



Agenda
Hearing Examiner Meeting
Monday, December 11, 2017
City Hall Council Chamber | 505 Swift Boulevard

Hearing Examiner: Gary McLean

Liaisons: Staff Liaison Development Services Manager Simon

Public Hearing – 6:00 p.m.

Public Hearing Explanation:

New Business – Public Hearing:

- I. S2017-104 - An application submitted by Lee Petty for the Preliminary Plat of Columbia Park Trail Development to subdivide 4.1 acres into 8 single family residential lots

Adjournment

The next Hearing Examiner Meeting is scheduled as needed.

This Meeting is broadcast live on CityView Channel 192 and online at CI.RICHLAND.WA.US/CITYVIEW

Richland City Hall is ADA accessible with special parking and access available at the entrance facing George Washington Way. Requests for sign interpreters, audio equipment, and/or other special services must be received 48 hours prior to the Hearing Examiner Meeting by calling the City Clerk's Office at 942-7388.

**CITY OF RICHLAND DEVELOPMENT SERVICES DIVISION
STAFF REPORT TO THE HEARING EXAMINER**

GENERAL INFORMATION:

PROPOSAL NAME: Columbia Park Trail Development - Preliminary Plat

LOCATION: South side of Columbia Park Trail approximately 1,725 feet
east of Queensgate Drive

APPLICANT: Lee Petty

FILE NO.: S2017-104

DESCRIPTION: Request to subdivide 4.1 acres into 8 single family
residential lots

PROJECT TYPE: Type III Preliminary Plat

HEARING DATE: December 11, 2017

REPORT BY: Shane O'Neill, Senior Planner

RECOMMENDED
ACTION: Approval subject to completion of proposed conditions

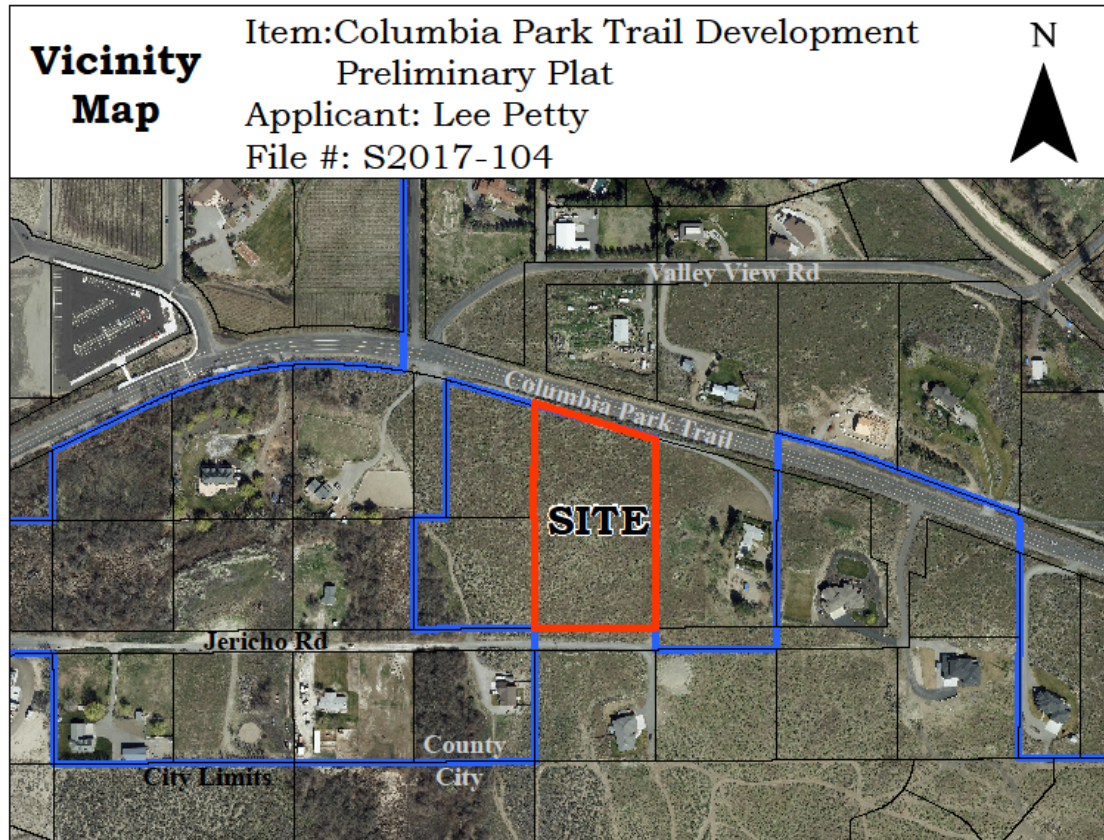


Figure 1 - Vicinity Map

DESCRIPTION OF PROPOSAL

Lee Petty has filed a preliminary plat application (Exhibit 1) to divide approximately 4.1 acres into 8 single family residential lots with an average lot area of 22,362 square feet (1.95 acres), known as the plat of Columbia Park Trail Development. All eight of the lots are proposed to be served by a 25-foot wide private roadway terminating in a cul-de-sac within lots 4-6 (see Exhibit 2).

This plat site lies immediately east of a 1-acre parcel recently subdivided into four parcels via short plat (Exhibit 3) by Mr. Petty as well. Although excluded from this preliminary plat review staff finds the adjacent short plat pertinent to mention here as the subdivisions will communicate with each other in terms of access and municipal utility extensions.

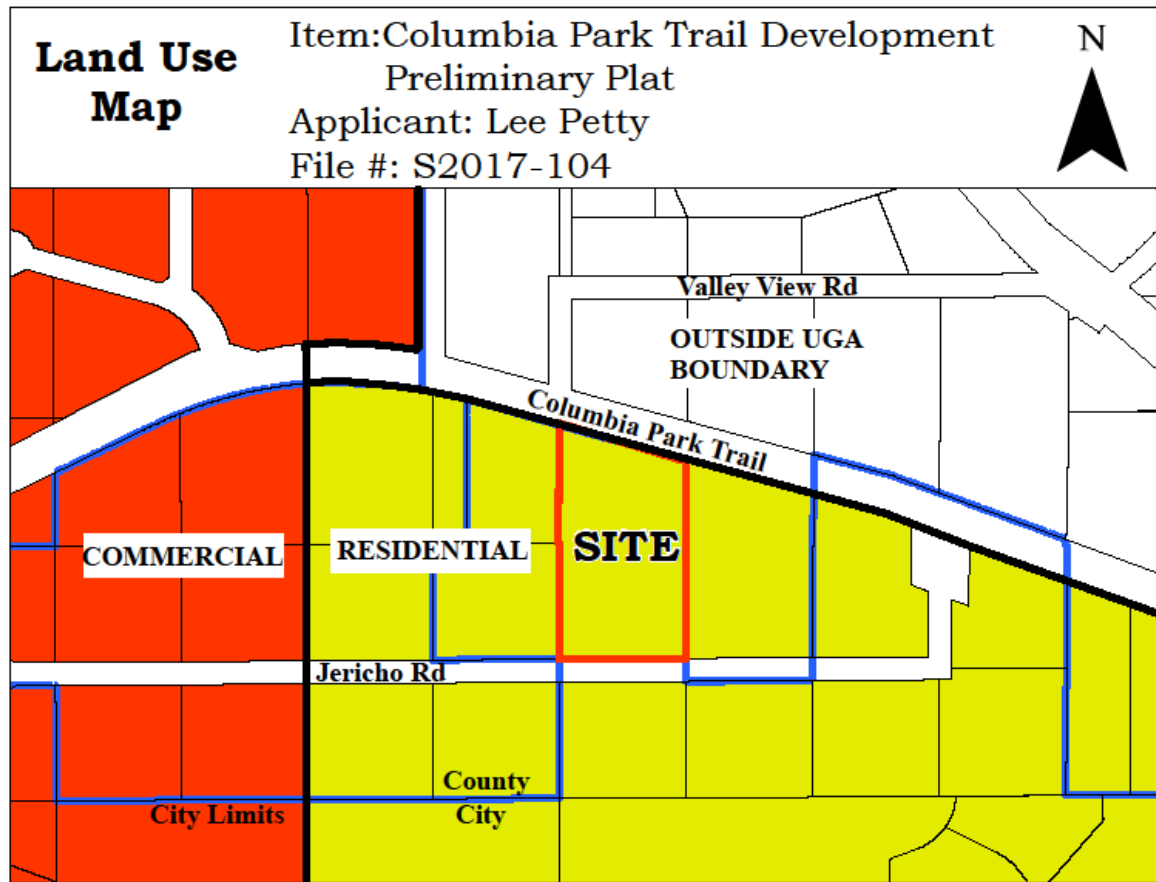


Figure 2 – Comprehensive Plan Map

COMPREHENSIVE PLAN

Richland's comprehensive plan assigns a low-density residential land use designation to the site. The low-density residential designation allows for a residential density range of between 0 – 5 dwelling units per acre equating to an average density of 3.5 units per acre. The plat of Columbia Park Trail Development proposes an overall density of 1.95 units/acre which is also the net density due to the plat's use of private roads. The proposed density is within the allowable range provided by the low-density residential land use designation.

GOALS & POLICIES

Land Use Goal #4 in the plan addresses residential development. It states:
The city will maintain a broad range of residential land use designations to accommodate a variety of lifestyles and housing opportunities.

Land Use Goal 4: The City will 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 that are 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.

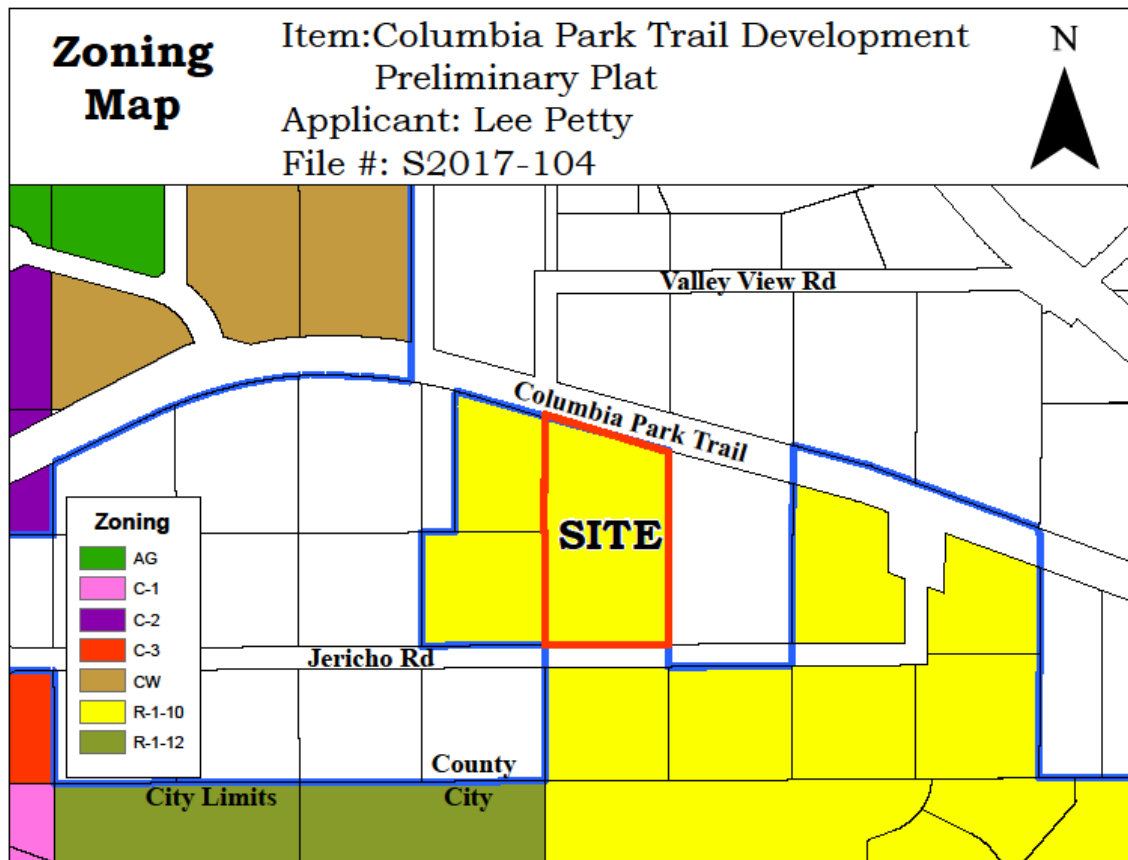


Figure 3 – Zoning Map

ZONING

The site is currently assigned R-1-10 (Low-Density Residential) zoning which allows development of residential densities up to 5.4 dwelling units per acre. Under R-1-10 zoning the proposed residential density of 1.95 units/acre, is compliant. Both R-1-10 & R-1-12 (Single-Family Residential) zoning districts are assigned to the sites within the City's jurisdiction in the immediate vicinity.

Land Uses and Dimensional Standards

The following R-1-10 standards apply to the proposed plat:

Uses Permitted:	Single Family Homes (detached)
Front yard setback:	20 feet minimum
Side yard setback:	10 feet minimum
Rear yard setback:	25 feet minimum
Maximum building height:	30 feet

SITE DESCRIPTION & ADJACENT LAND USES

The subject preliminary plat site lies on the south side of Columbia Park Trail approximately 1,725 feet east of Queensgate Drive. Approaching the site from the existing private drive on Columbia Park Trail there is an immediate gain in elevation which continues traveling southeast. Overall, the land within the parcel boundaries experiences a vertical difference of 42-feet as seen at the south property line. Topographical contour lines are shown on the survey included as Exhibit 2 (also see slope photo – Exhibit 12).

Opposite to the Columbia Park Trail property frontage, the south property line of the parcel fronts the unimproved Jericho Road public right-of-way for a distance of 330.94 feet. Jericho Road intersects with Queensgate Drive approximately 1,500 feet to the west and extends approximately 620 feet to the east where it connects with a future road extension connecting a nearby plat to the south with Columbia Park Trail. The neighboring parcel to the east contains a single-family home within Benton County's jurisdiction, whose access relies on a 1,000-foot gravel drive which extends from the plat's proposed point of access on Columbia Park Trail to the home. The plat survey (Exhibit 2) shows said driveway to be entirely within Columbia Park Trail right-of-way. Details relating to the preservation of the home's access is further addressed in the Transportation section of this report and in TAC condition #22 (Exhibit 9).

A geotechnical report (Exhibit 10) prepared by GN Northern Inc. and submitted with the application reveals details regarding the underlying geology. The report indicates shallow basalt bedrock at approximately five feet below the surface. Pages 6 – 8 of the report detail recommended constraints and mitigation measures for developing the site with single family homes. In general, due to the shallow depth of stable bedrock the site is suitable for lightly-loaded structures but that same condition poses difficulties for managing stormwater generated on-site as infiltration is viewed as infeasible.

Vegetation on-site is comprised of typical shrub steppe plant species including Big Sagebrush (*Artemisia tridentata*) together with some commonly associated non-woody herbaceous plants. One notable component of the site is the presence of medium to large basalt boulders protruding above the soil surface. Site photos taken by City staff are included in this report as Exhibit 12.

CRITERIA FOR PRELIMINARY PLAT APPROVAL

Section 24.12.053 of the RMC sets forth the criteria that must be met before a preliminary plat application can be approved. It states:

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

- A. The preliminary plat conforms to the requirements of this title (Title 24 Plats and Subdivisions);
- 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;
- C. The public use and interest will be served by the platting of such subdivision and dedication; and
- D. The application is consistent with the requirements of RMC 19.60.095

RMC Section 24.12.050 designates the Hearing Examiner as the hearing body responsible for conducting the review of preliminary plat applications.

PUBLIC NOTICE

Application Date:	November 21, 2017
Notice of Hearing Mailed:	November 27, 2017
Notice of Hearing Posted:	November 22, 2017
Notice of Hearing Published:	November 25, 2017
Public Hearing:	December 11, 2017

A combined notice of application, public hearing and SEPA determination was provided by mailing notices to property owners within 300 feet. Public hearing notices were distributed through posting of the property, mailing of notice to property owners within 300 feet of the site and publication in the *Tri-City Herald* newspaper. Copies of the notices and affidavits are included in Exhibit 4.

UTILITY AVAILABILITY

Utilities will serve the plat by way of extension from within Columbia Park Trail right-of-way and potentially from Sundance Estates to the south by way of Jericho Road and private easement into the proposed Heather Court on the adjacent parcel to the west. A uniform access and utility easement up to 85-feet in width will create the mechanism to allow placement of the utilities together with the road. Sewer and water lines are shown to be located under the road surface, while electrical power will be extended beside the roads.

Site specific development conditions contained in the attached TAC report (Exhibit 9) address extension of off-site utilities to the site and construction private on-site utilities.

TRANSPORTATION

Access into the plat will be achieved by connecting a private drive to Columbia Park Trail, a minor arterial roadway, in the northwest corner of the adjacent parcel to the west where there is currently a gravel access point serving two existing homes. The plat survey (Exhibit 2) indicates a gravel drive serving the home to the east (253 Columbia Park Trail) lies outside of the north boundary of the plat and within Columbia Park Trail public right-of-way. Road construction plans (Exhibit 11) show the existing gravel drive lying north of access improvements proposed with the plat; thereby allowing continued use of the gravel access drive by the resident.

This private access issue is addressed in TAC report condition #22; it reads:

There is an existing driveway serving the home to the east of this preliminary plat that currently lies in front of this property within the Columbia Park Trail Right-of-Way. This driveway's legal standing is in question and must be resolved before this project receives final approval. One potential solution is to provide access for this property to Heather Court or Rieve Court. The existing driveway shall not be removed until an acceptable course of action, as determined by the City, has been determined.

In other words, access to 253 Columbia Park Trail will not be allowed to be obstructed as a direct result of plat development.

Private access to the western home (141 Columbia Park Trail) lies outside of the boundaries of the proposed plat and will not be affected by plat construction.

Roadway construction drawings (Exhibit 11) submitted to the City show a 35-foot-wide paved road surface connecting to Columbia Park Trail; narrowing to 25-feet after the first bend which continues to the subject plat site and finally terminates in the form of a cul-de-sac. Each of the 8-lots will have direct access to the proposed Rieve Court and the off-site access point at Columbia Park Trail serving the adjacent 4-lots is proposed to be named Heather Court.

This project site lies within the boundary of the South Richland Collector Street Financing Plan (RMC 12.03). As such, each building permit within the property shall therefore be subject to the fees administered by the finance plan for any permit submitted for approval.

Columbia Park Trail road improvements including curb & gutter and sidewalk, additional paving, provisions for storm drainage and also street lighting per City standards are required as stated in TAC report conditions #23-25.

SEPA

Included in this pre-plat application submittal was a SEPA checklist addressing potential impacts of site development (Exhibit 5). On November 21, 2017 staff issued a Determination of Non-Significance (DNS) (Exhibit 6). The comment period for the DNS expired on December 6, 2017. No comments were submitted to the city in response to the DNS (EA2017-18).

AGENCY COMMENTS

A variety of public agencies and City departments were given an opportunity to comment on the proposal. Comments from the Richland Public Works and Energy Services Departments have been incorporated into the TAC Report (Exhibit 9). At the time this report was written city staff received a written response from the State Department of Ecology (Exhibit 7) relating to stormwater NPDES permitting. This comment letter from Ecology is the only agency comment received. Benton County Planning and Roads Department officials were directly notified of the project. As a result there was some general correspondence resulting in no comments or requirements by the County.

PUBLIC COMMENTS

Owners of all properties within 300-feet of the plat site were directly notified of the project by way of USPS mailing. A comment letter dated December 1st (Exhibit 8) was received from Mr. Jeff Smart, the owner of 253 Columbia Park Trail, expressing concern over the preservation and continued use of the gravel drive that he currently uses as the sole access route to the home.

TECHNICAL ADVISORY COMMITTEE RECOMMENDATIONS

City staff has prepared a list of recommended conditions for the application contained in the Technical Advisory Committee (TAC) Report (Exhibit 9).

ANALYSIS

The criteria approval of a preliminary plat application (RMC 24.12.053) are reprinted here, with a summary of how the application complies with the standard:

A. The preliminary plat conforms to the requirements of this title (RMC Title 24);

The City's subdivision regulations set forth specific requirements for the filing of an application, how notice of the application is to be provided and requires that the Hearing Examiner conduct a public hearing and make recommendation to the City Council. These steps have been followed to date. Staff has reviewed the plat survey provided against the provisions of RMC 24.12.010 thru 24.12.040 and finds the plat to be compliant. In this case the applicant submitted right-of-way construction drawings (Exhibit 11) in advance of the plat. This provided staff the opportunity to conduct a preliminary review of the proposed roadway construction plans which contain the required components such as utility extensions, easements, roadways, etc. A formal review of these plans has not been completed by Public Works but the plans gave Planning

staff the opportunity to review the plans which appear approximately compliant with general platting, utilities and access development requirements. Those plans included as Exhibit 11 are not the final approved draft and remain subject to change.

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;

Private roadways serving the plat will be designed to City right-of-way construction standards. Municipal utility extensions (sewer, water and electrical power) are planned to serve the plat within a private access and utility easement. In cases such as this, the municipal utilities will remain under city ownership and maintenance responsibility but the road surface maintenance will be the responsibility of the homeowners served by the road. Currently Columbia Park Trail right-of-way is not developed with sidewalks. Installing sidewalks adjacent to the plat site would provide an isolated section of sidewalk not contributing to pedestrian transportation needs in any practical manner. Building permits for homes within the plat will be subject to payment of park fees to contribute to development of open spaces and parks in the vicinity.

Columbia Park Trail is part of the Benton-Franklin Transit bus route #110 which extends from Van Giesen Street in West Richland to Deschutes Avenue in Kennewick.

Additionally, the following points address criteria B:

- The Keene Road Trail is a linear park containing a pedestrian trail along Keene Road. This park is located approximately 0.56 miles west of the proposed plat.
- The larger 41.5-acre Badger Mountain Park is located approximately 2-miles from the proposed plat site. Badger Mountain Park contains outdoor sports fields and courts able to serve recreational needs of the broader surrounding vicinity.
- The site is not located along an existing bus route. The Ben Franklin Transit Authority provides bus service to the community presently provides service along Columbia Park Trail as part of bus route #110.
- The plat would be served by City domestic water and sewer lines currently existing within Columbia Park Trail. Water and sewer lines have capacity to provide for the proposed project.
- The plat would be served by Richland Energy Services electrical power by way of service line extension.
- In accordance with City development standards, storm water drainage must be retained and managed on-site. Site drainage will rely on storm water drainage facilities designed and constructed for the plat.

- Richland School District was given the opportunity to comment. Following their review of the proposed preliminary plat the District indicated they have no specific concerns or requirements relative to the plat.

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

The proposed project is consistent with the Comprehensive Plan, in terms of the proposed density of the plat. Because the plat proposes no dedications the city will experience relief from routine maintenance costs supported by the city and taxpayers. Provision of several new housing units will contribute to meeting the currently high housing demand and will assist in fulfilling goals of the Growth Management Act (GMA) by furthering residential infill within the existing urban growth boundary. Adopted by the State Legislature in 1990 the GMA strongly encourages urban infill before expanding growth boundaries to limit urban sprawl which is viewed as a negative impact. Promoting urban development consistent the goals of the GMA is an action generally viewed by planning professionals as furthering public interest.

D. The application is consistent with the requirements of RMC 19.60.095, which states:

19.60.095 Required findings.

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.

The proposed plat is consistent with the intent of city Zoning (R-1-10) and the low-density residential land use designation assigned to the site in the city's Comprehensive Plan.

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

Impact fees for traffic and parks infrastructure improvements will be charged to the development at the building permit stage in the development process. 19. The "Columbia Park Trail Development" preliminary plat lies within the boundary of the South Richland Collector Street Financing Plan (RMC 12.03). This plat shall therefore be subject to the fees administered by the finance plan for any phase submitted for approval. Since this property is included within the Financing Plan, it is exempt from the SEPA-related traffic study requirement (TIA).

Chapter 22.09 is the City's adoption of the State Environmental Policy Act provisions. The applicants filed an environmental checklist for which the City issued and distributed a Determination of Non-Significance which completed

the SEPA review process. The City has not imposed additional mitigation measures beyond of the payment of standard impact fees for new homes.

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

Planning staff views the proposal a beneficial to the public at large based on its consistency with the Comprehensive Plan and City Zoning. Appropriate infrastructure meeting city standards is planned and will be required by the city to ensure the development will not be a detriment to public health, safety and welfare.

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.

The Columbia Park Trail Development preliminary plat lies within the boundary of the South Richland Collector Street Financing Plan (RMC 12.03). This plat shall therefore be subject to the fees administered by the finance plan for any phase submitted for approval. Because the project lies within the impact fee area, traffic studies are not required to prove level of service or identify mitigation. The fee becomes the mitigation; thereby fulfilling concurrency requirements. Since this property is included within the Financing Plan, it is exempt from the SEPA-related traffic study requirement (TIA). The project would add 8 new residential lots that would be accessed from newly constructed private access roadways leading from Columbia Park Trail into the subdivision including the adjacent 4-lot short plat.

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.

Development conditions contained in the TAC Report (Exhibit 9) are intended to mitigate potential impacts of the development. No unique mitigation measures are being imposed as a direct result of the SEPA review and determination process. The conditions of approval recommended for this project are as a direct result of imposing City development standards as contained in City Code and are directly related to the development proposal. All such conditions are iterated in the TAC report.

On the matter of required improvements to Jericho Road conditioned upon the plat, TAC condition #26 reads:

At the time of plat development the developer shall construct half of a rural section roadway within the Jericho Road right-of-way from the west boundary of this property to the existing street that lies approximately 970-feet to the east. These improvements shall consist of an approved road design, grading of the Jericho Road subgrade, 17-feet of strip paving and an accompanying ditch section. The other half of Jericho shall be constructed by other property owners at the time of their property improvement. This project will not be required to install frontage improvements along Jericho, per RMC Chapter 12.010.10.

