CITY OF RICHLAND
NOTICE OF APPLICATION, PUBLIC HEARING & OPTIONAL DNS (PUD2022-101 & EA2022-122)

Notice is hereby given that Aqtera Engineering, applicant, on behalf of Columbia Valley Property Holdings, LLC, owner, have filed an application for the proposed development commonly referred to as The Terraces at Queensgate South.

Proposal: Development of an approximately 36.21-acre mixed use development project to include 19 single family lots, 89 townhome lots and 5 open space tracts and associated street network.

Location: The project site is located upon Assessor's Parcel Nos. 122983000002004 and 122983000003003 and is generally located south of and adjacent to Keene Road, north of and adjacent to Shockley Road and east of the plat of Country Ridge.

Public Hearing: The Richland Hearings Examiner will conduct a public hearing and review of the application at 6:00 p.m., Monday, January 9, 2023 in the Richland City Hall Council Chambers, 625 Swift Boulevard. All interested parties are invited to attend and present testimony at the public hearing or by visiting the City of Richland website (www.ci.richland.wa.us) and joining via Zoom. Copies of the complete application packet, SEPA Checklist and related materials can be obtained by visiting the City of Richland website (www.ci.richland.wa.us).

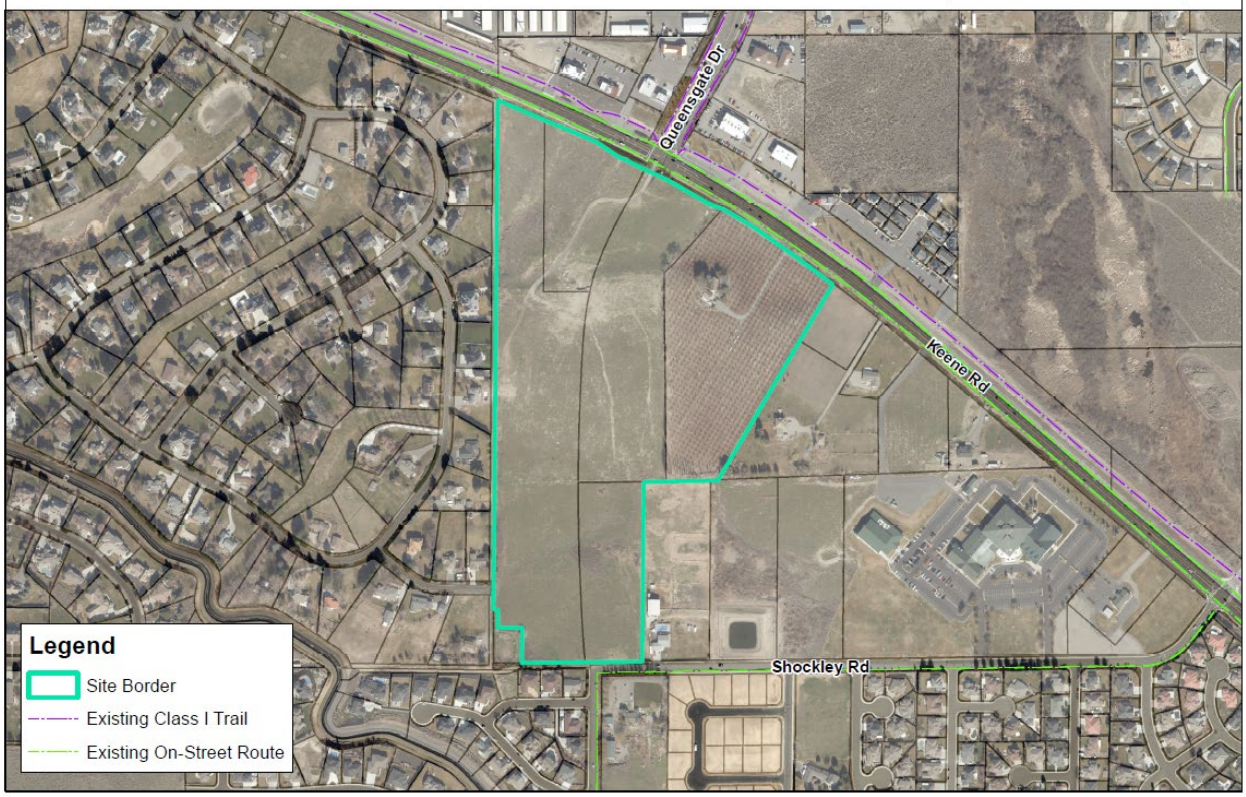
Environmental Review: The proposal is subject to environmental review. The City of Richland is lead agency for the proposal under the State Environmental Policy Act (SEPA) and has reviewed the proposed project for probable adverse environmental impacts and expects to issue a determination of non-significance (DNS) for this project. The optional DNS process in WAC 197-11-355 is being used. This may be your only opportunity to comment on the environmental impacts of the proposed development. The environmental checklist and related file information are available to the public and can be viewed at www.ci.richland.wa.us.

Public Comment: Any person desiring to express their views or to be notified of any decisions pertaining to this application should notify Mike Stevens, Planning Manager, 625 Swift Boulevard, MS #35, Richland, WA 99352. Comments may also be emailed to mstevens@ci.richland.wa.us. Written comments should be received no later than 5:00 p.m. on Wednesday, December 28, 2022, to be incorporated into the staff report. Comments received after that date will be entered into the record at the hearing. Written comment will not be accepted after 6 p.m. on Sunday, January 8, 2023; however verbal comments may be presented during the public hearing.

Appeal: The application will be reviewed in accordance with the regulations in RMC Title 19 Development Regulations Administration, Title 23 Zoning and Title 24 Plats and Subdivisions. Appeal procedures of decisions related to the above referenced application are set forth in RMC Chapter 19.70. Contact the Richland Planning Division at the above referenced address with questions related to the available appeal process.

Vicinity Map

Item: The Terraces at Queensgate South
Applicant: Aqtera Engineering
File #: PUD2022-101



City of Richland
Development Services

625 Swift Blvd. MS-35
Richland, WA 99352
509-942-7794
509-942-7764

Planned Unit Development (PUD) Application

Note: A Pre-Application meeting is required prior to submittal of an application.

PROPERTY OWNER INFORMATION	☐ Contact Person
Owner: Mallikarjuna R Vallem/Columbia Valley Property Holdings LLC	
Address: 16455 NE 99th Street, Redmond, WA 98052	
Phone:	Email: maliksss@gmail.com

APPLICANT/CONTRACTOR INFORMATION (if different)	☐ Contact Person
Company: Aqtera Engineering	UBI#:
Contact: Caleb Stromstad, Project Manager	
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Phone: 509.845.0208	Email: caleb@aqtera.com

SURVEYOR INFORMATION	
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ENGINEER INFORMATION	
Contact: Nathan Machiela, Knutzen Engineering	
Address: 5401 Ridgeline Drive,Suite 160, Kennewick, WA 99338	
Phone: 509.222.0959	Email: nathan@knutzenengineering.com

PROJECT DESCRIPTION

Phase I of a mixed use development project to include 19 single family lots, 89 townhome lots, 5 open space tracts and assoicated street network.

PROPERTY INFORMATION		
Parcel #: 122983000002004, 122983000003003	Zoning: Agricultre & Suburban Agriculture	
Legal Description: See attached plat map		
Proposed Development Name: The Terraces at Queensgate South		
Gross Acreage: 20.93 acres	Number of Lots: 108	Smallest Lot Size: 1,581 sq. ft.
Net Lot Area Acreage: 9.45 acres	Avg. Lot Size: 3,808 sq. ft.	Largest Lot Size: 15,624 sq.ft.
Domestic Water Supply: ☑ City ☐ Private Well	Sewage Disposal: ☑ City ☐ Septic	
Irrigation Source: ☐ City ☐ Private Well ☐ Columbia Irrig. District ☑ Kennewick Irrig. District ☐ Other		
SEPA Checklist submitted? ☑ Yes ☐ No	Title Report (Subdivision Guarantee) submitted? ☑ Yes ☐ No	

APPLICATION MUST INCLUDE
1. Completed application and filing fee 2. Refer to RMC 23.50.030

UTILITY	APPROVAL RECEIVED	
Power	☐ Yes	☐ No
Telephone	☐ Yes	☐ No
Natural Gas	☐ Yes	☐ No
Cable TV	☐ Yes	☐ No

I authorize employees and officials of the City of Richland the right to enter and remain on the property in question to determine whether a permit should be issued and whether special conditions should be placed on any issued permit. I have the legal authority to grant such access to the property in question.
I also acknowledge that if a permit is issued for land development activities, no terms of the permit can be violated without further approval by the permitting entity. I understand that the granting of a permit does not authorize anyone to violate in any way any federal, state, or local law/regulation pertaining to development activities associated with a permit.

I hereby certify under penalty of perjury under the laws of the State of Washington that the following is true and correct:

1. I have read and examined this permit application and have documented all applicable requirements on the site plan.
2. The information provided in this application contains no misstatement of fact.
3. I am the owner(s), the authorized agent(s) of the owner(s) of the above referenced property, or I am currently a licensed contractor or specialty contractor under Chapter 18.27 RCW or I am exempt from the requirements of Chapter 18.27 RCW.
4. I understand this permit is subject to all other local, state, and federal regulations.

Note: This application will not be processed unless the above certification is endorsed by an authorized agent of the owner(s) of the property in question and/or the owner(s) themselves. If the City of Richland has reason to believe that erroneous information has been supplied by an authorized agent of the owner(s) of the property in question and/or by the owner(s) themselves, processing of the application may be suspended.

Applicant Printed Name: Mallikarjuna R Vallem Resubmited 12/13/2022

Applicant Signature: Mallikarjuna Vallem Date 06/24/2022

The Terraces at Queensgate South

Preliminary Planned Unit Development and Preliminary Plat Application

Columbia Valley Properties Holding Company LLC

December 2022

Project Information for The Terraces at Queensgate South

The Village at Queensgate South and The Terraces at Queensgate South are two phases of a proposed planned development on a 47.5-acre site located in South Richland between Keene and Shockley Roads, east of the Country Ridge subdivision. Columbia Valley Property Holdings, LLC seeks approval of phase I for planned unit development and preliminary plat application to construct a mixed use project with single family residences, and townhomes.

Project Team

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Appendices

A. Soils Report – USDA Natural Resources Conservation Service
B. Geotechnical Engineering Evaluation – Intermountain Materials Testing & Geotechnical
C. Cultural Resources Report – GRAM Northwest, LLC
D. Traffic Analysis – PBS
E. Record of Survey – AHBL
F. Topographic Survey – AHBL
G. Preliminary Plat Maps – Knutzen Engineering
H. Architectural Renderings – IHB Architects
I. Landscape Plan – Lango Hansen

Project Description

Introduction

The Terraces at Queensgate South and the Village at Queensgate South are two phases of a mixed use planned development project proposed on a 47.5 acre site located between Keene and Shockley Roads in South Richland. At full build-out the project will be a vibrant community with a variety of housing types and densities, including 19 large single family lots and 260 townhome units. Adjacent to the residential component of the project, well-designed community commercial services are planned including a grocery, pharmacy, four two story commercial buildings and a hotel. Between the commercial and residential components, an urban open space area will provide a public gathering place for the community. Interwoven through the project is an important arterial street extension: Queensgate Drive will be extended across the site from Keene Road to Shockley Road, providing a critical link in Richland's transportation system. Queensgate will be designed as a complete street with multiple travel lanes, a roundabout, bicycle lanes and pedestrian walks. Generous landscaping, including street trees and open space tracts will be placed throughout the development. Together with the modern architectural design of the commercial buildings and townhomes the project will be an attractive, vibrant community that will be a highly desired place to both live and shop and will be an important asset in the South Richland community.

*Figure 1: Queensgate South at Full Build-***Out**

Phasing

Phase I consists of the development of the western 20.93 acres of the site and includes only residential development consisting of a 19 lot single family subdivision along the proposed Lambert Drive and 89 townhome lots located west of the Queensgate Drive corridor. Five open space tracts totaling 2.88 acres would be interspersed throughout the development. A storm drainage pond or series of ponds would be built in the northwestern corner of the site. Queensgate Drive would be extended across the full site; those portions of Queensgate adjacent to the Phase I development would be built to a full City street standards, while the portion of Queensgate extending to Keene Road would be built to a rural standard. (Full Queensgate Drive improvements would be built with Phase II development.) Lambert Drive, a local street would provide access to the single family large lots and provide a connection to Lariat Lane on the western boundary of the project site.

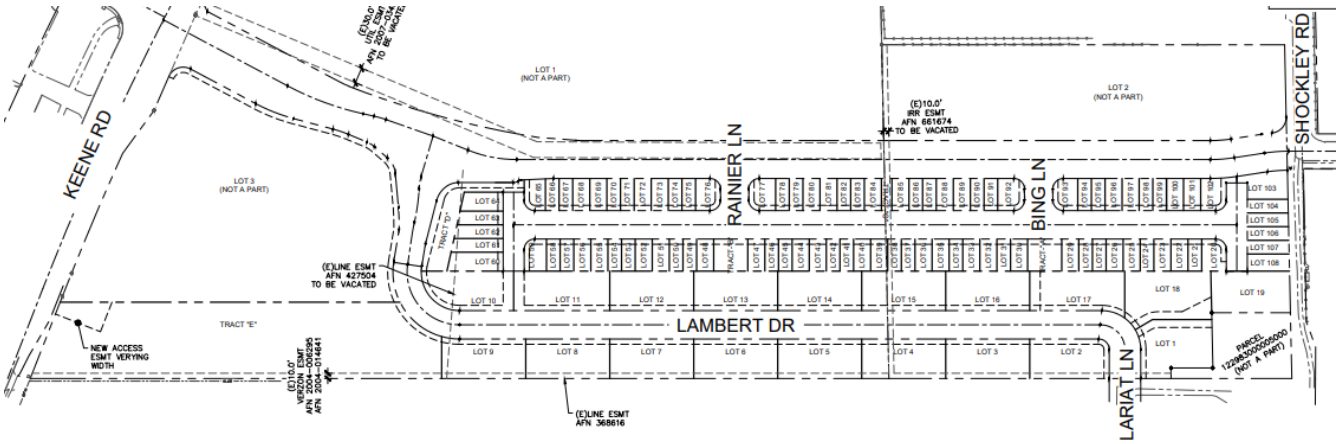


Figure 2: Phase I Development – The Terraces at Queensgate South

Development Standard	Single Family	Townhome	Combined
Smallest Lot	11,277sq. ft.	1,525 sq. ft.	1,525 sq. ft.
Largest Lot	15,208 sq. ft.	3,474 sq. ft.	15,208 sq. ft.
Average Lot Size	12,105 sq. ft.	1,924 sq. ft.	3,823 sq. ft.
Net Lot Acreage	5.28 acres	4.02 acres	9.30 acres
Open Space Tracts (no./area)	0/0	4/.56 acres	4/.56 acres
Rights-of-Way	1.86 acres	5.09 acres	7.05 acres
Net Density	2.66 units/acre	8.52 units/acre	6.44 units/acre

Table 1: Phase I Lot Sizes and Density

Existing Conditions

The Phase I portions of the site are currently undeveloped. The Phase II area is also vacant except for a 12 acre cherry orchard and a single family residence located near the eastern boundary of the site.

Figure 3: Vicinity Map

Land use adjacent to the project site includes a low density single family neighborhood (Country Ridge) located along the western boundary of the site; a second single family subdivision (Badger Den) is located to the south across Shockley Road from the site. Additional detail of adjacent residential developments is shown in Figure 4 below. Commercial development is located across Keene Road to the north of the site; and two single family residences on large lots are located to the east of the site.

Residential Densities of Adjacent Subdivisions

Subdivision	Acres in Plat	Number of Lots	Density (lots/acre)
Country Ridge Phase 1	108.55	101	.93
Badger Den Phase 1	7.62	19	2.49
Julianna Heights Phase 1	28.57	42	1.47
Bordeaux Grove	5.43	16	2.94
Vineyards Phase 1	6.68	20	2.99
Vineyards Phase 2	17.12	48	2.80
Applewood Estates	30.91	78	2.52
Averages	**204.88**	**324**	**1.58**

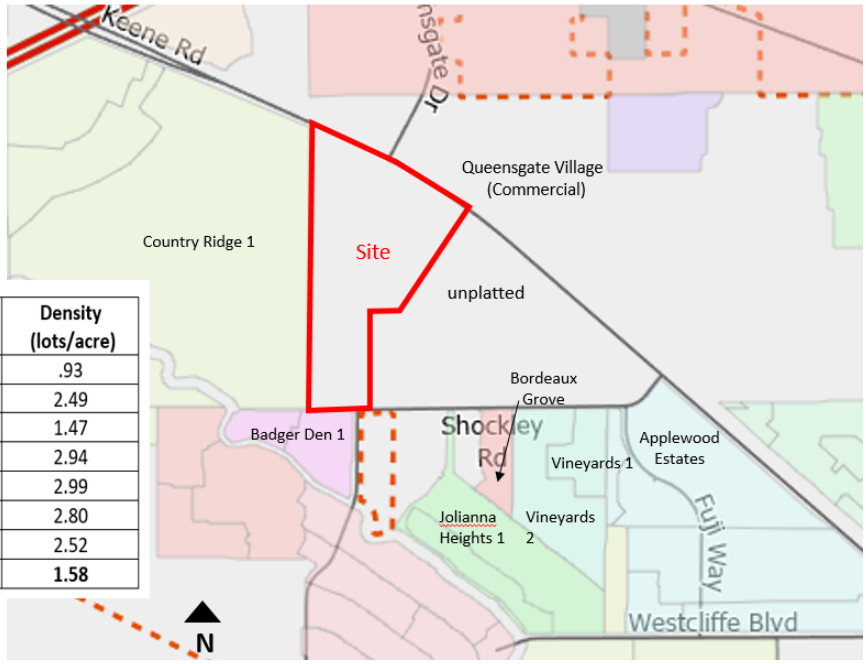


Figure 4: Existing Residential Densities of Adjacent Subdivisions

History

In 2010 a group of six property owners approached the City to amend the comprehensive plan for this site. Objections to the proposal from the adjacent landowners in the Country Ridge development resulted in the City entering into a development agreement with the landowners (Richland Contract #92-10). Over time the ownership of the property changed. Now, Columbia Valley Property Holdings, LLC acquired the property. Some modifications to the agreement were approved by the City earlier this year. (Copies of both the original and revised agreements are attached.) The Queensgate South project has been designed to comply with the provisions of both the comprehensive plan and the development agreement.

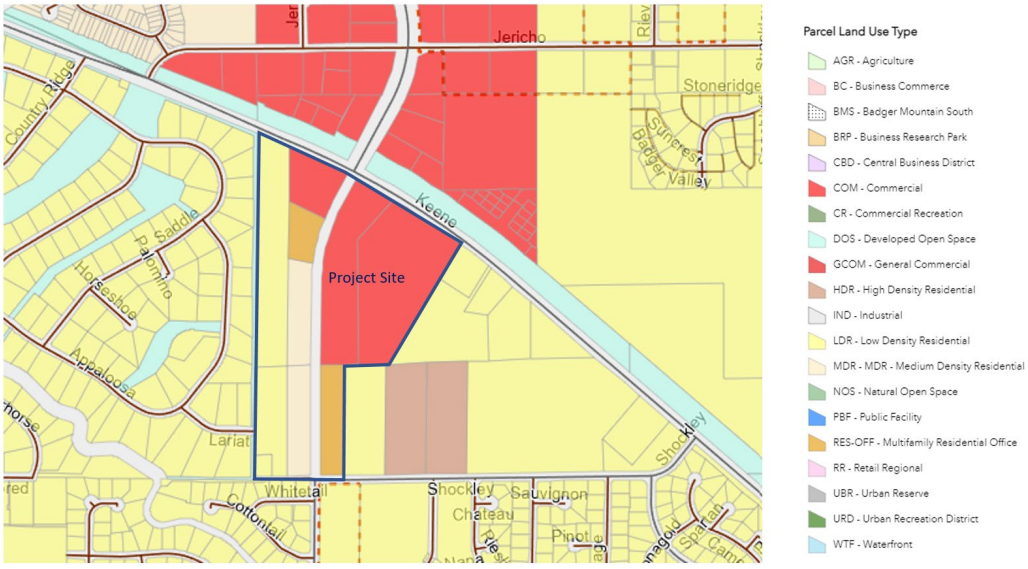


Figure 5: Comprehensive Plan Land Use Map

Zoning

Existing zoning of the site is agricultural and suburban agriculture. The proposed PUD zoning would follow the comprehensive plan designations established by the City in 2010, with low density residential along the westerly property boundary adjacent to the Country Ridge neighborhood that is proposed to be developed with 19 lots meeting the City's R-1-12 zoning standards. The proposed townhomes would be located on the portion of the site designated as Medium Density Residential and Multi-Family Residential/Office. The remainder of the site would be developed under a future Phase II PUD application

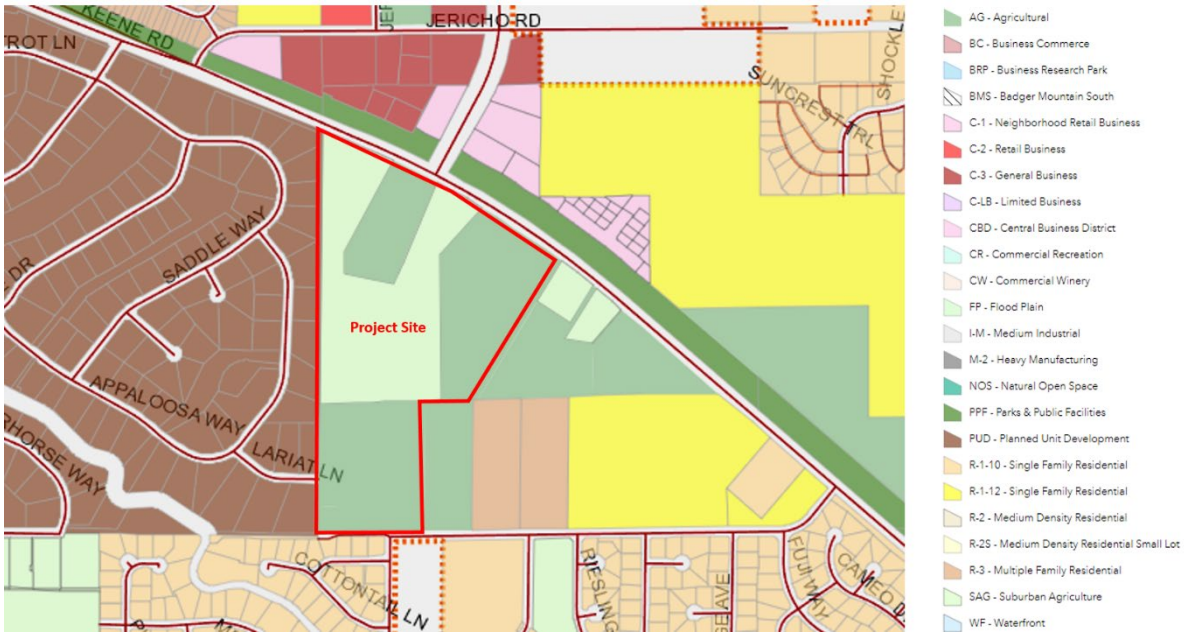


Figure 6: Existing Zoning Map

Transportation

The City's Transportation Plan calls for the extension of Queensgate Drive, an arterial collector street, across the site as part of its Functionally Classified Street Network. Under full buildout, Queensgate South will fully build this arterial street, with multiple travel lanes, turn lanes, a roundabout, bicycle paths and pedestrian walkways. Phase I construction would result in the following Queensgate improvements:
Extension of Queensgate Drive north from Shockley Road adjacent to Phase I development to include three vehicle lanes, bike lanes and sidewalks to meet City collector street standards. The remaining portions of Queensgate Drive to Keene Road would be constructed with two lanes, meeting the City's rural street development standard.

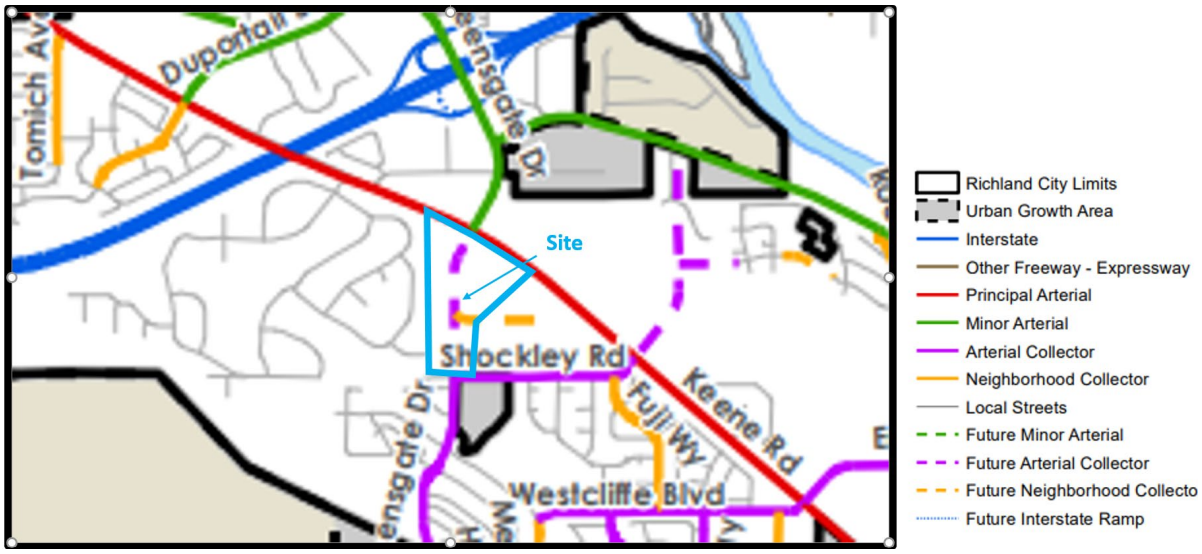


Figure 7: Richland Functionally Classified Street Network Plan

Other streets included in the Phase I project would be built to local street standards as defined in the municipal code and would provide for 2 travel lanes, on-street parking and turn-around areas large enough to accommodate emergency vehicles. Lambert Drive, the street that would access the low density residential lots would be connected to Lariat Lane, a street that borders the western boundary of the site and provides a connection to the adjacent Country Ridge neighborhood.

Site Characteristics

The site is largely free from natural constraints to development, as illustrated by Richland's critical areas map that shows that there are no known critical areas on-site which would limit development. Studies completed for the proposed development include a detailed soils survey, a geotechnical report, a site survey and topographic survey and a cultural resources report. All of these documents are attached.

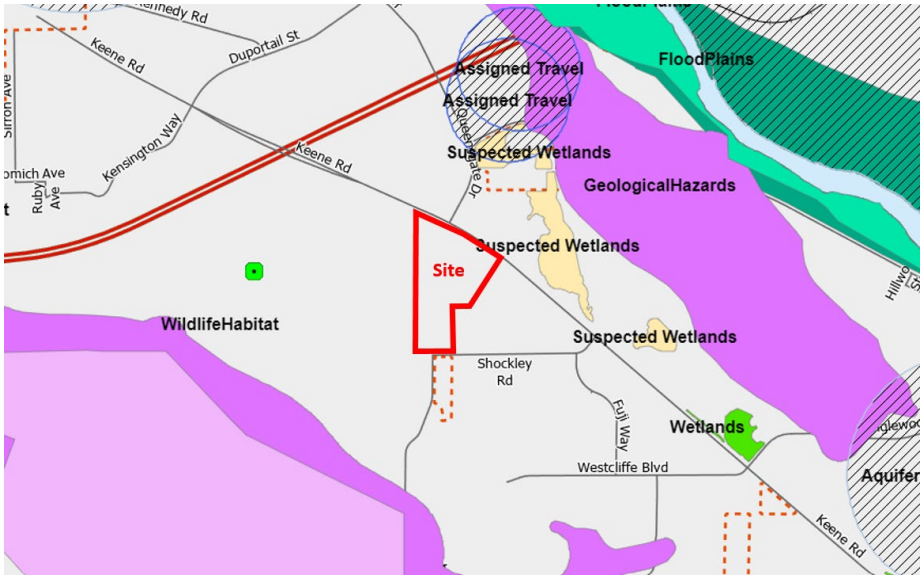


Figure 8: Richland's Critical Areas Map

Open Space

Within Phase I development there are four open space tracts, totaling 2.88 acres in area. These open space tracts would accomplish several purposes. First, a small open space tract extending between the proposed Chelan Drive and Queensgate Drive would provide a mid-block pedestrian connection to encourage pedestrian activity within the townhome neighborhood. As Phase II develops, additional pedestrian connections would be provided between the townhome and commercial portions of the site. Two open space tracts would be placed directly opposite a street intersection so that vehicles turning from Queensgate Drive into the townhome neighborhood would have a point of visual interest and would avoid a situation where turning cars would shine their headlights directly into homes. The fourth open space area will provide some separation between the townhomes and the proposed commercial development to the north that is planned for Phase II.

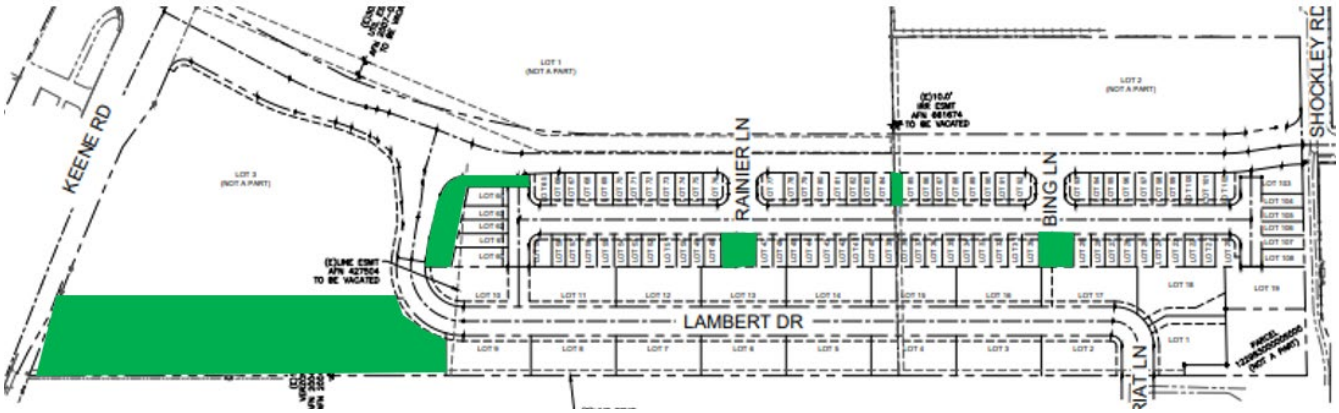


Figure 9: Phase I Proposed Open Space Tracts

Maintenance of these open spaces will be managed by a Home Owners Association that will be comprised of the townhome owners. Additional details of the HOA will be provided as part of the Final PUD submittal.

Landscaping

Landscaping of the Phase I area will include the placement of street trees along all public rights-of-way and landscaping of the common open space tracts. Additionally, a six foot masonry wall will be built along the westerly and southerly property boundaries to provide a separation between the project and the adjacent neighborhoods. Landscaping and buffering along the eastern boundary of the site will be addressed in the Phase II submittal.

Figure 10: Landscaping Plan

Townhome Development

The proposed townhomes are 3 story structures, with garages on the first level and living spaces on the upper two levels. The units would be clustered together generally in groups of four units with a 10 foot setback between groups of buildings; however; one grouping of buildings will contain six units. The development is arranged so that units fronting on Queensgate Drive would be accessed from the local side street, so that no unit would have direct access onto Queensgate.
Each unit would have a two car garage and a driveway that could accommodate two additional off-street parking spaces. The rendering below is an example of how the townhomes would appear. Additional renderings are attached.

Figure 11: Architectural Rendering of Townhomes

Development Standard	Townhomes
Minimum Lot Size – One-Family Attached Dwelling	1,525 sq. ft.
Minimum Lot Width – One-Family Attached Dwelling	25 ft.
Minimum Front Yard Setback	20 feet garage level 12 feet upper stories
Minimum Side Yard Setback	0 feet interior unit/5 feet end unit
Minimum Rear Yard Setback	15 feet
Maximum Lot Coverage[8]	65%
Maximum Building Height – Main Building	40 feet

Table 2: Townhome Development Standards

Single Family Residence Development

The proposed single family residential lots would form two tiers of lots along the westerly property boundary and would line both sides of Lambert Drive as called for the development agreement (See attached Contract

#92-10). These lots have been designed to be wide and shallow. This result is that there are fewer lots bordering the Country Ridge subdivision than there otherwise would be. The proposed lots average 150 feet in width as opposed to the 90 foot width mandated in the R-1-12 zoning standards. The reduction of 5 feet in the rear yard setback is mitigated by the presence of a 15 foot wide pedestrian easement that runs between the site and the Country Ridge neighborhood. Additionally, the six foot masonry wall that will be built along the property boundary provides adequate separation between the two projects. Reduction of the front yard setback is again a minor deviation that wouldn't generally be noticeable to passersby and still provides adequate room for off-street parking in the driveway area. These two minor setback reductions allow an additional 15 feet of building envelope on each lot and will provide home builders design flexibility to be able to build slightly larger and more attractive homes, thereby benefitting both the project and the adjacent neighborhood.

Development Standard	Single Family Lots
Average Lot Size	12,105 sq. ft.
Minimum Lot Size	11,218 sq. ft.
Front Yard Setback	15/20 feet*
Side Yard Setback	10 feet
Rear Yard Setback	15 feet
Setback from Private Access Easements	6 feet
Building Height	30 feet
Maximum Lot Coverage	40%
Accessory Building Height	16 feet

*15 foot setback living areas; 20 foot setback garage

Table 3: Single Family Lot Development Standards

Given the relatively wide and shallow nature of the single family lots, side entry garages may be an attractive option for homebuilders. In order to provide for this type of design, driveways may be placed along a side property boundary and may be shared with the adjacent lot. Driveway width shall be as determined by City standards. Accessory buildings shall be governed by the city zoning code provisions regulating the size and setbacks of detached accessory buildings as set forth in RMC 23.38.020. Fencing height limitations and locations shall be as specified in RMC 23.28.070.

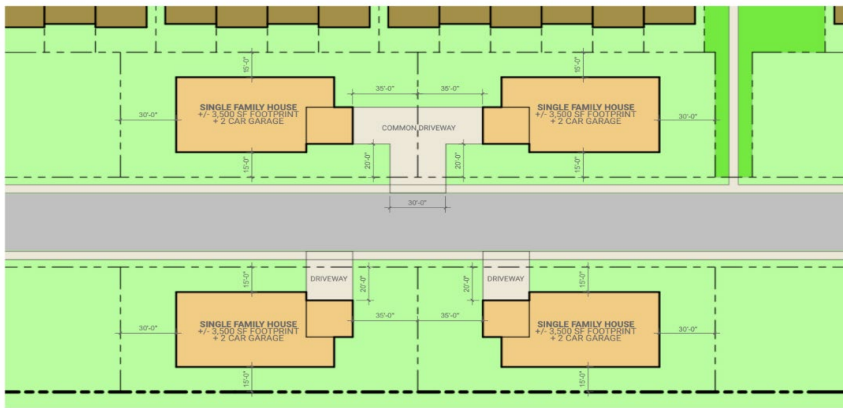


Figure 12: Potential Single Family Lot Configuration

Utilities

Utilities needed to serve the project include domestic water, sewer, electrical service and garbage collection to be provided by the City of Richland. Irrigation water would be provided by the Kennewick Irrigation District. Cascade would supply natural gas to the project. Spectrum would provide cable. Storm drainage would be retained on site. An existing City-owned storm pond located adjacent to the extreme southeastern corner of the property would remain in place. A series of new ponds would be located in the northwest corner of the site. Phase II development may require additional storm drainage facilities to be located along the northern boundary of the site, adjoining Keene Road. Specific details will be provided at the time that Phase II development plans are submitted for review.

Ownership

Individual townhome and single family residential lots will be sold. Townhome owners will be included in a Home Owners Association to maintain the open space areas within Phase I. This HOA would be expanded to include the townhome lots in Phase II of the project together with the open space areas set aside in that Phase of development.

Timing of Development

Phase I development will begin as soon as possible. Detailed engineering design will begin once preliminary plat and PUD approvals are granted. Construction of streets and utilities would immediately follow construction approvals and would be anticipated to start no later than the fall of 2023. Phase II preliminary design and preliminary PUD approval would begin by the fall of 2023, with the hope that commercial construction could be initiated in 2024. The development team respectfully requests that the City expedite its review of this project in order to facilitate this proposed development timeline.

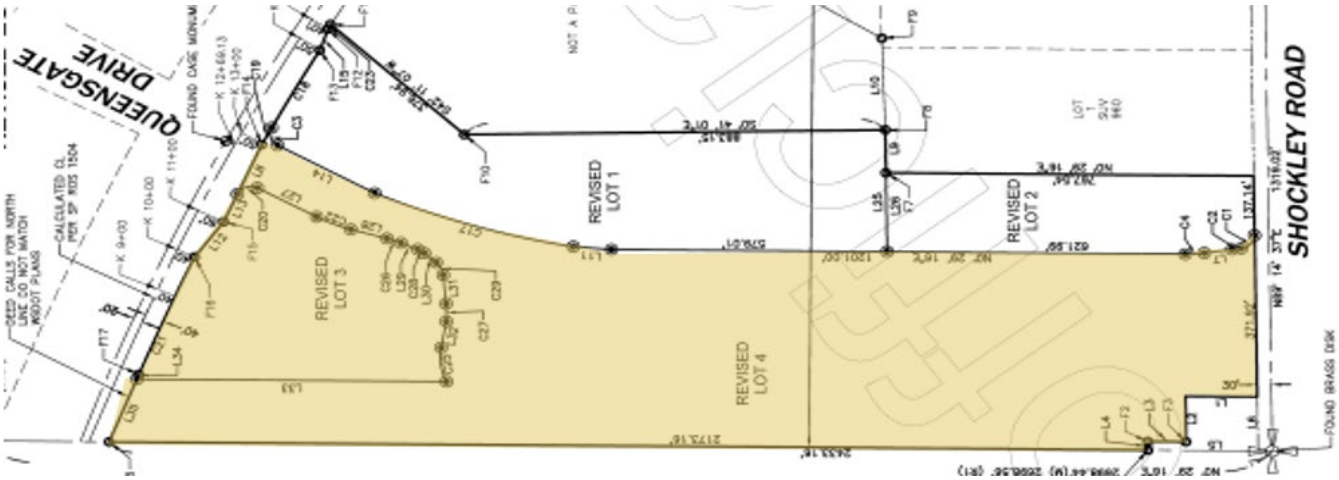


Figure 13: Boundary Line Adjustments

A boundary line adjustment was completed on the site in November. The Assessor's Office has not assigned new parcel numbers to correspond with the change in lot boundaries. Phase I of the project, located within the revised Lots 3 and 4 is highlighted in the figure above. Assessor Parcel Numbers assigned to the new lot boundaries for Revised Lot 3 is: 122983000002004. Revised Lot 4 is: 122983000003003.

NARRATIVE RESPONSE

In order for the City to approve an application for a Planned Unit Development and a Preliminary Plat, the Richland Municipal Code requires that specific criteria be met. The following is a discussion on how The Terraces at Queensgate South project meets these criteria:

1. RMC 23.50.030(B) Consideration of Reclassification to Planned Unit Development
2. RMC 24.12.053 Preliminary Plat – Required Findings
    a. RMC 24.16 Design Standards
3. RMC 19.60.095 Required Findings for Type II and Type III Applications
4. Compliance with Provisions of Development Agreement – Contract #92-10

From RMC 23.50.030(B) Planned Unit Development Criteria

B. The hearing examiner shall conduct an open record public hearing and review of the request for reclassification to PUD and preliminary PUD plan approval as required by RMC Title 19 for Type IIIA permit application. The hearing examiner, after public hearing, shall recommend to the city council that the application be granted (with or without additional conditions) or denied. Such recommendation shall be based on the hearing examiner's determination of whether:

1. The PUD district development will be compatible with nearby developments and uses;

Response: The project is consistent with the City's adopted comprehensive plan, which is evidence of the project's compatibility with nearby uses. The initial phase of development provides low-density single family residential lots along the westerly property boundary that abuts the low-density Country Ridge single family neighborhood. It includes townhome development in areas that are designated as medium density residential in the comprehensive plan. It provides for the extension of Queensgate Drive across the site in the location that the plan identifies for a future arterial street extension. Phase 2 of the project includes commercial development along the Keene Road corridor on lands that are designated for commercial development in the comprehensive plan and additional town home development along the Queensgate corridor in locations identified for multifamily residential and commercial development.

In addition, the Phase I portion of the project includes construction of a masonry wall along the western property boundary adjacent to a pedestrian/equestrian easement that runs along the boundary of the Country Ridge plat. The masonry wall would also be extended along the southern boundary of the site, adjacent to the Shockley Road right-of-way, providing separation between the proposed townhome development and the existing single family housing that abuts the southern boundary of Shockley Road. (Refer to the attached landscaping plan.)

The eastern boundary of the initial phase of development would be the Queensgate Drive corridor. Both the eastern and northern project boundaries are included in the second phase of development and specific buffering and/or landscaping will be determined at that stage of project development.

2. Peripheral treatment ensures proper transition between PUD uses and nearby external uses and developments;

Response: The project has been designed to match the adjacent low-density residential Country Ridge neighborhood that forms the western boundary of the project site. On the Country Ridge side of the project boundary there are 12 existing single family properties. The project proposes 9 low density single family residential lots along with a tract that will serve as the project's storm drainage basin. Adjacent to the Country Ridge properties, a 15 foot wide pedestrian/equestrian easement was created as part of the County Ridge development. A six foot masonry wall will be constructed along this property boundary. Finally, Lariat Lane, a local street that serves the Country Ridge neighborhood terminates at the property boundary. The project provides for the extension of Lariat Lane, which will provide access to both the project's proposed single family residential lots while also providing another street connection into the Country Ridge neighborhood.

Along the southerly boundary of Phase I, the site directly fronts on Shockley Road. Single family homes in the R-10 Single Family Residential zoning district are located south of Shockley Road. The southerly edge of the project includes two large single family home lots in the southwestern corner of the site and one cluster of townhomes. The same masonry wall buffer that is proposed for the western boundary of the site would be extended along southern boundary as well.

The eastern and northern boundaries of Phase I do not abut the exterior boundaries of the project site. Future phases call for the development of townhomes along a portion of the eastern and southern borders and commercial development along a portion of the eastern and northern borders. Specific details regarding transition and buffers will be addressed in a Phase II submittal.

3. The development will be consistent with the comprehensive plan and with the purpose of the PUD district;

Response – Consistency with comprehensive plan: The western boundary of the site is designated as Low Density Residential (0-5 dwelling units/acre). The proposed single family lots, with a net density of 2.66 units/acre fall within the middle of this range. The remainder of the Phase I area is designed as Medium Density Residential (5 – 10 units/acre). The townhomes with a density of 8.52 units/acre fall within the range of the medium density plan designation. Additionally, the plan calls for the extension of Queensgate Drive, a minor arterial street, to be extended across the site between Keene and Shockley Roads. The proposed project makes provision for this road extension.

Additionally, the project will help to implement the following goals and policies contained within the City's comprehensive plan:

LU Goal 1: Plan for growth within the urban growth area and promote compatible land use.

Policy 2: Facilitate planned growth and infill developments within the City.

Comment: The site is located inside both City limits and urban growth area boundaries; is surrounded by developed properties and so qualifies as infill development, and so is consistent with policy #2. The project would be compatible with adjacent land uses and so is consistent with the overall intent of this goal.

LU Goal 2: Establish land uses that are sustainable and create a livable and vibrant community.

Policy 1: Maintain a variety of land use designations to accommodate appropriate residential, commercial, industrial, healthcare, educational, recreational, and open space uses that will take advantage of the existing infrastructure network.

Policy 2: Ensure that adequate public services are provided in a reasonable time frame for new developments.

Policy 3: Ensure that the intent of the land use and districts are maintained.

Comment: The project will result in mixed use development that will incorporate different housing types and densities, make an important arterial street connection and provide needed commercial services along Keene Road, the major street corridor in South Richland. It will include an urban open space amenity and attractive landscaping along street corridors. Utility infrastructure is in place to be extended into the site to support the project. Trails and parks are both within walking distance of the site and provide an important amenity to the project.

LU Goal 3: Maintain a broad range of residential land use designations to accommodate a variety of lifestyles and housing opportunities.

Policy 1: Distribute residential uses and densities throughout the urban growth area consistent with the City's vision.

Policy 2: Encourage higher residential densities especially in and near the Central Business District area.

Policy 3: Innovative and non-traditional residential developments can occur through the use of planned unit developments, density bonuses, new types of housing, and multi-use or mixed-use developments.

Comment: The project will result in development that is consistent with both the City's comprehensive plan and a 2010 development agreement. It includes both low density single family residential lots and medium density townhome development utilizing a planned unit development and platting process to achieve this mixed-use development project. The site is well situated for a higher density residential project, given its proximity to the City's arterial street system.

LU Goal 5: Ensure connectivity that enhances community access and promotes physical, social, and overall well-being so residents can live healthier and more active lives.

Policy 1: Locate commercial uses so that they conveniently serve the needs of residential neighborhoods, workplaces, and are easily accessible via non-motorized modes of transport.

Policy 2: Promote pedestrian and bicycle circulation throughout the community by connecting with the infrastructure and the City's network of parks and trail system.

Comment: The project will result in the extension of Queensgate Drive from Keene Road to Shockley Road, an important connection in Richland's transportation network. The roadway corridor includes accommodation for vehicles, bicycles and pedestrians and is consistent with Richland's adopted complete streets policies. The proposed commercial land included within the second phase of development will provide commercial services in close proximity to both new and existing residential neighborhoods and will provide pedestrian pathways between residential and commercial land uses. Further, these new residences will be located in close proximity to the Keene Road trail corridor.

UD Goal 1: Create a physically attractive and culturally vibrant, pedestrian- and bicycle-friendly environment in the City.

Policy 1: Establish and enhance the positive attributes of residential, commercial, central business, and other districts with appropriate transition between them.

Policy 2: Encourage redevelopment and upgrade of suitable commercial areas.

Policy 3: Improve streetscape and connectivity for safe and pedestrian friendly environments.

Comment: The project will accommodate pedestrian and bicycle routes through the project site, providing for pedestrian access between proposed commercial and residential land uses. The proposed commercial uses in Phase II of the project will provide additional commercial services along the Keene Road corridor, while making good use of grade changes and landscaping to provide an effective transition between planned residential and commercial uses. The use of landscaping and street trees will ensure that the project maintains a physically attractive appearance for pedestrians.

HE Goal 1: Provide a range of housing densities, sizes, and types for all income and age groups of the Richland community.

Policy 1: Ensure that the comprehensive plan and development regulations allow for a variety of housing types, sizes, densities, and lot configurations such as small lot single family housing, multi-family housing, mixed-use development, cluster development, live/work housing, cohousing, accessory dwelling units, single room occupancy units, zero lot line and similar subdivisions, and planned unit developments.

Policy 4: Promote and provide incentives (such as zoning/rezoning, revised regulations, and provision of infrastructure) for infill development and redevelopment, while respecting the character and scale of the existing neighborhood.

Policy 6: Plan for an adequate supply of land in appropriate land use designations and zoning categories to accommodate projected household growth, while accommodating other commercial, industrial, and open space needs of the City.

Comment: The project includes both single family detached housing and townhome development and so provides for a variety of housing types utilizing the planned unit development process. The townhome portions of the project will provide an attractive alternative for home ownership for individuals desiring a more urban setting with both commercial services and the Keene Road trail corridor in close proximity. The project qualifies as infill development. The design of the project both protects existing neighborhoods and takes advantage of its proximity to a needed arterial street extension.

Response – Consistency with purpose of Planned Unit Development Ordinance: According to Section 25.50.010 of the Richland Municipal Code, the purpose of a planned unit development is as follows: "provide opportunities to create a more desirable environment through the application of flexible design and development standards to tracts of land under common ownership or control. Planned unit development is intended to encourage the use of new and improved techniques and technology in community development and continued maintenance. It is intended to achieve economics in development and maintenance while providing privacy, usable open space, safe pedestrian and vehicular circulation, and compatible relationships between different uses. "

The Planned Unit Development approval is requested to achieve greater flexibility in design standards. Specifically, the single family lots proposed along the westerly portion of the site would meet all R-1-12 standards in terms of use, building height, lot coverage and size, with a minor deviation in setback standards. This slight reduction in front and rear setbacks from R-1-12 standards will ensure a reasonable building footprint for lots that are relatively shallow, while still maintaining the look and feel of R-1-12 zoning standards. The proposed townhome development will provide a housing product that is in high demand, given the rising cost of land and construction, while maintaining an attractive and efficient standard that could not be achieved under standard city zoning. The project provides for a necessary extension the City's arterial street system, with a well-designed plan for vehicular, pedestrian and bicycle circulation, in an attractive setting with street trees and landscaped open space areas.

4. The development can be completed within a reasonable period of time.

Response: Following preliminary approval, detailed development plans required by the PUD and subdivision ordinances will be prepared and submitted to the City as soon as possible. Construction of streets and utility line extensions called for in Phase I development are planned to be completed in the fall of 2023, with housing construction to follow immediately after that.

24.12.053 Preliminary plat – Required findings.

The hearing examiner shall not approve any preliminary plat application, unless the approval is accompanied by written findings that:

A. *The preliminary plat conforms to the requirements of this title;*

Response: Chapter 24.16 of the Municipal Code establishes design standards for plats. Specific standards and comments are detailed below:

Code Requirement: 24.16.010 states that the alignment of streets shall conform to the comprehensive plan as nearly as possible.

Response: *The project plans for the extension of Queensgate Drive through the project site, providing a connection between Keene and Shockley Roads, as contemplated in the City's Future Functionally Classified Street Network (refer to Figure 7). Additionally, the project provides for the extension of Lariat Lane, a local street, as called for in the existing development agreement that is in place to regulate the future development of the site.*

Code Requirement: 24.16.020 requires the layout of streets to provide for the continuation of principal streets in adjoining subdivisions for future projection of streets into areas which are not subdivided.

Response: *The project provides for the extension of Lariat Lane, which serves as a local street for the adjoining Country Ridge neighborhood. Lariat Lane would be extended to tie into the Queensgate Drive arterial street extension, satisfying both the design criteria and the provisions of the development agreement that has been established for this property.*

Code Requirement: 24.16.030 requires that subdivisions bordering a body of water shall provide at least one street access to such body of water.

Response: *This standard is not applicable to the project, as there are no bodies of water in proximity to the site.*

Code Requirement: 24.16.040 requires streets which serve primarily to provide access to abutting property only shall be designed to discourage through traffic.

Response: *The extension of Lariat Lane is intended to serve local traffic only and so has been designed as a local street section and as mandated in the development agreement established for this property, extends more than 1,200 lineal feet in a north-south orientation before it turns to the east to connect with Queensgate Drive. The other local street planned in Phase I development is Chelan Drive, which would connect to Queensgate Drive and terminate in a dead-end at both the northern and southern ends of the street.*

Code Requirement: 24.16.050 requires that dead-end streets be 400 feet or less in length and provided with a cul-de-sac or "Y" or "T" turnaround with a minimum radius of 50 feet.

Response: *Both ends of Chelan Drive are proposed to be dead-end roads with "T" turnarounds. The southern end of Chelan Drive would be approximately 380 feet and the northern end would be less than 300 feet in length.*

Code Requirement: 24.16.060 requires that "limited access" streets be dedicated in such a manner as to qualify them as "limited access facilities".

Response: *The project has been designed so that all residential lots fronting on Queensgate Drive, an arterial street, are provided access from an adjoining local street. In Phase 1 development, Chelan Drive would provide access to the proposed townhome lots. A note shall be placed on the final plat specifying that direct access onto Queensgate Drive is prohibited for all townhome lots that contain frontage along Queensgate Drive. The commercial development proposed as part of Phase II will require commercial driveways to maintain a minimum setback from the Keene Road/Queensgate intersection. Driveway locations will be addressed with greater specificity when an application for Phase II development is submitted to the City for review.*

Code Requirement: 24.16.070 requires that connecting street centerlines that deflect from each other by more than 10 degrees shall be connected by a horizontal curve.

Response: *The proposed street design of Phase I meets this standard.*

Code Requirement: 24.16.080 requires that street intersections shall be at right angles to the greatest degree practicable.

Response: *All proposed street intersections within Phase I development are designed at 90 degree angles and so meet this standard.*

Code Requirement: 24.16.090 requires that streets maintain centerline offsets of at least 125 feet.

Response: *The project is designed to avoid centerline offsets within the proposed street system.*

Code Requirement: 24.16.100 requires that streets conform to the natural grade of the land, with minimum grades of .5%. Maximum grades allowed are as established by AASHTO for major streets and 10% for minor streets.

Response: *Streets within Phase I development include local streets that have a maximum grade of less than 10%. Queensgate Drive, an arterial street is designed with a 2% grade within the Phase I development area.*

Code Requirement: 24.16.110 requires that street rights-of-way meet the comprehensive plan and shall not be less than the 60 feet for arterial collector streets; 54 feet for neighborhood collector and local streets; and 40 feet for single frontage local streets.

Response: *The City's Future Functionally Classified Street Network Plan identifies the Queensgate extension as a minor arterial street. The proposed design for Queensgate for the fully developed project includes a 72 foot wide right of way with a roundabout located several hundred feet from Queensgate's intersection with Keene Road. Sidewalks, bicycle paths and turn lanes will be incorporated into the street design in coordination with City Public Works staff. For the initial phase of development, Queensgate Drive will be built to a rural street standard, providing a connection between Shockley Road and Keene Road. All other streets within Phase I, both Lambert and Chelan Drives, are classified as local streets and meet the 54 foot wide right-of-way requirement.*

Note: The RMC does not include a section 24.16.120.

Code Requirement: 24.16.130 states that alleys are prohibited in residential areas but required in commercial areas.

Response: *Phase I does not include any commercial properties and no alleys are proposed within the Phase I residential area.*

Code Requirement: 24.16.140 provides standards for alleys.

Response: *This standard is not applicable to Phase I development.*

Code Requirement: 24.16.150 requires easements along the side and rear property boundaries of at least 5 feet in width when needed.

Response: *The proposed plat includes easements alongside the rear property boundaries for all single family lots along the western portion of the Phase I development site. All townhome lots include an easement along the rear property boundaries and side yard easements for those lots that do not have zero foot setbacks.*

Code Requirement: 24.16.160 requires that easements for high-voltage electrical lines, irrigation canals and pondage areas shall be of sufficient width for their intended purpose including necessary maintenance roads.

