



Agenda
Hearing Examiner Meeting
Monday, June 20, 2022
Richland City Hall ~ Council Chambers
625 Swift Boulevard
[Zoom](#) – Public Telephone Access: (206) 337-9723 or (253) 215-8782
Meeting ID No. 872 2126 7401

Hearing Examiner: Gary McLean

Staff Liaison: Planning Manager Stevens

Public Hearing - 6:00 p.m.

Public Hearing Explanation:

New Business - Public Hearing:

- I. PUD2021-102 Skyhous
Wave Design Group, on Behalf of TMT Homes NW, LLC

Adjournment

The next Hearing Examiner Meeting will be scheduled as needed.

This meeting is broadcast live on CityView Channel 192 and online at ci.richland.wa.us

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HEARING EXAMINER AGENDA ITEM COVERSHEET

Meeting Date: 6/20/2022

Agenda Category: New Business - Public Hearing

Prepared By: Mike Stevens, Planning Manager

Subject:

PUD2021-102 Skyhous

Wave Design Group, on Behalf of TMT Homes NW, LLC

Department:

Development Services

Recommended Motion:

Deny

Summary:

Wave Design Group, applicant, on behalf of TMT Homes NW, LLC, owner, are requesting approval for a new Planned Unit Development (PUD) to be known as Skyhous. The proposed development consists of the development of approximately 10.24-acres with six (6) 8-unit multi-family condominium buildings and the completion of Meadow Hills Drive within an area approximately 10.24 acres in size.

Attachments:

1. Skyhouse Full Staff Report
2. Skyhous Vicinity Map

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

GENERAL INFORMATION:

PROPOSAL NAME: Skyhous – Planned Unit Development

LOCATION: The project site is located upon Assessor's Parcel Nos. 135983000010002 & 135984060003022, and is generally located northwest of the City of Richland water reservoir located at 303 Meadow Hills Drive, Richland, WA.

APPLICANT: Wave Design Group on behalf of TMT Homes NW, LLC.

FILE NO.: PUD2021-102

DESCRIPTION: 48-unit Planned Unit Development consisting of six (6) 8-unit multi-family condominium buildings and the completion of Meadow Hills Drive.

PROJECT TYPE: Type 3A Preliminary Planned Unit Development

HEARING DATE: June 20, 2022

REPORT BY: Mike Stevens, Planning Manager

RECOMMENDED ACTION: Denial

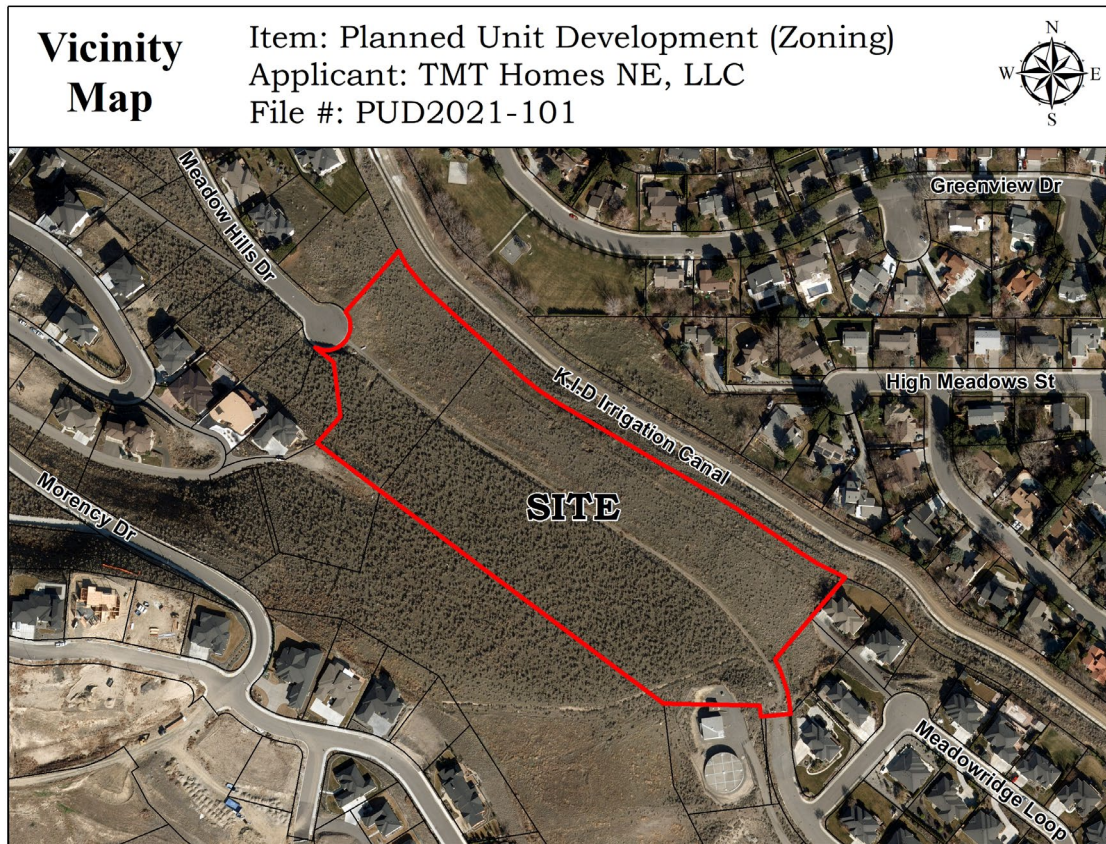


Figure 1 - Vicinity Map

DESCRIPTION OF PROPOSAL

Wave Design Group, applicant, on behalf of TMT Homes NW, LLC, owner, are requesting approval for a new Planned Unit Development (PUD) to be known as Skyhous. The proposed development consists of the development of approximately 10.24-acres with six (6) 8-unit multi-family condominium buildings and the completion of Meadow Hills Drive within an area approximately 10.24 acres in size.

SITE DESCRIPTION & ADJACENT LAND USES

The project site is approximately 10.24-acres in size and is located between the eastern and western terminuses of Meadow Hills Drive on Little Badger Mountain between the plats of Meadow Hills Phase Two and Crested Hills No. 3. The site is extremely steep and is located southwest of the KID irrigation canal and northeast of Falconcrest Loop and the Falconcrest residential neighborhood. Land surrounding the project site is primarily developed with single-family residences; however, a tract of land located south of the project site (up the slope from the proposal) is undeveloped and owned by the City of Richland.

PROJECT HISTORY

The site has been the subject of two (2) previous PUD requests in 2010 (Z2010-109) and 2012 (Z2012-101). Both of the previous requests resulted in denial of the proposal. The 2010 proposal was for a PUD that included 54 dwelling units in eleven 3 and 4 story buildings. The Planning Commission recommended denial of the proposal and the applicant subsequently withdrew the application. The 2012 proposal was for a PUD that consisted of a 44-unit condominium complex contained within four (4) buildings, with each building being 7 stories high with 11 condominium units per structure. The 2012 proposal was considered by the Planning Commission and ultimately recommended for approval subject to a modification limiting the development of the site to either 33 dwelling units in three 7-story buildings or 32 dwelling units in four 5-story buildings. The intent of the modification was to reduce the overall number of dwelling units and overall building mass on the steeply sloping site to provide a more compatible relationship with the surrounding lower density single-family detached homes and to increase the amount of open space consistent with the purpose and intent of the City's PUD regulations. Ultimately, the City Council voted to deny the 2012 PUD application during their September 18, 2012 meeting.

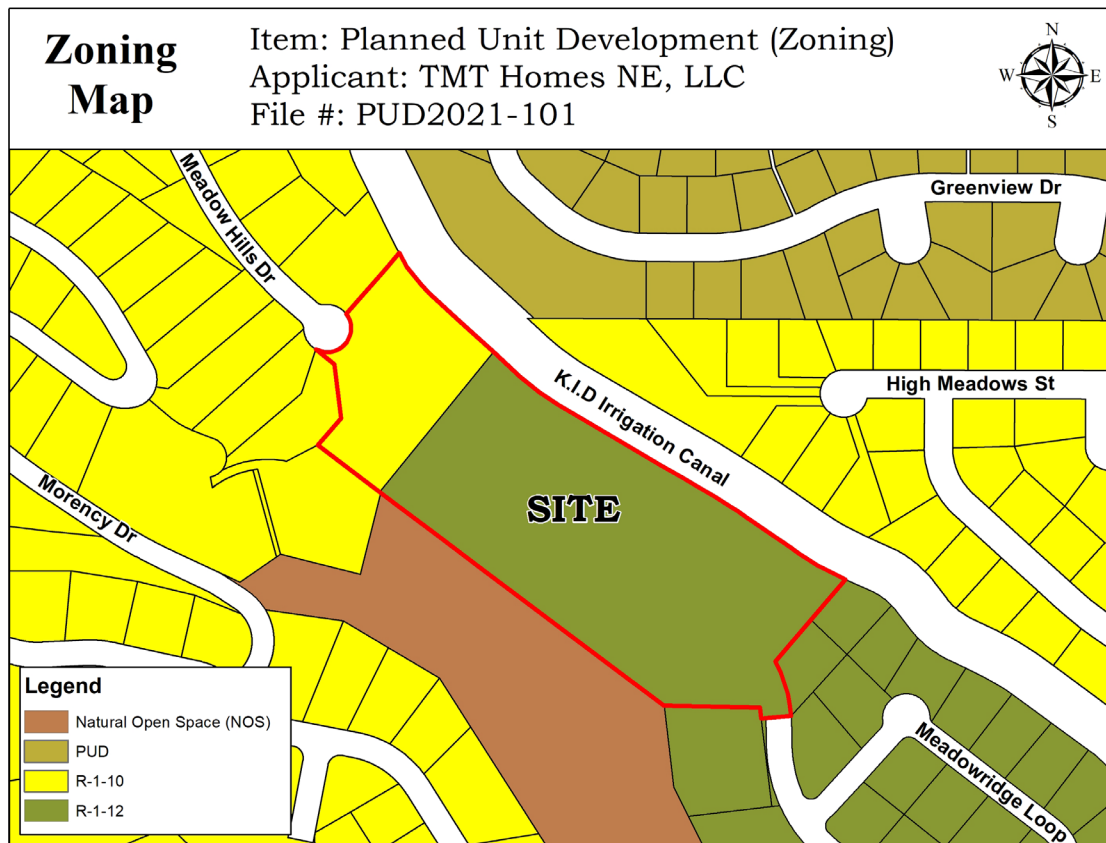


Figure 2 – Zoning Map

ZONING

The current zoning of the site is Low-Density Residential (R-1-10 and R-1-12) as depicted on the zoning map above.

As stated in Richland Municipal Code Chapter 23.18.010, the single-family residential - 12,000 (R-1-12) zone is a residential zone classification requiring the lowest density of population within the city, providing protection against hazards, objectionable influences, building congestion and lack of light, air and privacy and is intended to be applied to some portions of the City that are designated low-density residential (zero to five dwellings per acre) under the City of Richland Comprehensive Plan.

The single-family residential – 10,000 (R-1-10) zone is a residential zone classification requiring a low density of population, providing protection against hazards, objectionable influences, building congestion, and lack of light, air, and privacy and is intended to be applied to some portions of the City that are designated low-density residential (zero to five dwellings per acre) under the City of Richland Comprehensive Plan.

Chapter 23.50 RMC, Planned Unit Development, states that the purpose of a planned unit development is to provide opportunities to create a more desirable environment through the application of flexible design and development standards to tracts of land under common ownership or control. Planned unit development is intended to encourage the use of new and improved techniques and technology in community development and continued maintenance. It is intended to achieve economics in development and maintenance while providing privacy, usable open space, safe pedestrian and vehicular circulation, and compatible relationships between different uses.

REQUESTED PLANNED UNIT DEVELOPMENT

The proposed PUD consists of 48 residential condominium units within six (8-unit) buildings that will stack and recede back as the building rises with the face of the hill. The proposal would also result in the completion of Meadow Hills Drive with automated gates at each end of the property on Meadow Hills Drive. The applicant is proposing to designate as public open space and natural area approximately 50% of the vacant land that will exist between Meadow Hills Drive and the KID irrigation canal. Pedestrian pathways/trails are proposed upon the downhill side of the property (north) and also in various locations on the uphill portion of the site to provide access to the large open space tract owned by the City.

Off-street parking for each unit is proposed as being via a private tandem garage capable of storing two vehicles. Each garage will have an independent opening onto Meadow Hills Drive separated by a 20' driveway that can store an additional vehicle. In addition, parallel parking is proposed on the north side of the roadway to provide additional parking for guests and the general public who are visiting the public open space.

To provide adequate access for the fire department, an emergency service road is proposed along the south boundary of the site, above the buildings. This road will

connect to Meadow Hills Drive through the City's water reservoir access road and will tie into Mont Blanc Way, allowing emergency access to Skyhous from the north and south.

The proposed development is intended to follow the Multiple-Family Residential Use District (R-3) zoning standards. This residential zone classification allows for the location of multiple-family dwellings, duplexes and attached and detached one-family dwellings and provides a high degree of protection for such uses and adjacent low-density residential development. The R-3 zoning classification is intended to be applied to some portions of the City that are designated high-density residential (10.1 or more dwellings per acre) under the City of Richland Comprehensive Plan.

The maximum density for multifamily dwellings in the R-3 zone is one unit per 3,000 s.f. of land area with a maximum lot coverage of 33% and a maximum building height of 40'. Setbacks for multifamily buildings in the R-3 zone are 20' from the front property line, one foot of side yard for each three feet or portion of building height for side yard setbacks and 25' for rear yard setbacks. The application materials do not clearly indicate what the proposed setbacks will be; However, the information contained on page 17 - 18 of the application packet seems to indicate that the development will meet all applicable setback requirements.

UTILITY AVAILABILITY

City utility mapping records indicate underground utility infrastructure as illustrated in Figure 3 provided below. Written explanations of each utility service are provided in the following sections.

