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

STAFF REPORT
FOR THE PLANNING COMMISSION

FILE NUMBER:	PUD-14-01/DR-14-01/WAP-14-01
HEARING DATE:	July 16, 2014
REQUEST:	26-unit duplex development on common lot, requesting Class II Design Review approval, Water Resource Area approval (no development proposed in WRA), and Planned Unit Development (PUD) approval with a density bonus at 18270-18340 Willamette Drive and 18395 Shady Hollow Way.
APPROVAL CRITERIA:	Community Development Code (CDC) Chapter 14, Single-Family Residential Detached and Attached/Duplex, R-4.5; Chapter 24 Planned Unit Development; Chapter 55, Design Review; Chapter 32 Water Resource Area Protection.
STAFF REPORT PREPARED BY:	Tom Soppe, Associate Planner

Planning Manager's Initials AB Development Review Engineer's Initials EL

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GENERAL INFORMATION

OWNER:	Willamette Commons LLC, 3380 Barrington Dr., West Linn, OR 97068
APPLICANT:	David Emami, 3380 Barrington Dr., West Linn, OR 97068
CONSULTANT:	Stewart Gordon Straus, Architect, PC, 6775 SW 111th Ave., #20, Beaverton, OR 97008
SITE LOCATION:	18270 & 18340 Willamette Drive, 18395 Shady Hollow Way
LEGAL DESCRIPTION:	Clackamas County Assessor's Map 2-1E-14DB, tax lots 1100, 1200, and 1500
SITE SIZE:	2.08 acres
ZONING:	R-4.5, Single-Family Residential Detached and Attached/Duplex Conditional
COMP PLAN DESIGNATION:	Medium-Density Residential
120-DAY PERIOD:	This application became complete on May 21, 2014. The 120-day maximum application-processing period ends on September 14, 2014 per subsequent agreement by the applicant.
PUBLIC NOTICE:	Public notice was mailed to the Robinwood Neighborhood Associations and affected property owners on June 26, 2014. The property was posted with a sign on July 1, 2014. In addition, the application has been posted on the City's website and was published in the West Linn Tidings on July 3, 2014. The notice requirements have been met.

EXECUTIVE SUMMARY

The City Council recently adopted changes to update the water resource areas section and multiple other sections of the CDC. As you review this report, please note this application was processed under the CDC prior to those changes taking effect.

The application is for a 26-unit development consisting of 13 duplex buildings. This is a Planned Unit Development (PUD) on three existing parcels at the intersection of Willamette Drive (Highway 43) and Shady Hollow Way in the Robinwood neighborhood.

As with most PUDs the applicant has requested this approval at least in part to design a site in a way that utilizes the density transfer provisions of Chapter 24 (PUD chapter). The applicant does propose to utilize these by proposing a common lot for all units instead of individual duplex lots, and also requests the density bonus allowed by 24.150. The applicant requests a density bonus for site planning and design excellence, provided by 24.150(B). As a PUD with a requested density bonus, this must meet the standard PUD criteria as well as that in the density bonus section.

The standard PUD criteria of 24.100 involve preservation of existing amenities, creating a desirable and stable environment, the placement/design of buildings, and compatibility in scale with surroundings. There are many examples in 24.150 of what can constitute design excellence, and these are summarized in Staff Response 10 of the addendum below.

The applicant proposes 13 duplexes, or 26 units in all. The density of the site allows for 11 duplexes in the R-4.5 zone. A density transfer at a maximum of 15% bonus is allowed per Chapter 24, which if approved would allow four additional units or add two duplexes for a total of 13 duplexes.

All buildings proposed are two-story, some with daylight basements, with individual garages and driveways for each unit. A common parking area with 26 spaces including three ADA-accessible spaces is also proposed along Shady Hollow Way. The main driveway is midway along Shady Hollow Way's site. This is the only vehicle ingress/egress besides the individual driveways to Building D1's units along Shady Hollow Way to the east; the driveways to all other units as well as the common parking lot all access from the main driveway off Shady Hollow. The applicant proposes four different typical unit plans and elevations, all similar in that they are rectangular and two story with one unit on the left half of the building and one on the right, as is typical for many duplexes. Four buildings in the interior of the site are to be Plan A. Six buildings, including all four along Willamette Drive, would be Plan B. Two at the east end would be Plan C. The only Plan D building (Building D1) is the one accessing from the individual set of duplex driveways at the east end of the site, as discussed above.

As required with a PUD open space areas area proposed. Three are game-specific which is allowed: a putting green at the east end of the site, a bocce court near the northeast corner, a basketball area south of this. The fourth proposed open space area is a landscaped area with a gazebo at the site's southwest corner. The northeast corner of the site is preserved as undeveloped; this is the only area of the site within a protected water resource area, as a creek daylights just east of this corner. Although no development is proposed there the

application still requires Water Resource Area approval per Chapter 32 as it is a site with proposed new non-single-family development including part of a water resource area.

This is a development of more than two duplexes and therefore requires Class II Design Review, and is not exempt from Design Review per 55.025.

The property is in the R-4.5 zone. City Council approved a zone change (ZC-08-01, Ordinance 1578) in October 2008 to R-4.5 that was subject to four conditions of approval. Condition 3 required a 25 foot wide buffer between buildings on the project to buildings on adjacent properties at 18194 and 18200 Shady Hollow Way and required a special notation on the zoning map. Two other conditions addressed that no non-residential developments or multi-family were permitted on site. The applicant's proposal is for duplexes, has no commercial uses, and maintains a 25-foot building setback from the listed neighboring properties.

Currently the site consists of remnants of lots 45 and 46 of the Robinwood plat, and all of Lot 47 of this plat. The applicant proposes the duplexes to be on a common lot. The applicant proposes for buildings to straddle the existing lot lines of record across the site which has been allowed by the City before but is not ideal. This is addressed in Condition of Approval 13 below.

While without a PUD overlay duplexes would have to be on individual lots meeting size and dimensional standards, the overlay if approved allows for these to be on a common lot as long as the same maximum overall R-4.5 density for duplexes in this zone is respected. The applicant requests PUD approval in part for these reasons. Therefore the applicable approval criteria include:

- Chapter 14, Single-Family Residential Detached and Attached/Duplex R-4.5 zoning district;
- Chapter 55, Design Review, Class II Design Review criteria in Section 55.100;
- Chapter 24, Planned Unit Development;
- Chapter 32, Water Resource Area Protection

Staff has determined that the applicant has met the criteria of Chapter 24 upon inclusion of the proposed conditions of approval, including the requested density bonus for design excellence, and has adopted the applicant's findings regarding this. Staff has determined that the applicant meets Chapter 32 criteria upon inclusion of the proposed conditions of approval as no development is proposed in the water resource area. Staff has also determined that with the inclusion of the conditions of approval the applicant meets Class II Design Review criteria.

Staff has determined that with the recommended condition of approval as discussed below, the application meets the approval criteria.

Review of Conditions of Approval:

Condition of Approval 1 requires site plans to be conformed to and ensures the completion of improvements is tied to building permit issuance. Condition of Approval 2 ensures that all forthcoming plans will conform to Engineering standards including for half-street improvements and other on- and off-site improvements.

Condition of Approval 3 ensures that the requirements to underground utilities in 55.100(M) are fulfilled.

55.100(A)(5) requires compliance with Chapter 42 Clear Vision Areas. 55.100(L)(4) requires signs not to obstruct lines of sight. Condition of Approval 4 requires the proposed gazebo and sign near the intersection of Willamette Drive and Shady Hollow Way be outside the clear vision area for street intersections required by 42.040.

Condition of Approval 5 requires ODOT's requirements per their memo to staff on Pages 58-59 of Exhibit PC-4 for work in the Highway 43 right of way.

Condition of Approval 6 requires the public sidewalk be widened to eight feet along the existing bus stop nearby along Highway 43 just south of Shady Hollow Way, and for the applicant to add a bench here unless this is not acceptable to Tri-Met. These requirements fulfill 85.200(D)(4). This is necessary because 55.100(H)(6) requires the fulfillment of the criteria of 85.200(D).

Building D is the only building with its individual driveways directly off a street instead of the main driveway. 48.030(B)(4) requires there be 20 feet of driveway between the garage door and the paved portion of the right of way for such driveways, so Condition of Approval 7 requires this for Building D. Section 48.025(B)(6) requires that Transportation System Plan Table 8-3 be followed. Since this table requires driveways to be 50 feet apart on local streets, Condition of Approval 7 requires this distance be maintained from the proposed set of driveways for Building D, to the existing driveway on the next property to the north. 48.060(D)(3) requires curb cuts along the same side of the same local street to be 30 feet apart, meaning that the two proposed Building D driveways must share a curb cut. This condition also requires this.

Condition of Approval 8 fulfills all access requirements requested by TVFR in their letter on pages 56-57 of Exhibit PC-3, fulfilling the emergency access requirements of 48.030(C) and the requirements for water flow in 55.100(I)(3).

46.150(A)(20) requires pathways within the parking area to be six feet wide. 55.100(B)(7)(d) requires paths on site to be six feet wide, eight feet when abutting parking spaces or travel lanes. Therefore proposed Condition of Approval 9 requires paths to be at least six feet wide everywhere and at least eight feet wide when abutting parking spaces or travel lanes.

Condition of Approval 10A requires a conservation easement and signage for the area within 50-feet of the nearby off-site drainageway, as required by 32.050(G). Condition of Approval 10B requires a tree conservation easement for the significant tree to be protected, per 55.100(B)(2)(b).

Condition of Approval 11 fulfill's 24.170's requirement that a homeowner's association maintain common open spaces.

Condition of Approval 12 addresses the fulfillment of parking-related criteria including parking landscaping. 55.100(A)(7) requires compliance with Chapter 46 regarding off-street parking, and 55.100(A)(10) requires compliance with Chapter 54 Landscaping. Condition of

Approval 12A requires the proposed ADA van-accessible space be marked as such per 46.150(B)(6). Condition of Approval 12B requires the wheel stops required by 46.150(A)(11) for parking spaces along landscaped areas. 54.020(E)(3) requires parking lots of this size to have landscaping comprising 10% of the interior of the parking lot and for them to also have two shade trees along the perimeter. Conditions of approval 12C and 12D require these respectively.

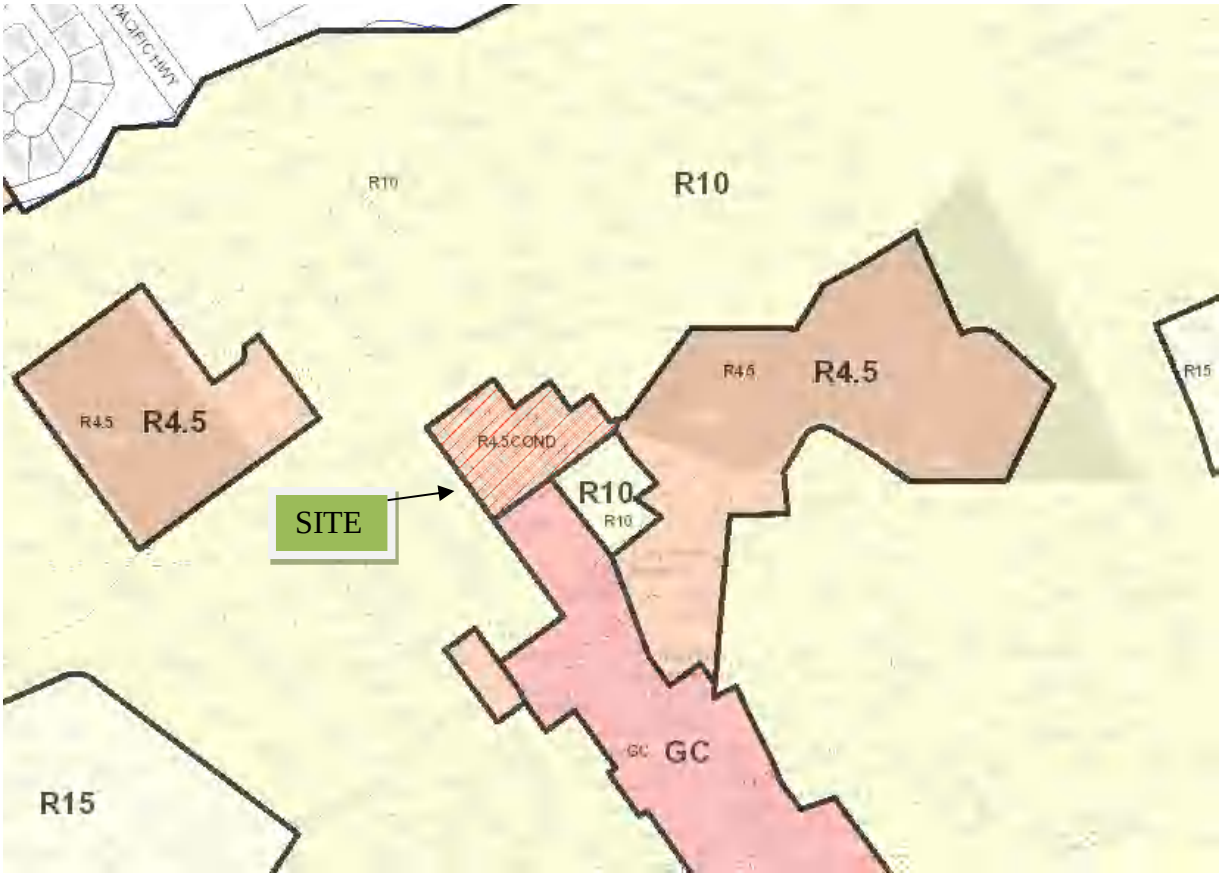
Condition of Approval 13 fulfills all setback-related requirements by ensuring the applicant obtains Lot Line Adjustment approval and replats the three lots on site as one lot of record, so buildings will not straddle existing lot lines.

Condition of Approval 14 requires the three on-site lots be legally made into one lot by the Lot Line Adjustment and county platting processes. Condition of Approval 14 ensures compliance with 24.030's deadline for project completion.

Site Conditions: There are two single-family houses on site, one of which accesses from Willamette Drive and the other from Shady Hollow Way. Both are proposed to be demolished and their driveways eliminated. There are many trees on site, four of which are considered significant by the City Arborist; one of these is proposed for preservation. The site is buffered from the streets by many small trees and some hedges. There are not sidewalks and curbs along the site.

Site Aerial View

Source: West Linn GIS, 2014



Zoning Vicinity Map **Source:** West Linn GIS, 2014

Surrounding Land Use. The site is in a mainly residential area of the city, but with a General Commercial corridor several blocks long along Highway 43 starting across Shady Hollow from the site.

Public comments:

No public comments have been received to date.

RECOMMENDATION

Staff recommends approval of application PUD-14-01/DR-14-01/WAP-14-01, subject to the following proposed conditions:

1. Site Plans. With the exception of modifications required by these conditions, the project shall conform to the Shady Hollow Village plans, sheet DRS1-DRS7, dated May 14, 2014, located on Page 85 of Exhibit PC-6, before a building permit is issued.

2. Engineering Standards. The applicant shall submit updated engineering plans for review and approval by the City Engineer that address public improvement issues (including but not limited to public water mains, sidewalks, street improvements) on-site or off-site. These improvements must be completed prior to building permit

approval. All public improvements and facilities associated with public improvements including grading, onsite stormwater design, street lighting, easements, and easement locations are subject to the City Engineer's review, modification, and approval.

3. Undergrounding Utilities. All utilities shall be undergrounded along the site's frontage including across the street where utility lines cross over street right of way along the site.

4. Clear Vision Area. The gazebo shall be placed outside the 30 foot by 30 foot clear vision area as measured from the right of way lines (after dedication) at the intersection of Shady Hollow and Willamette. The sign shall also be placed outside this clear vision area if it is more than three feet tall.

5. ODOT Requirements.
   A) An ODOT Miscellaneous Permit must be obtained for all work in the highway right of way.
   B) The applicant must obtain an ODOT permit to place trees in the state right of way.
   C) Illumination within the ODOT right of way must be in accordance with AASHTO illumination standards and the ODOT Lighting Policy and Guidelines, January 2003, which states that local jurisdictions must enter into an intergovernmental agreement (IGA) with ODOT wherein the local jurisdiction is responsible for installation, maintenance, operation, and energy costs.

6. Sidewalk and Bench for Bus Stop. The applicant shall widen the sidewalk to eight feet along the existing bus stop south of Shady Hollow Way on the east side of Highway 43. The applicant shall add a bench in the bus stop area, provided it is agreeable to Tri-Met.

7. Driveway Spacing and Length. The accesses to the two units in Building D1 shall share a curb cut on Shady Hollow Way. The curb cut shall be at least 50 feet from the driveway to the north at 18200 Shady Hollow Way. The accesses to Building D1 shall be 20 feet long at minimum between the sidewalk and the garage doors.

8. Emergency Access.
   A) A minimum centerline turning radius of 45 feet is required for all curves in the driveway. Inside turning radii shall not be less than 28 feet. Outside turning radii shall not be less than 48 feet, measured from the same center point.
   B) "No parking" signs are required along both sides of the driveway.
   C) The applicant shall provide documentation from a registered engineer that the driveway is capable of supporting 12,500 pounds point load (wheel load) and 60,000 pounds live load (gross vehicle weight).
   D) A fire flow test shall be performed to the satisfaction of TVFR.
   E) Fire sprinklers shall be installed in all buildings.
   F) Approved fire apparatus access roadways and firefighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on site.

9. Paths. Pedestrian paths within the site shall be six feet wide, eight feet wide where they abut travel lanes or parking spaces.

10. Conservation Easements.
    A) A conservation easement shall be recorded that applies to all areas of the site within 50 feet of the drainageway outfall just east of the site's northeast corner. The easement shall include the City's standard conservation easement language for water resource area conservation easements (available from the Planning Department) which prohibits further development and protects native vegetation. The edge of the conservation easement on all sides shall be marked with the City's standard permanent markers at 30-foot to 50-foot intervals and at all boundary direction changes.
    B) The applicant shall establish a tree conservation easement for the significant oak tree in the southwest area of the site preserved for preservation. The easement area shall include both the tree's canopy and dripline-plus-10-foot areas that are proposed to remain undeveloped. The applicant shall use the City's standard tree conservation easement language, available from the Planning Department.

11. Usable Open Space. CDC 24.170(B)(3) and (4) require the creation of a Homeowner's Association (HOA) for the maintenance of the common open space and the active recreation facilities. The applicant shall provide the completed HOA that addresses this requirement prior to building permit approval.

12. Parking.
    A) The proposed ADA van-accessible space shall have a sign marked "Van Accessible" mounted below the accessible parking sign.
    B) All parking spaces shall be provided with a wheel stop at least four inches high located two feet back from the front of the parking stall.
    C) Within the parking lot, spaces shall be converted to landscaping, enough to equal 10% of the interior of the parking lot. The proposed semicircular landscaped areas on either side of the driveway entrance may count towards this 10% minimum.
    D) Two shade trees shall be planted along the perimeter of the parking lot.

13. Lot Line Adjustment and Platting. The applicant shall apply for a Lot Line Adjustment through the Planning Division to eliminate the existing lot of record lines through the site, and subsequently re-plat the three existing lots on site into one lot of record with Clackamas County, after the demolition of at least one of the two existing single-family dwelling units on site.

14. Expiration of Extension of Approval. The applicant shall complete conditions of approval within three years of the date of approval of the development plan.

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:

- 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
July 16, 2014

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

I. File ZC-08-01

In October 13, 2008, City Council adopted Ordinance 1578 to implement a plan and zone change for file ZC-08-01. This decision contained four conditions of approval (as follows): Conditions:

1. The property within the rezone area cannot be developed for non-residential uses.
2. The units shall be limited to single family attached, duplex or detached single family residential configuration only. Triplex or other configurations with more attached units are not permitted.
3. A 25 foot wide buffer shall be provided between buildings on the project site and the properties at 18194 and 19200 Shady Hollow Way.
4. The City of West Linn shall amend its zoning map and shall identify the three lots on the face of the map as "R-4.5 "COND." Which will identify or "red flag" the fact that conditions have been imposed with limit the allowable uses of the R-4.5 zone. Additionally, conditions 1, 2, and 3 shall be recorded with the deed

Staff Response 1: Only residential uses are proposed, and these are all duplexes. There are no buildings proposed within 25 feet of the properties at 18194 and 19200 Shady Hollow Way. Staff determines the conditions of the rezoning decision are met.

II. Chapter 14
SINGLE-FAMILY RESIDENTIAL ATTACHED AND DETACHED/DUPLEX, R-4.5

14.030 PERMITTED USES

The following are uses permitted outright in this zoning district:

(…)

2. Duplex residential units.

(…)

14.070 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:

A. The minimum lot size shall be:

(…)

3. For a duplex, 8,000 square feet or 4,000 square feet for each unit.

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

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

D. The minimum average lot depth shall be 90 feet.

Staff Response 2: The only use proposed is duplexes. This is a use permitted outright in this district, so that criterion is met. The applicant has applied for PUD approval which would allow this to be done as one lot with multiple duplexes. After dedication the site would have 89,243 square feet, which would allow for 22 duplex units (11 duplexes) per the standard in (A)(3) above. The applicant requests a density bonus allowing 26 units (13 duplexes). See Staff Response 10.

E. The minimum yard dimensions or minimum building setback areas from the lot line shall be:

1. For a front yard, 20 feet; except for steeply sloped lots where the provisions of CDC 41.010 shall apply.

2. For an interior side yard, five feet.

3. For a side yard abutting a street, 15 feet.

4. For a rear yard, 20 feet.

Staff Response 3: The proposal meets (1) and (2) above. Subsections (3) and (4) are met except for Building D1 but for a PUD these are met via the allowable setbacks in 24.180(D)(3) and (4) respectively. As they border a frontage with a street and not another development the frontages to the south and east for Building D1 are not considered to be along the property perimeter as it related to other developments. Staff determines the criteria are met in conjunction with 24.180(D); see Staff Response 17.

F. The maximum building height shall be 35 feet except for steeply sloped lots in which case the provisions of Chapter 41 CDC shall apply.

Staff Response 4: The buildings meet the 35-foot limit except for when they meet Chapter 41's exception allowing them to slightly exceed this when there is a more than 10-foot grade along the side of the building (as measured from five feet away horizontally, downslope). Staff determines the criterion is met.

G. The maximum lot coverage shall be 40 percent.

(…)

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

J. The sidewall provisions of Chapter 43 CDC shall apply.

(…)

Staff Response 5: The lot coverage is proposed to be 25.5% and the floor area ratio (FAR) to be 0.446 (or 44.6%, which falls below the floor area maximum of 45%). Sidewall provisions of Chapter 43 are met as the midpoint of each sidewall is less than 22 feet tall. Staff determines the criteria are met.

III. Chapter 24
PLANNED UNIT DEVELOPMENT

24.030 EXPIRATION OR EXTENSION OF APPROVAL

If the final plat has not been recorded with the County within three years from the date of approval of the development plan, the application shall be null and void unless an extension is granted per CDC 99.325. If an extension is granted, the final plat must be recorded with the County before the extension lapses.

Staff Response 6: A final plat is not required as this is not a subdivision. Therefore Condition of Approval 14 requires the applicant to complete the conditions of approval within three years of the approval of the development plan.

24.070 EXEMPTIONS FROM PLANNED UNIT DEVELOPMENT REQUIREMENTS

A planned unit development (PUD) shall not apply in cases where all the following conditions exist:

A. No density transfer is proposed pursuant to provisions of this chapter.

(…)

Staff Response 7: Density transfer is requested, so a PUD applies as this is required with density transfer.

24.090 APPLICABILITY AND ALLOWED USES

Subject to the provisions of CDC 24.070, 24.080 and this section, the PUD Overlay Zone may be applied to all residential, commercial, and industrial zones.

A. In addition to the uses allowed outright in the underlying zone the following uses shall be allowed outright where all other applicable standards are met.

1. Single-family, duplex, attached housing and multiple-family housing.

Staff Response 8: The applicant has applied a PUD in a residential zone, for multiple duplexes on one site with no land division proposed. Staff determines the criterion is met.

24.100 APPROVAL CRITERIA

(…)

B. The application shall also demonstrate compliance with the following criteria:

1. The proposal shall preserve the existing amenities of the site to the greatest extent possible by relating the type and design of the development to the topography, landscape features, and natural amenities existing on the site and in the vicinity.

2. The proposed PUD shall provide a desirable, attractive, and stable environment in harmony with that of the surrounding area through thorough, well-developed, detailed planning and by comprehensively correlating the provisions of this code and all applicable adopted plans.

3. The placement and design of buildings, use of open spaces, circulation facilities, off-street parking areas, and landscaping shall be designed to best utilize the potentials of the site characterized by special features of geography, topography, size, and shape.

4. The PUD shall be developed so that it is compatible with neighboring development in terms of architecture, massing, and scale. Where that cannot be accomplished, appropriate transitions shall be provided that are deferential or sympathetic to existing development.

Staff Response 9: The two-story duplexes create an attractive environment along Highway 43 by having their facades face the highway. In other directions vegetative buffers provide appropriate transitions. Such buffers preserve existing amenities and landscape features. These buffers are provided between this development and others, and between residents of this development and the Burgerville businesses and parking area. Daylight basements are

provided including the units' individual garages, where the topography warrants these plans rather than the non-daylight-basement plans. The water resource area is preserved at the northeast corner. The 25-foot required buffer per ZC-08-01/PLN-08-06 is provided to the residential properties on Shady Hollow to the east.
Staff determines the criteria are met.

(…)

24.110 RESIDENTIAL DENSITY CALCULATIONS

A. The PUD allows density to be transferred on residential portions of the site. The following sections explain how the allowed number of dwelling units per acre is calculated. The standards are also intended to ensure that PUDs and adjoining developments are compatible and maintain a sense of neighborhood unity.

B. Net acres for land to be developed with detached single-family dwellings, or multi-family dwellings including duplexes, is computed by subtracting the following from the gross acres:

1. Any land area which is included in a boundary street right-of-way or water course, or planned open space areas if density transfer is not requested.

2. An allocation of 25 percent for public or private facilities (e.g., streets, paths, right-of-way, etc.) or, when a tentative plat or plan has been developed, the total land area allocated for public or private facilities.

(…)

C. The allowed density or number of dwelling units on the site, subject to the limitations in CDC 24.140 and 24.150, is computed by dividing the number of square feet in the net acres by the minimum number of square feet required for each lot, by the base zone.

24.130 ALLOWABLE DENSITY ON TYPE I AND II LANDS

A. This table relates to the allowed density of development on Type I and II lands. "Development" means when the footprint of a home is placed on Type I or II lands, or when over 50 percent of the lot comprises Type I or II lands. Generally speaking, the greater the constraints, the lower the density; and the lower the constraints, the higher the allowable density.

Please note that density transfers from constrained lands generally allow a 50 to 100 percent transfer. The rationale for only a 50 percent transfer is that these lands have historically been of marginal development value (e.g., wetlands, 52 percent slopes, etc.); so to say those lands should have the same 100 percent development value and potential as less constrained lands would be wrong since they are tougher to build on and they are generally appraised at a lower land value than flatter, more developable sites.

There are three categories of allowable density: (1) "building not allowed"; (2) allowable density "when developed"; and (3) allowable density "when transferred." The first category means that no building is allowed in, for example, slopes over 50 percent or in wetlands. The prohibition is represented by an "X." The second category means that if a developer wants to develop an area, it can only be developed at 50 percent of normal density or not at all. The third category, "when transferred," explains what percentage of the normal density of the Type I and II lands can be transferred to on-site non Type I and II lands.

B.

	Allowable Density*		
Type I or Type II lands	**Building Not Allowed**	**When Developed**	**When Transferred**
Water Quality Resource Area	X	X	50%

* Development of single-family detached residences on pre-existing lots of record is exempt from this chart; most restrictive density governs in the event of conflict or overlap.

** The "50 percent allowable density when developed" means that if we reduce the number of homes on constrained lands, we reduce the hazard potential which typically increases with higher density and increased site disturbance. Consequently, the density is reduced in half (50 percent). That means that to develop on a predominantly steep lot would require twice the minimum lot size of the underlying zone (e.g., you would need a 20,000-square-foot lot in the R-10 zone). When Type I and II lands are to be developed, the 70 percent rule shall not apply to those areas; it shall only apply to the developable net area as defined in CDC 85.200(J)(7). (Ord. 1408, 1998)

Staff Response 10: The applicant demonstrates on Page 65 of Exhibit PC-6 that the site meets the density transfer standards for the base number of units. The applicant's calculations include the necessary subtractions for right of way dedications and the water resource area. Staff determines the criteria are met.

24.140 TRANSITIONS AND LIMITATIONS ON DENSITY TRANSFER

A. Because the PUD and the provisions of this chapter allow increased residential densities and various housing types, it is necessary that some kind of transition be provided between the project site and the surrounding properties. These transitions will, for example, mitigate the impacts of multi-family housing next to single-family housing. Transitions are not required in all cases, however. The following exceptions shall apply:

(…)

2. Two housing units attached side by side by common wall are considered compatible with detached single-family units; but

(…)

Staff Response 11: The applicant proposes multiple side-by-side duplexes, so no transition is needed between these and the adjacent detached single-family units. Also as discussed above in this staff report, the proposal complies with the 25-foot buffer required by ZC-08-01 Condition 3 between buildings on site and the single-family detached properties at 18194 and 19200 Shady Hollow Way. Staff determines the criterion is met.

24.150 DENSITY BONUSES

A. Although the density may be reduced by CDC 24.130, applicants are encouraged to seek density bonus credits under such categories as "site planning and design excellence." The permitted number of dwelling units may be increased up to 29 percent above those computed under the formula above based on a finding of the Planning Director that the density bonus credits have been satisfied as set forth in the following section and in CDC 24.160:

B. **Site planning and design excellence** allow additional units up to the maximum indicated on the chart when excellence in site planning and building design is demonstrated with respect to neighborhood compatibility, recreation space, security and crime prevention, and livability of on-site environment, as determined through design review. Examples of quality design features which may be used to address the foregoing include, but are not limited to:

1. Maximum retention and integration of natural features into site design in addition to open space areas dedicated to the City.

2. Minimize impervious surfaces. Locate parking facilities and garages at the rear of buildings accessed by alleys. De-emphasis of the automobile is encouraged through placement of parking at side or rear of buildings (reference CDC 55.100(A)(2)).

3. Maximize recreation and open spaces in addition to open space areas dedicated to the City.

4. Superior landscape plan in terms of quantity of materials and quality represented by size of plant/tree, variety of plant/tree, and mix to allow seasonal colors. The landscape plan should incorporate available natural site features (e.g., rock outcroppings, creeks, etc.). The landscape plan should relate to or complement on-site buildings, frame views, and show sensitivity to the micro-climate. Other landscape elements may include rockeries, ornamental pools, and pathways.

5. Architectural design that emphasizes high quality materials, finish, texture, and craftsmanship. Architectural complexity and richness of detail are sought. Contextual design that draws from the predominant architecture of the area is preferred over contrasting design. Only examples of manifestly outstanding contrasting design would be acceptable alternatives to the contextual approach. The design should accommodate the human scale with multiple light windows, appropriately scaled entryways, and porches. Facades should be broken up into multiple elements, both horizontally and vertically. Variations in the building silhouette and depth are also desirable.

(…)

7. Well-articulated pedestrian and bikeway path system and public transit system, if applicable, that unifies the development site and connects with adjacent development and destinations. Transit facilities are important.

C. The City shall encourage and assist in the accumulation of density bonus developments. The final density allowed will depend on the following factors:

1. The amount of density allowed shall be rounded up to the next figure when any partial figure of one-half or greater results from adding the percentage density increase to the base density.

2. The development shall be subject to all applicable development standards of this code. The Planning Director may recommend that the proposed design of the development be modified to ensure that development standards are satisfied. Modifications of design may include, but are not limited to, the following:

a. Reduction in building coverage.
b. Clustering of buildings.
c. Redesign of parking or street layout.
d. Protection of resource areas. (Ord. 1463, 2000)

24.160 DENSITY BONUS CHART

The cumulative density bonus for all categories except for design excellence or low cost housing cannot exceed 20 percent. To achieve the maximum 29 percent density bonus, the application must qualify for the low cost housing bonus, the design excellence bonus, or both.

Bonus Category	**LOW DENSITY % of increase (R-20, R-15, R-10, R-7, R-40)**	**MEDIUM DENSITY % of increase (R-5 & R-4.5)**	**HIGH DENSITY % of increase (R-2.1, R-3.0)**
4. Design Excellence: The development satisfies the criteria for exceptional design, pursuant to CDC 24.150.	15%	15%	15%

(…)

Staff Response 12: The examples traits provided in 24.150(B) regarding density bonus requests based on site planning and design excellence are summarized as follows:

- Maximum retention and integration of natural features.

- Minimize impervious surfaces. Locate parking facilities and garages at the rear of buildings accessed by alleys.
- Maximize recreation and open spaces.
- Superior landscape plan.
- Architectural design, material quality, complexity, richness of detail.
- Integration of various housing types and densities.
- Well-articulated pedestrian and bikeway path system. Transit facilities are important.

The density calculations as allowed for net site area minus 50% for transferred WRA area as allowed by 24.110-130 are as follows:

Existing gross site area	90,375 sq. ft.
Minus right of way dedication	1,132
Minus transferred WRA x 0.5	599
Net site area	88,644

The applicant has a net site area of 88,644 sq. ft. (slightly different than the applicant's calculations as they subtracted the whole WRA instead of half as allowed by 24.120). With the 8,000 square foot minimum non-PUD lot size for duplexes in this zone per 14.070(A)(3), 11.08 duplexes are allowed.

88,644/8,000 = 11.08

Per 24.260(4) for medium-density housing in this zone, a maximum of 15% bonus is allowed with the requested density bonus.

11.08 x 1.15 = 12.74 duplexes.

Per 24.250(C)(1), the result of 12.74 shall be rounded up to 13 duplexes. If the density bonus is granted the applicant's proposal to build 13 duplexes will be allowed. It should be noted the applicant subtracted all, rather than 50% of the square footage of the water resource area, in their density calculation tables on Page 66 of Exhibit PC-6. In those tables the outcome was calculated to be slightly different than staff's analysis above, but results in the same number of allowed duplexes.

Staff finds that the criteria are met.

24.170 USABLE OPEN SPACE REQUIRED

Residential planned unit developments (PUDs) shall comply with the following usable open space requirements:

(…)

B. PUDs that contain 10 or more single-family detached, single-family attached, or duplex residential units shall comply with the following usable open space requirements.

1. The plan shall include an open space area with at least 300 square feet of usable area per dwelling unit.

(…)

3. The usable open space shall be owned in common by the residents of the development unless the decision-making authority determines, based upon a request from the applicant and the recommendation of the City Director of Parks and Recreation, that the usable open space should be dedicated to the City for public use. If owned in common by the residents of the development, then a homeowner's association shall be organized prior to occupancy to maintain the usable open space.

4. If the usable open space contains active recreational facilities such as hard surface athletic courts or swimming pools, then the usable open space area shall not be located on the perimeter of the development unless buffered by a transition pursuant to CDC 24.140(B).

Staff Response 13: The proposal is for 13 duplexes (26 units). The applicant has provided a development plan showing 8,646 square feet of open space. This exceeds the 7,800 square feet required by this section. The proposal includes active recreational facilities located toward the interior of the development consistent with the requirement of this section. The applicant's submittal does not reference the creation of a required HOW to maintain the usable open space. A condition of approval has addressed how to meet this requirement, allowing staff to determine the criteria are met upon implementation of the conditions.

24.180 APPLICABILITY OF THE BASE ZONE PROVISIONS

The provisions of the base zone are applicable as follows:

A. Lot dimensional standards. The minimum lot size and lot depth and lot width standards do not apply except as related to the density computation under this chapter.

Staff Response 14: The fact that the lot dimensional standards do not apply allows the applicant to apply for duplexes on one common lot (even if the common lot consists of three lots of record underneath). Proposing these on a common lot instead of individual duplex lots is compatible with the CDC as long as the density per square footage for duplexes for the zone is not exceeded; this exceeds the density per square footage but only as allowed by the PUD density bonus. See Staff Response 12 regarding the density bonus. See Staff Response 17 regarding Condition of Approval 12 which will require the three underlying lots of record to be replatted as one common lot. Staff determines the criterion is met.

B. Lot coverage. The lot coverage provisions of the base zone shall apply for detached single-family units. For single-family attached residential units, duplex residential units, and

multiple-family residential units, the following lot coverage provisions shall apply, based upon the underlying base zone.

(…)

R-5, R-4.5	50 percent

(…)

Staff Response 15: The applicant proposes 25.5% lot coverage. Staff determines the criterion is met.

C. Building height. The building height provisions of the underlying zone shall apply.

Staff Response16: The applicant proposes buildings that meet the height limit of the base zone; some use the exceptions for steeper sites found in Chapter 41. See Staff Response 4 for details. Staff determines the criterion is met.

D. Structure setback provisions.

1. Setback areas contiguous to the perimeter of the project shall be the same as those required by the base zone unless otherwise provided by the base zone or Chapter 55 CDC.

2. The side yard setback provisions shall not apply except that all detached structures shall maintain a minimum side yard setback of five feet, or meet the Uniform Building Code requirement for fire walls.

3. The side street setback shall be 10 feet.

4. The front yard and rear yard setbacks shall be 15 feet. Porches may encroach forward another five feet. Additional encroachments, such as porches, are allowed per Chapter 38 CDC.

5. The setback for a garage in the front yard that opens onto the street shall be 20 feet unless the provisions of CDC 41.010 apply. Garages in the rear yard may meet the standards of CDC 34.060.

6. The applicant may propose alternative setbacks. The proposed setbacks must be approved by the decision-making body and established as conditions of approval, or by amendment to conditions of approval. The decision-making body will consider among other things maintenance of privacy, adequate light, defensible space, traffic safety, etc.

E. All other provisions of the base zone shall apply except as modified by this chapter.

Staff Response 17: As shown on Sheet DRS2 Proposed Site Plan/Analysis on Page 85 of Exhibit PC-6, the proposal meets all of the above setback requirements if this is a common lot.

While the City has allowed buildings to be built across existing lot lines, de facto eliminating such line until any future demolition or redevelopment, this is not desirable. The applicant shall apply for a Lot Line Adjustment, a ministerial decision with no criteria that would prevent the elimination of these lines in the Lot Line Adjustment provisions of 85.210. Staff determines the criteria are met upon the inclusion of proposed Condition of Approval 12 which requires the Lot Line Adjustment and the subsequent county platting process required to making the site one lot of record.

IV. CHAPTER 55, DESIGN REVIEW

55.100 APPROVAL STANDARDS – CLASS II DESIGN REVIEW

The approval authority shall make findings with respect to the following criteria when approving, approving with conditions, or denying a Class II design review application.

A. The provisions of the following chapters shall be met:

(…)

2. Chapter 34 CDC, Accessory Structures, Accessory Dwelling Units, and Accessory Uses.

(…)

Staff Response 18: The only accessory structure proposed is the gazebo which meets all zoning setbacks. Staff determines the criterion is met.

4. Chapter 40 CDC, Building Height Limitations, Exceptions.

Staff Response 19: Chapters 40 and 41 are now combined, as Chapter 41. Building types A and C meet the zone's standard 35-foot height limit. Building types B and D meet the height limit by using the exception allowed when there is more than a 10-foot difference along the grade of the side of the building as allowed by Chapter 41 (counting the rear decks and their posts as part of the buildings). The site is on the downslope side of Highway 43. Section 41.020(A) requires buildings using the height exception discussed above to extend no more than 24 feet above street grade in front if they are on the downslope side of the street. All buildings along Highway 43 are proposed to be Type B. The front elevation of the Type B buildings will be 28 feet tall, and the street is over four feet above the front grade of the building as shown on the Proposed Grading Plan on Page 86 of Exhibit PC-6. Therefore the buildings will not be over 24 feet above the average street grade. The proposal is compliant with this section. Staff determines the criteria of Chapter 41 are met.

5. Chapter 42 CDC, Clear Vision Areas.

Staff Response 20: Buildings are not proposed in the clear vision areas of proposed driveways. Staff determines the criteria of Chapter 42 are met.

6. Chapter 44 CDC, Fences.

Staff Response 21: No fences are proposed higher than three feet. Staff determines the requirements of Chapter 44 are met.

7. Chapter 46 CDC, Off-Street Parking, Loading and Reservoir Areas.

(Begin Chapter 46 excerpt)

46.070 MAXIMUM DISTANCE ALLOWED BETWEEN PARKING AREA AND USE

A. Off-street parking spaces for single- and two-family dwellings shall be located on the same lot with the dwelling.

Staff Response 22: The entire development will be used as one lot, and each unit will have its own attached garage. Staff determines the criterion is met.

46.090 MINIMUM OFF-STREET PARKING SPACE REQUIREMENTS

A. Residential parking space requirements.

1. Single-family residences (attached or detached).	1 off-street space for each dwelling unit; may or may not be in garage or carport.
2. Two-family residences and duplexes.	Same as single-family.

(…)

Staff Response 23: This is a duplex development. Each unit has a one- or two-car garage as part of the unit. Therefore parking requirements are met even without the parking lot at the south end proposed by the applicant, however nothing in the code prevents the applicant from proposing extra parking. Any off-street parking lots that are proposed, even if not required to meet parking space minimums, must meet other Chapter 46 requirements as discussed below. Staff determines the off-street parking space minimum criteria are met.

(…)

46.150 DESIGN AND STANDARDS

The following standards apply to the design and improvement of areas used for vehicle parking, storage, loading, and circulation:

A. Design standards.

(…)

2. Disabled parking and maneuvering spaces shall be consistent with current federal dimensional standards and subsection B of this section and placed nearest to accessible building entryways and ramps.

(…)

4. Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety of traffic access and egress, and maximum safety of pedestrians and vehicular traffic on the site.

5. Each parking and/or loading space shall have clear access, whereby the relocation of other vehicles to utilize the parking space is not required.

(…)

8. Off-street parking spaces for single- and two-family residences shall be improved with an asphalt or concrete surface, or a permeable parking surface designed to reduce surface runoff, to specifications as approved by the Building Official. Other parking facilities for two- and single-family homes that are to accommodate additional vehicles, boats, recreational vehicles, and trailers, etc., need not be paved. All parking for multi-family residential development shall be paved with concrete or asphalt. Driveways shall measure at least 20 feet from the back of sidewalk to garage or the end of the parking pad to accommodate cars and sport utility vehicles without the vehicles blocking the public sidewalk.

9. Access drives from the street to off-street parking or loading areas shall be designed and constructed to facilitate the flow of traffic and provide maximum safety for pedestrian and vehicular traffic on the site. The number of access drives shall be limited to the minimum that will allow the property to accommodate and service the anticipated traffic. Access drives shall be clearly and permanently marked and defined through use of rails, fences, walls, or other barriers or markers on frontage not occupied by service drives.

10. Access drives shall have a minimum vision clearance as provided in Chapter 42 CDC, Clear Vision Areas.

Staff Response 24: There will be clear access for each driveway, and the main driveway is proposed to facilitate the flow of traffic through the site. It accesses from Shady Hollow

instead of Willamette to maximize safety. There is not a service drive separate from the access drive. The access drives and parking spaces will be paved. Disabled parking spaces are near to the buildings and served by ramps. Staff determines the criteria are met.

> 11. Parking spaces along the boundaries of a parking lot or adjacent to interior landscaped areas or sidewalks shall be provided with a wheel stop at least four inches high located two feet back from the front of the parking stall. Alternately, landscaped areas or sidewalks adjacent to the parking stalls without wheel stops shall be two feet wider.

Staff Response 25: All parking spaces fit what is described above, so all require these wheel stops. Condition of Approval 8B requires these. Staff determines the criterion is met upon the inclusion of proposed Condition of Approval 8B.

> 12. Off-street parking and loading areas shall be drained in accordance with plans and specifications approved by the City Engineer. Storm drainage at commercial sites may also have to be collected to treat oils and other residue.
>
> 13. Artificial lighting on all off-street parking facilities shall be designed to deflect all light downward away from surrounding residences and so as not to create a hazard to the public use of any road or street.
>
> (…)
>
> 17. The parking area shall have less than a five percent grade. No drainage across adjacent sidewalks or walkways is allowed.
>
> (…)
>
> 19. Areas of the parking lot improved with asphalt or concrete surfaces shall be designed into areas of 12 or less spaces through the use of defined landscaped area. Groups of 12 or less spaces are defined as:
>
> > a. Twelve spaces in a row, provided there are no abutting parking spaces, as in the case when the spaces are abutting the perimeter of the lot; or
> >
> > (…)

Staff Response 26: Staff determines that the plans show the proposed parking meets all of these criteria, and Condition of Approval 3 requires all Engineering standards to be met.

> 20. Pedestrian walkways shall be provided in parking areas having 20 or more spaces. Walkways or sidewalks shall be constructed between major buildings/activity areas (an example in multi-family housing: between recreation center, swimming pool, manager's office, park or open space areas, parking lots, etc.) within a development, between adjacent developments and the new development, as feasible, and between major buildings/activity areas within the development and adjacent streets and all adjacent transit stops. Internal parking lot circulation and design should maintain ease

of access for pedestrians from streets and transit stops. Walkways shall be constructed using a material that visually contrasts with the parking lot and driveway surface. Walkways shall be further identifiable to pedestrians and motorists by grade separation, walls, curbs, surface texture (surface texture shall not interfere with safe use of wheelchairs, baby carriages, shopping carts, etc.), and/or landscaping. Walkways shall be six feet wide. The arrangement and layout of the paths shall depend on functional requirements.

Staff Response 27: The applicant proposes walkways around the parking lot. Recommended Condition of Approval 9 requires them to be six feet wide. Staff determines the criterion is met upon the inclusion of Condition of Approval 9.

21. The parking and circulation patterns are easily comprehended and defined. The patterns shall be clear to minimize traffic hazards and congestion and to facilitate emergency vehicles.

22. The parking spaces shall be close to the related use.

(…)

Staff Response 28: All parking provided in addition to the garages is close to the units and is configured clearly. Staff determines the criterion is met.

B. Accessible parking standards for persons with disabilities. If any parking is provided for the public or visitors, or both, the needs of the people with disabilities shall be based upon the following standards or current applicable federal standards, whichever are more stringent:

1. Minimum number of accessible parking space requirements (see following table):

MINIMUM REQUIRED NUMBER OF TOTAL PARKING SPACES	TOTAL NUMBER OF ACCESSIBLE SPACES	NUMBER OF VAN-ACCESSIBLE SPACES REQUIRED, OF TOTAL	SPACES SIGNED "WHEELCHAIR USE ONLY"
1 – 25	1	1	–
26 – 50	2	1	–
51 – 75	3	1	–

2. Location of parking spaces. Parking spaces for the individual with a disability that serve a particular building shall be located on the shortest possible accessible circulation route to an accessible entrance to a building. In separate parking structures or lots that do not serve a particular building, parking spaces for the persons with

disabilities shall be located on the shortest possible circulation route to an accessible pedestrian entrance of the parking facility.

3. Accessible parking space and aisle shall meet ADA vertical and horizontal slope standards.

4. Where any differences exist between this section and current federal standards, those standards shall prevail over this code section.

Staff Response 29: There are 26 required spaces, requiring two ADA spaces. Three are proposed, each of which is the closest common parking area space to a particular building or set of buildings. Staff determines the above criteria are met.

5. One in every eight accessible spaces, but not less than one, shall be served by an access aisle 96 inches wide.

6. Van-accessible parking spaces shall have an additional sign marked "Van Accessible" mounted below the accessible parking sign. A van-accessible parking space reserved for wheelchair users shall have a sign that includes the words "Wheelchair Use Only." Van-accessible parking shall have an adjacent eight-foot-wide aisle. All other accessible stalls shall have a six-foot-wide aisle. Two vehicles may share the same aisle if it is between them. The vertical clearance of the van space shall be 96 inches.

Staff Response 30: One of the ADA spaces is proposed to be van-accessible. The other two accessible spaces have a six-foot-wide aisle. The signage required for the van-accessible space is required by Condition of Approval 8A. Staff determines the criteria are met upon the inclusion of Condition of Approval 8A.

C. Landscaping in parking areas. Reference Chapter 54 CDC, Landscaping.

(…)

Staff Response 31: See Staff Response 43 below.

(End Chapter 46 excerpt)

8. Chapter 48 CDC, Access, Egress and Circulation.

(Begin Chapter 48 excerpt)

48.025 ACCESS CONTROL

(…)

B. Access control standards.

(…)

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

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

(…)

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

(…)

5. Double-frontage lots. When a lot has frontage onto two or more streets, access shall be provided first from the street with the lowest classification. For example, access shall be provided from a local street before a collector or arterial street. When a lot has frontage opposite that of the adjacent lots, access shall be provided from the street with the lowest classification.

Staff Response 32: All access is from Shady Hollow, which is a local street, not the adjacent arterial Willamette Drive. The existing access from Willamette Drive to the site will be eliminated. Staff determines the criteria are met.

6. Access spacing. The access spacing standards found in Chapter 8 of the adopted Transportation System Plan (TSP) shall be applicable to all newly established public street intersections, private drives, and non-traversable medians.

Staff Response 33: There are no new street intersections. All access will be from local street Shady Hollow Way. The TSP requires 50 feet between private driveways on local streets. The only accesses proposed from Shady Hollow Way are the double driveway access for Building D1 and the main access driveway on the south side. These are more than 50 feet apart. The D1 access may have to be narrowed a few feet to be 50 feet from the driveway on the property north of this. Also, contrary to what the site plan shows in the applicant's submittal (see Page 85 of Exhibit PC-6) the accesses to both D1 units need to share a curb cut to be counted as one driveway access, since the units' accesses cannot be built 50 feet apart from each other.

Proposed Condition of Approval 7 requires these two adjustments. Staff determines the criterion is met upon the inclusion of Condition of Approval 7.

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

Staff Response 34: This is a corner lot not only in its relation to the intersection of Willamette and Shady Hollow, but in relation to how Shady Hollow makes a right angle turn along the east corner of the property. The main driveway is along the south side and only Building D1 takes access from the section of Shady Hollow east of the site; this section functions as a separate street since this is a right-angle turn. Recommended Condition of Approval 7 requires the Building D1 accesses to have one point of intersection with the street. Staff determines the criterion is met upon the inclusion of Condition of Approval 7.

(…)

48.030 MINIMUM VEHICULAR REQUIREMENTS FOR RESIDENTIAL USES

A. Direct individual access from single-family dwellings and duplex lots to an arterial street, as designated in the transportation element of the Comprehensive Plan, is prohibited for lots created after the effective date of this code where an alternate access is either available or is expected to be available by imminent development application. Evidence of alternate or future access may include temporary cul-de-sacs, dedications or stubouts on adjacent parcels, or tentative street layout plans submitted at one time by adjacent property owner/developer or by the owner/developer, or previous owner/developer, of the property in question.

(…)

Staff Response 35: All access will be from Shady Hollow. Staff determines the criterion is met.

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

> (…)
>
> 3. Maximum driveway grade shall be 15 percent. The 15 percent shall be measured along the centerline of the driveway only. Variations require approval of a Class II variance by the Planning Commission pursuant to Chapter 75 CDC. Regardless, the last

18 feet in front of the garage shall be under 12 percent grade as measured along the centerline of the driveway only. Grades elsewhere along the driveway shall not apply.

Staff Response 36: The driveways are less than 15% grade. Staff determines the criterion is met.

4. The driveway shall include a minimum of 20 feet in length between the garage door and the back of sidewalk, or, if no sidewalk is proposed, to the paved portion of the right-of-way.

Staff Response 37: This only applies to Building D1 as it is the only one that directly accesses from the street and not the main driveway. Recommended Condition of Approval 7 requires the driveway accesses for Building D1 to be 20 feet from the sidewalk to the garage doors. Staff determines the criterion is met upon the inclusion of recommended Condition of Approval 7.

C. When any portion of one or more homes is more than 150 feet from the adjacent right-of-way, the provisions of subsection B of this section shall apply in addition to the following provisions.

1. A turnaround may be required as prescribed by the Fire Chief.

2. Minimum vertical clearance for the driveway shall be 13 feet, six inches.

3. A minimum centerline turning radius of 45 feet is required unless waived by the Fire Chief.

4. There shall be sufficient horizontal clearance on either side of the driveway so that the total horizontal clearance is 20 feet.

(…)

Staff Response 38: The driveway has a turnaround in the form of the emergency pass-through in the basketball court area. The driveway meets the horizontal and vertical clearance requirements. Condition of Approval 10 requires the turning radius above as well as the other requirements that are not necessarily yet met from TVFR's May 6, 2014 comments on pages 56-57 of Exhibit PC-3. This includes sprinklers since not all parts of the driveway are less than 10% grade; see Item 8 in the TVFR comments. Staff determines the criteria are met upon the inclusion of Condition of Approval 10.

G. The number of driveways or curb cuts shall be minimized on arterials or collectors. Consolidation or joint use of existing driveways shall be required when feasible.

(…)

Staff Response 39: The only driveways will be off of Shady Hollow Way. The existing driveway off of arterial Willamette Drive will be eliminated. Staff determines the criterion is met.

48.060 WIDTH AND LOCATION OF CURB CUTS AND ACCESS SEPARATION REQUIREMENTS

A. Minimum curb cut width shall be 16 feet.

B. Maximum curb cut width shall be 36 feet, except along Highway 43 in which case the maximum curb cut shall be 40 feet. For emergency service providers, including fire stations, the maximum shall be 50 feet.

C. No curb cuts shall be allowed any closer to an intersecting street right-of-way line than the following:

(…)

6. On a local street when intersecting any other street, 35 feet.

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

(…)

3. Between any two curb cuts on the same lot on a local street, 30 feet.

Staff Response 40: The main driveway will be over 35 feet from Willamette Drive. Section (D)(3) will be met as Condition of Approval 7 requires the accesses to Building D1 to share a curb cut. Staff determines the criteria are met upon the inclusion of Condition of Approval 7.

(…)

F. Curb cuts shall be kept to the minimum, particularly on Highway 43. Consolidation of driveways is preferred. The standard on Highway 43 is one curb cut per business if consolidation of driveways is not possible.

Staff Response 41: The only existing site driveway on Highway 43 will be eliminated. Staff determines the criterion is met.

G. Adequate line of sight pursuant to engineering standards should be afforded at each driveway or accessway.

(…)

Staff Response 42: The only wall near a driveway is proposed to be three feet tall (in the putting green). Staff determines the criterion is met.

(End Chapter 48 excerpt)

(…)

10. Chapter 54 CDC, Landscaping.

Excerpted from Chapter 54:

54.020 APPROVAL CRITERIA

E. Landscaping – By type, location and amount.

3. All uses (residential uses (non-single-family) and non-residential uses):

a. The landscaping shall be located in defined landscaped areas which are uniformly distributed throughout the parking or loading area. There shall be one shade tree planted for every eight parking spaces. These trees shall be evenly distributed throughout the parking lot to provide shade. Parking lots with over 20 spaces shall have a minimum 10 percent of the interior of the parking lot devoted to landscaping. Pedestrian walkways in the landscaped areas are not to be counted in the percentage. The perimeter landscaping, explained in subsection (E)(3)(d) of this section, shall not be included in the 10 percent figure. Parking lots with 10 to 20 spaces shall have a minimum five percent of the interior of the parking lot devoted to landscaping. The perimeter landscaping, as explained above, shall not be included in the five percent. Parking lots with fewer than 10 spaces shall have the standard perimeter landscaping and at least two shade trees. Non-residential parking areas paved with a permeable parking surface may reduce the required minimum interior landscaping by one-third for the area with the permeable parking surface only

(End of Chapter 54 excerpt)

Staff Response 43: Staff determines that the remainder of Chapter 54 criteria are met except for 54.020(E)(3)(a). This is a 26-space proposed parking lot which requires 10% of its interior to be landscaped per Chapter 54. Condition of Approval 8C requires spaces to be eliminated to make it so 10% of the interior of the parking lot is landscaped. This is acceptable as minimum parking requirements for this site are already met via the units' individual garages and driveways. This criterion also requires two shade trees for a parking lot of this size, which Condition of Approval 8D requires. Staff determines the criteria are met upon the inclusion of Condition of Approval 8C and 8D.

B. Relationship to the natural and physical environment.

(…)

2. All heritage trees, as defined in the municipal code, all trees and clusters of trees ("cluster" is defined as three or more trees with overlapping driplines; however, native

oaks need not have an overlapping dripline) that are considered significant by the City Arborist, either individually or in consultation with certified arborists or similarly qualified professionals, based on accepted arboricultural standards including consideration of their size, type, location, health, long term survivability, and/or numbers, shall be protected pursuant to the criteria of subsections (B)(2)(a) through (f) of this section. In cases where there is a difference of opinion on the significance of a tree or tree cluster, the City Arborist's findings shall prevail. It is important to acknowledge that all trees are not significant and, further, that this code section will not necessarily protect all trees deemed significant.

(…)

b. Non-residential and residential projects on non-Type I and II lands shall set aside up to 20 percent of the area to protect trees and tree clusters that are determined to be significant, plus any heritage trees. Therefore, in the event that the City Arborist determines that a significant tree cluster exists at a development site, then up to 20 percent of the non-Type I and II lands shall be devoted to the protection of those trees, either by dedication or easement. The exact percentage is determined by establishing the driplines of the trees or tree clusters that are to be protected. In order to protect the roots which typically extend further, an additional 10-foot measurement beyond the dripline shall be added. The square footage of the area inside this "dripline plus 10 feet" measurement shall be the basis for calculating the percentage (see figure below). The City Arborist will identify which tree(s) are to be protected. Development of non-Type I and II lands shall also require the careful layout of streets, driveways, building pads, lots, and utilities to avoid significant trees, tree clusters, heritage trees, and other natural resources pursuant to this code. Exemptions of subsections (B)(2)(c), (e), and (f) of this section shall apply. Please note that in the event that more than 20 percent of the non-Type I and II lands comprise significant trees or tree clusters, the developer shall not be required to save the excess trees, but is encouraged to do so.

(…)

d. For both non-residential and residential development, the layout shall achieve at least 70 percent of maximum density for the developable net area. The developable net area excludes all Type I and II lands and up to 20 percent of the remainder of the site for the purpose of protection of stands or clusters of trees as defined in subsection (B)(2) of this section.

(…)

Staff Response 44: The project exceeds minimum density. There are no heritage trees. There are four trees on site considered significant by the City Arborist. See his map on Page 60 of Exhibit PC-5. One of these is proposed for preservation, the oak near the southwest corner in the proposed open space. The Highway 43 street improvements avoid this and other significant trees. The area of reserved preservation for the oak (and its dripline-plus-10-foot areas to remain undeveloped) is approximately 1,600 square feet. The significant oak

tree to be preserved shall be placed in a tree conservation easement along with the areas of its dripline-plus-10-foot area to remain undeveloped, per (b) above. Condition of Approval 2B requires this. Staff determines the criteria are met upon the inclusion of Condition of Approval 2B.

3. The topography and natural drainage shall be preserved to the greatest degree possible.

Staff Response 45: The design respects the topography and natural drainage of the site. Staff determines the criterion is met.

4. The structures shall not be located in areas subject to slumping and sliding. The Comprehensive Plan Background Report's Hazard Map, or updated material as available and as deemed acceptable by the Planning Director, shall be the basis for preliminary determination.

(…)

Staff Response 46: The site is not located in landslide vulnerability areas or potential landslide areas per the Natural Hazards Mitigation Plan. Staff determines the criterion is met.

6. Architecture.

a. The proposed structure(s) scale shall be compatible with the existing structure(s) on site and on adjoining sites. Contextual design is required. Contextual design means respecting and incorporating prominent architectural styles, building lines, roof forms, rhythm of windows, building scale and massing of surrounding buildings in the proposed structure. The materials and colors shall be complementary to the surrounding buildings.

b. While there has been discussion in Chapter 24 CDC about transition, it is appropriate that new buildings should architecturally transition in terms of bulk and mass to work with, or fit, adjacent existing buildings. This transition can be accomplished by selecting designs that "step down" or "step up" from small to big structures and vice versa (see figure below). Transitions may also take the form of carrying building patterns and lines (e.g., parapets, windows, etc.) from the existing building to the new one.

c. Contrasting architecture shall only be permitted when the design is manifestly superior to adjacent architecture in terms of creativity, design, and workmanship, and/or it is adequately separated from other buildings by distance, screening, grade variations, or is part of a development site that is large enough to set its own style of architecture.

d. Human scale is a term that seeks to accommodate the users of the building and the notion that buildings should be designed around the human scale (i.e., their size and the average range of their perception). Human scale shall be accommodated in all designs by, for example, multi-light windows that are

broken up into numerous panes, intimately scaled entryways, and visual breaks (exaggerated eaves, indentations, ledges, parapets, awnings, engaged columns, etc.) in the facades of buildings, both vertically and horizontally.

The human scale is enhanced by bringing the building and its main entrance up to the edge of the sidewalk. It creates a more dramatic and interesting streetscape and improves the "height and width" ratio referenced in this section.

(…)

f. Variations in depth and roof line are encouraged for all elevations.
To vary the otherwise blank wall of most rear elevations, continuous flat elevations of over 100 feet in length should be avoided by indents or variations in the wall. The use of decorative brick, masonry, or stone insets and/or designs is encouraged. Another way to vary or soften this elevation is through terrain variations such as an undulating grass area with trees to provide vertical relief.

g. Consideration of the micro-climate (e.g., sensitivity to wind, sun angles, shade, etc.) shall be made for building users, pedestrians, and transit users, including features like awnings.

h. The vision statement identified a strong commitment to developing safe and attractive pedestrian environments with broad sidewalks, canopied with trees and awnings.

(…)

Staff Response 47: Staff adopts the applicant's findings regarding architecture on pages 78-79 of Exhibit PC-6.

7. Transportation Planning Rule (TPR) compliance. The automobile shall be shifted from a dominant role, relative to other modes of transportation, by the following means:

(…)

d. Accessways, parking lots, and internal driveways shall accommodate pedestrian circulation and access by specially textured, colored, or clearly defined footpaths at least six feet wide. Paths shall be eight feet wide when abutting parking areas or travel lanes. Paths shall be separated from parking or travel lanes by either landscaping, planters, curbs, bollards, or raised surfaces. Sidewalks in front of storefronts on the arterials and main store entrances on the arterials identified in CDC 85.200(A)(3) shall be 12 feet wide to accommodate pedestrians, sidewalk sales, sidewalk cafes, etc. Sidewalks in front of storefronts and main store entrances in commercial/OBC zone development on local streets and collectors shall be eight feet wide.

e. Paths shall provide direct routes that pedestrians will use between buildings, adjacent rights-of-way, and adjacent commercial developments. They shall be clearly identified. They shall be laid out to attract use and to discourage people from cutting through parking lots and impacting environmentally sensitive areas.

f. At least one entrance to the building shall be on the main street, or as close as possible to the main street. The entrance shall be designed to identify itself as a main point of ingress/egress.

g. Where transit service exists, or is expected to exist, there shall be a main entrance within a safe and reasonable distance of the transit stop. A pathway shall be provided to facilitate a direct connection.

Staff Response 48: The buildings along Willamette Drive have front façade entrances facing Willamette Drive. Clearly identifiable paths will connect throughout the site and to the right of ways, avoiding the water resource area. Condition of Approval 9 requires the paths to be six feet wide, eight feet wide when abutting parking spaces and travel lanes as required above. Staff determines the criteria are met upon the inclusion of Condition of Approval 9.

h. Projects shall bring at least part of the project adjacent to or near the main street right-of-way in order to enhance the height-to-width ratio along that particular street. (The "height-to-width ratio" is an architectural term that emphasizes height or vertical dimension of buildings adjacent to streets. The higher and closer the building is, and the narrower the width of the street, the more attractive and intimate the streetscape becomes.) For every one foot in street width, the adjacent building ideally should be one to two feet higher. This ratio is considered ideal in framing and defining the streetscape.

(…)

Staff Response 49: The applicant plans a row of buildings along Willamette Drive two stories tall. This improves the height-to-width ratio along the street as there are no buildings close to Willamette Drive along the project site now. Staff determines the criterion is met.

D. Privacy and noise.

1. Structures which include residential dwelling units shall provide private outdoor areas for each ground floor unit which is screened from view from adjoining units.

2. Residential dwelling units shall be placed on the site in areas having minimal noise exposure to the extent possible. Natural-appearing sound barriers shall be used to lessen noise impacts where noise levels exceed the noise standards contained in West Linn Municipal Code Section 5.487.

3. Structures or on-site activity areas which generate noise, lights, or glare shall be buffered from adjoining residential uses in accordance with the standards in subsection C of this section where applicable.

(…)

E. Private outdoor area. This section only applies to multi-family projects.

1. In addition to the requirements of residential living, unit shall have an outdoor private area (patio, terrace, porch) of not less than 48 square feet in area;

2. The outdoor space shall be oriented towards the sun where possible; and

3. The area shall be screened or designed to provide privacy for the users of the space.

4. Where balconies are added to units, the balconies shall not be less than 48 square feet, if they are intended to be counted as private outdoor areas.

Staff Response 50: For each unit the applicant provides private outdoor areas that meet the minimum size and other above criteria. On-site activity areas will be buffered from surrounding properties by vegetation. Staff determines the criteria are met.

F. Shared outdoor recreation areas. This section only applies to multi-family projects and projects with 10 or more duplexes or single-family attached dwellings on lots under 4,000 square feet. In those cases, shared outdoor recreation areas are calculated on the duplexes or single-family attached dwellings only. It also applies to qualifying PUDs under the provisions of CDC 24.170.

1. In addition to the requirements of subsection E of this section, usable outdoor recreation space shall be provided in residential developments for the shared or common use of all the residents in the following amounts:

(…)

b. Three or more bedroom units: 300 square feet per unit.

2. The required recreation space may be provided as follows:

a. It may be all outdoor space;

(…)

d. In considering the requirements of this subsection F, the emphasis shall be on usable recreation space. No single area of outdoor recreational space shall encompass an area of less than 250 square feet. All common outdoor recreational space shall be clearly delineated and readily identifiable as such. Small, marginal, and incidental parcels of land are not usable recreation spaces. The location of outdoor recreation space should be integral to the overall design concept of the site and be free of hazards or constraints that would interfere with active recreation.

3. The shared space shall be readily observable to facilitate crime prevention and safety.

G. Demarcation of public, semi-public, and private spaces. The structures and site improvements shall be designed so that public areas such as streets or public gathering places, semi-public areas, and private outdoor areas are clearly defined in order to establish

persons having a right to be in the space, to provide for crime prevention, and to establish maintenance responsibility. These areas may be defined by:

1. A deck, patio, fence, low wall, hedge, or draping vine;
2. A trellis or arbor;
3. A change in level;
4. A change in the texture of the path material;
5. Sign; or
6. Landscaping.

Use of gates to demarcate the boundary between a public street and a private access driveway is prohibited.

Staff Response 51: There is over 300 square feet of shared outdoor recreation space proposed per dwelling unit. These are the bocce court behind buildings A1 and A2, the putting and chipping green north of Building D1, the basketball hoop areas north of buildings A3 and B5, and the gazebo area at the southwest corner. Each of these is over 250 square feet. Each is visually accessible from buildings and/or streets. Landscaping, along with path and building placement, delineate these gathering places. The entry courts to each unit delineate units' private outdoor areas. Staff determines the criteria are met.

H. Public transit.

1. Provisions for public transit may be required where the site abuts an existing or planned public transit route. The required facilities shall be based on the following:
   a. The location of other transit facilities in the area.
   b. The size and type of the proposed development.
   c. The rough proportionality between the impacts from the development and the required facility.

2. The required facilities shall be limited to such facilities as the following:
   a. A waiting shelter with a bench surrounded by a three-sided covered structure, with transparency to allow easy surveillance of approaching buses.
   b. A turnout area for loading and unloading designed per regional transit agency standards.
   c. Hard-surface paths connecting the development to the waiting and boarding areas.
   d. Regional transit agency standards shall, however, prevail if they supersede these standards.

3. The transit stop shall be located as close as possible to the main entrance to the shopping center, public or office building, or multi-family project. The entrance shall not be more than 200 feet from the transit stop with a clearly identified pedestrian link.

(…)

5. If a commercial business center or multi-family project is adjacent to an existing or planned public transit stop, the parking requirement may be reduced by the multiplier of 0.9, or 10 percent. If a commercial center is within 200 feet of a multi-family project,

with over 80 units and pedestrian access, the parking requirement may be reduced by 10 percent or by a 0.90 multiplier.

6. Standards of CDC 85.200(D), Transit Facilities, shall also apply.

Staff Response 52: The closest stop southbound is across the street from the site, barely north of Shady Hollow Way. There is a small bench here, but no shelter or sidewalk. As the shoulder is up against a ditch with no sidewalk it would be hard to put a shelter here. The closest stop northbound is in front of the north end of Burgerville. Here there is a sidewalk but no bench or shelter. There is 13 feet of space between the sidewalk and the Burgerville property line, still within the right of way. As the proposal will add trips here, the applicant should add a bench here to Tri-Met's approval. Proposed Condition of Approval 6 requires this and requires the sidewalk to be eight feet wide along the transit stop per 85.200(D)(4). Staff determines the criteria are met upon inclusion of Condition of Approval 6.

I. Public facilities. An application may only be approved if adequate public facilities will be available to provide service to the property prior to occupancy.

1. Streets. Sufficient right-of-way and slope easement shall be dedicated to accommodate all abutting streets to be improved to the City's Improvement Standards and Specifications. The City Engineer shall determine the appropriate level of street and traffic control improvements to be required, including any off-site street and traffic control improvements, based upon the transportation analysis submitted. The City Engineer's determination of developer obligation, the extent of road improvement and City's share, if any, of improvements and the timing of improvements shall be made based upon the City's systems development charge ordinance and capital improvement program, and the rough proportionality between the impact of the development and the street improvements.

In determining the appropriate sizing of the street in commercial, office, multi-family, and public settings, the street should be the minimum necessary to accommodate anticipated traffic load and needs and should provide substantial accommodations for pedestrians and bicyclists. Road and driveway alignment should consider and mitigate impacts on adjacent properties and in neighborhoods in terms of increased traffic loads, noise, vibrations, and glare.

The realignment or redesign of roads shall consider how the proposal meets accepted engineering standards, enhances public safety, and favorably relates to adjacent lands and land uses. Consideration should also be given to selecting an alignment or design that minimizes or avoids hazard areas and loss of significant natural features (drainageways, wetlands, heavily forested areas, etc.) unless site mitigation can clearly produce a superior landscape in terms of shape, grades, and reforestation, and is fully consistent with applicable code restrictions regarding resource areas.

Streets shall be installed per Chapter 85 CDC standards. The City Engineer has the authority to require that street widths match adjacent street widths. Sidewalks shall be installed per CDC 85.200(A)(3) for commercial and office projects, and CDC

85.200(A)(16) and 92.010(H) for residential projects, and applicable provisions of this chapter.

Based upon the City Manager's or Manager's designee's determination, 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 55.125 that are required to mitigate impacts from the proposed development. Proportionate share of the costs shall be determined by the City Manager or Manager's designee, who shall assume that the proposed development provides improvements in rough proportion to identified impacts of the development.

Staff Response 53: The applicant shows curb/gutter/planter/sidewalks improvements on both streets, which are compatible with current street alignments including along Willamette Drive. Condition of Approval 2 requires updated plans showing half-street improvements for Engineering. Condition of Approval 5 implements ODOT's requirements listed in their memo to staff on page 58-59 of Exhibit PC-4. Staff determines the criterion is met upon the implementation of the conditions.

2. Drainage. 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 impacts from increased intensity of runoff off site or the plan and statement shall identify all off-site impacts and measures to mitigate those impacts. The plan and statement shall, at a minimum, determine off-site impacts from a 25-year storm. The City Engineer shall adjust storm drainage facilities for applications which contain permeable parking surfaces based upon a quantitative analysis of the increased water retention and water quality characteristics of the permeable parking surface.

   Catch basins shall be installed and connected to pipelines leading to storm sewers or drainageways.

   All plans will then be reviewed by the City Engineer.

Staff Response 54: The ODOT comments on pages 58-59 of Exhibit PC-4 require a permit if drainage naturally drains to their right of way. However it drains in the other direction so this is not required. The system proposed on site for storm drainage detention is adequate. Staff determines the criterion is met.

3. Municipal water. A registered civil engineer shall prepare a plan for the provision of water which demonstrates to the City Engineer's satisfaction the availability of sufficient volume, capacity, and pressure to serve the proposed development's domestic, commercial, and industrial fire flows. All plans will then be reviewed by the City Engineer.

Staff Response 55: The applicant proposes connection to the water system adequately as long as there is a fire flow test to the satisfaction of TVFR which is required by proposed Condition of Approval 10D. The public water meter is proposed in the right of way. Staff determines the criterion is met upon the inclusion of Condition of Approval 10D.

4. Sanitary sewers. A registered civil engineer shall prepare a sewerage collection system plan which demonstrates sufficient on-site capacity to serve the proposed development. The City Engineer shall determine whether the existing City system has sufficient capacity to serve the development.
(…)

Staff Response 56: The applicant proposes a sewage collection system that will drain into the existing public sanitary sewer line under Shady Hollow Way east of the site. Staff determines the criterion is met.

J. Crime prevention and safety/defensible space.

1. Windows shall be located so that areas vulnerable to crime can be surveyed by the occupants.

(…)

3. Mailboxes, recycling, and solid waste facilities shall be located in lighted areas having vehicular or pedestrian traffic.

4. The exterior lighting levels shall be selected and the angles shall be oriented towards areas vulnerable to crime.

5. Light fixtures shall be provided in areas having heavy pedestrian or vehicular traffic and in potentially dangerous areas such as parking lots, stairs, ramps, and abrupt grade changes.

6. Fixtures shall be placed at a height so that light patterns overlap at a height of seven feet which is sufficient to illuminate a person. All commercial, industrial, residential, and public facility projects undergoing design review shall use low or high pressure sodium bulbs and be able to demonstrate effective shielding so that the light is directed downwards rather than omni-directional. Omni-directional lights of an ornamental nature may be used in general commercial districts only.

7. Lines of sight shall be reasonably established so that the development site is visible to police and residents.

(…)

K. Provisions for persons with disabilities.

1. The needs of a person with a disability shall be provided for. Accessible routes shall be provided between all buildings and accessible site facilities. The accessible route shall be the most practical direct route between accessible building entries, accessible site facilities, and the accessible entry to the site. An accessible route shall connect to the public right-of-way and to at least one on-site or adjacent transit stop (if the area is served by transit). All facilities shall conform to, or exceed, the Americans with

Disabilities Act (ADA) standards, including those included in the Uniform Building Code.

Staff Response 57: Staff adopts the applicant's findings to determine that these criteria are met.

L. Signs.

1. Based on considerations of crime prevention and the needs of emergency vehicles, a system of signs for identifying the location of each residential unit, store, or industry shall be established.

2. The signs, graphics, and letter styles shall be designed to be compatible with surrounding development, to contribute to a sense of project identity, or, when appropriate, to reflect a sense of the history of the area and the architectural style.

3. The sign graphics and letter styles shall announce, inform, and designate particular areas or uses as simply and clearly as possible.

4. The signs shall not obscure vehicle driver's sight distance.

(…)

6. Signs and appropriate traffic control devices and markings shall be installed or painted in the driveway and parking lot areas to identify bicycle and pedestrian routes.

Staff Response 58: A sign is proposed by the gazebo in the southwest open space area. Condition of Approval 4 requires the gazebo to be outside the clear vision area of the Willamette/Shady Hollow intersection and requires this for the sign if it is more than 3 feet tall. The applicant will be providing directional and address signage when the buildings are constructed. Staff determines the criteria are met.

M. Utilities. The developer shall make necessary arrangements with utility companies or other persons or corporations affected for the installation of underground lines and facilities. Electrical lines and other wires, including but not limited to communication, street lighting, and cable television, shall be placed underground, as practical. The design standards of Tables 1 and 2 above, and of subsection 5.487 of the West Linn Municipal Code relative to existing high ambient noise levels shall apply to this section.

(…)

Staff Response 59: The applicant's proposal does not include the undergrounding of utilities where they cross the other side of the street along the site. This is required standardly with the undergrounding of utilities. Condition of Approval 11 requires this. Staff determines the criterion is met upon the inclusion of Condition of Approval 11.

V. CHAPTER 32, WATER RESOURCE AREA PROTECTION

32.050 APPROVAL CRITERIA

No application for development on property containing a water resource area shall be approved unless the decision-making authority finds that the following standards have been satisfied, or can be satisfied by conditions of approval.

(…)

B. Proposed developments shall be so designed as to maintain the existing natural drainageways and utilize them as the primary method of stormwater conveyance through the project site unless the most recently adopted West Linn Surface Water Management Plan calls for alternate configurations (culverts, piping, etc.). Proposed development shall, particularly in the case of subdivisions, facilitate reasonable access to the drainageway for maintenance purposes.

C. Development shall be conducted in a manner that will minimize adverse impact on water resource areas. Alternatives which avoid all adverse environmental impacts associated with the proposed action shall be considered first. For unavoidable adverse environmental impacts, alternatives that reduce or minimize these impacts shall be selected. If any portion of the water quality resource area is proposed to be permanently disturbed, the applicant shall prepare a mitigation plan as specified in CDC 32.070 designed to restore disturbed areas, either existing prior to development or disturbed as a result of the development project, to a healthy natural state.

Staff Response 60: No development is proposed in the drainageway or its protected area. Staff determines the criterion is met.

D. Water resource areas shall be protected from development or encroachment by dedicating the land title deed to the City for public open space purposes if either: (1) a finding can be made that the dedication is roughly proportional to the impact of the development; or (2) the applicant chooses to dedicate these areas. Otherwise, these areas shall be preserved through a protective easement. Protective or conservation easements are not preferred because water resource areas protected by easements have been shown to be harder to manage and, thus, more susceptible to disturbance and damage. Required 15-foot-wide structural setback areas do not require preservation by easement or dedication.