Response: *High voltage electrical lines and irrigation canals are not located on the site. A storm pond facility proposed for the northwestern corner of the Phase I development site will be located within an open space tract. Specific easement widths will be identified when final plans for the development are submitted for City review.*

Code Requirement: 24.16.170 requires that any watercourse or drainage way that traverses the site shall be provided a stormwater easement or drainage right-of-way.

Response: *The plan calls for a stormwater easement that would run adjacent to the westerly property boundary to direct stormwater runoff to drainage ponds located at the northwestern corner of the site. Adequate easement widths for this storm drain line will be identified on the final plat.*

Code Requirement: 24.16.180 requires that block lengths not exceed 1,500 feet or be less than 500 feet.

Response: *The proposed layout of the Phase I development project includes a block length of approximately 500 feet for Chelan Drive and a block length of approximately 1,260 feet for Lambert Drive*.

Code Requirement: 24.16.190 requires that block width be sufficient to allow for two tiers of lots except in the instance of reverse-frontage parcels.

Response: *All blocks have been designed to contain two tiers of lots except in the case of the lots that contain frontage along Queensgate Drive. These blocks are reverse frontage parcels that will be accessed only from the Chelan Drive and not from Queensgate Drive.*

Code Requirement: 24.16.200 regulates large parcel subdivisions, for parcels larger than ½ acre in size.

Response: *This regulation is not applicable to this project.*

Code Requirement: 24.16.210 requires that a mid-block crosswalk be provided on blocks more than 1,000 feet in length or on shorter blocks where essential to provided circulation or access to schools, playgrounds, shopping centers or similar facilities.

Response: *A pedestrian walkway is provided along the northern portion of Lambert Drive, which is the only block in the proposed development that is longer than 1,000 feet. A mid-block pedestrian walk is also proposed between Chelan Drive and Queensgate Drive to promote better pedestrian access.*

Code Requirement: 24.16.220 requires that every lot shall have satisfactory access to a public street or other legally sufficient permanent right of access.

Response: *All lots within the project have been designed to include direct access onto a public street, except for two single-family lots located in the extreme southwestern portion of the site. These two lots would be served by a permanent access easement that would connect the lots to Lambert Drive.*

Code Requirement: 24.16.230 provides that corner lots shall have extra width to provide for appropriate setbacks from streets.

***Response**:* *All townhome corner lots have been provided additional area to accommodate a 5 foot setback.*

Code Requirement: 24.16.240 requires that lots shall be as nearly rectangular as possible with side lot lines that are approximately perpendicular to streets, ordinarily with a ratio of width to depth of one to not more than two and one fourth.

Response: *The design of the project provides for lots that are rectangular and perpendicular to streets. Interior townhome lots, typically measure 27.5 feet by 61 feet and so meet this standard. End townhome lots are generally proposed to be 32.5 feet by 61 feet and so are also consistent with this standard. The single family home lots along Lambert Drive are generally 160 feet wide and 75 feet deep. These lots are wider than is typical for 12,000 square foot lots with the result being that there are fewer lots located along the western property boundary shared with the Country Ridge neighborhood. Over the common property boundary which extends 1,635 feet between the site and Country Ridge, there are only ten lots proposed. As one objective of the development agreement with the City was to limit the density of development on this portion of the site, the wider lots help to achieve this goal.*

Code Requirement: 24.16.250 requires that key lots be avoided.

Response: *The project does not include any key lots.*

Code Requirement: 24.16.260 requires that double frontage lots be avoided except when they are essential to provide separation between residential development and arterial traffic.

Response: *There are no double frontage lots proposed except those that are adjacent to Queensgate Drive, which is a limited access street.*

Code Requirement: 24.16.270 requires that lots not connecting to sewer be of a sufficient size to accommodate septic system in accordance with health department requirements.

Response: *All lots within the project are proposed to be connected to the City sewer system.*

Note: The RMC does not include a section 24.16.280

Code Requirement: 24.16.290 requires driveway separation along major arterial streets of at least 300 feet.

Response: *The project proposes street intersections along Queensgate Drive that are approximately 500 feet apart. No lots fronting on Queensgate Drive will be afforded direct access*

onto Queensgate. In the Phase II development area, the commercial portions of the site will be designed to meet this standard.

B. *Appropriate provisions are made for the public health, safety and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and school grounds and all other relevant facts, including sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school;*

Response: The public health, safety and general welfare would be served by approval of this project as it complies with the City's subdivision design standards, including street width and improvement standards and utility standards including placement of fire hydrants. Further, the project is consistent with the City's comprehensive plan and the development agreement that regulates this property. The proposal includes the following provisions:

- Open space: Common open spaces within Phase I include a landscaped drainage pond tract in the northwestern corner of the site; a landscape tract located at the northern end of the Townhome development area providing a separation between the townhomes and the commercial development planned for Phase II and two open space tracts along Chelan Drive and a small open space tract that would provide for pedestrian access between Chelan Drive and Queensgate Drive.
- Drainage ways: A storm drainage system will be designed to collect, treat and route storm water runoff generated on-site to a storm pond located in the northwest corner of the site. Phase II development will include some storm drainage facilities along the Keene Road corridor.
- Streets: Streets have been designed to meet City standards for improvement width, grade, drainage, curbs and sidewalks. Further, proposed streets will meet the City's requirements for complete streets with provisions for bicycle lanes and pedestrian walkways. Queensgate Drive, an arterial street is proposed to extend across the site in a manner that is consistent with the City's Transportation Plan. Lambert Drive, a local street is proposed to be an extension of Lariat Lane, as required under the development agreement that pertains to this site. Traffic impacts generated by the project will be offset both through the construction of this important Queensgate Drive arterial street connection and through the payment of traffic mitigation fees as mandated by City code when homes are constructed on-site.
- Potable water: The project will be connected to the City's municipal water system.
- Sanitary waste: The project will be connected to the City's municipal sewage system.
- Parks & recreation: The site is well situated to take advantage of existing City park facilities, including the Keene Road trail corridor, the Badger Mountain Community Park, the Trailhead Community Park and Gala Park. Impacts to the City park system generated by the future residents of The Terraces at Queensgate South will be offset by the park mitigation fees that will be paid to the City at the time that homes are constructed.

- Playgrounds: The open space tracts within the Phase I site may be improved with some playground equipment and/or park furniture. Specific plans will be included with Final PUD plans.
- The site is located within the Richland School District. Existing school facilities within the South Richland area include Badger Mountain Elementary, Orchard Elementary and White Bluffs Elementary schools.
- Sidewalks/Safe Walking Conditions: Development of the site will include sidewalks along all public streets. Additionally, pedestrian walkways will be provided in various locations throughout the single family and townhome portions of the site.

C. The public use and interest will be served by the platting of such subdivision and dedication;

Response: The public use and interest is served by development that is consistent with the City's comprehensive plan and development regulations. This proposal demonstrates that consistency as detailed in the responses provided above. In addition, development of the project will complete an important link in the City's transportation plan through the extension of Queensgate Drive. It will provide relatively higher density residential development in a central location that has easy access to: arterial streets and the freeway; to a number of public facilities including schools and parks and to existing and proposed commercial services. Townhome development as proposed in this project, makes efficient use of both land and construction materials and so is helpful in keeping housing somewhat affordable in a time when real estate prices are rapidly escalating. The mixed use nature of the project will provide for an interesting, attractive and vibrant community that will be an asset to the community and a desirable place to both live and shop.

RMC 19.60.095(D) Required Findings for Type II and Type III Applications

D. The application is consistent with the requirements of RMC 19.60.095, which reads as follows: No development application for a Type II or Type III permit shall be approved by the city of Richland unless the decision to approve the permit application is supported by the following findings and conclusions:

A. The development application is consistent with the adopted comprehensive plan and meets the requirements and intent of the Richland Municipal Code.

Response: As detailed above, the application is consistent with the comprehensive plan in a variety of ways. The project is consistent with the land use map which identifies desired future land uses. It provides for the extension of an arterial street, which is an important component of the City's transportation plan. The project is also consistent with and implements a variety of goals and policies found in the plan (see discussion beginning on page 15 above for details.) Additionally, the project is consistent with both the provisions of the City's PUD ordinance (refer to discussion on page 18 above) and the City's subdivision regulations as described beginning on page 19).

B. Impacts of the development have been appropriately identified and mitigated under Chapter 22.09 RMC. (SEPA)

Response: The SEPA checklist prepared for this application referenced a number of studies that have been prepared for this project, including a survey and topographic map, a custom soils report, a geotechnical evaluation, a cultural resources report and a traffic analysis. Additionally, the project is committed to development of the property in a manner that is consistent with the City's PUD ordinance and subdivision regulations, the comprehensive plan land use map, several goal and policy statements from the comprehensive plan, the transportation plan calling for the extension of Queensgate Drive, the development agreement that is in place on the property, engineering standards for road design and utility line extensions, conformance with storm drainage standards, state energy and building code requirements, outdoor lighting standards, and City codes requiring payment of traffic and park mitigation fees. In summary, the project has addressed and mitigated all environmental impacts of the project in a manner consistent with City plans and regulations.

C. The development application is beneficial to the public health, safety and welfare and is in the public interest.

Response: The proposed PUD promotes and protects public health, safety and welfare in the following ways:

- Provides for 109 new housing units during a time of increased demand for housing;
- Provides for a mix of uses and housing types that will add interest and vibrancy to the South Richland area;

- Provides housing in a location that is conveniently located to commercial facilities, parks, trails, schools and major transportation corridors, including bus routes;
- Makes efficient use of both land and building materials and so will help to alleviate the already high and increasing costs of housing;
- Includes provisions to provide adequate buffers to the adjacent low density residential neighborhood;
- Provides for the extension of an arterial street that is a key component to the City's transportation plan;
- Designed with streets meeting City standards and so provides access for emergency vehicles;
- Provides for utility extensions to provide adequate domestic water, irrigation water, fire flow, sewage disposal and electrical power in a manner that meets city standards;
- Maintains appropriate setbacks and open spaces to ensure adequate light, air and access for the future residents of the development;
- Includes a well-considered plan for the development of future phases of the site through the provision of commercial services that will benefit the residential uses in Phase I as well as surrounding neighborhoods;
- Provides for vehicular, pedestrian and bicycle access in a manner that is consistent with the City's complete streets standards; and
- Includes street design that will provide for improved traffic flow through the neighborhood and safe access for the future residents of the development.

D. *The development does not lower the level of service of transportation facilities below the level of service D, as identified in the comprehensive plan; provided, that if a development application is projected to decrease the level of service lower than level of service D, the development may still be approved if improvements or strategies to raise the level of service above the minimum level of service are made concurrent with development. For the purposes of this section, "concurrent with development" means that required improvements or strategies are in place at the time of occupancy of the project, or a financial commitment is in place to complete the required improvements within six years of approval of the development.*

Response: The attached traffic analysis prepared by PBS demonstrates that the project, at both full completion and completion of Phase I will not result in any street segments falling below level of service D, provided that improvements to Queensgate Drive are completed in the manner prescribed in the traffic analysis.

E. Any conditions attached to a project approval are as a direct result of the impacts of the development proposal and are reasonably needed to mitigate the impacts of the development proposal.

Response: This determination will need to be made by the City during the review of this proposal. Conditions of approval attached to the project will need to address the conditions outlined in the development agreement between the City and the property owner as specified in Richland Contract #92-10 as revised (copies attached.)

Contract #92-10 Section 10 of Development Agreement

The project site is subject to a development agreement that the City originally entered into with the property owners in 2010. The agreement (Contract #92-10) was modified in 2021. Section 10 of the agreement includes the following provisions regulating the development of the site.

a) *A buffer area of low density residential designated along the westerly property boundary of the site, adjacent to the Country Ridge property line and zoned for R-1-12. The buffer would provide for two tiers of single family residential lots separated by a road corridor, providing for an overall density not to exceed three (3) lots per acres (inclusive of such road corridor). A Planned Unit Development may be utilized to achieve a density average consistent with this agreement. These lots would meet all R-1-12 zoning standards, and such lots adjoining the adjacent Country Ridge development shall be laid out with their rear yards facing the Country Ridge property line.*

Response: The low density area is proposed to be developed as part of the PUD and Phase 1 of subdivision. Net density for this portion of the site is 2.6 lots/acre, falling well below the 3 unit/acre standard contained in the development agreement. Two tiers of lots, separated by Lambert Drive adhere to the two tiers of lots requirement of the agreement. Rear yards of the lots abutting the Country Ridge property boundary satisfy the required conditions. Lots meet all R-1-12 zoning standards, except for proposed front and rear front yard setbacks.

The rationale for utilizing different setbacks is based on the shallow, wide lots that form this buffer area. With lots 75 feet in depth, standard setbacks would provide for a building envelope that is only 30 feet deep. Enlarging the building envelope by reducing both the front and rear setbacks gives home builders a 45 foot deep building envelope and affords much greater flexibility to build attractive homes. (Note: the proposed setbacks are 15 foot rear yard and 15 foot front yard for living areas. Garages would still need to meet a 20 foot setback standard to allow parking in the driveway.) A reduction of 10 feet in the rear yard setback would hardly be noticeable to the adjacent Country Ridge homeowners, particularly since there is a pedestrian/equestrian easement that runs between Country Ridge and the project site. Further, a six foot tall masonry wall will be built along the entirety of the western property boundary.

The net effect is that wide and shallow lots proposed for the project mean that there are fewer lots abutting the Country Ridge neighborhood. The proposal calls for nine single family home lots along the Country Ridge border. If minimum width R-1-12 lots (minimum lot width of 90 feet) were constructed along the western property boundary, there would be up to sixteen lots. The lesser rear yard setback is appropriately mitigated by the combination of fewer lots, the additional separation created by the pedestrian easement and the construction of a masonry wall. Finally, the larger building envelope afforded by the setback reduction will allow for greater size and flexibility in home design which would also benefit the

Country Ridge neighborhood, as larger homes will ensure that homes of similar size and value can be constructed adjacent to Country Ridge. The design of the project meets the overall intent of the R-1-12 zoning and the conditions of the development agreement.

b) Areas that are designated as Medium Density Residential in the comprehensive plan; may be developed to an average density of ten (10) units per acre. For the purposes of calculating density within the Medium Density portions of the site, all residential lands designated either Low density residential or Medium Density Residential may be used to determine the maximum overall permitted density of ten (10) units per acre, provided that the low density buffer identified in subsection a (above) shall be maintained at a maximum density of 3 dwellings units per acre.

Response: Net density of the low density single family portion of the project is 2.6 units/acre. The net density of the townhome portion of the project is 8.5 units/acre and the overall net density of the Phase I portion of the development is 6.08 units/acre, all well within the parameters set in the development agreement.

c) A masonry wall, at least six feet in height shall be installed along the length of the western property boundary of the Site, providing a separation between the Site and the adjoining plat of Country Ridge. This wall shall be constructed simultaneously with the development of the adjacent lands that are designated Low Density Residential. Approval of a specific design for the masonry wall shall be part of the development approval process for the Low Density Residential lands. The wall shall be constructed in earth tones consistent with surrounding neighborhoods such as the Applewood and Cherrywood subdivision.

Response: A masonry meeting the standards established in the development agreement is proposed to be built along the boundary with the Country Ridge subdivision. Specific design plans for the wall will be included with the Final PUD application.

d) The Owner shall provide dedicated right-of-way for a future extension of Queensgate Drive, extending southward from Keene Road, through the Site to its connection to Shockley Road. This right-of-way dedication shall be made to the City at the time that an applicable land use application is reviewed and finalized by the Owner or a Developer for any portion of the Site, and shall be dedicated in its entirety at such time. The right-of-way width for future Queensgate Drive shall be determined at the subdivision or land use approval stage based on City development standards then in effect and consultation with the City's Public Works Director or designee. The specific alignment of the future roadway for Queensgate Drive shall be mutually agreed to by the Owner (or the Developer) and the City. Access points to and from future Queensgate Drive shall be determined at the subdivision or project review stage, however, the Owner (and Developer as the Owner's successor-in-interest) understands that direct access from single family residential lots

shall not be allowed, and commercial access points may be limited consistent with City development standards then in effect and based on review and evaluation by the City's Public Works Director or designee

Response: Full development of the site will include complete improvements of Queensgate Drive to a minor arterial standard with multiple travel lanes, turn lanes, a roundabout, bicycle paths and sidewalks. The development team has been working closely with City staff to coordinate on general design of this road corridor. For the initial phase of development, Queensgate Drive will be dedicated and constructed as a rural street standard from Keene Road across the Phase II portion of the site. Full street improvements would be constructed along the Phase I portion of the site. The proposed plat acknowledges that no direct access from residential lots will be allowed from Queensgate Drive.

e) *Buffer standards for the eastern boundary of the site shall be established at the time a specific zoning proposal is submitted to the City and at a minimum shall address:*
1. Building setbacks;
2. Maximum building height;
3. Landscape screening and/or fencing;
4. Restrictions on outdoor lighting;
5. Restrictions on location of outdoor storage areas, truck loading docks, refuse collection areas. The intent of the buffer shall be to provide an adequate separation between the proposed commercial/multi-family residential use and the adjoining low density residential land use to protect the low density residential property from impacts of noise, and light and glare.

Response: The eastern boundary is part of Phase II and so will be addressed in the future when a PUD application is brought forward for Phase II.

f) *Access from future development onto Keene Road and/or the future Queensgate Drive shall be subject to road approach review and/or permits from the City, which review may include review of commercially reasonable site distances from existing intersections, including the intersection of Keene Road/Queensgate Drive.*

Response: The development team has worked closely with city staff to coordinate potential locations for access onto Keene Road. Current plans call for a 300' separation between Queensgate/Keene intersection and the nearest driveway into the site. Specific road and driveway locations will be provided when a PUD application is submitted for Phase II of the development.

g) *Zoning for the portion of the Site designated as Commercial may be C-1, C-2 or C-LB or may be part of a Planned Unit Development. Identified compatibility concerns at the zoning or project stage may be addressed by concomitant agreement(s) that limit potential commercial uses shown to be incompatible with nearby residential uses. Zoning for the portions of the Site designated as*

Multifamily/Office shall be zoned C-LB (Limited Business) or shall be part of a Planned Unit Development. Unless otherwise approved by a variance at the project stage, permitted development will be limited to building heights no more than forty (40) feet on portions of the Site zoned commercial west of Queensgate Drive.

Response: The proposal calls for PUD zoning for the entirety of the Phase I site. Single family lots to be constructed under R-1-12 development standards and proposed townhomes would be developed under standards as shown in the PUD application. Proposed building heights within the Single family portion of the site would be 30 feet as set forth in the R-1-12 zone. Townhome building heights would be a maximum of 40 feet. Commercial development will be addressed in specific detail when a PUD application for Phase II is submitted to the City.

h) *Development proposals within the portions of the Site designated as Commercial shall not be approved unless they are determined to be consistent with the design standards included in Exhibit B (attached) of this agreement and Section 23.28.020(D)(1) through (4) of the Richland Municipal Code.*

Response: Commercial development is proposed in the Phase II portion of the project and will be designed to be consistent with these standards.

i) *Development proposals within the portions of the Site designated as Low Density Residential shall be reviewed and approved through the City Subdivision process as specified in Title 24 of the Richland Municipal Code or through the Planned Unit Development Application Procedures as set forth in Chapter 23.50 of the Richland Municipal Code.*

Response: The Low density portions of the site are included in both the Phase I pre plat and PUD applications.

j) *Development proposals within the portion of the site adjoining Lariat Lane Right-of-Way shall provide for the extension of Lariat Lane eastward to connect with the future Queensgate Drive extension, unless said extension is determined to be unnecessary by the City. Any extension from Lariat Lane into the Site shall be accomplished through an indirect route that will include at least nine hundred (900) feet of travel in a north-south orientation before Lariat Lane can be connected to Queensgate Drive. The design of Lariat Lane may also include other traffic calming measures. The intent of this provision is to provide connectivity between the County Ridge neighborhood and the Site but to keep Lariat Lane from functioning as a collector street.*

Response: The development team acknowledges the benefit of providing multiple road connections to new developments that tie into the existing street system to the greatest extent practical for improved traffic circulation. We further recognize that the connection to

Lariat Lane provides potentially greater benefit to the Country Ridge neighborhood than it does to the Terraces at Queensgate South. Any level of connection between the two projects would function equally well for The Terraces at Queensgate South. The City will need to make a determination as to what level of connection is most appropriate.

The current design meets the requirements of this condition: Lambert Drive extends some 1,200 feet in a north-south orientation before it curves to the east to connect with Queensgate Drive. The current design contemplates a full connection with Lariat Lane, but such design can be modified to insert traffic calming measures, or limitations on through access as determined by the City.

k) *The process of implementing the comprehensive plan may result in some minor deviations to the plan, such as adjustments in zoning boundary lines. Such deviations may be acceptable if they are deemed minor in nature and consistent with items a through j as listed above.*

Response: The only deviation from typical zoning standards requested is the minor reduction in setbacks for the R-1-12 lots along the western property boundary, which is permissible under the provisions of the PUD application process. No adjustments to zoning boundaries are contemplated in Phase I development.

l) *The City shall provide notification to the Country Ridge Homeowners Association President and Richard Forman of any development proposed within the Site that requires public review under the provisions of the Richland Municipal Code.*

Response: This is an obligation to be met by the City.

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [HELP]

1. Name of proposed project, if applicable: The Terraces at Queensgate South

2. Name of applicant: Columbia Valley Property Holdings LLC

3. Address and phone number of applicant and contact person:

Applicant:	Project Manager:
Mallikarjuna R Vallem	Caleb Stromstad, Aqtera Eng.
16455 NE 99th St, Redmond, WA 98052	2707 St Andrews Loop, Suite C,Pasco,WA
619.400.7845	509.845.0208

4. Date checklist prepared: June 21, 2022

5. Agency requesting checklist: City of Richland Development Services

6. Proposed timing or schedule (including phasing, if applicable):

Project design immediately following approval of request with initial construction anticipated to start in fall of 2023.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Yes. Phase II of the project known as the Village at Queensgate South consists of the development of an additional 22.5 acres with additional townhome development, open space, retail commercial space including a grocery, pharmacy, hotel and four two-story commercial structures with associated parking and landscaping. The second phase of development would also complete full street improvements to Queensgate Drive between Keene and Shockley Roads, including the construction of a roundabout.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

The following environmental information has been prepared for this project and is attached

- Topographic and Record Surveys;
- Custom Soils Report;
- Geotechnical Engineering Evaluation;
- Cultural Resources Report;
- Traffic Analysis

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No.

10. List any government approvals or permits that will be needed for your proposal, if known.

Approval of a Planned Unit Development Application and Preliminary Plat Application are needed initially. Final plat, Final Planned Unit Development approval, Public Works approval of street and utility extension designs and building permits will be required before project construction can begin.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The Terraces at Queensgate South is a proposed development of 20.93 acres consisting of a subdivision to create 19 single-family residential lots, 89 townhome units, and 5 open space tracts including full development of local streets and the extension of Queensgate Drive between Keene and Shockley Roads to a rural development standard. The project also includes the construction of storm drainage facilities, the extension of public utilities, and the construction of a masonry wall along the western boundary of the site.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The properties known as Queensgate South are located south of and adjacent to Keene Road, north of and adjacent to Shockley Road and east of the plat of Country Ridge in the South Richland area and include the following assessor parcel numbers: 122983000002003, 1229830000011000, 122983000003003 and 122983000002004;

B. Environmental Elements [HELP]

1. *Earth* [help]

a. General description of the site:

(circle one): Flat, **rolling,** **hilly,** steep slopes, mountainous, other _____

The site slopes from Shockley Road on the south to Keene Road on the north, with an elevation difference of approximately 80 feet, ranging from approximately 520 feet MSL near Keene Road to 600 feet Shockley Road. A distinctive terrace, running

parallel to Keene Road at approximately 20 feet in height is located south of Keene Road between 350 and 500 feet south of Keene Road.

b. What is the steepest slope on the site (approximate percent slope)?
Approximately 10%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The site consists of a variety of Warden silt loams, and Warden very fine sandy loams. Refer to the attached Custom Soil Resource Report.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No. Refer to the attached Geotechical Engineering Evaluation prepared by Intermountain Materials Testing & Geotechnical

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Fill and grade activities will be balanced on the site. Specific grading plans have not yet been developed but will be prepared and submitted to the City for review and approval following approval of preliminary plat and PUD applications.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion could occur as a result of clearing and grading activities unless appropriate measures are taken during the construction process.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The initial phase of development would cover 18. Acres (excluding planned open space). Approximately 65% of the site would be covered with buildings, streets and sidewalks.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Implementation of the conclusions and recommendations included in the Geotechnical Engineering Evaluation prepared by Intermountain Materials Testing & Geotechnical.

2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Construction activities would generate emissions from the operation of equipment and the clearing of ground. Following construction, emissions from vehicles operated by the future residents of the project would occur. Operation of lawn care equipment and backyard barbeques could also result in some emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None known.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

During construction activities, once ground has been cleared, measures to reduce or eliminate wind borne dust will be implemented. After completion of construction residents may choose to operate electric vehicles and/or lawn care equipment. The mixed use nature of the project would encourage residents to walk to commercial services, which would result in a reduction of vehicle travel and emissions.

3. Water [help]

a. Surface Water: [help]

1) Is there any surface water body on or in the immediate vicinity of the site (including
year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

No surface water is on or near the site.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described
waters? If yes, please describe and attach available plans.

No.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Not applicable.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

6) Does the proposal involve any discharges of waste materials to surface waters? If so,
describe the type of waste and anticipated volume of discharge.

No.

b. Ground Water: [help]

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No groundwater withdrawals are proposed. Groundwater is estimated to be approximately 40 feet below surface based on Washington Department of Ecology Groundwater Well Log Database.

2) Describe waste material that will be discharged into the ground from septic tanks or
other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the
number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No groundwater discharges are proposed. Public sewer system would be extended to serve the proposed development.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Runoff would be generated by development of impervious surfaces including buildings and streets. A storm drainage system would collect water from streets and pipe it to a storm pond that would be located at the northwestern corner of the site. The existing storm pond in the southwest corner of the site would be removed.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Not likely.

2) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

An existing storm drainage pond located in the southwestern corner of the site would be removed and replaced with a larger pond in the northwestern corner of the site.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Storm drainage plans meeting City standards will be prepared and submitted to the City for review and approval prior to construction.

4. Plants [help]

a. Check the types of vegetation found on the site:

____deciduous tree: alder, maple, aspen, other
____evergreen tree: fir, cedar, pine, other
__X__shrubs
__x__grass
____pasture
____crop or grain
__X__ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____water plants: water lily, eelgrass, milfoil, other
____other types of vegetation

Native vegetation on site included perennial grasses and shrubs typical of Columbia Plateau shrub-steppe. The eastern 12 acres of the site (located within the Phase II portion of the project) consist of a cherry orchard.

b. What kind and amount of vegetation will be removed or altered?

Much of the native vegetation located on site was removed within the last 2 years. None of the vegetation that has established itself since then will be retained. The existing cherry orchard will also be removed during development of the Phase II portion of the project.

c. List threatened and endangered species known to be on or near the site.

None are known to exist on-site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

A detailed landscape plan will be prepared and submitted to the City for review and approval as a part of the Final Planned Unit Development process. Generally, landscaping will include planting of street trees and landscaping of the common open space tracts located within project and typical residential landscaping of the yards surrounding the single family residences and townhomes.

e. List all noxious weeds and invasive species known to be on or near the site.

None are known to exist on-site.

5. Animals [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, **songbirds,** other:
mammals: deer, bear, elk, beaver, other: **rodents, coyotes**
fish: bass, salmon, trout, herring, shellfish, other _____

b. List any threatened and endangered species known to be on or near the site.

None known to exist on-site.

c. Is the site part of a migration route? If so, explain.

The site and all of the Tri-Cities region are part of the Pacific Flyway.

d. Proposed measures to preserve or enhance wildlife, if any:

No mitigation measures are proposed.

e. List any invasive animal species known to be on or near the site.

None known to exist on-site.

6. Energy and Natural Resources [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet
the completed project's energy needs? Describe whether it will be used for heating,
manufacturing, etc.

Energy needed to provide services to single family residences and townhomes will primarily be supplied by electric energy and natural gas.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No. The proposed heights of residential buildings and their setbacks from project boundaries will not impact the potential use of solar energy for adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal?
List other proposed measures to reduce or control energy impacts, if any:

Residential building construction will comply with the provisions of the Washington State Energy Code.

7. Environmental Health [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal?
If so, describe.

The project would not involve the use of any toxic chemicals, hazardous wastes or result in risk of fire or explosion beyond those normally associated with residential use.

1) Describe any known or possible contamination at the site from present or past uses.

There is no known hazardous or toxic waste contamination that has occurred on-site.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None known.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

No toxic or hazardous chemical storage or use is anticipated on-site.

4) Describe special emergency services that might be required.

No special emergency services beyond those typically required for residential development area needed.

5) Proposed measures to reduce or control environmental health hazards, if any:

No specific mitigation measures are proposed.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Existing traffic noise on Keene Road is discernible from the project site.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

During the short term, construction equipment typical of grading, road building and home construction will be present on-site. In the long term, noises associated with residential neighborhoods, including traffic noise would be generated on-site.

3) Proposed measures to reduce or control noise impacts, if any:

During construction, equipment noise would be limited to normal working hours, as required under City code. Future residents of the site would be subject to City noise control regulations.

8. Land and Shoreline Use [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The entirety of the Phase I portion of the site is vacant. Twelve acres of the Phase II area contains a single family residence and a cherry orchard. There would be a 6 foot masonry wall built along the western boundary of the site.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

None of the Phase I portion of the site has been used for agricultural purposes in recent history. Twelve acres of Phase II lands have been developed with a cherry orchard. No portion of either Phase I or Phase II areas have been designated as agricultural or forest lands of long-term commercial significance.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

There are no working forest or farm lands in the vicinity of the site.

c. Describe any structures on the site.

There are no structures on the Phase I site. There is a single family residence and storage building located on the eastern portion of the site in the center of the existing cherry orchard.

d. Will any structures be demolished? If so, what?

When Phase II is constructed, both the residence and storage building will be demolished.

e. What is the current zoning classification of the site?

Ag- Agricultural and Suburban Agricultural

f. What is the current comprehensive plan designation of the site?

Low Density Residential, Medium Density Residential and Multi-Family/Office within the Phase I area and Commercial and Multi-Family Office within the Phase II area. (Refer to attached map.)

g. If applicable, what is the current shoreline master program designation of the site?

Not Applicable.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

At full occupancy of the Phase I project, there would be an estimated 230 people residing within the project.

j. Approximately how many people would the completed project displace?

No one would be displaced.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Not applicable.

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The project will be developed in a manner consistent with the City's comprehensive plan, planned unit development and subdivision ordinances and a development agreement that the City has entered into with the property owner.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

Not applicable.

9. Housing [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Nineteen single family residential lots and 89 townhome lots would be included in Phase I of the project. Units would fall in the mid to high income housing range.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No units would be eliminated in Phase I. Phase II would result in the removal of one single family residence.

c. Proposed measures to reduce or control housing impacts, if any:

No mitigation measures are proposed.

10. Aesthetics [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Townhomes would be a maximum of 40 feet in height; single family residences would be a maximum of 30 feet. Exterior building materials used include stucco, wood and metal.

b. What views in the immediate vicinity would be altered or obstructed?

Territorial views as experienced from adjacent properties would be altered.

e. Proposed measures to reduce or control aesthetic impacts, if any:

The proposed townhomes are designed by a professional architect and would be attractive, modern buildings. Landscaped open spaces and street trees will help to ensure that the Terraces at Queensgate South is an attractive community. Additionally, a 6 foot masonry wall will be constructed along the western boundary of the project site.

11. Light and Glare [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Lighting typical of residential development including street lights will occur within the project. Street lighting would occur from dusk to dawn.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Properly designed lighting should not be a safety hazard, nor interfere with views.

c. What existing off-site sources of light or glare may affect your proposal?

No existing off-site sources of lighting are anticipated to impact the project.

d. Proposed measures to reduce or control light and glare impacts, if any:

Future development will comply with the City's adopted outdoor lighting standards.

12. Recreation [help]

a. What designated and informal recreational opportunities are in the immediate vicinity?

The Keene Road trail corridor is located along the northern edge of the Keene Road right-of-way, which is located immediately across Keene Road from the project site. Additionally, Trailhead Community Park, Badger Mountain Community Park and Gala Park are all within walking distance of the site.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No existing recreational uses would be displaced.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

The project will include open space tracts, and both pedestrian and bicycle paths. As housing units are constructed, the City will collect park mitigation fees to offset the increased demand to City recreational facilities created by the future residents of the project.

13. Historic and cultural preservation [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.

The existing single family residence located in the northeastern portion of the site was originally constructed in 1976.

f. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any

material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

A Cultural Resource Survey Report was conducted in November, 2021. (See attached.) No cultural resources were identified in this report.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Refer to the attached Cultural Resource report.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

The Cultural Resource Survey Report includes an Inadvertent Discovery Plan. (Refer to Exhibit B of the attached report.)

14. Transportation [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The site is adjacent to and south of Keene Road and north of adjacent to Shockley Road. Access to the development would be provided through an extension of Queensgate Drive that would cross the site from north to south. A third access point, Lariat Lane provides an access point along the western property boundary. The attached preliminary plat map shows specific street locations.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Keene Road, which is adjacent to the site is located along a transit route operated by Benton-Franklin Transit.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

Phase I development would include a minimum of 2 outdoor and two garage parking spaces for each dwelling or 432 spaces total. No parking spaces would be eliminated.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The completed project will result in an extension of Queensgate Drive, a minor arterial road, built to City standards with multiple lanes, turn lanes, a roundabout, bicycle lanes and sidewalks. Initial phase I development will result in the northern portion of the Queensgate Drive extension built to rural standards. Other local streets within the project will be constructed to City standards. All streets within the project will be public streets.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Phase I development is estimated to generate 844 average daily trips (as detailed in the attached Trip Generation Letter as prepared by John Manex, Traffic Engineer for PBS.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

There are no agricultural or forest products produced in the area.

h. Proposed measures to reduce or control transportation impacts, if any:

The project would result in the extension of Queensgate Drive across the site, which is an important arterial street connection called for in the City's Transportation Plan. In addition, as homes within the project are constructed, the City will collect a traffic impact fee to offset the transportation impacts created by the project.

15. Public Services [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

b. Proposed measures to reduce or control direct impacts on public services, if any.

The project will meet City street width and turn-around standards to ensure that City vehicles can access the project site for normal services such as garbage collection and emergency services such as ambulance service. Additionally, fire hydrant placement and building code requirements imposed on new construction will ensure that risk of fire is minimized within the project. Park and traffic impact fees, property taxes and sales taxes imposed on the project will provide funds for the demands placed on public services.

16. Utilities [help]

a. Circle utilities currently available at the site:
electricity, natural gas, **water**, **refuse service**, **telephone**, **sanitary sewer**, septic system,
other _**Irrigation water**

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
Electrical service, water, sewer, garbage collection to be provided by the City of Richland; Irrigation water to be provided by the Kennewick Irrigation District; Natural gas to be provided by Cascade; Phone service to be provided by Verizon. Cable provided by Spectrum.

C. Signature [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Mallikarjuna Vallem

Name of signee Mallikarjuna Vallem

Position and Agency/Organization Manager, Columbia Valley Property Holdings, LLC

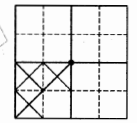
Date Submitted: 11/15/2022 Resubmitted 12/13/2022

RECORD OF SURVEY #5562 & 5735
Benton County WA

RECORD OF SURVEY #5562

PORTIONS OF THE SW 1/4, THE NW 1/4 AND THE NE 1/4 OF THE SW 1/4 OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON.

SECTION INDEX
S 22, T 9 N, R 28 E, WM
BENTON COUNTY, WA



ORIGINAL LEGAL DESCRIPTIONS

LEGAL DESCRIPTION: BF13656

PARCEL A: 1-2298-300-0002-002

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE N 00°32'04" E, ALONG THE WEST LINE THEREOF, FOR 2433.28 FEET TO THE SOUTHERLY RIGHT OF WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 845365;
THENCE S 68°02'32" E, ALONG SAID SOUTHERLY RIGHT OF WAY MARGIN, FOR 167.97 FEET TO THE POINT OF CURVATURE WITH A 5690.10 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST;
THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE TO THE RIGHT, THROUGH A CENTRAL ANGLE OF 02°57'53", FOR AN ARC DISTANCE OF 294.42 FEET TO THE TRUE POINT OF BEGINNING;
THENCE LEAVING SAID SOUTHERLY RIGHT OF WAY MARGIN, S 27°55'03" W, FOR 624.20 FEET;
THENCE S 00°32'04" E FOR 127.33 FEET;
THENCE S 79°08'35" E FOR 301.72 FEET;
THENCE N 23°15'27" E FOR 646.45 FEET TO THE SOUTHERLY RIGHT OF WAY MARGIN OF SAID KEENE ROAD;
THENCE N 65°58'26" W, ALONG SAID SOUTHERLY RIGHT OF WAY MARGIN, FOR 194.88 FEET;
THENCE N 53°10'14" W FOR 101.12 FEET TO THE TRUE POINT OF BEGINNING.
EXCEPT THAT PORTION CONVEYED TO THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2015-016418;
AND TOGETHER WITH THAT PORTION VACATED BY THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2016-017070, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL B: 1-2298-300-0002-001

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, LYING SOUTHERLY OF THE SOUTHERLY RIGHT OF WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 845365 AND NORTH AND WEST OF THE FOLLOWING DESCRIBED LINE;
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE N 00°32'04" E, ALONG THE WEST LINE THEREOF, FOR 797.55 FEET TO THE TRUE POINT OF BEGINNING OF THE HEREINAFTER DESCRIBED LINE:
THENCE N 88°32'05" E FOR 733.00 FEET;
THENCE N 00°37'55" W FOR 873.60 FEET;
THENCE N 42°13'55" E FOR 376.94 FEET TO THE SOUTHERLY RIGHT OF WAY MARGIN OF SAID KEENE ROAD AND THE TERMINUS OF SAID DESCRIBED LINE;
EXCEPT THAT PORTION DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE N 00°32'04" E, ALONG THE WEST LINE THEREOF, FOR 2433.28 FEET TO THE SOUTHERLY RIGHT
OF WAY MARGIN OF SAID KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON;
THENCE S 68°02'32" E, ALONG SAID SOUTHERLY RIGHT OF WAY MARGIN, FOR 167.97 FEET TO THE POINT OF CURVATURE WITH A 5690.10 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST;
THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 02°57'53", FOR AN ARC DISTANCE OF 294.42 FEET TO THE TRUE POINT OF BEGINNING;
THENCE, LEAVING SAID SOUTHERLY RIGHT OF WAY MARGIN S 27°55'03" W FOR 624.20 FEET;
THENCE S 00°32'04" E FOR 127.33 FEET;
THENCE S 79°08'35" E FOR 301.72 FEET;
THENCE N 23°15'27" E FOR 646.45 FEET TO THE SOUTHERLY RIGHT OF WAY MARGIN OF SAID KEENE ROAD;
THENCE N 65°58'26" W, ALONG SAID SOUTHERLY RIGHT OF WAY MARGIN, FOR 194.88 FEET;
THENCE N 53°10'14" W FOR 101.12 FEET TO THE TRUE POINT OF BEGINNING.
EXCEPT THAT PORTION CONVEYED TO THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2015-016418;
AND TOGETHER WITH THAT PORTION VACATED BY THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2016-017070, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL C: 1-2298-300-0003-002

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT ON THE WEST BOUNDARY OF SAID SECTION 22, SAID POINT BEING 260.00 FEET NORTH OF THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE NORTHERLY AND FOLLOWING THE WEST BOUNDARY OF SAID SECTION 22, 537.55 FEET;
THENCE EASTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 316.20 FEET;
THENCE SOUTHERLY AND PARALLEL TO THE WEST BOUNDARY OF SAID SECTION 22, 767.55 FEET TO A POINT 30.00 FEET PERPENDICULARLY DISTANT NORTHERLY OF THE SOUTH BOUNDARY OF SAID SECTION 22;
THENCE WESTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 191.17 FEET;
THENCE NORTHERLY AND PARALLEL TO THE WEST BOUNDARY OF SAID SECTION, 180.00 FEET;
THENCE WESTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 105.00 FEET;
THENCE NORTHERLY AND PARALLEL TO THE WEST BOUNDARY OF SAID SECTION 22, 80.00 FEET;
THENCE WESTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 20.00 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL D: 1-2298-300-0004-000

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT ON THE WEST BOUNDARY OF SAID SECTION 22, SAID POINT BEING 797.55 FEET NORTH OF THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE EASTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 316.20 FEET TO THE TRUE POINT OF BEGINNING;
THENCE CONTINUING EASTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 317.89 FEET;
THENCE SOUTHERLY AND PARALLEL TO THE WEST BOUNDARY OF SAID SECTION 22, 767.55 FEET TO A POINT 30.00 FEET PERPENDICULARLY DISTANT NORTHERLY OF THE SOUTH BOUNDARY OF SAID SECTION 22;
THENCE WESTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SECTION 22, 317.89 FEET;
THENCE NORTHERLY AND PARALLEL TO THE WEST BOUNDARY OF SAID SECTION 22, 767.55 FEET TO THE TRUE POINT OF BEGINNING.
EXCEPT THAT PORTION CONVEYED TO THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2015-016418;
AND TOGETHER WITH THAT PORTION VACATED BY THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2016-017070, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL E: 122983000005000

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., RECORDS OF BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION 22, THE TRUE POINT OF BEGINNING; THENCE NORTH ALONG THE SECTION LINE BETWEEN SECTIONS 22 AND 21, A DISTANCE OF 260 FEET; THENCE EAST PARALLEL TO AND 260 FEET DISTANT FROM THE SOUTH LINE OF SECTION 22, A DISTANCE OF 20 FEET; THENCE SOUTH PARALLEL TO AND 20 FEET DISTANT FROM THE WEST LINE OF SECTION 22, A DISTANCE OF 80 FEET; THENCE EAST PARALLEL TO AND 180 FEET NORTH OF THE SOUTH LINE OF SECTION 22 A DISTANCE OF 105 FEET; THENCE SOUTH PARALLEL TO AND 125 FEET DISTANT FROM THE WEST LINE OF SECTION 22, A DISTANCE OF 180 FEET; THENCE WEST ALONG THE SECTION LINE, A DISTANCE OF 125 FEET TO THE TRUE POINT OF BEGINNING;
EXCEPT THE SOUTH 30 FEET THEREOF.

PARCEL F: 122983000001009

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON COLLECTIVELY DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE NORTH 00°32'05" EAST ALONG THE WEST LINE OF SAID SECTION FOR 797.55 FEET; THENCE NORTH 89°16'55" EAST PARALLEL WITH THE SOUTH LINE OF SAID SECTION FOR 733.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 87°59'21" EAST FOR 211.32 FEET;
THENCE NORTH 30°52'05" EAST FOR 978.13 FEET TO INTERSECT THE SOUTHERLY RIGHT OF WAY LINE OF KEENE ROAD ON A CURVE CONCAVE TO THE SOUTHWEST, THE RADIUS POINT OF WHICH BEARS SOUTH 36°43'32" WEST A DISTANCE OF 5690.1 FEET; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 02°20'11" FOR AN ARC DISTANCE OF 231.75 FEET TO THE NORTHEAST CORNER OF THAT CERTAIN PARCEL OF LAND CONVEYED BY DEED RECORDED UNDER AUDITOR'S FILE NO. 885837; THENCE SOUTH 30°52'05" WEST ALONG THE EAST LINE OF SAID PARCEL FOR 617.86 FEET; THENCE SOUTH 88°32'05" WEST FOR 212.57 FEET TO THE SOUTHWEST CORNER OF SAID PARCEL; THENCE SOUTH 00°38'31" EAST FOR 446.01 FEET TO THE TRUE POINT OF BEGINNING;

TOGETHER WITH TRACT OF LAND DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE NORTHERLY ALONG THE WEST LINE OF SAID SECTION FOR 797.55 FEET; THENCE ANGLE RIGHT 88° A DISTANCE OF 733.00 FEET;
THENCE ANGLE LEFT 89°10' ON A BEARING CALLED NORTH A DISTANCE OF 436.45 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 295.00 FEET; THENCE NORTH 31°30' EAST 493.45 FEET TO A POINT ON THE SOUTHERLY RIGHT OF WAY BOUNDARY OF KEENE ROAD;
THENCE CONTINUING IN A SOUTHEASTERLY DIRECTION ALONG SAID BOUNDARY, SAID BOUNDARY BEING ON A 1.02316 DEGREE OF CURVE TO THE RIGHT AND HAVING A CHORD DISTANCE OF 334.00 FEET; THENCE SOUTH 31°30' WEST 621.02 FEET; THENCE SOUTH 89°10' WEST 212.57 FEET TO THE TRUE POINT OF BEGINNING;
AND TOGETHER WITH TRACT OF LAND DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE NORTHERLY ALONG THE WEST LINE OF SAID SECTION FOR 797.55 FEET; THENCE ANGLE RIGHT 88° A DISTANCE OF 733.00 FEET;
THENCE ANGLE LEFT 89°10' ON A BEARING CALLED NORTH A DISTANCE OF 731.45 FEET TO THE TRUE POINT OF BEGINNING;
THENCE CONTINUING NORTH A DISTANCE OF 142.15 FEET;
THENCE NORTH 42°47'01" EAST A DISTANCE OF 379.59 FEET;
THENCE SOUTH 31°30'00" WEST A DISTANCE OF 493.45 FEET TO THE TRUE POINT OF BEGINNING.

BASIS OF BEARING

NAD 1983/11
WASHINGTON STATE PLANE SOUTH PROJECTION, BASED ON GPS OBSERVATIONS USING WSRN AND GEOID 2012A. UNITS OF MEASUREMENT ARE US SURVEY FEET.

AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS 31st DAY OF August,
2021, AT 47 MINUTES PAST 12 P.M. RECORDS OF
THE Benton COUNTY AUDITOR, Kennewick WASHINGTON.
RECORDING NUMBER 2021-040767.
Brenda Chilton
COUNTY AUDITOR
FEE B01 P5562
BY Miranda Cunarte (Deputy)

SURVEY FOR

FRIENDSHIP ENTERPRISES LLC
68 CANYON STREET
RICHLAND, WA 99352

EQUIPMENT USED

3" TOTAL STATION USING STANDARD FIELD TRAVERSE METHODS FOR CONTROL AND STAKING.

SURVEYOR'S CERTIFICATE

I, JOHN W. BECKER, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF WASHINGTON, HEREBY CERTIFY THAT THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION IN JULY, 2021, IN COMPLIANCE WITH THE REQUIREMENTS OF THE SURVEY RECORDING ACT, CHAPTER 58.09 R.C.W. AND 332-130 W.A.C., AT THE REQUEST OF FRIENDSHIP ENTERPRISES LLC.

JOHN W. BECKER, PLS 38480 — DATE 8/31/2021

JOHN W. BECKER — STATE OF WASHINGTON — 38480 — REGISTERED PROFESSIONAL LAND SURVEYOR
AUGUST 31, 2021

DWN. BY	DATE
TD	8/2/21
CHKD. BY	JOB NO.
JB	2210404

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509.380.5883 TEL 253.383.2572 FAX www.ahbl.com WEB

RECORD OF SURVEY #5562

PORTIONS OF THE SW 1/4, THE NW 1/4 AND THE NE 1/4 OF THE SW 1/4 OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON.

CORRECTED LEGAL DESCRIPTIONS

CORRECTED PARCEL A

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, LYING SOUTHERLY OF THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NO. 845365 AND LYING NORTH AND WEST OF THE FOLLOWING DESCRIBED LINE:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE OF SAID SECTION A DISTANCE OF 2433.16 FEET, MORE OR LESS, TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF SAID KEENE ROAD; THENCE SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 167.97 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 2°58'00" A DISTANCE OF 294.60 FEET TO THE TRUE POINT OF BEGINNING; THENCE, LEAVING SAID MARGIN, SOUTH 27°52'15" WEST A DISTANCE OF 624.09 FEET; THENCE SOUTH 00°34'52" EAST A DISTANCE OF 127.33 FEET; THENCE SOUTH 79°11'23" EAST A DISTANCE OF 301.72 FEET; THENCE NORTH 23°12'39" EAST A DISTANCE OF 647.34 FEET MORE OR LESS TO SAID SOUTHERLY MARGIN; THENCE NORTH 66°00'37" WEST, ALONG SAID MARGIN, A DISTANCE OF 197.06 FEET; THENCE NORTH 53°13'09" EAST, ALONG SAID MARGIN, A DISTANCE OF 101.12 FEET TO THE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO THE CITY OF RICHLAND FOR ROAD RIGHT-OF-WAY RECORDED UNDER AUDITOR'S FILE NO. 2015-016418;

CORRECTED PARCEL B

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, LYING SOUTHERLY OF THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NO. 845365 AND LYING NORTH AND WEST OF THE FOLLOWING DESCRIBED LINE:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE OF SAID SECTION A DISTANCE OF 797.55 FEET TO THE TRUE POINT OF BEGINNING OF THE HEREINAFTER DESCRIBED LINE; THENCE, LEAVING SAID WEST LINE, NORTH 89°14'37" EAST, PARALLEL WITH THE SOUTH LINE OF SAID SECTION, A DISTANCE OF 733.00 FEET; THENCE NORTH 00°41'01" WEST A DISTANCE OF 883.15 FEET; THENCE NORTH 42°11'07" EAST A DISTANCE OF 376.94 FEET MORE OR LESS TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF SAID KEENE ROAD AND THE TERMINUS OF SAID DESCRIBED LINE.

EXCEPT THAT PORTION DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE OF SAID SECTION A DISTANCE OF 2433.16 FEET, MORE OR LESS, TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF SAID KEENE ROAD; THENCE SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 167.97 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 2°58'00" A DISTANCE OF 294.60 FEET TO THE TRUE POINT OF BEGINNING; THENCE, LEAVING SAID MARGIN, SOUTH 27°52'15" WEST A DISTANCE OF 624.09 FEET; THENCE SOUTH 00°34'52" EAST A DISTANCE OF 127.33 FEET; THENCE SOUTH 79°11'23" EAST A DISTANCE OF 301.72 FEET; THENCE NORTH 23°12'39" EAST A DISTANCE OF 647.34 FEET MORE OR LESS TO SAID SOUTHERLY MARGIN; THENCE NORTH 66°00'37" WEST, ALONG SAID MARGIN, A DISTANCE OF 197.06 FEET; THENCE NORTH 53°13'09" EAST, ALONG SAID MARGIN, A DISTANCE OF 101.12 FEET TO THE POINT OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO THE CITY OF RICHLAND FOR ROAD RIGHT-OF-WAY RECORDED UNDER AUDITOR'S FILE NO. 2015-016418;

CORRECTED PARCEL F

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, LYING SOUTHERLY OF THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NO. 845365 AND LYING NORTH AND WEST OF THE FOLLOWING DESCRIBED LINE:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°32'05" EAST ALONG THE WEST LINE OF SAID SECTION A DISTANCE OF 797.55 FEET; THENCE, LEAVING SAID LINE, THENCE NORTH 89°14'37" EAST, PARALLEL WITH THE SOUTH LINE OF SAID SECTION, A DISTANCE OF 733.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 87°56'53" EAST A DISTANCE OF 211.32 FEET; THENCE NORTH 30°49'47" EAST A DISTANCE OF 978.11 FEET, MORE OR LESS, TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD ON A CURVE CONCAVE TO THE SOUTHWEST, THE RADIUS POINT OF WHICH BEARS SOUTH 36°40'51" WEST A DISTANCE OF 5690.00 FEET; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 5°41'53" A DISTANCE OF 565.87 FEET; THENCE, LEAVING SAID MARGIN, SOUTH 42°11'07" WEST A DISTANCE OF 376.94 FEET; THENCE SOUTH 00°41'01" EAST A DISTANCE OF 883.15 FEET TO THE POINT OF BEGINNING.

FOUND CORNERS

F1: FOUND WORLEY REBAR AND CAP LS 41966 0.10'W OF CORNER
F2: FOUND WORLEY REBAR AND CAP LS 41966 0.15'W AND 0.14'S OF CORNER
F3: FOUND WORLEY REBAR AND CAP LS 41966 0.10'W OF CORNER
F4: FOUND WORLEY REBAR AND CAP LS 41966 0.10'E AND 0.10'S OF CORNER
F5: FOUND 1/2" CRIMPED IRON PIPE 0.78'S OF CORNER
F6: FOUND WORLEY REBAR AND CAP LS 13352 3.81'N OF CORNER.
F7: FOUND WORLEY REBAR AND CAP LS 13352 8.07'N OF CORNER
F8: FOUND BENT 5/8" REBAR WITH NO CAP 0.22'W AND 0.12'N OF CORNER
F9: FOUND WORLEY REBAR AND CAP LS 13352 8.73'N OF CORNER
F10: FOUND 1/2" CRIMPED IRON PIPE AT CORNER
F11: FOUND WORLEY REBAR AND CAP LS 13352 8.03'N OF CORNER
F12: FOUND WORLEY REBAR AND CAP LS 13352 AT CORNER
F13: FOUND WORLEY REBAR AND CAP LS 41966 0.19'W AND 0.13'N OF CORNER
F14: FOUND 1/2" CRIMPED IRON PIPE 0.53'E AND 0.76'N OF CORNER
F15: FOUND WORLEY REBAR AND CAP LS 41966 1.23'W AND 0.64'N OF CORNER
F16: FOUND WORLEY REBAR AND CAP LS 13352 2.23'W AND 1.25'N OF CORNER
F17: FOUND WORLEY REBAR AND CAP LS 13352 2.13'W AND 1.04'N OF CORNER
F18: FOUND WORLEY REBAR AND CAP LS 41966 0.24'W AND 0.16'N OF CORNER
F19: FOUND WORLEY REBAR AND CAP LS 41966 AT CORNER
F20: FOUND WORLEY REBAR AND CAP LS 41966 AT CORNER
F21: FOUND WORLEY REBAR AND CAP LS 41966 AT CORNER
F22: FOUND WORLEY REBAR AND CAP LS 41966 1.36'E AND 1.08'S OF CORNER

SURVEYOR'S NARATIVE

THIS BOUNDARY LINE AGREEMENT IS BEING PERFORMED AS ALLOWED BY RCW 58.04. THE INTENT IS TO ESTABLISH THE COMMON AND AGREED UPON BOUNDARY LINE BETWEEN PARCELS B, C AND D. IN 1987, WORLEY SURVEY PREPARED A RECORD OF SURVEY FOR BOUNDARY LINE ADJUSTMENT WHICH WAS RECORDED UNDER AUDITOR'S FILE NUMBER 87-6186. THIS SURVEY ATTEMPTED TO CHANGE THE EAST-WEST LINE COMMON TO SAID PARCELS, WHICH WAS ORIGINALLY PARALLEL WITH THE SOUTH LINE OF THE SECTION AND BEGAN 797.55 FEET NORTHERLY OF THE SOUTHWEST CORNER OF SAID SECTION. DEEDS WERE NOT RECORDED TO PERFECT THIS BOUNDARY LINE ADJUSTMENT, AND TRACTS ONE THROUGH SIX AS SHOWN ON SAID SURVEY STILL HAVE DEEDED LEGAL DESCRIPTIONS WHICH REFLECT THE EAST-WEST LINE AS DEPICTED ON THE PRIOR WORLEY SURVEY RECORDED UNDER AUDITOR'S FILE NUMBER 85-883. SUBSEQUENT TO THE RECORDING OF SURVEY RECORDED UNDER AUDITOR'S FILE NUMBER 87-6186, THE PARCELS LYING NORTH OF THE LINE IN QUESTION, BEGAN TO USE THE LEGAL DESCRIPTIONS AS PROVIDED ON SURVEY RECORDED UNDER 87-6186, THUS CREATING A GAP BETWEEN PARCELS C AND D ON THE SOUTH AND B ON THE NORTH OF THE LINE. THIS BEARING CHANGE ALONG SAID EAST-WEST LINE ALSO RESULTED IN AN OVERLAP BETWEEN PARCELS B AND F WHICH HAS BEEN RECTIFIED WITH THIS SURVEY.