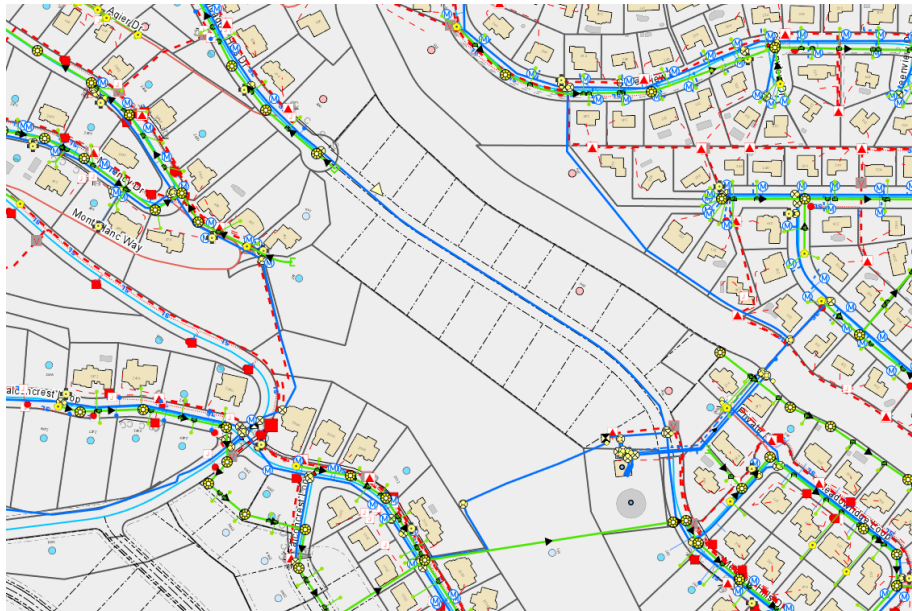


Figure 3 - Utilities Map
(Blue = water, Green = sewer, Red = electrical power)

SEWER

There is an 8-inch sewer main that extends onto the northwest portion of the property within the location of the proposed Meadow Hills Drive extension. The 8-inch sewer main will likely be extended within the confines of the road right-of-way in order to access the proposed development. However, there are also other sewer stubs in the area as well that could accommodate the necessary sewer needs depending upon site specific engineering details.

WATER

There is a 12-inch water main that bisects the property in the location of the proposed Meadow Hills Drive extension. Adequate water supply exists to provide potable water to the site.

ELECTRICAL POWER

Richland Energy Services (RES), a municipal public utility district, will service future development on the site. Underground power lines currently provide electrical service to the site; however, it is anticipated that electrical service upgrades may be required depending upon the final electrical plan design.

TRANSPORTATION

Meadow Hills Drive is proposed to bisect the site and connect the northwest and southeast dead-ends that currently exist. The proposal indicates that Meadow Hills Drive will be gated; however, the Public Works Department is not in favor of that proposal and will require that the roadway be fully open to the public as development plans for this area have long relied on this segment of Meadow Hills Drive to provide travel options and distribute traffic volumes more evenly among the available access routes. Public Works does not believe that it is in the public's interest to eliminate this segment as a public street.

Public Works would allow this portion of Meadow Hills Drive to utilize the City's single-frontage local street standard, subject to sidewalks being installed along both sides of the roadway. The single-frontage local street standard would require parking to be made available on the north side of Meadow Hills Drive.

Finally, it should be noted that the project site is subject to the City's traffic impact fee program (RMC 12.03) and since staff analysis indicates that the project will create no unusual or unanticipated traffic impacts, it is exempt from a SEPA related traffic study requirement (TIA).

COMPREHENSIVE PLAN

Richland's Comprehensive Plan designates the project site for low density residential development such as those uses allowed by the R-1-12 and R-1-10 zoning districts. While a Planned Unit Development is not a specific zoning designation, Section 23.50.020 RMC, Uses Permitted, states that a planned unit development district may be approved for any use or combination of uses listed in Chapters 23.14 (Agriculture Zoning Districts) through 23.30 (Public Use Zoning Districts). Chapter 23.18 (Residential Zoning Districts) falls within the list of uses approved for planned unit developments. As such, the proposed development is consistent with the Comprehensive Plan.

The following land use map (Fig. 4) illustrates the city's Comprehensive Plan land use designations for the site and surrounding vicinity as depicted by the city's GIS mapping database.

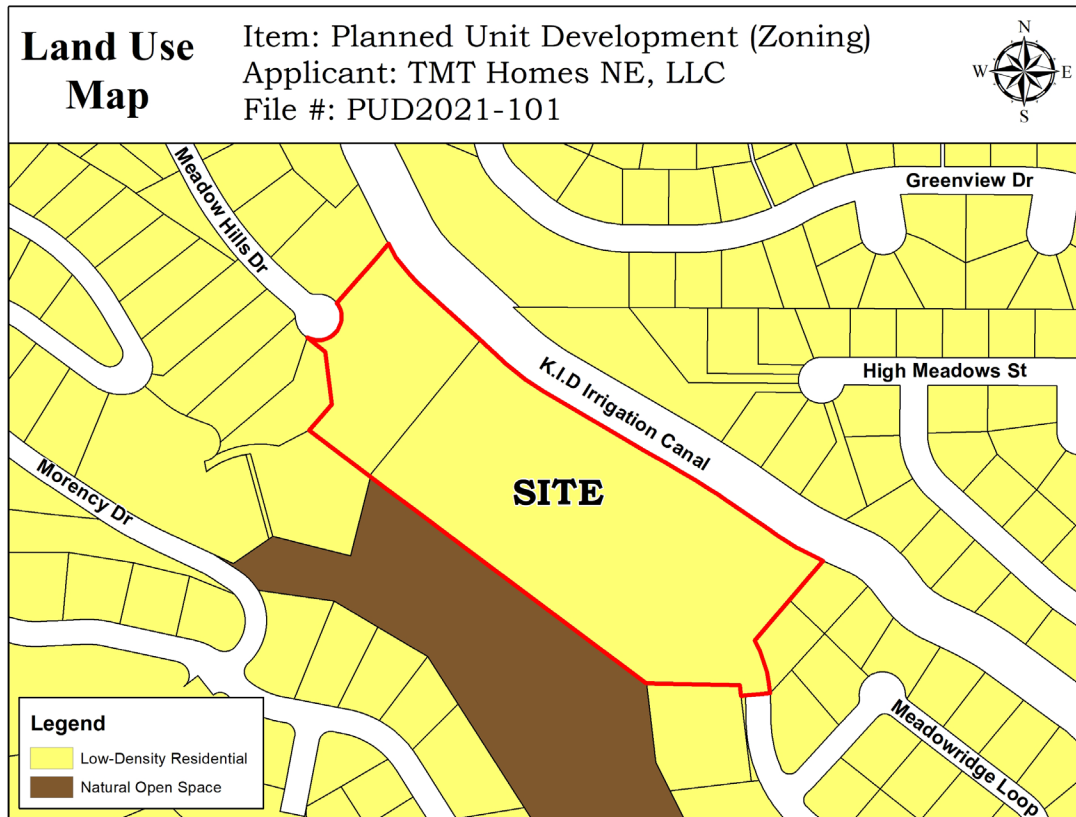


Figure 4 – Comprehensive Plan Map

The Comprehensive Plan contains the following goals and policy statements generally viewed as being in support of the proposed application:

Land Use Goal 1:

Plan for growth within the urban growth area and promote compatible land use.

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

Land Use Goal 2:

Establish land uses that are sustainable and create a livable and vibrant community.

Policy 1 - Maintain a variety of land use designations to accommodate appropriate residential [and] commercial... uses that will take advantage of the existing infrastructure network.

Land Use Goal 3:

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

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.

CRITICAL AREAS

The proposed development site is located within or contains the following Critical Areas as per Chapter 22.10 RMC.

Geological Hazard Area:

A Feasibility-Level Geotechnical Evaluation and Critical Areas Assessment Report was prepared for the site by GN Northern, Inc. (exhibit 2). This report supplements the 2011 report that was provided with the application. According to the report the geologic hazards that may affect the development site include seismic hazards, slope instability, flooding, ground subsidence and erosion. The report details the various hazards and concludes that the primary geologic hazards and geotechnical site constraints for the site include slope failures and surface erosion. Other geologic hazards, including fault rupture, liquefaction, and seismic shaking are considered low or negligible on the site.

Based on the findings in their subsurface geotechnical/geologic study, GN Northern (GNN) has concluded that slopes across large portions of the project site are marginally stable and may not be suitable for the proposed construction without appropriate engineered remediation and stabilization efforts. The report further indicates that once final grading and drainage plans are prepared, a design-level geotechnical investigation should be completed and that it is imperative that GNN work with the design team to provide consultation during the design development phase to ensure implementation of the geotechnical recommendations.

Fish and Wildlife Habitat Conservation Area:

The site is mapped as being within a Fish and Wildlife Habitat Conservation Area (FWHCA) by the Washington State Department of Fish and Wildlife (WDFW) due to the site containing shrub-steppe. When the pre-application meeting for the current project occurred in 2020, the site did not appear on the WDFW map as containing shrub-steppe habitat, as a result, the applicants did not submit a FWHCA report. However, as time has elapsed, the WDFW mapping has been updated and now indicates the site as presumptive shrub-steppe. Planning staff recommended to the applicant that they contact Mike Ritter, WDFW Habitat Biologist, to determine whether or not a FWHCA report should be prepared. As of the date the staff report was prepared the applicants had not submitted a FWHCA report nor provided evidence that they had been in contact with Mr. Ritter regarding this issue.

A comment letter from Mr. Ritter, included as part of exhibit 5 indicates that priority habitat will be permanently impacted by the proposed project. The proposed project does propose to retain some of the native vegetation and deed over 50% of the total project area to the city as open space; however, any native vegetation that will exist will occur in small fragmented areas adjacent to the development or as ancillary features of the deeded area that will convert native habitat into trails, biofiltration swales, dog park, etc.

As a result, staff has required that a FWHCA report be prepared for the site and that consultation and agreement with WDFW occur prior to submittal of the report to the City. This requirement is included in the SEPA MDNS that was issued (exhibit 4).

SHORELINE MASTER PROGRAM

The proposed development site is not located within the jurisdiction of the City of Richland's Shoreline Master Program.

PUBLIC NOTICE

Application Date (Complete):	April 1, 2022
Notice of Hearing Mailed:	May 9, 2022
Notice of Hearing Posted:	May 11, 2022
Notice of Hearing Published:	May 15, 2022
Public Hearing:	June 20, 2022

Notice of application and notice of hearing was provided 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 3.

As of the date of this report, city staff has received approximately 30 comments from the general public and various governmental agencies (Exhibit 5).

SEPA

The City of Richland is lead agency for the proposal under the State Environmental Policy Act (SEPA) and reviewed the proposed project for probable adverse environmental impacts. A Mitigated Determination of Non-Significance (MDNS) was issued for this project on June 10, 2022 after utilizing the optional DNS process in WAC 197-11-355 (Exhibit 4).

PLANNED UNIT DEVELOPMENT ANALYSIS

Chapter 23.50 RMC governs the approval and development of Planned Unit Developments. Section 23.50.040.A RMC, specifically indicates that the preliminary PUD plan shall include the following:

1. Relationship of the property to the surrounding area, including identification of nearby uses and peripheral treatment of the PUD to maximize compatibility and integration of the PUD with nearby existing or proposed uses;
2. Proposed land uses and approximate building locations or buildable areas;
3. Location, arrangement and width of proposed streets and pedestrian ways, and the design and arrangement of off-street parking areas, loading areas and recreation vehicle storage areas;
4. Location, layout and conceptual design of parks, playgrounds and open spaces;
5. Location and extent of trees, watercourses, rock outcrops and any other features, indicating any significant features to be removed, improved or preserved;
6. Topography at a minimum five-foot contour interval;

7. Building heights and setbacks from property lines;
8. Preliminary architectural plans and elevations of typical buildings and structures, except single-family detached dwellings;
9. Landscape plans for open space, parks, recreation facilities, streets, parking facilities and pedestrian ways;
10. Proposed ownership pattern, including preliminary subdivision plan if property is to be subdivided;
11. The proposed method of maintaining common facilities;
12. Proposed source of water supply, electric supply, sewage disposal, and storm drainage systems;
13. General timetable of development, including a phasing schedule if the project will be developed in phases; or
14. For PUDs containing residential uses, graphic and, where necessary, written description of proposed nonresidential uses and facilities. In addition, a table shall be provided showing the total site acreage, total number of dwelling units proposed, and the dwelling unit density of adjacent subdivisions.

Based upon staff's analysis of the items submitted, it appears that most of the items listed above have been addressed by the applicants as part of their PUD submittal packet. However, several items were not addressed or were not fully supported by adequate information. For instance, the application does not address how peripheral treatment of the PUD will maximize compatibility with nearby existing uses. Furthermore, the application lacks a general timetable of development and also lacks a table providing the dwelling unit density of adjacent subdivisions. Specifically, staff refers the hearing's examiner to the document titled "Skyhous Planned Unit Development (PUD) Application Meadow Hills Phase 3 – 2021".

Section 23.50.040.B states that the hearing examiner shall conduct an open record public hearing and review of the request for reclassification to PUD and preliminary PUD plan approval as required by RMC Title 19 for Type IIIA permit applications. The hearing examiner, after public hearing, shall recommend to the city council that the application be granted (with or without additional conditions) or denied. Such recommendation shall be based on the hearing examiner's determination of whether:

1. The PUD district development will be compatible with nearby developments and uses;
2. Peripheral treatment ensures proper transition between PUD uses and nearby external uses and developments;
3. The development will be consistent with the comprehensive plan and with the purpose of the PUD district;
4. The development can be completed within a reasonable period of time.

Section 23.50.040.C indicates that the hearing examiner's recommendation shall include findings of fact with due consideration to all issues raised, pro and con, and the reasons for the hearing examiner's action referring expressly to the maps and other documents constituting the proposed plan and program, and matters of record.

Staff's review and analysis of the proposed PUD in regard to the four (4) criteria indicated above is as follows:

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

The proposed PUD will be residential in nature and will consist of multi-family buildings containing separate condominium units of various styles. The surrounding neighborhoods consist exclusively of detached single-family homes on lots ranging in size from approximately 1.5 acres to 0.275 acres (12,000 s.f). While the overall density of the project would be 1 unit per 0.21 acres, that density still exceeds the density ratio of the nearby neighborhoods. Furthermore, given the proposal's description as a multi-family condominium project it does not appear that such a development is consistent with nor compatible with the general area. As can be witnessed by viewing the land use map contained within the applicant's application materials (pages 7 & 8), the closest area designated for this type of development is over 0.5 miles from the project site. In fact, other than Natural Open Space and Developed Open Space there are no other land use designations other than low-density residential within more than 0.5 miles from the site. In addition, most of the south Richland area depicted on the land use map is designated for low-density single-family residential development (yellow).

While a PUD is an allowed mechanism to achieve neighborhoods with different types of uses, it appears that this proposal is attempting to circumvent the process that should be used for this type of development, which would be a change to the comprehensive plan with associated rezone. However, even that process would likely result in a negative outcome as placing multi-family residential development within a large area of exclusive single-family detached homes of a low-density pattern would be extremely controversial and likely not in the best interest of the city.

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

Other than the offering of gates at either end of the new Meadow Hills Drive connection, the proposal does not offer any form of transition between the proposed PUD and the adjacent single-family neighborhoods. It appears that native shrub-steppe type vegetation will remain on either side of the development and that public park/open space will be provided on the northern (downhill) portion of the property. It has been expressed by the City's Public Works Department that placing gates on either end of the new Meadow Hills Drive connection will not be allowed and as of the date this staff report was prepared, staff had not received any comments from the City's Parks and Public Facilities Department on whether or not they would be willing to accept the area proposed for dedication on the downhill side of the site.