E. The protected water resource area shall include the drainage channel, creek, wetlands, and the required setback and transition area. The setback and transition area shall be determined using the following table:

Table 32-1. Required Widths of Setback and Transition Area

Protected Water Feature	Slope	Starting Point for	Width of Setback

Type (See Chapter 02 CDC, Definitions)	Adjacent to Protected Water Feature	Measurements from Water Feature	and Transition Area on Each Side of the Water Feature
Wetland, Major Drainageway, Minor Drainageway	0% – 25%	• Edge of bankful flow or 2-year storm level • Delineated edge of wetland	50 feet plus structural setback.

(…)

G. Prior to construction, the water resource area shall be protected with an anchored chain link fence (or approved equivalent) at its perimeter and shall remain undisturbed except as specifically allowed by an approved water resource area permit. Such fencing shall be maintained until construction is complete. The water resource area shall be identified with City-approved permanent markers at all boundary direction changes and at 30- to 50-foot intervals that clearly delineate the extent of the protected area.

(…)

Staff Response 61: There is a drainageway outfall east of the northeast corner of the property. The applicant's plans show a 57.5-foot setback from this representing the required 50-foot setback plus a minimum 7.5-foot structural setback. Per (D) above only the 50 feet has to be protected via dedication or easement. As this would be a landlocked tract (hard for the City to access) if dedicated to the City and as the impacts on the drainageway are minimal here, an easement would be preferred. Condition of Approval 2A is recommended to establish the conservation easement per (D) and the signage per (G). The applicant has pledged to have the fencing required during construction per (G). Staff determines the criteria are met upon the inclusion of Condition of Approval 2A.

I. Sound engineering principles regarding downstream impacts, soil stabilization, erosion control, and adequacy of improvements to accommodate the intended drainage through the drainage basin shall be used. Storm drainage shall not be diverted from its natural watercourse. Inter-basin transfers of storm drainage shall not be permitted.

J. Appropriate erosion control measures based on Chapter 31 CDC requirements shall be established throughout all phases of construction.

Staff Response 62: With the exception of the northeast corner of the site that includes the preserved water resource protected area, the site will ultimately drain to the southeast corner into the public storm pipe which merges with the main body of Robinwood Creek. Silt fencing is proposed to protect this area. Currently all areas of the site drain to the drainageway near the northeast corner of the site or to these pipes at the southeast corner; all of these flow into Robinwood Creek within a block of the site. Therefore there is no interbasin transfer or diversion from the ultimate natural watercourse. Erosion control will be provided in the form of silt fencing. Staff determines the criteria are met.

K. Vegetative improvements to areas within the water resource area may be required if the site is found to be in an unhealthy or disturbed state, or if portions of the site within the water resource area are disturbed during the development process. "Unhealthy or disturbed" includes those sites that have a combination of native trees, shrubs, and groundcover on less than 80 percent of the water resource area and less than 50 percent tree canopy coverage in the water resource area. Vegetative improvements will be documented by submitting a revegetation plan meeting CDC 32.080 criteria that will result in the water resource area having a combination of native trees, shrubs, and groundcover on more than 80 percent of its area, and more than 50 percent tree canopy coverage in its area. Where any existing vegetation is proposed to be permanently removed, or the original land contours disturbed, a mitigation plan meeting CDC 32.070 criteria shall also be submitted. Interim erosion control measures such as mulching shall be used to avoid erosion on bare areas. Upon approval of the mitigation plan, the applicant is responsible for implementing the plan during the next available planting season.

Staff Response 63: There is more than 50 percent tree canopy on the protected water resource setback area on site, so these improvements are not required. Staff determines the criterion is met.

L. Structural setback area. Where a structural setback area is specifically required, development projects shall keep all foundation walls and footings at least 15 feet from the edge of the water resource area transition and setback area if this area is located in the front or rear yard of the lot, and seven and one-half feet from the edge of the water resource area transition and setback area if this area is located in the side yard of the lot. Structural elements may not be built on or cantilever over the setback area. Roof overhangs of up to three feet are permitted in the setback. Decks are permitted within the structural setback area.

(…)

Staff Response 64: No building will be within 15 feet of the protected 50-foot area. Staff determines the criterion is met.

EXHIBITS PC-1 THROUGH PC-5

AFFIDAVIT AND NOTICE MAILING

PACKET, COMPLETENESS LETTER, TVFR

COMMENTS, ODOT MEMO, CITY ARBORIST

TREE MAP

FILE NUMBER: **PUD-14-01/DR-14-01/WAP-14-01**

REQUEST: **PLANNED UNIT DEVELOPMENT OF 13 DUPLEXES WITH ADDITIONAL REQUESTS FOR CLASS II DESIGN REVIEW AND WATER RESOURCE AREA APPROVAL**

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. PUD-14-01 / DR-14-01 / WAP-14-01 Applicant's Name David Emami - Willamette Commons LLC
Development Name _____
Scheduled ~~Meeting~~/Decision Date 7-16-14

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) 6-26-14	(signed)	S. Shroyer
B.	Affected property owners (date) 6-26-14	(signed)	S. Shroyer
C.	School District/Board (date) —	(signed)	
D.	Other affected gov't. agencies (date) 6-26-14	(signed)	S. Shroyer
E.	Affected neighborhood assns. (date) 6-26-14 (all)	(signed)	S. Shroyer
F.	All parties to an appeal or review (date) 6-26-14	(signed)	S. Shroyer

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

Tidings (published date) 7-3-14 (signed) S Shroyer
City's website (posted date) 6-26-14 (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) ~~7-1-14~~ 7-1-14 (signed) _____

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) _____ (signed) _____

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. PUD-14-01/DR-14-01/WAP-14-01

The West Linn Planning Commission is scheduled to hold a public hearing, on Wednesday, July 16, 2014, **starting at 6:30 p.m.** in the Council Chambers of City Hall, 22500 Salamo Road, West Linn, to consider a request for a Planned Unit Development (PUD) with 13 duplexes requiring Class II Design Review and a Water Resource Area permit. The site is located at 18270/18340 Willamette Drive and 18395 Shady Hollow Way.

Criteria for PUDs are found in Chapter 24 of the Community Development Code (CDC). Criteria for Class II Design Review are in Chapter 55 of the CDC. Criteria for Water Resource Area permits are in Chapter 32 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.

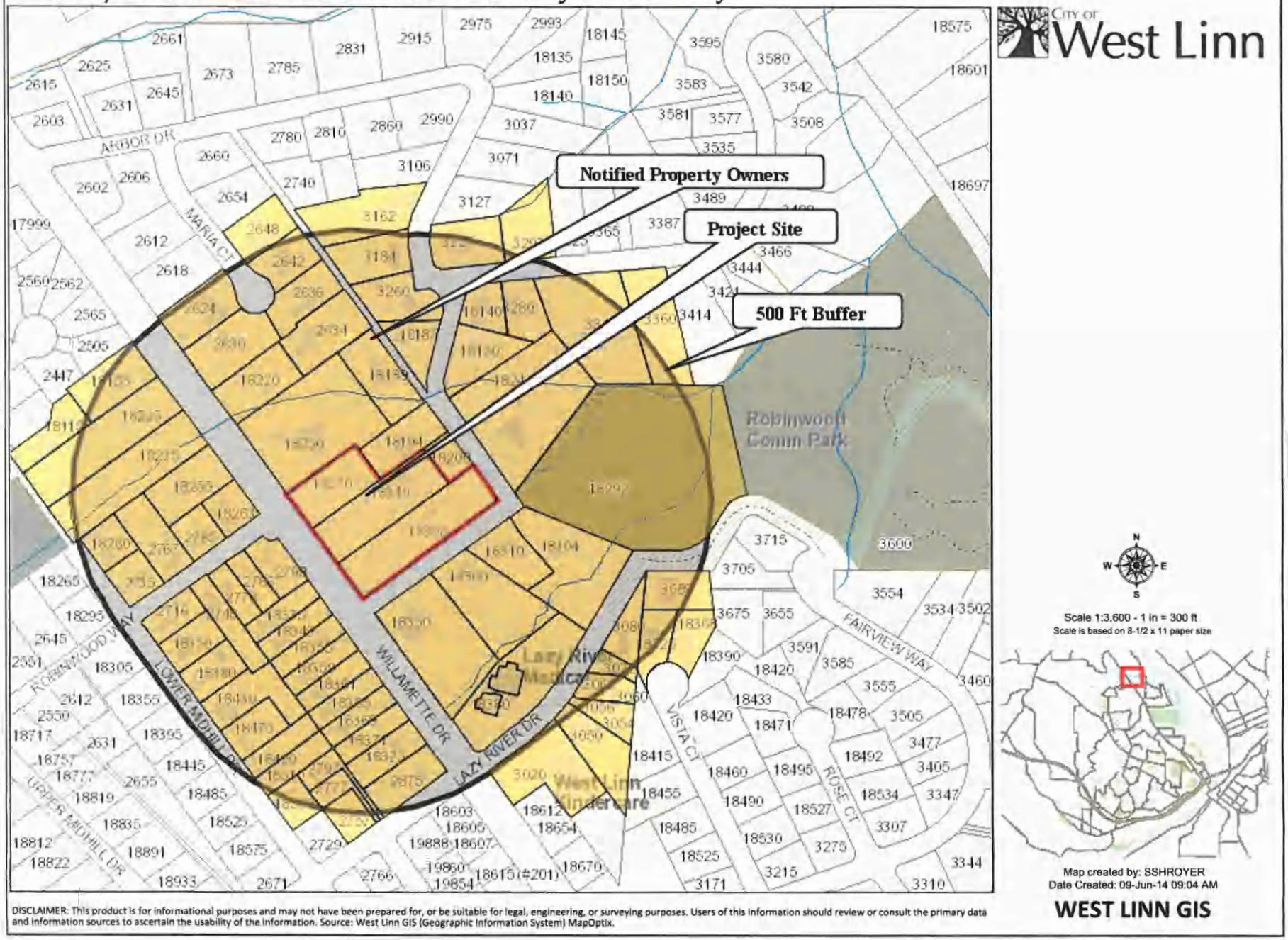
You have been notified of this proposal because County records indicate that you own property within 500 feet of the affected site on tax lots 1100, 1200, and 1500 of Clackamas County Assessor's Map 2-1E-14DB and/or as required by Chapter 99 of the CDC.

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/1827018340-willamette-dr-18395-shady-hollow-way-pud-class-ii-design-review-and-water, 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

18270/18340 Willamette Dr & 18395 Shady Hollow Way



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.

AASEN DONALD L & LILLIAN L
11555 SW 14TH ST
BEAVERTON, OR 97005

ARCHER DAVID JAMES & KERI ANN
3184 ARBOR DR
WEST LINN, OR 97068

ARNOLD SHAN D
18244 SHADY HOLLOW WAY
WEST LINN, OR 97068

BAZZAZ ALA
2798 ROBINWOOD WAY
WEST LINN, OR 97068

BEAN KENNETH J & KELLY S
18140 SHADY HOLLOW WAY
WEST LINN, OR 97068

BELL MARGARET M
2648 MARIA CT
WEST LINN, OR 97068

BOGDAN JANUSZ G & BARBARA K
16872 CHERRY CREST DR
LAKE OSWEGO, OR 97034

BONACLCH STEVE
291 CERVANTES
LAKE OSWEGO, OR 97035

BRACCO ANTHONY MICHAEL &
ANNE MARIE
2716 ROBINWOOD WAY
WEST LINN, OR 97068

BROWN MILES WILLIAM & WAKA
TAKAHASHI
3689 FAIRVIEW WAY
WEST LINN, OR 97068

CALLAGAN MICHAEL W & HELENE F
3293 ARBOR DR
WEST LINN, OR 97068

CASSELL STANLEY J
2767 ROBINWOOD WAY
WEST LINN, OR 97068

CHAMBERS LORI
18510 LOWER MIDHILL DR
WEST LINN, OR 97068

CHERRY ROGER L TRUSTEE
2636 MARIA CT
WEST LINN, OR 97068

COALE FRANKLIN
PO BOX 163
WEST LINN, OR 97068

COALE FRANKLIN
13070 CARMELITA PL
OREGON CITY, OR 97045

COVIC GEORGE GARY TRUSTEE
35311 BEACH RD
CAPISTRANO BEAC, CA 92624

DAUM NANCY L
18304 SHADY HOLLOW WAY
WEST LINN, OR 97068

DEBELLIS VITO J
18200 SHADY HOLLOW WAY
WEST LINN, OR 97068

DESTEFANIS L MARIE
PO BOX 178
MARYLHURST, OR 97036

DEVILLE CLELIA A
3260 ARBOR DR
WEST LINN, OR 97068

FORTUNA DALE L & SHERRY A
3360 ARBOR DR
WEST LINN, OR 97068

FROMME MATHEW W & ASHLEE M
MARSTON
1800 BAY MEADOWS DR
WEST LINN, OR 97068

GASTON EDNA R CO-TRUSTEE
18189 SHADY HOLLOW WAY
WEST LINN, OR 97068

GODDARD MARK LEE
18260 LOWER MIDHILL DR
WEST LINN, OR 97068

GROVE DONALD RAYMOND &
ERLENE ANNETTE
3225 ARBOR DR
WEST LINN, OR 97068

GROVES ELDORA J
18360 SHADY HOLLOW WAY
WEST LINN, OR 97068

GUY LILLIAN
2786 ROBINWOOD WAY
WEST LINN, OR 97068

HARRIMAN KATHLEEN
18115 LOWER MIDHILL DR
WEST LINN, OR 97068

HOLLAND INC
109 W 17TH ST
VANCOUVER, WA 98660

HOLT RICHARD D & GRACE ANN
18380 LOWER MIDHILL DR
WEST LINN, OR 97068

HOUSING AUTHRTY CO CLACK
PO BOX 1510
OREGON CITY, OR 97045

HVOSTOV HARRY
2748 ROBINWOOD WAY
WEST LINN, OR 97068

JERVIS BRUCE S
206 ANDOVER ST
SAN FRANCISCO, CA 94110

JONES STEPHEN B & CYNTHIA S
18325 VISTA CT
WEST LINN, OR 97068

KANE LINDA J
18220 WILLAMETTE DR
WEST LINN, OR 97068

KENT JOY L HARNS
18490 LOWER MIDHILL DR
WEST LINN, OR 97068

KIRBY MATTHEW & AMY
3280 ARBOR DR
WEST LINN, OR 97068

KNAEBEL DAVID R & DONNA M
18430 LOWER MIDHILL DR
WEST LINN, OR 97068

KNOWLEDGE LEARNING CENTER
650 NE HOLLIDAY ST #1400
PORTLAND, OR 97232

KORAN LAWRENCE A
18194 SHADY HOLLOW WAY
WEST LINN, OR 97068

LAVIN CHARLES J & ALICE GAIL
2642 MARIA CT
WEST LINN, OR 97068

LAWSON MICHAEL C
18150 SHADY HOLLOW WAY
WEST LINN, OR 97068

LAZY RIVER DEVLP LLC
PO BOX 229
MARYLHURST, OR 97036

LUNSFORD WILBUR T JR
18365 WILLAMETTE DR
WEST LINN, OR 97068

MCALLISTER DAN C
18155 WILLAMETTE DR
WEST LINN, OR 97068

MCKINLEY BENJAMIN R & CHRISTI M
2624 MARIA CT
WEST LINN, OR 97068

MCQUAY JAMES M & JEANNETTE K
3162 ARBOR DR
WEST LINN, OR 97068

MEYERS MICHAEL D & ROCHELLE
2735 ROBINWOOD WAY
WEST LINN, OR 97068

NUSBAUM CATHY E
2777 MARYLHURST DR
WEST LINN, OR 97068

OWENS CARL R & JUDITH M
5885 SKYLINE DR
WEST LINN, OR 97068

OXFORD INVESTMENT CORP
2875 MARYLHURST DR
WEST LINN, OR 97068

PERRY TYLER J
2630 MARIA CT
WEST LINN, OR 97068

QUINN LINDA L
2105 PEREGRINE CT
WEST LINN, OR 97068

RHOADES CARLENE
2757 MARYLHURST DR
WEST LINN, OR 97068

RICHARDS DANIEL & SHANNON
13295 SW 110 AVE
TIGARD, OR 97223

SANDOVAL JENNIFER M & JAMES E
910 3RD ST
SANTA CRUZ, CA 95060

SCHELSKE WENDY M
18470 LOWER MIDHILL DR
WEST LINN, OR 97068

SCHLITT DUSTIN & THERESA L
18355 WILLAMETTE DR
WEST LINN, OR 97068

SCHLUNEGGER JOHN R
18560 LOWER MIDHILL DR
WEST LINN, OR 97068

SCHUTZLER BRIAN & STEPHANIE
21640 S SWEETBRIAR CIR
WEST LINN, OR 97068

SENGER SUSAN M
18310 SHADY HOLLOW WAY
WEST LINN, OR 97068

TURNEY TIM
18350 LOWER MIDHILL DR
WEST LINN, OR 97068

VELER TED
18368 VISTA CT
WEST LINN, OR 97068

WEBBER MICHAEL F
1598 SKYE PKWY
WEST LINN, OR 97068

WILLAMETTE COMMONS LLC
3380 BARRINGTON DR
WEST LINN, OR 97068

WILLAMETTE PROP LTD PRTNSHP
18380 WILLAMETTE DR #202
WEST LINN, OR 97068

STEWART GORDON STRAUS, ARCH
6775 SW 111TH AVE, STE 20
BEAVERTON, OR 97008

ODOT REGION 1
DEVELOPMENT REVIEW
123 NW FLANDERS
PORTLAND OR 97209-4307

OREGON DIV OF STATE LANDS
ATTN: TAMI HUBERT
775 SUMMER ST NE
SALEM, OR 97301

US ARMY CORPS OF ENGINEERS
ATTN: BILL DAVIS
PO BOX 2946
PORTLAND, OR 97208

TRI-MET
PROJECT PLANNING DEPT
710 NE HOLLADAY
PORTLAND, OR 97232

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

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

ERIK VAN DE WATER
HIDDEN SPRINGS NA PRESIDENT
6433 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

AARON BUFFINGTON
ROBINWOOD NA PRESIDENT
3820 RIDGEWOOD 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

TONY BREAULT
SUNSET NA PRESIDENT
1890 SUNSET CT
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

WEST LINN CHAMBER OF
COMMERCE
1745 WILLAMETTE FALLS DR
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

CITY OF WEST LINN
PLANNING COMMISSION
PUBLIC HEARING NOTICE
FILE NO. PUD-14-01/DR-14-01/WAP-14-01

The West Linn Planning Commission is scheduled to hold a public hearing, on Wednesday, July 16, 2014, **starting at 6:30 p.m.** in the Council Chambers of City Hall, 22500 Salamo Road, West Linn, to consider a request for a Planned Unit Development (PUD) with 13 duplexes requiring Class II Design Review and a Water Resource Area permit. The site is located at 18270/18340 Willamette Drive and 18395 Shady Hollow Way (tax lots 1100, 1200, and 1500 of Clackamas County Assessor's Map 2-1E-14DB).

Criteria for PUDs are found in Chapter 24 of the Community Development Code (CDC). Criteria for Class II Design Review are in Chapter 55 of the CDC. Criteria for Water Resource Area permits are in Chapter 32 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.

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/1827018340-willamette-dr-18395-shady-hollow-way-pud-class-ii-design-review-and-water, 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

Publish: West Linn Tidings July 3, 2014

City of West Linn

May 21, 2014

David Emami
3380 Barrington Dr.
West Linn OR 97068

SUBJECT: PUD-14-01/DR-14-01/WAP-14-01 at 18270-18340 Willamette Drive/18395 Shady Hollow Way

Dear Mr. Emami:

You submitted this application on March 17, 2014. Your application has been declared **complete** as of the supplemental submittal received on May 21, 2014. The City now has 120 days (until September 18, 2014) to exhaust all local review per state statute. The application will shortly be scheduled for a Planning Commission hearing. At least 20 days before the hearing you will be sent a copy of the hearing notice.

Please contact me at 503-742-8660, or by email at tsoppe@westlinnoregon.gov if you have any questions or comments.

Sincerely,

Tom Soppe
Associate Planner

C: Stewart Gordon Straus, Architect, 6775 SW 111th Ave., #20, Beaverton, OR 97008

C: Aaron Buffington, Robinwood NA, 3820 Ridgewood Way, West Linn, OR 97068

MAILED
5-21-14

Tualatin Valley Fire & Rescue

May 6, 2014

City of West Linn
Attn: Tom Soppe
22500 Salamo Rd.
West Linn, Oregon 97068

Re: Shady Hollow Village, PUD-14-01

Dear Tom,

Thank you for the opportunity to review the proposed site plan surrounding the above named development project. Tualatin Valley Fire & Rescue endorses this proposal predicated on the following criteria and conditions of approval:

1) **FIRE APPARATUS ACCESS ROAD DISTANCE FROM BUILDING AND TURNAROUNDS:** Access roads shall be within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building. An approved turnaround is required if the remaining distance to an approved intersecting roadway, as measured along the fire apparatus access road, is greater than 150 feet. (OFC 503.1.1)

2) **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Where fire apparatus roadways are less than 26 feet wide, "NO PARKING" signs shall be installed on both sides of the roadway and in turnarounds as needed. Where fire apparatus roadways are more than 26 feet wide but less than 32 feet wide, "NO PARKING" signs shall be installed on one side of the roadway and in turnarounds as needed. Where fire apparatus roadways are 32 feet wide or more, parking is not restricted. (OFC 503.2.)

3) **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of supporting not less than 12,500 pounds point load (wheel load) and 60,000 pounds live load (gross vehicle weight). You may need to provide documentation from a registered engineer that the design will be capable of supporting such loading. (OFC D102.1)

4) **FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet. (OFC D103.1)

5) **NO PARKING SIGNS:** Roads 26 feet wide or less shall be posted on both sides as a fire lane. Roads more than 26 feet wide to 32 feet wide shall be posted on one side as a fire lane. Signs shall read "NO PARKING - FIRE LANE" and shall be installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. (OFC D103.6)

6) **TURNING RADIUS:** The inside turning radius and outside turning radius shall be not less than 28 feet and 48 feet respectively, measured from the same center point. (OFC 503.2.4 & 103.3)

7) **PAINTED CURBS:** Where required, fire apparatus access roadway curbs shall be painted red and marked "NO PARKING FIRE LANE" at approved intervals. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on red background. (OFC 503.3)

8) **GRADE**: Fire apparatus access roadway grades shall not exceed 10 percent. Intersections and turnarounds shall be level (maximum 5%) with the exception of crowning for water run-off. When fire sprinklers are installed, a maximum grade of 15% may be allowed. The approval of fire sprinklers as an alternate shall be accomplished in accordance with the provisions of ORS 455.610(5). (OFC 503.2.7 & D103.2)

9) **SINGLE FAMILY DWELLINGS - REQUIRED FIRE FLOW**: The minimum available fire flow for single family dwellings and duplexes served by a municipal water supply shall be 1,000 gallons per minute. If the structure(s) is (are) 3,600 square feet or larger, the required fire flow shall be determined according to IFC Appendix B. (OFC B105.2)

10) **FIRE HYDRANTS – ONE- AND TWO-FAMILY DWELLINGS**: Where a portion of a structure is more than 600 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the structure(s), on-site fire hydrants and mains shall be provided. (OFC 507.5.1)

11) **FIRE HYDRANT NUMBER AND DISTRIBUTION**: The minimum number and distribution of fire hydrants available to a building shall not be less than that listed in Appendix C, Table C 105.1.
    - Existing hydrants in the area may be used to meet the required number of hydrants as approved.

12) **PRIVATE FIRE HYDRANTS**: To distinguish private fire hydrants from public fire hydrants, private fire hydrants shall be painted red. (OFC 507.2.1, NFPA 24 & 291)

13) **FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD**: Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway. (OFC C102.1)

14) **PHYSICAL PROTECTION**: Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6)

15) **CLEAR SPACE AROUND FIRE HYDRANTS**: A 3 foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5)

16) **ACCESS AND FIRE FIGHTING WATER SUPPLY DURING CONSTRUCTION**: Approved fire apparatus access roadways and fire fighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 1410.1 & 1412.1)

17) **FIRE DEPARTMENT ACCESS TO EQUIPMENT**: Fire protection equipment shall be identified in an approved manner. Rooms containing controls for HVAC, fire sprinklers risers and valves or other fire detection, suppression or control features shall be identified with approved signs. (OFC 509.1)

18) **ANGLE OF APPROACH AND DEPARTURE**: The angles of approach and departure for fire apparatus roads shall not exceed 8 Degrees. (OFC 503.2.8, NFPA 1901)

If you have questions or need further clarification, please feel free to contact me at (503)259-1409.

Sincerely,

Ty Darby

Ty Darby
Deputy Fire Marshal

Cc: file

Oregon
John A. Kitzhaber, MD, Governor

Department of Transportation
Region 1 Headquarters
123 NE Flanders Street
Portland, Oregon 97209
(503) 731.8200
FAX (503) 731.8259

5/1/2014

ODOT #5918

ODOT Response to Local Land Use Notification

Project Name: Shady Hollow Village	**Applicant:** David Emami
Jurisdiction: City of West Linn	**Jurisdiction Case #:** PA-13-30
Site Address: 18270 / 18340 Willamette Dr., 18395 Shady Hollow Way	**Legal Description:** **Tax Lot(s):**
State Highway: Willamette Dr., OR 43	**Mileposts:** 8.31

The site of this proposed land use action is adjacent to OR 43. ODOT has permitting authority for this facility and an interest in ensuring that this proposed land use is compatible with its safe and efficient operation. **Please direct the applicant to the District Contact indicated below to determine permit requirements and obtain application information.**

ODOT RECOMMENDED LOCAL CONDITIONS OF APPROVAL

☒ Curb, sidewalk, bikeways and road widening shall be constructed as necessary to be consistent with the local Transportation System Plan and ODOT/ADA standards. ODOT recommends that the City implement the *West Linn OR 43 Conceptual Design Plan* to the extent feasible.

☒ An ODOT Miscellaneous Permit must be obtained for all work in the highway right of way. When the total value of improvements within the ODOT right of way is estimated to be $100,000 or more, an agreement with ODOT is required to address the transfer of ownership of the improvement to ODOT. An intergovernmental agreement (IGA) is required for agreements involving local governments and a cooperative improvement agreement (CIA) is required for private sector agreements. The agreement shall address the work standards that must be followed, maintenance responsibilities, and compliance with ORS 276.071, which includes State of Oregon prevailing wage requirements.

☒ The applicant must obtain an ODOT permit to place trees in the state right of way. Tree spacing and design must be consistent with Highway Design Manual (http://www.oregon.gov/ODOT/HWY/ENGSERVICES/pages/hwy_manuals.aspx, Section 4.2.6)

☒ Illumination within the ODOT right of way must be in accordance with AASHTO illumination standards and the ODOT Lighting Policy and Guidelines, January 2003, which states that local jurisdictions must enter into an intergovernmental agreement (IGA) with ODOT wherein the local jurisdiction is responsible for installation, maintenance, operation, and energy costs.

☒ An ODOT Drainage Permit is required for connection to state highway drainage facilities. Connection will only be considered if the site's drainage naturally enters

ODOT right of way. The applicant must provide ODOT District with a preliminary drainage plan showing impacts to the highway right of way.

A drainage study prepared by an Oregon Registered Professional Engineer is usually required by ODOT if:

1. Total peak runoff entering the highway right of way is greater than 1.77 cubic feet per second; or
2. The improvements create an increase of the impervious surface area greater than 10,758 square feet.

Noise Advisory:

☒ The applicant is advised that a residential development on the proposed site may be exposed to traffic noise levels that exceed federal noise guidelines. Builders should take appropriate measures to mitigate this impact. It is generally not the State's responsibility to provide mitigation for receptors that are built after the noise source is in place.

Please send a copy of the Notice of Decision including conditions of approval to:

ODOT Region 1 Planning
Development Review
123 NW Flanders St
Portland, OR 97209

Development Review Planner: Seth Brumley	Phone: 503.731.8234
Traffic Contact: Doug Baumgartner, P.E.	Phone: 503.731.8225
District Contact: James Nelson	Phone: 971.673.2942


SIGNIFICANT TREES IN GREEN
5-13-14
REMOVE EXISTING STRUCTU
REMOVE EXISTING TREE
REMOVE EXISTING ASPHALT I
EXISTING PROPERTY BOUNDA
REQUIRED BUFFER
EXISTING BOUNDARY ADJOIN
EXISTING WATER LINE
EXISTING GAS LINE
EXISTING SANITARY SEWER LI
REMOVE EXISTING POWER PO
EXISTING STORM OUTFALL &
RESOURCE AREA BOUNDARY
REMOVE EXISTING GAS LINE
REMOVE EXISTING CULVERT
SILT FENCING EROSION CON
GRAVEL CONSTRUCTION ENT
RESIDENTIAL
RESIDENTIAL
RESIDENTIAL
RESIDENTIAL
ROBINWOOD WAY
40'
80'
WILLAMETTE DRIVE
STATE HIGHWAY No. 43
SHADY HOLLOW WAY
EXISTING HOUSE
EXISTING HOUSE
PARK
BURGERVILLE RESTAURANT
RESIDENTIAL
RESIDENTIAL
MINIMUM 24" OVERLAP OF SEAMS
PLASTIC SHEETING
SEDIMENT FENCING REQUIRED ALL AROUND
NOTES:
1. MINIMUM 24" OVERLAP OF ALL SEAMS REQUIRED
2. SEDIMENT FENCING REQUIRED AT TOE OF STOCK PILE
3. COVERING TO BE MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.
INSTALLATION DETAIL

EXHIBIT PC-6

APPLICANT'S SUBMITTAL

FILE NUMBER: **PUD-14-01/DR-14-01/WAP-14-01**

REQUEST: **PLANNED UNIT DEVELOPMENT OF 13 DUPLEXES WITH ADDITIONAL REQUESTS FOR CLASS II DESIGN REVIEW AND WATER RESOURCE AREA APPROVAL**

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).: PU-14-01 / DR-14-01 / WA-14-01	
NON-REFUNDABLE FEE(S): 1000	REFUNDABLE DEPOSIT(S): 26,850	TOTAL: 27,850

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: 18270 / 18340 WILLAMETTE DRIVE
18395 FIELDS HOLLOW WAY

Assessor's Map No.:
Tax Lot(s):
Total Land Area:

Brief Description of Proposal:
PUD OF 13 DUPLEX BUILDINGS - RESIDENTIAL

Applicant Name: (please print) DAVID EMAMI
Address: 5380 Barrington Dr.
City State Zip: West Linn OR 97068
Phone: 503 557 3350
Email: Emami0076 Comcast.Net

Owner Name (required): (please print) WILLAMETTE COMMONS LLC
Address:
City State Zip:
Phone:
Email: Emami0076 Comcast.Net

Consultant Name: (please print) STEWART GORDON STRAUS ARCHITECT PC
Address: 6775 SW 111th AVE #20
City State Zip: BEAVERTON OR 97008
Phone: 503 672 7517
Email: sgs@sgs-straus.com

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

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MAR 17 2014
PERMIT CENTER

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

Applicant's signature — Date: 3,14,2014
Owner's signature *(required)* — Date: 3,14,2014

SHADY HOLLOW VILLAGE

SUBMISSION FOR DESIGN REVIEW

CONTENTS

UNDER SEPARATE COVER

DRAWINGS OF EXISTING SITE CONDITIONS AND PROPOSED DEVELOPMENT

STEWART GORDON STRAUS ARCHITECT PC

NARRATIVE – Shady Hollow Village

Project Description: Construction of thirteen duplex buildings as a PUD on a 2.08 acre site with base zoning of R4.5, including conditions of approval from previous land use action that changed zoning to R4.5 from R10.

PART A: Compliance with qualifications for and requirements of a PUD as stipulated in Chapter 24 of the Community Development Code

1. Compliance with 24.010 Purpose

   The purpose of the Planned Unit Development overlay zone is to provide a means for creating planned environments:

   A. To produce a development which would be as good or better than that resulting from traditional lot-by-lot development.

      Findings: Compared with a lot-by-lot development, the proposed PUD will create a true village neighborhood with opportunities for social interaction, separation of pedestrian and vehicular uses, and design themes that provide for both individuality and cohesiveness.

   B. To preserve, to the greatest extent possible, the existing landscape features and amenities through the use of a plan that relates the type and design of the development to a particular site.

      Findings: The general slope of the site is maintained and provides for a variety of building types to suit a range of housing types and pricing.

   C. To correlate comprehensively the provisions of this title and all applicable plans; to encourage developments which will provide a desirable, attractive, and stable environment in harmony with that of the surrounding area.

      Findings: The proposal is intended to create a transition from the environment of the Highway 43 corridor to the lower density of the existing residential development to the east. The proposal is an attractive and stable addition to the area with design features that create a sense of place that recalls the traditional existing neighborhood surrounding the site.

   D. To allow flexibility in design, placement of buildings, use of open spaces, circulation facilities, off-street parking areas, and to best utilize the potentials of sites characterized by special features of geography, topography, size, and shape.

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Findings: The proposal creates a unique environment that integrates a variety of open spaces, separates pedestrian and vehicle circulation, and blends with the existing topography on an odd-shaped site.

E. To allow a mixture of densities between zoning districts and plan designations when more than one district or designation is included in the development.

Findings: There is only one zoning district included in this development

F. To develop projects that are compatible with neighboring development in terms of architecture, massing, and scale. Where that cannot be accomplished, appropriate transitions should be provided that are deferential or sympathetic to existing development.

Findings: The proposal is compatible in scale and architectural character while acting as a transition from the existing single family residential area to the more intense uses along Highway 43.

G. To carry out the goals of West Linn's Vision, Imagine West Linn, especially goals relating to housing, commercial, and public facilities.

Findings: The proposal promotes the goals of Imagine West Linn in terms of creating a sense of community, including active/passive recreational opportunities, providing transitional infill development and providing a network of paths and meeting places on a small scale.

2. Compliance with 24.060 Area of Application

Findings: The proposal complies with these requirements because it is a residential development with more than 20% of the dwelling units being attached.

3. Compliance with 24.080(B)(E) Density – narrative and table

Findings: Number of duplexes allowed is based on the gross existing site area, less area of dedications for public right of way along Shady Hollow Way, less area dedicated to water resource area per table:

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DENSITY CALCULATION TABLE

Existing gross site area	**90,375 square feet**
Less public right of way dedications	**1,132 square feet**
Less water resource area	**1,098 square feet**
Net site area available for development	**88,150 square feet**
Basic number of duplexes @ 8,000 sf ea	**11.02**
Density bonus for design excellence @ 15%	**1.65**
Density allowed	**12.67**
Density proposed (rounding up)	**13 duplexes**

Note: Existing site is Type I land except for a small area of Type II and Type III land located substantially coincidental with the area designated as water resource area – see existing conditions plan.

4. Compliance with 24.100 Approval Criteria

   A. Compliance with Chapter 55-Design Review and Chapter 43-Side Yards

   Findings: See discussion in Part C Design Review

   B. Compliance with specific PUD criteria:

   1. Preserve existing amenities by coordination with topography and other features on the site

      Findings: The general slope of the site is maintained and existing trees are preserved to the greatest extent possible.

   2. Provide a desirable and stable environment in harmony with the surrounding area.

      Findings: The proposal is intended to create a neighborhood in a well organized arrangement of dwellings, pedestrian paths, vehicle areas and amenities that encourage social interaction; the buildings and outdoor spaces are similarly scaled to surrounding homes.

   3. Placement and design of buildings, use of open spaces, circulation facilities, parking and landscaping best utilize the potential of the site.

      Findings: See response to #2 above

4. The PUD shall be compatible with neighboring development in terms of architecture, massing and scale.

   Findings: See response to #2 above

C. Densities, density transfers, transitions, density bonuses and proposed setbacks shall conform with provisions of PUD and base zones.

   Findings: See #5 below and other responses as appropriate

5. Compliance with 24.110 thru 24.160 density and density bonuses

   Findings: (See Density Calculation Table on page 3 above)
   Density bonus is earned based on the following:

Requirement	Proposed
Retain slopes/trees	**Site layout to minimize impact on topography; maximize trees kept on Hwy 43 frontage**
Minimize impervious	**Impervious areas are approx. 60% of the site area; pervious paving is not recommended by geotech**
Garages off alleys	**Residents provided with two-car garages at rear alleys separated from pedestrian pathways**
De-emphasize auto	**Visitor parking is restricted to the portion of the site nearest the entry and compatible with the noisy Burgerville all hours drive thru, parking lot and driveway to ShadyHollow, keeping the dwelling units away from this noise/ congestion source.**
Maximize open/rec space	**Landscape/rec areas total 39% Recreation areas are unique and in scale with the overall development, blending into landscapes well suited to each activity. Activity area #1:**

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Requirement	Proposed
	A chess/checkers board inlaid into a concrete table with concrete benches, located under a finely detailed gazebo near the intersection of Highway 43 and Shady Hollow Way, that also serves as the main sign for the village; the area is surrounded with colorful landscaping to create a serene setting for mental recreation, and is placed to be welcoming to the entire community, not just the village. Activity area #2: A golf putting and chipping green near the eastern edge of the property and also available for use by neighbors as well as residents. Activity area #3: A pair of basketball half courts that are located within the paved area designated for emergency vehicle use only – a creative way to put an otherwise desolate uninviting area to positive use. Activity area #4: a bocce court that makes use of a narrow strip of the property perimeter; also adaptable for horseshoes. All of the activities near the perimeter of the site are generally quiet, low key and involve small groups. The one noisier activity is located away from the perimeter.
Superior landscape plan	**Landscape design integrates all recreational and pedestrian elements into a palette of plant materials that offer a variety of color, texture and scale that complement the architecture while being low maintenance. Pedestrian pathways are lined with plantings**

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Requirement	Proposed
	and connect nodes with unique features such as a gazebo, benches, water feature with mail boxes, a putting green and opportunities for residents to have social encounters.
High quality materials/finishes	Materials proposed are selected for durability and long-term low maintenance. Cement fiber siding with solid cedar or pressure treated fir trim is the primary exterior finish, with variations in texture/design including lap, board/batten and similar configurations. A limited amount of corrugated metal siding is also proposed for a little variety. Unit entry patios are surrounded with low stone walls and accented with metal trellises. Rear balconies at "B" units are integrated with metal trellises above the garage doors, with metal and glass railing systems unlike wood systems used at apartments. Front doors are carved wood with stained glass rather than stamped metal common to apartments. Outside lighting to have up and down effects to avoid glare for neighbors and create pleasant ambiance. Roofing is architectural 80 similar to slate with multiple color options. Windows will have a variety of mullioning options to provide differentiation between units. The variations between town houses will differentiate this village atmosphere

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Requirement	Proposed
	from typical multi-family complexes, and promote individual home ownership and encourage maintenance and improvements.
Complexity/richness of detail	The proposal offers a subtle balance between individuality and a common theme for the Village as a whole. While a lot-by-lot development allows complete design individuality and variety, the Village is intended to provide subtle variations within the context of a unified theme. The trade off is gaining a sense of place for all while allowing each resident to have a sense of identity for himself. While there are only four basic floor plans, the various combinations of siding, window, front door, lighting and color options generate more than twenty-six unique building appearances, which are further distinguished by variations in the adjacent landscaping, Typical multi-family complexes are monotonous repetitions of one or two basic design concepts, better suited to rentals, and not concerned about long term pride of ownership. With the added landscaping, perimeter ornamental fence/gate, and unique building design, we represent the Village as a place to invest and raise a family while enjoying the benefits of your property. The complexity and richness is achieved by having consistent detailing of major elements, such as windows/doors/trims, against a

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Requirement	Proposed
	backdrop of siding materials that vary in type, configuration and color such that no two adjacent buildings are the same – this is further explained in the matrix on the color/material board.
Draw from local design character	The Robinwood neighborhood is mix of original ranch, split entry and newer northwest contemporary style single family homes. Also, you see retail and office uses along Highway 43, such as medical/professional office building, fast food restaurants. This complexity of uses have influenced our design to set back from fast food restaurant and follow the simplicity of the traditional Robinwood two-story home. Our location is a natural transitional site between the traditional Robinwood neighborhood and the character along Highway 43. We have avoided overpowering the neighborhood by having traditional or contemporary design to the greatest extent possible, while promoting a village concept with amenities. We have avoided locating our parking next to our neighbors and have designed homes that blend into the overall existing character.
Human scale elements	The human scale begins with using the slope of the site to terrace the buildings and avoid having them appear too tall. The human scale is further enhanced by use of familiar residential building materials for

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	siding, windows, doors and other features. The landscape materials also tend to be smaller in proximity to pedestrian paths. This eye-appealing village concept is focused on the comfort of its residents.
Break up facades horiz/vert	**Areas of the facades on all four sides of the buildings are "bumped out" in combination with material changes. These also create variations in the roof line resembling dormers. With this feature, siding materials are easily abutted. The configurations of "bump-outs" vary between buildings to provide unique appearances.**

6. Compliance with 24.170 Usable Open Space

Findings: There are four distinct usable opens spaces provided as part of this proposal, with a total of 8646 sf, or 332 sf per unit; these are not all traditional recreational areas – some are more suited to mental relaxation than physical activity:

Area 1 – A gazebo with concrete table and benches; table to have integral chess/checkers board – 2231 sf

Area 2 – A putting and chipping green for golfers – 2707 sf

Area 3 – Two basketball backboards with courts integrated into the emergency vehicle turning area

Area 4 – A bocce court; this area could also become a community garden with small plots for the residents – 1908 sf

These further provide four unique opportunities for social activity in different parts of the site, encouraging residents to be involved.

These common areas will remain the responsibility of the developer until such time as a home owner association can be formed according to state law. Common areas do abut the perimeter, however none that do would be considered "active" in the same sense as examples provided in the code that typically generate considerable noise – all proposed perimeter activities are relatively quiet and engaged in by one to four persons at a time.

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7. Compliance with 24.180 Base Zone Provisions

Findings:

a. **Lot coverage – maximum allowed is 50%, proposed is 25.5%**
b. **Building height – maximum allowed by underlying zoning is 35'; proposed is 27'-4"**
c. **Setbacks – minimum per base zone are 20' at front (Hwy 43), 15' at side street (Shady Hollow), 20' at rear, and 5' at interior sides; these are met or exceeded in all locations; within the development, there are no formal front, rear or side yards, so the proposed setbacks are alternatives to those stipulated based on the general character of the development designed, and approval is requested based on these as proposed.**
d. **Floor Area Ratio – maximum allowed is 45%; proposed FAR is 44.6%**

PART B: Compliance with Water Resource requirements (Chapter 32)

1. Compliance with 32.040(G) – Description of water resource area

Findings: The water resource area located on this site is about 1093 sf located at the northeast corner of the site, uphill from the point of discharge from a pipe daylighting on an adjoining property. The area on this site exhibits no characteristics of wetland vegetation that might be associated with a water source – trees and other vegetation are similar in character to that found elsewhere on the subject property. There is one 6" hawthorn within the defined water resource area, and one 40" cedar several feet upslope from the edge of the water resource area. While there is no distinction to the vegetation within the water resource area, it will be kept in its current condition in compliance with code requirements.

2. Compliance with 32.050 – Approval Criteria

Findings:

a. **The water resource area shown on drawings submitted is based on investigation by Martin Schott, a wetland biologist, who determined the source of the water to be the discharge from a pipe located approximately 25' from the northeast corner of the subject property and draining generally to the northeast following the existing slope of the ground.**

b. The proposed development has identified the required buffer from the point of discharge and there are no alterations proposed for this area – it is to remain intact exactly as found.
c. Development adjacent to the defined water resource area will consist of walkways and minor recreational features having minimum impact of existing ground conditions.
d. Only a small portion of the water resource area is within the subject property; silt fencing is proposed during construction at the uphill perimeter of the area on the subject property, and a 4' high demarcation fence is proposed for installation as a permanent deterrent to disturbance of this area; what happens on adjoining properties is beyond our control.
e. Land adjacent to the point of discharge is believed to be in the range of 0% to 25% - not being on the subject property, we can only project from survey data available from our property. We have established a 57'-6" buffer distance from the discharge point to any constructed improvements on our property.
f. No construction of any kind is proposed for the water resource area.
g. A 6' high chain link fence will be installed at the perimeter of the water resource area on this property during construction.
h. All paving is located outside the perimeter of the water resource area on this property.
i. Since actual drainage occurs on adjoining property, this criterion is not applicable.
j. See finding 'd' above regarding erosion control measures.
k. Since the water resource area on this property is uphill from the actual discharge point of the water, enhanced vegetation is not believed to improve conditions for the water course.
l. See finding 'e' above regarding distance to structural work.
m. There are no storm water facilities within the defined water resource area.
n. There are no piped drains on the subject property to be openend.
o. There are no adjustments to setbacks required or sought.
p. The drain pipe shown on the submitted drawings is the only water resource area determinant for this property.

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PART C: Compliance with Design Review requirements (Chapter 55)

1. Compliance with prerequisite Pre-Ap and neighborhood meetings

   Findings: Documentation related to these meetings is attached

2. Compliance with 55.100 approval standards for Class II Design Review

   A. Compliance with other code chapters

   1. Chapter 33 Stormwater Management

      Findings: A preliminary design for storm water management is shown on drawing DRS4 based on calculations attached herewith; detention is proposed by soils report due to conditions that are not conducive to infiltration.

   2. Chapter 34 Accessory Structures

      Findings: The only accessory structure provided is the small gazebo in activity area #1, which also serves as signage for the project

   3. Chapter 38 Additional Yard Requirements

      Findings: The provisions of this chapter are not applicable to this proposal

   4. Chapter 41 Building Height (replaces repealed Chapter 40)

      Findings: "A" and "C" buildings 35' max; "B" and "D" buildings 45' max based on 10' site slope accommodated.

   5. Chapter 42 Vision Clearance

      Findings: The only place this is an issue is at the intersection of Hwy 43 and Shady Hollow Way; the required 30' each way at intersection has been used to determine the allowable location of the gazebo

   6. Chapter 44 Fences

      Findings: A 3' high non-sight-obscuring fence with stone-clad piers and metal pergolas at entry points is proposed for the west and south public frontages of the site, and is shown on drawing DRS5. This is intended to define, connect and welcome. Additionally at each unit, the entry court/patio is surrounded by a stone

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clad wall that extends approximately 3' above the patio surface with metal gates. Together, these provide a hierarchy of transition between public and private space. Other site perimeters rely on landscape to define.

7. Chapter 46 Parking

   Findings: There are two-car garages provided for all "A", "B" and "D" units and one-car garages are provided for the "C" units; in addition, there are 23 visitor parking spaces near the site entry; bike parking is available in all garages, plus there are 8 bike parking racks for visitors.

8. Chapter 48 Access

   Findings: The main driving aisles comply with fire department requirements for width (24') and turning radius (45' to centerline); the portion of the emergency access path north of buildings A3 and B5 is designated for fire and garbage vehicle access only – with heavy cobble paving to discourage use by most vehicles – which allows a portion of this area to be used as outdoor recreation space (see findings for usable open space on page 4 above). Three buildings are configured for accessibility: C1, C2 and D1. Accessible parking is provided in the visitor lot.

9. Chapter 52 Signs

   Findings: One overall project sign is proposed to be incorporated into the design of the gazebo located in activity area #1. Method of addressing the buildings and units has not yet been determined; a site map will be incorporated into the feature that accommodates the mailboxes for the site.

10. Chapter 54 Landscaping

    Findings: Proposal provides 39% landscape area compared to 25% minimum site area required. Plant materials have been selected for low maintenance while offering a variety of trees, shrubs and ground cover. Landscape plan incorporates existing trees in locations not conflicting with proposed buildings, circulation and outdoor activities; many of these are along the Hwy 43 frontage, which will help preserve the current look and feel of this thoroughfare.

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B. Relationship to Natural and Physical Environment

1. Preservation of Heritage Trees

   Findings: Arborist report identified only one significant tree on the site, an oak near the southwest corner of the property. This tree is being preserved whether or not it is considered "Heritage"

2. Area of preserved trees

   Findings: All existing trees to be preserved, including the significant tree noted above and others not designated as significant, shall be protected during the course of construction with chain link fencing at 10'-0" outside the dripline, which shall be verified prior to construction.

3. Existing topography and natural drainage to be preserved to maximum extent possible.

   Findings: The proposed design is based on maximum possible retention of general site topography in benched terraces stepping down from west to east. Natural drainage patterns are preserved, but due to the poor percolation characteristics of the site, storm water is collected at impervious areas for treatment and detention prior to discharge into the existing creek system to the east of the site.

4. Buildings are not to be located in areas of slumping or sliding soils

   Findings: The geotechnical investigation indicates that the site soils are not subject to slumping or sliding; site grade slopes are gradual enough to preclude lateral instability.

5. Buildings are to be located to provide adequate separation for light and fire protection

   Findings: Buildings are located a minimum of 10'-0" apart at their closest conditions.

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6. Architecture

a. Compatibility with buildings on adjoining sites

Findings: The proposed building designs are consistent with the existing wide range of residential styles, scale, materials and other features in the general vicinity. The design intent is to provide a reasonable range of variety within the development to give each building an identity in a similar manner to house-by-house development in the adjacent neighborhood.

b. Transitions to buildings on adjoining sites

Findings: The proposed building designs are similar enough to and sufficiently distant from single family residences on adjoining site to preclude the need for transitions designed into the proposed buildings.

c. Contrasting architecture

Findings: The proposed building designs, while similar to those on adjoining sites, use the vocabulary of adjacent buildings in a more sophisticated manner. This does not contrast with the existing buildings, but adds to the quality of the existing neighborhood.

d. Human scale

Findings: The proposed buildings incorporate a number of features to maintain a human scale: intimate entry ways with private outdoor patios, windows with traditional trims and proportions, varieties of siding materials to break up large wall areas, and changes in wall planes. At the units with basement garages, a trellis is introduced to moderate the higher wall plane.

e. Windows at commercial building frontages

Findings: Not applicable to this proposal

f. Variations in depth and roof line

Findings: All sides of the proposed buildings incorporate variations in wall plane (bump-outs) and roof configuration (dormers) to create a hierarchy of architectural elements and opportunities to introduce variations of siding materials.

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g. Micro-climate conditions for pedestrians

Findings: Building orientation on the site was primarily a function of the topography. Covered entries are provided at dwelling units. Introduction of awnings or similar devices is not appropriate for this residential use or consistent with what would be found in a traditional lot-by-lot development.

h. Safe and attractive pedestrian environments

Findings: The proposed design goes to great length to separate pedestrian circulation from vehicular circulation, providing nicely landscaped and well-lit pathways within the site and in connections to the public rights of way. Where pedestrian paths cross vehicular areas, the pedestrian paths are raised and marked, which also eliminates the need for wheelchair ramps, making the site more accessible. Since this is not a commercial development, pedestrian paths do not "hug" building facades, making the use of awnings irrelevant. However, entries to units do have covered porch areas.

7. Transportation

a. Orientation of commercial developments

Findings: This is not applicable to the proposed development

b. Parking for multi-family projects

Findings: This proposal is intended to strike a balance between a variety of design goals to provide an overall pleasant environment for the residents as well as for the neighborhood. We have separated vehicular and pedestrian circulation, including parking access and unit entrances, giving each unit a pleasant entry courtyard patio. Visitor parking has been consolidated in a single area along Shady Hollow Way, directly opposite the existing Burgerville restaurant, which has extensive vehicular activity, and heavily buffered with bermed landscaping. The primary site frontage along Highway 43 is only pedestrian oriented. Had the preferences described in the code been incorporated into the design, the access to visitor parking would have been through areas intended to be private for residents and would have required more paved site area.

c. Buildings fronting on rights-of-way

Findings: As described above, the buildings and their pedestrian access are located as close to the Highway 43 frontage as allowed by required setbacks.

d/e.Pedestrian access

Findings: The proposal includes an extensive network of interconnected pedestrian paths separated to the extent possible from vehicular circulation. The widths of paths vary in a hierarchal manner: primary accesses are wider and more formal; secondary accesses are narrower and less formal. Where pedestrian paths cross vehicular circulation, they are typically raised and marked.

f. Primary access

Findings: The proposal is comprised of multiple buildings and multiple access points from both Highway 43 and Shady Hollow way. The two accesses at the southwest corner could be deemed "main".

g. Access from public transit

Findings: Public transit is available on Highway 43 with the closest stop being in front of Burgerville. Riders have access to and from the site via two access points near the southwest corner of the site.

h. Height-to-width ratio

Findings: As noted in item 'c' above, buildings along the Highway 43 frontage are located as close to the right-of-way as allowed by setbacks. Because Highway 43 is very wide and the buildings are only two story, the desired proportion for streetscape design is not possible.

C. Compatibility and Buffering

Findings: While buffering is not required between single family and duplex developments, there is a condition of approval from the zone change that requires a 25' buffer between buildings on this property and the site property line. This is provided in all locations.

D/E. Privacy and Noise

Findings: All units have a front patio area for outdoor activities - this functions as an entry court, and exceeds the 48 square foot minimum in all locations. These are screened from the attached unit and since most are elevated between 2' and 4' above grade, the perimeter stone faced wall provides visual privacy from passersby and the neighbors. The primary noise concern is from Hwy 43 traffic, although at a speed of 35 mph, the noise generated will not be similar to being next to a freeway – the proposal includes 3' to 4' high berms in the landscape area between the units and the public right of way and heavy planting to help dampen the noise. With regard to orientation of outdoor spaces for sun exposure, all patios are on the east or west sides of the units to which they are attached; each will have either a morning/ afternoon exposure or an afternoon/evening exposure, allowing residents to include this in their consideration of unit selection. The extent of exposure will also be dependent on the type of landscaping adjacent to the patios. All four of the common outdoor activity areas have good exposure as well.

F. Shared Outdoor Recreation Space

Findings: This has been addressed above on page 5

G. Demarcation of public and private spaces

Findings: As noted above, the entry courts to each unit are generally raised a few feet and surrounded by a stone clad wall.

H. Public transportation

Findings: Existing bus service on Highway 43

I. Public facilities

Findings: Existing right-of-way on Shady Hollow Way is proposed to be increased by 2' dedication on south and 4' dedication on east; storm water collection, treatment and detention system is proposed on site, with metered discharge to nearby creek; existing water and sanitary sewer systems have been determined adequate to accommodate the proposed project; see "O" below for waste handling.

J. Crime prevention

Findings: Lighting provided throughout the site for vehicular circulation, pedestrian circulation, key outdoor features and general monitoring of concealed areas.

K. ADA accommodation

Findings: Ramped access is available to dwelling units in buildings C1, C2 and D, with connection to mailboxes, outdoor activity areas and public right-of-way sidewalk.

L. Signs

Findings: Sign identifying "Shady Hollow Village" to be mounted on frieze of gazebo structure at southwest corner of the project site. Each dwelling unit will have an address – addressing system to be determined. Other directional signage and informational signage to be determined at a later date. All signage to utilize a common graphic design compatible with the buildings and other site features.

M. Utilities

Findings: Electrical power and communications systems, public water supply and public sanitary sewer to be provided by existing serving utility companies. All electrical wires will be placed underground per City code – impact to adjoining property owners not the responsibility of this developer.

N. Wireless communication facilities

Findings: Not applicable to this proposal

O. Refuse and recycling

Findings: Garbage and recycling containers will be kept in the garages of each unit and moved outside the garage or in an area designated adjacent to the garage on pick-up days. The access drives have been configured to accommodate garbage trucks.

3. Transportation Analysis

   Findings: A copy of the transportation report completed May, 2008 is attached herewith.

4. Compliance with Robinwood Neighborhood Plan goals

   Findings: As evident in multiple findings above, the proposed development is pedestrian and bike friendly, uses high quality materials, preserves natural areas where possible, and provides good lighting for security.

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SHADY HOLLOW VILLAGE

PROJECT TEAM

OWNER/DEVELOOPER
BARRINGTON MANAGEMENT
WILLAMETTE COMMONS LLC
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ARCHITECT
STEWART GORDON STRAUS ARCHITECT PC
CONTACT: STEWART STRAUS
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CIVIL ENGINEER
WDY INC
CONTACT: COLE PRESTHEUS
503-203-8111

STRUCTURAL ENGINEER
MASSAAD ENGINEERING GROUP
CONTACT: GABY MASSAAD
503-997-4555

GENERAL CONTRACTOR
BRADLEY CONSTRUCTION
CONTACT: STEVE BRADLEY
503-681-0621

GEOTECHNICAL ENGINEER
ALDER GEOTECHNICAL
CONTACT: JOHN CUNNINGHAM
503-282-7482

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SCHOTT & ASSOCIATES
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503-678-6007

DRAWING INDEX

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BEAVERTON, OR 97008
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sgs@s-straus.com (e-mail)

REGISTERED ARCHITECT
STEWART GORDON STRAUS
PORTLAND, OREGON
1602
STATE OF OREGON

SHADY HOLLOW VILLAGE
SHADY HOLLOW AND WILLAMETTE DRIVE
WEST LINN, OREGON

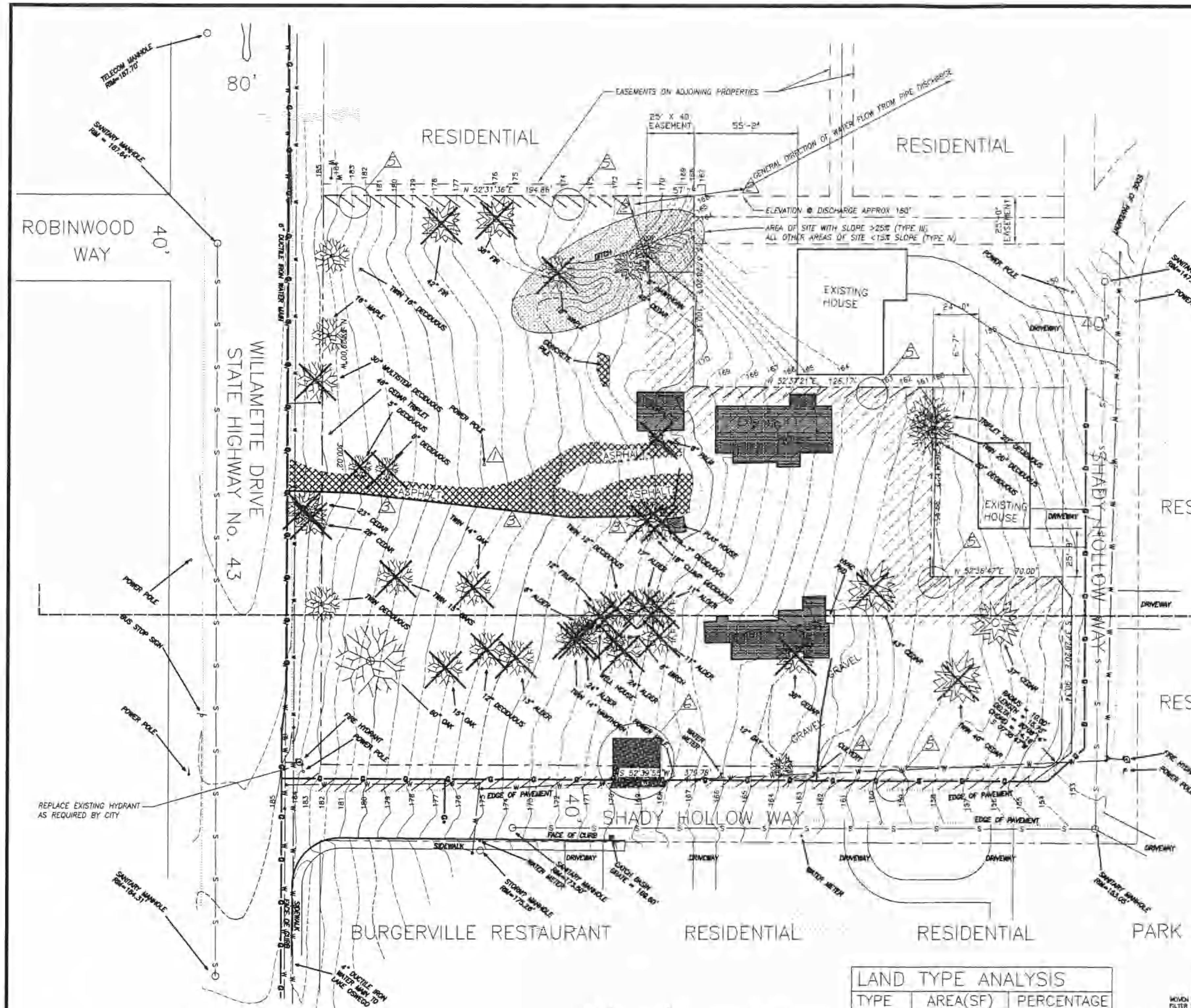
PROJECT NUMBER: 1335

DRAWING	DATE	BY
DESIGN		
	20 NOV 2013	SGS
NBRHD MTG		
	11 FEB 2014	SGS
DES REV		
	12 MAR 2014	SGS
PERMIT		

SHEET TITLE
COVER DIRECTORY

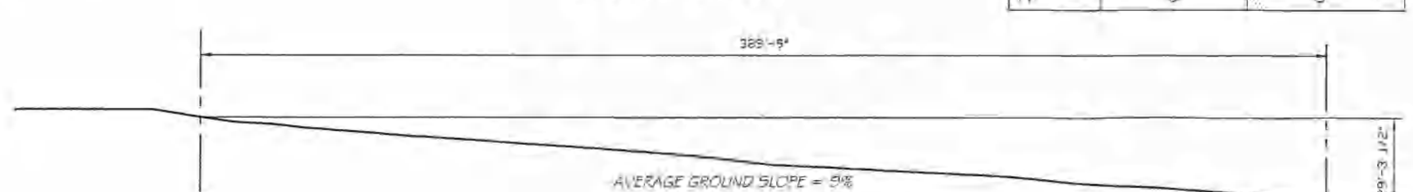
SHEET #
DR0

- REMOVE EXISTING STRUCTURE
- REMOVE EXISTING TREE
- REMOVE EXISTING ASPHALT PAVING
- EXISTING PROPERTY BOUNDARY
- REQUIRED BUFFER
- EXISTING BOUNDARY ADJOINING PROPERTY
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING SANITARY SEWER LINE
- 1 REMOVE EXISTING POWER POLE & WIRING
- 2 EXISTING STORM OUTFALL & WATER RESOURCE AREA BOUNDARY
- 3 REMOVE EXISTING GAS LINE
- 4 REMOVE EXISTING CULVERT
- 5 SILT FENCING EROSION CONTROL
- 6 GRAVEL CONSTRUCTION ENTRANCE



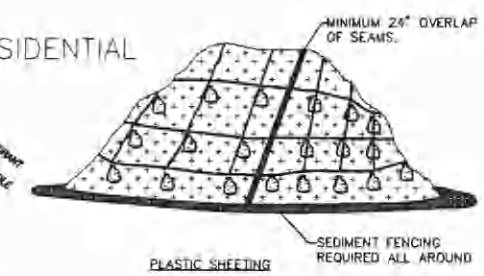
1 / DRS1 EXISTING SITE CONDITIONS PLAN
1" = 30'-0"

LAND TYPE ANALYSIS		
TYPE	AREA(SF)	PERCENTAGE
I	86699	95.7
II	3886	4.3
III	0	0
IV	0	0



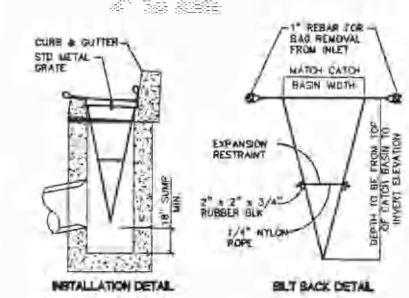
NOTE: ALL SITE GROUND SLOPES ARE LESS THAN 25% EXCEPT WHERE NOTED ON PLAN:

2 / DRS1 EXISTING SITE CONDITIONS SECTION
1" = 30'-0"



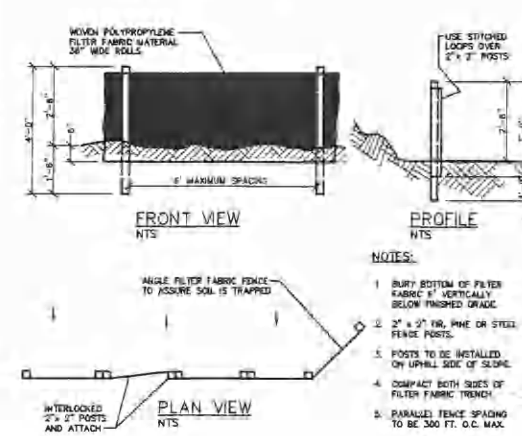
NOTES
1. MINIMUM 24" OVERLAP OF ALL SEAMS REQUIRED.
2. SEDIMENT FENCING REQUIRED AT TOE OF STOCK PILE.
3. COVERING TO BE MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

3 / DRS SOIL STOCKPILE



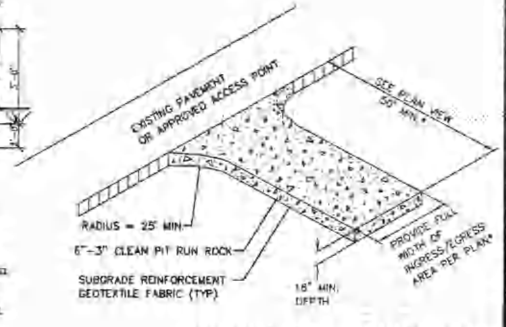
GENERAL NOTES:
1. EMPTY SILT SACK AS NECESSARY.
2. VERIFY LOCATIONS AT ALL EXISTING DRAIN INLETS

4 / DRS DRAIN FILTER



NOTES:
1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 2" x 2" FIR, PINE OR STEEL FENCE POSTS.
3. POSTS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
4. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
5. PARALLEL FENCE SPACING TO BE 300 FT. O.C. MAX.

5 / DRS1 SILT FENCE
NOT TO SCALE



*20' MIN. FOR SINGLE FAMILY AND DUPLEX RESIDENTIAL
*SEE EROSION CONTROL PLAN FOR MIN. EXTENT OF CONSTRUCTION PAD

6 / DRS1 GRAVEL CONSTRUCTION ENTRY
NOT TO SCALE

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SHADY HOLLOW AND WILLAMETTE DRIVE
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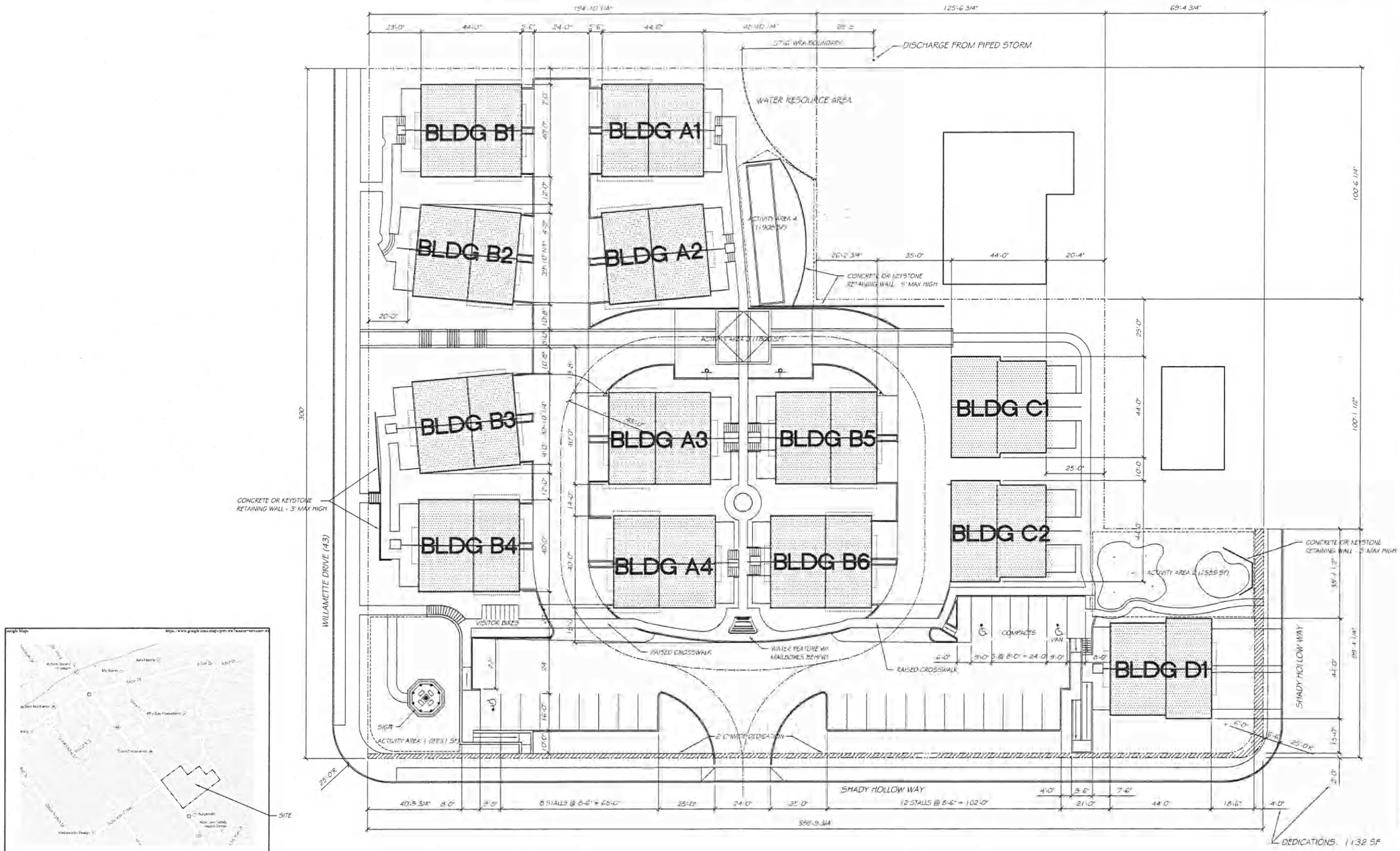
PERMIT		

SHEET TITLE
EXISTING SITE ANALYSIS

SHEET #
DRS1



2 DRS2 VICINITY MAP
1" = 400'-0" (APPROX)

TRUE PLAN

1 DRS2 SITE PLAN
1" = 20'-0"

TRUE PLAN

SITE AREA ANALYSIS

EXISTING SITE AREA	90375 SF	
LESS DEDICATIONS ALONG SHADY HOLLOW WAY	1,132 SF	
DEVELOPMENT SITE AREA	89243 SF	
BUILDING AREA	22773 SF	25.5%
PAVING AREA (ASPHALT, CONCRETE, ACTIVITY)	31705 SF	35.5%
LANDSCAPING AREA	34765 SF	39.0%

ACTIVITY AREAS (INCLUDE PAVING & LANDSCAPING)

AREA 1: CHESS/CHECKERS IN GAZEBO	2231 SF	
AREA 2: PUTTING/CHIPPING GREENS	2589 SF	
AREA 3: TWO BASKETBALL HOOPS	1800 SF	
AREA 4: BOCCE COURT	1908 SF	
TOTAL	328 SF PER DWELLING	8528 SF

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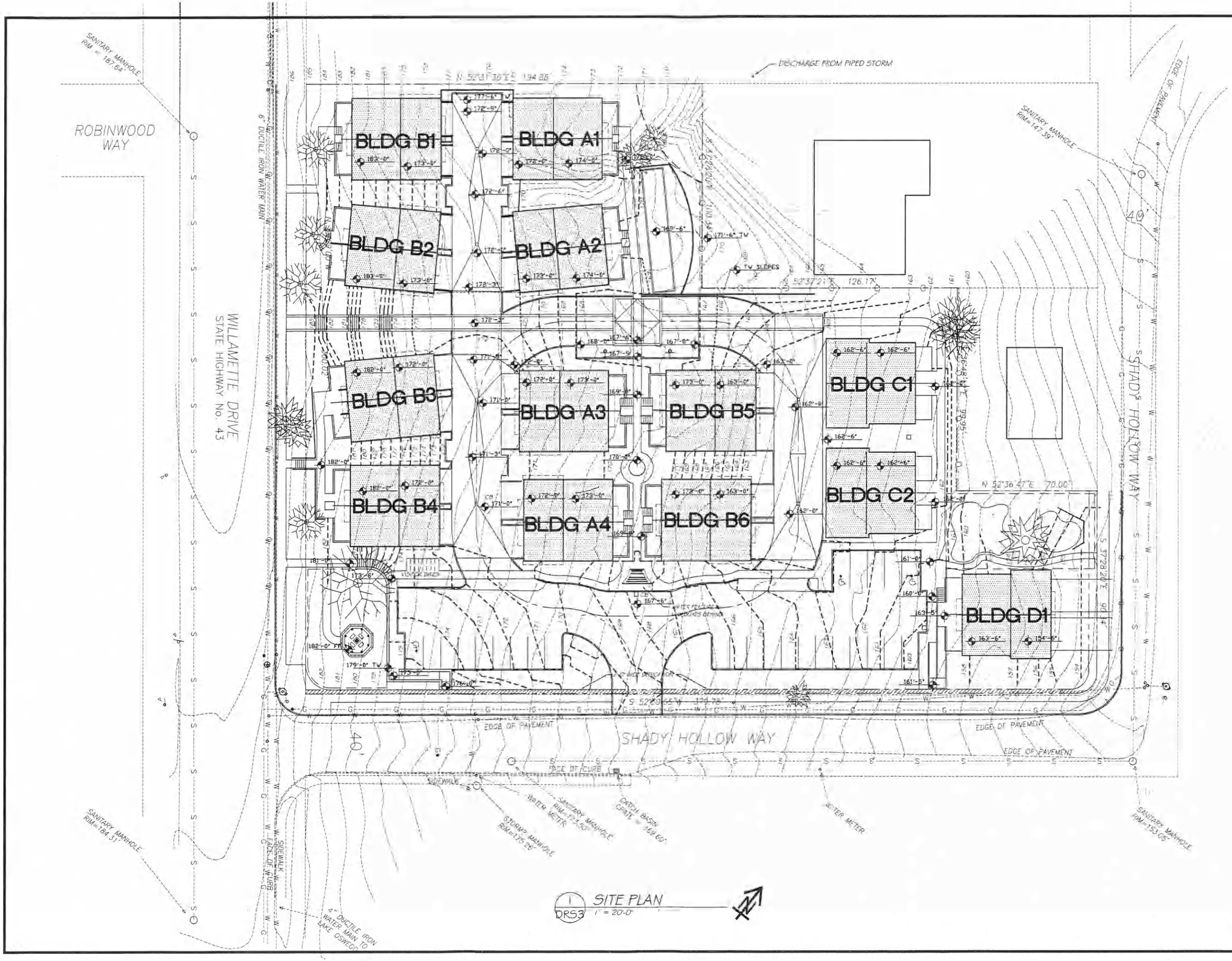
PERMIT		

SHEET TITLE
PROPOSED SITE PLAN / ANALYSIS

SHEET #
DRS2



1 DRS3 SITE PLAN
1" = 20'-0"

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STATE OF OREGON

SHADY HOLLOW VILLAGE

SHADY HOLLOW AND WILLAMETTE DRIVE
WEST LINN, OREGON

PROJECT NUMBER:	1335	
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PERMIT		

SHEET TITLE
PROPOSED GRADING PLAN

SHEET #
DRS3

STORMWATER NARRATIVE:

ONSITE: New Onsite stormwater runoff will be collected and drain via a network of private storm pipes to an underground detention storage system that will detain the 2 yr, 5 yr, 10 yr and 25 yr, 24 hour long storms to their respective pre-developed flow rates. Onsite stormwater treatment will be provided using a CONTECH StormFilter Manhole Assembly for treatment prior to runoff leaving the site to the new public storm system in Shady Hollow Way.

OFFSITE PUBLIC: The Hwy 43 frontage will not receive any stormwater from the private development which is downhill from Hwy 43 street level. The new frontage curb will collect surface water only from the eastern half of the existing Hwy pavement width. The existing street pavement slopes to the south at approximately 0.7% slope across the 300 ft. wide frontage of the development to a new curb inlet located at the intersection of Hwy 43 and Shady Hollow Way. Stormwater runoff from the new improved half of Shady Hollow Way will be collected in the new frontage curb and routed to (3) new public storm water swales located along Shady Hollow Way. Their discharge will overflow back into the gutter and immediately into new curb inlets connected to the new public storm system in Shady Hollow Way. The new public storm system will outfall into the city owned natural drainage way on the east side Shady Hollow Way.

