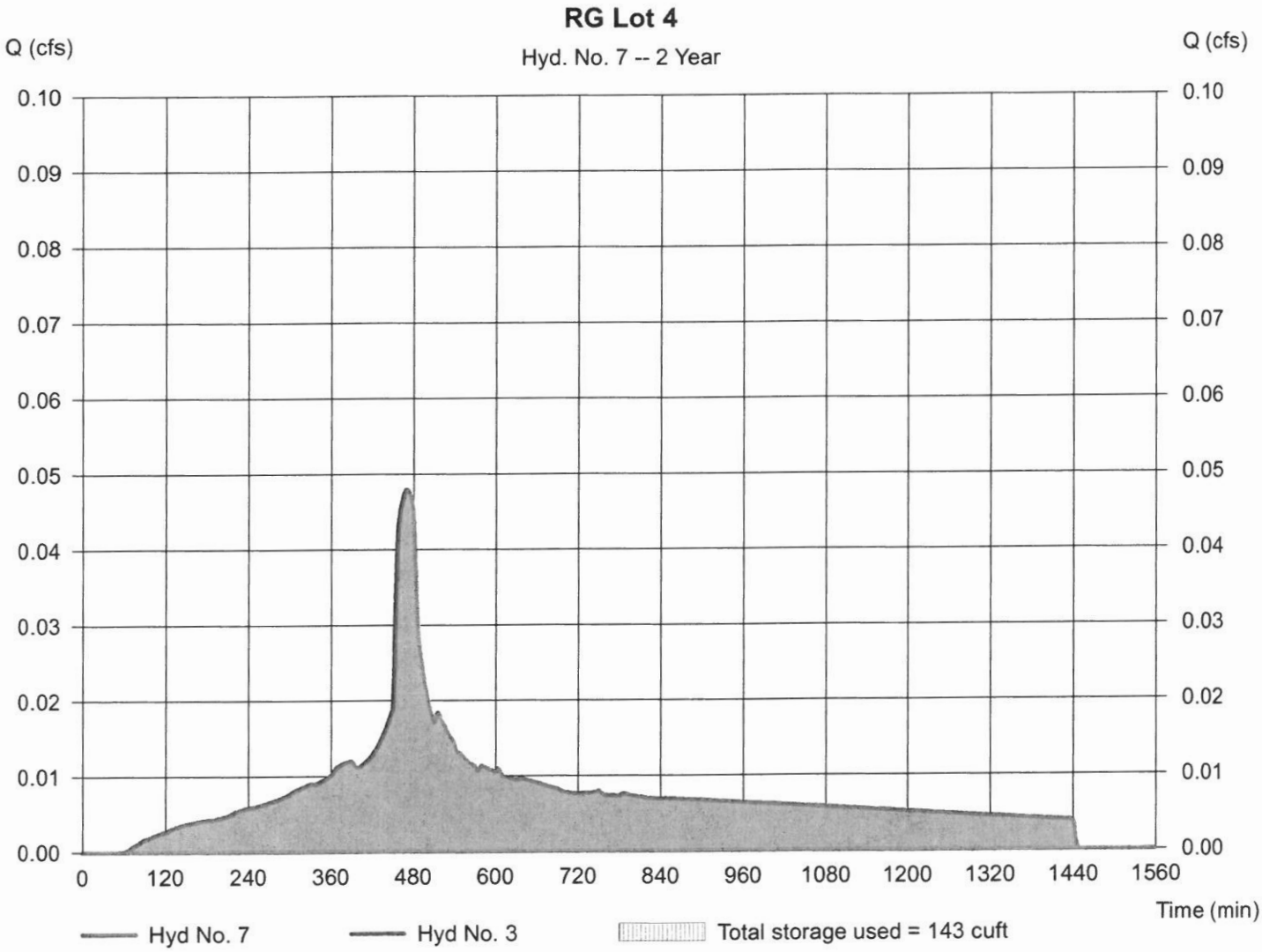
Hydrograph Report

Hyd. No. 7

RG Lot 4

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 244 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 100.66 ft
Reservoir name	= RG Lot 4	Max. Storage	= 143 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



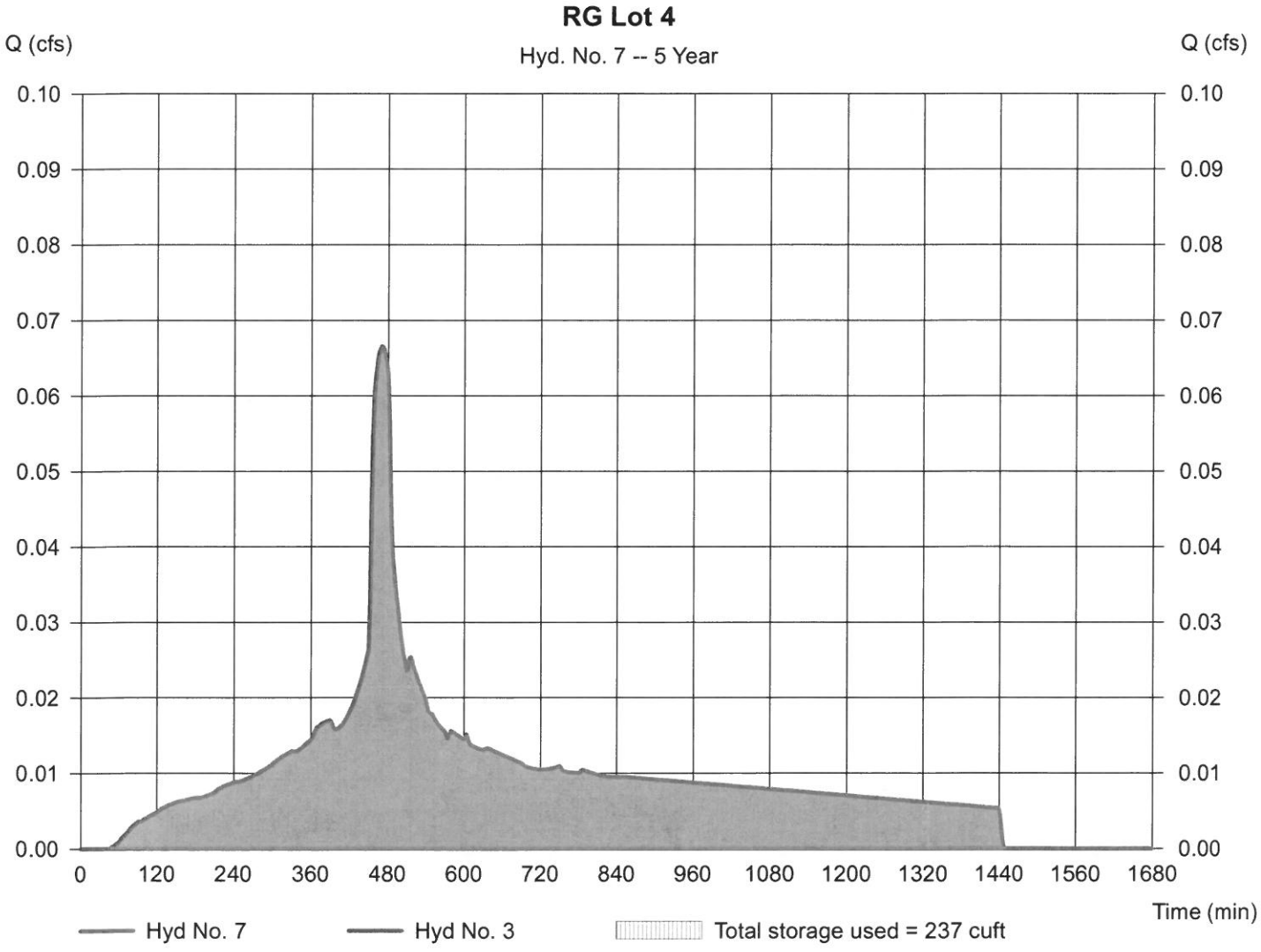
Hydrograph Report

Hyd. No. 7

RG Lot 4

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= 158 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 100.96 ft
Reservoir name	= RG Lot 4	Max. Storage	= 237 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

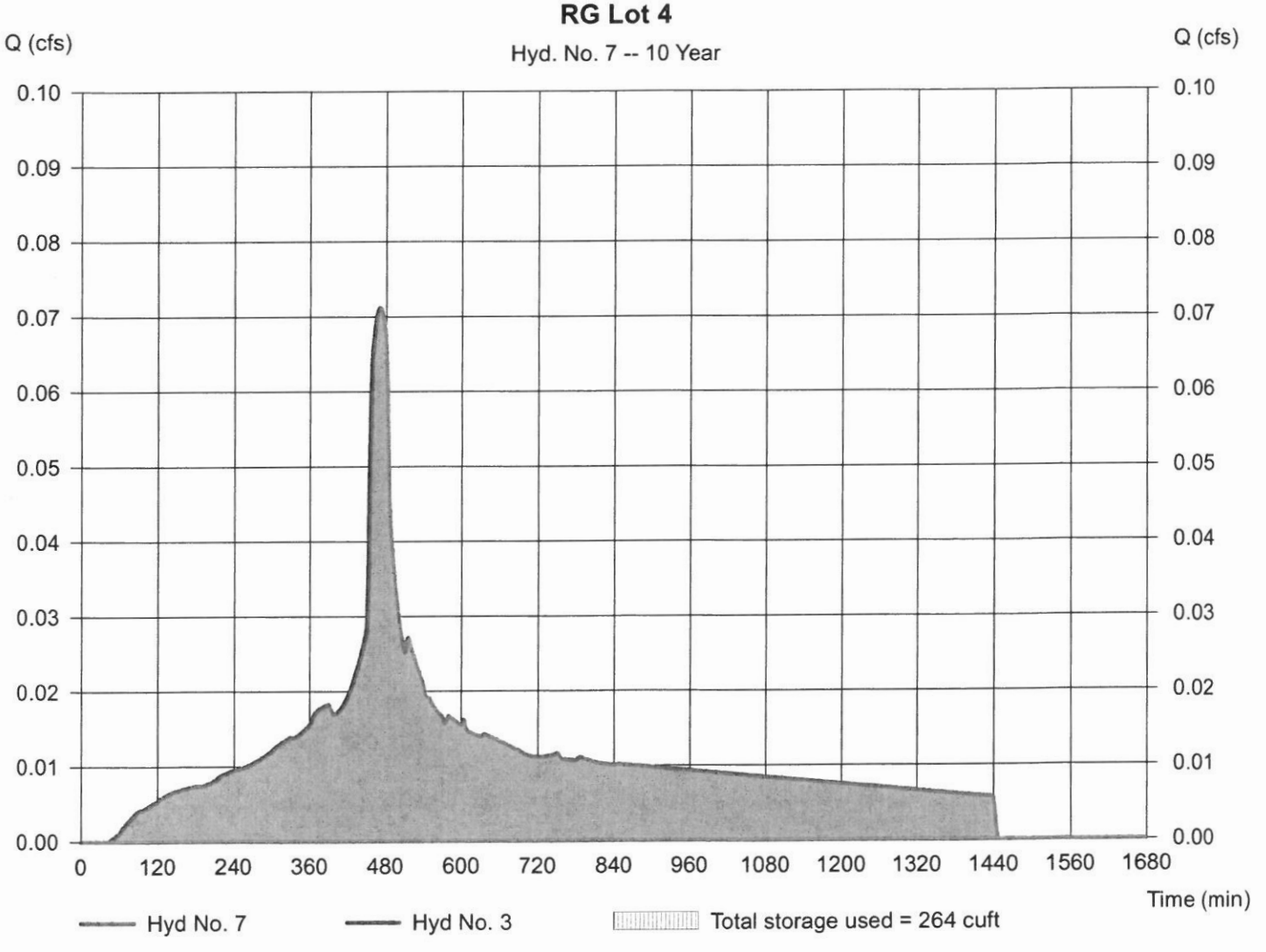
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Friday, Sep 13, 2013

Hyd. No. 7

RG Lot 4

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= 150 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 102.53 ft
Reservoir name	= RG Lot 4	Max. Storage	= 264 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



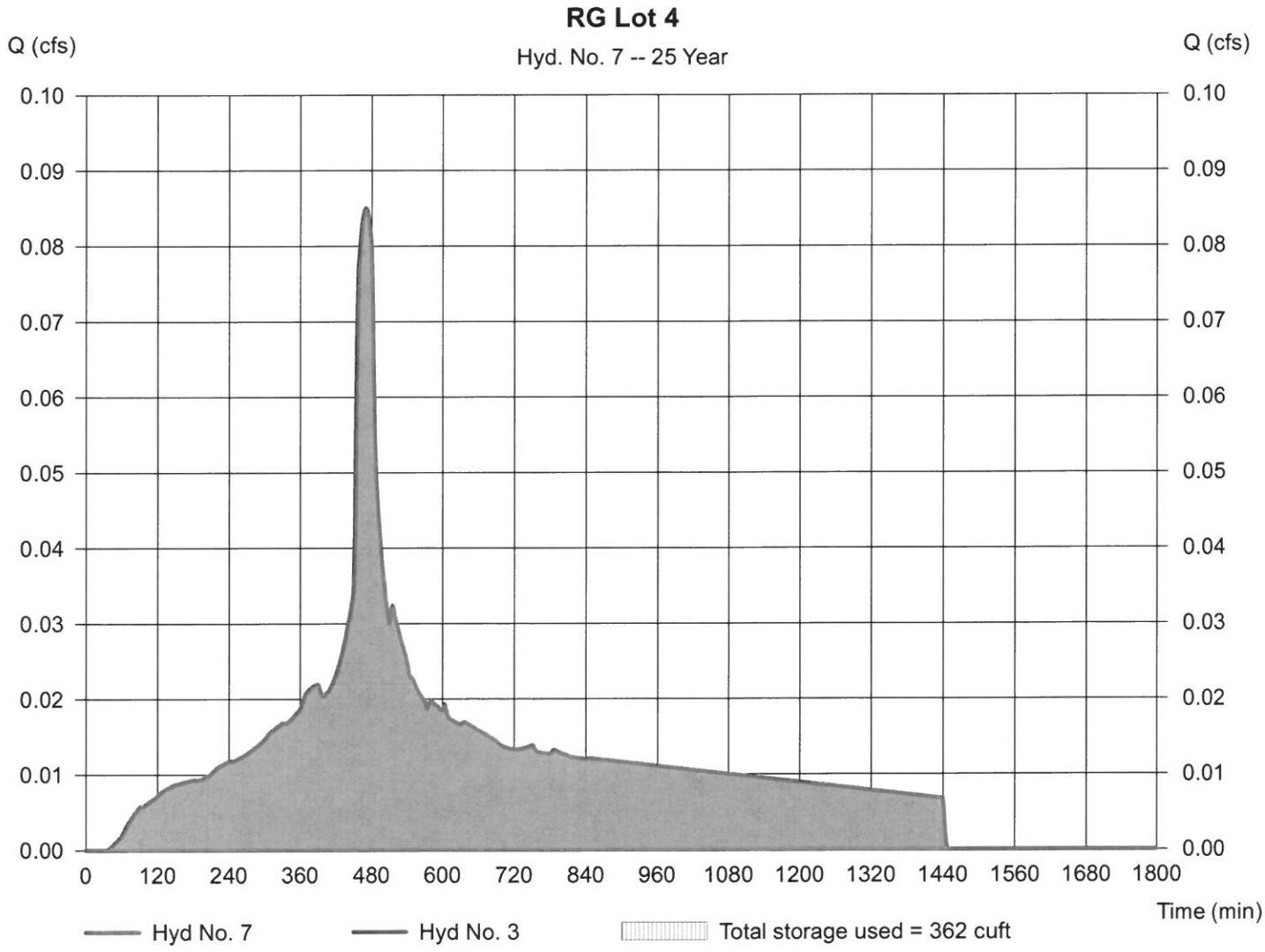
Hydrograph Report

Hyd. No. 7

RG Lot 4

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 25 yrs	Time to peak	= 126 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 102.96 ft
Reservoir name	= RG Lot 4	Max. Storage	= 362 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

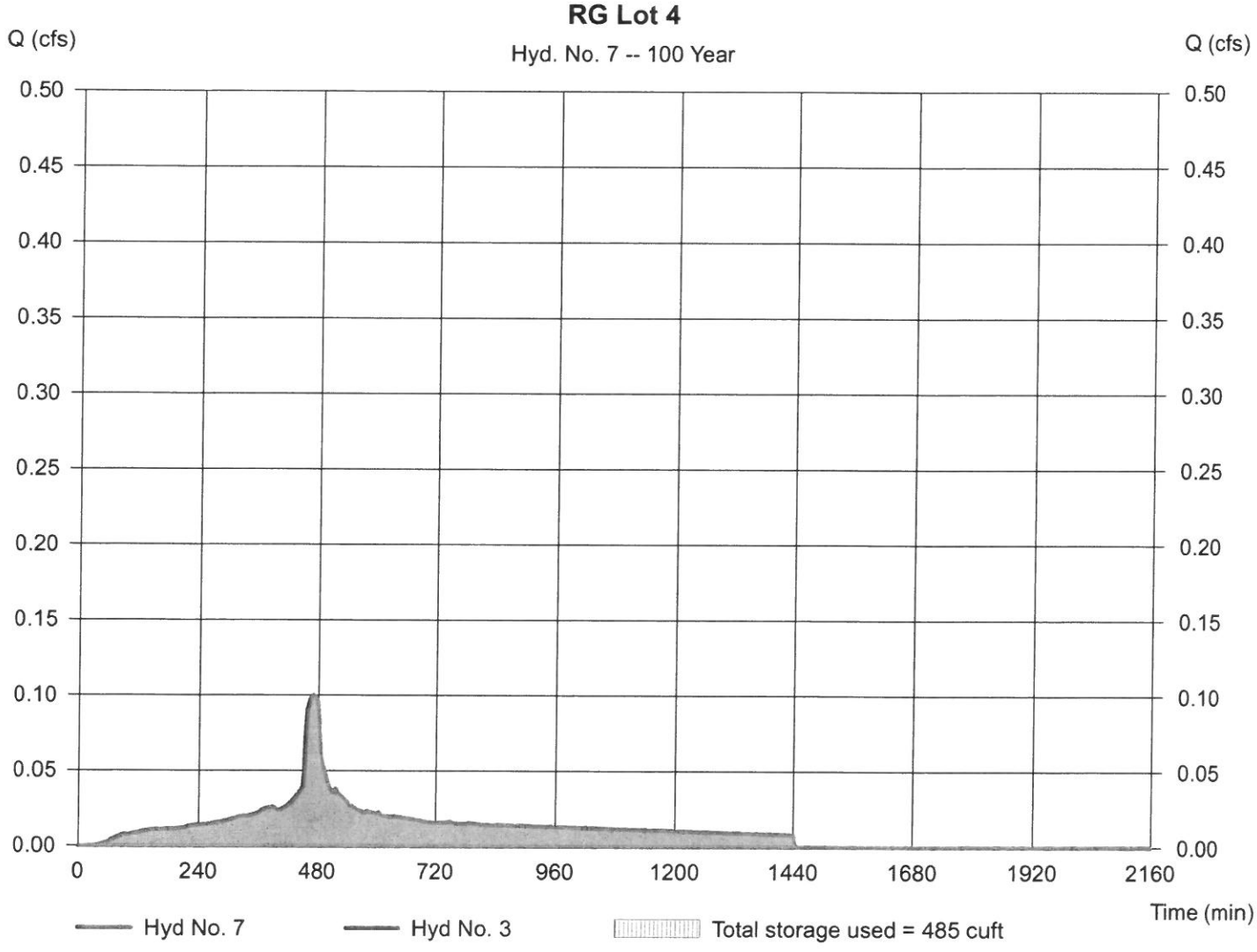
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Friday, Sep 13, 2013

Hyd. No. 7

RG Lot 4

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= 120 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 103.49 ft
Reservoir name	= RG Lot 4	Max. Storage	= 485 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Pond No. 4 - RG Lot 6 & 7