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

As previously indicated, it appears that the applicants are attempting to circumvent the process that should be utilized for this type of proposal, which is a change to the comprehensive plan and zoning. This PUD request contains no substantial changes from the previous submittal requests that were denied by the city other than the

aesthetics of the buildings. Also, other than the proposed open space/park area there is nothing about the proposal that creates a more desirable environment or encourages the use of new and improved techniques and technology that would result in compatible relationships between different uses. In other words, the request is simply a rezone request in order to build multi-family condominiums that would otherwise be allowed within any other area of the city zoned for multi-family development.

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

Staff was unable to find any mention of how long it would take to permit and construct the proposed development within the application materials. Given the amount of design work required for the utilities, site grading and building construction it is difficult to conceive that a final development plan would be able to be submitted within one year of passage of the ordinance granting preliminary planned unit development approval as required by RMC 23.50.040 (D).

STAFF RECOMMENDATION

Staff has completed its review of the request for a preliminary PUD and change of zone to PUD (PUD2021-102) and recommends denial of the request based on the following Suggested Findings of Fact. Should the Hearing Examiner decide to approve the request, staff suggests that conditions of approval be placed on the project as per recommendations made within this staff report and per comments received from the Public Works Department, Fire Department and Building Department:

SUGGESTED FINDINGS OF FACT

1. Wave Design Group, applicant, on behalf of TMT Homes NW, LLC, owner, are requesting approval for a new Planned Unit Development (PUD) to be known as Skyhous.
2. The proposed development consists of the development of approximately 10.24-acres with six (6) 8-unit multi-family condominium buildings and the completion of Meadow Hills Drive within an area approximately 10.24 acres in size.
3. The project site is approximately 10.24-acres in size and is located between the eastern and western terminuses of Meadow Hills Drive on Little Badger Mountain between the plats of Meadow Hills Phase Two and Crested Hills No. 3.
4. The site is extremely steep and is located southwest of the KID irrigation canal and northeast of Falconcrest Loop and the Falconcrest residential neighborhood.

5. Land surrounding the project site is primarily developed with single-family residences; however, a tract of land located south of the project site (up the slope from the proposal) is undeveloped and owned by the City of Richland.
6. The site has been the subject of two (2) previous PUD requests in 2010 (Z2010-109) and 2012 (Z2012-101). Both of the previous requests resulted in denial.
7. The project site is currently zoned single-family residential – 12,000 and single-family residential – 10,000 (R-1-12 & R-1-10).
8. RMC Chapter 23.18 indicates that the single-family residential - 12,000 (R-1-12) zone and single-family residential – 10,000 (R-1-10) zone are residential zoning classifications requiring the lowest density of population within the city, providing protection against hazards, objectionable influences, building congestion and lack of light, air and privacy and are intended to be applied to some portions of the City that are designated low-density residential (zero to five dwellings per acre) under the City of Richland Comprehensive Plan.
9. Chapter 23.50 RMC indicates that the purpose of a planned unit development is to provide opportunities to create a more desirable environment through the application of flexible design and development standards to tracts of land under common ownership or control. Planned unit development is intended to encourage the use of new and improved techniques and technology in community development and continued maintenance. It is intended to achieve economics in development and maintenance while providing privacy, usable open space, safe pedestrian and vehicular circulation, and compatible relationships between different uses.
10. The proposed development is intended to follow the current R-3 zoning standards.
11. Public water, sanitary sewer and electrical power are all capable of handling the proposed residential development.
12. Access to the site comes by way of Meadow Hills Drive.
13. The proposed connection of Meadow Hill Drive within the proposed PUD is proposed to be built to city single-frontage standards. As a result, on-street parking will be prohibited on the south side of the street. Restrictive parking signage will be required to be installed at the developer's expense prior to final approval.
14. The City does not believe that trips generated from the proposed PUD will cause any street or intersection to compromise the City's adopted level of service for traffic operations and, as a result, a Traffic Impact Analysis was not required.

15. Notice of application and public hearing was mailed to all recorded property owners within 300' of the project site on May 9, 2022.
16. Notice of public hearing was posted at the project site on May 11, 2022.
17. Notice of application and public hearing was published in the Tri-City Herald on May 15, 2022.
18. The City of Richland utilized the Optional DNS Process in WAC 197-11-355. The end of the SEPA comment period was June 3, 2022.
19. A Mitigated Determination of Non-Significance (MDNS) was issued on June 10, 2022.
20. The proposed development site contains critical areas as defined by Chapter 22.10 RMC (Geologic Hazard Areas and Fish and Wildlife Habitat Conservation Area).
21. Based on the findings in their subsurface geotechnical/geologic study, GN Northern (GNN) has concluded that slopes across large portions of the project site are marginally stable and may not be suitable for the proposed construction without appropriate engineered remediation and stabilization efforts.
22. The site is mapped as being within a Fish and Wildlife Habitat Conservation Area (FWHCA) by the Washington State Department of Fish and Wildlife (WDFW) due to the site containing shrub-steppe.
23. When the pre-application meeting for the current project occurred in 2020, the site did not appear on the WDFW map as containing shrub-steppe habitat, as a result, the applicants did not submit a FWHCA report. However, as time has elapsed, the WDFW mapping has been updated and now indicates the site as presumptive shrub-steppe.
24. Planning staff recommended to the applicant that they contact Mike Ritter, WDFW Habitat Biologist, to determine whether or not a FWHCA report should be prepared. As of the date the staff report was prepared the applicants had not submitted a FWHCA report nor provided evidence that they had been in contact with Mr. Ritter regarding this issue.
25. A comment letter from Mr. Ritter, included as part of exhibit 5 indicates that priority habitat will be permanently impacted by the proposed project.
26. The proposed development site is not located within the jurisdiction of the City of Richland's Shoreline Master Program.
27. The City of Richland Comprehensive Plan designates the subject site as suitable for low-density residential land uses.

28. The proposed development is not single-family in nature and is therefore considered multi-family residential.
29. Chapter 23.50 RMC governs the approval and development of Planned Unit Developments.
30. Section 23.50.040.A RMC outlines fourteen (14) items that shall be shown and/or indicated in a PUD application.
31. Section 23.50.040.B states that the hearing examiner shall conduct an open record public hearing and review of the request for reclassification to PUD and preliminary PUD plan approval as required by RMC Title 19 for Type IIIA permit applications. The hearing examiner, after public hearing, shall recommend to the city council that the application be granted (with or without additional conditions) or denied. Such recommendation shall be based on the hearing examiner's determination of whether:
 1. The PUD district development will be compatible with nearby developments and uses;
 2. Peripheral treatment ensures proper transition between PUD uses and nearby external uses and developments;
 3. The development will be consistent with the comprehensive plan and with the purpose of the PUD district;
 4. The development can be completed within a reasonable period of time.
32. The surrounding neighborhoods consist exclusively of detached single-family homes on lots ranging in size from approximately 1.5 acres to 0.275 acres (12,000 s.f.).
33. Other than the offering of gates at either end of the new Meadow Hills Drive connection, the proposal does not offer any form of transition between the proposed PUD and the adjacent single-family neighborhoods.
34. This PUD request contains no substantial changes from the previous submittal requests that were denied by the city other than the aesthetics of the buildings.
35. There is no mention of how long it would take to permit and construct the proposed development within the application materials.

EXHIBIT LIST

1. PUD Application Materials
2. Geotechnical Report 2021
3. Public Notices & Affidavits
4. SEPA MDNS & SEPA Checklist
5. Public & Agency Comments

Exhibit A



PLANNED UNIT DEVELOPMENT (PUD) APPLICATION MEADOW HILLS PHASE 3

2021

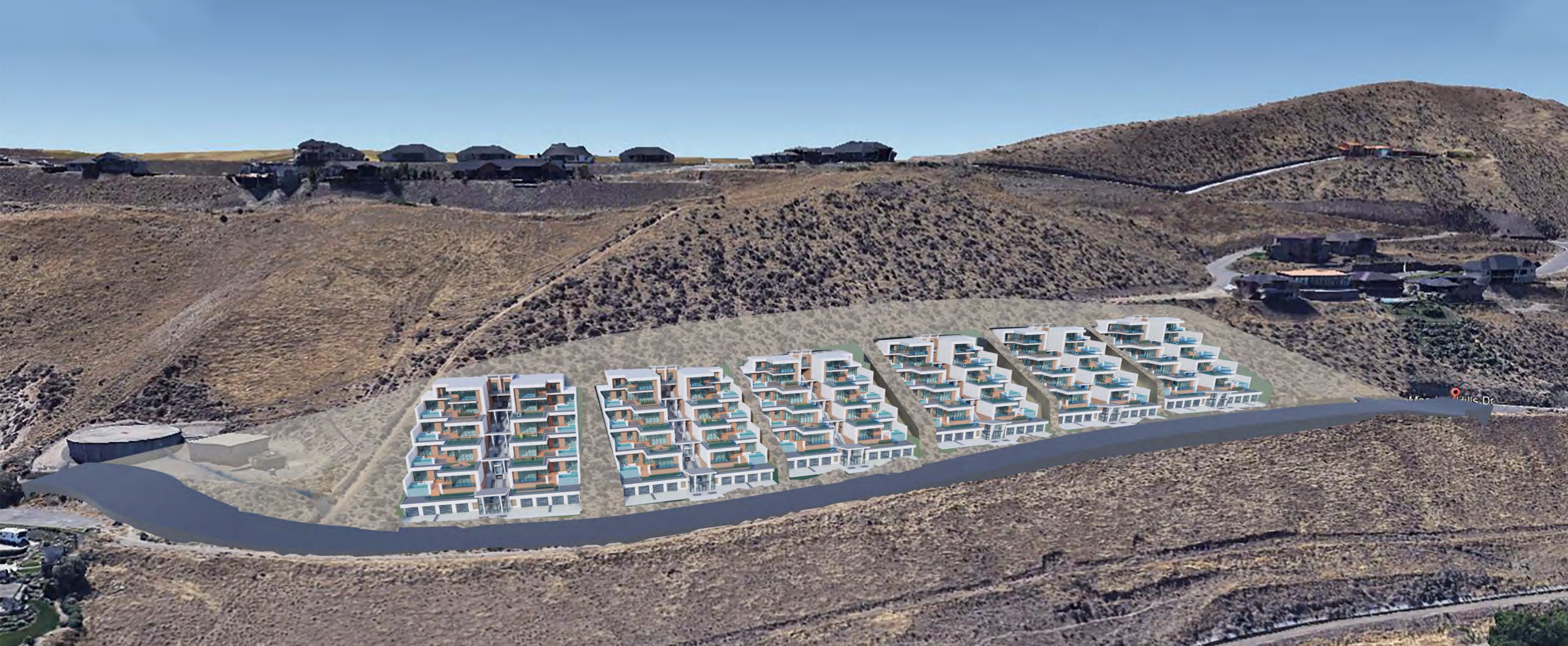


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Planned Unit Development (PUD) Application

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

PROPERTY OWNER INFORMATION

☐ Contact Person

Owner: TMT Homes NW, LLC - Nora Wolf

Address: 4001 Kennedy Road Suite #13, West Richland, WA 99353

Phone: (509) 627-0743

Email: nora@tmthomes.com

APPLICANT/CONTRACTOR INFORMATION (if different)

☒ Contact Person

Company: Wave Design Group

UBI#:

Contact: Kyle Lepper

Address: 418 N. Kellogg St. Suite B Kennewick, WA 99336

Phone: 509-737-1000

Email: kylel@wavedesigngroupllc.com

SURVEYOR INFORMATION

Contact: Statton Surveying and Mapping P.C. - Aaron Dyck

Address: 313 N Morain Street Kennewick WA, 99336

Phone: (509) 735-7364

Email: Aaron@StrattonSurvey.com

ENGINEER INFORMATION

Contact: Wave Design Group - Dick Nelson

Address: 418 N. Kellogg St. Suite B Kennewick, WA 99336

Phone: 509-737-1000

Email: dick@wavedesigngroupllc.com

PROJECT DESCRIPTION

Development of 10.24 acres located on Little Badger Mountain with the construction of six luxury 8-unit multifamily condominium buildings on the south portion of the lot, the remaining north 5.76 acres to be open public space, and complete the connection of Meadow Hills Drive.

PROPERTY INFORMATION

Parcel #: 1359800001002 & 135984050003022

Zoning: R-1-12 - Single Family Residential

Legal Description: Section 35 Township 9 Range 28. THAT PORTION OF THE SOUTH HALF OF SECTION 35, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M. BENTON COUNTY, WASHINGTON LYING WESTERLY OF THE KENNEWICK IRRIGATION DISTRICT BADGER EAST LATERAL AND EASTERLY AND SOUTHERLY OF THE

Proposed Development Name: Skyhaus

Gross Acreage: 10.24 Acres

Number of Lots: 2

Smallest Lot Size: 4.48 Acres

Net Lot Area Acreage:

Avg. Lot Size:

Largest Lot Size: 5.76 Acres

Domestic Water Supply: ☒ City ☐ Private Well

Sewage Disposal: ☒ City ☐ Septic

Irrigation Source: ☐ City ☐ Private Well ☐ Columbia Irrig. District ☒ Kennewick Irrig. District ☐ Other

SEPA Checklist submitted? ☒ Yes ☐ No

Title Report (Subdivision Guarantee) submitted? ☒ Yes ☐ No

APPLICATION MUST INCLUDE

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

UTILITY

Power

APPROVAL RECEIVED

☐ Yes ☒ No

Telephone

☐ Yes ☒ No

Natural Gas

☐ Yes ☒ No

Cable TV

☐ Yes ☒ No

I authorize employees and officials of the City of Richland the right to enter and remain on the property in question to determine whether a permit should be issued and whether special conditions should be placed on any issued permit. I have the legal authority to grant such access to the property in question.

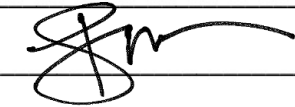
I also acknowledge that if a permit is issued for land development activities, no terms of the permit can be violated without further approval by the permitting entity. I understand that the granting of a permit does not authorize anyone to violate in any way any federal, state, or local law/regulation pertaining to development activities associated with a permit.