KEYNOTES FOR THIS SHEET

MARK	DESCRIPTION
1	NEW 6" DIA PVC S.S. PIPE
2	NEW 4" DIA PVC S.S. SERVICE (TYP)
3	CONNECT NEW 6" PVC S.S. PIPE TO EXIST 8" PUBLIC S.S. MAIN
4	TYP S.S. OR ST. D. C.O. ASSEMBLY
5	NEW 2" DIA PUBLIC WATER METER
6	NEW 2 1/2" DIA PVC, SCHEDULE 40 WATER SERVICE PIPE
7	NEW 2" DIA PVC, SCHEDULE 40 WATER PIPE
8	NEW 1" DIA PVC SCHEDULE 40 WATER PIPE TO EACH UNIT (TYP)
9	NEW PRIVATE 3/4" DIA WATER METER AT EACH UNIT (TYP)
10	NEW 2 1/2" DIA DOUBLE CHECK VALVE AND BOX ASSEMBLY
11	6" DIA PVC ST. D. PIPE
12	8" DIA ST. D. PIPE
13	TYP 4" DIA PVC ROOF DRAIN CONNECTION PIPE
14	5' DIA ST. D. DETENTION MANHOLE
15	NEW PUBLIC ST. D. MANHOLE
16	NEW 'CONTECH' STORMFILTER MANHOLE WITH (5) 27" TALL CARTRIDGES
17	NEW PUBLIC CURB INLET
18	NEW PUBLIC CURB AND GUTTER
19	NEW PUBLIC STORMWATER TREATMENT SWALE WITH CURB INLETS
20	NEW PUBLIC ST. D. PIPE
21	NEW PUBLIC ST. D. PIPE OUTFALL INTO EXIST. NATURAL DRAINAGE WAY
22	NEW CATCH BASIN
23	NEW LANDSCAPE AREA DRAIN
24	(4) ROWS OF 55 L.F. OF NEW 48" DIA ST. D. DETENTION PIPE
25	NEW STREET PAVEMENT
26	SAWCUT EXIST PAVEMENT

1 DRS4 PRELIMINARY ONSITE UTILITY PLAN
SCALE: 1"=20'-0"

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

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PRELIMINARY
NOT FOR
CONSTRUCTION
05/14/14

SHADY HOLLOW VILLAGE

SHADY HOLLOW AND WILLAMETTE DRIVE
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PERMIT		

SHEET TITLE
ON SITE
UTILITY PLAN

SHEET #
DRS4

PLANT LIST

TREES (see A1 for existing trees)

- TRACHYCARPUS FORTUNEI — Windmill Palm
- CUPRESSUS SEMPERVIRANS — Italian Cypress
- TAXUS BREVIFOLIA — Oregon Yew
- ALRBUTUS UNEDO — Strawberry Tree
- QUERCUS PHILLYREOIDES — Ubame Oak
- STREET TREES — Verify species with jurisdictions

SHRUBS AND ORNAMENTAL GRASSES

- GAULTHERIA SHALON — Salal — GS
- MAHONIA AQUAFOLIUM — Oregon Grape — MA
- MAHONIA AQUAFOLIUM "COMPACTA" — Dwarf Oregon Grape — MAC
- NANDIAN DOMESTICA — Heavenly Bamboo — ND
- ANDROPOGON GERARDII — Big Bluestem Turkeyfoot Grass — AG
- ARRHENATHERUM CLATIUS BULBOSUM "VARIEGATUM" — Bulbous Oat Grass — AC
- CORTADERIA SELLOANA — Pampas Grass — CS
- PENNISETUM ALOPECUROIDS — Fountain Grass — PA
- RHODODENDRON — Varieties to be selected — R
- AZALEA — Varieties to be selected — A

GROUND COVERS

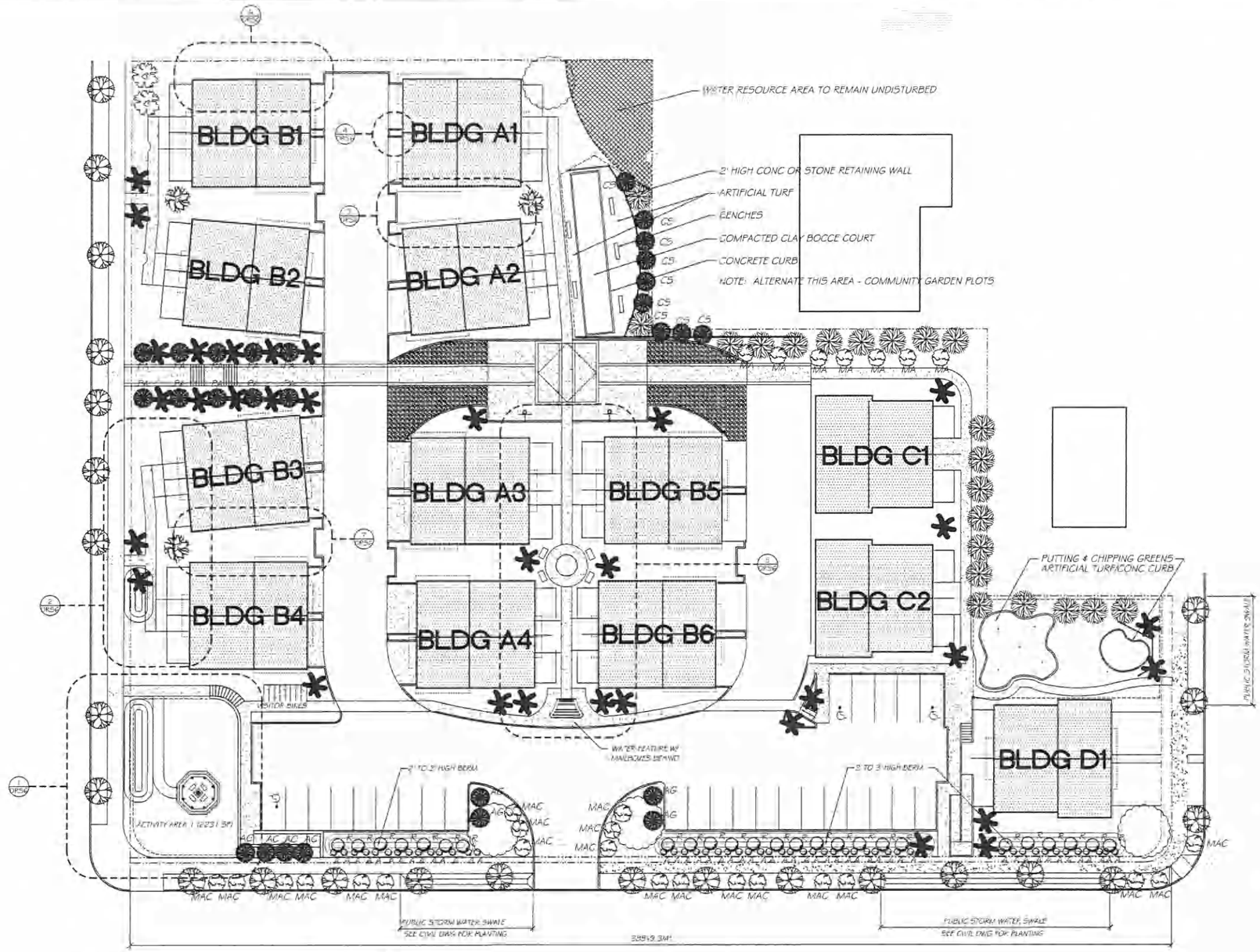
- ASARUM CAUDATUM — Wild Ginger
- COTONEASTER DAMERII — Bearberry Cotoneaster
- ARCTOSTAPHYLOS UVA URSI — Kinnickinnick

NOTES

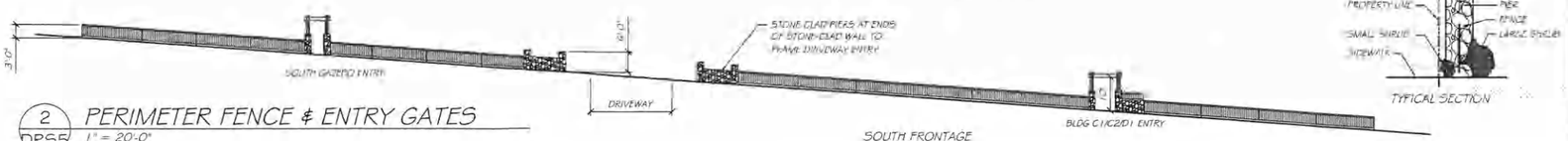
1. NEW TREES TO BE 2" CAL DBH AND/OR 6'-0" MIN HEIGHT
2. NEW SHRUBS AND GRASSES TO BE 1 GAL CONTAINER MIN
3. NEW GROUND COVERS TO BE 4" POT @ 18" OC TRIANGULAR
4. TYPICAL GROUND COVER TO BE KINNICKINNICK UNLESS NOTED
5. PROVIDE 2" BARK MULCH IN ALL PLANTER BEDS

CONCRETE PAVING

- SALT OR BROOM, SCORED
- WITH COBBLES/ROCKS (EMERGENCY ACCESS ONLY)



1 DRS5 LANDSCAPE PLAN
1" = 20'-0"



2 DRS5 PERIMETER FENCE & ENTRY GATES
1" = 20'-0"

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REGISTERED ARCHITECT — STEWART GORDON STRAUS — PORTLAND, OREGON — 1602 — STATE OF OREGON

SHADY HOLLOW VILLAGE

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PERMIT		

SHEET TITLE: PROPOSED LANDSCAPE

SHEET # DRS5

PLANT LIST

TREES (see existing conditions plan A1 for existing trees)

- TRACHYCARPUS FORTUNEI — Windmill Palm
- CUPRESSUS SEMPERVIRANS — Italian Cypress
- TAXUS BREVIFOLIA — Oregon Yew
- ALRBUTUS UNEDO — Strawberry Tree
- QUERCUS PHILLYREOIDES — Ubame Oak
- STREET TREES — Verify species with jurisdictions

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NOTES

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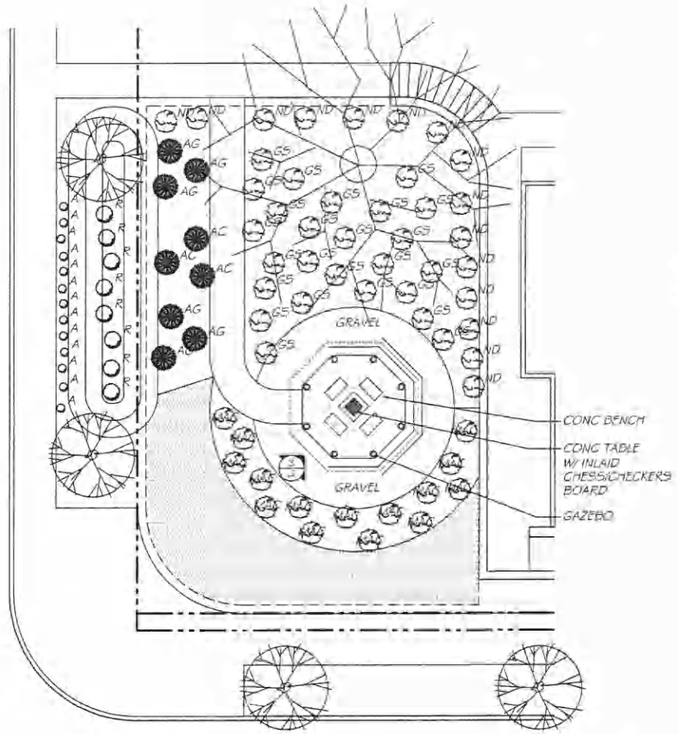
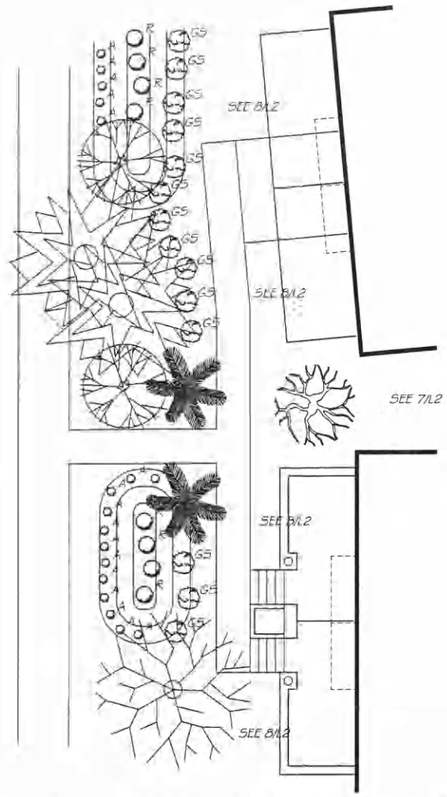
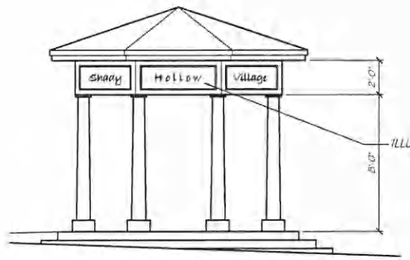
4. TYPICAL GROUND COVER TO BE KINNICKINNICK UNLESS NOTED
5. PROVIDE 2" BARK MULCH IN ALL PLANTER BEDS



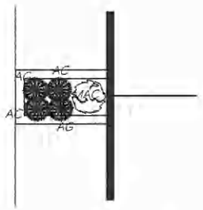
1 DRS6 ACTIVITY AREA 1 PLAN
1/8" = 1'-0"



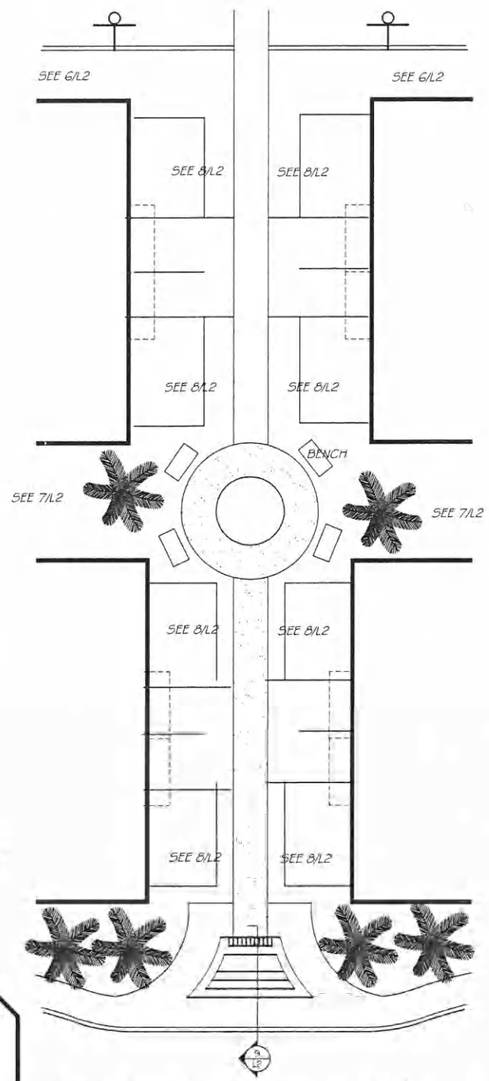
2 DRS6 HIGHWAY 43 FRONTAGE PLAN
1/8" = 1'-0" BLDGS B3 & B4 SHOWN, OTHERS SIMILAR



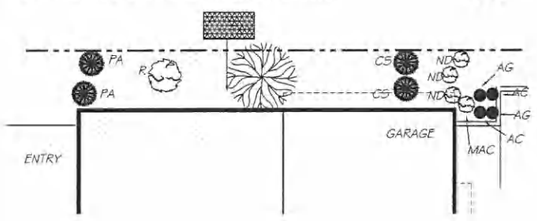
3 DRS6 GAZEBO/PROJECT SIGN
1/4" = 1'-0"



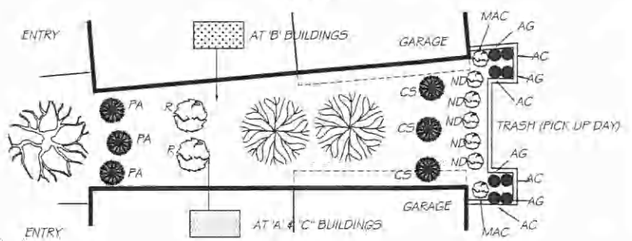
4 DRS6 PLANTER @ GARAGES
1/4" = 1'-0"



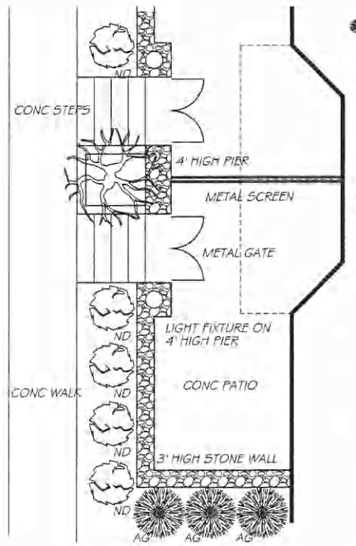
5 DRS6 CENTER COURT PLAN
1/8" = 1'-0"



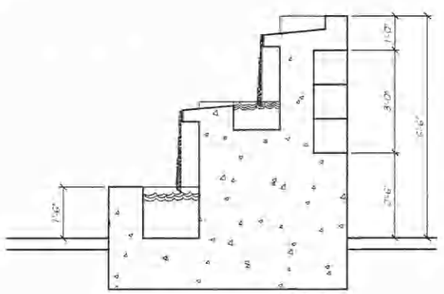
6 DRS6 TYPICAL BLDG ENDS
1/8" = 1'-0"



7 DRS6 TYPICAL BETWEEN BLDGS
1/8" = 1'-0"



8 DRS6 ENTRY PATIO
1/4" = 1'-0"



9 DRS6 MAILBOX/FOUNTAIN SECTION
1/2" = 1'-0"

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SHEET TITLE
LANDSCAPE DETAILS

SHEET #
DRS6

LIGHT FIXTURE SCHEDULE

- A — CREE "THE EDGE PWY-EDG-5M" - BLACK OR BRONZE
  13' TO 18' POLE MOUNT, ANCHORED TO TOP OF MASONRY PIER
  LED LAMPS
  CONTROLS: PE & MOTION DETECTION

- B — RUUD "E3-H SERIES" RECTANGULAR WALL MOUNT PERIMETER CUTOFF
  50 WATT PSMH LAMP
  9' ± MOUNTING HEIGHT
  CONTROLS: PE & MOTION DETECTION

- C — RUUD "AC2-16 SERIES" SQUARE POLE MOUNT AREA CUTOFF LIGHT
  400 WATT PSMH LAMP
  25' ± MOUNTING HEIGHT
  CONTROLS: PE

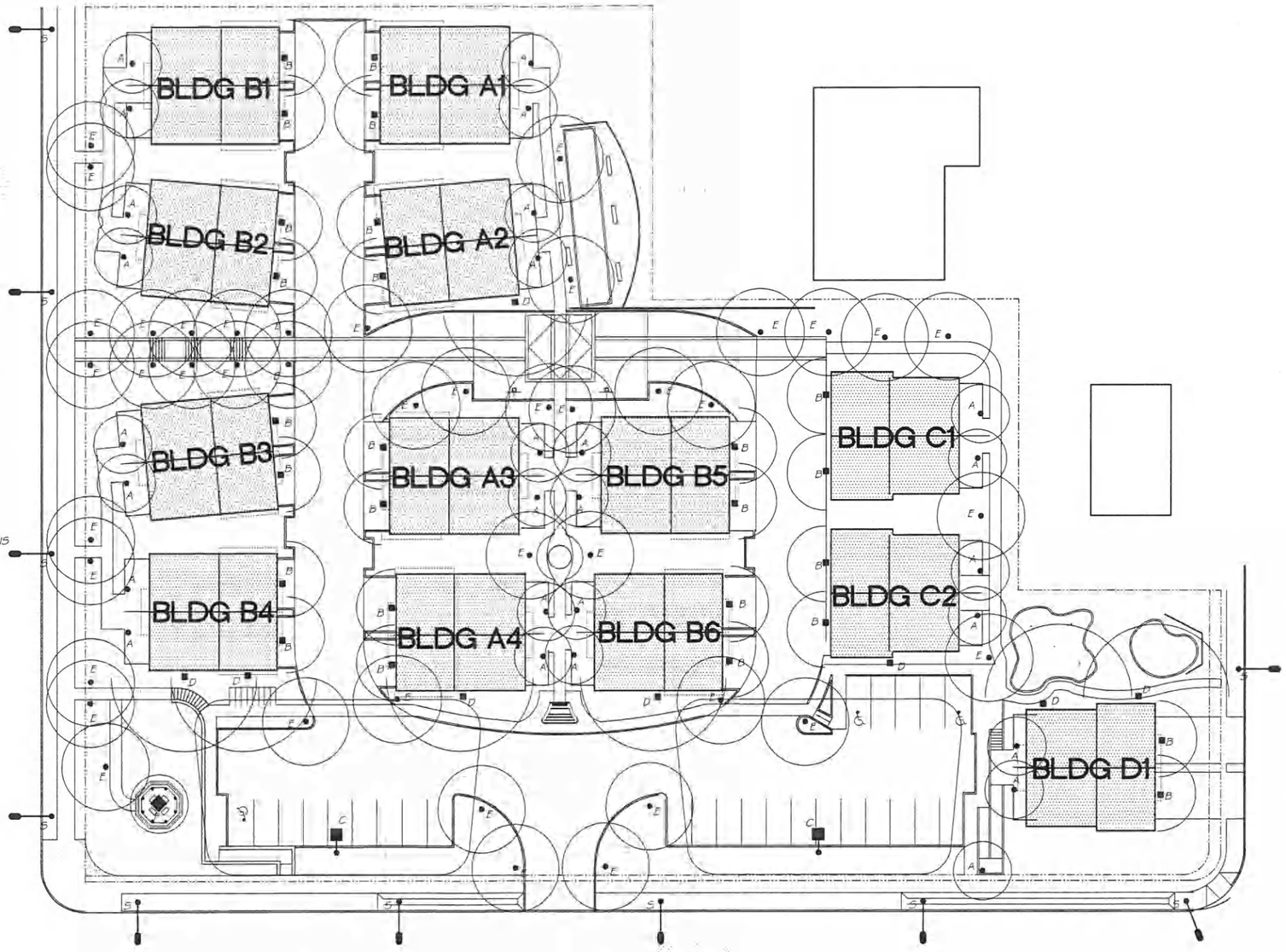
- D — RUUD "E3-H SERIES" RECTANGULAR WALL MOUNT PERIMETER CUTOFF
  70 WATT PSMH LAMP
  9' ± MOUNTING HEIGHT
  CONTROLS: PE

- E — RUUD "HCF SERIES" ROUND BOLLARD WITH HCL LOUVER
  100 WATT PSMH LAMP
  3' ± MOUNTING HEIGHT
  CONTROLS: PE & MOTION DETECTION

- F — RUUD "SE1-8 SERIES" SQUARE CEILING MOUNT WITH TRANSLUCENT LENS
  70 WATT PSMH LAMP
  9' ± MOUNTING HEIGHT
  CONTROLS: PE

- S — COBRA HEAD STREET LIGHT
  CITY STANDARD LED LAMP
  25' ± MOUNTING HEIGHT
  CONTROLS: PER JURSDICTION

- 1 FC LINE @ EACH FIXTURE



1 DRS7 SITE LIGHTING PLAN
1" = 20'-0"

TRUE PLAN

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REGISTERED ARCHITECT
STEWART GORDON STRAUS
PORTLAND, OREGON
1602
STATE OF OREGON

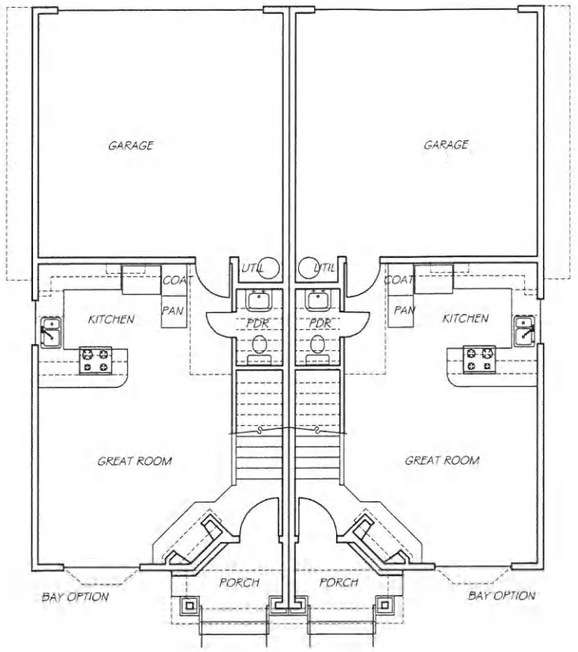
SHADY HOLLOW VILLAGE

SHADY HOLLOW AND WILLAMETTE DRIVE
WEST LINN, OREGON

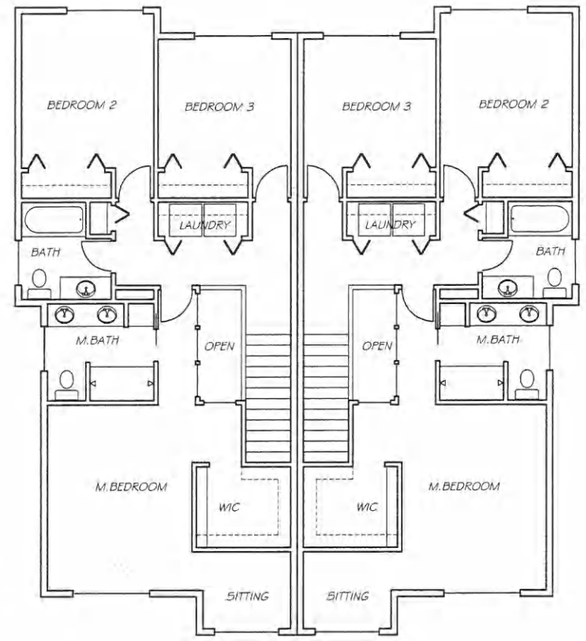
PROJECT NUMBER:	1335	
DRAWING	DATE	BY
DESIGN		
	20 NOV 2013	SGS
NBRHD MTG.		
	11 FEB 2014	SGS
DES REV		
	12 MAR 2014	SGS
	21 APR 2014	SGS
PERMIT		

SHEET TITLE
PROPOSED
LIGHTING PLAN

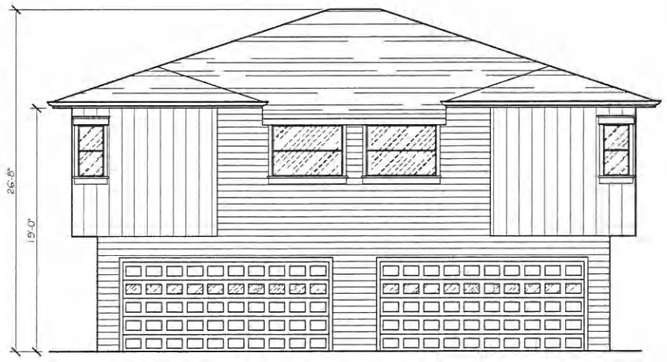
SHEET #
DRS7



1 DRB1 TYP. UNIT 'A' - LOWER LEVEL PLAN
3/16" = 1'-0"



2 DRB1 TYP. UNIT 'A' - UPPER LEVEL PLAN
3/16" = 1'-0"



3 DRB1 TYP. UNIT 'A' - REAR ELEVATION
3/16" = 1'-0"

4 DRB1 TYP. UNIT 'A' - SIDE ELEVATION
3/16" = 1'-0"

5 DRB1 TYP. UNIT 'A' - FRONT ELEVATION
3/16" = 1'-0"

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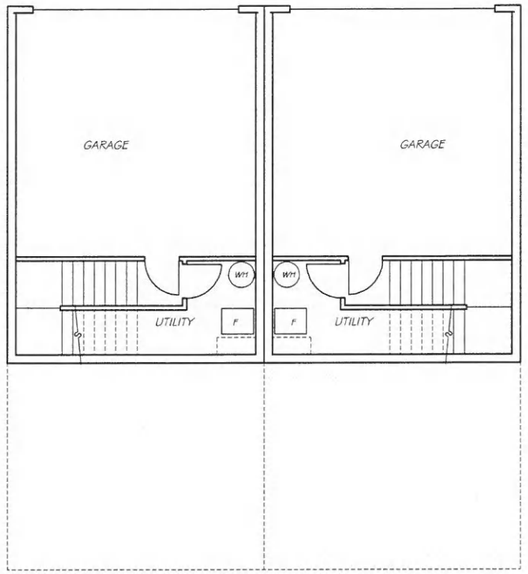
SHADY HOLLOW VILLAGE

SHADY HOLLOW AND WILLAMETTE DRIVE
WEST LINN, OREGON

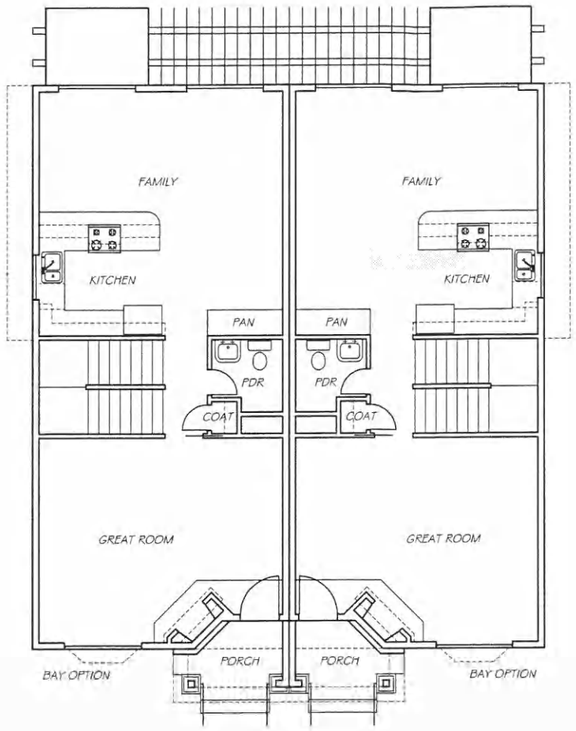
PROJECT NUMBER:	1335	
DRAWING	DATE	BY
DESIGN	20 NOV 2013	SGS
NBRHD MTG	11 FEB 2014	SGS
DES REV	12 MAR 2014	SGS
PERMIT		

SHEET TITLE
UNIT TYPE 'A'
PLAN + ELEVS

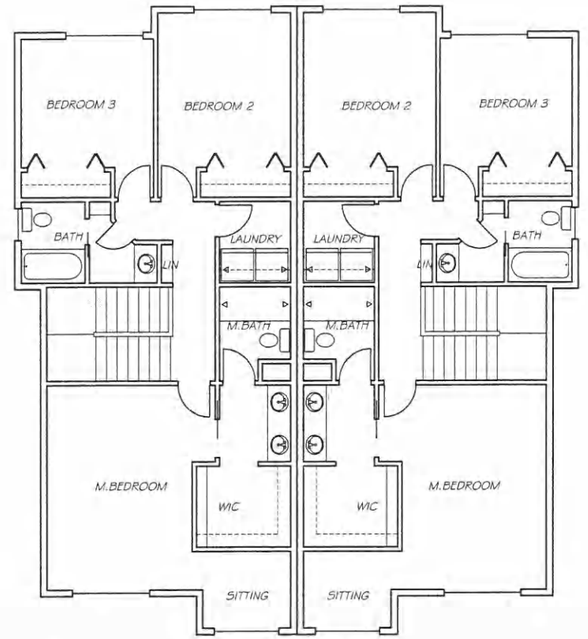
SHEET #
DRB-1



1 DRB2 TYP. UNIT 'B' - BASEMENT PLAN
3/16" = 1'-0"

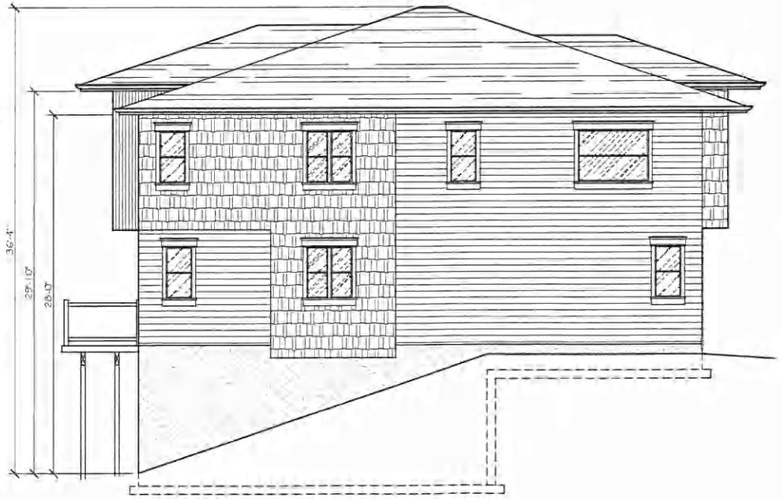


2 DRB2 TYP. UNIT 'B' - LOWER LEVEL PLAN
3/16" = 1'-0"



3 DRB2 TYP. UNIT 'B' - UPPER LEVEL PLAN
3/16" = 1'-0"

4 DRB2 TYP. UNIT 'B' - REAR ELEVATION
3/16" = 1'-0"



5 DRB2 TYP. UNIT 'B' - SIDE ELEVATION
3/16" = 1'-0"

6 DRB2 TYP. UNIT 'B' - FRONT ELEVATION
3/16" = 1'-0"

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REGISTERED ARCHITECT
STEWART GORDON STRAUS
PORTLAND, OREGON
1602
STATE OF OREGON

SHADY HOLLOW VILLAGE

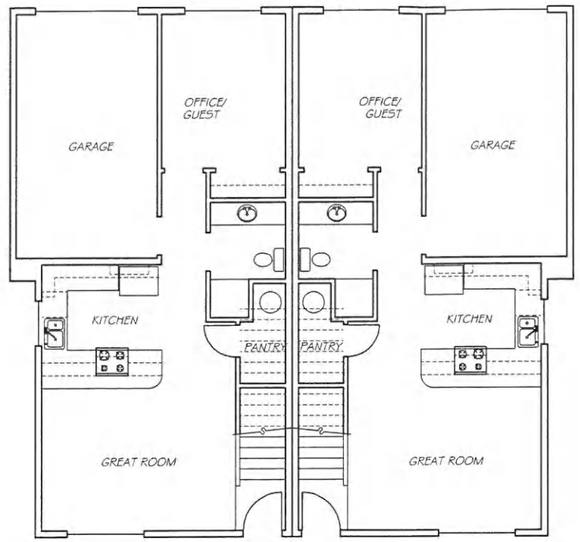
SHADY HOLLOW AND WILLAMETTE DRIVE
WEST LINN, OREGON

PROJECT NUMBER: 1335

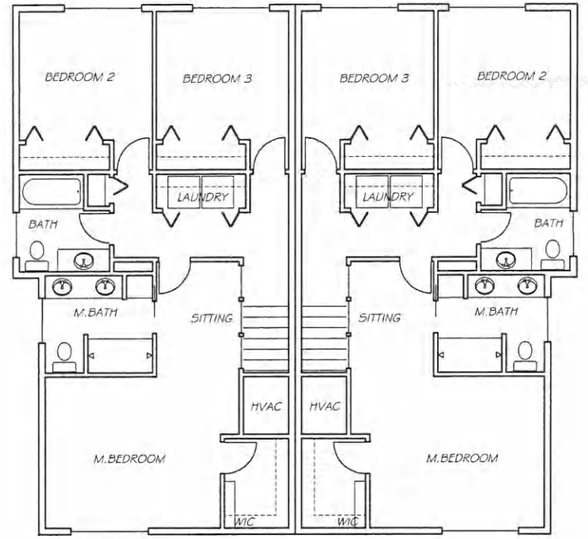
DRAWING	DATE	BY
DESIGN	20 NOV 2013	SGS
NBRHD MTG	11 FEB 2014	SGS
DES REV	12 MAR 2014	SGS
PERMIT		

SHEET TITLE
UNIT TYPE 'B'
PLAN + ELEVS

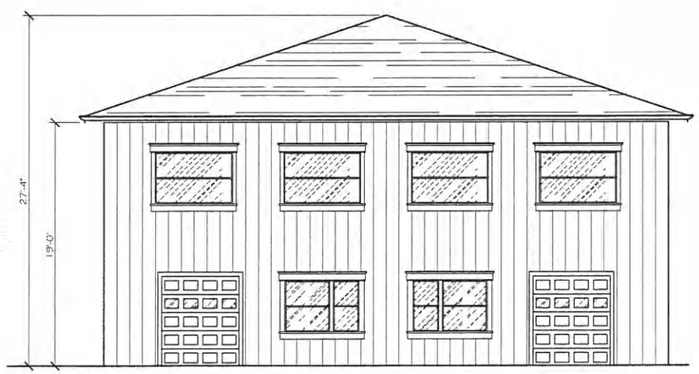
SHEET #
DRB-2



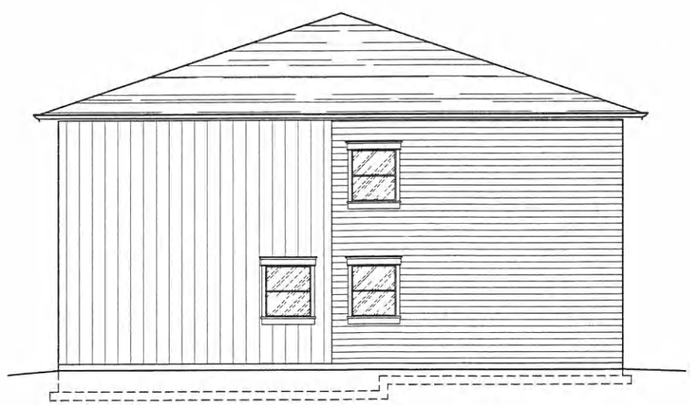
1 DRB3 TYP. UNIT 'C' - LOWER LEVEL PLAN
3/16" = 1'-0"



2 DRB3 TYP. UNIT 'C' - UPPER LEVEL PLAN
3/16" = 1'-0"



3 DRB3 TYP. UNIT 'C' - REAR ELEVATION
3/16" = 1'-0"



4 DRB3 TYP. UNIT 'C' - SIDE ELEVATION
3/16" = 1'-0"

5 DRB3 TYP. UNIT 'C' - FRONT ELEVATION
3/16" = 1'-0"

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REGISTERED ARCHITECT
STEWART GORDON STRAUS
PORTLAND, OREGON
1602
STATE OF OREGON

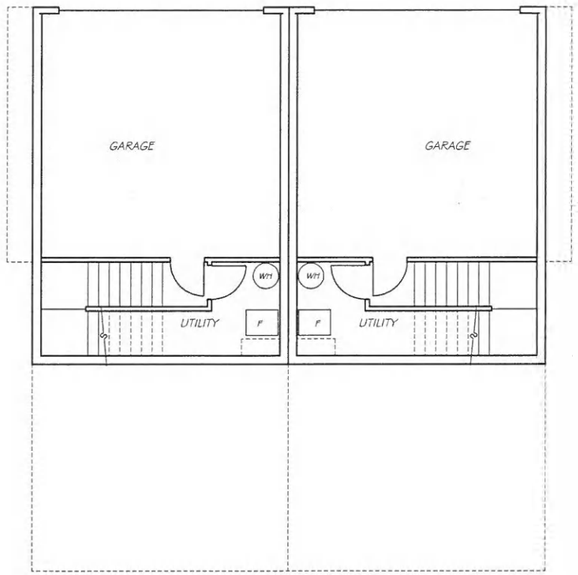
SHADY HOLLOW VILLAGE

SHADY HOLLOW AND WILLAMETTE DRIVE
WEST LINN, OREGON

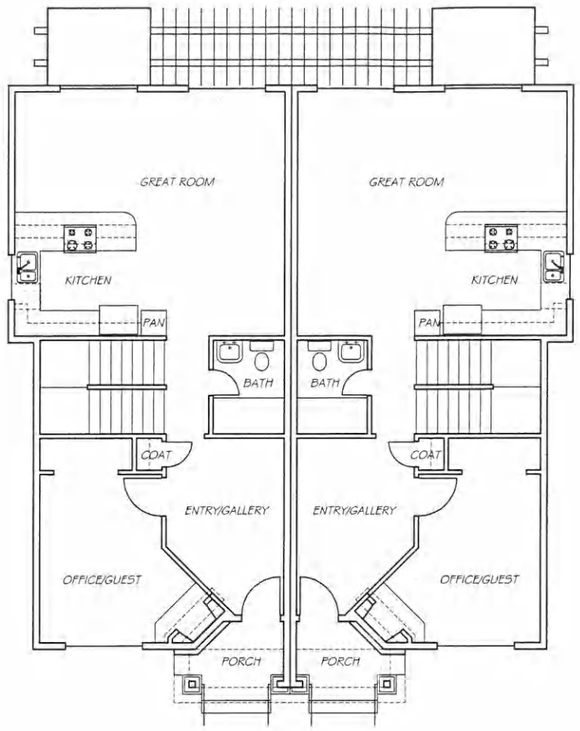
PROJECT NUMBER: 1335		
DRAWING	DATE	BY
DESIGN	20 NOV 2013	SGS
NBRHD MTG.	11 FEB 2014	SGS
DES REV	12 MAR 2014	SGS
	21 APR 2014	SGS
PERMIT		

SHEET TITLE
UNIT TYPE 'C' PLAN + ELEVS

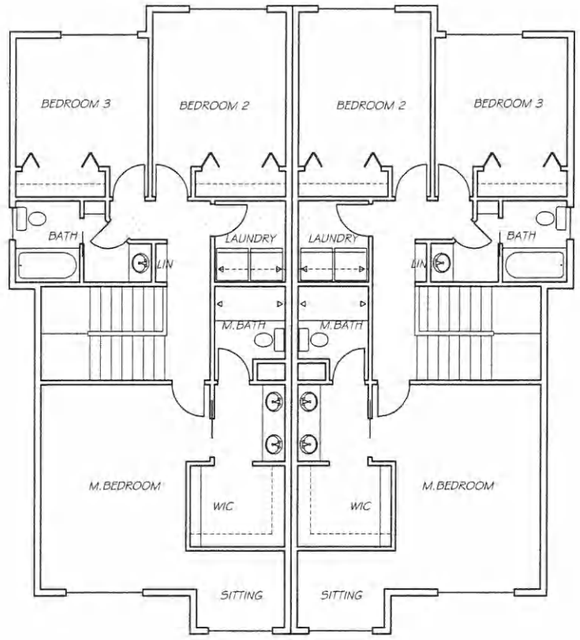
SHEET #
DRB-3



1 DRB4 TYP. UNIT 'D' - BASEMENT PLAN
3/16" = 1'-0"

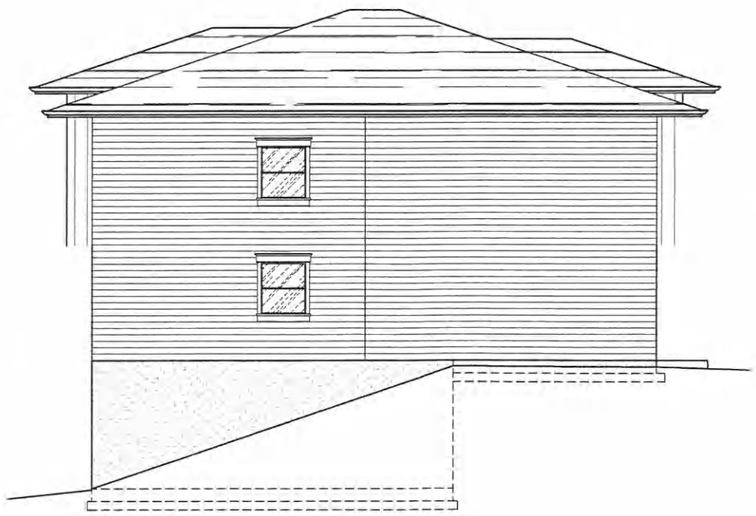


2 DRB4 TYP. UNIT 'D' - LOWER LEVEL PLAN
3/16" = 1'-0"



3 DRB4 TYP. UNIT 'D' - UPPER LEVEL PLAN
3/16" = 1'-0"

4 DRB4 TYP. UNIT 'D' - REAR ELEVATION
3/16" = 1'-0"



5 DRB4 TYP. UNIT 'D' - SIDE ELEVATION
3/16" = 1'-0"

6 DRB4 TYP. UNIT 'D' - FRONT ELEVATION
3/16" = 1'-0"

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REGISTERED ARCHITECT
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PORTLAND, OREGON
1602
STATE OF OREGON

SHADY HOLLOW VILLAGE

SHADY HOLLOW AND WILLAMETTE DRIVE
WEST LINN, OREGON

PROJECT NUMBER: 1335

DRAWING	DATE	BY
DESIGN	20 NOV 2013	SGS
NBRHD MTG	11 FEB 2014	SGS
DRB REV	12 MAR 2014	SGS
PERMIT		

SHEET TITLE
UNIT TYPE 'D'
PLAN + ELEVS

SHEET #
DRB-4

STEWART GORDON STRAUS ARCHITECT PC

21 April 2014

City of West Linn
Attn: Tom Soppe
Cc: David Emami
Re: Shady Hollow Village

Tom,

This letter is our response to your letter of 1 April and email of 8 April; the revised drawings and narrative are being printed this morning and will be delivered by David Emami. The following describes the general responses to your letters and indicates where the detailed revisions or clarifications can be found in the drawings and/or narrative. Please note that we are resubmitting the entire drawing package and the entire narrative only – all other documents in the original submission remain valid.

Section 55.070(D) – 11 x 17 drawings have been requested as part of the print order

Section 24.080(B) and (E) – tabulation is on page 3 of the narrative

Section 24.080(F) and 55.110(B)(10) – land type information added to drawing DRS1

Section 24.170(B)(3) and (4) – information is on narrative page 5

Section 24.180(E) – information is on narrative page 5

Section 32.040(G) – information is on narrative page 5

Section 32.050 – information is on narrative pages 6 and 7

Section 32.060(A) and 55.110(A) – map added to drawing DRS2

Section 32.060(B)(2) – information added to drawing DRS1

Section 55.100(B)(1-5) – information is on narrative pages 9 and 10

Section 55.100(B)(6)(b-h) – information is on narrative pages 10 and 11

Section 55.100(E) – information is on narrative page 13 under noise/privacy

Section 55.100(H-M) – information is on narrative pages 14 and 15

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Section 55.110(B)(3) – slope analysis information has been added to drawing DRS1

Section 55.110(B)(5) – the general direction of the water flow has been added to drawing DRS1; this is discharge from a drainage pipe, not a creek – the general direction of flow is assumed based on information available about the general slope of the ground from the survey that was completed, since we did not have access to the neighboring properties to establish precise information.

Section 55.120(D) – graphic scale has been added to drawings DRS1 and DRS2

Section 55.120(G)(7) – a call-out for the main sign on the gazebo in activity area 1 has been added to drawing DRS2

Buffer to properties at 18194 and 18200 Shady Hollow Way – the design of buildings C1 and C2, and their locations have been modified to provide the required 25' distance from the property line.

Density calculations – it is understood from your 8 April email that you concur with our assertion that the allowed number of duplex buildings is 13.

Shady Hollow Way dedications – the 4'-0" dedication along the eastern property line has been incorporated in all plan drawings; it is understood that the pavement width along the south property line must be 28' rather than the 26' shown in your letter of 1 April, which results in the 2'-0" dedication already shown.

Sidewalk along Highway 43 frontage – all plan drawings have been modified to show the sidewalk spaced 6'-0" behind the curb in this area, with additional trees removed (shown on drawing DRS1); street trees have been moved into planted area between curb and sidewalk; if allowed, sidewalk may be set at an elevation below top of curb in some areas to better accommodate grading requirements.

Undergrounding of overhead utilities – we acknowledge requirements for moving overhead utilities to underground, however, the means and locations for this are not yet finalized and therefore not noted on drawings.

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Curb radius at intersections – radius has been modified to 25' on drawing DRS2

Street lighting – final design for layout and fixture selection will be done in concert with PGE, however, the lighting plan DRS7 has been modified to show general locations anticipated and also notes City of West Linn standard 150W HPS Cobra Head type fixtures.

Fire hydrant – the requirement to upgrade existing hydrant at the intersection of Highway 43 and Shady Hollow Way has been noted on drawing DRS1

Thank you.

Stewart Straus

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LAND TYPE ANALYSIS		
TYPE/SLOPE	AREA(SF)	%
I 35% +	0	0
II 26% – 35%	0	0
III 16% – 25%	3886	4.3
IV 0% – 15%	86699	95.7

City of West Linn

PRE-APPLICATION CONFERENCE MEETING

Notes

November 21, 2013

SUBJECT: Planned Unit Development and Class II Design Review for duplex-style multi-family development, possibly requiring Water Resource Area permit, at 18270/18340 Willamette Drive and 18395 Shady Hollow Way. Water Resource Area (WRA) approval also applies unless professional analysis proves there is no actual open drainage channel.

ATTENDEES: Applicants: David & Diana Emami, Stewart Gordon Straus
Staff: Tom Soppe (Planning Department), Khoi Le (Engineering Division)
ODOT: Seth Brumley
Neighborhood: Kevin Bryck (Robinwood NA)

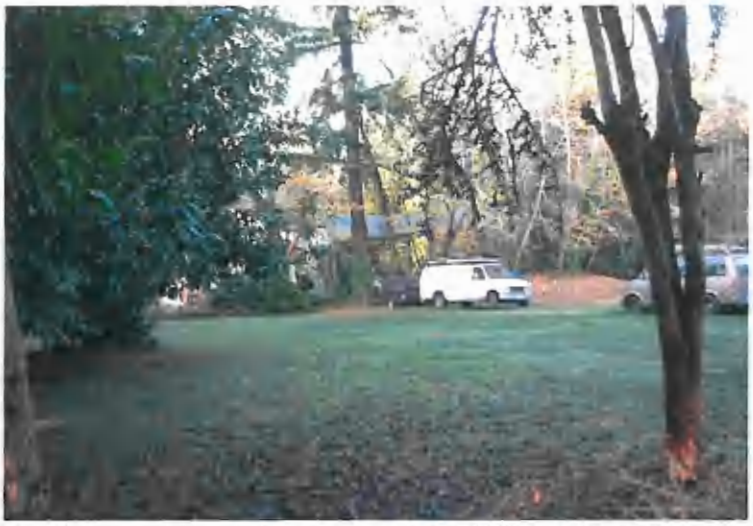
The following is a summary of the meeting discussion provided to you from staff meeting notes. Additional information may be provided to address any "follow-up" items identified during the meeting. <u>These comments are PRELIMINARY in nature</u>. Please contact the Planning Department with any questions regarding approval criteria, submittal requirements, or any other planning-related items. Please note disclaimer statement below.

<u>Project Details</u>

This is an approximately two-acre site at the northeast corner of Willamette Drive and Shady Hollow in the Robinwood area. The zoning is R-4.5. The applicants propose a multi-family development, and the removal of the two single-family houses currently on site. As is desirable, the new development would access only off of Shady Hollow Way and not Willamette Drive.

Existing house on site along Shady Hollow Way

Existing house and driveway from Willamette Drive. House and its outbuildings are on the left. On the right is the house on site that accesses from Shady Hollow, which is also seen in the photo above this one.



Northwest area of site as seen from Willamette Drive edge; Open channel shown on maps is along the trees and bushes behind the white van.

The proposed development would be in the form of duplex-style buildings, but the applicant does not plan subdivision of these into separate lots so the use would be considered multi-family rather than duplex or single-family residential attached. Multi-family is not allowed in the R-4.5 zone but can be allowed with a Planned Unit Development (PUD) approval. Community Development Code (CDC) 24.090 states the following:

> **24.090 APPLICABILITY AND ALLOWED USES**
>
> Subject to the provisions of CDC 24.070, 24.080 and this section, the PUD Overlay Zone may be applied to all residential, commercial, and industrial zones.
>
> A. In addition to the uses allowed outright in the underlying zone the following uses shall be allowed outright where all other applicable standards are met.
>
> 1. Single-family, duplex, attached housing and multiple-family housing.

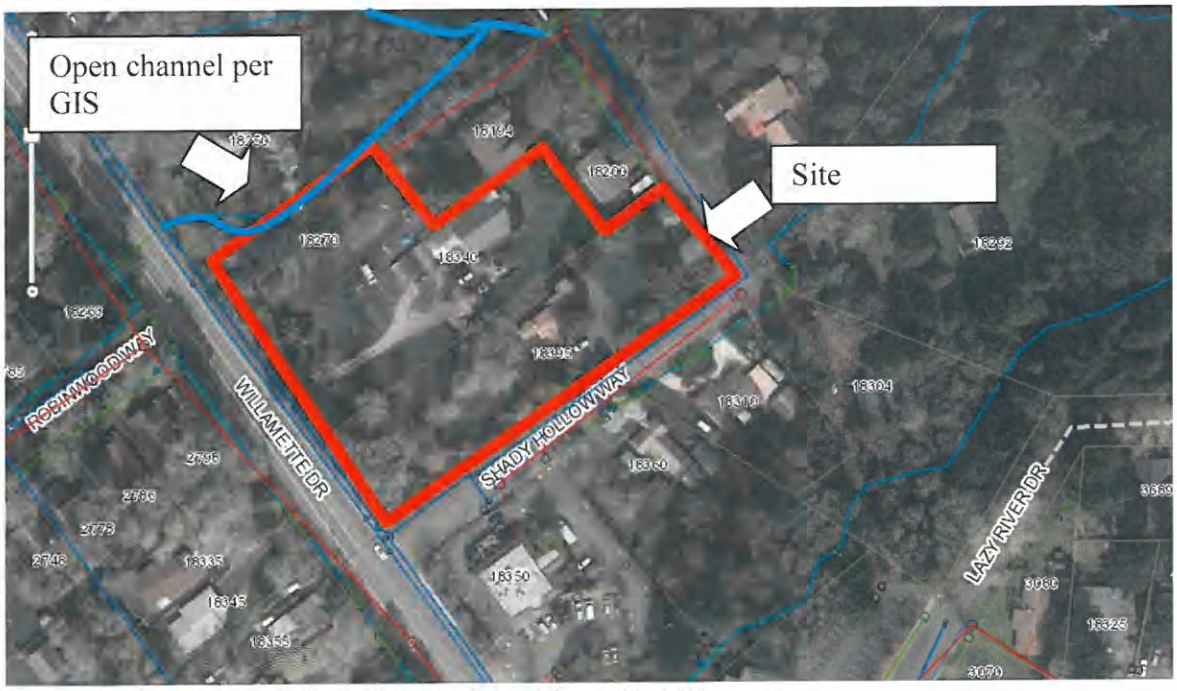
The zone change approval from 2008 which changed the site from R-10 to R-4.5 came with conditions, which are listed in the zone change ordinance for the site. The file is ZC-08-01/PLN-08-06. Condition of Approval 3 in the ordinance requires a 25-foot –wide buffer between buildings on the site and the properties to the east. The concept plan will have to be modified to meet this standard, even if units are lost.

The other constraint that affects the property is the open channel just north of the property. As an open channel this has a development setback of 50 feet and a structural setback of another 7.5 feet (to a building side) or 15 feet (to a building rear), per CDC 32.050(E). Because this setback overlaps with the site, a Water Resource Area permit is

also required. Under current Chapter 32 Water Resource Area provisions, this area will be required to not have buildings and the 50-foot buffer specifically will be required to be in its own tract or conservation easement per CDC 32.050(D). This is likely to result in the loss of 4-6 units unless the applicant can reconfigure the site so these can fit elsewhere. The applicant also is required to provide 300 square feet of usable open space per unit. Since the Water Resource Area buffer is to be preserved as a conservation area it cannot count as usable space. This may require further reconfiguration of the site and may make it hard not to lose the aforementioned units from the plan. Further investigation may be needed to determine if an actual viable open channel does exist at this location, as sometimes wrong assumptions were made on the data that became the City's stormwater map. Staff found mixed evidence of channelization here. A wetlands specialist, in conjunction with City engineering staff, may have to make the final determination. If it is concluded that there is not an open channel here, the setbacks, easements/tracts, and protected areas discussed above do not apply.

In duplex configuration CDC 14.070(A)(3) requires a minimum of 4,000 square feet per unit; with the non-subdivided multi-family provision of duplexes as proposed by the applicant, this amount of minimum square feet per unit applies to the entire site as there will not be individual lots. As the site has approximately 90,479 square feet, a maximum of 22 units are allowed, even if private "right of way" in the form of shared driveway is not subtracted, which it must be according to CDC 24.120. Typically it would subtract about ¼ of the area so something like 16 units is more likely (which would probably become 15 or so after the water resource area, if the property really has one, is subtracted). Also, density transfer is further affected by how the water resource area square footage can only be 50% transferred to the rest of the site per CDC 24.130(B). The applicant proposes 30 units, so some units will have to be lost anyway.

Theoretically the applicant could request a density bonus for more units than allowed by the calculations of 24.120, responding to the criteria and calculations in 24.150 and 24.160 to make the case that this is warranted. This could bring the development, at the highest theoretical possibility, up to approximately 29 units (using the maximum allowed low-cost housing, design excellence, and the dedication of the water resource setback), but that is also before subtracting private right of way so that would likely bring it down to 22 units or so at the highest theoretical possibility.



Aerial of site, and location of open channel on City GIS maps


Shady Hollow Way along south edge of site (right)

Shady Hollow Way along east edge of site (left)

Willamette Drive along west edge of site (right)

Engineering Notes

I. TRANSPORTATION

WILLAMETTE DRIVE

Willamette Drive is an ODOT Highway. Pavement improvement will be dictated by ODOT.
City of West Linn will coordinate with ODOT on sidewalk and curb improvement.

	EXISTING CONDITIONS	POTENTIAL POST DEVELOPMENT CONDITIONS
Classification	State Highway	State Highway
Zone	R-4.5	R-4.5
Right of Way Width	Approximate 80'	Check with ODOT
Full Pavement Width	Approximate 43'	Check with ODOT

Bike Lane	Along the frontage	6'
Curb and Gutter	None	Curb and Gutter
Planter Strip	None	5.5'
Sidewalk	None	6'
Street Light	None	Yes – LED Fixtures
Utility Pole	None	New services to be placed underground
Street Tree	None	Yes
ADA Ramps	None	Yes
Post Speed	35 MPH	35 MPH
Stripe	Double Center Line and Bike Line	Provide proper striping as part of street improvements and in accordance with ODOT requirements.

A. MINIMUM REQUIRED IMPROVEMENT WITH ODOT REVIEW AND APPROVAL

1. Dedication: None
2. Per ODOT recommendations.
3. Provide striping including double yellow line and 6' bike lane in accordance with ODOT recommendations and requirements.
4. Provide illumination analysis of the existing conditions. Install street lights per analysis recommendations in accordance with ODOT requirements. Street lights should match existing surrounding lights, with LED Beta Fixtures.
5. Provide Street Trees. Coordinate with Parks Department for requirements.

- Driveway Approach: 36' maximum width including wings. See WL-504A, 504B, and 505 for technical and construction specifications. Driveway approach serving 3 lots or more.

6. All new and existing overhead utilities along the development must be placed underground.
7. Reference: Burgerville and Willamette Village Shopping Center

SHADY HOLLOW WAY

	EXISTING CONDITIONS	POTENTIAL POST DEVELOPMENT CONDITIONS
Classification	Local	Local
Zone	R-4.5	R-4.5
Right of Way Width	Approximate 46'	52'
Full Pavement Width	Approximate 24'	28'
Bike Lane	None	No
Curb and Gutter	None	Curb and Gutter
Planter Strip	None	5.5' Planter
Sidewalk	None	6' Sidewalk
Street Light	None	Yes – LED Fixtures

Utility Pole	None	New services to be placed underground
Street Tree	None	Yes
ADA Ramps	None	Yes
Post Speed	10 MPH	10 MPH
Stripe	Double Center Line	Provide proper stripe as part of street improvement

B. MINIMUM REQUIRED IMPROVEMENT

1. Dedication: 6''
2. Provide a minimum 16' half street pavement improvement with the following sections:
   - 10" of 1-1/2"-0 Crush Rock
   - 2" of ¾" -0 Leveling Course
   - 4" of AC Pavement consisting of 2" Class "C" over 2" Class "B"
   - See Public Works Standards Section 5.0030 Pavement Design for design requirements.
3. Provide illumination analysis of the existing conditions. Install street lights as recommended in accordance to the followings:
   - Average Maintained Illumination: 0.6 foot-candles (Residential)
   - Uniformity Average to Minimum: 4 to 1
   - Street Light should match existing surrounding lights, with LED Beta Fixtures.
4. All new and existing overhead utilities along the development must be placed underground.
5. Reference: Burgerville

C. CITY TRANSPORTATION MASTER PLAN

PEDESTRIAN MASTER PLAN

Willamette Dr is indicated in the City Pedestrian Master Plan as one of the roadways with sidewalk deficiencies. The sidewalk project along Willamette Drive between Shady Hollow Way and the north edge of the City Limits is identified as project number 14 on the Pedestrian Master Plan Project list (See TSP page 5-6). **6' sidewalk along the project frontage will be included as part of the street improvement requirements.**

BICYCLE MASTER PLAN

Willamette Dr is indicated in the City Bicycle Master Plan as one of the roadways with bike lane deficiencies. The bike lane project along Willamette Drive between McKillican St to North City Limits is identified as project 24 on the Bicycle Plan Project List (See TSP page 6-7). **6' bike lane along project frontage will be included as part of the street improvement requirements.**

MOTOR VEHICLE MASTER PLAN

The intersection of Shady Hollow Way and Willamette Dr was not one of the intersections analyzed in the TSP. The nearest intersection analyzed is Arbor Dr.

Existing Operations Conditions

Intersection	LOS	Average Delay (sec)	Volume/ Capacity (v/c)	Measure of Effectiveness Administrative		MOE Met?
				Agency	Maximum	
Willamette Dr/Shady Hollow Way	B/F	1.5	0.03/0.037	ODOT	0.99/0.90	YES

The intersection will still continue to operate at this level until 2030. No improvement is needed at this point.

D. STREET SDC AND BIKE/PEDESTRIAN EFFECTIVE JULY 1ST 2013

Type of Use	Trip per Use	Factor	Reimbursement	Improvement	Admin.	Total
Per Factor of 1		1.00	$2,201	$4,717	$179	$7,097
Single Family	Per House	1.01	$2,223	$4,764	$181	$7,168

Type of Use	Trip per Use	Factor	Reimbursement	Improvement	Admin.	Total
Per Factor of 1		1.00	$0	$1,542	$40	$1,582
Single Family	Per House	1.00	$0	$1,557	$40	$1,597

II. STORM DRAINAGE

A. EXISTING CONDITIONS

1. There are limited public storm mains along both Willamette Dr and Shady Hollow Way.

B. MINIMUM REQUIRED IMPROVEMENT

1. Provide treatment for new impervious of 500 square feet or more.
2. Provide detention for new impervious of 5000 square feet or more.
3. Storm Drainage Analysis Report is required.
4. **Collect, treat, detain, and provide proper conveying system for new impervious area created along Willamette Dr and Shady Hollow Way. Installation of public storm main on Shady Hollow Way may be required.**

C. SURFACE WATER SDC EFFECTIVE JULY 1ST 2013

Unit		Factor	Reimbursement	Improvement	Admin.	Total
Per Factor of 1		1.00	$793	$238	$52	$1,083
Single Family	Per House	1.00	$793	$238	$52	$1,083

III. SANITARY SEWER

A. EXISTING CONDITIONS

1. Public sanitary sewer main is available along Shady Hollow Way for connectivity.

B. MINIMUM REQUIRED IMPROVEMENT

1. **If the existing houses are on septic, decommission the septic tank(s) and drain field(s) in accordance to DEQ requirements and submit to the City with proper paperwork.**

A. SANITARY SEWER SDC EFFECTIVE JULY 1ST 2013

Unit	Meter Size	Factor	Reimbursement	Improvement	Admin.	Total
Per Factor of 1		1.00	$612	$2,385	$111	$3,108
Single Family	Per House	1.00	$612	$2,385	$111	$3,108

Tri-City Service District Sewer SDC 1 EDU = $2,020

IV. WATER

A. PRESSURE ZONE

1. Zone: Robinwood Zone
2. Overflow Elevation: 328 Upper Elevation: 218 Lower Elevation: to river

B. RESERVOIR AND PUMP STATION

1. Reservoir: The View Drive Reservoir is located on View Dr. The reservoir's usable capacity is 0.4 million gallons. The reservoir is filled by South Fork and also has an emergency intertie with Lake Oswego.
2. Pump Station: The View Drive Pump Station has a total of 3 pumps at 600 gpm each with nominal firm capacity at 1,200 gpm.

C. EXISTING POPULATION AND PROJECTED POPULATION AT SATURATION

1. Existing Population: 1,915
2. Projected Population at Saturation: 2,476

D. WATER DEMAND AT SATURATION

Average Day Demand (mgd)	Maximum Day Demand (mgd)	Peak Hour Demand (mgd)
0.3	0.8	1.2

E. RESERVOIR AND PUMP STATION CURRENT OPERATNG CONDITIONS

1. In accordance with Water System Plan, both the reservoir and pump station are listed as appearing in good condition.

F. ROBINWOOD PRESSURE ZONE PEFORMANCE

Year	MDD (mg)	Fire Flow (mg)	Total Supply Need (mg)	Normal Supply Capacity (mg)	Emerg. Supply Capacity (mg)	Normal Supply Deficit (mg)	Emerg. Supply Deficit (mg)
Current	1.6 (0.6)	0.5	2.1 (1.1)	3.1	0.5	(1.0)	0.6
2015	1.7 (0.7)	0.5	2.2 (1.2	3.1	0.5	(0.9)	0.8
2030	1.9 (0.8)	0.5	2.4 (1.3)	3.1	0.5	(0.7)	0.8
Saturation	2.0 (0.8)	0.5	2.5 (1.3)	3.1	0.5	(0.6)	0.8

1. The table above indicates that there is NO deficiency in supply capacity during normal conditions. There is no improvement project adjacent to development listed in the Water System Master Plan.

G. ROBINWOOD PRESSURE ZONE SUPPLY AND STORAGE DEFICIT

Year	Normal Conditions			Emergency Conditions		
	Supply Deficit (mgd)	Storage Volume (mg)	Overall Deficit (mgd)	Supply Deficit (mgd)	Storage Deficit (mgd)	Overall Deficit (mgd)
Current	0	0.4	0	0.6	0.4	0.2
2015	0	0.4	0	0.7	0.4	0.3
2030	0	0.4	0	0.8	0.4	0.4
Saturation	0	0.4	0	0.8	0.4	0.4

1. The table above indicates that there is no overall storage volume deficit during a normal condition but deficient during emergency condition.

H. ROBINWOOD PRESSURE ZONE MASTER PROJECT LIST

1. There are 8 water improvement projects listed in the City Water System Plan under the Willamette Pressure zone. **Project number 60 is along the subject development frontage. However it was done in 2013. No improvement is required of this development.**

I. MINIMUM REQUIRED IMPROVEMENTS

1. Existing public water system is available on Shady Hollow Way for connection.
2. New water meter shall be set behind curb and out of driveway approaches. No water meters or water main shall be allowed to be placed in private driveway.
3. Existing fire hydrant on Willamette Dr will need to be replaced with new hydrant to ensure efficiency.

J. WATER SDC EFFECTIVE JULY 1ST 2013

Unit	Meter Size	Factor	Reimbursement	Improvement	Admin.	Total
Per Factor of 1		1.00	$585	$6,969	$196	$7,750
1" Meter		2.5	$1,463	$17,423	$490	$19,376
1.5" Meter		5	$2,925	$34,845	$980	$38,750
2" Meter		8	$4680	$55,752	$1,568	$62,000

Process

Planned Unit Development (PUD) and Class II Design Review approvals are required. Unless analysis shows otherwise as discussed above, a Water Resource Area permit is also required. This will be a Planning Commission decision as PUD and Class II Design Review require Planning Commission approval.

A neighborhood meeting is required for this application. The site is in the Robinwood neighborhood. Contact Aaron Buffington, President of the Robinwood Neighborhood Association, at RobinwoodNA@westlinnoregon.gov. Follow the provisions of 99.038 precisely, including regarding what needs to be submitted with the application regarding the meeting and meeting notice. The applicant is required to provide the neighborhood association with conceptual plans and other material at least 10 days prior to the meeting.

Follow 24.080, 55.070, and 32.040 strictly and completely regarding submittal requirements (including plans, maps, etc.) that should accompany the narrative and the application form. Submittal requirements may be waived but the applicant must first identify the specific submittal requirement and request, in letter form, that it be waived by the Planning Director and must identify the specific grounds for that waiver. The waiver may or may not be granted by the Planning Director.

The criteria of 24.100, 24.110, 24.170, 24.180, 32.050, and 55.100 shall be responded to in a narrative (if requesting a density bonus, also respond to 24.150 and 24.160). N/A is not an acceptable response to the approval criteria. Prepare the application and submit to the Planning Department with deposit fees and signed application form.

Prepare the application and submit to the Planning Department with a signed application form and deposit fees. The deposit for PUD is $4,600, plus a $500 fee for eventual final inspection. The fee for Class II Design Review is $4,000 plus 4% of construction value, plus a $300 final inspection fee. The deposit for a Water Resource Area permit is $1,850.

PLEASE NOTE that the deposits are initial deposits, and staff time is charged against the deposit account. It is common for there to be more staff time spent on development applications than deposits cover, and therefore additional billing may be likely to occur.

Once the submittal is deemed complete, the staff will schedule a hearing with the Planning Commission. Staff will send out public notice of the Planning Commission hearing at least 20 days before it occurs. The Planning Commission's decision may be appealed to City Council by the applicant or anyone with standing.

The CDC is online at http://westlinnoregon.gov/planning/community-development-code-cdc.

Pre-application notes are void after 18 months. After 18 months with no application approved or in process, a new pre-application conference is required.

Typical land use applications can take 6-10 months from beginning to end.

DISCLAIMER: This summary discussion covers issues identified to date. It does not imply that these are the only issues. The burden of proof is on the applicant to demonstrate that all approval criteria have been met. These notes do not constitute an endorsement of the proposed application. Staff responses are based on limited material presented at this pre-application meeting. New issues, requirements, etc. could emerge as the application is developed. Thus, there is no "shelf life" for pre-apps.

Oregon
John A. Kitzhaber, MD, Governor

Department of Transportation
Region 1 Headquarters
123 NE Flanders Street
Portland, Oregon 97209
(503) 731.8200
FAX (503) 731.8259

11/22/2013 ODOT #5918

ODOT Pre-Application Conference Comments

Project Name: West Linn Duplexes	**Applicant:** David Emami
Jurisdiction: City of West Linn	**Jurisdiction Case #:** PA-13-30
Site Address: 18270 / 18340 Willamette Dr., 18395 Shady Hollow Way	**Legal Description:** **Tax Lot(s):**
State Highway: OSWEGO, OR 43	**Mileposts:** 8.31

The site of this proposed land use action adjacent to OR 43. ODOT has permitting authority for this facility and an interest in ensuring that this proposed land use is compatible with its safe and efficient operation. **Please direct the applicant to the District Contact indicated below to determine permit requirements and obtain application information.**

ODOT RECOMMENDED LOCAL CONDITIONS OF APPROVAL

☒ Curb, sidewalk, bikeways and road widening shall be constructed as necessary to be consistent with the local Transportation System Plan and ODOT/ADA standards. The ODOT standard is a 6' bike lane and our understanding is that the City requires a minimum 6' planter strip and 6' sidewalk in residential zones. ODOT recommends that the applicant consider the *West Linn OR 43 Conceptual Design Plan*.

☒ An ODOT Miscellaneous Permit must be obtained for all work in the highway right of way. When the total value of improvements within the ODOT right of way is estimated to be $100,000 or more, an agreement with ODOT is required to address the transfer of ownership of the improvement to ODOT. An intergovernmental agreement (IGA) is required for agreements involving local governments and a cooperative improvement agreement (CIA) is required for private sector agreements. The agreement shall address the work standards that must be followed, maintenance responsibilities, and compliance with ORS 276.071, which includes State of Oregon prevailing wage requirements.

☒ The applicant must obtain an ODOT permit to place trees in the state right of way. Tree spacing and design must be consistent with Highway Design Manual Technical Bulletin RD06-03B, or ODOT must approve a design exception.

☒ Illumination within the ODOT right of way must be in accordance with AASHTO illumination standards and the ODOT Lighting Policy and Guidelines, January 2003, which states that local jurisdictions must enter into an intergovernmental agreement (IGA) with ODOT wherein the local jurisdiction is responsible for installation, maintenance, operation, and energy costs.

☒ An ODOT Drainage Permit is required for connection to state highway drainage facilities. Connection will only be considered if the site's drainage naturally enters ODOT right of way. The applicant must provide ODOT District with a preliminary drainage plan showing impacts to the highway right of way.

A drainage study prepared by an Oregon Registered Professional Engineer is usually required by ODOT if:

1. Total peak runoff entering the highway right of way is greater than 1.77 cubic feet per second; or
2. The improvements create an increase of the impervious surface area greater than 10,758 square feet.

Noise Advisory:

☒ The applicant is advised that a residential development on the proposed site may be exposed to traffic noise levels that exceed federal noise guidelines. Builders should take appropriate measures to mitigate this impact. It is generally not the State's responsibility to provide mitigation for receptors that are built after the noise source is in place.

Please send a copy of the Notice of Decision including conditions of approval to:

ODOT Region 1 Planning
Development Review
123 NW Flanders St
Portland, OR 97209

Development Review Planner: Seth Brumley	Phone: 503.731.8234
Traffic Contact: Doug Baumgartner	Phone: 503.731.8225
District Contact: Loretta Kieffer	Phone: 971.673.6228

SCHOTT & ASSOCIATES
Ecologists & Wetlands Specialists

21018 NE Hwy 99E • P.O. Box 589 • Aurora, OR 97002 • (503) 678-6007 • FAX: (503) 678-6011

January 6, 2014

David A. Emami
3380 Barrington Drive
West Linn, OR 97068

Re: Drainage Channel North of Lot 1500

Dear David:

I enjoyed meeting with you on your property located northeast of the intersection of Willamette Drive and Shady Hollow Way (Tax Lots 1100, 1200, and 1500). Based on the pre-application conference meeting notes I see that the City of West Linn is concerned about a drainage channel mapped along the northern boundary of your property. I walked the property as well as up and down Willamette Drive. There is a culvert under Willamette Drive approximately 115' north of your northwest property corner. There is a catchment basin on the east side of Willamette Drive which directs the water to the southeast via a culvert. There is another catchment basin, which appears to be north of your property line, where the water is directed via a culvert to the northeast. The culvert opens approximately 25' past the northeast property line of tax lot 1500. Judging from the trees growing above the culvert the culvert has been in the ground for a significant amount of time. There is about a 14 inch caliper big leaf maple growing directly above the pipe near its terminus.

In summary, there is not an open channel along the northern property boundary of tax lot 1500. The drainage has been culverted. The culverted drainage has been in place quite a few years based on the mature trees growing above it.

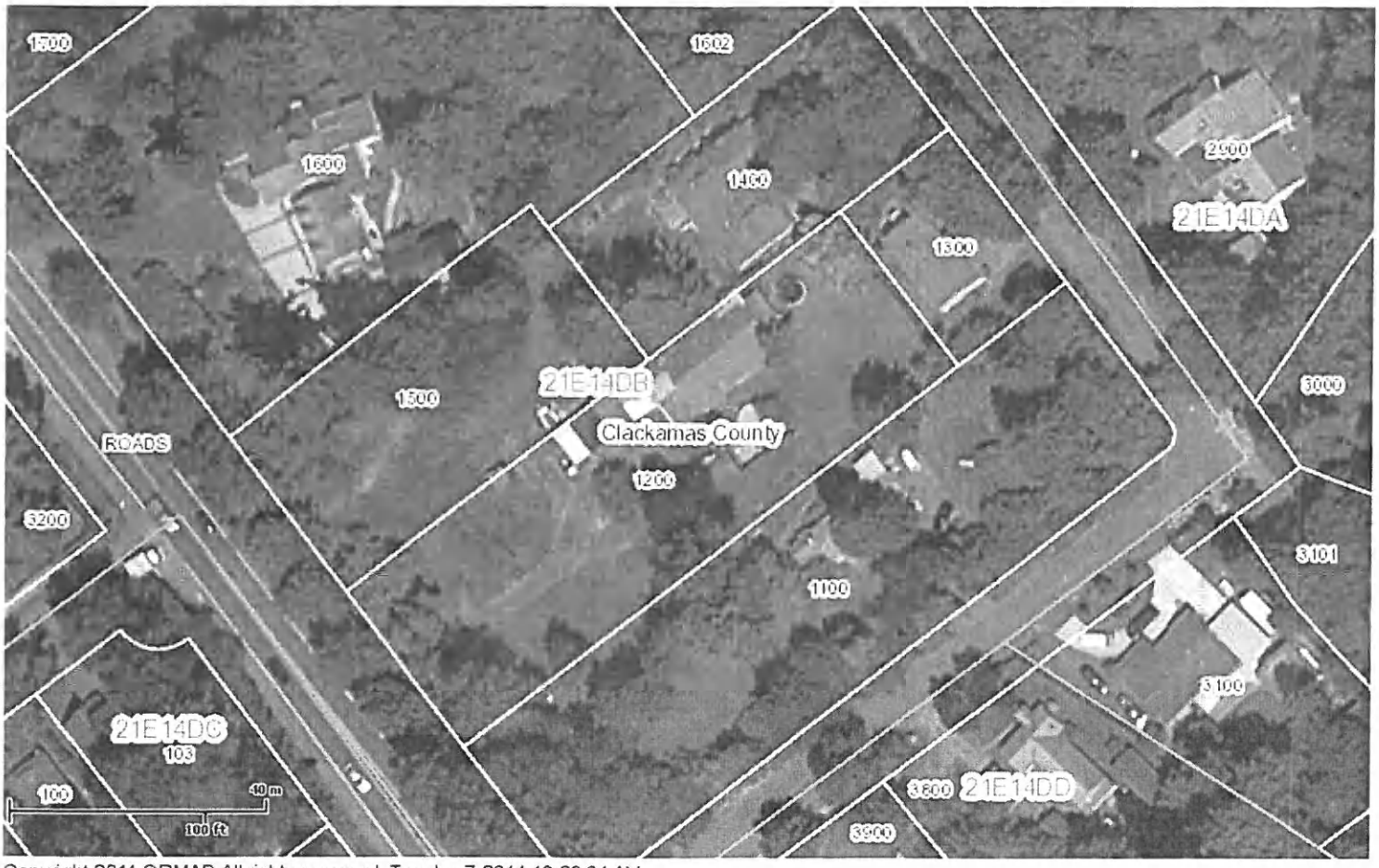
Please contact me if you need further assistance, or have questions.