Pond Data

Trapezoid - Bottom L x W = 86.0 x 5.0 ft, Side slope = 3.00:1, Bottom elev. = 100.00 ft, Depth = 1.00 ft, Voids = 33.00%
Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 101.01 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	100.00	430	0	0
0.10	100.10	485	15	15
0.20	100.20	541	17	32
0.30	100.30	597	19	51
0.40	100.40	654	21	71
0.50	100.50	712	23	94
0.60	100.60	771	24	118
0.70	100.70	830	26	145
0.80	100.80	890	28	173
0.90	100.90	951	30	204
1.00	101.00	1,012	32	236
1.01	101.01	00	5	241
2.50	102.50	00	0	241
3.50	103.50	430	215	456

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	Inactive	Inactive	Inactive	Inactive
Span (in)	= 6.00	1.10	1.50	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 629.30	628.80	630.60	0.00
Length (ft)	= 10.00	10.00	10.00	0.00
Slope (%)	= 2.00	2.00	2.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 632.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.690 (by Contour)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	100.00	0.00	0.00	0.00	---	0.00	---	---	---	0.000	---	0.000
0.10	15	100.10	0.00	0.00	0.00	---	0.00	---	---	---	0.008	---	0.008
0.20	32	100.20	0.00	0.00	0.00	---	0.00	---	---	---	0.009	---	0.009
0.30	51	100.30	0.00	0.00	0.00	---	0.00	---	---	---	0.010	---	0.010
0.40	71	100.40	0.00	0.00	0.00	---	0.00	---	---	---	0.010	---	0.010
0.50	94	100.50	0.00	0.00	0.00	---	0.00	---	---	---	0.011	---	0.011
0.60	118	100.60	0.00	0.00	0.00	---	0.00	---	---	---	0.012	---	0.012
0.70	145	100.70	0.00	0.00	0.00	---	0.00	---	---	---	0.013	---	0.013
0.80	173	100.80	0.00	0.00	0.00	---	0.00	---	---	---	0.014	---	0.014
0.90	204	100.90	0.00	0.00	0.00	---	0.00	---	---	---	0.015	---	0.015
1.00	236	101.00	0.00	0.00	0.00	---	0.00	---	---	---	0.016	---	0.016
1.01	241	101.01	0.00	0.00	0.00	---	0.00	---	---	---	0.016	---	0.016
2.50	241	102.50	0.00	0.00	0.00	---	0.00	---	---	---	0.016	---	0.016
3.50	456	103.50	0.00	0.00	0.00	---	0.00	---	---	---	0.016	---	0.016

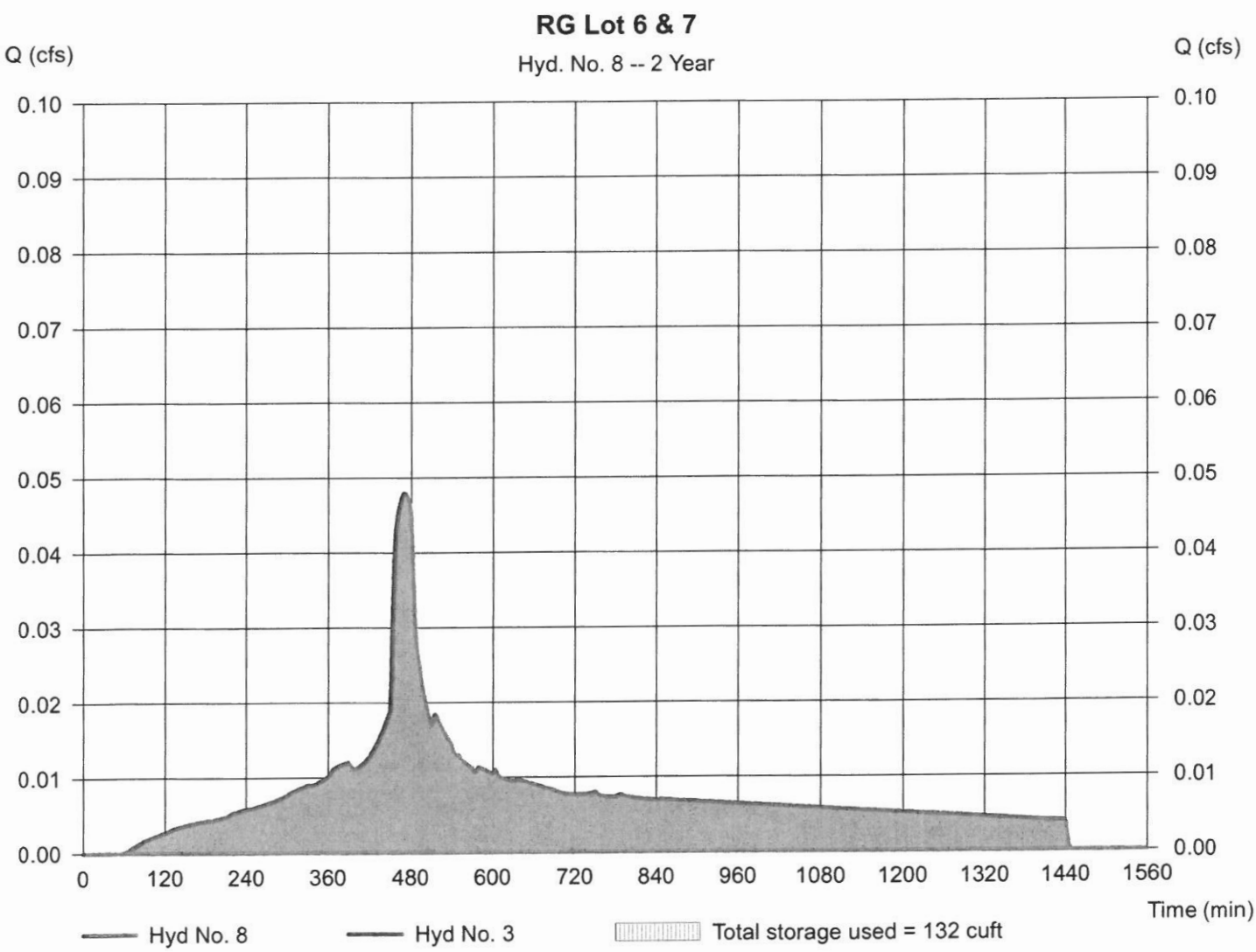
Hydrograph Report

Hyd. No. 8

RG Lot 6 & 7

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 284 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 100.65 ft
Reservoir name	= RG Lot 6 & 7	Max. Storage	= 132 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



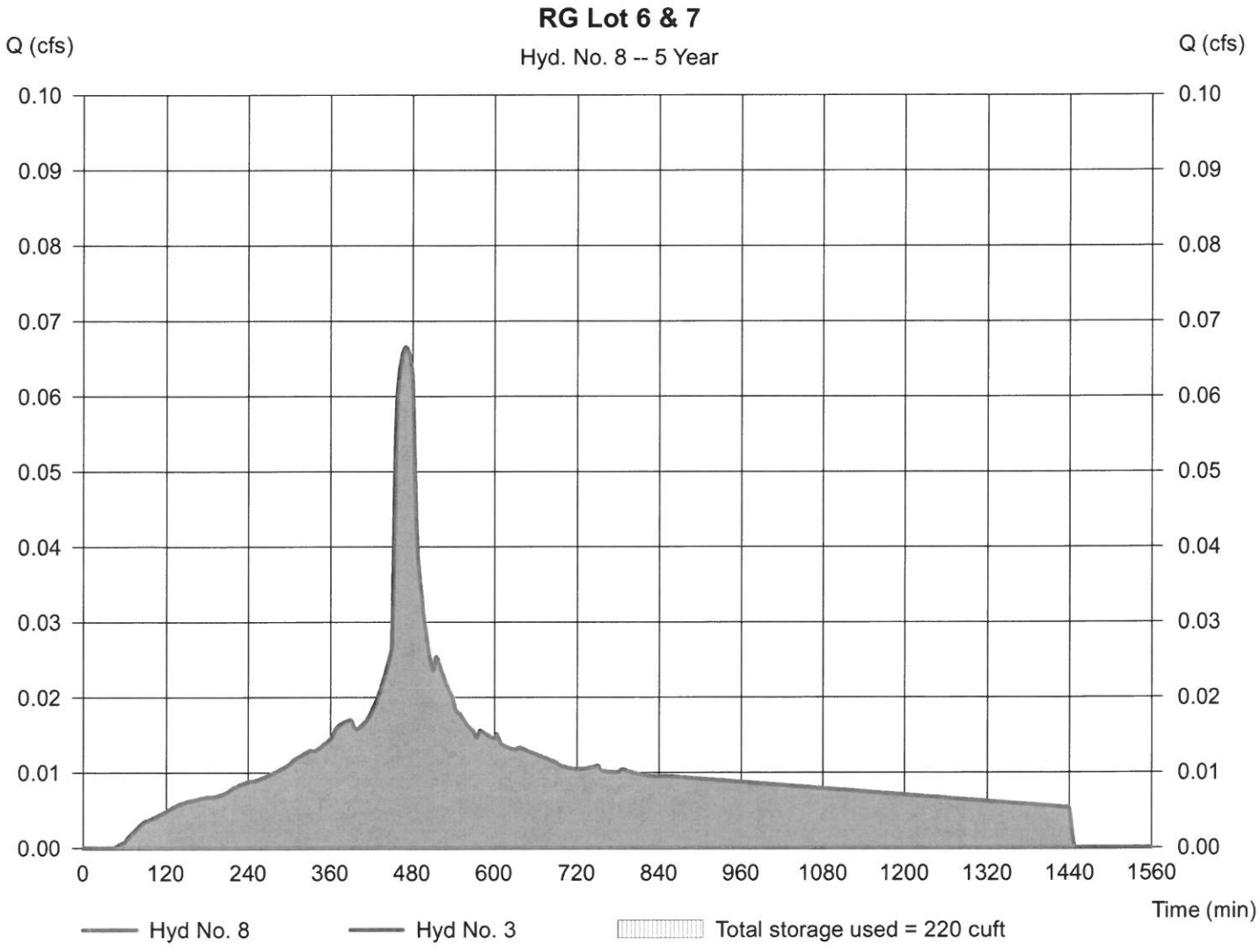
Hydrograph Report

Hyd. No. 8

RG Lot 6 & 7

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= 156 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 100.95 ft
Reservoir name	= RG Lot 6 & 7	Max. Storage	= 220 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

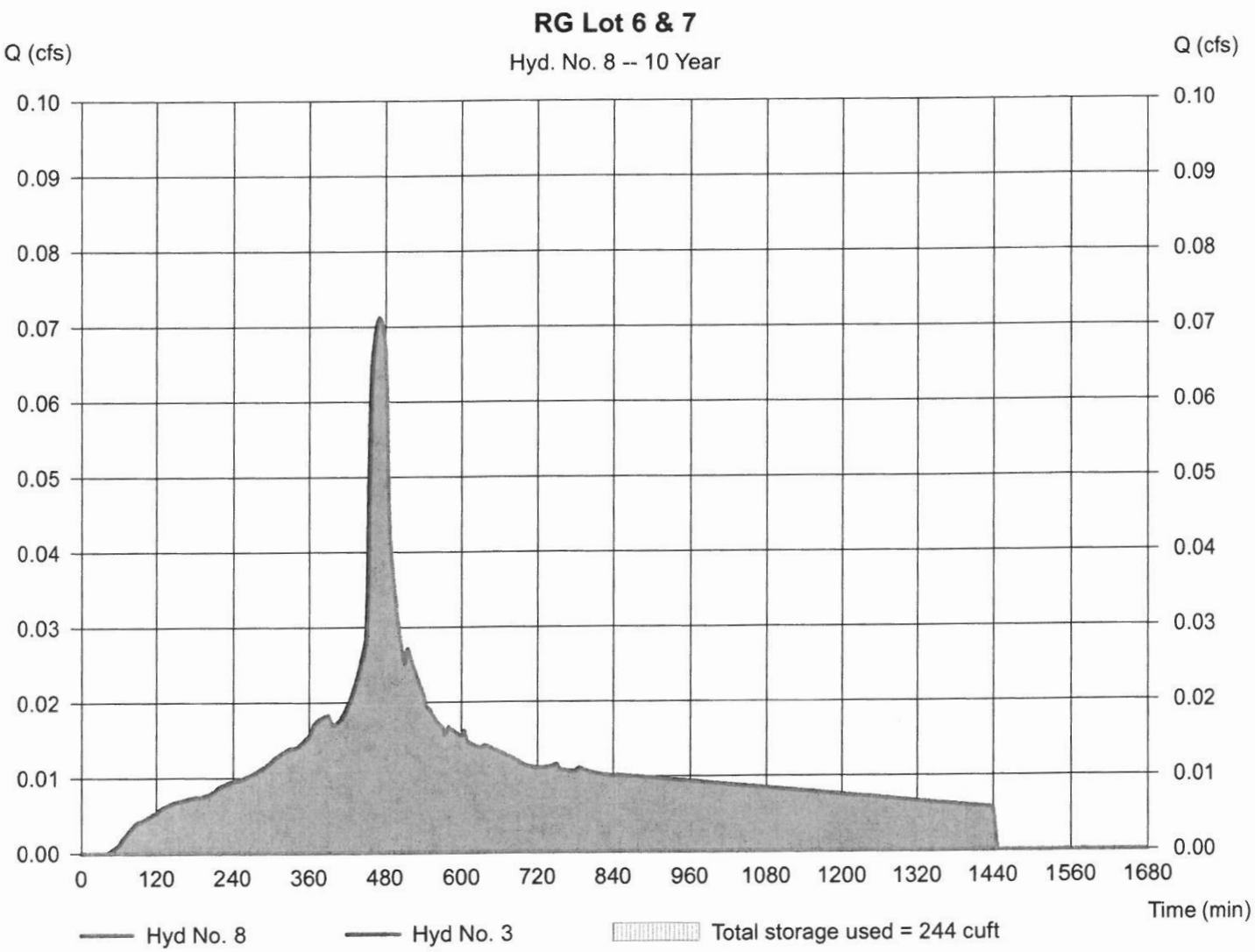
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Friday, Sep 13, 2013

Hyd. No. 8

RG Lot 6 & 7

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= 168 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 102.52 ft
Reservoir name	= RG Lot 6 & 7	Max. Storage	= 244 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



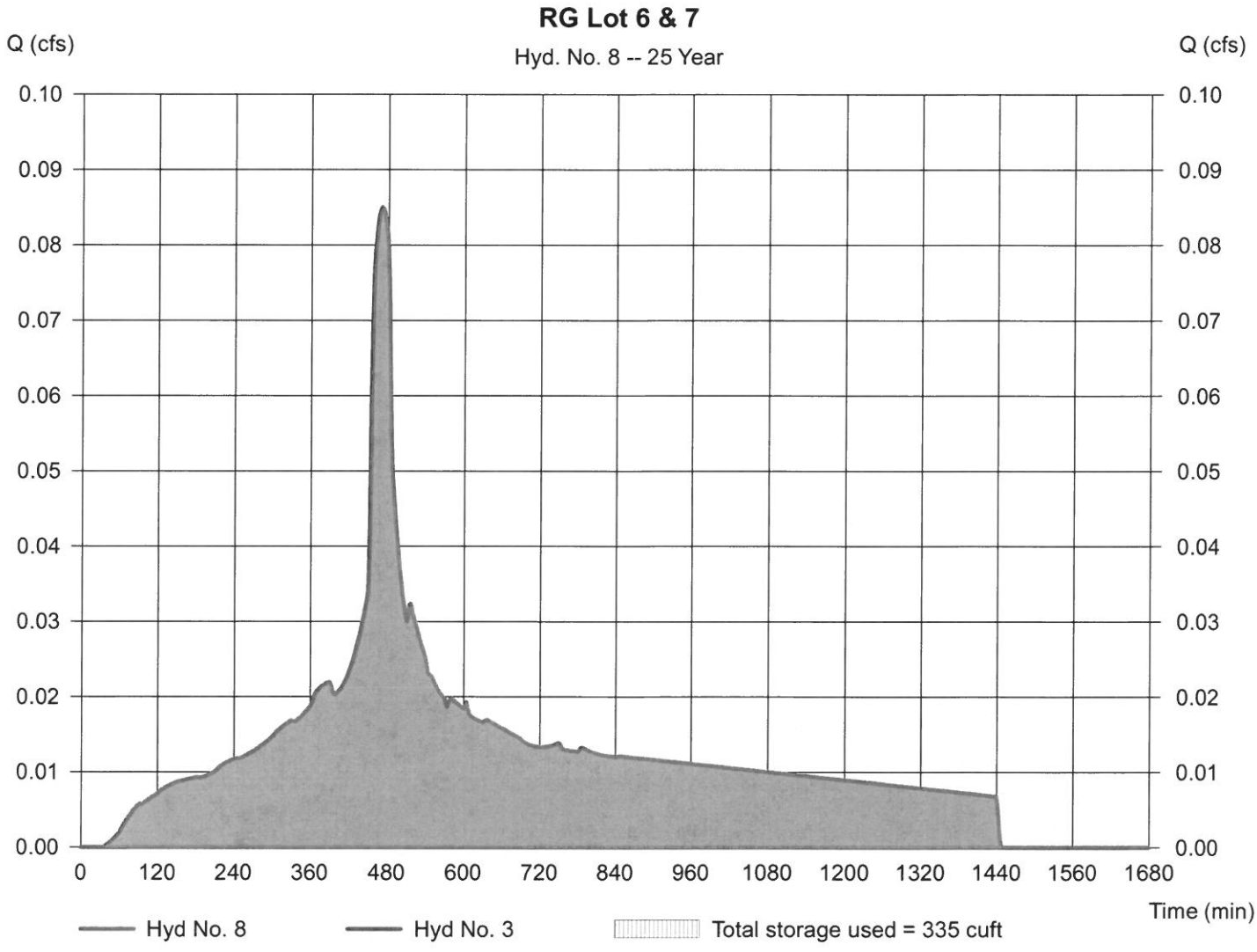
Hydrograph Report

Hyd. No. 8

RG Lot 6 & 7

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 25 yrs	Time to peak	= 126 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 102.94 ft
Reservoir name	= RG Lot 6 & 7	Max. Storage	= 335 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.022	2	480	397	------	------	------	Pre-Developed Lot
2	SCS Runoff	0.013	2	482	227	------	------	------	Pre-Developed Drive
3	SCS Runoff	0.071	2	470	1,010	------	------	------	Post-Developed Lot
4	SCS Runoff	0.036	2	470	505	------	------	------	Post-Developed Drive
5	Reservoir	0.000	2	162	0	3	102.50	196	RG Lot 1 & 5
6	Reservoir	0.000	2	142	0	3	102.52	204	RG Lot 2
7	Reservoir	0.000	2	150	0	3	102.53	264	RG Lot 4
8	Reservoir	0.000	2	168	0	3	102.52	244	RG Lot 6 & 7

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.033	2	480	551	------	------	------	Pre-Developed Lot
2	SCS Runoff	0.019	2	480	310	------	------	------	Pre-Developed Drive
3	SCS Runoff	0.085	2	470	1,213	------	------	------	Post-Developed Lot
4	SCS Runoff	0.043	2	470	607	------	------	------	Post-Developed Drive
5	Reservoir	0.000	2	126	0	3	102.92	268	RG Lot 1 & 5
6	Reservoir	0.000	2	136	0	3	102.94	279	RG Lot 2
7	Reservoir	0.000	2	126	0	3	102.96	362	RG Lot 4
8	Reservoir	0.000	2	126	0	3	102.94	335	RG Lot 6 & 7