DWN. BY	DATE
TD	8/2/21
CHKD. BY	JOB NO.
JB	2210404

AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS 31 DAY OF August,
20 21 AT 47 MINUTES PAST 12 P.M. RECORDS OF
THE Benton COUNTY AUDITOR, Kennewick WASHINGTON.
RECORDING NUMBER 2021-040767.

Brenda Chilton
COUNTY AUDITOR
B01 P5562
FEE
Miranda Cuarteo (Deputy)
BY

JOHN W. BECKER
STATE OF WASHINGTON
38480
REGISTERED
PROFESSIONAL LAND SURVEYOR
August 31, 2021

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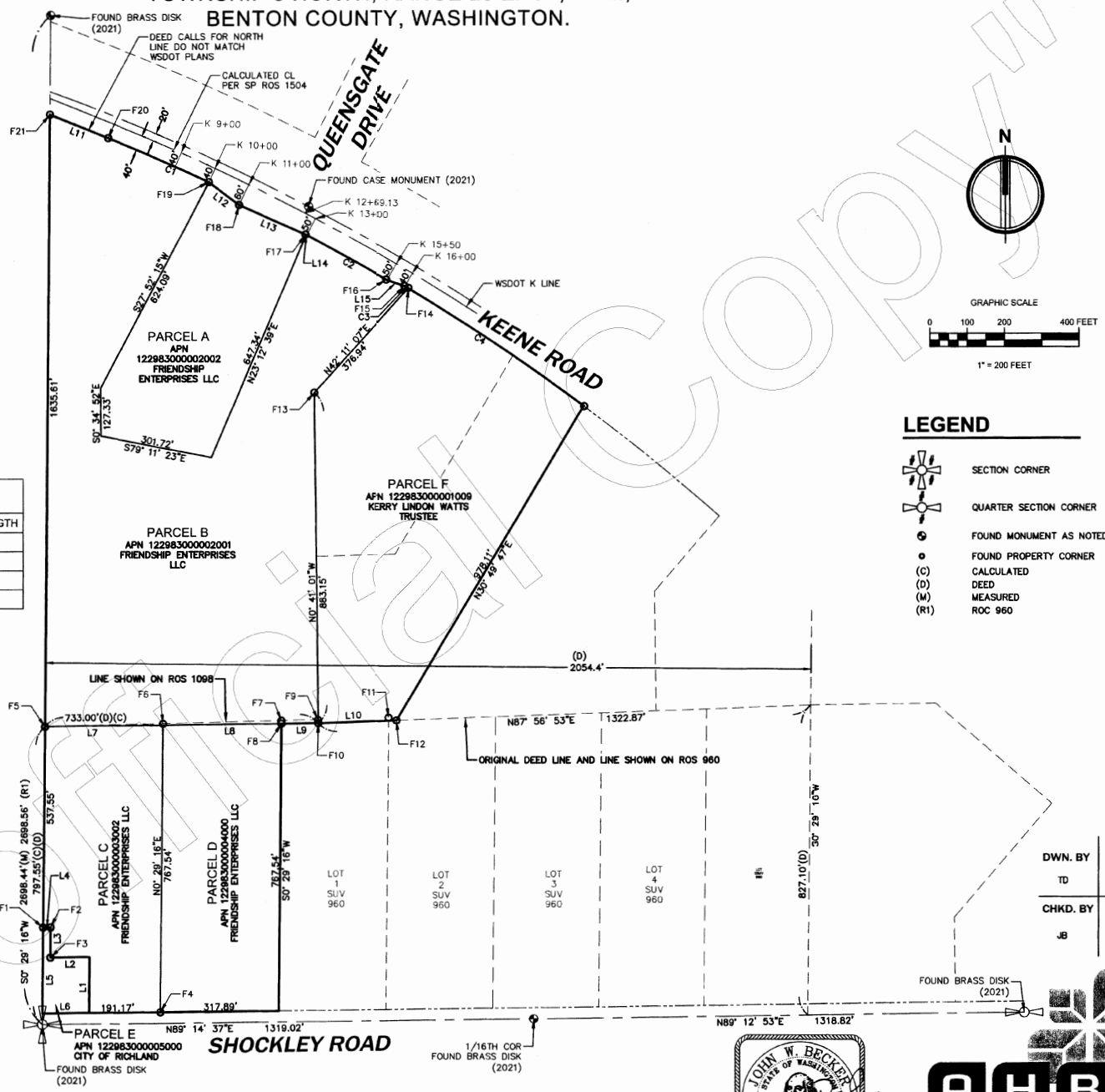
RECORD OF SURVEY #5562

PORTIONS OF THE SW 1/4, THE NW 1/4 AND THE NE 1/4 OF THE SW 1/4 OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON.

LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	150.00	N0° 29' 16"E
L2	105.00	S89° 14' 37"W
L3	79.99	N0° 29' 16"E
L4	20.03	S89° 14' 37"W
L5	229.99	S0° 29' 16"W
L6	125.03	N89° 14' 37"E
L7	316.20	N89° 14' 37"E
L8	317.89	N89° 14' 37"E
L9	98.91	N89° 14' 37"E
L10	211.32	N87° 56' 53"E
L11	167.97	S68° 05' 20"E
L12	101.12	S53° 13' 09"E
L13	197.06	N66° 00' 37"W
L14	1.26	S66° 07' 54"E
L15	50.61	N70° 46' 11"W

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	294.60	5690.00	2°58'00"	N66° 36' 20"W	294.57
C2	247.82	5680.00	2°29'59"	N60° 52' 21"W	247.80
C3	10.47	5690.00	0°06'20"	N59° 04' 12"W	10.47
C4	565.87	5690.00	5°41'53"	S56° 10' 05"E	565.64



LEGEND

- SECTION CORNER
- QUARTER SECTION CORNER
- FOUND MONUMENT AS NOTED
- FOUND PROPERTY CORNER
- (C) CALCULATED
- (D) DEED
- (M) MEASURED
- (R1) ROC 960

DWN. BY	DATE
TD	8/2/21
CHKD. BY	JOB NO.
JB	2210404

AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS 31st DAY OF August, 2021, AT 47 MINUTES PAST 12 P.M. RECORDS OF THE Benton COUNTY AUDITOR, Kennewick WASHINGTON.

RECORDING NUMBER 2021-040767.

Brenda Chilton
COUNTY AUDITOR

B01 P5562
FEE

Miranda Cravatt (Deputy)
BY

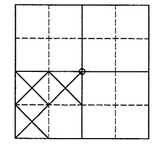
JOHN W. BECKER
STATE OF WASHINGTON
21680
REGISTERED
PROFESSIONAL LAND SURVEYOR
AUGUST 31, 2021

AHBL
TACOMA · SEATTLE · SPOKANE · TRI-CITIES
5804 Road 90, Suite H Pasco, WA 99301
509.380.5883 TEL 253.383.2572 FAX www.ahbl.com WEB

RECORD OF SURVEY FOR BOUNDARY LINE ADJUSTMENT SURVEY #5135

PORTIONS OF THE SW 1/4, THE NW 1/4 AND THE NE 1/4 OF THE SW 1/4 OF SECTION 22,
TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M.,
BENTON COUNTY, WASHINGTON.

SECTION INDEX
S 22, T 9 N, R 28 E, WM
BENTON COUNTY, WA



ORIGINAL LEGAL DESCRIPTIONS

LOT 1

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 2433.16 FEET TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NO. 845365; THENCE SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 167.97 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 2°58'00" A DISTANCE OF 294.60 FEET; THENCE SOUTH 53°13'09" EAST, ALONG SAID MARGIN, A DISTANCE OF 101.12 FEET; THENCE SOUTH 66°00'37" EAST, ALONG SAID MARGIN, A DISTANCE OF 66.36 FEET TO THE TRUE POINT OF BEGINNING; THENCE, LEAVING SAID MARGIN, SOUTH 27°57'01" WEST A DISTANCE OF 289.88 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1090.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 23°53'51" A DISTANCE OF 454.63 FEET TO A POINT OF COMPOUND CURVE HAVING A RADIUS OF 9540.00 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 3°54'48" A DISTANCE OF 651.57 FEET; THENCE NORTH 88°25'48" EAST A DISTANCE OF 276.58 FEET; THENCE NORTH 89°14'37" EAST A DISTANCE OF 98.91 FEET; THENCE NORTH 00°41'01" WEST A DISTANCE OF 883.15 FEET; THENCE NORTH 42°11'07" EAST A DISTANCE OF 376.94 FEET TO THE HEREINBEFORE SAID RIGHT-OF-WAY MARGIN AND THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET AND FROM WHICH THE CHORD BEARS NORTH 59°04'12" WEST A DISTANCE OF 10.47 FEET; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 0°06'20" A DISTANCE OF 10.47 FEET; THENCE NORTH 70°46'11" WEST, ALONG SAID MARGIN, A DISTANCE OF 50.61 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5680.00 FEET AND FROM WHICH THE CHORD BEARS NORTH 60°52'21" WEST A DISTANCE OF 247.80 FEET; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 2°29'59" A DISTANCE OF 247.82 FEET; THENCE NORTH 66°00'37" WEST, ALONG SAID MARGIN, A DISTANCE OF 66.36 FEET TO THE POINT OF BEGINNING.

LOT 2

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 260.00 FEET; THENCE, LEAVING SAID LINE, NORTH 89°14'37" EAST A DISTANCE OF 20.03 FEET; THENCE SOUTH 00°29'16" WEST A DISTANCE OF 79.99 FEET; THENCE NORTH 89°14'37" EAST A DISTANCE OF 105.00 FEET; THENCE SOUTH 00°29'16" WEST A DISTANCE OF 150.00 FEET TO INTERSECT A LINE 30.00 FEET NORTHERLY OF AND PARALLEL WITH THE SOUTH LINE OF SAID SECTION; THENCE NORTH 89°14'37" EAST, ALONG SAID PARALLEL LINE, A DISTANCE OF 266.75 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 89°14'37" EAST, ALONG SAID PARALLEL LINE, A DISTANCE OF 242.31 FEET; THENCE, LEAVING SAID LINE, NORTH 00°29'16" EAST A DISTANCE OF 767.54 FEET; THENCE SOUTH 88°25'48" WEST A DISTANCE OF 276.58 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE EAST HAVING A RADIUS OF 9540.00 FEET AND FROM WHICH THE CHORD BEARS SOUTH 02°05'05" EAST A DISTANCE OF 740.58 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 4°26'56" A DISTANCE OF 740.77 FEET TO A POINT OF REVERSE CURVE HAVING A RADIUS 260.00 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 4°41'08" A DISTANCE OF 21.26 FEET; THENCE SOUTH 00°22'35" WEST A DISTANCE OF 1.80 FEET TO THE POINT OF BEGINNING.

LOT 3

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 2433.16 FEET TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NO. 845365; THENCE SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 167.97 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 0°28'22" A DISTANCE OF 46.96 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING SOUTHEASTERLY ALONG THE ARC OF SAID CURVE AND ALONG SAID MARGIN THROUGH A CENTRAL ANGLE OF 2°29'37" A DISTANCE OF 247.65 FEET; THENCE SOUTH 53°13'09" EAST, ALONG SAID MARGIN, A DISTANCE OF 101.12 FEET; THENCE SOUTH 66°00'37" EAST, ALONG SAID MARGIN, A DISTANCE OF 131.96 FEET; THENCE, LEAVING SAID MARGIN, SOUTH 27°57'01" WEST A DISTANCE OF 289.88 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1090.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 15°01'40" A DISTANCE OF 285.89 FEET; THENCE SOUTH 89°57'18" WEST A DISTANCE OF 199.29 FEET; THENCE NORTH 00°29'16" EAST A DISTANCE OF 736.83 FEET TO THE POINT OF BEGINNING.

LOT 4

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 260.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 00°29'16" EAST ALONG SAID WEST LINE A DISTANCE OF 2173.16 FEET TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NO. 845365; THENCE SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 167.97 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 0°28'22" A DISTANCE OF 46.96 FEET; THENCE, LEAVING SAID MARGIN, SOUTH 00°29'16" WEST A DISTANCE OF 736.83 FEET; THENCE NORTH 89°57'18" EAST A DISTANCE OF 199.29 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE EAST HAVING A RADIUS OF 1090.00 FEET AND FROM WHICH THE CHORD BEARS SOUTH 08°29'16" WEST A DISTANCE OF 168.57 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 8°52'11" A DISTANCE OF 168.74 FEET TO A POINT OF COMPOUND CURVE HAVING A RADIUS OF 9540.00 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 8°21'44" A DISTANCE OF 1392.33 FEET TO A POINT OF REVERSE CURVE HAVING A RADIUS 260.00 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 4°41'08" A DISTANCE OF 21.26 FEET; THENCE SOUTH 00°22'35" WEST A DISTANCE OF 1.80 FEET TO INTERSECT A LINE 30.00 FEET NORTHERLY OF AND PARALLEL WITH THE SOUTH LINE OF SAID SECTION; THENCE SOUTH 89°14'37" WEST, ALONG SAID PARALLEL LINE, A DISTANCE OF 266.75 FEET; THENCE, LEAVING SAID LINE, NORTH 00°29'16" EAST A DISTANCE OF 150.00 FEET; THENCE SOUTH 89°14'37" WEST A DISTANCE OF 105.00 FEET; THENCE NORTH 00°29'16" EAST A DISTANCE OF 79.99 FEET; THENCE SOUTH 89°14'37" WEST A DISTANCE OF 20.03 FEET TO THE PONT OF BEGINNING.

FOUND CORNERS

F1: FOUND WORLEY REBAR AND CAP LS 41966 0.10'W OF CORNER
F2: FOUND WORLEY REBAR AND CAP LS 41966 0.15'W AND 0.14'S OF CORNER
F3: FOUND WORLEY REBAR AND CAP LS 41966 0.10'W OF CORNER
F4: FOUND WORLEY REBAR AND CAP LS 41966 0.10'E AND 0.10'S OF CORNER
F5: FOUND 1/2" CRIMPED IRON PIPE 0.78'S OF CORNER
F6: FOUND WORLEY REBAR AND CAP LS 13352 3.81'N OF CORNER.
F7: FOUND BENT 5/8" REBAR WITH NO CAP 0.22'W AND 0.12'N OF CORNER
F8: FOUND 1/2" CRIMPED IRON PIPE AT CORNER
F9: FOUND WORLEY REBAR AND CAP LS 13352 AT CORNER
F10: FOUND WORLEY REBAR AND CAP LS 41966 0.19'W AND 0.13'N OF CORNER
F11: FOUND 1/2" CRIMPED IRON PIPE 0.53'E AND 0.76'N OF CORNER
F12: FOUND WORLEY REBAR AND CAP LS 41966 1.23'W AND 0.64'N OF CORNER
F13: FOUND WORLEY REBAR AND CAP LS 13352 2.23'W AND 1.25'N OF CORNER
F14: FOUND WORLEY REBAR AND CAP LS 13352 2.13'W AND 1.04'N OF CORNER
F15: FOUND WORLEY REBAR AND CAP LS 41966 0.24'W AND 0.16'N OF CORNER
F16: FOUND WORLEY REBAR AND CAP LS 41966 AT CORNER
F17: FOUND WORLEY REBAR AND CAP LS 41966 AT CORNER
F18: FOUND WORLEY REBAR AND CAP LS 41966 AT CORNER
F219: FOUND WORLEY REBAR AND CAP LS 41966 1.36'E AND 1.08'S OF CORNER

ORIGINAL PARCEL AREAS

PARCEL 1	451,061 SF±
PARCEL 2	202,070 SF±
PARCEL 3	205,128 SF±
PARCEL 4	718,979 SF±
TOTAL	1,577,238 SF±

REVISED PARCEL AREAS

PARCEL 1	333,696 SF±
PARCEL 2	138,316 SF±
PARCEL 3	204,845 SF±
PARCEL 4	900,381 SF±
TOTAL	1,577,238 SF±

BASIS OF BEARING

NAD 1983/11
WASHINGTON STATE PLANE SOUTH PROJECTION, BASED ON GPS OBSERVATIONS USING WSRN AND GEOID 2012A. UNITS OF MEASUREMENT ARE US SURVEY FEET.

AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS 15th DAY OF NOVEMBER,
2022 AT 32 MINUTES PAST 10 A.M. RECORDS OF
THE BENTON COUNTY AUDITOR, KENNEWICK, WASHINGTON.
RECORDING NUMBER 2022-035589.

Brenda Chilton
COUNTY AUDITOR

B01 P5735
FEE

M'Quanta (Deputy)
BY

2022-035589 B: 01 P: 5735 SUR
11/15/2022 10 32 17 AM Pages 5 Fee $307 50
AHBL
Benton County, Benton County Auditor's Office

SURVEY FOR

COLUMBIA VALLEY PROPERTY HOLDINGS, LLC
16455 NE 99TH STREET
REDMOND, WA98052

EQUIPMENT USED

3" TOTAL STATION USING STANDARD FIELD TRAVERSE METHODS FOR CONTROL AND STAKING.

SURVEYOR'S CERTIFICATE

I, JOHN W. BECKER, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF WASHINGTON, HEREBY CERTIFY THAT THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION IN SEPTEMBER, 2022, IN COMPLIANCE WITH THE REQUIREMENTS OF THE SURVEY RECORDING ACT, CHAPTER 58.09 R.C.W. AND 332-130 W.A.C., AT THE REQUEST OF COLUMBIA VALLEY PROPERTY HOLDINGS, LLC.

JOHN W. BECKER, PLS 38480 — DATE 10-14-2022

JOHN W. BECKER
STATE OF WASHINGTON
38480
REGISTERED
PROFESSIONAL LAND SURVEYOR
OCTOBER 14, 2022

DWN. BY	DATE
TD	9/7/22
CHKD. BY	JOB NO.
JB	2210404

AHBL
TACOMA · SEATTLE · SPOKANE · TRI-CITIES

5804 Road 90, Suite H Pasco, WA 99301
509.380.5883 TEL 253.383 2572 FAX www.ahbl.com WEB

RECORD OF SURVEY FOR BOUNDARY LINE ADJUSTMENT SURVEY #5735

PORTIONS OF THE SW 1/4, THE NW 1/4 AND THE NE 1/4 OF THE SW 1/4 OF SECTION 22,
TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M.,
BENTON COUNTY, WASHINGTON.

REVISED LEGAL DESCRIPTIONS

REVISED LOT 1

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 2433.16 FEET TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NO. 845365; THENCE SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 167.96 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 02°58'00" A DISTANCE OF 294.60 FEET; THENCE SOUTH 53°13'09" EAST, ALONG SAID MARGIN, A DISTANCE OF 101.12 FEET; THENCE SOUTH 66°00'37" EAST, ALONG SAID MARGIN, A DISTANCE OF 128.24 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5680.00 FEET, THE CHORD OF WHICH BEARS SOUTH 61°55'07" EAST A DISTANCE OF 40.40 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 00°24'27" A DISTANCE OF 40.40 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 02°05'32" A DISTANCE OF 207.42 FEET; THENCE SOUTH 70°46"11" EAST A DISTANCE OF 50.61 FEET TO THE BEGINNING OF OF A NON-TANGENT CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET, THE CHORD OF WHICH BEARS SOUTH 59°04'12" EAST A DISTANCE OF 10.47; THENCE EASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 00°06'20" A DISTANCE OF 10.47 FEET; THENCE LEAVING SAID SOUTHERLY MARGIN, SOUTH 42°11'07" WET A DISTANCE OF 376.94 FEET; THENCE SOUTH 00°41'01" EAST A DISTANCE OF 883.15 FEET TO THE NORTH LINE OF LOT 1 AS DEPICTED ON SURVEY RECORDED IN VOLUME 1 OF SURVEYS AT PAGE 960, RECORDS OF BENTON COUNTY, WASHINGTON; THENCE SOUTH 89°14'37" WEST ALONG SAID NORTH LINE AND ITS WESTERLY PROJECTION A DISTANCE OF 280.89 FEET; THENCE NORTH 00°29'16" EAST A DISTANCE OF 579.01 FEET; THENCE NORTH 04°48'01" EAST A DISTANCE OF 79.68 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1774.22 FEET, THE CHORD OF WHICH BEARS NORTH 16°32'54" EAST A DISTANCE OF 433.99 FEET; THENCE NORTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 14°03'01" A DISTANCE OF 435.08 FEET; THENCE NORTH 28°26'30" EAST A DISTANCE OF 231.11 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 30.00 FEET; THENCE NORTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 89°50'36" A DISTANCE OF 47.04 FEET TO THE POINT OF BEGINNING AND THE END OF THIS DESCRIPTION.

REVISED LOT 2

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 30.00 FEET TO THE NORTHERLY MARGIN OF SHOCKLEY ROAD; THENCE NORTH 89°14'37" EAST ALONG SAID NORTHERLY MARGIN A DISTANCE OF 496.95 FEET TO THE TRUE POINT OF BEGINNING THENCE CONTINUING ALONG SAID NORTHERLY MARGIN, NORTH 89°14'37" EAST A DISTANCE OF 137.14 FEET TO THE SOUTHWEST CORNER OF LOT 1 AS DEPICTED ON SURVEY RECORDED IN VOLUME 1 OF SURVEYS AT PAGE 960, RECORDS OF BENTON COUNTY, WASHINGTON; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE OF SAID LOT A DISTANCE OF 767.54 FEET TO THE NORTHWEST CORNER THEREOF; THENCE SOUTH 89°14'37" WEST ALONG THE WESTERLY PROJECTION OF THE NORTH LINE OF SAID LOT A DISTANCE OF 181.98 FEET; THENCE SOUTH 00°29'16" WEST A DISTANCE OF 621.99 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE EAST HAVING A RADIUS OF 264.00 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 08°42'36" A DISTANCE OF 40.13 FEET; THENCE SOUTH 08°13'19" EAST A DISTANCE OF 58.44 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE WEST HAVING A RADIUS OF 336.00 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 03°22'27" A DISTANCE OF 19.79 FEET OF THE BEGINNING OF A REVERSE CURVE CONCAVE TO THE NORTHEAST HAVING A RADIUS OF 30.00 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 85°54'31" A DISTANCE OF 44.98 FEET TO THE POINT OF BEGINNING AND THE END OF THIS DESCRIPTION.

REVISED LOT 3

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 2433.16 FEET TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NO. 845365; THENCE SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 155.77 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 12.19 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 02°58'00" A DISTANCE OF 294.60 FEET; THENCE SOUTH 53°13'09" EAST, ALONG SAID MARGIN, A DISTANCE OF 101.12 FEET; THENCE SOUTH 66°00'37" EAST, ALONG SAID MARGIN, A DISTANCE OF 70.08 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 30.00 FEET; THENCE LEAVING SAID SOUTHERLY MARGIN, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 94°27'08" A DISTANCE OF 49.46 FEET; THENCE SOUTH 28°26'30" WEST A DISTANCE OF 140.55 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 341.00; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 13°1'00" A DISTANCE OF 77.47 FEET; THENCE SOUTH 15°25'30" WEST A DISTANCE OF 77.90 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST HAVING A RADIUS OF 233.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 07°39'14" A DISTANCE OF 31.13 FEET; THENCE SOUTH 23°04'44" WEST A DISTANCE OF 38.23 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST HAVING A RADIUS OF 53.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 18°05'50" A DISTANCE OF 16.74 FEET; THENCE SOUTH 41°10'33" WEST A DISTANCE OF 32.82 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST HAVING A RADIUS OF 43.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 43°59'50" A DISTANCE OF 33.02 FEET; THENCE SOUTH 85°10'23" WEST A DISTANCE OF 66.34 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE NORTH HAVING A RADIUS OF 531.64 FEET, THE CHORD OF WHICH BEARS SOUTH 88°53'40" WEST A DISTANCE OF 40.99 FEET; THENCE WESTERLY ALONG THE ARC OF SAID CURVE THOUGH A CENTRAL ANGLE OF 04°25'09" A DISTANCE OF 41.00 FEET; THENCE NORTH 80°03'24" WEST A DISTANCE OF 61.27 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 127.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 36°07'24" A DISTANCE OF 80.07 FEET; THENCE NORTH 00°29'20" EAST A DISTANCE OF 647.47 FEET TO THE POINT OF BEGINNING AND THE END OF THIS DESCRIPTION.

REVISED LOT 4

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22; THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 30.00 FEET TO THE NORTHERLY MARGIN OF SHOCKLEY ROAD; THENCE NORTH 89°14'37" EAST ALONG SAID NORTHERLY MARGIN A DISTANCE OF 125.03 FEET TO THE TRUE POINT OF BEGINNING THENCE CONTINUING ALONG SAID NORTHERLY MARGIN, NORTH 89°14'37" EAST A DISTANCE OF 371.92 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE NORTHEAST HAVING A RADIUS OF 30.00 FEET, THE CHORD OF WHICH BEARS NORTH 47°48'07" WEST A DISTANCE OF 40.88 FEET; THENCE LEAVING SAID NORTHERLY MARGIN, NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 85°54'31" A DISTANCE OF 44.98 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE TO THE WEST HAVING A RADIUS OF 336.00 FEET; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 03°22'27" A DISTANCE OF 19.79 FEET; THENCE NORTH 08°13'19" WEST A DISTANCE OF 58.44 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE EAST HAVING A RADIUS OF 264.00 FEET; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 08°42'36" A DISTANCE OF 40.13 FEET; THENCE NORTH 00°29'16" EAST A DISTANCE OF 1201.00 FEET; THENCE NORTH 04°48'01" EAST A DISTANCE OF 79.68 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1774.22 FEET, THE CHORD OF WHICH BEARS NORTH 16°32'54" EAST A DISTANCE OF 433.99 FEET; THENCE NORTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 14°03'01" A DISTANCE OF 435.08 FEET; THENCE NORTH 28°26'30" EAST A DISTANCE OF 231.11 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 30.00 FEET; THENCE NORTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 89°50'36" A DISTANCE OF 47.04 FEET TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NO. 845365, AND THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5680.00 FEET, THE CHORD OF WHICH BEARS NORTH 61°55'07" WEST A DISTANCE OF 40.40 FEET; THENCE NORTHWESTERLY ALONG SAID SOUTHERLY MARGIN AND SAID CURVE, THROUGH A CENTRAL ANGLE OF 00°24'27" A DISTANCE OF 40.40 FEET; THENCE CONTINUING ALONG SAID SOUTHERLY MARGIN, NORTH 66°00'37" WEST A DISTANCE OF 128.24 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 30.00 FEET, THE CHORD OF WHICH BEARS SOUTH 18°47'04" EAST A DISTANCE OF 44.04 FEET; THENCE LEAVING SAID SOUTHERLY MARGIN, SOUTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 94°27'08" A DISTANCE OF 49.46 FEET; THENCE SOUTH 28°26'30" WEST A DISTANCE OF 140.55 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 341.00; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 13°1'00" A DISTANCE OF 77.47 FEET; THENCE SOUTH 15°25'30" WEST A DISTANCE OF 77.90 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST HAVING A RADIUS OF 233.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 07°39'14" A DISTANCE OF 31.13 FEET; THENCE SOUTH 23°04'44" WEST A DISTANCE OF 38.23 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST HAVING A RADIUS OF 53.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 18°05'50" A DISTANCE OF 16.74 FEET; THENCE SOUTH 41°10'33" WEST A DISTANCE OF 32.82 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST HAVING A RADIUS OF 43.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 43°59'50" A DISTANCE OF 33.02 FEET; THENCE SOUTH 85°10'23" WEST A DISTANCE OF 66.34 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE NORTH HAVING A RADIUS OF 531.64 FEET, THE CHORD OF WHICH BEARS SOUTH 88°53'40" WEST A DISTANCE OF 40.99 FEET; THENCE WESTERLY ALONG THE ARC OF SAID CURVE THOUGH A CENTRAL ANGLE OF 04°25'09" A DISTANCE OF 41.00 FEET; THENCE NORTH 80°03'24" WEST A DISTANCE OF 61.27 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 127.00 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 36°07'24" A DISTANCE OF 80.07 FEET; THENCE NORTH 00°29'20" EAST A DISTANCE OF 647.47 FEET TO SAID SOUTHERLY MARGIN; THENCE NORTH 68°05'20" WEST A DISTANCE OF 155.77 FEET TO THE WEST LINE OF SAID SOUTHWEST QUARTER; THENCE SOUTH 00°29'16" WEST ALONG SAID WEST LINE A DISTANCE OF 2173.16 FEET; THENCE LEAVING SAID WEST LINE, NORTH 89°14'37" EAST A DISTANCE OF 20.03 FEET; THENCE SOUTH 00°29'16" WEST A DISTANCE OF 79.99 FEET; THENCE NORTH 89°14'37" WEST A DISTANCE OF 105.0 FEET; THENCE SOUTH 00°29'16" WEST A DISTANCE OF 150.00 FEET TO THE POINT OF BEGINNING AND THE END OF THIS DESCRIPTION.

DWN. BY	DATE
TD	9/7/22
CHKD. BY	JOB NO.
JB	2210404

AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS 15th DAY OF November,
2022, AT 32 MINUTES PAST 10 A.M. RECORDS OF
THE BENTON COUNTY AUDITOR, KENNEWICK, WASHINGTON.
RECORDING NUMBER 2022-035589.

Brenda Chilton
COUNTY AUDITOR
B01 P5735
FEE
[illegible] (Deputy)
BY

JOHN W. BECKER
STATE OF WASHINGTON
38480
REGISTERED
PROFESSIONAL LAND SURVEYOR
OCTOBER 14, 2022

AHBL
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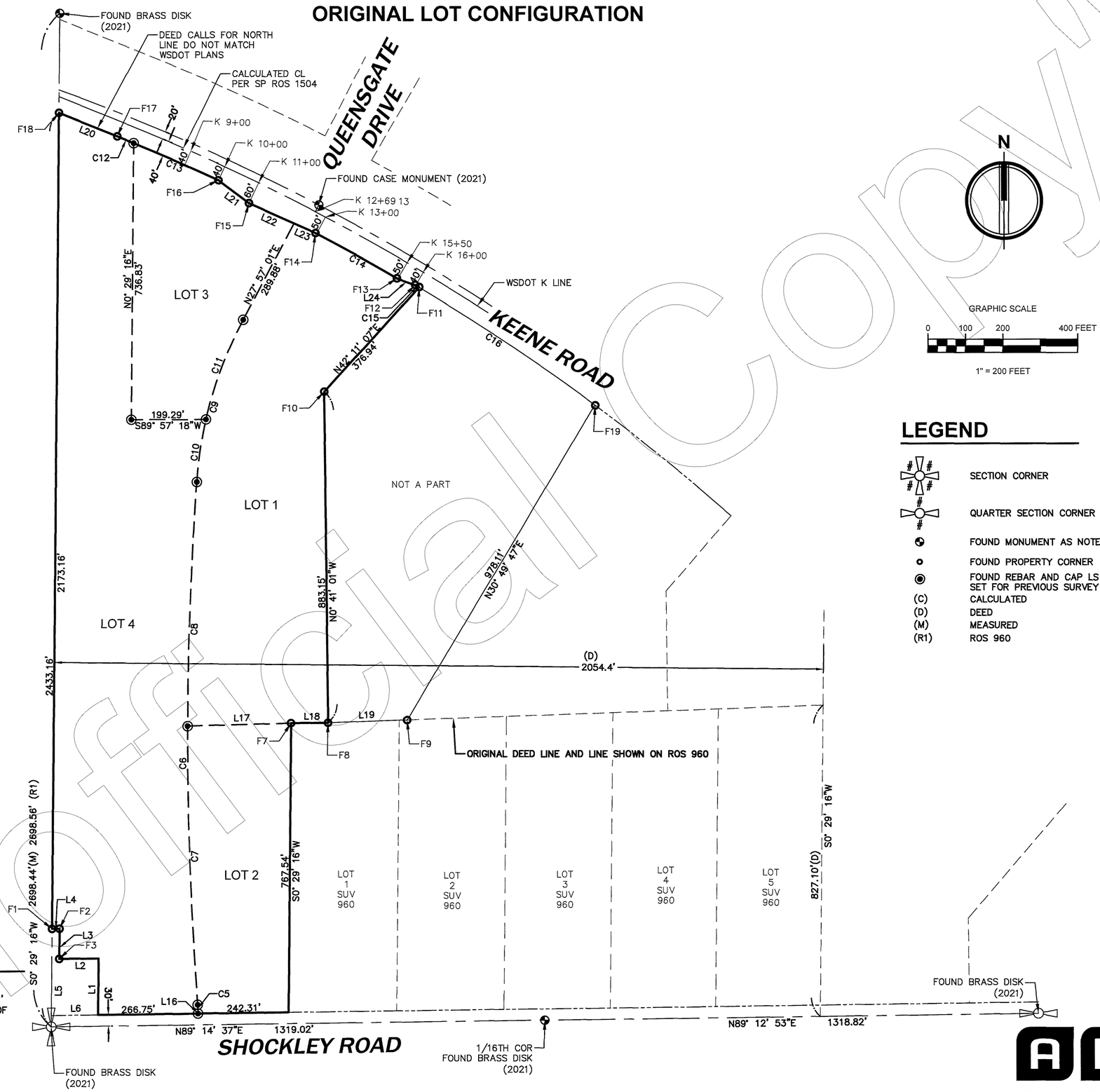
5804 Road 90, Suite H Pasco, WA 99301
509 380 5883 TEL 253.383.2572 FAX www.ahbl.com WEB

RECORD OF SURVEY FOR BOUNDARY LINE ADJUSTMENT SURVEY #5735

PORTIONS OF THE SW 1/4, THE NW 1/4 AND THE NE 1/4 OF THE SW 1/4 OF SECTION 22,
TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M.,
BENTON COUNTY, WASHINGTON.

ORIGINAL LOT CONFIGURATION



N

GRAPHIC SCALE
0 100 200 400 FEET
1" = 200 FEET

LEGEND

	SECTION CORNER
	QUARTER SECTION CORNER
	FOUND MONUMENT AS NOTED
	FOUND PROPERTY CORNER
	FOUND REBAR AND CAP LS 38480 SET FOR PREVIOUS SURVEY
(C)	CALCULATED
(D)	DEED
(M)	MEASURED
(R1)	ROS 960

JOHN W. BECKER — STATE OF WASHINGTON — 38480 — REGISTERED PROFESSIONAL LAND SURVEYOR

OCTOBER 14, 2022

AUDITOR'S CERTIFICATE

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RECORDING NUMBER 2022-035589.

Brenda Chilton
COUNTY AUDITOR

B01 P5735
FEE

Mlmartn (Deputy)
BY

DWN. BY	DATE
TD	9/7/22
CHKD. BY	JOB NO.
JB	2210404

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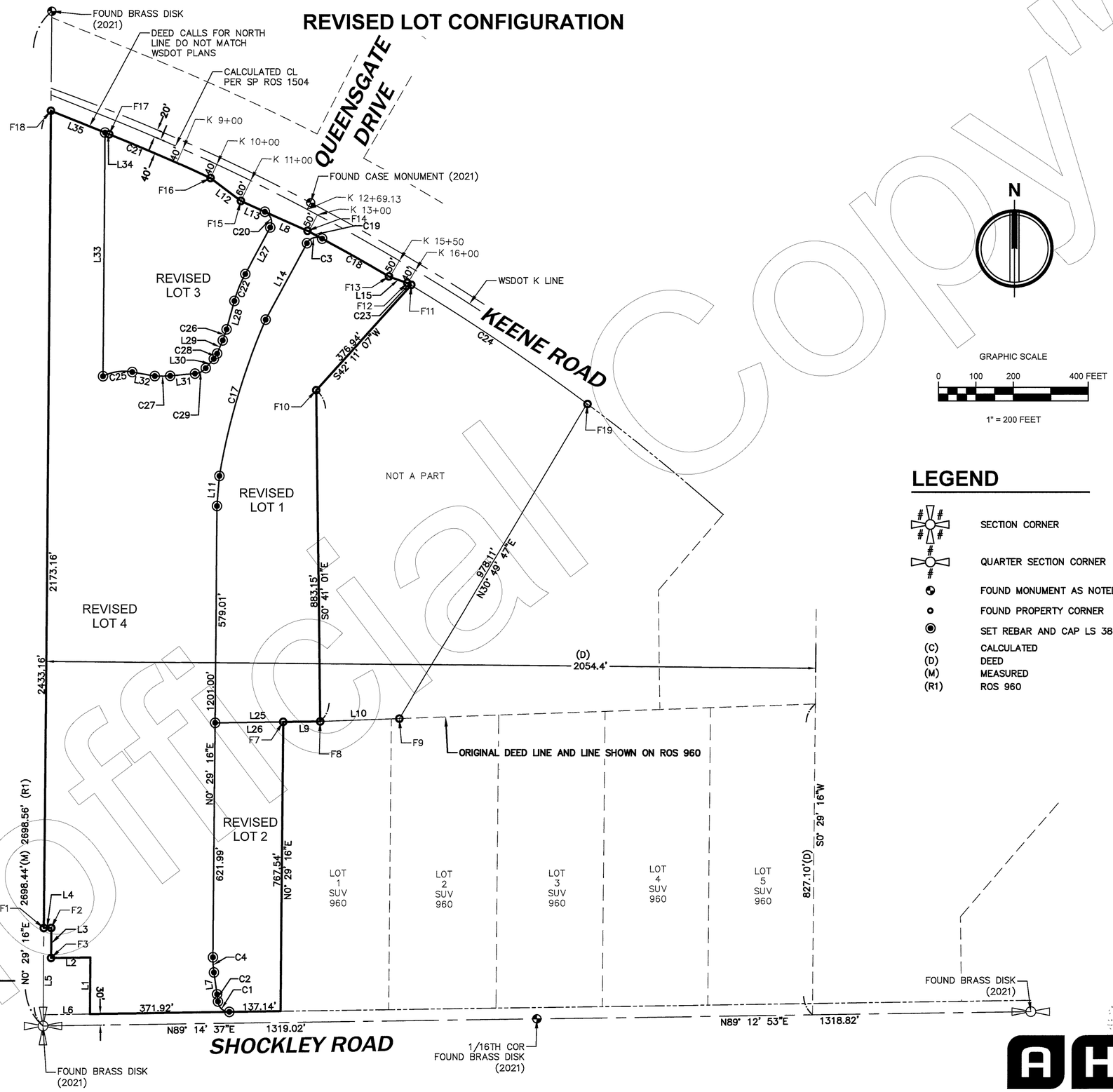
RECORD OF SURVEY FOR BOUNDARY LINE ADJUSTMENT

SURVEY #5735

PORTIONS OF THE SW 1/4, THE NW 1/4 AND THE NE 1/4 OF THE SW 1/4 OF SECTION 22,
TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M.,
BENTON COUNTY, WASHINGTON.

REVISED LOT CONFIGURATION



GRAPHIC SCALE

0 100 200 400 FEET

1" = 200 FEET

LEGEND

- SECTION CORNER
- QUARTER SECTION CORNER
- FOUND MONUMENT AS NOTED
- FOUND PROPERTY CORNER
- SET REBAR AND CAP LS 38480
- (C) CALCULATED
- (D) DEED
- (M) MEASURED
- (R1) ROS 960

J. JOHN W. BECKER STATE OF WASHINGTON 38480 REGISTERED PROFESSIONAL LAND SURVEYOR

OCTOBER 14, 2022

DWN. BY	DATE
TD	9/7/22
CHKD. BY	JOB NO.
JB	2210404

AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS 15th DAY OF NOVEMBER, 2022, AT 32 MINUTES PAST 10 AM. RECORDS OF THE BENTON COUNTY AUDITOR, KENNEWICK, WASHINGTON.

RECORDING NUMBER 2022-035589.

Brenda Chilton
COUNTY AUDITOR

B02 P5735
FEE

MCrawford (Deputy)
BY

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509 380.5883 TEL 253.383.2572 FAX www.ahbl.com WEB

RECORD OF SURVEY FOR BOUNDARY LINE ADJUSTMENT SURVEY#5735

PORTIONS OF THE SW 1/4, THE NW 1/4 AND THE NE 1/4 OF THE SW 1/4 OF SECTION 22,
TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M.,
BENTON COUNTY, WASHINGTON.

REVISED LOT CONFIGURATION

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	44.98	30.00	85°54'31"	N47° 48' 07"W	40.88
C2	19.79	336.00	3°22'27"	N6° 32' 06"W	19.78
C3	47.04	30.00	89°50'36"	N73° 21' 48"E	42.37
C4	40.13	264.00	8°42'36"	N3° 52' 01"W	40.09
C5	21.26	260.00	4°41'08"	N1° 57' 59"W	21.26
C6	1392.33	9540.00	8°21'44"	S0° 07' 42"E	1391.10
C7	740.77	9540.00	4°26'56"	N2° 05' 05"W	740.58
C8	651.57	9540.00	3°54'48"	N2° 05' 47"E	651.44
C9	454.63	1090.00	23°53'51"	S16° 00' 06"W	451.34
C10	168.74	1090.00	8°52'11"	N8° 29' 16"E	168.57
C11	285.89	1090.00	15°01'40"	N20° 26' 12"E	285.07
C12	46.96	5690.00	0°28'22"	S67° 51' 09"E	46.96
C13	247.65	5690.00	2°29'37"	S66° 22' 09"E	247.63
C14	247.82	5680.00	2°29'59"	N60° 52' 21"W	247.80
C15	10.47	5690.00	0°06'20"	N59° 04' 12"W	10.47
C16	565.87	5690.00	5°41'53"	S56° 10' 05"E	565.64
C17	435.08	1774.22	14°03'01"	N16° 32' 54"E	433.99
C18	207.42	5680.00	2°05'32"	S60° 40' 08"E	207.41
C19	40.40	5680.00	0°24'27"	S61° 55' 07"E	40.40
C20	49.46	30.00	94°27'08"	S18° 47' 04"E	44.04
C21	294.60	5690.00	2°58'00"	N66° 36' 20"W	294.57
C22	77.47	341.00	13°01'00"	S21° 56' 00"W	77.30
C23	10.47	5690.00	0°06'20"	S59° 04' 12"E	10.47
C24	565.87	5690.00	5°41'53"	S56° 10' 05"E	565.64
C25	80.07	127.00	36°07'24"	S81° 52' 54"W	78.75
C26	31.13	233.00	7°39'14"	S19° 15' 07"W	31.10
C27	41.00	531.64	4°25'09"	S88° 53' 40"W	40.99
C28	16.74	53.00	18°05'50"	S32° 07' 39"W	16.67
C29	33.02	43.00	43°59'50"	S63° 10' 28"W	32.21

LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	150.00	S0° 29' 16"W
L2	105.00	N89° 14' 37"E
L3	79.99	S0° 29' 16"W
L4	20.03	N89° 14' 37"E
L5	229.94	N0° 27' 52"E
L6	125.03	N89° 14' 37"E
L7	58.44	S8° 13' 19"E
L8	128.24	S66° 00' 37"E
L9	98.91	N89° 14' 37"E
L10	211.32	N87° 56' 53"E
L11	79.68	N4° 48' 01"E
L12	101.12	S53° 13' 09"E
L13	70.08	S66° 00' 37"E
L14	231.11	N28° 26' 30"E
L15	50.61	S70° 46' 11"E
L16	1.80	N0° 22' 35"E
L17	276.58	N88° 25' 48"E
L18	98.91	N89° 14' 37"E
L19	211.32	N87° 56' 53"E
L20	167.97	S68° 05' 20"E

LINE TABLE		
LINE #	LENGTH	DIRECTION
L21	101.12	S53° 13' 09"E
L22	131.96	S66° 00' 37"E
L23	66.36	S66° 00' 37"E
L24	50.61	N70° 46' 11"W
L25	280.89	S89° 14' 37"W
L26	181.98	S89° 14' 37"W
L27	140.55	S28° 26' 30"W
L28	77.90	S15° 25' 30"W
L29	38.23	S23° 04' 44"W
L30	32.82	S41° 10' 33"W
L31	66.34	S85° 10' 23"W
L32	61.27	N80° 03' 24"W
L33	647.47	N0° 29' 20"E
L34	12.19	S68° 05' 20"E
L35	155.77	S68° 05' 20"E

JOHN W. BECKER
STATE OF WASHINGTON
38480
REGISTERED
PROFESSIONAL LAND SURVEYOR

OCTOBER 14, 2022

DWN. BY	DATE
TD	9/7/22
CHKD. BY	JOB NO.
JB	2210404

AUDITOR'S CERTIFICATE

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RECORDING NUMBER 2022-035589.

Brenda Chilton
COUNTY AUDITOR

B01 #5735
FEE

[signature] (Deputy)
BY

AHBL
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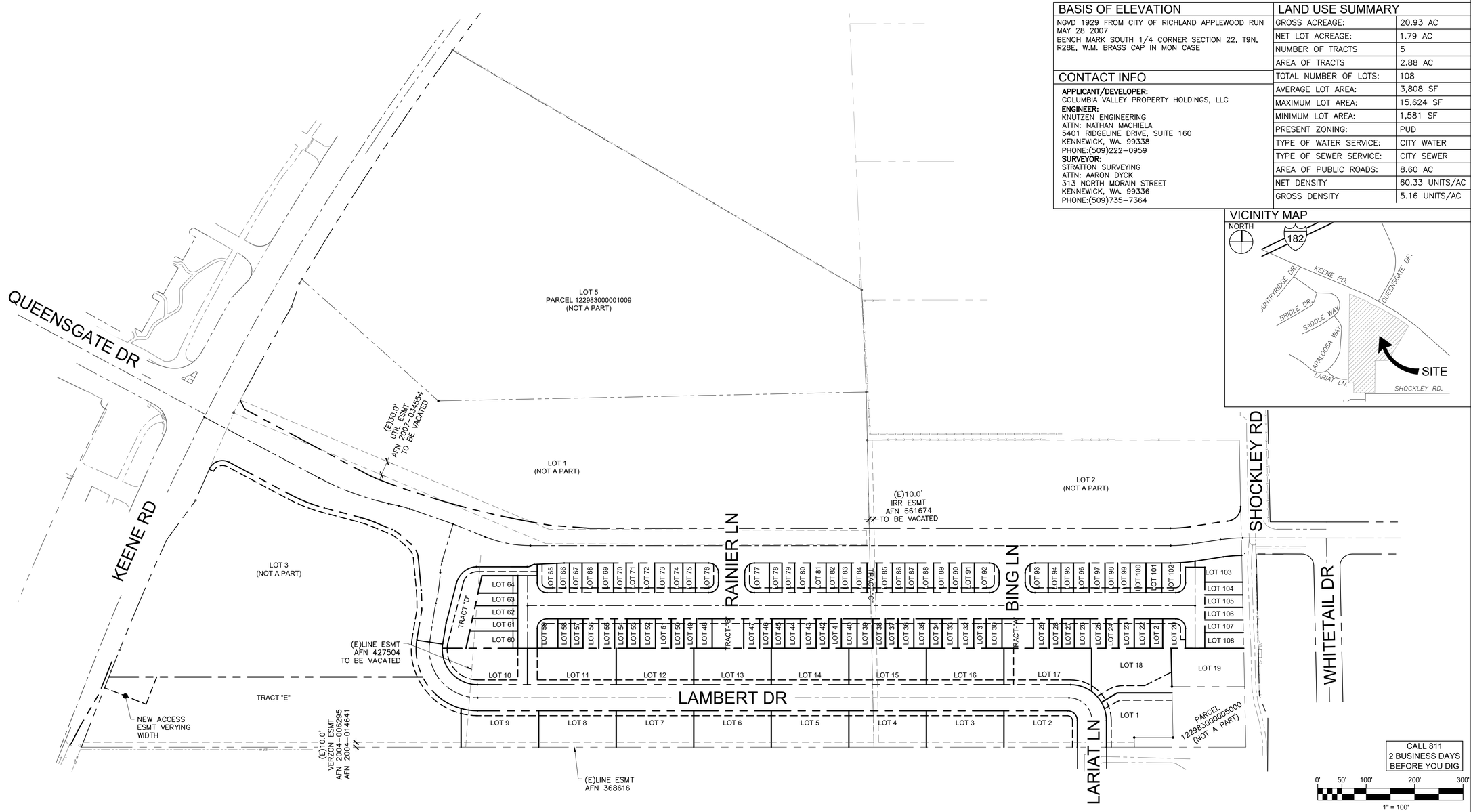
5804 Road 90, Suite H Pasco, WA 99301
509.380 5883 TEL 253 383.2572 FAX www.ahbl.com WEB

THE TERRACES AT QUEENSGATE SOUTH

PRELIMINARY PLAT

LOCATED IN A PORTION *OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M.,*
CITY OF RICHLAND, *BENTON COUNTY, WASHINGTON*



BASIS OF ELEVATION
NGVD 1929 FROM CITY OF RICHLAND APPLEWOOD RUN MAY 28 2007 BENCH MARK SOUTH 1/4 CORNER SECTION 22, T9N, R28E, W.M. BRASS CAP IN MON CASE

CONTACT INFO
APPLICANT/DEVELOPER: COLUMBIA VALLEY PROPERTY HOLDINGS, LLC **ENGINEER:** KNUTZEN ENGINEERING ATTN: NATHAN MACHIELA 5401 RIDGELINE DRIVE, SUITE 160 KENNEWICK, WA. 99338 PHONE:(509)222-0959 **SURVEYOR:** STRATTON SURVEYING ATTN: AARON DYCK 313 NORTH MORAIN STREET KENNEWICK, WA. 99336 PHONE:(509)735-7364

LAND USE SUMMARY	
GROSS ACREAGE:	20.93 AC
NET LOT ACREAGE:	1.79 AC
NUMBER OF TRACTS	5
AREA OF TRACTS	2.88 AC
TOTAL NUMBER OF LOTS:	108
AVERAGE LOT AREA:	3,808 SF
MAXIMUM LOT AREA:	15,624 SF
MINIMUM LOT AREA:	1,581 SF
PRESENT ZONING:	PUD
TYPE OF WATER SERVICE:	CITY WATER
TYPE OF SEWER SERVICE:	CITY SEWER
AREA OF PUBLIC ROADS:	8.60 AC
NET DENSITY	60.33 UNITS/AC
GROSS DENSITY	5.16 UNITS/AC

VICINITY MAP

LEGAL DESCRIPTION

REVISED LOT 1

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON

REVISED LOT 2

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON

REVISED LOT 3

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON

REVISED LOT 4

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON

DRAWING INDEX

KNUTZEN ENGINEERING
5401 RIDGELINE DR.
SUITE 160
KENNEWICK, WA 99338
1-509-222-0959
www.knutzenengineering.com

No.	REVISIONS	DATE	DESIGN	CHKD	APPD

PRELIMINARY PLAT COVER
COLUMBIA VALLEY PROPERY HOLDINGS, LLC
THE TERRACES AT QUEENSGATE SOUTH
RICHLAND, WASHINGTON

APPROVAL		
DESIGN	JAW	11/04/22
CHECKED	NJM	11/04/22
APPROVED	NJM	11/04/22

SCALE: AS NOTED
CADFILE: 21152PP01
JOB No. 21152
REV. E
DWG. No. PP01

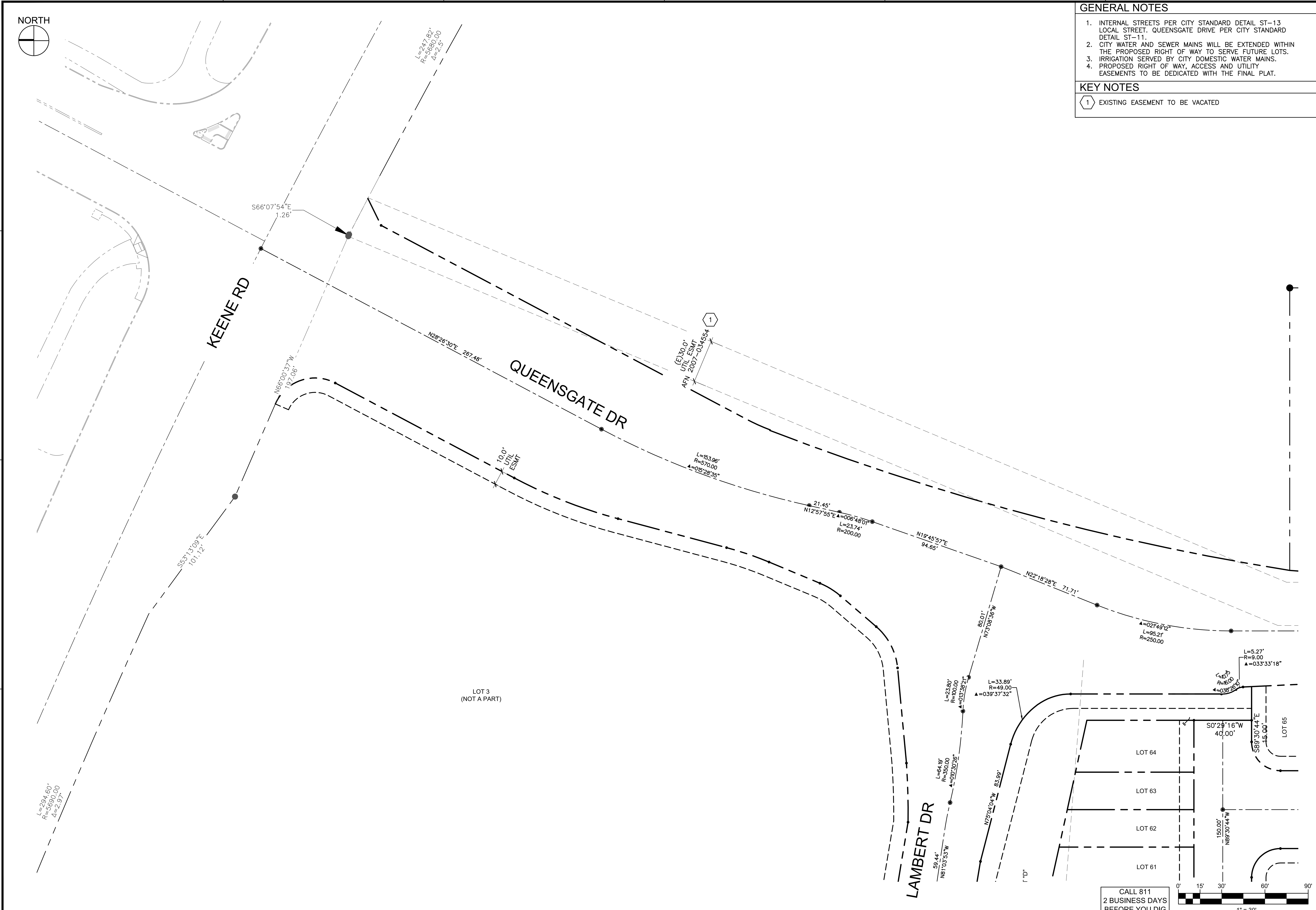
\2021\21152-Queensgate Drive\DWG\PH.1\21152PP01.dwg - Nov 04,2022 - 01:58pm - jwa

GENERAL NOTES

1. INTERNAL STREETS PER CITY STANDARD DETAIL ST-13 LOCAL STREET. QUEENSGATE DRIVE PER CITY STANDARD DETAIL ST-11.
2. CITY WATER AND SEWER MAINS WILL BE EXTENDED WITHIN THE PROPOSED RIGHT OF WAY TO SERVE FUTURE LOTS.
3. IRRIGATION SERVED BY CITY DOMESTIC WATER MAINS.
4. PROPOSED RIGHT OF WAY, ACCESS AND UTILITY EASEMENTS TO BE DEDICATED WITH THE FINAL PLAT.