This requirement implies the need to construct 640-feet of off-site rural road improvement east of the plat site. The Public Works Department provided reasoning to the effect that full frontage improvements (curb, gutters, sidewalks, street lights, etc.) will be waived in exchange for a potentially more equitable transference of value by achieving a paved connection between the subject plat site and the section of roadway connecting Columbia Park Trail to the 45-lot plat of Sundance Estates to the south. At the time this report was written the Planning Department had not received cost break-downs comparing the expense of installing a 330-foot section of road with full frontage improvements against the cost of installing 970 feet of road built to rural standard. It is expected that these cost comparisons will be available at the time of the public hearing where they will be entered into the record as an exhibit for use by the Hearing Examiner in developing his written recommendation.

FINDINGS AND CONCLUSIONS

Staff has completed its review the preliminary plat application for Columbia Park Trail Development preliminary plat (S2017-104) and recommends approval of the request subject to conformance with the conditions of approval included in the attached Technical Advisory Committee Report (Exhibit 9) based on the following findings:

Findings of Fact:

1. The plat conforms to the low-density residential land use designation assigned to the site by the Comprehensive Plan in that said land use allows for residential development of 0-5 dwelling units per acre and the plat proposes 1.95 dwelling units per acre;
2. The proposed preliminary plat consists of 8 lots averaging 22,362 square feet in area, representing a net density of 1.95 units per acre which falls below the maximum allowable density;
3. Columbia Park Trail is classified as a minor arterial roadway in the City's Comprehensive Plan;

4. The Columbia Park Trail Development preliminary plat lies within the boundary of the South Richland Collector Street Financing Plan (RMC 12.03). This plat shall therefore be subject to the fees administered by the finance plan for any phase submitted for approval. Since this property is included within the Financing Plan, it is exempt from the SEPA-related traffic study requirement (TIA).

Conclusion of Law:

The proposed preliminary plat is consistent with and would provide for development of the subject property in conformance with the density and type of land use envisioned in the land use and transportation elements of the adopted comprehensive plan.

Findings of Fact:

5. The site is currently zoned R-1-10 (Single-Family Residential);
6. R-1-10 zoning imposes a minimum average lot size requirement of 10,000 square feet. Columbia Park Trail Development proposes an 22,362 square foot average lots size which exceed the minimum land area requirement;
7. All lots proposed lots exceed the 8,000 square foot minimum lot size requirement of the R-1-10 zone;
8. Whether lot frontages be on existing public or proposed private roadways all lot frontage dimensions exceed the 70-foot minimum imposed by the R-1-10 zone.

Conclusion of Law:

The lots within the proposed subdivision are consistent with the provisions of the City's residential zoning regulations.

Findings of Fact:

9. Section 24.12.053 of the RMC sets forth standards for review of preliminary plats that require the Hearing Examiner to consider whether 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;
10. The proposed preliminary plat provides for improvement of the adjacent public roadway (Columbia Park Trail) and will be required to extend public domestic water, sewer, irrigation water and electrical power lines;
11. The proposed improvements serving the platted area are consistent with the City's development standards;
12. Building permits for homes within the plat will be assessed parks fees to contribute to the development of open spaces needed in the vicinity of the plat as determined by the City of Richland Parks and Public Facilities Department;

13. City staff and other utility providers reviewed the project and have recommended specific conditions of approval as set forth in the Technical Advisory Committee report.

Conclusion of Law:

As conditioned, the proposed preliminary plat makes appropriate provisions 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.

Findings of Fact:

14. A SEPA checklist was provided with the plat application together with a geo-technical report by GN-Northern analyzing the site's capacity for residential development as required under the City's Sensitive Areas Ordinance (RMC 22.10). Based on information included in the aforementioned documents city staff issued a Determination of Non-Significance on November 21, 2017.
15. Project application and public hearing notice was distributed and advertised in conformance with requirements set forth in RMC 24.12.040.

Conclusion of Law:

Pursuant to Chapters 22.09 and 22.10 of the RMC, the procedures required under the State Environmental Policy Act and the City's Sensitive Areas Ordinance have been completed.

Findings of Fact:

16. RMC 19.60.095(D) requires that development not lower the level of service standard for transportation facilities below a level of service D.
17. The proposed project would add 8 single family lots that would have direct access onto private roadways proposed in the plat and to Columbia Park Trail;
18. According to the ITE Trip Generation Manual 9th edition, a single-family home is projected to generate an average of 9.5 vehicle trips per day; equating to approximately 76 vehicle trips per day being generated from an 8-lot plat.
19. The Columbia Park Trail Development preliminary plat lies within the boundary of the South Richland Collector Street Financing Plan (RMC 12.03). This plat shall therefore be subject to the fees administered by the finance plan for any phase submitted for approval. Since this property is included within the Financing Plan, it is exempt from the SEPA-related traffic study requirement (TIA).

Conclusion of Law:

The proposed project would not result in a decline of transportation service levels within the area surrounding the project and so is consistent with the provisions of RMC 19.60.095.

Overall Conclusion:

Based on the above findings and conclusions, approval of the proposed preliminary plat of Columbia Park Trail Development subject to the recommended conditions listed in the Technical Advisory Committee Report is warranted because the project conforms to the City's adopted land use plan and zoning regulations; has followed the required State Environmental Policy Act procedures; and is consistent with the requirements of the City's subdivision regulations.

EXHIBIT LIST

1. Application
2. Preliminary Plat Map
3. Adjacent Short Plat Survey
4. Public Notice & Affidavits
5. Environmental Checklist
6. Determination of Non-Significance
7. Agency Comment(s)
8. Public Comment(s)
9. Technical Advisory Committee Report
10. Geotechnical Engineering Report
11. Preliminary Road Construction Plans
12. Site Photos



Exhibit 1

Development & Permit Services Division • Current Planning Section
840 Northgate Dr. • Richland, WA 99352
General Information: 509/942-7794 • Fax: 509/942-7764
www.ci.richland.wa.gov

PRELIMINARY PLAT APPLICATION

Applicant's Section			
Applicant or Sponsor <u>LCR Construction</u>			
Address <u>1120 Columbia Park Trail</u>		City <u>Richland</u>	State <u>WA</u> Zip <u>99352</u>
Phone Number <u>(509) 987-2747</u>	Fax Number	Other	
Proposed Subdivision Name <u>Columbia Park Trail Development</u>		Legal Description <u>SE 1/4 of NW 1/4 of the SW 1/4 of the NE 1/4 of SEC 22 T.09N, R.2E CITY OF RICHLAND</u>	
Average Size Lots <u>22,362 SF</u>		Proposed Number of Tracts <u>8</u>	
Average Lot Size (Residential Lots) <u>22,362 SF</u>		Area in Acres <u>4.11</u>	
Proposed Number of Lots <u>8</u>		Proposed Number of Blocks <u>1</u>	
Name of Surveyor Platting Subdivision <u>Stratton Surveying & Mapping</u>			
Address <u>313 North Morain St.</u>		City <u>Kennewick</u>	State <u>WA</u> Zip <u>99336</u>
Phone Number <u>(509) 735-7364</u>	Fax Number <u>(509) 735-6560</u>	Other	

I DECLARE UNDER THE PENALTY OF THE PERJURY LAWS THAT THE INFORMATION I HAVE PROVIDED ON THIS FORM/APPLICATION IS TRUE, CORRECT AND COMPLETE.

[Signature]
Applicant's Signature

11/21/17
Date

OFFICE USE ONLY

Filed on _____ Signature _____
Case File No. _____ Date of Planning Commission Hearing _____
Action by Planning Commission - Minutes _____

Attach:

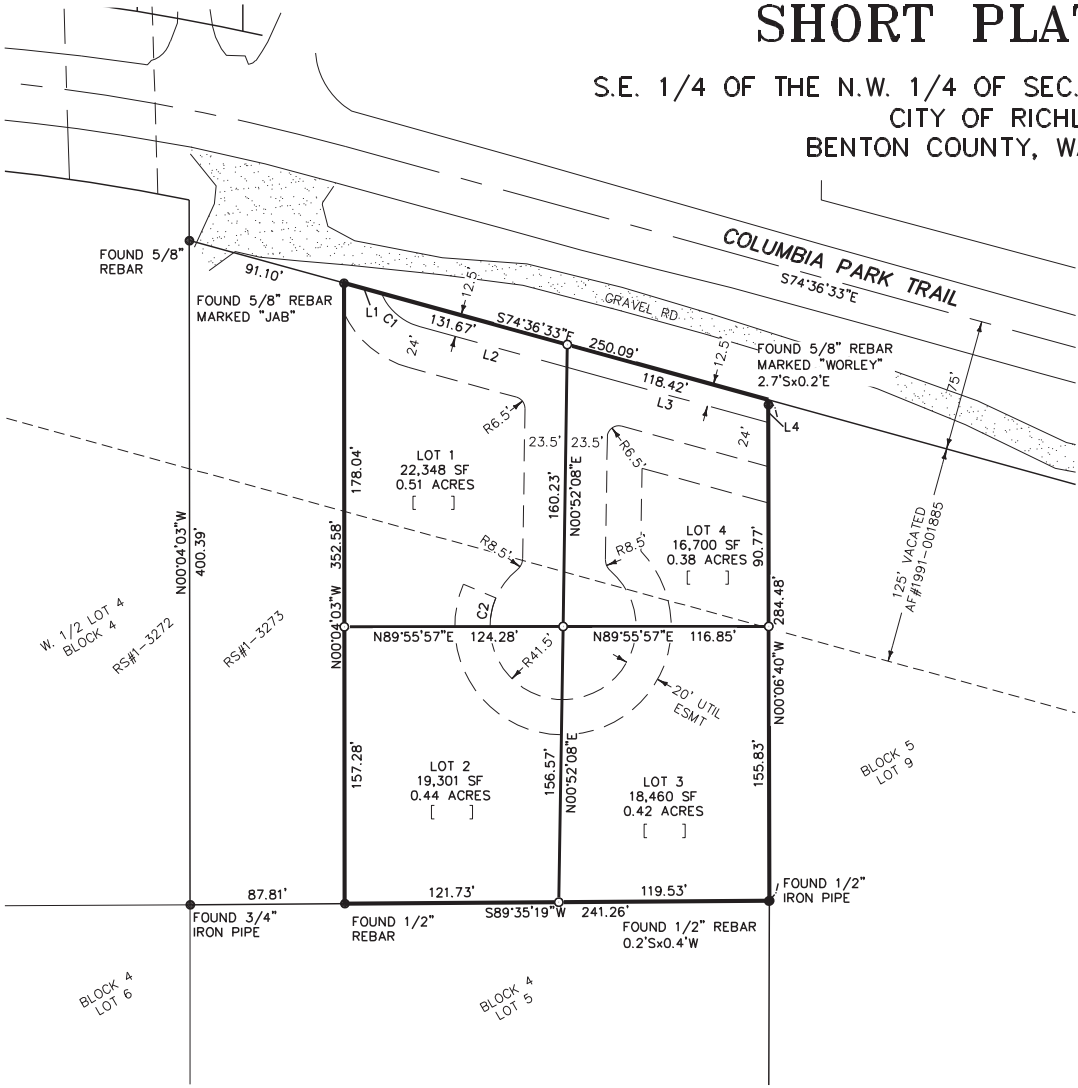
1. 6 Full-Size Copies + the .pdf file
2. 11" x 17" Reduction
3. Ownership Report from Title Company listing all Owners within 300-feet.

SHORT PLAT NO. _____

S.E. 1/4 OF THE N.W. 1/4 OF SEC. 22, T.09N., R.28E., W.M.,
CITY OF RICHLAND
BENTON COUNTY, WASHINGTON

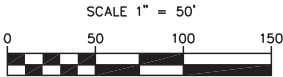


VICINITY SKETCH
NOT TO SCALE



CURVE TABLE					
CURVE	LENGTH	RADIUS	Δ	CH DIREC.	CHORD
C1	30.13	34.00	50°46'34"	S49°13'16"E	29.15
C2	16.75	41.50	23°07'53"	S11°29'54"W	16.64

LINE TABLE		
LINE	LENGTH	DIRECTION
L1	21.96	S74°36'33"E
L2	86.60	S74°36'33"E
L3	118.65	S74°36'33"E
L4	12.97	N00°06'40"W



BASIS OF BEARING
NAD 83 PER
CITY OF RICHLAND CONTROL FILE
DISTANCES SHOWN ARE GROUND

EQUIPMENT USED
A THREE-SECOND TOTAL STATION
TOPCON HIPER RTK GPS

HORIZONTAL CONTROL

WASHINGTON STATE SOUTH ZONE, US SURVEY FEET, NAD 83. BASED ON THE CITY OF RICHLAND CONTROL FILE, GPS TIES WERE MADE TO 1766, 1797 CONTROL POINTS.
GROUND DISTANCES ARE SHOWN HEREON.

LEGEND

- = SET 5/8" REBAR W/ ORANGE PLASTIC CAP MARKED "STRATTON AAD 38021"
- = FOUND AS INDICATED
- B.O.B. = BASIS OF BEARING
- (NS)Ø = NOT FOUND OR SET
- ⬢ = FOUND CASED MONUMENT
- [###] = ADDRESSES

SHORT PLAT FOR

LCR CONST.

SURVEYOR'S CERTIFICATE

I, DEREK C. INGALSBE, A REGISTERED LAND SURVEYOR, HEREBY CERTIFY THAT THE SHORT PLAT AS SHOWN IS BASED UPON ACTUAL FIELD SURVEY OF THE LAND DESCRIBED AND THAT ALL ANGLES, DISTANCES, AND COURSES ARE HEREON CORRECTLY SHOWN AND THAT THE LOT CORNERS HAVE BEEN STAKED ON THE GROUND AS SHOWN ON THE MAP.



INDEX

1/4	SEC	T.	R.
	22	09N	28E

AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS _____ DAY OF _____, 2017 AT _____ MINUTES PAST _____ M., AND RECORDED IN VOLUME _____ OF SHORT PLATS PAGE _____, AT THE REQUEST OF DEREK C. INGALSBE, P.L.S.
BENTON COUNTY AUDITOR _____
DEPUTY _____ FEE NO. _____



STRATTON SURVEYING & MAPPING, PC
313 NORTH MORAIN STREET
KENNEWICK, WA 99336
(509) 735-7364
FAX: (509) 735-6560
stratton@strattonsurvey.com

5273SP1.DWG	© 2017
DATE: 10/18/17	SHT. 1 OF 2
DRAWN BY: DCI	JOB # 5273

DEREK C. INGALSBE LS46886 DATE _____

SHORT PLAT NO. _____

S.E. 1/4 OF THE N.W. 1/4 OF SEC. 22, T.09N., R.28E., W.M.,
CITY OF RICHLAND
BENTON COUNTY, WASHINGTON

IRRIGATION

THE PROPERTY DESCRIBED HEREIN IS LOCATED WHOLLY WITHIN THE BOUNDARIES OF THE BADGER MOUNTAIN IRRIGATION DISTRICT. I HEREBY CERTIFY THAT THE IRRIGATION EASEMENTS AND RIGHT-OF-WAY SHOWN ON THIS SHORT PLAT ARE ADEQUATE TO SERVE THE LOTS LOCATED WITHIN THIS SHORT PLAT WHICH ARE OTHERWISE ENTITLED TO IRRIGATION WATER UNDER THE OPERATING RULES AND REGULATIONS OF THE DISTRICT, AND THAT ALL OTHER IRRIGATION DISTRICT REQUIREMENTS AS SPECIFIED BY RCW 58.17.310 HAVE BEEN PAID THROUGH THE YEAR 20____A.D., AND HAS BEEN INSTALLED.

_____BADGER MOUNTAIN IRRIGATION DISTRICT

_____DATE

NOTES

1. NO BUILDING PERMITS FOR THE PROPOSED LOTS SHALL BE ISSUED FOR ANY STRUCTURE REQUIRING POTABLE WATER AND SANITARY SEWER SERVICE UNTIL AN APPROVED WATER AND SEWER DISTRIBUTION SYSTEM THAT WILL PROVIDE SERVICES TO THE LOT THE STRUCTURE WILL BE BUILT ON HAS BEEN DESIGNED AND ACCEPTED BY THE CITY OF RICHLAND ENGINEERING DEPT. NO CERTIFICATE OF OCCUPANCY SHALL BE ISSUED FOR ANY STRUCTURE UNTIL SAID SYSTEM IS CONSTRUCTED AND ACCEPTED BY THE CITY. UTILITY INFORMATION IS AVAILABLE THROUGH THE CITY OF RICHLAND.
2. [####] = ADDRESSES SUBJECT TO CHANGE BY THE CITY OR RICHLAND. ZIP CODE 99352.

DESCRIPTION

THAT PORTION OF THE EAST HALF OF LOT 4, BLOCK 5 OF THE PLAT OF BADGER HEIGHTS SUBDIVISION RECORDED IN VOLUME 5 OF PLATS AT PAGE 11, RECORDS OF BENTON COUNTY, WASHINGTON; BEGINNING AT THE SOUTHEAST CORNER OF LOT 4 THENCE NORTH A DISTANCE OF 152.55 FEET, THENCE NORTHWESTERLY ALONG THE PROPERTY LINE A DISTANCE OF 250 FEET ALONG THE PROPERTY LINE, THENCE SOUTH A DISTANCE OF 219.5 FEET TO THE SOUTH LINE, THENCE EAST ALONG SOUTH PROPERTY LINE A DISTANCE OF 240.89 FEET TO A POINT OF BEGINNING TOGETHER WITH PORTION OF VACATED ROAD RIGHT OF WAY PER AF#1991-001885.

APPROVALS

THE ANNEXED SHORT PLAT IS HEREBY APPROVED BY AND FOR THE CITY OF RICHLAND, BENTON COUNTY, WASHINGTON.

_____CITY OF RICHLAND CITY ENGINEER

_____DATE

I HEREBY CERTIFY THAT THE TAXES ON THE LAND DESCRIBED HEREON HAVE BEEN PAID TO AND INCLUDING THE YEAR____PARCEL NO. _____

OWNER'S CERTIFICATE

WE, THE UNDERSIGNED, HEREBY CERTIFY THAT WE ARE THE OWNERS OF THE TRACT OF LAND DESCRIBED HEREON, THAT WE HAVE CAUSED SAID LAND TO BE SURVEYED AND SHORT PLATTED INTO LOTS AS SHOWN HEREON, AND DEDICATED TO THE PUBLIC ALL EASEMENTS AND STREET RIGHTS-OF-WAY SHOWN HEREON.

RIEVE REALTY LLC

SIGNED

TITLE

DATE

ACKNOWLEDGEMENT

STATE OF _____

COUNTY OF _____

I CERTIFY THAT I KNOW OR HAVE SATISFACTORY EVIDENCE THAT _____ IS THE PERSON WHO APPEARED BEFORE ME, AND SAID PERSON ACKNOWLEDGED THAT (HE/SHE) SIGNED THIS INSTRUMENT, ON OATH STATED THAT (HE/SHE) WAS AUTHORIZED TO EXECUTE THE INSTRUMENT AND ACKNOWLEDGED IT AS THE _____ OF _____ TO BE THE FREE AND VOLUNTARY ACT OF SUCH PARTY FOR THE USES AND PURPOSES MENTIONED IN THE INSTRUMENT.

DATED: _____

NOTARY PUBLIC _____

MY APPOINTMENT EXPIRES _____

NOTARY STAMP
BLACK INK ONLY

SHORT PLAT FOR

LCR CONST.



AUDITOR'S CERTIFICATE

FILED FOR RECORD THIS _____ DAY OF _____, 2017 AT _____ MINUTES PAST _____ M., AND RECORDED IN VOLUME _____ OF SHORT PLATS PAGE _____, AT THE REQUEST OF DEREK C. INGALSBE, P.L.S.

BENTON COUNTY AUDITOR

DEPUTY _____

FEE NO. _____



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5273SP1.DWG

© 2017

DATE: 10/18/17

SHT. 2 OF 2

DRAWN BY: DCI

JOB # 5273



CITY OF RICHLAND NOTICE OF APPLICATION, PUBLIC HEARING AND SEPA DETERMINATION (S2017-103 & EA2017-18)

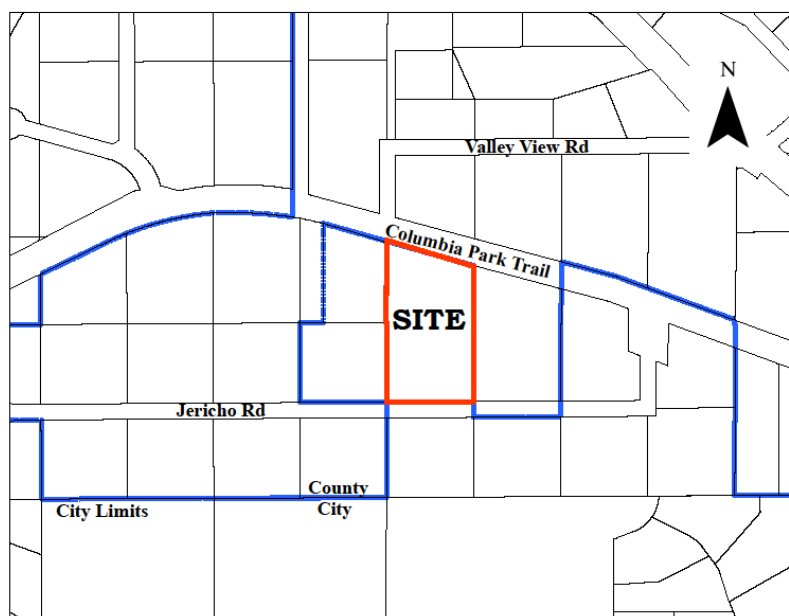
Notice is hereby given that Lee Petty on November 21, 2017, filed an application for preliminary plat approval to subdivide an approximately 4.1 acre site into 8 single family residential lots (Preliminary Plat of Columbia Park Trail Development). The proposed plat site is located on the south side of Columbia Park Trail approximately 1,725 feet east of Queensgate Drive. The proposed plat would have an average lot size of 22,362 square feet.

The Richland Hearings Examiner, on **Monday, December 11**, 2017, will conduct a public hearing and review of the application at 6:00 p.m. in the Richland City Hall Council Chambers, 505 Swift Boulevard. All interested parties are invited to attend and present testimony at the public hearing.

Notice is also given that the City of Richland has issued a Determination of Non-Significance (DNS). An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request. This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal until **December 6, 2017**

Any person desiring to express their views or to be notified of any decisions pertaining to this application should notify Shane O'Neill, Senior Planner, 840 Northgate Drive, Richland, WA 99352. Comments may also be faxed to (509) 942-7587 or emailed to soneill@ci.richland.wa.us. Written comments should be received no later than 5:00 p.m. on Friday, December 1, 2017 to be incorporated into the staff report. Comments received after that date will be entered into the record at the hearing.

The application will be reviewed in accordance with the regulations in RMC Title 19 Development Regulations Administration and Tile 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.



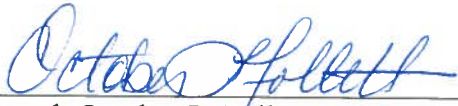
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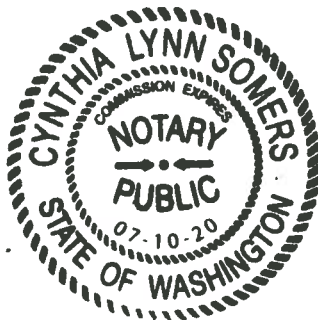
STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

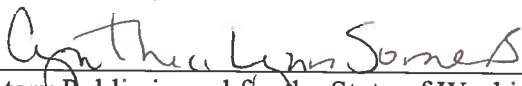
COMES NOW, October L. Follett, who, being first duly sworn upon oath deposes and says:

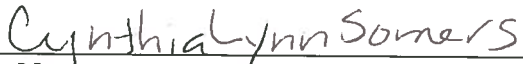
1. I am an employee in the Planning & Development Department for the City of Richland.
2. On the 27th day of November, 2017, I mailed a copy of the attached NOTICE OF APPLICATION, PUBLIC HEARING AND SEPA DETERMINATION to the attached list of individuals via regular USPS on the date indicated above. The Notice of Application, Public Hearing and SEPA Determination is related to preliminary plat approval to subdivide an approximately an approximately 4.1 acre site into 8 single family residential lots (Preliminary Plat of Columbia Park Trail Development) The proposed plat is located on the south side of Columbia Park Trail approximately 1,725 feet east of Queensgate Drive.


Signed: October L. Follett

SIGNED AND SWORN to before me this 27th day of November, 2017 by October L. Follett.




Notary Public in and for the State of Washington,


Print Name

Residing at Kennewick WA

My appointment expires: July 10, 2020

AFFIDAVIT OF POSTING

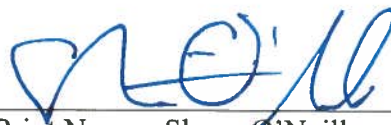
STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

COMES NOW, **Shane O'Neill**, who, being first duly sworn upon oath deposes and says:

1. I am an employee in the Planning & Development Department for the City of Richland.

2. On the 22nd day of November, 2017, I posted the attached NOTICE OF PUBLIC HEARING, File Number S2017-104 at the following location:

The south side of Columbia Park Trail approximately 1,725 feet east of Queensgate Drive, Richland WA



Print Name: Shane O'Neill

SIGNED AND SWORN to before me this 22nd day of November, 2017 by SHANE O'NEILL.



Signature of Notary

October L. Follett

Printed Name

Notary Public in and for the State of Washington,

Residing in Benton County, WA.

My appointment expires: 11-1-2020

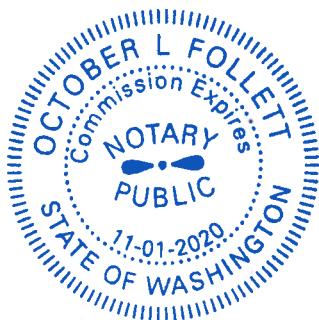


Exhibit 5

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

1. Name of proposed project, if applicable:

Columbia Park Trail Development

2. Name of applicant: Reive Realty, LLC

3. Address and phone number of applicant and contact person: 7009 Alsdernan Rd
Pasco Wa 99301 509-987-2747

4. Date checklist prepared: 11-7-17

5. Agency requesting checklist: City of Richland WA

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

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. No

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

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. Yes
Hearing examiner & council approval of preliminary and final plat & subsequent Right of Way and Building Permit approvals for home construction

10. List any government approvals or permits that will be needed for your proposal, if known. City Of Richland
Hearing examiner & council approval of preliminary and final plat & subsequent Right of Way and Building Permit approvals for home construction

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.) Subdivide 1 parcel into 8 residential lots.