STORMWATER-small-inf.gpw | Return Period: 25 Year | Friday, Sep 13, 2013

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.046	2	480	730	------	------	------	Pre-Developed Lot
2	SCS Runoff	0.026	2	480	406	------	------	------	Pre-Developed Drive
3	SCS Runoff	0.100	2	470	1,434	------	------	------	Post-Developed Lot
4	SCS Runoff	0.050	2	470	717	------	------	------	Post-Developed Drive
5	Reservoir	0.000	2	104	0	3	103.46	360	RG Lot 1 & 5
6	Reservoir	0.000	2	100	0	3	103.49	376	RG Lot 2
7	Reservoir	0.000	2	120	0	3	103.49	485	RG Lot 4
8	Reservoir	0.000	2	106	0	3	103.47	450	RG Lot 6 & 7

Pond Report

Pond No. 1 - RG Lot 1 & 5

Pond Data

Trapezoid - Bottom L x W = 69.0 x 5.0 ft, Side slope = 3.00:1, Bottom elev. = 100.00 ft, Depth = 1.00 ft, Voids = 33.00%
Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 101.01 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	100.00	345	0	0
0.10	100.10	390	12	12
0.20	100.20	435	14	26
0.30	100.30	481	15	41
0.40	100.40	528	17	58
0.50	100.50	576	18	76
0.60	100.60	624	20	96
0.70	100.70	673	21	117
0.80	100.80	723	23	140
0.90	100.90	774	25	165
1.00	101.00	825	26	191
1.01	101.01	00	4	195
2.50	102.50	00	0	195
3.50	103.50	345	173	368

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	Inactive	Inactive	Inactive	Inactive
Span (in)	= 6.00	1.10	1.50	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 629.30	628.80	630.60	0.00
Length (ft)	= 10.00	10.00	10.00	0.00
Slope (%)	= 2.00	2.00	2.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 632.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.050 (by Contour)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	100.00	0.00	0.00	0.00	---	0.00	---	---	---	0.000	---	0.000
0.10	12	100.10	0.00	0.00	0.00	---	0.00	---	---	---	0.009	---	0.009
0.20	26	100.20	0.00	0.00	0.00	---	0.00	---	---	---	0.011	---	0.011
0.30	41	100.30	0.00	0.00	0.00	---	0.00	---	---	---	0.012	---	0.012
0.40	58	100.40	0.00	0.00	0.00	---	0.00	---	---	---	0.013	---	0.013
0.50	76	100.50	0.00	0.00	0.00	---	0.00	---	---	---	0.014	---	0.014
0.60	96	100.60	0.00	0.00	0.00	---	0.00	---	---	---	0.015	---	0.015
0.70	117	100.70	0.00	0.00	0.00	---	0.00	---	---	---	0.016	---	0.016
0.80	140	100.80	0.00	0.00	0.00	---	0.00	---	---	---	0.018	---	0.018
0.90	165	100.90	0.00	0.00	0.00	---	0.00	---	---	---	0.019	---	0.019
1.00	191	101.00	0.00	0.00	0.00	---	0.00	---	---	---	0.020	---	0.020
1.01	195	101.01	0.00	0.00	0.00	---	0.00	---	---	---	0.020	---	0.020
2.50	195	102.50	0.00	0.00	0.00	---	0.00	---	---	---	0.020	---	0.020
3.50	368	103.50	0.00	0.00	0.00	---	0.00	---	---	---	0.020	---	0.020

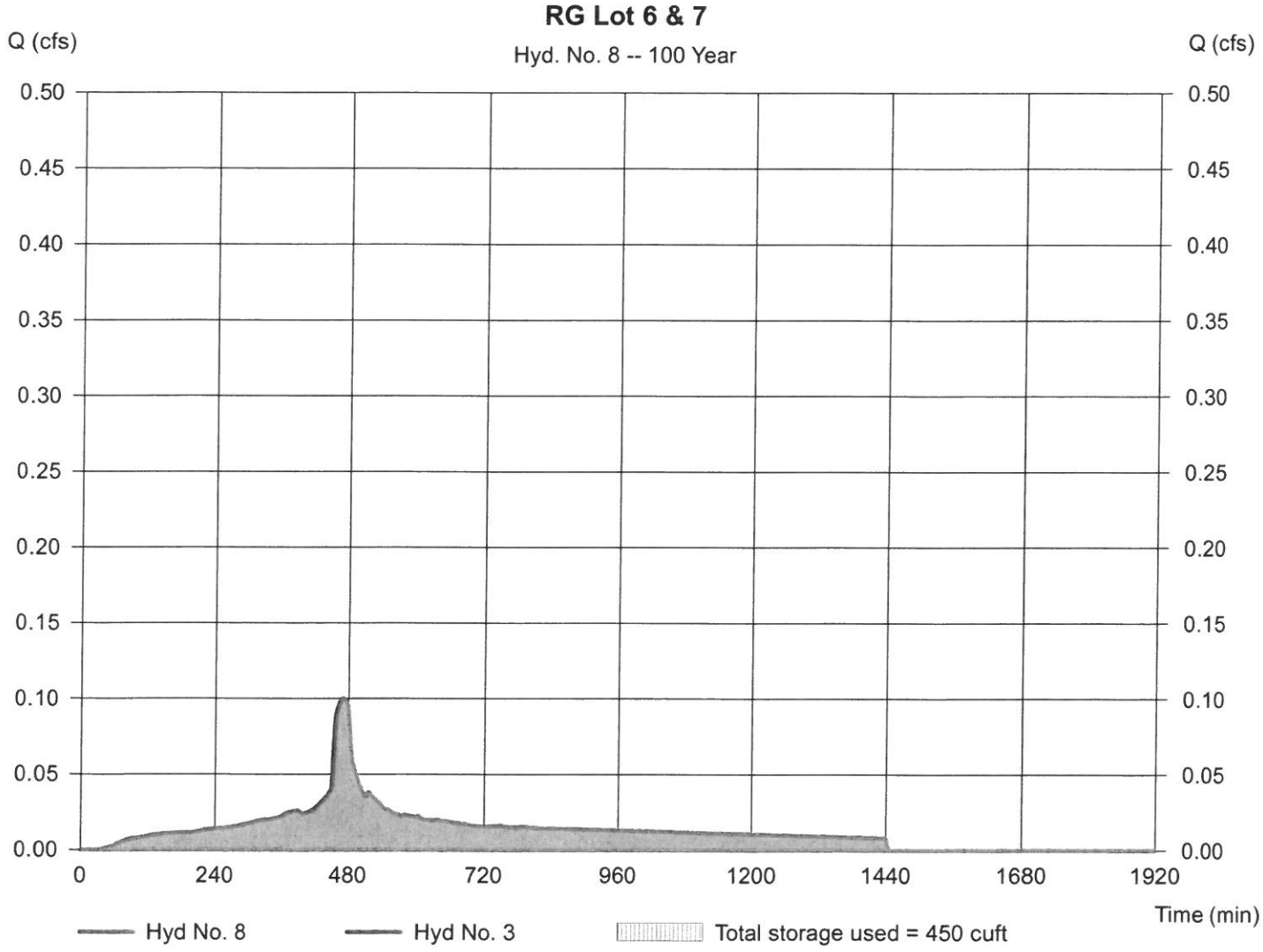
Hydrograph Report

Hyd. No. 8

RG Lot 6 & 7

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= 106 min
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - Post-Developed Lot	Max. Elevation	= 103.47 ft
Reservoir name	= RG Lot 6 & 7	Max. Storage	= 450 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

ALASKA
CALIFORNIA
COLORADO
FLORIDA
MISSOURI
OREGON
WASHINGTON
WISCONSIN

August 29, 2013

Mr. Kelly Pyrch
1332 Stonehaven Drive
West Linn, Oregon 97068

RE: REPORT OF GEOTECHNICAL ENGINEERING SERVICES FOR THE PROPOSED 1485 ROSEMONT SUBDIVISION WEST LINN, OREGON

Dear Mr. Pyrch:

This letter presents our geotechnical subsurface data collection, design recommendations, and construction considerations supporting the design and construction of the roadway improvements, utility installations, and stormwater infiltration for the proposed 1485 Rosemont Subdivision. The site is located at 1485 Rosemont Road in West Linn, Oregon, as shown on Figure 1. Our services are being performed based on the Shannon & Wilson, Inc., proposal No. 24-2-04528-001 dated February 25, 2013.

Scope of Services

We performed the following geotechnical services in accordance with the scope of services specified in the agreement referenced above. In general, our services included the following:

- Exploring the subsurface conditions and collecting soil samples from four test pits;
- Performing infiltration tests in six locations along this portion of the alignment and providing raw field infiltration rate data for use in stormwater facility design;
- Conducting laboratory testing to characterize the subsurface material and to develop engineering parameters for evaluation;
- Performing geotechnical analyses including the development of earthquake design parameters and pavement recommendations;
- Providing recommendations for site preparation, grading, structural fill, and compaction criteria; and
- Providing this written report summarizing our explorations, data collection, geotechnical analyses, conclusions, and recommendations.

3990 COLLINS WAY, SUITE 100
LAKE OSWEGO, OREGON 97035-3480
PHONE: 503-210-4750
FAX: 503-210-4890
www.shannonwilson.com

Results of the geotechnical analyses and our geotechnical recommendations for the location listed above are in the following sections.

Project Understanding

We understand that the site will be split into seven residential lots that have a total area of approximately 1.9 acres. Three stormwater quality and detention facilities, two residential access roads to Rosemont Road, and some proposed utilities will be included in this subdivision development. Individual lots and the associated development will be designed at a later date. Applicable design elements include site grading with cuts and fills, road construction, installation of pavements, and stormwater infiltration design. We have assumed that the facilities will be constructed in accordance with the applicable City of West Linn regulations.

In general, we understand that the roadway construction will require minor grading with cuts and fills less than 4 feet. We understand that the proposed infiltration facilities will consist of rain gardens on each proposed lot.

SUBSURFACE INVESTIGATION

Field Explorations

The site explorations consisted of shallow test pits at the locations shown on Figure 2. Test pits TP-1 through TP-4 were excavated on August 15, 2013, to depths between 8.5 and 9.5 feet. Test pits TP-5 through TP-7 were excavated on August 27, 2013, to depths between 7 and 8 feet. A Shannon &Wilson geologist was present during excavation to collect and log samples of soils and conduct infiltration testing. The test pits were excavated with backhoes provided and operated by Western States Soil Conservation (TP-1 through TP-4) and Scott Dahme (TP-5 through TP-7). Details of excavations and logs of soil samples are presented in Attachment A.

Test pits were loosely backfilled and tamped with the excavator bucket after each excavation. During construction, if the test pit excavations are in structural areas and if potential settlement is not acceptable, the material should be removed and re-compacted as structural fill.

Infiltration Testing

Infiltration testing was completed during the explorations at six locations in general accordance with the Encased Falling Head Method as described in Appendix F of the 2008 City of Portland Stormwater Management Manual (Appendix F). Tests were completed in a 6-inch-diameter standpipe embedded in the base of a test pit. The test areas were saturated prior to testing for 1 to 4 hours, depending on the test location. Two to three tests were completed at each location to confirm saturation and consistent rates.

Approximate infiltration test locations are shown on Figure 2, and results are provided in Attachment B. Infiltration rates discussed above and in Attachment B are raw, field-measured rates. Data should be evaluated, and the appropriate safety and design factors provided in the Portland Stormwater Management Manual should be applied to the field infiltration rates during design of the proposed facility.

Laboratory Testing

Soil samples obtained during field explorations were examined in the laboratory. Physical characteristics of the samples were noted, and field classifications were modified as necessary in accordance with the terminology presented in Attachment A, Figure A1. During the course of the examination, representative samples were selected for further testing. The soil-testing program included particle-size analyses and Atterberg Limits determinations. These tests are described in the following paragraphs. All test procedures were performed in general accordance to applicable ASTM International standards. The term "general accordance" means that certain local and common descriptive practices and methodologies have been followed.

Atterberg Limits Determinations

Atterberg Limits were determined for selected samples in accordance with ASTM D4318. This analysis yields index parameters of the soil that are useful in soil classification as well as in engineering analyses. Atterberg Limits tests include liquid and plastic limits. The results are plotted on Figure A8.

Grain-Size Analyses

Grain-size analyses were performed on selected samples of soil taken below three of the infiltration test locations in general accordance with ASTM D422, Standard Test Method for Particle-Size Analysis of Soils. Results of the grain-size analyses are plotted on grain-size distribution curves presented in Figure A9, Grain-Size Distribution.

SUBSURFACE CONDITIONS

Based on the materials encountered in test pits TP-1 through TP-7, the subsurface soils at the site have been grouped into four primary units: Fill, Colluvium, Residual Soil, and Decomposed Basalt. Interpretation of the subsurface conditions is based on data obtained from the test pits and regional information from published sources. The soil units are described as follows:

Fill

The fill was encountered in TP-2 on Lot 5 and consisted of medium stiff brown lean clay and silt with sand content (CL/ML). The fill had low to medium plasticity with few organics. The fill in TP-2 was 2 feet thick.

Colluvium

The colluvium at the site was present in all the test pits at the surface or underlying the fill and typically extended to depths between 4.5 and 6 feet below the ground surface. The colluvium consisted of stiff to very stiff, gray brown to red brown elastic silt (MH) with medium plasticity.

Residual Soil

The residual soil was encountered in all of the test pits underlying the colluvium layer and was between 1 and 5 feet thick. TP-1, TP-6, and TP-7 were terminated in this layer at depths between 7 and 9.5 feet below the ground surface (bgs). The residual soil consisted of very stiff to hard red-brown and gray elastic silt (MH) with medium plasticity.

Decomposed Basalt

Decomposed Columbia River Basalt was encountered below the residual soil in test pits TP-2 through TP-5 at depths between 6 and 8.4 feet bgs. This layer consists of very low to low strength, tan and red-brown fine grained basalt. Joints were closely spaced and rough planar with joint staining. The material was slightly to moderately vesicular.

These generalized geologic units were grouped based on engineering properties and their distribution in the subsurface. Variations in subsurface conditions may exist between the

locations of the test pits. During our excavations, no groundwater was encountered seeping into the test pits.

SEISMIC DESIGN CONSIDERATIONS

In accordance with the site classification criteria set forth in the 2012 International Building Code (IBC), we recommend a Site Class D for the site based upon the borings explored on the site near the proposed retaining walls. The following paragraphs describe the required seismically related hazard evaluations on site.

Strong Ground Motions

The maximum considered earthquake (MCE) ground motions at the bedrock level of S_S = 0.92 g and S_1 = 0.33 g were obtained from the United States Geological Survey (USGS) Earthquake Hazards Program – 2002 interactive deaggregation website. Based on the site class and these values, the design earthquake spectral response coefficients are Fa = 1.13 and Fv = 1.74. The ground motions are based on a probabilistic hazard analysis performed by the USGS and the seismic site classification of the project site.

Fault Rupture

In the vicinity of the project site, the nearest mapped faults are as follows

- Oatfield fault, about 2.7 miles to the northeast
- Canby Molalla fault, about 3.4 miles to the southwest
- Portland Hills Fault, about 3.5 miles to the northeast
- Damascus-Tickle Creek fault, about 5.3 miles to the northeast
- East Bank fault, about 7.6 miles to the northeast

All five faults are designated as Class A by the USGE and are thought to have been active within the last 1.6 million years (Personius, 2002). Due to their mapped distance from the site, it is our opinion that the risk for fault rupture at the site is low.

Other Seismic Risks

Due to the shallow weathered bedrock at the site and the geography, it is our opinion that the risk for liquefaction and lateral spread at the site is minimal. Tsunmai and seiche are not a risk at the site.

CONCLUSIONS AND RECOMMENDATIONS

General

Based upon the subsurface conditions encountered in our explorations and information provided by Mr. Kelly Pyrch and Mackenzie, we have developed the following geotechnical engineering recommendations for the proposed subdivision development.

Pavement Recommendations

We are providing asphalt concrete (AC) pavement design for the two private, residential shared driveways that will provide access to Rosemont Road from each side of the proposed subdivision. The pavement was designed using the 2011 ODOT Pavement Design Guide (ODOT PDG) and the 1993 AASHTO Guide for Design of Pavement Structures procedures. For new pavement, ODOT PDG requires a minimum 20-year design life for AC. Subgrade preparation, pavement, base course materials, and installation should be completed in accordance with Oregon Standard Specifications for Construction (OSSC).

Traffic Analysis

We estimated the traffic volume to be 24 ADT (average daily traffic) with a design growth rate of 2 percent. No actual FHWA vehicle classes (based on number of axles) were obtained; therefore, the following vehicle breakdown was assumed, as shown in Table 1.

TABLE 1: ASSUMED SUMMARY OF PERCENTAGE OF VEHICLE CLASSES

Vehicle Type and Assumption	FHWA Vehicle Class	Percentage Vehicle of ADT
24 Passenger Cars a day (2-Axle)	1,2, or 3	99.94
5 Emergency Vehicles a year (4-Axle)	7	0.06

ODOT one-way truck conversion factors and lane distribution factors were used to estimate the design equivalent single-axle loads (ESALs). For a 20-year design life, the estimated design ESAL was 1,485.

Subgrade

The anticipated primary soil type exposed at pavement subgrade will be stiff to very stiff silt to clayey silt. We recommend that the subgrade be "proof-rolled" in the presence of a qualified geotechnical engineer or civil engineering representative to identify any soft or weak

spots prior to the placement of pavement material. The subgrade should be prepared as described under "Geotechnical Construction Considerations." Soft or weak spots should be overexcavated and replaced with compacted granular material.

Asphalt Concrete Pavement Section Design Parameters

The following additional assumptions should be reviewed by the design team to evaluate their suitability for this project. Changes in the assumptions will affect the corresponding pavement section recommendations.

- Subgrade Resilient Modulus (M_R) = 5,000 psi
- Design Life: 20 years
- Standard Deviation = 0.49
- Loss of Serviceability = 1.7 (initial = 4.2, terminal = 2.5)
- Reliability = 75 percent
- Drainage Coefficient = 1.0 (good)

Recommended Asphalt Concrete Pavement Section

Based on these assumptions, we recommend that all AC pavements for the proposed driveways be constructed with the properties as presented in Table 2.

TABLE 2: RECOMMENDED AC PAVEMENT SECTION

Material	Thickness (in)	Material Requirements
AC	3	Level 2, ½-inch dense HMAC, PG 64-22
Base Rock	8	Dense graded base

Aggregate base material should meet Section 02630 of ODOT OSSC. The asphalt grade was selected based on Table J-2 of the 2011 ODOT PDG for urban highways with ESALs less than 1 million.

GEOTECHNICAL CONSTRUCTION CONSIDERATIONS

Site Preparation

Site preparation will include: (1) clearing, grubbing, and roadside cleanup, (2) removal of existing structures and underground utilities, and (3) subgrade preparation and excavation. Based on our explorations, the average depth of stripping will be approximately 6 inches to remove the topsoil and pavement; however, deeper excavations may be required locally.

After stripping and excavating to the proposed subgrade level, as required, the site should be proof-rolled with a fully loaded 10- to 12-yard dump truck, another suitably loaded rubber-tired construction vehicle, or self-propelled compaction equipment weighing at least 6 tons. Soils that are observed to rut or deflect excessively under the moving load, or are otherwise judged to be unsuitable, should be over-excavated and replaced with properly compacted fill. The proof-rolling and overexcavation activities should be witnessed by a representative of the geotechnical or civil engineer.

Subgrade areas should be cleanly cut to firm undisturbed soil. Proof-rolling of excavations is likely not appropriate during wet-weather grading in order to avoid disturbance of moisture-sensitive soils. Should construction take place during wet weather, we recommend that a representative of the geotechnical or civil engineer be present to observe the subgrade in order to evaluate whether additional preparation is indicated.

Cut-and-Fill Slopes

Unshored, temporary excavation slopes may be used where planned excavation limits will not undermine existing roadways and structures, interfere with other construction, or extend beyond construction limits. The stability of excavated slopes will depend on the following factors: (1) actual angle of slope, (2) the presence of groundwater; (3) the type and density of the soils; (4) the depth of excavation; (5) surcharge loading adjacent to the excavation, such as that from excavated material, existing facilities, or construction equipment; and (6) the weather and season of year. For planning purposes, we recommend that temporary slopes be excavated at no steeper than 1.5 horizontal to 1 vertical (1.5H:1V). Temporary cut slopes are typically the responsibility of the contractor and should comply with applicable local, state, and federal safety regulations, including the current OSHA Excavation and Trench Safety Standards. Permanent earth slopes should be cut to 2H:1V or flatter and protected from erosion.