KEY NOTES

(1) EXISTING EASEMENT TO BE VACATED



KNUTZEN ENGINEERING

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KENNEWICK, WA 99338
1-509-222-0959
www.knutzenengineering.com

No.	REVISIONS	DATE	DESIGN	CHKD	APPD

PARTIAL PRELIMINARY PLAT

COLUMBIA VALLEY PROPERY HOLDINGS, LLC
THE TERRACES AT QUEENSGATE SOUTH
RICHLAND, WASHINGTON

APPROVAL		
DESIGN	JAW	11/04/22
CHECKED	NJM	11/04/22
APPROVED	NJM	11/04/22

SCALE: AS NOTED
CADFILE: 21152PP01
JOB No. 21152
REV. D
DWG. No. PP02

\2021\21152-Queensgate Drive\DWG\PH.1\21152PP01.dwg - Nov 10,2022 - 01:55pm - jwa

NORTH

GENERAL NOTES

1. INTERNAL STREETS PER CITY STANDARD DETAIL ST-13 LOCAL STREET. QUEENSGATE DRIVE PER CITY STANDARD DETAIL ST-11.
2. CITY WATER AND SEWER MAINS WILL BE EXTENDED WITHIN THE PROPOSED RIGHT OF WAY TO SERVE FUTURE LOTS.
3. IRRIGATION SERVED BY CITY DOMESTIC WATER MAINS.
4. PROPOSED RIGHT OF WAY, ACCESS AND UTILITY EASEMENTS TO BE DEDICATED WITH THE FINAL PLAT.
5. TRACTS TO BE DEDICATED AND MAINTAINED BY HOA.

KEY NOTES

1. EXISTING POWER EASEMENT ALONG SOUTH AND WEST PROPERTY LINES TO REMAIN
2. EXISTING IRRIGATION EASEMENT ALONG WEST PROPERTY LINE TO REMAIN
3. EXISTING VERIZON EASEMENT ALONG WEST PROPERTY LINE TO REMAIN
4. EXISTING POLE LINE EASEMENT TO BE VACATED
5. EXISTING EASEMENT TO BE VACATED

LOT 1
(NOT A PART)

LOT 3
(NOT A PART)

(E)30.0' UTILITY EASEMENT AFN 2007-0345545

(E)30.0' UTIL ESMT AFN 2007-0345545

QUEENSGATE DR

CHELAN DR

RAINER LN

LAMBERT DR

TRACT "D" 10,351 SF

TRACT "E"

TRACT "B" 3,965 SF

LOT 64 2,815 SF
LOT 63 2,209 SF
LOT 62 2,358 SF
LOT 61 2,506 SF
LOT 60 3,714 SF
LOT 10 12,059 SF
LOT 11 13,717 SF
LOT 12 12,000 SF
LOT 13 12,000 SF
LOT 9 12,052 SF
LOT 8 12,000 SF
LOT 7 12,000 SF
LOT 6 12,000 SF

APPROX. LOCATION OF POLE LINE EASEMENT AFN 427504

40.0' ACCESS EASEMENT

EASEMENT OF UNDEFINED WIDTH FOR POLES ALONG WEST AND SOUTH PROPERTY LINE. AFN 368616

(E)10.0' IRR ESMT RESERVED IN REAL ESTATE CONTRACT AFN 661674

(E)10.0' VERIZON ESMT AFN 2004-006295 AFN 2004-011641

(E)20.0' COUNTRY RIDGE HOA PARCEL

CALL 811
2 BUSINESS DAYS
BEFORE YOU DIG

0' 15' 30' 60' 90'
1" = 30'

KNUTZEN ENGINEERING
5401 RIDGELINE DR.
SUITE 160
KENNEWICK, WA 99338
1-509-222-0959
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No.	REVISIONS	DATE	DESIGN	CHKD	APPD

PARTIAL PRELIMINARY PLAT

COLUMBIA VALLEY PROPERTY HOLDINGS, LLC

THE TERRACES AT QUEENSGATE SOUTH

RICHLAND, WASHINGTON

APPROVAL		
DESIGN	JAW	11/04/22
CHECKED	NJM	11/04/22
APPROVED	NJM	11/04/22

SCALE: AS NOTED

CADFILE: 21152PP01

JOB No. 21152

REV. D

DWG. No. PP03

NORTH

LOT 1
(NOT A PART)

4 (E)30.0' UTILITY EASEMENT AFN 2007-034554

QUEENSGATE DR — 72.0' ROW

RAINIER LN — 54.0' ROW

BING LN — 54.0' ROW

CHELAN DR — 54.0' ROW

LAMBERT DR — 54.0' ROW

N0°29'16"E 485.06'

S0°29'16"W 485.06'

S0°29'16"W 1297.48'

N0°29'16"E 1223.43'

S0°29'16"W 1217.43'

S0°29'16"W 537.55'

LOT 76 2,726 SF — 10.0' UTIL ESMT

LOT 77 2,941 SF — 10.0' UTIL ESMT

LOT 92 2,941 SF — 10.0' UTIL ESMT

LOT 93 2,726 SF — 10.0' UTIL ESMT

TRACT "C" 1,220 SF

10.0' UTIL ESMT

LOT 78 1,586 SF
LOT 79 1,586 SF
LOT 80 1,983 SF
LOT 81 1,983 SF
LOT 82 1,586 SF
LOT 83 1,586 SF
LOT 84 1,982 SF
LOT 85 1,982 SF
LOT 86 1,586 SF
LOT 87 1,586 SF
LOT 88 1,983 SF
LOT 89 1,983 SF
LOT 90 1,586 SF
LOT 91 1,586 SF

LOT 49 1,586 SF
LOT 48 1,982 SF
TRACT "B" 3,965 SF
LOT 47 1,982 SF
LOT 46 1,586 SF
LOT 45 1,586 SF
LOT 44 1,982 SF
LOT 43 1,982 SF
LOT 42 1,586 SF
LOT 41 1,586 SF
LOT 40 1,983 SF
LOT 39 1,983 SF
LOT 38 1,586 SF
LOT 37 1,586 SF
LOT 36 1,983 SF
LOT 35 1,983 SF
LOT 34 1,586 SF
LOT 33 1,982 SF
LOT 32 1,983 SF
LOT 31 1,586 SF
LOT 30 1,982 SF
TRACT "A" 3,965 SF
LOT 29 1,982 SF
LOT 28

LOT 13 12,000 SF
LOT 14 12,000 SF
LOT 15 12,000 SF
LOT 16 12,000 SF
20.0' ACCESS ESMT
LOT 17 13,773 SF

LOT 6 12,000 SF
LOT 5 12,000 SF
4 (E)10.0' IRR ESMT RESERVED IN REAL ESTATE CONTRACT AFN 661674
LOT 4 12,000 SF
LOT 3 12,000 SF
LOT 2 11,277 SF

3 (E)10.0' VERIZONE ESMT AFN 2004-006285 AFN 2004-014641

1 EASEMENT OF UNDEFINED WIDTH FOR POLES ALONG WEST AND SOUTH PROPERTY LINE. AFN 368616

2 (E)10.0' IRR ESMT RESERVED IN REAL ESTATE CONTRACT AFN 661674

GENERAL NOTES

1. INTERNAL STREETS PER CITY STANDARD DETAIL ST-13 LOCAL STREET. QUEENSGATE DRIVE PER CITY STANDARD DETAIL ST-11.
2. CITY WATER AND SEWER MAINS WILL BE EXTENDED WITHIN THE PROPOSED RIGHT OF WAY TO SERVE FUTURE LOTS.
3. IRRIGATION SERVED BY CITY DOMESTIC WATER MAINS.
4. PROPOSED RIGHT OF WAY, ACCESS AND UTILITY EASEMENTS TO BE DEDICATED WITH THE FINAL PLAT.
5. TRACTS TO BE DEDICATED AND MAINTAINED BY HOA.

KEY NOTES

1. EXISTING POWER EASEMENT ALONG SOUTH AND WEST PROPERTY LINES TO REMAIN.
2. EXISTING IRRIGATION EASEMENT ALONG WEST PROPERTY LINE TO REMAIN.
3. EXISTING VERIZON EASEMENT ALONG WEST PROPERTY LINE TO REMAIN.
4. EXISTING EASEMENT TO BE VACATED

CALL 811
2 BUSINESS DAYS
BEFORE YOU DIG

0' 15' 30' 60' 90'
1" = 30'

KNUTZEN ENGINEERING
5401 RIDGELINE DR.
SUITE 160
KENNEWICK, WA 99338
1-509-222-0959
www.knutzenengineering.com

No.	REVISIONS	DATE	DESIGN	CHKD	APPD

PARTIAL PRELIMINARY PLAT

COLUMBIA VALLEY PROPERTY HOLDINGS, LLC

THE TERRACES AT QUEENSGATE SOUTH

RICHLAND, WASHINGTON

APPROVAL		
DESIGN	JAW	11/04/22
CHECKED	NJM	11/04/22
APPROVED	NJM	11/04/22

SCALE: AS NOTED

CADFILE: 21152PP01

JOB No. 21152 — REV. D

DWG. No. PP04

\20211211152-Queensgate Drive\DWG\PH.1\21152PP01.dwg - Nov 04,2022 - 02:13pm - jwa

NORTH

REVISED LOT 2
(NOT A PART)

GENERAL NOTES

1. INTERNAL STREETS PER CITY STANDARD DETAIL ST-13 LOCAL STREET. QUEENSGATE DRIVE PER CITY STANDARD DETAIL ST-11.
2. CITY WATER AND SEWER MAINS WILL BE EXTENDED WITHIN THE PROPOSED RIGHT OF WAY TO SERVE FUTURE LOTS.
3. IRRIGATION SERVED BY CITY DOMESTIC WATER MAINS.
4. PROPOSED RIGHT OF WAY, ACCESS AND UTILITY EASEMENTS TO BE DEDICATED WITH THE FINAL PLAT.

KEY NOTES

1. EXISTING POWER EASEMENT ALONG SOUTH AND WEST PROPERTY LINES TO REMAIN.
2. EXISTING IRRIGATION EASEMENT ALONG WEST PROPERTY LINE TO REMAIN.

QUEENSGATE DR — 72.0' ROW — N0°29'16"E 326.90' — S0°29'16"W 279.90'

CHELAN DR — 54.0' ROW

LAMBERT DR — 137.5' — 131.50'

LARIAT LN — 60.0' ROW — 151.50'

SHOCKLEY RD — (E)66.0' ROW — (E)8" CL200 PVC

WHITETAIL DR

LOT 93 2,726 SF
LOT 94 1,586 SF
LOT 95 1,586 SF
LOT 96 1,982 SF
LOT 97 1,983 SF
LOT 98 1,586 SF
LOT 99 1,586 SF
LOT 100 1,983 SF
LOT 101 1,983 SF
LOT 102 3,139 SF
LOT 103 4,256 SF
LOT 104 2,019 SF
LOT 105 2,034 SF
LOT 106 2,049 SF
LOT 107 2,063 SF
LOT 108 2,600 SF
LOT 29 1,982 SF
LOT 28 1,586 SF
LOT 27 1,586 SF
LOT 26 1,982 SF
LOT 25 1,982 SF
LOT 24 1,586 SF
LOT 23 1,982 SF
LOT 22 1,982 SF
LOT 21 1,586 SF
LOT 20 2,780 SF
LOT 17 13,773 SF
LOT 18 15,624 SF
LOT 19 11,850 SF
LOT 2 11,277 SF
REVISED LOT 4
LOT 1 13,714 SF
PARCEL 122983000005000

10.0' UTIL ESMT — 39.5' ACCESS ESMT — 40.0' ROW — ACCESS/ UTILITY ESMT

L=45.73' R=300.00 Δ=008°43'59" — L=45.60' R=300.00 Δ=008°42'36" — N8°13'19"W 58.44' — S8°13'19"E 58.44'

L=50.78' R=336.00 Δ=008°39'34" — L=31.42' R=20.00 Δ=090°00'00" — L=73.83' R=47.00 Δ=090°00'00" — L=18.24' R=74.00 Δ=090°00'00"

N89°30'44"W 179.85' — S89°30'44"E 167.40' — N89°30'44"W 55.00' — S89°30'44"E 55.00' — N89°14'37"E 191.17' — S89°14'37"W 105.00' — S89°14'37"W 20.03' — N89°14'37"E 125.03'

N0°29'16"E 290.48' — N0°29'16"E 79.99' — N0°29'16"E 150.00' — S0°29'16"W 229.99'

(E)10.0' IRR ESMT RESERVED IN REAL ESTATE CONTRACT AFN 6616174

EASEMENT OF UNDEFINED WIDTH FOR POLES ALONG WEST AND SOUTH PROPERTY LINE. AFN 368616

CALL 811
2 BUSINESS DAYS
BEFORE YOU DIG

0' 15' 30' 60' 90'
1" = 30'

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SUITE 160
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1-509-222-0959
www.knutzenengineering.com

No.	REVISIONS	DATE	DESIGN	CHKD	APPD

PARTIAL PRELIMINARY PLAT

COLUMBIA VALLEY PROPERTY HOLDINGS, LLC
THE TERRACES AT QUEENSGATE SOUTH
RICHLAND, WASHINGTON

APPROVAL		
DESIGN	JAW	11/04/22
CHECKED	NJM	11/04/22
APPROVED	NJM	11/04/22

SCALE: AS NOTED
CADFILE: 21152PP01
JOB No. 21152 — REV. D
DWG. No. PP05

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TOPOGRAPHIC SURVEY
AHBL

QUEENSGATE DEVELOPMENT

A PORTION OF THE SW 1/4 OF SEC. 22, TWN. 09 N., RGE. 28 E. W.M.

CITY OF RICHLAND, BENTON COUNTY, WASHINGTON.

EXHIBIT F - Topo Survey

LEGAL DESCRIPTION

SEE SHEET 5 FOR LEGAL DESCRIPTIONS

VERTICAL DATUM

NAVD 1988 VERTICAL DATUM ON ORTHOMETRICALLY CORRECTED GPS OBSERVATIONS USING WSRN AND GEOID 2012A.

BASIS OF BEARING

NAD 1983/11
WASHINGTON STATE PLANE SOUTH PROJECTION, BASED ON GPS OBSERVATIONS USING WSRN AND GEOID 2012A. UNITS OF MEASUREMENT ARE US SURVEY FEET.

UTILITY NOTES

1. SURFACE UTILITY FACILITIES ARE SHOWN HEREON PER FIELD LOCATED VISIBLE EVIDENCE. THERE MAY BE UTILITIES THAT EXIST ON THIS SITE OTHER THAN THOSE GRAPHICALLY DEPICTED HEREON.

2. UNDERGROUND (BURIED) UTILITIES SHOWN HEREON ARE BASED ON COMBINATIONS OF VISIBLE SURFACE EVIDENCE, UTILITY LOCATOR MARKINGS AND RECORD DATA (SUCH AS AS-BUILT OR UTILITY DESIGN DRAWINGS). ALL UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND, IN SOME CASES, ARE SHOWN AS STRAIGHT LINES BETWEEN FIELD LOCATED SURFACE UTILITY FACILITIES. UNDERGROUND UTILITIES MAY HAVE BENDS, CURVES OR CONNECTIONS WHICH ARE NOT SHOWN.

3. ALTHOUGH LOCATIONS OF UNDERGROUND UTILITIES BASED ON UTILITY LOCATOR MARKINGS AND RECORD DATA (SUCH AS AS-BUILT OR UTILITY DESIGN DRAWINGS) ARE DEEMED RELIABLE, AHBL, INC. ASSUMES NO LIABILITY FOR THE ACCURACY OF SAID DATA.

4. CALL 1-800-424-5555 BEFORE ANY CONSTRUCTION.

RELIANCE NOTE

THIS SURVEY WAS PREPARED AT THE REQUEST OF MALLIKARJUNA R. VALLEM FOR THE SOLE AND EXCLUSIVE USE OF JAYA HOLDINGS LLC AND BENTON-FRANKLIN TITLE COMPANY. RIGHTS TO RELY UPON AND, OR USE THIS SURVEY DO NOT EXTEND TO ANY OTHER PARTY EXCEPT THROUGH EXPRESS RECERTIFICATION BY THE PROFESSIONAL LAND SURVEYOR WHOSE STAMP AND SIGNATURE APPEAR HEREON.

EQUIPMENT USED

3" TOTAL STATION UTILIZING STANDARD FIELD TRAVERSE METHODS FOR CONTROL AND STAKING.

SURVEYOR'S CERTIFICATE

I, JOHN W. BECKER, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF WASHINGTON, HEREBY CERTIFY THAT THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION IN JULY 2021 AT THE REQUEST OF THE JAYA HOLDINGS LLC.

JOHN W. BECKER, PLS 38480 DATE

N

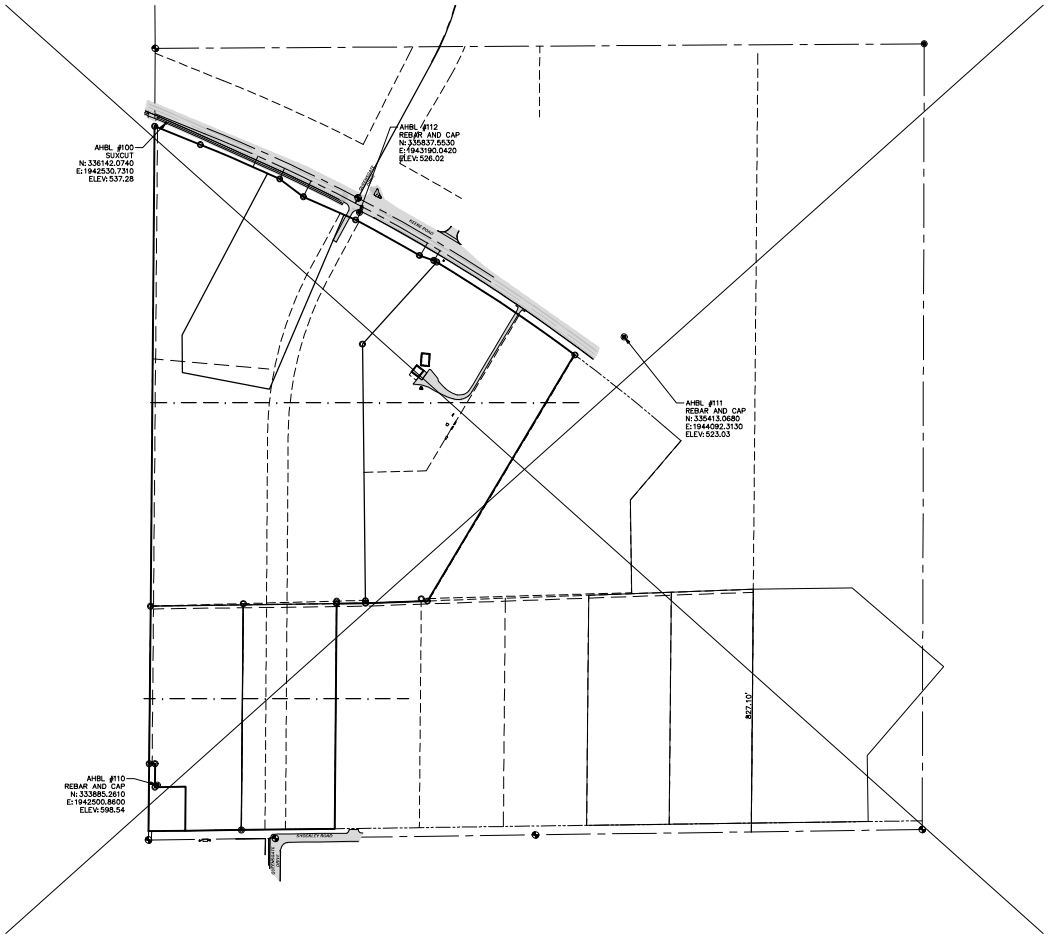
GRAPHIC SCALE

0 100 200 400 FEET

1" = 200 FEET

LEGEND

- SECTION CORNER
- QUARTER SECTION CORNER
- CENTER SECTION
- FOUND MONUMENT AS NOTED
- FOUND SURFACE MONUMENT AS NOTED
- BENCHMARK
- HUB AND TACK
- SET NAIL AND WASHER
- SET REBAR AND CAP
- FOUND PROPERTY CORNER
- FOUND/ SET LEAD AND TACK
- BOLLARD
- MAIL BOX
- SIGN AS NOTED
- SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- STORM CLEANOUT
- STORM CATCH BASIN
- STORM MANHOLE
- CABLE RISER
- GAS METER
- GAS VALVE
- TRAFFIC SIGNAL POLE
- TRAFFIC CABINET
- GUY ANCHOR
- UTILITY POWER POLE
- JUNCTION BOX
- POWER METER
- POWER VAULT
- LUMINAIRE
- FIRE HYDRANT
- HOSE BIB
- IRRIGATION CONTROL VALVE
- WATER METER
- WATER VALVE
- CONIFEROUS TREE AS NOTED
- DECIDUOUS TREE AS NOTED
- LEFT TURN ARROW
- RIGHT TURN ARROW
- D — STORM LINE
- S — SEWER LINE
- W — WATER LINE
- G — GAS LINE
- P — ELECTRICAL LINE
- T — COMMUNICATION LINE
- OHP — OVERHEAD UTILITIES
- FENCE
- ASPHALT
- CONCRETE



AHBL

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5804 Road 90, Suite H Pasco, WA 99301
509.380.5883 TEL 253.383.2572 FAX www.ahbl.com WEB

Project Title:

QUEENSGATE DEVELPOMENT

Client:

JAYA HOLDINGS LLC

11364 KENSINGTON WAY
RICHLAND, WA 99352-7871

MALLIKARJUNA R. VALLEM

Job No.

2210404.50

Issue Set & Date:

JULY 15, 2021

JOHN W. BECKER STATE OF WASHINGTON 38480 REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

NOTICE

Revisions:

Sheet Title:

TOPOGRAPHIC SURVEY

Designed by:	Drawn by:	Checked by:
	TD/LF	JB

Sheet No.

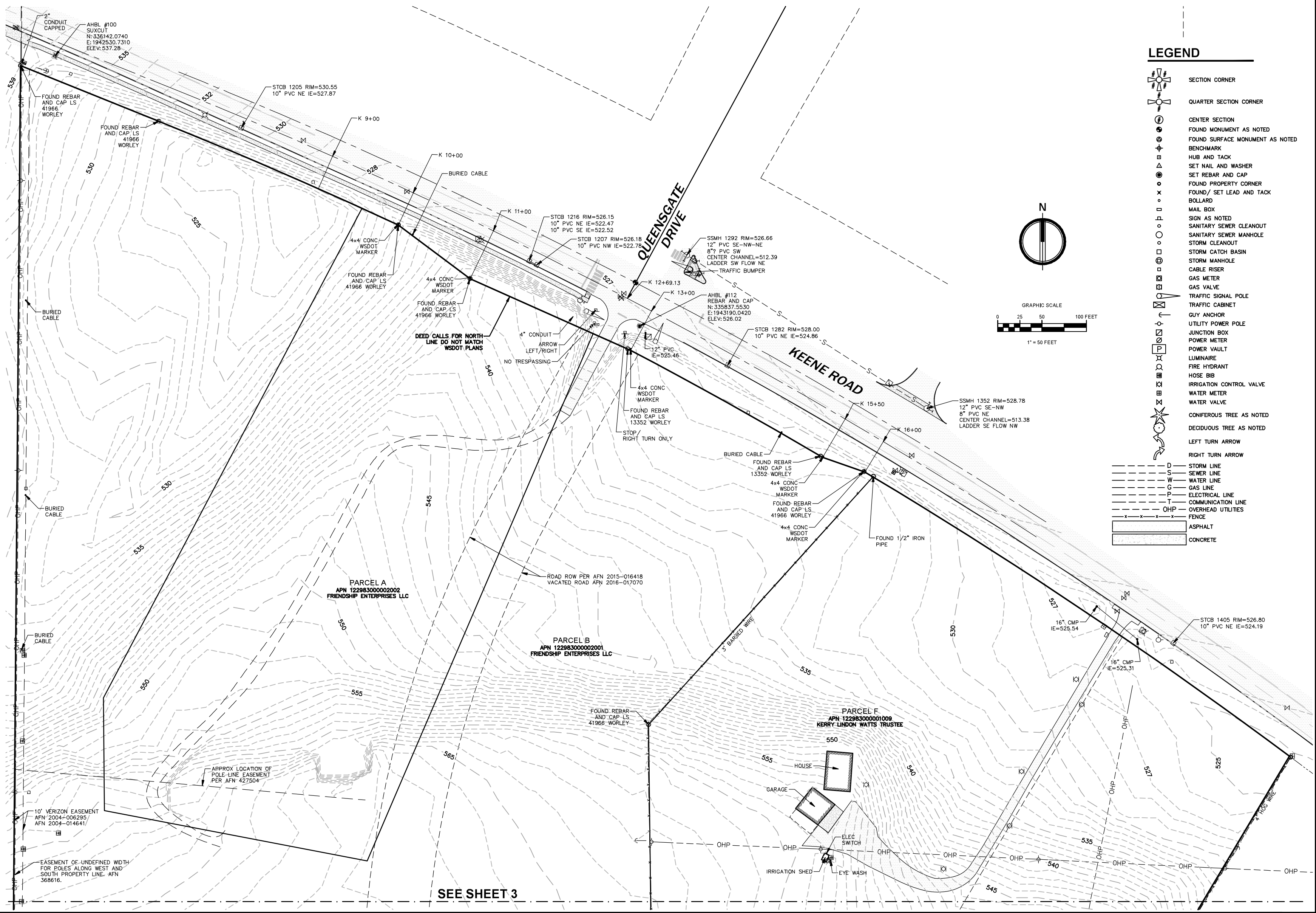
1

1 of 5 Sheets

QUEENSGATE DEVELOPMENT

A PORTION OF THE SW 1/4 OF SEC. 22, TWN. 09 N., RGE. 28 E. W.M.

CITY OF RICHLAND, BENTON COUNTY, WASHINGTON.



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Revisions:

Sheet Title:

TOPOGRAPHIC SURVEY

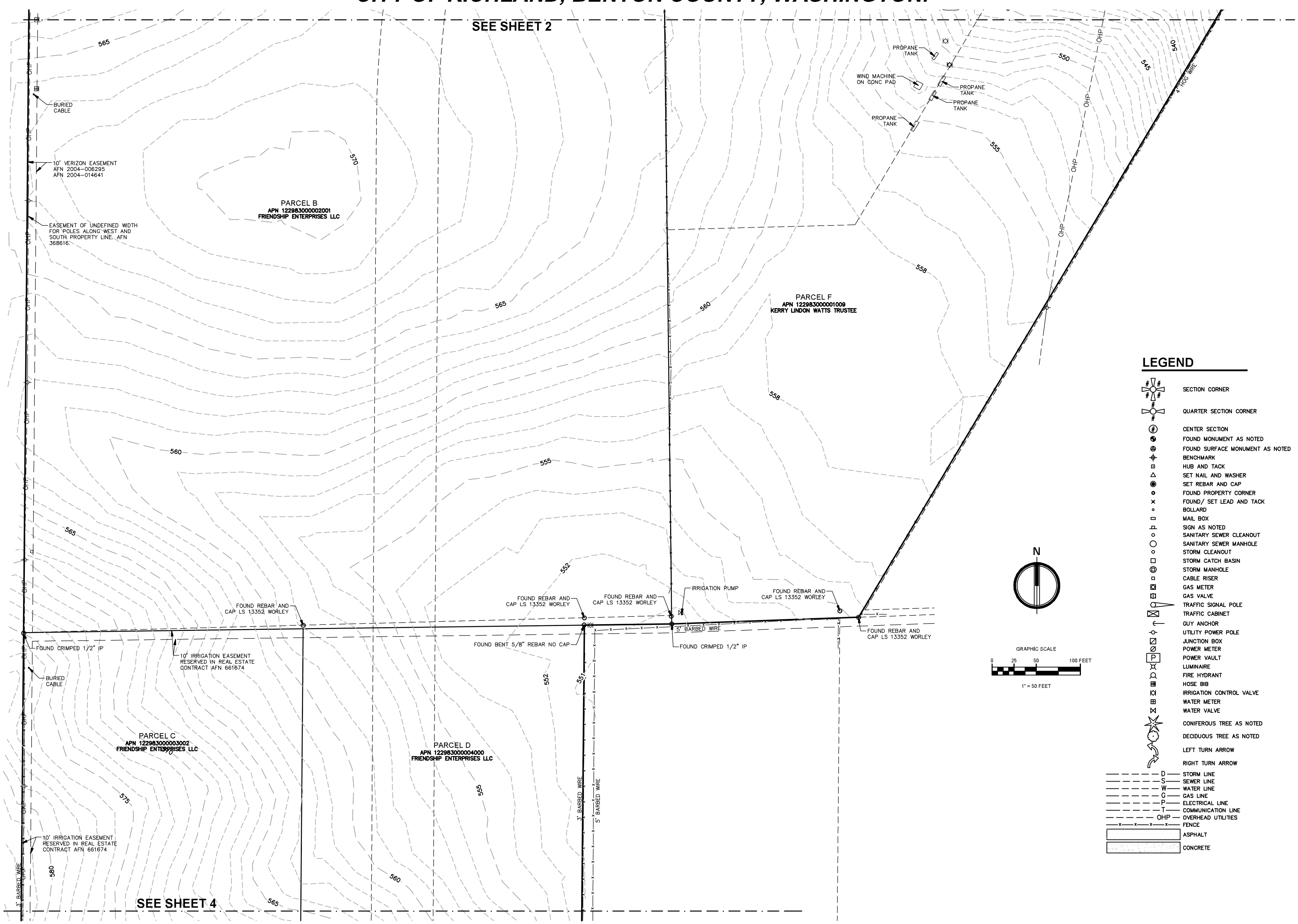
Designed by:	Drawn by:	Checked by:
	TD/LF	JB

Sheet No.

2

2 of 5 Sheets

QUEENSGATE DEVELOPMENT
A PORTION OF THE SW 1/4 OF SEC. 22, TWN. 09 N., RGE. 28 E. W.M.
CITY OF RICHLAND, BENTON COUNTY, WASHINGTON.



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Project Title:

QUEENSGATE DEVELPOMENT

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JOHN W. BECKER
STATE OF WASHINGTON
38480
REGISTERED
PROFESSIONAL LAND SURVEYOR

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Revisions:

Sheet Title:

TOPOGRAPHIC SURVEY

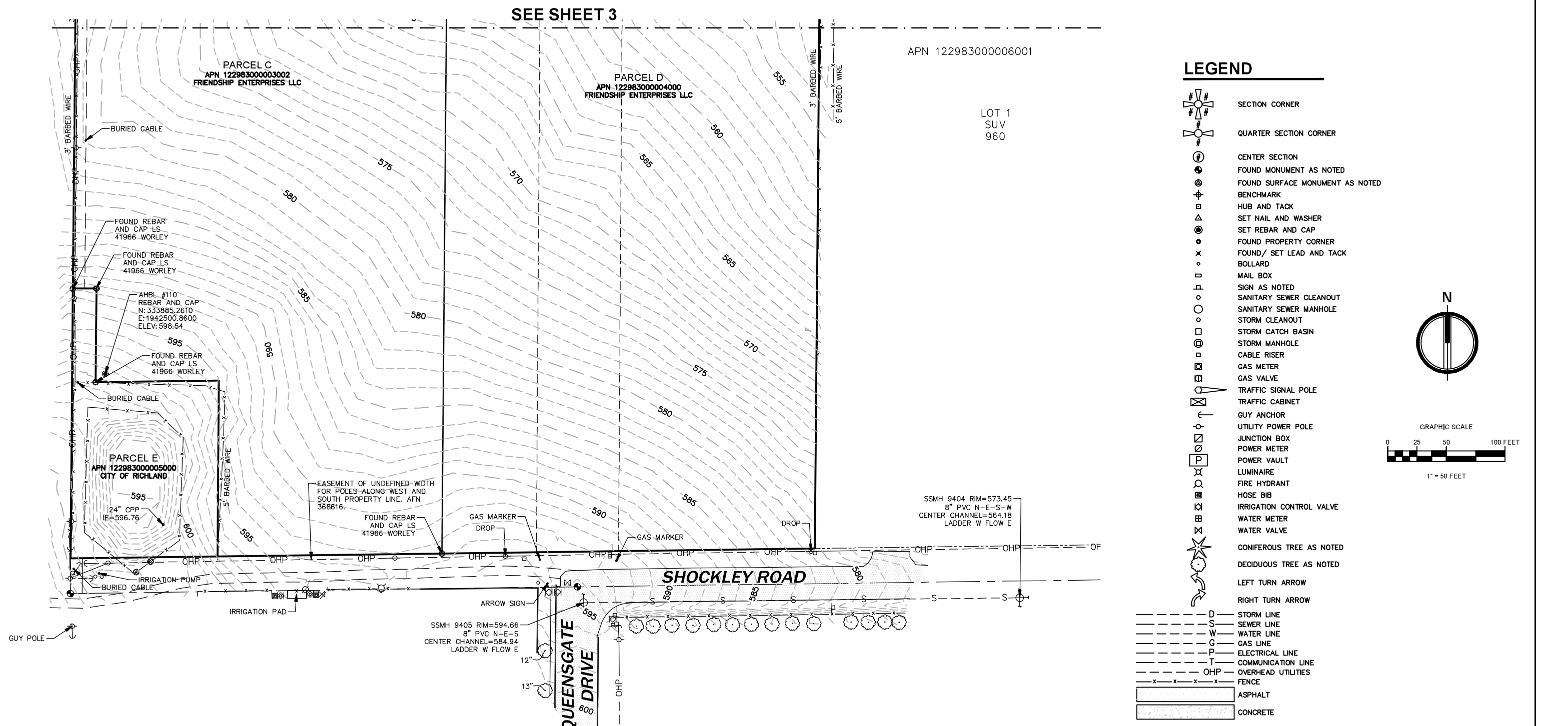
Designed by:	Drawn by:	Checked by:
	TD/LF	JB

Sheet No.

3

QUEENSGATE DEVELOPMENT

A PORTION OF THE SW 1/4 OF SEC. 22, TWN. 09 N., RGE. 28 E. W.M.
CITY OF RICHLAND, BENTON COUNTY, WASHINGTON.



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5804 Road 90, Suite H Pasco, WA 99301
509.380.5883 TEL 253.383.2572 FAX www.ahbl.com WEB

Project Title:

QUEENSGATE DEVELPOMENT

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MALLIKARJUNA R. VALLEM

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Revisions:

Sheet Title:

TOPOGRAPHIC SURVEY

Designed by:	Drawn by:	Checked by:
	TD/LF	JB

Sheet No.

4

4 of 5 Sheets

QUEENSGATE DEVELOPMENT

A PORTION OF THE SW 1/4 OF SEC. 22, TWN. 09 N., RGE. 28 E. W.M.
CITY OF RICHLAND, BENTON COUNTY, WASHINGTON.

LEGAL DESCRIPTION

LEGAL DESCRIPTION: BF13656

PARCEL A: 1-2298-300-0002-002

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE N 00°32'04" E, ALONG THE WEST LINE THEREOF, FOR 2433.28 FEET TO THE SOUTHERLY RIGHT OF WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDTIOR'S FILE NUMBER 845365;
THENCE S 68°02'32" E, ALONG SAID SOUTHERLY RIGHT OF WAY MARGIN, FOR 167.97 FEET TO THE POINT OF CURVATURE WITH A 5690.10 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST;
THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE TO THE RIGHT, THROUGH A CENTRAL ANGLE OF 02°57'53", FOR AN ARC DISTANCE OF 294.42 FEET TO THE TRUE POINT OF BEGINNING;
THENCE LEAVING SAID SOUTHERLY RIGHT OF WAY MARGIN, S 27°55'03" W, FOR 624.20 FEET;
THENCE S 00°32'04" E FOR 127.33 FEET;
THENCE S 79°08'35" E FOR 301.72 FEET;
THENCE N 23°15'27" E FOR 648.45 FEET TO THE SOUTHERLY RIGHT OF WAY MARGIN OF SAID KEENE ROAD;
THENCE N 65°58'26" W, ALONG SAID SOUTHERLY RIGHT OF WAY MARGIN, FOR 194.88 FEET;
THENCE N 53°10'14" W FOR 101.12 FEET TO THE TRUE POINT OF BEGINNING.
EXCEPT THAT PORTION CONVEYED TO THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2015-016418;
AND TOGETHER WITH THAT PORTION VACATED BY THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2016-017070, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL B: 1-2298-300-0002-001

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, LYING SOUTHERLY OF THE SOUTHERLY RIGHT OF WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NUMBER 845365 AND NORTH AND WEST OF THE FOLLOWING DESCRIBED LINE;
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE N 00°32'04" E, ALONG THE WEST LINE THEREOF, FOR 797.55 FEET TO THE TRUE POINT OF BEGINNING OF THE HEREINAFTER DESCRIBED LINE:
THENCE N 88°32'05" E FOR 733.00 FEET;
THENCE N 00°37'55" W FOR 873.60 FEET;
THENCE N 42°13'55" E FOR 376.94 FEET TO THE SOUTHERLY RIGHT OF WAY MARGIN OF SAID KEENE ROAD AND THE TERMINUS OF SAID DESCRIBED LINE;
EXCEPT THAT PORTION DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE N 00°32'04" E, ALONG THE WEST LINE THEREOF, FOR 2433.28 FEET TO THE SOUTHERLY RIGHT
OF WAY MARGIN OF SAID KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON;
THENCE S 68°02'32" E, ALONG SAID SOUTHERLY RIGHT OF WAY MARGIN, FOR 167.97 FEET TO THE POINT OF CURVATURE WITH A 5690.10 FOOT RADIUS CURVE CONCAVE TO THE SOUTHWEST;
THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 02°57'53", FOR AN ARC DISTANCE OF 294.42 FEET TO THE TRUE POINT OF BEGINNING;
THENCE, LEAVING SAID SOUTHERLY RIGHT OF WAY MARGIN S 27°55'03" W FOR 624.20 FEET;
THENCE S 00°32'04" E FOR 127.33 FEET;
THENCE S 79°08'35" E FOR 301.72 FEET;
THENCE N 23°15'27" E FOR 646.45 FEET TO THE SOUTHERLY RIGHT OF WAY MARGIN OF SAID KEENE ROAD;
THENCE N 65°58'26" W, ALONG SAID SOUTHERLY RIGHT OF WAY MARGIN, FOR 194.88 FEET;
THENCE N 53°10'14" W FOR 101.12 FEET TO THE TRUE POINT OF BEGINNING.
EXCEPT THAT PORTION CONVEYED TO THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2015-016418;
AND TOGETHER WITH THAT PORTION VACATED BY THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2016-017070, RECORDS OF BENTON COUNTY, WASHINGTON.

PARCEL C: 1-2298-300-0003-002

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT ON THE WEST BOUNDARY OF SAID SECTION 22, SAID POINT BEING 260.00 FEET NORTH OF THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE NORTHERLY AND FOLLOWING THE WEST BOUNDARY OF SAID SECTION 22, 537.55 FEET;
THENCE EASTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 316.20 FEET;
THENCE SOUTHERLY AND PARALLEL TO THE WEST BOUNDARY OF SAID SECTION 22, 767.55 FEET TO A POINT 30.00 FEET PERPENDICULARLY DISTANT NORTHERLY OF THE SOUTH BOUNDARY OF SAID SECTION 22;
THENCE WESTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 191.17 FEET;
THENCE NORTHERLY AND PARALLEL TO THE WEST BOUNDARY OF SAID SECTION, 180.00 FEET;
THENCE WESTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 105.00 FEET;
THENCE NORTHERLY AND PARALLEL TO THE WEST BOUNDARY OF SAID SECTION 22, 80.00 FEET;
THENCE WESTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 20.00 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL D: 1-2298-300-0004-000

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT ON THE WEST BOUNDARY OF SAID SECTION 22, SAID POINT BEING 797.55 FEET NORTH OF THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE EASTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 316.20 FEET TO THE TRUE POINT OF BEGINNING;
THENCE CONTINUING EASTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SAID SECTION 22, 317.89 FEET;
THENCE SOUTHERLY AND PARALLEL TO THE WEST BOUNDARY OF SAID SECTION 22, 767.55 FEET TO A POINT 30.00 FEET PERPENDICULARLY DISTANT NORTHERLY OF THE SOUTH BOUNDARY OF SAID SECTION 22;
THENCE WESTERLY AND PARALLEL TO THE SOUTH BOUNDARY OF SECTION 22, 317.89 FEET;
THENCE NORTHERLY AND PARALLEL TO THE WEST BOUNDARY OF SAID SECTION 22, 767.55 FEET TO THE TRUE POINT OF BEGINNING.
EXCEPT THAT PORTION CONVEYED TO THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2015-016418;
AND TOGETHER WITH THAT PORTION VACATED BY THE CITY OF RICHLAND FOR ROAD RIGHT OF WAY, RECORDED UNDER AUDITOR'S FILE NUMBER 2016-017070, RECORDS OF BENTON COUNTY, WASHINGTON.

LEGAL DESCRIPTION

PARCEL E: 122983000005000

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., RECORDS OF BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION 22, THE TRUE POINT OF BEGINNING; THENCE NORTH ALONG THE SECTION LINE BETWEEN SECTIONS 22 AND 21, A DISTANCE OF 260 FEET; THENCE EAST PARALLEL TO AND 260 FEET DISTANT FROM THE SOUTH LINE OF SECTION 22, A DISTANCE OF 20 FEET; THENCE SOUTH PARALLEL TO AND 20 FEET DISTANT FROM THE WEST LINE OF SECTION 22, A DISTANCE OF 80 FEET; THENCE EAST PARALLEL TO AND 180 FEET NORTH OF THE SOUTH LINE OF SECTION 22 A DISTANCE OF 105 FEET; THENCE SOUTH PARALLEL TO AND 125 FEET DISTANT FROM THE WEST LINE OF SECTION 22, A DISTANCE OF 180 FEET; THENCE WEST ALONG THE SECTION LINE, A DISTANCE OF 125 FEET TO THE TRUE POINT OF BEGINNING;
EXCEPT THE SOUTH 30 FEET THEREOF.

PARCEL F: 122983000001009

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON COLLECTIVELY DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE NORTH 00°32'05" EAST ALONG THE WEST LINE OF SAID SECTION FOR 797.55 FEET; THENCE NORTH 89°16'55" EAST PARALLEL WITH THE SOUTH LINE OF SAID SECTION FOR 733.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 87°59'21" EAST FOR 211.32 FEET;
THENCE NORTH 30°52'05" EAST FOR 978.13 FEET TO INTERSECT THE SOUTHERLY RIGHT OF WAY LINE OF KEENE ROAD ON A CURVE CONCAVE TO THE SOUTHWEST, THE RADIUS POINT OF WHICH BEARS SOUTH 36°43'32" WEST A DISTANCE OF 5690.1 FEET; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 02°20'11" FOR AN ARC DISTANCE OF 231.75 FEET TO THE NORTHEAST CORNER OF THAT CERTAIN PARCEL OF LAND CONVEYED BY DEED RECORDED UNDER AUDITOR'S FILE NO. 885837; THENCE SOUTH 30°52'05" WEST ALONG THE EAST LINE OF SAID PARCEL FOR 617.86 FEET; THENCE SOUTH 88°32'05" WEST FOR 212.57 FEET TO THE SOUTHWEST CORNER OF SAID PARCEL; THENCE SOUTH 00°38'31" EAST FOR 446.01 FEET TO THE TRUE POINT OF BEGINNING;

TOGETHER WITH TRACT OF LAND DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE NORTHERLY ALONG THE WEST LINE OF SAID SECTION FOR 797.55 FEET; THENCE ANGLE RIGHT 88° A DISTANCE OF 733.00 FEET;
THENCE ANGLE LEFT 89°10' ON A BEARING CALLED NORTH A DISTANCE OF 436.45 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 295.00 FEET; THENCE NORTH 31°30' EAST 493.45 FEET TO A POINT ON THE SOUTHERLY RIGHT OF WAY BOUNDARY OF KEENE ROAD;
THENCE CONTINUING IN A SOUTHEASTERLY DIRECTION ALONG SAID BOUNDARY, SAID BOUNDARY BEING ON A 1.02316 DEGREE OF CURVE TO THE RIGHT AND HAVING A CHORD DISTANCE OF 334.00 FEET; THENCE SOUTH 31°30' WEST 621.02 FEET; THENCE SOUTH 89°10' WEST 212.57 FEET TO THE TRUE POINT OF BEGINNING;
AND TOGETHER WITH TRACT OF LAND DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;
THENCE NORTHERLY ALONG THE WEST LINE OF SAID SECTION FOR 797.55 FEET; THENCE ANGLE RIGHT 88° A DISTANCE OF 733.00 FEET;
THENCE ANGLE LEFT 89°10' ON A BEARING CALLED NORTH A DISTANCE OF 731.45 FEET TO THE TRUE POINT OF BEGINNING;
THENCE CONTINUING NORTH A DISTANCE OF 142.15 FEET;
THENCE NORTH 42°47'01" EAST A DISTANCE OF 379.59 FEET;
THENCE SOUTH 31°30'00' WEST A DISTANCE OF 493.45 FEET TO THE TRUE POINT OF BEGINNING.

AHBL
TACOMA • SEATTLE • SPOKANE • TRI-CITIES
5804 Road 90, Suite H Pasco, WA 99301
509.380.5883 TEL 253.383.2572 FAX www.ahbl.com WEB

Project Title:
QUEENSGATE DEVELPOMENT

Client:
JAYA HOLDINGS LLC
11364 KENSINGTON WAY
RICHLAND, WA 99352-7871
MALLIKARJUNA R. VALLEM

Job No.
2210404.50

Issue Set & Date:
JULY 15, 2021

JOHN W. BECKER
STATE OF WASHINGTON
38480
REGISTERED
PROFESSIONAL LAND SURVEYOR

NOTICE

Revisions:

Sheet Title:
TOPOGRAPHIC SURVEY

Designed by:	Drawn by:	Checked by:
	TD/LF	JB

Sheet No.
5
5 of 5 Sheets

LANDSCAPE PLAN

LRS Architects

EXHIBIT I - Landscape Plan

SITE PHASING

A1.1

PHASE 1

LRS ARCHITECTS

221215 | RICHLAND - QUEENSGATE | LUR
06.22.2022

FULL SITE PLAN

A1.2

- LOW-RISE COMMERCIAL
- MEDIUM-RISE COMMERCIAL
- TOWN HOMES

- A PEDESTRIAN CONNECTION
- B FESTIVAL STREET
- C STORM WATER BASINS
- D 6' HIGH ESTATE WALL
- ~~E GATED CONNECTION~~

2-STORY COMMERCIAL & PEDESTRIAN STREET

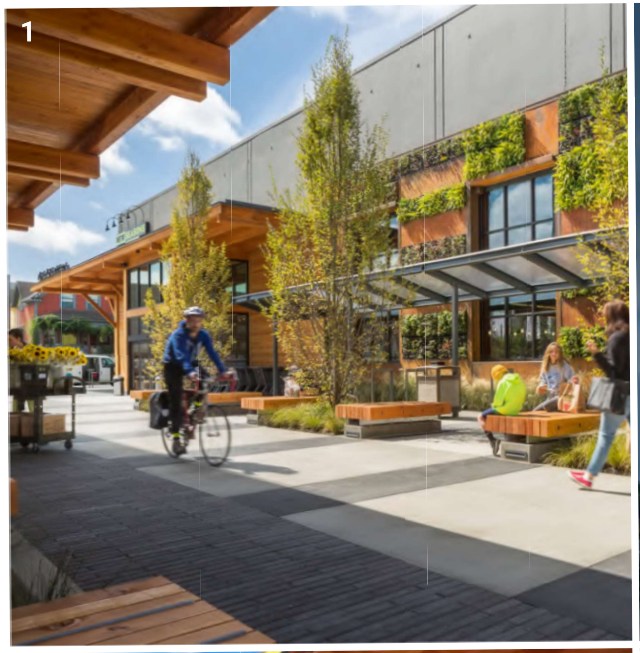
A1.3

2-STORY COMMERCIAL & PEDESTRIAN STREET

A1.4

LARGE COMMERCIAL BUILDINGS & TOWN HOMES

A1.5


1


3


2


4


5

POCKET PARKS

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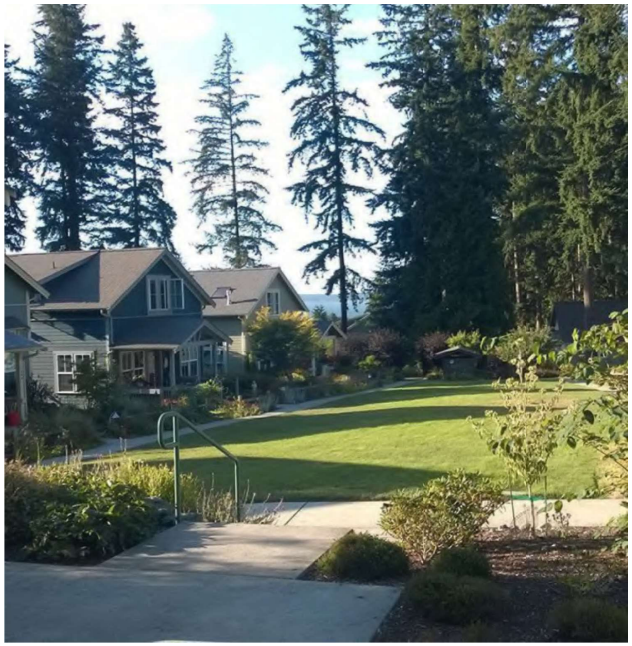

SINGLE FAMILY LOT CONFIGURATIONS

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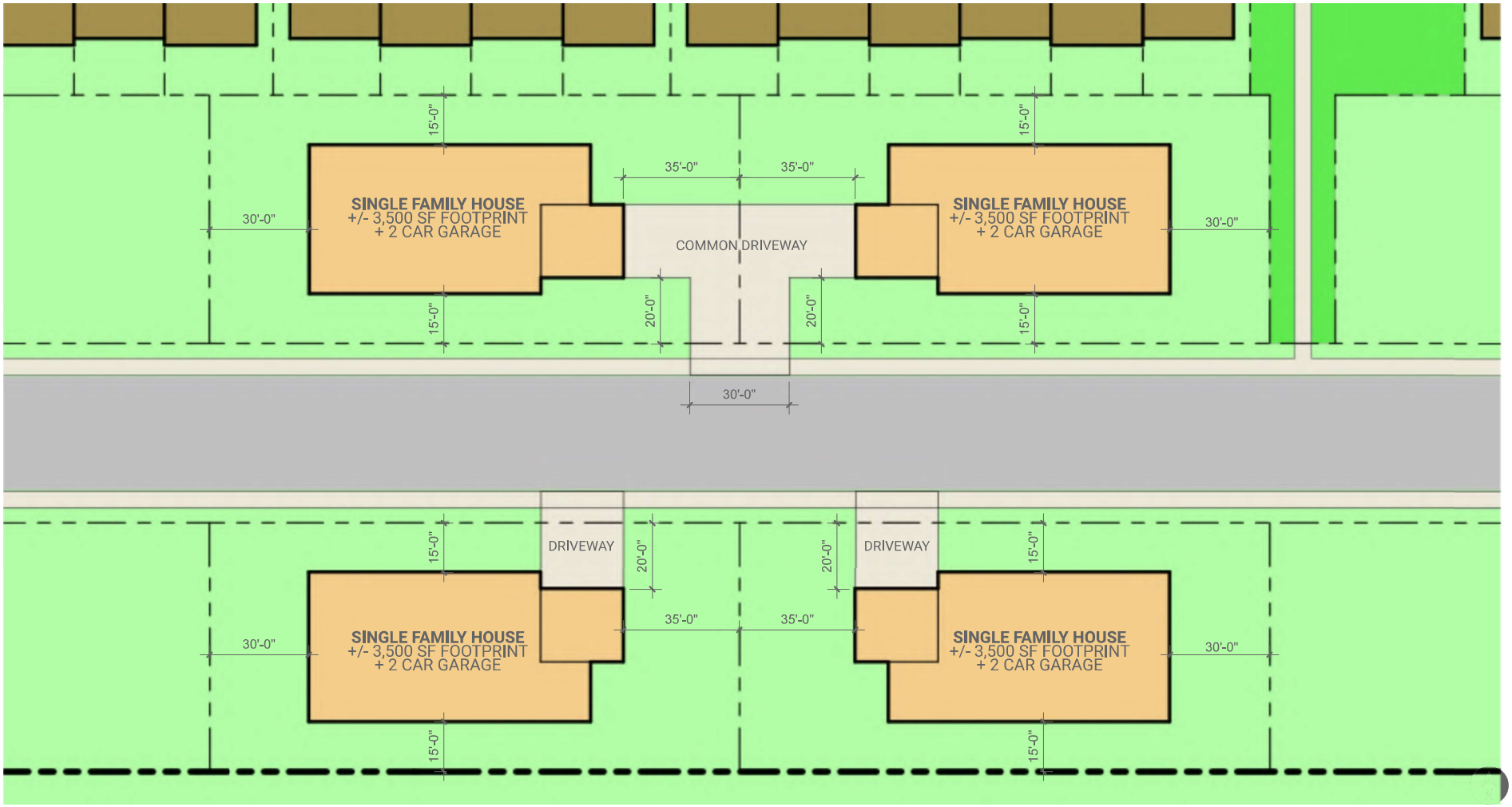


TRAFFIC ANALYSIS

May 18, 2022

Caleb Stromstad
Aqtera Engineering
2705 Saint Andrews Loop, Suite C
Pasco, Washington 99301

Via email: caleb@aqtera.com

Regarding: Trip Generation Letter
Queensgate South – Phase 1
Queensgate Drive at Shockley Road
Richland, Washington
PBS Project 71818.000

Dear Mr. Stromstad:

This letter presents the information required for a trip generation letter supporting the proposed Queensland South (QS) – Phase 1 development (Phase 1). This letter verifies that Phase 1 is within trip generation estimates for the full development. This letter also lists the transportation improvements necessary to be functionally consistent with the extension of Queensgate Drive to Keene Road, with full build-out of the site, and with the previously agreed-upon roadway improvements. See Appendix A for the Queensland South Analysis Memo, dated May 13, 2022 (Memo), for the full development traffic evaluation and conceptual long-term improvements.