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

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

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

Applicant Printed Name: Kyle Lepper

Applicant Signature:  Date 03/01/21

SKYHOÛS INTRODUCTION

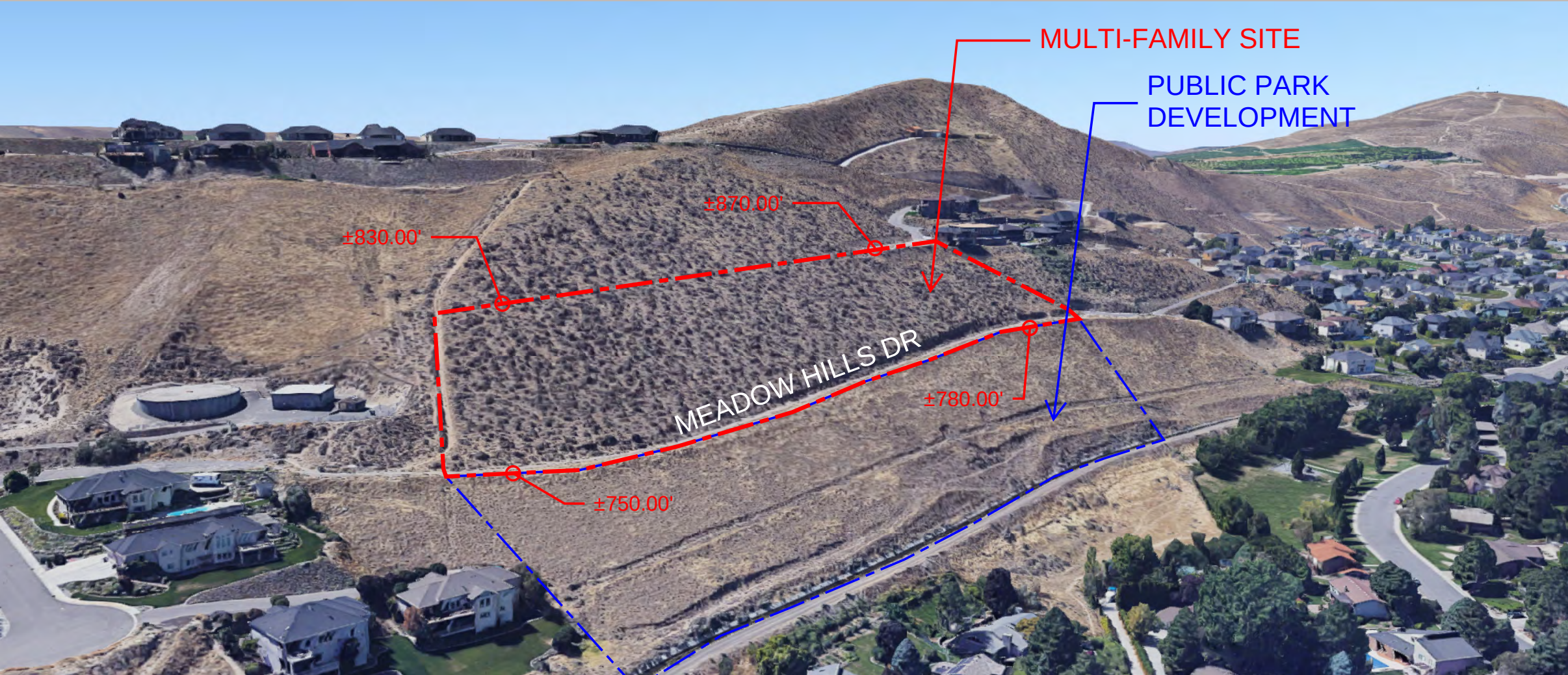
OVERVIEW

Wave Design Group, LLC, on behalf of TMT Homes, requests approval to move forward on the pre-application process for the Planned Unit Development (PUD). The development “SkyHoûs” is a luxurious, multi-family condominium high-density residential development, designed with pedestrian trails, large open space and natural areas, and completes the connection of Meadow Hills Drive, emphasizing safety, security, and neighborhood integration. The design includes aesthetic that enhances the area, sustainable approaches to wastewater management with the use of bioretention swales and adds public open spaces that will promote pedestrian connectivity, addresses the goals and policies in the City of Richland 2017 Comprehensive Plan.

PROJECT TEAM

- DEVELOPER / OWNER: TMT HOMES
- ARCHITECT:..... WAVE DESIGN GROUP
- CIVIL ENGINEER: WAVE DESIGN GROUP
- STRUCTURAL ENGINEER: .. WAVE DESIGN GROUP
- MECHANICAL ENGINEER:... WAVE DESIGN GROUP





PROJECT SUMMARY

Meadow Hills Drive, located in south Richland, is 10.24 acres of undeveloped shrub-steppe (big sagebrush) on land sloped between 20-60%. We are proposing to construct a high-density multifamily development that will consist of 48 luxury condominiums across six separate buildings titled, SkyHoûs. The goal of SkyHoûs is to address the high-end multifamily living niche in the housing market while enhancing the surrounding communities by providing public open space, connecting Meadow Springs Drive, and improving pedestrian circulation between neighborhoods. The building is designed to be incorporated into the hillside of Little Badger Mountain to minimize excavation and the architecture features modern aesthetics that speaks to the regions vernacular and promotes healthy indoor/outdoor living with views that will overlook the Columbia basin.

Over 50% portion of the vacant land north of Meadow Hills Drive proposed to be designated as public open space and natural areas. Pathways provide a safe link for the public to walk between neighborhoods. These pedestrian trails shall be innovative and secure, improving the existing land and enhancing the walkability of the community. Sustainable, aesthetic water features including bioretention swales and professional landscaping.

SkyHoûs fulfills a significant gap in the Richland housing market, promotes sustainability in land use, sustainable features in the design, building materials, and construction process.

SkyHoûs aligns with the Urban Design and Culture Section in the City of Richland 2017 Comprehensive Plan. The SkyHoûs design promotes vision and goals from the Comprehensive Plan, specifically, "The community values high-quality design in shaping its natural and physical character in building, landscaping, and streetscape design. Its urban areas are revitalized with public spaces and pedestrian-friendly features." (Oneza & Associates)

BENEFITS

1. The owner will deed 57% (5.76) acres of the shrub-steppe to the City of Richland for Public Open Space and Natural Areas.
2. The owner will make land improvements, including sustainable features in the landscaping and secure pathways improving walkability for the current neighborhood and the public, to the 5.76 acres of deeded land.
3. SkyHoûs, an R-3 high-density residential zone, improves the high-density zoning percentage (1.85%) in Richland and better aligns housing supply with demand and contributes to the diversity of housing.



LOCATION

SITE INFO:

Owner:	TMT Homes NW LLC
Situs Address:	Not Sited
Property ID:	279007
Total Site Area:	10.24 Acres
Public Open Space:	5.76 Acres
Public Open Space Ratio:	57%
Total Dwelling Units:	48
Density:	1 Unit per 0.21 Acres
Hardscape Ratio:	

ZONING - HDR

The proposed development is located on the northeast face of Little Badger Mountain at along Meadow Hill Drive. Currently zoned low density residential, SkyHoûs proposes to revise the zoning to high density residential, R-3. High density residential allows several advantages to the development of this site including:

- A multifamily development is a more feasible approach to building on a steep terrain than individual single family residential structures. This reduces grading and allows a more cohesive strategy to stormwater management on the site.
- High density residential provides greater housing opportunities for families to experience the benefits of the site and promotes diversity of housing types in the community.
- Multifamily design warrants the designation of public open space that would not be possible with a low-density residential development.

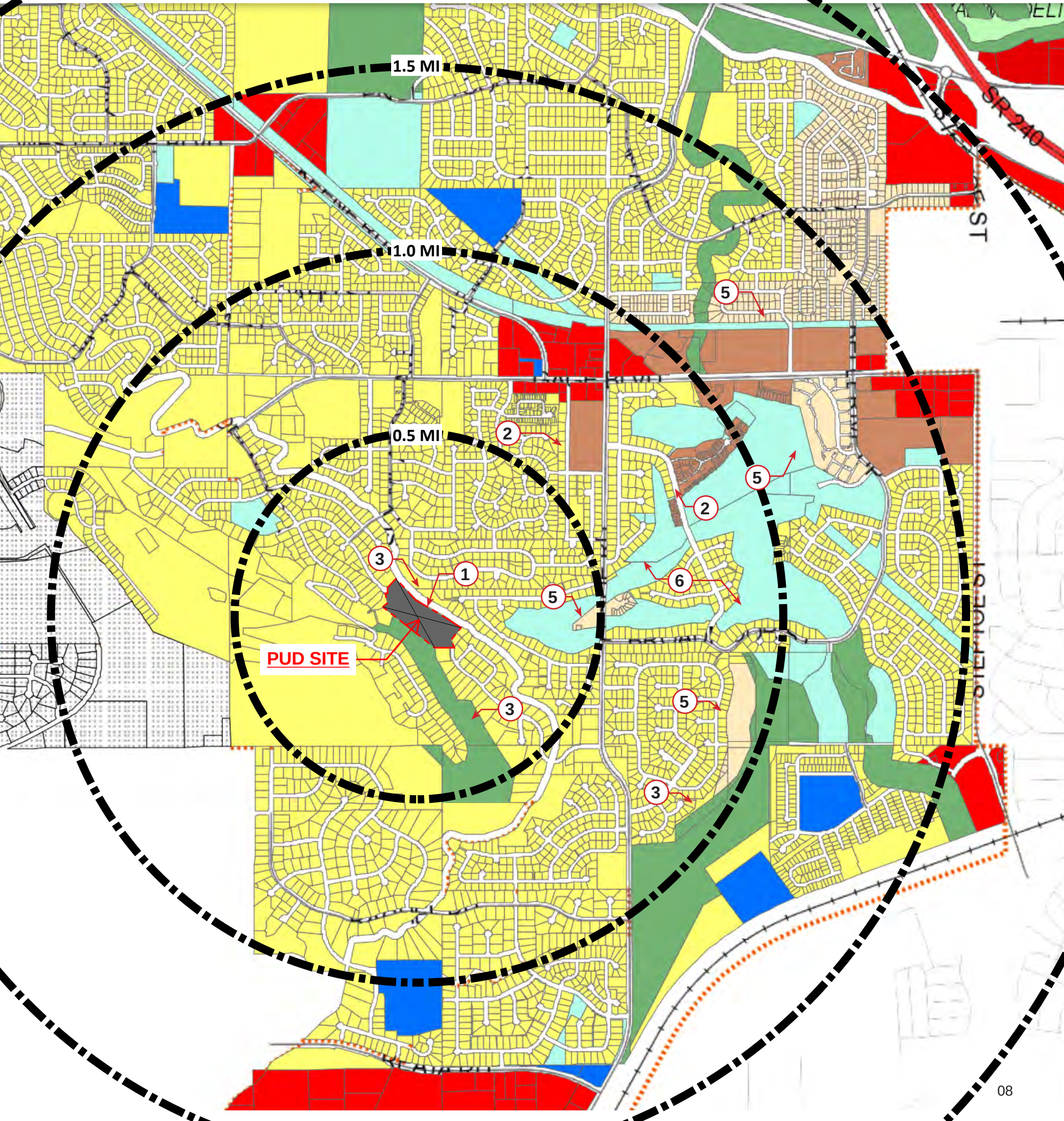
There are several mid and high-density residential developments established in south Richland and SkyHoûs will contribute to the pattern of high-density zoning already vested by the city, fulfilling Richland’s goal of providing housing diversity. See zoning map with all instances of mid and high-density residential zoning in a 1.5-mile radius of the site.

The site is primarily boarded by low-density residential zoning with the exception to public open space to the south. This public open space that was deeded to the city by the Falconcrest development creates a unique opportunity for the SkyHoûs development to link the neighborhoods to the north (Meadow Springs) with the neighborhood to the south (Falconcrest) with pedestrian access. In addition to the benefit of the increased walkability, adjacent neighboring properties will also profit as the investment of a high-end, luxury development such as SkyHoûs will certainly increase surrounding property values.

MAP LEGEND

	AGR - Agriculture
	BC - Business Commerce
	BMS - Badger Mountain South
	BRP - Business Research Park
	CBD - Central Business District
	COM - Commercial
	CR - Commercial Recreation
	DOS - Developed Open Space
	GCOM - General Commercial
	HDR - High Density Residential
	IND - Industrial
	LDR - Low Density Residential
	MDR - MDR - Medium Density Res
	NOS - Natural Open Space
	PBF - Public Facility
	RES-OFF - Multifamily Residential
	RR - Retail Regional
	UBR - Urban Reserve
	URD - Urban Recreation District
	WTF - Waterfront

- # KEYNOTES
1. PROPOSED PUD SITE
 2. HIGH DENSITY RESIDENTIAL
 3. NATURAL OPEN SPACE
 4. NEIGHBORHOOD PARK
 5. MEDIUM DENSITY RESIDENTIAL
 6. DEVELOPED OPEN SPACE - MEADOW SPRINGS GOLF COURSE





SITE DESIGN

SITE SURVEY

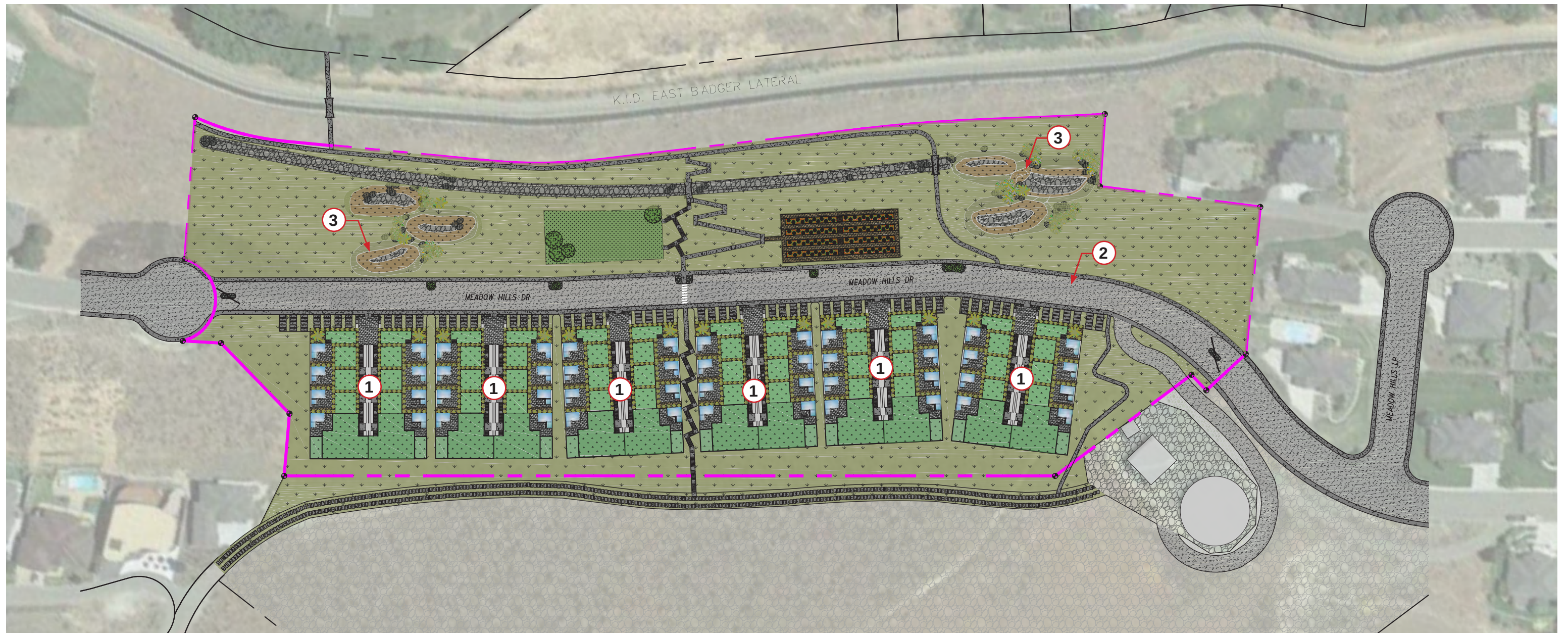
Located on the north face of Little Badger Mountain, the terrain of the site features a steep slope that ranges from 20-60%. This is the primary challenge and opportunity of the project. SkyHoûs development is proposed to be located entirely on the southern portion of the site, which features the steepest grades. This location allows the building design to take advantage of the elevation gain as each building level steps up the hillside. By stepping the building in this manner will reduce the excavation on site, minimize the building height from the average grade, limit obstructions of neighbor's views, reduces scale by fragmenting the buildings mass and provides a design that is integrated with the hillside. The north portion of the site features reduced grades making it a more feasible area for public open space that can provide community amenities such as trails, seating areas and natural preserves.