If wetted by surface water, the slopes may be subject to erosion. Slope protection should be designed and properly installed, as appropriate, to reduce erosion effects.

Wet Weather Construction

Excavation and construction operations may expose the on-site silty surficial soils to inclement weather conditions. These soils can be easily disturbed when wet, and the stability of exposed soils may rapidly deteriorate due to a change in moisture content (i.e. wetting or drying) or the

actions of heavy or repeated construction traffic. Accordingly, foundation and pavement area excavations should be adequately protected from the elements and from the actions of repetitive or heavy construction loadings.

Weathered Rock Excavation

Based on our explorations, weathered rock excavation may be required at the site depending on the proposed grading plans. Rock descriptions and depths where rock was encountered along the alignment are included in the discussion above and test pit logs included in Appendix A. In general, the weathered basalt was easily excavatable with conventional equipment.

Erosion Control

Erosion control work consists of furnishing, installing, maintaining, removing, and disposing of water sediments and erosion-control items in accordance with City Standard Specifications. Other erosion control items including seeding, fertilizing, and mulching construction areas should also be done in accordance with City requirements. Erosion control is typically the responsibility of the contractor during construction.

Structural Fill Material and Placement

On-site sand silt may be used for structural fill, provided that it meets these requirements, and topsoil, pavement, and cobbles larger than 6 inches are removed prior to placement. Structural fill material should meet the requirements in ODOT OSSC, Section 00330.12, and consist of relatively well-graded soils that are free of debris and organic matter and that can be compacted to the specified density. Typical structural fill materials include clean sand, gravel, washed rock, crushed rock, quarry spalls, well-graded mixtures of sand and gravel (commonly called "gravel borrow" or "pit-run"), and miscellaneous mixtures of silt, sand, and gravel. We recommend not using sand or rounded gravel as structural fill material. The maximum particle size should be restricted to 6 inches. If construction occurs during wet weather, fill materials should meet the requirements of ODOT OSSC, Section 00330.14, and contain less than 5 percent material passing the No. 200 sieve.

Structural fill should be placed in maximum lifts of 8 inches of loose material and should be compacted to within 2 percentage points of the optimum moisture content value in accordance with ASTM D1557 (modified proctor). If water must be added, it should be uniformly applied and thoroughly mixed into the soil or granular material by disking or scarifying. Each lift of the

compacted fill should be tested by a representative of the geotechnical engineer prior to placement of subsequent lifts. Fill should extend horizontally outward from the exterior perimeter of the pavement at a distance equal to the height of the fill or 3 feet, whichever is greater, prior to sloping.

Drainage Considerations

Water should not be allowed to collect on prepared subgrade during construction. Positive site drainage should be maintained throughout construction activities. Overexcavated or graded excavated areas should be sloped to facilitate removal of any collected rainwater, perched groundwater, or surface runoff.

LIMITATIONS

The analyses, conclusions, and recommendations contained in this report are based upon site conditions as they presently exist and further assume that the test pits are representative of subsurface conditions throughout the site, i.e., the subsurface conditions everywhere are not significantly different from those disclosed by the field explorations.

If, during construction, subsurface conditions different from those encountered in the field explorations are observed or appear to be present beneath excavations, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary. If there is a substantial lapse of time between the submission of this report and start of work at the site, or if conditions have changed due to natural causes or construction operations at or adjacent to the site, it is recommended that this report be reviewed to determine the applicability of these conclusions and recommendations, considering the changed conditions and the elapsed time.

We recommend that Shannon & Wilson review the geotechnical portions of the construction plans and specifications, especially those parts that address embankments and earthwork, to determine if they are consistent with our recommendations.

This letter is prepared for the exclusive use of the Mr. Pyrch and Mackenzie and their design team for the design and construction of the proposed subdivision roadway and stormwater system construction. Unanticipated soil conditions are commonly encountered and cannot fully be determined by merely taking soil samples from geotechnical test pits. Such unexpected

conditions frequently require that additional expenditures be made to attain properly constructed projects. This letter is not as a warranty of subsurface conditions described herein.

Please note that the scope of our services did not include any environmental assessment or evaluation regarding the presence or absence of hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around the project site.

Sincerely,

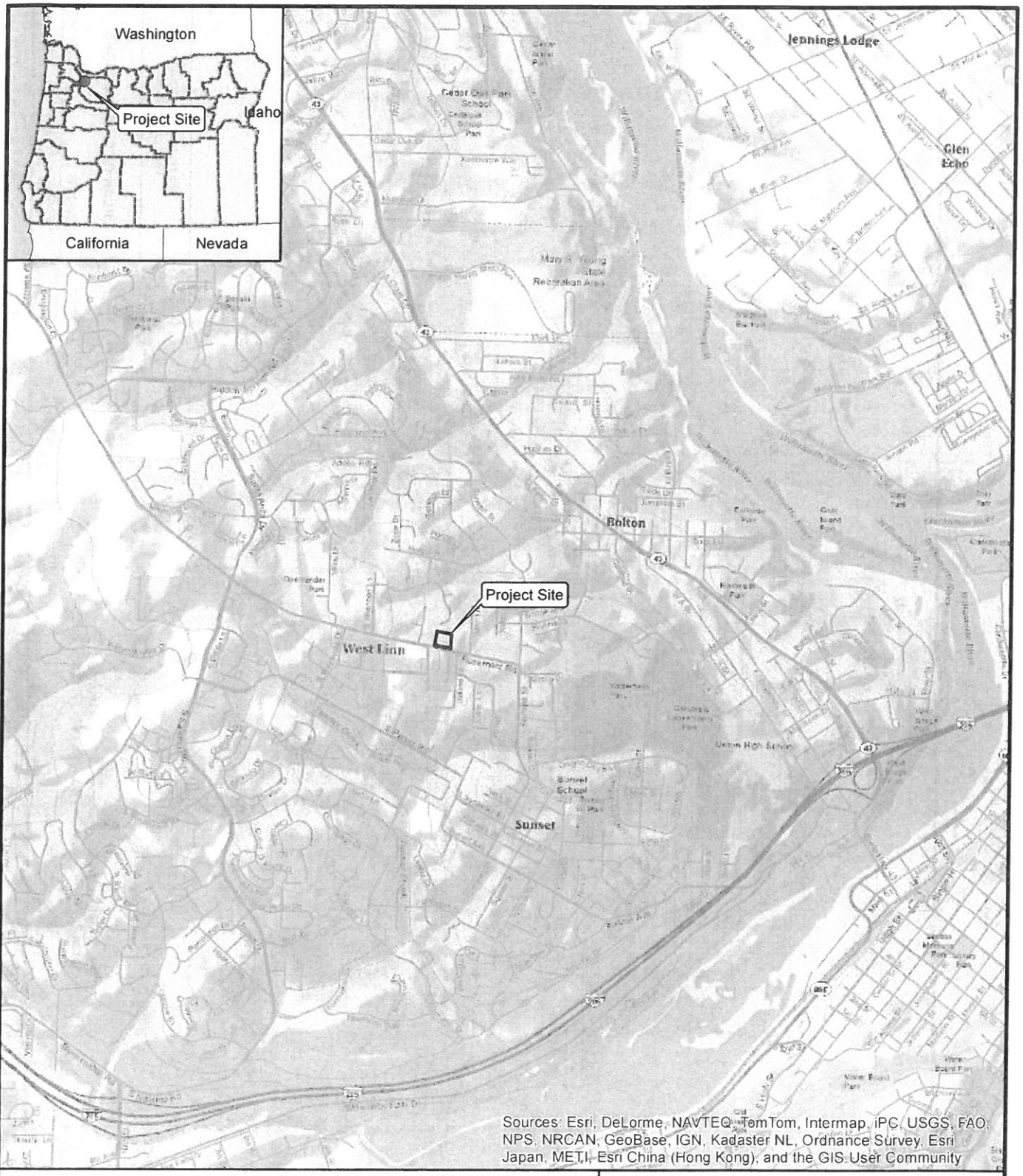
SHANNON & WILSON, INC.

Allison M. Pyrch, PE, GE
Principal | Geotechnical Engineer

Jerry L. Jacksha, PE, GE
Senior Associate | Geotechnical Engineer

AMP/JLJ/amn

Encl: Figure 1 – Vicinity Map
Figure 2 – Plan of Explorations
Attachment A – Field Explorations and Laboratory Testing
Attachment B – Infiltration Testing Results
Attachment C - Important Information About Your Geotechnical/Environmental Report



N
W E
S

0 2,000 4,000 Feet

1485 Rosemont Subdivision
West Linn, Oregon

VICINITY MAP

August 2013 24-1-03764-001

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FIG. 1

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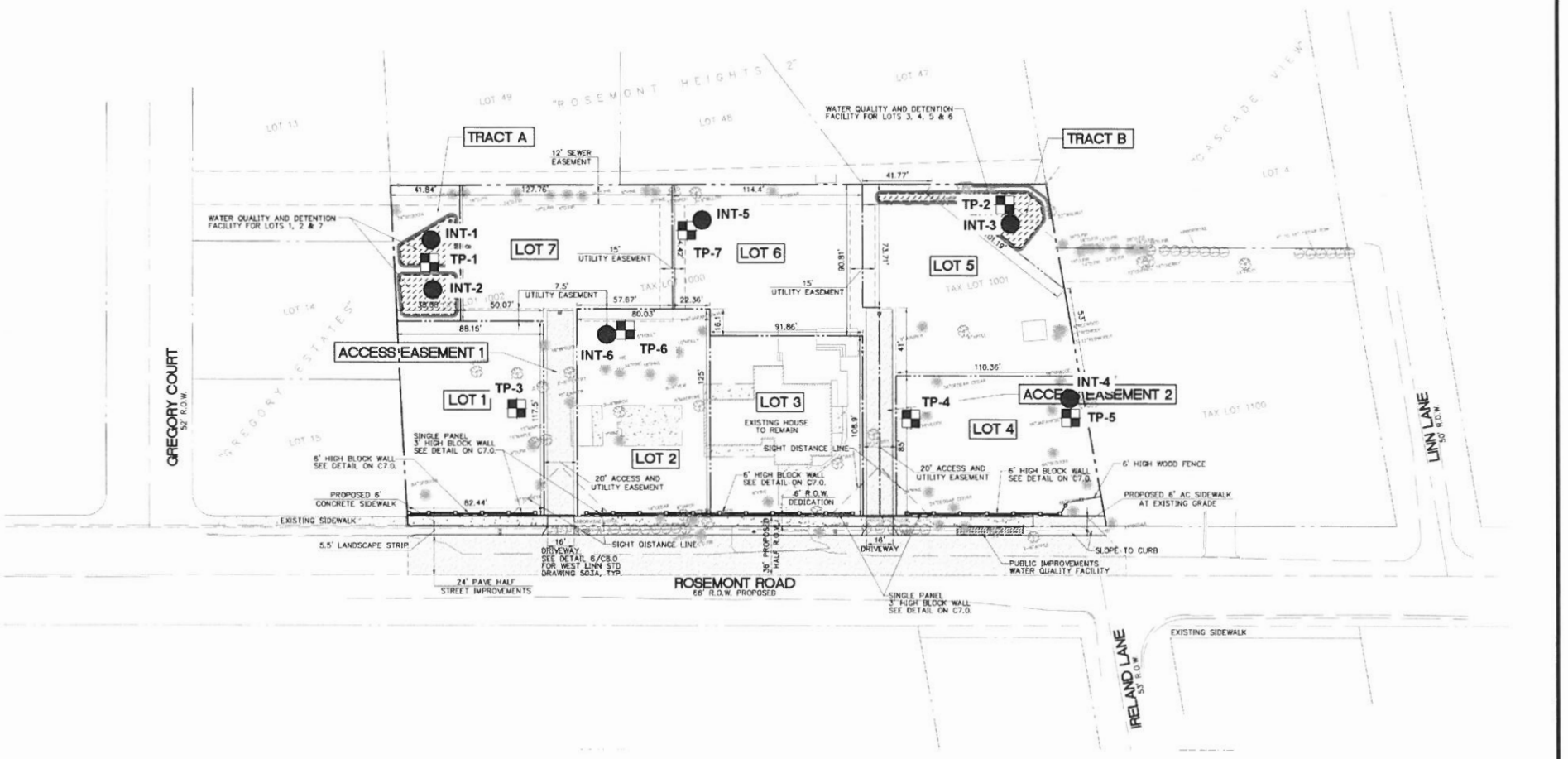

EXPLANATION

INT-1 ● Location and Designation of Infiltration Test

TP-1 ■ Location and Designation of Test Pit

Reference: Base drawing provided by Group Mackenzie, entitled, "Tentative Subdivision Plan," dated May 23, 2013.

0 60 120

Scale in Feet

N

1485 Rosemont Subdivision
West Linn, Oregon

PLAN OF EXPLORATIONS

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FIG. 2

File: I:\WIP\Projects\24-1 Portland\3700\3764 1485 Rosemont Subdivision\Graphics\CAD\24-1-03764-001-SP.dwg Date: 08-29-2013 Author: ath

ATTACHMENT A

FIELD EXPLORATIONS AND LABORATORY TESTING

TABLE OF CONTENTS

Figures

Shannon & Wilson, Inc. (S&W), uses a soil identification system modified from the Unified Soil Classification System (USCS). Elements of the USCS and other definitions are provided on this and the following pages. Soil descriptions are based on visual-manual procedures (ASTM D2488) and laboratory testing procedures (ASTM D2487), if performed.

S&W INORGANIC SOIL CONSTITUENT DEFINITIONS

CONSTITUENT[2]	FINE-GRAINED SOILS (50% or more fines)[1]	COARSE-GRAINED SOILS (less than 50% fines)[1]
Major	***Silt, Lean Clay, Elastic Silt,*** or ***Fat Clay***[3]	***Sand*** or ***Gravel***[4]
Modifying (Secondary) Precedes major constituent	30% or more coarse-grained: ***Sandy*** or ***Gravelly***[4]	More than 12% fine-grained: ***Silty*** or ***Clayey***[3]
Minor Follows major constituent	15% to 30% coarse-grained: ***with Sand*** or ***with Gravel***[4]	5% to 12% fine-grained: ***with Silt*** or ***with Clay***[3]
	30% or more total coarse-grained *and* lesser coarse-grained constituent is 15% or more: ***with Sand*** or ***with Gravel***[5]	15% or more of a second coarse-grained constituent: ***with Sand*** or ***with Gravel***[5]

[1]All percentages are by weight of total specimen passing a 3-inch sieve.
[2]The order of terms is: *Modifying Major with Minor.*
[3]Determined based on behavior.
[4]Determined based on which constituent comprises a larger percentage.
[5]Whichever is the lesser constituent.

MOISTURE CONTENT TERMS

Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, from below water table

STANDARD PENETRATION TEST (SPT) SPECIFICATIONS

Hammer:	140 pounds with a 30-inch free fall. Rope on 6- to 10-inch-diam. cathead 2-1/4 rope turns, > 100 rpm
Sampler:	10 to 30 inches long Shoe I.D. = 1.375 inches Barrel I.D. = 1.5 inches Barrel O.D. = 2 inches
N-Value:	Sum blow counts for second and third 6-inch increments. Refusal: 50 blows for 6 inches or less; 10 blows for 0 inches.

NOTE: Penetration resistances (N-values) shown on boring logs are as recorded in the field and have not been corrected for hammer efficiency, overburden, or other factors.

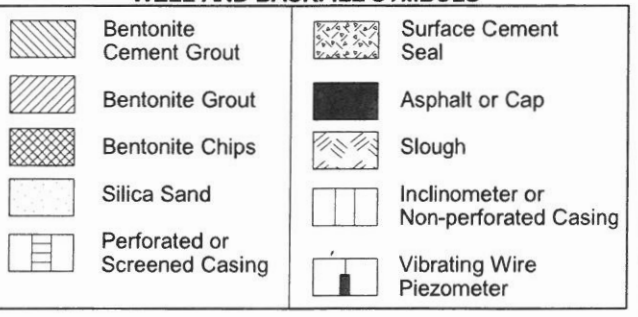
PARTICLE SIZE DEFINITIONS

DESCRIPTION	SIEVE NUMBER AND/OR APPROXIMATE SIZE
FINES	< #200 (0.075 mm = 0.003 in.)
SAND	
Fine	#200 to #40 (0.075 to 0.4 mm; 0.003 to 0.02 in.)
Medium	#40 to #10 (0.4 to 2 mm; 0.02 to 0.08 in.)
Coarse	#10 to #4 (2 to 4.75 mm; 0.08 to 0.187 in.)
GRAVEL	
Fine	#4 to 3/4 in. (4.75 to 19 mm; 0.187 to 0.75 in.)
Coarse	3/4 to 3 in. (19 to 76 mm)
COBBLES	3 to 12 in. (76 to 305 mm)
BOULDERS	> 12 in. (305 mm)

RELATIVE DENSITY / CONSISTENCY

COHESIONLESS SOILS		COHESIVE SOILS	
N, SPT, BLOWS/FT.	RELATIVE DENSITY	N, SPT, BLOWS/FT.	RELATIVE CONSISTENCY
< 4	Very loose	< 2	Very soft
4 - 10	Loose	2 - 4	Soft
10 - 30	Medium dense	4 - 8	Medium stiff
30 - 50	Dense	8 - 15	Stiff
> 50	Very dense	15 - 30	Very stiff
		> 30	Hard

WELL AND BACKFILL SYMBOLS



PERCENTAGES TERMS [1,2]

Trace	< 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

[1]Gravel, sand, and fines estimated by mass. Other constituents, such as organics, cobbles, and boulders, estimated by volume.

[2]Reprinted, with permission, from ASTM D2488 - 09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM International, www.astm.org.

1485 Rosemont Subdivision
West Linn, Oregon

SOIL DESCRIPTION AND LOG KEY

August 2013 24-1-03764-001

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Geotechnical and Environmental Consultants

FIG. A1
Sheet 1 of 3

2013 BORING CLASS1 24-1-03764.GPJ SWNEW.GDT 8/28/13

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)
(Modified From USACE Tech Memo 3-357, ASTM D2487, and ASTM D2488)

MAJOR DIVISIONS			GROUP/GRAPHIC SYMBOL		TYPICAL IDENTIFICATIONS
COARSE-GRAINED SOILS *(more than 50% retained on No. 200 sieve)*	Gravels *(more than 50% of coarse fraction retained on No. 4 sieve)*	Gravel *(less than 5% fines)*	GW		Well-Graded Gravel; Well-Graded Gravel with Sand
			GP		Poorly Graded Gravel; Poorly Graded Gravel with Sand
		Silty or Clayey Gravel *(more than 12% fines)*	GM		Silty Gravel; Silty Gravel with Sand
			GC		Clayey Gravel; Clayey Gravel with Sand
	Sands *(50% or more of coarse fraction passes the No. 4 sieve)*	Sand *(less than 5% fines)*	SW		Well-Graded Sand; Well-Graded Sand with Gravel
			SP		Poorly Graded Sand; Poorly Graded Sand with Gravel
		Silty or Clayey Sand *(more than 12% fines)*	SM		Silty Sand; Silty Sand with Gravel
			SC		Clayey Sand; Clayey Sand with Gravel
FINE-GRAINED SOILS *(50% or more passes the No. 200 sieve)*	Silts and Clays *(liquid limit less than 50)*	Inorganic	ML		Silt; Silt with Sand or Gravel; Sandy or Gravelly Silt
			CL		Lean Clay; Lean Clay with Sand or Gravel; Sandy or Gravelly Lean Clay
		Organic	OL		Organic Silt or Clay; Organic Silt or Clay with Sand or Gravel; Sandy or Gravelly Organic Silt or Clay
	Silts and Clays *(liquid limit 50 or more)*	Inorganic	MH		Elastic Silt; Elastic Silt with Sand or Gravel; Sandy or Gravelly Elastic Silt
			CH		Fat Clay; Fat Clay with Sand or Gravel; Sandy or Gravelly Fat Clay
		Organic	OH		Organic Silt or Clay; Organic Silt or Clay with Sand or Gravel; Sandy or Gravelly Organic Silt or Clay
HIGHLY-ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor		PT		Peat or other highly organic soils (see ASTM D4427)

NOTE: No. 4 size = 4.75 mm = 0.187 in.; No. 200 size = 0.075 mm = 0.003 in.