PROJECT DESCRIPTION AND BACKGROUND

Phase 1 is a portion of the larger development on the south side of Keene Road at the intersection of Queensgate Drive. See Figure 1 for the vicinity map and Figure 2 for the site plan. The Memo provides a detailed description of the full development at build-out.

Phase 1 includes 20 units of single-family homes and 84 units of townhomes. It proposes to extend Queensgate Drive north from Shockley Road to Keene Road. Queensgate Drive will be built in two segments:

- From Shockley Road north to the location of the future roundabout (approximately 400 feet south of Keene Road), Queensgate Drive will be constructed to the City of Richland's Major Collector standard.
- From Keene Road south to the location of the future roundabout, Queensgate Drive will be constructed as a core road, built to rural standards.

See the site plan for the Queensgate Drive road layout.

Phase 1 includes construction of local streets to provide access to the residential land uses. Additionally, a local street connection to Lariat Lane is proposed to provide a new connection into the Country Ridge Estates neighborhood.

TRIP GENERATION AND DISTRIBUTION

Trip Generation

The number of trips generated by Phase 1 is based on the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition (September 2021), treating the respective portions of the development as "Multifamily Housing (Low-Rise)" and "Single-Family Detached Housing," with dwelling units as the

independent variable for both. The trip generation results are summarized in Table 1, and the calculation details are attached in Appendix B. The site trips are presented for the average weekday, including the AM peak hour between 7:00 and 9:00 AM and the PM peak hour between 4:00 and 6:00 PM.

Table 1. Phase 1 Trip Generation

Proposed Single-Family Homes Detached (ITE Land Use Code 210)							
	Homes 20			**Independent Variable** Dwelling Units			
	Weekday AM Peak Hour of Adjacent Roadways			**Weekday PM Peak Hour of Adjacent Roadways**			**Weekday Average Daily Trips (ADT)**
	Entering	Exiting	Total	Entering	Exiting	Total	
Proposed Trips	4	13	17	14	8	22	230
Proposed Multifamily Housing (Low-Rise) (ITE Land Use Code 220)							
	Townhomes 84			**Independent Variable** Dwelling Units			
	Weekday AM Peak Hour of Adjacent Roadways			**Weekday PM Peak Hour of Adjacent Roadways**			**ADT**
	Entering	Exiting	Total	Entering	Exiting	Total	
Proposed Trips	12	37	49	36	21	57	614
Total Phase 1 Proposed Trips							
	Weekday AM Peak Hour of Adjacent Roadways			**Weekday PM Peak Hour of Adjacent Roadways**			**ADT**
	Entering	Exiting	Total	Entering	Exiting	Total	
Total Trips	16	50	66	50	29	79	844

Phase 1 of the project is anticipated to generate 844 average daily trips on a typical weekday, including 66 trips during the AM peak hour and 79 trips during the PM peak hour. These trips are consistent with the number of trips proposed in the Memo.

Trip Distribution

The proposed distribution of primary trips is based on a review of the land uses within the study area, on the concentration of existing traffic patterns, and on engineering judgment. The external distribution is based on the Memo distribution for residential land uses and is influenced by the trips traveling to and from the highway (Interstate 182) and the commercial land uses north of it.

See Figure 2 for the distribution pattern. The proposed Phase 1 trip distribution pattern is as follows:

- 45% to and from Queensgate Drive to the north
- 25% to and from Shockley Road to the east
- 0% to and from Queensgate Drive to the south
- 5% to and from Keene Road to the east

- 25% to and from Keene Road to the west

ROADWAY IMPROVEMENTS

For Phase 1 to remain consistent with the roadway improvements as agreed upon and illustrated in the Memo, the following key improvements should be implemented with Phase 1:

- Extend Queensgate Drive north from Shockley Road with three vehicle lanes, bike lanes, and sidewalks to meet both the Major Collector street standard (City standard detail ST11) and the Richland Municipal Code, chapter 12.10.030. Queensgate Drive will include widening at the future roundabout location to accommodate the two through lanes traveling both northbound and southbound through the roundabout. Queensgate Drive at Shockley Road will include a southbound left-turn lane and northbound right-turn lane.
- Construct the Phase 1 improvements to Queensgate Drive to accommodate the future roundabout, with a 160-foot inscribed diameter, to be positioned approximately 400 feet from Keene Road (measured from the future northbound stop line at Keene Road to the southbound yield line at the future roundabout).
- Continue the north section of Queensgate Drive from the future roundabout to Keene Road as a core road, built to rural street standards (City standard detail ST15). On Queensgate Drive south of Keene Road, the lane configuration will require one southbound through lane, one northbound left-turn lane, and one northbound through/right-turn lane.
- Local streets will be built to City of Richland standards (City standard detail ST13).

Figure 2 shows the location of the roadway improvements.

CLOSING

Please feel free to contact me at 360.567.2117 or john.manix@pbsusa.com with any questions or comments.

Sincerely,

John Manix, PE
Senior Traffic Engineer

JOHN ANDREW MANIX
STATE OF WASHINGTON
37225
REGISTERED
PROFESSIONAL ENGINEER

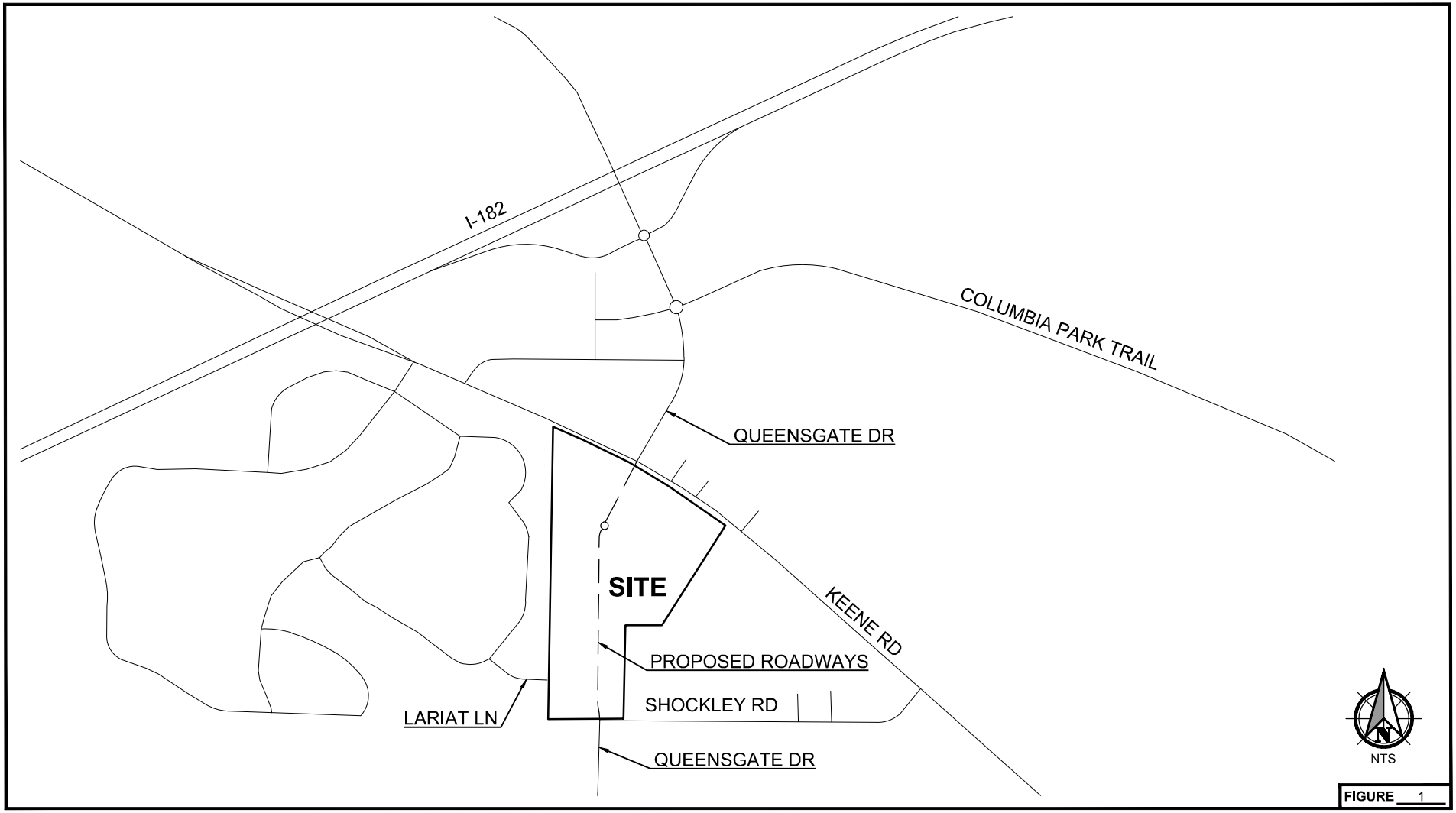
John A Manix
2022.05.18
13:41:34-07'00'

cc: Mallikarjuna Vallem, Jaya Holdings, LLC
David Holt, PBS Engineering and Environmental Inc.

Attachments: Figure 1. Vicinity Map
Figure 2. Phase 1 Site Plan, Trip Distribution, and Roadway Improvements
Appendix A. Queensland South Traffic Analysis Memo
Appendix B. Trip Generation Calculations

JAM:DAH:lc

Figures



Vicinity Map

Queensgate South Phase 1

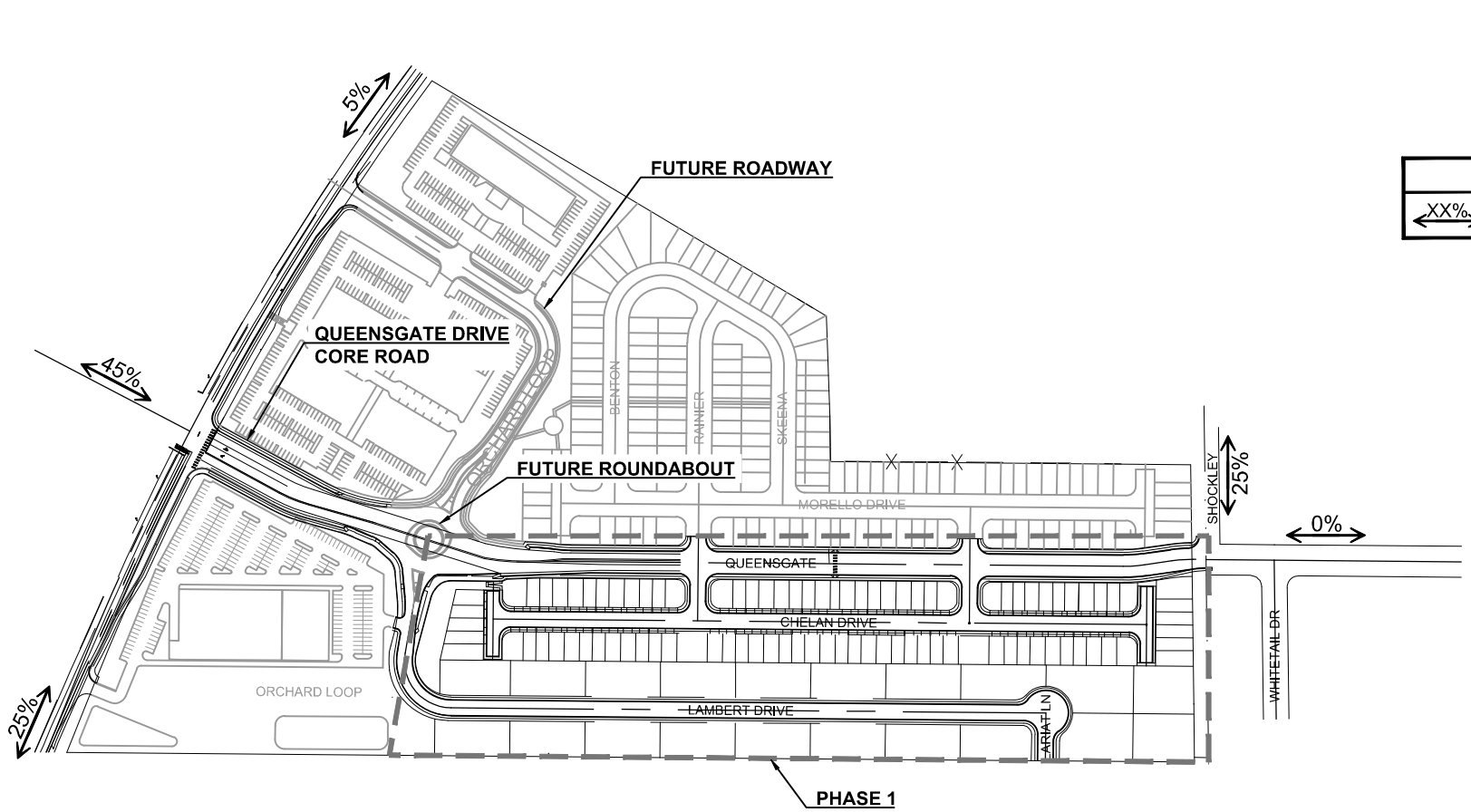


FIGURE 2

Site Plan and Trip Distribution

Queensgate South Phase 1

Appendix A

Queensland South Traffic Analysis Memo

Memorandum

DATE: May 13, 2022

TO: Caleb Stromstad, PE, Principal Engineer, Aqtera Engineering

FROM: John Manix, PE

PROJECT: 71818.000

REGARDING: Queensgate South – Traffic Analysis

PBS Engineering and Environmental Inc. (PBS) is reporting our to-date analysis related to the extension of Queensgate Drive and the trips associated with the proposed Queensgate South (QS), formerly referred to as Queensgate Drive Mixed-Use Development. See Figure 1 for the vicinity map of the site. The intent of the memo is to support the long-range roadway improvements on Keene Road and Queensgate Drive as part of the QS development.

The planning level analysis addressed the following topics:

- Level of service (LOS) of the Keene Road/Queensgate Drive intersection with the Queensgate Drive extension and the proposed QS development. This included the proposed intersection modifications.
- Queueing between the proposed roundabout and existing traffic signal at Keene Road and Queensgate Drive.
- Roundabout design and the number of lanes entering and departing.
- Queensgate Drive cross section.

LOS ANALYSIS

The LOS analysis was prepared using the following methods and assumptions:

- The LOS was evaluated during the 2040 PM peak hour condition with QS developed.
- The 2040 LOS will meet the City of Richland (City) standard of LOS D with no more than 55 seconds of delay per vehicle.
- The site access assumptions include:
    - A full access traffic signal at Keene Road and Queensgate Drive.
    - A roundabout on Queensgate that is no closer than 300 feet to the traffic signal, measured from the stop line to yield line.
    - The west-most Keene Road access is restricted to right-in, right-out.
    - The east-most Keene Road access is full access.
- The analysis is based on the latest site plan. See Figure 2.

2040 Forecast Year Background Traffic

The analysis compared the turning movement volumes from two traffic studies that provided forecast turning movements at the Keene Road and Queensgate Drive intersection with Queensgate Drive completed. The *Badger Mountain South Traffic Study* by Transportation Engineering Northwest (TENW) and *Queensgate Drive Corridor Traffic Study* by JUB Engineers dated January 2015 both provide horizon year turning movement volumes. The two forecast year volumes were compared to Benton-Franklin Council of Government (BFCOG) 2045 transportation model data to adjust the background traffic volume. Based on engineering judgement, consultation with the City, and forecast volumes from BFCOG, the BMS turning movement volumes were increased by approximately 12% to establish the background 2040 turning movement volumes at the studied intersections.

QS Trip Generation

The trip generation for the QS site is based on the proposed land uses from the Institute of Transportation Engineers (ITE) *Trip Generation Manual,* 11th edition. Table 1 summarizes the trip generation by the proposed land uses at full buildout.

Table 1. Queensgate South Trip Generation

Land Use	ITE Code	Independent Variable	Size	PM Peak Hour		
				Entering	Exiting	Total
Hotel	310	Rooms	108	27	25	52
Shopping Plaza (40-150K) No supermarket	821	1,000 Sq. Ft. GLA	73	186	193	379
Multi-Family Housing (Low-Rise)	220	Dwelling Units	235	77	45	122
Single Family Detached Housing	210	Dwelling Units	20	14	8	22
Supermarket	850	1,000 Sq. Ft. GLA	33.8	160	161	321
Pharmacy Without Drive-Through Window	880	1,000 Sq. Ft. GLA	15.1	63	66	129
			Total Site-Generated Trips	527	498	1025

No pass-by or internal capture trip reductions were applied.

QS Trip Distribution

The BFCOG transportation model output was used to determine the trip distribution to and from the site. The model provides a distribution of trips from the area surrounding the site with a percentage of trips on each roadway link in the 2045 forecast year. Based on engineering judgement and consultation with the City, the BFCOG trip distribution percentages were adjusted to reflect a reasonable estimate of the PM peak hour trip distribution onto adjacent roadways. The distribution of trips from each land use within the QS site to each site access intersection is based on proximity of land use to the site access (that is, shortest path and turn delays). See Figure 2 for the trip distribution and trips assigned to each intersection.

LOS Calculations

The LOS analysis focused on the Keen Road and Queensgate Drive intersection and the proposed roundabout at Queensgate Drive and the access into the commercial property (Orchard Loop).

To achieve the LOS D operational standard at Keen Road and Queensgate Drive while accommodating the 2040 volumes, including the site-generated trips, and the new Queensgate extension, several improvement alternatives were analyzed.

Several alternatives were evaluated with various lane configurations and lanes for the proposed roundabout on Queensgate Drive at the entrance to the proposed commercial land uses.

After consultation with the City, two alternatives were developed: a short-term and long-term improvement to the Keene Road and Queensgate Drive intersection. The long-term improvement will meet the City's LOS D standard in the 2040 forecast year during the PM peak hour. See Figure 3 for the long-term improvements.

In the short term, not all improvements are needed to meet LOS standards and the QS does not contribute to growth requiring some of the widening. Thus, short-term improvements were developed to be implemented initially, and the City is to upgrade the remaining intersection improvements to meet full buildout of the long-term intersection configuration. See Figure 4 for the short-term improvements. The City should monitor intersection operation to time the long-term intersection improvements.

Table 2 summarizes the LOS analysis with the 2040 conditions with the long-term improvements at the Queensgate Drive / Keene Road intersection.

Table 2: Estimated 2040 Level of Service

INTERSECTION *(critical lane group, AM / PM)*	**PM Peak Hour**		
	LOS	***Delay (sec/veh)***	***v/c***
Queensgate Drive / Keene Road *(WB-TH)*	D	41.7	0.95
Queensgate Drive / Commercial Road *(SB-TH/RT)*	A	5.8	0.303

v/c = volume to capacity

QUEUEING ANALYSIS

The queue length was evaluated to verify that there is adequate storage between the existing traffic signal on Keene Road and Queensgate Drive and the proposed roundabout south of the intersection. SimTraffic software was used to estimate queue lengths for the northbound approach at the existing traffic signal and southbound approach for the proposed roundabout. Table 3 summarizes the queue lengths and the proposed storage at each intersection.

Table 3. 2040 PM Peak Hour Intersection Queueing Analysis

Intersection	Approach	Movement	*Available Storage (Feet)*	95th Percentile Queue (Feet)*
Queensgate Drive / Keene Road	EB	L	400+	325
		L	400+	325
		T	400+	300
		T	400+	250
		R	400+	75
	WB	L	400+	225
		T	400+	500
		T	400+	475
		R	400+	40
	NB	L	175	125
		L	175	150
		T	250	150
		T/R	250	150
	SB	L	550	775
		L	550	775
		T	300	225
		R	250	125
Queensgate Drive / Commercial Road	EB	L/T/R	100	100
	WB	L/T/R	200	50
	NB	L/T	150	50
		T/R	150	25
	SB	L/T	425	50
		T/R	425	25

*The queue lengths of each movement is rounded off to 25 feet to match a vehicle in a queue.

The northbound queue on Queensgate Drive at Keene Road is estimated at 150 feet and storage is over 175 feet. The southbound queue on Queensgate Drive at the roundabout is 50 feet with storage of 425 feet.

QUEENSGATE DRIVE EXTENSION CROSS-SECTION

Queensgate Drive extension is intended to be classified as a Major Collector. The QS development proposes two intersections between Shockley Road and the roundabout with relatively short block lengths. To maintain efficiency and reduce the risk of rear-end collisions, a three-lane cross section is proposed. See Figure 5 for the City's Standard for a Major Collector and Figure 6 for the proposed cross section. The proposed 5-foot-wide sidewalk will meet Richland Municipal Code for a sidewalk on a collector. Street trees are proposed between the sidewalk and the street curb to maintain a pedestrian-friendly walking environment. Bike lanes are proposed to facilitate active transportation.

CONCEPTUAL DESIGN

The following is a summary for the Queensgate South development.

Keene Road/Queensgate Drive Intersection – Short-term

The following lanes are recommended at the Keene Road/Queensgate Drive intersection to stay within the City's LOS standard prior to build-out:

- Northbound: two left-turn lanes, one through lane, a one through/right-turn lane and bike lane
- Southbound: two left-turn lanes, one through/right-turn lane, and bike lane entering the intersection and two lanes and bike lane departing the intersection
- Westbound: one left-turn lane, two through lanes, one right-turn lane, and bike lane
- Eastbound: one left-turn lane, two through lanes, one right-turn lane, and bike lane (requires widening for long-term buildout of intersection)

Keene Road/Queensgate Drive Intersection – Long-term

- The long-term improvements will meet the City's LOS D standard
- Adds a second left-turn lane for eastbound Keene Road
- Adds a right-turn lane on southbound Queensgate Drive

Intersection Spacing Between Keene Road and Proposed Roundabout

The spacing between the existing signal and proposed roundabout intersection, measured from stop line at the signal to the yield line at the roundabout, requires approximately 300 feet with the proposed the lane configuration described above for the Keene Road and Queensgate Drive intersection. The proposed design provides 400 feet. This exceeds the queueing on Queensgate Drive for both northbound and southbound directions between the signal and the roundabout.

Roundabout Intersection

A roundabout with two northbound and southbound approach lanes, and one eastbound and westbound approach lanes will meet the demand. The southbound departing lane will need two lanes for 160 feet.

Queensgate Drive between Roundabout and Shockley

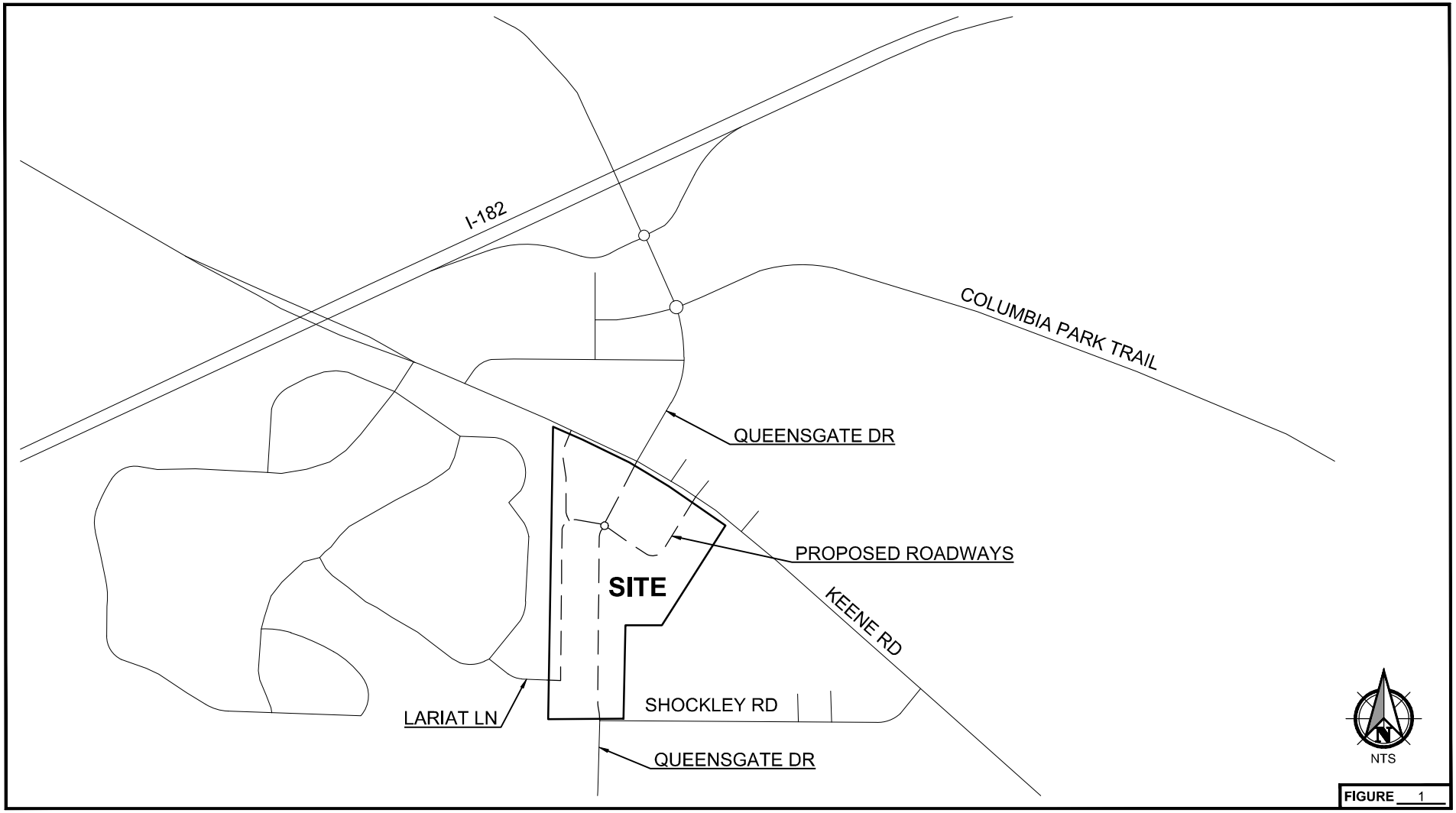
The proposed Queensgate Drive cross section will meet the City's Major Collector cross section.

Attachments: Figure 1. Vicinity Map
Figure 2. Site Plan, Trip Distribution, and Trip Assignments
Figure 3. Long-Term Improvements
Figure 4. Short-Term Improvements
Figure 5. City of Richland's Major Collector Cross Sections
Figure 6. Proposed Queensgate Cross Section

QS Trip Generation Calculation
Synchro and SimTraffic Outputs
Queensgate Roundabout Design

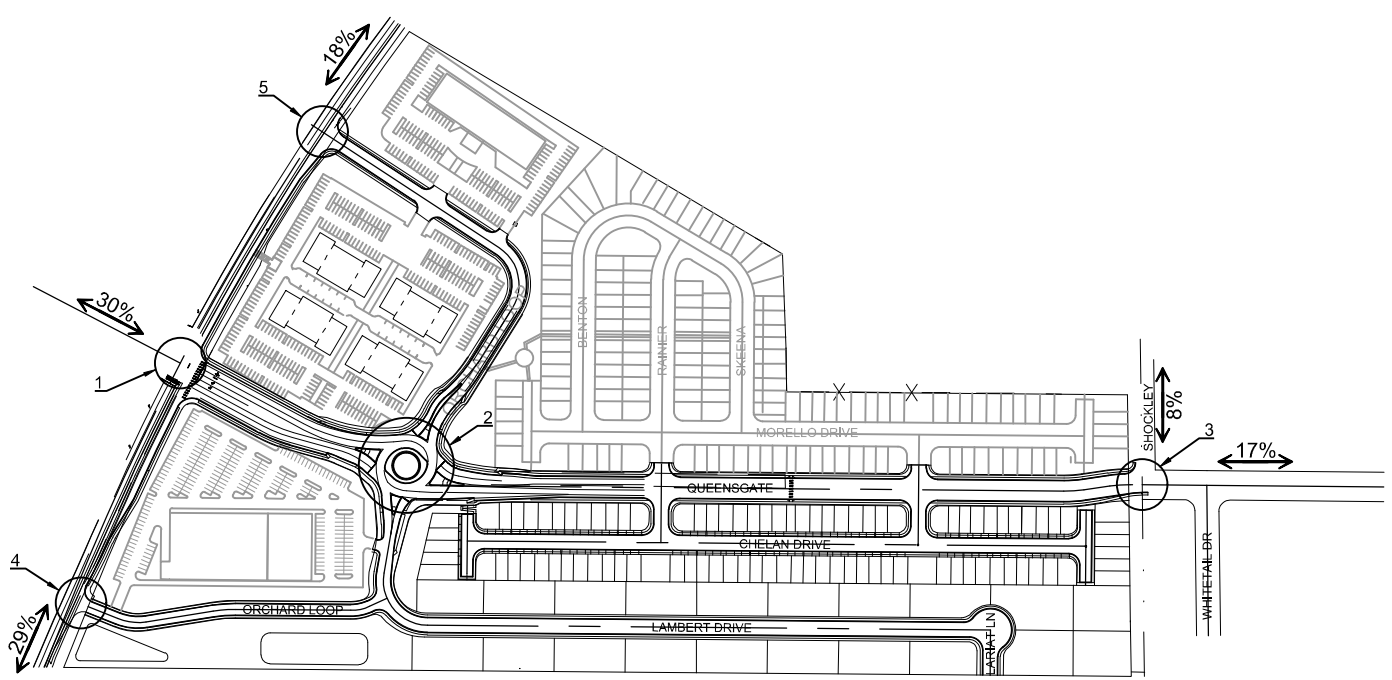
cc: David Holt

JAM:BJ:lc



Vicinity Map

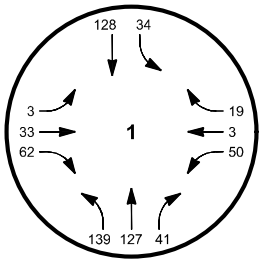
Queensgate South



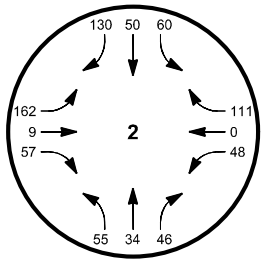
NTS

LEGEND

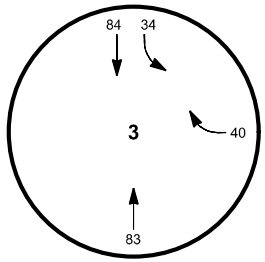
- ◯ INTERSECTION
- XXX PM PEAK HOUR



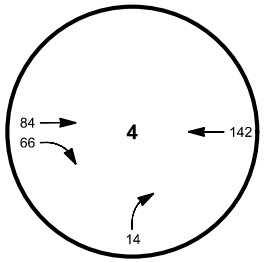
Queensgate Drive /
Keene Road



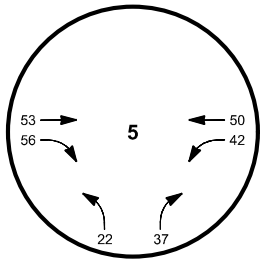
Queensgate Drive /
Commercial Access



Queensgate Drive /
Shockley Road



West Access /
Keene Road



East Access /
Keene Road

FIGURE 2

Site Plan, Trip Distribution and Trip Assignment

Queensgate South

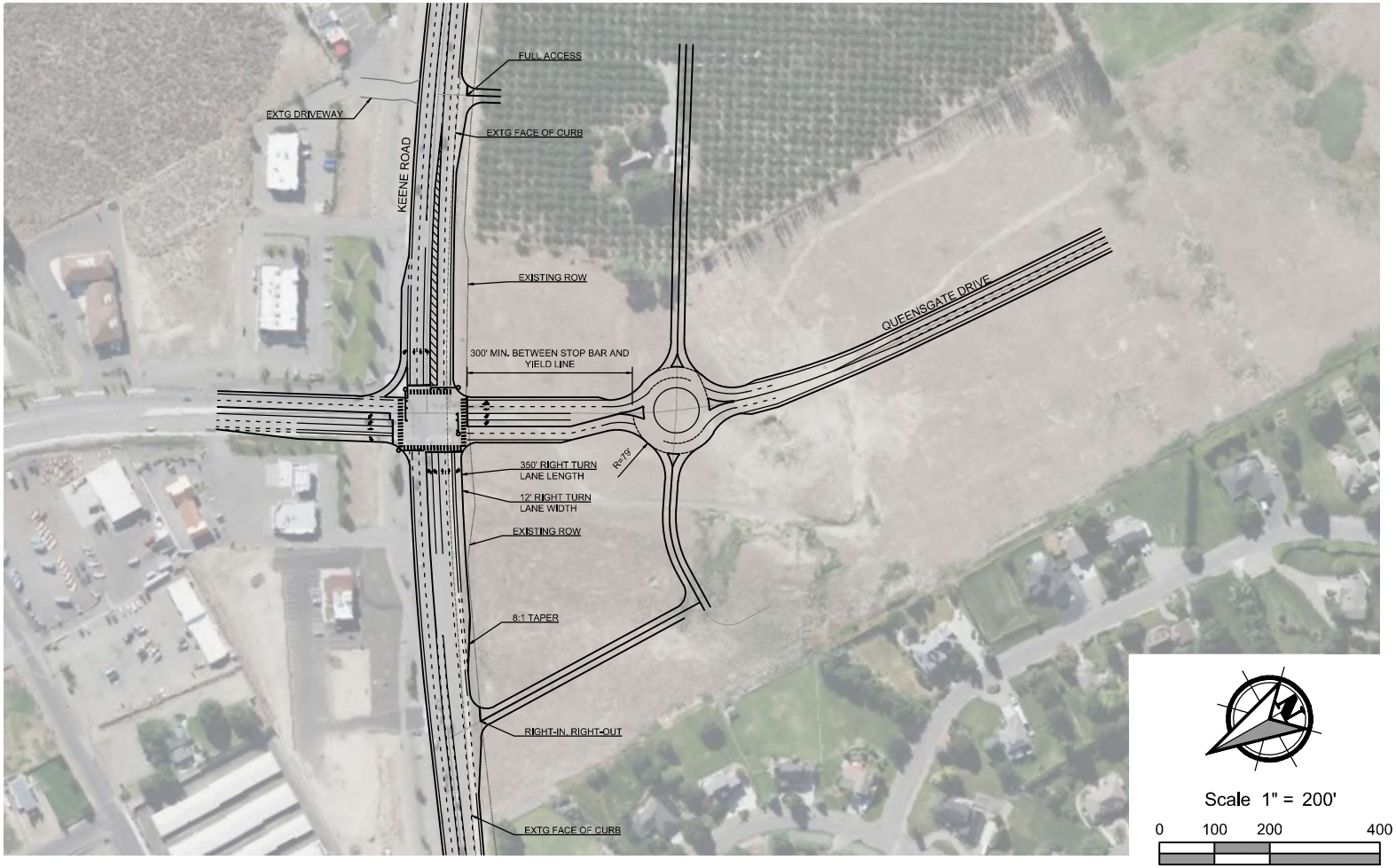


FIGURE 3

Long Term Improvements

Queensgate South

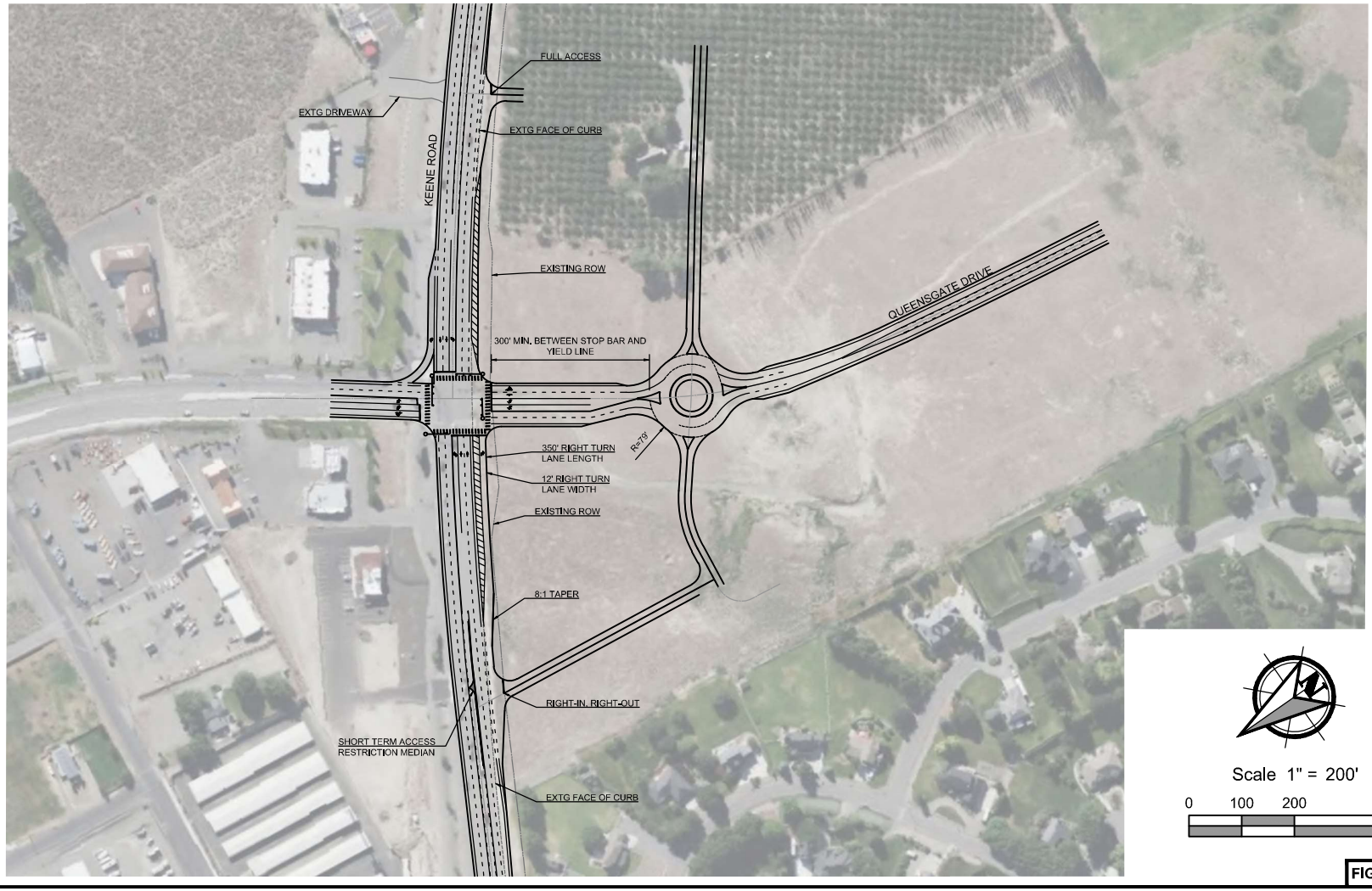


FIGURE 4

Short Term Improvements

Queensgate South

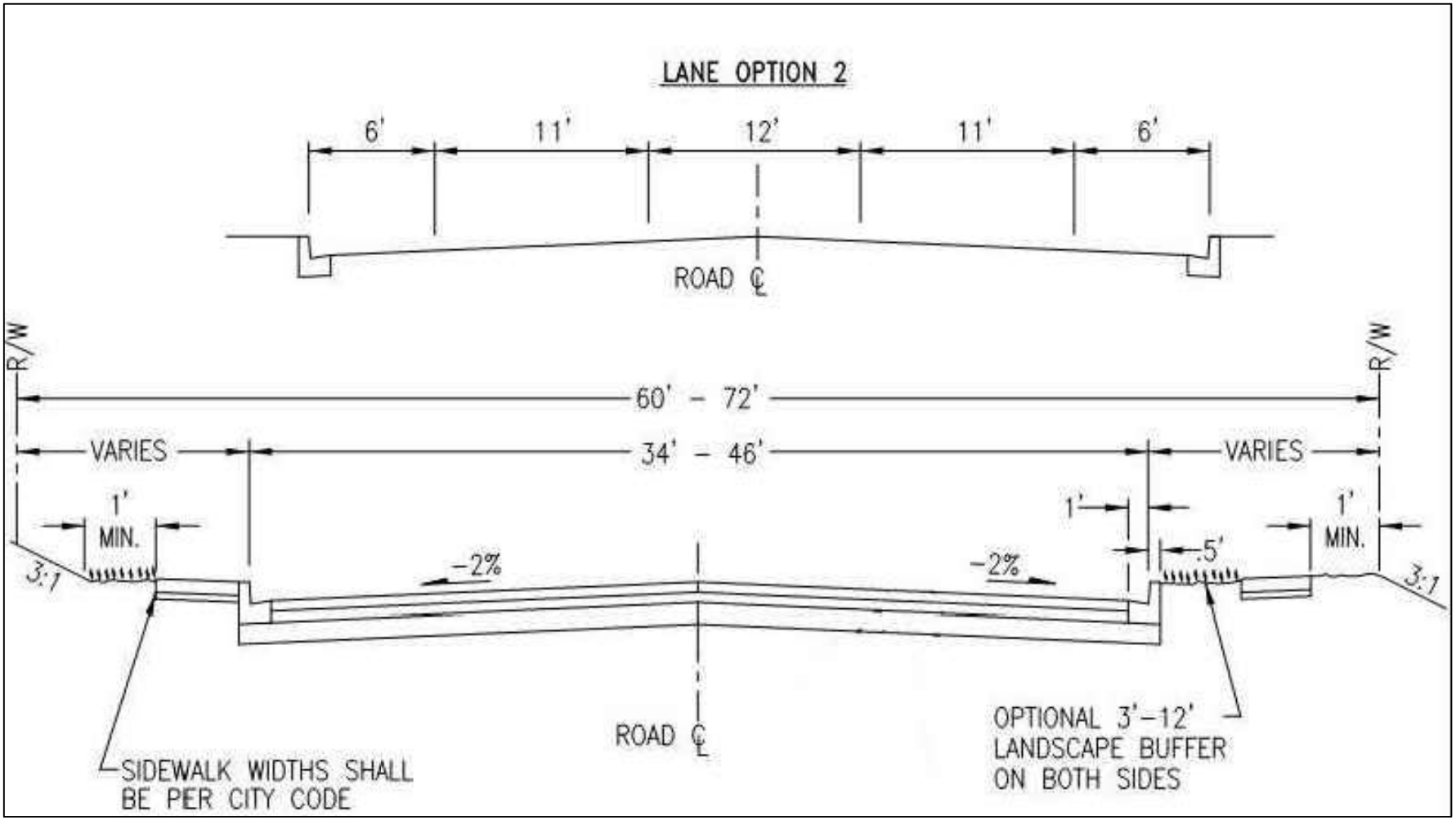


FIGURE 5

City Standard for Major Collector

Queensgate South

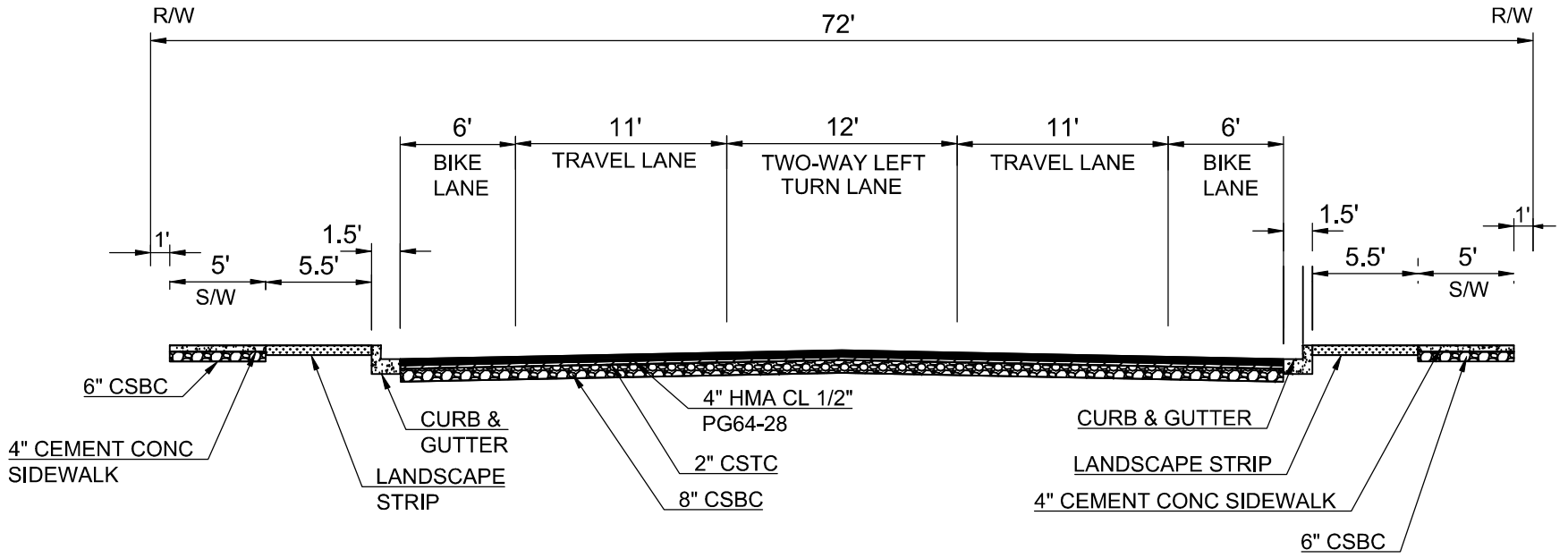


FIGURE 6

Proposed Queensgate Drive Cross-section

Queensgate South

Graph Look Up

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
310

LAND USE GROUP:
(300-399) Lodging

LAND USE :
310 - Hotel

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

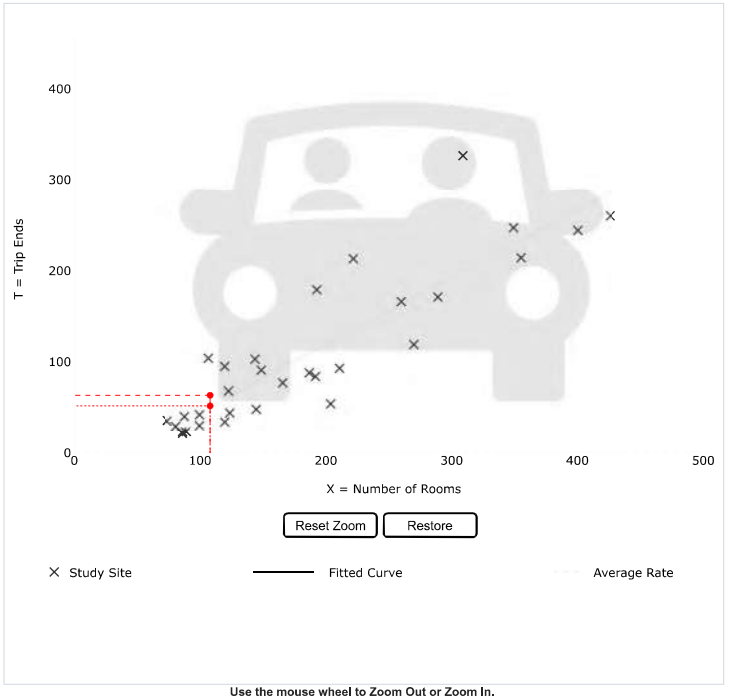
INDEPENDENT VARIABLE (IV):
Rooms

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
108 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Hotel (310) Click for Description and Data Plots

Independent Variable:
Rooms

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
31

Avg. Num. of Rooms:
186

Average Rate:
0.59

Range of Rates:
0.26 - 1.06

Standard Deviation:
0.22

Fitted Curve Equation:
T = 0.74(X) - 27.89

R^2:
0.78

Directional Distribution:
51% entering, 49% exiting

Calculated Trip Ends:
Average Rate: 64 (Total), 32 (Entry), 32 (Exit)
Fitted Curve: 52 (Total), 27 (Entry), 25 (Exit)

Graph Look Up

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
821

LAND USE GROUP:
(800-899) Retail

LAND USE :
821 - Shopping Plaza (40-150k)

LAND USE SUBCATEGORY:
Supermarket - No

SETTING/LOCATION:
General Urban/Suburban

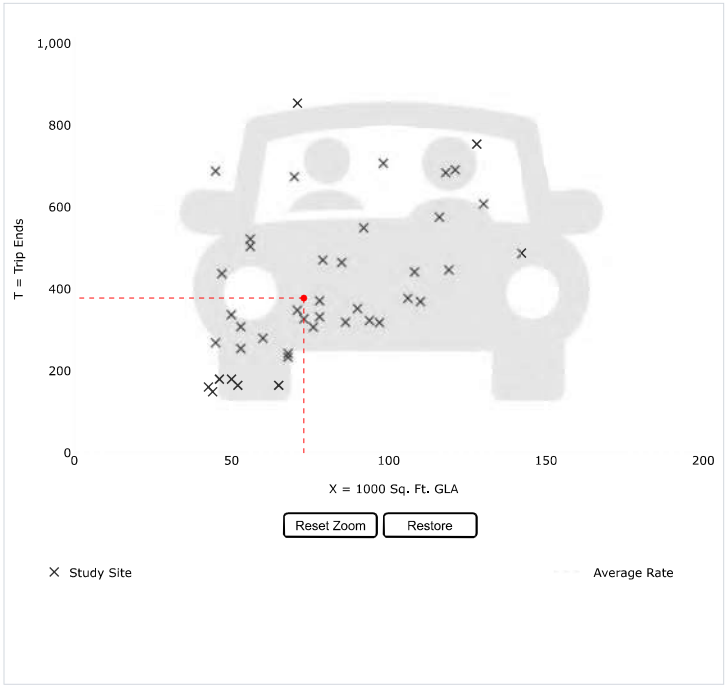
INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GLA

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
73 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Shopping Plaza (40-150k) - Supermarket - No (821)
Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GLA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
42

Avg. 1000 Sq. Ft. GLA:
79

Average Rate:
5.19

Range of Rates:
2.55 - 15.31

Standard Deviation:
2.28

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
49% entering, 51% exiting

Calculated Trip Ends:
Average Rate: 379 (Total), 186 (Entry), 193 (Exit)

Graph Look Up

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
220

LAND USE GROUP:
(200-299) Residential

LAND USE :
220 - Multifamily Housing (Low-Rise)

LAND USE SUBCATEGORY:
Not Close to Rail Transit

SETTING/LOCATION:
General Urban/Suburban

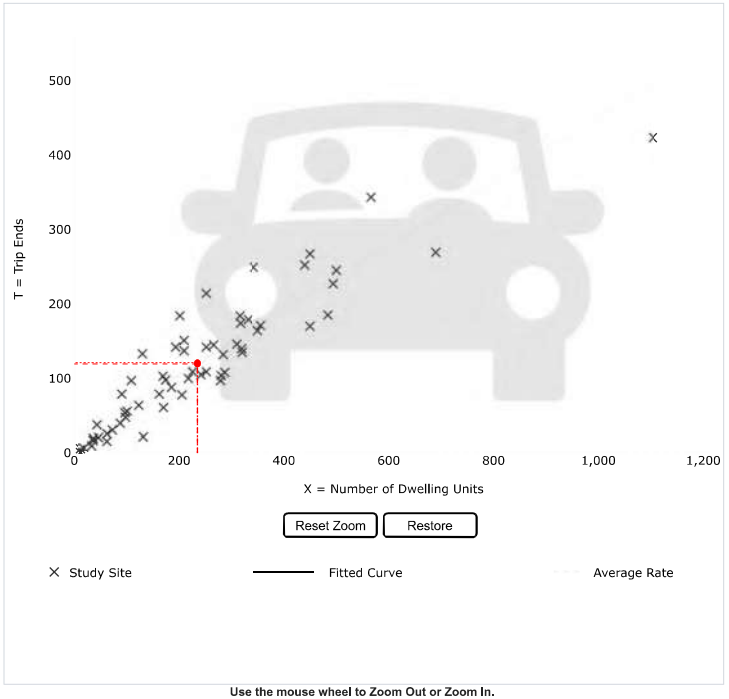
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
235 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Multifamily Housing (Low-Rise) - Not Close to Rail Transit (220) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
59

Avg. Num. of Dwelling Units:
241

Average Rate:
0.51

Range of Rates:
0.08 - 1.04

Standard Deviation:
0.15

Fitted Curve Equation:
T = 0.43(X) + 20.55

R^2:
0.84

Directional Distribution:
63% entering, 37% exiting

Calculated Trip Ends:
Average Rate: 120 (Total), 76 (Entry), 44 (Exit)
Fitted Curve: 122 (Total), 77 (Entry), 45 (Exit)