UTILITIES

Connections to primary utilities such as power, gas and sewer are available where Meadow Hills Drive currently terminate. These systems will be continued to service the SkyHoûs development and installed per the utility's design standards, following the route of the new road. Located to the east of the site is the city's water reservoir. The SkyHoûs development proposes to reroute the service road to this facility to improve access to the reservoir and provide access for emergency vehicles to the new service road along the south boundary of the site. The Kennewick Irrigation canal runs along the north boundary of the site. The development should not impact the irrigation system as the adjacent portion of the site will consist of public open space.

KEYNOTES

1. PROPOSED BUILDING CONSTRUCTION AREA
2. PROPOSED OPEN PUBLIC SPACE
3. EXISTING OPEN PUBLIC SPACE
4. PUBLIC WORKS RESERVOIR AND PUMP HOUSE
5. EXISTING RESERVOIR ACCESS ROAD
6. K.I.D. CANAL
7. END OF MEADOW HILLS DR.
8. STEEPEST SLOPE 50-60%
9. NEW ROAD
10. LOW-DENSITY RESIDENTIAL



CIVIL DESIGN

The grade of the hillside the site design is extremely important to the success of the project. The civil design addresses the challenges associated with a sloped site with includes grading, road design, stormwater management and utilities. The goals of the SkyHoûs development are:

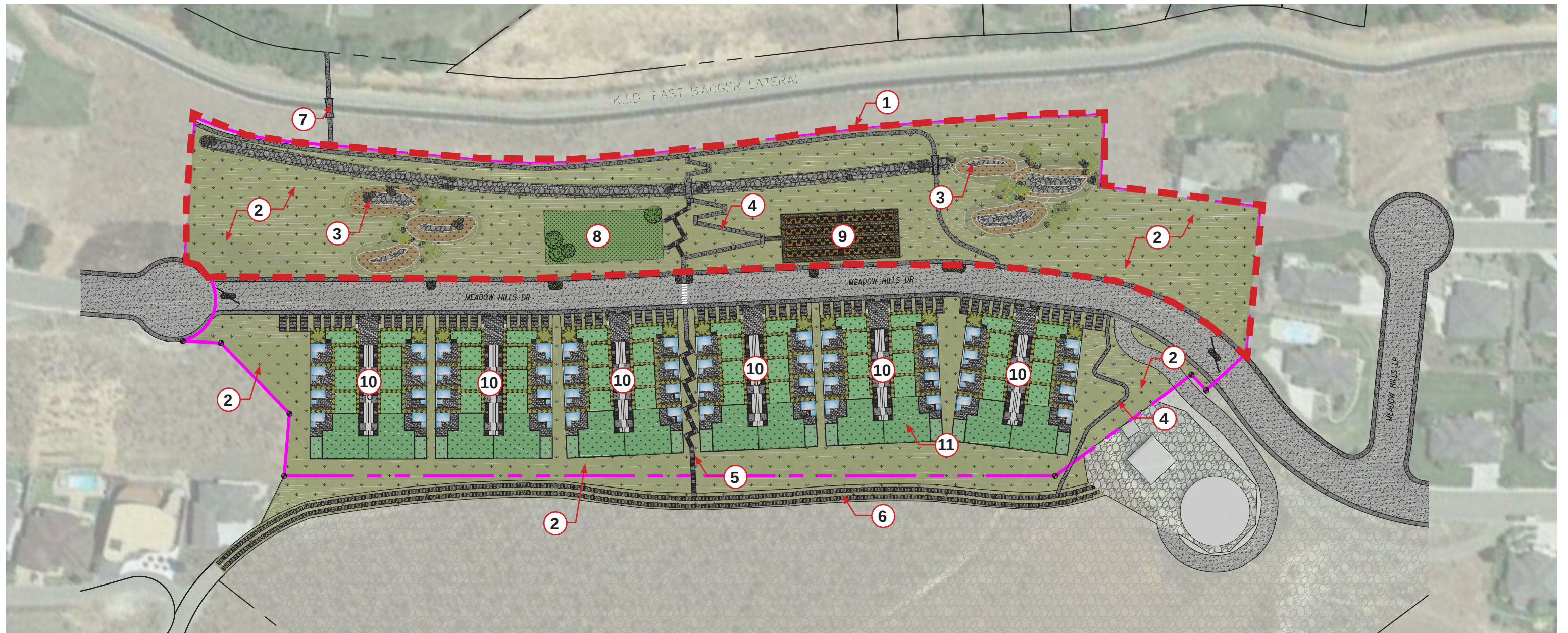
1. Minimize grading and excavation impact to the site. By the building design utilizing the hillside by the stepped approach eliminates the need to excavate deep into Little Badger Mountain that is required with a traditional multi-level building design. Stepping the building as it rises in elevation allows the building footprint to be graded in lifts, minimizing the impact of excavation on the site.
2. Provide a safe and efficient road design. A primary benefit to the SkyHoûs development will be constructing the continuation in Meadow Hills Drive that will improve

the circulation and congruency in the community. The road shall be designed to city standards and provide parallel parking on the north side of the road to serve the public open space and residence of SkyHoûs. While the south side of the road will provide access to residences parking.

3. Utilize responsible stormwater practices. Managing stormwater is a challenge with a sloped site and the approach is to capture all the stormwater on-site and treat it with bioinfiltration systems. The system will capture stormwater from the buildings and route the water to north portion of the site where it will be treated with a series of swales, filters, and other adsorptive technologies. The biofiltration system will be designed to integrate into the natural terrain and ecosystem by using swales that feature native vegetation for filtration, dry wells to minimize surface impacts, and natural elements that integrates into the landscape.

KEYNOTES

1. NEW BUILDING WITH STEPPED WITH SLOPE
2. NEW ROAD THAT COMPLETES MEADOW HILLS DRIVE
3. STORMWATER INFILTRATION SWALES DESIGNED TO INTEGRATE INTO THE LANDSCAPE



OPEN SPACE & PEDESTRIAN CIRCULATION

Over 5.76 acres is proposed to be designated for open space and pedestrian connectivity to enhance community access and promote physical, social, and overall well-being of residences. The vision for the public open space is to remain largely native is its landscape design to promote the growth and health of the existing eco-system. Landscape improvements will use sustainable features to enrich the native vegetation and preserve the natural landscape as open spaces for public use. The open space includes the design of bioretention stormwater drainage systems promoting sustainability and conservation of water use. A network of pathways will be implemented to provide a safe link for the public to walk between neighborhoods. The paths will be integrated with the landscape design improving the existing land and enhancing the walkability of the community. In addition to the trails and pathways, some

public amenities that may also be incorporated include, sitting areas, dog park, and pea patches.

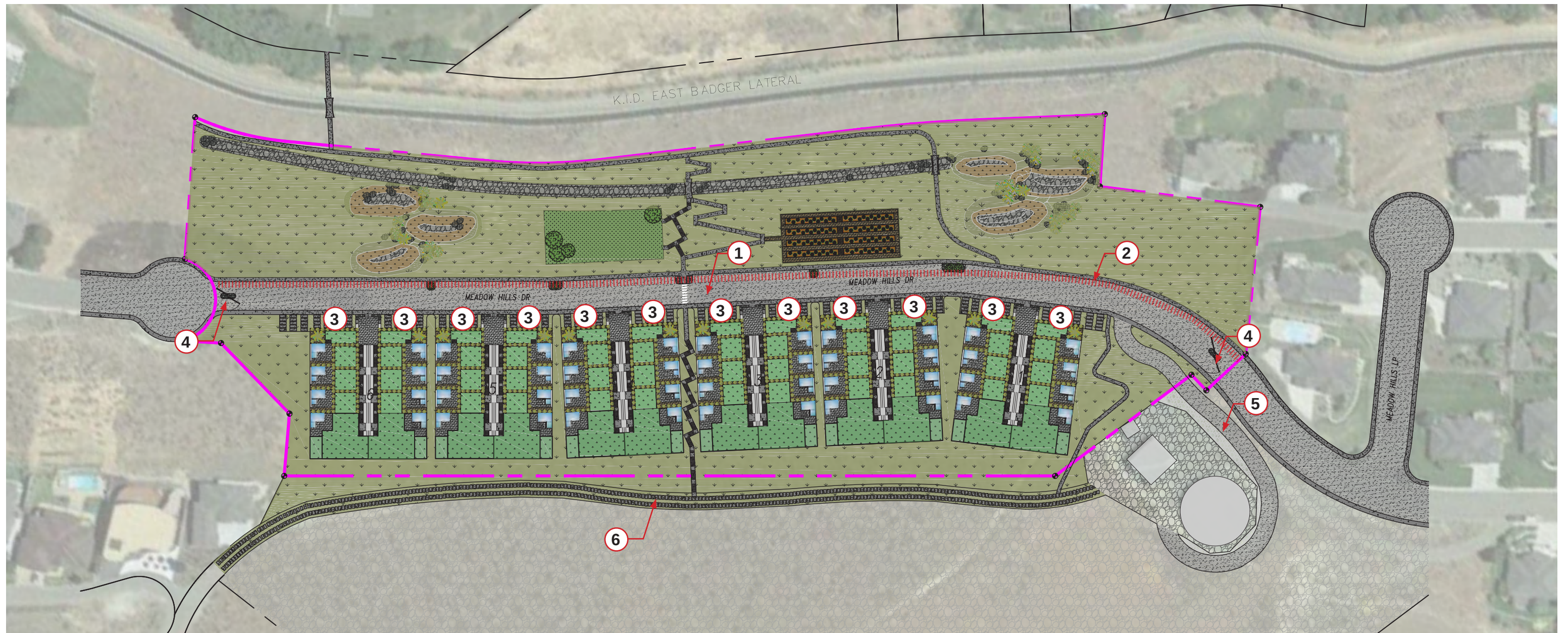
LANDSCAPE DESIGN

The landscape design strategy will promote the growth and preservation of the native vegetation (shrub-steppe) and ecosystem. Landscaped biofiltration swale system to blend into the terrain and designed to be a feature within the public open space. This landscape strategy will include both the public open space on the north portion of the site but also landscaped areas around the buildings. Select area around the building such as the unit driveways and fire access road to the north will feature permeable paving systems to promote stormwater infiltration that will be capable to handle vehicular travel. Buildings will feature green roof systems that will support landscaping to contribute to sustainable design strategies such as solar heat gain, air quality, stormwater management, building insulation, and

reduces gas emissions. By providing residences private outdoor areas with vegetation will encourage healthier indoor/outdoor living lifestyle.

KEYNOTES

1. PUBLIC OPEN SPACE
2. NATIVE SHRUB-STEPPE PRESERVATION
3. STORMWATER BIOFILTRATION SWALES
4. PUBLIC TRAILS/PATHWAY
5. PUBIC STAIRCASE THAT CONNECTS PUBLIC OPEN SPACE
6. SOUTH BOUNDARY PATH AND EMERGENCY ACCESS ROAD
7. PROPOSED CANAL BRIDGE TO CONNECT NEIGHBORHOOD PARK
8. DOG PARK
9. PEA PATCH
10. NEW BUILDING
11. GREEN ROOFS



VEHICULAR CIRCULATION & PARKING

SkyHoûs provides the completion of Meadow Springs Drive with a two-way street with public parallel parking on the north side and residence driveway access along the south side of the street. The continuation of the street promotes continuity for the community, improving the vehicular circulation for communities. However, there has been concerns expressed from neighboring residence that by completing Meadow Hills Drive will create a thoroughfare and potentially may result in a higher volume of speeding traffic. In effort to mitigate this risk, SkyHoûs is proposed as a gated community.

As a gated community automated gates will be placed at each end of Meadow Hills Drive. The gates shall remain open during the day to allow public access and will close at night. When closed, vehicles will need to have a key

card or will be buzzed in from a resident to gain access, and gates will automatically open to all vehicles exiting the site. The implementation of a gated community will reduce traffic speeds due to the heightened notion of security that is mutually beneficial to surrounding neighborhoods and the SkyHoûs development. The gates will be maintained by SkyHoûs and City street services such as waste disposal, recycling, snow removal, and emergency services will have access, including the placement of a Knox box at each gate.

Parallel parking along the north side of the street will serve both the public open space patrons and the residence of SkyHoûs. On-street parking spaces provides convenient parking for patrons using the public open space where a series designated trail entrance will be placed along the north sidewalk for access. Additionally, these parking spaces will also serve visitors of SkyHoûs residence. Spaces will also be designated for city and utility services, and short-term parking spaces for deliveries and other

services. This will help prevent congestion along the street and help ensure steady traffic flow. Off-street parking will be provided for each residential unit in SkyHoûs. Each unit is designated a private tandem garage capable of storing two vehicles. Each garage will have an independent opening onto Meadow Hills Drive separated by a 20' driveway that can store an additional vehicle.

To provide adequate access for the fire department, an emergency service road is proposed along the south boundary of the site, above the buildings. This road will connect to meadows hill drive through the reservoir access road and will tie into Mont Blanc Way, allowing emergency access to SkyHoûs from the north and south. This road will not be heavily access by vehicles, therefore, permeable surfacing is proposed to help with stormwater management and can also serve as a pathway for pedestrian circulation and connectivity.