Sincerely,

Martin R. Schott, Ph.D., PWS

The Oregon Map

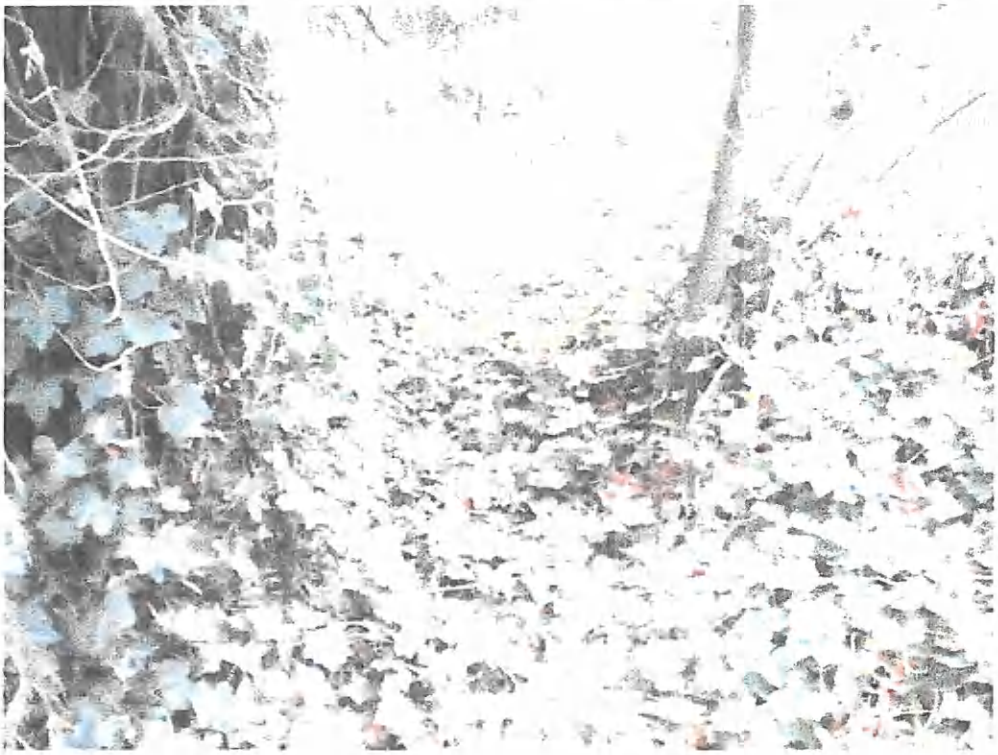
New Directions



North property line, west half on tax lot 1500. Note-lacks drainage channel

North property line, northeast visual showing lack of drainage channel

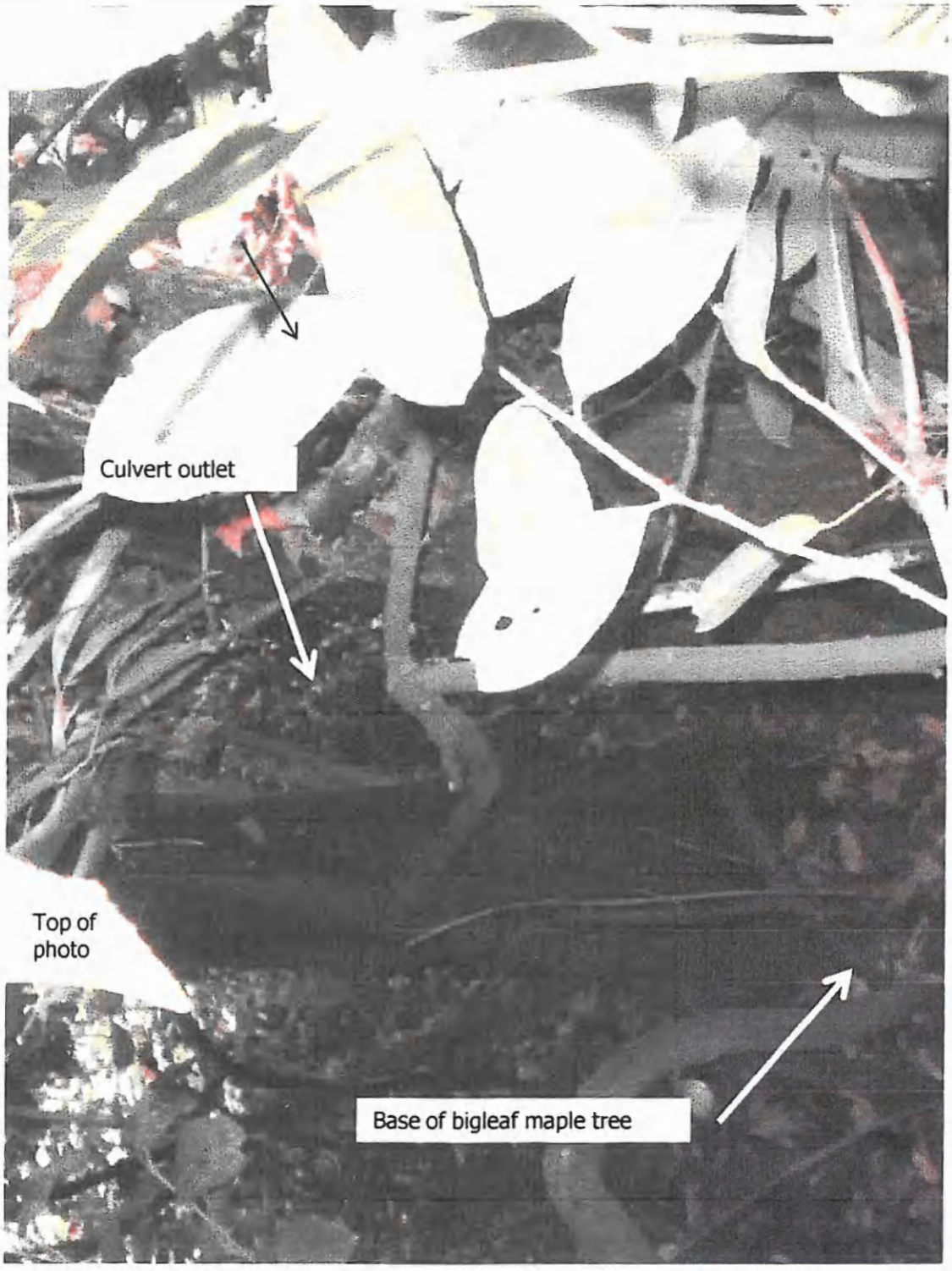
Site Photos 2014 Willamette Dr & Shady Hollow Way S&A 2293	Schott & Associates P.O. Box 589 Aurora, OR. 97002 503.678.6007



From north property corner looking southeast. Note lack of drainage channel.

From north property corner looking northeast.

Site Photos 2014 Willamette Dr & Shady Hollow Way S&A 2293	Schott & Associates P.O. Box 589 Aurora, OR. 97002 503.678.6007



Culvert outlet off property to the northeast.
Note-picture flipped sideways to enlarge.

Site Photos 2014 Willamette Dr & Shady Hollow Way S&A 2293	Schott & Associates P.O. Box 589 Aurora, OR. 97002 503.678.6007

WDY Structural • Civil Engineers

PRELIMINARY STORM DRAINAGE CALCULATIONS

FOR

WEST LINN VILLAGE

WILLAMETTE DRIVE (STATE HWY 43) AND SHADY HOLLOW WAY
WEST LINN, OREGON

March 11, 2014

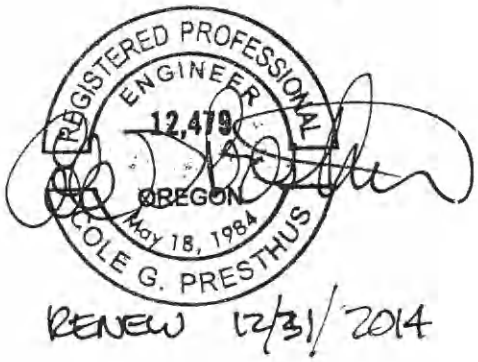


TABLE OF CONTENTS/INCLUSIONS:

March 11, 2014

Stewart Gordon Straus Architect
6170 SW Cherry Hill Drive
Beaverton, OR 97008

Attn: Stewart Straus

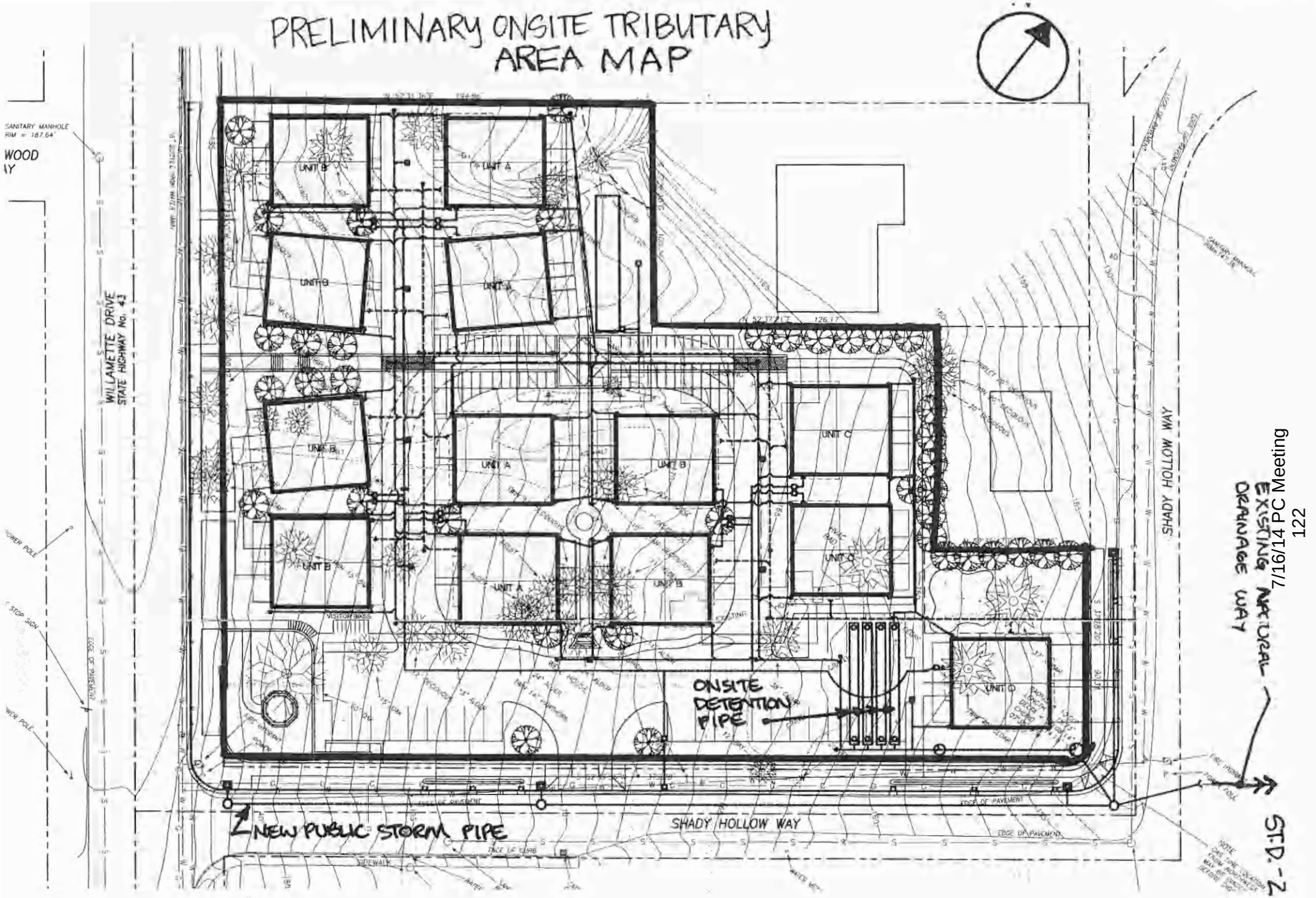
RE: SHADY HOLLOW VILLAGE DUPLEXES
WILLAMETTE DR. (HWY 43) AND SHADY HOLLOW WAY
WEST LINN, OREGON
"PRELIMINARY STORM DRAINAGE NARRATIVE" 3/11/2014

At your request, WDY, Inc. has completed the following preliminary storm drainage review and design for the proposed Shady Hollow Village located on the N.E. corner of Highway 43 and Shady Hollow Way. The proposed 2.08 acre property will include 13 housing units, a basketball area, a putting green and a parking lot. The purpose of this review is to confirm feasibility of meeting the City of West Linn standards and requirements for storm water quality treatment and detention. The new onsite storm runoff will drain via a network of private onsite storm pipes to an onsite underground detention pipe storage system that will detain the 2 yr, 5 yr, 10 yr and 25 year, 24 hour storms to their respective pre-develop rates. To meet the City's detention requirements, approximately 204 L.F. of 48" diameter pipe is needed to detain the runoff. The storm runoff will also be treated using (5) 27" tall CONTECH storm water filter cartridges before leaving the site and connecting to a new public storm main in Shady Hollow Way.

Three public storm treatment swales are proposed to treat the public stormwater runoff from Shady Hollow Way. The swale sizes are based upon the impervious public street & sidewalk area draining to each of the swales. The treated runoff will flow out of the swale facilities into a new adjacent downstream curb inlet and into the new public storm drain pipe. The new public storm main pipe will extend east across Shady Hollow Way and outfall into the existing natural drainage way at this location which flows easterly down to the Willamette River.

The following pages include storm calculations for the proposed private site and public street improvements showing compliance with the City of West Linn's storm drainage design requirements.

PRELIMINARY ONSITE TRIBUTARY AREA MAP



ST.-2

ONSITE STORM DRAINAGE DESIGN CRITERIA

DESIGN CRITERIA **

- Meet City of West Linn storm water mitigation requirements:
  - Provide onsite detention for Post-Developed 2-yr, 5yr, 10yr and 25yr, 24 hr storms to respective Pre-Developed runoff rates.
- Use SCS, Type 1A, 24 hr long storms with SBUH using HYD software to size detention pipes
  - Rainfall depths per NOAA Atlas 2, Vol. X, Oregon
    1. 2-yr Storm = 2.5"
    2. 5-yr Storm = 3.0"
    3. 10-yr Storm = 3.4"
    4. 25-yr Storm = 3.9"
    5. 100-yr Storm = 4.4"
  - Use CN = 98 for Impervious Area
  - Use CN = 86 for Pervious Area
- Use SCS, Type 1A, 1 Year, 24 Hour Storm = 0.83" for water quality treatment per city of portland guidelines.

mmary

STORM	RAIN DEPTH	Q_{PRE}	Q_{POST}	Q_{POST} (W/DETENTION)
2-YR	2.5"	0.61	1.10	0.46
5-YR	3.0"	0.84	1.38	0.74
10-YR	3.4"	1.04	1.60	0.85
25-YR	3.9"	1.29	1.88	0.99
100-YR	4.4"	1.54	2.82	2.16

Use 204' of 48" pipe for storage min

ONSITE STORM DRAINAGE CALCULATIONS

RE-DEVELOPED CONDITIONS

Onsite Tributary Area

Impervious area = 0 s.f. = 0 Acres
Pervious area = 90,570 s.f. = 2.08 Acres

EVELOPED CONDITIONS

Onsite New Tributary Area

Impervious area = 59,485 s.f. = 1.37 Acres
Pervious area = 31,085 s.f. = 0.71 Acres

ME OF CONCENTRATION CALCULATIONS

- **Pre-Developed Design:**
  - **Sheet Flow** $n = 0.13$, $L = 150$ ft, $P_2 = 2.5$ in/hr, $S = 7.5\%$
    - $T_1 = \frac{(0.42)(nL)^{0.8}}{(P_2)^{0.5}(S)^{0.4}} = 8$ min
  - **Shallow Flow** $K=11$, $S = 7.5\%$, $L = 225$ ft
    - $V = 11(S)^{0.5} = 3.01$ fps
    - $T_2 = \frac{L}{(V)(60)} = 1.25$ min
  - **Tc = 8.64 min + 1.25 min = 9.89 min; USE 10 MIN FOR DESIGN**

- **Post-Developed Design T_C = 5 min.**

ONSITE STORM DRAINAGE CALCULATIONS

-CONTINUED-

WATER QUALITY TREATMENT CALCULATIONS

- Use 1 year, 24 hour storm for minimum water quality treatment
  - Output = 0.25 CFS
- # Cartridges = $\frac{(\text{Runoff } ft^3/sec) * (60sec/min) * (7.48gal/ft^3)}{(\text{Size of Cartridge } (22.5 \text{ gpm}))}$
- $\frac{(0.25\ ft^3/sec) * (60sec/min) * (7.48gal/ft^3)}{22.5\ gpm} = 4.98$, USE (5) 22.5 GPM CARTRIDGES

```
SBUH/SCS METHOD FOR COMPUTING RUNOFF HYDROGRAPH

STORM OPTIONS:

1 - S.C.S. TYPE-1A
2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE

SPECIFY STORM OPTION:
1

S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
2,24,2.5
-------------------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
*********   2-YEAR  24-HOUR STORM  ****  2.50" TOTAL PRECIP. *********
-------------------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
2.08,86,0,98,10

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS    TC(MINUTES)
                  A     CN     A     CN
       2.1        2.1  86.0      .0  98.0        10.0

  PEAK-Q(CFS)  T-PEAK(HRS)    VOL(CU-FT)
       .61        7.83          9381

ENTER [d:][path]filename1.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
wlinn02pre

SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S - STOP
n
```

2 YR PRE-DEVELOPED

```
STORM OPTIONS:

1 - S.C.S. TYPE-1A
2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE

SPECIFY STORM OPTION:
1

S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
2,24,2.5
-------------------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
*********   2-YEAR  24-HOUR STORM  ****  2.50" TOTAL PRECIP. *********
-------------------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
0.71,86,1.37,98,5

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS    TC(MINUTES)
                  A     CN     A     CN
       2.1         .7  86.0     1.4  98.0         5.0

  PEAK-Q(CFS)  T-PEAK(HRS)    VOL(CU-FT)
      1.10        7.67          14497

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
wl2post

SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S - STOP
```

2 YR POST-DEVELOPED

ST.D.-7

```
STORM OPTIONS:

1 - S.C.S. TYPE-1A
2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE

SPECIFY STORM OPTION:
1

S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
5,24,3.0
------------------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
*********   5-YEAR  24-HOUR STORM  ****  3.00" TOTAL PRECIP. *********
------------------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
2.08,86,0,98,10

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS    TC(MINUTES)
                  A     CN     A     CN
       2.1        2.1  86.0      .0  98.0        10.0

  PEAK-Q(CFS)   T-PEAK(HRS)    VOL(CU-FT)
       .84          7.83          12543

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
wlinn5pre

SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S - STOP
n
```

5YR PRE-DEVELOPED

```
1 - S.C.S. TYPE-1A
2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE

SPECIFY STORM OPTION:
1

S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
5,24,3.0
------------------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
*********   5-YEAR  24-HOUR STORM  ****  3.00" TOTAL PRECIP. *********
------------------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
0.71,86,1.37,98,5

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS    TC(MINUTES)
                  A     CN     A     CN
       2.1         .7  86.0     1.4  98.0         5.0

  PEAK-Q(CFS)   T-PEAK(HRS)    VOL(CU-FT)
      1.38          7.67          18051

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
wl05post

SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S - STOP
```

5 YR POST-DEVELOPED

10 YR PRE-DEVELOPED

```
S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
10,24,3.4
-----------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
*********  10-YEAR  24-HOUR STORM  ****  3.40" TOTAL PRECIP. *********
-----------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
2.08,86,0,98,10

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS   TC(MINUTES)
                  A     CN     A     CN
       2.1        2.1   86.0     .0  98.0        10.0

  PEAK-Q(CFS)  T-PEAK(HRS)     VOL(CU-FT)
      1.04         7.83           15166

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
wlinn10pre

SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S - STOP
n

STORM OPTIONS:

1 - S.C.S. TYPE-1A
2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE
```

10 YR POST-DEVELOPED

```
SPECIFY STORM OPTION:
1

S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
10,24,3.4
-----------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
*********  10-YEAR  24-HOUR STORM  ****  3.40" TOTAL PRECIP. *********
-----------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
0.71,86,1.37,98,5

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS   TC(MINUTES)
                  A     CN     A     CN
       2.1          .7  86.0    1.4  98.0         5.0

  PEAK-Q(CFS)  T-PEAK(HRS)     VOL(CU-FT)
      1.60         7.67           20929

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
wl10yrpost

SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S - STOP
```

```
STORM OPTIONS:

1 - S.C.S. TYPE-1A
2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE

SPECIFY STORM OPTION:
1

S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
25,24,3.9
------------------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
*********  25-YEAR  24-HOUR STORM  ****  3.90" TOTAL PRECIP. *********
------------------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
2.08,86,0,98,10

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS    TC(MINUTES)
                  A     CN     A     CN
       2.1        2.1  86.0      .0  98.0        10.0

  PEAK-Q(CFS)   T-PEAK(HRS)    VOL(CU-FT)
      1.29          7.83          18531

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
wlinn25pre

SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S - STOP
n
```

25 YR PRE-DEVELOPED

25 YR POST-DEVELOPED

```
S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
25,24,3.9
------------------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
*********  25-YEAR  24-HOUR STORM  ****  3.90" TOTAL PRECIP. *********
------------------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
0.71,86,1.37,98,5

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS    TC(MINUTES)
                  A     CN     A     CN
       2.1         .7  86.0     1.4  98.0         5.0

  PEAK-Q(CFS)   T-PEAK(HRS)    VOL(CU-FT)
      1.88          7.67          24557

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
wl25post

SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S - STOP
```

```
1 - S.C.S. TYPE-1A
2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE

SPECIFY STORM OPTION:
1

S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
100,24,4.4
------------------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
********* 100-YEAR  24-HOUR STORM  ****  4.40" TOTAL PRECIP. *********
------------------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
2.08,86.0,98.10

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS    TC(MINUTES)
                  A     CN     A     CN
       2.1        2.1  86.0      .0  98.0        10.0

  PEAK-Q(CFS)   T-PEAK(HRS)     VOL(CU-FT)
      1.54          7.83           21967

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
wlinn100pre

SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S - STOP
```

100 YR-PRE-DEVELOPED

```
1 - S.C.S. TYPE-1A
2 - 7-DAY DESIGN STORM
3 - STORM DATA FILE

SPECIFY STORM OPTION:
1

S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
100,24,4.4
------------------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
********* 100-YEAR  24-HOUR STORM  ****  4.40" TOTAL PRECIP. *********
------------------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
0.71,86,1.37,98,5

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS    TC(MINUTES)
                  A     CN     A     CN
       2.1         .7  86.0     1.4  98.0         5.0

  PEAK-Q(CFS)   T-PEAK(HRS)     VOL(CU-FT)
      2.16          7.67           28212

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
wl100post

SPECIFY: C - CONTINUE, N - NEWSTORM, P - PRINT, S - STOP
```

100 YR POST-DEVELOPED

```
SUMMARY OF INPUT ITEMS

1) TYPE OF FACILITY:   TANK
2) TANK DIAMETER(ft), STORAGE DEPTH(ft):   4.00,  4.00
3) VERTICAL PERMEABILITY(min/in):    .00

4) PRIMARY DESIGN HYDROGRAPH FILENAME:   wl25post
5) PRIMARY RELEASE RATE(cfs):   1.29

6) NUMBER OF TEST HYDROGRAPHS:  4
   TEST HYD 1 FILENAME:   wl2post          TARGET RELEASE(cfs):    .61
   TEST HYD 2 FILENAME:   wl05post         TARGET RELEASE(cfs):    .84
   TEST HYD 3 FILENAME:   wl10yrpost       TARGET RELEASE(cfs):   1.04
   TEST HYD 4 FILENAME:   wl100post        TARGET RELEASE(cfs):   1.54

7) NUMBER-OF-ORIFICES, RISER-HEAD(ft), RISER-DIAM(in):  2,  4.00,  10
8) ITERATION DISPLAY:   NO

ENTER ITEM NUMBER TO BE REVISED (ENTER ZERO IF NO REVISIONS ARE REQUIRED):
7

ENTER:  NUMBER OF ORIFICES,  RISER-HEAD(ft),  RISER-DIAMETER(in)
2,4,10

RISER OVERFLOW DEPTH FOR PRIMARY PEAK INFLOW =    .51 FT

SPECIFY:  R - REVIEW/REVISE INPUT,  C - CONTINUE
c

INITIAL STORAGE VALUE FOR ITERATION PURPOSES:     8766 CU-FT

BOTTOM ORIFICE:  ENTER Q-MAX(cfs)
0.61
DIA.= 3.35 INCHES
TOP ORIFICE:  ENTER HEIGHT(ft)
2.75
DIA.= 4.74 INCHES

PERFORMANCE:    INFLOW   TARGET-OUTFLOW   ACTUAL-OUTFLOW   PK-STAGE   STORAGE
 DESIGN HYD:25YR 1.88          1.29             1.29          3.99      2559
 TEST HYD 1: 2YR 1.10           .61              .46          2.27      1490
 TEST HYD 2: 5YR 1.38           .84              .74          2.92      1990
 TEST HYD 3:10YR 1.60          1.04              .99          3.28      2240
 TEST HYD 4:100YR 2.16         1.54             2.16          4.21      2560

SPECIFY:  D - DOCUMENT,  R - REVISE,  A - ADJUST ORIF,  E - ENLARGE,  S - STOP
```

$$\frac{2559\,FT^3}{\pi\,(2)^2} = 203.6\,L.F.$$

204 L.F. OF PIPE (MIN)

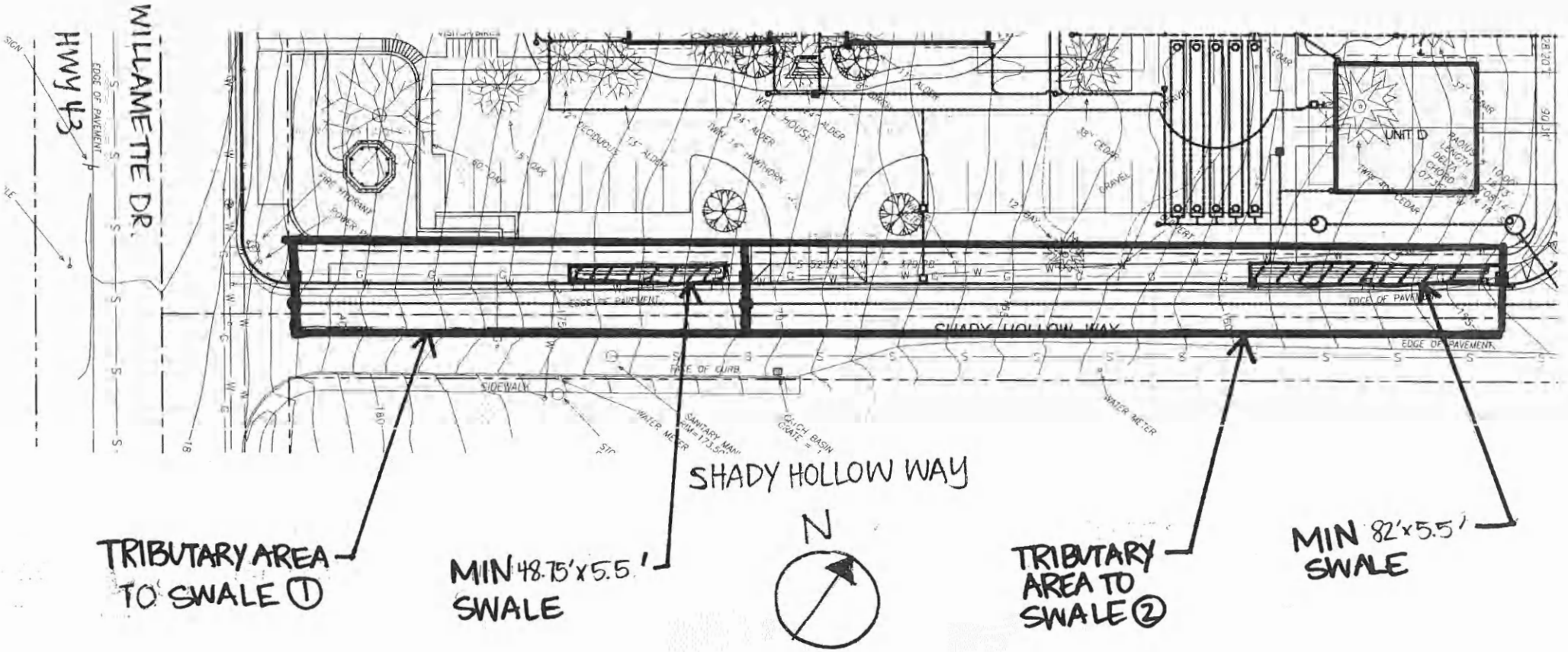
WATER QUALITY CALCULATION

```
S.C.S. TYPE-1A RAINFALL DISTRIBUTION
ENTER: FREQ(YEAR), DURATION(HOUR), PRECIP(INCHES)
1,24,0.83
-------------------------------------------------------------------------
********** S.C.S. TYPE-1A DISTRIBUTION **********
**********   1-YEAR  24-HOUR STORM  ****   .83" TOTAL PRECIP. **********
-------------------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
.71,86,1.37,98,5

DATA PRINT-OUT:

  AREA(ACRES)     PERVIOUS     IMPERVIOUS    TC(MINUTES)
                  A     CN     A     CN
       2.1         .7  86.0    1.4  98.0         5.0

  PEAK-Q(CFS)   T-PEAK(HRS)     VOL(CU-FT)
       .25          7.67            3425

ENTER [d:][path]filename[.ext] FOR STORAGE OF COMPUTED HYDROGRAPH:
_
```

$$\frac{(0.25\,CFS)(60)(7.48)}{22.5\,GPM} = 4.98 \rightarrow 5\,CARTRIDGES(MIN) \leftarrow \checkmark$$

↑ FOR 27" TALL STORMFILTER UNITS

OFFSITE TRIBUTARY AREA MAP FOR SWALE ① & ②



ST.P.-13

OFFSITE TRIBUTARY AREA MAP FOR SWALE (3)

OFFSITE STORM DRAINAGE CALCULATIONS

WATER QUALITY TREATMENT SWALE CALCULATIONS

- Use City of Portland Vegetative Swale Design
  - Scale Impervious Area by 0.09
- Swale width on streets = 5.5'

1. Shady Hollow Way **Area 1**
   - Total Impervious Area To Swale (6' Sidewalk, 6" Curb, 14' Pavement Width) = 2,965 SF
   - 2,965 SF x 0.09 = 266.85 SF
   - 266.85 / 5.5' = **48.75 FT = Min Swale Length**

2. Shady Hollow Way **Area 2**
   - Total Impervious Area To Swale (6' Sidewalk, 6" Curb, 14' Pavement Width) = 5,000 SF
   - 5,000 SF x 0.09 = 450.0 SF
   - 450.00 / 5.5' = **82 FT = Min Swale Length**

3. Shady Hollow Way **Area 3**
   - Total Impervious Area To Swale (6' Sidewalk, 6" Curb, 10' Pavement Width, ADA Ramp) = 2,390 SF
   - 2,390 SF x 0.09 = 215.1 SF
   - 215.1 / 5.5' = **39.10 FT = Min Swale Length**

ALDER
GEOTECHNICAL SERVICES

3910 NE 10th Avenue
Portland, Oregon 97212

February 18, 2014
Project No. 448-7

Mr. David Emami
Barrington Management
3380 Barrington Drive
West Linn, Oregon 97068

GEOTECHNICAL INVESTIGATION REPORT
PROPOSED SHADY HOLLOW VILLAGE TOWNHOMES
18270, 18340 WILLAMETTE DRIVE AND 18395 SHADY HOLLOW WAY
WEST LINN, OREGON

Dear Mr. Emami:

This report presents the results of a geotechnical investigation on three tax lots at the northeast corner of Willamette Drive and Shady Hollow Way in West Linn, Clackamas County, Oregon (Figure 1). The purpose of the investigation was to evaluate soil conditions and provide site grading, foundation, and paving recommendations to use during design and construction of a new cultural center. The scope of services included performing field explorations, a field infiltration test, laboratory tests, and engineering analyses

As discussed below, the site is suitable for the proposed residential development. Soft, compressible, topsoils 6 inches to 2 feet thick cover the entire site. The underlying soils consist of firm to very stiff clays and silts that provide excellent bearing support for shallow foundations. Unfortunately, the soils have low permeability and are unsuitable for infiltrating concentrated flows of stormwater. If at all possible, site grading should be done during the dry summer and fall months. Thick sections of gravel will be required to protect building pads and hardscape areas from construction traffic during the wet winter and spring months.

DESCRIPTION OF THE PROJECT

Thirteen townhouse duplexes will be constructed on an approximately 2.1-acre, gently sloping site located at the northeast corner of Willamette Drive and Shady Hollow Way in West Linn. The buildings will be a mix of two-story and two-story over daylight basement structures. Conventional wood-frame construction is anticipated. The daylight basement units will have slab-on-grade floors and cantilever-type, reinforced concrete retaining walls up to about 9 feet tall. The two-story units will have crawl spaces and raised wood floors. Foundation loads for the two building types are anticipated to be typical of this type construction and occupancy.

Site grading will involve making cuts up to about 10 feet deep in building pads and fills up to about 5 feet deep in driveway areas between buildings. Asphalt concrete driveways will provide access to individual garages. A parking lot with asphalt concrete pavement is also planned along

the south property line. Stormwater will be collected, detained, and discharged into a nearby natural drainage.

The layout of the site is shown on the Site Plan (Figure 2).

FIELD AND LABORATORY INVESTIGATIONS

The field investigation consisted of digging five backhoe test pits on January 31, 2014. The pits ranged from 3½ to 8½ feet deep. The approximate locations are shown on Figure 2.

Final logs of the test pits are presented in Appendix A. The descriptions on the logs are based on field logs, sample inspection, and laboratory testing. Results of laboratory moisture content tests are shown at the corresponding sample locations on the final logs.

SITE CONDITIONS

Surface Conditions

The 2.4-acre property consists of three tax lots. Two lots are developed with single family residences, gravel driveways. Landscaping includes lawn and a wide variety of moderate to tall deciduous and evergreen trees.

Topographic relief on the site is about 30 feet. The ground surface slopes down about 7 percent to the east.

Subsurface Conditions

The entire site is mantled with topsoils and underlain by flood deposited clays and silts, followed by basalt bedrock. Geology maps indicate that the alluvial soils are likely less than 30 feet thick. These soils were deposited 15,000 to 13,000 years ago on basalt rock by dozens of immense Missoula Flood inundations that occurred at the end of the last ice age.

Topsoil

The entire ground surface is mantled with 6 inches to 2 feet of organic and porous topsoil. The topsoil is very dark brown to dark brown silt with much clay. It is full of fine roots and worm holes. The topsoils are weak and unsuitable for supporting new foundations and pavements. Project grading plans and construction budgets must anticipate and specify stripping dark brown, porous soils from the building pad, patio, and parking areas before placing new fill. Deeper stripping will be required in local areas, particularly where trees are present.

Fine-Grained Flood Deposits

The mineral soils on the site consist of light brown silts and lean clays. The soils below the topsoil layer and within about 4 to 7 feet of the ground surface are typically heavily mottled, indicating they are saturated with seasonal, perched ground water. The relative consistency of the silty soil is estimated to range from to medium stiff to very stiff.

New shallow foundations and pavements may be supported on the brown silty soils located below all dark brown topsoils. Six inches to 2 feet of soft, dark brown topsoils will need to be removed from all building pads and pavement areas.

Groundwater

Groundwater was encountered during the field investigation on January 31, 2014. The maximum depth explored was 8½ feet below the ground surface. The soils within about 4 to 7 feet of the ground surface are heavily mottled, indicating the presence of perched ground water in the wet winter and spring months.

Review of a 2008 U.S. Geological Survey groundwater map for Portland metro region indicates that permanent groundwater on the site is located about 80 feet below the ground surface.

Liquefaction

Soil, rock and groundwater conditions indicate that the liquefaction potential of the site is low to very low. The site consists of about 30 feet of moderate plasticity silts and clays followed by basalt bedrock. Permanent groundwater is likely located at least 80 feet deep.

CONCLUSIONS AND RECOMMENDATIONS

Site Preparation and Earthwork

Clearing and Grubbing

The ground surface within building and pavement areas should be stripped of vegetation, surface organics, and dark brown topsoils and mineral soils. Deep stripping of topsoils and soft soils is required on the southern portions of the development area. The intent of the following clearing and grubbing recommendations is to remove weak soils so that only lighter brown, medium stiff mineral soils are exposed in building and pavement subgrade areas.

Based on the results of the soil explorations, stripped should be done to a minimum depth of at 6 inches. Local areas will require 2 feet of stripping.

The loose, organic topsoils may either be hauled off the site or stockpiled and used in landscape areas. Silty and clayey soils are moisture sensitive and easily disturbed and rutted by construction equipment when wet. Clearing and grubbing during the rainy winter and spring months should be avoided.

Abandoned underground utilities, septic tanks, building foundations, and surface debris should be excavated, stockpiled, and hauled off the site. Excavations required to remove buried structures should be shaped with 1 horizontal to 1 vertical side slopes and then backfilled to grade with properly compacted granular fill.

The site contains medium to large trees with extensive root structures. The grading contractor should plan to over-excavate a minimum of 2 to 3 feet deep and a minimum of 5 feet

horizontally around each tree stump. Roots larger than about 1 inch in diameter should be removed from under building and pavement areas. Soils that are disturbed and loosened during stump and root removal must be excavated back to 1 horizontal to 1 vertical side slopes and replaced with properly compacted gravel fill.

A geotechnical engineer should periodically observe the clearing and grubbing operations and evaluate subgrade strength. All soft spots and pumping areas should be excavated and replaced with properly compacted structural fill.

Structural Fill

It is strongly recommended that only imported gravel be used as structural fill.

On-site or imported, organic-free soils approved by the geotechnical engineer can be used to construct structural fills; however, the silty and clayey soils on the site are extremely sensitive to moisture content. They can only be effectively placed as structural fill during the driest summer and fall months and, then, only with diligent, patient, slow effort. Compacting silty and clayey soil on small sites is difficult and slow because the soil need to be spread out, aerated, and either dried or wetted, before being placed and compacted in thin, horizontal layers with suitable compaction equipment. Proper moisture control is essential, challenging, and time consuming. Appropriate compaction cannot be achieved without good moisture control.

During wet fall, winter, and spring months, structural fills can only be constructed using imported gravel, such as 1½-inch or ¾-inch minus crushed gravel.

Structural fills should be constructed in horizontal lifts that are no more than 9 inches thick before compaction. Each lift should be compacted to at least 90 percent of the maximum dry density determined in accordance with ASTM Test Method D 1557 (modified Proctor).

Pavement Subgrade

Pavement subgrade should consist of firm to stiff undisturbed native silt soils. Regardless of final grades and whether grading requires cutting or filling, dark brown topsoils must be stripped at least 6 inches deep from the asphalt pavement areas. Construction equipment must be kept off the final subgrade surfaces until they have been covered with geotextile and crushed gravel.

We recommend that a geotechnical engineer observe the pavement subgrade soils before they are covered with geotextile and crushed gravel. Weak areas that are identified by the geotechnical engineer will need to be over-excavated down to firm materials and replaced with structural fill.

Utility Trenches

Shoring will be required on all trenches deeper than 4 feet. The native silts should be considered as OSHA "Type B" soils for design of trench shoring. Open cut trenches should be sloped back 1 horizontal to 1 vertical.

Only imported 1½-inch or ¾-inch minus crushed gravel should be used as utility trench backfill in building and pavement areas. Native soils can be used as backfill in landscape areas. All trench backfill should be placed in maximum 9-inch-thick loose lifts and compacted to at least 90 percent of ASTM D 1557.

Foundations

The proposed building can be supported on conventional foundations bearing on undisturbed, brown native silt soils or on structural fill. Dark brown soils encountered below footing excavations must be over-excavated and replaced with compacted gravel fill.

Spread and continuous footings may be designed for an allowable soil bearing pressure of 2,000 psf (dead plus live loads). The allowable bearing pressure may be increased by one-third for loads that include wind and seismic forces.

The bottoms of all footings should be located at least 18 inches below lowest adjacent grade. Perimeter continuous and spread footings should have minimum widths of 15 inches for two-story buildings and 18 inches for three-story buildings. All column footings should be at least 24 inches square. Interior thickened slab footings should be at least 12 inches wide and founded at least 12 inches below the top of the floor slab. All footings should be reinforced as specified by the structural engineer.

During wet weather, a 3-inch-thick layer of ¾-inch-minus crushed rock must be placed on the bottom of the footing excavations to reduce disturbance of the silty soils. This crushed rock layer should be lightly compacted.

A geotechnical engineer should review the foundation plans to verify that these recommendations have been properly interpreted and incorporated into the project documents. In addition, a geotechnical engineer should observe all footing excavations prior to the contractor placing reinforcing steel or concrete. The purpose of this work is to evaluate whether actual soil conditions are similar to those encountered in the test pits or whether different conditions are present that may require design changes.

Estimated Foundation Settlements

It is estimate that total settlements of footings designed in accordance with the above recommendations will be about 1 inch or less. Differential settlements are estimated to be one-half the total settlements.

Foundation Drains

Positive measures should be taken to properly finish grade the site so that drainage waters from the building and parking areas and adjacent properties are directed away from the building foundations, floor slabs, and pavement subgrade. All roof and pavement drainage should be

directed into conduits that carry runoff water away from buildings. A minimum ground slope of 3 percent is recommended in unpaved areas and 1 percent in paved areas.

Foundation drains should be installed around all building foundations. The drains should consist of at least a 3-inch-diameter, perforated flexible PVC pipe surrounded on all sides by a minimum of 6 inches of 1½- ¾-inch drain rock. The drainpipe should be placed at the bottom of the footing, not on top of the footing adjacent to the stem wall. The drain rock should be wrapped in a nonwoven geotextile such as *Geotex® 601*, *Mirafi® 160N*, or equivalent. Roof runoff and ground surface drainage should not be inter-connected.

Prefabricated foundation drains such as *ezflow®* (www.ezflowlp.com) may be installed as an alternative to drain rock. The *ezflow®* system consists of a flexible, perforated pipe surrounded by expanded polystyrene (EPS) aggregate. A geotextile wrap holds the lightweight aggregate around the drain pipe. The system is sold in 10-foot long lengths that snap together.

Because of the wet nature of the site, consideration should be given to installing pre-fabricated drainage panels against the outside of basement retaining walls. A suitable, locally available product is *Sitedrain™ 184* by American Wick Drain, sold at ACF West, Inc.

Site Seismic Coefficient
Based on our interpretation of site geology, the soil conditions at this site are most similar to Site Class D in the 2010 Oregon Structural Specialty Code.

Floor Slabs
The subgrade soils must be in a firm, non-yielding condition at the time of slab construction. Soft areas should be excavated and replaced with structural fill. A minimum slab thickness of 4 inches is recommended for light residential spaces.

A capillary break consisting of at least 6 inches of 1½- or ¾- inch minus crushed aggregate covered with a vapor retarding membrane should be placed underneath the floor slab to reduce the amount of moisture intrusion.

Wet weather construction typically requires using more than 6 inches of gravel under the floor slab. The general contractor should evaluate the need to construct a thicker section of base rock to support construction activities during wet weather.

The bottom of the concrete floor slab should be separated from the gravel capillary break by an appropriate vapor retarding membrane. The vapor membrane should be installed as recommended by the manufacture.

Experience indicates that concrete slabs-on-grade commonly exhibit shrinkage cracks despite the presence of steel reinforcing or fiber strands. This cracking can be reduced by using low slump

concrete, properly designed and constructed joints, and by properly reinforcing and curing the concrete.

Proper quality concrete is essential when placing the floor slab directly on the vapor retarding membrane. The project structural engineer can assist in specify an appropriate concrete mix.

Retaining Walls

Geotechnical design recommendations for retaining walls are provided in the following paragraphs. The recommended static equivalent fluid weights and seismic resultant thrusts assume that (1) the wall backfill is level and fully drained by a foundation drain system, (2) the recommended earth pressures act horizontally (normal to the wall), (3) gravel backfill has a maximum wet, compacted unit weight of 135 pcf and consists of imported crushed aggregate, and (4) native silty soils backfill has a maximum wet, compacted unit weight of 120 pcf.

Static Design

Cantilever retaining walls that are free to rotate should be designed to resist static, horizontal earth pressure forces calculated using an equivalent fluid weight of 35 pcf.

A friction coefficient of 0.3 may be used when concrete foundations are underlain by silty and clayey soils. A friction coefficient of 0.5 may be used when concrete foundations are underlain by at least 6 inches of crushed gravel. If the 0.5 value is used in design, the structural drawings should show the crushed gravel layer.

Passive pressure may be used to resist sliding if the ground in front of the foundation is level for at least 10 feet or three times the height of the surface generating passive resistance. The static horizontal passive resistance may be calculated using an equivalent fluid weight of 300 pcf. Only two-thirds of the passive resistance should be used if friction and passive resistance are combined to resist lateral forces.

Seismic Design

Ground accelerations during earthquakes temporarily increase lateral earth pressures on retaining walls. The resultant horizontal seismic thrust should be added to the horizontal static force calculated using the equivalent fluid weights listed above. Seismic thrusts have been calculated assuming a 2010 OSSC peak ground acceleration amax of 0.28g.

Unrestrained walls should be designed to resist a seismically-induced resultant horizontal thrust of 6H2 pounds, where H is the height of the wall in feet. The resultant seismic thrust acts 0.6H above the base of the wall. This thrust was calculated using the Mononobe-Okabe method assuming the unrestrained walls are free to displace and assuming a pseudostatic horizontal acceleration equal to ½ amax.

A friction coefficient of 0.5 may be used when concrete foundations are underlain by at least 6 inches of crushed gravel. If the 0.5 value is used in design, the structural drawings must show the crushed gravel layer.

Passive pressure may be used to resist sliding during seismic loading if the ground in front of the foundation is level for at least 10 feet or three times the height of the surface generating passive resistance. The seismic passive resistance may be calculated using an equivalent fluid weight of 250 pcf. This seismic passive equivalent fluid weight was calculated using the Mononobe-Okabe method with $\delta=\frac{1}{2}\varphi'$ and a pseudostatic horizontal acceleration equal to amax.

Only two-thirds of the passive resistance should be used if friction and passive resistance are combined to resist lateral forces.

The minimum recommended factors of safety for seismic design of sliding, overturning, and bearing capacity are taken as 75% of the values recommended for statically loaded structures. Therefore, the minimum static factors of safety for sliding, overturning, and bearing capacity of 1.5, 1.5, and 2.0 are reduced to 1.1, 1.1, and 1.5, respectively, when evaluating seismic stability.

Soil Infiltration

The site is unsuitable for infiltrating concentrated flows of stormwater runoff. The property is underlain by low-permeability silts and clays and has shallow groundwater. Seasonal, perched groundwater develops within 5 to 7 feet of the ground surface.

A standpipe infiltration test performed in Test Pit 3 on the south side of the site measured an infiltration rate of 0.25 inch per hour. The test was performed 3½ feet below the ground surface in a 6-inch diameter PVC pipe carefully pushed 6 inches into the cleaned bottom of the test pit. Several inches of clean gravel was placed in the pipe to protect the silty and clayey soils from erosion. A maximum of 9 inches of water was carefully poured in the pipe and allowed to drop at least 1 inch. The pipe was refilled and tested three times on January 31 and February 2, 2014.

Pavements

Based on our general experience, we recommend driveways and parking areas be paved with 3 inches of asphalt concrete on at least 8 inches of compacted crushed aggregate (either 1½-minus or ¾-inch minus gravel). The aggregate base must be separated from the native silt subgrade by a woven polypropylene geotextile with a grab tensile strength (ASTM D 4632) of at least 300 pounds and puncture strength (ASTM D 4833) of at least 110 pounds.

The recommended pavement section is based on professional experience with similar nearby developments and soil conditions constructed during dry weather. Use of this pavement section assumes that the soft, dark brown topsoils have been removed from pavement areas and the exposed soil subgrade consists of undisturbed, firm, brown silty soils.

If construction will occur primarily during the wet fall, winter, and spring months, consideration should be given to reinforcing the bottom of the gravel section with a plastic geogrid, such as *E'Grid 3030* by Hanes Geo Components, Inc., or equivalent. The geogrid helps reduce loading on the weak subgrade soils by spread out wheel loads.

CLOSURE

The conclusions and recommendations presented in this report are based on the information provided to us, results of the field and laboratory studies, analyses, and professional judgment. Only a very small portion of the pertinent soil and groundwater conditions has been observed. The recommendations made are based on the assumption that soil conditions do not deviate appreciably from those found during the field investigations

Geotechnical review is of paramount importance in engineering practice. The poor performance of many foundations has been attributed to inadequate construction review. On-site grading and earthwork should be observed and, where necessary, tested by a qualified geotechnical engineering firm to verify compliance with the recommendations contained in this report. Foundation excavations should also be observed to compare the generalized site conditions assumed in this report with those found on the site at the time of construction. If the plans for site development are changed, or if variations or undesirable geotechnical conditions are encountered during construction, the geotechnical engineer should be consulted for further recommendations.

Geotechnical engineering is characterized by uncertainty. Professional judgments presented are based partly on an understanding of the proposed construction, and partly on general experience. The engineering work performed and judgments rendered for this study meet current professional standards ordinarily provided by members of the engineering profession in this area practicing under similar conditions at this time. No other warranties, either expressed or implied, are made.

Please call if you have questions.

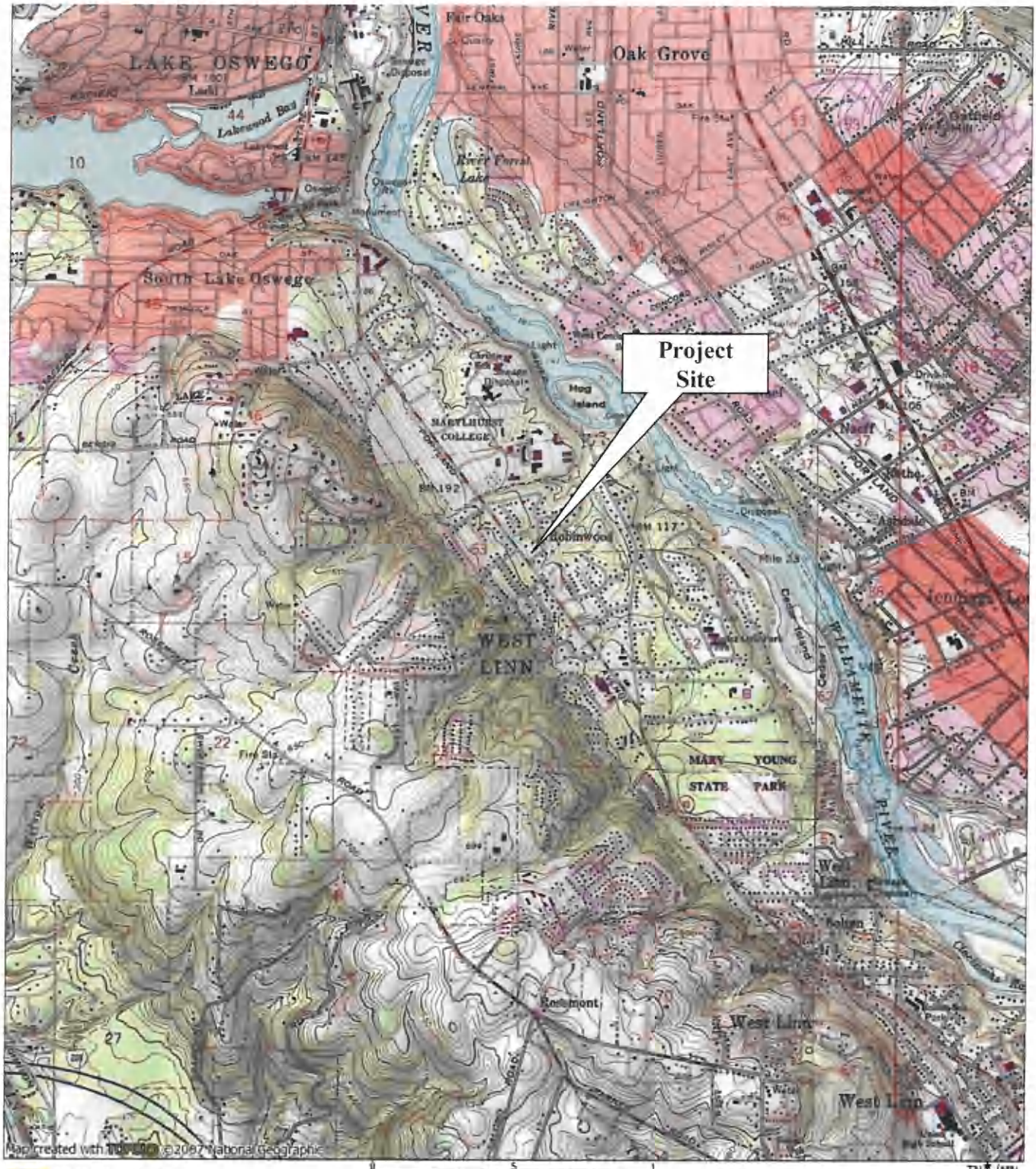
Sincerely,

ALDER GEOTECHNICAL SERVICES, LLC

John N. Cunningham, P.E., G.E.
Oregon Registered Engineer No. 13,507

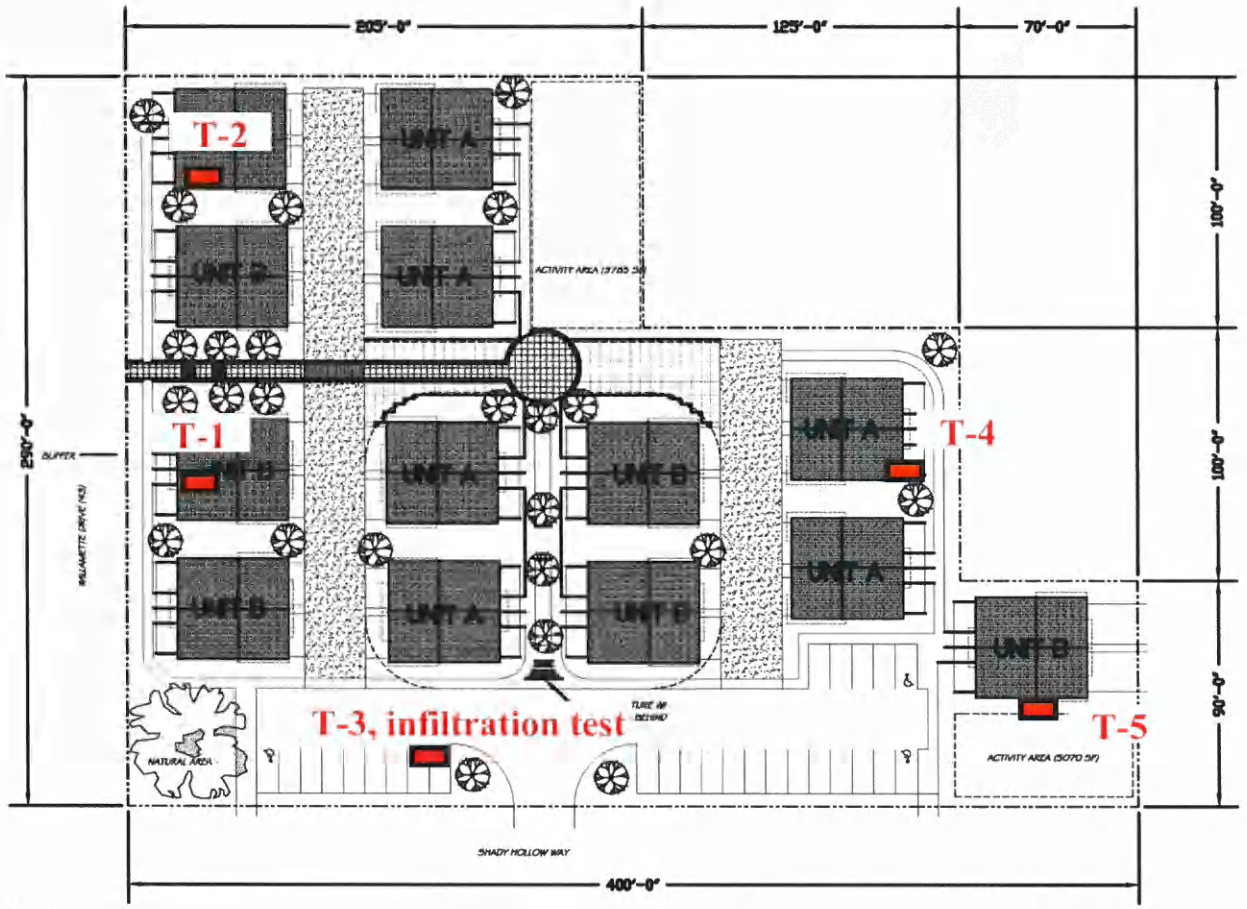
(1) Addressee via .pdf
(1) Stuart Gordon Straus Architect, PC

Electronically signed by John Cunningham, PE, GE
2014.02.18 11:12:00 -08'00'



Alder Geotechnical Services, LLC

Job No. 448-7 | Shady Hollow Village | Figure 1
Feb. 2014 | West Linn, Oregon | Vicinity Map



Preliminary site plan from
Stuart Gordon Straus Architect PC

SITE CONCEPT
1" = 40'-0"

Legend

T-1 Approx. location of backhoe test pit

Alder Geotechnical Services, LLC

Job # 448-7 Shady Hollow Village Figure 2
Feb. 2014 West Linn, OR Site Plan

APPENDIX A

FIELD INVESTIGATION

Five exploratory backhoe test pits were dug on January 31, 2014 at the approximate locations shown on the Site Plan (Figure 2). The test pits were excavated using a trackhoe equipped with a 2-foot-wide bucket. A geotechnical engineer observed and logged the test pits.

Disturbed soil samples were collected at selected intervals, sealed in plastic bags and brought to our laboratory for examination and testing.

The locations of the test pits are approximate. The location of each exploration was estimated using the site plan prepared by Stewart Gordon Strauss Architect.

The soils encountered in the test pits were generally described using the Unified Soil Classification System. A Key to Logs is attached as Figure B-1. The test pit logs are attached as Figures B-2 through B-6

Project: KEY TO TEST PIT LOGS **Project Location:** **Project Number:**	**Log of Test Pit T-0** Sheet 1 of 1

Date(s) Excavated	Logged By	Checked By
Length of Excavation	Width of Excavation	Total Depth of Excavation 11 feet
Excavation Equipment	Excavation Contractor	Surface Elevation
Water Observation(s) ATD 7' Water level encountered during drilling		Weather
Location		Surface Condition

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	GWT	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	MOISTURE (%)	FINES (%)	POCKET PEN. (tsf)	REMARKS
	0			GRAB SAMPLE Bulk sample collected from excavated soil, sealed in a plastic bag.	GB 1-3				
	1								
	2			SHELBY TUBE THIN WALLED SAMPLER Thin-walled steel tube (3" outside diameter, 2.875" inside diameter, 30" long). The sampler is typically pushed 12" to 24" into the soil at the bottom of the test pit with the excavating equipment.	ST 1-1				
	3								
	4								
	5			Distinct geologic contact.					
	6			Gradual or uncertain geologic contact.					
	7		▽	Water level encountered during digging.					
	8			Note: The stratification lines shown on the test pit logs represent approximately boundaries between material types. The actual transisitions between materials may be gradual. These test pit logs and related information depict subsurface conditions only at the specific locations and at the particular time the test pits were dug.					
	9								
	10								
	11			Bottom of test pit at 11.0 feet.					
	12								

ALDER - TEST PIT LOG - GINT STD US.GPJ - 1/19/12 14:14 - C:\PROGRAM FILES\GINT\PROJECTS\KEY TO TEST PIT LOGS.GPJ

Alder Geotechnical Services

Figure A-1

Project: Shady Hollow Village
Project Location: 18340 Shaddy Hollow Way, West Linn, Oregon
Project Number: 448-7

Log of Test Pit T-1

Sheet 1 of 1

Date(s) Drilled	31-Jan-14 to 31-Jan-14	Logged By	JNC	Checked By	JNC
Drilling Method	trackhoe	Drill Bit Size/Type	24" bucket	Total Depth of Borehole	8 feet
Drill Rig Type	trackhoe	Drilling Contractor	Bradley Const.	Surface Elevation	
Groundwater Level(s)	AD none encountered	Sampling Method(s)	Grab Sample	Hammer Data	
Borehole Backfill	excavated soils	Location			

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	GWT	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	N VALUE	MOISTURE (%)	POCKET PEN. (tsf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / □ FINES CONTENT (%) □ 20 40 60 80
	0.0			LEAN CLAY TO SILT (CL/ML), dark gray brown with some rust mottling, moist, soft, medium plastic, porous with root and worm holes, crumb texture (TOPSOIL)					
					GB 1-1		25		
	2.5			SILT (ML), light brown with heavy rust and light gray mottling, moist, stiff to very stiff, medium plastic, some clay, weakly cemented, trace fine mica (FINE-GRAINED FLOOD DEPOSITS)				4	
					GB 1-2		17		
	5.0			few mottles below 5', massive, still weakly cemented					
	7.5								
	10.0			Bottom of test pit at 8.0 feet.					

ALDER - BOREHOLE LOG - GINT STD US.GDT - 2/17/14 15:06 - C:\USERS\ALDERGEO\DOCUMENTS\0400\0448-07\TEST PITS 1-5.GPJ

Alder Geotechnical Services

Figure A-2

Project: Shady Hollow Village
Project Location: 18340 Shaddy Hollow Way, West Linn, Oregon
Project Number: 448-7

Log of Test Pit T-2

Sheet 1 of 1

Date(s) Drilled	31-Jan-14 to 31-Jan-14	Logged By	JNC	Checked By	JNC
Drilling Method	trackhoe	Drill Bit Size/Type	24" bucket	Total Depth of Borehole	8 feet
Drill Rig Type	trackhoe	Drilling Contractor	Bradley Const.	Surface Elevation	
Groundwater Level(s)	AD none encountered	Sampling Method(s)	Grab Sample	Hammer Data	
Borehole Backfill	excavated soils	Location			

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	GWT	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	N VALUE	MOISTURE (%)	POCKET PEN. (tsf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
	0.0			LEAN CLAY TO SILT (CL/ML), dark gray brown with some rust mottling, moist, soft, medium plastic, porous with root and worm holes, crumb texture (TOPSOIL)					
				LEAN CLAY TO SILT (CL/ML), brown with heavy rust and tan mottling, moist, firm to stiff, medium plastic (FINE-GRAINED FLOOD DEPOSITS)	GB 2-1		31		
	2.5			SILT (ML), light brown with some rust and light gray mottling, moist, stiff to very stiff, medium plastic, some clay, weakly cemented, trace fine mica (FINE-GRAINED FLOOD DEPOSITS)				2	
								4.5	
					GB 2-2		32		
	5.0			below 6', low plasticity, massive, no mottling, no cementation					
	7.5								
				Bottom of test pit at 8.0 feet.					
	10.0								

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Alder Geotechnical Services

Figure A-3

Project: Shady Hollow Village
Project Location: 18340 Shaddy Hollow Way, West Linn, Oregon
Project Number: 448-7

Log of Test Pit T-3

Sheet 1 of 1

Date(s) Drilled	31-Jan-14 to 31-Jan-14	Logged By	JNC	Checked By	JNC
Drilling Method	trackhoe	Drill Bit Size/Type	24" bucket	Total Depth of Borehole	2.75 feet
Drill Rig Type	trackhoe	Drilling Contractor	Bradley Const.	Surface Elevation	
Groundwater Level(s)		Sampling Method(s)		Hammer Data	
Borehole Backfill	excavated soils	Location			

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	GWT	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	N VALUE	MOISTURE (%)	POCKET PEN. (tsf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
	0.0			LEAN CLAY TO SILT (CL/ML), dark gray brown with some rust mottling, moist, soft, medium plastic, porous with root and worm holes, crumb texture (TOPSOIL)					
	2.5			LEAN CLAY TO SILT (CL/ML), brown with heavy rust and tan mottling, moist, firm to stiff, medium plastic (FINE-GRAINED FLOOD DEPOSITS)					
	5.0			Bottom of test pit at 2.8 feet.					
	7.5								
	10.0								

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Alder Geotechnical Services

Figure A-4

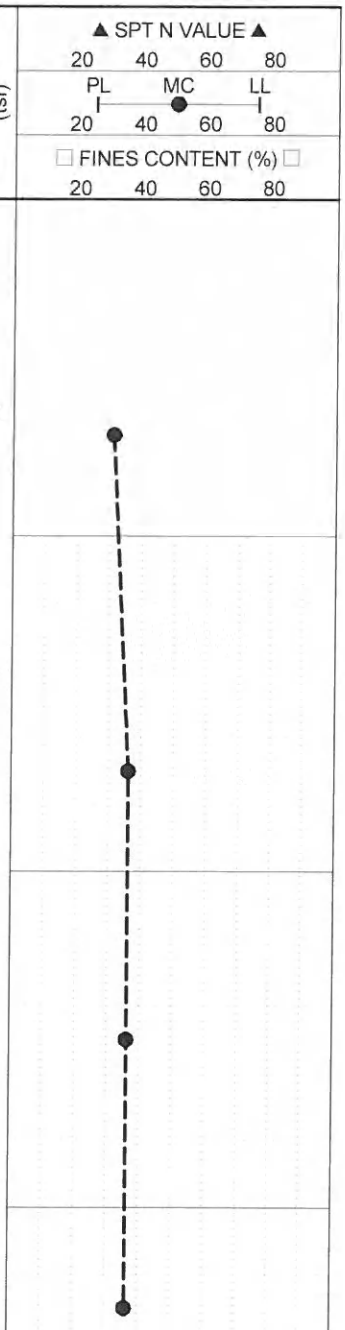
Project: Shady Hollow Village
Project Location: 18340 Shaddy Hollow Way, West Linn, Oregon
Project Number: 448-7

Log of Test Pit T-4

Sheet 1 of 1

Date(s) Drilled	31-Jan-14 to 31-Jan-14	Logged By	JNC	Checked By	JNC
Drilling Method	trackhoe	Drill Bit Size/Type	24" bucket	Total Depth of Borehole	8.5 feet
Drill Rig Type	trackhoe	Drilling Contractor	Bradley Const.	Surface Elevation	
Groundwater Level(s)	ATD none encountered	Sampling Method(s)	Grab Sample	Hammer Data	
Borehole Backfill	excavated soils	Location			

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	GWT	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	N VALUE	MOISTURE (%)	POCKET PEN. (tsf)
	0.0			LEAN CLAY TO SILT (CL/ML), dark gray brown with some rust mottling, moist, soft, medium plastic, porous with root and worm holes, crumb texture (TOPSOIL)				
				LEAN CLAY TO SILT (CL/ML), brown with heavy rust and tan mottling, moist, firm to stiff, medium plastic (FINE-GRAINED FLOOD DEPOSITS)	GB 4-1		31	1.5
	2.5			SILT (ML), light brown with heavy rust and light gray mottling, stiff, trace fine mica, moderate to low plasticity (FINE-GRAINED FLOOD DEPOSITS)				4.5
	5.0				GB 4-2		36	
				below 6', no mottling, massive, low plasticity	GB 4-3		36	
	7.5				GB 4-4		36	
	10.0			Bottom of test pit at 8.5 feet.				



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Alder Geotechnical Services

Figure A-5

Project: Shady Hollow Village
Project Location: 18340 Shaddy Hollow Way, West Linn, Oregon
Project Number: 448-7

Log of Test Pit T-5

Sheet 1 of 1

Date(s) Drilled	31-Jan-14 to 31-Jan-14	Logged By	JNC	Checked By	JNC
Drilling Method	trackhoe	Drill Bit Size/Type	24" bucket	Total Depth of Borehole	8 feet
Drill Rig Type	trackhoe	Drilling Contractor	Bradley Const.	Surface Elevation	
Groundwater Level(s)	ATD none encountered	Sampling Method(s)	Grab Sample	Hammer Data	
Borehole Backfill	excavated soils	Location			

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	GWT	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	N VALUE	MOISTURE (%)	POCKET PEN. (tsf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
	0.0			LEAN CLAY TO SILT (CL/ML), dark gray brown, soft to firm, moist, moderately plastic, many fine cedar roots, worm holes, root holes (TOPSOIL)					
	2.5			LEAN CLAY TO SILT (CL/ML), brown with heavy rust and tan mottling, moist, firm to stiff, medium plastic (FINE-GRAINED FLOOD DEPOSITS)					
	5.0			SILT (ML), light brown with heavy rust and light gray mottling, moist, stiff to very stiff, medium plastic, some clay, weakly cemented, trace fine mica (FINE-GRAINED FLOOD DEPOSITS)	GB 5-1		29		
	7.5			below 6', low plastic, homogeneous, still weakly cemented	GB 5-2		28		
	10.0			Bottom of test pit at 8.0 feet.					

Alder Geotechnical Services

Figure A-6

TRAFFIC ANALYSIS REPORT

FOR A

COMPREHENSIVE PLAN MAP AMENDMENT AND ZONE CHANGE

Willamette Drive (Highway 43)

CITY OF WEST LINN

PREPARED BY

CHARBONNEAU ENGINEERING LLC

MAY 2008

PROJECT 08-16

TRAFFIC ANALYSIS REPORT

FOR A

COMPREHENSIVE PLAN MAP AND ZONE CHANGE

Willamette Drive (Highway 43)

CITY OF WEST LINN

PREPARED BY

Charbonneau Engineering LLC

9370 SW Greenburg Rd., Suite 411, Portland, OR 97223
(503) 293-1118 • FAX (503) 293-1119

5-12-08

MAY 2008

PROJECT 08-16

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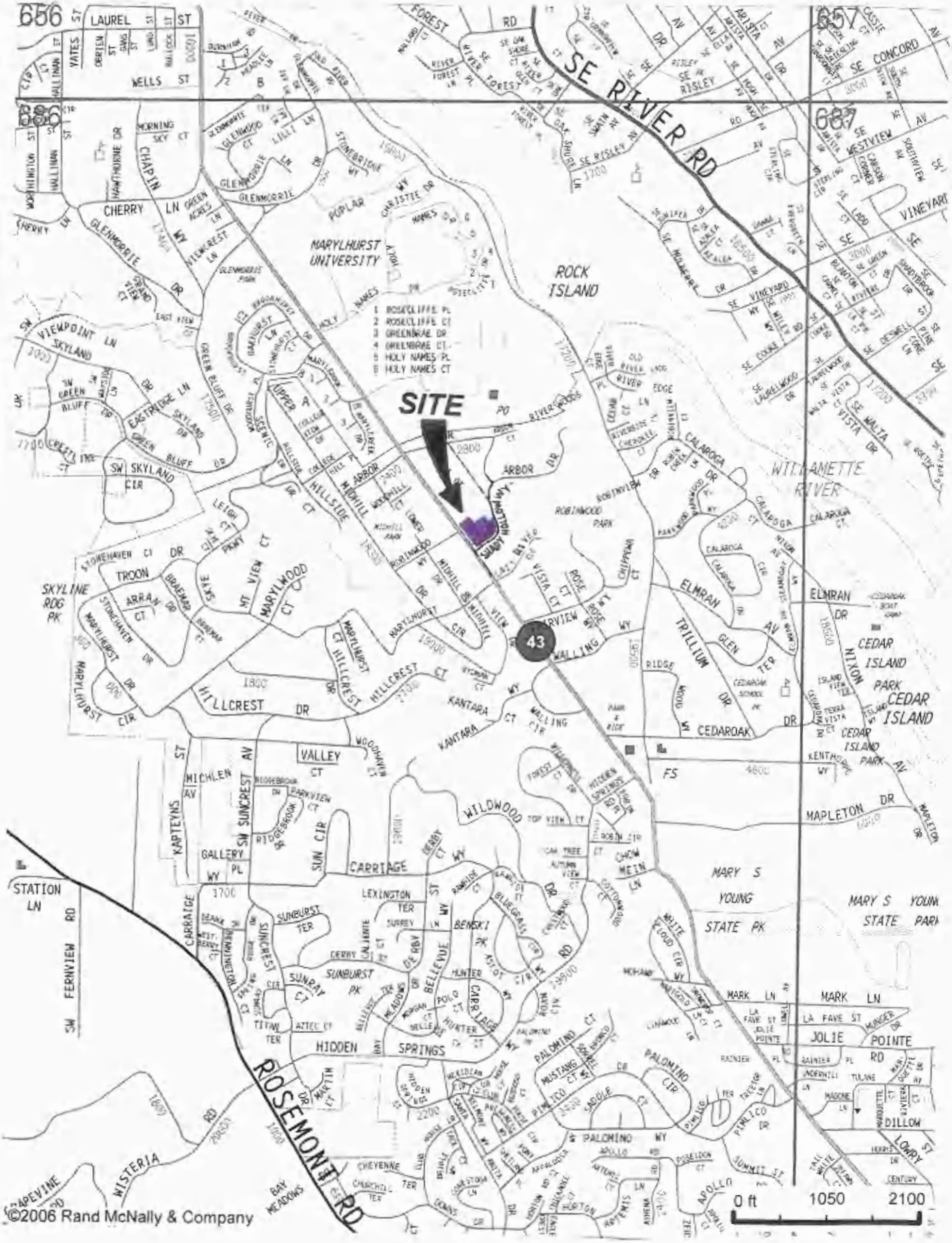
INTRODUCTION

This traffic study has been prepared to document and evaluate the traffic operation and safety conditions that may result from the proposed comprehensive plan map and corresponding zone change on property in West Linn, Oregon. This site is owned by Willamette Commons LLC. This analysis will include the evaluation of the site considering the current R-10 zoning with the existing Low Density Residential Comprehensive Plan designation; and the proposed R-2.1 zoning with the proposed Medium High Residential Density Comprehensive Plan designation. Changing the site's zoning from R-10 to R-2.1 would require a concurrent change to both the comprehensive plan map and to the zoning map.

Under its current zoning the site has the potential for a development maximum of nine (9) single-family homes. Under the proposed zoning the site has the potential for development of up to 43 multi-family units, which may include townhomes, apartments, or condominiums. For purposes of analysis the impacts of the multi-family units will be evaluated with the Institute of Transportation Engineers (ITE) Apartment (ITE 220) trip generation rates.

The study area is defined as the surrounding neighborhood, including Willamette Drive (Highway 43) and Shady Hollow Way. The site consists of three separate parcels (Taxlot 1100, 1200, and 1500) on which a total of two single-family homes (house #18395 on taxlot 1100 and house #18340 on taxlot 1200) are located. The site is highlighted on the vicinity map (Figure 'a').

The Oregon Highway Plan (Action 1F.2.) identifies that highway mobility standards should be applied over a 20-year planning horizon in local transportation system plans (TSP) or a planning horizon of 15 years from the proposed date of amendment adoption, whichever is greater. The City of West Linn's TSP was adopted in year 1991 which corresponds to a 2011 planning horizon year. The proposed amendment adoption date (year 2008) for the Willamette Commons site corresponds to a 2023 planning horizon. For this reason, in addition to evaluating the site's buildout (in year 2013) this analysis will include evaluation of the site in the required planning horizon (in year 2023).



CHARBONNEAU ENGINEERING LLC

PROJECT: 08-16

NOTES:
NO SCALE

VICINITY MAP
WILLAMETTE COMMONS

FIGURE
a

TRAFFIC ANALYSIS CONSIDERATIONS

In the project scope established with Oregon Department of Transportation (ODOT) staff and City of West Linn staff, a number of important elements were identified and considered in this study.