Graph Look Up

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

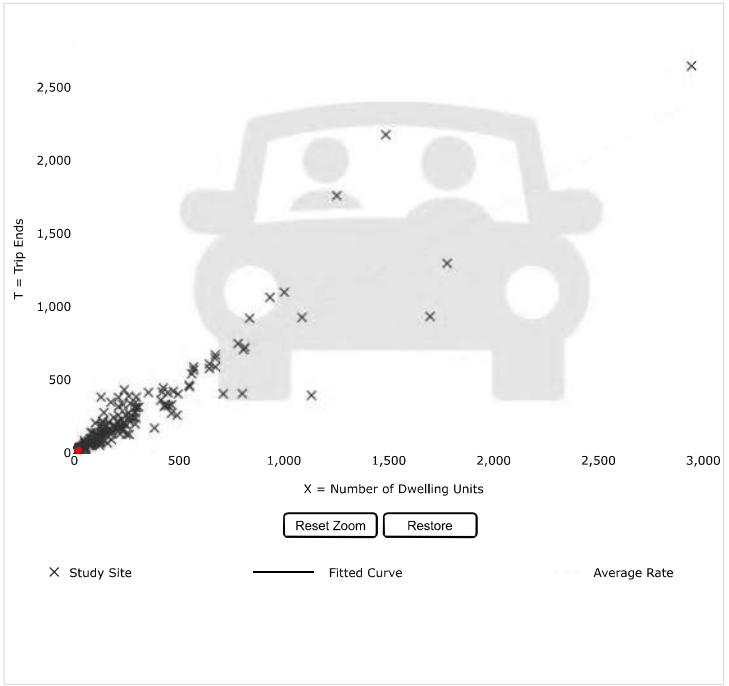
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
20 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
208

Avg. Num. of Dwelling Units:
248

Average Rate:
0.94

Range of Rates:
0.35 - 2.98

Standard Deviation:
0.31

Fitted Curve Equation:
Ln(T) = 0.94 Ln(X) + 0.27

R^2:
0.92

Directional Distribution:
63% entering, 37% exiting

Calculated Trip Ends:
Average Rate: 19 (Total), 12 (Entry), 7 (Exit)
Fitted Curve: 22 (Total), 14 (Entry), 8 (Exit)

Graph Look Up

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
850

LAND USE GROUP:
(800-899) Retail

LAND USE :
850 - Supermarket

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

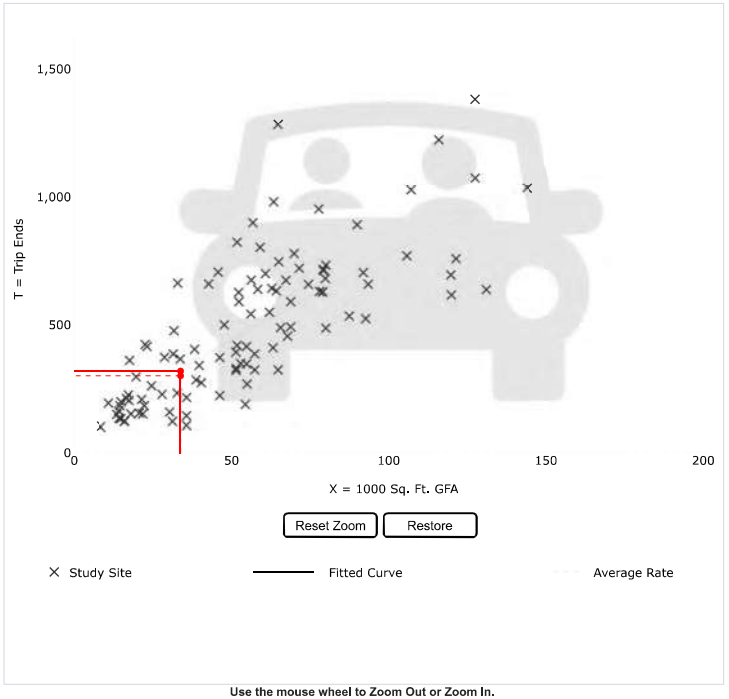
INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GFA

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
33.8 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Supermarket (850) Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
104

Avg. 1000 Sq. Ft. GFA:
55

Average Rate:
8.95

Range of Rates:
3.11 - 20.30

Standard Deviation:
3.32

Fitted Curve Equation:
Ln(T) = 0.81 Ln(X) + 2.92

R^2:
0.67

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 303 (Total), 151 (Entry), 152 (Exit)
Fitted Curve: 321 (Total), 160 (Entry), 161 (Exit)

Graph Look Up

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
880

LAND USE GROUP:
(800-899) Retail

LAND USE :
880 - Pharmacy/Drugstore without Drive-Throu

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

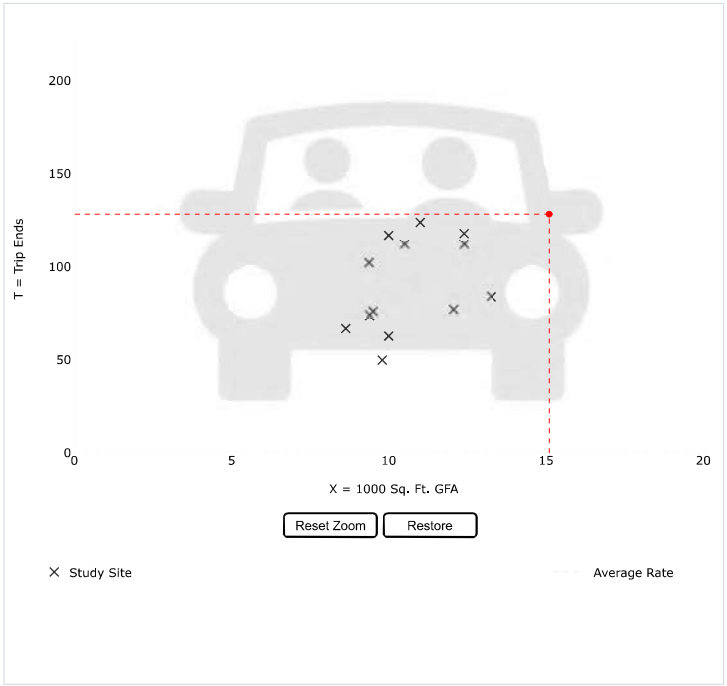
INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GFA

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
15.1 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Pharmacy/Drugstore without Drive-Through Window (880) Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
13

Avg. 1000 Sq. Ft. GFA:
11

Average Rate:
8.51

Range of Rates:
5.11 - 11.70

Standard Deviation:
2.16

Fitted Curve Equation:
Not Given

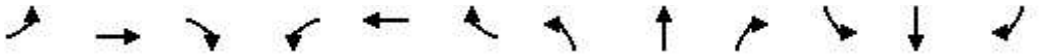
R^2:
****

Directional Distribution:
49% entering, 51% exiting

Calculated Trip Ends:
Average Rate: 129 (Total), 63 (Entry), 66 (Exit)

HCM 6th Signalized Intersection Summary
1: Queensgate Drive & Keene Road

05/10/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	482	827	230	78	819	636	223	271	61	866	380	292
Future Volume (veh/h)	482	827	230	78	819	636	223	271	61	866	380	292
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	507	871	242	82	862	669	235	285	64	912	400	307
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	552	1270	812	105	912	849	541	372	82	971	473	400
Arrive On Green	0.16	0.36	0.36	0.06	0.26	0.26	0.16	0.13	0.13	0.28	0.25	0.25
Sat Flow, veh/h	3456	3554	1577	1781	3554	1574	3456	2893	639	3456	1870	1581
Grp Volume(v), veh/h	507	871	242	82	862	669	235	173	176	912	400	307
Grp Sat Flow(s),veh/h/ln	1728	1777	1577	1781	1777	1574	1728	1777	1755	1728	1870	1581
Q Serve(g_s), s	14.9	21.6	1.9	4.7	24.6	26.5	6.4	9.7	10.0	26.6	21.0	12.4
Cycle Q Clear(g_c), s	14.9	21.6	1.9	4.7	24.6	26.5	6.4	9.7	10.0	26.6	21.0	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	552	1270	812	105	912	849	541	228	226	971	473	400
V/C Ratio(X)	0.92	0.69	0.30	0.78	0.95	0.79	0.43	0.76	0.78	0.94	0.85	0.77
Avail Cap(c_a), veh/h	552	1270	812	140	912	849	541	335	331	987	701	592
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	28.2	6.0	48.0	37.7	19.2	39.4	43.5	43.6	36.3	36.7	16.0
Incr Delay (d2), s/veh	20.6	1.6	0.2	18.4	18.1	5.0	0.6	5.7	6.9	16.0	6.2	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	8.9	1.6	2.5	12.4	13.0	2.7	4.6	4.7	13.0	10.1	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.3	29.8	6.2	66.4	55.8	24.2	40.0	49.2	50.5	52.2	42.9	19.5
LnGrp LOS	E	C	A	E	E	C	D	D	D	D	D	B
Approach Vol, veh/h		1620			1613			584			1619	
Approach Delay, s/veh		36.8			43.2			45.9			43.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	31.0	20.7	30.6	10.6	41.4	33.5	17.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	26.5	10.3	38.7	8.1	34.9	29.5	19.5
Max Q Clear Time (g_c+I1), s	16.9	28.5	8.4	23.0	6.7	23.6	28.6	12.0
Green Ext Time (p_c), s	0.0	0.0	0.2	3.1	0.0	4.8	0.4	1.1

Intersection Summary	
HCM 6th Ctrl Delay	41.7
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	5.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	237	168	404	724
Demand Flow Rate, veh/h	241	171	412	738
Vehicles Circulating, veh/h	650	537	247	111
Vehicles Exiting, veh/h	199	122	644	597
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.8	6.0	5.0	5.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	LT	TR	LT	TR
Assumed Moves	LTR	LTR	LT	TR	LT	TR
RT Channelized						
Lane Util	1.000	1.000	0.471	0.529	0.470	0.530
Follow-Up Headway, s	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	241	171	194	218	347	391
Cap Entry Lane, veh/h	817	900	1075	1151	1219	1292
Entry HV Adj Factor	0.983	0.982	0.979	0.982	0.980	0.981
Flow Entry, veh/h	237	168	190	214	340	383
Cap Entry, veh/h	803	884	1053	1131	1194	1267
V/C Ratio	0.295	0.190	0.180	0.189	0.285	0.303
Control Delay, s/veh	7.8	6.0	5.1	4.9	5.6	5.6
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	1	1

Intersection: 1: Queensgate Drive & Keene Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	L	T
Maximum Queue (ft)	344	327	318	287	79	372	524	495	387	156	157	151
Average Queue (ft)	202	187	201	178	40	84	332	294	160	74	85	88
95th Queue (ft)	337	331	287	260	68	229	508	483	387	130	138	141
Link Distance (ft)	432	432	432	432			621	621				303
Upstream Blk Time (%)	0	0					1	1				
Queuing Penalty (veh)	1	1					7	7				
Storage Bay Dist (ft)					200	300			300	200	200	
Storage Blk Time (%)				4		0	20	11	1	0	0	
Queuing Penalty (veh)				10		0	16	73	3	0	0	

Intersection: 1: Queensgate Drive & Keene Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	L	T	R
Maximum Queue (ft)	168	597	583	381	214
Average Queue (ft)	97	403	408	201	28
95th Queue (ft)	157	785	778	318	134
Link Distance (ft)	303	2222	2222	2222	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					300
Storage Blk Time (%)				2	
Queuing Penalty (veh)				5	

Intersection: 2: Queensgate Drive & Commercial Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	TR	LT	TR
Maximum Queue (ft)	115	76	68	31	67	52
Average Queue (ft)	50	26	21	2	17	3
95th Queue (ft)	92	62	55	18	53	25
Link Distance (ft)	646	775		1698	303	303
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			100			
Storage Blk Time (%)			0	0		
Queuing Penalty (veh)			0	0		

Intersection: 3: Queensgate Drive & Shockley Road

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	70	66	7	40
Average Queue (ft)	27	25	0	10
95th Queue (ft)	58	55	5	35
Link Distance (ft)	2307		478	1698
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 4: West Access & Keene Road

Movement	EB	NB
Directions Served	TR	R
Maximum Queue (ft)	2	36
Average Queue (ft)	0	10
95th Queue (ft)	2	33
Link Distance (ft)	892	366
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: East Access & Keene Road

Movement	EB	WB	WB	WB	NB
Directions Served	TR	L	T	T	LR
Maximum Queue (ft)	18	64	32	39	156
Average Queue (ft)	1	25	3	4	57
95th Queue (ft)	8	57	46	64	140
Link Distance (ft)	621		356	356	321
Upstream Blk Time (%)				0	1
Queuing Penalty (veh)				0	0
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Network Summary

Network wide Queuing Penalty: 124

Appendix B
Trip Generation Calculations

Graph Look Up

https://itetripgen.org/Query

ITETripGen Web-based App

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Graph Look Up

ITETripGen Web-based App

- Graph Look Up
- How to Use *ITETripGen*
- TGM Desk Reference
- TGM Appendices
- Support Documents
- Add Users
- Comments

Add-ons to do more

Try OTISS Pro

Query | Filter

DATA SOURCE: Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE: 210

LAND USE GROUP: (200-299) Residential

LAND USE : 210 - Single-Family Detached Housing

LAND USE SUBCATEGORY: All Sites

SETTING/LOCATION: General Urban/Suburban

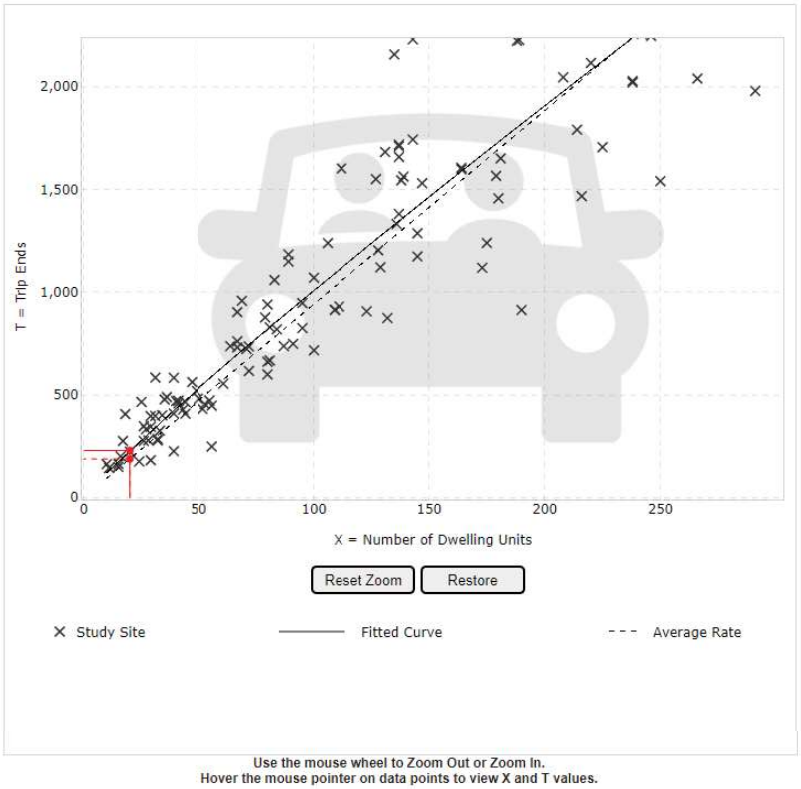
INDEPENDENT VARIABLE (IV): Dwelling Units

TIME PERIOD: Weekday

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 20 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
174

Avg. Num. of Dwelling Units:
246

Average Rate:
9.43

Range of Rates:
4.45 - 22.61

Standard Deviation:
2.13

Fitted Curve Equation:
Ln(T) = 0.92 Ln(X) + 2.68

R^2:
0.95

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 189 (Total), 94 (Entry), 95 (Exit)
Fitted Curve: 230 (Total), 115 (Entry), 115 (Exit)

Graph Look Up

https://itetripgen.org/Query

ITETripGen Web-based App

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Graph Look Up

ITETripGen Web-based App

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- How to Use *ITETripGen*
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- TGM Appendices
- Support Documents
- Add Users
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DATA SOURCE: Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE: 210

LAND USE GROUP: (200-299) Residential

LAND USE : 210 - Single-Family Detached Housing

LAND USE SUBCATEGORY: All Sites

SETTING/LOCATION: General Urban/Suburban

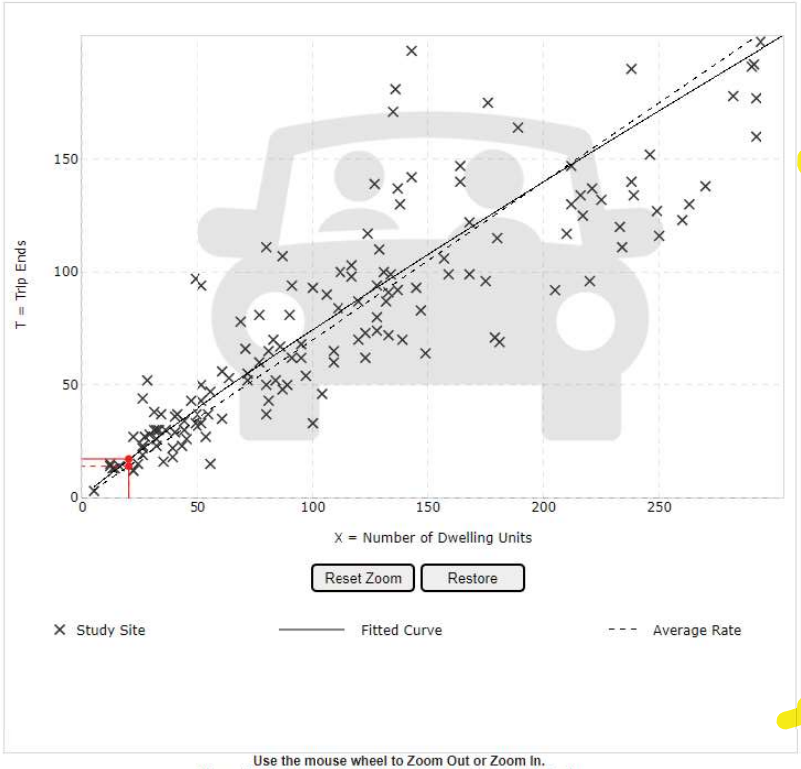
INDEPENDENT VARIABLE (IV): Dwelling Units

TIME PERIOD: Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 20 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday,
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
192

Avg. Num. of Dwelling Units:
226

Average Rate:
0.70

Range of Rates:
0.27 - 2.27

Standard Deviation:
0.24

Fitted Curve Equation:
Ln(T) = 0.91 Ln(X) + 0.12

R^2:
0.90

Directional Distribution:
26% entering, 74% exiting

Calculated Trip Ends:
Average Rate: 14 (Total), 4 (Entry), 10 (Exit)
Fitted Curve: 17 (Total), 4 (Entry), 13 (Exit)

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Query | Filter

DATA SOURCE: Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE: 210

LAND USE GROUP: (200-299) Residential

LAND USE : 210 - Single-Family Detached Housing

LAND USE SUBCATEGORY: All Sites

SETTING/LOCATION: General Urban/Suburban

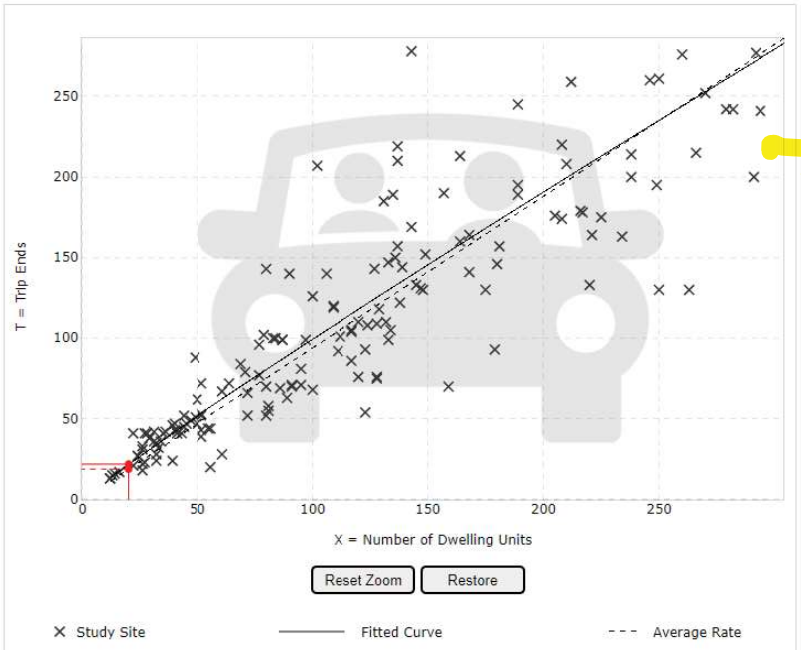
INDEPENDENT VARIABLE (IV): Dwelling Units

TIME PERIOD: Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 20 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
208

Avg. Num. of Dwelling Units:
248

Average Rate:
0.94

Range of Rates:
0.35 - 2.98

Standard Deviation:
0.31

Fitted Curve Equation:
Ln(T) = 0.94 Ln(X) + 0.27

R^2:
0.92

Directional Distribution:
63% entering, 37% exiting

Calculated Trip Ends:
Average Rate: 19 (Total), 12 (Entry), 7 (Exit)
Fitted Curve: 22 (Total), 14 (Entry), 8 (Exit)

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Query | Filter

DATA SOURCE: Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE: 220

LAND USE GROUP: (200-299) Residential

LAND USE : 220 - Multifamily Housing (Low-Rise)

LAND USE SUBCATEGORY: Not Close to Rail Transit

SETTING/LOCATION: General Urban/Suburban

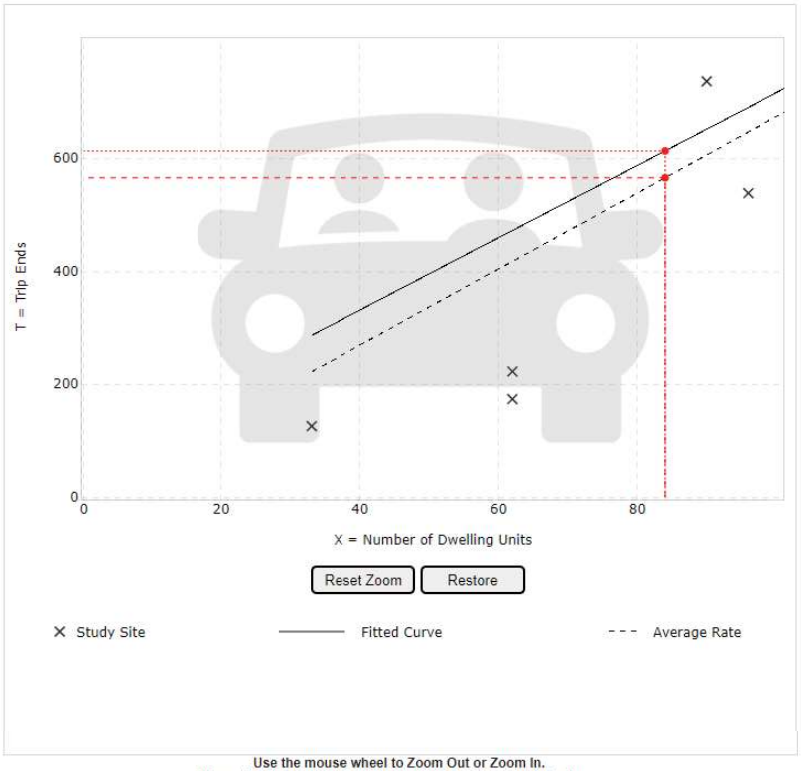
INDEPENDENT VARIABLE (IV): Dwelling Units

TIME PERIOD: Weekday

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 84 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Multifamily Housing (Low-Rise) - Not Close to Rail Transit (220) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
22

Avg. Num. of Dwelling Units:
229

Average Rate:
6.74

Range of Rates:
2.46 - 12.50

Standard Deviation:
1.79

Fitted Curve Equation:
T = 6.41(X) + 75.31

R^2:
0.86

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 566 (Total), 283 (Entry), 283 (Exit)
Fitted Curve: 614 (Total), 307 (Entry), 307 (Exit)

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DATA SOURCE: Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE: 220

LAND USE GROUP: (200-299) Residential

LAND USE : 220 - Multifamily Housing (Low-Rise)

LAND USE SUBCATEGORY: Not Close to Rail Transit

SETTING/LOCATION: General Urban/Suburban

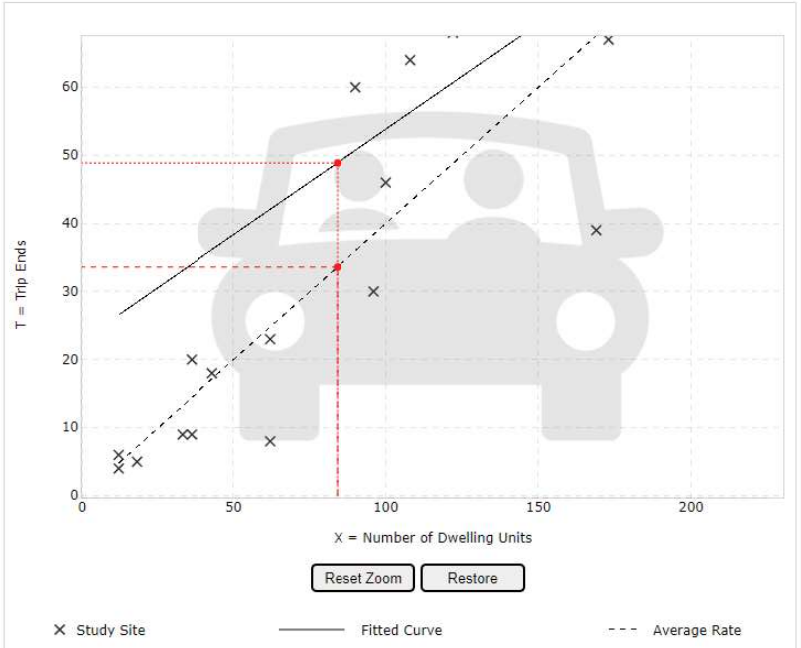
INDEPENDENT VARIABLE (IV): Dwelling Units

TIME PERIOD: Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 84 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Multifamily Housing (Low-Rise) - Not Close to Rail Transit (220) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
49

Avg. Num. of Dwelling Units:
249

Average Rate:
0.40

Range of Rates:
0.13 - 0.73

Standard Deviation:
0.12

Fitted Curve Equation:
T = 0.31(X) + 22.85

R^2:
0.79

Directional Distribution:
24% entering, 76% exiting

Calculated Trip Ends:
Average Rate: 34 (Total), 8 (Entry), 26 (Exit)
Fitted Curve: 49 (Total), 12 (Entry), 37 (Exit)

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DATA SOURCE: Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE: 220

LAND USE GROUP: (200-299) Residential

LAND USE : 220 - Multifamily Housing (Low-Rise)

LAND USE SUBCATEGORY: Not Close to Rail Transit

SETTING/LOCATION: General Urban/Suburban

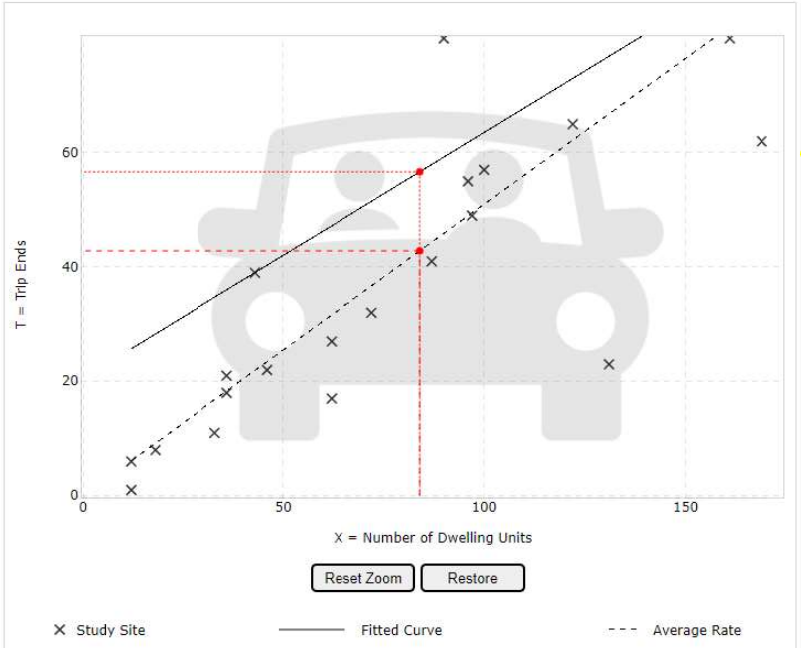
INDEPENDENT VARIABLE (IV): Dwelling Units

TIME PERIOD: Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 84 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Multifamily Housing (Low-Rise) - Not Close to Rail Transit (220) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
59

Avg. Num. of Dwelling Units:
241

Average Rate:
0.51

Range of Rates:
0.08 - 1.04

Standard Deviation:
0.15

Fitted Curve Equation:
T = 0.43(X) + 20.55

R^2:
0.84

Directional Distribution:
63% entering, 37% exiting

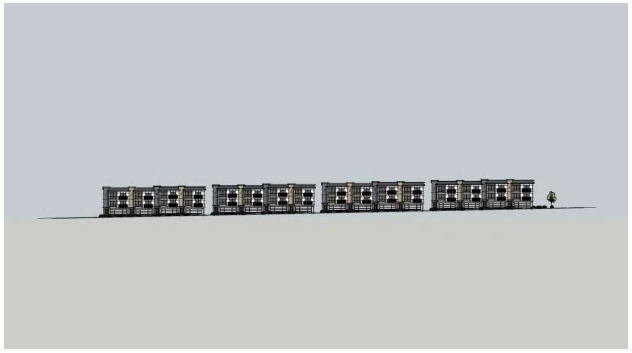
Calculated Trip Ends:
Average Rate: 43 (Total), 27 (Entry), 16 (Exit)
Fitted Curve: 57 (Total), 36 (Entry), 21 (Exit)

ARCHITECTURAL RENDERINGS - IHB ARCHITECTS

Queensgate Drive

TRADITIONAL ARCHITECTURAL STYLE
WITH FLAT LAYOUT

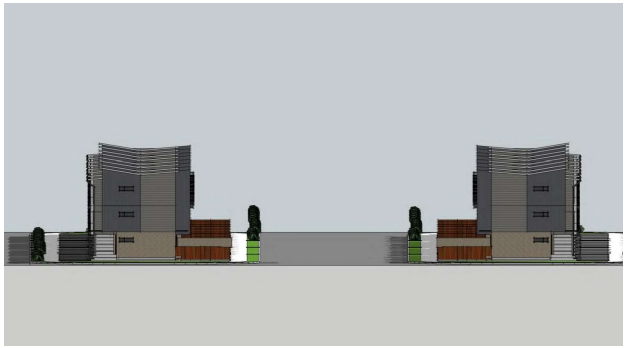
AERIAL VIEW FROM SOUTH LOOKING NORTH



WEST STREET ELEVATION

ALLEY VIEW

STREET VIEW LOOKING WEST



STREET ELEVATION LOOKING SOUTH

BLOCK CORNER VIEW

STREET VIEW WITH FENCES LOOKING SOUTH

STREET VIEW WITHOUT FENCES LOOKING SOUTH

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The Terraces– A Townhome Development
Richland, WA

revisions:

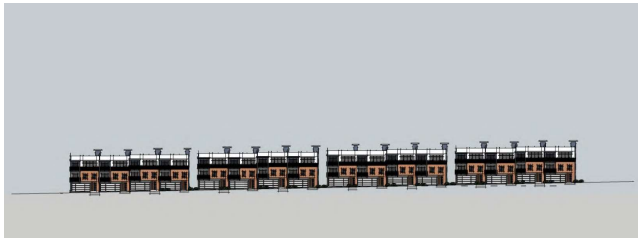
job No: -
date:
drawn by:
reviewed by: IHB

A02

Queensgate Drive

MODERN ARCHITECTURAL STYLE
WITH FLAT LAYOUT

AERIAL VIEW FROM SOUTH LOOKING NORTH



WEST STREET ELEVATION

ALLEY VIEW

STREET VIEW LOOKING WEST

STREET ELEVATION LOOKING SOUTH

BLOCK CORNER VIEW

STREET VIEW WITH FENCES LOOKING NORTH

STREET VIEW WITHOUT FENCES LOOKING NORTH

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Kent, WA 98032

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The Terraces– A Townhome Development
Richland, WA

revisions:

job No:
date:
drawn by:
reviewed by: IHB

A04

GEOTECHNICAL ENGINEERING EVALUATION

SIGNATURE ESTATES AT QUEENSGATE

RICHLAND, WASHINGTON

October 20, 2016

Prepared For:

Friendship Enterprises, LLC

68 Canyon Street

Richland, Washington 99352

Prepared By:

Intermountain Materials Testing & Geotechnical

Geotechnical Engineering • Construction Materials Testing & Inspection

2301 N. Commercial Ave., Pasco, Washington 99301

(509) 545-9217 www.imt-testing.com

INTERMOUNTAIN MATERIALS TESTING & GEOTECHNICAL
PO Box 2801
Pasco, WA 99302-2801
(509) 545-9217 • (509) 545-9243 FAX

October 20, 2016

Mr. Jeff Jensen
Jensen and Associates Consulting Engineers
3505 S. Volland Street
Kennewick, Washington 99337

Re: Geotechnical Engineering Evaluation
Signature Estates at Queensgate
Richland, Washington

Dear Mr. Jensen:

Intermountain Materials Testing has completed our authorized geotechnical engineering evaluation for the proposed Signature Estates at Queensgate development along the proposed Queensgate Drive extension located between Keene Road and Shockley Road in Richland, Washington. The attached report presents the results of our field evaluation, laboratory testing, and our engineering opinions and recommendations to assist with the design and construction of the proposed project.

We appreciate the opportunity to be of service to you on this project. Please contact us if you have any questions or need additional information.

Respectfully Submitted,
INTERMOUNTAIN MATERIALS TESTING

Brian Binsfield

Brian W. Binsfield, P.E.
Geotechnical Services Manager

10-20-16

BWB/gsl
Addressee USPS – 2
Addressee Email – JensenEngineering@Outlook.com

TABLE OF CONTENTS
Project No. S16146
Signature Estates at Queensgate
Richland, Washington

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page

INTRODUCTION

This report presents the results of our geotechnical engineering evaluation for the proposed Signature Estates at Queensgate project located near the intersection of Queensgate Drive and Keene Road in Richland, Washington. The location of the project is shown on the attached Vicinity Map, Figure 1. The purpose of the evaluation was to explore and evaluate subsurface conditions at the site in order to provide geotechnical engineering opinions and recommendations with respect to project design and construction. This report presents the results of our field evaluation, laboratory testing, and our engineering opinions and recommendations to assist with the design and construction of the proposed project.

SCOPE OF WORK

To complete the geotechnical evaluation, we accomplished the following scope of work:

1. USDA Natural Resources Conservation Service and U.S. Geologic Survey mapping information for the project sites and surrounding areas were reviewed.

2. Subsurface conditions at the site were explored by excavating 20 test pits within the proposed construction area to depths ranging between approximately 5 and 14 feet below the existing ground surface. Soils encountered in the test pits were visually classified and the subsurface profiles were logged. Representative soil samples were collected for classification and laboratory testing.

3. Infiltration testing was conducted in two test pits to assist with the design of on-site stormwater disposal facilities.

4. Laboratory testing was performed on selected soil samples obtained from the test pits to assess the engineering and index properties.

5. Results of the field evaluation and laboratory testing were reviewed with respect to the proposed construction.

6. Engineering analyses were performed and recommendations were prepared to assist project planning, design, and construction.

7. This report was prepared, including logs of the test pits, results of our laboratory testing, our analyses, and our recommendations for design and construction.

PROJECT DESCRIPTION

It is IMT's understanding that preliminary plans include extending Queensgate Drive from Keene Road to Shockley Road, and constructing a new local road parallel to and south of Queensgate Drive, connecting to Lariat Lane near the southwest property line. Plans include developing the approximate 36-acre property as a mixed-use development to include commercial structures with associated parking, medium and low density residential structures with associated parking and driveways, a neighborhood park, and a development-wide stormwater retention pond.

Given the preliminary nature of the current site layout, this report has been developed to address site grading associated with the proposed infrastructure improvements. Depending on the size, location, and type of development, individual commercial and residential developments planned within the site may require site-specific geotechnical engineering prior to design and construction. Construction materials will likely include concrete foundation components and slabs, but at this time, specific design criteria are not available. For our purposes, we have assumed that residential wall loads will be on the order of 2 to 3 kips per lineal foot and that column loads, if any, will be less than 30 kips.

It is our further understanding that site grading will generally include cuts and fills on the order of 10 feet below the existing ground surface, with localized cuts approaching as much as 22 feet and fills up to 18 feet. Retaining walls with heights up to 10 feet may be necessary to support the preliminary grading. Proposed site utility profiles indicated pipe depths of up to 20 feet below existing site grade.

FIELD EXPLORATIONS

We explored subsurface conditions at the site by excavating 20 test pits (TP-1 through TP-20) on July 13, 2016. The test pits were excavated at or near the locations shown on the attached Exploration Location Map, Figure 2. The test pits were excavated at locations we selected, and were located in the field by topographic layout provided by Jensen and Associates Consulting Engineers (JACE) and by GPS measurement from existing site features.

The test pits were excavated between approximately 5 and 14 feet below existing site grade with a track-mounted excavator using a 3-foot-wide bucket provided by BMB Development under subcontract to Friendship Enterprises, LLC. An engineering representative from our firm continuously observed the excavation of the test pits, logged the subsurface conditions, and obtained representative soil samples. The soils encountered in the test pits were visually described and classified in general accordance with ASTM D-2487 and D-2488 and were classified according to the Unified Soil Classification System (USCS). Logs of the test pits are presented on the Log of Test Pit sheets in Appendix A attached to this report. A copy of the USCS chart is included with this report. Depths referred to in this report are relative to the existing ground surface elevation at the time of our field investigation. Soil samples obtained from the test pits were stored in watertight containers and transported to our laboratory for further visual examination and testing.

The test pits were backfilled at the completion of the field evaluation. The backfill was compacted to the degree possible with the bucket on the excavator, but will settle with time. We recommend that the backfill be removed and replaced with structural fill as recommended herein.

INFILTRATION TESTING

Infiltration testing was conducted in two test pits preselected by JACE, TP-5 and TP-20. The test pits were excavated to depths of approximately 5 and 6 feet below the ground surface, respectively. The tests were conducted using single-ring infiltrometer test methods in general accordance with the guidelines established by the Washington State Department of Ecology and presented in Appendix 6B of the *Stormwater Management Manual for Eastern Washington*, dated September 2004. The infiltration test involved driving a 2-foot long section of 12-inch diameter pipe 6 inches into the ground. Due to the relatively slow infiltration rate of the site soil, we were unable to conduct constant head permeability testing in the infiltrometer pipe. We therefore conducted a falling head infiltration tests for a 2-hour test period and used the last half-hour for our infiltration calculations.

LABORATORY TESTING

Laboratory tests were performed on representative soil samples obtained from the borings. The tests performed consisted of moist content determinations (ASTM D 2216) and Particle Size Analysis tests (ASTM D 6913). These tests were used to assist in soil classification and in the evaluation and formulation of engineering recommendations. The results of the laboratory tests performed are included in Appendix B attached to this report.

SITE CONDITIONS

Location and Surface Conditions

The project site is located on the south side of Keene Road and the north side of Shockley Road along the future Queensgate Drive extension in Richland. Specifically, the site is located in the SW¼ of the SW¼ of Section 22, T9N, R28E, W.M. The parcel is mostly undeveloped except for one residence extending off of Keene road which has been razed. The site generally slopes down from Shockley Road to Keene Road with an elevation difference of approximately 80 feet. On the northwest side of the parcel near Keene Road, the ground is at approximately elevation 520 feet (MSL) and ascends (slopes upward) to the southwest property line at approximately elevation 600 feet (MSL). The median elevation is approximately 560 feet (MSL). The southern property boundary terminates near the intersection of Shockley Road and Queensgate Drive. The ground surface is covered in small grasses and weeds with intermittent bushes and mature trees scattered throughout the parcel. A distinctive terrace of approximately 20 feet in elevation difference is located approximately 350 to 500 feet in from Keene Road and runs parallel to Keene Road on the parcel.

Regional Geology

The development lies on the Columbia Plateau, a broad plain situated between the Cascade Range to the west and the Rocky Mountains to the east. The Columbia Plateau was formed by a thick sequence of Miocene-Age tholeiitic basalt flows, called the Columbia River Basalt Group that erupted from fissures in north-central and northeastern Oregon, eastern Washington, and western Idaho. The Columbia Plateau is often called the Columbia Basin because it forms a broad lowland surrounded by mountains. The Columbia River Basalt Group is underlain by continental sedimentary rocks from earlier in the Tertiary Period. The Pliocene-Age Ringold formation sediments overlie the Columbia basalts. The Ringold Formation sediments consist of a heterogeneous mix of variably cemented and compacted gravel, sand, silt, and clay deposited by the ancestral Columbia, Snake, and Yakima Rivers. Surficial deposits consist of Plio-Pleistocene loess, silt, and fine-grained sand.

The Geologic Map of the Richland 1:100,000 Quadrangle (DGER OF 94-8) maps the site as silt and sand outburst flood deposits (Qfs_3) near the surface and gravel outburst flood deposits (Qfg_1) at depth. The outburst flood deposits are described as lacustrine silt and fine sand, fluvial coarse to fine sand, and fluvial gravel and cobbles. These soils were deposited by outburst floods from glacial Lake Missoula and are found at maximum +1,200 feet elevations, but generally not extensively above +900 feet MSL.

Subsurface Conditions

We encountered generally similar subsurface conditions at each of the test pit locations ranging from silty sand (SM) to sandy silt (ML). Beneath the organic-laden topsoil in test pits TP-1, TP-2, and TP-13 through TP-16, we encountered silty sand (SM). We characterized the silty sand as loose to medium dense and dry. The silty sand extended to the maximum depths explored of approximately 14 feet below the existing ground surface.

Beneath the organic-laden topsoil in the remaining test pits (TP-3 through TP-12, and TP-17 through TP-20), we encountered sandy silt and silt with sand (ML). The silt soils extended to the maximum depths explored of 12 feet below grade. We characterized the sandy silt and silt with sand as loose to medium dense and dry.

Detailed descriptions of the soil and geologic conditions encountered in the test pits are presented on the Test Pit Log sheets in Appendix A of this report. The Unified Soil Classification System is also included in Appendix A for reference.

Groundwater

Groundwater was not encountered in the test pits excavated at the site to the depths explored during our subsurface exploration on July 13, 2016. Numerous factors contribute to groundwater fluctuation and evaluations of such factors are beyond the scope of this report. We estimate groundwater is beyond 40 feet in this area based on the Washington Department of Ecology Groundwater Well Log Database.

Liquefaction

Liquefaction may occur in loose, saturated cohesionless soils when they are subjected to earthquake ground motions. Liquefaction potential at the site was evaluated using the DCP (N-value) based method outlined in Seed and Harden (1990) and using the subsurface information from the test pits. The soils are generally silty sand or sandy silt and are medium dense, and in our opinion, the groundwater table is well below the site to influence the soils during a seismic event. Additionally, the mapped maximum earthquake Ss is less than 0.5g, therefore no liquefaction analysis is required for the site. In our opinion, the chance of liquefaction occurring at the site is extremely unlikely.

Slope Stability

We developed a slope profile based on site topography obtained from our site reconnaissance and soil information. We estimated the soil strength parameters based on our experience with similar soils. We based our slope profile on soil conditions and ground surface elevations as they currently exist with the residential improvements constructed.

We evaluated the slope stability using the computer program STB2006. Over 100 critical failure areas were analyzed and reviewed. In general, geotechnical professionals consider a slope with a 1.5 or greater safety factor stable for long term conditions. The results indicate the residential improvements have a safety factor greater than 1.5; therefore, the slope is considered stable for long term conditions. No indications of slope instability were observed during our field investigation. Based on our analysis, the placement of the structures on the property does not adversely impact the stability of the slope.

CONCLUSIONS AND RECOMMENDATIONS

General

Based on the results of our site explorations and understanding of the proposed construction, it is our opinion that the proposed project can generally be constructed as envisioned. Specific recommendations for project design and construction are included in the following paragraphs of this report. Our conclusions and recommendations are based on our project understanding and experience with similar soil conditions. If soil conditions are encountered during construction that differ from those described in this report, we should be notified so that we may update our opinions and recommendations, if necessary.

The primary geotechnical concern for the Signature Estates development is the construction of a terraced hillside development. Based on our site observations, the existing slopes throughout the site appear relatively stable. Whenever constructing on or near slopes, the owners must accept a risk that slope movement can occur. Proper construction, building setbacks, and proper drainage will reduce these risks. Placing fill or a load on a slope, cutting away the slope toe, or introducing water onto a slope are the primary causes of slope movement or landslides.

Pre-Wetting

Because of the dry soil conditions at the site, moisture conditioning will be necessary to facilitate construction of the embankments and for dust control. We recommend pre-watering the areas to be excavated. By pre-watering, the moisture content of the soil can be brought to near optimum moisture content, thereby reducing the need to add water during placement of the embankment. Significant savings in time and effort during compaction can often be realized through pre-watering the excavation areas.

We recommend that enough water be added to the borrow area to bring the soil to within ± 1 percent of optimum moisture content to a depth of 2 feet below the bottom of the proposed excavation. We expect optimum moisture content on these soils to be in the range of 12 to 14 percent of dry weight. Based on our experiences, the wetted front is expected to advance at a rate of about 12 inches per 24 hours of water application.

Site Preparation

Initial site preparation will include the clearing and grubbing of the existing vegetation from the site. We recommend that all vegetation and root zone be excavated and removed from the proposed construction areas. Based on our explorations, we estimate a stripping depth on the order of 3 inches will be required for topsoil removal. The striped soils may be reused as fill in landscape areas only and should not be used as structural fill. After clearing and grubbing operations are complete, we recommend that the exposed soil be scarified, moisture-conditioned, and compacted to at least 92 percent of the maximum dry density as determined by ASTM D 1557 (modified proctor) prior to construction or the placement of structural fill. Soft or pumping areas which cannot be adequately compacted should be over-excavated to firm soil or to a depth of 2 feet, whichever is less, and replaced with structural fill compacted to 95 percent of the modified proctor maximum dry density.

Structural Fill

Based on our explorations, it is our opinion that the native soils are generally suitable for reuse as structural fill provided the material is moisture conditioned for compaction and free of debris, organic material, and frozen soil. We recommend imported structural fill consist of granular material such as sands or gravels containing less than about 10 percent fines (material passing a No. 200 sieve). Imported structural fill should also be free of debris, organic material, frozen soil and rock particles greater than about 4 inches in diameter.

We recommend structural fill be moisture conditioned within about 2 percentage points of optimum moisture content and placed in horizontal lifts no thicker than 8 inches before compaction. We recommend structural fill be compacted to at least 95 percent of the modified proctor maximum dry density. Non-structural fill should be placed in loose lifts not exceeding 12 inches in thickness and compacted to at least 85 percent of maximum dry density. Structural fill should not be placed on or over topsoil, non-structural fill, wet or frozen soils, or other unsuitable materials.

From our previous experience with similar soils, effective compaction of fine grained materials can generally be accomplished using heavy rubber-tired equipment. We suggest that for mass grading, a loaded scraper, off-road mining truck or water wagon be used to effectively compact the soils. Proper routing of hauling equipment across the fill area can produce good compaction results with moderate effort when the moisture content of the material is near optimum.

Shrink/Swell Considerations

We characterized the native soils at the site to be in a loose to medium dense condition. Because of this condition, we expect the soil to shrink approximately 15 percent after compaction. In other word, 115 cubic yards of in-place bank material will be required to produce 100 cubic yards of compacted embankment. Swell from bank volume to bulk hauling volume is expected to be approximately 20 percent.

Temporary Excavations

Based on our subsurface explorations, it is our opinion the native soils can be excavated with standard soil excavation equipment. We characterized the soils encountered as Type C soils according to OSHA guidelines. We therefore recommend temporary excavations greater than four feet deep be sloped no steeper than 1.5H:1V (horizontal to vertical). Unsupported vertical cuts deeper than 4 feet are not recommended if worker access is necessary. Alternatively, deeper excavations may be shored or braced in accordance with OSHA specifications and local codes. The project contractor will be responsible for ensuring that excavations are properly constructed for worker protection.

Slope Construction

Fill placed on slopes steeper than 5H:1V should be keyed and benched into the existing native soils. We recommend that benches be cut into the native slope a minimum of 10 feet horizontally and a minimum of 2 feet vertically.

We recommend that the exposed soil of each bench be scarified, moisture-conditioned, and compacted to at least 92 percent of the maximum dry density prior to the placement of structural fill. If excavations for cut slopes expose loose, cohesionless, significantly fractured or otherwise unsuitable material, over-excavation and replacement of the unsuitable materials with compacted structural fill shall be accomplished as recommended above.

Fill slopes should be constructed with suitable structural fill soil that has been properly moisture conditioned and compacted to at least 95 percent of the modified proctor maximum dry density.

We recommend that permanent cut and fill slopes be inclined no steeper than 2H:1V. Fill slopes should be overbuilt and then trimmed back to uniformly compacted material. The final slope surface should be track-walked or grid rolled to improve the slope's resistance to erosion. We recommend that surface drainage be directed away from all slope faces.

Slope Protection

The site soils are prone to erosion and will require protection and maintenance. Since the site soils are susceptible to wind and water erosion, it is strongly recommended that erosion control measures such as proper grading, erosion control blankets or fabrics, sprayed tackifiers, the rapid establishment of new vegetation or some combination of these, be utilized on all slopes within this project.

Foundations

Based on the data obtained from our test pits, it is our opinion that foundations for the residential and lightly-loaded commercial buildings and associated improvements can be supported on compacted native soils or structural fill placed on the compacted native soils. For our purposes, we have assumed that residential and commercial wall loads will be on the order of 2 to 3 kips per lineal foot and that column loads, if any, will be less than 30 kips. If structures have greater loads, we request that we review those plans to see if any additional geotechnical analysis is required for the intended structure. We recommend that exterior foundations bear at least 24 inches below the exposed ground surface for frost protection or as required by local building codes.

We recommend that exposed foundation subgrades be compacted to 95 percent of the modified proctor maximum dry density. Foundation subgrades should be compacted to at least 12 inches horizontally beyond the footing perimeter. We recommend that foundation bearing surfaces be free of loose soil and debris. Foundations should not bear on topsoil, non-structural fill, or other unsuitable materials. We recommend that an experienced geotechnical engineer observe foundation subgrades to evaluate if suitable bearing soils are exposed and prepared as recommended.

We recommend that continuous footings and isolated column footings have minimum widths of 16 and 24 inches, respectively. It is our opinion that foundation subgrades prepared as recommended are suitable for support of spread footings designed to exert a net allowable bearing pressure of 1,500 pounds per square foot (psf) or less. This bearing pressure may be increased by one-third for short-term wind and seismic conditions.

If the previous recommendations are implemented, it is our opinion that total settlement will be approximately 1 inch or less and that differential settlement will be less than ½ inch. We estimate that settlement of the native soil or structural fill occur with the application of loads during construction. If foundation subgrades become disturbed during construction and loose soil is not removed, settlements larger than those estimated may occur.

We recommend that all backfill placed on the exterior sides of the foundation walls be compacted to a minimum of 90 percent of the modified proctor maximum dry density. Beneath pads, slabs and steps, backfill should be compacted to a minimum of 95 percent of the modified proctor maximum dry density. Backfill should be brought up uniformly on both sides of foundation walls to minimize the potential for displacement.

Slope Setbacks

In accordance with IBC 2015 Section 1808.7.2 *Foundation Setback from Descending Slope Surface*, "Foundations on or adjacent to slope surfaces shall be founded in firm material with an embedment and setback from the slope surface sufficient to provide vertical and lateral support for the foundation without detrimental settlement. Where the slope is steeper than 1 unit vertical in 1 unit horizontal (100-percent slope), the required set back shall be measured from an imaginary plane 45 degrees to the horizontal, projected upward from the toe of the slope." We recommend that the building footprint shall be setback from the top of the slope for a distance of a minimum of 12 feet and 15 feet from the bottom of the slope. The long term performance of the structure near slopes is dependent on the protection of slopes from erosion or over steepening by cutting into the toe of the slope. Lots should be maintained to prevent erosion or undermining the toe. If the slopes will be modified from their constructed configuration, we recommend properly designed retaining walls should be used.

Seismic Conditions

Based on our test pit logs, and our review of well logs in the vicinity of the site, we interpret the site to be classified as Site Class D as defined by Table 20.3-1 of Chapter 20 of the American Society of Civil Engineers ASCE 7. The spectral response accelerations for short periods (S_S) and a 1-second period (S_1) in the vicinity of the site were determined from Figures 1613.3.1(1) and 1613.3.1(2) of the 2015 IBC, respectively. The mapped S_S coefficient for the site is 0.420 and the mapped S_1 coefficient for the site is 0.162.

Lateral Foundation Resistance

Lateral foundation loads will be resisted by friction against the base of the foundation and the passive earth pressure acting against the sides of the foundation. For sliding resistance at the base of foundations, we recommend using a frictional coefficient of 0.3 for the contact between the foundation concrete and native soils or compacted structural fill. The passive earth pressure resulting from compacted backfill against the sides of foundations can be calculated as an equivalent fluid pressure using a fluid unit weight of 230 pounds per cubic foot (pcf). Both of the above values include a safety factor of about 1.5.

Retaining Walls

Retaining walls may be necessary on the site. Cast-in-place concrete walls may retain significant amounts of soil and should be designed to resist lateral earth pressures. The equivalent fluid pressure used to design the walls will depend on the material used as backfill and whether the walls are designed to be flexible during backfilling (active soil pressure) or rigid (at-rest soil pressure). We recommend using the following values for design.

RECOMMENDED LATERAL EARTH PRESSURES			
Wall Type	**Condition**	**Lateral Pressure Coefficient**	**Equivalent Fluid Density (pcf)**
Flexible	Active	$K_a = 0.32$	35
Rigid	At-rest	$K_o = 0.48$	55

For the on-site silt and silty sand soils, we assumed a unit weight of 110 pcf and an angle of internal friction of 31 degrees. We recommend that retaining wall backfill be placed as structural fill. In order to prevent over-compaction of the fill and deflection of the retaining wall, we recommend that hand-operated compaction equipment be used within 3 feet of retaining walls.