KEYNOTES

1. NEW ROAD COMPLETING MEADOW HILLS DRIVE.
2. SHARED PARALLEL PARKING
3. RESIDENT DRIVEWAY WITH PERMEABLE SURFACING / GARAGE ACCESS
4. AUTOMATED GATES
5. RESERVIOR ACCESS ROAD
6. PEDESTRIAN PATH / EMERGENCY ACCESS ROAD WITH PERMEABLE SURFACING



BUILDING LOCATION, HEIGHT & SETBACKS

All six building are located on the south side of the site, situated above Meadow Spring Drive. This is the steepest part of the site where the building's design will utilize the grade as it steps back with the slope of the hill as it rises in elevation. This approach allows the massing to be broken up to reduce the scale of the building while staying within the required maximum building height from existing grade. Each building is separated by a swath of landscaping and a public staircase providing vertical pedestrian circulation is situated between the middle buildings in the center of the site. The buildings will maintain a XXX setback from the property lines that are shared with residential properties and XXX setbacks along property lines that are shared with other uses per by the municipal code. The building locations and design also reduces the impact to neighboring structures by using the

grade of the site to prevent obstruction of neighboring views and by implementing green roofs and patios to blend into surroundings and by screening necessary mechanical units.

KEYNOTES

1. 10 FOOT SETBACK
2. 20 FOOT SETBACK
3. 35 FOOT SETBACK TO ADJACENT RESIDENTIAL PROPERTY
4. 25 FOOT DRIVEWAY

BUILDING DESIGN

BUILDING INFO

SkyHoûs fulfills a significant gap in the Richland housing market by contributing to the lack of high-density residential opportunities in Tri-Cities. The goals and policies from the Housing Element (HE) within the City of Richland Comprehensive Plan seek to provide a range of housing densities, sizes and types of all income and age groups of the Richland community and the SkyHoûs development helps the City achieve this goal by providing distinguished, high end luxury units within an innovative multi-family facility.

Each of SkyHoûs's six building consists of 8 dwelling units that stack and recede back as the building rises with the face of the hill. This not only promotes a more responsible design approach by integrating the building with the hillside, but also reduces the building's scale that is more conducive to a neighborhood environment. The building design features cantilevered elements that fragments the mass that contributes to the scale reduction and feature a range of building materials and articulation to create shadow, texture and patterns that help the facility integrate into the surrounding environment and enhance the region's building vernacular.

KEYNOTES

- 1. GARAGE DOOR AND DRIVEWAY
- 2. BUILDING ENTRY
- 3. LEVEL 2 STANDARD DWELLING UNIT
- 4. LEVEL 3 STANDARD DWELLING UNIT
- 5. LEVEL 4 STANDARD DWELLING UNIT
- 6. LEVEL 5 & 6 PENTHOUSE DWELLING UNIT
- 7. INCLINE ELEVATOR (TRAM)
- 8. STAIRCASE
- 9. STEPPED BUILDING PROFILE
- 10. OUTDOOR PATIO
- 11. OUTDOOR GREENSPACE
- 12. INFINITY EDGE POOL/SPA
- 13. PRIVATE BALCONY
- 14. OPERABLE WALLS

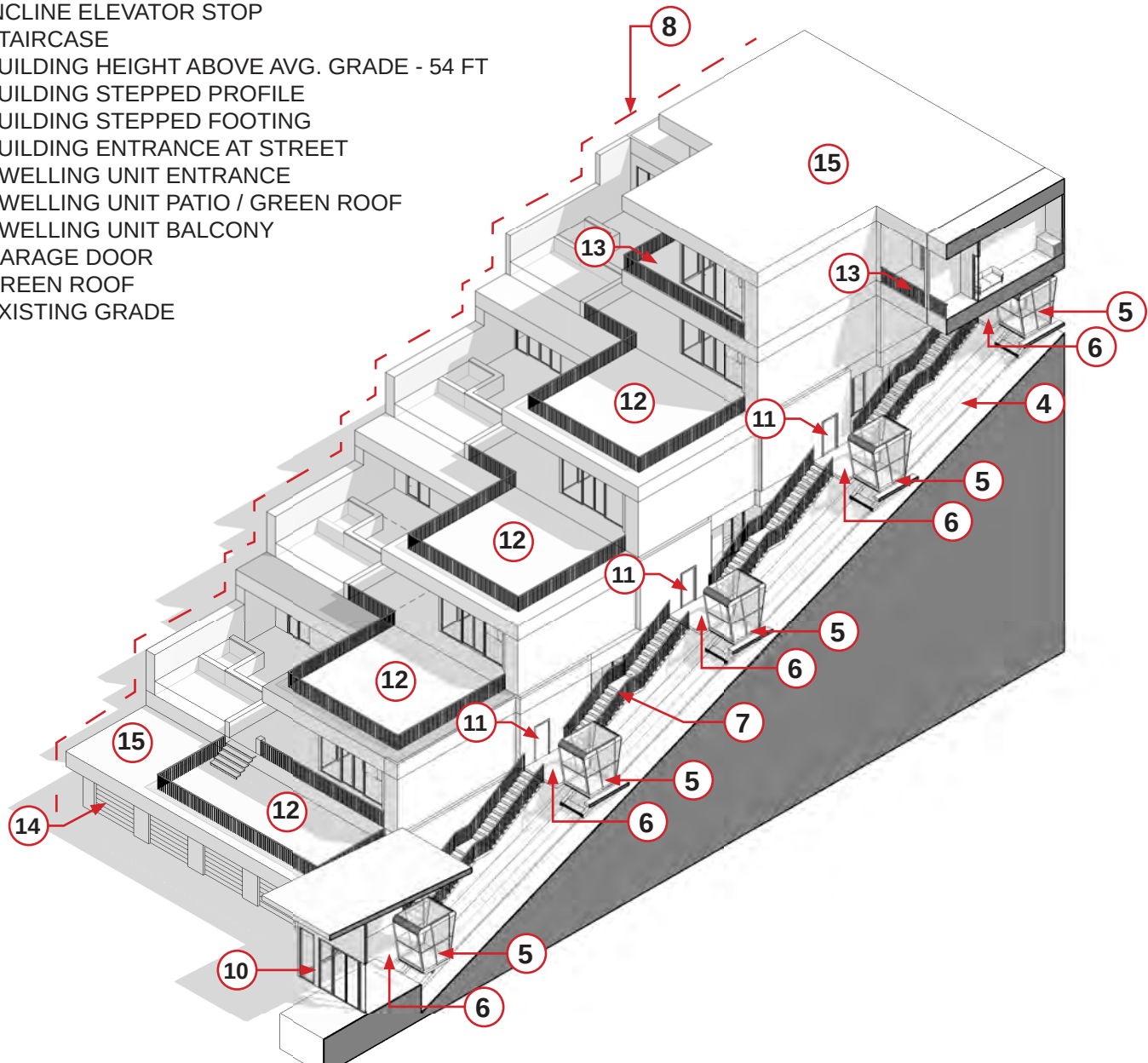


BUILDING INTEGRATION

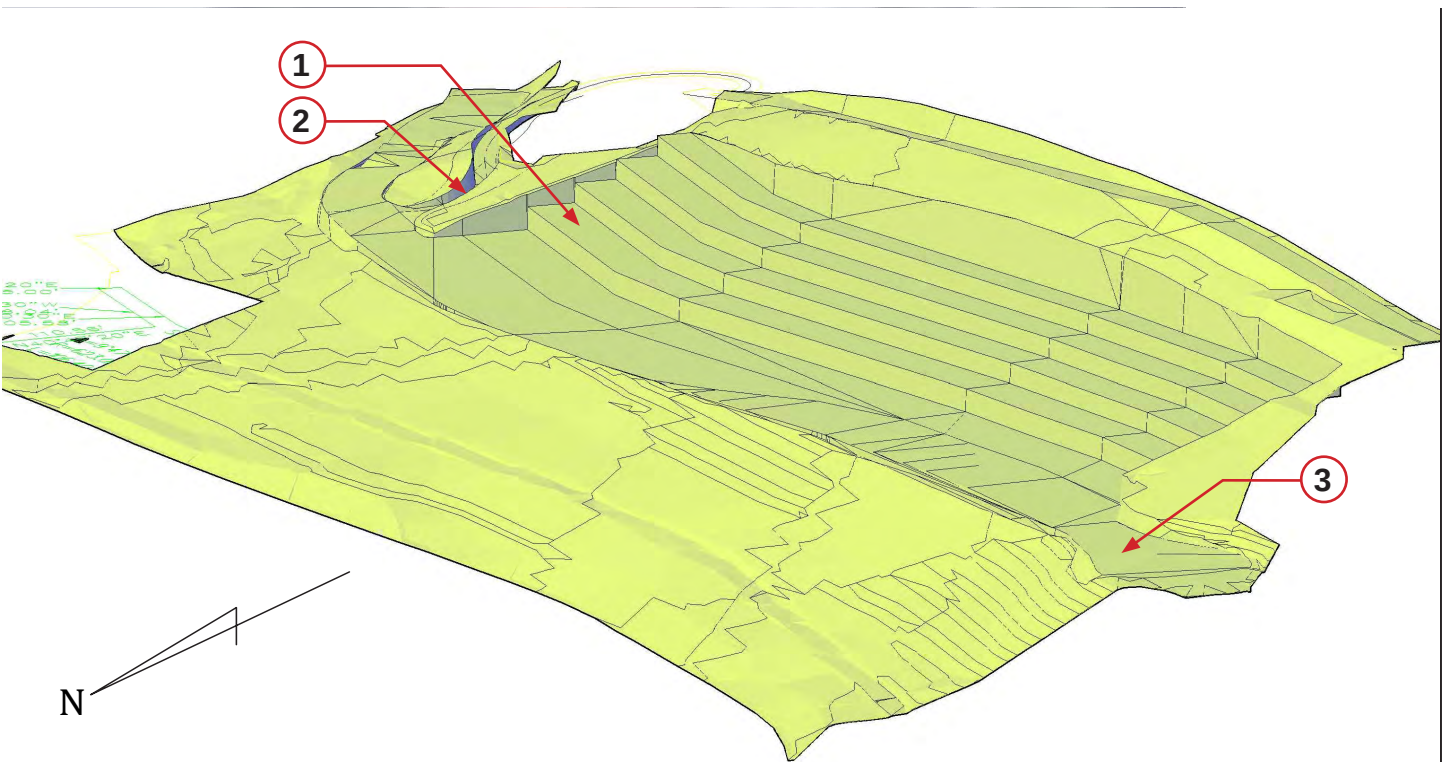
The construction of multilevel building on a steep grade has many challenges but creates several opportunities to provide a building design that will integrate well with topography and neighborhood typology. Instead of traditional multistory that would require building to carve deep into the slope, the design of SkyHoûs allows the building to leverage the slope with a stepped approach that minimizes excavation. By stepping each level of the building as it rises the slope allows the foundation to sit on graded lifts.

KEYNOTES

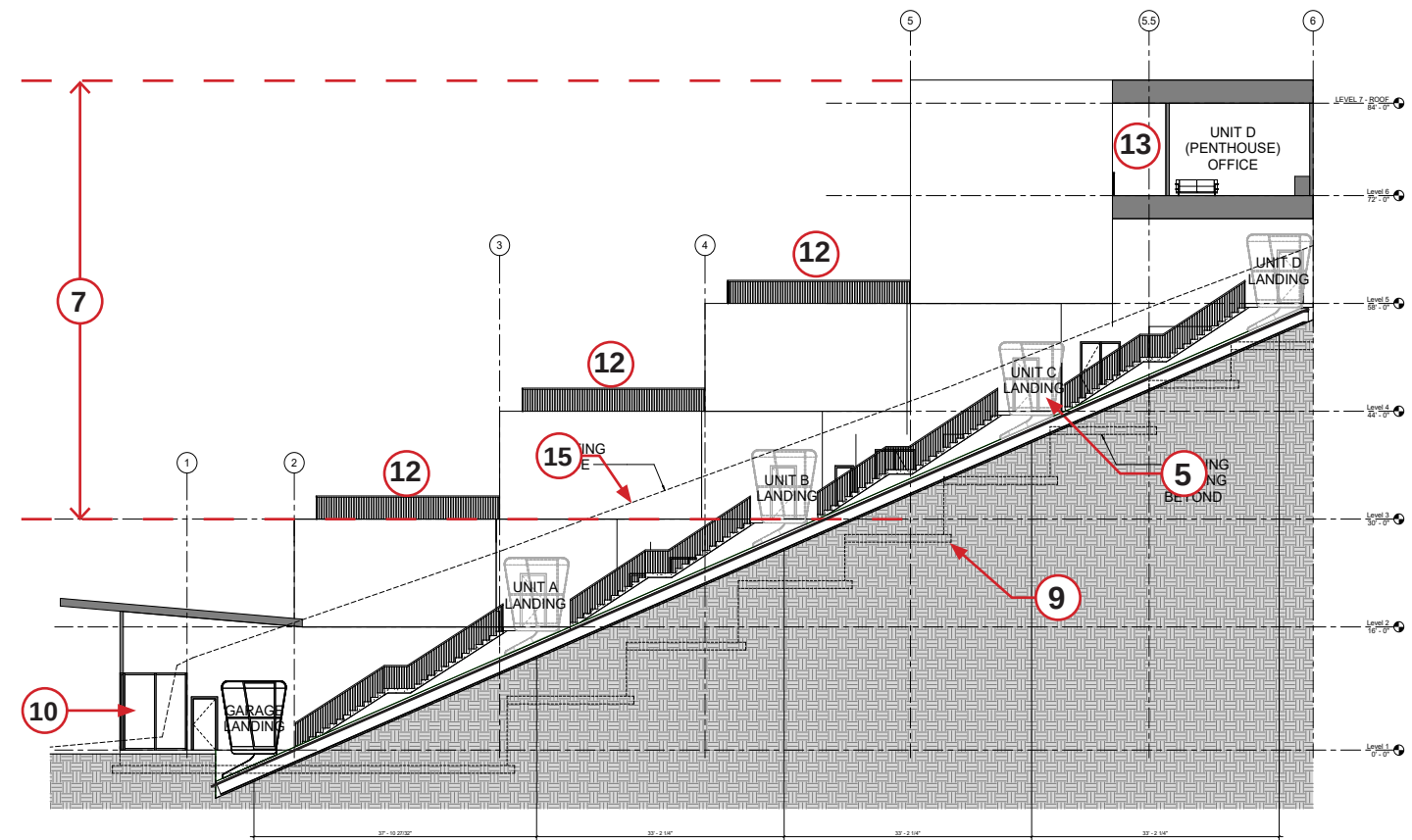
- 1. BUILDING LIFTS
- 2. NEW RESERVIOR ACCESS ROAD
- 3. NEW ROAD, MEADOW HILLS DRIVE
- 4. INCLINE ELEVATOR (TRAM), TRACK RUNS ALONG SURFACE OF THE SLOPE
- 5. INCLINE ELEVATOR STOP
- 6. STAIRCASE
- 7. BUILDING HEIGHT ABOVE AVG. GRADE - 54 FT
- 8. BUILDING STEPPED PROFILE
- 9. BUILDING STEPPED FOOTING
- 10. BUILDING ENTRANCE AT STREET
- 11. DWELLING UNIT ENTRANCE
- 12. DWELLING UNIT PATIO / GREEN ROOF
- 13. DWELLING UNIT BALCONY
- 14. GARAGE DOOR
- 15. GREEN ROOF
- 16. EXISTING GRADE



BUILDING ISOMETRIC



GRADING ISOMETRIC



BUILDING SECTION

BUILDING CIRCULATION

A central circulation corridor bisects each building with an incline elevator that travels the surface of the of slope, flanked on each side with a staircase. The incline elevator mitigates the impact to the hillside by place its structure on the surface rather than vertical shaft that would need to penetrate deep into the earth as required by a traditional elevator. The incline elevator will be equipped with a fully enclosed cab to protect residents from the elements and features glazing to capture the beautiful views of the city as it travels the hillside. This central circulation corridor not only provides residences a unique experience traveling to and from dwelling units but also promotes a sense of community by providing opportunities for residence to interact whether riding the incline elevator or traversing the stairs.