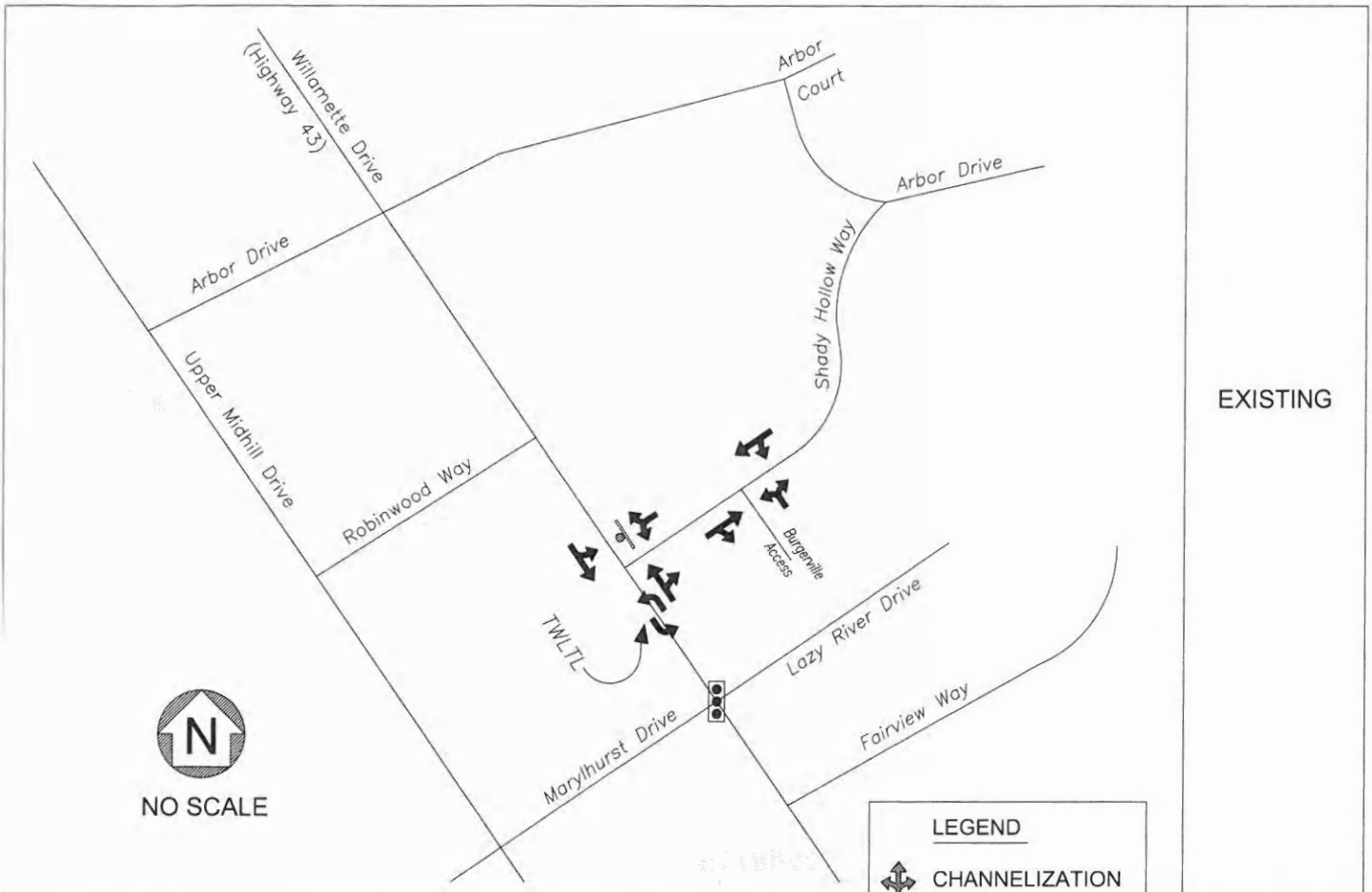
- Inventory and record pertinent information such as traffic control devices, circulation patterns, lane widths, pedestrian & bicycle facilities, transit zones, parking conditions, and street characteristics.
- Record data on typical weekdays during the AM and PM peak traffic hours.
- Conduct traffic counts at the Willamette Drive (Highway 43) and Shady Hollow Way intersection and the Burgerville access onto Shady Hollow Way during the AM and PM peak hours.
- Level of service (LOS) analysis of the study intersections to measure the approach delays for comparison to City of West Linn and ODOT standards.
- Inclusion of the Transportation Planning Rule (TPR) response and a proposal to change both the comprehensive plan map and the zoning map.
- Verification of intersection sight distance at the site's proposed access location.
- Review of traffic accident data furnished ODOT and determination of the intersection crash rates at the study intersections.
- Consideration of traffic circulation.

SITE DESCRIPTION, STREETS, AND CRITICAL INTERSECTIONS

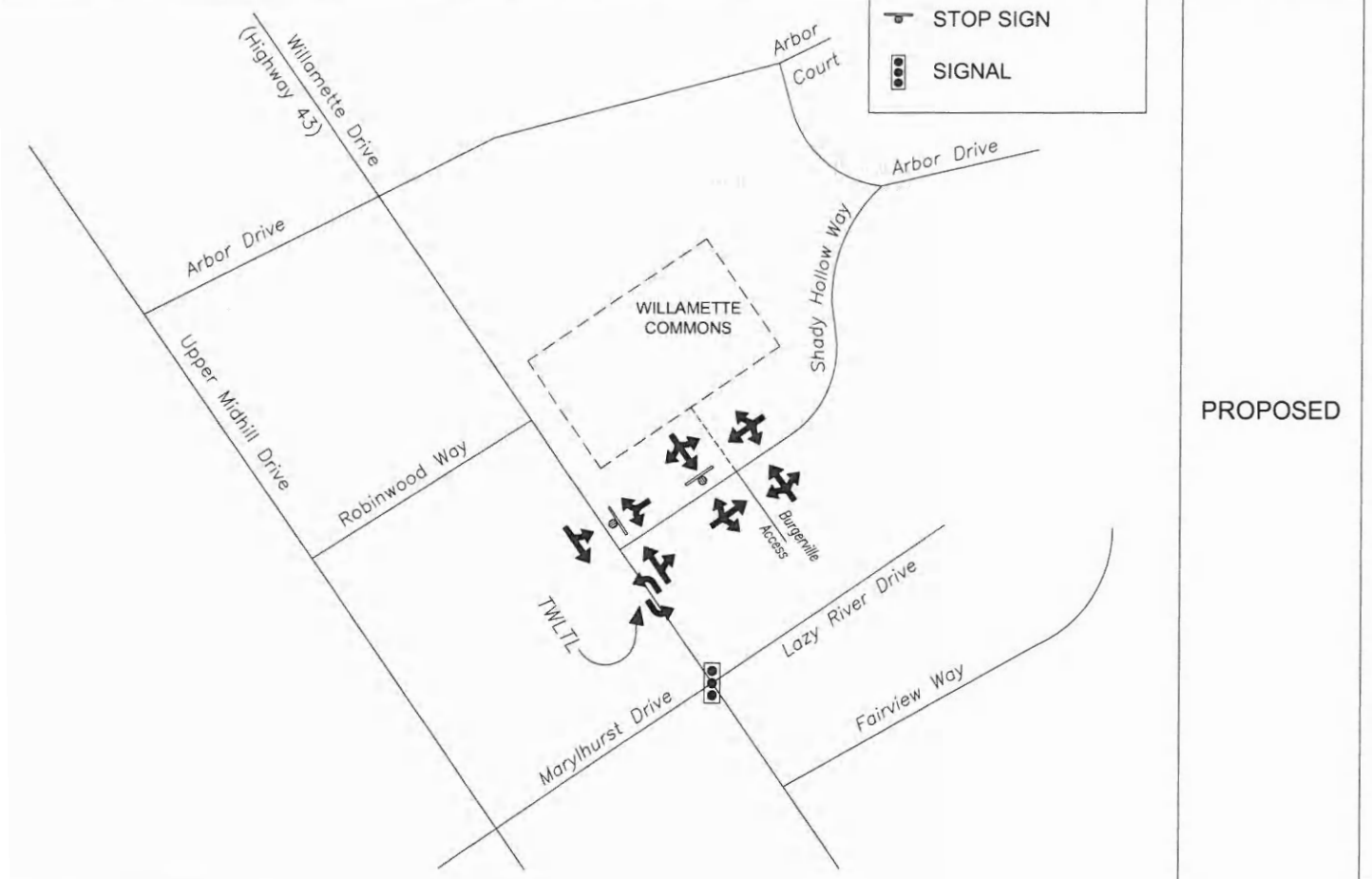
The Willamette Commons site is located at the northeast corner of the Willamette Drive (Highway 43) and Shady Hollow Way intersection. The site would be developed on three parcels (taxlots 1100, 1200, and 1500) on which two homes are currently located. The current proposal includes a change to the site's current zoning, Low Density Residential (R-10), to Medium High Density Residential (R-2.1) zoning. Changing the site's zoning from R-10 to R-2.1 would require a concurrent change to both the comprehensive plan map and to the zoning map.

Under its current zoning the site has the potential for a maximum development of nine (9) single-family homes. It is expected that the nine homes would have potentially up to three accesses. Under the proposed zoning the site has the potential for development of up to 43 multi-family units. The site would have a single access (to Shady Hollow Way). The access would be located approximately 160 feet east of Willamette Drive (Highway 43) and opposite of the Burgerville access to Shady Hollow Way. A site plan is not available for either development scenario as no development is proposed at this time.

Currently, the Willamette Drive (Highway 43) and Shady Hollow Way intersection and the Burgerville access and Shady Hollow Way intersection are unsignalized. The existing and proposed lane configurations and traffic control are presented in Figure 'b'.



EXISTING



PROPOSED

CHARBONNEAU ENGINEERING LLC

PROJECT: 08-16

NOTES: TWLTL = Two-way left turn lane.

LANE CONFIGURATIONS AND TRAFFIC CONTROL WILLAMETTE COMMONS

FIGURE b

Willamette Drive (Highway 43) is classified by the City of West Linn as a principal arterial and is classified by ODOT as a State Highway on the National Highway System (NHS). North of Shady Hollow Way, Willamette Drive (Highway 43) is a 46-foot wide two-lane roadway with a 10-foot wide center gore area that separates northbound and southbound traffic flows. South of Shady Hollow Way, Willamette Drive (Highway 43) is 49-foot wide three-lane roadway with a center left turn lane. Bicycle lanes are provided on both sides of Willamette Drive (Highway 43). A sidewalk is provided along the south side Willamette Drive (Highway 43) along the Burgerville frontage.

Shady Hollow Way is classified by the City of West Linn as a local street. Shady Hollow Way is a 25-28-foot wide, two-lane roadway with a sidewalk provided along the Burgerville frontage (on the south side of the road). The double-yellow line that separates westbound and eastbound traffic flows is extremely faded and should be re-striped with development of the site. Bicycle lanes are not provided.

Willamette Drive (Highway 43) and Shady Hollow Way is a tee-shaped intersection. On the north approach a shared left-through lane is provided. On the east approach a shared left-right lane is provided. On the south approach a shared through-right lane is provided. Crosswalks are not provided.

Burgerville access and Shady Hollow Way is a tee-shaped intersection. On the east approach a shared left-through lane is provided. On the south approach a shared left-right lane is provided. On the west approach a shared through-right lane is provided. Crosswalks are not provided. With development of the site this intersection will become a four-legged intersection with a shared left-through-right lane on each approach.

TRAFFIC OPERATIONAL ANALYSIS

The Oregon Highway Plan (Action 1F.2.) identifies that highway mobility standards should be applied over a 20-year planning horizon in local transportation system plans (TSP) or a planning horizon of 15 years from the proposed date of amendment adoption, whichever is greater. The City of West Linn's TSP was adopted in year 1991 which corresponds to a 2011 planning horizon year. The proposed amendment adoption date (year 2008) for the Willamette Commons site corresponds to a 2023 planning horizon. For this reason, in addition to evaluating the site's buildout (in year 2013) this analysis will include evaluation of the site in the required planning horizon (in year 2023).

In order to evaluate traffic flow and delay in the area the Shady Hollow Way intersections with Willamette Drive (Highway 43) and the Burgerville access were analyzed for level of service (LOS) conditions and safety. LOS analyses were completed in the AM and PM peak hour periods for the following scenarios:

- 2008 Existing Traffic
- 2013 Background Traffic
- 2013 Total Traffic
- 2023 Planning Horizon Traffic

In order to perform the LOS analysis at the critical intersections manual traffic counts were conducted during the AM peak (7:00-9:00 AM) and PM peak (4:00-6:00 PM) traffic hours. The AM and PM peak period traffic counts at the Willamette Drive (Highway 43) and Shady Hollow Way intersection were conducted on Wednesday, April 2nd, 2008 and Tuesday, April 1st, 2008, respectively. The AM and PM peak period traffic counts at the Burgerville access and Shady Hollow Way intersection were conducted on Friday, April 4th, 2008 and Thursday, April 3rd, 2008, respectively. Figure 1 illustrates the existing volume data for the weekday peak hours.

The City of West Linn's website was used to confirm that there are not currently any in-process projects that will affect the study area intersections.

Background growth is comprised of the existing traffic factored with a traffic growth rate established by the City of West Linn's TSP. The analysis for this project will use a growth rate of 2.0% per year over the five-year buildout scenario. This growth rate will also be used to evaluate the growth estimated to occur through the 2023 planning horizon. Year 2013 background traffic volumes, the sum of existing traffic and background growth, are illustrated in Figure 2.

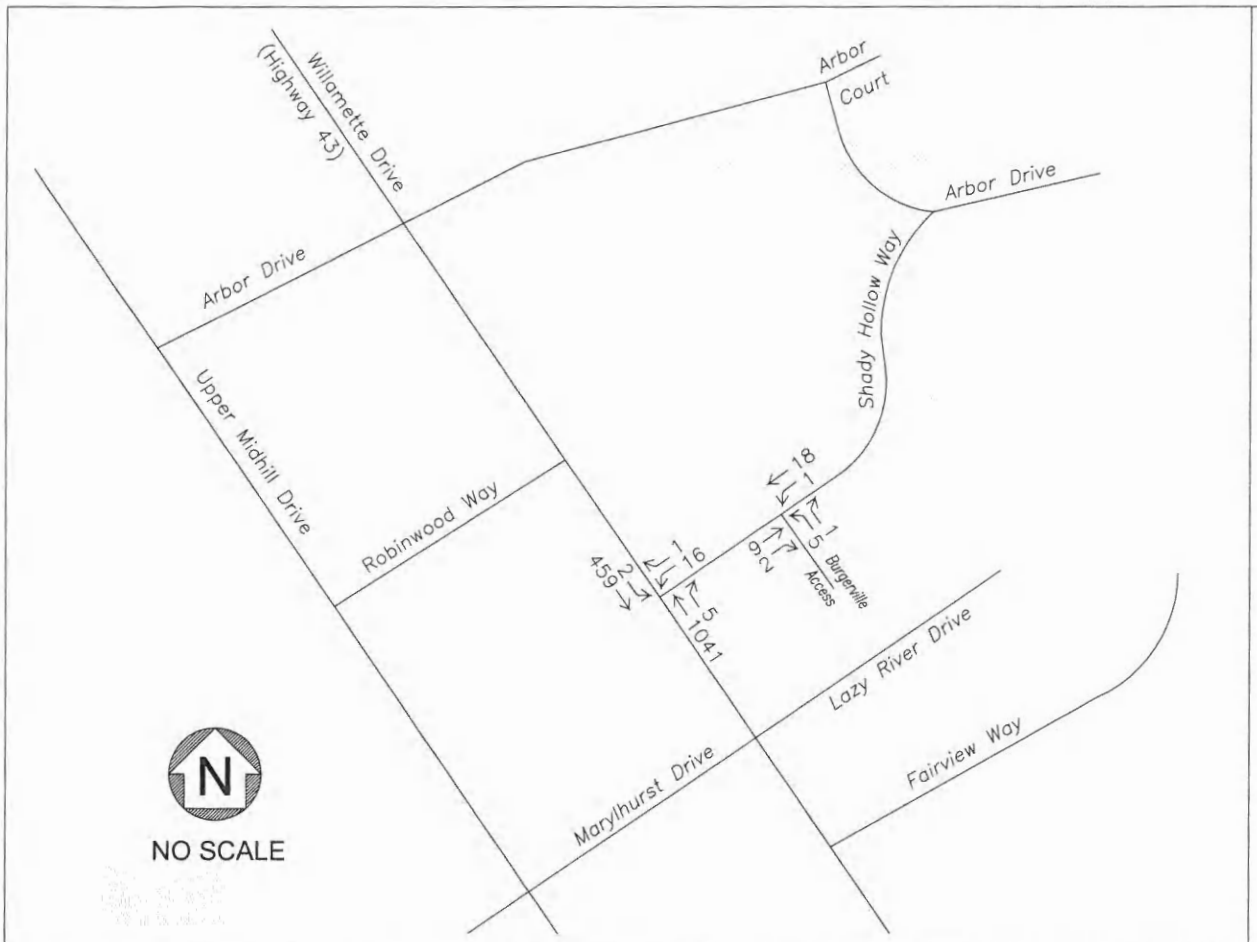
The 2013 total traffic is the summation of background traffic volumes and site generated traffic. The peak hour volumes with the site's current R-10 zoning are presented in Figure 5a. The peak hour volumes with the site's proposed R-2.1 zoning are presented in Figure 5b.

The 2023 planning horizon traffic is the summation of 2013 total traffic and 10 years of traffic growth (occurring between year 2013 and year 2023). The year 2023 planning horizon peak hour volumes with the site's current and proposed zoning are presented in Figure 6a and Figure 6b, respectively.

VEHICULAR TRIP GENERATION

Trip rates presented in the Institute of Transportation Engineers (ITE) *Trip Generation* Manual, Seventh Edition, were utilized to estimate the site's trip generation. Specifically, Single-Family Residential (ITE 210) trip rates were applied to estimate the trips generated by the site for the current R-10 zoning analysis scenario. Apartment (ITE 220) trip rates were applied to estimate the trips generated by the site for the proposed R-2.1 zoning analysis scenario. A credit for the trips generated by the existing two homes on the site has not been taken at this time.

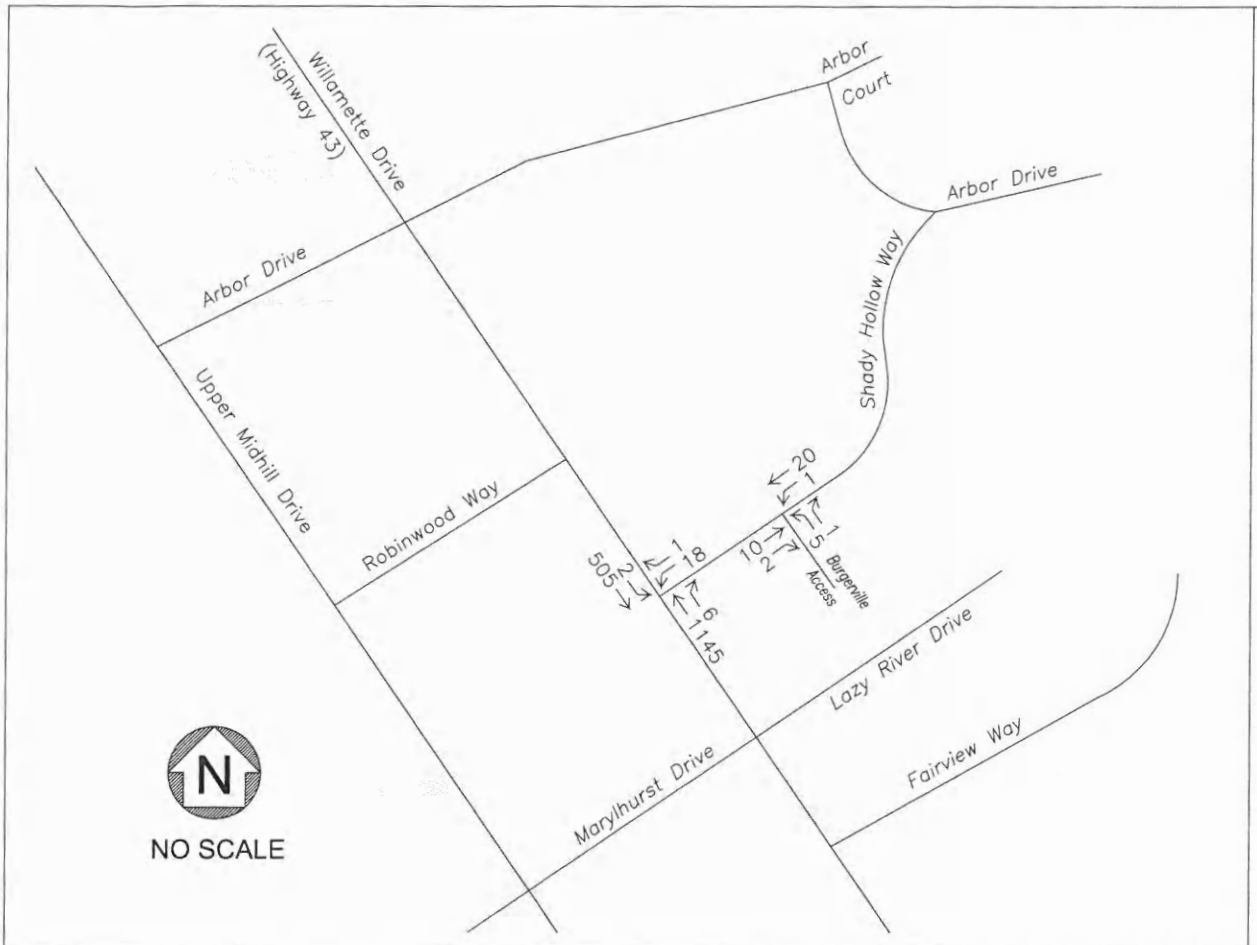
Table 1a presents the trip generation estimate for the current R-10 zoning analysis scenario. Table 1b presents the trip generation estimate for the proposed R-2.1 zoning analysis scenario.



AM PEAK HOUR

PM PEAK HOUR

CHARBONNEAU ENGINEERING LLC PROJECT: 08-16	NOTES:	2008 EXISTING TRAFFIC WILLAMETTE COMMONS	FIGURE 1



AM PEAK HOUR

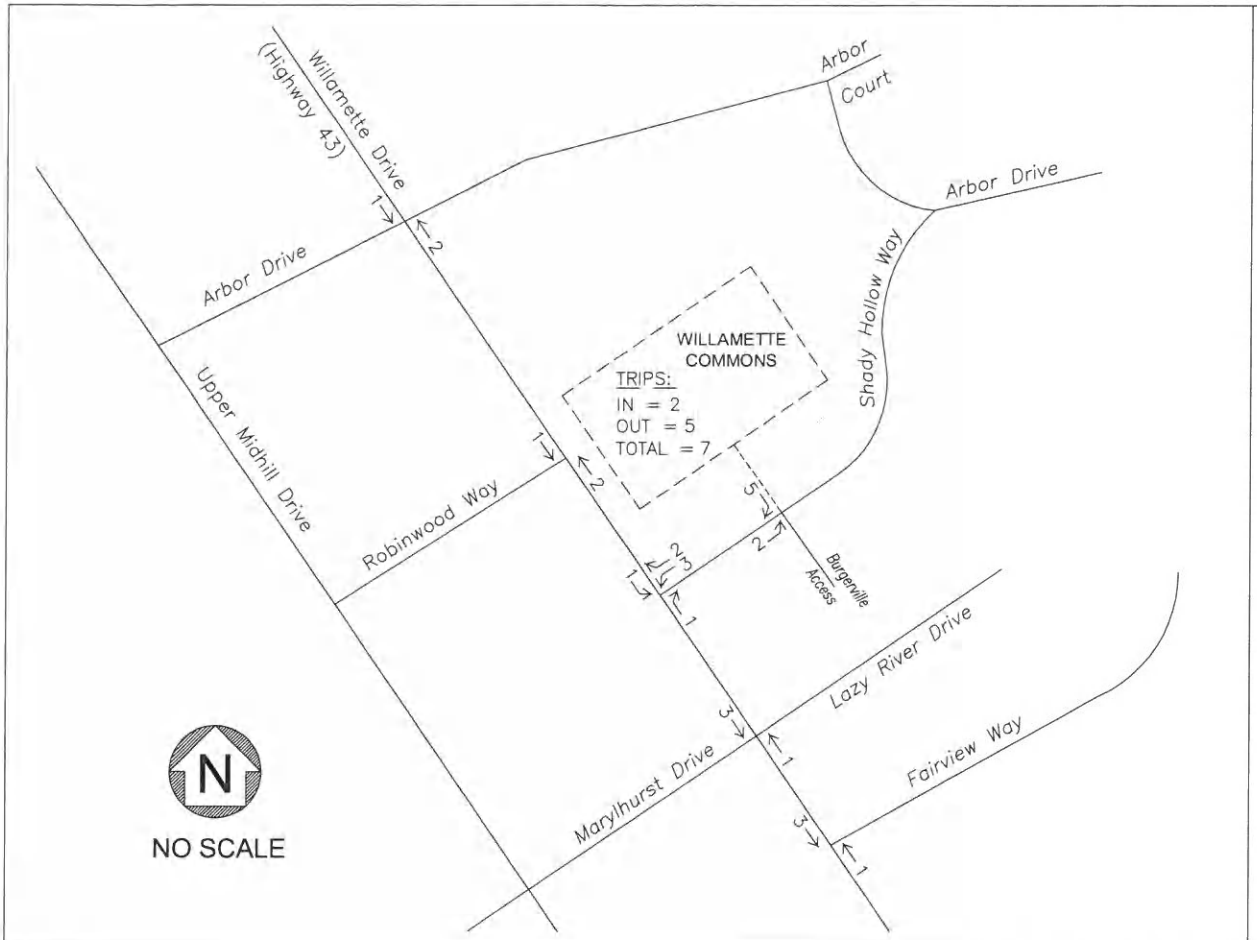
PM PEAK HOUR

CHARBONNEAU ENGINEERING LLC PROJECT: 08-16	NOTES: 2013 Background Traffic = 2008 Existing Traffic + growth (2% per year for 5 years)	2013 BACKGROUND TRAFFIC WILLAMETTE COMMONS	FIGURE 2

AM PEAK HOUR & PM PEAK HOUR

FILE NAME: U81b1low.dwg

CHARBONNEAU ENGINEERING LLC PROJECT: 08-16	NOTES: Trip distribution based on existing traffic patterns and engineering judgement.	TRIP DISTRIBUTION EXISTING & PROPOSED ZONING WILLAMETTE COMMONS	FIGURE 3



AM
PEAK
HOUR

PM
PEAK
HOUR

CHARBONNEAU ENGINEERING LLC

PROJECT: 08-16

NOTES: Trip generation based on Single-Family Residential (ITE 210) trip rates.

TRIP ASSIGNMENT
CURRENT (R-10) ZONING
WILLAMETTE COMMONS

FIGURE
4a

FILE NAME: 08TDTIOW.dwg

AM
PEAK
HOUR

PM
PEAK
HOUR

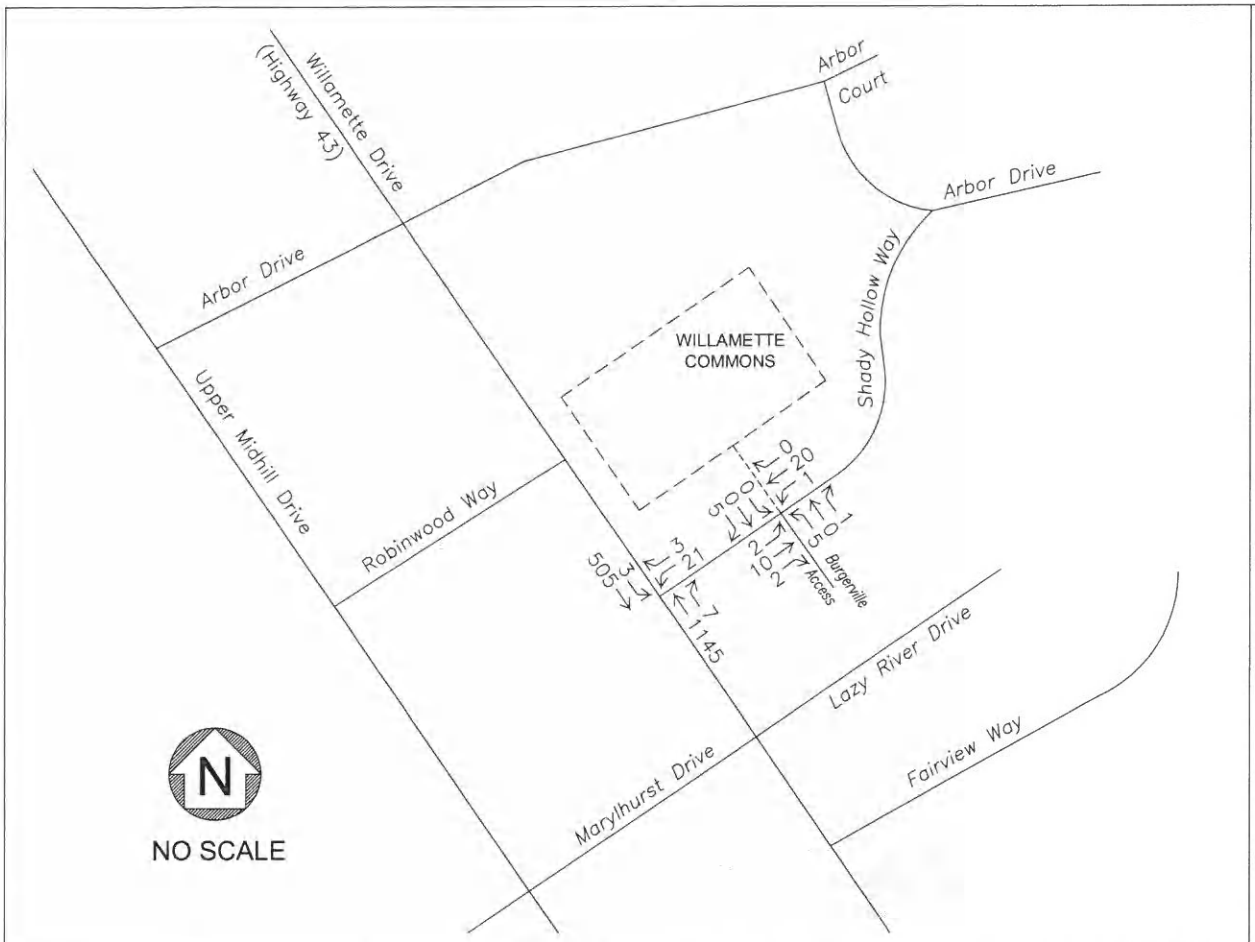
CHARBONNEAU ENGINEERING LLC
PROJECT: 08-16

NOTES: Trip generation based on Apartment (ITE 220) trip rates.

TRIP ASSIGNMENT
PROPOSED (R 2.1) ZONING
WILLAMETTE COMMONS

FIGURE
4b

FILE NAME: 08tbflow.dwg



AM PEAK HOUR

PM PEAK HOUR

CHARBONNEAU ENGINEERING LLC

PROJECT: 08-15

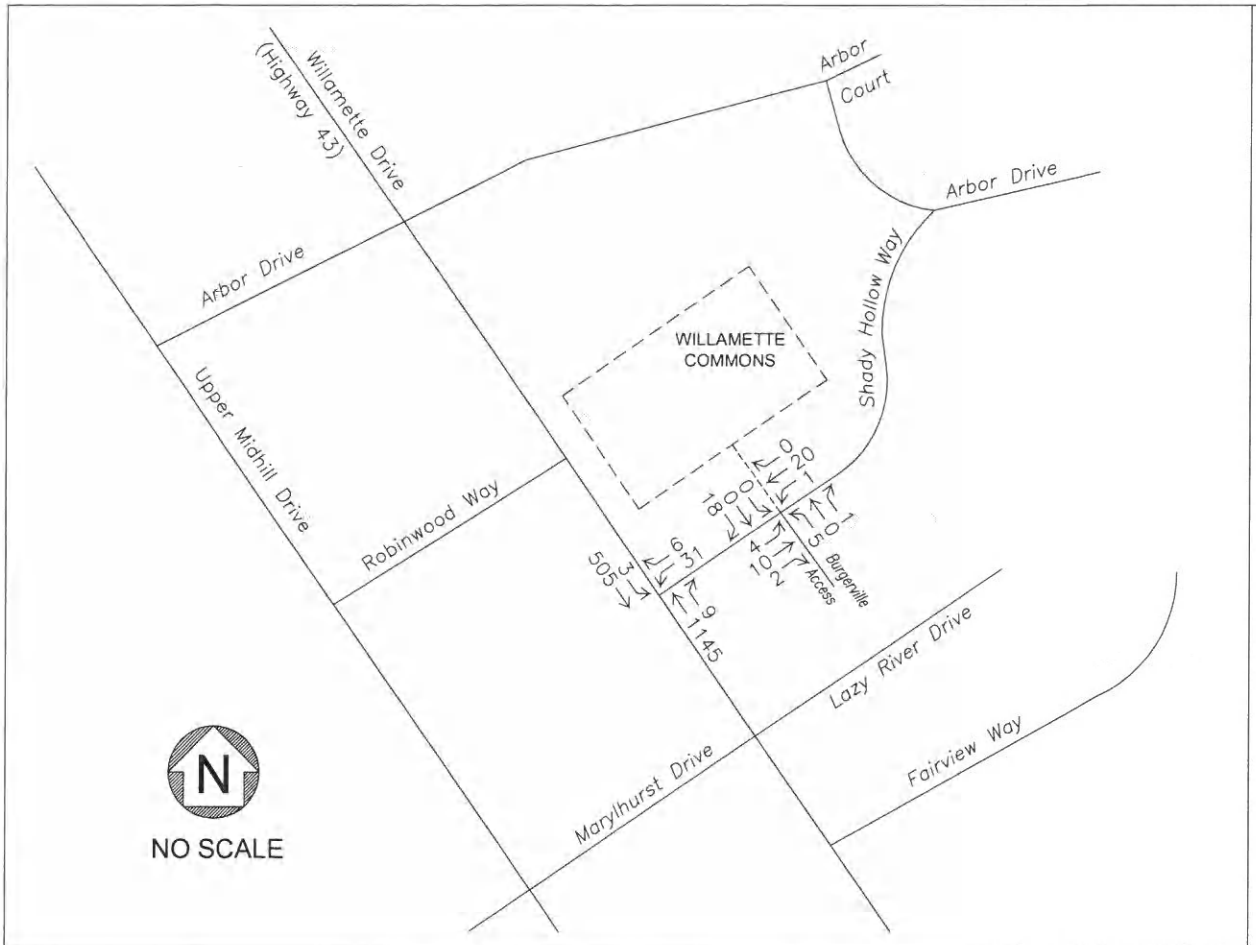
NOTES: 2013 Total Traffic = 2013 Background Traffic + Trip Assignment (Current Zoning)

2013 TOTAL TRAFFIC
CURRENT (R-10) ZONING
WILLAMETTE COMMONS

FIGURE 5a

FILE NAME: 08TOTOW.dwg

PLOT DATE: 04.04.08



AM
PEAK
HOUR

PM
PEAK
HOUR

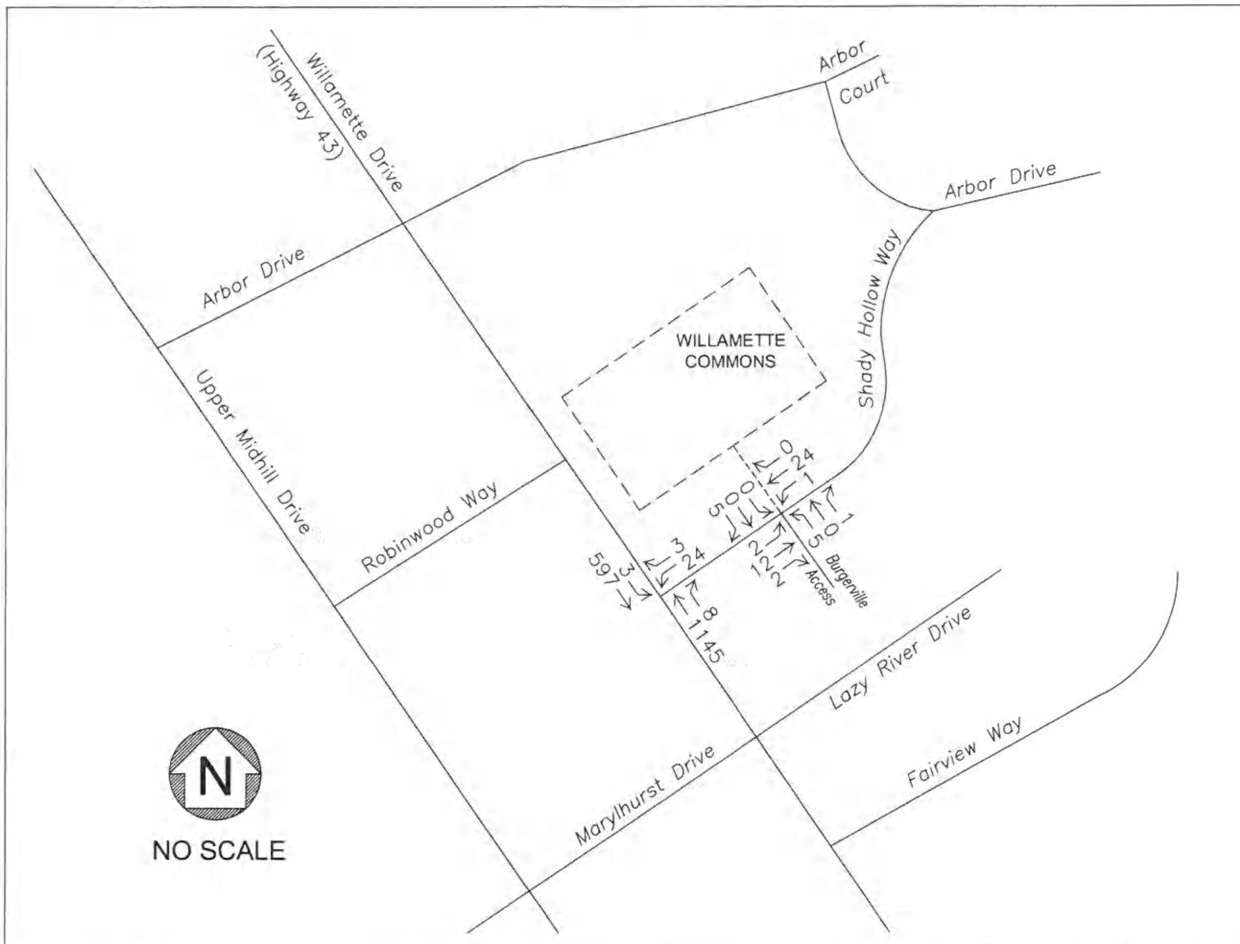
CHARBONNEAU ENGINEERING LLC
PROJECT: 08-16

NOTES: 2013 Total Traffic = 2013 Background Traffic + Trip Assignment (Proposed Zoning)

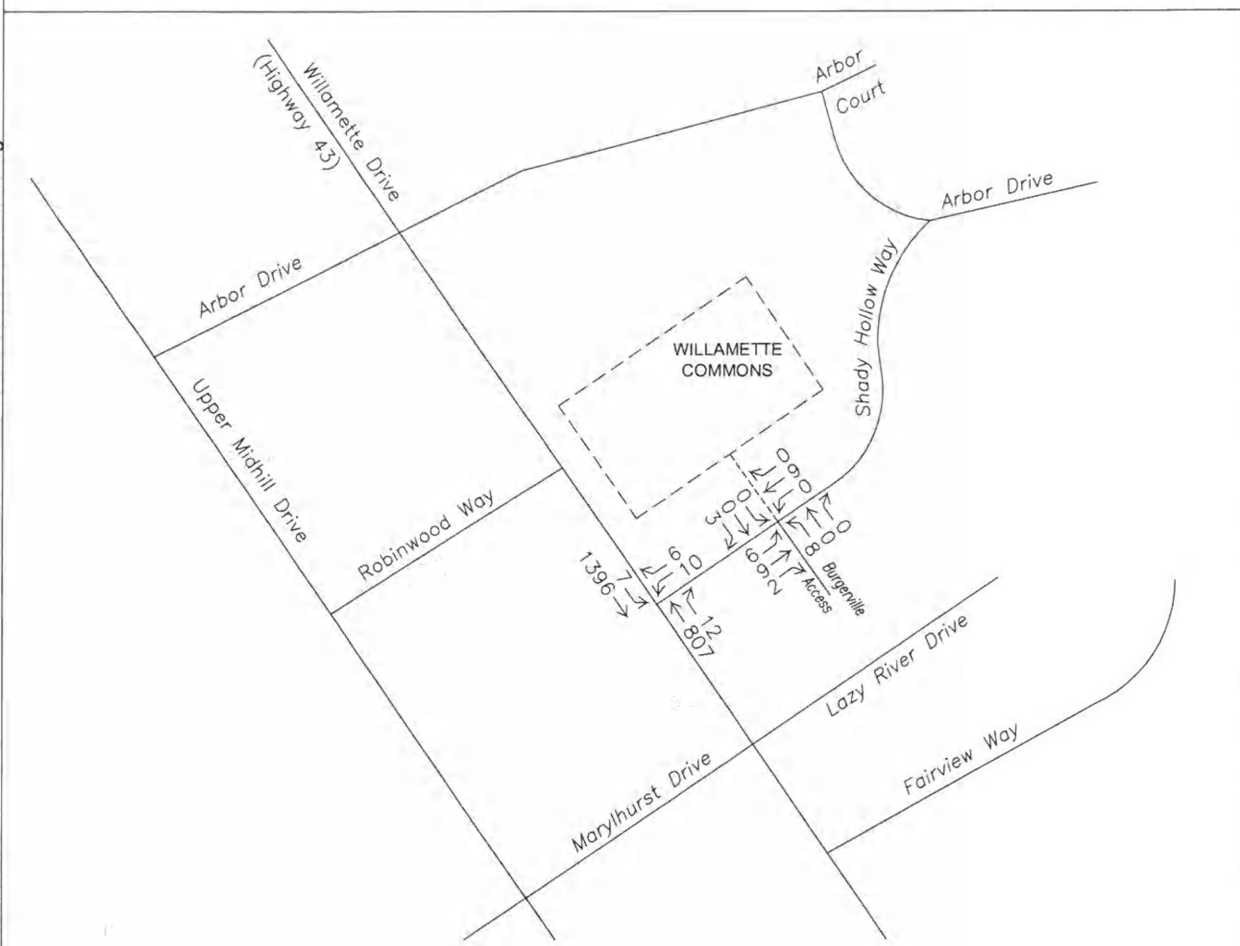
2013 TOTAL TRAFFIC
PROPOSED (R-2.1) ZONING
WILLAMETTE COMMONS

FIGURE
5b

FILE NAME: U81tflow.dwg
PLOT DATE: 04.04.08



AM PEAK HOUR



PM PEAK HOUR

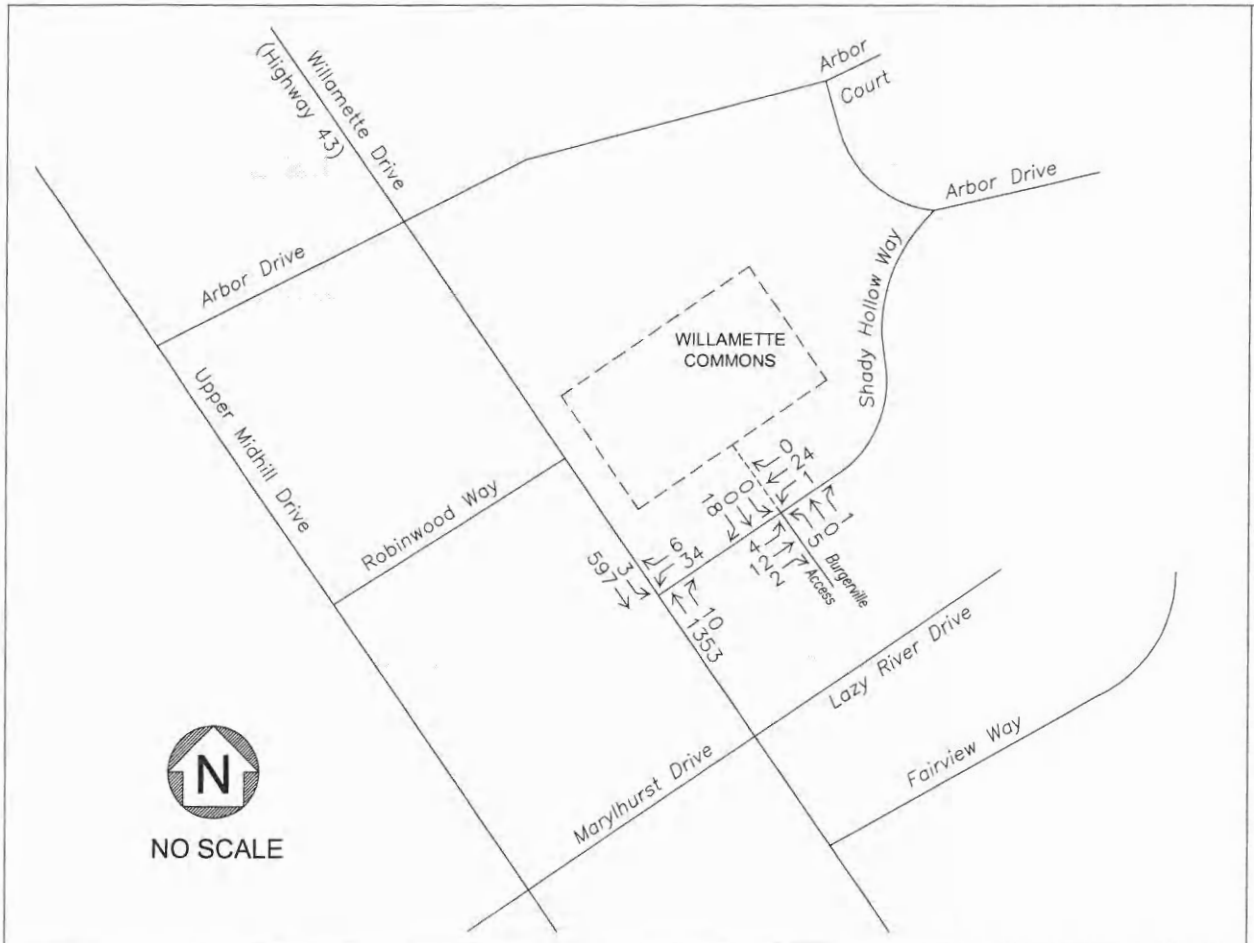
CHARBONNEAU ENGINEERING LLC

PROJECT: 08-16

NOTES: 2023 Planning Horizon = 2013 Total Traffic (current R-10 zoning) + growth (2% per year for 10 years).

2023 PLANNING HORIZON TRAFFIC CURRENT (R-10) ZONING WILLAMETTE COMMONS

FIGURE 6a



AM PEAK HOUR

PM PEAK HOUR

FILE NAME: 0816flow.dwg

CHARBONNEAU ENGINEERING LLC

PROJECT: 08-16

NOTES: 2023 Planning Horizon = 2013 Total Traffic (proposed R-2.1 zoning) + growth (2% year for 10 years).

2023 PLANNING HORIZON TRAFFIC
PROPOSED (R-2.1) ZONING
WILLAMETTE COMMONS

FIGURE 6b

Table 1a. Projected trip generation for site with the existing (R-10) zoning.

ITE Land Use	Units (#)	Weekday						
		ADT	AM Peak Hour			PM Peak Hour		
			Total	Enter	Exit	Total	Enter	Exit
Single-Family (#210)	9							
Generation Rate [1]		9.57	0.75	25%	75%	1.01	63%	37%
Site Trips		**86**	**7**	2	5	**9**	6	3

[1] Source: *Trip Generation*, 7th Edition, ITE, 2003, average rates.

Table 1b. Projected trip generation for the site with the proposed (R-2.1) zoning.

ITE Land Use	Units (#)	Weekday						
		ADT	AM Peak Hour			PM Peak Hour		
			Total	Enter	Exit	Total	Enter	Exit
Apartment (#220)	43							
Generation Rate [1]		6.72	0.51	20%	80%	0.62	65%	35%
Site Trips		**289**	**22**	4	18	**27**	18	9

[1] Source: *Trip Generation*, 7th Edition, ITE, 2003, average rates.

Under the current R-10 zoning the site's trip generation is estimated as 86 daily trips, 7 AM peak hour trips, and 9 PM peak hour trips. Under the proposed R-2.1 zoning the site would generate an estimated 289 daily trips, 22 AM peak hour trips, and 27 PM peak hour trips.

Trip distribution is based on existing traffic patterns and engineering judgement. Figure 3 illustrates the AM and PM peak hour trip distribution under the site's current zoning and proposed zoning. Figure 4a illustrates the trip assignments that correspond to the level of development with the site's current zoning. Figure 4b illustrates the trip assignments that correspond to the proposed zoning.

CAPACITY ANALYSIS

Capacity analyses were performed to determine the levels of service for the weekday peak hours. Highway Capacity Software (HCS) was used to determine the level of service for each scenario considered. The program is based on the 2000 Highway Capacity Manual methodology. Table 2a summarizes the existing and background traffic analysis results. Table 2b summarizes the year 2013 total traffic analysis results under the site's current zoning and the site's proposed zoning. Table 2c summarizes the year 2023 planning horizon traffic results under the site's current zoning and the site's proposed zoning. Copies of the capacity analysis calculations are included in the appendix.

The City of West Linn's Transportation System Plan (TSP) identifies level of service "E" as the minimum standard for principal arterials. For local streets the TSP identifies level of service "D" as the minimum standard. Table 7 (in Policy 1F) in the 1999 Oregon Highway Plan identifies the maximum volume to capacity ratio for Statewide (NHS) Non-Freight Routes within Metro as 1.0[1].

Table 2b indicates that with the site's current plan designation zoning, the Willamette Drive (Highway 43) and Shady Hollow Way intersection will operate at level of service "C" during the AM and PM peak hours. The intersection's volume-to-capacity (v/c) ratio (with the current zoning) will be 0.06 or less during both peak hours. With the site's proposed zoning and plan designation, the Willamette Drive (Highway 43) and Shady Hollow Way intersection will operate at level of service "D" during the AM peak hour and level of service "C" during the PM peak hour. The intersection's v/c ratio (with the proposed zoning) will be 0.18 or less during both peak hours. The site access/Burgerville access and Shady Hollow Way intersection will operate at level of service "A" during both peak hours with the site's current zoning and proposed zoning.

Table 2c indicates that with either the current or proposed land use designation the Willamette Drive (Highway 43) and Shady Hollow Way intersection will operate at level of service "D" during the AM and PM peak hours. The v/c ratio will be 0.17 or less with the current zoning and 0.26 or less with the proposed zoning. The site access/Burgerville access and Shady Hollow Way intersection will continue to operate at level of service "A" during both peak hours with the site's current zoning and proposed zoning.

Through year 2023 (the planning horizon period) both study intersections will meet the City of West Linn's level of service standard and ODOT's v/c standard with the site's proposed zoning and plan designation.

Table 2a. Summary of capacity analysis for study intersections (without site).

Intersection	Type of Control	Peak Hour	Traffic Scenario							
			2008 Existing				2013 Background			
			Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c
Willamette Drive (Highway 43) and Shady Hollow Way	Two-way Stop	AM	WB	C	21.3	0.08	WB	C	23.9	0.10
		PM	WB	C	19.3	0.04	WB	C	21.9	0.05
Burgerville Driveway and Shady Hollow Drive	Two-way Stop	AM	NB	A	8.7	0.01	NB	A	8.7	0.01
		PM	NB	A	8.6	0.01	NB	A	8.6	0.01

Notes: 2000 *Highway Capacity Manual* methodology used in analysis. NB - Northbound, WB - Westbound, Crit. Mov't - Critical movement or critical approach.

[1] Oregon Highway Plan, Table 7 – Maximum volume to capacity ratios within Metro

Table 2b. Summary of capacity analysis for study intersections (with site).

Intersection	Type of Control	Peak Hour	Traffic Scenario							
			2013 Total **with current zoning**				2013 Total **with proposed zoning**			
			Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c
Willamette Drive (Highway 43) and Shady Hollow Way	Two-way Stop	AM	WB	C	24.4	0.01	WB	D	25.8	0.18
		PM	WB	C	22.4	0.06	WB	C	23.6	0.10
Site Access/ Burgerville Driveway and Shady Hollow Drive	Two-way Stop	AM	NB	A	8.9	0.01	NB	A	9.0	0.01
		PM	NB	A	8.8	0.01	NB	A	9.1	0.01

Notes: 2000 *Highway Capacity Manual* methodology used in analysis. NB - Northbound, WB - Westbound, Crit. Mov't - Critical movement or critical approach.

Table 2c. Summary of capacity analysis for study intersections (with site).

Intersection	Type of Control	Peak Hour	Traffic Scenario							
			2023 Planning Horizon **with current zoning**				2023 Planning Horizon **with proposed zoning**			
			Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c
Willamette Drive (Highway 43) and Shady Hollow Way	Two-way Stop	AM	WB	D	31.6	0.17	WB	D	34.8	0.26
		PM	WB	D	28.7	0.10	WB	D	31.1	0.14
Site Access/ Burgerville Driveway and Shady Hollow Drive	Two-way Stop	AM	NB	A	8.9	0.01	NB	A	9.1	0.01
		PM	NB	A	8.8	0.01	NB	A	9.1	0.01

Notes: 2000 *Highway Capacity Manual* methodology used in analysis. NB - Northbound, WB - Westbound, Crit. Mov't - Critical movement or critical approach.

Generally, LOS 'A', 'B', 'C', and 'D' are desirable service levels ranging from no vehicle delays to average or longer than average delays in the peak hours. Level 'E' represents long delays indicating signalization warrants need to be reviewed and signals considered only if warrants are met. Level 'F' indicates that intersection improvements, such as widening and signalization, may be required. According to the *Highway Capacity Manual* (HCM), the following delay times are associated with the LOS at stop controlled unsignalized and signalized intersections.

Level of Service criteria defined in the 2000 *Highway Capacity Manual.*

Level of Service (LOS)	Unsignalized Control Stopped Delay (sec/veh)	Signalized Control Stopped Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

TRANSPORTATION PLANNING RULE (TPR)

The proposed zone change warrants a response to the State of Oregon's Administrative Rules which require that 'the local government shall put in place measures to assure that allowed land uses are consistent with the identified function, capacity, and performance standards (e.g. level of service, volume to capacity ratio, etc.) of the facility'.

The Plan and Land Use Regulation Amendments (OAR Section 660-012-0060) are used to determine if a *plan or land use regulation amendment significantly affects a transportation facility*. The Oregon Administrative Rules identify many measures of how a plan or land use "significantly affects" a transportation facility. The measures used and how the Willamette Commons site relates to them are addressed below.

(1)(a) Change the functional classification of an existing or planned transportation facility;
(1)(b) Change standards implementing a functional classification system; or

Development of the Willamette Commons site does not propose changes to the existing or planned functional classification, nor the functional classification standards.

(1)(c) As measured at the end of the planning period identified in the adopted transportation system plan:

(1)(A) Allow land uses or levels of development that would result in types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

The Willamette Commons site will develop on three separate parcels (Taxlot 1100, 1200, and 1500) which are currently zoned residential (R-10). Under the current zoning the site has the potential for a development maximum of nine (9) single-family homes which will generate an estimated 86 daily trips, 7 AM peak hour trips, and 9 PM peak hour trips. Under the proposed R-2.1 zoning the site has the potential for development of up to 43 multi-family units which will generate an estimated 289 daily trips, 22 AM peak hour trips, and 27 PM peak hour trips.

Regardless of the increase in trip generation, between the levels of development of the existing zoning and proposed zoning, the Shady Hollow Way local street sole function (of providing access to adjacent land) will not be adversely affected.

Willamette Drive (Highway 43) is classified as a principal arterial. Based on the proposed site's access to Shady Hollow Way, the lower classified street, the Willamette Commons site is consistent with the functional classification of the existing and planned transportation facility.

(1)(B) Reduce the performance of an existing or planned transportation facility below the minimum acceptable performance standard identified in the TSP or comprehensive plan; or

The City of West Linn's Transportation System Plan (TSP) identifies level of service "E" as the minimum standard for principal arterials. For local streets the TSP identifies level of

service "D" as the minimum standard. Table 7 (in Policy 1F) in the 1999 Oregon Highway Plan identifies the maximum volume to capacity ratio for Statewide (NHS) Non-Freight Routes within Metro as 1.0[1].

As identified in Table 2c, through the year 2023 planning horizon, the Shady Hollow Way and Willamette Drive (Highway 43) intersection will operate at level of service "D" or better during the AM and PM peak hours with the level of development corresponding to the proposed R-2.1 zoning and proposed medium high residential density plan designation. The intersection's volume-to-capacity ratio will be 0.26 or less during both peak hours. The site access/Burgerville access and Shady Hollow Way intersection will operate at level of service "A" during both peak hours. The intersection's volume-to-capacity ratio will be 0.01 during both peak hours. Based on the analysis results the proposed zoning and plan amendment will not reduce the performance of the study intersections below the minimum acceptable performance standards of the City of West Linn's TSP and the State of Oregon's highway plan.

(1)(C) Worsen the performance of an existing or planned transportation facility that is otherwise projected to perform below the minimum acceptable performance standard identified in the TSP or comprehensive plan.

Both study intersections are projected to operate at acceptable levels of service with acceptable volume-to-capacity ratios in the 2023 planning horizon traffic scenario. Based on these results the study intersections will not perform below the minimum acceptable performance standard of the City of West Linn's TSP or the Oregon Highway Plan.

Based on the information presented in Section (1)(B) or Section (1)(C) development of the site will not have a significant effect on the transportation facility. Approval of the proposed zone change (from R-10 to R-2.1) and comprehensive plan amendment (from Low Density Residential to Medium High Density Residential) should be approved.

QUEUING ANALYSIS

Queue lengths at the study intersections were taken from the Highway Capacity Software (HCS) analysis reports. Copies of the reports are included in the appendix.

Through the year 2023 Planning Horizon Traffic scenario the peak hour queue lengths are not expected to exceed 25 feet, or 1 vehicle-length.

[1] Oregon Highway Plan, Table 7 – Maximum volume to capacity ratios within Metro

SIGHT DISTANCE

Sight distance at the proposed site access location was reviewed in the field in accordance with AASHTO standards. Based on a posted speed of 25 miles per hour, AASHTO recommends a minimum sight distance of 280 feet should be available from the access (in both directions).

Dense shrubbery and bushes along the site's Shady Hollow Way frontage limited the point at which the sight lines could be reviewed to a distance equal to 8 feet from the travel lane. From the 8-foot back position, looking west the sight line is clear through to the west side of Willamette Drive (Highway 43) at Shady Hollow Way.

Similarly, looking east the sight line is clear to a distance of 270 feet which corresponds to the point at which Shady Hollow Way curves to the north. While this sight distance does not meet AASHTO's recommendation it is anticipated that vehicles traveling around the corner toward Willamette Drive (Highway 43) will be traveling at a rate of 10-20 mph (the curve has an 10 mph advisory speed). Based on these travel speeds AASHTO recommends a minimum sight distance of 115 feet (for 10 mph) and 225 feet (for 20 mph). Based on these sight distances the sight line to the east meets the AASHTO recommendation. With development of Willamette Commons the site access to Shady Hollow Way should be designed such that AASHTO's minimum sight distance recommendation is met or exceeded.

TURN LANE WARRANTS

ODOT's right turn lane criteria was reviewed for the northbound approach of Willamette Drive (Highway 43) at Shady Hollow Way. ODOT's left turn lane criteria was reviewed at the southbound approach of Willamette Drive (Highway 43) at Shady Hollow Way and the eastbound approach of Shady Hollow Way at the site access/Burgerville access.

The review identified that the ODOT right turn lane criteria is not met in the AM peak hour. Under the site's current zoning a roadway shoulder is recommended with PM peak hour traffic. Under the site's proposed zoning the right turn lane criteria is just met with PM peak hour traffic levels (northbound approaching volume = 703 vehicles and northbound right turn volume = 20 vehicles). ODOT's right turn lane criteria volume thresholds are identified as an advancing volume of 700 vehicles and a right turn volume of 20 vehicles. Construction of a shoulder or a right turn lane is not recommended as it is not needed for intersection capacity.

The ODOT left turn lane criteria is not met with the site's current or proposed zoning as the southbound left turn volume (through the planning horizon) does not exceed 10 vehicles; however, the criteria does advise that 'careful consideration be given to installing a left turn lane due to the increased potential for accidents in through lanes'. The turn lane criteria and warrant nomographs are included in the report's appendix.

TRAFFIC SIGNAL WARRANTS

The peak hour signal warrant presented in the *Manual on Uniform Traffic Control Devices* (MUTCD) was reviewed at the study intersections. Based on the low peak hour traffic volumes, signalization is not warranted at either intersection regardless of the site's zoning. A copy of the peak hour signal warrant is included.

ACCIDENT HISTORY

Accident data for the Shady Hollow Way and Willamette Drive (Highway 43) intersection was obtained from ODOT staff and was reviewed to help identify any traffic safety problems. A copy of the accident data is included in the appendix.

Table 3. Accident rate results for study intersections.

Intersection	Accident History (Years)	Number of Accidents	Accidents per year	Annual Traffic Entering (veh/yr)	Accident rate per M.E.V.*
Shady Hollow Way and Willamette Drive (Highway 43)	5	2	0.4	6263866	**0.064**

* M.E.V. - million entering vehicles.

The Shady Hollow Way and Willamette Drive (Highway 43) intersection accident rate does not exceed the 1.0 accidents per MEV threshold, and thus mitigation is not necessary.

PEDESTRIANS, BICYCLES, & BUSES

Sidewalks are provided along the Burgerville frontage to Willamette Drive (Highway 43) and Shady Hollow Way. Regardless of whether the site develops under the current zoning or proposed zoning sidewalks will be constructed along the site's frontage to Willamette Drive (Highway 43) and Shady Hollow Way.

Bicycle lanes are provided along both sides of Willamette Drive (Highway 43). Additional bicycle lanes are not proposed.

Transit service is provided by C-Tran. Route #35, Macadam, travels along Willamette Drive and Macadam Avenue, between the Oregon City Transit Center and downtown Portland.

SUMMARY AND RECOMMENDATIONS

The traffic study for the Willamette Commons site has been prepared to determine the potential impacts of the proposed comprehensive plan map amendment and the corresponding zone change (from the site's current Low Density Residential (R-10) zoning to the proposed Medium High Density Residential (R-2.1) zoning.

Under its current land use designation the site has the potential for a maximum development of nine (9) single-family homes which would generate an estimated 86 daily trips, 7 AM peak hour trips, and 9 PM peak hour trips. It is expected that the nine homes would have potentially up to three accesses. Under the proposed land use designation the site has the potential for development of up to 43 multi-family units which would generate an estimated 289 daily trips, 22 AM peak hour trips, and 27 PM peak hour trips. The multi-family units would have a single access (to Shady Hollow Way, opposite of Burgerville's access).

Sight distance at the proposed site access location was reviewed in the field in accordance with AASHTO standards. Sight lines from 8 feet back from the travel lane identified that the sight line from the proposed access to the west is clear through to the west side of Willamette Drive (Highway 43) at Shady Hollow Way. Looking east the sight line is clear to a distance of 270 feet which corresponds to the point at which Shady Hollow Way curves to the north. While this sight distance does not meet AASHTO's recommendation (280 feet for a 25 mph design speed) it is anticipated that vehicles traveling around the corner toward Willamette Drive (Highway 43) will be traveling at a rate of 10-20 mph (the curve has an 10 mph advisory speed). Based on these travel speeds AASHTO recommends a minimum sight distance of 115 feet (for 10 mph) and 225 feet (for 20 mph). Based on these sight distances the sight line to the east meets the AASHTO recommendation. With development of Willamette Commons the site access to Shady Hollow Way should be designed such that AASHTO's minimum sight distance recommendation is met or exceeded. Obstruction by landscaping, signing, parking, buildings, or other objects would be unsafe.

The ODOT turn lane warrants were reviewed at both study intersections. Under the site's current zoning a roadway shoulder is recommended with PM peak hour traffic. Under the site's proposed zoning the right turn lane criteria is just met during the PM peak hour with 703 vehicles in the through vehicles and 20 vehicles turning right (warrant thresholds are 700 vehicles in through movement and 20 vehicles making a right turn). Construction of a shoulder or a right turn lane is not recommended as it is not needed for intersection capacity.

At the Willamette Drive (Highway 43) and Shady Hollow Way intersection the ODOT left turn lane criteria is not met with the site's current or proposed zoning; however, the criteria does advise that 'careful consideration be given to installing a left turn lane due to the increased potential for accidents in through lanes'. Based on intersection's low accident rate (0.064 per MEV), the acceptable levels of service and volume-to-capacity ratios, and the low peak hour volumes (making a southbound left turn) installation of a southbound left turn lane is not recommended.

The MUTCD peak hour signal warrant was reviewed at both study intersections under the site's current zoning and proposed zoning. Neither intersection meets the peak hour signal warrant, thus installation of a traffic signal is not recommended.

The intersection capacity and level of service analysis for the Willamette Drive (Highway 43) and Shady Hollow Way intersection and the site access/Burgerville access and Shady Hollow Way intersection identified that through the year 2023 planning horizon, the Shady Hollow Way and Willamette Drive (Highway 43) intersection will operate at level of service "D" or better during the AM and PM peak hours with the level of development corresponding to the

proposed R-2.1 zoning. The intersection's volume-to-capacity ratio will be 0.26 or less during both peak hours. The site access/Burgerville access and Shady Hollow Way intersection will operate at level of service "A" during both peak hours with a v/c of 0.01.

Based on the analysis results the proposed change in zoning and the associated change to the comprehensive plan map and the zoning map will not reduce the performance of the study intersections below the minimum acceptable performance standards of the City of West Linn's TSP and the State of Oregon's highway plan. Intersection improvements are not necessary.

Based on the responses to the Transportation Planning Rule Section (1)(B) and Section (1)(C), the proposed zone change (from R-10 to R-2.1) will not have a significant effect on the transportation facility. Based on the information presented in this traffic analysis report approval of the proposed zone change and concurrent change to the comprehensive plan map and the zoning map should be approved.

APPENDIX

- Traffic Count Data
- Turn Lane Warrants
- Peak Hour Signal Warrant
- Accident History Summary (furnished by the Oregon Department of Transportation)
- Highway Capacity Software (HCS) Analysis Worksheets

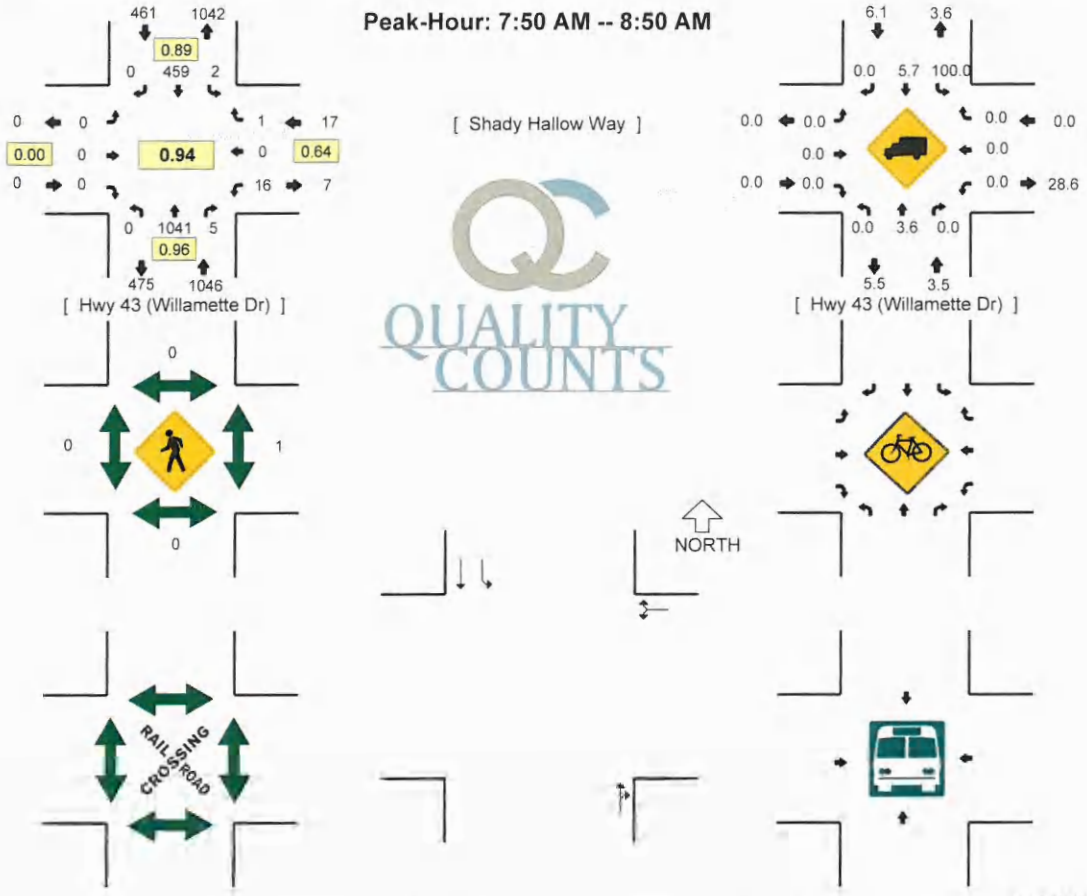
List of Figures

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

INTERSECTION: Hwy 43 (Willamette Dr)--Shady Hallow Way
WEATHER:

QC JOB #: 10342101
DATE: 4/2/2008



*SEE LEGEND SHEET

5-MIN COUNT PERIOD BEGINNING AT	Hwy 43 [Willamett... (Northbound)				Hwy 43 [Willamett... (Southbound)				Shady Hallow Way (Eastbound)				Shady Hallow Way (Westbound)				TOTAL	HOURLY TOTALS
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	87	0		1	22	0		0	0	0		0	0	0		110	
7:05 AM	0	61	0		0	28	0		0	0	0		0	0	1		90	
7:10 AM	0	107	0		0	25	0		0	0	0		0	0	0		132	
7:15 AM	0	67	0		0	28	0		0	0	0		0	0	0		95	
7:20 AM	0	98	0		0	33	0		0	0	0		0	0	0		131	
7:25 AM	0	94	0		1	19	0		0	0	0		1	0	1		116	
7:30 AM	0	81	0		0	33	0		0	0	0		0	0	1		115	
7:35 AM	0	88	1		0	33	0		0	0	0		0	0	0		122	
7:40 AM	0	84	0		0	31	0		0	0	0		1	0	0		116	
7:45 AM	0	98	0		0	23	0		0	0	0		2	0	0		123	
7:50 AM	0	84	1		0	43	0		0	0	0		2	0	0		130	
7:55 AM	0	87	0		1	32	0		0	0	0		0	0	0		120	1400
8:00 AM	0	73	0		0	40	0		0	0	0		1	0	0		114	1404
8:05 AM	0	81	0		0	44	0		0	0	0		4	0	0		129	1443
8:10 AM	0	94	0		0	45	0		0	0	0		2	0	0		141	1452
8:15 AM	0	81	0		0	40	0		0	0	0		1	0	0		122	1479
8:20 AM	0	95	0		0	45	0		0	0	0		1	0	0		141	1489
8:25 AM	0	92	0		0	33	0		0	0	0		0	0	0		125	1498
8:30 AM	0	74	2		0	31	0		0	0	0		0	0	0		107	1490
8:35 AM	0	105	2		0	33	0		0	0	0		2	0	1		143	1511
8:40 AM	0	85	0		1	35	0		0	0	0		2	0	0		123	1518
8:45 AM	0	90	0		0	38	0		0	0	0		1	0	0		129	1524
8:50 AM	0	81	0		1	34	0		0	0	0		1	0	1		118	1512
8:55 AM	0	77	0		0	39	0		0	0	0		0	0	0		116	1508

PEAK 15-MIN FLOW RATES	Northbound				Southbound				Eastbound				Westbound				TOTAL
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	1080	0		0	520	0		0	0	0		16	0	0		1616
Heavy Trucks	0	24	0		0	40	0		0	0	0		0	0	0		64
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Counter Comments:

Report generated on 4/3/2008

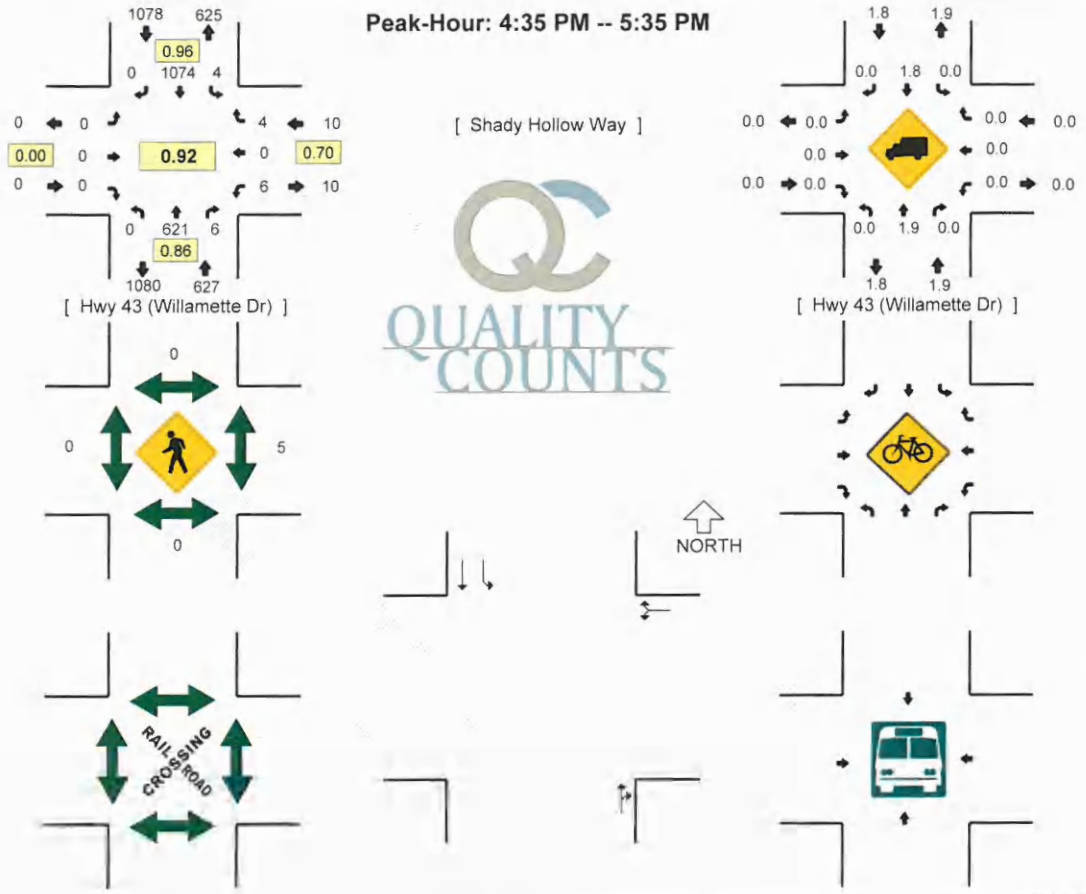
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

INTERSECTION: Hwy 43 (Willamette Dr)--Shady Hollow Way
WEATHER:

QC JOB #: 10342102
DATE: 4/1/2008



*SEE LEGEND SHEET

5-MIN COUNT PERIOD BEGINNING AT	Hwy 43 [Willamett... (Northbound)				Hwy 43 [Willamett... (Southbound)				Shady Hollow Way (Eastbound)				Shady Hollow Way (Westbound)				TOTAL	HOURLY TOTALS
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	41	3		0	75	0		0	0	0		1	0	0		120	
4:05 PM	0	45	1		0	87	0		0	0	0		0	0	0		133	
4:10 PM	0	48	2		1	86	0		0	0	0		0	0	0		137	
4:15 PM	0	50	2		0	80	0		0	0	0		0	0	0		132	
4:20 PM	0	55	1		0	81	0		0	0	0		1	0	0		138	
4:25 PM	0	36	2		0	78	0		0	0	0		1	0	0		117	
4:30 PM	0	40	3		0	84	0		0	0	0		1	0	0		128	
4:35 PM	0	54	0		0	94	0		0	0	0		0	0	0		148	
4:40 PM	0	63	1		1	84	0		0	0	0		0	0	0		149	
4:45 PM	0	51	2		0	85	0		0	0	0		1	0	0		139	
4:50 PM	0	41	0		0	85	0		0	0	0		0	0	1		127	
4:55 PM	0	39	0		0	85	0		0	0	0		0	0	0		124	1592
5:00 PM	0	42	2		0	86	0		0	0	0		3	0	0		133	1605
5:05 PM	0	58	0		1	90	0		0	0	0		0	0	1		150	1622
5:10 PM	0	45	0		1	87	0		0	0	0		0	0	1		134	1619
5:15 PM	0	63	1		1	97	0		0	0	0		1	0	0		163	1650
5:20 PM	0	70	0		0	87	0		0	0	0		1	0	1		159	1671
5:25 PM	0	48	0		0	95	0		0	0	0		0	0	0		143	1697
5:30 PM	0	47	0		0	99	0		0	0	0		0	0	0		146	1715
5:35 PM	0	48	1		1	82	0		0	0	0		0	0	1		133	1700
5:40 PM	0	48	1		0	94	0		0	0	0		0	0	0		143	1694
5:45 PM	0	48	0		0	87	0		0	0	0		2	0	0		137	1692
5:50 PM	0	45	0		0	62	0		0	0	0		0	0	0		107	1672
5:55 PM	0	52	1		0	83	0		0	0	0		2	0	1		139	1687

PEAK 15-MIN FLOW RATES	Northbound				Southbound				Eastbound				Westbound				TOTAL
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	724	4		4	1116	0		0	0	0		8	0	4		1860
Heavy Trucks	0	12	0		0	12	0		0	0	0		0	0	0		24
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad Stopped Buses																	

Counter Comments:

Report generated on 4/3/2008

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

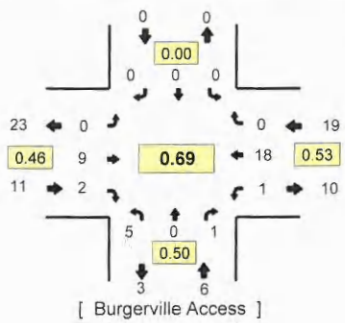
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

INTERSECTION: Burgerville Access--Shady Hollow Way
WEATHER:

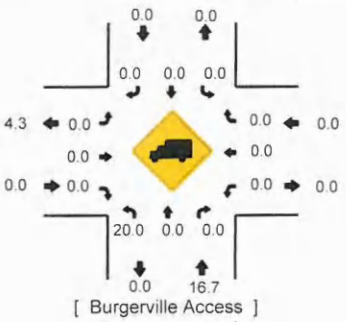
QC JOB #: 10342901
DATE: 4/4/2008

Peak-Hour: 8:00 AM -- 9:00 AM

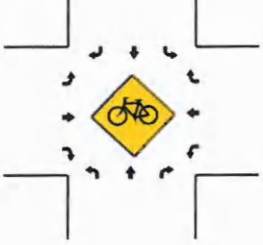


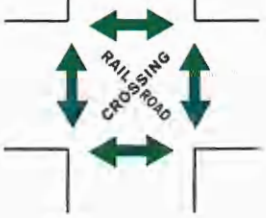
[Burgerville Access]

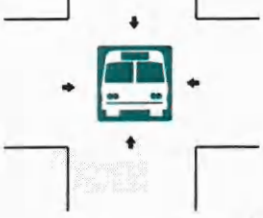
[Shady Hollow Way]



[Burgerville Access]







NORTH

*SEE LEGEND SHEET

5-MIN COUNT PERIOD BEGINNING AT	Burgerville Access (Northbound)				Burgerville Access (Southbound)				Shady Hollow Way (Eastbound)				Shady Hollow Way (Westbound)				TOTAL	HOURLY TOTALS
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0		0	0	0		0	0	0		0	0	0		0	
7:05 AM	0	0	0		0	0	0		0	0	0		0	0	0		0	
7:10 AM	0	0	0		0	0	0		0	0	0		0	0	0		0	
7:15 AM	0	0	0		0	0	0		0	0	0		0	0	0		0	
7:20 AM	0	0	0		0	0	0		0	0	0		1	0	0		1	
7:25 AM	0	0	0		0	0	0		0	1	0		0	2	0		3	
7:30 AM	0	0	0		0	0	0		0	0	0		0	2	0		2	
7:35 AM	1	0	0		0	0	0		0	0	0		0	1	0		2	
7:40 AM	0	0	0		0	0	0		0	0	0		0	1	0		1	
7:45 AM	0	0	0		0	0	0		0	0	0		0	0	0		0	
7:50 AM	0	0	0		0	0	0		0	1	0		0	1	0		2	
7:55 AM	0	0	0		0	0	0		0	0	0		0	1	0		1	12
8:00 AM	0	0	0		0	0	0		0	0	0		0	3	0		3	15
8:05 AM	1	0	0		0	0	0		0	1	0		0	1	0		3	18
8:10 AM	0	0	0		0	0	0		0	0	0		0	1	0		1	19
8:15 AM	0	0	0		0	0	0		0	0	0		0	1	0		1	20
8:20 AM	1	0	0		0	0	0		0	3	1		0	0	0		5	24
8:25 AM	1	0	0		0	0	0		0	1	0		0	1	0		3	24
8:30 AM	0	0	0		0	0	0		0	1	0		0	3	0		4	26
8:35 AM	0	0	0		0	0	0		0	0	0		0	1	0		1	25
8:40 AM	1	0	1		0	0	0		0	1	0		1	4	0		8	32
8:45 AM	0	0	0		0	0	0		0	1	0		0	0	0		1	33
8:50 AM	1	0	0		0	0	0		0	0	0		0	1	0		2	33
8:55 AM	0	0	0		0	0	0		0	1	1		0	2	0		4	36

PEAK 15-MIN FLOW RATES	Northbound				Southbound				Eastbound				Westbound				TOTAL
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	4		0	0	0		0	8	0		4	32	0		52
Heavy Trucks	4	0	0		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Counter Comments:

Report generated on 4/4/2008

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

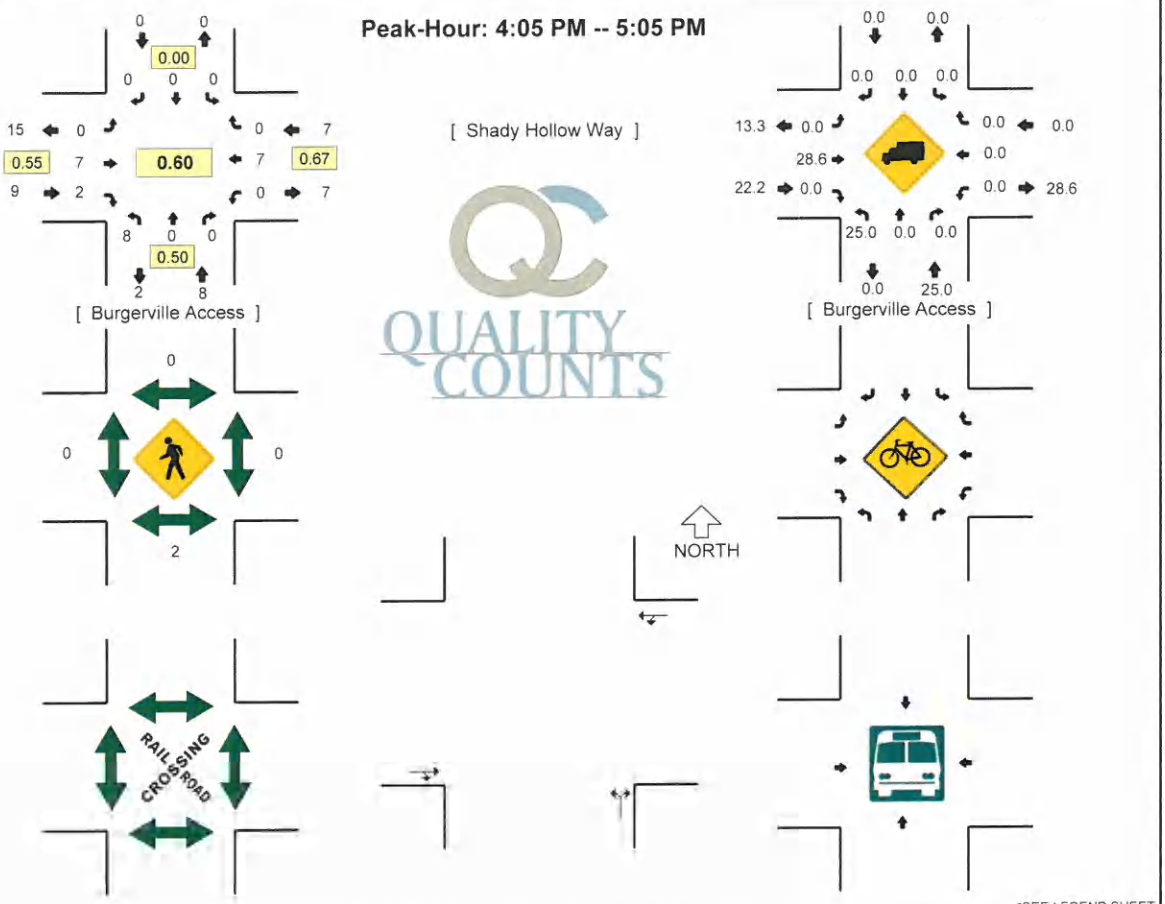
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

INTERSECTION: Burgerville Access--Shady Hollow Way
WEATHER:

QC JOB #: 10342902
DATE: 4/3/2008

Peak-Hour: 4:05 PM -- 5:05 PM



*SEE LEGEND SHEET

5-MIN COUNT PERIOD BEGINNING AT	Burgerville Access (Northbound)				Burgerville Access (Southbound)				Shady Hollow Way (Eastbound)				Shady Hollow Way (Westbound)				TOTAL	HOURLY TOTALS
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0		0	0	0		0	0	0		0	1	0		1	
4:05 PM	3	0	0		0	0	0		0	1	0		0	1	0		5	
4:10 PM	1	0	0		0	0	0		0	2	0		0	0	0		3	
4:15 PM	0	0	0		0	0	0		0	1	0		0	1	0		2	
4:20 PM	1	0	0		0	0	0		0	0	0		0	2	0		3	
4:25 PM	1	0	0		0	0	0		0	1	0		0	0	0		2	
4:30 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	
4:35 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	
4:40 PM	1	0	0		0	0	0		0	1	0		0	0	0		2	
4:45 PM	1	0	0		0	0	0		0	0	0		0	1	0		2	
4:50 PM	0	0	0		0	0	0		0	0	1		0	0	0		1	
4:55 PM	0	0	0		0	0	0		0	0	1		0	0	0		1	22
5:00 PM	0	0	0		0	0	0		0	1	0		0	2	0		3	24
5:05 PM	1	0	0		0	0	0		0	0	0		0	1	0		2	21
5:10 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	18
5:15 PM	0	0	0		0	0	0		0	2	0		0	0	0		2	18
5:20 PM	0	0	0		0	0	0		0	1	0		0	0	0		1	16
5:25 PM	0	0	0		0	0	0		0	0	1		0	0	0		1	15
5:30 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	15
5:35 PM	1	0	0		0	0	0		0	0	0		0	2	0		3	18
5:40 PM	0	0	0		0	0	0		0	1	0		0	0	0		1	17
5:45 PM	1	0	0		0	0	0		0	1	0		0	1	0		3	18
5:50 PM	0	0	0		0	0	0		0	0	2		0	1	0		3	20
5:55 PM	0	0	0		0	0	0		0	2	0		1	0	0		3	22

PEAK 15-MIN FLOW RATES	Northbound				Southbound				Eastbound				Westbound				TOTAL
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	0		0	0	0		0	16	0		0	8	0		40
Heavy Trucks	8	0	0		0	0	0		0	8	0		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles																	
Railroad																	
Stopped Buses																	

Counter Comments:

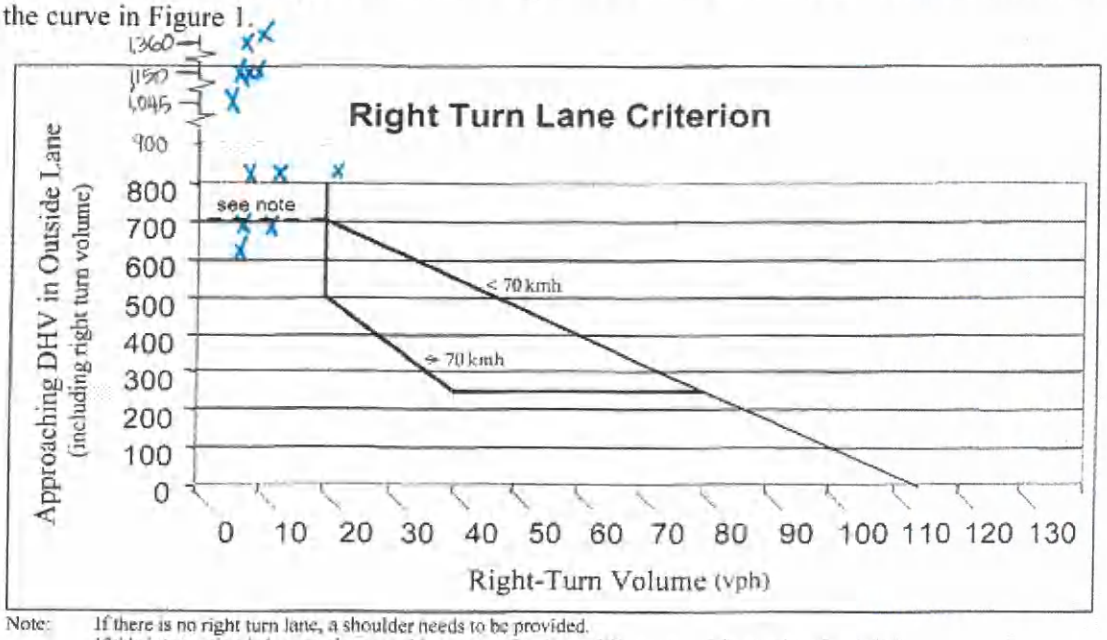
Report generated on 4/4/2008

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Oregon Department of Transportation - Right Turn Lane Criteria

I. Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of the intersection traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria is determined using the curve in Figure 1.