The above equivalent fluid densities are based on the assumption of a free-draining condition behind the retaining walls. To prevent hydrostatic pressures from developing against the walls, we recommend placing a minimum 12-inch thick zone of free-draining granular material containing less than 5 percent fines against the wall. As an alternative to the free-draining layer, a geocomposite drainage mat may be placed against the wall.

Concrete Slabs-On-Grade

We anticipate slab subgrades will consist of compacted native soils or structural fill. We recommend that slab subgrades be compacted to a minimum of 95 percent of the modified proctor maximum dry density. We recommend concrete slabs-on-grade be underlain be a minimum of 6 inches of crushed aggregate base. We recommend using Washington Department of Transportation (WSDOT) crushed surfacing below slabs (Standard Specification 9-03.9(3)). The crushed surfacing should be compacted to a minimum of 95 percent of the modified proctor maximum dry density.

Stormwater

Based on the results of our infiltration testing in TP-5 (east location) and TP-20 (northwest location), we calculated the infiltration of the sandy silt soils encountered in the test pits. We calculated an infiltration rate of 2.25 and 3.0 inches per hour for TP-5 and TP-20, respectively. These rates do not include a safety factor. We recommend applying a factor of safety of at least 2.5 in order to establish a long term design infiltration rate.

Pavements

Based on the results of our explorations at the site, we anticipate that pavement subgrades will consist of sandy silt. We recommend that the upper one foot of the pavement subgrade be compacted to a minimum of 95 percent of the modified proctor maximum dry density.

Prior to placing the aggregate base, we recommend that all subgrade areas be proof-rolled with a loaded dump truck. This precautionary measure would assist in detecting any localized soft areas. Any soft areas discovered during the proof-rolling operation should be over-excavated to firm bearing or a maximum depth of 2 feet, whichever is less, and replaced with structural fill placed and compacted as previously recommended. We recommend that the proof-rolling process be observed by an experienced geotechnical engineer to make the final evaluation of the subgrades.

For pavement subgrades compacted as recommended above, we recommend a pavement section for main traffic drive areas consist of a minimum of 3 inches of asphalt overlying 8 inches of crushed rock base. The upper 2 inches of the crushed rock base can be comprised of crushed surfacing top course. For automobile parking lots we recommend the pavement section consist of a minimum of 2.5 inches of asphalt overlying 6 inches of crushed rock base. We recommend that pavements within the City of Richland right-of-way be constructed in accordance with the City of Richland standards.

We recommend specifying crushed gravel base meeting the requirements of the WSDOT Standard Specifications for crushed surfacing. We also recommend that the asphalt concrete pavement meet the requirements of WSDOT Standard Specifications for hot mix asphalt. The crushed gravel base should be compacted to a minimum of 95 percent of its modified proctor maximum dry density. We recommend that the asphaltic concrete surface be compacted to 91 percent of the (rice) theoretical maximum density, as determined in accordance with AASHTO T209.

Additional Recommended Services

We recommend that IMT be retained to review the final plans and specifications for the project prior to construction. Also, we recommend that IMT be retained to provide construction monitoring services to verify that soil and geologic conditions are consistent with our report and that the report recommendations are incorporated into the actual construction. Compaction testing should be performed by an experienced engineering technician at the time of construction to verify the recommended levels of compaction are achieved. If we are not retained to provide the recommended plan review and construction monitoring services, we cannot be responsible for soil engineering related construction errors or omissions.

Mass grading of the property to achieve the design configurations and elevations will require cuts and fills involving large volumes of soil. We require that an experienced geotechnical engineering representative be on site during earthwork operations to observe subgrade preparation and fill placement. Soil conditions shall be evaluated by in-place density testing in accordance with ASTM D2922, visual evaluation, probing and proof-rolling of the fill to check for compliance with the recommendations of this report. A moisture-density curve shall be established in accordance with ASTM D1557 method for native subgrade soil and imported fill materials prior to grading.

EVALUATION LIMITATIONS

This report is for the exclusive use of Friendship Enterprises, LLC and JACE and their agents for use in design of the proposed project and preparation of construction documents. This report has been prepared to assist with the design and construction of the proposed Signature Estates project and improvements on Queensgate Drive between Keene Road and Shockley Road in Richland, Washington. The information contained herein in not applicable to other sites. In the absence of our written approval, we make no representations and assume no responsibility to other parties regarding this report. The data, analyses, and recommendations presented may not be appropriate for other structures or purposes.

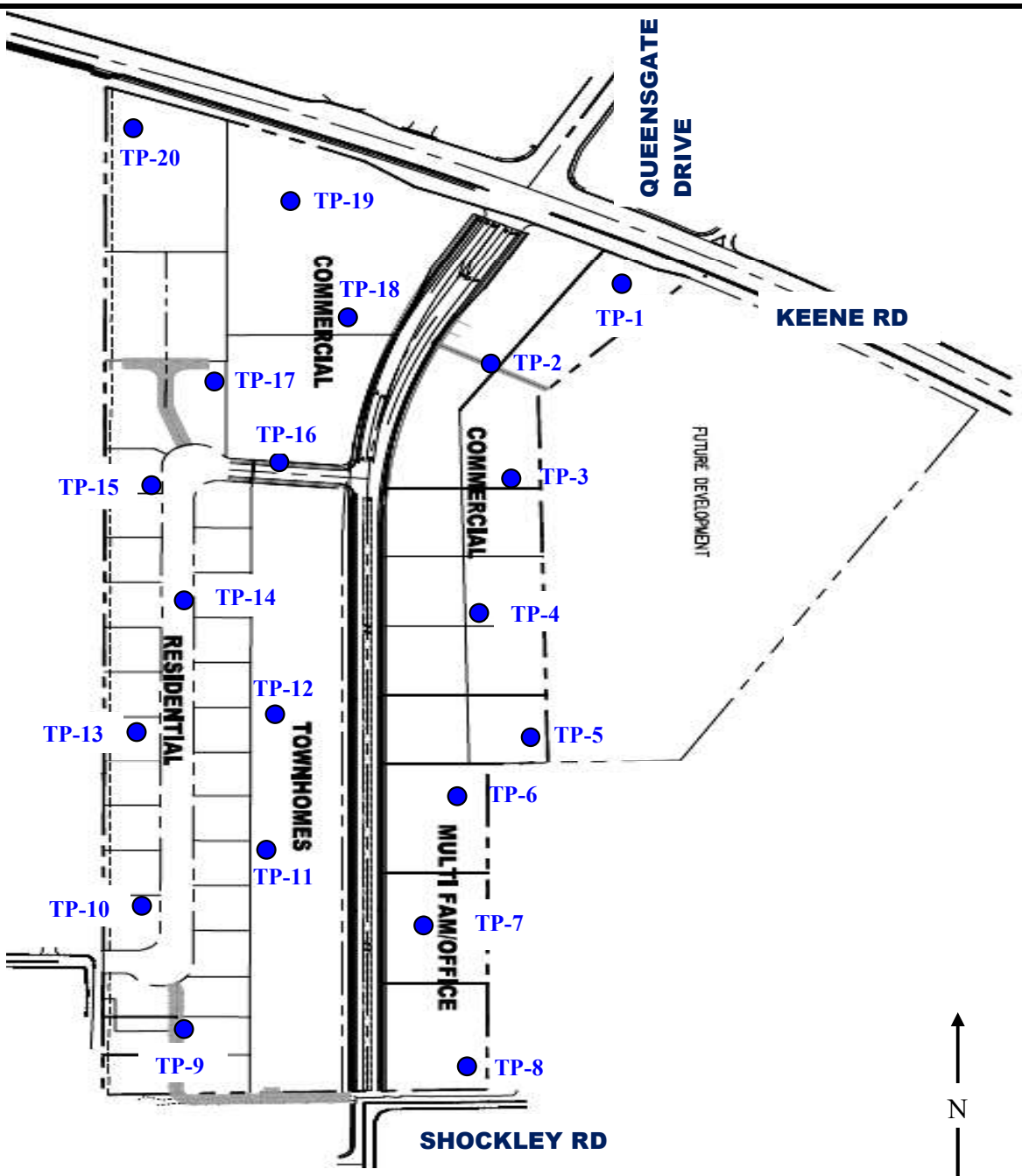
The analyses and recommendations submitted in this report are based on the data obtained from the test pits excavated at the locations indicated on the attached Exploration Location Map, Figure 2. It should be recognized that the explorations performed for this evaluation reveal subsurface conditions only at specific locations on the project site and that conditions between the test pits and in other areas could vary. Furthermore, the nature and extent of any such variations would not become evident until additional explorations are performed or until construction activities have begun. If significant variations are observed at that time, we may need to modify the conclusions and recommendations contained in this report to reflect the actual conditions encountered.

If there is a substantial lapse of time between the submission of this report and the start of work at the site, or if site conditions have changed due to natural causes or construction operations at or adjacent to the site, or if the basic project design is significantly modified from that assumed, we recommend that this report be reviewed to determine if the conclusions and recommendations contained herein are still applicable. Please see Important Information about Your Geotechnical Engineering Report in Appendix C.

Our services consist of professional opinions and conclusions made in accordance with generally accepted geotechnical engineering principles and practices. This acknowledgement is in lieu of all warranties either expressed or implied.

FIGURES

	VICINITY MAP	**Figure** **1**
	Signature Estates at Queensgate Richland, Washington	
	October, 2016 | Project No. S16146	



TP-1 Test Pit Number and Approximate Location

Not to Scale

	EXPLORATION LOCATION MAP	**Figure 2**
	Signature Estates at Queensgate Richland, WA	
	October 2016 | Project No. S16146	

APPENDIX A

TEST PIT LOGS &
USCS CLASSIFICATION GUIDE

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-1

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.860', W119 18.174'	Elevation:	527'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		SM	SILTY SAND, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
2						
4						43.3% passing No. 200 sieve
6						
8						
10			Bottom of Test Pit = 10' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			
12						
14						

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-2

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.822', W119 18.218'	Elevation:	536'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		SM	SILTY SAND, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
10			Bottom of Test Pit = 10' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-3

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.767', W119 18.236'	Elevation:	547'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SANDY SILT, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
2						
4						
6						62.1% passing No. 200 sieve
8						
10			Bottom of Test Pit = 10' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			
12						
14						

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-4

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.713', W119 18.254'	Elevation:	567'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SILT WITH SAND, non plastic fines, fine-grained sand, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
12			Bottom of Test Pit = 12' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-5

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.679', W119 18.220'	Elevation:	552'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SILT WITH SAND, non plastic fines, fine-grained sand, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
2						
4						81.6% passing No. 200 sieve Infiltration Test Performed
6			Bottom of Test Pit = 5' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			
8						
10						
12						
14						

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-6

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.634', W119 18.233'	Elevation:	551'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SILT WITH SAND, non plastic fines, fine-grained sand, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
10			Bottom of Test Pit = 10' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-7

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.580', W119 18.250'	Elevation:	560'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SILT WITH SAND, non plastic fines, fine-grained sand, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
10			Bottom of Test Pit = 10' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-8

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.550', W119 18.240'	Elevation:	574'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SILT WITH SAND, non plastic fines, fine-grained sand, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
2						83.6% passing No. 200 Sieve
4						
6						
8						
10						
12			Bottom of Test Pit = 12' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			
14						

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-9

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.562', W119 18.325'	Elevation:	588'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SANDY SILT, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
2						
4						
6						
8						
10						
			Bottom of Test Pit = 11' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			
12						
14						

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-10

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.605', W119 18.342'	Elevation:	576'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SANDY SILT, fine-grained sand, non plastic fines, tan, dry to damp, loose to medium dense			Organic-laden Topsoil (3")
2						
4						
6						61.7% passing No. 200 Sieve
8						
10			Bottom of Test Pit = 10' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			
12						
14						

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-11

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.628', W119 18.303'	Elevation:	563'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SANDY SILT, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
12			Bottom of Test Pit = 12' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-12

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.685', W119 18.297'	Elevation:	560'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SANDY SILT, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
12			Bottom of Test Pit = 12' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-13

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.722', W119 18.347'	Elevation:	562'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		SM	SILTY SAND, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
2						
4						
6						
8						
10						28.8% passing No. 200 Sieve
12			Bottom of Test Pit = 12' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			
14						

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-14

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.738', W119 18.316'	Elevation:	570'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		SM	SILTY SAND, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
2						
4						
6						
8						
10						
12						
14			Bottom of Test Pit = 14' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-15

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.783', W119 18.341'	Elevation:	561'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		SM	SILTY SAND, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
12			Bottom of Test Pit = 12' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-16

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.771', W119 18.283'	Elevation:	565'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		SM	SILTY SAND, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
12			Bottom of Test Pit = 12' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-17

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.805', W119 18.340'	Elevation:	546'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SANDY SILT, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
2						
4						
6						60.4% passing No. 200 Sieve
8						
10						
12			Bottom of Test Pit = 11' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			
14						

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-18

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.831', W119 18.290'	Elevation:	546'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SANDY SILT, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
2						
4						
6						
8						
10						
			Bottom of Test Pit = 11' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			
12						
14						

Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-19

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.911', W119 18.240'	Elevation:	526'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SANDY SILT, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
10			Bottom of Test Pit = 10' No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			

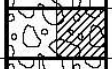
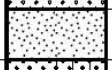
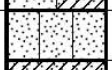
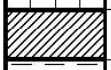
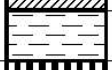
Intermountain
Materials Testing
& Geotechnical

Log of Test Pit
TP-20

Project:	Signature Estates at Queensgate	Project No:	S16146
Location:	Keene Road/Queensgate Drive, Richland	Date:	7-13-16
Client:	Friendship Enterprises, LLC	Logged By:	G. Lee
Test Pit Loc.:	N46 14.911', W119 18.350'	Elevation:	530'

Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	Tests or Notes
0		ML	SANDY SILT, fine-grained sand, non plastic fines, tan, dry, loose to medium dense			Organic-laden Topsoil (3")
2						
4						
						55% passing No. 200 sieve
						Infiltration Test Performed
6			Bottom of Test Pit = 6 No Groundwater Encountered. Test Pit Loosely Backfilled upon Completion of Work.			
8						
10						
12						
14						

UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2488

MAJOR DIVISION			GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
COARSE GRAINED SOILS CONTAINS MORE THAN 50% FINES	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH * 5% FINES		GW	Well-graded GRAVEL
				GP	Poorly graded GRAVEL
		GRAVEL WITH BETWEEN 5% AND 15% FINES		GW-GM	Well-graded GRAVEL with silt
				GW-GC	Well-graded GRAVEL with clay
				GP-GM	Poorly graded GRAVEL with silt
				GP-GC	Poorly graded GRAVEL with clay
		GRAVEL WITH ≥ 15% FINES		GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SAND WITH * 5% FINES		SW	Well-graded SAND
				SP	Poorly graded SAND
		SAND WITH BETWEEN 5% AND 15% FINES		SW-SM	Well-graded SAND with silt
				SW-SC	Well-graded SAND with clay
				SP-SM	Poorly graded SAND with silt
				SP-SC	Poorly graded SAND with clay
		SAND WITH ≥ 15% FINES		SM	Silty SAND
				SC	Clayey SAND
FINE GRAINED SOILS CONTAINS MORE THAN 50% FINES	SILT AND CLAY	LIQUID LIMIT LESS THAN 50		ML	Inorganic SILT with low plasticity
				CL	Lean inorganic CLAY with low plasticity
				OL	Organic SILT with low plasticity
		LIQUID LIMIT GREATER THAN 50		MH	Elastic inorganic SILT with moderate to high plasticity
				CH	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS				PT	PEAT soils with high organic contents

NOTES:

1) Sample descriptions are based on visual field and laboratory observations using classification methods of ASTM D2488. Where laboratory data are available, classifications are in accordance with ASTM D2487.

2) Solid lines between soil descriptions indicate change in interpreted geologic unit. Dashed lines indicate stratigraphic change within the unit.

3) Fines are material passing the U.S. Std. #200 Sieve.

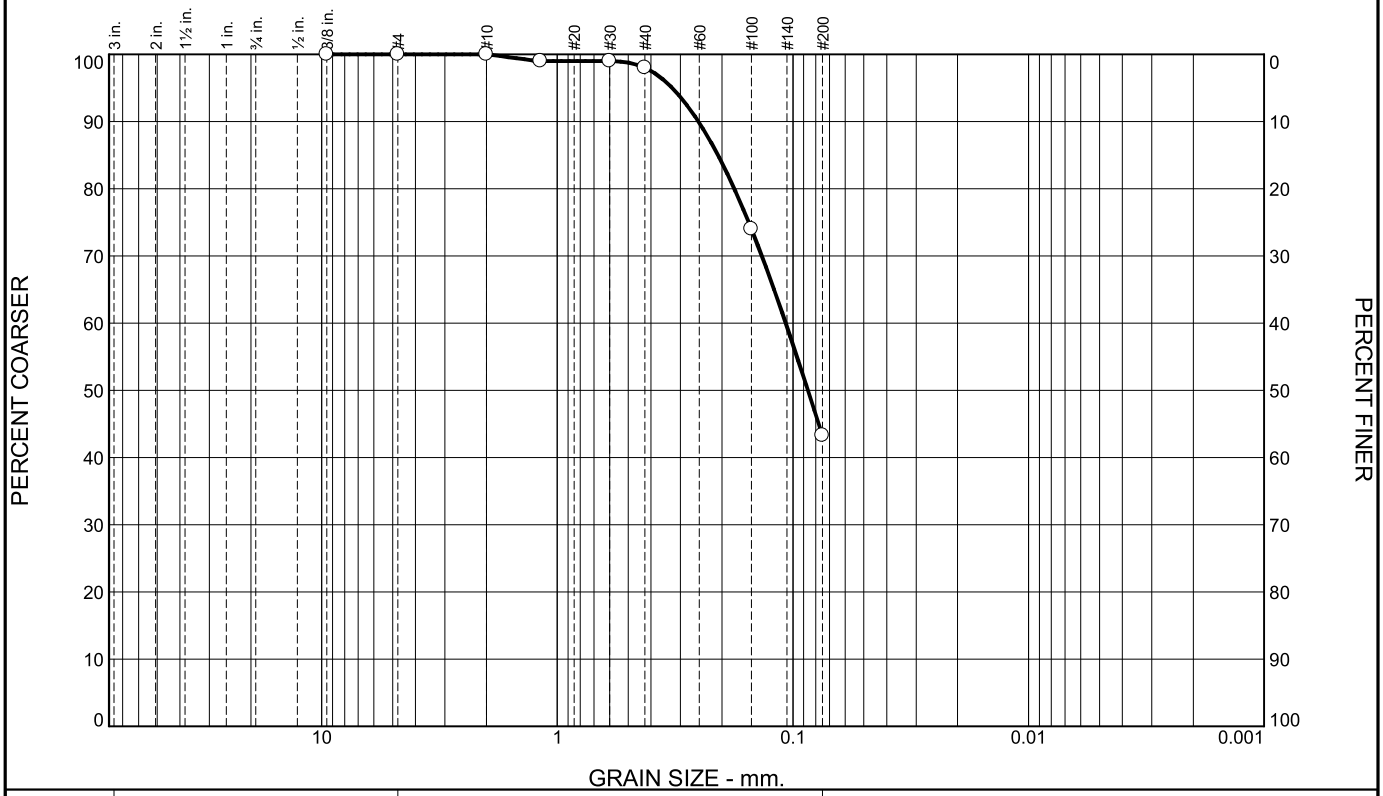
APPENDIX B

LABORATORY TEST RESULTS

LABORATORY SUMMARY

LABORATORY NUMBER				62192	62193	62194	62195	62196	62197	62198	62199
SAMPLE NUMBER				1	2	3	4	5	6	7	8
SAMPLE DATE				7/13/16	7/13/16	7/13/16	7/13/16	7/13/16	7/13/16	7/13/16	7/13/16
SAMPLE TYPE				Bag	Bag	Bag	Bag	Bag	Bag	Bag	Bag
SAMPLED BY				IMT	IMT	IMT	IMT	IMT	IMT	IMT	IMT
DATE RECEIVED				7/14/16	7/14/16	7/14/16	7/14/16	7/14/16	7/14/16	7/14/16	7/14/16
SAMPLE LOCATION				TP-1	TP-3	TP-5	TP-8	TP-10	TP-13	TP-17	TP-20
				4'	6'	4'	2'	5'	9'	5'	5'
		UNITS	Test Methods								
SAMPLE MOISTURE			ASTM D2216	3.0	2.5	2.2	3.6	12.3	2.4	2.7	3.3
SIEVE ANALYSIS			ASTM D6913								
S											
I	1/2"	%					100	100			100
E	3/8"			100	100	100	99	99		100	99
V	#4	P		100-	100-	100-	98	98	100	100-	98
E	#10	A		100-	99	100-	97	96	100-	99	97
	#16	S		99	98	100-	96	96-	100-	98	97-
S	#30	S		99-	97	99	95	95	99	97	96
I	#40	I		98	96	98	94	93	99-	97-	95
Z	#100	N		74	88	94	91	79	69	85	85
E	#200	G		43.3	62.1	81.6	83.6	61.7	28.8	60.4	55.0

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.0	54.7	43.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	100.0		
#10	100.0		
#16	99.0		
#30	99.0		
#40	98.0		
#100	74.0		
#200	43.3		

* (no specification provided)

Material Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.2520 D_{85}= 0.2082 D_{60}= 0.1074
D_{50}= 0.0864 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Sampled by: IMT

Source of Sample: TP-1 **Depth:** 4'
Sample Number: 1-62192

Date: 7/13/16

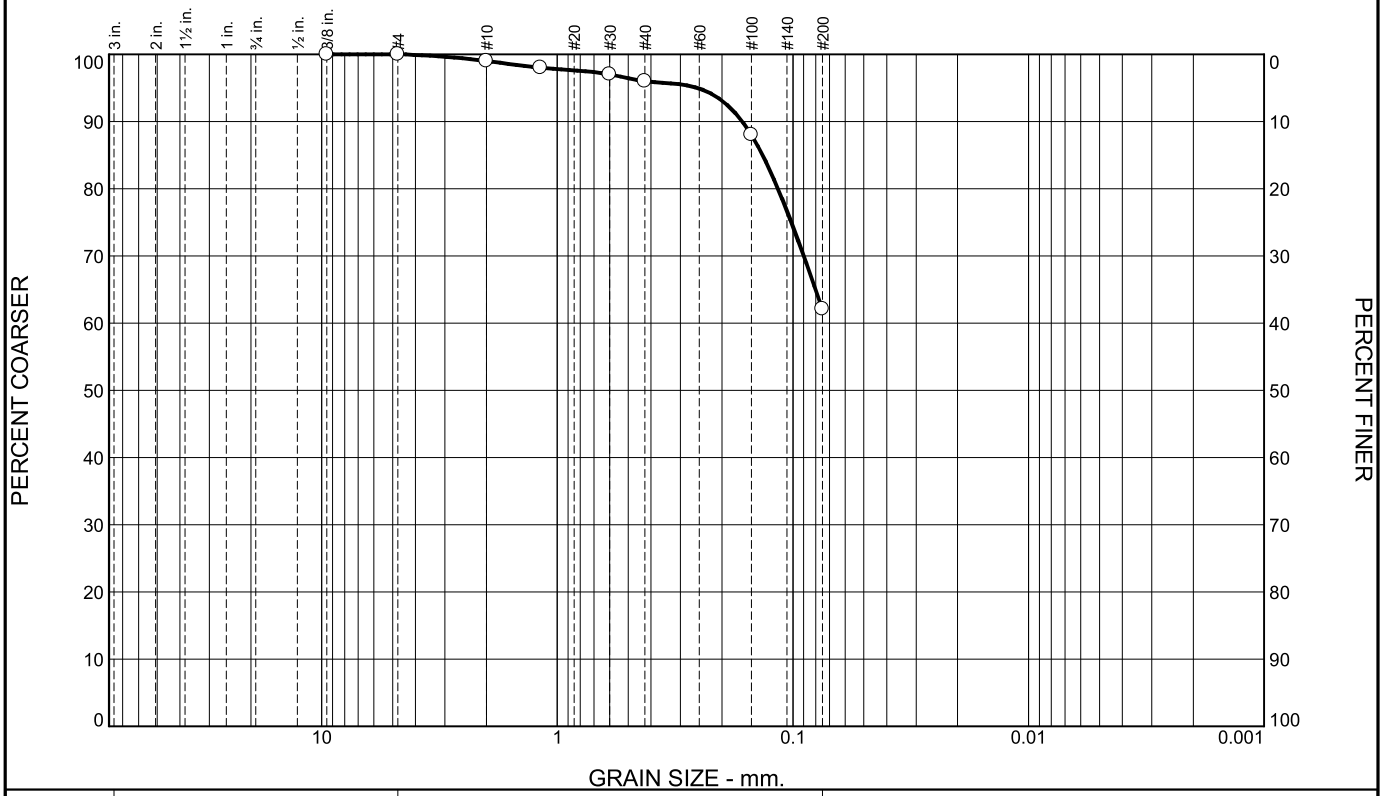
Intermountain Materials Testing & Geotechnical

Client: Friendship Enterprises, LLC
Project: Signature Estates at Queensgate

Project No: S16146

Tested By: GM **Checked By:** GL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.0	3.0	33.9	62.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	100.0		
#10	99.0		
#16	98.0		
#30	97.0		
#40	96.0		
#100	88.0		
#200	62.1		

* (no specification provided)

Material Description

sandy silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.1640 D_{85}= 0.1345 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Sampled by: IMT

Source of Sample: TP-3 **Depth:** 6'
Sample Number: 2-62193

Date: 7/13/16

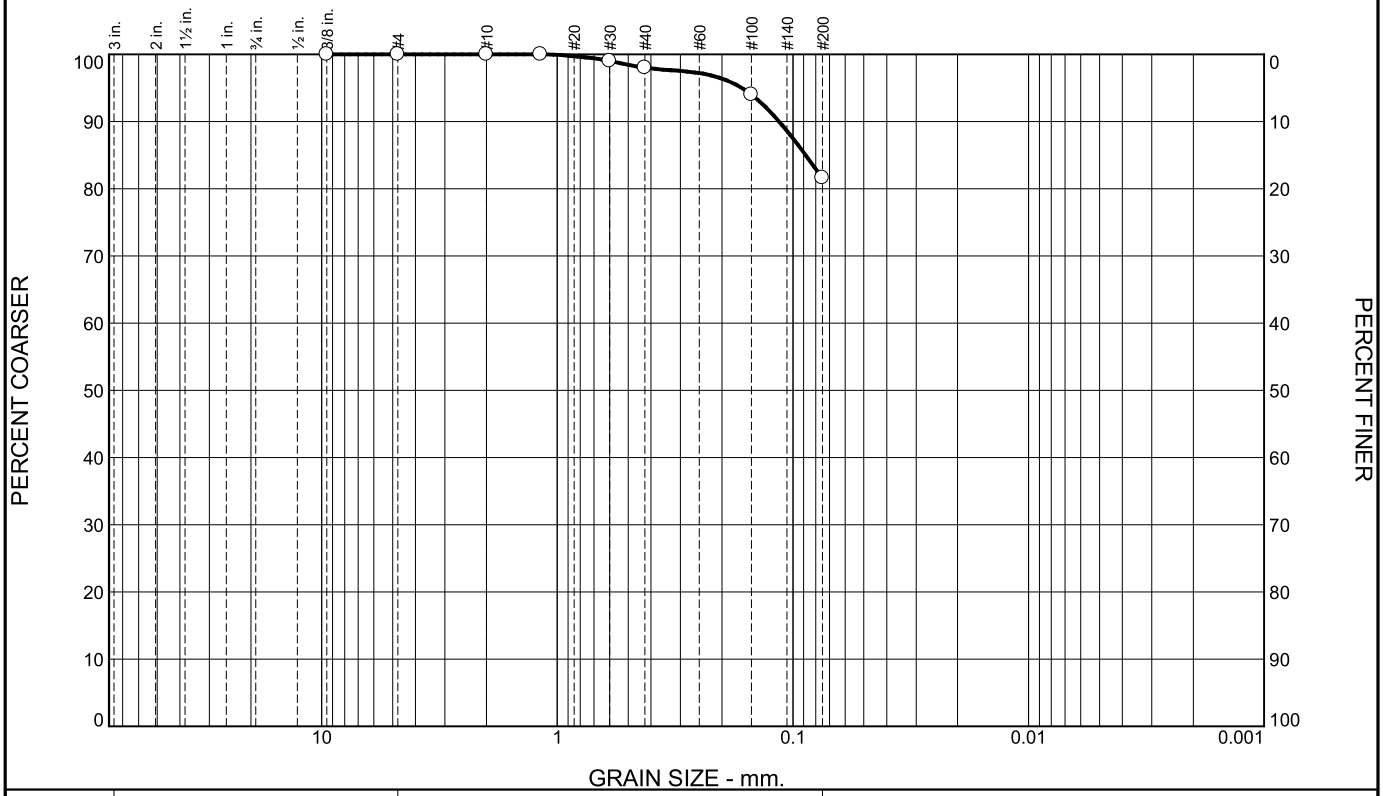
Intermountain Materials Testing & Geotechnical

Client: Friendship Enterprises, LLC
Project: Signature Estates at Queensgate

Project No: S16146

Tested By: GM **Checked By:** GL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.0	16.4	81.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	100.0		
#10	100.0		
#16	100.0		
#30	99.0		
#40	98.0		
#100	94.0		
#200	81.6		

* (no specification provided)

Material Description

silt with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.1145 D_{85}= 0.0883 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Sampled by: IMT

Source of Sample: TP-5 **Depth:** 4'
Sample Number: 3-62194

Date: 7/13/16

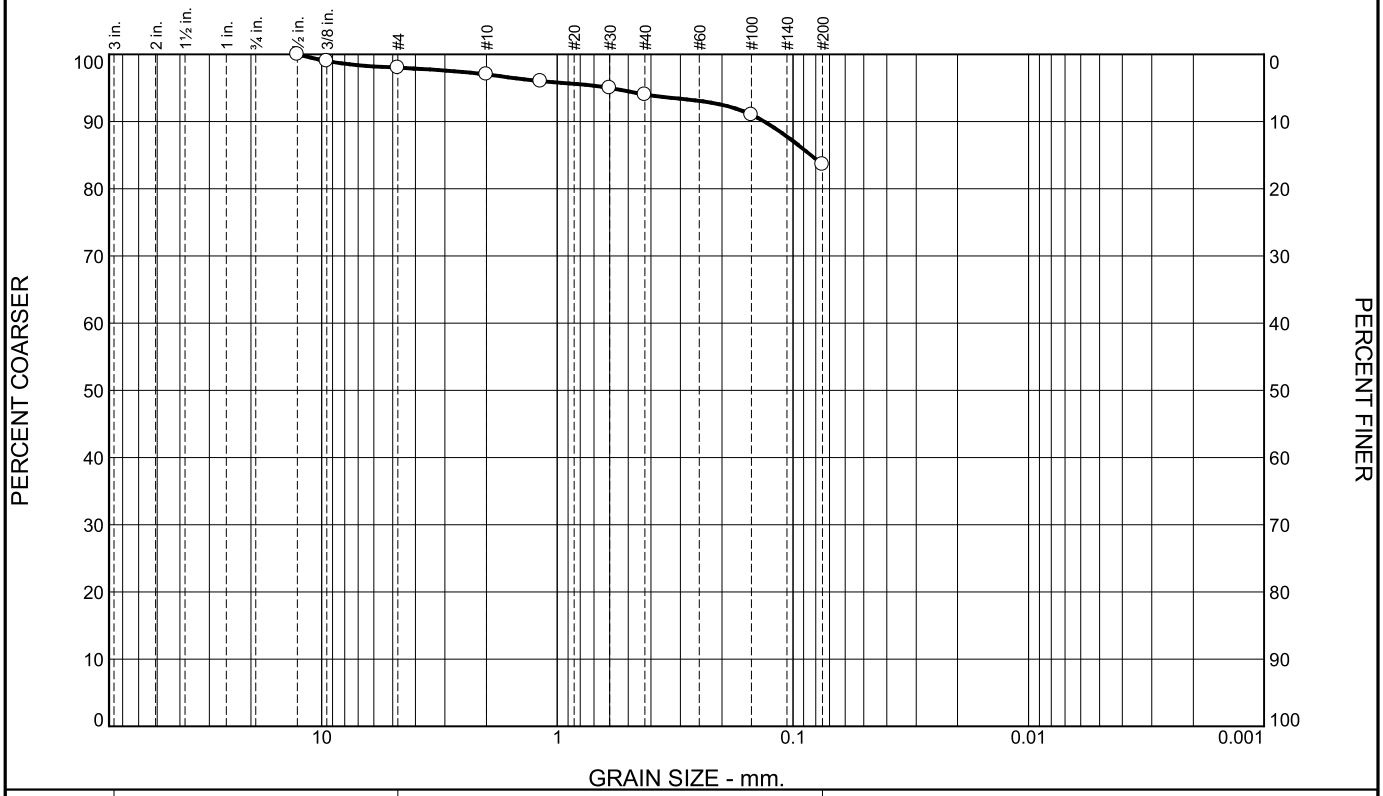
Intermountain Materials Testing & Geotechnical

Client: Friendship Enterprises, LLC
Project: Signature Estates at Queensgate

Project No: S16146

Tested By: GM **Checked By:** GL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	1.0	3.0	10.4	83.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2	100.0		
3/8	99.0		
#4	98.0		
#10	97.0		
#16	96.0		
#30	95.0		
#40	94.0		
#100	91.0		
#200	83.6		

* (no specification provided)

Material Description

silt with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.1324 D_{85}= 0.0840 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Sampled by: IMT

Source of Sample: TP-8 **Depth:** 2'
Sample Number: 4-62195

Date: 7/13/16

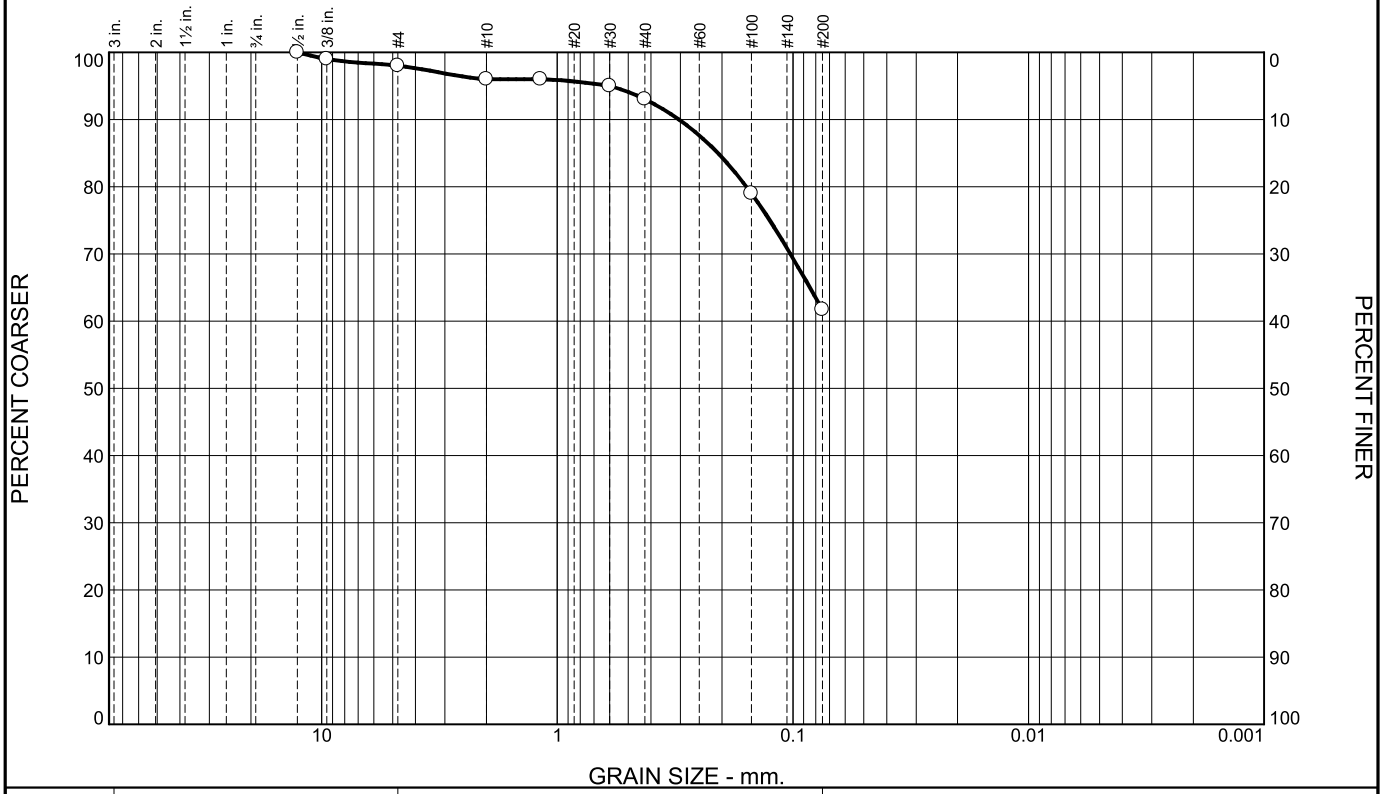
Intermountain Materials Testing & Geotechnical

Client: Friendship Enterprises, LLC
Project: Signature Estates at Queensgate

Project No: S16146

Tested By: GM **Checked By:** GL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	2.0	3.0	31.3	61.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2	100.0		
3/8	99.0		
#4	98.0		
#10	96.0		
#16	96.0		
#30	95.0		
#40	93.0		
#100	79.0		
#200	61.7		

* (no specification provided)

Material Description

sandy silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.3047 D_{85}= 0.2083 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Sampled by: IMT

Source of Sample: TP-10 **Depth:** 5'
Sample Number: 5-62196

Date: 7/13/16

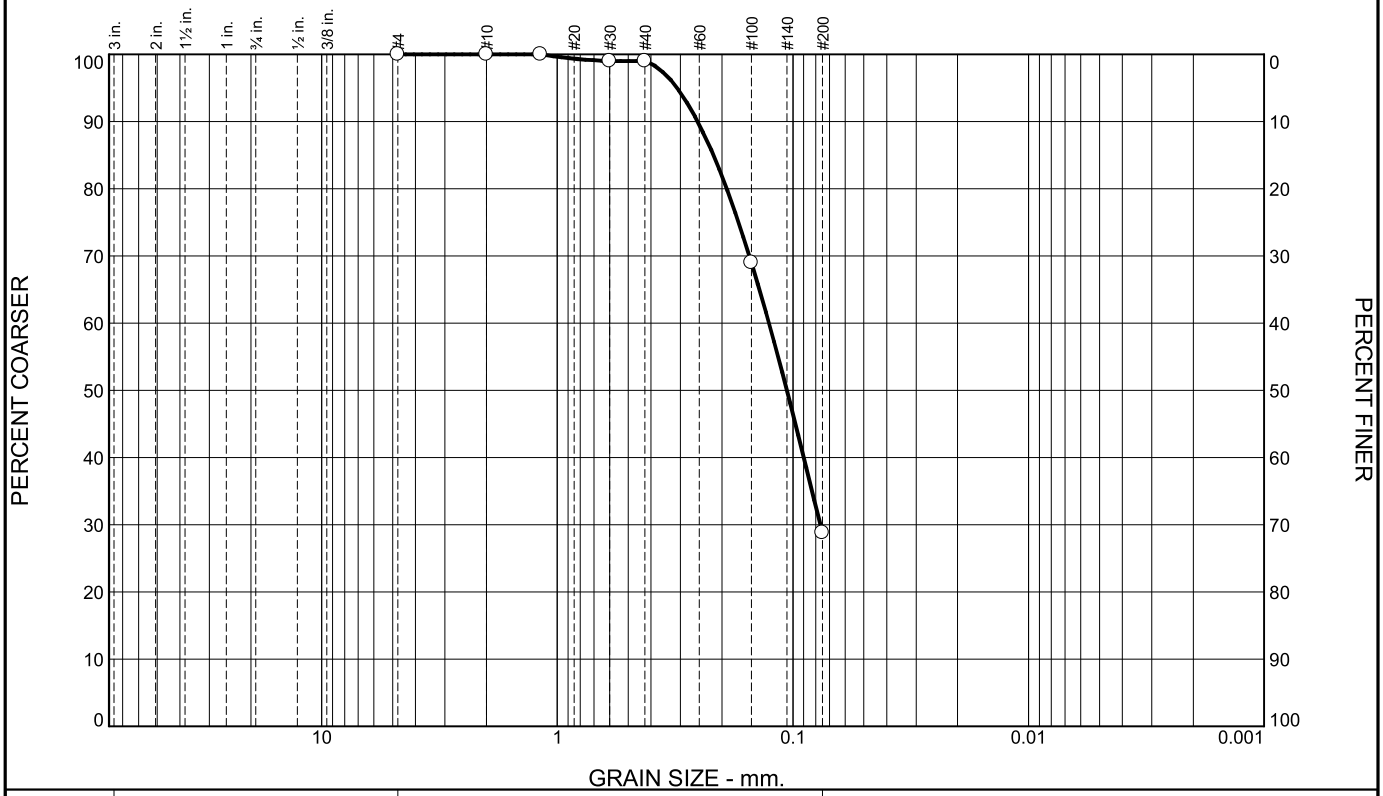
Intermountain Materials Testing & Geotechnical

Client: Friendship Enterprises, LLC
Project: Signature Estates at Queensgate

Project No: S16146

Tested By: GM **Checked By:** GL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.0	70.2	28.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#16	100.0		
#30	99.0		
#40	99.0		
#100	69.0		
#200	28.8		

* (no specification provided)

Material Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.2538 D_{85}= 0.2177 D_{60}= 0.1264
D_{50}= 0.1061 D_{30}= 0.0765 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Sampled by: IMT

Source of Sample: TP-13 **Depth:** 9'
Sample Number: 6-62197

Date: 7/13/16

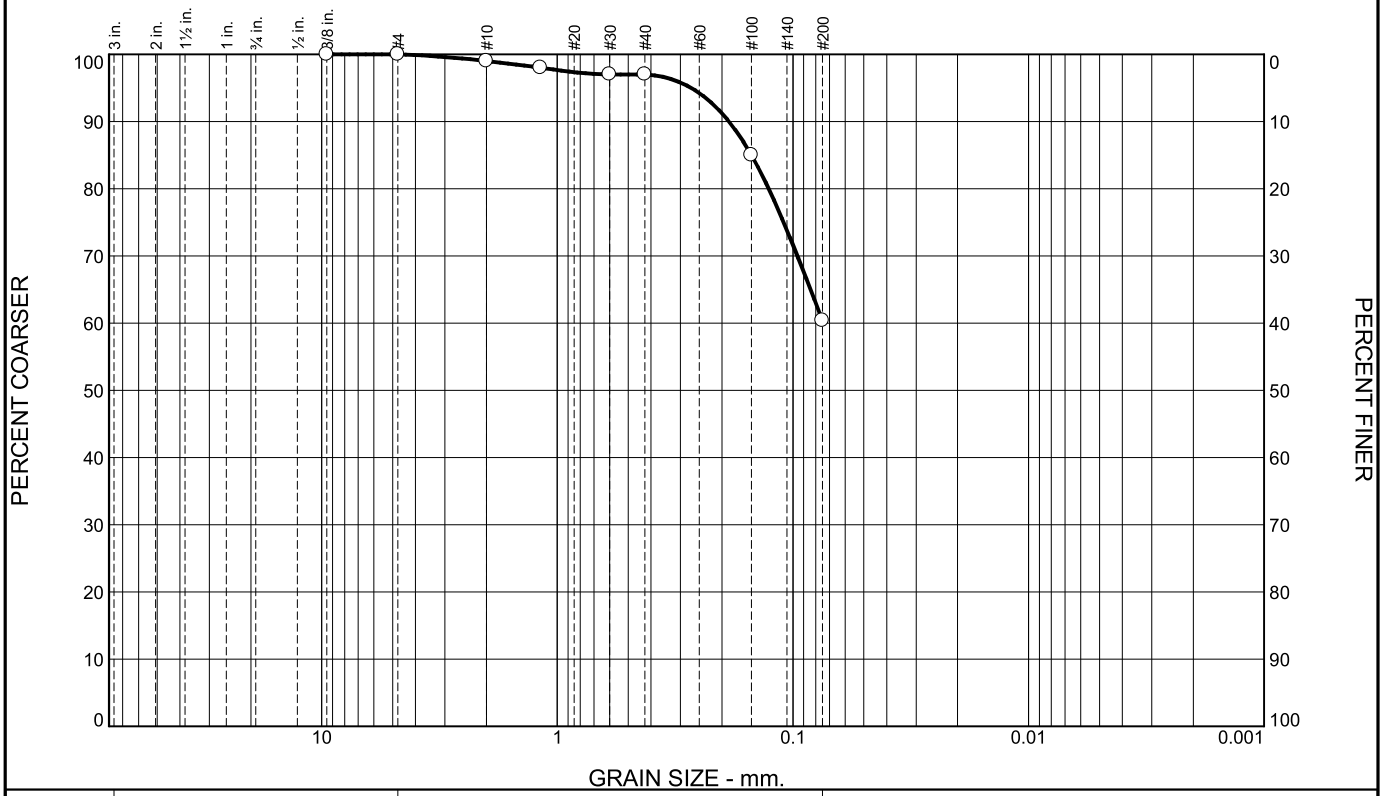
Intermountain Materials Testing & Geotechnical

Client: Friendship Enterprises, LLC
Project: Signature Estates at Queensgate

Project No: S16146

Tested By: GM **Checked By:** GL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.0	2.0	36.6	60.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	100.0		
#10	99.0		
#16	98.0		
#30	97.0		
#40	97.0		
#100	85.0		
#200	60.4		

* (no specification provided)

Material Description

sandy silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.1869 D_{85}= 0.1500 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Sampled by: IMT

Source of Sample: TP-17 **Depth:** 5'
Sample Number: 7-62198

Date: 7/13/16

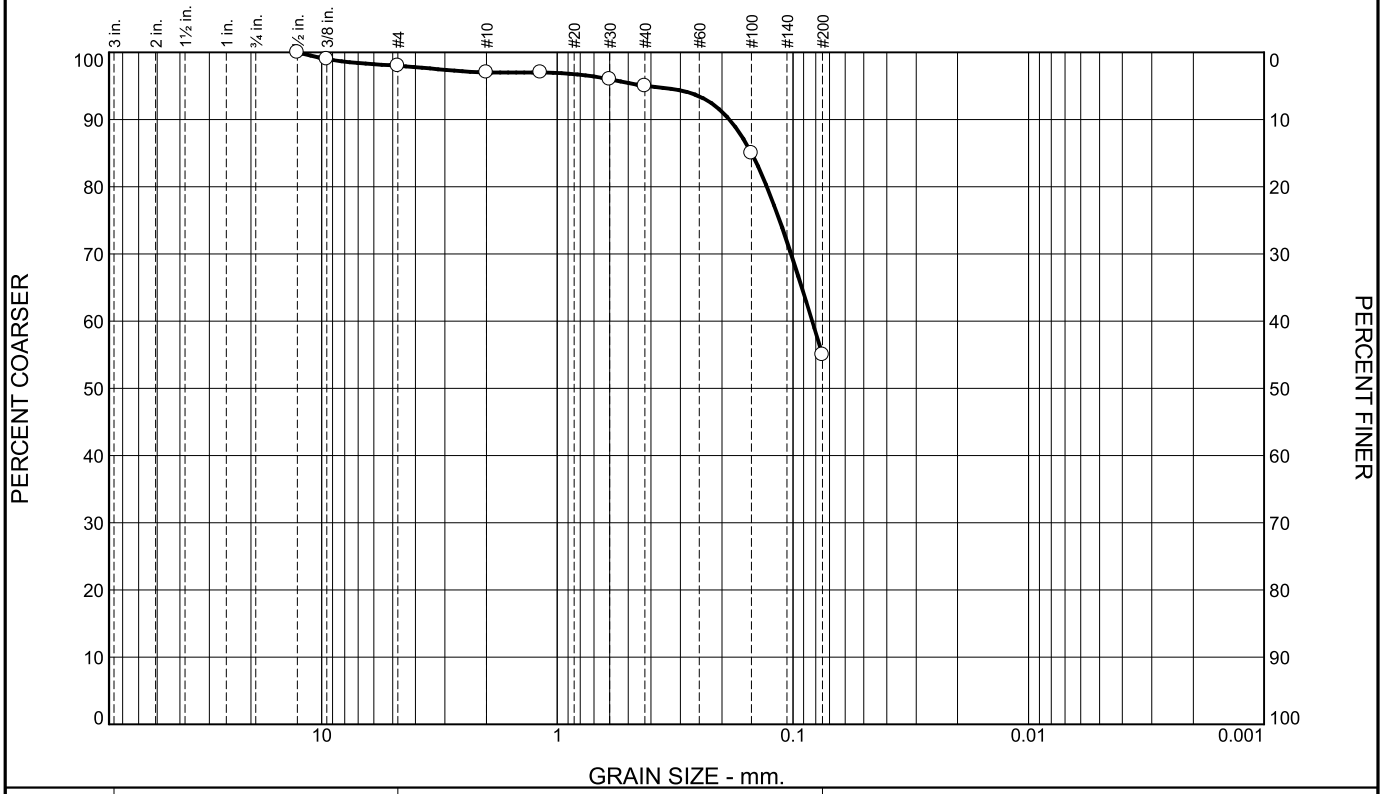
Intermountain Materials Testing & Geotechnical

Client: Friendship Enterprises, LLC
Project: Signature Estates at Queensgate

Project No: S16146

Tested By: GM **Checked By:** GL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	1.0	2.0	40.0	55.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2	100.0		
3/8	99.0		
#4	98.0		
#10	97.0		
#16	97.0		
#30	96.0		
#40	95.0		
#100	85.0		
#200	55.0		

* (no specification provided)

Material Description

sandy silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.1862 D_{85}= 0.1500 D_{60}= 0.0829
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Sampled by: IMT

Source of Sample: TP-20 **Depth:** 5'
Sample Number: 8-62199

Date: 7/13/16

Intermountain Materials Testing & Geotechnical

Client: Friendship Enterprises, LLC
Project: Signature Estates at Queensgate

Project No: S16146 **Figure**

Tested By: GM **Checked By:** GL

APPENDIX C

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

Important Information about Your Geotechnical Engineering Report

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects
Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you* – should apply the report for any purpose or project except the one originally contemplated.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors
Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change
A geotechnical engineering report is based on conditions that existed at the time the study was preformed. *Do no rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings are Professional Opinions
Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in your report. Retaining the geotechnical engineer who developed you report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final
Do not over rely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation
Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having our geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs
Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk*.

Give Contractors a Complete Report and Guidance
Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Contactors are Responsible for Site Safety on their Own Construction Projects
Geotechnical engineers' recommendations are not intended to direct the contractor's procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and to adjacent properties.

Read Responsibility Provisions Closely
Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineer's responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered
The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else*.