KEYNOTES

- 1. INCLINE ELEVATOR (TRAM) CAB WITH GLASS ENCLOSURE
- 2. INCLINE ELEVATOR TRACK
- 3. INCLINE ELEVATOR LANDING
- 4. LANDING CANOPY
- 5. DWELLING UNIT ENTRANCE
- 6. STAIRWAY
- 7. DWELLING UNIT SIGNAGE
- 8. PLANTER



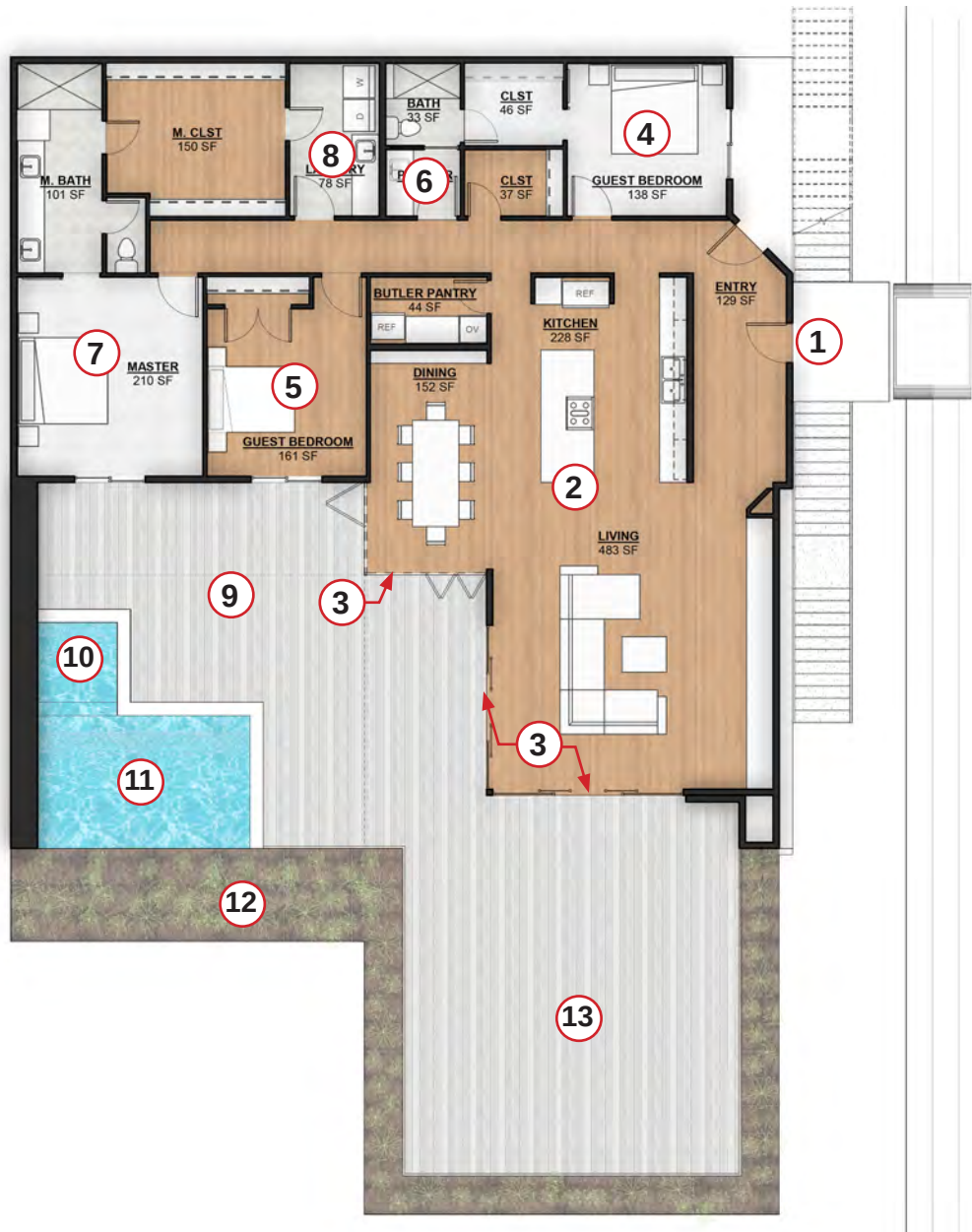


BUILDING ENTRANCE

Located at the base of the tram is a grand, open-air, building entrance featuring curtain walls for optimal transparency and looming shed roof that contributes to the high design of the facility. This provides a clear entry point for visitors and a central location for gathering. Street level also consists of eight private garages entrances that are individually designated to each unit.

KEYNOTES

1. BUILDING ENTRANCE WITH STOREFRONT GLAZING SYSTEM FOR HIGH LEVEL OF TRANSPARENCY INTO THE BUILDING
2. BUILDING SIGNAGE WITH EXTRUDED LETTERING
3. COVERED ENTRY WITH CANTED COLUMNS
4. GARAGE DOORS WITH INTEGRAL SIGNAGE AND MODERN MATERIALS
5. DRIVEWAY WITH PERMEABLE PAVING



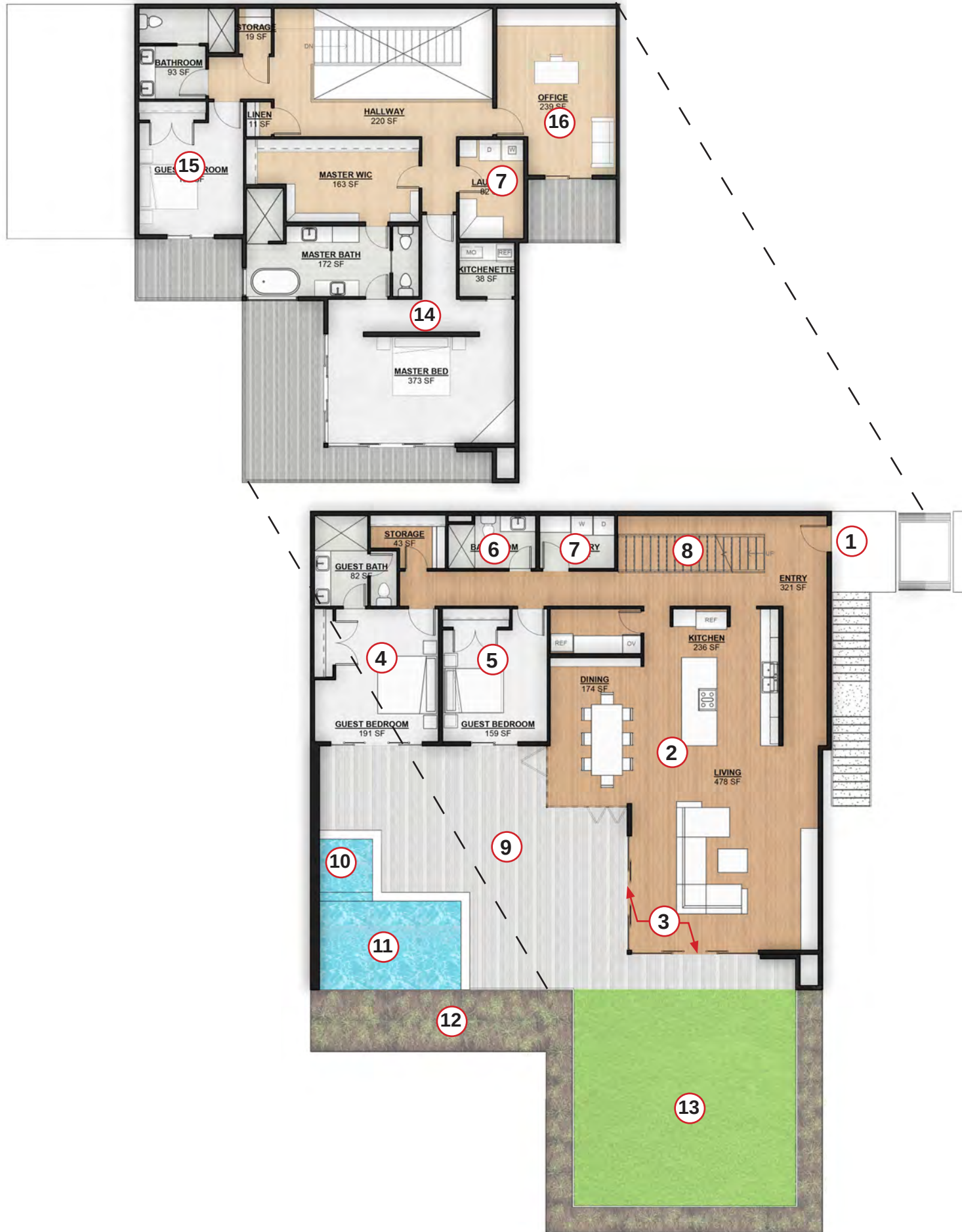
STANDARD FLOOR PLAN

Each building consists of six standard plan condominiums with two unit per level. The standard unit is designed to provide a luxury lifestyle that blurs the boundary of indoor and outdoor living. The three-bedroom, two-bath unit features communal areas an open floor plan that expand out to the outdoors with large operable doors. The outdoor patio wraps the perimeter of the living quarters and provide a variety of covered and open spaces. Each unit includes outdoor space that features a yard, spa, and pool with infinity edge. The orientation of the condominiums restricts sightlines from units above and below to provide privacy.

KEYNOTES

1. ENTRANCE & TRAM LANDING
2. OPEN PLAN KITCHEN, DINING & LIVING ROOM
3. OPERABLE WALLS
4. GUEST SUITE WITH PRIVATE PATIO
5. GUEST BEDROOM WITH PATIO ACCESS
6. BATHROOM
7. MASTER SUITE WITH PATIO ACCESS
8. LAUNDRY
9. OUTDOOR PATIO WITH CUSTOMIZABLE FEATURES
10. SPA
11. POOL WITH INFINITY EDGE
12. PLANTER
13. GREEN SPACE





PENTHOUSE FLOOR PLAN

There are two-penthouse units that make up the top floors of each building. These two-story units are approximately 4,000 square feet and provide an exceptional living experience. The lower-level features spacious communal areas that open to the outdoor patio through large operable walls, two guest bedrooms and expansive outdoor area that offer a variety of functions. The upper level features a grand master suite with private balcony, a guest bedroom and multipurpose room that hovers over the top of the tram.

KEYNOTES

1. ENTRANCE & TRAM LANDING
2. OPEN PLAN KITCHEN, DINING & LIVING ROOM
3. OPERABLE WALLS
4. GUEST SUITE WITH PATIO ACCESS
5. GUEST BEDROOM WITH PATIO ACCESS
6. BATHROOM
7. LAUNDRY
8. STAIRCASE
9. OUTDOOR PATIO WITH CUSTOMIZABLE FEATURES
10. SPA
11. POOL WITH INFINITY EDGE
12. PLANTER
13. GREEN SPACE
14. MASTER SUITE WITH PRIVATE BALCONY
15. GUEST BEDROOM WITH PRIVATE BALCONY
16. FLEX SPACE WITH PRIVATE BALCONY



SUMMARY

In conclusion, SkyHoûs will serve the surrounding neighborhoods and the Richland community by providing a multifamily facility that serves a unique niche in the market, contributes to the goals of diversifying housing types, increases public open space and pedestrian connectivity, expands vehicular circulation and a building aesthetic that

enhance the areas design vernacular. This is a unique project is to the area and as the development of Little Badger continues, the SkyHoûs development brings value to the community and is conducive to the City's comprehensive plan.

APPENDIX | SEPA CHECKLIST

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

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

Instructions for applicants:

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

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

Instructions for Lead Agencies:

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

Use of checklist for nonproject proposals:

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

A. Background [\[HELP\]](#)

1. Name of proposed project, if applicable:
Meadow Hills Phase 3 Multifamily Development Skyhous
2. Name of applicant:
TMT Homes NW, LLC - Nora Wolf

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

4001 Kennedy Road Suite #13, West Richland, WA 99353. (509) 627-0743

4. Date checklist prepared:

February 24, 2021

5. Agency requesting checklist:

City of Richland

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

Construction of infrastructure and first building to begin spring 2022 and remaining buildings to be constructed in subsequent phases with completion estimated in 2025

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

None

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

None

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

No

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

None

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.)

Development 10.24 acres with construction of six individual 8-unit multifamily buildings on the south portion of the lot and the north 5.76 acres to be open public space

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.

Parcel ID: 135983000010002 & 135984060003022

Legal Description: Section 35 Township 9 Range 28. THAT PORTION OF THE SOUTH HALF OF SECTION 35, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M. BENTON COUNTY, WASHINGTON LYING WESTERLY OF THE KENNEWICK IRRIGATION DISTRICT BADGER EAST LATERAL AND EASTERLY AND SOUTHERLY OF THE

Rectangular shaped property located on the north face of Little Badger Mountain that stretched from the westerly boundary of the plat of Meadow Hills Phase Two and the easterly boundary of the plats of Crested Hills No. 3 and No. 10

B. Environmental Elements [\[HELP\]](#)

1. Earth [\[help\]](#)

a. General description of the site:

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

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

60%

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.

Sandy Loam

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

No

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.

Grading to primarily impact south portion of site with estimation 150,000 cy of cut and 20,000 cy of fill. All fill sourced onsite.

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)?

40%

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

None

2. Air [\[help\]](#)

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

Negligible amount as developer will implement dust control measures during construction and excavation.

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:

Typical dust control measures

3. **Water** [\[help\]](#)

a. Surface Water: [\[help\]](#)

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

No

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.

None

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

No

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

No

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

No

b. Ground Water: [\[help\]](#)

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

No

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.

Domestic sewer servicing 48 residential units

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.

Stormwater to be collected and treated on site with bioinfiltration systems

- 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:

Stormwater collection of building and streets and routed to bioinfiltration system

4. Plants [\[help\]](#)

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

___deciduous tree: alder, maple, aspen, other

___evergreen tree: fir, cedar, pine, other

__x_shrubs

__x_grass

___pasture

___crop or grain

___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?

Schrubs within the building footprint and along new roadway.