Note: If there is no right turn lane, a shoulder needs to be provided.
If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

Figure 1

Intersection	Mov't	Analysis Period	Speed	Advancing Volume (vph)	Right Turns in Advancing Volume (vph)	Storage Req'd (ft)
Willamette Drive (Highway 43) & Shady Hollow Way	NB RT	2008 Extg Traffic, AM Peak	35 mph (56 kmh)	1046	5	No[1]
		2008 Extg Traffic, PM Peak		627	6	No
		2013 Bkgd Traffic, AM Peak		1151	6	No[1]
		2013 Bkgd Traffic, PM Peak		690	7	No
		2023 Bkgd Traffic[2], AM Peak		1360	7	No[1]
		2023 Bkgd Traffic[2], PM Peak		815	8	No[1]
		Current (R-10) Zoning				
		2013 Total Traffic, AM Peak		1152	7	No[1]
		2013 Total Traffic, PM Peak		694	11	No
		2023 Planning Horizon, AM Peak		1361	8	No[1]
		2023 Planning Horizon, PM Peak		819	12	No[1]
		Proposed (R-2.1) Zoning				
		2013 Total Traffic, AM Peak		1154	9	No[1]
		2013 Total Traffic, PM Peak		703	20	Yes
		2023 Planning Horizon, AM Peak		1363	10	Yes
		2023 Planning Horizon, PM Peak		828	21	Yes

[1] The bicycle lane on the east side of Willamette Drive (Highway 43) will function as a shoulder when cyclists are not present.

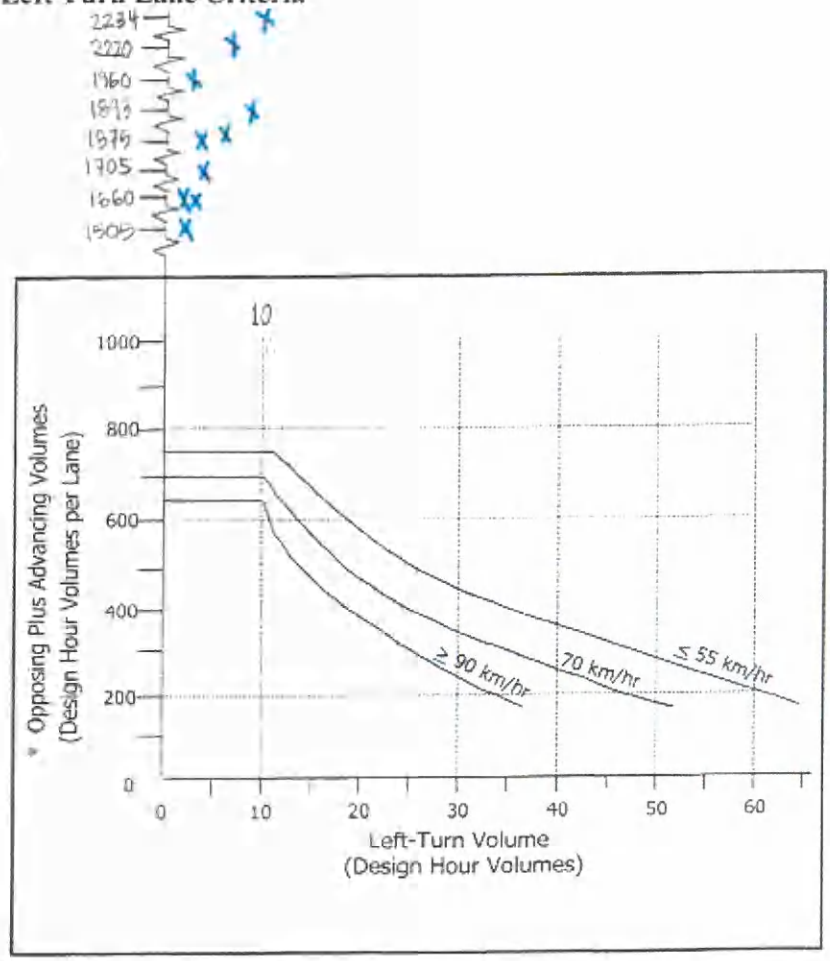
[2] 2023 Background Traffic = 2008 Existing Traffic + growth (15 years at 2% per year).

Oregon Department of Transportation - Left Turn Lane Criteria

I. Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a left turn lane. The volume criteria is determined by the Texas Transportation Institute (TTI) curves in Figure 1.

The criteria is not met from zero to ten left turn vehicles per hour, but indicates that careful consideration be given to installing a left turn lane due to the increased potential for accidents in the through lanes. While the turn volumes are low, the adverse safety and operations impacts may require installation of a left turn lane. The final determination will be based on a field study.

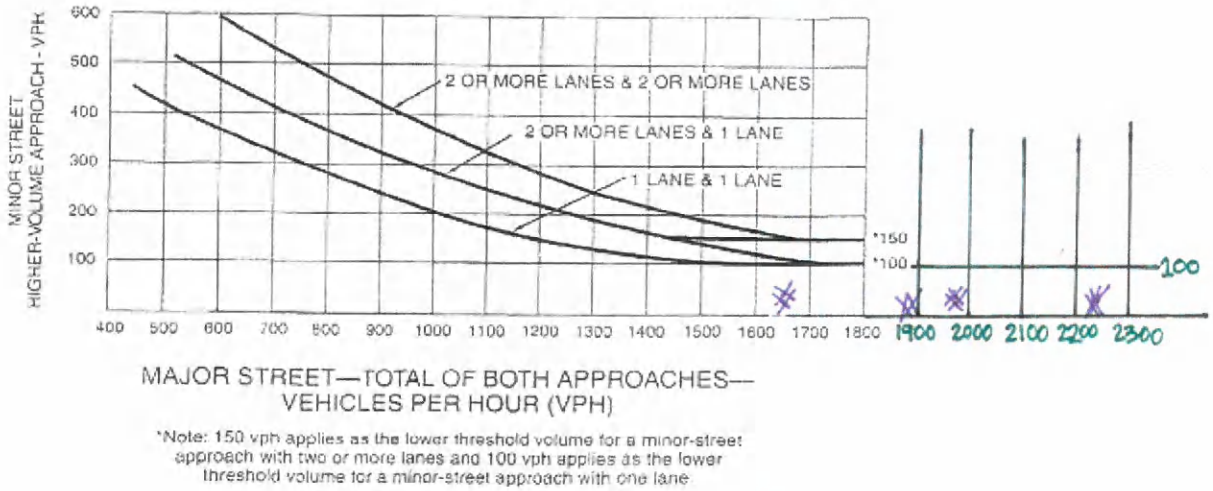


* ((Advancing volume/number of advancing through lanes) + (opposing volume/ number of opposing through lanes))

FIGURE 1

Intersection	Mov't	Analysis Period	Speed	Opposing plus Advancing Volume (vph per lane)	Left Turns in Advancing Volume (vph)	Storage Req'd?
Willamette Drive (Highway 43) & Shady Hollow Way	SB LT	2008 Extg Traffic, AM Peak	35 mph (56 kmh)	1507	2	No
		2008 Extg Traffic, PM Peak		1705	4	No
		2013 Bkgd Traffic, AM Peak		1658	2	No
		2013 Bkgd Traffic, PM Peak		1875	4	No
		Current (R-10) Zoning				
		2013 Total Traffic, AM Peak		1660	3	No
		2013 Total Traffic, PM Peak		1881	6	No
		2023 Planning Horizon, AM Peak		1961	3	No
		2023 Planning Horizon, PM Peak		2222	7	No
		Proposed (R-2.1) Zoning				
		2013 Total Traffic, AM Peak		1662	3	No
		2013 Total Traffic, PM Peak		1893	9	No
		2023 Planning Horizon, AM Peak		1963	3	No
		2023 Planning Horizon, PM Peak		2234	10	No

Figure 4C-3. Warrant 3, Peak Hour



MAJOR STREET—TOTAL OF BOTH APPROACHES—
VEHICLES PER HOUR (VPH)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Peak hour volume warrant for signalization data.

Intersection	Analysis Period	Major Street Speed (mph)	Major Street		Minor Street High Volume Approach		Signal Warranted?
			Volume (vph)	Lanes (#)	Volume (vph)	Lanes (#)	
	Current (R-10) Zoning						
Willamette Drive (Highway 43) & Shady Hollow Way	2013 Total Traffic, AM Peak	35	1660	1	24	1	No
	2013 Total Traffic, PM Peak		1881		14		No
	2023 Planning Horizon, AM Peak		1961		27		No
	2023 Planning Horizon, PM Peak		2222		16		No
Burgerville Access/ Proposed Access & Shady Hollow Way	2013 Total Traffic, AM Peak	25	35	1	6	1	No
	2013 Total Traffic, PM Peak		24		8		No
	2023 Planning Horizon, AM Peak		41		6		No
	2023 Planning Horizon, PM Peak		26		9		No
	Proposed (R-2.1) Zoning						
Willamette Drive (Highway 43) & Shady Hollow Way	2013 Total Traffic, AM Peak	35	1662	1	37	1	No
	2013 Total Traffic, PM Peak		1893		20		No
	2023 Planning Horizon, AM Peak		1963		40		No
	2023 Planning Horizon, PM Peak		2234		22		No
Burgerville Access/ Proposed Access & Shady Hollow Way	2013 Total Traffic, AM Peak	25	37	1	18	1	No
	2013 Total Traffic, PM Peak		36		9		No
	2023 Planning Horizon, AM Peak		43		18		No
	2023 Planning Horizon, PM Peak		38		9		No

Source: Manual on Uniform Traffic Control Devices (MUTCD), 2003 Edition

Mary Kate

From: "RIFE Christina M" <Christina.M.RIFE@odot.state.or.us>
To: "Mary Kate" <MaryKate@charbonneauengineer.com>
Cc: "RIFE Christina M" <Christina.M.RIFE@odot.state.or.us>
Sent: Wednesday, April 09, 2008 1:56 PM
Attach: CR.Rt 43@Maryhurst&LazyRvr, +500'(WestLinn)_CDS380.pdf; CR.Rt 43@ShadyHollowWay, +500'(WestLinn)_CDS150.pdf; CR.Rt 43@ShadyHollowWay, +500'(WestLinn)_CDS380.pdf; CR.Rt 43@Maryhurst&LazyRvr, +500'(WestLinn)_CDS150.pdf
Subject: Crashes in West Linn at Willamette Drive and Shady Hollow Way & Maryhurst Drive/Lazy River Drive

Mary Kate,

Attached are detailed and summary reports for Willamette Drive at Shady Hollow Way and Willamette Drive at Maryhurst Drive/Lazy River Drive, plus 500' in all directions of the intersections, for 1-1-2002 through 12-31-2006 that you requested. Some West Linn city street numbers showed up. These numbers and their names are:

1. #412 refers to CedarOak Drive
2. #1006 refers to Hollowell Street
3. #803 refers to Fairview Way
4. #1509 refers to Maryhurst Drive
5. #2109 refers to Robinwood Way
6. #2209 refers to Shady Hollow Way
7. #2605 refers to Willamette Drive

<<CR.Rt 43@Maryhurst&LazyRvr, +500'(WestLinn)_CDS380.pdf>> <<CR.Rt 43@ShadyHollowWay, +500'(WestLinn)_CDS150.pdf>> <<CR.Rt 43@ShadyHollowWay, +500'(WestLinn)_CDS380.pdf>> <<CR.Rt 43@Maryhurst&LazyRvr, +500'(WestLinn)_CDS150.pdf>>

Christina "Chris" Rife
Crash Data Technician
Crash Analysis and Reporting Unit
Transportation Data Section
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503-986-4239
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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

003 OSWEGO

Willamette Drive (Hwy 3, Route 43I at Shady Hollow Way, plus 500' in all directions, in West Linn
1-1-2002 through 12-31-2006

SER# / INVEST	S P E D / E A U C D / L G H R / S L K	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# FC / COMPNT / MLG TYP / MILEPNT	CONN # / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / WTHR / SURF / CRASH TYP / LIGHT / COLL TYP / SVRTY	SPCL USE / TRLR QTY / OWNER / VE VEH TYPE	MOVE / FROM / TO	PR#	PRTC TYPE	INJ SVRTY	AGE	S E X	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00578	N N N	02/09/2006	CLACKAMAS	1 14		ALLEY		N	N CLR O-1TURN	01 NONE 0	STRGHT											08
		Thu	WEST LINN	0 0	02605 WILLAMETTE	SE	(NONE)	UNKNOWN	N DRY TURN	PRVTE	NW SE									000		00
		5P	PORTLAND UA	8.21	00412 CEDAR OAK	03			N DUSK PDO	PSNGR CAR		01	DRVR	NONE	31	M	OR-Y		000	000		00
							(02)										OR<25					
										02 NONE 0	TURN-L											
										PRVTE	SE W									000		00
										PSNGR CAR		01	DRVR	NONE	48	M	OR-Y		004	000		08
																	OR<25					
												02	PSNG	NO<5	03	F			000	000		00
04764	N N N	11/07/2006	CLACKAMAS	1 14		STRGHT		N	N RAIN S-1STOP	01 NONE 0	STRGHT											07
NONE		Tue	WEST LINN	0 0	02605 WILLAMETTE	N	(NONE)	UNKNOWN	N WET REAR	PRVTE	N S									000		00
		6P	PORTLAND UA	8.27	02109 ROBINWOOD	03			N DLIT PDO	PSNGR CAR		01	DRVR	NONE	56	F	OR-Y		026	000		07
							(02)										OR<25					
										02 NONE 0	STOP											
										PRVTE	N S									011		00
										PSNGR CAR		01	DRVR	NONE	33	M	OR-Y		000	000		00
																	OR<25					
07[illegible]2	N N N	06/10/2003	CLACKAMAS	1 14		INTER	3-LEG	N	N CLR S-1STOP	01 NONE 0	STRGHT										013	10
C		Tue	WEST LINN	0 0	ROBINWOOD WAY	SE		UNKNOWN	N DRY REAR	PUBLC	SE NW									000		00
		4P	PORTLAND UA	8.29	WILLAMETTE DR	06	0		N DAY INJ	PSNGR CAR		01	DRVR	INJB	56	M	OR-Y		026	000		10
																	OR<25					
										02 NONE 0	STOP											
										PRVTE	SE NW									011	013	00
										PSNGR CAR		01	DRVR	INJC	21	F	OR-Y		000	000		00
																	OR<25					
										03 NONE 0	STOP											
										PRVTE	SE NW									012		00
										PSNGR CAR		01	DRVR	NONE	43	F	OR-Y		000	000		00
																	OR<25					
06628	N N N N N	11/16/2002	CLACKAMAS	1 14		INTER	3-LEG	N	N RAIN S-1TURN	01 NONE 0	STRGHT											07
CITY		Sat	WEST LINN	0 0	ROBINWOOD WAY	CN		UNKNOWN	N WET REAR	PRVTE	NW SE									000		
		9A	PORTLAND UA	8.29	WILLAMETTE DR	03	0		N DAY PDO	PSNGR CAR		01	DRVR	NONE	24	F	OR-Y		043	038		07
																	OR<25					
										02 NONE 0	TURN-R											
										PRVTE	NW SW									000		
										PSNGR CAR		01	DRVR	NONE	55	M	OR-Y		000			
																	OR<25					
01606	N N N N N	04/20/2006	CLACKAMAS	1 14		STRGHT		Y	N CLR S-1STOP	01 NONE 0	STRGHT										013	27
CITY		Thu	WEST LINN	0 0	02605 WILLAMETTE	NW	(NONE)	UNKNOWN	N DRY REAR	PRVTE	SE NW									000		00
		3P	PORTLAND UA	8.30	02209 SHADY HOLLOW	04			N DAY INJ	PSNGR CAR		01	DRVR	NONE	68	M	OR-Y		026	000		27
							(02)										CR<25					

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

003 OSWEGO

Willamette Drive (Hwy 3, Route 43) at Shady Hollow Way, plus 500' in all directions, in West Linn
1-1-2002 through 12-31-2006

SER# INVEST	S P E E D / D A L C / R U G S / S C H L / W O R K	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# FC COMPNT MLG TYP MILEPNT	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
												02	NONE 0 PRVTE PSNGR CAR	STOP SE NW	01	DRVR	INJC	21	M	OR-Y OR>25		000	011 000	013	00 00
												03	NONE 0 PRVTE PSNGR CAR	STOP SE NW	01	DRVR	NONE	34	F	OTH-Y N-RES		000	011 000		00 00
02165 CITY	N N N	05/25/2006 Thu 5P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.31	02605 WILLAMETTE 01806 HOLLOWELL	ALLEY E 03	(NONE) (02)	N UNKNOWN	N N N	RAIN WET DAY	ANGL-OTH TURN PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-L NW E	01	DRVR	NONE	18	F	OR-Y OR<25		004	018 000		08 00 08
												02	NONE 0 PRVTE PSNGR CAR	STRGHT E W	01	DRVR	NONE	36	F	OR-Y OR<25		000	000 000		00 00
01[illegible]3 [illegible]	N N N N N	04/08/2002 Mon 5P	CLACKAMAS LAKE OSWEGO PORTLAND UA	1 14 0 0 8.33	02605 WILLAMETTE 02209 SHADY HOLLOW	STRGHT SE 03	(NONE) 0 (02)	N NONE	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW SE	01	DRVR	NONE	31	F	OR-Y OR<25		043	000	013 013	07 07
												02	NONE 0 PRVTE PSNGR CAR	STOP NW SE	01	DRVR	NONE	30	F	OR-Y OR<25		000	011		
												03	NONE 0 PRVTE PSNGR CAR	STOP NW SE	01	DRVR	NONE	29	M	OR-Y OR<25		000	011		
04808 NONE	Y N N	11/19/2004 Fri 5P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.33		STRGHT S 06	(NONE) (02)	Y UNKNOWN	N N N	CLR DRY DUSK	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S N	01	DRVR	NONE	16	M	OR-Y OR<25		026	000 000		01,07,27 00 01,07,27
												02	NONE 0 PRVTE PSNGR CAR	STOP S N	01	DRVR	INJC	19	M	OR-Y OR<25		000	011 000		00 00
00389 NONE	Y N N	02/02/2004 Mon 5P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.36	02605 WILLAMETTE 01509 MARYLHURST	STRGHT UN 04	(RSDMD) (03)	N TRF SIGNAL	N N N	RAIN WET DLIT	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT N S	01	DRVR	NONE	55	M	OR-Y OR<25		026	000 000		01 00 01
												02	NONE 0 PRVTE PSNGR CAR	STOP N S	01	DRVR	NONE	30	F	OR-Y OR<25		000	011 000		00 00

003 OSWEGO

Willamette Drive (Hwy 3, Route 43) at Shady Hollow Way, plus 500' in all directions, in West Linn
1-1-2002 through 12-31-2006

SER# / INVEST	S P E D	A L C	R S L	W C H K	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# / MLG TYP / MILEPNT	FC / COMPNT	CONN # / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- CNTL	OFFRD PSBDT DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	VH	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	PH	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
06615	N	N	N	N N	12/01/2003	CLACKAMAS	1	14		STRGHT		Y	N	CLD	S-1STOP	01	NONE 0	STRGHT										07
CITY					Mon	WEST LINN	0	0	02605 WILLAMETTE	NW	(NONE)	NONE	N	DRY	REAR		PRVTE	NW SE										000	00
					12P	PORTLAND UA	8.38		01509 MARYLHURST	03			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y OR<25	043		000	07
											(02)																	
																02	NONE 0	STOP									011	00
																	PRVTE	NW SE										
																	PSNGR CAR		01	DRVR	INJA	45	M	OR-Y OR<25	000		000	00

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

003 OSWEGO

Willamette Drive (Hwy 3, Route 43) at Maryhurst Drive/Lazy River Drive, plus 500' in all directions, in West Linn

1-1-2002 through 12-31-2006

SER# INVEST	S P E E D / D A L C S / R U G S / S C H L / W C R K	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# FC COMPNT MLG TYP MILEPNT	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER V# VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01963 CITY DUPLICATE	N N N N N	04/08/2002 Mon 5P	CLACKAMAS LAKE OSWEGO PORTLAND UA	1 14 0 0 8.33	02605 02209	STRGHT SE 03	(NONE) 0 (02)	N NONE	N N N	CLR DRY DAY	S-1STOP REAR PDO	01 NONE 0 PRVTE PSNGR CAR	STRGHT NW SE	01	DRVR	NONE	31	F	OR-Y OR<25		043	 000	013 013	07 07
												02 NONE 0 PRVTE PSNGR CAR	STOP NW SE	01	DRVR	NONE	30	F	OR-Y OR<25		000	011		
												03 NONE 0 PRVTE PSNGR CAR	STOP NW SE	01	DRVR	NONE	29	M	OR-Y OR<25		000	011		
04808 NONE DUPLICATE	Y N N	11/19/2004 Fri 5P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.33		STRGHT S 06	(NONE) (02)	Y UNKNOWN	N N N	CLR DRY DUSK	S-1STOP REAR INJ	01 NONE 0 PRVTE PSNGR CAR	STRGHT S N	01	DRVR	NONE	16	M	OR-Y OR<25		026	 000 000		01,07,27 00 01,07,27
												02 NONE 0 PRVTE PSNGR CAR	STOP S N	01	DRVR	INJC	19	M	OR-Y OR<25		000	011 000		00 00
[illegible] [illegible] DUPLICATE	Y N N	02/02/2004 Mon 5P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.36	02605 01509	STRGHT UN 04	(RSDMD) (03)	N TRF SIGNAL	N N N	RAIN WET DLIT	S-1STOP REAR PDO	01 NONE 0 PRVTE PSNGR CAR	STRGHT N S	01	DRVR	NONE	55	M	OR-Y OR<25		026	 000 000		01 00 01
												02 NONE 0 PRVTE PSNGR CAR	STOP N S	01	DRVR	NONE	30	F	OR-Y OR<25		000	011 000		00 00
06615 CITY DUPLICATE	N N N N N	12/01/2003 Mon 12P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.38	02605 01509	STRGHT NW 03	(NONE) (02)	Y NONE	N N N	CLD DRY DAY	S-1STOP REAR INJ	01 NONE 0 PRVTE PSNGR CAR	STRGHT NW SE	01	DRVR	NONE	21	F	OR-Y OR<25		043	 000 000		07 00 07
												02 NONE 0 PRVTE PSNGR CAR	STOP NW SE	01	DRVR	INJA	45	M	OR-Y OR<25		000	011 000		00 00
01706 NONE	N N N	05/12/2004 Wed 4P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.42	02605 WILLAMETTE 01509 MARYLHURST	STRGHT NW 06	(NONE) (02)	N UNKNOWN	N N N	CLR DRY DAY	S-1STOP REAR INJ	01 NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	INJC	27	F	OR-Y OR<25		026	 000 000		07 00 07
												02 NONE 0 PRVTE PSNGR CAR	STOP SE NW	01	DRVR	NONE	18	F	OR-Y OR<25		000	011 000		00 00

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

003 OSWEGO

Willamette Drive (Hwy 3, Route 43) at Marylhurst Drive/Lazy River Drive, plus 500' in all directions, in West Linn
1-1-2002 through 12-31-2006

SERN / INVEST	S P E E D / E A L C / D R U G S / R S C H L / W O R K	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# FC / COMPNT / MLG TYP / MILEPNT	CONN # / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE TRLR QTY / OWNER / VEH TYPE	MOVE FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS / RES	PED LOC	ERROR	ACTN EVENT	CAUSE
07425	Y N N N N	12/20/2002	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										01
NO RPT		Fri	WEST LINN	0 0	MARYLHURST DR	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE NW									000	01
		11A	PORTLAND UA	8.43	WILLAMETTE DR	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	50	F	OR-Y		016	038	01
																				OR<25				
												02	NONE 0	STOP										
													PRVTE	SE NW									011	
													PSNGR CAR		01	DRVR	NONE	56	F	OR-Y		000		
																				OR<25				
06635	Y N N	12/01/2003	CLACKAMAS	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										01
NONE		Mon	WEST LINN	0 0	MARYLHURST DR	NW		TRF SIGNAL	N	WET	REAR		PRVTE	NW SE									001	00
		7A	PORTLAND UA	8.43	WILLAMETTE DR	06	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	61	F	OR-Y		047	000	01
																				OR<25				
												02	NONE 0	STOP										
													PRVTE	NW SE									011	00
													PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																				UNK				
0[illegible]2	Y N N	05/06/2005	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT										01,27
N[illegible]E		Fri	WEST LINN	0 0	MARYLHURST DR	NW		TRF SIGNAL	N	DRY	REAR		PRVTE	NW SE									000	00
		8A	PORTLAND UA	8.43	WILLAMETTE DR	06	99		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	21	M	OR-Y		016,026,047	038	01,27
																				OR<25				
												02	NONE	STOP										
													PRVTE	NW SE									011	00
													PSNGR CAR		01	DRVR	NONE	57	F	OR-Y		000	000	00
																				OR<25				
0[illegible]32	Y N N	11/28/2003	CLACKAMAS	1 14		INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 0	TURN-R										01,08
C[illegible]Y		Fri	WEST LINN	0 0		CN		TRF SIGNAL	N	WET	TURN		PRVTE	E N									000	00
		10P	PORTLAND UA	8.43		04	99		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	72	F	OR-Y		001	000	01,08
																				OR<25				
												02	NONE 0	STRGHT										
													PRVTE	N S									000	00
													PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																				UNK				
02021	N N N	05/16/2006	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE		Tue	WEST LINN	0 0	LAZY RIVER DR	SE		UNKNOWN	N	DRY	REAR		PRVTE	SE NW									000	00
		8A	PORTLAND UA	8.44	WILLAMETTE DR	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000	07
																				OR<25				
												02	NONE 0	STOP										
													PRVTE	SE NW									011	00
													PSNGR CAR		01	DRVR	NONE	26	M	OR-Y		000	000	00
																				OR<25				
05407	N N N	10/09/2003	CLACKAMAS	1 14		ALLEY		N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										10
NONE		Thu	WEST LINN	0 0	02605 WILLAMETTE	SE	(NONE)	L-TURN REF	N	DRY	TURN		PRVTE	SE NW									000	00
		5P	PORTLAND UA	8.45	01509 MARYLHURST	04			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	55	F	OR-Y		044	000	10
							(03)													OR<25				

CDS380 4/9/2008

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

003 OSWEGO

Willamette Drive (Hwy 3, Route 43) at Maryhurst Drive/Lazy River Drive, plus 500' in all directions, in West Linn
1-1-2002 through 12-31-2006

SER# INVEST	S P E E / D A L C / R U G S / S C H L / W O R K	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# FC COMPNT MLG TYP MILEPNT	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
												02	NONE 0 PRVTE PSNGR CAR	TURN-L NE SE									018	00
															01	DRVR	INJB	49	F	OR-Y OR<25		000	000	00
															02	PSNG	NO<5	01	F			000	000	00
01702 NONE	N N N	04/30/2005 Sat 6P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.45	02605 WILLAMETTE 01509 MARYLAURST	STRGHT S 06	(NONE) (02)	N UNKNOWN	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT S N									000	07 00
															01	DRVR	NONE	22	M	OR-Y OR<25		026	000	07
												02	NONE 0 PRVTE PSNGR CAR	STOP S N									011	00
															01	DRVR	NONE	29	F	OR-Y OR<25		000	000	00
															02	PSNG	NO<5	01	F			000	000	00
															03	PSNG	NO<5	04	M			000	000	00
															04	PSNG	NO<5	01	F			000	000	00
[illegible]53 CITY	N N N	03/29/2005 Tue 9P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.45	02605 WILLAMETTE 01509 MARYHURST	STRGHT NW 03	(NONE) (02)	Y NONE	N N N	CLD WET DLIT	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW SE									003	01 00
															01	DRVR	NONE	21	M	OR-Y OR<25		026	000	02
												02	NONE 0 PRVTE PSNGR CAR	STRGHT NW SE									000	00
															01	DRVR	NONE	20	F	OR-Y OR<25		000	000	00
[illegible]33 NONE	N N N	02/03/2005 Thu 3P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.46	02605 WILLAMETTE 01509 MARYLHURST	STRGHT S 06	(NONE) (02)	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S N									000	07 00
															01	DRVR	NONE	41	F	OR-Y OR<25		026	000	07
												02	NONE 0 PRVTE PSNGR CAR	STOP S N									011	00
															01	DRVR	INJC	28	F	OR-Y OR<25		000	000	00
00689 NO RPT	N N N	02/10/2003 Mon 3P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.47	02605 WILLAMETTE 01509 MARYLHURST	ALLEY SE 04	(NONE) (03)	N L-TURN REF	N N N	CLR DRY DAY	ANGL-OTH TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-L NE SE									018	02,10 00
															01	DRVR	NONE	30	F	OR-Y OR<25		028	000	02
												02	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW									000	00
															01	DRVR	NONE	59	M	OR-Y OR<25		044	000	10
															02	PSNG	INJB	55	F			000	000	00
00079 NONE	N N N N N	01/03/2002 Thu 1P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.49	02605 WILLAMETTE 01509 MARYLHURST	STRGHT SE 03	(NONE) 0 (02)	N UNKNOWN	N N N	CLR WET DAY	S-STRGHT REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW SE									000	07
															01	DRVR	NONE	55	F	OR-Y OR<25		042		07

7/16/14 PC Meeting
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003 OSWEGO

Willamette Drive (Hwy 3, Route 43) at Marylhurst Drive/Lazy River Drive, plus 500' in all directions, in West Linn
1-1-2002 through 12-31-2006

SER# INVEST	S D P R S W E A U C O E L G H R D C S L K	DATE DAY TIME	COUNTY CITY URBAN AREA	RD# FC COMPNT MLG TYP MILEPNT	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER V# VEH TYPE	MOVE FROM TO	P# PRTC TYPE INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
												02 NONE 0 PRVTE PSNGR CAR	STRGHT NW SE	 01 DRVR NONE	 25	 M	 OR-Y OR<25		 000	 006		
07079 NONE	N N N N N	12/06/2002 Fri 8A	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 D 8.49	 02605 WILLAMETTE 01509 MARYLHURST	STRGHT SE 04	 (NONE) 0 (02)	N UNKNOWN	N N N	CLR DRY DAY	S-1STOP REAR PDO	01 NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	 01 DRVR NONE	 54	 F	 OR-Y OR<25		 026	 000		07 07
												02 NONE 0 PRVTE PSNGR CAR	STOP SE NW	 01 DRVR NONE	 67	 F	 OR-Y OR<25		 000	 011		
00159 NONE	N N N N N	01/07/2002 Mon UNK	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 0 8.51	 02605 WILLAMETTE 00803 FAIRVIEW	ALLEY UN 04	 (NONE) 0 (02)	N UNKNOWN	N N Y	RAIN WET DAY	ANGL-OTH TURN INJ	01 NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	 01 DRVR INJC 02 PSNG INJC 03 PSNG NO<5 04 PSNG NO<5	 29 28 02 01	 F M F F	 OR-Y OR<25		 000	 000		02
												02 NONE 0 PRVTE PSNGR CAR	TURN-R NE NW	 01 DRVR NONE	 43	 F	 OR-Y OR<25		 028	 018		 02
[illegible]05 N[illegible]RPT	Y N N	01/09/2005 Sun 8A	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 D 8.52	 02605 WILLAMETTE 00803 FAIRVIEW	STRGHT SE 01	 (NONE) (02)	N STOP SIGN	Y N N	RAIN ICE DAY	FIX OBJ FIX PDO	01 NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	 01 DRVR NONE	 22	 M	 OR-Y OR<25		 047,080,081	 000 017	053 053	01 00 01
06372 CITY	N N N N N	11/07/2002 Thu 5P	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 D 8.53	 FAIRVIEW WAY WILLAMETTE DR	INTER NE 06	3-LEG 0	N STOP SIGN	N N N	RAIN WET DLIT	PED PED INJ	01 NONE 0 PRVTE PSNGR CAR	TURN-L NW NE	 01 DRVR NONE	 52	 F	 OR-Y OR<25		 029	 000		02 02
													STRGHT NW SE	01 PED INJC	63	M		01	000	034		
01192 CITY	N N N N N	02/28/2002 Thu 8A	CLACKAMAS WEST LINN PORTLAND UA	1 14 0 D 8.53	 FAIRVIEW WAY WILLAMETTE DR	INTER SE 06	3-LEG 0	N STOP SIGN	N N N	CLR DRY DAY	S-1STOP REAR PDO	01 NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	 01 DRVR NONE	 17	 M	 OR-Y OR<25		 043	 000		07 07
												02 NONE 0 PRVTE PSNGR CAR	STOP SE NW	 01 DRVR NONE	 30	 F	 OR-Y OR<25		 000	 011		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & Willamette Dr*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/9/2008*	Analysis Year	*2008 Existing Traffic*
Analysis Time Period	*AM Peak Hour*		
Project Description	*#08-16 Willamette Commons*		
East/West Street:	*Shady Hollow Way*	North/South Street:	*Willamette Drive (Hwy 43)*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*1041*	*5*	*2*	*459*	*0*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*0*	*1107*	*5*	*2*	*488*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*16*	*0*	*1*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*17*	*0*	*1*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (vph)		*2*		*18*				
C (m) (vph)		*635*		*239*				
v/c		*0.00*		*0.08*				
95% queue length		*0.01*		*0.24*				
Control Delay		*10.7*		*21.3*				
LOS		*B*		*C*				
Approach Delay	--	--	*21.3*					
Approach LOS	--	--	*C*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*MEO*
Agency/Co.	*Charbonneau Engineering*
Date Performed	*4/9/2008*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Shady Hollow & Burgerville acc*
Jurisdiction	*City of West Linn*
Analysis Year	*2008 Existing Traffic*

Project Description *#08-16 Willamette Commons*

East/West Street: *Shady Hollow Way* | North/South Street: *Burgerville access*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*0*	*9*	*2*	*1*	*18*	*0*
Peak-hour factor, PHF	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*
Hourly Flow Rate (veh/h)	*0*	*14*	*3*	*1*	*29*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*5*	*0*	*1*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*
Hourly Flow Rate (veh/h)	*8*	*0*	*1*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
Volume, v (vph)		*1*		*9*				
Capacity, c_m (vph)		*1613*		*977*				
v/c ratio		*0.00*		*0.01*				
Queue length (95%)		*0.00*		*0.03*				
Control Delay (s/veh)		*7.2*		*8.7*				
LOS		*A*		*A*				
Approach delay (s/veh)	--	--	*8.7*					
Approach LOS	--	--	*A*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & Willamette Dr*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/9/2008*	Analysis Year	*2008 Existing Traffic*
Analysis Time Period	*PM Peak Hour*		
Project Description	*#08-16 Willamette Commons*		
East/West Street:	*Shady Hollow Way*	North/South Street:	*Willamette Drive (Hwy 43)*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*621*	*6*	*4*	*1074*	*0*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*0*	*674*	*6*	*4*	*1167*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*6*	*0*	*4*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*6*	*0*	*4*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (vph)		*4*		*10*				
C (m) (vph)		*922*		*261*				
v/c		*0.00*		*0.04*				
95% queue length		*0.01*		*0.12*				
Control Delay		*8.9*		*19.3*				
LOS		*A*		*C*				
Approach Delay	--	--	*19.3*					
Approach LOS	--	--	*C*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*MEO*
Agency/Co.	*Charbonneau Engineering*
Date Performed	*4/9/2008*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Shady Hollow & Burgerville acc*
Jurisdiction	*City of West Linn*
Analysis Year	*2008 Existing Traffic*

Project Description *#08-16 Willamette Commons*

East/West Street: *Shady Hollow Way* | North/South Street: *Burgerville access*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*0*	*7*	*2*	*0*	*7*	*0*
Peak-hour factor, PHF	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*
Hourly Flow Rate (veh/h)	*0*	*10*	*2*	*0*	*10*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*
Hourly Flow Rate (veh/h)	*11*	*0*	*0*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
Volume, v (vph)		*0*		*11*				
Capacity, c_m (vph)		*1620*		*1001*				
v/c ratio		*0.00*		*0.01*				
Queue length (95%)		*0.00*		*0.03*				
Control Delay (s/veh)		*7.2*		*8.6*				
LOS		*A*		*A*				
Approach delay (s/veh)	--	--		*8.6*				
Approach LOS	--	--		*A*				

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MEO	Intersection	Shady Hollow & Willamette Dr
Agency/Co.	Charbonneau Engineering	Jurisdiction	City of West Linn
Date Performed	4/9/2008	Analysis Year	2013 Background Traffic
Analysis Time Period	AM Peak Hour		
Project Description	#08-16 Willamette Commons		
East/West Street:	Shady Hollow Way	North/South Street:	Willamette Drive (Hwy 43)
Intersection Orientation:	North-South	Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	1145	6	2	505	0
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	0	1218	6	2	537	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	18	0	1	0	0	0
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	19	0	1	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		2		20				
C (m) (vph)		577		210				
v/c		0.00		0.10				
95% queue length		0.01		0.31				
Control Delay		11.3		23.9				
LOS		B		C				
Approach Delay	--	--	23.9					
Approach LOS	--	--	C					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*MEO*
Agency/Co.	*Charbonneau Engineering*
Date Performed	*4/9/2008*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Shady Hollow & Burgerville acc*
Jurisdiction	*City of West Linn*
Analysis Year	*2013 Background Traffic*

Project Description *#08-16 Willamette Commons*

East/West Street: *Shady Hollow Way* | North/South Street: *Burgerville access*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*0*	*10*	*2*	*1*	*20*	*0*
Peak-hour factor, PHF	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*
Hourly Flow Rate (veh/h)	*0*	*16*	*3*	*1*	*33*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*5*	*0*	*1*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*
Hourly Flow Rate (veh/h)	*8*	*0*	*1*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
Volume, v (vph)		*1*		*9*				
Capacity, c_m (vph)		*1611*		*970*				
v/c ratio		*0.00*		*0.01*				
Queue length (95%)		*0.00*		*0.03*				
Control Delay (s/veh)		*7.2*		*8.7*				
LOS		*A*		*A*				
Approach delay (s/veh)	--	--	*8.7*					
Approach LOS	--	--	*A*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MEO	Intersection	Shady Hollow & Willamette Dr
Agency/Co.	Charbonneau Engineering	Jurisdiction	City of West Linn
Date Performed	4/9/2008	Analysis Year	2013 Background Traffic
Analysis Time Period	PM Peak Hour		
Project Description	#08-16 Willamette Commons		
East/West Street:	Shady Hollow Way	North/South Street:	Willamette Drive (Hwy 43)
Intersection Orientation:	North-South	Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	683	7	4	1181	0
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR	0	742	7	4	1283	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	7	0	4	0	0	0
Peak-Hour Factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Hourly Flow Rate, HFR	7	0	4	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		4		11				
C (m) (vph)		869		224				
v/c		0.00		0.05				
95% queue length		0.01		0.15				
Control Delay		9.2		21.9				
LOS		A		C				
Approach Delay	--	--	21.9					
Approach LOS	--	--	C					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*MEO*
Agency/Co.	*Charbonneau Engineering*
Date Performed	*4/9/2008*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Shady Hollow & Burgerville acc*
Jurisdiction	*City of West Linn*
Analysis Year	*2013 Background Traffic*

Project Description *#08-16 Willamette Commons*

East/West Street: *Shady Hollow Way* | North/South Street: *Burgerville access*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*0*	*8*	*2*	*0*	*8*	*0*
Peak-hour factor, PHF	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*
Hourly Flow Rate (veh/h)	*0*	*11*	*2*	*0*	*11*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*
Hourly Flow Rate (veh/h)	*11*	*0*	*0*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
Volume, v (vph)		*0*		*11*				
Capacity, c_m (vph)		*1619*		*998*				
v/c ratio		*0.00*		*0.01*				
Queue length (95%)		*0.00*		*0.03*				
Control Delay (s/veh)		*7.2*		*8.6*				
LOS		*A*		*A*				
Approach delay (s/veh)	--	--	*8.6*					
Approach LOS	--	--	*A*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MEO	Intersection	Shady Hollow & Willamette Dr
Agency/Co.	Charbonneau Engineering	Jurisdiction	City of West Linn
Date Performed	4/9/2008	Analysis Year	2013 Total Traffic
Analysis Time Period	AM Peak Hour		
Project Description	#08-16 Willamette Commons - with existing (R-10) zoning		
East/West Street:	Shady Hollow Way	North/South Street:	Willamette Drive (Hwy 43)
Intersection Orientation:	North-South	Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	1145	7	3	505	0
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	0	1218	7	3	537	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	21	0	3	0	0	0
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	22	0	3	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		3		25				
C (m) (vph)		576		210				
v/c		0.01		0.12				
95% queue length		0.02		0.40				
Control Delay		11.3		24.4				
LOS		B		C				
Approach Delay	--	--	24.4					
Approach LOS	--	--	C					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & accesses*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/9/2008*	Analysis Year	*2013 Total Traffic*
Analysis Time Period	*AM Peak Hour*		

Project Description *#08-16 Willamette Commons - with existing (R-10) zoning*

East/West Street: *Shady Hollow Way* | North/South Street: *Burgerville access/site access*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*2*	*10*	*2*	*1*	*20*	*0*
Peak-hour factor, PHF	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*
Hourly Flow Rate (veh/h)	*3*	*16*	*3*	*1*	*33*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*5*	*0*	*1*	*0*	*0*	*5*
Peak-hour factor, PHF	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*
Hourly Flow Rate (veh/h)	*8*	*0*	*1*	*0*	*0*	*8*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
Volume, v (vph)	*3*	*1*		*9*			*8*	
Capacity, c_m (vph)	*1592*	*1611*		*941*			*1046*	
v/c ratio	*0.00*	*0.00*		*0.01*			*0.01*	
Queue length (95%)	*0.01*	*0.00*		*0.03*			*0.02*	
Control Delay (s/veh)	*7.3*	*7.2*		*8.9*			*8.5*	
LOS	*A*	*A*		*A*			*A*	
Approach delay (s/veh)	--	--	*8.9*			*8.5*		
Approach LOS	--	--	*A*			*A*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
nalyst	*MEO*	Intersection	*Shady Hollow & Willamette Dr*
gency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
ate Performed	*4/9/2008*	Analysis Year	*2013 Total Traffic*
nalysis Time Period	*PM Peak Hour*		
roject Description	*#08-16 Willamette Commons - with existing (R-10) zoning*		
ast/West Street:	*Shady Hollow Way*	North/South Street:	*Willamette Drive (Hwy 43)*
ıtersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

ehicle Volumes and Adjustments

ajor Street	Northbound			Southbound		
ovement	1	2	3	4	5	6
	L	T	R	L	T	R
olume	*0*	*683*	*11*	*6*	*1181*	*0*
eak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
ourly Flow Rate, HFR	*0*	*742*	*11*	*6*	*1283*	*0*
ercent Heavy Vehicles	*0*	--	--	*0*	--	--
edian Type	*Two Way Left Turn Lane*					
T Channelized			*0*			*0*
anes	*0*	*1*	*0*	*0*	*1*	*0*
onfiguration			*TR*	*LT*		
pstream Signal		*0*			*0*	

linor Street	Westbound			Eastbound		
lovement	7	8	9	10	11	12
	L	T	R	L	T	R
olume	*9*	*0*	*5*	*0*	*0*	*0*
eak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
lourly Flow Rate, HFR	*9*	*0*	*5*	*0*	*0*	*0*
ercent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
ercent Grade (%)		*0*			*0*	
lared Approach		*N*			*N*	
torage		*0*			*0*	
T Channelized			*0*			*0*
anes	*0*	*0*	*0*	*0*	*0*	*0*
onfiguration		*LR*				

elay, Queue Length, and Level of Service

pproach	NB	SB	Westbound			Eastbound		
lovement	1	4	7	8	9	10	11	12
ane Configuration		*LT*		*LR*				
(vph)		*6*		*14*				
(m) (vph)		*866*		*221*				
/c		*0.01*		*0.06*				
5% queue length		*0.02*		*0.20*				
ontrol Delay		*9.2*		*22.4*				
OS		*A*		*C*				
pproach Delay	--	--	*22.4*					
pproach LOS	--	--	*C*					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MEO	Intersection	Shady Hollow & accesses
Agency/Co.	Charbonneau Engineering	Jurisdiction	City of West Linn
Date Performed	4/9/2008	Analysis Year	2013 Total Traffic
Analysis Time Period	PM Peak Hour		

Project Description: #08-16 Willamette Commons - with existing (R-10) zoning

East/West Street: Shady Hollow Way | North/South Street: Burgerville access/site access

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	6	8	2	0	8	0
Peak-hour factor, PHF	0.69	0.69	0.69	0.69	0.69	0.69
Hourly Flow Rate (veh/h)	8	11	2	0	11	0
Proportion of heavy vehicles, P_{HV}	0	--	--	0	--	--
Median type	Undivided					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	8	0	0	0	0	3
Peak-hour factor, PHF	0.69	0.69	0.69	0.69	0.69	0.69
Hourly Flow Rate (veh/h)	11	0	0	0	0	4
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0
Percent grade (%)		0			0	
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
Volume, v (vph)	8	0		11			4	
Capacity, c_m (vph)	1621	1619		961			1076	
v/c ratio	0.00	0.00		0.01			0.00	
Queue length (95%)	0.01	0.00		0.03			0.01	
Control Delay (s/veh)	7.2	7.2		8.8			8.4	
LOS	A	A		A			A	
Approach delay (s/veh)	--	--	8.8			8.4		
Approach LOS	--	--	A			A		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MEO	Intersection	Shady Hollow & Willamette Dr
Agency/Co.	Charbonneau Engineering	Jurisdiction	City of West Linn
Date Performed	4/9/2008	Analysis Year	2013 Total Traffic
Analysis Time Period	AM Peak Hour		
Project Description	#08-16 Willamette Commons - with proposed (R-2.1) zoning		
East/West Street:	Shady Hollow Way	North/South Street:	Willamette Drive (Hwy 43)
Intersection Orientation:	North-South	Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	1145	9	3	505	0
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	0	1218	9	3	537	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	31	0	6	0	0	0
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	32	0	6	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (vph)		3		38				
C (m) (vph)		575		211				
v/c		0.01		0.18				
95% queue length		0.02		0.64				
Control Delay		11.3		25.8				
LOS		B		D				
Approach Delay	--	--	25.8					
Approach LOS	--	--	D					

Version 4.1d

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MEO	Intersection	Shady Hollow & accesses
Agency/Co.	Charbonneau Engineering	Jurisdiction	City of West Linn
Date Performed	4/9/2008	Analysis Year	2013 Total Traffic
Analysis Time Period	AM Peak Hour		

Project Description #08-16 Willamette Commons - with proposed (R-2.1) zoning

East/West Street: Shady Hollow Way	North/South Street: Burgerville access/site access
Intersection Orientation: East-West	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	4	10	2	1	20	0
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60
Hourly Flow Rate (veh/h)	6	16	3	1	33	0
Proportion of heavy vehicles, P_{HV}	0	--	--	0	--	--
Median type	Undivided					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration	LTR			LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	5	0	1	0	0	18
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60
Hourly Flow Rate (veh/h)	8	0	1	0	0	29
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0
Percent grade (%)		0			0	
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	LTR		LTR			LTR	
Volume, v (vph)	6	1		9			29	
Capacity, c_m (vph)	1592	1611		902			1046	
v/c ratio	0.00	0.00		0.01			0.03	
Queue length (95%)	0.01	0.00		0.03			0.09	
Control Delay (s/veh)	7.3	7.2		9.0			8.5	
LOS	A	A		A			A	
Approach delay (s/veh)	--	--	9.0			8.5		
Approach LOS	--	--	A			A		

TWO-WAY STOP CONTROL SUMMARY

ieneral Information		Site Information	
nalyst	*MEO*	Intersection	*Shady Hollow & Willamette Dr*
gency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
ate Performed	*4/9/2008*	Analysis Year	*2013 Total Traffic*
nalysis Time Period	*PM Peak Hour*		
roject Description	*#08-16 Willamette Commons - with proposed (R-2.1) zoning*		
ast/West Street:	*Shady Hollow Way*	North/South Street:	*Willamette Drive (Hwy 43)*
itersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

ehicle Volumes and Adjustments

ajor Street	Northbound			Southbound		
ovement	1	2	3	4	5	6
	L	T	R	L	T	R
olume	*0*	*683*	*20*	*9*	*1181*	*0*
eak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
ourly Flow Rate, HFR	*0*	*742*	*21*	*9*	*1283*	*0*
ercent Heavy Vehicles	*0*	--	--	*0*	--	--
edian Type	*Two Way Left Turn Lane*					
T Channelized			*0*			*0*
anes	*0*	*1*	*0*	*0*	*1*	*0*
onfiguration			*TR*	*LT*		
pstream Signal		*0*			*0*	

inor Street	Westbound			Eastbound		
ovement	7	8	9	10	11	12
	L	T	R	L	T	R
olume	*13*	*0*	*7*	*0*	*0*	*0*
eak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
ourly Flow Rate, HFR	*14*	*0*	*7*	*0*	*0*	*0*
ercent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
ercent Grade (%)		*0*			*0*	
ared Approach		*N*			*N*	
torage		*0*			*0*	
T Channelized			*0*			*0*
anes	*0*	*0*	*0*	*0*	*0*	*0*
onfiguration		*LR*				

elay, Queue Length, and Level of Service

pproach	NB	SB	Westbound			Eastbound		
ovement	1	4	7	8	9	10	11	12
ane Configuration		*LT*		*LR*				
(vph)		*9*		*21*				
(m) (vph)		*859*		*214*				
c		*0.01*		*0.10*				
5% queue length		*0.03*		*0.32*				
ontrol Delay		*9.2*		*23.6*				
OS		*A*		*C*				
pproach Delay	--	--	*23.6*					
pproach LOS	--	--	*C*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & accesses*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/9/2008*	Analysis Year	*2013 Total Traffic*
Analysis Time Period	*PM Peak Hour*		

Project Description *#08-16 Willamette Commons - with proposed (R-2.1) zoning*

East/West Street: *Shady Hollow Way*	North/South Street: *Burgerville access/site access*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*18*	*8*	*2*	*0*	*8*	*0*
Peak-hour factor, PHF	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*
Hourly Flow Rate (veh/h)	*26*	*11*	*2*	*0*	*11*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*0*	*0*	*0*	*0*	*9*
Peak-hour factor, PHF	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*
Hourly Flow Rate (veh/h)	*11*	*0*	*0*	*0*	*0*	*13*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
Volume, v (vph)	*26*	*0*		*11*			*13*	
Capacity, c_m (vph)	*1621*	*1619*		*888*			*1076*	
v/c ratio	*0.02*	*0.00*		*0.01*			*0.01*	
Queue length (95%)	*0.05*	*0.00*		*0.04*			*0.04*	
Control Delay (s/veh)	*7.3*	*7.2*		*9.1*			*8.4*	
LOS	*A*	*A*		*A*			*A*	
Approach delay (s/veh)	--	--	*9.1*			*8.4*		
Approach LOS	--	--	*A*			*A*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & Willamette Dr*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/14/2008*	Analysis Year	*2023 Planning Horizon Traffic*
Analysis Time Period	*AM Peak Hour*		
Project Description	*#08-16 Willamette Commons - with existing (R-10) zoning*		
East/West Street:	*Shady Hollow Way*	North/South Street:	*Willamette Drive (Hwy 43)*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*1353*	*8*	*3*	*597*	*0*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*0*	*1439*	*8*	*3*	*635*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*24*	*0*	*3*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*25*	*0*	*3*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (vph)		*3*		*28*				
C (m) (vph)		*474*		*163*				
v/c		*0.01*		*0.17*				
95% queue length		*0.02*		*0.60*				
Control Delay		*12.6*		*31.6*				
LOS		*B*		*D*				
Approach Delay	--	--	*31.6*					
Approach LOS	--	--	*D*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & accesses*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/14/2008*	Analysis Year	*2023 Planning Horizon Traffic*
Analysis Time Period	*AM Peak Hour*		

Project Description *#08-16 Willamette Commons - with existing (R-10) zoning*

East/West Street: *Shady Hollow Way*	North/South Street: *Burgerville access/site access*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*2*	*12*	*2*	*1*	*24*	*0*
Peak-hour factor, PHF	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*
Hourly Flow Rate (veh/h)	*3*	*19*	*3*	*1*	*39*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*5*	*0*	*1*	*0*	*0*	*5*
Peak-hour factor, PHF	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*
Hourly Flow Rate (veh/h)	*8*	*0*	*1*	*0*	*0*	*8*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
Volume, v (vph)	*3*	*1*		*9*			*8*	
Capacity, c_m (vph)	*1584*	*1607*		*930*			*1038*	
v/c ratio	*0.00*	*0.00*		*0.01*			*0.01*	
Queue length (95%)	*0.01*	*0.00*		*0.03*			*0.02*	
Control Delay (s/veh)	*7.3*	*7.2*		*8.9*			*8.5*	
LOS	*A*	*A*		*A*			*A*	
Approach delay (s/veh)	--	--	*8.9*			*8.5*		
Approach LOS	--	--	*A*			*A*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & Willamette Dr*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/14/2008*	Analysis Year	*2023 Planning Horizon Traffic*
Analysis Time Period	*PM Peak Hour*		

Project Description	*#08-16 Willamette Commons - with existing (R-10) zoning*
East/West Street: *Shady Hollow Way*	North/South Street: *Willamette Drive (Hwy 43)*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*807*	*12*	*7*	*1396*	*0*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*0*	*877*	*13*	*7*	*1517*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*10*	*0*	*6*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*10*	*0*	*6*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (vph)		*7*		*16*				
C (m) (vph)		*770*		*168*				
v/c		*0.01*		*0.10*				
95% queue length		*0.03*		*0.31*				
Control Delay		*9.7*		*28.7*				
LOS		*A*		*D*				
Approach Delay	--	--	*28.7*					
Approach LOS	--	--	*D*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & accesses*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/14/2008*	Analysis Year	*2023 Planning Horizon Traffic*
Analysis Time Period	*PM Peak Hour*		

Project Description *#08-16 Willamette Commons - with existing (R-10) zoning*

East/West Street: *Shady Hollow Way* | North/South Street: *Burgerville access/site access*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*6*	*9*	*2*	*0*	*9*	*0*
Peak-hour factor, PHF	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*
Hourly Flow Rate (veh/h)	*8*	*13*	*2*	*0*	*13*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*0*	*0*	*0*	*0*	*3*
Peak-hour factor, PHF	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*
Hourly Flow Rate (veh/h)	*11*	*0*	*0*	*0*	*0*	*4*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
Volume, v (vph)	*8*	*0*		*11*			*4*	
Capacity, c_m (vph)	*1619*	*1616*		*955*			*1073*	
v/c ratio	*0.00*	*0.00*		*0.01*			*0.00*	
Queue length (95%)	*0.01*	*0.00*		*0.03*			*0.01*	
Control Delay (s/veh)	*7.2*	*7.2*		*8.8*			*8.4*	
LOS	*A*	*A*		*A*			*A*	
Approach delay (s/veh)	--	--	*8.8*			*8.4*		
Approach LOS	--	--	*A*			*A*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & Willamette Dr*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/14/2008*	Analysis Year	*2023 Planning Horizon Traffic*
Analysis Time Period	*AM Peak Hour*		
Project Description	*#08-16 Willamette Commons - with proposed (R-2.1) zoning*		
East/West Street:	*Shady Hollow Way*	North/South Street:	*Willamette Drive (Hwy 43)*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*1353*	*10*	*3*	*597*	*0*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*0*	*1439*	*10*	*3*	*635*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*34*	*0*	*6*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*36*	*0*	*6*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (vph)		*3*		*42*				
C (m) (vph)		*474*		*162*				
v/c		*0.01*		*0.26*				
95% queue length		*0.02*		*0.99*				
Control Delay		*12.6*		*34.8*				
LOS		*B*		*D*				
Approach Delay	--	--	*34.8*					
Approach LOS	--	--	*D*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & accesses*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/14/2008*	Analysis Year	*2023 Planning Horizon Traffic*
Analysis Time Period	*AM Peak Hour*		

Project Description *#08-16 Willamette Commons - with proposed (R-2.1) zoning*

East/West Street: *Shady Hollow Way*	North/South Street: *Burgerville access/site access*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*4*	*12*	*2*	*1*	*24*	*0*
Peak-hour factor, PHF	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*
Hourly Flow Rate (veh/h)	*6*	*19*	*3*	*1*	*39*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*5*	*0*	*1*	*0*	*0*	*18*
Peak-hour factor, PHF	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*	*0.60*
Hourly Flow Rate (veh/h)	*8*	*0*	*1*	*0*	*0*	*29*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
Volume, v (vph)	*6*	*1*		*9*			*29*	
Capacity, c_m (vph)	*1584*	*1607*		*892*			*1038*	
v/c ratio	*0.00*	*0.00*		*0.01*			*0.03*	
Queue length (95%)	*0.01*	*0.00*		*0.03*			*0.09*	
Control Delay (s/veh)	*7.3*	*7.2*		*9.1*			*8.6*	
LOS	*A*	*A*		*A*			*A*	
Approach delay (s/veh)	--	--	*9.1*			*8.6*		
Approach LOS	--	--	*A*			*A*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MEO*	Intersection	*Shady Hollow & Willamette Dr*
Agency/Co.	*Charbonneau Engineering*	Jurisdiction	*City of West Linn*
Date Performed	*4/14/2008*	Analysis Year	*2023 Planning Horizon Traffic*
Analysis Time Period	*PM Peak Hour*		

Project Description	*#08-16 Willamette Commons - with proposed (R-2.1) zoning*
East/West Street: *Shady Hollow Way*	North/South Street: *Willamette Drive (Hwy 43)*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*807*	*21*	*10*	*1396*	*0*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*0*	*877*	*22*	*10*	*1517*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*14*	*0*	*8*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
Hourly Flow Rate, HFR	*15*	*0*	*8*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (vph)		*10*		*23*				
C (m) (vph)		*764*		*161*				
v/c		*0.01*		*0.14*				
95% queue length		*0.04*		*0.49*				
Control Delay		*9.8*		*31.1*				
LOS		*A*		*D*				
Approach Delay	--	--	*31.1*					
Approach LOS	--	--	*D*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*MEO*
Agency/Co.	*Charbonneau Engineering*
Date Performed	*4/14/2008*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Shady Hollow & accesses*
Jurisdiction	*City of West Linn*
Analysis Year	*2023 Planning Horizon Traffic*

Project Description *#08-16 Willamette Commons - with proposed (R-2.1) zoning*

East/West Street: *Shady Hollow Way* | North/South Street: *Burgerville access/site access*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*18*	*9*	*2*	*0*	*9*	*0*
Peak-hour factor, PHF	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*
Hourly Flow Rate (veh/h)	*26*	*13*	*2*	*0*	*13*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*8*	*0*	*0*	*0*	*0*	*9*
Peak-hour factor, PHF	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*	*0.69*
Hourly Flow Rate (veh/h)	*11*	*0*	*0*	*0*	*0*	*13*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
Volume, v (vph)	*26*	*0*		*11*			*13*	
Capacity, c_m (vph)	*1619*	*1616*		*883*			*1073*	
v/c ratio	*0.02*	*0.00*		*0.01*			*0.01*	
Queue length (95%)	*0.05*	*0.00*		*0.04*			*0.04*	
Control Delay (s/veh)	*7.3*	*7.2*		*9.1*			*8.4*	
LOS	*A*	*A*		*A*			*A*	
Approach delay (s/veh)	--	--	*9.1*			*8.4*		
Approach LOS	--	--	*A*			*A*		

January 20, 2014

RE: Pre-Application No. PA-13-30

Dear Property Owner,

I am representing Willamette Commons, LLC, owner of the property located at 18270/18340 Willamette Drive and 18395 Shady Hollow Drive, West Linn. The property owner is considering Planned Unit Development for duplex-style multi-family development. Prior to applying to the City of West Linn for the necessary permits, our team would like to discuss the proposal in more detail with the members of the adjacent recognized Neighborhood Associations, the surrounding property owners, and residents. Per the requirements of 99.038.C, you are invited to attend a meeting on:

February 11, 2014
7:00 pm
Robinwood Station
3706 Cedaroak Dr.
West Linn, OR 97068

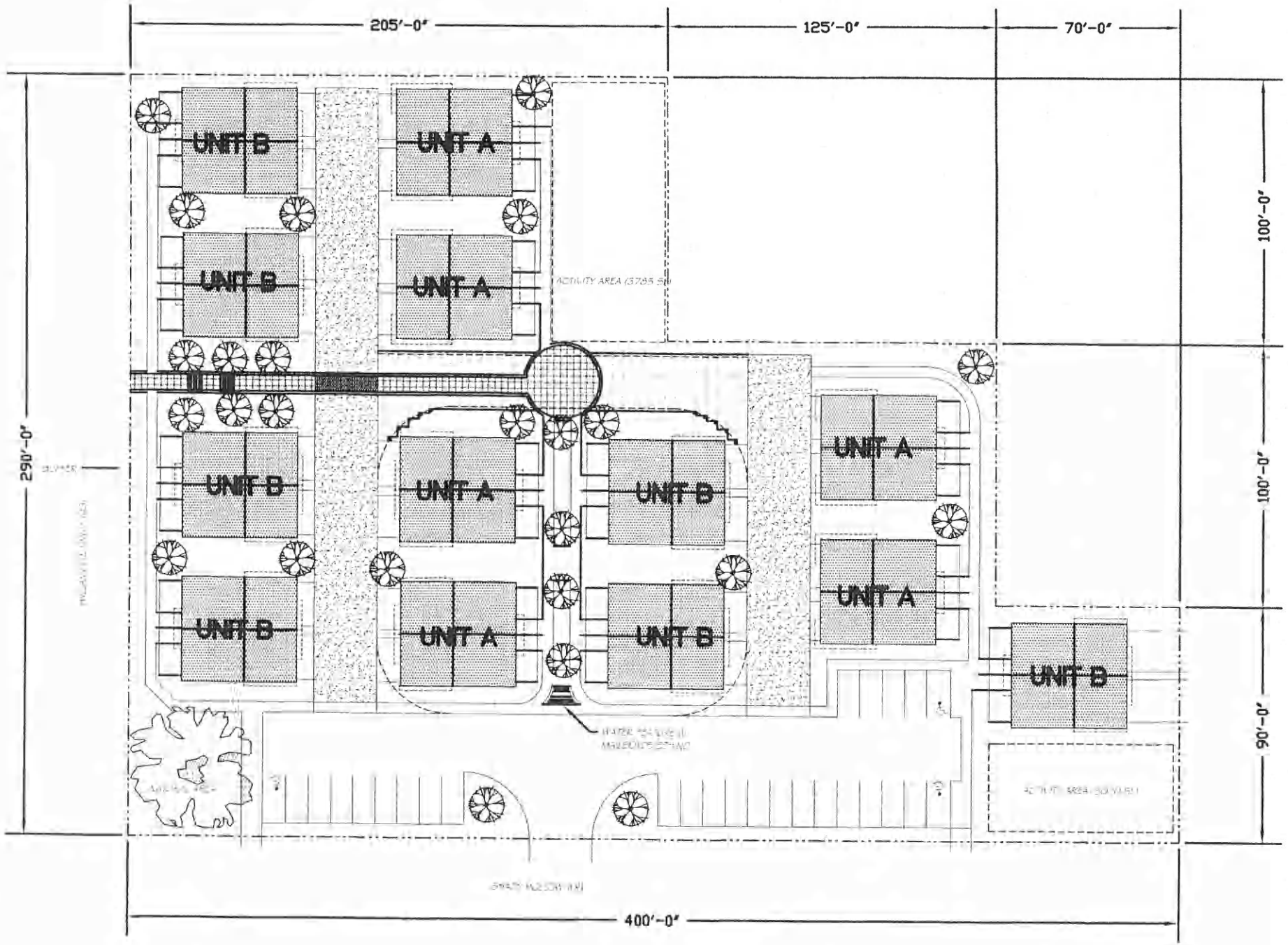
Please note that this will be an informational meeting on preliminary developments. These plans may be altered prior to submittal of the application to the City.

Our team looks forward to discussing more specifically the proposal with you. Please call David Emami at 503-557-3350 if you have any questions.