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. Located off Columbia Park Trail near Queensgate rd. Richland Wa (S.E. 1/4 OF THE N.W. 1/4 OD SEC22, T.09N.,R.28.,W.M.,

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other ROLLING ,
ROCKY

b. What is the steepest slope on the site (approximate percent slope)? 8.3%

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. Sany silts and rock, Basalt rock and cobble

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. NONE

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. Residential lots, 6 ACRES.

Cut - 3224cy

Fill - 184cy

Net Cut - 3040cy

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. NO

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? 1/3

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

2. Air

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. NONE

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. NO

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

NA

3. Water

a. Surface Water:

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

- 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. NA
- 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:

- 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
- 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

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.

NONE

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

NO

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

NO

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

4. Plants

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

____deciduous tree: alder, maple, aspen, other
____evergreen tree: fir, cedar, pine, other
____shrubs
__x__grass
____pasture
____crop or grain
____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

- b. What kind and amount of vegetation will be removed or altered? We will clear and grub road way.

- c. List threatened and endangered species known to be on or near the site. NONE

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: NONE

- e. List all noxious weeds and invasive species known to be on or near the site. NONE

5. Animals

- 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. NONE

Examples include:

birds: hawk, heron, eagle, songbirds, other:

mammals: deer, bear, elk, beaver, other:

fish: bass, salmon, trout, herring, shellfish, other _____

Birds and Songbirds

- b. List any threatened and endangered species known to be on or near the site. NONE

- c. Is the site part of a migration route? If so, explain. Yes, Richland lies within the Pacific Flyway

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

- e. List any invasive animal species known to be on or near the site. NONE

6. Energy and Natural Resources

- 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. ELECTRIC, GAS

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. NO

- c. What kinds of energy conservation features are included in the plans of this proposal? NONE
List other proposed measures to reduce or control energy impacts, if any:

7. Environmental Health

- 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. NO

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

NONE

- 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

- 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.

NONE

- 4) Describe special emergency services that might be required.

NONE

5)

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

NONE

b. Noise

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

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. HEAVEY EQUIPMENT

- 3) Proposed measures to reduce or control noise impacts, if any: NONE

8. Land and Shoreline Use

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. HOUSEING, NO AFFECT

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? NO

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: NO

c. Describe any structures on the site. NONE

d. Will any structures be demolished? If so, what?
NO

e. What is the current zoning classification of the site? R.1.10. Low density residential

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

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

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?
Approximately 42 residents

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

None

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

NA

L. Proposed measures to ensure the proposal is compatible with existing and projected land

uses and plans, if any:

PLAN REVIEW

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

NA

9. Housing

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

12

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

0

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

NA

10. Aesthetics

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

LESS THAN 20' Zoning permits homes up to 30' tall

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

NA

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

COVENANTS

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? NONE

b. Could light or glare from the finished project be a safety hazard or interfere with views? NO

c. What existing off-site sources of light or glare may affect your proposal? NONE

d. Proposed measures to reduce or control light and glare impacts, if any: NONE

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity? NONE

b. Would the proposed project displace any existing recreational uses? If so, describe.
NO

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

13. Historic and cultural preservation

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. NO

b. 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.
NO

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. NA

NA

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. NONE

14. Transportation

- 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.

COLUMBIA PARK TRIAL

- 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?

YES

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

NONE

- 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). ____

YES, ADDED CURB GUTTER NAD SIDEWALK AND STREET LIGHTS

- 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?

TBD

- 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.

NO

- h. Proposed measures to reduce or control transportation impacts, if any: NO

15. Public Services

- 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. YES

- c. Proposed measures to reduce or control direct impacts on public services, if any.
ROAD WAY IMPROVEMENT

16. Utilities

- a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic
system, other ELECTRIC, GAS, WATER SEWER, TELEPHONE
- 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. ELECTRIC, GAS, WATER SEWER, TELEPHONE

C. Signature

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: Lee Petty

Name of signer Lee Petty

Position and Agency/Organization Owner

Date Submitted: 11/21/17

COMMUNITY DEVELOPMENT DEPARTMENT

THIS APPLICATION WAS REVIEWED BY THE PLANNING DIVISION OF
THE COMMUNITY DEVELOPMENT DEPARTMENT. ANY COMMENTS
OR CHANGES MADE BY THE DEPARTMENT ARE ENTERED IN THE
BODY OF THE CHECKLIST AND CONTAIN INITIALS OF THE REVIEWER

8LEA 11.21.17
Reviewer Signature Date

D. supplemental sheet for nonproject actions

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

NONE

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

NONE

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

NONE

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands? NO AFFECT

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are: NO AFFECT

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are: WE REQUIRE ADDITIONAL UTILITIES AND POSSIBLE TRANSPORTATION NEEDS.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment. NO AFFECT



File No. EA2017-18

CITY OF RICHLAND
Determination of Non-Significance

Description of Proposal: A preliminary plat subdividing a 4.1-acre site into 8 residential lots for single-family construction

Proponent: Lee Petty (Columbia Park Trail Development)

Location of Proposal: The south side of Columbia Park Trail approximately 1,725 feet east of Queensgate Drive. Benton County tax parcel ID #: 1-22982020005009, generally, the southeast ¼ of the northwest ¼ of Section 22, Township 9 North, Range 28 East, W.M.

Lead Agency: City of Richland

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

() There is no comment for the DNS.

(**X**) This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for fourteen days from the date of issuance, which is November 21, 2017. Public comments must be submitted by **December 6, 2017**.

() This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

Responsible Official: Shane O'Neill
Position/Title: Senior Planner
Address: P.O. Box 190, Richland, WA 99352
Date: November 21, 2017

Signature  _____



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

1250 W Alder St • Union Gap, WA 98903-0009 • (509) 575-2490

December 1, 2017

Shane O'Neill
City of Richland
PO Box 190
Richland, WA 99352

Re: EA2017-18

Dear Mr. O'Neill:

Thank you for the opportunity to comment on the determination of nonsignificance for the subdivision of 4.1 acres into 8 residential lots, proposed by Columbia Park Trail Development. We have reviewed the documents and have the following comments.

WATER QUALITY

Dividing or platting a piece of property is often the first step in a proposed development. An NPDES Construction Stormwater Permit may be required if there is a potential for stormwater discharge from a construction site with disturbed ground. Ground disturbance includes all utility placements, and building or upgrading roads. The permitting process requires going through SEPA, developing a stormwater pollution prevention plan, submitting an application, and a 30-day public notice process. This may take 38-60 days. A permit and a stormwater plan are required prior to beginning ground-breaking activities. Please contact **Lloyd Stevens, Jr.** with the Department of Ecology, (509) 574-3991 or lloyd.stevensjr@ecy.wa.gov, with questions about this permit.

Erosion control measures must be in place prior to any clearing, grading, or construction. These control measures must prevent soil from being carried by stormwater runoff into surface waters, or into stormwater drains that may discharge directly to surface water. Sand, silt, and soil will damage aquatic habitat and are considered pollutants.

Underground Injection Control

Drywells, and certain infiltration structures such as drain fields and French drains are regulated under 173-218 WAC Underground Injection Control Program. This program requires evaluation of construction standards, restrictions on types of discharges, registration of the structure through the UIC Program. Further information may be found on Ecology's website: <http://www.ecy.wa.gov/programs/wq/grndwtr/uic/index.html>, or, with an internet search for "Washington UIC"

Mr. O'Neill
December 1, 2017
Page 2

If you have any questions or would like to respond to the Water Quality comments, please contact **Andrew Wargo** at (509) 454-7223 or email at andrew.wargo@ecy.wa.gov.

Sincerely,



Gwen Clear
Environmental Review Coordinator
Central Regional Office
(509) 575-2012
crosepacoordinator@ecy.wa.gov

Exhibit 8

Jeff J Smart
253 Columbia Park Trail
Richland, WA 99352
12/1/2017

Mr. O'Neill
Senior Planner
City of Richland
840 Northgate Drive
Richland WA 99352

Dear Mr. O'Neill:

This letter of comment is in reference to the application for preliminary plat approval for a site on Columbia Park Trail by Mr Lee Petty.

I own the adjacent property at 253 Columbia Park Trail (directly East of the proposed plat). Although I have no objection to the approval of the preliminary plat nor the development itself on Mr. Petty's land, I do take issue with what the City may require on the land between Mr. Petty's property and Columbia Park Trail. This strip of land has been referred to as a "vacated right of way".

My concern with the right of way is if the City requires something done with this property, my access to my property will be disturbed.

The access to my property at 253 Columbia Park Trail has been using a driveway through the vacated right of way for more than 50 years. There is no other access to my property. If drastic changes are made to the vacated right of way, I will no longer be able to access my property.

I have spoken to City staff on this issue and have not received a clear answer as to what will happen to the vacated right of way between Mr. Petty's land and Columbia Park Trail aside from a possible widening of Columbia Park Trail with curbs, gutters and street lights. I have also been attempting contact with Mr. Petty, but have not received a call or email back as of the date of this letter.

I am sure there is a reasonable solution the City can offer so as to allow continued access to my property along the historic driveway and allow for improvements to Columbia Park Trail.

I am available to talk with Staff at anytime regarding finding a solution. I plan on attending the hearing on December 11.

Sincerely,



Jeff J Smart

(S2017-104 – Columbia Park Trail Development)

**RICHLAND PLANNING COMMISSION
TECHNICAL ADVISORY COMMITTEE REPORT
DECEMBER 11, 2017**

APPLICANT: LEE PETTY

REQUEST: PRELIMINARY PLAT APPROVAL TO SUBDIVIDE 4.1 ACRES INTO 8
RESIDENTIAL LOTS, (COLUMBIA PARK TRAIL DEVELOPMENT)

LOCATION: SOUTH SIDE OF COLUMBIA PARK TRAIL APPROXIMATELY 1,725
FEET EAST OF QUEENSGATE DRIVE

ENGINEER: PBS ENGINEERING

TECHNICAL ADVISORY COMMITTEE RECOMMENDATIONS

The Technical Advisory Committee conducted a review of the request and recommends that if the preliminary plat is approved, such approval be subject to the following conditions:

General Conditions:

1. The following notes shall be placed on the final plat:
 - The lots within this plat are subject to payment of the City of Richland's park mitigation fee regulations. Fees must be paid in accordance with Richland Municipal Code Chapter 22.12.
 - The lots within this plat are subject to payment of the City of Richland's road impact mitigation fee regulations. Fees must be paid in accordance with Richland Municipal Code Chapter 12.03.
2. Prior to plat recording: the developer shall provide the City of Richland Development Services with CBU placement and installation approval from USPS Growth Management. Current USPS contact - joseph.e.spry@usps.gov, 509-967-0500.
3. Add following plat note: 'Addresses shown in brackets are subject to change by the City of Richland. Zip code: 99352'.
4. Prior to plat recording: Grading permit GR-17-02793 shall be issued with final inspection approval by the City and final field observation report by the geo-technical engineer submitted to this office. Any specific geo-technical requirements regarding foundation footings and site slopes shall be noted on the plat along with reference to geotechnical engineer and report date.
5. The entire access easement bearing one street name; Rieve Ct. has been approved for use (Heather Ct. has been disallowed).
6. All final plans for public improvements shall be submitted prior to pre-con on a 24" x 36" hardcopy format and also electronically in .dwg format compatible with the City's standard CAD software. Addendums are not allowed, all information shall be supplied in the specified 24 x 36 (and electronic) format. When construction of the infrastructure has been substantially completed, the applicant shall provide paper, mylar and electronic record drawings in accordance with the City's

"Record Drawing Requirements". The electronic as-built record drawings shall be submitted in a AutoCAD format compatible with the City's standard CAD software. Electronic copies of the construction plans are required prior to the pre-con meeting, along with the multiple sets of paper drawings. The mylar record drawings (including street lights) shall be submitted and approved by the City before the final punchlist inspection will be performed. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.

7. Any and all necessary permits that may be required by jurisdictional entities outside of the City of Richland shall be the responsibility of the developer to obtain.
8. A copy of the construction drawings shall be submitted for review to the appropriate jurisdictions by the developer and his engineer. All required comments / conditions from all appropriate reviewing jurisdictions (e.g.: Benton County, any appropriate irrigation districts, other utilities, etc.) shall be incorporated into one comprehensive set of drawings and resubmitted (if necessary) for final permit review and issuance.
9. Any work within the public right-of-way or easements or involving public infrastructure will require the applicant to obtain a right-of-way permit prior to construction, per RMC Chapter 12.08. A plan review and inspection fee in the amount equal to 5% of the construction costs of the work within the right-of-way or easement will be collected at the time the permit is issued. A stamped, itemized Engineers estimate (Opinion of probable cost) and a copy of the material submittals shall be submitted along with the final plan submittal.
10. When the construction is substantially complete a paper set of "record drawings" shall be prepared by a licensed surveyor and include all changes and deviations. Please reference the Public Works document "RECORD DRAWING REQUIREMENTS & PROCEDURES" for a complete description of the record drawing process. After approval by the City of the paper copy, a mylar copy of the record drawings shall be submitted along with a CAD copy of them. The electronic as-built record drawings shall be submitted in a AutoCAD format compatible with the City's standard CAD software. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.
11. Public utility infrastructure located on private property will require recording of a City standard form easement prior to acceptance of the infrastructure and release of the final plat. The City requires preparation of the easement legal description by the developer two weeks prior to the scheduled date of plat acceptance. Once received, the City will prepare the easement document and provide it to the developer. The developer shall record the easement at the Benton County Assessor and return a recorded original document to the City prior to application for plat acceptance.
12. A pre-construction conference will be required prior to the start of any work within the public right-of-way or easement. Contact the Public Works Engineering Division at 942-7500 to schedule a pre-construction conference.
13. Site plan drawings which involve the construction of public infrastructure shall be drawn on a standard 24" x 36" drawing format to a scale which shall not be less than 1"= 40'.
14. All plan sheets involving construction of public infrastructure shall have the stamp of a current Washington State licensed professional engineer.
15. All construction plan sheets shall include the note "CALL TWO WORKING DAYS BEFORE YOU DIG 1-800-424-5555 (or "811")." Or: <http://www.call811.com/>
16. An irrigation source and distribution system, entirely separate from the City's domestic water system, shall be provided for this development. *Construction plans will not be accepted for review*

until adequate and viable proof of an irrigation source is made available by the developer. The designing Engineer shall submit plans for the proposed irrigation system to the Irrigation District with jurisdiction over the property at the same time that they are submitted to the City for construction review. Plans shall be reviewed and accepted by said irrigation district prior to issuance of a Right-of-Way permit by the City. Easements shall be provided on the final plat for this system where needed.

17. A copy of the preliminary plat shall be supplied to the Post Office and all locations of future mailbox clusters approved prior to final platting.

Design Standards:

18. Public improvement design shall follow the following general format:
 - A. All materials and workmanship shall be in conformance with the latest revision of the City of Richland Standard Specifications and Details and the current edition of the State of Washington Standard Specifications for Road, Bridge, and Municipal Construction. Please confirm that you have the latest set of standard specs and details by visiting the City's web page.
 - B. Sanitary sewer shall be aligned on the north and west side of street centerlines.
 - C. Storm sewer shall be aligned on the south and east side of street centerlines.
 - D. Any sewer or storm manholes that are installed outside of public Right of Way shall have an acceptable 12-foot wide gravel access road (minimum) provided from a public street for maintenance vehicles.
 - E. 10-foot horizontal spacing shall be maintained between domestic water and sanitary sewer mainlines and service lines.
 - F. Water lines shall be aligned on the south and east side of street centerlines.
 - G. Watermains larger than 8-inches in diameter shall be ductile iron.
 - H. Watermains installed outside of the City Right of Way or in very rocky native material, shall be ductile iron and may need restrained joints.
 - I. All watermains outside areas zoned R1 shall be ductile iron.
 - J. Fire hydrant location shall be reviewed and approved by the City Fire Marshal.
 - K. Sewer mains over 15-feet deep shall be constructed out of SDR26 PVC or C900 PVC. The entire main from manhole to manhole shall be the same material. Private sewer service lines over 15-feet deep shall also be constructed of the same material, then transition to regular sewer piping above 15-feet.
 - L. Water valves and manholes installed on private property shall be placed so as to avoid parked cars whenever feasible.
 - M. All utilities shall be extended to the adjacent property (properties) at the time of construction.
 - N. The minimum centerline finish grade shall be no less than 0.30 % and the maximum centerline finish grade shall be no more than 10.0 % for local City streets.
 - O. The minimum centerline radius for local City streets shall be 100-feet.
 - P. Any filling of low areas that may be required within the public Right of Way shall be compacted to City standards.
 - Q. A overall, composite utility plan shall be included in the submitted plan set if the project is phased. This comprehensive utility plan benefits all departments and maintenance groups involved in the review and inspection of the project.
 - R. A detailed grading plan shall be included in the submitted plan set.
 - S. For public utilities not located within public street rights-of-way the applicant shall provide maintenance access acceptable to the City and the applicant shall provide an exclusive 10-foot wide public utility easement (minimum) to be conveyed to the City of Richland.
 - T. Final design of the public improvements shall be approved at the time of the City's issuance of a Right-of-way Construction Permit for the proposed construction.

- U. All public improvements shall comply with the State of Washington and City of Richland requirements, standards and codes.
 - V. All cul-de-sacs shall have a minimum radius of 45-feet to the face of curb to allow for adequate turning radius of fire trucks and solid waste collection vehicles.
 - W. Curb returns at minor intersections shall have a minimum radius of 25-feet. Curb returns at major intersections should have minimum radius of 30-feet but should be evaluated on a case by case basis.
 - X. All public streets shall meet design requirements for sight distance (horizontal, vertical and intersectional).
 - Y. All intersections with public streets shall meet horizontal, vertical and intersectional design requirements for sight distance (A.K.A. the Vision Clearance Triangle).
 - Z. The final engineered construction plans shall identify locations for irrigation system, street lighting, gas service, power lines, telephone lines, cable television lines, street trees and mail boxes. All electrical appurtenances such as transformers, vaults, conduit routes, and street lights (including their circuit) need to be shown in the plan view.
 - AA. Construction plans shall provide or reference all standard drawings or special details that will be necessary to construct all public improvements which will be owned, operated, maintained by the City or used by the general public (Commercial Driveway, Curb, Gutter, Sidewalk, Water, Sewer, Storm, Street and Street lighting etc.).
 - BB. The contractor shall be responsible for any and all public infrastructure construction deficiencies for a period of one year from the date of the letter of acceptance by the City of Richland.
19. If the project will be built in phases the applicant shall submit a master plan for the sanitary sewer, domestic water, storm drainage, electrical, street lighting and irrigation system for the entire project prior to submitting plans for the first phase to assure constructability of the entire project. This includes the location and size of any storm retention ponds that may be required to handle runoff.
20. If the City Fire Marshal requires a secondary emergency vehicle access, it shall be included in the construction plan set and be designed to the following standards:
- A. 2-inches compacted gravel, minimum (temp. SEVA only).
 - B. 2% cross-slope, maximum.
 - C. 5% slope, maximum. Any access road steeper than 5% shall be paved or be approved by the Fire Marshal.
 - D. Be 20-feet in width.
 - E. Have radii that are accommodating with those needed for City Fire apparatus.

Secondary emergency vehicles accesses (SEVA's) shall be 20-feet wide, as noted. Longer secondary accesses can be built to 12-feet wide with the approval of the City of Richland Fire Marshal, however turn-outs are required at a spacing acceptable to the Fire Dept. Temporary SEVA's shall be constructed with 2-inches of compacted gravel, at a minimum. Permanent SEVA's shall be paved with 2-inches of asphalt over 4-inches of gravel, at a minimum.

21. SURVEY MONUMENT DESTRUCTION:

All permanent survey monuments existing on the project site shall be protected. If any monuments are destroyed by the proposed construction, the applicant shall retain a professional land surveyor to replace the monuments and file a copy of the record survey with the City.

- A. No survey monument shall be removed or destroyed (*the physical disturbance or covering of a monument such that the survey point is no longer visible or readily accessible*) before a permit is obtained from the Department of Natural Resources (DNR). WAC 332-120-030(2) states "It shall be the responsibility of the governmental agency or others performing construction work or other activity (including road or street resurfacing projects) to adequately search the records and the physical area of the proposed construction work or

other activity for the purpose of locating and referencing any known or existing survey monuments.” (RCW 58.09.130).

- B. Any person, corporation, association, department, or subdivision of the state, county or municipality responsible for an activity that may cause a survey monument to be removed or destroyed shall be responsible for ensuring that the original survey point is perpetuated. (WAC 332-120-030(2)).
- C. Survey monuments are those monuments marking local control points, geodetic control points, and land boundary survey corners. (WAC 332-120-030(3)).

When a monument must be removed during an activity that might disturb or destroy it, a licensed Engineer or Land Surveyor must complete, sign, seal and the file a permit with the DNR.

It shall be the responsibility of the designing Engineer to identify the affected monuments on the project plans and include a construction note directing them to the DNR permit.

Traffic & Streets:

- 22. There is an existing driveway serving the home to the east of this preliminary plat that currently lies in front of this property within the Columbia Park Trail Right-of-Way. This driveway's legal standing is in question and must be resolved before this project receives final approval. One potential solution is to provide access for this property to "Heather Court" or "Rieve Court". The existing driveway shall not be removed until an acceptable course of action, as determined by the City, has been determined.
- 23. This development is entirely dependent for public street access on an off-site private street connection to Columbia Park Trail. No construction plans for this project will be approved prior to approval by the City Engineer of the design of that off-site street, including its intersection with Columbia Park Trail.
- 24. The "Columbia Park Trail Development" preliminary plat lies within the boundary of the South Richland Collector Street Financing Plan (RMC 12.03). This plat shall therefore be subject to the fees administered by the finance plan for any phase submitted for approval. Since this property is included within the Financing Plan, it is exempt from the SEPA-related traffic study requirement (TIA).
- 25. The Columbia Park Trail frontage shall be completed to City standards at the time that the phase which constructs the lots adjacent to each is developed. Frontage improvements consist of curb & gutter and sidewalk, additional paving, provisions for storm drainage and also street lighting per City standards.
- 26. At the time of plat development the developer shall construct half of a rural section roadway within the Jericho Road right-of-way from the west boundary of this property to the existing street that lies approximately 970-feet to the east. These improvements shall consist of an approved road design, grading of the Jericho Road subgrade, 17-feet of strip paving and an accompanying ditch section. The other half of Jericho shall be constructed by other property owners at the time of their property improvement. This project will not be required to install frontage improvements along Jericho, per RMC Chapter 12.010.10.
- 27. A ten-foot public utility easement along both the Jericho Road and the Columbia Park Trail Right-of-Ways shall be provided on the face of the final plat.

28. A note will be shown on the face of the final plat stating that Columbia Park Trail is classified as a "Minor Arterial" street. Subsequently, no driveways accessing single family lots will be allowed onto Columbia Park Trail.
29. The vision-clearance triangle needs to be shown on all corner lots on both the construction plans and the final plat document, in accordance with RMC Chapter 12.11.020. If the intersection is in a curve, it will have to be evaluated per AASHTO guidelines. This information may need to be designed by the engineer of record and supplied to the surveyor of record for inclusion into the final plat document.
30. All private roads shall be constructed to provide for adequate fire truck & solid waste collection truck access & turnaround movements.
31. Any private roads narrower than 34-feet shall have parking restricted on one side, and any roads 27-feet or narrower shall have parking restricted on both sides. Street signs indicating restricted parking shall be installed prior to final platting at the developers expense.
32. If the project is to be constructed in phases, all dead-end streets longer than 150-feet that will be continued later need to have temporary turn-arounds built at the end of them. The radius of these turn-arounds shall be 45-feet minimum, and shall be constructed of 2-inches of compacted top course gravel for slopes less than 5%, or of 2-inches of asphalt atop 2-inches of gravel for slopes greater than 5%. If the temporary turn around is not located within the final plat an easement with a 50-foot radius will be required.

Domestic Water:

33. The proposed preliminary plat is located within the Tapteal 1 water pressure zone. The closest Tapteal 1 watermain is located in the Sundance Estates project to the South, or in Columbia Park Trail approximately 700-feet to the west. It shall be the responsibility of the developer to extend a watermain to this property to serve domestic water at the time of plat construction.
34. If the Tapteal 1 water main in Columbia Park Trail is not extended to this project at the time of construction, an 8-inch domestic water main shall be extended down to Columbia Park Trail from this project in anticipation of a connection with a water main extension in the future. If this project obtains its water service from the Tapteal 1 water main in Columbia Park Trail this project shall extend an 8-inch domestic water main to the boundary of this project within the Jericho Road right of way.
35. Domestic water shall be extended to the adjoining properties adjacent to this plat.
36. The developer will be required to demonstrate that all phases are capable of delivering adequate fire flows prior to construction plans being accepted for review. This may require looping of the watermain from off-site locations, or oversizing of the main where needed.
37. The fire hydrant layout shall be approved by the City Fire Marshal.

Sanitary Sewer:

38. The closest gravity-flow sanitary sewer available for this development is located in Columbia Park Trail approximately 700-feet to the west. It shall be the responsibility of the developer to extend a sewer main to this property to serve sanitary sewer at the time of plat construction.

39. A 10-foot wide exclusive sanitary sewer easement shall be provided for any sewer main that is outside of the public Right-of-Way. Wider easements are required for mains that are buried deeper than 10-feet. If any manholes are located outside of the public Right-of-Way, maintenance truck access to said structure may be required.
40. Sanitary sewer shall be extended to the adjoining properties adjacent to the plat.