NOTES

1. Dual symbols *(symbols separated by a hyphen, i.e., SP-SM, Sand with Silt)* are used for soils with between 5% and 12% fines or when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart. Graphics shown on the logs for these soil types are a combination of the two graphic symbols (e.g., SP and SM).

2. Borderline symbols *(symbols separated by a slash, i.e., CL/ML, Lean Clay to Silt; SP-SM/SM, Sand with Silt to Silty Sand)* indicate that the soil properties are close to the defining boundary between two groups.

1485 Rosemont Subdivision
West Linn, Oregon

SOIL DESCRIPTION AND LOG KEY

August 2013 24-1-03764-001

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FIG. A1
Sheet 2 of 3

2013_BORING_CLASS2 24-1-03764.GPJ SWNEW.GDT 8/28/13

GRADATION TERMS

Poorly Graded	Narrow range of grain sizes present or, within the range of grain sizes present, one or more sizes are missing (Gap Graded). Meets criteria in ASTM D2487, if tested.
Well-Graded	Full range and even distribution of grain sizes present. Meets criteria in ASTM D2487, if tested.

CEMENTATION TERMS[1]

Weak	Crumbles or breaks with handling or slight finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

PLASTICITY[2]

DESCRIPTION	VISUAL-MANUAL CRITERIA	APPROX. PLASITICTY INDEX RANGE
Nonplastic	A 1/8-in. thread cannot be rolled at any water content.	< 4
Low	A thread can barely be rolled and a lump cannot be formed when drier than the plastic limit.	4 to 10
Medium	A thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. A lump crumbles when drier than the plastic limit.	10 to 20
High	It take considerable time rolling and kneading to reach the plastic limit. A thread can be rerolled several times after reaching the plastic limit. A lump can be formed without crumbling when drier than the plastic limit.	> 20

ADDITIONAL TERMS

Mottled	Irregular patches of different colors.
Bioturbated	Soil disturbance or mixing by plants or animals.
Diamict	Nonsorted sediment; sand and gravel in silt and/or clay matrix.
Cuttings	Material brought to surface by drilling.
Slough	Material that caved from sides of borehole.
Sheared	Disturbed texture, mix of strengths.

PARTICLE ANGULARITY AND SHAPE TERMS[1]

Angular	Sharp edges and unpolished planar surfaces.
Subangular	Similar to angular, but with rounded edges.
Subrounded	Nearly planar sides with well-rounded edges.
Rounded	Smoothly curved sides with no edges.
Flat	Width/thickness ratio > 3.
Elongated	Length/width ratio > 3.

ACRONYMS AND ABBREVIATIONS

ATD	At Time of Drilling
Diam.	Diameter
Elev.	Elevation
ft.	Feet
FeO	Iron Oxide
gal.	Gallons
Horiz.	Horizontal
HSA	Hollow Stem Auger
I.D.	Inside Diameter
in.	Inches
lbs.	Pounds
MgO	Magnesium Oxide
mm	Millimeter
MnO	Manganese Oxide
NA	Not Applicable or Not Available
NP	Nonplastic
O.D.	Outside Diameter
OW	Observation Well
pcf	Pounds per Cubic Foot
PID	Photo-Ionization Detector
PMT	Pressuremeter Test
ppm	Parts per Million
psi	Pounds per Square Inch
PVC	Polyvinyl Chloride
rpm	Rotations per Minute
SPT	Standard Penetration Test
USCS	Unified Soil Classification System
q_u	Unconfined Compressive Strength
VWP	Vibrating Wire Piezometer
Vert.	Vertical
WOH	Weight of Hammer
WOR	Weight of Rods
Wt.	Weight

STRUCTURE TERMS[1]

Interbedded	Alternating layers of varying material or color with layers at least 1/4-inch thick; singular: bed.
Laminated	Alternating layers of varying material or color with layers less than 1/4-inch thick; singular: lamination.
Fissured	Breaks along definite planes or fractures with little resistance.
Slickensided	Fracture planes appear polished or glossy; sometimes striated.
Blocky	Cohesive soil that can be broken down into small angular lumps that resist further breakdown.
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay.
Homogeneous	Same color and appearance throughout.

[1]Reprinted, with permission, from ASTM D2488 - 09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM International, www.astm.org.
[2]Adapted, with permission, from ASTM D2488 - 09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428. A copy of the complete standard may be obtained from ASTM International, www.astm.org.

1485 Rosemont Subdivision
West Linn, Oregon

SOIL DESCRIPTION AND LOG KEY

August 2013 | 24-1-03764-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

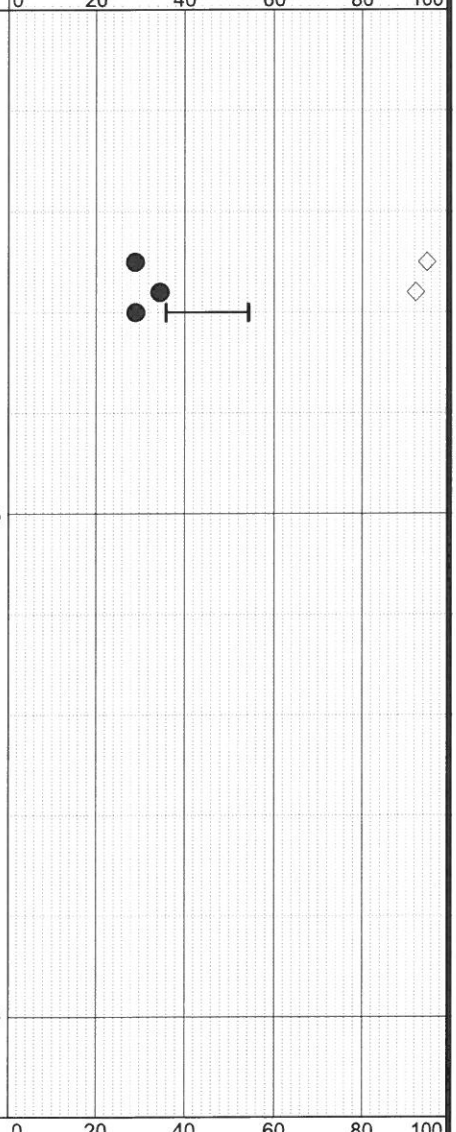
FIG. A1
Sheet 3 of 3

2013 BORING CLASS3 24-1-03764.GPJ SWNEW.GDT 8/28/13

Total Depth:	9.5 ft.	Northing:	~	Drilling Method:		Hole Diam.:	~
Top Elevation:	~	Easting:	~	Drilling Company:	Western States	Rod Type:	~
Vert. Datum:		Station:	~	Drill Rig Equipment:	backhoe	Hammer Type:	~
Horiz. Datum:		Offset:	~	Other Comments:			

SOIL DESCRIPTION *Refer to the report text for a proper understanding of the subsurface materials and drilling methods. The stratification lines indicated below represent the approximate boundaries between soil types, and the transitions may be gradual.*	Elev. Depth (ft.)	Symbol	Samples	Ground Water	Depth, ft.
Stiff to very stiff, gray-brown, *Elastic Silt (MH)*; moist; <10% fine to coarse, subrounded sand composed of decomposed basalt; medium plasticity; little to some organics in upper 1.0 ft. Grades to gray-yellow at 1.0 ft. Few rootlets from 1.0 to 2.0 ft. **COLLUVIUM**			S-1 G S-2 G		
Very stiff, red-brown, *Elastic Silt (MH)*; moist; <10% fine sand; medium plasticity; relict joint surfaces with black staining. **RESIDUAL SOIL**	4.5		S-3 G S-4 G	Not observed	5
Completed - August 15, 2013	9.5				10

PENETRATION RESISTANCE, N (blows/ft.)
▲ Hammer Wt. & Drop: *140 lbs / 30 inches*



◇ % Fines (<0.075mm)
● % Water Content
Plastic Limit ⊢—⊣ Liquid Limit
Natural Water Content

LEGEND
* Sample Not Recovered
G Grab Sample

NOTES
1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. Group symbol is based on visual-manual identification and selected lab testing.
4. The hole location and elevation should be considered approximate.

1485 Rosemont Subdivision
West Linn, Oregon

LOG OF TEST PIT TP-1

August 2013 24-1-03764-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. A2

REV 3

MASTER_LOG_E 24-1-03764.GPJ SHAN_WIL.GDT 8/28/13 Log: AAH Rev: Typ: MAS

Total Depth:	9 ft.	Northing:	~	Drilling Method:		Hole Diam.:	~
Top Elevation:	~	Easting:	~	Drilling Company:	Western States	Rod Type:	~
Vert. Datum:		Station:	~	Drill Rig Equipment:	backhoe	Hammer Type:	~
Horiz. Datum:		Offset:	~	Other Comments:			

SOIL DESCRIPTION

Refer to the report text for a proper understanding of the subsurface materials and drilling methods. The stratification lines indicated below represent the approximate boundaries between soil types, and the transitions may be gradual.

Medium stiff, brown, *Lean Clay* to *Silt with Sand (CL/ML)*; dry to moist; fine to coarse, subrounded to subangular sand; low to medium plasticity; few to little organics.

FILL

Broken glass bottles at 1.8 ft.

Stiff to very stiff, red-brown to yellow-brown, *Elastic Silt (MH)*; moist; <10% fine to coarse, subrounded sand; medium plasticity.

COLLUVIUM

Very stiff, red-brown and gray mottled, *Elastic Silt (MH)*; moist; <10% fine sand; medium plasticity; remnant black joint staining.

RESIDUAL SOIL

DECOMPOSED BASALT: very low strength (R1); dark gray with light gray vesicle infilling and red and white joint staining; slight to moderately vesicular; closely jointed.

DECOMPOSED COLUMBIA RIVER BASALT

Completed - August 15, 2013

Elev. Depth (ft.): 2.0, 4.5, 8.4, 9.0

Symbol

Samples: S-1, S-2, S-3, S-4

Ground Water Depth, ft.: Not observed

PENETRATION RESISTANCE, N (blows/ft.)

▲ Hammer Wt. & Drop: *140 lbs / 30 inches*

0 20 40 60 80 100

5

10

0 20 40 60 80 100

◇ % Fines (<0.075mm)

● % Water Content

Plastic Limit ⊢——⊣ Liquid Limit

Natural Water Content

LEGEND

* Sample Not Recovered

Grab Sample

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. Group symbol is based on visual-manual identification and selected lab testing.
4. The hole location and elevation should be considered approximate.

1485 Rosemont Subdivision
West Linn, Oregon

LOG OF TEST PIT TP-2

August 2013 24-1-03764-001

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FIG. A3

REV 3

Typ: MAS Rev: Log: AAH

MASTER_LOG_E_24-1-03764.GPJ_SHAN_WIL.GDT 8/28/13

Total Depth:	8.5 ft.	Northing:	~	Drilling Method:		Hole Diam.:	~
Top Elevation:	~	Easting:	~	Drilling Company:	Western States	Rod Type:	~
Vert. Datum:		Station:	~	Drill Rig Equipment:	backhoe	Hammer Type:	~
Horiz. Datum:		Offset:	~	Other Comments:			

SOIL DESCRIPTION *Refer to the report text for a proper understanding of the subsurface materials and drilling methods. The stratification lines indicated below represent the approximate boundaries between soil types, and the transitions may be gradual.*	Elev. Depth (ft.)	Symbol	Samples	Ground Water	Depth, ft.	PENETRATION RESISTANCE, N (blows/ft.) ▲ Hammer Wt. & Drop: 140 lbs / 30 inches 0 20 40 60 80 100
Stiff to very stiff, gray-brown grading to red-brown, *Elastic Silt (MH)*; moist; <10% fine to coarse, rounded sand; medium plasticity; 10%-15% organics and roots from 0 to 1.5 ft. <5% rootlets from 1.5 to 4.0 ft. **COLLUVIUM**			S-1 G S-2 G	Not observed	5	
Very stiff to hard, red-brown, *Elastic Silt (MH)*; moist; <10% fine to coarse, subrounded sand; medium plasticity; with remnant black joint staining and some light gray color. **RESIDUAL SOIL**	6.0		S-3 G			
DECOMPOSED BASALT: very low to low strength (R1-R2); light gray and red-brown; fine grained; closely spaced, rough, planar joints with black staining; highly weathered. **DECOMPOSED COLUMBIA RIVER BASALT**	8.0 8.5		S-4 G		10	
Completed - August 15, 2013						0 20 40 60 80 100

LEGEND

* Sample Not Recovered

G Grab Sample

Plastic Limit ⊢—⊣ Liquid Limit
Natural Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. Group symbol is based on visual-manual identification and selected lab testing.
4. The hole location and elevation should be considered approximate.

1485 Rosemont Subdivision
West Linn, Oregon

LOG OF TEST PIT TP-3

August 2013 24-1-03764-001

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Geotechnical and Environmental Consultants

FIG. A4

REV 3

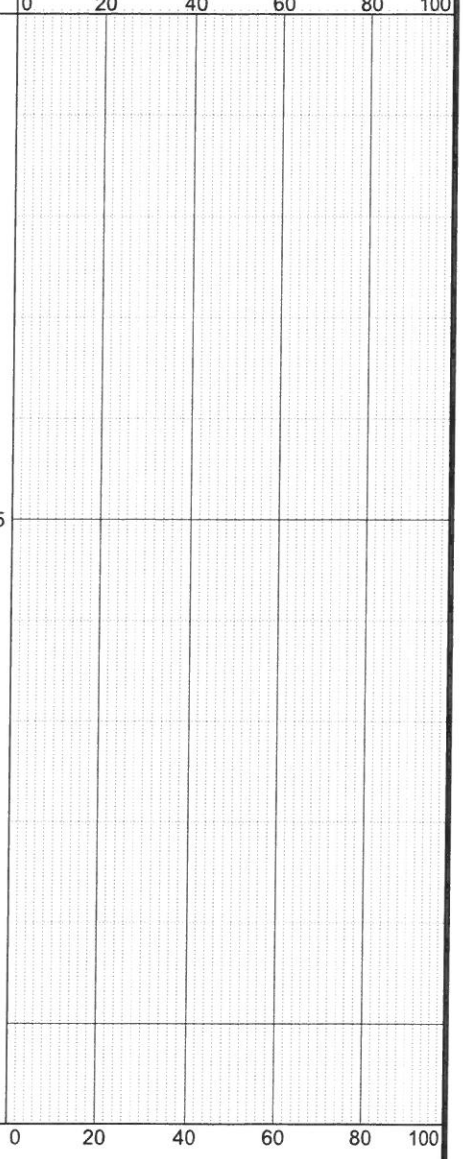
MASTER LOG_E 24-1-03764.GPJ SHAN WIL.GDT 8/28/13 Log: AAH Rev: Typ: MAS

Total Depth:	9 ft.	Northing:	~	Drilling Method:		Hole Diam.:	~
Top Elevation:	~	Easting:	~	Drilling Company:	Western States	Rod Type:	~
Vert. Datum:		Station:	~	Drill Rig Equipment:	backhoe	Hammer Type:	~
Horiz. Datum:		Offset:	~	Other Comments:			

SOIL DESCRIPTION *Refer to the report text for a proper understanding of the subsurface materials and drilling methods. The stratification lines indicated below represent the approximate boundaries between soil types, and the transitions may be gradual.*	Elev. Depth (ft.)
Stiff to very stiff, red-brown, *Elastic Silt (MH)*; moist; <10% fine sand; medium plasticity; 15% organics and roots from 0 to 2.0 ft. **COLLUVIUM** 5%-10% rootlets from 2.0 to 4.0 ft.	
Very stiff, red-brown, *Elastic Silt with Cobbles and Boulders (MH)*; moist; ~30% cobbles and ~10% boulders up to 1.1 ft. diameter, subrounded, basaltic; medium plasticity; up to about medium high strength (R4). **RESIDUAL SOIL**	5.0
DECOMPOSED BASALT: very low to low strength (R1-R2); gray and red-brown; fine grained; closely spaced, rough, planar joints with black staining; highly weathered. **DECOMPOSED COLUMBIA RIVER BASALT**	6.0
Completed - August 15, 2013	9.0

Symbol | Samples: S-1, S-2, S-3, S-4 | Ground Water Depth, ft.: Not observed

PENETRATION RESISTANCE, N (blows/ft.)
▲ Hammer Wt. & Drop: *140 lbs / 30 inches*



LEGEND
* Sample Not Recovered
G Grab Sample

Plastic Limit ⊢—⊣ Liquid Limit
Natural Water Content

NOTES
1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. Group symbol is based on visual-manual identification and selected lab testing.
4. The hole location and elevation should be considered approximate.

1485 Rosemont Subdivision
West Linn, Oregon

LOG OF TEST PIT TP-4

August 2013 24-1-03764-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. A5

REV 3

Typ: MAS Rev: Log: AAH

MASTER_LOG_E_24-1-03764.GPJ SHAN_WIL.GDT 8/28/13

Total Depth:	7 ft.	Northing:	~	Drilling Method:		Hole Diam.:	~
Top Elevation:	~	Easting:	~	Drilling Company:	Owner's Sub	Rod Type:	~
Vert. Datum:		Station:	~	Drill Rig Equipment:	backhoe	Hammer Type:	~
Horiz. Datum:		Offset:	~	Other Comments:			

SOIL DESCRIPTION

Refer to the report text for a proper understanding of the subsurface materials and drilling methods. The stratification lines indicated below represent the approximate boundaries between soil types, and the transitions may be gradual.

Elev. Depth (ft.) | Symbol | Samples | Ground Water Depth, ft.

PENETRATION RESISTANCE, N (blows/ft.)

▲ Hammer Wt. & Drop: *140 lbs / 30 inches*

0 20 40 60 80 100

Medium stiff to very stiff, red-brown, *Silt with Sand* to *Elastic Silt (ML/MH)*; dry to moist; fine, subangular sand; low to medium plasticity; little to some roots in upper 1.5 ft.

<10% fine sand; few rootlets after 1.5 ft.

COLLUVIUM

S-1

Not observed

5

Very stiff, red-brown and gray, *Elastic Silt with Sand (MH)*; moist; fine to medium, subangular sand; medium plasticity; remnant black joint staining.

5.0

6- to 8-in.-diam. large cobbles at 6.0 ft.

S-2

3- to 8-in.-diam. small and large cobbles at 6.5 ft.

6.5

RESIDUAL SOIL

7.0

DECOMPOSED BASALT: very low to low strength (R1-R2), tan and dark gray; closely spaced joints with black staining; highly weathered.

DECOMPOSED COLUMBIA RIVER BASALT

10

Completed - August 27, 2013

0 20 40 60 80 100

LEGEND

* Sample Not Recovered

Grab Sample

Plastic Limit ⊢——⊣ Liquid Limit

Natural Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. Group symbol is based on visual-manual identification and selected lab testing.
4. The hole location and elevation should be considered approximate.