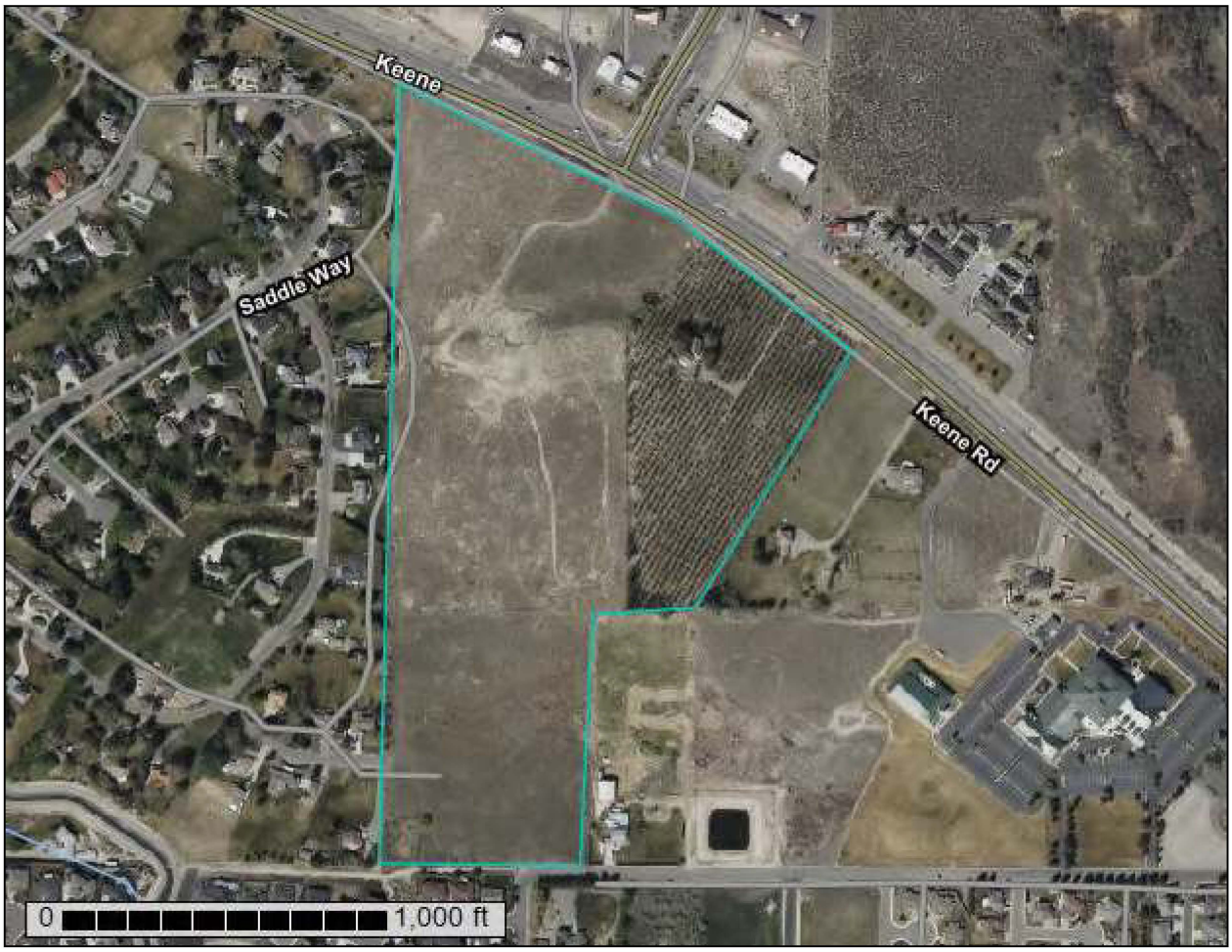
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Benton County Area, Washington



April 29, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

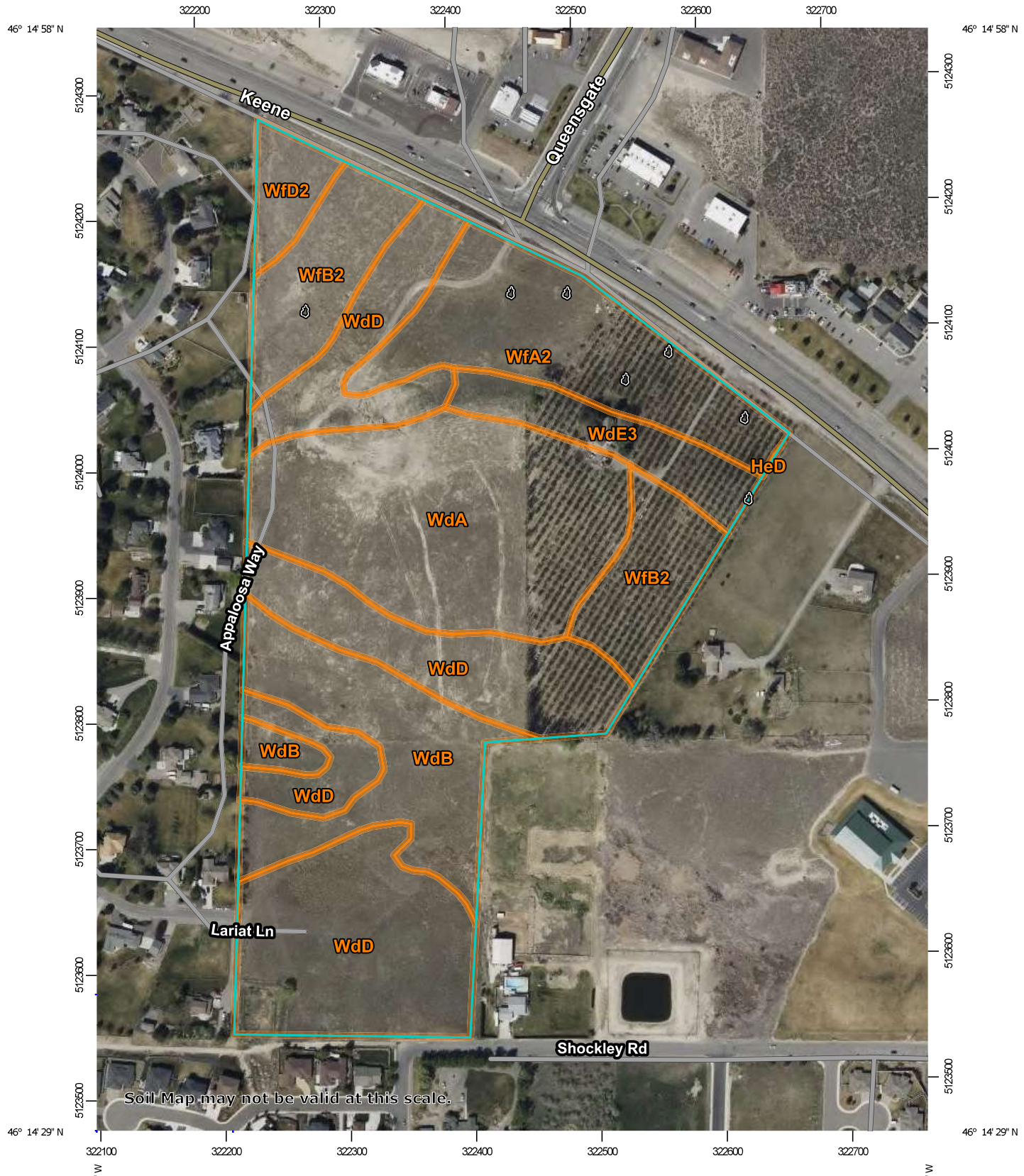
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:4,280 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

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

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

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

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

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

Soil Survey Area: Benton County Area, Washington
Survey Area Data: Version 17, Aug 23, 2021

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

Date(s) aerial images were photographed: Apr 16, 2021—Apr 17, 2021

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HeD	Hezel loamy fine sand, 2 to 15 percent slopes	0.0	0.0%
WdA	Warden silt loam, 0 to 2 percent slopes	10.3	21.6%
WdB	Warden silt loam, 2 to 5 percent slopes	6.3	13.1%
WdD	Warden silt loam, 8 to 15 percent slopes	15.6	32.7%
WdE3	Warden silt loam, 15 to 30 percent slopes, severely eroded	2.4	5.1%
WfA2	Warden very fine sandy loam, 0 to 2 percent slopes, eroded	6.4	13.4%
WfB2	Warden very fine sandy loam, 2 to 8 percent slopes, eroded	5.5	11.5%
WfD2	Warden very fine sandy loam, 8 to 15 percent slopes, eroded	1.2	2.5%
Totals for Area of Interest		**47.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas

are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Benton County Area, Washington

HeD—Hezel loamy fine sand, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2bch
Elevation: 400 to 2,500 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hezel and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hezel

Setting

Landform: Terraces
Parent material: Eolian sands over silty lacustrine deposits

Typical profile

H1 - 0 to 3 inches: loamy fine sand
H2 - 3 to 16 inches: loamy fine sand
H3 - 16 to 60 inches: stratified fine sandy loam to silt loam

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R007XY502WA - SANDS 6-10 PZ
Hydric soil rating: No

WdA—Warden silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2bfj

Elevation: 600 to 1,300 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 135 to 200 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Warden and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Warden

Setting

Landform: Terraces
Parent material: Loess over lacustrine deposits

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 19 inches: silt loam
H3 - 19 to 60 inches: stratified very fine sandy loam to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): 2c
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: R007XY102WA - LOAMY 6-10 PZ
Hydric soil rating: No

WdB—Warden silt loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2bfl
Elevation: 600 to 1,300 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 135 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Warden and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Warden

Setting

Landform: Terraces
Parent material: Loess over lacustrine deposits

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 19 inches: silt loam
H3 - 19 to 60 inches: stratified very fine sandy loam to silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R007XY102WA - LOAMY 6-10 PZ
Hydric soil rating: No

WdD—Warden silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2bfn
Elevation: 600 to 1,300 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 135 to 200 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Warden and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Warden

Setting

Landform: Terraces
Parent material: Loess over lacustrine deposits

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 19 inches: silt loam
H3 - 19 to 60 inches: stratified very fine sandy loam to silt loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R007XY102WA - LOAMY 6-10 PZ
Hydric soil rating: No

WdE3—Warden silt loam, 15 to 30 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 2bfp
Elevation: 600 to 1,300 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 135 to 200 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Warden and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Warden

Setting

Landform: Terraces
Parent material: Loess over lacustrine deposits

Typical profile

H1 - 0 to 2 inches: silt loam
H2 - 2 to 12 inches: silt loam
H3 - 12 to 60 inches: stratified very fine sandy loam to silt loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R007XY102WA - LOAMY 6-10 PZ
Hydric soil rating: No

WfA2—Warden very fine sandy loam, 0 to 2 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2bfr
Elevation: 600 to 1,300 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 135 to 200 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Warden and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Warden

Setting

Landform: Terraces
Parent material: Loess over lacustrine deposits

Typical profile

H1 - 0 to 4 inches: very fine sandy loam
H2 - 4 to 14 inches: silt loam
H3 - 14 to 60 inches: stratified very fine sandy loam to silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R007XY102WA - LOAMY 6-10 PZ
Hydric soil rating: No

WfB2—Warden very fine sandy loam, 2 to 8 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2bfs
Elevation: 600 to 1,300 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 135 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Warden and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Warden

Setting

Landform: Terraces
Parent material: Loess over lacustrine deposits

Typical profile

H1 - 0 to 4 inches: very fine sandy loam
H2 - 4 to 14 inches: silt loam
H3 - 14 to 60 inches: stratified very fine sandy loam to silt loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R007XY102WA - LOAMY 6-10 PZ
Hydric soil rating: No

WfD2—Warden very fine sandy loam, 8 to 15 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2bfv
Elevation: 600 to 1,300 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 135 to 200 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Warden and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Warden

Setting

Landform: Terraces
Parent material: Loess over lacustrine deposits

Typical profile

H1 - 0 to 4 inches: very fine sandy loam
H2 - 4 to 14 inches: silt loam
H3 - 14 to 60 inches: stratified very fine sandy loam to silt loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B

Ecological site: R007XY102WA - LOAMY 6-10 PZ
Hydric soil rating: No

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Contract No. 92-10

DEVELOPMENT AGREEMENT
BY AND BETWEEN THE CITY OF RICHLAND
AND JOHN PERRY, JULEE ANN PERRY, BEULAH COSENS, LINDA NORWOOD, KERRY WATTS AND JONGJIT WATTS

THIS DEVELOPMENT AGREEMENT is made and entered into this 20th day of ~~June~~ July, 2022, by and between the City of Richland, a First Class code Washington municipal corporation, hereinafter the "City," and John Perry, Julee Ann Perry, Beulah Cousins, Linda Norwood, Kerry Watts and Jongjit Watts, property owners; hereinafter the "Owners."

RECITALS

WHEREAS, the Washington State Legislature has authorized the execution of a development agreement between a local government and a person or persons having ownership or control of real property within its jurisdiction (RCW 36.70B.170(1)); and

WHEREAS, a development agreement must set forth the development standards and other provisions that shall apply to, govern and vest the development, use and mitigation of the development of the real property for the duration specified in the agreement (RCW 36.70B.170(1)); and

WHEREAS, for the purposes of this development agreement, "development standards" include, but are not limited to, all of the standards listed in RCW 36.70B.170(3); and

WHEREAS, a development agreement must be consistent with the applicable development regulations adopted by a local government planning under chapter 36.70A RCW (RCW 36.70B.170(1)); and

WHEREAS, this Development Agreement by and between the City of Richland and the Owners relates to the amendment of the City Comprehensive Plan land use designations for approximately 47 acres of land generally located south of Keene Road, north of Shockley Road, east of the Plat of Country Ridge and which consists of five separate parcels of record and which has been the subject of File #Z2008-109; and

WHEREAS, the following events have occurred in the processing of the Developer's application:

a) By Ordinance No. 32-08, the City amended the City's Comprehensive Plan land use designation for the Property from Low Density Residential to Commercial (12.5 acres) and Medium Density Residential (34.5 acres) ;

b) Richard Forman and the Country Ridge Homeowners Association, parties of record, filed an appeal before the Eastern Washington Growth Management Hearings Board challenging the validity of the comprehensive plan amendment;

c) Adoption of this development agreement will complete a settlement agreement entered into between the city of Richland, the property owners and the appellants.

d) After a public hearing, by Ordinance No. 21-10 the City Council authorized the City Manager to sign this Development Agreement with the Owners; and

Now, therefore, the parties hereto agree as follows:

General Provisions

Section 1. *The Project.* Future development of the site is anticipated to be a mix of commercial, office and residential uses as set forth in the comprehensive plan. The owners acknowledge that there is not yet a specific development proposal for the site. This agreement anticipates that the Owners will develop plans themselves and/or sell the site to a Developer(s) who will then develop specific plans for the future use of the site.

Section 2. *The Site.* The project site is legally described in Exhibit A, attached hereto and incorporated herein by this reference.

Section 3. *Definitions.* As used in this Development Agreement, the following terms, phrases and words shall have the meanings and be interpreted as set forth in this Section.

a) "*Adopting Ordinance*" means the Ordinance which approves this Development Agreement, as required by RCW 36.70B.200.

b) "*Developer*" means any party or parties who acquire ownership of the site or a portion of the site and bring forward plans for the future development of the site and who shall be subject to the applicable provisions of this agreement.

c) "*Existing Development Regulations*" means the ordinances adopted by the City Council of Richland in effect on the date that the Adopting Ordinance takes effect, including the following provisions of the Richland Municipal Code: Title 12 – Streets, Title 19 – Development Regulation Administration, Title 20 – Buildings, Title 22 – Environment, Title 23 – Zoning, Title 24 – Subdivision, and Title 27 Signs as well as all other provisions of City Code that address design standards.

d) "*Owners*" means collectively the parties who have ownership interest in the five parcels of record that comprise the Site.

e) "*Project*" means the anticipated development of the Site, as specified in Section 1 and as addressed in the City's adopted comprehensive plan.

Section 4. *Exhibits.* Exhibits to this Agreement are as follows:

a) Exhibit A – Legal description of the Site.
b) Exhibit B – Design standards

Section 5. *Parties to Development Agreement.* The parties to this Agreement are:

a) The "City" is the City of Richland, 505 Swift Boulevard, Richland, WA 99352.

b) The "Owners" are John Perry, PO Box 5900, Kennewick, WA 99336; Julee Ann Perry, 1102 Appaloosa Way, Richland, WA 99352; Beulah Cosens, 3680 Keene Road, Richland, WA 99352l; Linda Norwood, 324 Columbia Point Drive, Richland, WA

99352; Kerry Watts and Jongjit Watts, 68 Canyon Street, Richland, WA 99352; all of whom have ownership interests in some of the five parcels that comprise the site.

c) The "Developer." From time to time, as provided in this Agreement, the Owners may sell or otherwise lawfully dispose of a portion of the Site to a Developer who shall be subject to the provisions of this Agreement related to such portion of the Site.

Section 6. *Project is a Private Undertaking.* It is agreed among the parties that the Project is a private development and that the City has no interest therein except as authorized in the exercise of its governmental functions.

Section 7. *Term of Agreement.* This Agreement shall commence upon the effective date of the Adopting Ordinance approving this Agreement, and shall continue in force indefinitely. This agreement may be modified upon the City's adoption of zoning for the site in a fashion consistent with the Comprehensive Plan, provided that any modification to the agreement shall be consistent with Section 18 herein and shall be consistent with the intent of this agreement. This or any future agreement shall be terminated when the Site has been fully developed. Fully developed shall mean any combination of final plat and site plan approval consistent with this agreement that bind the entire site. The terms and conditions of settlement agreement regarding Eastern Washington Growth Management Hearing Board appeal No. 09-1004 are incorporated by reference into this development agreement. Other than as set forth in these agreements, the Growth Board Petitioners do not obtain any greater participation rights I the development of the site described in Exhibit A.

Section 8. *Vested Rights of Owner.* During the term of this Agreement, in developing the Site consistent with the Project described herein, the Owners are assured, and the City agrees, that the Site shall be permitted to develop in accordance with the comprehensive plan designations put into place on the site and that the development rights, obligations, terms and conditions specified in this Agreement are fully vested in the Owners and may not be changed or modified by the City, except as may be expressly permitted by, and in accordance with, the terms and conditions of this Agreement, or as expressly consented thereto by the Owners.

Section 9. *Current Permitted Uses* The current permitted uses, the density and intensity of use, the maximum height and size of proposed buildings shall be consistent with the zoning regulations pertaining to the SAG Suburban Agriculture and AG – Agricultural zoning districts, as codified in Title 23 of the Richland Municipal Code. This zoning shall remain in place until such time when the Owners and/or a Developer brings forward a proposal to amend the zoning.

Section 10 *Future Uses.* The future permitted uses, the density and intensity of use, the maximum height and size of proposed buildings shall be determined when the City grants approval of an application(s) for zoning amendment brought forward by the Owners and/or Developer. The future zoning shall be consistent with the City's adopted comprehensive plan and shall include the following:

a) A buffer area of Low density residential development designated along the westerly property boundary of the Site, adjacent to the Country Ridge property line and zoned for R-1-12. The buffer would provide for two tiers of single family residential lots separated by a road corridor, providing for an overall density not to exceed three (3) lots per acre (inclusive of such road corridor). A Planned Unit Development may be utilized to achieve a density average consistent with this agreement. These lots would meet all R-1-12 zoning standards, and such lots adjoining the adjacent Country Ridge development shall be laid out with their rear yards facing the County Ridge property line.

b) Areas that are designated as Medium Density Residential in the comprehensive plan may be developed to an average density of ten (10) units per acre. For the purposes of calculating density within the Medium Density portions of the site, all residential lands designated either Low density residential or Medium Density Residential may be used to determine the maximum overall permitted density of ten (10) units per acre, provided that the low density buffer identified in subsection a (above) shall be maintained at a maximum density of 3 dwelling units per acre.

c) A masonry wall, at least six feet in height shall be installed along the length of the western property boundary of the Site, providing a separation between the Site and the adjoining plat of Country Ridge. This wall shall be constructed simultaneously with the development of the adjacent lands that are designated Low Density Residential. Approval of a specific design for the masonry wall shall be part of the development approval process for the Low Density Residential lands. The wall shall be constructed in earth tones consistent with surrounding neighborhoods such as the Applewood and Cherrywood subdivisions.

d) The Owners shall provide a dedication of a future Queensgate Drive Right-of-Way, extending southward from Keene Road, through the Site to its connection to Shockley Road. This Right-of-Way dedication shall be granted in its entirety at the time that a zoning application is brought forward by the Owners or a Developer for any portion of the Site. The Right-of-Way dedication for Queensgate Drive shall be 70 feet in width. The specific alignment of the future roadway shall be as mutually agreed to by the Owners and the City. Queensgate Drive has been classified as a planned Areterial Collector on the City's Street Function Class Map. As such, direct access from residential lots will be prohibited and commercial access will be managed to limit the number of access points.

e) Buffer standards for the eastern boundary of the site shall be established at the time a specific zoning proposal is submitted to the City and at a minimum shall address:
   1. Building setbacks;
   2. Maximum building height;
   3. Landscape screening and/or fencing;
   4. Restrictions on outdoor lighting;

5. Restrictions on location of outdoor storage areas, truck loading docks, refuse collection areas.

The intent of the buffer shall be to provide an adequate separation between the proposed commercial/multi-family residential use and the adjoining low density residential land use to protect the low density residential property from impacts of noise, and light and glare.

f) No access for future development from the Site onto Keene Road will be permitted. Access from future development onto the future Queensgate Drive shall be separated from the Keene Road/Queensgate Drive intersection by a minimum distance of 300 feet;

g) Zoning for the portions of the site designated as Commercial shall either be C-1 Neighborhood Retail or shall be part of a Planned Unit Development that will specifically limit the potential commercial uses to those that are of a neighborhood scale and compatible with nearby residential uses and otherwise consistent with C-1 Neighborhood Retail zoning. Zoning for the portions of the site designated as Multi-Family/Office shall be zoned C-LB Limited Business or shall be part of a Planned Unit Development that will specifically limit uses to those that are compatible with C-LB Limited Business zoning. In either case, the permitted development will be specifically limited to buildings no more than thirty (30) feet in height or more than two-stories.

h) Development proposals within the portions of the Site designated as Commercial shall not be approved unless they are determined to be consistent with the design standards included in Exhibit B (attached) of this agreement and Section 23.28.020(D)(1) through (4) of the Richland Municipal Code.

i) Development proposals within the portions of the Site designated as Low Density Residential shall be reviewed and approved through the City Subdivision process as specified in Title 24 of the Richland Municipal Code or through the Planned Unit Development Application Procedures as set forth in Chapter 23.50 of the Richland Municipal Code.

j) Development proposals within the portion of the site adjoining Lariat Lane Right-of-Way shall provide for the extension of Lariat Lane eastward to connect with the future Queensgate Drive extension, unless said extension is determined to be unnecessary by the City. Any extension of Lariat Lane into the Site shall be accomplished through an indirect route that will include at least nine hundred (900) feet of travel in a north-south orientation before Lariat Lane can be connected to Queensgate Drive. The design of Lariat Lane may also include other traffic calming measures. The intent of this provision is to provide connectivity between the Country Ridge neighborhood and the Site but to keep Lariat Lane from functioning as a collector street.

k) The process of implementing the comprehensive plan may result in some minor deviations to the plan, such as adjustments in zoning boundary lines. Such deviations may be acceptable if they are deemed minor in nature and consistent with Items a through j as listed above.

l) The City shall provide notification to the Country Ridge Homeowners Association President and Richard Forman of any development proposed

within the Site that requires public review under the provisions of the Richland Municipal Code.

Section 11. *Subject to City Development Standards.* The Owners acknowledge that the development of the site shall be subject to the City's development standards in place at the time development proposals are brought forward, including but not limited to requirements for payments of fees and/or dedication of property for mitigation of traffic and park impacts; and for the installation and extension of public utility and street systems.

Section 12. *Further Discretionary Actions.* The Owners acknowledge that the City Municipal Code contemplates the exercise of further discretionary powers by the City. These powers include, but are not limited to, review of permit applications under SEPA and under the provisions of Title 19 of the Richland Municipal Code – Development Regulation Administration. Nothing in this Agreement shall be construed to limit the authority or the obligation of the City to hold legally required public hearings, or to limit the discretion of the City and any of its officers or officials in complying with or applying the provisions of the City Municipal Code.

Section 13. *Existing Land Use Fees and Impact Fees.*

A. Land use fees adopted by the City by ordinance as of the effective date of this Agreement may be increased by the City from time to time, and applicable to permits and approvals for the Site, as long as such fees apply to similar applications and projects in the City.

B. All impact fees shall be paid as set forth in the approved permit or approval, or as addressed in the Titles 12 and 20 of the Richland Municipal Code.

Section 14. *Default.*

A. Failure or delay by either party not released from this Agreement, to perform any term or provision of this Agreement shall constitute a default. In the event of alleged default or breach of any terms or conditions of this Agreement, the party alleging such default or breach shall give the other party not less than thirty (30) days notice in writing, specifying the nature of the alleged default and the manner in which said default may be cured. During this thirty (30) day period, the party or Owners charged shall not be considered in default for purposes of termination or institution of legal proceedings.

B. After notice and expiration of the thirty (30) day period, if such default has not been cured or is not being diligently cured in the manner set forth in the notice, the other party or Owners to this Agreement may, at its option, institute legal proceedings pursuant to this Agreement. In addition, the City may decide to file an action to enforce the City's Codes, and to obtain penalties and costs as provided in the Richland Municipal Code.

C. Extensions of time granted in writing by mutual consent by all parties to this agreement shall not be construed as a default.

Section 15. *Termination* This or any future Agreement shall be terminated when the Site has been fully developed in accordance with the Agreement. Fully developed shall mean

any combination of final plat approval and site plan approval consistent with this agreement that binds the entire site.

Section 16. *Assignment and Assumption.* This agreement shall not restrict the right of the owners to sell, assign or transfer their properties to any person, firm or corporation. The Owners shall provide the City with written notice of any intent to sell, assign, or transfer all or a portion of the Subject Property, at least 30 days in advance of such action.

Section 17. *Covenants Running with the Land.* The conditions and covenants set forth in this Agreement and incorporated herein by the Exhibits shall run with the land and the benefits and burdens shall bind and inure to the benefit of the parties. The Owners, Developer(s) and every purchaser, assignee or transferee of an interest in the Site, or any portion thereof, shall be obligated and bound by the terms and conditions of this Agreement, and shall be the beneficiary thereof and a party thereto, but only with respect to the Site, or such portion thereof, sold, assigned or transferred to it. Any such purchaser, assignee or transferee shall observe and fully perform all of the duties and obligations of an Owner contained in this Agreement, as such duties and obligations pertain to the portion of the Site sold, assigned or transferred to it.

Section 18. *Amendment to Agreement; Effect of Agreement on Future Actions.* This Agreement may be amended by mutual consent of all of the parties, to make minor amendments consistent with the terms of this agreement or to obtain relief from unduly oppressive terms or conditions, provided that any such amendment shall follow the process established by law for the adoption of a development agreement (*see,* RCW 36.70B.200) and be consistent with the intent of the original agreement. However, nothing in this Agreement shall prevent the City Council from making any amendment to its Comprehensive Plan, Zoning Code, Official Zoning Map or development regulations affecting the Site as the City Council may deem necessary to the extent required by a serious threat to public health and safety. The City shall provide notification to the Country Ridge Homeowners Association President of any proposed amendment to this Development Agreement.

Section 19. *Releases.* Owners, and any subsequent Developer, may free itself from further obligations relating to the sold, assigned, or transferred property, provided that the buyer, assignee or transferee expressly assumes the obligations under this Agreement as provided herein.

Section 20. *Notices.* Notices, demands, correspondence to the City and Owners shall be sufficiently given if dispatched by pre-paid first-class mail to the addresses of the parties as designated in Section 5. Notice to the City shall be to the attention of both the City Director of Community Development and the City Attorney. Notices to subsequent Owners shall be required to be given by the City only for those Owners who have given the City written notice of their address for such notice. The parties hereto may, from time to time, advise the other of new addresses for such notices, demands or correspondence.

Section 21. *Applicable Law and Attorneys' Fees.* This Agreement shall be construed and enforced in accordance with the laws of the State of Washington. If litigation is initiated to enforce the terms of this Agreement, the prevailing party shall be entitled to recover its reasonable attorneys' fees and costs from the non-prevailing party. Venue for any action shall lie in Benton County Superior Court or the U.S. District Court for Eastern Washington.

Section 22. *Third Party Legal Challenge.* In the event any legal action or special proceeding is commenced by any person or entity other than a party or an Owner to challenge this Agreement or any provision herein, the City may elect to tender the defense of such lawsuit or individual claims in the lawsuit to Owner(s). In such event, Owners shall hold the City harmless from and defend the City from all costs and expenses incurred in the defense of such lawsuit or individual claims in the lawsuit, including but not limited to, attorneys' fees and expenses of litigation, and damages awarded to the prevailing party or parties in such litigation. The Owners shall not settle any lawsuit without the consent of the City. The City shall act in good faith and shall not unreasonably withhold consent to settle.

Section 23. *Specific Performance.* The parties specifically agree that damages are not an adequate remedy for breach of this Agreement, and that the parties are entitled to compel specific performance of all material terms of this Development Agreement by any party in default hereof.

Section 24. *Severability.* If any phrase, provision or section of this Agreement is determined by a court of competent jurisdiction to be invalid or unenforceable, or if any provision of this Agreement is rendered invalid or unenforceable according to the terms of any statute of the State of Washington which became effective after the effective date of the ordinance adopting this Agreement, and either party in good faith determines that such provision or provisions are material to its entering into this Agreement, that party may elect to terminate this Agreement as to all of its obligations remaining unperformed.

IN WITNESS WHEREOF, the parties hereto have caused this Development Agreement to be executed as of the dates set forth below:

OWNERS

11/13/09
JOHN C. PERRY

Julee Ann Perry 5-26-09
JULEE ANN PERRY

Linda Norwood
LINDA NORWOOD

Beulah B Cosens
BEULAH COSENS

KERRY WATTS 5-11-10

JONGJIT WATTS 5-11-10

CITY OF RICHLAND

CYNTHIA D. JOHNSON for
City Manager

APPROVED AS TO FORM:

THOMAS L. O. LAMPSON
City Attorney 4/20/10

10

ORDINANCE NO. 2022-03

AN ORDINANCE OF THE CITY OF RICHLAND, WASHINGTON, AMENDING THE 2010 LAND DEVELOPMENT AGREEMENT AFFECTING 47 ACRES SOUTH OF KEENE ROAD AND EAST OF THE PLAT OF COUNTRY RIDGE.

WHEREAS, on July 20, 2010, the City entered into a Development Agreement affecting 47 acres south of Keene Road and east of the Plat of Country Ridge (the "Original Agreement")(Richland Contract No. 92-10); and

WHEREAS, the Original Agreement was entered into pursuant to RCW 36.70B.170(1) and as authorized by City of Richland Ordinance No. 21-10 for the purpose of settling an appeal filed by the Country Ridge Homeowners Association related to the City's 2009 Comprehensive Plan amendments affecting the property (*see* Eastern Washington Growth Management Hearing Board Appeal No. 09-1004); and

WHEREAS, by its own terms, the Original Agreement may be amended by mutual agreement of the parties with notice to the Country Ridge Homeowners Association President; and

WHEREAS, despite execution of the Original Agreement in 2010, the property has remained undeveloped, likely due to the fact that its ownership has been divided among multiple unrelated individuals; and

WHEREAS, recently, the 47-acre property came under the common ownership of Columbia Valley Property Holdings, LLC; and

WHEREAS, the City received a request from the property owner to amend the Original Agreement, and a letter of support from the Country Ridge Homeowners Association. Upon review, the proposed First Amendment to Development Agreement maintains critical components of the Original Agreement and appears to be consistent with the intent of the 2010 settlement agreement and the Richland Comprehensive Plan amendments adopted by Ordinance No. 21-10; and

WHEREAS, a public hearing is required before a decision on the proposed First Amendment to Development Agreement can be rendered by Richland City Council (RCW 36.70B.200).

NOW, THEREFORE, BE IT ORDAINED by the City of Richland as follows:

Section 1. The findings and conclusions contained in Section 1.01 of Ordinance No. 21-10 are adopted in support of approval of the First Amendment to Development Agreement and are incorporated by this reference as though set forth herein.

Section 2. The First Amendment to Development Agreement, attached hereto as **Exhibit A**, allows for development of a coordinated mixed use plan benefitting South Richland and the City as a whole while leaving all critical components of the Original Agreement unchanged.

Section 3. The Country Ridge Homeowners Association submitted written approval signed by a duly authorized representative acknowledging no opposition to the proposed amendments to the Original Agreement.

Section 4. The First Amendment to Development Agreement attached hereto as **Exhibit A** is hereby approved, and the City Manager is authorized to sign the same on behalf of the City of Richland.

Section 5. This Ordinance shall take effect the day following its publication in the official newspaper of the City of Richland.

Section 6. Should any section or provision of this Ordinance be declared by a court of competent jurisdiction to be invalid, that decision shall not affect the validity of the Ordinance as a whole or any part thereof, other than the part so declared to be invalid.

Section 7. The City Clerk and the codifiers of this Ordinance are authorized to make necessary corrections to this Ordinance, including but not limited to the correction of scrivener's errors/clerical errors, section numbering, references, or similar mistakes of form.

PASSED by the City Council of the City of Richland, Washington, at a regular meeting on the 15th day of February, 2022.

Michael Alvarez, Mayor

Attest:

Jennifer Rogers, City Clerk

Approved as to Form:

Heather Kintzley, City Attorney

First Reading: February 1, 2022
Second Reading: February 15, 2022
Date Published: February 20, 2022

FIRST AMENDMENT TO DEVELOPMENT AGREEMENT

THIS FIRST AMENDMENT to the July 20, 2010 Development Agreement is made and entered into this ____ day of _____, 2022 (the "Effective Date") by and between the **City of Richland**, a Washington municipal corporation ("City") and **Columbia Valley Property Holdings, LLC**, a Washington limited liability company and successor-in-interest to John Perry, Julee Ann Perry, Beulah Cousins, Linda Norwood, and Kerry and Jongjit Watts ("Owner").

I. RECITALS

WHEREAS, the City and original owners entered into a Development Agreement authorized by RCW 36.70B.170(1) dated July 20, 2010 and recorded under Benton County Auditor's File No. 2010-024273 (the "Original Agreement"); and

WHEREAS, the Original Agreement set forth development standards relating to the future zoning and development of the property subject to the Development Agreement (sometimes referred to as the "Property" or the "Site"); and

WHEREAS, the current Owner (as successor-in-interest to the original owners) has requested modifications to the Original Agreement to accommodate future mixed-use development on the Site, which modifications are substantially consistent with the intent of the Original Agreement and allowed under Section 18 of the Original Agreement and applicable law (*see* RCW 36.70B.200); and

WHEREAS, the Parties have agreed to amend the Original Agreement as set forth below in order for the Site to be developed.

NOW, THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the City and the Owner hereby agree as follows:

II. AGREEMENT

1. **Section 5(b)** of the Original Agreement, under the title *Parties to Development Agreement*, is replaced in its entirety with the following:

   > b) The "Owner" is Columbia Valley Property Holdings, LLC, who has succeeded to the interest of the original owners under the Original Agreement and is Owner of the entire Site.

2. **Section 7** of the Original Agreement, under the title *Term of Agreement*, is replaced in its entirety with the following:

   > Section 7. *Term of Agreement*. This Agreement (as amended) shall commence on the effective date of the Adopting Ordinance approving this Amendment. This Agreement may be further modified upon the City's adoption of zoning regulations or land use applications consistent with the Comprehensive Plan, provided that any additional modifications to the Agreement shall be consistent with Section 18 of the Original Agreement and applicable law. The Agreement (as amended) shall terminate when the Site has been fully developed. "Fully developed" means any combination of subdivision, site plan or land use approvals consistent with the

Agreement that bind the entire Site. The Country Ridge Homeowners Association, a Washington non-profit corporation, reviewed the terms of the Original Agreement and the First Amendment to the Development Agreement, although not a formal party to the Agreement, and by its letter attached hereto as **Exhibit A-1**, confirms that the Original Agreement (as amended) meets the intent of the Settlement Agreement regarding Eastern Washington Growth Management Hearing Board appeal No. 09-1004, the terms and conditions of which are hereby incorporated by reference into this Agreement. Other than as set forth in these agreements, the Growth Board Petitioners do not obtain any greater participation rights in the development of the Site described in Exhibit A.

3. **Section 10(d)** of the Original Agreement, under the title *Future Uses*, is replaced in its entirety with the following:

   d) The Owner shall provide dedicated right-of-way for a future extension of Queensgate Drive, extending southward from Keene Road, through the Site to its connection to Shockley Road. This right-of-way dedication shall be made to the City at the time that an applicable land use application is reviewed and finalized by the Owner or a Developer for any portion of the Site, and shall be dedicated in its entirety at such time. The right-of-way width for future Queensgate Drive shall be determined at the subdivision or land use approval stage based on City development standards then in effect and consultation with the City's Public Works Director or designee. The specific alignment of the future roadway for Queensgate Drive shall be mutually agreed to by the Owner (or the Developer) and the City. Access points to and from future Queensgate Drive shall be determined at the subdivision or project review stage, however, the Owner (and Developer as the Owner's successor-in-interest) understands that direct access from single family residential lots shall not be allowed, and commercial access points may be limited consistent with City development standards then in effect and based on review and evaluation by the City's Public Works Director or designee.

4. **Section 10(f)** of the Original Agreement, under the title *Future Uses*, is replaced in its entirety with the following:

   f) Access from future development onto Keene Road and/or the future Queensgate Drive shall be subject to road approach review and/or permits from the City, which review may include review of commercially reasonable site distances from existing intersections, including the intersection of Keene Road/Queensgate Drive.

5. **Section 10(g)** of the Original Agreement, under the title *Future Uses*, is replaced in its entirety with the following:

   g) Zoning for the portion of the Site designated as Commercial may be C-1, C-2 or C-LB or may be part of a Planned Unit Development. Identified compatibility concerns at the zoning or project stage may be addressed by concomitant agreement(s) that limit potential commercial uses shown to be incompatible with nearby residential uses. Zoning for the portions of the Site designated as Multi-Family/Office shall be zoned C-LB (Limited Business) or shall be part of a Planned Unit Development. Unless otherwise approved by a variance at the project stage, permitted development will be limited to building heights no more than **forty (40) feet** on portions of the Site zoned commercial west of Queensgate Drive. Attached

as **Exhibit B-1** is a colored land use map showing the existing comprehensive plan designations for the Site.

6. Effect of Amendment. This First Amendment to the Development Agreement is intended to modify the Original Agreement. In the event of a conflict between the terms and conditions of the Original Agreement and this Amendment, the terms and provisions of this First Amendment shall control. Except as expressly modified by this First Amendment to the Development Agreement, all terms and conditions of the Original Agreement remain in full force and effect.

7. Governing Law. This Amendment shall be construed in accordance and governed by the laws of the state of Washington.

8. Effective Date. This First Amendment to the Development Agreement is made effective on the Effective Date first set forth above.

City of Richland
a Washington municipal corporation

By: _____
Jon Amundson, ICMA-CM
City Manager

Columbia Valley Property Holdings, LLC
a Washington limited liability company

By: _____
Mallikarjuna Vallem
Managing Member

Approved as to Form:

_____
Heather Kintzley, City Attorney

BENTON-FRANKLIN TITLE COMPANY
510 N. COLORADO ST., STE B
KENNEWICK, WA 99336 Phone: 509-783-0661 Fax: 509-783-2256

SUBDIVISION GUARANTEE

SCHEDULE A

Office File Number	Policy Number	Date of Policy	Amount of Insurance	Premium
BF15325 Ref. No.:		at **12:00 AM**	**$0.00**	**$0.00**

NAME OF ASSURED:

Aqtera Engineering

THE ASSURANCES REFERRED TO ON THE FACE PAGE ARE:

THAT, ACCORDING TO THOSE PUBLIC RECORDS WHICH, CONSTRUCTIVE NOTICE OF MATTERS RELATIVE TO THE DESCRIPTION OF WHICH IS FULLY SET FORTH IN UNDER THE RECORDING LAWS, IMPART FOLLOWING DESCRIBED REAL PROPERTY:

SEE ATTACHED EXHIBIT "A"

TITLE TO SAID REAL PROPERTY IS VESTED IN:

Columbia Valley Property Holdings, LLC, a Washington Limited Liability Company

SUBJECT TO THE MATTERS SHOWN BELOW UNDER EXCEPTIONS, WHICH EXCEPTIONS ARE NOT NECESSARILY SHOWN IN THE ORDER OF THEIR PRIORITY.

EXCEPTIONS:

1. GENERAL TAXES AND ASSESSMENTS, IF ANY, NO SEARCH HAVING BEEN MADE THEREOF; ALSO, TAXES OR ASSESSMENTS WHICH ARE NOT SHOWN AS EXISTING LIENS BY THE RECORDS OF ANY TAXING AUTHORITY THAT LEVIES TAXES OR ASSESSMENTS ON REAL PROPERTY OR BY THE PUBLIC RECORDS.

2. UNPATENTED MINING CLAIMS, RESERVATIONS OR EXCEPTIONS IN THE UNITED STATES PATENTS OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF; WATER RIGHTS, CLAIMS OR TITLE TO WATER.

3. TITLE TO ANY PROPERTY BEYOND THE LINES OF THE REAL PROPERTY EXPRESSLY DESCRIBED HEREIN, OR TITLE TO STREETS, ROADS, AVENUES, LANES, WAYS OR WATERWAYS ON WHICH SUCH REAL PROPERTY ABUTS, OR THE RIGHT TO MAINTAIN THEREIN VAULTS, TUNNELS, RAMPS, OR ANY OTHER STRUCTURE OR IMPROVEMENT; OR ANY RIGHTS OR EASEMENTS THEREIN UNLESS SUCH PROPERTY, RIGHTS OR EASEMENTS ARE EXPRESSLY AND SPECIFICALLY SET FORTH IN SAID DESCRIPTION.

Policy Number:

ADDITIONAL EXCEPTIONS:

1. **LIABILITY TO FUTURE ASSESSMENT BY KENNEWICK IRRIGATION DISTRICT, NONE NOW DUE AND PAYABLE.**

2. **RESERVATIONS BY THE UNITED STATES OF AMERICA INSTRUMENT RECORDED UNDER AUDITOR'S FILE NO. 514550.**

3. **MATTERS SHOWN ON RECORD SURVEY NOS. 1098, 504 AND 5562.**

4. **DEVELOPMENT AGREEMENT RECORDED UNDER AUDITOR'S FILE NO. 2010-024273.**

5. **GROWTH MANAGEMENT SETTLEMENT AGREEMENT RECORDED UNDER AUDITOR'S FILE NO. 2010-024274.**

6. **UNRECORDED LEASEHOLDS, IF ANY; RIGHTS OF VENDORS AND HOLDERS OF A SECURITY INTEREST ON PERSONAL PROPERTY INSTALLED UPON THE LAND; AND RIGHTS OF TENANTS TO REMOVE TRADE FIXTURES AT THE EXPIRATION OF THE TERM.**

7. **EASEMENT, INCLUDING THE TERMS, COVENANTS AND PROVISIONS THEREOF;**
   RECORDED: NOVEMBER 25, 1959
   RECORDING NO.: 427504
   IN FAVOR OF: BENTON RURAL ELECTRIC ASSOCIATION
   FOR: ELECTRIC POWER WIRES

8. **EASEMENT, INCLUDING THE TERMS, COVENANTS AND PROVISIONS THEREOF;**
   RECORDED: FEBRUARY 21, 1957
   RECORDING NO.: 368616
   IN FAVOR OF: BENTON RURAL ELECTRIC ASSOCIATION
   FOR: ELECTRIC POWER WIRES

9. **TERMS AND CONDITIONS OF THOSE CERTAIN CONTRACTS RELATIVE TO THE OPERATION OF THE KENNEWICK IRRIGATION DISTRICT ENTERED INTO BETWEEN THE UNITED STATES OF AMERICA AND GEORGE AND BETTY HUNT AND RECORDED OCTOBER 15, 1956 UNDER AUDITOR'S FILE NO. 363433.**

10. **EASEMENT AND THE TERMS AND CONDITIONS THEREOF:**
    GRANTEE: KERRY AND JONGJIT WATTS
    RECORDED: October 18, 2007
    AUDITOR'S FILE NO.: 2007-034554
    AREA AFFECTED: PARCEL A
    FOR: UTILITIES

11. **DEED OF TRUST AND THE TERMS AND CONDITIONS THEREOF:**
    GRANTOR: COLUMBIA VALLEY PROPERTY HOLDINGS, LLC
    TRUSTEE: BENTON FRANKLIN TITLE COMPANY
    BENEFICIARY: THE TIGER IRON TRUST, DATED JANUARY 14TH 2017, ACTING BY AND THROUGH KERRY LINDON WATTS, TRUSTEE
    AMOUNT: $7,250,000.00
    DATED: UNDISCLOSED
    RECORDED: November 10, 2021
    AUDITOR'S FILE NO.: 2021-051441

Policy Number:

12. DEED OF TRUST AND THE TERMS AND CONDITIONS THEREOF:

GRANTOR:	COLUMBIA VALLEY PROPERTY HOLDINGS, LLC
TRUSTEE:	BENTON FRANKLIN TITLE COMPANY
BENEFICIARY:	FRIENDSHIP ENTERPRISES, LLC
AMOUNT:	$2,750,000.00
DATED:	UNDISCLOSED
RECORDED:	November 10, 2021
AUDITOR'S FILE NO.:	2021-051460

13. DEED OF TRUST AND THE TERMS AND CONDITIONS THEREOF:

GRANTOR:	COLUMBIA VALLEY PROPERTY HOLDINGS, LLC
TRUSTEE:	BENTON FRANKLIN TITLE COMPANY
BENEFICIARY:	FRIENDSHIP ENTERPRISES, LLC
AMOUNT:	$2,000,000.00
DATED:	UNDISCLOSED
RECORDED:	November 10, 2021
AUDITOR'S FILE NO.:	2021-051461

14. DEED OF TRUST AND THE TERMS AND CONDITIONS THEREOF:

GRANTOR:	COLUMBIA VALLEY PROPERTY HOLDINGS, LLC
TRUSTEE:	BENTON FRANKLIN TITLE COMPANY
BENEFICIARY:	FRIENDSHIP ENTERPRISES, LLC
AMOUNT:	$1,500,000.00
DATED:	UNDISCLOSED
RECORDED:	November 10, 2021
AUDITOR'S FILE NO.:	2021-051462

15. DEED OF TRUST AND THE TERMS AND CONDITIONS THEREOF:

GRANTOR:	COLUMBIA VALLEY PROPERTY HOLDINGS, LLC
TRUSTEE:	BENTON FRANKLIN TITLE COMPANY
BENEFICIARY:	FRIENDSHIP ENTERPRISES, LLC
AMOUNT:	$500,000.00
DATED:	UNDISCLOSED
RECORDED:	November 10, 2021
AUDITOR'S FILE NO.:	2021-051463

END OF SCHEDULE A EXCEPTIONS.

Subdivision Guarantee

Benton Franklin Title Company

Privacy Policy Notice

PURPOSE OF THIS NOTICE

Title V of the Gramm-Leach-Bliley Act (GLBA) generally prohibits any financial institution, directly or through its affiliates, from sharing nonpublic personal information about you with a nonaffiliated third party unless the institution provides you with a notice of its privacy policies and practices, such as the type of information that it collects about you and the categories of persons or entities to whom it may be disclosed. In compliance with the GLBA, we are providing you with this document, which notifies you of the privacy policies and practices of **Benton Franklin Title Company**

We may collect nonpublic personal information about you from the following sources:

Information we receive from you such as on applications or other forms.
Information about your transactions we secure from our files, or from [our affiliates or] others.
Information we receive from a consumer reporting agency.
Information that we receive from others involved in your transaction, such as the real estate agent or lender.

Unless it is specifically stated otherwise in an amended Privacy Policy Notice, no additional nonpublic personal information will be collected about you.

We may disclose any of the above information that we collect about our customers or former customers to our affiliates as permitted by law.

WE DO NOT DISCLOSE ANY NONPUBLIC PERSONAL INFORMATION ABOUT YOU WITH ANYONE FOR ANY PURPOSE THAT IS NOT SPECIFICALLY PERMITTED BY LAW.

We restrict access to nonpublic personal information about you to those employees who need to know that information in order to provide products or services to you. We maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

ORT 287-C 5/07/01

EXHIBIT A

LOT 1 (1-2298-303-0002-002)

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;

THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 2433.16 FEET TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER AUDITOR'S FILE NO. 845365;

THENCE SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 167.97 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET;

THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 2°58'00" A DISTANCE OF 294.60 FEET;

THENCE SOUTH 53°13'09" EAST, ALONG SAID MARGIN, A DISTANCE OF 101.12 FEET;

THENCE SOUTH 66°00'37" EAST, ALONG SAID MARGIN, A DISTANCE OF 66.36 FEET TO THE TRUE POINT OF BEGINNING;

THENCE, LEAVING SAID MARGIN, SOUTH 27°57'01" WEST A DISTANCE OF 289.88 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1090.00 FEET;

THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 23°53'51" A DISTANCE OF 454.63 FEET TO A POINT OF COMPOUND CURVE HAVING A RADIUS OF 9540.00 FEET;

THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 3°54'48" A DISTANCE OF 651.57 FEET;

THENCE NORTH 88°25'48" EAST A DISTANCE OF 276.58 FEET;

THENCE NORTH 89°14'37" EAST A DISTANCE OF 98.91 FEET;

THENCE NORTH 00°41'01" WEST A DISTANCE OF 883.15 FEET;

THENCE NORTH 42°11'07" EAST A DISTANCE OF 376.94 FEET TO THE HEREINBEFORE SAID RIGHT-OF-WAY MARGIN AND THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET AND FROM WHICH THE CHORD BEARS NORTH 59°04'12" WEST A DISTANCE OF 10.47 FEET;

THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 0°06'20" A DISTANCE OF 10.47 FEET;

THENCE NORTH 70°46'11" WEST, ALONG SAID MARGIN, A DISTANCE OF 50.61 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5680.00 FEET AND FROM WHICH THE CHORD BEARS NORTH 60°52'21" WEST A DISTANCE OF 247.80 FEET;

THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 2°29'59" A DISTANCE OF 247.82 FEET;

THENCE NORTH 66°00'37" WEST, ALONG SAID MARGIN, A DISTANCE OF 66.36 FEET TO THE POINT OF BEGINNING.

LOT 2 (1-2298-300-0002-001)

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;

THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 260.00 FEET;

THENCE, LEAVING SAID LINE, NORTH 89°14'37" EAST A DISTANCE OF 20.03 FEET;

THENCE SOUTH 00°29'16" WEST A DISTANCE OF 79.99 FEET;

THENCE NORTH 89°14'37" EAST A DISTANCE OF 105.00 FEET;

THENCE SOUTH 00°29'16" WEST A DISTANCE OF 150.00 FEET TO INTERSECT A LINE 30.00 FEET NORTHERLY OF AND PARALLEL WITH THE SOUTH LINE OF SAID SECTION;

THENCE NORTH 89°14'37" EAST, ALONG SAID PARALLEL LINE, A DISTANCE OF 266.75 FEET TO THE TRUE POINT OF BEGINNING;

THENCE NORTH 89°14'37" EAST, ALONG SAID PARALLEL LINE, A DISTANCE OF 242.31 FEET;

THENCE, LEAVING SAID LINE, NORTH 00°29'16" EAST A DISTANCE OF 767.54 FEET;

THENCE SOUTH 88°25'48" WEST A DISTANCE OF 276.58 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE EAST HAVING A RADIUS OF 9540.00 FEET AND FROM WHICH THE CHORD BEARS SOUTH 02°05'05" EAST A DISTANCE OF 740.58 FEET;

THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 4°26'56" A DISTANCE OF 740.77 FEET TO A POINT OF REVERSE CURVE HAVING A RADIUS 260.00 FEET;

THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 4°41'08" A DISTANCE OF 21.26 FEET;

THENCE SOUTH 00°22'35" WEST A DISTANCE OF 1.80 FEET TO THE POINT OF BEGINNING.

LOT 3 (1-2298-300-0003-002)

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;

THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 2433.16 FEET TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER AUDITOR'S FILE NO. 845365;

THENCE SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 167.97 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET;

THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 0°28'22" A DISTANCE OF 46.96 FEET TO THE TRUE POINT OF BEGINNING;

THENCE CONTINUING SOUTHEASTERLY ALONG THE ARC OF SAID CURVE AND ALONG SAID MARGIN THROUGH A CENTRAL ANGLE OF 2°29'37" A DISTANCE OF 247.65 FEET;

THENCE SOUTH 53°13'09" EAST, ALONG SAID MARGIN, A DISTANCE OF 101.12 FEET;

THENCE SOUTH 66°00'37" EAST, ALONG SAID MARGIN, A DISTANCE OF 66.36 FEET;

THENCE, LEAVING SAID MARGIN, SOUTH 27°57'01" WEST A DISTANCE OF 289.88 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 1090.00 FEET;

THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 15°01'40" A DISTANCE OF 285.89 FEET;

THENCE SOUTH 89°57'18" WEST A DISTANCE OF 199.29 FEET;

THENCE NORTH 00°29'16" EAST A DISTANCE OF 736.83 FEET TO THE POINT OF BEGINNING.

LOT 4 (1-2298-300-0004-000)

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;

THENCE NORTH 00°29'16" EAST ALONG THE WEST LINE THEREOF A DISTANCE OF 260.00 FEET TO THE TRUE POINT OF BEGINNING;

THENCE CONTINUING NORTH 00°29'16" EAST ALONG SAID WEST LINE A DISTANCE OF 2173.16 FEET TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER AUDITOR'S FILE NO. 845365;

THENCE SOUTH 68°05'20" EAST ALONG SAID MARGIN A DISTANCE OF 167.97 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHWEST HAVING A RADIUS OF 5690.00 FEET;

THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, AND ALONG SAID MARGIN, THROUGH A CENTRAL ANGLE OF 0°28'22" A DISTANCE OF 46.96 FEET;

THENCE, LEAVING SAID MARGIN, SOUTH 00°29'16" WEST A DISTANCE OF 736.83 FEET;

THENCE NORTH 89°57'18" EAST A DISTANCE OF 199.29 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE TO THE EAST HAVING A RADIUS OF 1090.00 FEET AND FROM WHICH THE CHORD BEARS SOUTH 08°29'16" WEST A DISTANCE OF 168.57 FEET;

THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 8°52'11" A DISTANCE OF 168.74 FEET TO A POINT OF COMPOUND CURVE HAVING A RADIUS OF 9540.00 FEET;

THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 8°21'44" A DISTANCE OF 1392.33 FEET TO A POINT OF REVERSE CURVE HAVING A RADIUS 260.00 FEET;

THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 4°41'08" A DISTANCE OF 21.26 FEET;

THENCE SOUTH 00°22'35" WEST A DISTANCE OF 1.80 FEET TO INTERSECT A LINE 30.00 FEET NORTHERLY OF AND PARALLEL WITH THE SOUTH LINE OF SAID SECTION;

THENCE SOUTH 89°14'37" WEST, ALONG SAID PARALLEL LINE, A DISTANCE OF 266.75 FEET;

THENCE, LEAVING SAID LINE, NORTH 00°29'16" EAST A DISTANCE OF 150.00 FEET;

THENCE SOUTH 89°14'37" WEST A DISTANCE OF 105.00 FEET;

THENCE NORTH 00°29'16" EAST A DISTANCE OF 79.99 FEET;

THENCE SOUTH 89°14'37" WEST A DISTANCE OF 20.03 FEET TO THE PONT OF BEGINNING.

LOT 5 (1-2298-300-0001-009)

THAT PORTION OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON, LYING SOUTHERLY OF THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD AS DEEDED TO THE STATE OF WASHINGTON BY WARRANTY DEED RECORDED UNDER BENTON COUNTY AUDITOR'S FILE NO. 845365 AND LYING NORTH AND WEST OF THE FOLLOWING DESCRIBED LINE:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 22;

THENCE NORTH 00°32'05" EAST ALONG THE WEST LINE OF SAID SECTION A DISTANCE OF 797.55 FEET;

THENCE, LEAVING SAID LINE, NORTH 89°14'37" EAST, PARALLEL WITH THE SOUTH LINE OF SAID SECTION, A DISTANCE OF 733.00 FEET TO THE TRUE POINT OF BEGINNING;

THENCE NORTH 87°56'53" EAST A DISTANCE OF 211.32 FEET;

THENCE NORTH 30°49'47" EAST A DISTANCE OF 978.11 FEET, MORE OR LESS, TO THE SOUTHERLY RIGHT-OF-WAY MARGIN OF KEENE ROAD ON A CURVE CONCAVE TO THE SOUTHWEST, THE RADIUS POINT OF WHICH BEARS SOUTH 36°40'51" WEST A DISTANCE OF 5690.00 FEET;

THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 5°41'53" A DISTANCE OF 565.87 FEET;

THENCE, LEAVING SAID MARGIN, SOUTH 42°11'07" WEST A DISTANCE OF 376.94 FEET;

THENCE SOUTH 00°41'01" EAST A DISTANCE OF 883.15 FEET TO THE POINT OF BEGINNING.

ENDORSEMENT
Attached to and forming a part of
Policy Number **SGW-08004583**
Issued By **Benton Franklin Title Company**
acting as agent for
Old Republic National Title Insurance Company

Endorsement No. **1**
File Number **BF15325**

The Company hereby assures the Assured that there are no matters shown by the public records which affect the estate or interest described in Schedule A, other than those shown in Schedule B, except:

NO CHANGES

The effective date for the Guarantee is hereby extended to the date shown herein, subject, however, to any additional matters shown above.

The total liability of the Company under said Guarantee and under this endorsement thereto shall not exceed, in the aggregate, the amount stated in said Guarantee. This endorsement is made a part of said Guarantee and in subject to the exclusions from coverage, the limits of liability and other provisions of the Conditions and Stipulations therein, except as modified by the provisions hereof.

Dated: June 14, 2022 at 8:00 a.m.

Benton Franklin Title Company as agent for
Old Republic National Title Insurance Company

Countersigned

Mark D. Sr

Authorized Signatory
Note: This endorsement shall not be valid or binding until countersigned by an authorized signatory.

Guarantee Update Endorsement