Sincerely,

Diana Emami
Member, Willamette Commons, LLC
3380 Barrington Drive
West Linn, OR 97068
Phone 503-557-3350

Enc: Site Plan



SITE CONCEPT

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:

Kevin Bryck
Robinwood NA Designee
18840 Nixon Ave
West Linn, OR 97068

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery
Kevin Bryck 1-24-14

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 service label) 7007 0710 0004 8030 8148

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

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$ $0.46
Certified Fee	$3.10
Return Receipt Fee (Endorsement Required)	$2.55
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$ $6.11

0155 25 Postmark Here 01/21/2014

7007 0710 0004 8030 8148

Sent To Kevin Bryck
Street, Apt. No.; or PO Box No. 18840 Nixon Ave
City, State, ZIP+4 West Linn 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:

Aaron Buffington
Robinwood NA President
3820 Ridgewood Way
West Linn, OR 97068

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery
1/22

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 service label) 7013 1090 0001 4827 8630

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

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

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OFFICIAL USE

Postage	$ $0.46
Certified Fee	$3.10
Return Receipt Fee (Endorsement Required)	$2.55
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$ $6.11

0155 25 Postmark Here 01/21/2014

7013 1090 0001 4827 8630

Sent To Aaron Buffington
Street, Apt. No.; or PO Box No. 3820 Ridgewood Way
City, State, ZIP+4 West Linn, OR 97068

PS Form 3800, August 2006 See Reverse for Instructions

Donald & Lillian Aasen
11555 SW 14th St
Beaverton, OR 97005-4078

David James & Keri Ann Archer
3184 Arbor Dr
West Linn, OR 97068-1111

Ana Laura Arias
18368 Vista Ct
West Linn, OR 97068-1139

Ala Bazzaz
2798 Robinwood Way
West Linn, OR 97068-1329

Kenneth & Kelly Bean
18140 Shady Hollow Way
West Linn, OR 97068-1133

Margaret Bell
2648 Maria Ct
West Linn, OR 97068-1127

Barbara Bogdan
16872 Cherry Crest Dr
Lake Oswego, OR 97034-5973

Barbara & Janusz Bogdan
16872 Cherry Crest Dr
Lake Oswego, OR 97034-5973

Janusz & Barbara Bogdan
16872 Cherry Crest Dr
Lake Oswego, OR 97034-5973

Steve Bonacich
291 Cervantes
Lake Oswego, OR 97035-1207

Boyer Family Partnership I LP
650 NE Holladay St #1400
Portland, OR 97232-2096

Anthony Michael & Anne Marie Bracc
2716 Robinwood Way
West Linn, OR 97068-1365

Michael & Helene Callagan
3293 Arbor Dr
West Linn, OR 97068-1113

Stanley Cassell
2767 Robinwood Way
West Linn, OR 97068-1332

Lori Chambers
18510 Lower Midhill Dr
West Linn, OR 97068-1325

Ilona Cherry
2636 Maria Ct
West Linn, OR 97068-1127

Roger Cherry
2636 Maria Ct
West Linn, OR 97068-1127

City of West Linn
22500 Salamo Rd #600
West Linn, OR 97068-8306

Franklin Coale
PO Box 105
West Linn, OR 97068-0105

George Gary Covic
35311 Beach Rd
Capistrano Beach, CA 92624-1707

Nancy Daum
18304 Shady Hollow Way
West Linn, OR 97068-1137

Vito & Yvonne Debellis
18200 Shady Hollow Way
West Linn, OR 97068-1128

L Marie Destefanis
PO Box 178
Marylhurst, OR 97036-0178

Clelia Deville
3260 Arbor Dr
West Linn, OR 97068-1114

Dale & Sherry Fortuna
3360 Arbor Dr
West Linn, OR 97068-1118

Sherry Ann & Dale Fortuna
3360 Arbor Dr
West Linn, OR 97068-1118

Mathew Fromme
18361 Willamette Dr
West Linn, OR 97068-1219

Larry Gaston
18189 Shady Hollow Way
West Linn, OR 97068-1126

Mark Lee Goddard
18260 Lower Midhill Dr
West Linn, OR 97068-1327

Donald Raymond & Erlene Annette Gr
3225 Arbor Dr
West Linn, OR 97068-1113

Eldora Groves
18360 Shady Hollow Way
West Linn, OR 97068-1137

Lillian Guy
2786 Robinwood Way
West Linn, OR 97068-1329

Holland Inc
109 W 17th St
Vancouver, WA 98660-2932

Richard & Grace Ann Holt
18380 Lower Midhill Dr
West Linn, OR 97068-1358

Housing Authrty Co Clack
PO Box 1510
Oregon City, OR 97045-0510

Leslie Hvostov
2748 Robinwood Way
West Linn, OR 97068-1329

Bruce Jervis
206 Andover St
San Francisco, CA 94110-5610

Stephen & Cynthia Jones
18325 Vista Ct
West Linn, OR 97068-1139

Donald Kane
18220 Willamette Dr
West Linn, OR 97068-1210

Joy Harns Kent
18490 Lower Midhill Dr
West Linn, OR 97068-1362

Matthew & Amy Kirby
3280 Arbor Dr
West Linn, OR 97068-1116

Christopher & Angela Kleips
2630 Maria Ct
West Linn, OR 97068-1127

David & Donna Knaebel
18430 Lower Midhill Dr
West Linn, OR 97068-1362

Charles & Alice Gail Lavin
2642 Maria Ct
West Linn, OR 97068-1127

Michael Lawson
18150 Shady Hollow Way
West Linn, OR 97068-1133

Lazy River Devlp LLC
5584 River St
West Linn, OR 97068-3245

Wilbur Lunsford Jr.
18365 Willamette Dr
West Linn, OR 97068-1219

Frederick & Lisa Mabie
31641 3rd Ave
Laguna Beach, CA 92651-8218

Dan McAllister
18155 Willamette Dr
West Linn, OR 97068-1215

Benjamin & Christi McKinley
2624 Maria Ct
West Linn, OR 97068-1127

James & Jeannette McQuay
3162 Arbor Dr
West Linn, OR 97068-1111

Michael & Rochelle Meyers
2735 Robinwood Way
West Linn, OR 97068-1368

Cathy Nusbaum
2777 Marylhurst Dr
West Linn, OR 97068-1355

Carl & Judith Owens
5885 Skyline Dr
West Linn, OR 97068-3122

Carl & Judith Owens
5885 Skyline Dr
West Linn, OR 97068-3122

Oxford Investment Corp
2875 Marylhurst Dr
West Linn, OR 97068-1304

Daniel & Shannon Richards
3080 Lazy River Dr
West Linn, OR 97068-1125

Ruth Rusk
2308 Sunset Ave
West Linn, OR 97068-3623

Jennifer & James Sandoval
910 3rd St
Santa Cruz, CA 95060-5004

Wendy Schelske
18470 Lower Midhill Dr
West Linn, OR 97068-1362

Dustin & Theresa Schlitt
18355 Willamette Dr
West Linn, OR 97068-1219

John Schlunegger
18560 Lower Midhill Dr
West Linn, OR 97068-1325

Brian & Stephanie Schutzler
21640 S Sweetbriar Cir
West Linn, OR 97068-9228

Susan Senger & Gary & Kelly Rothge
18310 Shady Hollow Way
West Linn, OR 97068-1137

William & K Macdonald- Shepherd
2757 Marylhurst Dr
West Linn, OR 97068-1355

Stellebreit LLC
2105 Peregrine Ct
West Linn, OR 97068-2825

Tim Turney
18350 Lower Midhill Dr
West Linn, OR 97068-1358

Michael Webber
1598 Skye Pkwy
West Linn, OR 97068-1806

Willamette Commons LLC
3380 Barrington Dr
West Linn, OR 97068-3631

Willamette Prop Ltd Prtnshp
18380 Willamette Dr #202
West Linn, OR 97068-1200

WFG National Title Insurance Company
a Williston Financial Group company

WFG National Title - Customer Service Department
12909 SW 68th Pkwy # 350 Portland, OR 97223
Phone: 503.603.1700 Fax: 888.833.6840
E-mail: cs@wfgnationaltitle.com

Date	:1/7/2014	Prepared By	:Amanda Shaw
Time	:9:34 AM	Prepared For	:
County	:Clackamas (OR)	Company	:
Sort Type	:OWNER	Address	:
Parcels Records	:78	City/ST/Zip	:

SEARCH PARAMETERS

Reference Parcel Number...78

21E14DA00600
21E14DA00700
21E14DA02500
21E14DA02501
21E14DA02600
21E14DA02700
21E14DA02800
21E14DA02900
21E14DA03000
21E14DA03100
21E14DA03101
21E14DB00700
21E14DB00800
21E14DB00900
21E14DB01000
21E14DB01100
21E14DB01200
21E14DB01300
21E14DB01400
21E14DB01500
21E14DB01600
21E14DB01602
21E14DB01700
21E14DB01900
21E14DB02100
21E14DB02200
21E14DB02300
21E14DB03000
21E14DB03100
21E14DB03200
21E14DB03300
21E14DB03400
21E14DB03500
21E14DB03600
21E14DB03700
21E14DB03800
21E14DB03900

SEARCH PARAMETERS (Continued)

21E14DB04000
21E14DB04200
21E14DC00100
21E14DC00102
21E14DC00103
21E14DC00200
21E14DC00201
21E14DC00300
21E14DC00400
21E14DC00500
21E14DC00600
21E14DC00700
21E14DC00800
21E14DC00900
21E14DC01000
21E14DC01200
21E14DC01201
21E14DC01202
21E14DC01400
21E14DC01501
21E14DC01502
21E14DC01600
21E14DC01700
21E14DC01800
21E14DC01900
21E14DC02101
21E14DC02200
21E14DD00802
21E14DD01901
21E14DD01902
21E14DD03500
21E14DD03601
21E14DD03700
21E14DD03701
21E14DD03702
21E14DD03703
21E14DD03800
21E14DD03900
21E14DD90000
21E14DD90001
21E14DD90002

WFG NATIONAL TITLE: FARM REPORT / Clackamas (OR)

1

Owner	: **Aasen Donald L & Lillian L**	Parcel #	: 00304708
Site	: 18185 Shady Hollow Way West Linn 97068	Ref Parcel #	: 21E14DB01000
Mail	: 11555 SW 14th St Beaverton Or 97005	12-13Taxes	: $2,622.54
Land Use	: 101 Res,Residential Land,Improved	Market Total	: $194,274
MapGrid	: 686 H2	Millage Rate	: 18.7110
Sale Date	: Sales Price :	Doc #	: 76-29016
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 25	Market Land	: $105,834
	:	Mkt Structure	: $88,440
Bedrooms: 3	Bath: 1.00 YearBuilt: 1949 BldgSqft: 1,390	Lot Sq Ft: 11,774	Acres: .27

2

Owner	: **Archer David James & Keri Ann**	Parcel #	: 00304682
Site	: 3184 Arbor Dr West Linn 97068	Ref Parcel #	: 21E14DB00800
Mail	: 3184 Arbor Dr West Linn Or 97068	12-13Taxes	: $3,157.17
Land Use	: 101 Res,Residential Land,Improved	Market Total	: $226,268
MapGrid	: 686 H2	Millage Rate	: 18.7110
Sale Date	: 01/04/1996 Sales Price : $149,000	Doc #	: 0096-00758
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 25	Market Land	: $127,278
	:	Mkt Structure	: $98,990
Bedrooms: 3	Bath: 2.00 YearBuilt: 1972 BldgSqft: 1,344	Lot Sq Ft: 17,083	Acres: .39

3

Owner	: **Arias Ana Laura**	Parcel #	: 00306323
Site	: 18368 Vista Ct West Linn 97068	Ref Parcel #	: 21E14DD01902
Mail	: 18368 Vista Ct West Linn Or 97068	12-13Taxes	: $2,999.10
Land Use	: 101 Res,Residential Land,Improved	Market Total	: $216,151
MapGrid	: 686 H2	Millage Rate	: 18.7110
Sale Date	: Sales Price :	Doc #	:
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: 2087 GLEN GLENN LT 2	Market Land	: $108,961
	:	Mkt Structure	: $107,190
Bedrooms: 3	Bath: 2.00 YearBuilt: 1975 BldgSqft: 1,256	Lot Sq Ft: 11,265	Acres: .26

4

Owner	: **Arnold Shan D**	Parcel #	: 00304352
Site	: 18244 Shady Hollow Wa (No Mail) West Linn 97068	Ref Parcel #	: 21E14DA02900
Mail	: 18244 Shady Hollow Wa (No Mail) West Linn Or 97068	12-13Taxes	: $3,735.35
Land Use	: 101 Res,Residential Land,Improved	Market Total	: $281,484
MapGrid	: 686 H2	Millage Rate	: 18.7110
Sale Date	: 12/18/1998 Sales Price : $410,000	Doc #	: 098-121073
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: 451 ROBINWOOD LT 23	Market Land	: $163,734
	:	Mkt Structure	: $117,750
Bedrooms: 4	Bath: 2.00 YearBuilt: 1936 BldgSqft: 2,243	Lot Sq Ft: 63,348	Acres: 1.45

5

Owner	: **Bazzaz Ala**	Parcel #	: 00305226
Site	: 2798 Robinwood Way West Linn 97068	Ref Parcel #	: 21E14DC00103
Mail	: 2798 Robinwood Way West Linn Or 97068	12-13Taxes	: $3,062.65
Land Use	: 101 Res,Residential Land,Improved	Market Total	: $212,636
MapGrid	: 686 H2	Millage Rate	: 18.7110
Sale Date	: 10/22/2004 Sales Price : $214,000	Doc #	: 004-097614
Prior Sale Date	: 10/11/2000 Prior Sale Price : $162,500	Prior Doc#	: 0000066526
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LTS	Market Land	: $105,906
	: 24 25&26 BLK 1	Mkt Structure	: $106,730
Bedrooms: 4	Bath: 2.00 YearBuilt: 1978 BldgSqft: 1,612	Lot Sq Ft: 10,965	Acres: .25

6

Owner	: **Bean Kenneth J & Kelly S**			Parcel #	: 00304334
Site	: 18140 Shady Hollow Way West Linn 97068			Ref Parcel #	: 21E14DA02700
Mail	: 18140 Shady Hollow Way West Linn Or 97068			12-13Taxes	: $4,474.78
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $304,131
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 07/08/2005	Sales Price	: $350,000	Doc #	: 005-063927
Prior Sale Date	: 12/07/2004	Prior Sale Price	: $266,000	Prior Doc#	: 004-111821
Legal	: 451 ROBINWOOD PT LT 24			Market Land	: $108,961
	:			Mkt Structure	: $195,170
Bedrooms: 4	Bath: 3.00	YearBuilt: 1960	BldgSqft: 2,957	Lot Sq Ft: 10,115	Acres: .23

7

Owner	: **Bell Margaret M**			Parcel #	: 00304833
Site	: 2648 Maria Ct West Linn 97068			Ref Parcel #	: 21E14DB02300
Mail	: 2648 Maria Ct West Linn Or 97068			12-13Taxes	: $3,291.62
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $250,223
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	:	Sales Price	:	Doc #	: 568-092
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 849 J W FORD ADD LT 3			Market Land	: $118,343
	:			Mkt Structure	: $131,880
Bedrooms: 4	Bath: 2.00	YearBuilt: 1960	BldgSqft: 2,170	Lot Sq Ft: 14,054	Acres: .32

8

Owner	: **Bogdan Barbara K**			Parcel #	: 00305235
Site	: 18335 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DC00200
Mail	: 16872 Cherry Crest Dr Lake Oswego Or 97034			12-13Taxes	: $2,762.15
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $194,621
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 04/22/2011	Sales Price	:	Doc #	: 011-024306
Prior Sale Date	: 03/18/2011	Prior Sale Price	: $140,000 Full	Prior Doc#	: 011-017484
Legal	: 541 AMENDED REPLT ROBINWOOD PT LT			Market Land	: $99,651
	: 27 BLK 1			Mkt Structure	: $94,970
Bedrooms: 3	Bath: 2.00	YearBuilt: 1978	BldgSqft: 1,152	Lot Sq Ft: 9,201	Acres: .21

9

Owner	: **Bogdan Barbara K & Janusz G**			Parcel #	: 00305244
Site	: 18345 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DC00201
Mail	: 16872 Cherry Crest Dr Lake Oswego Or 97034			12-13Taxes	: $2,788.11
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $200,281
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 07/15/2011	Sales Price	: $125,000 Full	Doc #	: 011-039780
Prior Sale Date	: 12/10/1999	Prior Sale Price	: $120,000	Prior Doc#	: 099-113737
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LT			Market Land	: $99,651
	: 1 BLK 1			Mkt Structure	: $100,630
Bedrooms: 3	Bath: 2.00	YearBuilt: 1978	BldgSqft: 1,152	Lot Sq Ft: 9,201	Acres: .21

10

Owner	: **Bogdan Janusz G & Barbara K**			Parcel #	: 01693732
Site	: 2797 Marylhurst Dr West Linn 97068			Ref Parcel #	: 21E14DC01202
Mail	: 16872 Cherry Crest Dr Lake Oswego Or 97034			12-13Taxes	: $3,719.93
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $241,085
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 01/31/2007	Sales Price	: $350,000	Doc #	: 007-008831
Prior Sale Date	: 01/07/2002	Prior Sale Price	: $200,000	Prior Doc#	: 002-001385
Legal	: 541 AMEND REPLAT ROBINWOOD PT LTS			Market Land	: $85,355
	: 10-13 BLK 1			Mkt Structure	: $155,730
Bedrooms: 4	Bath: 2.50	YearBuilt: 1996	BldgSqft: 1,974	Lot Sq Ft: 6,607	Acres: .15

11

Owner	: **Bonacich Steve**			Parcel #	: 01781245
Site	: 3054 Lazy River Dr West Linn 97068			Ref Parcel #	: 21E14DD03703
Mail	: 291 Cervantes Lake Oswego Or 97035			12-13Taxes	: $5,840.77
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $355,391
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 10/31/2013	Sales Price	: $375,000	Doc #	: 013-074575
Prior Sale Date	: 10/03/2013	Prior Sale Price	: $440,000	Prior Doc#	: 013-069242
Legal	: 1997-115 PARTITION PLAT PARCEL 3			Market Land	: $95,061
	:			Mkt Structure	: $260,330
Bedrooms:	Bath: 2.50	YearBuilt: 1998	BldgSqft: 2,706	Lot Sq Ft: 8,341	Acres: .19

12

Owner	: **Boyer Family Partnership I LP**			Parcel #	: 00306591
Site	: 3020 Lazy River Dr West Linn 97068			Ref Parcel #	: 21E14DD03500
Mail	: 650 NE Holladay St #1400 Portland Or 97232			12-13Taxes	: $13,395.25
Land Use	: 201 Com,Commercial Land,Improved			Market Total	: $874,308
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 03/26/2008	Sales Price	:	Doc #	: 008-021424
Prior Sale Date	: 08/17/2000	Prior Sale Price	: $1,055,000	Prior Doc#	: 000-053530
Legal	: 451 ROBINWOOD PT LTS 53&54			Market Land	: $280,748
	:			Mkt Structure	: $593,560
Bedrooms:	Bath:	YearBuilt: 1984	BldgSqft:	Lot Sq Ft: 30,601	Acres: .70

13

Owner	: **Bracco Anthony Michael & Anne Marie**			Parcel #	: 00305459
Site	: 2716 Robinwood Way West Linn 97068			Ref Parcel #	: 21E14DC02200
Mail	: 2716 Robinwood Way West Linn Or 97068			12-13Taxes	: $2,027.24
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $156,651
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 03/25/2002	Sales Price	: $115,000	Doc #	: 002-027833
Prior Sale Date	: 06/18/1998	Prior Sale Price	: $115,000	Prior Doc#	: 0098-54534
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LTS			Market Land	: $99,651
	: 22 & 23 BLK 1			Mkt Structure	: $57,000
Bedrooms: 2	Bath: 1.00	YearBuilt: 1950	BldgSqft: 844	Lot Sq Ft: 9,432	Acres: .22

14

Owner	: **Callagan Michael W & Helene F**			Parcel #	: 00304067
Site	: 3293 Arbor Dr West Linn 97068			Ref Parcel #	: 21E14DA00700
Mail	: 3293 Arbor Dr West Linn Or 97068			12-13Taxes	: $3,465.74
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $246,573
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 07/09/1993	Sales Price	: $129,950	Doc #	: 0093-48273
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 847 OAK ARBOR LT 3			Market Land	: $105,333
	:			Mkt Structure	: $141,240
Bedrooms: 4	Bath: 3.00	YearBuilt: 1960	BldgSqft: 2,332	Lot Sq Ft: 17,796	Acres: .41

15

Owner	: **Cassell Stanley J**			Parcel #	: 00304959
Site	: 2767 Robinwood Way West Linn 97068			Ref Parcel #	: 21E14DB03500
Mail	: 2767 Robinwood Way West Linn Or 97068			12-13Taxes	: $2,528.76
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $196,338
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 07/08/2005	Sales Price	: $199,500	Doc #	: 005-063798
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 65&68			Market Land	: $127,278
	:			Mkt Structure	: $69,060
Bedrooms: 2	Bath: 1.00	YearBuilt: 1935	BldgSqft: 896	Lot Sq Ft: 17,000	Acres: .39

 # 16

Owner	: **Chambers Lori**			Parcel #	: 01872183
Site	: 18510 Lower Midhill Dr West Linn 97068			Ref Parcel #	: 21E14DC01502
Mail	: 18510 Lower Midhill Dr West Linn Or 97068			12-13Taxes	: $2,100.90
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $167,401
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 10/06/2004	Sales Price	: $174,500	Doc #	: 004-093051
Prior Sale Date	: 09/04/2001	Prior Sale Price	: $143,670	Prior Doc#	: 001-071411
Legal	: 541 AMENDED REPLAT ROBINWOOD LT 14			Market Land	: $99,651
	: BLK 1			Mkt Structure	: $67,750
Bedrooms:	Bath:	YearBuilt: 1945	BldgSqft: 1,092	Lot Sq Ft: 9,451	Acres: .22

 # 17

Owner	: **Cherry Ilona B Trustee**			Parcel #	: 00304815
Site	: 2636 Maria Ct West Linn 97068			Ref Parcel #	: 21E14DB02100
Mail	: 2636 Maria Ct West Linn Or 97068			12-13Taxes	: $3,507.83
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $272,586
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 05/03/2005	Sales Price	:	Doc #	: 005-039894
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 849 J W FORD ADD PT LT 5&6			Market Land	: $116,556
	:			Mkt Structure	: $156,030
Bedrooms: 3	Bath: 2.50	YearBuilt: 1964	BldgSqft: 2,259	Lot Sq Ft: 15,162	Acres: .35

 # 18

Owner	: **Cherry Roger L Trustee**			Parcel #	: 00304806
Site	: 2634 Maria Ct West Linn 97068			Ref Parcel #	: 21E14DB01900
Mail	: 2636 Maria Ct West Linn Or 97068			12-13Taxes	: $3,433.17
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $245,203
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 04/13/2011	Sales Price	: $220,000 Full	Doc #	: 011-022683
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 42 849 J W FORD			Market Land	: $134,873
	: ADD PT LT 5			Mkt Structure	: $110,330
Bedrooms: 3	Bath: 1.50	YearBuilt: 1964	BldgSqft: 1,768	Lot Sq Ft: 21,063	Acres: .48

 # 19

Owner	: **City of West Linn**			Parcel #	: 00304361
Site	: 18292 Shady Hollow Way West Linn 97068			Ref Parcel #	: 21E14DA03000
Mail	: 22500 Salamo Rd #600 West Linn Or 97068			12-13Taxes	:
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $399,610
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 07/30/1999	Sales Price	: $350,000	Doc #	: 099-075857
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD LT 14			Market Land	: $318,960
	:			Mkt Structure	: $80,650
Bedrooms: 3	Bath: 1.00	YearBuilt: 1945	BldgSqft: 2,276	Lot Sq Ft: 153,794	Acres: 3.53

 # 20

Owner	: **Coale Franklin**			Parcel #	: 01699022
Site	: 18380 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DD90001
Mail	: PO Box 105 West Linn Or 97068			12-13Taxes	: $7,878.40
Land Use	: 201 Com,Commercial Land,Improved			Market Total	: $504,660
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 06/01/1996	Sales Price	: $392,423	Doc #	: 96-41153
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 3252 MARYLHURST MED CONDO UNIT 1			Market Land	:
	:			Mkt Structure	: $504,660
Bedrooms:	Bath:	YearBuilt: 1995	BldgSqft:	Lot Sq Ft: 2,159	Acres: .05

 # 21

Owner	: **Coale Franklin**			Parcel #	: 01699013
Site	: *no Site Address*			Ref Parcel #	: 21E14DD90000
Mail	: PO Box 163 West Linn Or 97068			12-13Taxes	:
Land Use	: 200 Vacant,Commercial Land			Market Total	:
MapGrid	:			Millage Rate	: 18.7110
Sale Date	: 02/01/1995	Sales Price	: $261,050	Doc #	: 95-11208
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 3252 MARYLHURST MED CONDO GENERAL			Market Land	:
	: COMMON ELEMENT			Mkt Structure	:
Bedrooms:	Bath:	YearBuilt:	BldgSqft:	Lot Sq Ft: 35,685	Acres: .82

 # 22

Owner	: **Covic George Gary Trustee**			Parcel #	: 00305217
Site	: 2778 Robinwood Way West Linn 97068			Ref Parcel #	: 21E14DC00102
Mail	: 35311 Beach Rd Capistrano Beach Ca 92624			12-13Taxes	: $2,857.85
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $198,714
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 08/18/2008	Sales Price	:	Doc #	: 08-065924
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LTS			Market Land	: $95,184
	: 24 25&26 BLK 1			Mkt Structure	: $103,530
Bedrooms: 2	Bath: 2.00	YearBuilt: 1979	BldgSqft: 1,379	Lot Sq Ft: 7,613	Acres: .17

 # 23

Owner	: **Daum Nancy L**			Parcel #	: 00304389
Site	: 18304 Shady Hollow Way West Linn 97068			Ref Parcel #	: 21E14DA03101
Mail	: 18304 Shady Hollow Way West Linn Or 97068			12-13Taxes	: $2,401.62
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $180,078
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 02/05/2003	Sales Price	:	Doc #	: 003-015005
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 48			Market Land	: $118,058
	:			Mkt Structure	: $62,020
Bedrooms: 3	Bath: 1.00	YearBuilt: 1925	BldgSqft: 1,106	Lot Sq Ft: 40,110	Acres: .92

 # 24

Owner	: **Debellis Vito J & Yvonne C**			Parcel #	: 00304735
Site	: 18200 Shady Hollow Way West Linn 97068			Ref Parcel #	: 21E14DB01300
Mail	: 18200 Shady Hollow Way West Linn Or 97068			12-13Taxes	: $2,925.92
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $209,532
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 10/24/2012	Sales Price	:	Doc #	: 012-069746
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 46			Market Land	: $96,452
	:			Mkt Structure	: $113,080
Bedrooms: 3	Bath: 1.50	YearBuilt: 1971	BldgSqft: 1,707	Lot Sq Ft: 7,000	Acres: .16

 # 25

Owner	: **Destefanis L Marie**			Parcel #	: 00304986
Site	: 18225 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DB03800
Mail	: PO Box 178 Marylhurst Or 97036			12-13Taxes	: $2,061.94
Land Use	: 100 Vacant,Residential Land			Market Total	: $175,577
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 07/13/2012	Sales Price	:	Doc #	: 012-043894 Multi-Parcel
Prior Sale Date	: 02/27/2007	Prior Sale Price	: $40,000	Prior Doc#	: 007-017024
Legal	: 451 ROBINWOOD PT LT 69			Market Land	: $175,577
	:			Mkt Structure	:
Bedrooms:	Bath:	YearBuilt:	BldgSqft:	Lot Sq Ft: 39,000	Acres: .90

 # 26

Owner	: **Destefanis L Marie**			Parcel #	: 00304995
Site	: 18225 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DB03900
Mail	: PO Box 178 Marylhurst Or 97036			12-13Taxes	: $3,868.24
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $294,123
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 07/13/2012	Sales Price :		Doc #	: 012-043894 Multi-Parcel
Prior Sale Date	: 02/27/2007	Prior Sale Price : $40,000		Prior Doc#	: 007-017024
Legal	: 451 ROBINWOOD PT LT 72			Market Land	: $196,973
	:			Mkt Structure	: $97,150
Bedrooms: 2	Bath: 1.00	YearBuilt: 1950	BldgSqft: 2,046	Lot Sq Ft: 39,000	Acres: .90

 # 27

Owner	: **Deville Clelia A**			Parcel #	: 00304691
Site	: 3260 Arbor Dr West Linn 97068			Ref Parcel #	: 21E14DB00900
Mail	: 3260 Arbor Dr West Linn Or 97068			12-13Taxes	: $3,172.84
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $230,580
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 10/14/2010	Sales Price : $265,000 Full		Doc #	: 010-065013
Prior Sale Date	:	Prior Sale Price :		Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 25			Market Land	: $121,470
	:			Mkt Structure	: $109,110
Bedrooms: 3	Bath: 2.00	YearBuilt: 1972	BldgSqft: 1,344	Lot Sq Ft: 17,004	Acres: .39

 # 28

Owner	: **Fortuna Dale L & Sherry A**			Parcel #	: 01380044
Site	: 3360 Arbor Dr West Linn 97068			Ref Parcel #	: 21E14DA02501
Mail	: 3360 Arbor Dr West Linn Or 97068			12-13Taxes	: $6,165.63
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $377,185
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 03/01/1989	Sales Price : $10		Doc #	: 0089-10024
Prior Sale Date	:	Prior Sale Price :		Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 16			Market Land	: $127,005
	:			Mkt Structure	: $250,180
Bedrooms: 3	Bath: 2.50	YearBuilt: 1989	BldgSqft: 3,027	Lot Sq Ft: 28,166	Acres: .65

 # 29

Owner	: **Fortuna Sherry Ann & Dale L**			Parcel #	: 00304316
Site	: 3340 Arbor Dr West Linn 97068			Ref Parcel #	: 21E14DA02500
Mail	: 3360 Arbor Dr West Linn Or 97068			12-13Taxes	: $4,906.59
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $369,036
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 10/14/2010	Sales Price :		Doc #	: 010-064982
Prior Sale Date	:	Prior Sale Price :		Prior Doc#	:
Legal	: 451 ROBINWOOD PT LTS 16&22			Market Land	: $249,816
	:			Mkt Structure	: $119,220
Bedrooms: 3	Bath: 2.00	YearBuilt: 1945	BldgSqft: 1,479	Lot Sq Ft: 46,506	Acres: 1.07

 # 30

Owner	: **Fromme Mathew W & Ashlee M Marston**			Parcel #	: 00305271
Site	: 18361 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DC00500
Mail	: 18361 Willamette Dr West Linn Or 97068			12-13Taxes	: $2,802.60
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $201,091
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 02/29/2012	Sales Price :		Doc #	: 012-011715
Prior Sale Date	: 01/06/2009	Prior Sale Price : $240,000 Full		Prior Doc#	: 009-000696
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LT			Market Land	: $99,651
	: 4 BLK 1			Mkt Structure	: $101,440
Bedrooms: 3	Bath: 2.00	YearBuilt: 1978	BldgSqft: 1,152	Lot Sq Ft: 9,201	Acres: .21

 # 31

Owner	: **Gaston Larry R Co-Trustee**			Parcel #	: 00304771
Site	: 18189 Shady Hollow Way West Linn 97068			Ref Parcel #	: 21E14DB01602
Mail	: 18189 Shady Hollow Way West Linn Or 97068			12-13Taxes	: $4,977.28
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $355,263
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 05/23/2005	Sales Price :		Doc #	: 005-046682
Prior Sale Date	:	Prior Sale Price :		Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 43 44&45			Market Land	: $134,873
	:			Mkt Structure	: $220,390
Bedrooms: 3	Bath: 2.50	YearBuilt: 1978	BldgSqft: 2,801	Lot Sq Ft: 20,640	Acres: .47

 # 32

Owner	: **Goddard Mark Lee**			Parcel #	: 00304977
Site	: 18260 Lower Midhill Dr West Linn 97068			Ref Parcel #	: 21E14DB03700
Mail	: 18260 Lower Midhill Dr West Linn Or 97068			12-13Taxes	: $2,366.08
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $181,637
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	:	Sales Price :		Doc #	: 90-50508
Prior Sale Date	:	Prior Sale Price :		Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 68			Market Land	: $104,047
	:			Mkt Structure	: $77,590
Bedrooms: 2	Bath: 1.00	YearBuilt: 1953	BldgSqft: 852	Lot Sq Ft: 9,800	Acres: .23

 # 33

Owner	: **Grove Donald Raymond & Erlene Annette**			Parcel #	: 00304058
Site	: 3225 Arbor Dr West Linn 97068			Ref Parcel #	: 21E14DA00600
Mail	: 3225 Arbor Dr West Linn Or 97068			12-13Taxes	: $4,240.26
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $294,978
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	:	Sales Price :		Doc #	: 79-46375
Prior Sale Date	:	Prior Sale Price :		Prior Doc#	:
Legal	: 847 OAK ARBOR LT 4			Market Land	: $128,618
	:			Mkt Structure	: $166,360
Bedrooms: 5	Bath: 3.00	YearBuilt: 1961	BldgSqft: 2,517	Lot Sq Ft: 17,859	Acres: .41

 # 34

Owner	: **Groves Eldora J**			Parcel #	: 00306635
Site	: 18360 Shady Hollow Way West Linn 97068			Ref Parcel #	: 21E14DD03800
Mail	: 18360 Shady Hollow Way West Linn Or 97068			12-13Taxes	: $3,332.55
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $256,270
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 06/28/2004	Sales Price :		Doc #	: 004-059424
Prior Sale Date	:	Prior Sale Price :		Prior Doc#	:
Legal	: 451 ROBINWOOD LT 49			Market Land	: $184,910
	:			Mkt Structure	: $71,360
Bedrooms: 2	Bath: 1.00	YearBuilt: 1946	BldgSqft: 1,192	Lot Sq Ft: 35,535	Acres: .82

 # 35

Owner	: **Guy Lillian**			Parcel #	: 00305208
Site	: 2786 Robinwood Way West Linn 97068			Ref Parcel #	: 21E14DC00100
Mail	: 2786 Robinwood Way West Linn Or 97068			12-13Taxes	: $3,144.79
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $234,054
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 11/28/2012	Sales Price :		Doc #	: 012-078099
Prior Sale Date	: 10/02/1998	Prior Sale Price : $156,500		Prior Doc#	: 0098-92709
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LTS			Market Land	: $95,184
	: 24-26 BLK 1			Mkt Structure	: $138,870
Bedrooms: 2	Bath: 2.00	YearBuilt: 1978	BldgSqft: 1,393	Lot Sq Ft: 7,613	Acres: .17

36

Owner	: **Harriman Kathleen**			Parcel #	: 00305011
Site	: 18115 Lower Midhill D (No Mail) West Linn 97068			Ref Parcel #	: 21E14DB04200
Mail	: 18115 Lower Midhill D (No Mail) West Linn Or 97068			12-13Taxes	: $4,288.59
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $289,716
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 08/21/2008	Sales Price	: $465,000 Full	Doc #	: 008-058742
Prior Sale Date	: 06/21/2006	Prior Sale Price	: $479,000	Prior Doc#	: 006-056456
Legal	: 451 ROBINWOOD PT LT 73			Market Land	: $115,216
	:			Mkt Structure	: $174,500
Bedrooms: 3	Bath: 2.00	YearBuilt: 1997	BldgSqft: 1,961	Lot Sq Ft: 13,473	Acres: .31

37

Owner	: **Holland Inc**			Parcel #	: 00306644
Site	: 18350 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DD03900
Mail	: 109 W 17th St Vancouver Wa 98660			12-13Taxes	: $17,159.28
Land Use	: 201 Com,Commercial Land,Improved			Market Total	: $1,120,889
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 01/03/2014	Sales Price	:	Doc #	: 14 000158 Multi-Parcel
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 50			Market Land	: $366,559
	:			Mkt Structure	: $754,330
Bedrooms:	Bath:	YearBuilt: 1990	BldgSqft:	Lot Sq Ft: 46,335	Acres: 1.06

38

Owner	: **Holt Richard D & Grace Ann**			Parcel #	: 00305404
Site	: 18380 Lower Midhill Dr West Linn 97068			Ref Parcel #	: 21E14DC01800
Mail	: 18380 Lower Midhill Dr West Linn Or 97068			12-13Taxes	: $3,079.12
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $217,266
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 06/21/1999	Sales Price	:	Doc #	: 099-062109
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LTS			Market Land	: $107,246
	: 19 & 20 BLK 1			Mkt Structure	: $110,020
Bedrooms: 2	Bath: 1.00	YearBuilt: 1950	BldgSqft: 1,424	Lot Sq Ft: 11,676	Acres: .27

39

Owner	: **Housing Authrty Co Clack**			Parcel #	: 01380035
Site	: 3050 Lazy River Dr West Linn 97068			Ref Parcel #	: 21E14DD03601
Mail	: PO Box 1510 Oregon City Or 97045			12-13Taxes	:
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $264,936
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 03/01/1989	Sales Price	: $18,500	Doc #	: 89-11105
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 53			Market Land	: $131,746
	:			Mkt Structure	: $133,190
Bedrooms: 5	Bath: 2.00	YearBuilt: 1989	BldgSqft: 2,185	Lot Sq Ft: 19,212	Acres: .44

40

Owner	: **Hvostov Leslie**			Parcel #	: 00305440
Site	: 2748 Robinwood Way West Linn 97068			Ref Parcel #	: 21E14DC02101
Mail	: 2748 Robinwood Way West Linn Or 97068			12-13Taxes	: $3,264.12
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $226,334
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 12/16/2005	Sales Price	: $347,000	Doc #	: 005-125209
Prior Sale Date	: 09/15/1999	Prior Sale Price	: $152,700	Prior Doc#	: 099-090361
Legal	: SUBDIVISION AMENDED REPLAT			Market Land	: $110,374
	: ROBINWOOD 541 BLOCK 1 PT LTS 19 20			Mkt Structure	: $115,960
Bedrooms: 3	Bath: 2.00	YearBuilt: 1978	BldgSqft: 1,313	Lot Sq Ft: 12,501	Acres: .29

 # 41

Owner	: **Jervis Bruce S**			Parcel #	: 01781236
Site	: 3060 Lazy River Dr West Linn 97068			Ref Parcel #	: 21E14DD03702
Mail	: 206 Andover St San Francisco Ca 94110			12-13Taxes	: $5,816.37
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $353,905
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 05/21/2007	Sales Price	: $440,000	Doc #	: 007-044040
Prior Sale Date	: 11/01/1997	Prior Sale Price	: $115,000	Prior Doc#	: 0097-94299
Legal	: 1997-115 PARTITION PLAT PARCEL 2			Market Land	: $93,575
	:			Mkt Structure	: $260,330
Bedrooms:	Bath: 2.50	YearBuilt: 1998	BldgSqft: 2,706	Lot Sq Ft: 8,003	Acres: .18

 # 42

Owner	: **Jones Stephen B & Cynthia S**			Parcel #	: 00306314
Site	: 18325 Vista Ct West Linn 97068			Ref Parcel #	: 21E14DD01901
Mail	: 18325 Vista Ct West Linn Or 97068			12-13Taxes	: $2,887.72
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $203,744
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 05/05/2008	Sales Price	: $330,000 Full	Doc #	: 008-032888
Prior Sale Date	: 03/21/2003	Prior Sale Price	: $179,950	Prior Doc#	: 003-034491
Legal	: 2087 GLEN GLENN LT 1			Market Land	: $105,834
	:			Mkt Structure	: $97,910
Bedrooms: 3	Bath: 2.00	YearBuilt: 1975	BldgSqft: 1,592	Lot Sq Ft: 10,477	Acres: .24

 # 43

Owner	: **Kane Donald B**			Parcel #	: 00304780
Site	: 18220 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DB01700
Mail	: 18220 Willamette Dr West Linn Or 97068			12-13Taxes	: $3,022.71
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $192,020
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 05/18/2005	Sales Price	:	Doc #	: 005-045420
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 42			Market Land	: $136,660
	:			Mkt Structure	: $55,360
Bedrooms: 2	Bath: 1.00	YearBuilt: 1945	BldgSqft: 1,306	Lot Sq Ft: 19,302	Acres: .44

 # 44

Owner	: **Kent Joy L Harns**			Parcel #	: 00305379
Site	: 18490 Lower Midhill Dr West Linn 97068			Ref Parcel #	: 21E14DC01501
Mail	: 18490 Lower Midhill Dr West Linn Or 97068			12-13Taxes	: $4,392.02
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $293,841
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 11/22/2006	Sales Price	: $393,400	Doc #	: 006-108577
Prior Sale Date	: 02/29/2000	Prior Sale Price	: $215,200	Prior Doc#	: 000-012999
Legal	: 541 AMENDED REPLAT ROBINWOOD LT 15			Market Land	: $99,651
	: BLK 1			Mkt Structure	: $194,190
Bedrooms: 3	Bath: 2.50	YearBuilt: 1999	BldgSqft: 1,772	Lot Sq Ft: 9,451	Acres: .22

 # 45

Owner	: **Kirby Matthew & Amy**			Parcel #	: 00304325
Site	: 3280 Arbor Dr West Linn 97068			Ref Parcel #	: 21E14DA02600
Mail	: 3280 Arbor Dr West Linn Or 97068			12-13Taxes	: $4,163.57
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $294,551
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 07/19/2007	Sales Price	: $400,000	Doc #	: 007-062987
Prior Sale Date	: 03/13/2001	Prior Sale Price	: $237,500 Full	Prior Doc#	: 001-016859
Legal	: 451 ROBINWOOD PT LT 22&24			Market Land	: $108,961
	:			Mkt Structure	: $185,590
Bedrooms: 3	Bath: 2.00	YearBuilt: 1958	BldgSqft: 2,776	Lot Sq Ft: 12,468	Acres: .29

 # 46

Owner	: **Kleips Christopher M & Angela**			Parcel #	: 00304913
Site	: 2630 Maria Ct West Linn 97068			Ref Parcel #	: 21E14DB03100
Mail	: 2630 Maria Ct West Linn Or 97068			12-13Taxes	: $3,825.89
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $284,085
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 05/26/2006	Sales Price	: $390,000	Doc #	: 006-048529
Prior Sale Date	: 05/20/1998	Prior Sale Price	: $165,000	Prior Doc#	: 0098-44550
Legal	: 849 J W FORD ADD PT LT 6&7			Market Land	: $142,915
	:			Mkt Structure	: $141,170
Bedrooms: 3	Bath: 3.00	YearBuilt: 1964	BldgSqft: 1,683	Lot Sq Ft: 22,330	Acres: .51

 # 47

Owner	: **Knaebel David R & Donna M**			Parcel #	: 00305397
Site	: 18430 Lower Midhill Dr West Linn 97068			Ref Parcel #	: 21E14DC01700
Mail	: 18430 Lower Midhill Dr West Linn Or 97068			12-13Taxes	: $4,468.46
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $312,828
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	:	Sales Price	:	Doc #	: 78-17667
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: SUBDIVISION AMENDED REPLAT			Market Land	: $116,628
	: ROBINWOOD 541 BLOCK 1 LT 18 & PT			Mkt Structure	: $196,200
Bedrooms: 2	Bath: 1.00	YearBuilt: 1950	BldgSqft: 2,199	Lot Sq Ft: 11,399	Acres: .26

 # 48

Owner	: **Koran Lawrence A**			Parcel #	: 00304744
Site	: 18194 Shady Hollow Wa (No Mail) West Linn 97068			Ref Parcel #	: 21E14DB01400
Mail	: 18194 Shady Hollow Wa (No Mail) West Linn Or 97068			12-13Taxes	: $3,896.63
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $279,381
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 03/07/2008	Sales Price	: $395,000 Full	Doc #	: 008-016271
Prior Sale Date	: 08/01/1986	Prior Sale Price	: $80,000	Prior Doc#	: 0086-32933
Legal	: 451 ROBINWOOD PT LT 45			Market Land	: $122,811
	:			Mkt Structure	: $156,570
Bedrooms: 3	Bath: 2.00	YearBuilt: 1977	BldgSqft: 2,175	Lot Sq Ft: 16,575	Acres: .38

 # 49

Owner	: **Lavin Charles J & Alice Gail**			Parcel #	: 00304824
Site	: 2642 Maria Ct West Linn 97068			Ref Parcel #	: 21E14DB02200
Mail	: 2642 Maria Ct West Linn Or 97068			12-13Taxes	: $3,133.03
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $224,998
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	:	Sales Price	:	Doc #	: 74-08010
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 849 J W FORD ADD LT 4			Market Land	: $112,088
	:			Mkt Structure	: $112,910
Bedrooms: 3	Bath: 1.50	YearBuilt: 1964	BldgSqft: 1,358	Lot Sq Ft: 13,044	Acres: .30

 # 50

Owner	: **Lawson Michael C**			Parcel #	: 00304343
Site	: 18150 Shady Hollow Way West Linn 97068			Ref Parcel #	: 21E14DA02800
Mail	: 18150 Shady Hollow Way West Linn Or 97068			12-13Taxes	: $3,717.43
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $254,158
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 10/20/2010	Sales Price	:	Doc #	: 010-066215
Prior Sale Date	: 02/12/2004	Prior Sale Price	: $235,500	Prior Doc#	: 004-011195
Legal	: 451 ROBINWOOD PT LT 24			Market Land	: $77,688
	:			Mkt Structure	: $176,470
Bedrooms: 4	Bath: 2.00	YearBuilt: 1957	BldgSqft: 2,695	Lot Sq Ft: 17,745	Acres: .41

51

Owner	: **Lazy River Devlp LLC**			Parcel #	: 00306617
Site	: *no Site Address*			Ref Parcel #	: 21E14DD03700
Mail	: 5584 River St West Linn Or 97068			12-13Taxes	: $870.61
Land Use	: 100 Vacant,Residential Land			Market Total	: $65,674
MapGrid	:			Millage Rate	: 18.7110
Sale Date	: 10/21/1998	Sales Price	: Non-Disc	Doc #	: 0098-99106 Multi-Parcel
Prior Sale Date	: 11/01/1997	Prior Sale Price	: $115,000	Prior Doc#	: 0097-94299
Legal	: 1997-115 PARTITION PLAT PARCEL 1			Market Land	: $65,674
	:			Mkt Structure	:
Bedrooms:	Bath:	YearBuilt:	BldgSqft:	Lot Sq Ft: 4,566	Acres: .10

52

Owner	: **Lunsford Wilbur T Jr**			Parcel #	: 00305280
Site	: 18365 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DC00600
Mail	: 18365 Willamette Dr West Linn Or 97068			12-13Taxes	: $2,772.57
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $195,121
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 05/28/2010	Sales Price	: $200,000 Full	Doc #	: 010-032427
Prior Sale Date	: 02/12/2010	Prior Sale Price	: $240,000	Prior Doc#	: 010-009405
Legal	: 541 AMENDED REPLAT ROBINWOOD LT 5			Market Land	: $99,651
	: PT LT 4 BLK 1			Mkt Structure	: $95,470
Bedrooms: 3	Bath: 2.00	YearBuilt: 1978	BldgSqft: 1,152	Lot Sq Ft: 9,201	Acres: .21

53

Owner	: **Mabie Frederick J & Lisa C**			Parcel #	: 00306243
Site	: 3689 Fairview Way West Linn 97068			Ref Parcel #	: 21E14DD00802
Mail	: 31641 3rd Ave Laguna Beach Ca 92651			12-13Taxes	: $7,386.61
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $487,701
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 08/15/2007	Sales Price	: $775,000	Doc #	: 007-070580
Prior Sale Date	: 05/27/2004	Prior Sale Price	: $190,000	Prior Doc#	: 004-048263
Legal	: 468 CEDAROAK PK PT LT 54			Market Land	: $122,811
	:			Mkt Structure	: $364,890
Bedrooms: 4	Bath: 3.00	YearBuilt: 2004	BldgSqft: 3,648	Lot Sq Ft: 13,992	Acres: .32

54

Owner	: **McAllister Dan C**			Parcel #	: 00305002
Site	: 18155 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DB04000
Mail	: 18155 Willamette Dr West Linn Or 97068			12-13Taxes	: $3,778.14
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $275,400
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 11/19/2004	Sales Price	: $250,000	Doc #	: 004-106789
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 73			Market Land	: $136,660
	:			Mkt Structure	: $138,740
Bedrooms: 4	Bath: 1.50	YearBuilt: 1950	BldgSqft: 3,132	Lot Sq Ft: 18,996	Acres: .44

55

Owner	: **McKinley Benjamin R & Christi M**			Parcel #	: 00304904
Site	: 2624 Maria Ct West Linn 97068			Ref Parcel #	: 21E14DB03000
Mail	: 2624 Maria Ct West Linn Or 97068			12-13Taxes	: $5,096.73
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $337,140
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 12/17/2003	Sales Price	: $380,000	Doc #	: 003-163365
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 849 J W FORD ADD PT LT 7			Market Land	: $138,000
	:			Mkt Structure	: $199,140
Bedrooms: 3	Bath: 3.50	YearBuilt: 1962	BldgSqft: 2,437	Lot Sq Ft: 17,737	Acres: .41

56

Owner	**McQuay James M & Jeannette K**	Parcel #	00304673
Site	3162 Arbor Dr West Linn 97068	Ref Parcel #	21E14DB00700
Mail	3162 Arbor Dr West Linn Or 97068	12-13Taxes	$5,015.86
Land Use	101 Res,Residential Land,Improved	Market Total	$348,533
MapGrid	686 H2	Millage Rate	18.7110
Sale Date	Sales Price	Doc #	71-15812
Prior Sale Date	Prior Sale Price	Prior Doc#	
Legal	451 ROBINWOOD PT LT 25&27	Market Land	$152,743
		Mkt Structure	$195,790

Bedrooms: 3 Bath: 1.00 YearBuilt: 1945 BldgSqft: 1,789 Lot Sq Ft: 26,746 Acres: .61

57

Owner	**Meyers Michael D & Rochelle**	Parcel #	00304968
Site	2735 Robinwood Way West Linn 97068	Ref Parcel #	21E14DB03600
Mail	2735 Robinwood Way West Linn Or 97068	12-13Taxes	$2,955.83
Land Use	101 Res,Residential Land,Improved	Market Total	$205,847
MapGrid	686 H2	Millage Rate	18.7110
Sale Date	06/30/2003 Sales Price	Doc #	003-083148
Prior Sale Date	08/28/1998 Prior Sale Price $156,000	Prior Doc#	0098-80483
Legal	451 ROBINWOOD PT LT 65	Market Land	$104,047
		Mkt Structure	$101,800

Bedrooms: 3 Bath: 2.00 YearBuilt: 1973 BldgSqft: 1,092 Lot Sq Ft: 9,800 Acres: .23

58

Owner	**Nusbaum Cathy E**	Parcel #	00305333
Site	2777 Marylhurst Dr West Linn 97068	Ref Parcel #	21E14DC01200
Mail	2777 Marylhurst Dr West Linn Or 97068	12-13Taxes	$3,732.92
Land Use	101 Res,Residential Land,Improved	Market Total	$242,272
MapGrid	686 H2	Millage Rate	18.7110
Sale Date	07/01/1997 Sales Price $186,000	Doc #	0097-57273
Prior Sale Date	05/19/1994 Prior Sale Price $35,000	Prior Doc#	0094-41736
Legal	541 AMEND REPLAT ROBINWOOD PT LTS 10-13 BLK 1	Market Land	$87,142
		Mkt Structure	$155,130

Bedrooms: 4 Bath: 2.50 YearBuilt: 1996 BldgSqft: 1,974 Lot Sq Ft: 5,796 Acres: .13

59

Owner	**Owens Carl & Judith M**	Parcel #	00304931
Site	2785 Robinwood Way West Linn 97068	Ref Parcel #	21E14DB03300
Mail	5885 Skyline Dr West Linn Or 97068	12-13Taxes	$3,320.37
Land Use	101 Res,Residential Land,Improved	Market Total	$230,017
MapGrid	686 H2	Millage Rate	18.7110
Sale Date	Sales Price	Doc #	69-25564
Prior Sale Date	Prior Sale Price	Prior Doc#	
Legal	451 ROBINWOOD PT LT 65	Market Land	$104,047
		Mkt Structure	$125,970

Bedrooms: 3 Bath: 2.00 YearBuilt: 1968 BldgSqft: 1,736 Lot Sq Ft: 9,500 Acres: .22

60

Owner	**Owens Carl R & Judith M**	Parcel #	00304922
Site	18263 Willamette Dr West Linn 97068	Ref Parcel #	21E14DB03200
Mail	5885 Skyline Dr West Linn Or 97068	12-13Taxes	$3,089.83
Land Use	101 Res,Residential Land,Improved	Market Total	$225,257
MapGrid	686 H2	Millage Rate	18.7110
Sale Date	Sales Price	Doc #	77-44161
Prior Sale Date	Prior Sale Price	Prior Doc#	
Legal	451 ROBINWOOD PT LT 65	Market Land	$104,047
		Mkt Structure	$121,210

Bedrooms: 3 Bath: 2.00 YearBuilt: 1948 BldgSqft: 1,438 Lot Sq Ft: 9,500 Acres: .22

 # 61

Owner	: **Owens Carl R & Judith M**	Parcel #	: 00304940
Site	: 18255 Willamette Dr West Linn 97068	Ref Parcel #	: 21E14DB03400
Mail	: 5885 Skyline Dr West Linn Or 97068	12-13Taxes	: $2,547.19
Land Use	: 101 Res,Residential Land,Improved	Market Total	: $199,070
MapGrid	: 686 H2	Millage Rate	: 18.7110
Sale Date	: Sales Price :	Doc #	: 74-20154
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 68	Market Land	: $136,660
	:	Mkt Structure	: $62,410
Bedrooms: 3	Bath: 1.00 YearBuilt: 1936 BldgSqft: 1,332	Lot Sq Ft: 19,000	Acres: .44

 # 62

Owner	: **Oxford Investment Corp**	Parcel #	: 00305324
Site	: 2875 Marylhurst Dr West Linn 97068	Ref Parcel #	: 21E14DC01000
Mail	: 2875 Marylhurst Dr West Linn Or 97068	12-13Taxes	: $3,567.10
Land Use	: 201 Com,Commercial Land,Improved	Market Total	: $238,900
MapGrid	: 686 H2	Millage Rate	: 18.7110
Sale Date	: 01/01/1990 Sales Price :	Doc #	: 90-06536
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: 526 REPLAT ROBINWOOD LT 009 BLK 01	Market Land	: $123,100
	:	Mkt Structure	: $115,800
Bedrooms:	Bath: YearBuilt: 1925 BldgSqft:	Lot Sq Ft: 14,813	Acres: .34

 # 63

Owner	: **Richards Daniel & Shannon**	Parcel #	: 00306626
Site	: 3080 Lazy River Dr West Linn 97068	Ref Parcel #	: 21E14DD03701
Mail	: 3080 Lazy River Dr West Linn Or 97068	12-13Taxes	: $2,362.62
Land Use	: 101 Res,Residential Land,Improved	Market Total	: $179,091
MapGrid	: 686 H2	Millage Rate	: 18.7110
Sale Date	: 10/19/2007 Sales Price :	Doc #	: 007-090240
Prior Sale Date	: 07/13/2006 Prior Sale Price : $262,000	Prior Doc#	: 006-064008
Legal	: 451 ROBINWOOD PT LT 52	Market Land	: $108,961
	:	Mkt Structure	: $70,130
Bedrooms: 3	Bath: 1.00 YearBuilt: 1965 BldgSqft: 1,380	Lot Sq Ft: 10,106	Acres: .23

 # 64

Owner	: **Rusk Ruth N Trustee**	Parcel #	: 00305315
Site	: 18375 Willamette Dr West Linn 97068	Ref Parcel #	: 21E14DC00900
Mail	: 2308 Sunset Ave West Linn Or 97068	12-13Taxes	: $2,195.60
Land Use	: 101 Res,Residential Land,Improved	Market Total	: $166,341
MapGrid	: 686 H2	Millage Rate	: 18.7110
Sale Date	: 11/21/2011 Sales Price :	Doc #	: 011-066912 Multi-Parcel
Prior Sale Date	: Prior Sale Price :	Prior Doc#	:
Legal	: 541 AMEND REPLAT ROBINWOOD PT LT 8	Market Land	: $113,501
	: BLK 1	Mkt Structure	: $52,840
Bedrooms: 2	Bath: 1.00 YearBuilt: 1946 BldgSqft: 798	Lot Sq Ft: 12,791	Acres: .29

 # 65

Owner	: **Sandoval Jennifer M & James E**	Parcel #	: 00305299
Site	: 18369 Willamette Dr West Linn 97068	Ref Parcel #	: 21E14DC00700
Mail	: 910 3rd St Santa Cruz Ca 95060	12-13Taxes	: $2,777.44
Land Use	: 101 Res,Residential Land,Improved	Market Total	: $195,291
MapGrid	: 686 H2	Millage Rate	: 18.7110
Sale Date	: 08/11/2005 Sales Price : $218,000	Doc #	: 005-076446
Prior Sale Date	: 08/04/1999 Prior Sale Price : $139,000	Prior Doc#	: 099-077482
Legal	: 541 AMENDED REPLAT ROBINWOOD LT 006	Market Land	: $99,651
	: BLK 01	Mkt Structure	: $95,640
Bedrooms: 3	Bath: 2.00 YearBuilt: 1978 BldgSqft: 1,152	Lot Sq Ft: 9,201	Acres: .21

66

Owner	: **Schelske Wendy M**			Parcel #	: 00305388
Site	: 18470 Lower Midhill Dr West Linn 97068			Ref Parcel #	: 21E14DC01600
Mail	: 18470 Lower Midhill Dr West Linn Or 97068			12-13Taxes	: $2,467.56
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $191,016
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 08/10/2012	Sales Price	: $249,500	Doc #	: 012-051320
Prior Sale Date	: 04/05/2012	Prior Sale Price	: $157,500 Full	Prior Doc#	: 012-020789
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LTS			Market Land	: $107,246
	: 16 & 17 BLK 1			Mkt Structure	: $83,770
Bedrooms: 3	Bath: 2.00	YearBuilt: 1949	BldgSqft: 1,232	Lot Sq Ft: 11,679	Acres: .27

67

Owner	: **Schlitt Dustin & Theresa L**			Parcel #	: 00305253
Site	: 18355 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DC00300
Mail	: 18355 Willamette Dr West Linn Or 97068			12-13Taxes	: $1,987.22
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $152,981
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 05/25/2007	Sales Price	: $225,000	Doc #	: 007-045848
Prior Sale Date	: 08/06/2004	Prior Sale Price	: $150,000	Prior Doc#	: 004-072561
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LT			Market Land	: $99,651
	: 2 BLK 1			Mkt Structure	: $53,330
Bedrooms: 2	Bath: 1.00	YearBuilt: 1942	BldgSqft: 768	Lot Sq Ft: 9,201	Acres: .21

68

Owner	: **Schlunegger John R**			Parcel #	: 00305360
Site	: 18560 Lower Midhill Dr West Linn 97068			Ref Parcel #	: 21E14DC01400
Mail	: 18560 Lower Midhill Dr West Linn Or 97068			12-13Taxes	: $2,709.29
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $200,201
MapGrid	: 686 H3			Millage Rate	: 18.7110
Sale Date	: 07/30/2002	Sales Price	: $145,000	Doc #	: 002-070540
Prior Sale Date	: 03/07/2002	Prior Sale Price	: $148,332	Prior Doc#	: 002-022377
Legal	: 541 AMENDED REPLT ROBINWOOD PT LTS			Market Land	: $98,311
	: 12 & 13 BLK 1			Mkt Structure	: $101,890
Bedrooms: 2	Bath: 1.00	YearBuilt: 1945	BldgSqft: 1,024	Lot Sq Ft: 8,501	Acres: .20

69

Owner	: **Schutzler Brian/Stephanie**			Parcel #	: 00305306
Site	: *no Site Address*			Ref Parcel #	: 21E14DC00800
Mail	: 21640 S Sweetbriar Cir West Linn Or 97068			12-13Taxes	: $923.24
Land Use	: 100 Vacant,Residential Land			Market Total	: $78,630
MapGrid	:			Millage Rate	: 18.7110
Sale Date	: 06/28/2013	Sales Price	: $166,500	Doc #	: 013-044953 Multi-Parcel
Prior Sale Date	: 03/01/1988	Prior Sale Price	: $55,000	Prior Doc#	: 0088-13343
Legal	: 541 AMENDED REPLAT ROBINWOOD LT 007			Market Land	: $78,630
	: BLK 01			Mkt Structure	:
Bedrooms:	Bath:	YearBuilt:	BldgSqft:	Lot Sq Ft: 9,201	Acres: .21

70

Owner	: **Senger Susan M**			Parcel #	: 00304370
Site	: 18310 Shady Hollow Way West Linn 97068			Ref Parcel #	: 21E14DA03100
Mail	: 18310 Shady Hollow Way West Linn Or 97068			12-13Taxes	: $3,030.81
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $239,848
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 03/28/2007	Sales Price	:	Doc #	: 007-026519
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 48			Market Land	: $128,618
	:			Mkt Structure	: $111,230
Bedrooms: 2	Bath: 1.00	YearBuilt: 1948	BldgSqft: 2,316	Lot Sq Ft: 16,060	Acres: .37

71

Owner	: **Shepherd William & K Macdonald-Shepherd**			Parcel #	: 00305342
Site	: 2757 Marylhurst Dr West Linn 97068			Ref Parcel #	: 21E14DC01201
Mail	: 2757 Marylhurst Dr West Linn Or 97068			12-13Taxes	: $1,305.87
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $196,471
MapGrid	: 686 H3			Millage Rate	: 18.7110
Sale Date	: 12/07/2011	Sales Price	:	Doc #	: 011-070750
Prior Sale Date	: 06/09/2003	Prior Sale Price	: $182,000	Prior Doc#	: 003-073112
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LTS			Market Land	: $96,971
	: 10&11 BLK 1			Mkt Structure	: $99,500
Bedrooms: 2	Bath: 1.00	YearBuilt: 1946	BldgSqft: 1,426	Lot Sq Ft: 8,402	Acres: .19

72

Owner	: **Stellebreit LLC**			Parcel #	: 00304762
Site	: 18250 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DB01600
Mail	: 2105 Peregrine Ct West Linn Or 97068			12-13Taxes	: $6,807.40
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $472,857
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 09/24/2012	Sales Price	:	Doc #	: 012-061556
Prior Sale Date	: 04/01/2005	Prior Sale Price	: $380,000	Prior Doc#	: 005-028878
Legal	: 451 ROBINWOOD PT LTS 43-45			Market Land	: $228,357
	:			Mkt Structure	: $244,500
Bedrooms: 3	Bath: 2.00	YearBuilt: 1978	BldgSqft: 3,993	Lot Sq Ft: 59,425	Acres: 1.36

73

Owner	: **Turney Tim**			Parcel #	: 00305413
Site	: 18350 Lower Midhill Dr West Linn 97068			Ref Parcel #	: 21E14DC01900
Mail	: 18350 Lower Midhill Dr West Linn Or 97068			12-13Taxes	: $3,737.49
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $271,646
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 04/22/2010	Sales Price	: $328,000 Full	Doc #	: 010-024360
Prior Sale Date	: 05/31/2007	Prior Sale Price	: $275,000	Prior Doc#	: 007-047611
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LTS			Market Land	: $105,906
	: 21 & 22 BLK 1			Mkt Structure	: $165,740
Bedrooms: 4	Bath: 2.00	YearBuilt: 1950	BldgSqft: 1,967	Lot Sq Ft: 11,398	Acres: .26

74

Owner	: **Webber Michael F**			Parcel #	: 00305262
Site	: 18359 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DC00400
Mail	: 1598 Skye Pkwy West Linn Or 97068			12-13Taxes	: $2,791.22
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $200,461
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 07/13/2007	Sales Price	: $288,900	Doc #	: 007-061500
Prior Sale Date	: 02/23/2007	Prior Sale Price	: $244,950	Prior Doc#	: 007-015564
Legal	: 541 AMENDED REPLAT ROBINWOOD PT LT			Market Land	: $99,651
	: 3 BLK 1			Mkt Structure	: $100,810
Bedrooms: 3	Bath: 2.00	YearBuilt: 1978	BldgSqft: 1,152	Lot Sq Ft: 9,201	Acres: .21

75

Owner	: **Willamette Commons LLC**			Parcel #	: 00304753
Site	: 18270 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DB01500
Mail	: 3380 Barrington Dr West Linn Or 97068			12-13Taxes	: $1,369.25
Land Use	: 100 Vacant,Residential Land			Market Total	: $116,604
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 03/28/2008	Sales Price	: $200,000 Full	Doc #	: 008-022425
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 451 ROBINWOOD PT LT 45			Market Land	: $116,604
	:			Mkt Structure	:
Bedrooms:	Bath:	YearBuilt:	BldgSqft:	Lot Sq Ft: 19,500	Acres: .45

#76

Owner	: **Willamette Commons LLC**			Parcel #	: 00304717
Site	: 18395 Shady Hollow Way West Linn 97068			Ref Parcel #	: 21E14DB01100
Mail	: 3380 Barrington Dr West Linn Or 97068			12-13Taxes	: $2,981.34
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $235,235
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 05/30/2003	Sales Price	:	Doc #	: 003-068669 Multi-Parcel
Prior Sale Date	: 08/17/1998	Prior Sale Price	: $175,000	Prior Doc#	: 0098-75491
Legal	: 451 ROBINWOOD LT 47			Market Land	: $193,845
	:			Mkt Structure	: $41,390
Bedrooms: 2	Bath: 1.00	YearBuilt: 1937	BldgSqft: 922	Lot Sq Ft: 38,979	Acres: .89

#77

Owner	: **Willamette Commons LLC**			Parcel #	: 00304726
Site	: 18340 Willamette Dr West Linn 97068			Ref Parcel #	: 21E14DB01200
Mail	: 3380 Barrington Dr West Linn Or 97068			12-13Taxes	: $2,918.62
Land Use	: 101 Res,Residential Land,Improved			Market Total	: $224,665
MapGrid	: 686 H2			Millage Rate	: 18.7110
Sale Date	: 05/30/2003	Sales Price	:	Doc #	: 003-068669 Multi-Parcel
Prior Sale Date	: 08/17/1998	Prior Sale Price	: $150,000	Prior Doc#	: 0098-75490
Legal	: 451 ROBINWOOD PT LT 46			Market Land	: $175,975
	:			Mkt Structure	: $48,690
Bedrooms: 2	Bath: 1.00	YearBuilt: 1910	BldgSqft: 1,429	Lot Sq Ft: 32,000	Acres: .73

#78

Owner	: **Willamette Prop Ltd Prtnshp**			Parcel #	: 01699031
Site	: *no Site Address*			Ref Parcel #	: 21E14DD90002
Mail	: 18380 Willamette Dr #202 West Linn Or 97068			12-13Taxes	: $16,409.53
Land Use	: 201 Com,Commercial Land,Improved			Market Total	: $1,051,100
MapGrid	:			Millage Rate	: 18.7110
Sale Date	: 06/01/1996	Sales Price	: $784,856	Doc #	: 96-41156
Prior Sale Date	:	Prior Sale Price	:	Prior Doc#	:
Legal	: 3252 MARYLHURST MED CONDO UNIT 2			Market Land	:
	:			Mkt Structure	: $1,051,100
Bedrooms:	Bath:	YearBuilt: 1995	BldgSqft:	Lot Sq Ft: 4,074	Acres: .09

M E T R O S C A N
Reference Farm
Clackamas (OR)

Owner	Address	Phone	Ref Number
Aasen Donald L;Lillian L	18185 Shady Hollow Way West Linn		1
Archer David James;Keri Ann	3184 Arbor Dr West Linn 97068		2
Arias Ana Laura	18368 Vista Ct West Linn 97068		3
Arnold Shan D	18244 Shady Hollow Wa (No Mail)		4
Bazzaz Ala	2798 Robinwood Way West Linn 9706		5
Bean Kenneth J;Kelly S	18140 Shady Hollow Way West Linn		6
Bell Margaret M	2648 Maria Ct West Linn 97068		7
Bogdan Barbara K	18335 Willamette Dr West Linn 970		8
Bogdan Barbara K;Janusz G	18345 Willamette Dr West Linn 970		9
Bogdan Janusz G;Barbara K	2797 Marylhurst Dr West Linn 9706		10
Bonacich Steve	3054 Lazy River Dr West Linn 9706		11
Boyer Family Partnership I	3020 Lazy River Dr West Linn 9706		12
Bracco Anthony Michael;Anne	2716 Robinwood Way West Linn 9706		13
Callagan Michael W;Helene F	3293 Arbor Dr West Linn 97068		14
Cassell Stanley J	2767 Robinwood Way West Linn 9706		15
Chambers Lori	18510 Lower Midhill Dr West Linn		16
Cherry Ilona B Trustee	2636 Maria Ct West Linn 97068		17
Cherry Roger L Trustee	2634 Maria Ct West Linn 97068		18
City of West Linn	18292 Shady Hollow Way West Linn		19
Coale Franklin	18380 Willamette Dr West Linn 970		20
Coale Franklin	*no Site Address*		21
Covic George Gary Trustee	2778 Robinwood Way West Linn 9706		22
Daum Nancy L	18304 Shady Hollow Way West Linn		23
Debellis Vito J;Yvonne C	18200 Shady Hollow Way West Linn		24
Destefanis L Marie	18225 Willamette Dr West Linn 970		25
Destefanis L Marie	18225 Willamette Dr West Linn 970		26
Deville Clelia A	3260 Arbor Dr West Linn 97068		27
Fortuna Dale L;Sherry A	3360 Arbor Dr West Linn 97068		28
Fortuna Sherry Ann;Dale L	3340 Arbor Dr West Linn 97068		29
Fromme Mathew W;Ashlee M Ma	18361 Willamette Dr West Linn 970		30
Gaston Larry R Co-Trustee	18189 Shady Hollow Way West Linn		31
Goddard Mark Lee	18260 Lower Midhill Dr West Linn		32
Grove Donald Raymond;Erlene	3225 Arbor Dr West Linn 97068		33
Groves Eldora J	18360 Shady Hollow Way West Linn		34
Guy Lillian	2786 Robinwood Way West Linn 9706		35
Harriman Kathleen	18115 Lower Midhill D (No Mail)		36
Holland Inc	18350 Willamette Dr West Linn 970		37
Holt Richard D;Grace Ann	18380 Lower Midhill Dr West Linn		38
Housing Authrty Co Clack	3050 Lazy River Dr West Linn 9706		39
Hvostov Leslie	2748 Robinwood Way West Linn 9706		40
Jervis Bruce S	3060 Lazy River Dr West Linn 9706		41
Jones Stephen B;Cynthia S	18325 Vista Ct West Linn 97068		42
Kane Donald B	18220 Willamette Dr West Linn 970		43
Kent Joy L Harns	18490 Lower Midhill Dr West Linn		44
Kirby Matthew;Amy	3280 Arbor Dr West Linn 97068		45

METROSCAN
Reference Farm
Clackamas (OR)

Owner	Address	Phone	Ref Number
Kleips Christopher M;Angela	2630 Maria Ct West Linn 97068		46
Knaebel David R;Donna M	18430 Lower Midhill Dr West Linn		47
Koran Lawrence A	18194 Shady Hollow Wa (No Mail)		48
Lavin Charles J;Alice Gail	2642 Maria Ct West Linn 97068		49
Lawson Michael C	18150 Shady Hollow Way West Linn		50
Lazy River Devlp LLC	*no Site Address*		51
Lunsford Wilbur T Jr	18365 Willamette Dr West Linn 970		52
Mabie Frederick J;Lisa C	3689 Fairview Way West Linn 97068		53
McAllister Dan C	18155 Willamette Dr West Linn 970		54
McKinley Benjamin R;Christi	2624 Maria Ct West Linn 97068		55
McQuay James M;Jeannette K	3162 Arbor Dr West Linn 97068		56
Meyers Michael D;Rochelle	2735 Robinwood Way West Linn 9706		57
Nusbaum Cathy E	2777 Marylhurst Dr West Linn 9706		58
Owens Carl;Judith M	2785 Robinwood Way West Linn 9706		59
Owens Carl R;Judith M	18263 Willamette Dr West Linn 970		60
Owens Carl R;Judith M	18255 Willamette Dr West Linn 970		61
Oxford Investment Corp	2875 Marylhurst Dr West Linn 9706		62
Richards Daniel;Shannon	3080 Lazy River Dr West Linn 9706		63
Rusk Ruth N Trustee	18375 Willamette Dr West Linn 970		64
Sandoval Jennifer M;James E	18369 Willamette Dr West Linn 970		65
Schelske Wendy M	18470 Lower Midhill Dr West Linn		66
Schlitt Dustin;Theresa L	18355 Willamette Dr West Linn 970		67
Schlunegger John R	18560 Lower Midhill Dr West Linn		68
Schutzler Brian;Stephanie	*no Site Address*		69
Senger Susan M	18310 Shady Hollow Way West Linn		70
Shepherd William;K Macdonal	2757 Marylhurst Dr West Linn 9706		71
Stellebreit LLC	18250 Willamette Dr West Linn 970		72
Turney Tim	18350 Lower Midhill Dr West Linn		73
Webber Michael F	18359 Willamette Dr West Linn 970		74
Willamette Commons LLC	18270 Willamette Dr West Linn 970		75
Willamette Commons LLC	18395 Shady Hollow Way West Linn		76
Willamette Commons LLC	18340 Willamette Dr West Linn 970		77
Willamette Prop Ltd Prtnshp	*no Site Address*		78

Current Sale Statistics

Average Sale Price	$375,000.00
Average Loan Amount	$275,000.00
Number of Sales in last year	1
Number of sales in last 6 months	1

Note: *Average Sale Price and Loan Amounts are calculated on full value sales within the last year.*

Farm Statistics

Owner Occupied	46
Absentee Owner	32
Average Square Footage	1762
Average # of bedrooms	2
Average # of Bathrooms	1.81
Average year built	1964

NEIGHBORHOOD MEETING SUMMARY

Meeting Date: Tuesday, February 11, 2014

In Attendance:

Stewart Gorgon Straus, Architect

David and Diana Emami, Willamette Commons, LLC

Neighborhood Members:

Twenty one (21) members of the community were present.

Presentation:

Mr. Emami spoke about the project. He said there would be 26 units(Townhomes) that would be plus or minus 2000 sf. They would have double car garages and there would be plenty of extra parking. He said that they would be very nice looking, like houses and not apartments. He said they would have yards. There would be a playground and a water feature. He brought up how expensive it is to build in West Linn(someone in the background input that the most expensive places to build are Happy Valley, Beaverton and then West Linn). Mr. Emami said because of the cost to build the price of each unit would be between $380,000 to $400,000. He said since the units would be owned by the people living in them they would be better maintained than if they were rentals. Mr. Emami mentioned that they were leaving one oak tree in the corner.

Mr. Emami introduced Stuart Strauss, Architect and opened the floor to questions

Q: How many units?

A: There will be 26 units.

Q: Are the 2 units together with no separation?

A: They are independent units.

Q: Is there going to be a bedroom on the main floor?

A: No there will not be.

Q: Is this a 5 acre parcel?

A: No, 2.9 acre.

Q: Have you done a traffic study?

A: Traffic study was done a long time ago.

Q: Why can't they come in off of 43?

A: ODOT will not allow it.

Q: Why do it on other projects?

A: They are grandfathered in.

Q: Are you going to improve Shady Hollow?

A: We are going to do a half street improvement.

Q: Is there going to be a right and left turn lane?

A: We do not know yet, the City has not told us what the improvements will be.

Q: Will we get another meeting after you find out?

A: The next meeting will be with the Design Review Board.

Q: How many people do you project living in this project?

A: Under 100, but not all of those will be driving, some of them will be children.

Q: Why 26 units?

A: Outdoor area allowed for extra units.

Q: Where are the driveways and walkways?

A: The driveways are on one side of the units and the walkways are on the other side.

Q: What is the setback from the property line?

A: 15 - 25 ft? Need to check and address the issue prior to submitting.

Q: Is there a promenade in the middle?

A: Yes, and fire truck access.

Q: Is there an entrance to Robinwood Park?

A: Our outdoor area will tie into the park across the street.

Q: How many off-street parking spaces?

A: 23

Q: Are any set up for motor homes or oversized vehicles?

A: No

Q: Are you going to have a fenced area?

A: We would prefer not to, but we cannot predict what the owners will do.

Q: Do you need to put in a sound wall on any part of 43?

A: Not that I am aware of, no. We may do some landscaping, but we do not want to turn this into a compound.

Q: Where is the creek on the property?

A: There is no creek on the property according to environmental study done.

Q: Being that there is a drainage down from 43 are you putting in bio swells?

A: Engineers will be providing ideas for treatment and detention of drainage water to enhance site.

Q: What is the grading going to be?

A: We will do balanced cut and fill 3 to 4 feet difference. We will be grading area by area.

Is it a stream or not, never was officially designated as one.

Our storm water management solutions might solve creek issue.

Concerned that storm water management will bother their stream to the north.

Q: Will the discharge from storm management system overwhelm the stream it is discharged into?

A: No

Q: What about in the winter time when there is more rain?

A: The storm drain system will not make more water, it will be the same as before.

Kevin Brick asked to conclude Q & A and continue the it if needed outside the meeting room.

End of presentation.

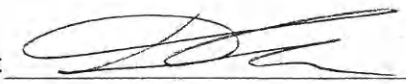
MEETING SIGN-IN SHEET

Project:	Willamette Commons	**Meeting Date:**	February 11, 2014 – 7:00 p.m.
Facilitator:	Robinwood Neighborhood Meeting	**Place/Room:**	Robinwood Station

Name	Address	Phone	E-Mail
Jeremy West	18340 Willamette Dr.	503 697 3250	
Lawrence Koren	18197 Shady Hollow Way	503 675-5530	
Edna Caston	18189 Shady Hollow Way	503 635 7195	
Lisa Clifton	3765 Ridgewood Way	503-675-1108	
Bob Stawek	3666 Maria Ct	503-636-5915	
Donna Fagan	4981 Marple [illegible]	503 799 6586	
Dan Kraniskowich	Box 148 97068	636-2544	
Mary Hill	19050 Nixon Ave WL	636-5373	
Marygrace McDermott	18976 Walling Cir	636-2051	
Theresa & Dustin Schlitt	18355 Willamette Dr. West Linn OR		
[illegible]	2612 [illegible] 97068	636 4400	
Kazi Ahmed	18649 Mapphill Cir. West Linn	635 8023	
Randall Fastabend	18787 Trillium Dr		randallfastabend88@gmail.com
Kelly Rothgeb	18310 Shady Hollow way west linn	503 636 6323	
Kevin Hoyer	19840 Nixon Av	503 675-7301	
Aaron Buffington	3820 Ridgewood way	503 432 7411	

As the applicant for the 18270/18340 Willamette Drive and 18395 Shady Hollow Drive, West Linn, OR 97068 project, I hereby certify that on this day, Tuesday, January 21, 2014 notice of the Neighborhood / Developer meeting was mailed in accordance with the requirements of the City of West Linn Code Chapter 99.038.

Applicant's Name: Willamette Commons, LLC
By: Diana Emami, Member

Applicant's Signature: 

Date: January 21, 2014

AFFIDAVIT OF MAILING

State of Oregon)
) SS
County of Clackamas)

I, Diana Emami, being first duly sworn, depose and say:

That on the 21st day of January, 2014, I served upon the persons shown on Exhibit "A", attached hereto and this reference incorporated herein, a copy of this Notice of Neighborhood / Developer meeting marked Exhibit "B", attached hereto and by this reference incorporated herein, by mailing to them a true and correct copy of the original hereof. I further certify that the addresses shown on said Exhibit "A" are their regular addresses as determined from the books and records of the Clackamas County Department of Assessment and Taxation Tax Rolls, and that said envelopes were placed in the United States mail at West Linn, Oregon, with postage fully prepaid thereon.

Dated this 21st day of January, 2014.

Signature

Subscribed and sworn to before me this 21st day of January 2014.

OFFICIAL SEAL
ANA PATRICIA MERCADO
NOTARY PUBLIC - OREGON
COMMISSION NO. 465557
MY COMMISSION EXPIRES FEBRUARY 05, 2016

Notary Public for Oregon
My Commission expires: 2/5/16

RE: 18270/18340 Willamette Drive and 18395 Shady Hollow Drive, West Linn, OR 97068 project

As the applicant for the 18270/18340 Willamette Drive and 18395 Shady Hollow Drive, West Linn, OR 97068 project, I hereby certify that on this day, Tuesday, January 21, 2014 sign was posted on the subject property in accordance with the requirements of the City of West Linn Code Chapter 99.038.