1485 Rosemont Subdivision
West Linn, Oregon

LOG OF TEST PIT TP-5

August 2013 24-1-03764-001

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FIG. A6

REV 3

MASTER_LOG_E 24-1-03764.GPJ SHAN_WIL.GDT 8/28/13 Log: RAP Rev: Typ: MAS

Total Depth:	8 ft.	Northing:	~	Drilling Method:		Hole Diam.:	~
Top Elevation:	~	Easting:	~	Drilling Company:	Owner's Sub	Rod Type:	~
Vert. Datum:		Station:	~	Drill Rig Equipment:	backhoe	Hammer Type:	~
Horiz. Datum:		Offset:	~	Other Comments:			

SOIL DESCRIPTION *Refer to the report text for a proper understanding of the subsurface materials and drilling methods. The stratification lines indicated below represent the approximate boundaries between soil types, and the transitions may be gradual.*	Elev. Depth (ft.)	Symbol	Samples	Ground Water	Depth, ft.	PENETRATION RESISTANCE, N (blows/ft.) ▲ Hammer Wt. & Drop: 140 lbs / 30 inches 0 20 40 60 80 100
Medium stiff to stiff, brown to red-brown, *Silt* to *Elastic Silt (ML/MH)*; moist; <10% sand; low to medium plasticity; few roots and rootlets from 0 to 1.0 ft.; few to little black staining within large soil peds. Trace roots after 1.0 ft. **COLLUVIUM**			S-1	Not observed		
Stiff to very stiff, red-brown, red-yellow, and black, *Silt* to *Elastic Silt with Sand (ML/MH)*; moist; trace to few cobbles and boulders; ~10% to 15% subangular sand; medium plasticity; relict rock texture with black and orange staining. **RESIDUAL SOIL**	5.0		S-2		5	
Completed - August 27, 2013	8.0				10	0 20 40 60 80 100

LEGEND

* Sample Not Recovered

G Grab Sample

Plastic Limit ⊢——⊣ Liquid Limit
Natural Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. Group symbol is based on visual-manual identification and selected lab testing.
4. The hole location and elevation should be considered approximate.

1485 Rosemont Subdivision
West Linn, Oregon

LOG OF TEST PIT TP-6

August 2013 24-1-03764-001

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FIG. A7

REV 3

Typ: MAS Rev: Log: RAP

MASTER_LOG_E 24-1-03764.GPJ SHAN WIL.GDT 8/28/13

Total Depth:	7 ft.	Northing:	~	Drilling Method:		Hole Diam.:	~
Top Elevation:	~	Easting:	~	Drilling Company:	Owner's Sub	Rod Type:	~
Vert. Datum:		Station:	~	Drill Rig Equipment:	backhoe	Hammer Type:	~
Horiz. Datum:		Offset:	~	Other Comments:			

SOIL DESCRIPTION *Refer to the report text for a proper understanding of the subsurface materials and drilling methods. The stratification lines indicated below represent the approximate boundaries between soil types, and the transitions may be gradual.*	Elev. Depth (ft.)	Symbol	Samples	Ground Water Depth, ft.	PENETRATION RESISTANCE, N (blows/ft.) ▲ Hammer Wt. & Drop: 140 lbs / 30 inches 0 20 40 60 80 100
Medium stiff to stiff, brown to red-brown, *Silt* to *Elastic Silt (ML/MH)*; moist; <10% fine, subangular sand; medium plasticity; trace roots. **COLLUVIUM**			S-1	Not observed	
Stiff to very stiff, red-brown and gray, *Elastic Silt (MH)*; moist; <10% fine, subangular sand; medium plasticity; residual rock texture with black and red staining. 1-ft.-diam. boulder at 5.0 ft. **RESIDUAL SOIL** Few to little cobbles after 6.0 ft.	4.5		S-2		5
Completed - August 27, 2013	7.0				10 0 20 40 60 80 100

LEGEND

* Sample Not Recovered

G Grab Sample

Plastic Limit ⊢—⊣ Liquid Limit
Natural Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. Group symbol is based on visual-manual identification and selected lab testing.
4. The hole location and elevation should be considered approximate.

1485 Rosemont Subdivision
West Linn, Oregon

LOG OF TEST PIT TP-7

August 2013 24-1-03764-001

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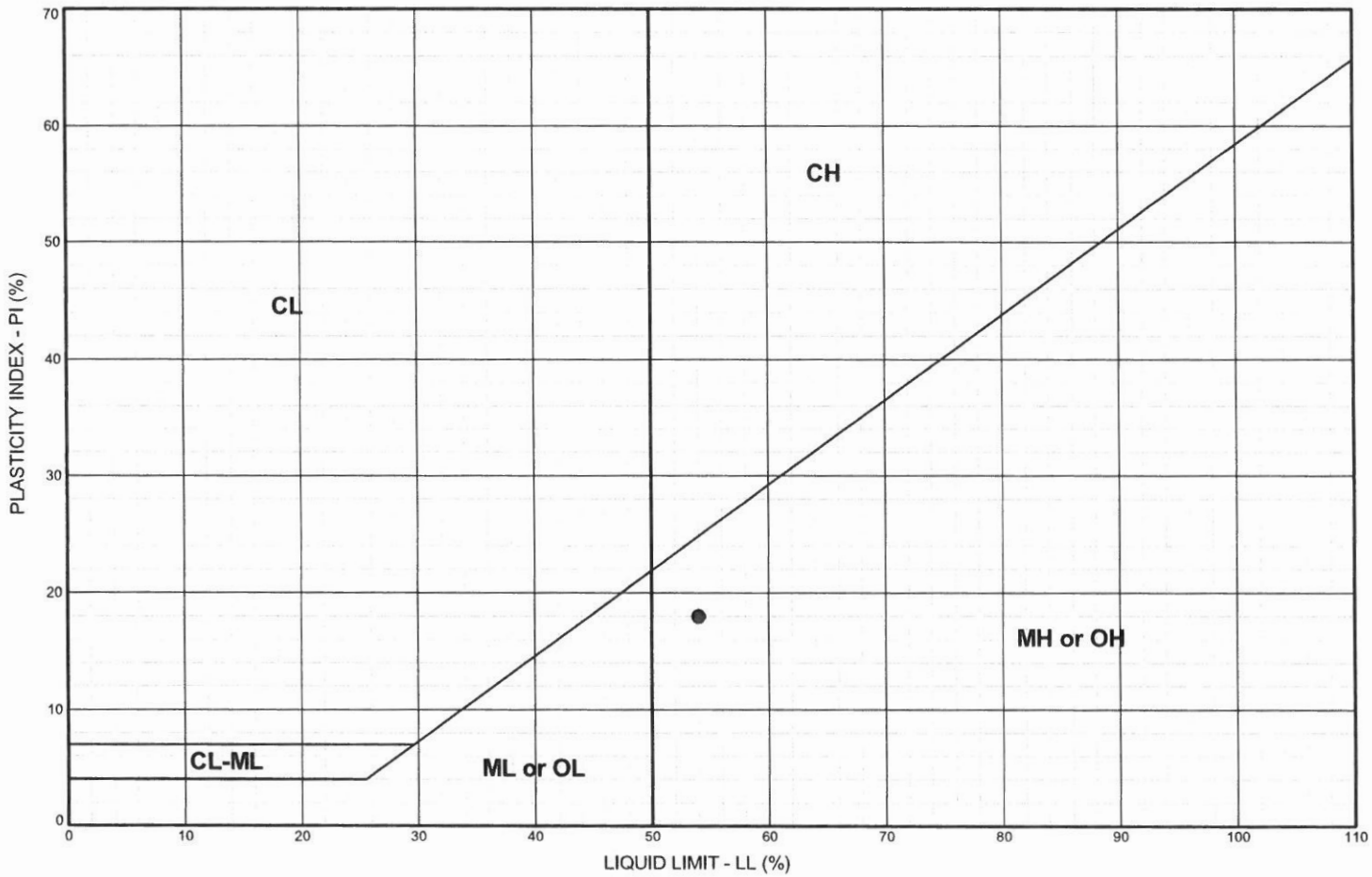
FIG. A8

REV 3

Typ: MAS Rev: Log: RAP

MASTER LOG E 24-1-03764.GPJ SHAN WIL.GDT 8/28/13



NOTES

1) Atterberg limits tests were performed in general accordance with ASTM D4318 unless otherwise noted in the report.

2) Plasticity adjectives used in sample descriptions correspond to plasticity index as follows:
- Nonplastic (0 - 4%)
- Low Plasticity (>4 - 10%)
- Medium Plasticity (>10 - 20%)
- High Plasticity (>20 - 40%)
- Very High Plasticity (>40%)

BORING AND SAMPLE NO.	DEPTH (feet)	GROUP SYMBOL	SAMPLE DESCRIPTION	LL %	PL %	PI %	NAT. W.C. %	FINES %
● TP-1, S-2	3.0	MH	Elastic SILT, trace sand	54	36	18	29	

1485 Rosemont Subdivision
West Linn, Oregon

ATTERBERG LIMITS RESULTS

August 2013 24-1-03764-001

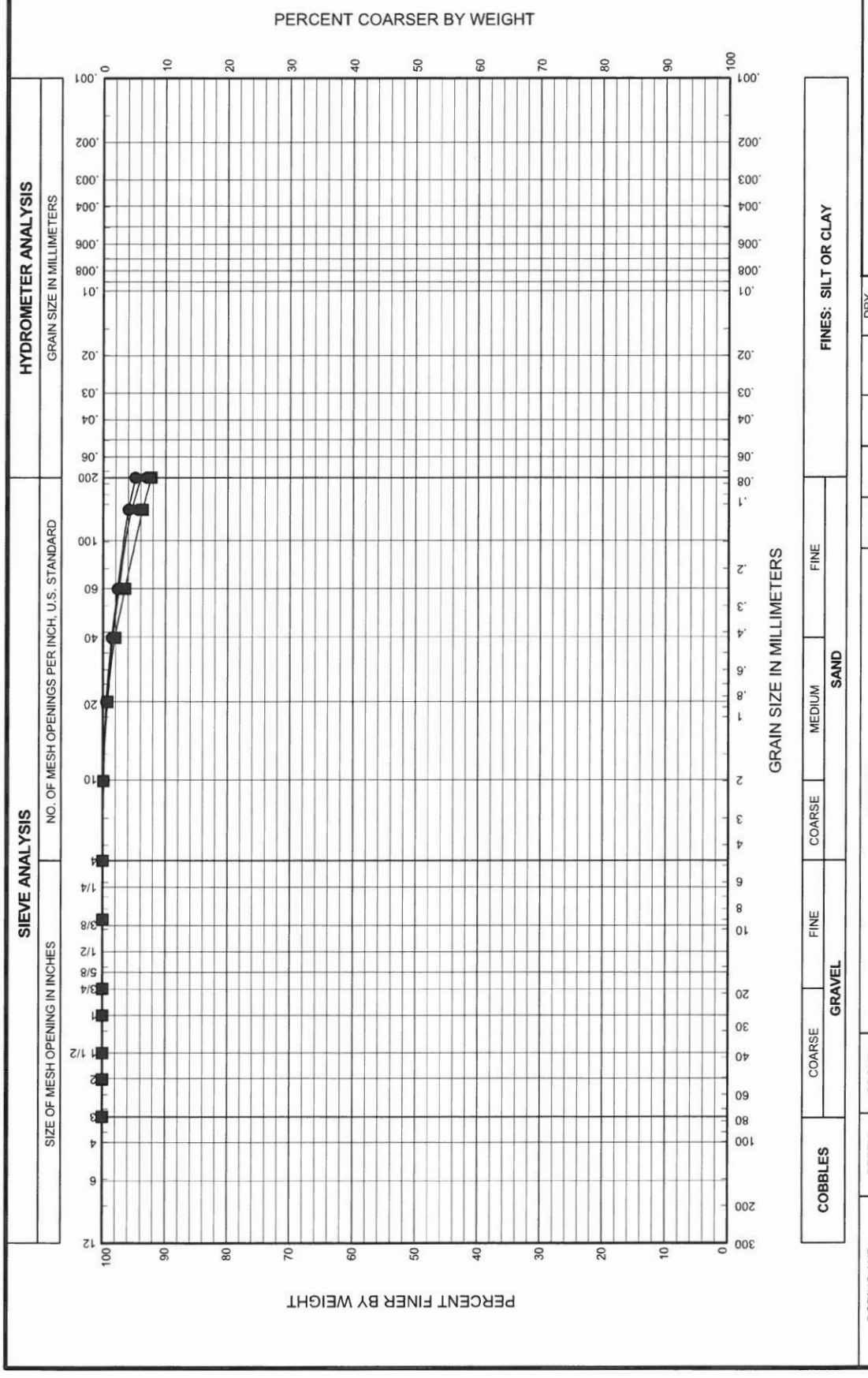
SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. A9

ATT MAIN 24-1-03764.GPJ SHAN WIL.GDT 8/28/13

FIG. A9

NOTES:
1) Sieve and hydrometer analyses were performed in general accordance with ASTM D422 unless otherwise noted in the report.
2) Particles retained on the 3-inch (76.2 mm) sieve are noted in the sample descriptions, but are not included in sieve analyses unless otherwise noted in the report.



BORING AND SAMPLE NO.	DEPTH (feet)	GROUP SYMBOL	SAMPLE DESCRIPTION	GRAVEL %	SAND %	FINES %	NAT. W.C. %	DRY DENSITY PCF
● TP-1,	2.5	MH	Elastic SILT, trace sand	0	5	95	29	
■ TP-1,	2.8	MH	Elastic SILT, trace sand	0	8	92	35	
▲ TP-2,	2.7	MH	Elastic SILT, trace sand	0	6	94	36	

1485 Rosemont Subdivision
West Linn, Oregon

GRAIN SIZE DISTRIBUTION

August 2013 24-1-03764-001

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FIG. A10

FIG. A10

ATTACHMENT B

INFILTRATION TESTING RESULTS

24-1-03764-001

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Location: 1485 Rosemont Road, West Linn, OR	Date: 8/15/2013 Job Number: 24-1-03764-001	Infiltration Test Number: Infiltration Test INT-1
Depth to bottom of hole: 2.5 ft	Dimension of casing: 0.5'	Test Method: Stand Pipe
Tester's Name: AMP Tester's Company: S&W		

Depth (feet):	Soil Texture:
2.5	Silt

Time	Time Interval (minutes)	Measurement (feet)	Head (feet)	Drop in Water Level (feet)	Infiltration rate (inches per hour)	Remarks
1203	--	0.70	1.00	--	--	Trial 1
1211	8	0.72	0.99	0.02	1.8	
1222	11	0.75	0.97	0.03	2.0	
1233	10	0.78	0.94	0.03	2.2	
1244	11	0.81	0.91	0.03	2.0	
1254	10	0.84	0.88	0.03	2.2	
1306	11	0.86	0.85	0.02	1.3	
1332	--	0.70	0.92	--		Trial 2
1405	33	0.78	0.96	0.08	1.7	
1444	39	0.87	0.88	0.09	1.7	
1506	--	0.69	0.92	--		Trial 3
1538	32	0.78	0.97	0.09	2.0	
1608	30	0.86	0.88	0.08	1.9	

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Location: 1485 Rosemont Road, West Linn, OR	Date: 8/15/2013 Job Number: 24-1-03764-001	Infiltration Test Number: Infiltration Test INT-2
Depth to bottom of hole: 2.8 ft	Dimension of casing: 0.5'	Test Method: Stand Pipe
Tester's Name: AMP Tester's Company: S&W		

Depth (feet):	Soil Texture:
2.8	Silt

Time	Time Interval (minutes)	Measurement (feet)	Head (feet)	Drop in Water Level (feet)	Infiltration rate (inches per hour)	Remarks
1159	--	1.34	1.00	--	--	Trial 1
1210	11	1.41	0.97	0.07	4.6	
1221	11	1.48	0.90	0.07	4.6	
1231	10	1.53	0.84	0.05	3.6	
1242	11	1.59	0.78	0.06	3.9	
1253	10	1.63	0.73	0.04	2.9	
1304	11	1.69	0.68	0.06	3.9	
1329	--	1.34	0.83	--		Trial 2
1401	32	1.50	0.92	0.16	3.6	
1441	40	1.66	0.76	0.16	2.9	
1507	--	1.34	0.84	--		Trial 3
1537	30	1.48	0.93	0.14	3.4	
1607	30	1.60	0.80	0.12	2.9	

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Location: 1485 Rosemont Road, West Linn, OR	Date: 8/15/2013 Job Number: 24-1-03764-001	Infiltration Test Number: Infiltration Test INT-3
Depth to bottom of hole: 2.7 ft	Dimension of casing: 0.5'	Test Method: Stand Pipe
Tester's Name: AMP Tester's Company: S&W		

Depth (feet):	Soil Texture:
2.7	Silt

Time	Time Interval (minutes)	Measurement (feet)	Head (feet)	Drop in Water Level (feet)	Infiltration rate (inches per hour)	Remarks
1228	--	0.72	1.00	--	--	Trial 1
1239	11	0.82	0.95	0.10	6.5	
1249	10	0.88	0.87	0.06	4.3	
1259	9	0.94	0.81	0.06	4.8	
1309	10	1.00	0.75	0.06	4.3	
1319	11	1.06	0.69	0.06	3.9	
1324	--	0.72	0.83	--	--	Trial 2
1358	35	0.93	0.90	0.21	4.3	
1435	37	1.11	0.70	0.18	3.5	
1455	--	0.71	0.81	--	--	Trial 3
1534	39	0.90	0.92	0.19	3.5	
1605	31	1.02	0.76	0.12	2.8	

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Location: 1485 Rosemont Road, West Linn, OR	Date: 8/27/2013 Job Number: 24-1-03764-001	Infiltration Test Number: Infiltration Test INT-4
Depth to bottom of hole: 2.8 ft	Dimension of casing: 0.5'	Test Method: Stand Pipe
Tester's Name: AMP Tester's Company: S&W		

Depth (feet):	Soil Texture:
2.8	Silt with sand

Time	Time Interval (minutes)	Measurement (feet)	Head (feet)	Drop in Water Level (feet)	Infiltration rate (inches per hour)	Remarks
1330	--	1.15	0.45	--	--	Trial 1
1341	11	1.19	0.41	0.04	2.6	
1353	12	1.23	0.37	0.04	2.4	
1359	6	1.24	0.36	0.01	1.2	
1409	10	1.28	0.32	0.04	2.9	
1418	9	1.32	0.28	0.04	3.2	
1426	8	1.34	0.26	0.02	1.8	
1428	--	1.14	0.46	--	--	Trial 2
1440	12	1.19	0.41	0.05	3.0	
1449	9	1.21	0.39	0.02	1.6	
1458	9	1.24	0.36	0.03	2.4	
1514	16	1.29	0.31	0.05	2.3	
1529	15	1.34	0.26	0.05	2.4	
1531	--	1.15	0.45	--	--	Trial 3
1545	14	1.19	0.41	0.04	2.1	
1552	15	1.22	0.38	0.03	1.4	
1607	15	1.26	0.34	0.04	1.9	

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Location: 1485 Rosemont Road, West Linn, OR	Date: 8/27/2013 Job Number: 24-1-03764-001	Infiltration Test Number: Infiltration Test INT-5
Depth to bottom of hole: 2.6 ft	Dimension of casing: 0.5'	Test Method: Stand Pipe
Tester's Name: AMP Tester's Company: S&W		

Depth (feet):	Soil Texture:
2.6	Silt

Time	Time Interval (minutes)	Measurement (feet)	Head (feet)	Drop in Water Level (feet)	Infiltration rate (inches per hour)	Remarks
1335	--	1.85	0.55	--	--	Trial 1
1345	10	1.88	0.52	0.03	2.2	
1355	10	1.92	0.48	0.04	2.9	
1403	8	1.92	0.48	0.00	0.0	
1412	9	1.96	0.44	0.04	3.2	
1422	10	1.99	0.41	0.03	2.2	
1431	9	2.01	0.39	0.02	1.6	
1434	--	1.84	0.56	--	--	Trial 2
1444	10	1.88	0.52	0.04	2.9	
1452	8	1.90	0.50	0.02	1.8	
1503	26	1.93	0.47	0.03	0.8	
1518	15	1.99	0.41	0.06	2.9	
1534	16	2.03	0.37	0.04	1.8	
1536	--	1.82	0.58	--	--	Trial 3
1548	12	1.85	0.55	0.03	1.8	
1557	9	1.89	0.51	0.04	3.2	
1612	20	1.94	0.46	0.05	1.8	
1616	4	1.95	0.45	0.01	1.8	
1636	20	2.00	0.40	0.05	1.8	

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Location: 1485 Rosemont Road, West Linn, OR	Date: 8/27/2013 Job Number: 24-1-03764-001	Infiltration Test Number: Infiltration Test INT-6
Depth to bottom of hole: 2.8 ft	Dimension of casing: 0.5'	Test Method: Stand Pipe
Tester's Name: AMP Tester's Company: S&W		

Depth (feet):	Soil Texture:
2.8	Silt

Time	Time Interval (minutes)	Measurement (feet)	Head (feet)	Drop in Water Level (feet)	Infiltration rate (inches per hour)	Remarks
1338	--	1.12	0.53	--	--	Trial 1
1347	9	1.15	0.50	0.03	2.4	
1357	10	1.21	0.44	0.06	4.3	
1404	7	1.25	0.40	0.04	4.1	
1414	10	1.29	0.36	0.04	2.9	
1423	9	1.32	0.33	0.03	2.4	
1436	13	1.37	0.28	0.05	2.8	
1437	--	1.22	0.43	--	--	Trial 2
1445	8	1.26	0.39	0.04	3.6	
1453	8	1.30	0.35	0.04	3.6	
1508	15	1.36	0.29	0.06	2.9	
1524	16	1.42	0.23	0.06	2.7	
1538	14	1.48	0.17	0.06	3.1	
1538	--	1.24	0.41	--	--	Trial 3
1549	11	1.29	0.36	0.05	3.3	
1558	9	1.32	0.33	0.03	2.4	
1619	21	1.41	0.24	0.09	3.1	

APPENDIX C

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Attachment to and part of Proposal 24-1-03764-001

Date: August 2013
To: Mr. Kelly Pyrch
1485 Rosemont Subdivision

Important Information About Your Geotechnical/Environmental Proposal

More construction problems are caused by site subsurface conditions than any other factor. The following suggestions and observations are offered to help you manage your risks.