Storm Water:

41. This project will require coverage under the Washington State General NPDES Permit for Construction projects. The Developer shall be responsible for compliance with the permit conditions. The City has adopted revised standards affecting the construction of new stormwater facilities in order to comply with conditions of its NPDES General Stormwater Permit program. This project, and each phase thereof, shall comply with the requirements of the City's stormwater program in place at the time each phase is engineered. The project will require detailed erosion control plans.
42. All storm drainage systems shall be designed following the core elements defined in the latest edition of the Stormwater Management Manual for Eastern Washington. The Hydrologic Analysis and Design shall be completed based on the following criteria: Washington, Region 2, Benton County; SCS Type 1A – 24 Hour storm for storm volume. The applicant's design shall provide runoff protection to downstream property owners.
43. The flow-rate of the public storm drainage system shall be designed using the 2-Year, 3-Hour short duration Eastern Washington storm for pipe and inlet sizing using SCS or Santa Barbara method; no modifying or adding time of concentration; no surcharge allowed. Calculations shall be stamped by a registered professional engineer and shall include a profile of the system showing the hydraulic grade line. The calculations should include a 50-foot wide strip behind each right of way line to represent drainage from private property into the City system. Of that area, 50% shall be considered pervious and 50% impervious. Calculations shall include a profile for the design showing the hydraulic grade line for the system. Passing the storm downhill to an existing system will require a downstream storm system capable of accepting the water without being overwhelmed.
44. All construction projects that don't meet the exemption requirements outlined in Richland Municipal Code, Section 16.06 shall comply with the requirements of the Washington State Department of Ecology issued Eastern Washington NPDES Phase II Municipal Stormwater Permit. All construction activities subject to this title shall be required to comply with the standards and requirements set forth in the Stormwater Management Manual for Eastern Washington (SWMMEW) and prepare a Stormwater Site Plan. In addition a Stormwater Pollution Prevention Plan (SWPPP) or submission of a completed erosivity waiver certification is required at the time of plan submittal.
45. If any existing storm drainage or ground water seepage drains onto the proposed site, said storm drainage shall be considered an existing condition, and it shall be the responsibility of the property developer to design a system to contain or treat and release the off-site storm drainage.
46. If there are any natural drainage ways across the proposed pre-plat, the engineered construction plans shall address it in accordance with Richland Municipal code 24.16.170 ("Easements-watercourses").
47. Prior to or concurrent with the submittal of the first phase the developer shall provide a Geotechnical report including the percolation rate of the soils in the area of any storm retention ponds. If the project constructs a storm retention pond then the engineer will need to

demonstrate that the pond will drain itself within 48 hours after the end of a storm event, and not have standing water in it longer than that. Engineering solutions are available for retention ponds that do not perk within 48 hours.

48. Stormwater collection pipes shall be extended to the adjoining properties adjacent to the plat.
49. If the storm drain pond slopes are greater than 25% or deeper than 4-feet, then a 6-foot fence will be required around the perimeter of the pond with a minimum 12-foot wide gate for maintenance vehicles. A maintenance road from the public Right of Way to the bottom of the pond is also needed (2-inches of compacted gravel, minimum). The City's maintenance of the pond in the future will consist of trimming weeds to maintain compliance with fire and nuisance codes, and maintaining the pond for functionality.
50. The developer shall be responsible for landscaping the storm pond and for its maintenance through the one-year infrastructure warranty period. At a minimum the landscaping plan should be consistent with the City's intended maintenance standard as described above. If the developer wishes for the pond to be landscaped and visually appealing, then the homeowners association should be considered for maintenance responsibilities. This will require an irrigation meter and sprinkler system (including a power source), and responsibility for maintaining the landscaping.
51. The developer of record shall maintain the public storm drainage system for one year from the date of final acceptance by The City of Richland (as determined by the issuance of the "Letter of Final Acceptance"). Said developer shall also thoroughly clean the entire system, including structures, pipelines and basins prior to the City warranty inspection, conducted 11 months after the Letter of Final Acceptance.

Final Platting / Project Acceptance Requirements:

52. When the construction is substantially complete a paper set of "record drawings" shall be prepared by a licensed surveyor and include all changes and deviations. Please reference the Public Works document "RECORD DRAWING REQUIREMENTS & PROCEDURES" for a complete description of the record drawing process. After approval by the City of the paper copy, a mylar copy of the record drawings shall be submitted along with a CAD copy of them. The electronic as-built record drawings shall be submitted in a AutoCAD format compatible with the City's standard CAD software. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.
53. Public utility infrastructure located on private property will require recording of a City standard form easement prior to acceptance of the infrastructure and release of a certificate of occupancy. The City requires preparation of the easement legal description by the developer two weeks prior to the scheduled date of final acceptance. Off-site ("third party") easements for City infrastructure are the responsibility of the developer to obtain. Once received, the City will prepare the easement document and provide it to the developer. The developer shall record the easement at the Benton County Assessor and return a recorded original document to the City prior to application for final occupancy.
54. Any off-site easements or permits necessary for this project shall be obtained and secured by the applicant and supplied to the City at the time of plat construction and prior to final plat acceptance by the City.
55. Ten-foot wide public utility easements will be required on the final plat along both sides of all Right-of-Ways within the proposed plat.

56. The vision-clearance triangle needs to be shown on all corner lots on the final plat document, in accordance with RMC Chapter 12.11.020. If the intersection is in a curve, it will have to be evaluated per AASHTO guidelines. This information may need to be designed by the engineer of record and supplied to the surveyor of record for inclusion into the final plat document.
57. The final plat shall include notes identifying all common areas including the private streets and tracts and acknowledging the ownership and maintenance responsibility by the homeowners association. A note shall be added to the face of the final plat that states: "*The private roads are for the use and benefit of the homeowners that abut said roads, and are to be maintained by said owners. The City of Richland accepts no maintenance responsibility for said roads*".
58. A note shall be added to the face of the plat that states: "*The private drives within this plat are fire lanes and parking is restricted. The required no-parking signs shall be installed by the developer where applicable.*" Any private roads narrower than 34-feet shall have parking restricted on one side, and any roads 27-feet or narrower shall have parking restricted on both sides. Street signs indicating restricted parking shall be installed prior to final platting at the developers expense. The restricted parking areas shall be indicated on the final plats.
59. All landscaped areas within the plat that are in the public Right of Way shall be the responsibility of the adjacent property owners to maintain.
60. A one-foot "No access / screening easement" will be required along the Columbia Park Trail Right of Way.
61. The intended use and ownership of all tracts within the plat shall be noted on the final plat.
62. Property with an unpaid L.I.D. assessment towards it must be paid in full or segregated per Richland Municipal Code 3.12.095.
63. Any restricted parking areas shall be indicated on the final plats.



Northern, Inc.

Consulting Engineers Environmental Scientists Geologists
Construction Materials Testing Geophysical Services

GEOTECHNICAL ENGINEERING REPORT

PROPOSED RESIDENTIAL DEVELOPMENT

COLUMBIA PARK TRAIL

RICHLAND, WASHINGTON

GNN PROJECT NO. 217-848

AUGUST 2017

Prepared for

**LCR CONSTRUCTION LLC
1128 COLUMBIA PARK TRAIL
RICHLAND, WA 99352**

Prepared by

**GN NORTHERN, INC.
CONSULTING GEOTECHNICAL ENGINEERS
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*Common Sense Approach to Earth and Engineering
Since 1995*



At GN Northern our mission is to serve our clients in the most efficient, cost effective way using the best resources and tools available while maintaining professionalism on every level. Our philosophy is to satisfy our clients through hard work, dedication and extraordinary efforts from all of our valued employees working as an extension of the design and construction team.

August 14, 2017

LCR Construction LLC
1128 Columbia Park Trail
Richland, WA 99352

Attention: Lee Petty, Owner

**Subject: Geotechnical Engineering Report
Proposed Residential Development
Columbia Park Trail
Richland, Washington**

GNN Project No. 217-848

Mr. Petty,

As requested, GN Northern (GNN) has completed a geotechnical site investigation for the proposed residential development to be constructed at the ~6-acre vacant site located on Columbia Park Trail in Richland, Washington.

Based on the findings of our subsurface study, we conclude that the site is suitable for the proposed construction provided that our geotechnical recommendations presented in this report are followed during the design and construction phases of the project.

This report describes in detail the results of our investigation, summarizes our findings and presents our recommendations concerning earthwork and the design and construction of foundation for the proposed project. It is important that GN Northern provide consultation during the design phase as well as field compaction testing and geotechnical monitoring services during the construction phase to review and monitor the implementation of the geotechnical recommendations.

If you have any questions regarding this report, please contact us at 509-248-9798.

Respectfully submitted,
GN Northern, Inc.



M. Yousuf Memon, EIT
Staff Engineer



Karl A. Harmon, LEG, PE
Senior Geologist/Engineer

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by Karl A. Harmon
Date: 2017.08.14
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PURPOSE AND SCOPE OF SERVICES

This report has been prepared for the proposed residential development to be constructed at the ~6-acre vacant site located on Columbia Park Trail in Richland, Washington; site location is shown on the *Vicinity Map* (Figure 1, Appendix I). Our investigation was conducted to collect information regarding subsurface soil/groundwater conditions and present recommendations for suitability of the subsurface materials to support the intended residential development and allowable bearing capacity for the proposed construction.

GN Northern, Inc. prepared this report for use by LCR Construction LLC and Tri-Cities Engineering, PLLC in the design and construction of the proposed development. Do not use or rely upon this report for other locations or purposes without the written consent of GN Northern, Inc.

Our study was conducted in general accordance with our *Proposal for Geotechnical Report and Infiltration Testing* dated June 21, 2017 and our understanding of the proposed project based on the information you provided; notice to proceed was provided on June 22, 2017 by Carrie Sullivan, Project Manager with LCR Construction in the form of a signed copy of the proposal.

A preliminary lot layout plan, along with a topographic survey, was provided by Mr. Zach Wright of Tri Cities Engineering PLLC via email on June 28, 2017. Field exploration, consisting of nine (9) test-pits, was completed on July 18, 2017. The exploratory test-pit locations are shown on the *Site & Exploration Map* (Figure 2, Appendix I). Detailed test-pit logs are presented in Appendix II, and results of our laboratory testing are presented in Appendix III.

This report has been prepared to summarize the data obtained during this study and to present our recommendations based on the proposed construction and the subsurface conditions encountered at the site. Results of the field exploration and laboratory testing were analyzed to develop recommendations for site development, earthwork, and foundation bearing capacity. Design parameters and a discussion of the geotechnical engineering considerations related to construction are included in this report.

PROPOSED CONSTRUCTION

Based on the preliminary information provided, we understand that the proposed development will include a total of twelve (12) subdivided lots, along with three (3) new roadways and associated infrastructure improvements. We understand that the lot sizes will range from 0.27-acre to 0.51-acre. Information regarding the proposed site grading for the new development, including proposed building pad grades, was not available at the time of this report.

We anticipate that the new residential structures will be one- to two-story, and will include of wood-frame construction with slab-on-grade. If these assumptions deviate from final project plans, GNN shall be contacted to review plans to provide revised recommendations if/as necessary. Structural loading information was not available at the time of this report. We expect light structural loading for proposed construction. Settlement tolerances for the structures are assumed to be limited to 1 inch, with differential settlement limited to ½ inch.

FIELD EXPLORATION

The field exploration was completed on July 18, 2017. A local public utility clearance was completed prior to the field exploration. Field exploration activities were coordinated with Mr. Lee Patty who also arranged for T-Tap Construction to excavate test-holes. Nine (9) exploratory test-pits were excavated using a CAT 320C excavator to depths ranging from approximately 1 to 5.5 feet below existing ground surface (BGS). All test-pits were terminated due to refusal on the fractured basalt bedrock. The test-pits were logged by a GNN field engineer. Three of the test-pit locations were initially suggested by Mr. Wright for soil infiltration testing; however, in light of the exposed soil/bedrock conditions, a determination was made regarding the unfeasible nature of soil infiltration testing. Upon completion, the test-pits were loosely backfilled with the excavated soils. Test-pit locations are shown on *Site & Exploration Map* (Figure 2, Appendix I).

The soils observed during our field exploration were classified according to the Unified Soil Classification System (USCS), utilizing the field classification procedures as outlined in ASTM D2488. A copy of the USCS Classification Chart is included in Appendix II. Photographs of the site and exploration are presented in Appendix IV. Depths referred to in this report are relative to

the existing ground surface elevation at the time of our investigation. The surface and subsurface conditions described in this report are as observed at the time of our field investigation.

LABORATORY TESTING

Representative samples of the exposed soils obtained from the test-pits, were selected for testing to determine the index properties of the subsurface soils in general accordance with ASTM procedures. The following laboratory tests were performed:

Table 1: Laboratory Tests Performed

Test	To determine
Particle Size Distribution (ASTM D6913)	Soil classification based on proportion of sand, silt, and clay-sized particles
Natural Moisture Content (ASTM D2216)	Soil moisture content indicative of in-situ condition at the time samples were taken

Results of the laboratory test are included on the test-pit logs and are also presented in graphic form in Appendix III attached to the end of the report.

SITE CONDITIONS

The 5.87-acre project site is located along the south side of Columbia Park Trail, generally southeast of the intersection with Valley View Road in the City of Richland, Washington. The site is currently spans over two (2) contiguous parcels identified by the Benton County Assessor as Parcel Numbers 122982020004013 & 122982020005009. The project site is generally surrounded by Columbia Park Trail to the north, and existing single-family residences on large acreage lots to the east, west and south. The site is situated in the northern ¼ of Section 22, Township 9 North and Range 28 East, Willamette Meridian, Benton County, Washington.

The vacant/undeveloped project site is generally covered with a moderate growth of native grass and brush. Surface bedrock outcrops are apparent throughout the site, and are most pronounced in the southern (elevated) portion of the site. An un-paved driveway extends along the northern site boundary and provides access to the adjacent residence to the east.

Surface topography at the site consists of a sloping hillside across the majority of the site. Based on the topographic survey provided, slope gradients along the hillside terrain range from less than

5% to maximum 25%. Surface elevations at the site range from $\pm 508'$ along the western portion of northern half of the site, to $\pm 565'$ near the southeastern corner of the site.

Regional Geology

The site is located in the Tri-Cities area of the Yakima Fold Belt region of the Columbia Basin Plateau. The subsurface stratigraphy of the region is comprised of a thick series of folded, Miocene-age flood basalt lava flows and interbedded sediments (collectively known as the Columbia River Basalt Group [CRBG]) overlain by unconsolidated deposits of late Miocene to recent age. In the Tri-Cities area, the uppermost layers of the CRBG are fractured basalt bedrock. Regionally, the top surface of the local basalt is known to slope to the northeast toward the Columbia River, although local variations exist in the area.

Based on the *Geologic Map of the Richland 1:100,000 Quadrangle, Washington* (Reidel, 1994), the site is primarily mapped as the Miocene age Ice Harbor Member [Mv_{sih}] of the Saddle Mountains Basalt (SMB), with the upper northwestern portion mapped as the Elephant Mountain Member [Mv_{sem}] of the SMB.

Seismic Considerations

As per the 2015 *International Building Code* (IBC), a Site Class 'B' may be used for seismic design purposes (see Appendix VII). Site Class 'B' corresponds to 'rock'. The following site-specific design values may be used:

Table 2: IBC Design Response Spectra Parameters

Seismic Design Parameter	Value (unit)
S_s	0.418 (g)
S_1	0.161 (g)
F_a	1.000 (unitless)
F_v	1.000 (unitless)
SM_s	0.418 (g)
SM_1	0.161 (g)
SD_s	0.278 (g)
SD_1	0.107 (g)

S_s = MCE spectral response acceleration at short periods

S_1 = MCE spectral response acceleration at 1-second period

F_a = Site coefficient for short periods

F_v = Site coefficient for 1-second period

SM_s = MCE spectral response acceleration at short periods as adjusted for site effects

SM_1 = MCE spectral response acceleration at 1-second period as adjusted for site effects

SD_s = Design spectral response acceleration at short periods

SD_1 = Design spectral response acceleration at 1-second period

SUBSURFACE CONDITIONS

Based on the findings of our field exploration, the entire site is underlain by relatively shallow basalt bedrock. This condition is most evident by presence of numerous surface outcrops throughout the site, along with the exposed condition of the rock cut along the south side of Columbia Park Trail. The project site consists of a relatively thin veneer of near-surface sandy loess soils, up to ~2 feet in some areas. Soil overburden at the site primarily consists of gravelly/cobbly colluvium with silty sand matrix. These angular gravels and cobbles appeared to be relatively dense. This colluvium unit was noted to be thickest, extending to ~5.5 feet BGS, in test-pit TP-6 in the northeastern-most portion of the site, and also included some boulders in this area. Underlying the colluvial soils, the highly fractured and weathered surface of the basalt bedrock was encountered. Test-pit logs in Appendix II show detailed descriptions and stratification of the soils encountered.

NRCS Soil Survey

The soil survey map of the site prepared by the Natural Resources Conservation Service (NRCS) identifies the near surface site soils as *Burbank loamy fine sand, basalt substratum*. According to the NRCS map (Soil Survey, Appendix V), this unit generally consists of *excessively drained* materials. NRCS data indicates that the capacity of the most limiting layer in these soils to transmit water (Ksat) is *high to very high* (5.95 to 19.98 in/hr).

Groundwater

Groundwater was not encountered in the exploratory test-pits to a maximum depth of ~5.5 feet BGS. To further assist in our evaluation, we reviewed the Washington State Department of Ecology database of nearby well logs (see Appendix VI) to estimate groundwater levels in the vicinity. The well logs indicate groundwater to be on the order of 50 to 80 feet BGS. Groundwater levels will fluctuate with precipitation, irrigation, drainage, and regional pumping from wells. Groundwater will not be a factor in design and construction at this site.

CONCLUSIONS

Conditions imposed by the proposed development have been evaluated on the basis of the assumed elevations and engineering characteristics of the subsurface materials encountered in the exploratory test-pits, and their anticipated behavior both during and after construction. The following is a summary of our conclusions and professional opinions based on the data obtained from a review of selected technical literature and the site evaluation.

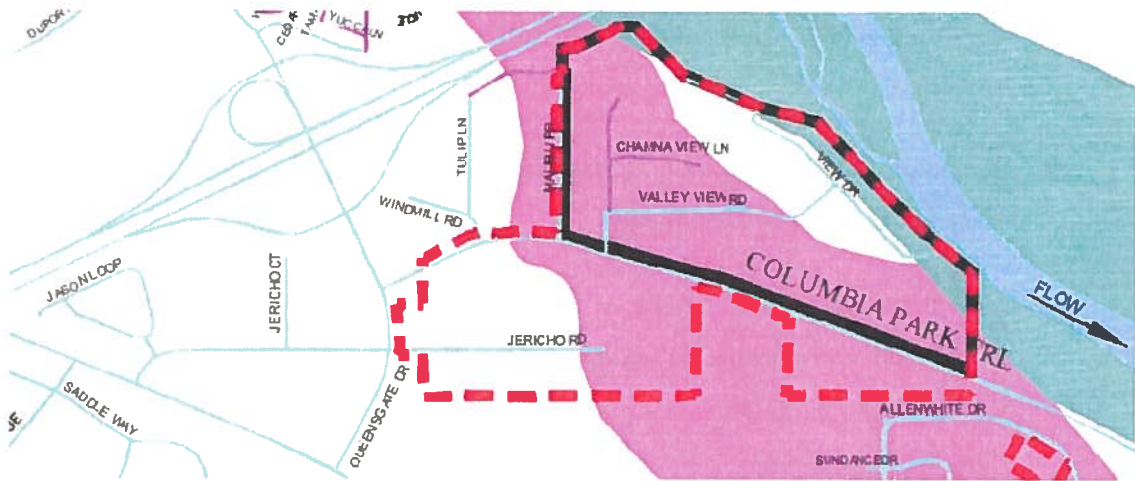
General

- Based on this geotechnical evaluation of the surface and subsurface conditions and our understanding of the proposed development, from a geotechnical perspective, it is our opinion that the site is suitable for the proposed development, provided the recommendations in this report are followed in the design and construction of the project.
- Final project plans, including proposed grading and finished elevations, were not provided at the time of this report. GNN shall be provided an opportunity to review final design plans to provide revised recommendations if/as necessary.

Geotechnical Constraints and Mitigation

- Based on the findings of our field exploration, the entire site is underlain by relatively shallow basalt bedrock. This condition is most evident by presence of numerous surface outcrops throughout the site, along with the exposed condition of the rock cut along the south side of Columbia Park Trail. Soil overburden at the site primarily consists a thin veneer of loess atop gravelly/cobbly colluvium with silty sand matrix.
- Groundwater was not encountered in the exploratory test-pits to a maximum depth of ~5.5 feet BGS. Nearby well logs indicate groundwater to be on the order of 50 to 80 feet BGS. Groundwater will not be a factor in design and construction at this site.
- The underlying geologic condition for seismic design is site class 'B'. The *minimum* seismic design should comply with the 2015 *International Building Code* (IBC) and ASCE 07-10, *Minimum Design Loads for Buildings and Other Structures*.

- Although mapped as a *Geologic Hazard Area (Steep Slopes)* in the City of Richland Geological Sensitive Areas map (August 2013), we believe existing site slopes do not pose a geologic hazard due to presence of shallow bedrock throughout the site. The following is an excerpt from the referenced map:



- Site-specific slope stability analysis was beyond the scope of this evaluation. However, due to presence of relatively shallow bedrock conditions, the lightly-loaded nature of the proposed structures, along with relatively shallow existing site slope gradients, the stability of site slopes should not be a significant concern for this the project.
- Due to presence of shallow bedrock throughout the site, onsite underground stormwater disposal facilities using infiltration are generally considered unfeasible due to site constraints.
- Proposed building layout across the descending slope will call for cut-fill transitions beneath the building footprint. Foundations supported on variably thick cuts and fills and variable support conditions will result in a significant risk for differential settlement. We recommend all foundation elements should either be extended to bear completely on the competent bedrock surface (or atop engineered fill extending to the bedrock), or completely on the native gravelly soils with a thin granular leveling course. No footings shall rest partially on the soils and partially on bedrock surface.

- Rock excavation techniques will be necessary due to the presence of shallow bedrock across the entire site. Excavation with heavy duty tractor-mounted rippers may be possible in some open shallow excavations; pneumatic hammers or blasting may be required in areas of competent (less weathered) bedrock. A geophysical survey (seismic refraction) should be conducted in order to assess the rippability conditions of the subsurface basalt bedrock.
- Site grading shall incorporate the requirements of IBC 2015 Appendix J as adopted by City of Richland Building Department.
- The proposed homes should be sited to include sufficient setbacks from slopes in accordance with appropriate building codes (IBC 2015, Chapter 18: *Soils and Foundations*, Section 1804: *Excavation, Grading, and Fill*, Section 1808: *Foundations*, and subsection 1808.7: *Foundations on or adjacent to slopes* (specifically subsection 1808.7.2: *Foundation setback from descending slope surface*)).
- Pavement section for the proposed residential streets shall conform to the City of Richland typical section for street and roads. The subgrade and base materials shall be compacted to minimum 95% of ASTM D1557.
- The onsite sandy soils, free of excessive deleterious materials including roots and organic matter, are generally suitable for reuse as engineered fill and utility trench backfill.
- The near-surface loess soils are susceptible to wind and water erosion when exposed during grading operations. Preventative measures and appropriate BMPs to control runoff and reduce erosion should be incorporated into site grading plans.

PRELIMINARY GEOTECHNICAL RECOMMENDATIONS

The preliminary geotechnical recommendations presented in this report are predicated upon a program of appropriate monitoring and testing of the site grading activities by a representative of our Geotechnical-Engineer-of-Record (GER). The following sections are intended to reduce the potential earthwork related risks at this site.

Site Development – Grading

Site grading shall incorporate the requirements of IBC 2015 Appendix J as adopted by City of Richland Building Department. The project GER or a representative of the GER should observe site clearing, grading, and the bottoms of excavations before placing fills. Local variations in soil conditions may warrant increasing the depth of over-excavation and recompaction. Seasonal weather conditions may adversely affect grading operations. To improve compaction efforts and prevent potential pumping and unstable ground conditions, we suggest performing site grading during dryer periods of the year.

Soil conditions shall be evaluated by in-place density testing, visual evaluation, probing, and proof-rolling of the imported fill and re-compacted on-site soil as it is prepared to check for compliance with recommendations of this report. A moisture-density curve shall be established in accordance with the ASTM D1557 method for all onsite soils and imported fill materials used as structural fill.

Clearing and Grubbing: At the start of site grading, areas of proposed improvements should be cleared of existing vegetation, large roots, non-engineered fill, construction debris, trash, and any abandoned underground utilities. The surface should be stripped of organic growth and removed from the construction area. Depth of stripping may be reduced through real-time observation during clearing activities. Areas disturbed during clearing should be properly backfilled and compacted as described below.

Re-Use of Onsite Soils as Engineered Fill: The native sandy soil may be suitable for use as engineered fill and utility trench backfill, provided it is free of significant organic or deleterious matter, and rocks greater than 3 inches. The native sandy soil should be placed in maximum 8-inch lifts (loose) and compacted to at least 95% relative compaction (ASTM D1557) near its optimum moisture content. The fine-grained sandy soils will require compaction to be performed within a strict range of $\pm 2\%$ of optimum moisture to achieve the proper degree of compaction. Compaction should be verified by testing.

Use of Imported Soils as Engineered Fill: If needed, imported fill soils should be non-expansive, granular soils meeting the USCS classifications of SM, SP-SM & SW-SM with a maximum rock

size of 3 inches, minimum 70% passing the No. 4 sieve, and 5 to 25% passing the No. 200 sieve. The GER should evaluate the import fill soils before hauling to the site. However, because of the potential variations within the borrow source, import soil will not be prequalified by GNN. The imported fill should be placed in lifts no greater than 8 inches in loose thickness and compacted to at least 95% of the maximum dry density (ASTM D1557) near optimum moisture content.

Foundation Subgrade Preparation

Based on the findings of our exploration, a relatively thin veneer of loose sandy loess is present at the site overlying gravelly/cobbly colluvium atop the fractured surface of the basalt bedrock at varying depths. Due to the variability of subsurface conditions and depth to transition from soil to bedrock, foundation subgrade preparations will need to be tailored based on structure- and site-specific conditions. We anticipate that foundation excavations will encounter the underlying fractured bedrock across majority of the site, with a few lots near the northeastern portion of the site exposing the gravelly/cobbly soils.