Applicant's Name: Willamette Commons, LLC
By: Diana Emami, Member

Applicant's Signature: _____

Date: January 21, 2014

AFFIDAVIT OF POSTING

State of Oregon)
) SS
County of Clackamas)

I, Diana Emami, being first duly sworn, depose and say:

As the applicant for the 18270/18340 Willamette Drive and 18395 Shady Hollow Drive, West Linn, OR 97068 project, I hereby certify that I posted copy of the Notice of the Neighborhood / Developer meeting in accordance with the requirements of the City of West Linn Code Chapter 99.038 on the 21st day of January, 2014, copy attached; and that I posted said copy in the public and conspicuous place within the City at the subject property, to wit:

Corner of 18340 Willamette Drive and 18395 Shady Hollow Drive, West Linn

Dated this 22nd day of January, 2014.

Signature

Subscribed and sworn to before me this 22nd day of January 2014.

Notary Public for Oregon
My Commission expires: 7-12, 2017

OFFICIAL SEAL
JULIE L COURSON
NOTARY PUBLIC - OREGON
COMMISSION NO. 479628
MY COMMISSION EXPIRES JULY 12, 2017

NOTICE

NEIGHBORHOOD / DEVELOPER MEETING FOR PROPOSED PROJECT

Willamette Commons

503-557-3350

February 11, 2014 at 7 p.m.
Robinwood Station at
3706 Cedaroak Dr, West Linn

December 27, 2013

Aaron Buffington
Robinwood NA President
3820 Ridgewood Way
West Linn, OR 97068

RE: Neighborhood contact requirement as per City of West Linn code 99.038

Dear Robinwood NA President,

We would like to request to placed on your next meeting agenda to present our townhouse development project located at 18270/18340 Willamette Drive and 18395 Shady Hollow Drive, West Linn.

You can reach me at 503-557-3350, my email is emami007@comcast.net

Mailing:
Willamette Commons, LLC
3380 Barrington Drive
West Linn, OR 97068

Look forward for your prompt response to this matter. Our email request remains unanswered.

Regards,

David Emami
Member, Willamette Commons, LLC
Phone 503-557-3350

cc: Kevin Bryck
Robinwood NA Designee
18840 Nixon Ave.
West Linn, OR 97068

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®
WEST LINN OR 97068

OFFICIAL USE

Postage	$ $0.46	0155
Certified Fee	$3.10	07 Postmark Here
Return Receipt Fee (Endorsement Required)	$2.55	
Restricted Delivery Fee (Endorsement Required)	$0.00	
Total Postage & Fees	$ $6.11	12/27/2013

Sent To: Aaron Buffington
Street, Apt. No.; or PO Box No.: 3820 Ridgewood Way
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:
Aaron Buffington
Robinwood NA President
3820 Ridgewood Way
West Linn OR 97068

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X A Buffington ☐ Agent ☐ Addressee

B. Received by (Printed Name): B Buffington — C. Date of Delivery: 12/28

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 service label): 7010 3090 0002 9780 2806

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

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®
WEST LINN OR 97068

OFFICIAL USE

Postage	$ $0.46	0155
Certified Fee	$3.10	07 Postmark Here
Return Receipt Fee (Endorsement Required)	$2.55	
Restricted Delivery Fee (Endorsement Required)	$0.00	
Total Postage & Fees	$ $6.11	12/27/2013

Sent To: Kevin Bryck
Street, Apt. No.; or PO Box No.: 18840 Nixon Ave
City, State, ZIP+4: West Linn, OR 97068

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:
Kevin Bryck
Robinwood NA Designee
18840 Nixon Ave
West Linn, OR 97068

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Logan Bryck ☐ Agent ☐ Addressee

B. Received by (Printed Name): Logan Bryck — C. Date of Delivery

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 service label): 7010 3090 0002 9780 2790

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

THE EDGE® PWY-EDG-5M

Pathway Luminaire – Type V Medium

Product Description

Duable die-cast aluminum luminaire housing mounts directly to 4" (102mm) diameter pole without visible mounting hardware for clean apperance. Pole mounts to rugged die cast aluminum internal flange secured by (3) 3/8-16 anchor bolts (provided). Note: T45 Torx 3/8 socket required for head installation. Top mounted LEDs for superior optical performance and light control.

Performance Summary

Utilizes BetaLED® Technology

Patented NanoOptic® Product Technology

Made in the U.S.A. of U.S. and imported parts

CRI: Minimum 70 CRI

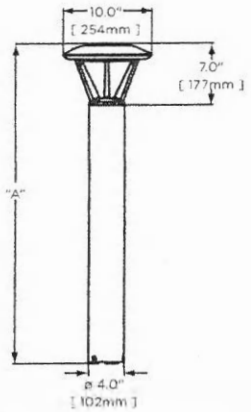
CCT: 5700K (+/- 500K) Standard, 4000K (+/- 300K)

Warranty: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish*

EPA and Weight: Reference EPA and Weight spec sheet

Accessories

Field Installed Accessories
XA-XBP8RSV
XA-XBP8BK
XA-XBP8RWH
XA-XBP8RBZ
XA-XBP8RPB Retro-Fit Kit - Used for replacement of existing bollards



Model	Dim. "A"
Landscape-13	13" [330mm]
Landscape-18	18" [457mm]
Pathway	36" [914mm]
Pathway	42" [1067mm]
Pedestrian	96" [2438mm]

Ordering Information

Example: PWY-EDG-5M-P0-02-D-UL-SV-350-OPTIONS

PWY-EDG	5M		02	D				
Product	Optic	Mounting	Light Source Count (qty)	Version	Voltage	Color Options	Drive Current	Options
PWY-EDG	**5M** Type V Medium	**P0** 13" (330mm) landscape **P1** 18" (457mm) landscape **P3** 3' (0.9m) landscape **P4** 42" (1068mm) landscape **P8** 8' (2.4m) landscape	**02**	**D**	**UL** Universal 120-277V **UH*** Universal 347-480V **12** 120V **24** 240V **27** 347V **34*** 347V **48*** 480V	**SV** Silver (Standard) **BK** Black **BZ** Bronze **PB** Platinum Bronze **WH** White	**350** 350mA **525**** 525mA	**40K** 4000K Color Temperature - Color temperature per luminaire **F** Fuse - When code dictates fusing, use time delay fuse - Not available with all ML options. Refer to ML spec sheet for availability with ML options **HL** Hi / Low (175/350/525 Dual Circuit Input) - Refer to ML spec sheet for details - Sensor not included **TL** Two-Level (175/525 w/ integrated sensor control) - Refer to ML spec sheet for details **TL2** Two-Level (0/350 w/ integrated sensor control) - Refer to ML spec sheet for details **TL3** Two-Level (0/525 w/ integrated sensor control) - Refer to ML spec sheet for details **WB** Welded Base - Standard on P8 mounting option, available with P1, P3, and P4 mounting options

* Available with P3, P4 and P8 mounting options.
** Available with P1, P3, P4 and P8 mounting options.
† See www.cree.com/lighting for warranty terms.

BetaLED TECHNOLOGY

Rev. Date 11/09/2012

CREE

www.cree.com/lighting T (800) 236-6800 F (262) 504-5415

A

Pathway Luminaire - Type V Medium

Product Specifications

CONSTRUCTION & MATERIALS

- Durable die-cast aluminum luminaire housing mounts directly to 4" (102mm) diameter pole without visavle mounting hardware for clean apperance
- Pole mounts to rugged die cast aluminum internal flange secured by (3) 3/8-16 anchor bolts (provided)
- Note: T45 Torx 3/8 socket required for head installation
- Top mounted LEDs for superior optical performance and light control
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultradurable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Standard is silver. Bronze, black, white, and platinum bronze are also available

ELECTRICAL SYSTEM

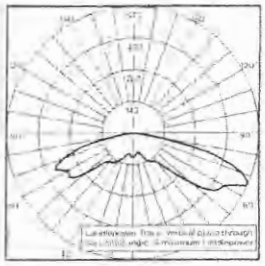
- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class I drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C/D breaker should be used

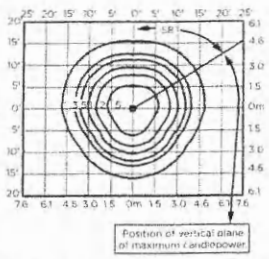
REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Luminaire also available with CE listing
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- ENERGY STAR Qualified LED Lighting
- Dark Sky Friendly, IDA Approved
- RoHS Compliant
- Meets Buy American requirements within ARRA

Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by independent testing Laboratories, a NVLAP certified laboratory.





ITL Test Report #: 70714
PWY-EDG-5M-**-02-D-UL-350
Initial Delivered Lumens: 1,520

PWY-EDG-5M-**-02-D-UL-350
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 1,520
Initial FC at grade

IES Files
To obtain an IES file specific to your project consult:
http://www.cree.com/lighting/tools-and-support/exterior-ies-configuration-tool

Lumen Output, Electrical, and Lumen Maintenance Data

Type V Medium Distribution													
LED Count (x10)	5700K Initial Delivered Lumens	5700K BUG Ratings* Per TM-15-11	4000K Initial Delivered Lumens	4000K BUG Ratings* Per TM-15-11	System Watts 120-480V	TOTAL CURRENT 120V	TOTAL CURRENT 208V	TOTAL CURRENT 240V	TOTAL CURRENT 277V	System Watts 347-480V**	TOTAL CURRENT 347V	TOTAL CURRENT 480V	50K Hours Projected Lumen Maintenance Factor @ 15°C (59°F)***
350mA @ 25°C (77°F)													
18	1,498	B1 U1 G1	1,380	B1 U1 G1	22	0.18	0.12	0.10	0.10	28	0.09	0.13	91%
525mA @ 25°C (77°F)													
18	2,097	B2 U1 G2	1,932	B1 U1 G1	34	0.29	0.19	0.17	0.15	40	0.12	0.13	89%

* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: www.iesna.org/PDF/Errata/TM-15-11BUGRatingsAddendum.pdf
** Utilizes magnetic step-down transformer when 525mA drive current or multi-level options are selected
*** Projected L70 (10K) Hours >60,000. For recommended lumen maintenance factor data see TD-03

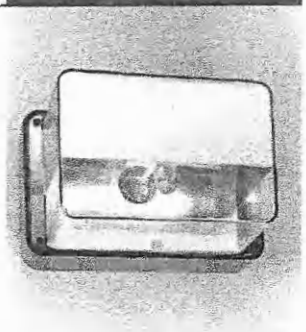
www.cree.com/lighting T (800) 236-6800 F (262) 504-5415

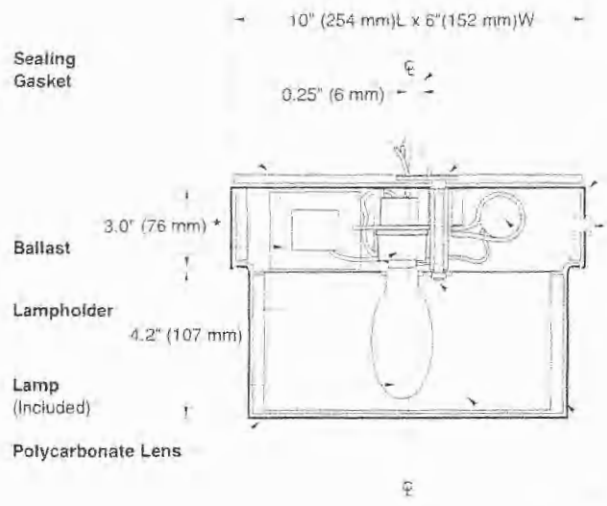
RECTANGULAR HID WALL MOUNT

PERIMETER CUTOFF

E3-H SERIES

B & P





Mounting Hole Line

Fixture Mounting Bar

Housing
Die-Cast Aluminum
Colorfast DeltaGuard® finish

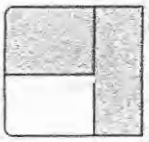
Photocell (Optional)

Ignitor

Threaded Nipple with Slotted Hex Head Cap

Aluminum Shroud

Reflector



Notes

NOTE:
* For 50–100W HPS 120V, this dimension is 2.3" (57 mm)

SPEC	MOUNTING POSITION	WATTAGE	CATALOG#
	PULSE START METAL HALIDE		
SPEC #	Wall Downlight	50W PSMH	E3405-(a)(b)
SPEC #	Wall Downlight	70W PSMH	E3407-(a)(b)
	HIGH PRESSURE SODIUM		
SPEC #	Any	50W HPS	E3505-(a)(b)
SPEC #	Wall Downlight	70W HPS	E3507-(a)(b)
SPEC #	Wall Downlight	100W HPS	E3510-(a)(b)

Specify (a) Voltage & (b) Options.

(a) VOLTAGE SUFFIX KEY

0	120/277V (50W HPS)
M	120/208/240/277V (Standard: 50 – 70W PSMH) (50 – 100W HPS)
T	120/277/347V (Canada Only) (70W PSMH; 70 – 100W HPS)
1	120V (Standard: 50 – 100W HPS)
2	277V
3	208V
4	240V
6	347V (Canada Only) (50W HPS)

For voltage availability outside the US and Canada, see Bulletin 70-9 or contact your Ruud Lighting authorized International Distributor.

(b) OPTIONS (factory-installed)

BS	Bronze Color Shroud
GS	Gold Color Shroud (n/a on 100W HPS)
H	High Power Factor Ballast
J	Tamperproof Lens Fasteners
-(a)P	Photocell
R	Vertical Mounting*

Specify (a) Single Voltage — See Voltage Suffix Key
* Not available when both options H & -(a)P are specified.

GENERAL DESCRIPTION

Aluminum die-cast ballast housing features a thermal air isolation chamber separating the ballast core and coil from the other electrical components. Supplied with a neoprene sealing gasket for complete waterproofing at the mounting surface. A silicone rubber seal is furnished between housing and lens to ensure a water- and insect-tight seal. Steel fixture mounting bar and threaded nipple provided for direct mounting to recessed junction box. Clear polycarbonate lens is fastened to housing with phillips-head captive stainless-steel screws. Combination of internal polished aluminum shroud (inside painted white and outside painted silver on 100W HPS) and specular reflector directs light downward to wash wall below and to the sides of the fixture.

ELECTRICAL

Fixture includes clear, medium-base lamp and porcelain enclosed, 4kv-rated screw-shell-type lampholder with spring-loaded center contact. Lamp ignitor included where required. All ballast assemblies are normal power factor and use the following circuit types:

Reactor (120V only)
50 – 100W HPS

HX — High Reactance
50 – 70W PSMH; 50 – 100W HPS

LABELS

ANSI lamp wattage label supplied, visible during relamping. UL Listed in the US and Canada for wet locations and enclosure classified IP54 per IEC 529 and IEC 598.

FINISH

Exclusive Colorfast DeltaGuard® finish features an E-coat epoxy primer with medium bronze acrylic powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. The finish is covered by our seven-year limited warranty.

ACCESSORIES

ESB-7	Surface Mounting Box
TPS-1	Tamperproof Screwdriver

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Rev. 04/05/12

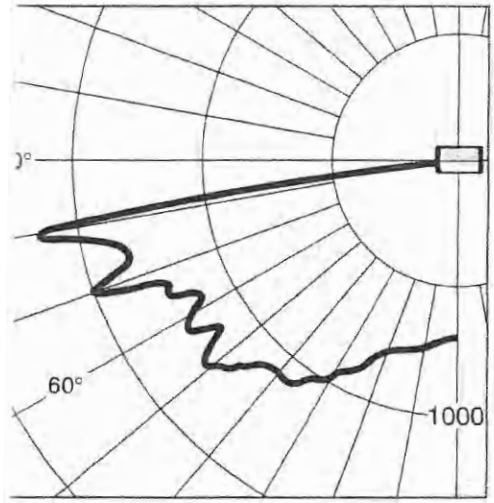
RUUD LIGHTING DIRECT

E3-H SERIES

RECTANGULAR HID WALL MOUNT

PERIMETER CUTOFF

B
&
D



nt View

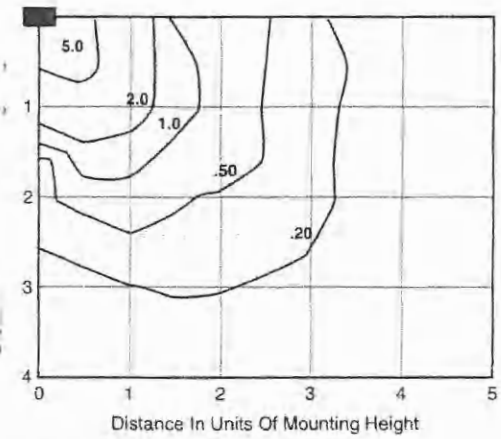
ting Sciences Inc.
lified Test Report No. LSI 9910
diepower distribution curve of 70W HPS
tangular Perimeter Cutoff Fixture.

Isofootcandle plots show initial footcandles at grade. (Footcandles ÷ 0.0929 = Lux)

ANGLE	MEAN CP	ANGLE	MEAN CP
0	698	50	1263
5	714	55	1128
10	742	60	1229
15	770	65	1268
20	801	70	1525
25	899	75	1373
30	964	80	1668
35	1051	85	235
40	1094	90	39
45	1131		

Maximum Candlepower:	1668
Plane of Maximum CP:	55°
Vertical Angle of Maximum Candlepower:	80°
Lumen Rating:	6400

EFFICIENCY = 66.7%



Isofootcandle plot of 70W HPS Rectangular Perimeter Cutoff fixture at 10' (3 m) mounting height. (Plan view)

MOUNTING HEIGHT CONVERSION TABLE

Footcandle readings for mounting heights other than 10' (3 m) may be obtained by multiplying fc values by the following:

HEIGHT	MULTIPLIER
7.0' (2.1 m)	2.04
8.0' (2.4 m)	1.56
9.0' (2.7 m)	1.23
12.0' (3.7 m)	0.69
15.0' (4.6 m)	0.44
20.0' (6.1 m)	0.25

LAMP WATTAGE CONVERSION TABLE

Footcandle readings for wattages and lamp types other than 70W HPS may be obtained by multiplying fc values by the following:

LAMP/WATTAGE	MULTIPLIER
50W PSMH	0.48
70W PSMH	0.79
50W HPS	0.63
100W HPS	1.49

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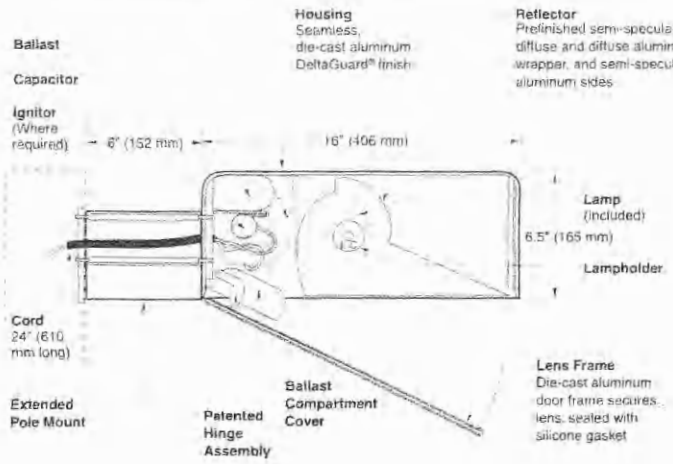
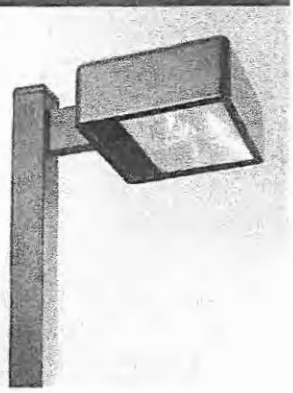
Rev. 04/05/12

6" EXTENDED POLE MOUNT

16" (406 mm) AREA CUTOFF LIGHT

AC2-16 SERIES





SPEC #	WATTAGE	CATALOG #
	PULSE START METAL HALIDE	
	150W PSMH	AC2615-**(a)(b)**
	200W PSMH	AC2620-**(a)(b)**
	250W PSMH	AC2625-**(a)(b)**
†	320W PSMH	AC2632-**(a)(b)**
†	350W PSMH	AC2635-**(a)(b)**
†	400W PSMH	AC2640-**(a)(b)**
	HIGH PRESSURE SODIUM	
	250W HPS	AC2525-**(a)(b)**
	400W HPS	AC2540-**(a)(b)**

Specify **(a)** Voltage & **(b)** Options

† Reduced envelope ED28 lamp

(a) VOLTAGE SUFFIX KEY	
M	120/208/240/277V (Standard)
T	120/277/347V (Canada Only) (Standard)
1	120V
2	277V
27	277V Reactor (PSMH Only)
3	208V
4	240V
5	480V
6	347V (Canada Only)

For voltage availability outside the US and Canada, see Bulletin TD-9 or contact your Ruud Lighting authorized International Distributor.

(b) OPTIONS (factory-installed)	
-(a)F	Fusing
-(a)P	Button Photocell
-5P	External Photocell (for 480V)
Q	Quartz Standby (includes 100W quartz lamp) (N/A on 277V Reactor)

Specify **(a)** Single Voltage — See Voltage Suffix Key

GENERAL DESCRIPTION

60° forward throw sharp cutoff luminaire for HID lamp, totally enclosed. Housing is seamless, die-cast aluminum. Mounting consists of a 1.8" (44 mm) wide by 4.5" (114 mm) high by 6" (152 mm) long extruded aluminum arm. The arm is held in place with two 3/8" (9 mm) mounting rods fastened to a steel backing plate inside the pole, and by two nuts inside the fixture housing. Mounting rods are provided with sealing washers to prevent water leakage. Lens assembly consists of rigid aluminum frame and high-impact, clear-tempered glass.

ELECTRICAL

Fixture includes clear, mogul-base lamp; 320 – 400W PSMH utilize the ED28 reduced envelope lamp. Pulse-rated porcelain enclosed, 4kv-rated screw-shell-type lampholder with spring-loaded center contact and lamp grips. Lamp ignitor included. All ballast assemblies are high-power factor and use the following circuit type:

277V Reactor
150 – 400W PSMH

HX— High Reactance
150W PSMH

CWA — Constant Wattage Autotransformer
200 – 400W PSMH; 250 – 400W HPS

PATENTS

US 4,689,729; 4,709,312

FINISH

Exclusive Colorfast DeltaGuard® finish features an E-coat epoxy primer with medium bronze ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. The finish is covered by our seven-year limited warranty.

LABELS

ANSI lamp wattage label supplied, visible during relamping. UL Listed in US and Canada for wet locations and enclosure classified IP65 per IEC 529 and IEC 598.

ACCESSORIES

FWG-16	Wire Guard
SBL-16	Backlight Shield

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RUUD LIGHTING DIRECT

AC2-16 SERIES

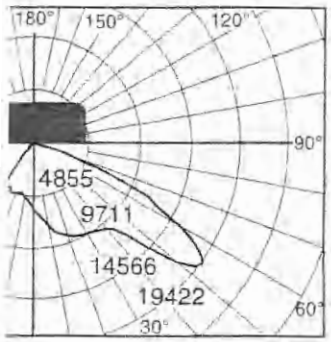
6" EXTENDED POLE MOUNT

16" (406 mm) AREA CUTOFF LIGHT

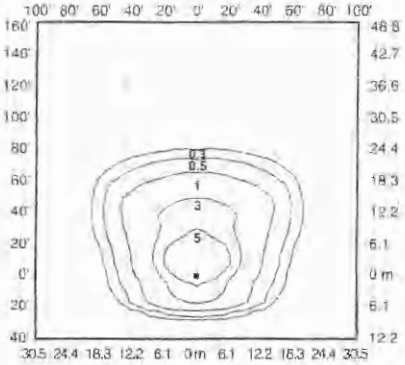
A RATING

Isofootcandle plots show initial footcandles at grade. (Footcandles ÷ 0.0929 = Lux)

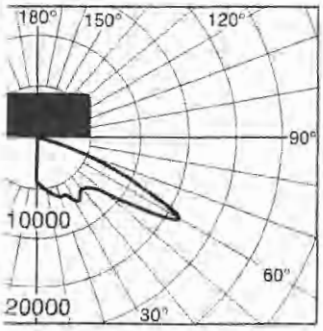
0.95 for single fixture with 0° tilt (Consult factory for EPA rating on multiple units).



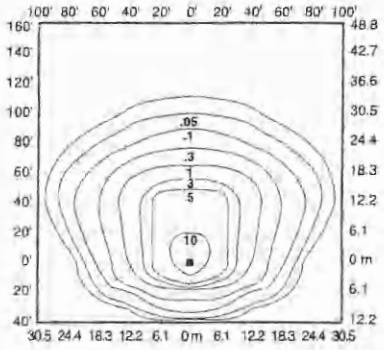
dlepower distribution curve of 400W PSMH Cutoff Light without backlight shield.



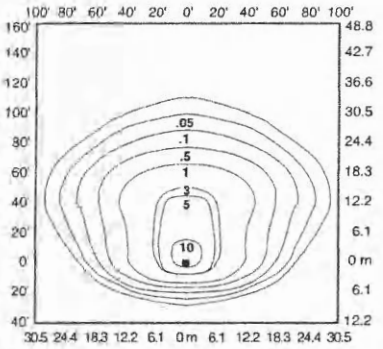
Isofootcandle plot of 400W PSMH Area Cutoff Light at 30' (9.1 m) mounting height, 0° vertical tilt, with backlight shield removed. (Plan view)



lting Sciences Inc.
ified Test Report No. LSI 10246
dlepower distribution curve of 250W HPS Cutoff Light without backlight shield.



Isofootcandle plot of 400W HPS Area Cutoff Light at 25' (7.6 m) mounting height, 0° vertical tilt, with backlight shield removed. (Plan view)



Isofootcandle plot of 400W HPS Area Cutoff Light at 25' (7.6 m) mounting height, 0° vertical tilt, with backlight shield located for backlight cutoff. (Plan view)

le-spacing Example Data

Test area is centered within a (1X) pole layout

alog #	Lamp Type	Lamp Lumens	Mounting Height	Max. Recommended Pole-spacing X x Y	Average Initial Light Levels at Grade 2 Fixtures per pole @ 180° (Footcandles ÷ 0.0929 = Lux) Footcandles	Lux
615-M	150W PSMH	12,000	15' (4.6 m)	60' (18.3 m) x 85' (25.9 m)	3.56	38
			20' (6.1 m)	75' (22.9 m) x 11' (33.5 m)	2.11	23
625-M	250W PSMH	22,000	20' (6.1 m)	75' (22.9 m) x 110' (33.5 m)	3.86	42
			25' (7.6 m)	95' (29.0 m) x 140' (42.7 m)	2.31	25
640-M	400W PSMH	40,000	25' (7.6 m)	95' (29.0 m) x 140' (42.7 m)	4.20	45
			30' (9.1 m)	115' (35.1 m) x 165' (50.3 m)	2.86	31
525-M	250W HPS	28,500	20' (6.1 m)	75' (22.9 m) x 110' (33.5 m)	4.83	52
			25' (7.6 m)	95' (29.0 m) x 140' (42.7 m)	2.89	31
540-M	400W HPS	50,000	25' (7.6 m)	95' (29.0 m) x 140' (42.7 m)	5.08	55
			30' (9.1 m)	115' (35.1 m) x 165' (50.3 m)	3.37	36

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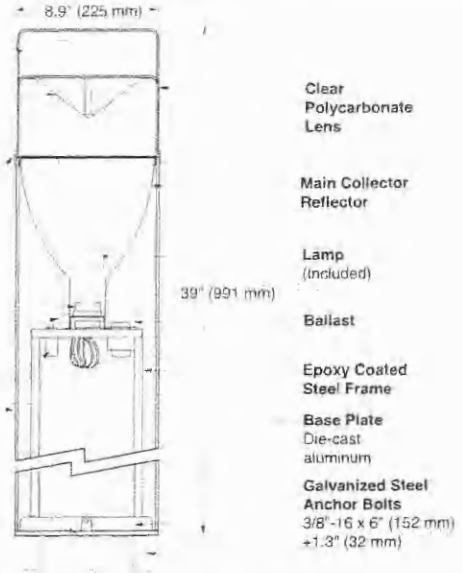
CLEAR LENS — EXTENDED FLAT TOP

ROUND BOLLARD

HCF SERIES



Extended Top
Die-cast aluminum

Specular Upper Reflector

Die-Cast Aluminum Lens Retaining Ring
With double silicone gasket

Lampholder

Ignitor
(Where required)

Capacitor

Housing
Extruded aluminum
DeltaGuard® finish

Conduit Entry

Clear Polycarbonate Lens

Main Collector Reflector

Lamp
(Included)

Ballast

Epoxy Coated Steel Frame

Base Plate
Die-cast aluminum

Galvanized Steel Anchor Bolts
3/8"-16 x 6" (152 mm)
+1.3" (32 mm)

Notes

SPEC #	WATTAGE	CATALOG #
	PULSE START METAL HALIDE	
☐ SPEC #	50W PSMH	HCF405-(a)(b)
☐ SPEC #	70W PSMH	HCF407-(a)(b)
☐ SPEC #	100W PSMH	HCF410-(a)(b)
☐ SPEC #	**HIGH PRESSURE SODIUM**	
	50W HPS	HCF505-(a)(b)
☐ SPEC #	70W HPS	HCF507-(a)(b)
☐ SPEC #	100W HPS	HCF510-(a)(b)
	FLUORESCENT	
☐ SPEC #	26/32/42W CFL	HCF242-(a)(b)

Specify (a) Voltage & (b) Options

(a) VOLTAGE SUFFIX KEY

D	120/277V (Standard: 50W HPS)
M	120/208/240/277V (Standard: PSMH; 70 – 100W HPS)
T	120/277/347V (Canada Only) (Standard: PSMH: 70 – 100W HPS)
1	120V
2	277V
3	208V
4	240V
6	347V (Canada Only: 50 HPS Only)
UL	120 – 277V Universal Voltage (Electronic Ballast)

For voltage availability outside the US and Canada, see Bulletin TD-9 or contact your Ruud Lighting authorized International Distributor.

(b) OPTIONS (factory-installed)

A	180° Shielded Clear Lens
-(a)F	Fusing
J	Tamperproof Lens Fasteners
-(a)LP	CFL Photocell
-(a)P	HID Photocell

Specify (a) Single Voltage — See Voltage Suffix Key

GENERAL DESCRIPTION

Extruded aluminum housing supplied internally with a formed and channeled 16 gauge steel frame supports the electrical components and main reflector. Housing fastens to a die-cast aluminum base with four 1/4"-20 phillips flat head screws. Base is secured to concrete footing using provided masonite template and three 3/8"-16 x 6" (152 mm) galvanized steel anchor bolts with leveling nuts and washers. Suggested poured base: 2' (610 mm) deep x 12" (305 mm) dia., depending on soil types and frost line in your area. A 3" (76 mm) dia. conduit opening is provided in the base for ease of wiring. Injection molded clear polycarbonate lens with specular collecting reflector attaches to the top of the housing with an over-lapping die-cast aluminum retaining ring, held by two stainless-steel allen flat head fasteners. Two silicone lens seals prevent moisture from entering the lens, while a double lip silicone seal at the top of the reflector and sealed lampholder prevent insects, dirt and moisture from entering the optical chamber.

ELECTRICAL

Fluorescent bollard includes a triple tube compact fluorescent lamp. HID bollards include a clear, medium-base lamp and porcelain enclosed, 4kv-rated screw-shell-type lampholder with spring-loaded center contact. Lamp ignitor included where required. All ballast assemblies are high-power factor and use the following circuit types:

Electronic
26/32/42W CFL

HX — High Reactance
50 – 100W PSMH; 50 – 100W HPS

PATENT

US PAT RE40,934

LABELS

ANSI lamp wattage label supplied, visible during relamping. UL Listed in the US and Canada for wet locations and enclosure classified IP65 per IEC 529 and IEC 598.

FINISH

Exclusive Colorfast DeltaGuard® finish features an E-coat epoxy primer with medium bronze acrylic powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. The finish is covered by our seven-year limited warranty.

ACCESSORIES

HCL	Louver
TPS-1	Tamperproof Screwdriver

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RUUD LIGHTING DIRECT

THE EDGE® PWY-EDG-5M

Pathway Luminaire - Type V Medium

Product Description

Duable die-cast aluminum luminaire housing mounts directly to 4" (102mm) diameter pole without visible mounting hardware for clean apperance. Pole mounts to rugged die cast aluminum internal flange secured by (3) 3/8-16 anchor bolts (provided). Note: T45 Torx 3/8 socket required for head installation. Top mounted LEDs for superior optical performance and light control.

Performance Summary

Utilizes BetaLED® Technology

Patented NanoOptic® Product Technology

Made in the U.S.A. of U.S. and imported parts

CRI: Minimum 70 CRI

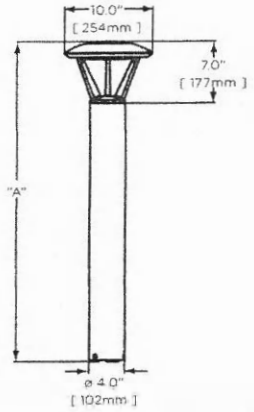
CCT: 5700K (+/- 500K) Standard, 4000K (+/- 300K)

Warranty: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish†

EPA and Weight: Reference EPA and Weight spec sheet

Accessories

Part Number / Description
XA-XBP8RSV
XA-XBP8BK
XA-XBP8RWH
XA-XBP8RBZ
XA-XBP8RPB Retro-Fit Kit - Used for replacement of existing bollards



Model	Dim. "A"
Landscape-13	13" (330mm)
Landscape-18	18" (457mm)
Pathway	36" (914mm)
Pathway	42" (1067mm)
Pedestrian	96" (2438mm)

Ordering Information

Example: PWY-EDG-5M-P0-02-D-UL-SV-350-OPTIONS

PWY-EDG	5M		02	D				
Product	Optic	Mounting	LED Count (qty)	Version	Voltage	Color Options	Drive Current	Options
PWY-EDG	**5M** Type V Medium	**P0** 13" (330mm) landscape **P1** 18" (457mm) landscape **P3** 3' (0.9m) landscape **P4** 42" (1068mm) landscape **P8** 8' (2.4m) landscape	**02**	**D**	**UL** Universal 120-277V **UH*** Universal 347-480V **12** 120V **24** 240V **27** 347V **34*** 347V **48*** 480V	**SV** Silver (Standard) **BK** Black **BZ** Bronze **PB** Platinum Bronze **WH** White	**350** 350mA **525**** 525mA	**40K** 4000K Color Temperature - Color temperature per luminaire **F** Fuse - When code dictates fusing, use time delay fuse - Not available with all ML options. Refer to ML spec sheet for availability with ML options **HL** Hi / Low (175/350/525 Dual Circuit input) - Refer to ML spec sheet for details - Sensor not included **TL** Two-Level (175/525 w/ integrated sensor control) - Refer to ML spec sheet for details **TL2** Two-Level (0/350 w/ integrated sensor control) - Refer to ML spec sheet for details **TL3** Two-Level (0/525 w/ integrated sensor control) - Refer to ML spec sheet for details **WB** Welded Base - Standard on P8 mounting option, available with P1, P3, and P4 mounting options

* Available with P3, P4 and P8 mounting options

** Available with P1, P3, P4 and P8 mounting options

† See www.cree.com/lighting for warranty terms

BetaLED TECHNOLOGY

RoHS

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Rev. Date 11/09/2012

CREE

www.cree.com/lighting T (800) 236-6800 F (262) 504-5415

A

Pathway Luminaire - Type V Medium

Product Specifications

CONSTRUCTION & MATERIALS

- Durable die-cast aluminum luminaire housing mounts directly to 4" (102mm) diameter pole without visavle mounting hardware for clean apperance
- Pole mounts to rugged die cast aluminum internal flange secured by (3) 3/8-16 anchor bolts (provided)
- Note: T45 Torx 3/8 socket required for head installation
- Top mounted LEDs for superior optical performance and light control
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultradurable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Standard is silver. Bronze, black, white, and platinum bronze are also available

ELECTRICAL SYSTEM

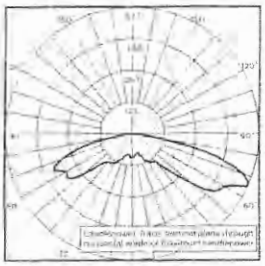
- **Input Voltage:** 120–277V or 347–480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C/D breaker should be used

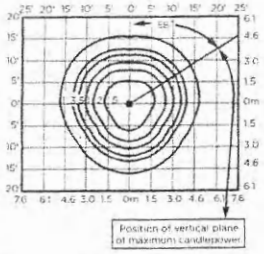
REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Luminaire also available with CE listing
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- ENERGY STAR Qualified LED Lighting
- Dark Sky Friendly, IDA Approved
- RoHS Compliant
- Meets Buy American requirements within ARRA

Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by Independent Testing Laboratories, a NVLAP certified laboratory.





ITL Test Report #: 70714
PWY-EDG-SM-**-02-D-UL-350
Initial Delivered Lumens: 1,520

PWY-EDG-SM-**-02-D-UL-350
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 1,520
Initial FC at grade

IES Files
To obtain an IES file specific to your project consult:
http://www.cree.com/lighting/tools-and-support/exterior-ies-configuration-tool

Lumen Output, Electrical, and Lumen Maintenance Data

Type V Medium Distribution													
LED Count (x10)	5700K		4000K		System Watts 120–480V	TOTAL CURRENT				System Watts 347–480V**	TOTAL CURRENT		50K Hours Projected Lumen Maintenance Factor @ 15°C (59°F)***
	Initial Delivered Lumens	BUG Ratings* Per TM-15-11	Initial Delivered Lumens	BUG Ratings* Per TM-15-11		120V	208V	240V	277V		347V	480V	
350mA @ 25°C (77°F)													
18	1,498	B1 U1 G1	1,380	B1 U1 G1	22	0.18	0.12	0.10	0.10	28	0.09	0.13	91%
525mA @ 25°C (77°F)													
18	2,097	B2 U1 G2	1,932	B1 U1 G1	34	0.29	0.19	0.17	0.15	40	0.12	0.13	89%

*For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit www.iesna.org/PDF/Errata/TM-15-11BugRatingsAddendum.pdf
**Utilizes magnetic step-down transformer when 525mA drive current or multi-level options are selected
***Projected L_{70} (10k) Hours: >60,000. For recommended lumen maintenance factor data see TD-03

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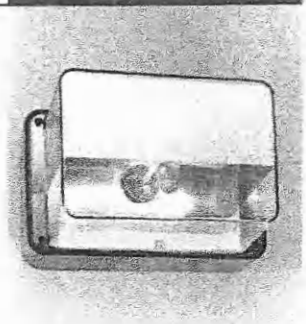
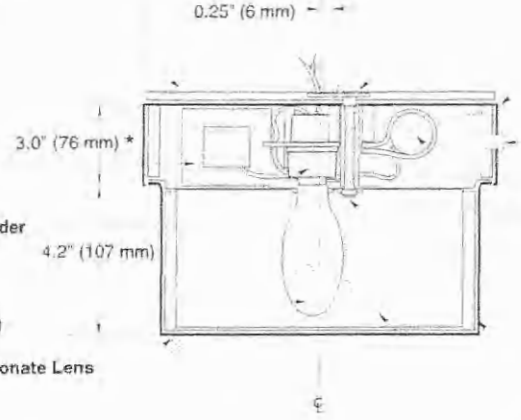
B & P

RECTANGULAR HID WALL MOUNT
PERIMETER CUTOFF

E3-H SERIES





Mounting Hole Line

Fixture Mounting Bar

Housing
Die-Cast Aluminum
Colorfast DeltaGuard® finish

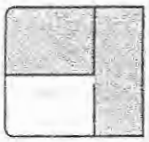
Photocell (Optional)

Ignitor

Threaded Nipple with Slotted Hex Head Cap

Aluminum Shroud

Reflector



Notes

NOTE:
* For 50–100W HPS 120V, this dimension is 2.3" (57 mm)

SPEC	MOUNTING POSITION	WATTAGE	CATALOG#
		PULSE START METAL HALIDE	
SPEC #	Wall Downlight	50W PSMH	E3405-(a)(b)
SPEC #	Wall Downlight	70W PSMH	E3407-(a)(b)
		HIGH PRESSURE SODIUM	
SPEC #	Any	50W HPS	E3505-(a)(b)
SPEC #	Wall Downlight	70W HPS	E3507-(a)(b)
SPEC #	Wall Downlight	100W HPS	E3510-(a)(b)

Specify (a) Voltage & (b) Options.

(a) VOLTAGE SUFFIX KEY	
D	120/277V (50W HPS)
M	120/208/240/277V (Standard: 50 – 70W PSMH) (50 – 100W HPS)
T	120/277/347V (Canada Only) (70W PSMH; 70 – 100W HPS)
1	120V (Standard: 50 – 100W HPS)
2	277V
3	208V
4	240V
6	347V (Canada Only) (50W HPS)

For voltage availability outside the US and Canada, see Bulletin TD-9 or contact your Ruud Lighting Authorized International Distributor.

(b) OPTIONS (factory-installed)	
BS	Bronze Color Shroud
GS	Gold Color Shroud (n/a on 100W HPS)
H	High Power Factor Ballast
J	Tamperproof Lens Fasteners
-(a)P	Photocell
R	Vertical Mounting*

Specify (a) Single Voltage — See Voltage Suffix Key
* Not available when both options H & -(a)P are specified.

GENERAL DESCRIPTION

Aluminum die-cast ballast housing features a thermal air isolation chamber separating the ballast core and coil from the other electrical components. Supplied with a neoprene sealing gasket for complete waterproofing at the mounting surface. A silicone rubber seal is furnished between housing and lens to ensure a water- and insect-tight seal. Steel fixture mounting bar and threaded nipple provided for direct mounting to recessed junction box. Clear polycarbonate lens is fastened to housing with phillips-head captive stainless-steel screws. Combination of internal polished aluminum shroud (inside painted white and outside painted silver on 100W HPS) and specular reflector directs light downward to wash wall below and to the sides of the fixture.

ELECTRICAL

Fixture includes clear, medium-base lamp and porcelain enclosed, 4kv-rated screw-shell-type lampholder with spring-loaded center contact. Lamp ignitor included where required. All ballast assemblies are normal power factor and use the following circuit types:

Reactor (120V only)
50 – 100W HPS

HX — High Reactance
50 – 70W PSMH; 50 – 100W HPS

LABELS

ANSI lamp wattage label supplied, visible during relamping. UL Listed in the US and Canada for wet locations and enclosure classified IP54 per IEC 529 and IEC 598.

FINISH

Exclusive Colorfast DeltaGuard® finish features an E-coat epoxy primer with medium bronze acrylic powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. The finish is covered by our seven-year limited warranty.

ACCESSORIES

ESB-7	Surface Mounting Box
TPS-1	Tamperproof Screwdriver

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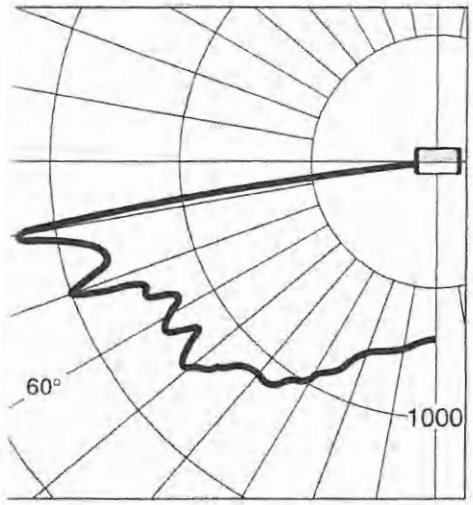
RUUD LIGHTING DIRECT

E3-H SERIES

RECTANGULAR HID WALL MOUNT

PERIMETER CUTOFF

B
E
D



View

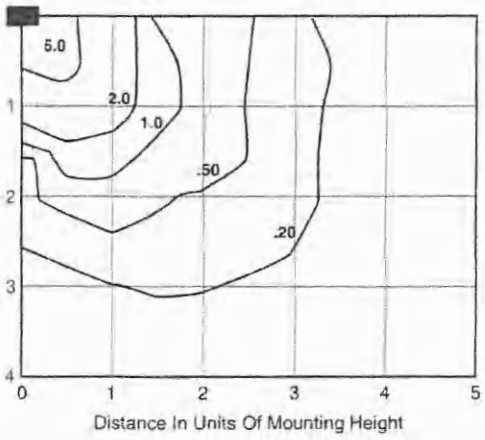
ng Sciences Inc.
ed Test Report No. LSI 9910
epower distribution curve of 70W HPS
ngular Perimeter Cutoff Fixture.

Isofootcandle plots show initial footcandles at grade. (Footcandles ÷ 0.0929 = Lux)

ANGLE	MEAN CP	ANGLE	MEAN CP
0	698	50	1263
5	714	55	1128
10	742	60	1229
15	770	65	1268
20	801	70	1525
25	899	75	1373
30	964	80	1668
35	1061	85	235
40	1094	90	39
45	1131		

Maximum Candlepower:	1668
Plane of Maximum CP:	55°
Vertical Angle of Maximum Candlepower:	80°
Lumen Rating	6400

EFFICIENCY = 66.7%



Isofootcandle plot of 70W HPS Rectangular Perimeter Cutoff fixture at 10' (3 m) mounting height. (Plan view)

MOUNTING HEIGHT CONVERSION TABLE

Footcandle readings for mounting heights other than 10' (3 m) may be obtained by multiplying fc values by the following:

HEIGHT	MULTIPLIER
7.0' (2.1 m)	2.04
8.0' (2.4 m)	1.56
9.0' (2.7 m)	1.23
12.0' (3.7 m)	0.69
15.0' (4.6 m)	0.44
20.0' (6.1 m)	0.25

LAMP WATTAGE CONVERSION TABLE

Footcandle readings for wattages and lamp types other than 70W HPS may be obtained by multiplying fc values by the following:

LAMP/WATTAGE	MULTIPLIER
50W PSMH	0.48
70W PSMH	0.79
50W HPS	0.63
100W HPS	1.49

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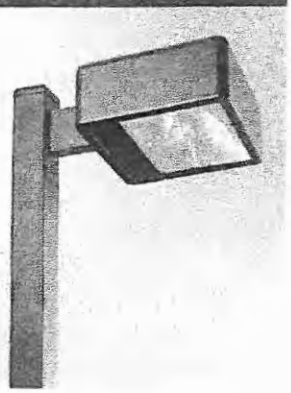
Rev. 04/05/12

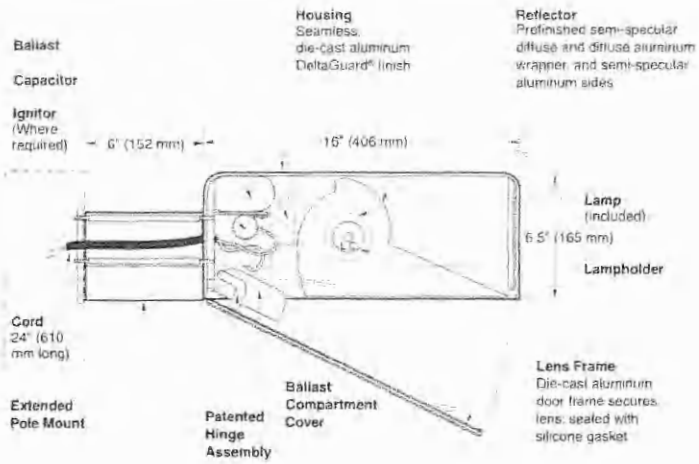
C

" EXTENDED POLE MOUNT

16" (406 mm) AREA CUTOFF LIGHT

AC2-16 SERIES





SPEC #	WATTAGE	CATALOG #
	PULSE START METAL HALIDE	
	150W PSMH	AC2615-**(a)(b)**
	200W PSMH	AC2620-**(a)(b)**
	250W PSMH	AC2625-**(a)(b)**
‡	320W PSMH	AC2632-**(a)(b)**
‡	350W PSMH	AC2635-**(a)(b)**
‡	400W PSMH	AC2640-**(a)(b)**
	HIGH PRESSURE SODIUM	
	250W HPS	AC2525-**(a)(b)**
	400W HPS	AC2540-**(a)(b)**

Specify **(a)** Voltage & **(b)** Options

‡ Reduced envelope ED28 lamp

(a) VOLTAGE SUFFIX KEY	
M	120/208/240/277V (Standard)
T	120/277/347V (Canada Only) (Standard)
1	120V
2	277V
27	277V Reactor (PSMH Only)
3	208V
4	240V
5	480V
6	347V (Canada Only)

For voltage availability outside the US and Canada, see Bulletin 10-9 or contact your Ruud Lighting authorized International Distributor.

(b) OPTIONS (factory-installed)	
-(a)F	Fusing
-(a)P	Button Photocell
-5P	External Photocell (for 480V)
Q	Quartz Standby (includes 100W quartz lamp) (N/A on 277V Reactor)

Specify **(a)** Single Voltage — See Voltage Suffix Key

GENERAL DESCRIPTION

60° forward throw sharp cutoff luminaire for HID lamp, totally enclosed. Housing is seamless, die-cast aluminum. Mounting consists of a 1.8" (44 mm) wide by 4.5" (114 mm) high by 6" (152 mm) long extruded aluminum arm. The arm is held in place with two 3/8" (9 mm) mounting rods fastened to a steel backing plate inside the pole, and by two nuts inside the fixture housing. Mounting rods are provided with sealing washers to prevent water leakage. Lens assembly consists of rigid aluminum frame and high-impact, clear-tempered glass.

ELECTRICAL

Fixture includes clear, mogul-base lamp; 320 – 400W PSMH utilize the ED28 reduced envelope lamp. Pulse-rated porcelain enclosed, 4kv-rated screw-shell-type lampholder with spring-loaded center contact and lamp grips. Lamp ignitor included. All ballast assemblies are high-power factor and use the following circuit type:

277V Reactor
150 – 400W PSMH

HX— High Reactance
150W PSMH

CWA — Constant Wattage Autotransformer
200 – 400W PSMH; 250 – 400W HPS

PATENTS

US 4,689,729; 4,709,312

FINISH

Exclusive Colorfast DeltaGuard® finish features an E-coat epoxy primer with medium bronze ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. The finish is covered by our seven-year limited warranty.

LABELS

ANSI lamp wattage label supplied, visible during relamping. UL Listed in US and Canada for wet locations and enclosure classified IP65 per IEC 529 and IEC 598.

ACCESSORIES

FWG-16	Wire Guard
SBL-16	Backlight Shield

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RUUD LIGHTING DIRECT

AC2-16 SERIES

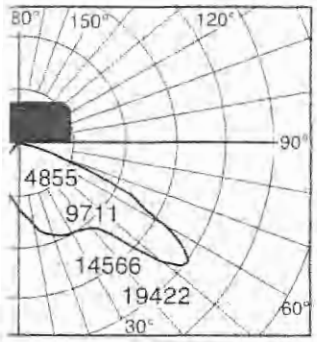
6" EXTENDED POLE MOUNT

16" (406 mm) AREA CUTOFF LIGHT

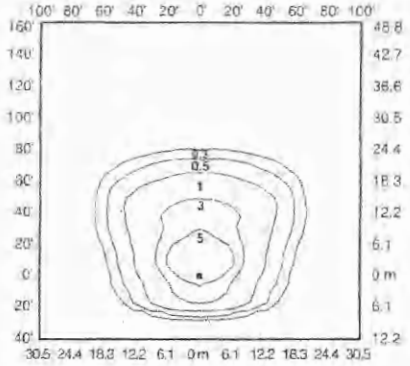
RATING

.95 for single fixture with 0° tilt (Consult factory for EPA rating on multiple units).

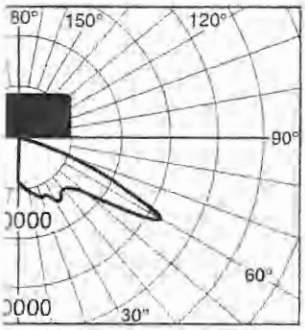
Isofootcandle plots show initial footcandles at grade. (Footcandles ÷ 0.0929 = Lux)



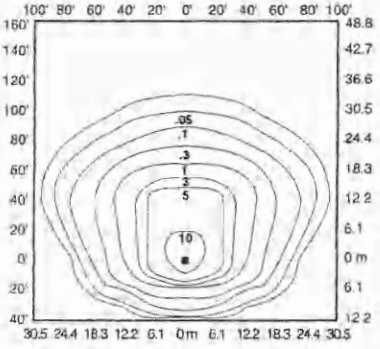
power distribution curve of 400W PSMH
utoff Light without backlight shield.



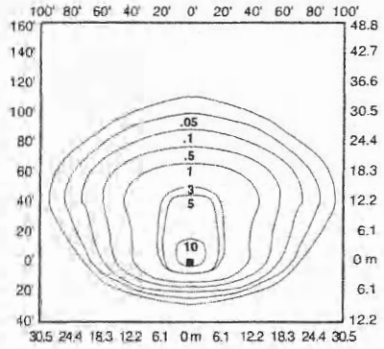
Isofootcandle plot of 400W PSMH Area Cutoff Light at 30' (9.1 m) mounting height, 0° vertical tilt, with backlight shield removed. (Plan view)



g Sciences Inc.
ed Test Report No. LSI 10246
power distribution curve of 250W HPS
utoff Light without backlight shield.



Isofootcandle plot of 400W HPS Area Cutoff Light at 25' (7.6 m) mounting height, 0° vertical tilt, with backlight shield removed. (Plan view)



Isofootcandle plot of 400W HPS Area Cutoff Light at 25' (7.6 m) mounting height, 0° vertical tilt, with backlight shield located for backlight cutoff. (Plan view)

t-spacing Example Data

Test area is centered within a (15) pole layout

Average Initial Light Levels at Grade
2 Fixtures per pole @ 180°
(Footcandles ÷ 0.0929 = Lux)

g #	Lamp Type	Lamp Lumens	Mounting Height	Max. Recommended Pole-spacing X x Y	Footcandles	Lux
5-M	150W PSMH	12,000	15' (4.6 m)	60' (18.3 m) x 85' (25.9 m)	3.56	38
			20' (6.1 m)	75' (22.9 m) x 11' (33.5 m)	2.11	23
5-M	250W PSMH	22,000	20' (6.1 m)	75' (22.9 m) x 110' (33.5 m)	3.86	42
			25' (7.6 m)	95' (29.0 m) x 140' (42.7 m)	2.31	25
0-M	400W PSMH	40,000	25' (7.6 m)	95' (29.0 m) x 140' (42.7 m)	4.20	45
			30' (9.1 m)	115' (35.1 m) x 165' (50.3 m)	2.86	31
5-M	250W HPS	28,500	20' (6.1 m)	75' (22.9 m) x 110' (33.5 m)	4.83	52
			25' (7.6 m)	95' (29.0 m) x 140' (42.7 m)	2.89	31
0-M	400W HPS	50,000	25' (7.6 m)	95' (29.0 m) x 140' (42.7 m)	5.08	55
			30' (9.1 m)	115' (35.1 m) x 165' (50.3 m)	3.37	36

D LIGHTING
RECT

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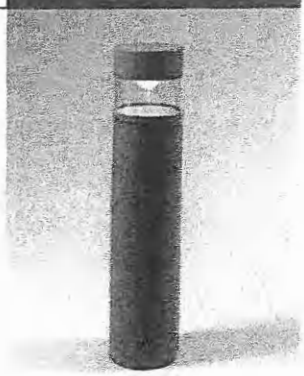
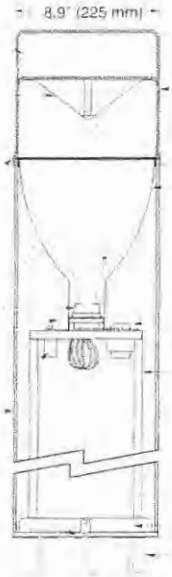
LEAR LENS — EXTENDED FLAT TOP

ROUND BOLLARD

HCF SERIES





Extended Top
Die-cast aluminum

Specular Upper Reflector

Die-Cast Aluminum Lens Retaining Ring
With double silicone gasket

Lampholder

Ignitor
(Where required)

Capacitor

Housing
Extruded aluminum
DeltaGuard® finish

Conduit Entry

Clear Polycarbonate Lens

Main Collector Reflector

Lamp
(Included)

Ballast

Epoxy Coated Steel Frame

Base Plate
Die-cast aluminum

Galvanized Steel Anchor Bolts
3/8"-16 x 6" (152 mm) +1.3" (32 mm)

Notes

SPEC #	WATTAGE	CATALOG #
	PULSE START METAL HALIDE	
☐	50W PSMH	HCF405-**(a)(b)**
☐	70W PSMH	HCF407-**(a)(b)**
☐	100W PSMH	HCF410-**(a)(b)**
☐	**HIGH PRESSURE SODIUM**	
	50W HPS	HCF505-**(a)(b)**
☐	70W HPS	HCF507-**(a)(b)**
☐	100W HPS	HCF510-**(a)(b)**
	FLUORESCENT	
☐	26/32/42W CFL	HCF242-**(a)(b)**

Specify **(a)** Voltage & **(b)** Options

(a) VOLTAGE SUFFIX KEY

D	120/277V (Standard: 50W HPS)
M	120/208/240/277V (Standard: PSMH, 70 – 100W HPS)
T	120/277/347V (Canada Only) (Standard: PSMH: 70 – 100W HPS)
1	120V
2	277V
3	208V
4	240V
6	347V (Canada Only; 50 HPS Only)
UL	120 – 277V Universal Voltage (Electronic Ballast)

For voltage availability outside the US and Canada, see Bulletin TD-9 or contact your Ruud Lighting authorized International Distributor.

(b) OPTIONS (factory-installed)

A	180° Shielded Clear Lens
-(a)F	Fusing
J	Tamperproof Lens Fasteners
-(a)LP	CFL Photocell
-(a)P	HID Photocell

Specify **(a)** Single Voltage — See Voltage Suffix Key

GENERAL DESCRIPTION

Extruded aluminum housing supplied internally with a formed and channeled 16 gauge steel frame supports the electrical components and main reflector. Housing fastens to a die-cast aluminum base with four 1/4"-20 phillips flat head screws. Base is secured to concrete footing using provided masonite template and three 3/8"-16 x 6" (152 mm) galvanized steel anchor bolts with leveling nuts and washers. Suggested poured base: 2' (610 mm) deep x 12" (305 mm) dia., depending on soil types and frost line in your area. A 3" (76 mm) dia. conduit opening is provided in the base for ease of wiring. Injection molded clear polycarbonate lens with specular collecting reflector attaches to the top of the housing with an over-lapping die-cast aluminum retaining ring, held by two stainless-steel allen flat head fasteners. Two silicone lens seals prevent moisture from entering the lens, while a double lip silicone seal at the top of the reflector and sealed lampholder prevent insects, dirt and moisture from entering the optical chamber.

ELECTRICAL

Fluorescent bollard includes a triple tube compact fluorescent lamp. HID bollards include a clear, medium-base lamp and porcelain enclosed, 4kv-rated screw-shell-type lampholder with spring-loaded center contact. Lamp ignitor included where required. All ballast assemblies are high-power factor and use the following circuit types:

Electronic
26/32/42W CFL

HX — High Reactance
50 – 100W PSMH; 50 – 100W HPS

PATENT

US PAT RE40,934

LABELS

ANSI lamp wattage label supplied, visible during relamping. UL Listed in the US and Canada for wet locations and enclosure classified IP65 per IEC 529 and IEC 598.

FINISH

Exclusive Colorfast DeltaGuard® finish features an E-coat epoxy primer with medium bronze acrylic powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. The finish is covered by our seven-year limited warranty.

ACCESSORIES

HCL	Louver
TPS-1	Tamperproof Screwdriver

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RUUD LIGHTING DIRECT

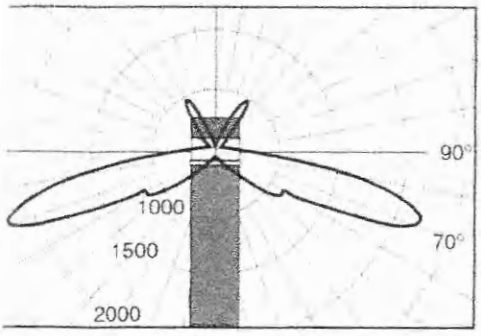
HCF SERIES

CLEAR LENS — EXTENDED FLAT TOP

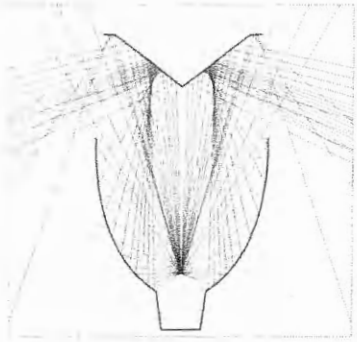
ROUND BOLLARD

E

(Footcandles ÷ 0.0929 = Lux)

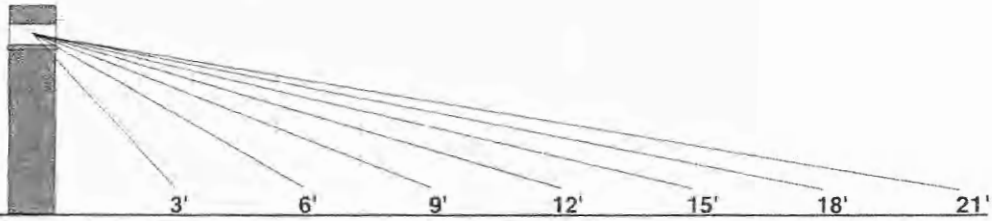


ıg Sciences Inc.
ed Test Report No. LSI 9728R
epower distribution curve of 100W MH
Bollard with clear lens.



Ray Trace showing light distribution of patented reflector system.

ıis chart to determine initial Footcandle levels at grade for the HCF Series Round Bollard with clear, extended flat top lens.



Lamp	Lumens						
50W PSMH	3400	1.79	4.38	2.33	0.90	0.36	0.17	0.09
70W PSMH	5600	2.95	7.22	3.85	1.47	0.59	0.28	0.15
100W PSMH	9000	4.74	11.60	6.18	2.37	0.95	0.45	0.24
50W HPS	4000	2.38	3.50	1.67	0.73	0.31	0.15	0.08
70W HPS	6400	3.81	5.60	2.67	1.17	0.50	0.24	0.13
100W HPS	9500	5.66	8.31	3.97	1.73	0.74	0.36	0.19
26W CFL	1710	1.42	0.84	0.34	0.16	0.08	0.04	0.03
32W CFL	2200	1.84	1.09	0.44	0.21	0.10	0.05	0.04
42W CFL	3200	2.67	1.58	0.64	0.30	0.15	0.08	0.06

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SECURITY FIXTURE ACCESSORIES

SPEC #	CATALOG #	DESCRIPTION
SPEC #	ESB-7	Surface Mounting Box
SPEC #	ESB-7(a)P	Surface Mounting Box with Photocell
SPEC #	WM-GW	Uneven Surface Mounting Plate
SPEC #	PAS-7	Pole Mounting Bracket
SPEC #	HCL	Louver
SPEC #	TPS-1	Tamperproof Screwdriver

Specify (a) Single Voltage. See Voltage Suffix Key.

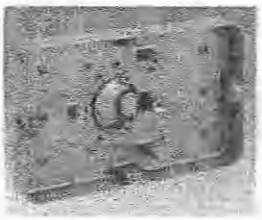
(a) VOLTAGE SUFFIX KEY	
1	120V
2	277V
3	208V
4	240V
5	480V
6	347V (Canada only)

For voltage availability outside the US and Canada, see Bulletin TD-9 or contact your Ruud Lighting authorized International Distributor.

Notes

ESB-7 SURFACE MOUNTING BOX

Die-cast aluminum box measuring 10" x 6" (254 mm x 152 mm) for use where surface wiring is required. DeltaGuard® finish supplied with medium-bronze, ultra-durable powder topcoat. Provided with five threaded and closed 1/2" conduit entries.



Depth Dimension:
1.25" (32 mm)

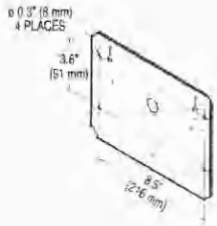
Use with E Series

ESB-7(a)P SURFACE MOUNTING BOX WITH BUTTON PHOTOCELL

Uses the same surface box as the ESB-7, with the addition of a bi-metallic type photocell, automatically turning fixture on at dusk, off at dawn. Specify **(a)** voltage.

WM-GW UNEVEN SURFACE MOUNTING PLATE

Used to prevent water entry into the fixture through the back box due to uneven gasket sealing. Also, IP65 rated installation can be achieved when installed to any wall surface. Note: An uneven surface is any irregular surface including but not limited to: brick, stucco, corrugated (ribbed) metal, and architectural soffits less than 7" wide.



Use with MGWC, GWC, MGWP and GWP fixtures

PAS-7 POLE MOUNT BRACKET

For mounting any E Series Security Light to the side of a square pole. Consists of a die-cast aluminum wiring compartment, an extruded aluminum support arm, and a steel backing plate with wiring hole, which holds the arm securely to the pole. Hardware includes two 5/16" mounting rods with nuts and sealing washers. DeltaGuard finish supplied with medium-bronze, ultra-durable powder topcoat.

Box Dimensions:
L = 10" (254 mm)
W = 6" (152 mm)
D = 1.3" (32 mm)

Arm Dimensions:
L = 3.6" (92 mm)
W = 2.5" (64 mm)
D = 1.8" (44 mm)

Use with E Series

HCL LOUVER

Louver for use on bollards with clear lens. Aesthetically appealing louver eliminates uplight and glare. The aluminum louver rests on the reflector inside the bollard lens. DeltaGuard finish supplied with black, ultra-durable powder topcoat. Shipped as a one-piece unit, consisting of five individual louvers with 40-degree tilt, held by three vertical posts spaced at 120 degrees.

Use with HC, HCD, HCF Series

TPS-1 TAMPERPROOF SCREWDRIVER

Spanner-head screwdriver, for #8 screw. Works together with Tamperproof Lens Fasteners option available on all Security fixtures.

Use with Security fixtures

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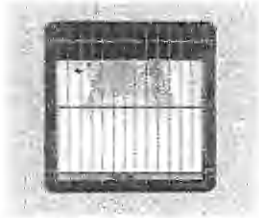
RUUD LIGHTING DIRECT

SECURITY FIXTURE ACCESSORIES

SPEC #	CATALOG #	DESCRIPTION
	FWG-(b)	Wire Guard
	FWG-MW	Wire Guard for MGWPO-12
	FWG-W	Wire Guard for GWPO-16
	LS-(b)	Polycarbonate Vandal Shield
	SB-16	Surface Box
	WWS-(b)	Wall Wash/Glare Shield

FWG-(b) WIRE GUARD

Steel wire guard used for protection in high vandalism areas. Attaches easily to lens frame with #8-32 phillips-head, black stainless steel screws. DeltaGuard® finish supplied with black, ultra-durable powder topcoat. 1" (25 mm) space between wires.

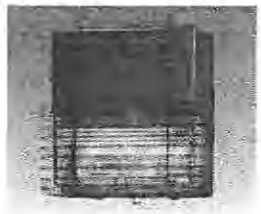


Depth Dimension:
1" (25 mm)

Use with W0 Series

FWG-MW WIRE GUARD (for MGWPO-12")
FWG-W WIRE GUARD (for GWPO-16")

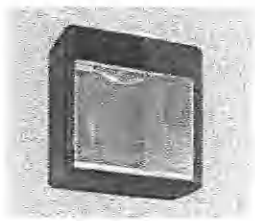
Steel wire provides protection to optical system. Attaches easily around lens frame with supplied #8 stainless steel screws. A black acrylic E-coat finish is standard.



Use with MGWPO and GWPO Series

LS-(b) POLYCARBONATE VANDAL SHIELD

Made from 0.118" (3 mm) thick polycarbonate. Used in high vandalism areas to deter objects that may break fixture lens. Open end design allows self cleaning as well as ventilation for cooling both lens and fixture. Attaches easily to floodlight lens frame with #8-32 phillips-head, black stainless steel screws. Not recommended for use with fixtures mounted in in uplight position.



Depth Dimensions:
12" (305 mm) housing = 2" (51 mm)
16" (406 mm) housing = 2.5" (64 mm)

Use with W0 Series

SB-16 SURFACE BOX

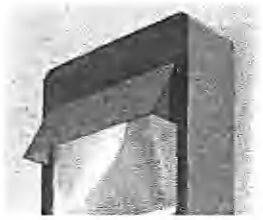
Die-cast aluminum, for use where surface wiring is required. Universal size will accommodate 12" (305 mm), 16" (406 mm) and 22" (559 mm) housings. Provides five threaded and closed 1/2" conduit entries. Also allows 300 – 400W 16" (406 mm) & 22" (559 mm) fixtures as well as 150W HPS & 175W MH 12" (305 mm) fixtures to be mounted to a combustible surface. Four #8-32 threaded studs and hex nuts included for ease of installation. DeltaGuard finish supplied with black, ultra-durable powder topcoat.

Depth Dimension:
1.3" (32 mm)

Use with W0 Series Direct Mount

WWS-(b) WALL WASH/GLARE SHIELD

Fabricated of 0.040" (1 mm) thick diffuse aluminum, finished with thermoset black powder paint. Used to redirect light downward to wash wall below and to the sides of the fixture. Also serves as a brightness deterrent when fixture is mounted at eye level. Attaches easily with #8-32 phillips-head, black stainless steel screws.



Depth Dimensions:
12" (305 mm) housing = 2.1" (53 mm)
16" (406 mm) housing = 2.8" (70 mm)

Use with W0 Series

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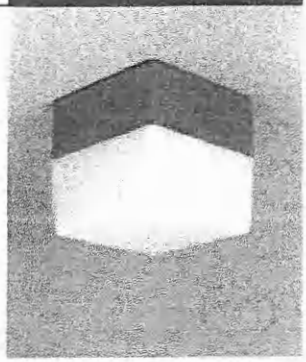
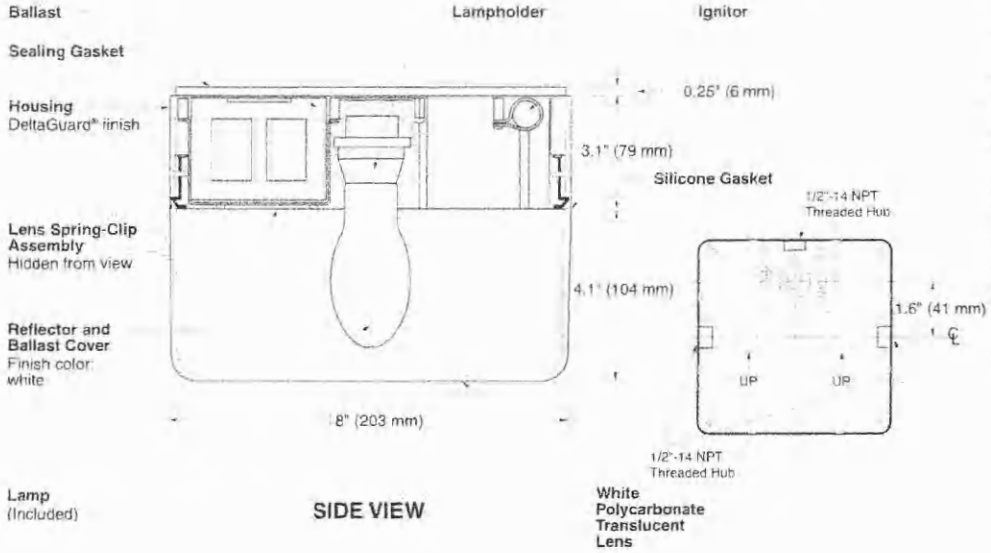
SQUARE CEILING/SOFFIT/WALL MOUNT

8" (203 mm) TRANSLUCENT LENS

SE1-8 SERIES





Notes

SPEC	MOUNTING POSITION	WATTAGE	CATALOG #
		PULSE START METAL HALIDE	
☐	Ceiling/ Soffit/Wall	50W PSMH	SE1405-(a)(b)
☐	Ceiling/ Soffit/Wall	70W PSMH	SE1407-(a)(b)
		HIGH PRESSURE SODIUM	
☐	Any	50W HPS	SE1505-(a)(b)
☐	Ceiling/ Soffit/Wall	70W HPS	SE1507-(a)(b)

Specify (a) Voltage & (b) Options

(a) VOLTAGE SUFFIX KEY

D	120/277V (50W HPS)
M	120/208/240/277V (Standard: 50 – 70W PSMH) (50 – 100W HPS)
T	120/277/347V (Canada Only) (70W PSMH; 70W HPS)
1	120V (Standard: 50 – 70W HPS)
2	277V
3	208V
4	240V
6	347V (Canada Only) (50 – 70W PSMH; 50W HPS)

For voltage availability outside the US and Canada, see Bulletin TD-9 or contact your Ruud Lighting authorized International Distributor.

(b) OPTIONS (factory-installed)

-(a)F	Fusing*
H	High Power Factor Ballast (N/A for 50W PSMH or 50 – 70W HPS with 347V)
J	Tamperproof Lens Fasteners
-(a)P	Photocell
Q	Quartz Standby* (includes 100W quartz lamp)

Specify **(a)** Single Voltage — See Voltage Suffix Key
*Quartz & fuse options are not available together.

GENERAL DESCRIPTION

Aluminum die-cast housing supplied. Knockouts are provided on the back of the housing for 1/2" (13 mm) conduit entry or for mounting over a single gang box, 4" (102 mm) square or 4" (102 mm) octagon boxes. NOTE: Knockouts are centered 1.6" (41 mm) above centerline of fixture. Two #8 x 1" (25 mm) threaded studs and nuts are provided for mounting over a junction box. Housing also includes 1/2" (13 mm)-14 NPT threaded hubs on three sides for conduit entry. Closed cell neoprene sponge gasketing on the back of the housing provides a watertight mounting seal. Silicone sponge cord gasket between housing and lens ensures a water- and insect-tight seal. Injection molded white polycarbonate lens is held in place using a hidden spring clip assembly. Lens diffuses glare and provides uniform light levels in all directions.

ELECTRICAL

Fixtures include a clear, medium-base lamp and porcelain enclosed, 4kv-rated screw-shell-type lampholder with spring-loaded center contact. Lamp ignitor included where required. All ballast assemblies are normal power factor and use the following circuit types:

Reactor (120V only)
50 – 70W HPS

HX — High Reactance
50 – 70W PSMH; 50 – 70W HPS

LABELS

ANSI lamp wattage label supplied, visible during relamping. UL Listed in the US and Canada for wet locations and enclosure classified IP54 per IEC 529 and IEC 598.

FINISH

Housing is standard with our exclusive Colorfast DeltaGuard® finish, featuring an E-coat epoxy primer with bronze ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. The finish is covered by our seven-year limited warranty.

ACCESSORIES

TPS-1	Tamperproof Screwdriver

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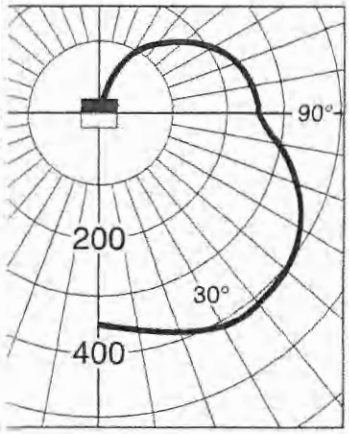
RUUD LIGHTING DIRECT

SE1-8 SERIES

SQUARE CEILING/SOFFIT/WALL MOUNT

8" (203 mm) TRANSLUCENT LENS



Front View

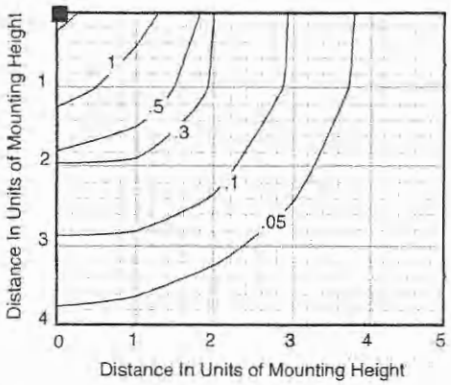
Lighting Sciences Inc.
Certified Test Report No. LSI 11602
Candlepower distribution curve of 50W HPS
Square Translucent Lens Fixture.

Isofootcandle plots show initial footcandles at grade. (Footcandles ÷ 0.0929 = Lux)

ANGLE	MEAN CP	ANGLE	MEAN CP
0	354	90	262
5	359	95	256
15	380	105	238
25	401	115	219
35	413	125	190
45	410	135	154
55	392	145	111
65	359	155	65
75	315	165	24
85	272	175	1
		180	0

Maximum Candlepower:	413
Plane of Maximum CP:	45.0°
Vertical Angle of Maximum Candlepower:	35.0°
Lumen Rating:	4000

EFFICIENCY = 79.3%



Isofootcandle plot of 50W HPS Square Translucent Lens fixture at 10' (3 m) mounting height. (Plan view)

MOUNTING HEIGHT CONVERSION TABLE

Footcandle readings for mounting heights other than 10' (3 m) may be obtained by multiplying fc values by the following:

HEIGHT	FACTOR
7.0' (2.1 m)	2.04
8.0' (2.4 m)	1.56
9.0' (2.7 m)	1.23
12.0' (3.7 m)	0.69
15.0' (4.6 m)	0.44
20.0' (6.1 m)	0.25

LAMP WATTAGE CONVERSION TABLE

Footcandle readings for wattages and lamp types other than 50W HPS may be obtained by multiplying fc values by the following:

LAMP/WATTAGE	MULTIPLIER
50W PSMH	0.85
70W PSMH	1.40
70W HPS	1.60

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