HAVE REALISTIC EXPECTATIONS.

If you have never before dealt with geotechnical or environmental issues, you should recognize that site exploration identifies actual subsurface conditions at those points where samples are taken, at the time they are taken. The data derived are extrapolated by the consultant, who then applies judgment to render an opinion about overall subsurface conditions; their reaction to construction activity; appropriate design of foundations, slopes, impoundments, and recovery wells; and other construction and/or remediation elements. Even under optimal circumstances, actual conditions may differ from those inferred to exist, because no consultant, no matter how qualified, and no subsurface program, no matter how comprehensive, can reveal what is hidden by earth, rock, and time.

DEVELOP THE SUBSURFACE EXPLORATION PLAN WITH CARE.

The nature of subsurface explorations—the types, quantities, and locations of procedures used—in large measure determines the effectiveness of the geotechnical/environmental report and the design based upon it. The more comprehensive a subsurface exploration and testing program, the more information it provides to the consultant, helping reduce the risk of unanticipated conditions and the attendant risk of costly delays and disputes. Even the cost of subsurface construction may be lowered.

Developing a proper subsurface exploration plan is a basic element of geotechnical/environmental design, which should be accomplished jointly by the consultant and the client (or designated professional representatives). This helps the parties involved recognize mutual concerns and makes the client aware of the technical options available. Clients who develop a subsurface exploration plan without the involvement and concurrence of a consultant may be required to assume responsibility and liability for the plan's adequacy.

READ GENERAL CONDITIONS CAREFULLY.

Most consultants include standard general contract conditions in their proposals. One of the general conditions most commonly employed is to limit the consulting firm's liability. Known as a "risk allocation" or "limitation of liability," this approach helps prevent problems at the beginning and establishes a fair and reasonable framework for handling them, should they arise.

Various other elements of general conditions delineate your consultant's responsibilities. These are used to help eliminate confusion and misunderstandings, thereby helping all parties recognize who is responsible for different tasks. In all cases, read your consultant's general conditions carefully, and ask any questions you may have.

HAVE YOUR CONSULTANT WORK WITH OTHER DESIGN PROFESSIONALS.

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a consultant's report. To help avoid misinterpretations, retain your consultant to work with other project design professionals who are affected by the geotechnical/environmental report. This allows a consultant to explain report implications to design professionals affected by them, and to review their plans and specifications so that issues can be dealt with adequately. Although some other design professionals may be familiar with geotechnical/environmental concerns, none knows as much about them as a competent consultant.

OBTAIN CONSTRUCTION MONITORING SERVICES.

Most experienced clients also retain their consultant to serve during the construction phase of their projects. Involvement during the construction phase is particularly important because this permits the consultant to be on hand quickly to evaluate unanticipated conditions, to conduct additional tests if required, and when necessary, to recommend alternative solutions to problems. The consultant can also monitor the geotechnical/environmental work performed by contractors. It is essential to recognize that the construction recommendations included in a report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site.

Because actual subsurface conditions can be discerned only during earthwork and/or drilling, design consultants need to observe those conditions in order to provide their recommendations. Only the consultant who prepares the report is fully familiar with the background information needed to determine whether or not the report's recommendations are valid. The consultant submitting the report cannot assume responsibility or liability for the adequacy of preliminary recommendations if another party is retained to observe construction.

REALIZE THAT ENVIRONMENTAL ISSUES MAY NOT HAVE BEEN ADDRESSED.

If you have requested only a geotechnical engineering proposal, it will not include services needed to evaluate the likelihood of contamination by hazardous materials or other pollutants. Given the liabilities involved, it is prudent practice to always have a site reviewed from an environmental viewpoint. A consultant cannot be responsible for failing to detect contaminants when the services needed to perform that function are not being provided.

ONE OF THE OBLIGATIONS OF YOUR CONSULTANT IS TO PROTECT THE SAFETY, PROPERTY, AND WELFARE OF THE PUBLIC.

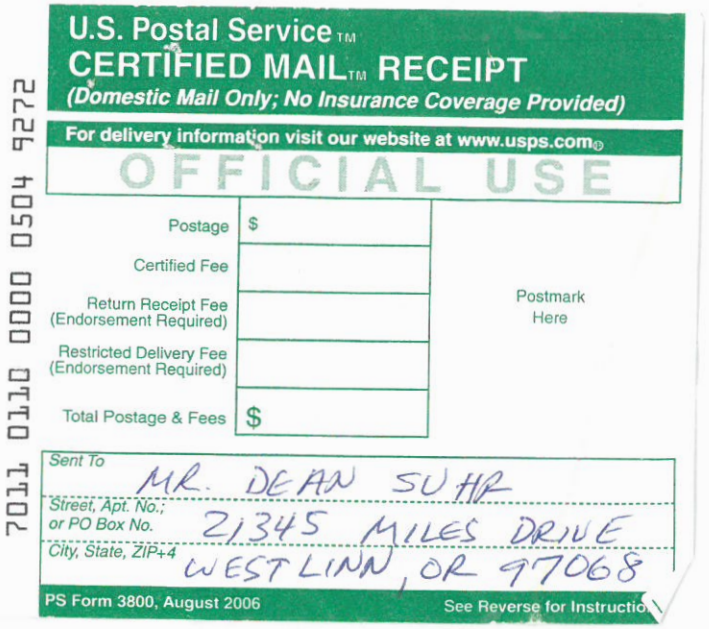
A geotechnical/environmental investigation will sometimes disclose the existence of conditions that may endanger the safety, health, property, or welfare of the public. Your consultant may be obligated under rules of professional conduct, or statutory or common law, to notify you and others of these conditions.

RELY ON YOUR CONSULTANT FOR ADDITIONAL ASSISTANCE.

Your consulting firm is familiar with several techniques and approaches that can be used to help reduce risk exposure for all parties to a construction project, from design through construction. Ask your consultant not only about geotechnical and environmental issues, but others as well, to learn about approaches that may be of genuine benefit.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland

1/2010



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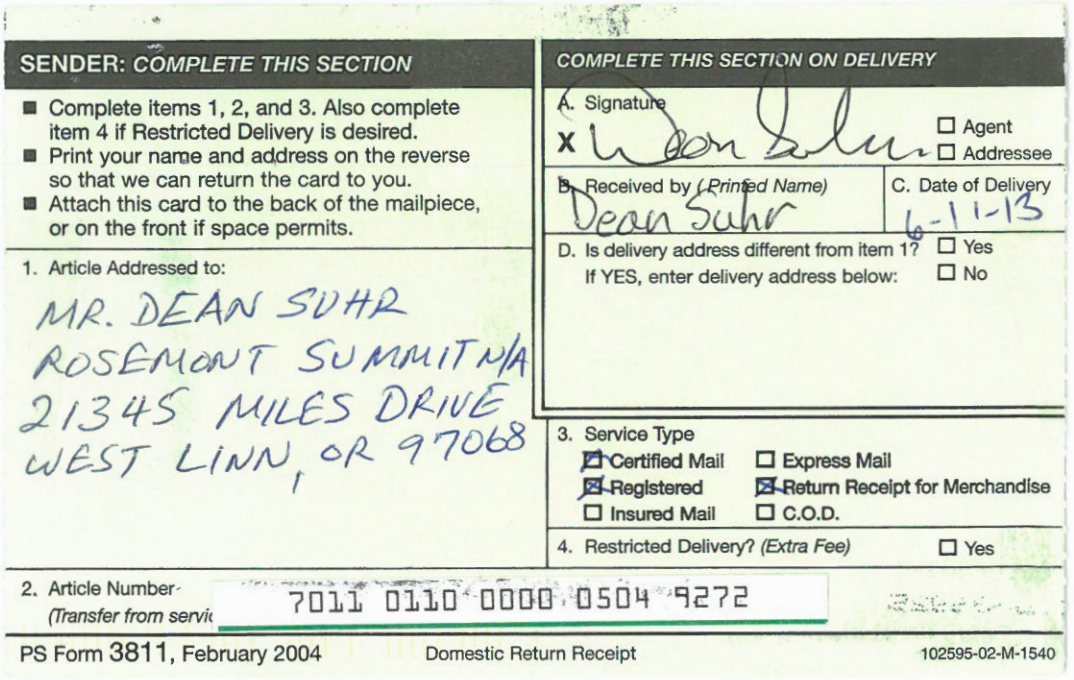
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To: MR. DEAN SUHR
Street, Apt. No.; or PO Box No.: 21345 MILES DRIVE
City, State, ZIP+4: WEST LINN, OR 97068

PS Form 3800, August 2006 See Reverse for Instructions



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MR. DEAN SUHR
ROSEMONT SUMMIT N/A
21345 MILES DRIVE
WEST LINN, OR 97068

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name): Dean Suhr
C. Date of Delivery: 6-11-13

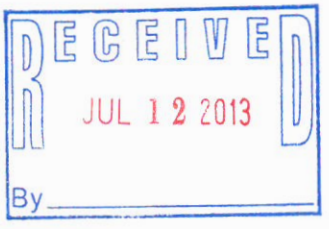
D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☒ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from servi): 7011 0110 0000 0504 9272

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540



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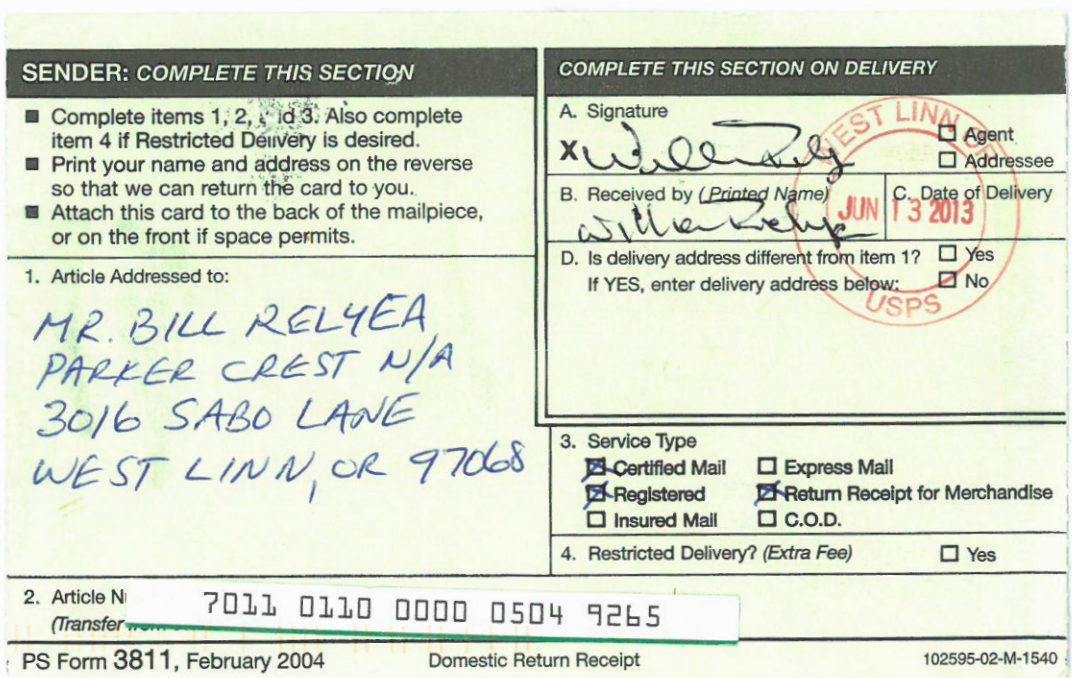
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To: MR. BILL RELYEA
Street, Apt. No.; or PO Box No.: 3016 SABO LANE
City, State, ZIP+4: WEST LINN, OR, 97068

PS Form 3800, August 2006 See Reverse for Instructions



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MR. BILL RELYEA
PARKER CREST N/A
3016 SABO LANE
WEST LINN, OR 97068

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) [signature] C. Date of Delivery JUN 13 2013

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

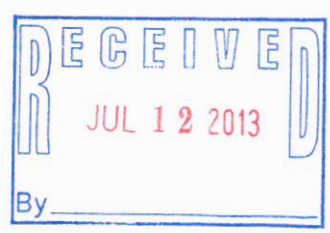
WEST LINN USPS

3. Service Type
☒ Certified Mail ☐ Express Mail
☒ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article N (Transfer 7011 0110 0000 0504 9265

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540



RECEIVED
JUL 12 2013
By

AFFIDAVIT

The State of Oregon)
) S.S.
County of Multnomah)

I, KELLY PYRCH, of WEST LINN, Oregon, MAKE OATH AND SAY THAT:

1. THAT LETTERS WERE MAILED ON JUNE 10, 2013 TO ALL OF THE PERSONS AND ADDRESSES IDENTIFIED ON THE (ATTACHED) LIST GENERATED BY FIDELITY TRUST FOR RESIDENTS WITHIN 500' OF 1485 ROSEMONT DRIVE, WEST LINN, OR, 97068.

SUBSCRIBED AND SWORN TO)
BEFORE ME, on the)
7th day of June, 2013)
)
)
)
NOTARY PUBLIC)
My Commission expires: 7/1/14)
Change Country

6.10.13

OFFICIAL SEAL
STEPHANIE S MOULTON
NOTARY PUBLIC-OREGON
COMMISSION NO. 449440
MY COMMISSION EXPIRES JULY 01, 2014

RECEIVED
JUL 12 2013
By

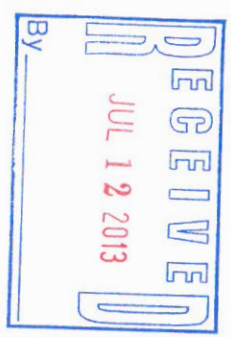
Notification Parcels

REFPARCEL	OWNER	MAILADDRES	MAILCITY	MAILSTATE	MAILZIP	SITEADDRES
21E25BC00100	Melvin & Marlene Ness	Po Box 32	West Linn	OR	97068	*no Site Address*
21E25BC00101	Melvin & Marlene Ness	Po Box 32	West Linn	OR	97068	1435 Rosemont Rd
21E25BC00102	Melvin & Marlene Ness	Po Box 32	West Linn	OR	97068	*no Site Address*
21E25BC00200	Roderick McLeod	1425 Rosemont Rd	West Linn	OR	97068	1425 Rosemont Rd
21E25BC00400	Joseph Trste McQueen	21950 Shannon Ln	West Linn	OR	97068	21950 Shannon Ln
21E25BD00200	City Of West Linn	22500 Salamo Rd #600	West Linn	OR	97068	*no Site Address*
21E25BD00300	James & Nancy Judd	5251 Linn Ln	West Linn	OR	97068	5251 Linn Ln
21E25BD00500	Robert Easton	21520 Lupine Ct	West Linn	OR	97068	5494 Linn Ln
21E25BD00601	Teresa Hearon	4130 Rosepark Dr	West Linn	OR	97068	4130 Rosepark Dr
21E25BD00602	Thomas & Sheryl Reis	4140 Rosepark Dr	West Linn	OR	97068	4140 Rosepark Dr
21E25BD00603	G Kevin Kiely	4150 Rosepark Dr	West Linn	OR	97068	4150 Rosepark Dr
21E25BD00604	Glenn & Nancy Puro	4160 Rosepark Dr	West Linn	OR	97068	4160 Rosepark Dr
21E25BD00605	William Bezio	4170 Rosepark Dr	West Linn	OR	97068	4170 Rosepark Dr
21E25BD00606	David & Deborah Mumford	4180 Rosepark Dr	West Linn	OR	97068	4180 Rosepark Dr
21E25BD00607	Karen Heisterkamp	4190 Rosepark Dr	West Linn	OR	97068	4190 Rosepark Dr
21E25BD00608	Allison Ittershagen	4195 Rosepark Dr	West Linn	OR	97068	4195 Rosepark Dr
21E25BD00609	John & Shannon Frysinger	4185 Rosepark Dr	West Linn	OR	97068	4185 Rosepark Dr
21E25BD00610	William Freund	4175 Rosepark Dr	West Linn	OR	97068	4175 Rosepark Dr
21E25BD00611	James & Pamela Frank	4165 Rosepark Dr	West Linn	OR	97068	4165 Rosepark Dr
21E25BD00612	Tamara & Dale Hoogestraat	4155 Rosepark Dr	West Linn	OR	97068	4155 Rosepark Dr
21E25BD00613	Richard & Linda DeClerck	4145 Rosepark Dr	West Linn	OR	97068	4145 Rosepark Dr
21E25BD00614	Robert & Sue Easton	21520 Lupine Ct	West Linn	OR	97068	21520 Lupine Ct
21E25BD01000	William Co-E Pyrch	1485 Rosemont Rd	West Linn	OR	97068	1485 Rosemont Rd
21E25BD01001	John Co-E Pyrch	1485 Rosemont Rd	West Linn	OR	97068	*no Site Address*
21E25BD01002	John Co-E Pyrch	1485 Rosemont Rd	West Linn	OR	97068	*no Site Address*
21E25BD01100	Myron & Joan Wallace	1515 Rosemont Rd	West Linn	OR	97068	1515 Rosemont Rd
21E25BD01200	J Thomas Pixton	5070 Linn Ln	West Linn	OR	97068	5070 Linn Ln
21E25BD01300	J Thomas Pixton	5070 Linn Ln	West Linn	OR	97068	*no Site Address*