To improve overall bearing capacity and reduce the potential for settlement of proposed structures and site improvements, we recommend either extending foundation elements down to the local bedrock unit, or constructing all the foundations of a given structure atop the native gravelly/cobbly soils with a thin leveling course. Foundations shall not be constructed on the near-surface fine-grained loess soils as these soils exhibit collapse potential. The area of subgrade preparation and compaction efforts should extend laterally a minimum of 2 feet beyond each side of proposed footings.

Subgrade Condition 1: Where the depth to bedrock is shallower than approximately 2- to 3- feet BGS (generally anticipated throughout the majority of the site), proposed foundations may be supported directly on the competent bedrock unit. The bottom of the over-excavation shall expose the competent basalt bedrock and the over-ex bottom shall be confirmed by a representative of our Geotechnical Engineer. In areas where protruding rock is encountered in the foundation excavations, we recommend placing 3 to 4 inches of leveling course.

Subgrade Condition 2: Where the depth to bedrock exceeds approximately 3- to 4-feet BGS (generally anticipated in the northeastern portions of the site), proposed foundations may be supported on the recompacted native gravelly soils. To reduce the potential for settlement, we

recommend over-excavation to a minimum of 6-inches below bottom of the proposed footing level (min. 2.5 feet below existing grade). The exposed gravelly soils at bottom of the over-excavation should be proof-compacted to a dense and non-yielding surface. After a suitable subgrade is confirmed by a representative of the GER, we recommend placing minimum 6-inch thick leveling course of 1½-inch minus imported crushed rock structural fill beneath all foundations (see *Imported Crushed Rock Structural Fill* section). Crushed rock structural fill shall be placed in accordance with the recommendations of the *Compaction Requirements for Structural Fill* section of this report. Compaction must be verified using a calibrated nuclear density gauge in accordance with ASTM D6938.

Temporary Excavation

It shall be the responsibility of the contractor to maintain safe temporary slope configurations since the contractor is at the job site, able to observe the nature and conditions of the slopes, and able to monitor the encountered subsurface conditions. Unsupported vertical cuts deeper than 4 feet are not recommended if worker access is necessary. The cuts shall be adequately sloped, shored or supported to prevent injury to personnel from caving and sloughing. The contractor and subcontractors shall be aware of, and familiar with, applicable local, state and federal safety regulations including the current OSHA Excavation and Trench Safety Standards, and OSHA Health and Safety Standards for Excavations, 29 CFR Part 1929, or successor regulations.

It is our opinion that the soil encountered at the site, overlying the bedrock, is classified as Type C soils. For excavation planning purposes, we recommend that temporary, unsupported, open cut slopes shall be no steeper than 1.5 feet horizontal to 1.0 feet vertical (1.5H:1V) in Type C soils. No heavy equipment should be allowed near the top of temporary cut slopes unless the cut slopes are adequately braced. Final (permanent) fill slopes should be graded to an angle of 2H:1V or flatter. We recommend that permanent slopes be hydroseeded and/or planted with vegetation after construction. Where unstable soils are encountered, flatter slopes may be required. We recommend protecting slopes with waterproof covering during periods of wet weather to reduce sloughing and erosion.

The native sandy soil and gravelly colluvium will be prone to caving and sloughing in open excavations. Rock excavation techniques will be necessary due to the presence of shallow bedrock

across the entire site. Excavation with heavy duty tractor-mounted rippers may be possible in some open shallow excavations; pneumatic hammers or blasting may be required in areas of competent (less weathered) bedrock. A geophysical survey (seismic refraction) should be conducted in order to assess the rippability conditions of the subsurface basalt bedrock.

Utility Excavation, Pipe Bedding and Trench Backfill

To provide suitable support and bedding for the pipe, we recommend the utilities be founded on suitable bedding material consisting of clean sand and/or sand & gravel mixture. Pipe bedding should provide a firm uniform cradle for support of the pipes. A minimum 4-inch thickness of bedding material beneath the pipe should be provided. Prior to installation of the pipe, the pipe bedding should be shaped to fit the lower part of the pipe exterior with reasonable closeness to provide uniform support along the pipe. Pipe bedding material should be used as pipe zone backfill and placed in layers and tamped around the pipes to obtain complete contact. To protect the pipe, bedding material should extend at least 6 inches above the top of the pipe.

Placement of bedding material is particularly critical where maintenance of precise grades is essential. Backfill placed within the first 12 inches above utility lines should be compacted to at least 90% of the maximum dry density (ASTM D1557), such that the utility lines are not damaged during backfill placement and compaction. In addition, rock fragments greater than 1 inch in maximum dimension should be excluded from this first lift. The remainder of the utility excavations should be backfilled and compacted to 95% of the maximum dry density as determined by ASTM D1557.

Native sandy soils are considered suitable for utility trench backfill provided they are free of oversize material and can be adequately compacted. All excavations should be wide enough to allow for compaction around the haunches of pipes and underground tanks.

Compaction of backfill material should be accomplished with soils within $\pm 2\%$ of their optimum moisture content in order to achieve the minimum specified compaction levels recommended in this report. However, initial lift thickness could be increased to levels recommended by the manufacturer to protect utilities from damage by compacting equipment.

We recommend that utility trenching, installation, and backfilling conform to all applicable federal, state, and local regulations including Oregon OSHA for open excavations.

Imported Crushed Rock Structural Fill (Leveling Course)

Structural gravel fill shall consist of imported, well-graded, crushed aggregate material meeting the grading requirements of Washington State Department of Transportation (WSDOT) Standard Specification 9-03.9(3) (3/4-inch minus Top Course Material) presented here:

Table 3: WSDOT Standard Spec. 9-03.9(3) (3/4" minus Top Course)

Sieve Size	Percent Passing (by Weight)
3/4 Inch Square	99 - 100
1/2 Inch Square	80 - 100
U.S. No. 4	46 - 66
U.S. No. 40	8 - 24
U.S. No. 200	Less than 10

A fifty (50) pound sample of each imported fill material shall be collected by GNN personnel prior to placement to ensure proper gradation and establish the moisture-density relationship (proctor curve).

Compaction Requirements for Structural Fill

All fill or backfill shall be approved by a representative of the GER, placed in uniform lifts, and compacted to a minimum 95% of the maximum dry density as determined by ASTM D1557. The compaction effort must be verified by a representative of the GER in the field using a nuclear density gauge in accordance with ASTM D6938. The thickness of the loose, non-compacted, lift of structural fill shall not exceed 10 inches for heavy-duty compactors or 4 inches for hand operated compactors...

Foundation Bearing Support Zone and Allowable Bearing Capacity

To provide a uniform bearing support and minimize the potential for total and differential settlement, we recommend that foundations shall bear on subgrade prepared using one of the two options described in the *Foundation Subgrade Preparation* section. Foundation subgrade preparations and crushed rock structural fill shall extend laterally a minimum distance of two (2) feet beyond the outer edge of footings. Provided foundations are constructed in accordance with the recommendations of this report, the following parameters may be used for foundation design:

Table 4: Recommended Foundation Design Parameters

Parameter	Value
Allowable Bearing Capacity ¹	4,000 psf (Subgrade Condition 1) 2,500 psf (Subgrade Condition 2)
Min. Footing Embedment for Frost Protection	24 inches ²

¹ value based on min. factor of safety of 3; applies to dead loads plus design live loads; may be increased by 33% for short-term (transient) loading events

² applicable to exterior footings only

We estimate the total settlement for footings constructed on structural fill as recommended herein to be less than 1-inch, with differential settlement less than half that magnitude.

Lateral forces on foundations from short term wind and seismic loading would be resisted by friction at the base of foundations and passive earth pressure against the buried portions. We recommend a passive earth pressure for the compacted onsite soil of **250 pcf**. This lateral foundation resistance value includes a factor of safety of 1.5. We recommend a coefficient of friction of **0.45** be used between cast-in-place concrete and imported crushed rock fill. An appropriate factor of safety should be used to calculate sliding resistance at the base of footings.

Slab-on-Grade Floors

We recommend placing a minimum 6-inch layer of crushed aggregate fill beneath all slabs. The material shall meet the WSDOT Specification 9-03.9 (3), "Crushed Surfacing Top Course", with less than 5 percent passing the No. 200 sieve (fines). The crushed rock material shall be compacted to at least 95% of the maximum dry density as determined by the ASTM D1557 method. Prior to placement of crushed aggregate fill, the subgrade soils shall be proof-rolled to a non-yielding surface (where applicable). Where near-surface sandy loess soils are encountered within the building envelope, the loess soils shall be removed and the over-ex shall be backfilled with suitable onsite soils placed as engineered fill compacted to 95% of the maximum dry density as determined by the ASTM D1557.

Control joints should be provided in all concrete slabs-on-grade at a maximum spacing of 36 times the slab thickness (12 feet maximum on-center, each way) as recommended by American Concrete Institute (ACI) guidelines. All joints should form approximately square patterns to reduce the potential for randomly oriented shrinkage cracks. Construction joints in the slabs should be tooled at the time of the concrete placement or saw cut ($\frac{1}{4}$ of slab depth) as soon as practical but not more

than 8 hours from concrete placement. Construction (cold) joints should consist of thickened butt joints with ½-inch dowels at 18-inches on center or a thickened keyed-joint to resist vertical deflection at the joint. These procedures will reduce the potential for randomly oriented cracks, but may not prevent them from occurring.

An appropriate vapor retarder (polyethylene liner) shall be used in all areas receiving moisture sensitive resilient flooring/VCT where prevention of moisture migration through slab is essential. If a vapor retarder is used we recommend placing a sand layer over the vapor retarder and immediately below the slab to promote proper curing and protect the vapor retarder during rebar placement. The architect shall determine the need and use of a vapor retarder and sand layer.

Slope Grading

Properly constructed cut or fill slopes can be safely developed at gradients as steep as 2H:1V, provided the recommendations in this report are followed during design and construction.

The project GER should observe all construction cuts to inspect for adverse geologic conditions and make appropriate recommendations based on the exposed conditions. BMPs to control erosion on all graded slopes will be required. Landscaping should take into consideration the engineering characteristics of the slopes, especially with regards to the surficial stability of the slopes.

Fill Slopes

Fill slopes should be constructed at a maximum slope of 2H:1V. Fill slopes should be constructed with suitable structural fill soil that has been properly moisture conditioned and compacted as recommended in this report. Fill slopes should be overfilled and 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.

Where fill slopes or stabilization fill slopes are to be constructed on natural slopes steeper than 5V:1H, the fill should be keyed and benched into firm natural soil. Keyways for all slopes, greater than 5 feet in height, should be cut into firm natural soil. This helps ensure a good bond between the existing native soil and new fill, and to eliminate a plane of weakness at the interface. Before engineered fill is placed, the key should be observed by a representative of the GER, to observe compliance with the above recommendations. It is recommended that the GER, or their

representatives, be present during the fill construction to observe compliance with the above recommendations.

Compacted fill slopes shall be overbuilt and cut back to grade, exposing the firm, compacted fill inner core. The actual amount of overbuilding should vary as field conditions dictate. The degree of overbuilding should be increased until the desired compacted slope surface condition is achieved. Care should be taken by the contractor to provide thorough mechanical compaction to the outer edge of the overbuilt slope surface. Fill placement should proceed in thin lifts (8-12 inch loose thickness, depending upon compaction equipment). Each lift should be moisture-conditioned and thoroughly compacted. The desired moisture condition ($\pm 2\%$ of optimum) should be maintained during the period between successive lifts, and each lift should be tested to ascertain that desired compaction is being achieved.

At intervals not exceeding 4 feet in vertical slope height or the capability of available equipment, whichever is less, fill slopes should be thoroughly back-rolled utilizing conventional equipment. Care should be taken to maintain the desired moisture conditions as needed prior to back-rolling. Upon achieving final grade, the slopes should again be moisture conditioned and thoroughly back-rolled. The use of a side boom roller may be necessary as well as vibratory methods. Without delay, the slopes should then be grid-rolled to achieve a relatively smooth surface and uniformly compact condition. Slope construction procedures shall be monitored, and moisture and density tests shall be taken at regular intervals.

Cut Slopes

Cut slopes in soil materials should be constructed at a maximum slope of 2H:1V. Cut slopes in the basalt bedrock should be stable at gradients of 1H:1V or steeper. It is recommended that the GER, or their representatives, should monitor cut slopes during construction, to check for adverse geologic features exposed within the cut face.

Slope Protection and Maintenance

Proper slope protection and maintenance should help minimize slope erosion and improve the stability of the project slopes. The project soils are prone to erosion and will require protection and maintenance.

Positive drainage should be provided at the tops of all slopes to divert runoff away from the face. Swales constructed in native soils should be lined with suitable non-erosive material. Erosion protection should be provided, especially where concentrated runoff is anticipated.

A qualified Landscape Architect should provide recommendations for slope planting. As the exposed site soils are susceptible to erosion, it is required that erosion control measures, such as planting, erosion control blankets or fabrics, sprayed tackifiers, or some combination of these, be utilized on all slopes within this project. Landscaping should take into consideration the engineering characteristics of the slopes, especially with regards to the surficial stability.

GENERAL CONSIDERATIONS FOR DESIGN AND CONSTRUCTION

Foundation bearing soils shall be constructed as recommended herein. GN Northern shall review significant changes in design (i.e. grade changes, partial cut and partial fill grade, new cuts greater 4 feet, swimming pools and/or daylight basements) not mentioned in this report. The aforementioned conditions shall be brought to the attention of the geotechnical engineer immediately for further recommendations, if necessary. Changes to the building assumptions discussed in (but not limited to) the “Proposed Construction” section of this report not brought to our attention shall fall outside of the purpose and scope of this report.

The following information provides general design considerations based on the soil conditions encountered during exploration and reconnaissance. GN Northern should review grading plans in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications, and determine if any supplemental geotechnical work may be necessary prior to issuing building permits.

To provide an adequate foundation for the proposed structures, the following minimum parameters shall also be followed during construction:

- In accordance with Chapter 4 of the IRC (Section R403.1), the lot shall be graded to drain surface water away from foundations. The minimum grade shall fall at least 6 inches within 10 feet of the foundation wall (2.5%). If slopes prohibit this fall rate then swales or drains shall be constructed to divert water away from the structure.

- Grades should be developed that do not allow runoff from the driveway to flow toward the structures.
- Finished constructed slopes should not be steeper than 2H:1V for cut and fill slopes in soil materials. If retaining walls are required in excess of 4 feet in height, they should be engineered to aid in long term performance and appropriate safety factors.
- Exterior foundations shall extend 12 inches plus 2 percent above the street gutter, except as permitted by the building official.
- Setbacks from ascending and descending slopes shall be based on the specific slope height at Height/2 (H/2). Setback distance for descending slopes shall be measured from the outer edge of the footings to the slope crest. In accordance with IBC 2015 Section 1808.7, footings on or adjacent to slope surfaces shall be founded in firm material with embedment and setback from the slope surface sufficient to provide vertical and lateral support for the footing without detrimental settlement.
- Foundation walls shall not be backfilled until the wall has sufficient strength or has been anchored to the floor above. Backfill shall be placed in lifts not exceeding 4 inches loose and compacted with a hand operated compaction device.
- Under-floor space ventilation shall be critical and should adhere to the IRC Section R408 requirements or City of Richland requirements, whichever is more restrictive.

Retaining Walls

Retaining walls allowed to deflect may be designed for an active, equivalent fluid pressure of 31 psf per foot of depth, using the onsite native sandy soils. Retaining walls restrained from movement (basement walls) may be designed using an at-rest, equivalent fluid pressure of 50 psf per foot of depth.

The earth pressures presented above assume that no surcharge loads exist, that the backfill is level, that the retaining walls are backfilled with granular material and include a footing drain, and will not develop hydrostatic pressures. The project structural engineer should be responsible for the design of structural elements such as basement walls and footing considering the actual structural loading conditions in conjunction with the geotechnical parameters provided in the report.

Surface Drainage

With respect to surface water drainage, we recommend that the ground surface be sloped to drain away from the structure. Final exterior site grades shall promote free and positive drainage from the building areas. Water shall not be allowed to pond or to collect adjacent to foundations or within the immediate building area. We recommend that a gradient of at least 3% for a minimum distance of 10 feet from the building perimeter be provided, except in paved locations. In paved areas, a minimum gradient of 1% should be provided unless provisions are included for collection/disposal of surface water adjacent to the structure. All surface water such as that coming from roof downspouts and catch basins be collected in tight drain lines and carried to a suitable discharge point, such as a storm drain system. Surface water and downspout water should not discharge into a perforated or slotted subdrain, nor should such water discharge onto the ground surface adjacent to the building. Cleanouts should be provided at convenient locations along all drain lines.

ADDITIONAL SERVICES

GNN recommends that the Client should maintain an adequate program of geotechnical consultation, construction monitoring, and soils testing during the final design and construction phases to monitor compliance with GNN's geotechnical recommendations. Maintaining GNN as the geotechnical consultant from beginning to end of the project will provide continuity of services. If GN Northern, Inc. is not retained by the owner/developer and/or the contractor to provide the recommended geotechnical inspections/observations and testing services, the geotechnical engineering firm or testing/inspection firm providing tests and observations shall assume the role and responsibilities of Geotechnical Engineer-of-Record.

GNN can provide construction monitoring and testing as additional services. The costs of these services are not included in our present fee arrangement, but can be obtained from our office. The recommended construction monitoring and testing includes, but is not necessarily limited to, the following:

- Consultation during the design stages of the project.
- Review of the grading and drainage plans to monitor compliance and proper implementation of the recommendations in GNN's Report.
- Observation and quality control testing during site preparation, grading, and placement of engineered fill as required by the local building ordinances.
- Geotechnical engineering consultation as needed during construction

LIMITATIONS OF THE GEOTECHNICAL ENGINEERING REPORT

This GEOTECHNICAL ENGINEERING REPORT (“Report”) was prepared for the exclusive use of the Client. GN Northern, Inc.’s (GNN) findings, conclusions and recommendations in this Report are based on selected points of field exploration, laboratory testing, and GNN’s understanding of the proposed project at the time the Report is prepared. Furthermore, GNN’s findings and recommendations are based on the assumption that soil, rock and/or groundwater conditions do not vary significantly from those found at specific exploratory locations at the project site. Variations in soil, bedrock and/or groundwater conditions could exist between and beyond the exploration points. The nature and extent of these variations may not become evident until during or after construction. Variations in soil, bedrock and groundwater may require additional studies, consultation, and revisions to GNN’s recommendations in the Report.

In many cases the scope of geotechnical exploration and the test locations are selected by others without consultation from the geotechnical engineer/consultant. GNN assumes no responsibility and, by preparing this Report, does not impliedly or expressly validate the scope of exploration and the test locations selected by others.

This Report’s findings are valid as of the issued date of this Report. However, changes in conditions of the subject property or adjoining properties can occur due to passage of time, natural processes, or works of man. In addition, applicable building standards/codes may change over time. Accordingly, findings, conclusions, and recommendations of this Report may be invalidated, wholly or partially, by changes outside of GNN’s control. Therefore, this Report is subject to review and shall not be relied upon after a period of one (1) year from the issued date of the Report.

In the event that any changes in the nature, design, or location of structures are planned, the findings, conclusions and recommendations contained in this Report shall not be considered valid unless the changes are reviewed by GNN and the findings, conclusions, and recommendations of this Report are modified or verified in writing.

This Report is issued with the understanding that the owner or the owner’s representative has the responsibility to bring the findings, conclusions, and recommendations contained herein to the

attention of the architect and design professional(s) for the project so that they are incorporated into the plans and construction specifications, and any follow-up addendum for the project. The owner or the owner's representative also has the responsibility to verify that the general contractor and all subcontractors follow such recommendations during construction. It is further understood that the owner or the owner's representative is responsible for submittal of this Report to the appropriate governing agencies. The foregoing notwithstanding, no party other than the Client shall have any right to rely on this Report and GNN shall have no liability to any third party who claims injury due to reliance upon this Report, which is prepared exclusively for Client's use and reliance.

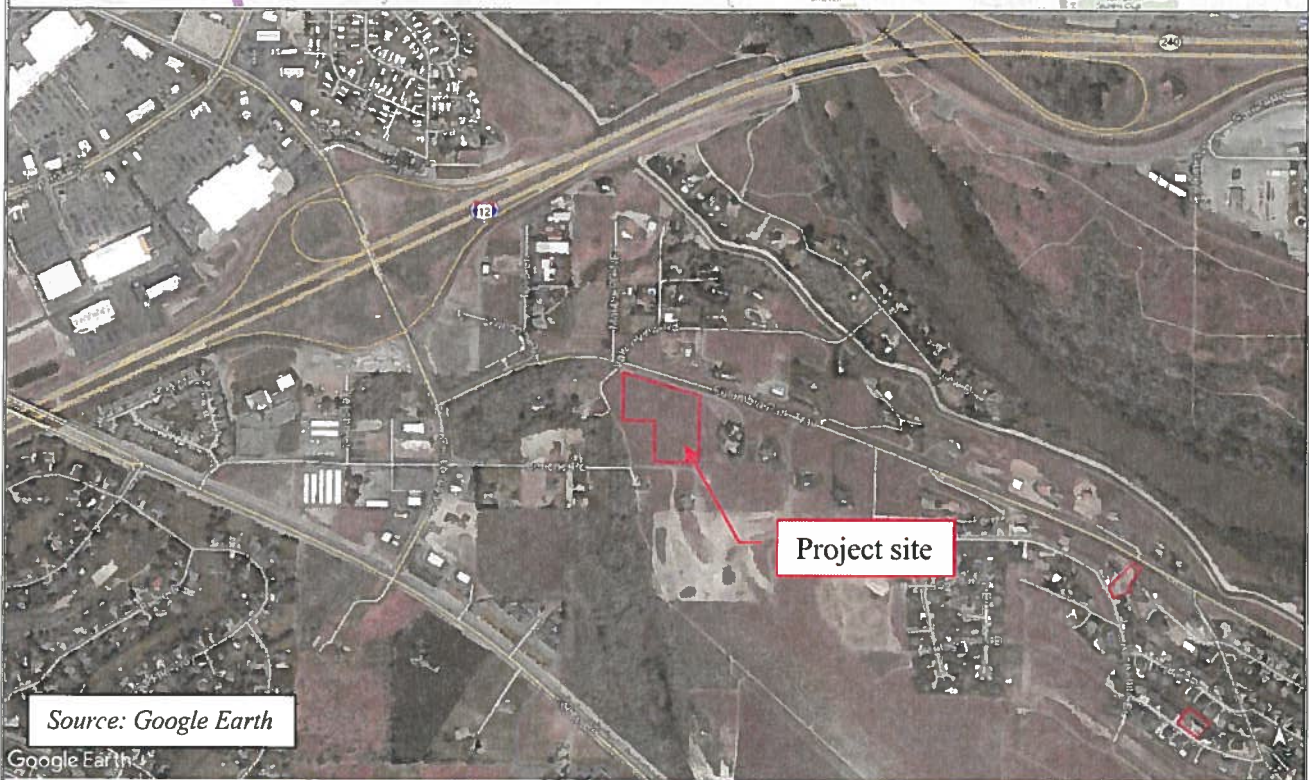
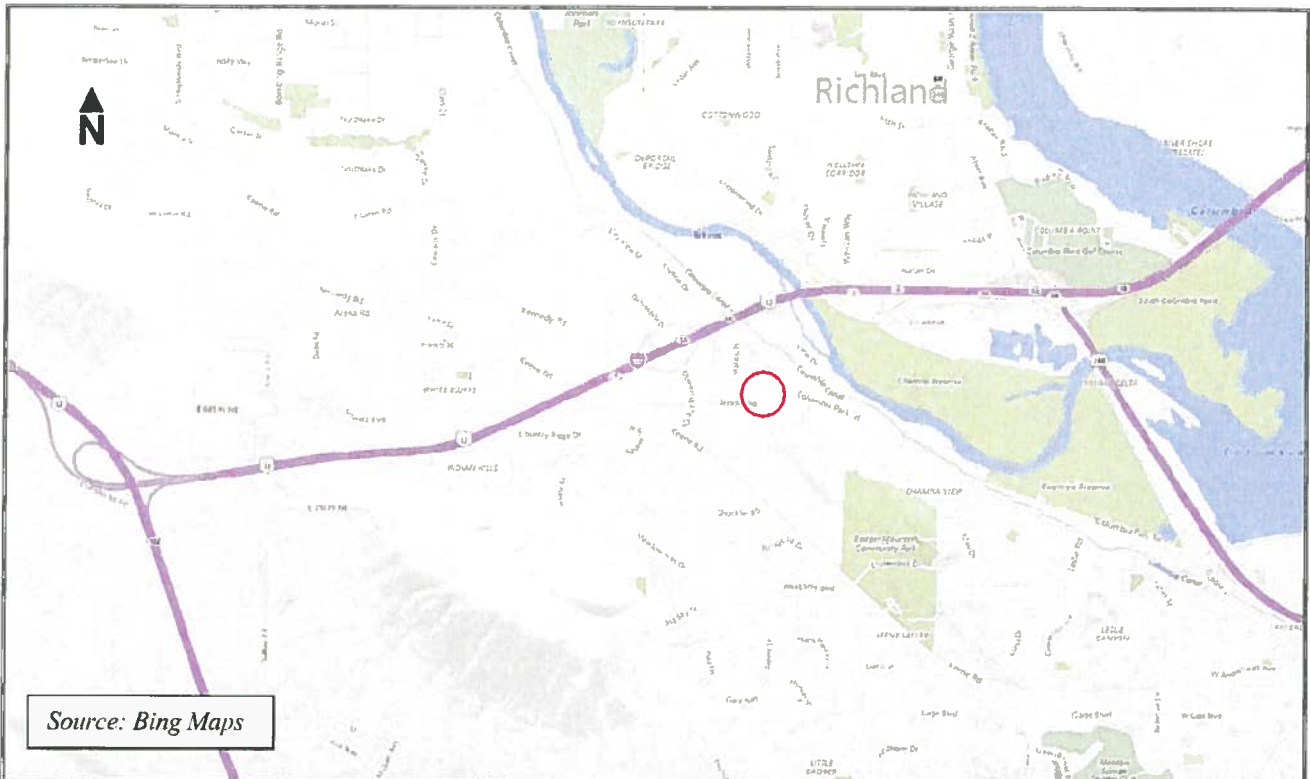
GNN has provided geotechnical services in accordance with generally accepted geotechnical engineering practices in this locality at this time. GNN expressly disclaims all warranties and guarantees, express or implied.

Client shall provide GNN an opportunity to review the final design and specifications so that earthwork, drainage and foundation recommendations may be properly interpreted and implemented in the design and specifications. If GNN is not accorded the review opportunity, GNN shall have no responsibility for misinterpretation of GNN's recommendations.

Although GNN can provide environmental assessment and investigation services for an additional cost, the current scope of GNN's services does not include an environmental assessment or an investigation for the presence or absence of wetlands, hazardous or toxic materials in the soil, surface water, groundwater, or air on, below, or adjacent to the subject property.

APPENDICES

Appendix I
Vicinity Map (Figure 1)
Site & Exploration Map (Figure 2)



Job Number: 217-848

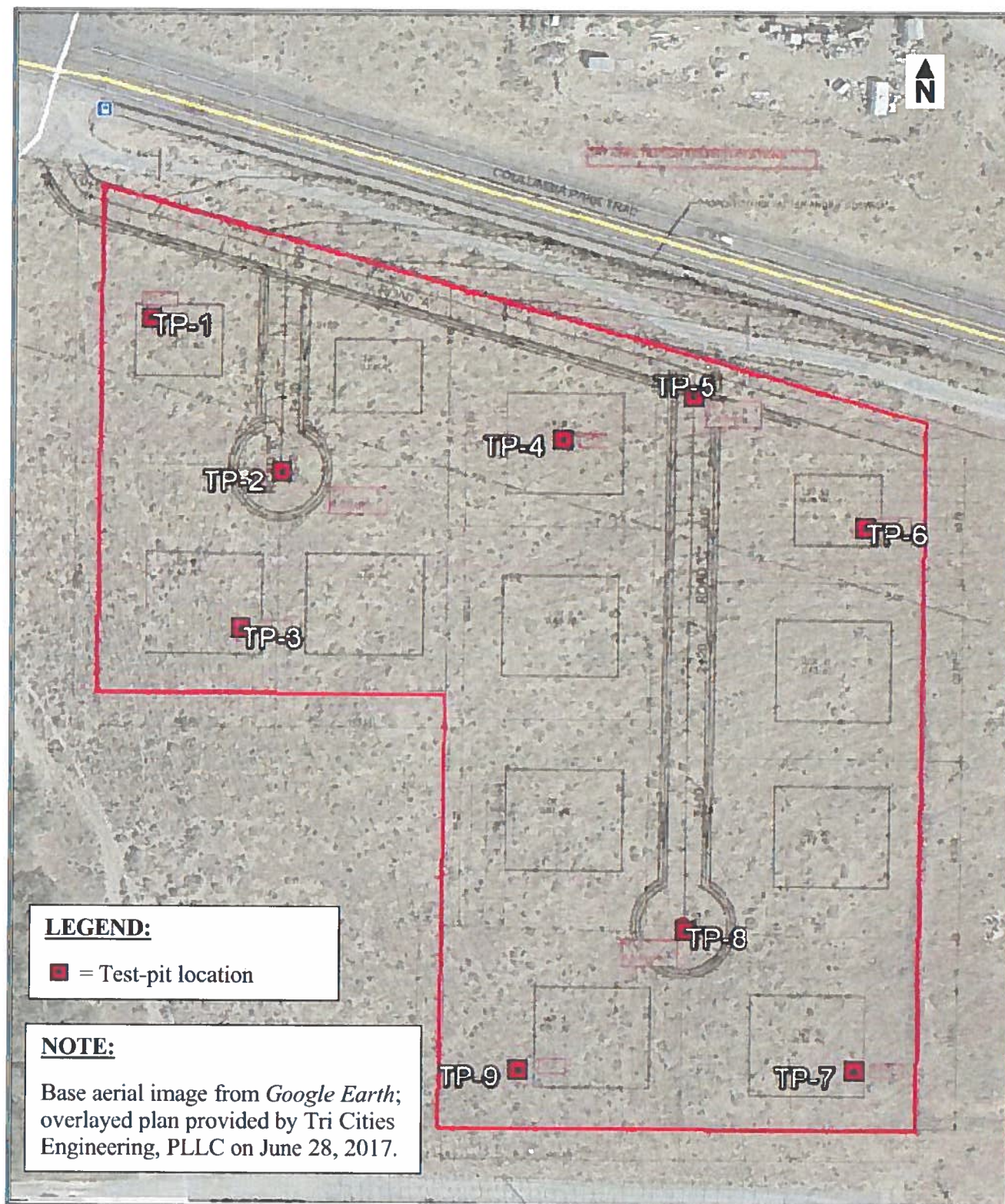
Vicinity Map
 Proposed Residential Development
 Columbia Park Trail
 Richland, Washington

Date
8/11/2017

Mounted By:
MYM

Reviewed By:
KAH

Figure
1



Job Number: 217-848

Site & Exploration Map
 Proposed Residential Development
 Columbia Park Trail
 Richland, Washington

Date
8/11/2017

Mounted By:
MYM

Reviewed By:
KAH

Figure
2

Appendix II
Exploratory Test-Pit Logs
Key Chart (for Soil Classification)



PAGE 1 OF 1

PROJECT NAME Proposed Residential Development

PROJECT LOCATION Columbia Park Trail, Richland, Washington

GROUND ELEVATION 513 ft **TEST PIT SIZE** inches

GROUND WATER LEVELS:

AT TIME OF EXCAVATION _____

AT END OF EXCAVATION ---

AFTER EXCAVATION

- Test-pit terminated due to excavator refusal on fractured basalt
- No groundwater encountered at time of excavation
- Referenced elevations are approximate and are based on topography shown on site plan provided by Tri Cities Engineering.

Bottom of test pit at 3.0 feet.

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 8/11/17 11:21 - C:\USERS\IGN NORTHERN\DROPBOX\5-ACTIVE PROJECTS\217-848 COLUMBIA PARK TRAIL RESIDENTIAL LOT SUBDIVISION, RICHLAND\217-848 LOGS.GPJ



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TEST PIT NUMBER TP-2

PAGE 1 OF 1

CLIENT LCR Construction, LLC PROJECT NAME Proposed Residential Development
PROJECT NUMBER 217-848 PROJECT LOCATION Columbia Park Trail, Richland, Washington
DATE STARTED 7/18/17 COMPLETED 7/18/17 GROUND ELEVATION 527 ft TEST PIT SIZE inches
EXCAVATION CONTRACTOR T-Tap Construction GROUND WATER LEVELS:
EXCAVATION METHOD CAT 320C Excavator AT TIME OF EXCAVATION —
LOGGED BY MYM CHECKED BY KAH AT END OF EXCAVATION —
NOTES Approx. GPS Coords.: 46°15'6.25"N, 119°17'45.38"W AFTER EXCAVATION —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
		SP- SM		POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine grained, dry to damp, appears loose to medium dense, [LOESS] ANGULAR GRAVELS & COBBLES, with silty sand soil matrix, dry to damp, appears dense [COLLUVIUM]
			2.0	525.0

- Test-pit terminated due to excavator refusal on fractured basalt
- No groundwater encountered at time of excavation
- Referenced elevations are approximate and are based on topography shown on site plan provided by Tri Cities Engineering.

Bottom of test pit at 2.0 feet.



PAGE 1 OF 1

PROJECT NAME Proposed Residential Development

PROJECT LOCATION Columbia Park Trail, Richland, Washington

GROUND ELEVATION 529 ft TEST PIT SIZE inches

GROUND WATER LEVELS:

AT TIME OF EXCAVATION ---

AT END OF EXCAVATION

AFTER EXCAVATION ____

ANGULAR GRAVELS & COBBLES, with silty sand soil matrix, dry to damp, appears dense [COLLUVIUM]

Bottom of test pit at 1.0 feet.

528.0



PAGE 1 OF 1

AFTER EXCAVATION _____

- Test-pit terminated due to excavator refusal on fractured basalt
- No groundwater encountered at time of excavation
- Referenced elevations are approximate and are based on topography shown on site plan provided by Tri Cities Engineering.

Bottom of test pit at 2.0 feet.

Bottom of test pit at 2.0 feet.



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TEST PIT NUMBER TP-5

PAGE 1 OF 1

CLIENT LCR Construction, LLC

PROJECT NAME Proposed Residential Development

PROJECT NUMBER 217-848

PROJECT LOCATION Columbia Park Trail, Richland, Washington

DATE STARTED 7/18/17 COMPLETED 7/18/17

GROUND ELEVATION 532 ft TEST PIT SIZE inches

EXCAVATION CONTRACTOR T-Tap Construction

GROUND WATER LEVELS:

EXCAVATION METHOD CAT 320C Excavator

AT TIME OF EXCAVATION ---

LOGGED BY MYM CHECKED BY KAH

AT END OF EXCAVATION ---

NOTES Approx. GPS Coords.: 46°15'6.75"N, 119°17'41.31"W

AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
	GB	MC = 4% Fines = 8%	SP- SM		POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine grained, dry to damp, appears loose to medium dense, [LOESS]
					1.0
					ANGULAR GRAVELS & COBBLES, with silty sand soil matrix, dry to damp, appears dense [COLLUVIUM]
2.5					
					3.5
					528.5

- Test-pit terminated due to excavator refusal on fractured basalt
- No groundwater encountered at time of excavation
- Referenced elevations are approximate and are based on topography shown on site plan provided by Tri Cities Engineering.

Bottom of test pit at 3.5 feet.



PAGE 1 OF 1

PROJECT NAME Proposed Residential Development

PROJECT LOCATION Columbia Park Trail, Richland, Washington

GROUND ELEVATION 541 ft **TEST PIT SIZE** inches

GROUND WATER LEVELS:

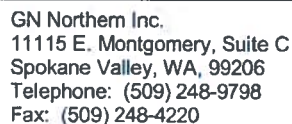
AT TIME OF EXCAVATION ---

AT END OF EXCAVATION ---

AFTER EXCAVATION ---

- Test-pit terminated due to excavator refusal on fractured basalt
- No groundwater encountered at time of excavation
- Referenced elevations are approximate and are based on topography shown on site plan provided by Tri Cities Engineering.
Bottom of test pit at 5.5 feet.

GENERAL BH / TP WELL - GINT STD US LAB.GDT - 8/11/17 11:21 - C:\USERS\IGN NORTHERNDROP\BOX15\ACTIVE PROJECTS\217-848 COLUMBIA PARK TRAIL RESIDENTIAL LOT SUBDIVISION, RICHLAND\217-8481 OGS.GPJ



PAGE 1 OF 1

PROJECT NAME Proposed Residential Development

PROJECT LOCATION Columbia Park Trail, Richland, Washington

COMPLETED 7/18/17

GROUND ELEVATION 563 ft

TEST PIT SIZE inches

GROUND WATER LEVELS:

AT TIME OF EXCAVATION —

CHECKED BY KAH

AT END OF EXCAVATION —

NOTES Approx. GPS Coords.: 46°15'2.12"N, 119°17'39.75"W

AFTER EXCAVATION ---

561.0

- Test-pit terminated due to excavator refusal on fractured basalt
- No groundwater encountered at time of excavation
- Referenced elevations are approximate and are based on topography shown on site plan provided by Tri Cities Engineering.

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TEST PIT NUMBER TP-8

PAGE 1 OF 1

CLIENT LCR Construction, LLC

PROJECT NAME Proposed Residential Development

PROJECT NUMBER 217-848

PROJECT LOCATION Columbia Park Trail, Richland, Washington

DATE STARTED 7/18/17 **COMPLETED** 7/18/17

GROUND ELEVATION 552 ft **TEST PIT SIZE** inches

EXCAVATION CONTRACTOR T-Tap Construction

GROUND WATER LEVELS:

EXCAVATION METHOD CAT 320C Excavator

AT TIME OF EXCAVATION ---

LOGGED BY MYM CHECKED BY KAH

AT END OF EXCAVATION —

NOTES Approx. GPS Coords.: 46°15'3.09"N, 119°17'41.42"W

AFTER EXCAVATION —

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0			
			ANGULAR GRAVELS & COBBLES, with silty sand soil matrix, dry to damp, appears dense [COLLUVIUM]
2.0			
550.0			

- Test-pit terminated due to excavator refusal on fractured basalt
- No groundwater encountered at time of excavation
- Referenced elevations are approximate and are based on topography shown on site plan provided by Tri Cities Engineering.

Bottom of test pit at 2.0 feet.

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TEST PIT NUMBER TP-9

PAGE 1 OF 1

CLIENT LCR Construction, LLC

PROJECT NAME Proposed Residential Development

PROJECT NUMBER 217-848

PROJECT LOCATION Columbia Park Trail, Richland, Washington

DATE STARTED 7/18/17 **COMPLETED** 7/18/17

GROUND ELEVATION 542 ft **TEST PIT SIZE** inches

EXCAVATION CONTRACTOR T-Tap Construction

GROUND WATER LEVELS:

EXCAVATION METHOD CAT 320C Excavator

AT TIME OF EXCAVATION —

LOGGED BY MYM CHECKED BY KAH

AT END OF EXCAVATION

NOTES Approx. GPS Coords.: 46°15'2.14"N, 119°17'43.06"W

AFTER EXCAVATION

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0			
			ANGULAR GRAVELS & COBBLES, with silty sand soil matrix, dry to damp, appears dense [COLLUVIUM]
2.0			
540.0			

- Test-pit terminated due to excavator refusal on fractured basalt
- No groundwater encountered at time of excavation
- Referenced elevations are approximate and are based on topography shown on site plan provided by Tri Cities Engineering.

Bottom of test pit at 2.0 feet.

KEY CHART

RELATIVE DENSITY OR CONSISTENCY VERSUS SPT N-VALUE					
COARSE-GRAINED SOILS			FINE-GRAINED SOILS		
DENSITY	N (BLOWS/FT)	FIELD TEST	CONSISTENCY	N (BLOWS/FT)	FIELD TEST
Very Loose	0 – 4	Easily penetrated with ½-inch reinforcing rod pushed by hand	Very Soft	0 – 2	Easily penetrated several inches by thumb
Loose	4 – 10	Difficult to penetrate with ½-inch reinforcing rod pushed by hand	Soft	2 – 4	Easily penetrated one inch by thumb
Medium -Dense	10 – 30	Easily penetrated with ½-inch rod driven with a 5-lb hammer	Medium-Stiff	4 – 8	Penetrated over ½-inch by thumb with moderate effort
Dense	30 – 50	Difficult to penetrate with ½-inch rod driven with a 5-lb hammer	Stiff	8 – 15	Indented about ½-inch by thumb but penetrated with great effort
Very Dense	> 50	penetrated only a few inches with ½-inch rod driven with a 5-lb hammer	Very Stiff	15 – 30	Readily indented by thumb
			Hard	> 30	Indented with difficulty by thumbnail

USCS SOIL CLASSIFICATION						
MAJOR DIVISIONS			GROUP DESCRIPTION			
Coarse-Grained Soils <50% passes #200 sieve	Gravel and Gravelly Soils <50% coarse fraction passes #4 sieve	Gravel (with little or no fines)		GW	Well-graded Gravel	
				GP	Poorly Graded Gravel	
		Gravel (with >12% fines)		GM	Silty Gravel	
				GC	Clayey Gravel	
	Sand and Sandy Soils >50% coarse fraction passes #4 sieve	Sand (with little or no fines)		SW	Well-graded Sand	
				SP	Poorly graded Sand	
		Sand (with >12% fines)		SM	Silty Sand	
				SC	Clayey Sand	
Fine-Grained Soils >50% passes #200 sieve	Silt and Clay Liquid Limit < 50			ML	Silt	
				CL	Lean Clay	
				OL	Organic Silt and Clay (low plasticity)	
	Silt and Clay Liquid Limit > 50			MH	Inorganic Silt	
				CH	Inorganic Clay	
				OH	Organic Clay and Silt (med. to high plasticity)	
Highly Organic Soils			PT	Peat	 Top Soil	

LOG SYMBOLS		
	2S	2" OD Split Spoon (SPT)
	3S	3" OD Split Spoon
	NS	Non-Standard Split Spoon
	ST	Shelby Tube
	CR	Core Run
	BG	Bag Sample
	TV	Torvane Reading
	PP	Penetrometer Reading
	NR	No Recovery
	GW	Groundwater Table

MODIFIERS	
DESCRIPTION	RANGE
Trace	<5%
Little	5% – 12%
Some	>12%

MOISTURE CONTENT	
DESCRIPTION	FIELD OBSERVATION
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but not visible water
Wet	Visible free water

SOIL CLASSIFICATION INCLUDES

1. Group Name
2. Group Symbol
3. Color
4. Moisture content
5. Density / consistency
6. Cementation
7. Particle size (if applicable)
8. Odor (if present)
9. Comments

MAJOR DIVISIONS WITH GRAIN SIZE						
SIEVE SIZE						
12"	3"	3/4"	4	10	40	200
GRAIN SIZE (INCHES)						
12	3	0.75	0.19	0.075	0.0171	0.0029
Boulders	Cobbles	Gravel		Sand		Silt and Clay
		Coarse	Fine	Coarse	Medium	Fine

Conditions shown on boring and testpit logs represent our observations at the time and location of the fieldwork, modifications based on lab test, analysis, and geological and engineering judgment. These conditions may not exist at other times and locations, even in close proximity thereof. This information was gathered as part of our investigation, and we are not responsible for any use or interpretation of the information by others.

Appendix III
Laboratory Testing Results



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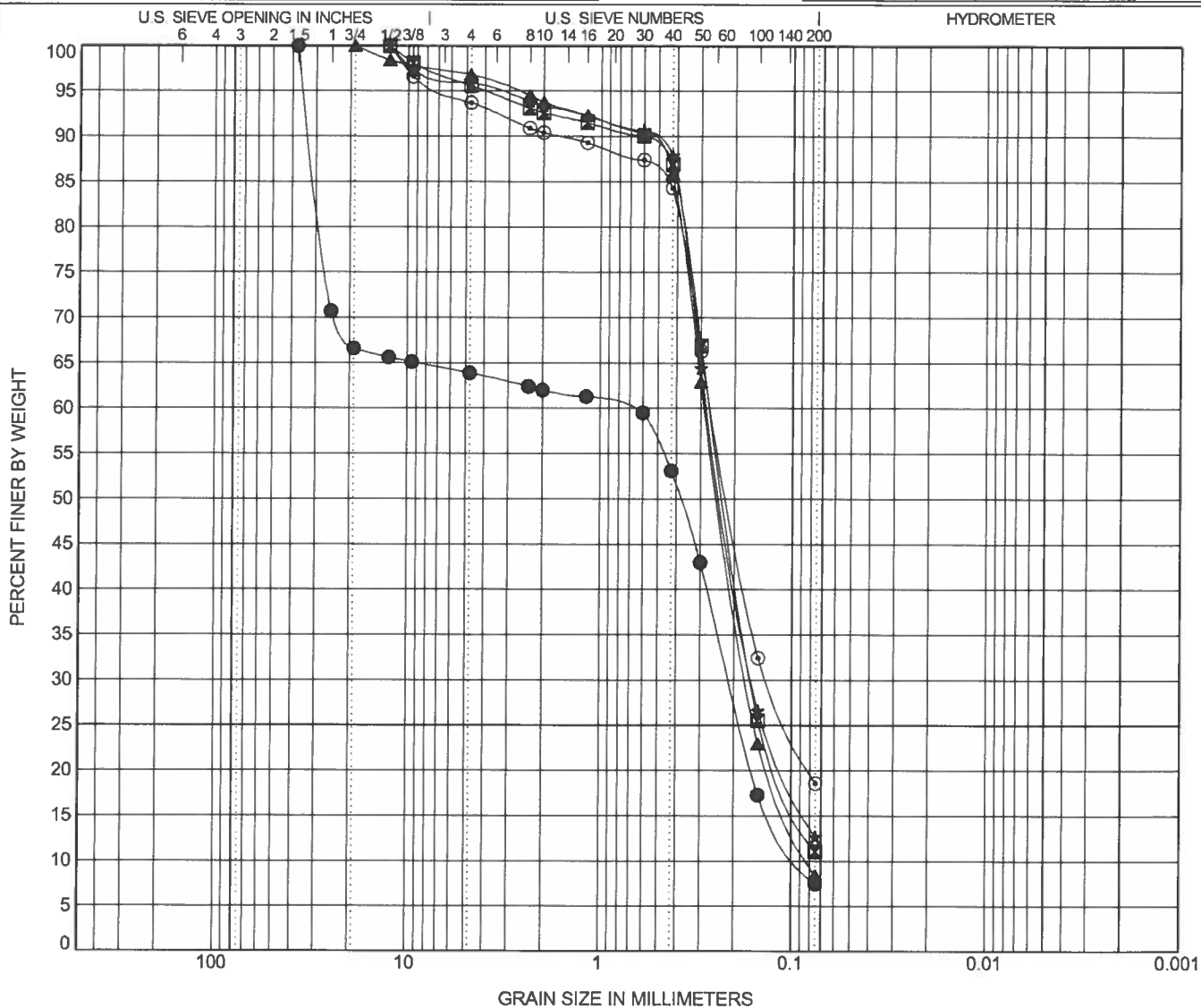
GRAIN SIZE DISTRIBUTION

CLIENT LCR Construction, LLC

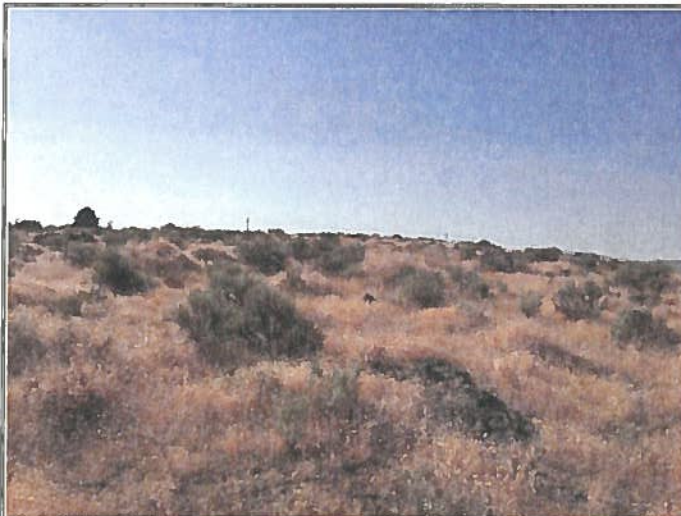
PROJECT NAME Proposed Residential Development

PROJECT NUMBER 217-848

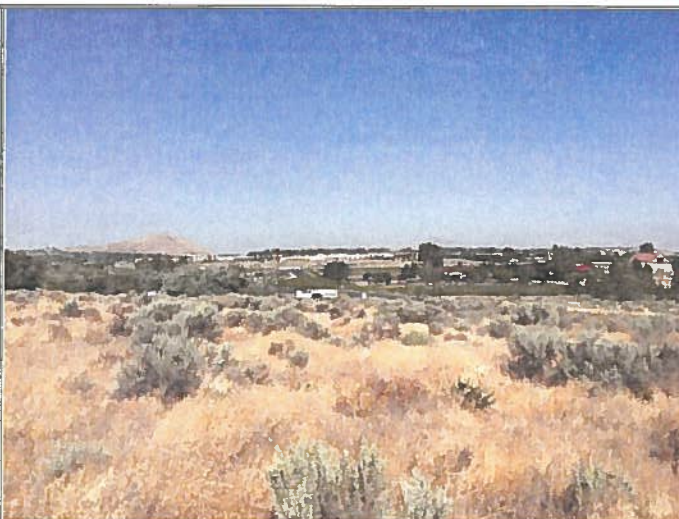
PROJECT LOCATION Columbia Park Trail, Richland, Washington



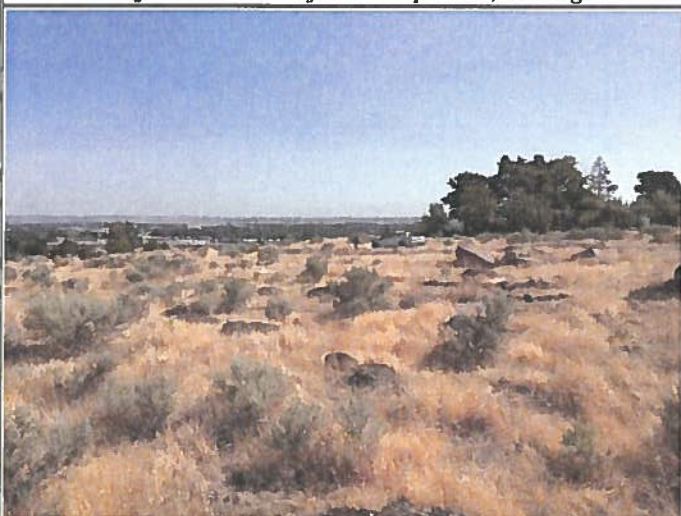
Appendix IV
Site & Exploration Photographs



View of site conditions from NW portion, looking SE



View of site conditions, looking northwest



View of site conditions from southern portion, looking NE



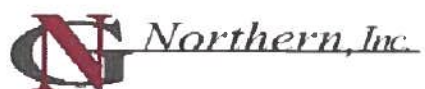
Typical basalt bedrock outcrops noted throughout the site



Exposed soil profile within test-pit TP-1



Exposed soil profile within test-pit TP-2



Job Number: 217-848

Site & Exploration Photographs
Proposed Residential Development
Columbia Park Trail
Richland, Washington