REFPARCEL	OWNER	MAILADDRES	MAILCITY	MAILSTATE	MAILZIP	SITEADDRES
21E25BD01400	James Donald & Kathleen Jensen	5088 Linn Ln	West Linn	OR	97068	5088 Linn Ln
21E25BD01500	Rita Baseman	5152 Linn Ln	West Linn	OR	97068	5152 Linn Ln
21E25BD01600	Laurienne Cassella	5250 Linn Ln	West Linn	OR	97068	5250 Linn Ln
21E25BD01601	Edward Galli	5184 Linn Ln	West Linn	OR	97068	5184 Linn Ln
21E25BD01700	Bruce Jackson	5185 Linn Ln	West Linn	OR	97068	5185 Linn Ln
21E25BD01800	Mark Leroy & Amanda Rasmussen	5120 Linn Ln	West Linn	OR	97068	5120 Linn Ln
21E25BD01900	Michael & Karen Bonoff	5115 Linn Ln	West Linn	OR	97068	5115 Linn Ln
21E25BD02000	J Brendan & Angela Nichols	5085 Linn Ln	West Linn	OR	97068	5085 Linn Ln
21E25BD02100	O Jerry & Andrea Andersen	5055 Linn Ln	West Linn	OR	97068	5055 Linn Ln
21E25BD02200	Constantin & Floare Tudorache	1535 Rosemont Rd	West Linn	OR	97068	1535 Rosemont Rd
21E25BD02300	Stephanie Buth-Hall	18699 NE Marine Dr #K7	Portland	OR	97230	1545 Rosemont Rd
21E25BD02400	Jarett Grimmett	5012 Gregory Ct	West Linn	OR	97068	5012 Gregory Ct
21E25BD02500	John & Cynthia Geffel	3982 Wheeler Ln	West Linn	OR	97068	3982 Wheeler Ln
21E25BD02600	Jeffrey Lee Longtain	3904 Wheeler Ln	West Linn	OR	97068	3904 Wheeler Ln
21E25BD02700	Clem & Betty Grant	3987 Wheeler Ln	West Linn	OR	97068	3987 Wheeler Ln
21E25BD02800	Jason Bren	3905 Wheeler Ln	West Linn	OR	97068	3905 Wheeler Ln
21E25BD02900	Jeffrey Bouchard	5122 Gregory Ct	West Linn	OR	97068	5122 Gregory Ct
21E25BD03000	Randy Scott Wood	5146 Gregory Ct	West Linn	OR	97068	5146 Gregory Ct
21E25BD03100	Annette Gulati	5160 Gregory Ct	West Linn	OR	97068	5160 Gregory Ct
21E25BD03200	David & Paula Harkin	5163 Gregory Ct	West Linn	OR	97068	5163 Gregory Ct
21E25BD03300	Amy Oliver	5125 Gregory Ct	West Linn	OR	97068	5125 Gregory Ct
21E25BD03400	Dyann Marie Knutson Myers	5077 Gregory Ct	West Linn	OR	97068	5077 Gregory Ct
21E25BD03500	Jeffery & Lori Stuart	5053 Gregory Ct	West Linn	OR	97068	5053 Gregory Ct
21E25BD03600	John & Barbara Cahill	5045 Gregory Ct	West Linn	OR	97068	5045 Gregory Ct
21E25BD03700	David & Cynthia Kott	5039 Gregory Ct	West Linn	OR	97068	5039 Gregory Ct
21E25BD03800	Gerhard & Marlene Grieser	5011 Gregory Ct	West Linn	OR	97068	5011 Gregory Ct
21E25BD03900	City Of West Linn	22500 Salamo Rd #600	West Linn	OR	97068	*no Site Address*
21E25CA00600	Helen Lorraine Ekerson	1550 Rosemont Rd	West Linn	OR	97068	1550 Rosemont Rd
21E25CA00700	Mark & Ann Dagostino	1530 Rosemont Rd	West Linn	OR	97068	1530 Rosemont Rd

REFPARCEL	OWNER	MAILADDRES	MAILCITY	MAILSTATE	MAILZIP	SITEADDRES
21E25CA00800	Craig Norris	1520 Rosemont Rd	West Linn	OR	97068	1520 Rosemont Rd
21E25CA00900	Renaissance Custom Homes LLC	16771 Boones Ferry Rd	Lake Oswego	OR	97035	1510 Rosemont Rd
21E25CA00901	Theodore Chappell	4991 Ireland Ln	West Linn	OR	97068	4991 Ireland Ln
21E25CA00902	Martin & Michelle Plotner	4987 Ireland Ln	West Linn	OR	97068	4987 Ireland Ln
21E25CA00903	Rosemont Pointe Homeowners Assn	PO Box 23099	Tigard	OR	97281	*no Site Address*
21E25CA01000	Shannon Swim Club Inc	1590 Rosemont Rd	West Linn	OR	97068	*no Site Address*
21E25CA01200	Charles & Linda Mills	31053 SW Kensington Dr	Wilsonville	OR	97070	1490 Rosemont Rd
21E25CA01201	Brian Grant	4090 Ireland Ln	West Linn	OR	97068	4090 Ireland Ln
21E25CA01300	Ralph Hanson	1480 Rosemont Rd	West Linn	OR	97068	1480 Rosemont Rd
21E25CA01400	Ralph Hanson	1480 Rosemont Rd	West Linn	OR	97068	*no Site Address*
21E25CA01500	A Gregory & Susan McKenzie	1470 Rosemont Rd	West Linn	OR	97068	1470 Rosemont Rd
21E25CA01600	Margory Ulbricht	1460 Rosemont Rd	West Linn	OR	97068	1460 Rosemont Rd
21E25CA01700	Steve & Julie Schiefelbein	1450 Rosemont Rd	West Linn	OR	97068	1450 Rosemont Rd
21E25CA01800	Heather & Todd Bowerly	1440 Rosemont Rd	West Linn	OR	97068	1440 Rosemont Rd
21E25CA01900	Melinda Stoneking	3940 Ridge Ln	West Linn	OR	97068	3940 Ridge Ln
21E25CA02000	Craig & Janis Liddell	3950 Ridge Ln	West Linn	OR	97068	3950 Ridge Ln
21E25CA02100	Carl & Barbara Witt	PO Box 275	West Linn	OR	97068	4020 Ridge Ln
21E25CA02300	Guest Claudia	4027 S Ridge Ln	West Linn	OR	97068	4027 S Ridge Ln
21E25CA02400	Gary Huffman	4025 Ridge Ln	West Linn	OR	97068	4025 Ridge Ln
21E25CA02500	Tim Murphy	4960 Ireland Ln	West Linn	OR	97068	4960 Ireland Ln
21E25CA02503	Richard Parson	4880 Ireland Ln	West Linn	OR	97068	4880 Ireland Ln
21E25CA04300	Julio & Charlotte Pantoja	2787 Ridge Ln	West Linn	OR	97068	2787 Ridge Ln
21E25CA04400	Scott & Crisi Fromherz	2791 Ridge Ln	West Linn	OR	97068	2791 Ridge Ln
21E25CA04500	Lamont Jr & Nancy Boileau	2795 Ridge Ln	West Linn	OR	97068	2795 Ridge Ln
21E25CA04600	Randy & Stephanie Knapick	4975 Ireland Ln	West Linn	OR	97068	4975 Ireland Ln
21E25CA04700	Jeffrey & Katherine Jones	4862 Coho Ln	West Linn	OR	97068	4862 Coho Ln
21E25CA09100	Rosemont Pointe Homeowners Assn	PO Box 23099	Tigard	OR	97281	*no Site Address*
21E25CA09200	Rosemont Pointe Homeowners Assn	PO Box 23099	Tigard	OR	97281	*no Site Address*

REFPARCEL	OWNER	MAILADDRES	MAILCITY	MAILSTATE	MAILZIP	SITEADDRES
21E25CB00100	Jerry & Christine Burns	1430 Rosemont Rd	West Linn	OR	97068	1430 Rosemont Rd
21E25DB00800	Dale & Natalie Johnson	1555 Rosemont Rd	West Linn	OR	97068	1555 Rosemont Rd
21E25DB00817	Marcus & Julie Jones	5194 Nelco Cir	West Linn	OR	97068	5194 Nelco Cir
21E25DB00818	James & Deborah Beaty	5186 Nelco Cir	West Linn	OR	97068	5186 Nelco Cir
21E25DB00819	Daniel Nielsen	5182 Nelco Cir	West Linn	OR	97068	5182 Nelco Cir
21E25DB00820	Ronald & Judy Clarke	5178 Nelco Cir	West Linn	OR	97068	5178 Nelco Cir
21E25DB00821	Leroy & Donna Dunn	5170 Nelco Cir	West Linn	OR	97068	5170 Nelco Cir
21E25DB00900	Glacier Ice LLC	Po Box 1170	Coupeville	WA	98239	1560 Rosemont Rd



AFFIDAVIT

The State of Oregon)
) S.S.
County of MULTNOMAH)

I, KELLY PYRCH, of WEST LINN, Oregon, MAKE OATH AND SAY THAT:

1. A SIGN, NOTIFYING PASSERS-BY OF 1485 ROSEMONT ROAD POTENTIAL TO BE SUB-DIVIDED, WAS POSTED ON JUNE 10, 2013. SEE ATTACHED PHOTO.

SUBSCRIBED AND SWORN TO)
BEFORE ME, on the)
7th day of June, 2013)
)
Stephanie J Moulton)
NOTARY PUBLIC)
My Commission expires: 7/1/14)

Kelly C. Pyrch)
6.10.13)

Change Country

OFFICIAL SEAL
STEPHANIE S MOULTON
NOTARY PUBLIC-OREGON
COMMISSION NO. 449440
MY COMMISSION EXPIRES JULY 01, 2014

RECEIVED
JUL 12 2013
By

Posted June 10, 2013

As per City of West Linn CDC 99.038, notice is being given that this site, 1485 Rosemont Road, West Linn, OR 97068, may be subject to a proposed 7 lot subdivision. All lots are to be the minimum 10,000 square fee as per West Linn zoning requirements.

Kelly Pyrch is the applicant and can be reached at 503.248.5525, with any additional questions. Additionally, there will be a meetings held at West Linn City Hall on July 10, 2013 at 6:00pm and 7:00 with the Rosemont Summit and the Parker Crest Neighborhood Associations.

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Rosemont Summit Neighborhood AssociationMeeting re: proposal subdivision at 1485 Rosemont Rd.

Held Wednesday 7.10.13 at City Hall at 6pm

Attendees: Kelly Pyrch (owner), Rick Saito (potential home owner), Myron/Joan Wallace (Rosemont), Tom Pixton (Linn Lane), Jerry Andersen (Linn Lane), James Judd (Linn Lane), Bruce Jackson (Linn Lane), Rita Baseman (Linn Lane), Barbara Cahill(), Shannon Frysinger (Rosepark Dr.), Tom Pufor??? and Andy ???? - see attached list.

Meeting Notes:

- Introduction of subdivision to attendees by Kelly Pyrch and Rick Saito. 7 lots, single level homes, 2 driveways, remodel of existing residence, street improvements, sidewalks, trees, etc.
- The only concerns that were raised were about trees and water runoff. People were curious about which trees were staying and which might be removed. This did not appear to be much of an issue to anyone. The bulk of the time was spent discussing the water runoff and the effect it would have on Linn Lane residents. They are very concerned about any increase in volume as there is currently only a partial ditch to move runoff along. The residents on the east side of Linn Lane experience "flooding" during significant rain events. Residents were also curious about the method by which overflow water would be transported from the northeast rain garden to the city storm water system. Pyrch and Saito mentioned that the path of least resistance from the northeast rain garden to Linn Lane was via an existing easement on the north end of the Wallace property. Pixton was concerned about water content of soil and the effect it might have on existing trees. Wallace was also concerned about water runoff from an improved Rosemont Road migrating across his property. A list of items was given to Pyrch from Steve Lathrop who was unable to attend (see attached).
- Saito brought to light 3 variances that are being considered. 1) Additional tree removal on lot 4 to make the lot buildable. 2) The height of the sound walls that are being considered. 3) Depth of flag lots.

Parker Crest Neighborhood Association Meeting re: proposed subdivision at 1485 Rosemont Road

Held Wednesday 7.10.13 at 7:25pm

Attendees: Kelly Pyrch (owner), Rick Saito (potential home owner), Bill Relyea (Sabo Lane), Linda Mills (Rosemont Dr.) and Shannon Frysingen (Rosepark Dr.) – see attached list.

Meeting Notes:

- Introduction of subdivision to attendees by Kelly Pyrch and Rick Saito. 7 lots, single level homes, 2 driveways, remodel of existing residence, street improvements, sidewalks, trees, etc.
- Attendees did not express concern over any issues.
- Saito brought to light 3 variances that are being considered. 1) Additional tree removal on lot 4 to make the lot buildable. 2) The height of the sound walls that are being considered. 3) Depth of flag lots.

ROSEMONT SUMMIT 6 PM 7.10.13

Jerry Andersen

JAMES M. JUDD

Joan Wallace

Bruce Jackson

Myron Wallace

Rita Baseman

Rick Saito

Barbara Cahill

Shannon Frysinger

Joan Purfor

KELLY PYRCH

[illegible] Baseman

PARKER CREST 7PM 6.10.13

Kelly
Nick

SHANNON FRYSINGER 4135 ROSEPARK DR. 656-3296
LINDA MILLS 1490 ROSEMONT RD 989-5323
BILL KELYEA 396 SABO LANE 593 636-1292

Jim,

Here is a good article on "diversion of water" from one land owner to another.

1. We need to know what the documents, plans, designs, permit requests, grants, etc, have been submitted to the "city" for development of the property.
2. We need to know the scope of the development and how it might impact adjoining or down stream (lower) land owners, including the City (Park).
3. The upper land owner **may not divert** water onto adjoining or lower land owners that would not have otherwise flowed there.
4. Drainage design(s) must be submitted
5. What drainage designs are being considered?
6. What environmental or other impact reports have been submitted?
7. What is the scope of the potential diversion of water by the upper land owner?
8. The upper land owner must utilize a drainage design that satisfy Oregon law.
9. What steps have been taken to ensure compliance with Oregon law?
10. What steps have been taken, or will be taken, to aviod any damage to lower land owers?
11. Have the required easements been obtained from **all affected** property owners.
12. What provisions have been made to remedy any potential damage to any lower land owner.
13. What provisions have been made by the upper land owner or City to endemnify any lower land owner from all water related claims.

Linn Lane

Steve Lathrop

Concerns from another neighbor on Linn Lane that was out of town.

Soppe, Tom

From: Kelly Pyrch <KPyrch@rhconst.com>
Sent: Monday, July 22, 2013 8:17 AM
To: Soppe, Tom
Subject: 1485 Rosemont Subdivision
Attachments: doc05775820130722081206.pdf

Tom,

The attached is a letter from Tom Pixton, a Rosemont Summit neighbor. The recorder that Shauna provided did not record the RSNA meeting that I held. She asked that I get someone who was in attendance to provide some type of documentation that what I portrayed in my accounting of the neighborhood meeting was accurate. This is said document.

Thank you,

kelly pyrch

Rosemont Summit Neighborhood AssociationMeeting re: proposal subdivision at 1485 Rosemont Rd.

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- Saito brought to light 3 variances that are being considered. 1) Additional tree removal on lot 4 to make the lot buildable. 2) The height of the sound walls that are being considered. 3) Depth of flag lots.

This looks about right to me.

Tom Pixton
July 18, 2013

RECEIVED
JUL 23 2013

City of West Linn
Planning & Development • 22500 Salamo Rd #1000 • West Linn, Oregon 97068
Telephone 503.656.4211 • Fax 503.656.4106 • westlinnoregon.gov

DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT: ~~TOM SOPPE~~	PROJECT NO(S).: ~~SUB-13-01~~ SUB-13-03	
NON-REFUNDABLE FEE(S): ~~500~~ $500	REFUNDABLE DEPOSIT(S): 5600	TOTAL: ~~6100~~ 6100.00

Type of Review (Please check all that apply):

- ☐ Annexation (ANX)
- ☐ Appeal and Review (AP) *
- ☐ Conditional Use (CUP)
- ☐ Design Review (DR)
- ☐ Easement Vacation
- ☐ Extraterritorial Ext. of Utilities
- ☐ Final Plat or Plan (FP)
- ☐ Flood Management Area
- ☐ Hillside Protection & Erosion Control
- ☐ Historic Review
- ☐ Legislative Plan or Change
- ☐ Lot Line Adjustment (LLA) */**
- ☐ Minor Partition (MIP) (Preliminary Plat or Plan)
- ☐ Non-Conforming Lots, Uses & Structures
- ☐ Planned Unit Development (PUD)
- ☐ Pre-Application Conference (PA) */**
- ☐ Street Vacation
- ☒ Subdivision (SUB)
- ☐ Temporary Uses *
- ☐ Time Extension *
- ☐ Variance (VAR)
- ☐ Water Resource Area Protection/Single Lot (WAP)
- ☐ Water Resource Area Protection/Wetland (WAP)
- ☐ Willamette & Tualatin River Greenway (WRG)
- ☐ 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: 1485 ROSEMONT ROAD, WEST LINN, OR

Assessor's Map No.: 2-1E-25BD
Tax Lot(s): 1000, 1001 & 1002
Total Land Area: 1.85Ac

Brief Description of Proposal: Create a 7-lot subdivision with 2 tracts, two access points and 420 LF of associated public improvements.

Applicant Name: (please print)
Address:
City State Zip: same
Phone:
Email:

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Revised

Owner Name (required): (please print) KELLY PYRCH
Address: 1332 STONEHAVEN DR.
City State Zip: WEST LINN, OR 97068
Phone: 503 697 4558
Email: KPYRCH@RHCONST.COM

Consultant Name: (please print) GROUP MACKENZIE
Address: 1515 SE WATER AVE #100
City State Zip: PORTLAND, OR 97214
Phone: 503 224 9560
Email: rhenderson@grpmack.com

RECEIVED
MAY 23 2013
PLANNING & BUILDING
CITY OF WEST LINN
INT. TIME

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.**

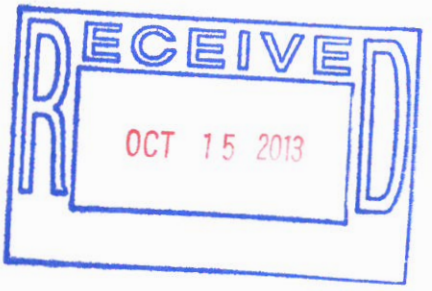
* No CD required / ** Only one hard-copy set needed

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.

Kelly G. Pyrch — Applicant's signature — 5.23.13 — Date
Kelly G. Pyrch — Owner's signature **(required)** — 5.23.13 — Date

Soppe, Tom

From: Eric Saito <rs-insite@comcast.net>
Sent: Thursday, October 10, 2013 12:35 PM
To: Soppe, Tom
Cc: Shroyer, Shauna
Subject: Re: Variances



Thanks Tom

On Oct 10, 2013, at 11:50 AM, Soppe, Tom wrote:

> Rick
>
> When you applied for two variances both were considered Class II including for the one that we then considered to cover the lot depth for several lots since at least one of those lots required it to be Class II, and the wall variance was Class II anyway.
>
> You are withdrawing the wall variance request as discussed but there are still two variances since one is needed for each of the two lots' depth. When we talked about this I wasn't considering whether one of the two variance numbers could go down to a Class I. It turns out one of them can because for Lot 6 the requested difference in depth is less than 10 feet different from the standard. For Lot 7 it is more than that so that is still a Class II.
>
> That means that your variance fee should be less than what you paid. A second Class II Variance is $1850 which is $1025 more than the fee for a Class I Variance. So as of this moment we technically owe you $1025.
>
> However as explained in the original pre-app notes, since there is also a deposit as part of this application (subdivision deposit) and those are based on staff hours spent, it remains to be seen whether we would owe you a refund in the end. For example if staff hours spent on this application consume more than $1025 over the original subdivision deposit paid when you applied, the variance refund is canceled out. For this reason we won't do anything about this until after the application is decided and hours are calculated but we will factor it in then to whether you are owed a refund or more billing.
>
> Thanks
> Tom
>
> _____
>
> [cid:image81a48b.gif@5ad07cf7.fe474286]<http://westlinnoregon.gov/e-news>
>
>
> Tom Soppe
> tsoppe@westlinnoregon.gov<mailto:tsoppe@westlinnoregon.gov>
> Associate Planner
> 22500 Salamo Rd
> West Linn, OR 97068
> P: (503) 742-8660
> F: (503) 656-4106
> Web: westlinnoregon.gov<http://westlinnoregon.gov>
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