Date
8/11/2017

Mounted By:
MYM

Reviewed By:
KAH

Plate
1



Exposed soil profile within test-pit TP-3



Exposed soil profile within test-pit TP-4



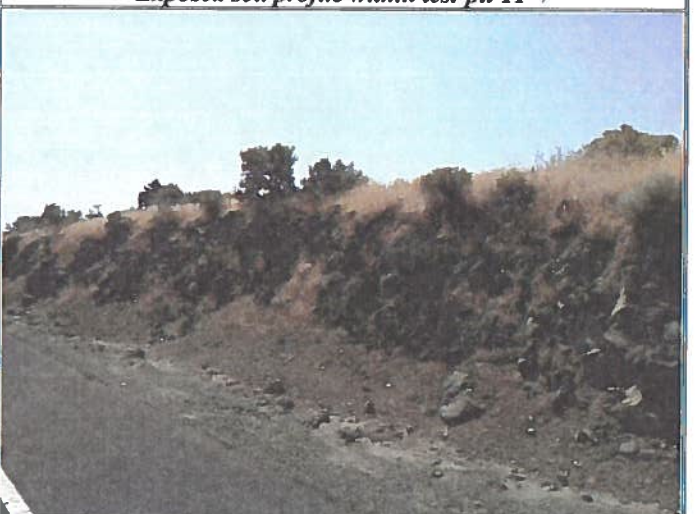
Exposed soil profile within test-pit TP-5



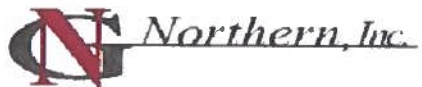
Exposed soil profile within test-pit TP-7



Exposed soil profile within test-pit TP-8



Exposed bedrock along south side of Columbia Park Trail



Job Number: 217-848

Site & Exploration Photographs
 Proposed Residential Development
 Columbia Park Trail
 Richland, Washington

Date
8/11/2017

Mounted By:
MYM

Reviewed By:
KAH

Plate
2

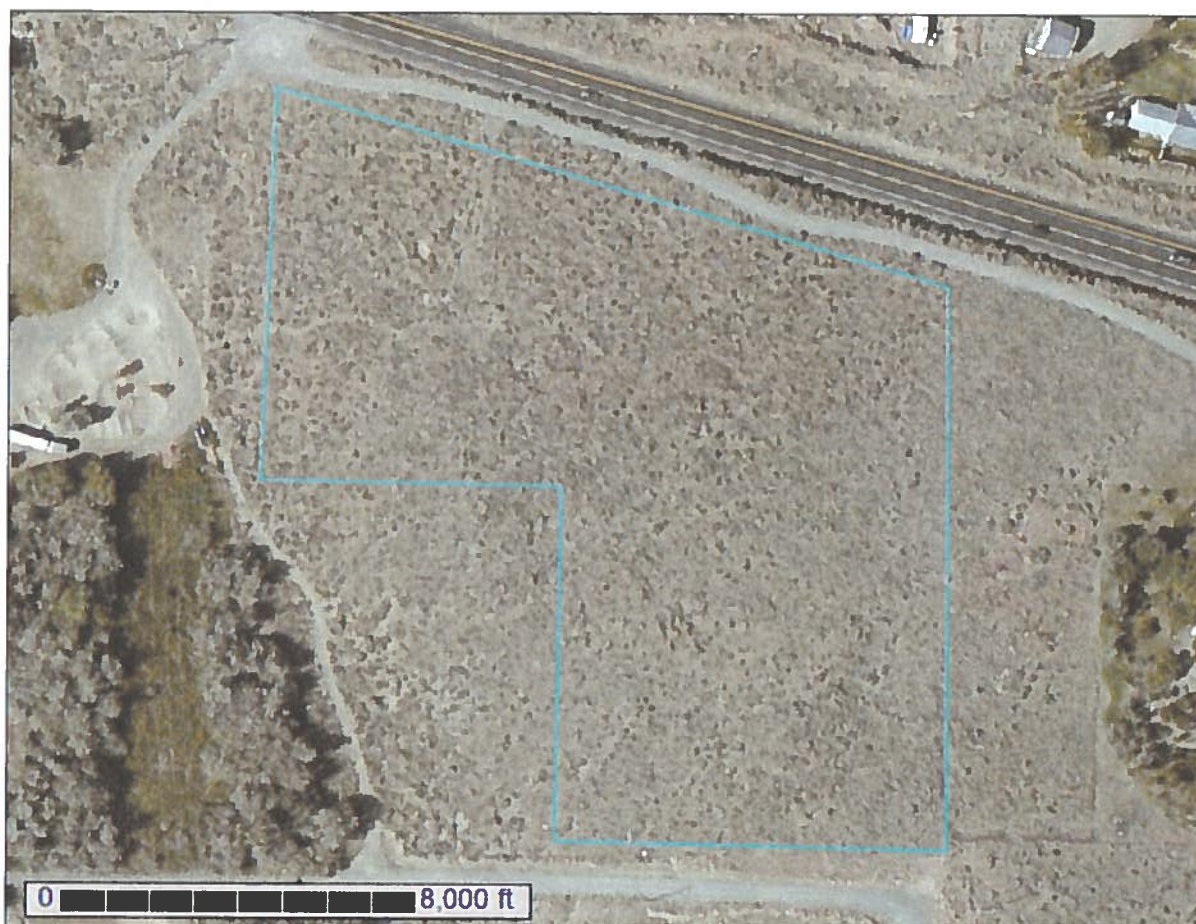
Appendix V
NRCS Soil Survey



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

Columbia Park Trail



July 19, 2017

Custom Soil Resource Report Soil Map



Benton County Area, Washington

BdE—Burbank loamy fine sand, basalt substratum, 0 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2bb8
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 54 degrees F
Frost-free period: 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Burbank and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Burbank

Setting

Landform: Terraces
Parent material: Mixed alluvium and/or eolian deposits over residuum weathered from basalt

Typical profile

H1 - 0 to 4 inches: loamy fine sand
H2 - 4 to 17 inches: loamy sand
H3 - 17 to 25 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

BfE—Burbank rocky loamy fine sand, basalt substratum, 0 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2bb9
Mean annual precipitation: 6 to 9 inches

Custom Soil Resource Report

Mean annual air temperature: 54 degrees F

Frost-free period: 190 days

Farmland classification: Not prime farmland

Map Unit Composition

Burbank and similar soils: 50 percent

Rock outcrop: 35 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Burbank

Setting

Landform: Terraces

Parent material: Mixed alluvium and/or eolian deposits over residuum weathered from basalt

Typical profile

H1 - 0 to 4 inches: loamy fine sand

H2 - 4 to 17 inches: loamy sand

H3 - 17 to 25 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 30 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Natural drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Hydric soil rating: No

Description of Rock Outcrop

Properties and qualities

Slope: 0 to 30 percent

Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Appendix VI
Washington Department of Ecology Well Logs

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original and First Copy with
Department of Ecology
Second Copy - Owner's Copy
Third Copy - Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. _____

Permit No. _____

(1) OWNER: Name GARY PIPES Address 8706 W 1st Kennewick, Washington
(2) LOCATION OF WELL: County Benton - SW 1/4 W 1/4 Sec. 22 T 9 N. R. 28 E W.M. MIN
ing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 1.45 ft. Depth of completed well 145 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 1 ft. to 2.0 ft.
Threaded ☐ " Diam. from _____ ft. to _____ ft.
Welded ☐ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☒

Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.

Material used in seal Bentonite

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
TOP SOIL	1	3
BROKEN BASALT	3	5
HARD BASALT	5	95
BROKEN BASALT	95	97
HARD BASALT	97	120
BROKEN BASALT	120	130
BROKEN BASALT WITH CLAY	130	140
BASALT SINDERS	140	145

RECEIVED

FEB 28 1977

DEPARTMENT OF ECOLOGY
SPOKANE REGIONAL OFFICE

RECEIVED

FEB 25 1977

DEPARTMENT OF ECOLOGY
SPOKANE REGIONAL OFFICE

Work started 2/3/77 19_____. Completed 2/4/ 1977.

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME CARMAN DEVELOPMENT COMPANY
(Person, firm, or corporation) (Type or print)

Address E. 6010 Broadway Spokane, Wa, 99206

[Signed] James P. Shank
(Well Driller)

License No. 0699 Date 2/11/ 1977

WMM

ATK

Appendix VII
USGS Design Maps Summary

USGS Design Maps Summary Report

User-Specified Input

Report Title Columbia Park Trail
Wed July 19, 2017 15:53:30 UTC

Building Code Reference Document 2012/2015 International Building Code
(which utilizes USGS hazard data available in 2008)

Site Coordinates 46.25203°N, 119.2963°W

Site Soil Classification Site Class B – “Rock”

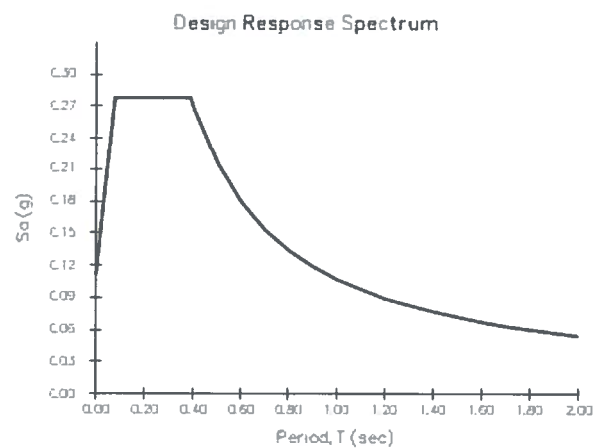
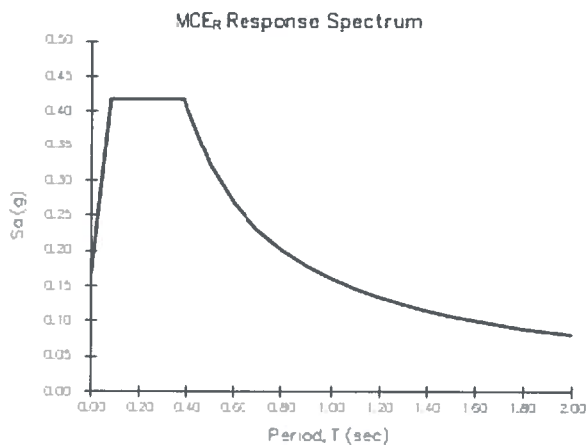
Risk Category I/II/III



USGS–Provided Output

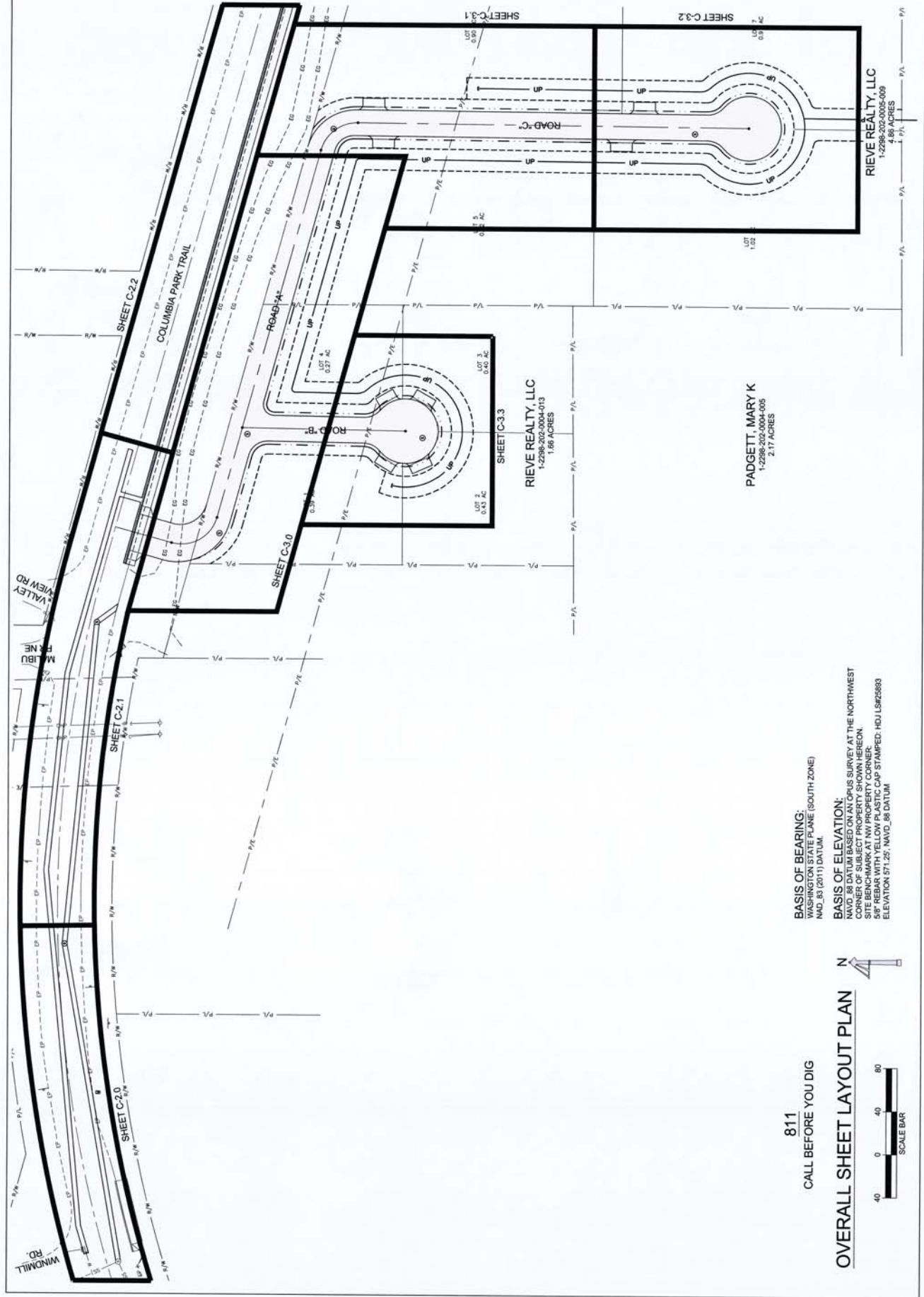
$S_s = 0.418 \text{ g}$	$S_{M5} = 0.418 \text{ g}$	$S_{D5} = 0.278 \text{ g}$
$S_1 = 0.161 \text{ g}$	$S_{M1} = 0.161 \text{ g}$	$S_{D1} = 0.107 \text{ g}$

For information on how the S_s and S_1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the “2009 NEHRP” building code reference document.

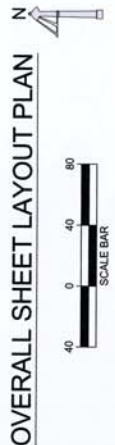


Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.

Exhibit 11



811
CALL BEFORE YOU DIG



OVERALL SHEET LAYOUT PLAN

BASIS OF BEARING:
WASHINGTON STATE PLANE (SOUTH ZONE)
NAD_83 (2011) DATUM

BASIS OF ELEVATION:
CLIPPER MOUNTAIN DATUM
CLIPPER MOUNTAIN DATUM SURVEY AT THE NORTHWEST
CORNER OF SUBJECT PROPERTY SHOWN HEREON.
SITE BENCHMARK AT NW PROPERTY CORNER
5/8" REBAR WITH YELLOW PLASTIC CAP STAMPED: HDJ L5425893
ELEVATION 571.25' NAVD_88 DATUM

PADGETT, MARY K
1-2288-202-0004-005
2.17 ACRES

RIEVE REALTY, LLC
1-2288-202-0004-013
1.66 ACRES

RIEVE REALTY, LLC
1-2288-202-0005-008
4.56 ACRES



THIS PLAN WAS PREPARED BY
TRI-CITIES ENGINEERING PLLC
FOR THE INSTRUMENTED
PROJECT. IT IS THE PROPERTY
OF TRI-CITIES ENGINEERING
PLLC AND IS NOT TO BE
REPRODUCED OR COPIED
WITHOUT THE WRITTEN
CONSENT OF TRI-CITIES
ENGINEERING PLLC.

DESIGNED FOR:
LCR CONSTRUCTION, LLC
COLUMBIA PARK TRAIL DEVELOPMENT
RICHLAND, WA 99352

SHEET INFO:
OVERALL SHEET LAYOUT PLAN
PH: 509.308.08.0015 / WEB: www.tricitiesengineering.com
5804 RD. 90, SUITE D, PASCO, WA 99301

PROJ. NO.: 16-566
DATE: 10/17/2017
CHKD BY: ZSW
DRAWN BY: STT
REV. NO.: 1-2288-202-0005-008
SHEET NUMBER

C-1.0

17-02793

201 Columbia Park Trail

RECEIVED
NOV 13 2017
Engineering & Surveying
Division of Planning

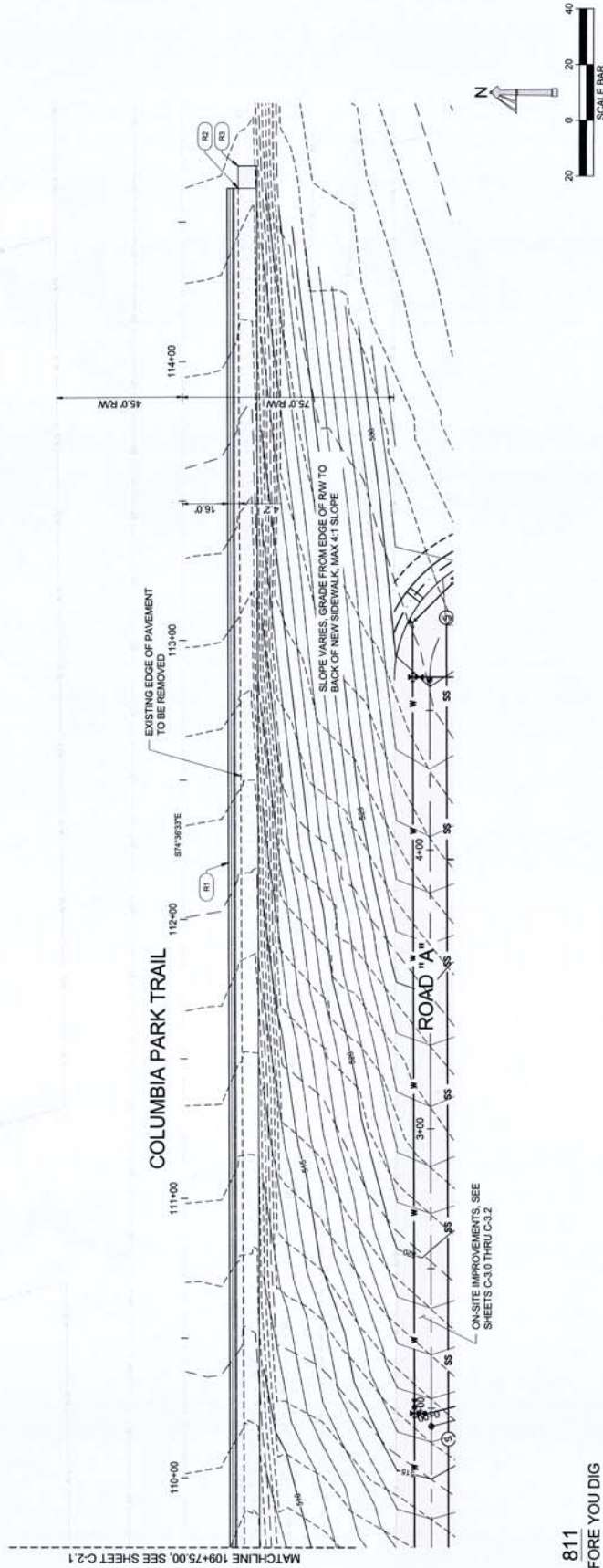


DESIGNED FOR:
LCR CONSTRUCTION, LLC
COLUMBIA PARK TRAIL DEVELOPMENT
RICHLAND, WA 99352

TRI-CITIES ENGINEERING PLLC
Structural & Civil Solutions
5804 RD. 90, SUITE D, PASCO, WA 99301
PH: 509.308.8015 / WEB: www.tricitiesengineering.com

PROJ. NO.:	16-566
DATE:	10/11/17
CHKD BY:	ZSW
DRAWN BY:	STT
REV. NO:	
SHEET NUMBER	

C-2.2



ROADWAY KEYED NOTES:

- (R1) SAWCUT ASPHALT AND PROVIDE NEAT CLEAN EDGE. MATCH EXISTING GRADE
- (R2) STA. 114+02.03, 18.0' RT END 8" FT WIDE CONCRETE SIDEWALK, PER COR STD. DWG. S11
- (R3) STA. 114+70.03, 18.0' RT INSTALL 5-FT LONG ASPHALT RAMP, SLOPE TO MATCH EXISTING GRADE. SLOPE SHALL NOT EXCEED 12:1

811
CALL BEFORE YOU DIG



DRAWINGS PREPARED BY
L.C.R. CONSTRUCTION, LLC
FOR THE CITY OF RICHLAND
SERVICES FOR USE SOLELY
FOR THE PROJECT IDENTIFIED
HEREIN. NO PART OF THIS
DRAWING SHALL BE REPRODUCED
OR TRANSMITTED IN ANY
FORM OR BY ANY MEANS
ELECTRONIC OR MECHANICAL,
INCLUDING PHOTOCOPYING,
RECORDING, OR BY ANY
INFORMATION STORAGE AND
RETRIEVAL SYSTEM, WITHOUT
THE WRITTEN PERMISSION OF
LCR CONSTRUCTION, LLC.

ROAD "A" - PLAN AND PROFILE STA. 0+00 TO 4+00
COLUMBIA PARK TRAIL DEVELOPMENT
RICHLAND, WA 99352
SHEET INFO:
DESIGNED FOR:

TRC-CITIES
ENGINEERING PLS
Structural & Civil Solutions
5804 RD. 90, SUITE D, PASCO, WA 99301
PH: 509.306.8015 / WEB: www.trccitiesengineering.com

PROJ. NO.: 16-566
DATE: 10/01/17
CHKD BY: ZSW
DRAWN BY: STT
REV. NO.:
SHEET NUMBER
C-3.0

ROADWAY KEYED NOTES:

- (R1) MATCH EXISTING GRAVEL ROADWAY GRADE TO INSTALL 35-FT WIDE CONC. DRIVEWAY FOR PRIVATE DRIVE PER COR STD DWG S12
- (R2) P.C. STA. 0+53.50, MONUMENT F.G. ELEV. 507.00
- (R3) P.T. STA. 1+06.91, MONUMENT F.G. ELEV. 510.56
- (R4) 37-FT WIDE PRIVATE ROAD INGRESS, EGRESS AND UTILITY ESMT
- (R5) S1 STA. 1+93.51 ROAD A = STA. 0+00.00 ROAD B, MONUMENT F.G. ELEV. 516.37
- (R6) EXISTING GRAVEL ROAD TO BE ABANDONED

WATER KEYED NOTES:

- SEE OFF-SITE UTILITY PLANS FOR CONTINUATION, SHT C-2.0
- (W1) STA. 1+00.74, 5.7% LT, 8" 90° BEND AND THRUST BLOCK PER COR STD DWG W16
- (W2) COR STD DWG W16
- (W3) 8" 90° BEND AND THRUST BLOCK PER COR STD DWG W16
- (W4) STA. 1+55.20, 6.00% LT, 8" 90° BEND AND THRUST BLOCK PER COR STD DWG W16
- (W5) FIELD BEND (P/C) 100' RADIUS, 10% GRADE, 8" 90° BEND AND THRUST BLOCK PER COR STD DWG W16

SEWER KEYED NOTES:

- SEE OFF-SITE UTILITY PLANS FOR CONTINUATION, SHT C-2.0
- (SS1) SSMH3 - ROAD A, PER COR STD DWG S4
- (SS2) 8" 90° ASTM D3034, SDR 35 PVC SEWER
- (SS3) STA. 0+81.29, 86.30° RT, 4" SEWER SERVICE, PER COR STD DWG S2 & S10, TYP.
- (SS4) SSMH4 - ROAD A, PER COR STD DWG S4
- (SS5) SEE SHT C-3.3 FOR ROAD B SEWER DESIGN
- (SS6) STA. 3+47.68, 94.46° RT, 4" SEWER SERVICE, PER COR STD DWG S2 & S10, TYP.
- (SS7)

IRRIGATION KEYED NOTES:

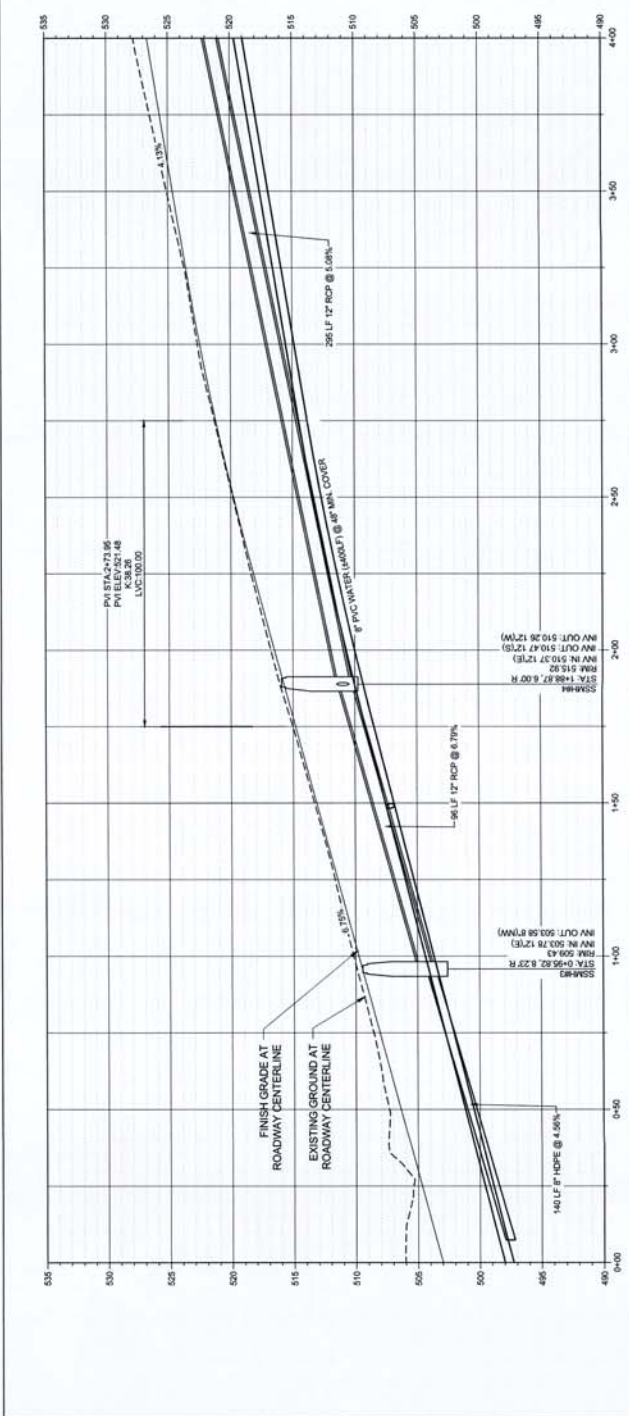
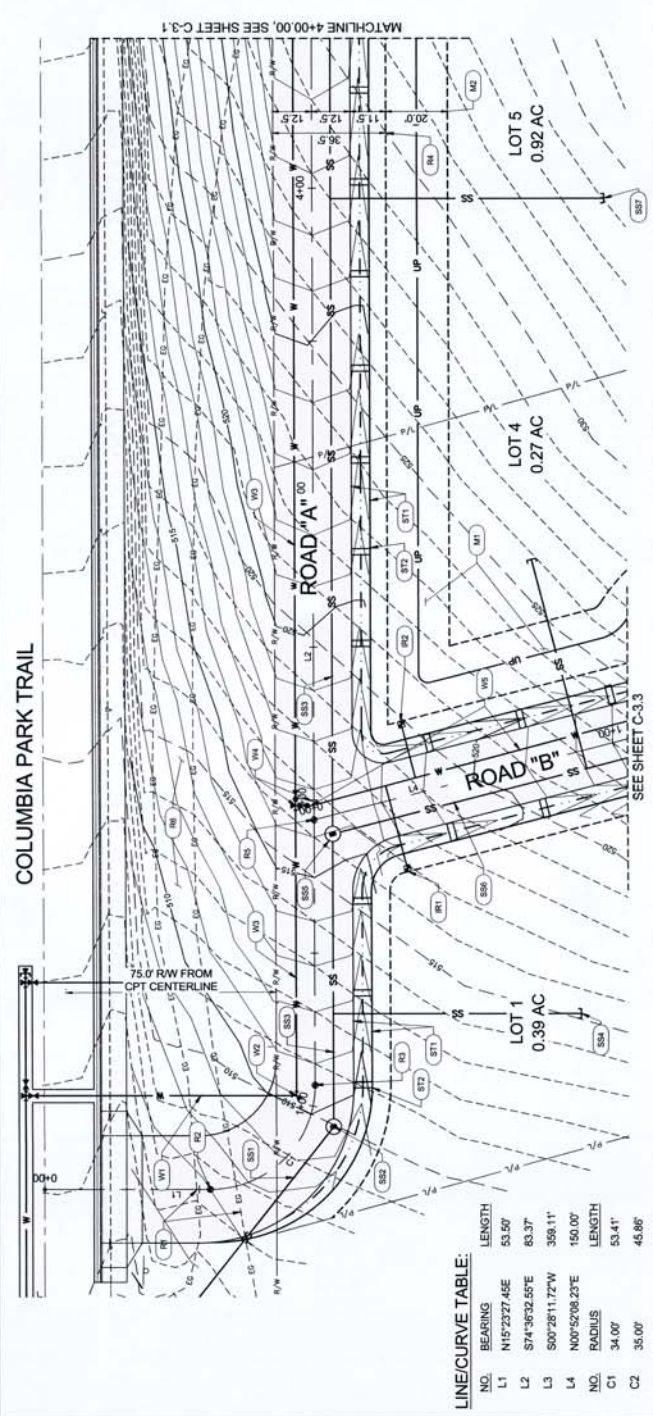
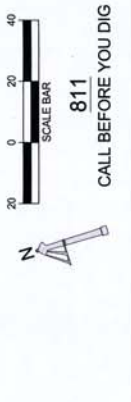
- (IR1) STA. 1+00, 6.45° RT, IRRIGATION SERVICE PER COR STD DWG S4
- (IR2) STA. 1+00, 6.45° RT, IRRIGATION SERVICE PER COR STD DWG CC

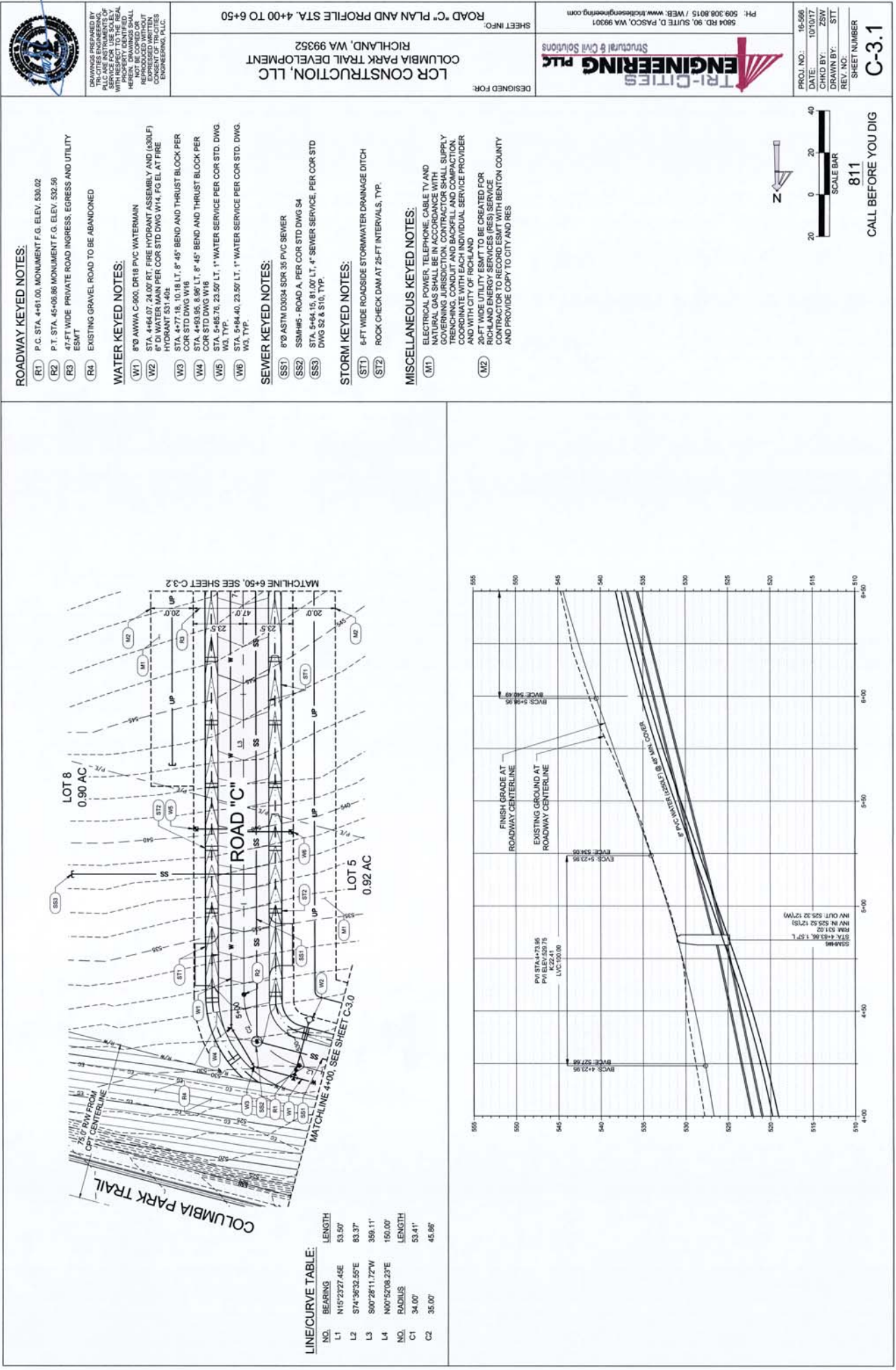
STORM KEYED NOTES:

- (ST1) 6-FT WIDE ROADSIDE STORMWATER DRAINAGE DITCH
- (ST2) ROCK CHECK DAM AT 25-FT INTERVALS, TYP.

MISCELLANEOUS KEYED NOTES:

- (M1) ELECTRICAL POWER, TELEPHONE, CABLE TV AND NATURAL GAS SHALL BE IN ACCORDANCE WITH GOVERNING JURISDICTION. CONTRACTOR SHALL SUPPLY NECESSARY MATERIALS AND LABOR TO INSTALL AND COORDINATE WITH EACH INDIVIDUAL SERVICE PROVIDER AND WITH CITY OF RICHLAND
- (M2) 20-FT WIDE UTILITY ESMT TO BE CREATED FOR RICHLAND ENERGY SERVICES (RES) SERVICE. CONTRACTOR TO RECORD ESMT WITH BENTON COUNTY AND PROVIDE COPY TO CITY AND RES





ROADWAY KEYED NOTES:

- (R1) P.C. STA. 4+61.00, MONUMENT F.G. ELEV. 530.02
- (R2) P.T. STA. 45+06.86 MONUMENT F.G. ELEV. 532.56
- (R3) 47-FT WIDE PRIVATE ROAD INGRESS, EGRESS AND UTILITY ESMT
- (R4) EXISTING GRAVEL ROAD TO BE ABANDONED

WATER KEYED NOTES:

- (W1) 8"Ø AWWA C-900, DR18 PVC WATERMAIN
- (W2) STA. 4+44.07, 24.00' RT. FIRE HYDRANT ASSEMBLY AND (430LF) 6"ØI WATER MAIN PER COR STD DWG W14, F5 EL AT FIRE
- (W3) STA. 4+77.18, 10.18 L.T., 8" 45° BEND AND THRUST BLOCK PER COR STD DWG W16
- (W4) STA. 4+93.95, 8.96 L.T., 8" 45° BEND AND THRUST BLOCK PER COR STD DWG W16
- (W5) STA. 5+65.76, 23.59' L.T., 1" WATER SERVICE PER COR STD. DWG W3, TYP.
- (W6) STA. 5+84.40, 23.59' L.T., 1" WATER SERVICE PER COR STD. DWG. W3, TYP.

SEWER KEYED NOTES:

- (SS1) 8"Ø ASTM D3034 SDR 35 PVC SEWER
- (SS2) SSM#46 - ROAD A, PER COR STD DWG S4
- (SS3) STA. 6+44.15, 81.00' L.T., 4" SEWER SERVICE, PER COR STD DWG S2 & S16, TYP.

STORM KEYED NOTES:

- (ST1) 6-FT WIDE ROADSIDE STORMWATER DRAINAGE DITCH
- (ST2) ROCK CHECK DAM AT 25-FT INTERVALS, TYP.

MISCELLANEOUS KEYED NOTES:

- (M1) ELECTRICAL POWER, TELEPHONE, CABLE TV AND NATURAL GAS SHALL BE IN ACCORDANCE WITH GOVERNING JURISDICTION. CONTRACTOR SHALL SUPPLY NECESSARY DEPTH AND COVER FOR ALL UTILITIES. COORDINATE WITH EACH INDIVIDUAL SERVICE PROVIDER AND WITH CITY OF RICHLAND
- (M2) 20-FT WIDE UTILITY ESMT TO BE CREATED FOR RICHLAND ENERGY SERVICES (RES) SERVICE. CONTRACTOR TO RECORD ESMT WITH BENTON COUNTY AND PROVIDE COPY TO CITY AND RES

LOR CONSTRUCTION, LLC
COLUMBIA PARK TRAIL DEVELOPMENT
RICHLAND, WA 99352

DESIGNED FOR:

ROAD "C" PLAN AND PROFILE STA. 4+00 TO 6+50

PROJECT INFO:

5804 RD. 90, SUITE D, PASCO, WA 99301
PH: 509.308.8015 / WEB: www.tricitiesengineering.com

PROJ. NO.: 16-566
DATE: 10/19/17
CHKD BY: ZSW
DRAWN BY: STT
REV. NO.:
SHEET NUMBER

C-3.1

LINE/CURVE TABLE:

NO.	BEARING	LENGTH
L1	N15°23'27.45"E	53.50'
L2	S74°36'32.55"E	83.37'
L3	S90°28'11.72"W	358.11'
L4	N00°52'08.23"E	150.00'
NO.	RADIUS	LENGTH
C1	34.00'	53.41'
C2	35.00'	45.86'



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ENGINEERING, LLC
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LCR CONSTRUCTION, LLC
COLUMBIA PARK TRAIL DEVELOPMENT
RICHLAND, WA 99352

DESIGNED FOR:

ROAD "B" PLAN AND PROFILE STA. 6+50 TO 8+47

TRAVIS-CITIES
ENGINEERING, LLC
Structural & Civil Solutions
5804 RD. 90, SUITE D, PASCO, WA 99301
PH: 509.308.8015 / WEB: www.travis-cities-engineering.com

PROJ. NO.: 15-565
DATE: 10/07/17
CHKD BY: ZSW
DRAWN BY: STT
REV. NO.:
SHEET NUMBER

C-3.2

ROADWAY KEYED NOTES:

- (R1) 47-FT WIDE PRIVATE ROAD INGRESS, EGRESS AND UTILITY ESMIT
- (R2) STA. 8+45.97, CENTER OF CUL-DE-SAC, MONUMENT F.G. ELEV. 551.00

WATER KEYED NOTES:

- (W1) 8" Ø ANWA C-900, DR18 PVC WATERMAIN
- (W2) STA. 8+82.54, 35.50 RT. FIRE HYDRANT ASSEMBLY AND (380L) 6" DI WATER MAIN PER COR STD DWG W4, F.G. EL. AT FIRE HYDRANT 548.691
- (W3) NOT USED
- (W4) 8" PRESSURE CAP
- (W5) STA. 8+74.46, 38.62 LT, 1" WATER SERVICE PER COR STD. DWG. W3
- (W6) STA. 8+77.21, 38.95 RT, 1" WATER SERVICE PER COR STD. DWG. W3

SEWER KEYED NOTES:

- (SS1) 8" Ø ASTM D3034 SDR 35 PVC SEWER
- (SS2) SSM#5 - ROAD A, PER COR STD DWG S4
- (SS3) STA. 7+87.16, 95.50 RT, 4" SEWER SERVICE, PER COR STD DWG S2 & S10, TYP.
- (SS4) STA. 8+13.51, 86.09 LT, 4" SEWER SERVICE, PER COR STD DWG S2 & S10, TYP.

IRRIGATION KEYED NOTES:

- (IR1) STA. 7+43.88, 23.50 LT, IRRIGATION SERVICE PER COR STD. DWG. XX
- (IR2) STA. 7+53.90, 23.50 LT, IRRIGATION SERVICE PER COR STD. DWG. XX
- (IR3) STA. 7+15.95, 23.50 RT, IRRIGATION SERVICE PER COR STD. DWG. XX
- (IR4) STA. 7+28.88, 23.50 RT, IRRIGATION SERVICE PER COR STD. DWG. XX

STORM KEYED NOTES:

- (ST1) 8-FT WIDE ROADSIDE STORMWATER DRAINAGE DITCH
- (ST2) ROCK CHECK DAM AT 25-FT INTERVALS, TYP.

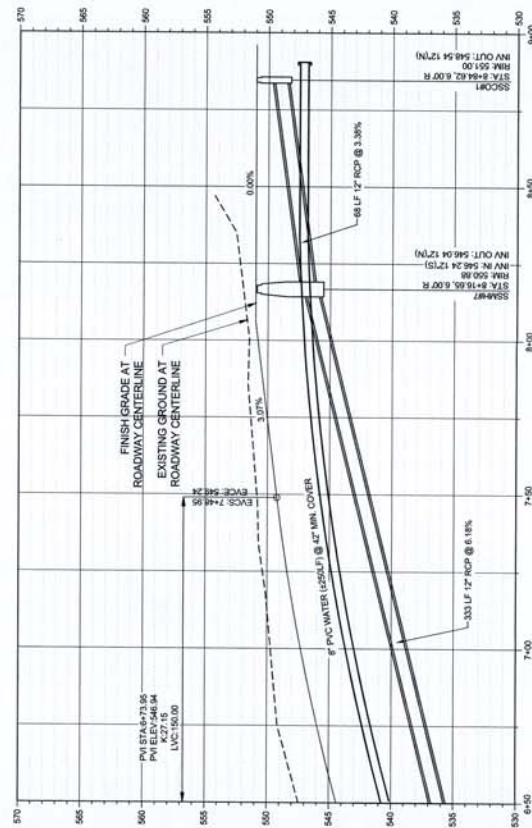
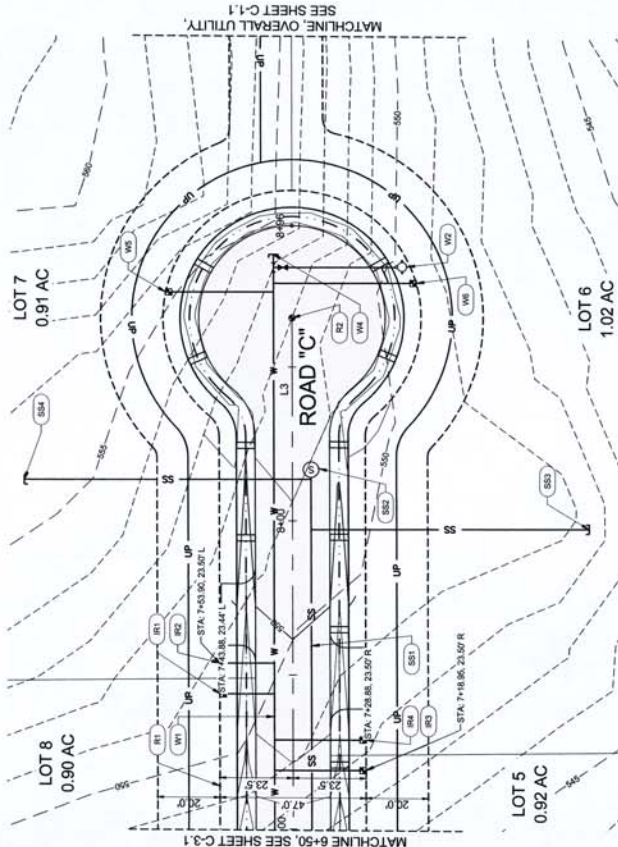
MISCELLANEOUS KEYED NOTES:

- (M1) ELECTRICAL POWER, TELEPHONE, CABLE TV AND COMMUNICATIONS CONDUITS SHALL BE INSTALLED IN TRENCHING, CONDUIT AND BACKFILL AND COMPACTION COORDINATE WITH EACH INDIVIDUAL SERVICE PROVIDER AND WITH CITY OF RICHLAND
- (M2) 20-FT WIDE UTILITY ESMIT TO BE CREATED FOR RICHLAND ENERGY SERVICES (RES) SERVICE COORDINATE WITH CITY OF RICHLAND AND BENTON COUNTY AND PROVIDE COPY TO CITY AND RES



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DESIGNED FOR:
LOR CONSTRUCTION, LLC
COLUMBIA PARK TRAIL DEVELOPMENT
RICHLAND, WA 99352
ROAD "B" PLAN AND PROFILE STA. 0+00 TO END

TR-CITIES
ENGINEERING
STRUCTURAL & CIVIL SOLUTIONS
5804 RD. 90, SUITE D, PASCO, WA 99301
PH: 509.308.8015 / WEB: www.trcitiesengineering.com

PROJECT NO.: 19-456
DATE: 10/10/17
CHKD BY: ZSW
DRAWN BY: STT
REV. NO.:
SHEET NUMBER

C-3.3

ROADWAY KEYED NOTES:

- (R1) 48-FT WIDE PRIVATE ROAD INGRESS, EGRESS AND UTILITY ESMT
- (R2) STA. 1+50.03, CENTER OF CUL-DE-SAC, MONUMENT F.G. ELEV. 529

WATER KEYED NOTES:

- (W1) 8"Ø ANWA C-900, DR18 PVC WATERMAIN
- (W2) STA. 1+53.71, 39.50' LT. FIRE HYDRANT ASSEMBLY AND (300LF) 6" DI WATER MAIN PER COR STD DWG W14, FG EL AT FIRE HYDRANT 526.00L
- (W3) STA. 0+35.27, 24.00' LT. 1" WATER SERVICE PER COR STD DWG W3, TYP.
- (W4) STA. 0+25.24, 24.00' RT. 1" WATER SERVICE PER COR STD DWG W3, TYP.
- (W5) STA. 1+91.00, 1.6' LT. 1" WATER SERVICE PER COR STD DWG W3, TYP.
- (W6) STA. 1+91.00, 1.6' RT. 1" WATER SERVICE PER COR STD DWG W3, TYP.
- (W7) 8" PRESSURE CAP

SEWER KEYED NOTES:

- (SS1) 8"Ø ASTM D3034 SDR 35 PVC SEWER
- (SS2) SSMH5 - ROAD A, PER COR STD DWG S4
- (SS3) STA. 7+48.41, 95.36' RT. 4" SEWER SERVICE, PER COR STD DWG S2 & S10, TYP.
- (SS4) STA. 7+64.35, 96.45' LT. 4" SEWER SERVICE, PER COR STD DWG S2 & S10, TYP.

IRRIGATION KEYED NOTES:

- (IR1) STA. 1+43.43, 40.82' LT. IRRIGATION SERVICE PER COR STD. DWG XX
- (IR2) STA. 1+49.83, 41.03' LT. IRRIGATION SERVICE PER COR STD. DWG XX
- (IR3) STA. 1+51.83, 41.41' RT. IRRIGATION SERVICE PER COR STD. DWG XX
- (IR4) STA. 1+43.37, 41.47' RT. IRRIGATION SERVICE PER COR STD. DWG XX

STORM KEYED NOTES:

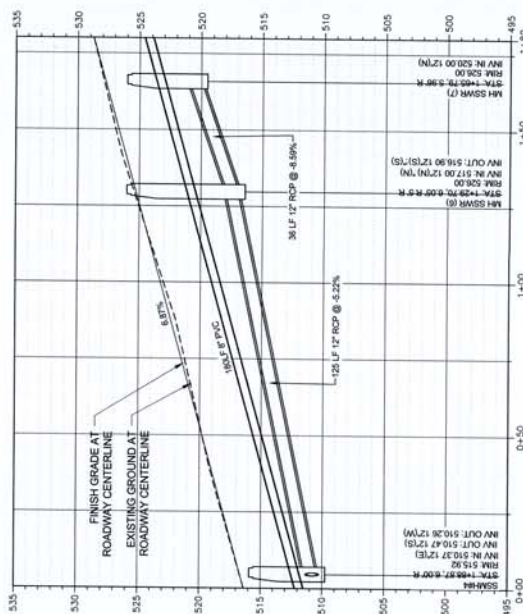
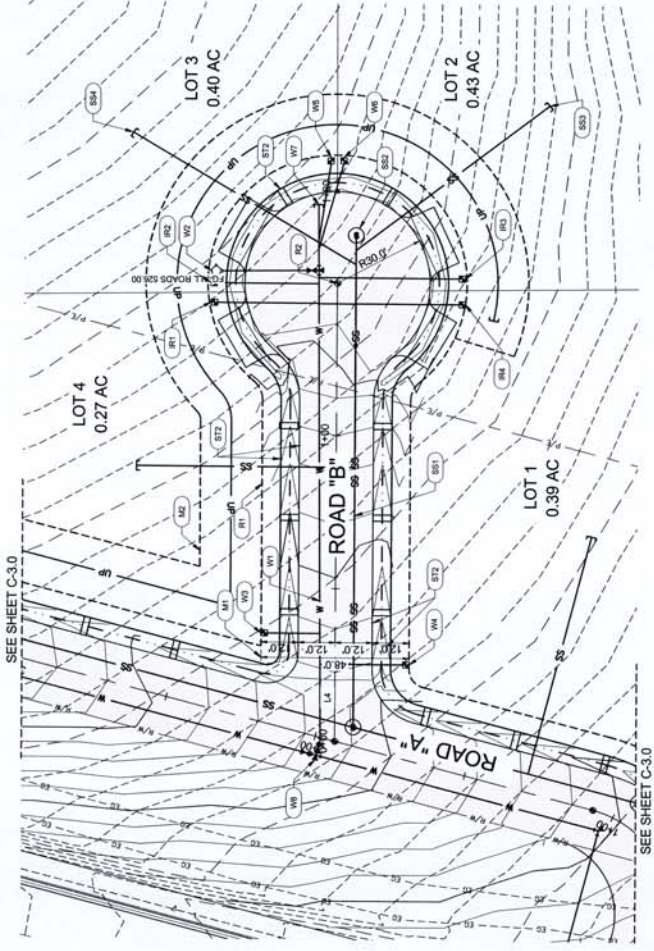
- (ST1) 6-FT WIDE ROADSIDE STORMWATER DRAINAGE DITCH
- (ST2) ROCK CHECK DAM AT 25-FT INTERVALS, TYP

MISCELLANEOUS KEYED NOTES:

- (M1) ELECTRICAL POWER, TELEPHONE, CABLE TV AND GAS SERVICE SHALL BE IN ACCORDANCE WITH THE CITY OF RICHLAND GOVERNING JURISDICTION. COORDINATE WITH THE CITY OF RICHLAND TRENCHING, CONDUIT AND BACKFILL AND COMPACT. COORDINATE WITH EACH INDIVIDUAL SERVICE PROVIDER AND WITH CITY OF RICHLAND.
- (M2) 20-FT WIDE UTILITY ESMT TO BE CREATED FOR 20-FT WIDE UTILITY SERVICES (PES) SERVICE CONTRACTOR TO PROVIDE TO BENTON COUNTY AND PROVIDE COPY TO CITY AND RES.



811
CALL BEFORE YOU DIG



Looking North



Home Site to the East



Looking South



Looking West



Showing Slope

Looking West

Approx. South
Property Line