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:

The landscape design strategy will promote the growth and preservation of the native vegetation (shrub-steppe) and ecosystem. Xeriscape landscape planting immediately adjacent to the residential structures.

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

None known

5. **Animals** [\[help\]](#)

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

Examples include:

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

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

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

None

- 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.

No

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

Approximately 57% of the parcel to be designated for public as natural open space.

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

None

6. **Energy and Natural Resources** [\[help\]](#)

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

Electric and natural gas for typical residential use.

- 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?

List other proposed measures to reduce or control energy impacts, if any:

Wastewater management

Green roofs

7. **Environmental Health** [\[help\]](#)

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

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)?

None

- 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.

Typical residential construction during working hours.

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

None

8. Land and Shoreline Use [\[help\]](#)

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

Currently undeveloped land surrounded by low density residential

- 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-1-12 - Single Family Residential

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

LDR - Low Density Residential

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

None

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

Yes. Geological Hazards

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

±75-100

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

None

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

None

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

Proposed use is high density residential.

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

None

9. Housing [\[help\]](#)

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

48 units high income

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

None

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

Not applicable

10. Aesthetics [\[help\]](#)

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

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

None

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

Not applicable

11. Light and Glare [\[help\]](#)

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

Residential Lighting. Dusk to 10pm

- 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?

No

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

Dark sky exterior lighting to be implemented

12. Recreation [\[help\]](#)

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

Open public space to the north of the parcel and neighborhood park to the south.

- 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:

Public open space proposed on the north portion of the site and a staircase that bisects the property to connect the open public space south of the property to the proposed north public open space.

13. *Historic and cultural preservation* [\[help\]](#)

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

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.

None

- 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.

None

- 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* [\[help\]](#)

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

Meadow Hills Drive

- 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?

No. ±1 mile

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

144 residential parking spaces to be provided. Shared public and residential parallel parking along north side of Meadow Hills Drive. ±200 spaces.

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

The project includes a new road the will infill the missing connection of Meadow Hills drive.

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

Proposed to be private and gated on the east and west boundary lines.

- 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?

Typical residential use for 48 families.

- 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:

Yes, gates expected to reduce speeds of vehicles

15. Public Services [\[help\]](#)

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

Yes. Typical increase by residential growth

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

None

16. Utilities [\[help\]](#)

- a. Circle utilities currently available at the site:

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

- 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.

Electricity: BPUD

Gas: Cascade natural gas

Irrigation: Badger mountain irrigation district

Sewer: City of Richland

Refuse Service: City of Richland

C. Signature [\[HELP\]](#)

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

Signature: _____

Name of signee Kyle Lepper

Position and Agency/Organization Architect / Wave Design Group

Date Submitted: 03/01/21

D. Supplemental sheet for nonproject actions [\[HELP\]](#)

(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?

Proposed measures to avoid or reduce such increases are:

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

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?

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?

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:

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:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

APPENDIX | GEOTECHNICAL REPORT

**COLUMBIA ENGINEERS - AUGUST 4, 2011
DWR CONSULTANTS REPORT - NOVEMBER 12, 1998**



Columbia Engineers & Constructors, LLC

August 4, 2011

TMT Homes NW, LLC
8608 W. Clearwater Pl.
Kennewick, WA 99336

Attention: Tony Tahvalli, President

Reference: Black, M.T., *Limited Geotechnical and Engineering Geology Investigation, Meadow Hills Development, Richland, WA*, DWR Consultants, Inc., 9/12/98.

Dear Mr. Tahvalli:

Introduction

This letter report updates and amends the referenced report above. Since 1998, two substantial changes have occurred relative to siting and constructing residences as follows:

1. The Kennewick Irrigation District, on occasion, has required slope stability analysis to determine slide impacts to their canal system.
2. The 1997 Uniform Building Code has been replaced by the 2009 international building and residential codes.

The area of development (Phase 3) remains unchanged, but the nature of the development has changed from individual residences to multi-story condominiums (see attached).

Scope of Work

Determine the validity of the referenced report, provide amendments or augmentation, and determine if further recommendations are required for the development per the attached sketch.

Review

We reviewed the entire report, including the data offered by 14 test pits. These data remain valid. A site visit was also performed to review the area and refresh the 1998 perspective. Furthermore, we reviewed the latest geologic mapping data per Reidel¹. Both Reidel and Fecht accompanied me during the construction of the test pits. The clay layer, with slickensides in Test Pit No. 13 did demonstrate not only a clay layer but a moving fault line. Both Messrs. Reidel and Fecht concluded the movement was not recent. However, it does represent a weak zone in the area and should be considered. The mapped fault occurs at the base of the topography to the north. The slickensided indicates either a splay fault or anticline movement at the rate of about 1 meter every 1 million years.

It is our understanding that the stormwater is to be collected and piped off-site to a lower elevation location.

Findings

We judge that the issues with current Code requirements and the Kennewick Irrigation District can be remedied with the following straightforward recommendations:

1. Provide a plot plan of the site placed on a 2 ft. contour map of the entire Phase 3 area. Furthermore, the proposed location of each condominium should be staked by a surveyor with at least one reference elevation hub.
2. Construct geotechnical boreholes to the basalt layer plus 20 ft. in the area of each condominium and at least to boreholes down gradient to provide accurate lithology (layer sequence and depth). This work may require some cat grading for drill rig access.
3. Prepare recommendations for deep foundations (e.g. micropiles and grade beams) for the condominiums.
4. In addition to stormwater diverted off-site, consider placing an under-drain ,adjacent the water supply line, to drain off of the slope area in the event of

¹ Reidel, S.P, and Fecht, K.R., *Geologic Map of the Richland 1:100,000 Quadrangle, Richland, Washington*, Washington Department of Natural Resources, June 1994.

a water line leak. This would serve to substantially mitigate undetected water saturation of the slope.

5. Provide low water or Xeroscape landscaping.

Limitations

It is important that you understand the limitations of our work and this report. The recommendations and conclusions documented in this report have been prepared for specific application to your project based on the scope, budget, and schedule constraints. Further, these recommendations and conclusions have been developed in a manner consistent with the level of care and skill normally exercised by members of the geotechnical engineering profession.

This report is prepared for the use of the CLIENT, design and construction professionals serving the CLIENT, and appropriate regulatory agencies. Columbia Engineers and Constructors, LLC assumes no liability except to the CLIENT and this report remains the property of Columbia Engineers and Constructors, LLC Use of this report by third parties, without our written authorization, is prohibited.

Please contact our office should you have questions or comments, and thank you for your confidence in Columbia Engineers and Constructors, LLC

Respectfully Yours,



Michael Black, P.E.

Columbia Engineers and Constructors, LLC

LIMITED GEOTECHNICAL and ENGINEERING GEOLOGY INVESTIGATION
Meadow Hills Development, Richland Washington



incorporated

(509) 545-0181, P.O. BOX 2188, PASCO, WA 99302

Prepared for:

Tony Tahvilli
TMT Construction, Inc.
8390 Gage Blvd., Ste. 201
Kennewick, WA 99336

Prepared by:
Michael Black, P.E.
DWR CONSULTANTS, Inc.
Pasco, Washington



November 12, 1998

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APPENDIX - Specifications and Field Data

1.0 INTRODUCTION AND BACKGROUND

The organization of this report provides; (1) this section presenting general information about the site and proposed construction (2) the Scope of Work performed for this project, (3) a summary of our findings, (4) the investigation that provides data for analysis, (5) an analysis of the data against the project requirements, (6) recommendations and conclusions, and (7) the limitations of this report and our work.

The enclosed project drawings show the road construction right-of-way and approximately 50 lots for development. The following page contains "TMT-Meadow Hills Development Map" showing the vicinity map for the project.

The project continues an existing road and development currently located to the east. The east ½ of the project is supported by a quasi-developed area supported by a gravel extension of the paved Meadow Hills Drive and two City of Richland water tanks. The west ½ of the project requires extending the roadway through a steep relief area (20 to 60% slopes).

2.0 SCOPE OF WORK

Provide (1) an engineering geology investigation , and (2) a global geotechnical investigation to determine principally the stability and construction specifications for the roadway extension. Also, formulate general recommendations for residential site development. Within the context of roadway development (1) ascertain global and base stability requirements, (2) provide storm water runoff and containment recommendations , (3) provide construction recommendations, (4) provide cut and fill stability recommendations, and (5) provide pavement section recommendations. With respect to the residential site development, provide general foundation support recommendations.

3.0 SUMMARY

This section provides our salient findings without qualification of the data base, depth or breadth of the analysis, or design assumptions. The reader is cautioned to examine the remainder of the report prior to making decisions.

In general, the roadway construction will generally encounter fine sand and silts or coarse gravel. For residential site development, the project is broken into three areas for discussion as follows:

- Area 1 contains those lots on the south side of the existing roadway (Block 1 lots) on sheet 1 of the drawings. This area contains some very loose to loose colluvium or slide debris from the steep relief to the south. Foundation bearing soils will be over 8 ft. deep.
- Area 2 contains blocks 2 and 3 lots to the north of the existing roadway. The foundation bearing soils are accessible at depths of no more than 3 ft. deep.
- Area 3 contains the entire steep sloped area to the west of the existing roadway. The lots to the south required filled areas and the lots to the north require cut areas. Bio-engineered slope protection is required for each slope or cut face. (continued page 3)

TMT-Meadow Hills Development Location Map

Mag 12.00

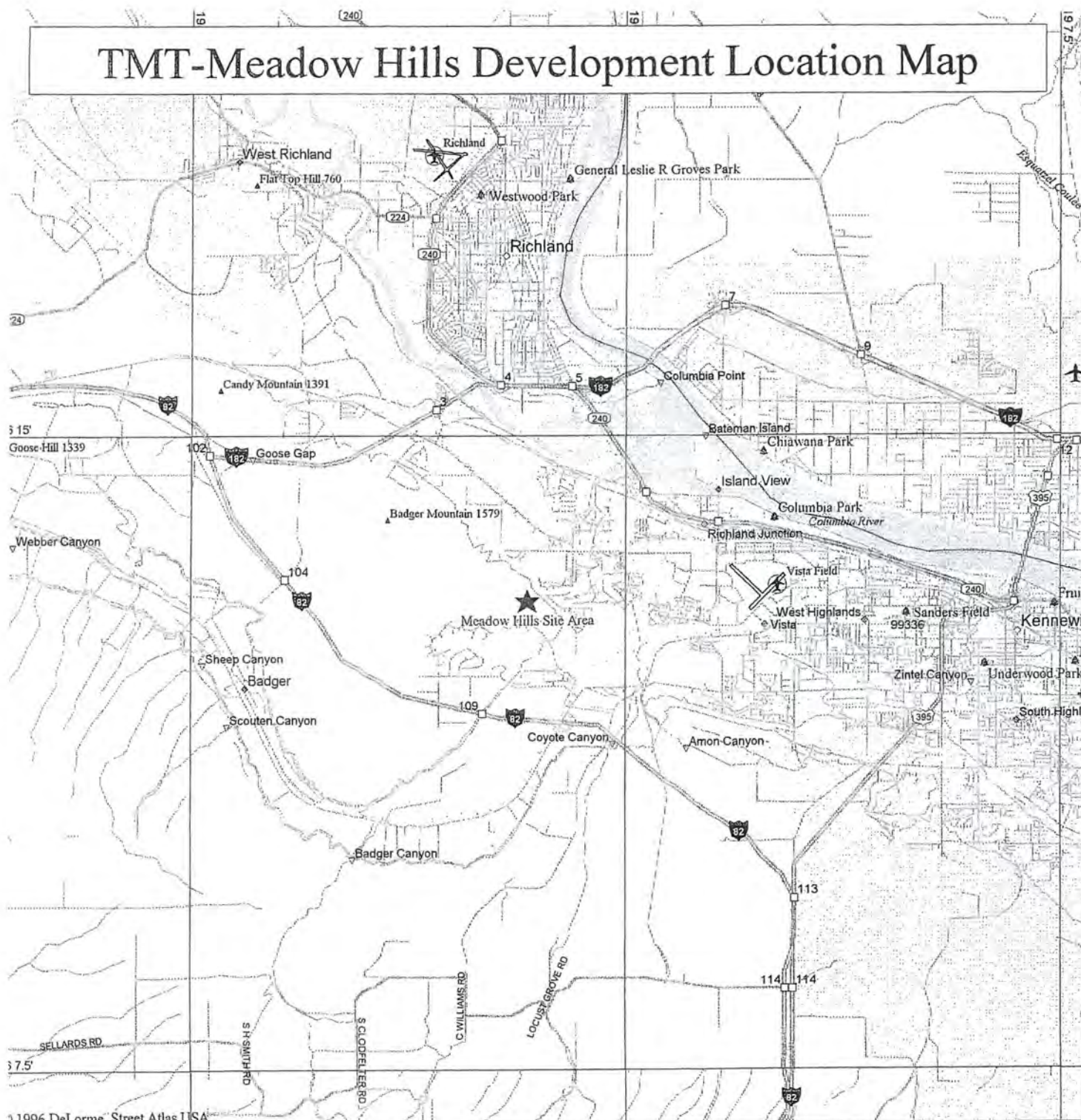
Wed Nov 11 14:36 1998

Scale 1:125,000 (at center)

2 Miles

2 KM

- Local Road
- Major Connector
- State Route
- Primary State Route
- Trail
- Interstate/Limited Access
- Utility/Pipe
- Railroad
- Small Town
- Large City
- Airfield
- Summit
- Geographic Feature
- Hospital
- Park/Reservation
- Sched Service Airport
- Locale
- Public Airport
- Exit
- Cemetery
- County Boundary
- Population Center
- Land
- Water
- Woodland
- River/Canal
- Intermittent River



This report also contains recommendations for two ancillary, but very important, issues as follows:

1. Water infiltration to the existing lots via storm water runoff and irrigation must be tightly controlled both on, and up-gradient of the project site.
2. For the homes exposed to steep slopes above the home (e.g. Block 1), a barrier is required to ensure that cobbles and boulders rolling down the slope do not expose the homes or people to danger.

4.0 INVESTIGATION

This section presents the factual data used to perform the analysis supporting our conclusions and recommendations. The only judgements presented are those that we conclude would result in near or complete agreement with other professionals working in the field. For example, the designation of a soil layer as "silt with fine sand" would not be an apparent fact to the layman, but would reach consensus among most professionals in geotechnical engineering.

4.1 Site Conditions

The "areas" described above in the "Summary" section of this report describe the general topography of the site. General to the entire Southeastern Washington area is the fact that most of our soils were deposited 10-14 thousand years ago with the basalt rock below formed over 10 million years ago. Throughout most of the last 5 thousand years, or so, the climate has been and continues to be *SEMI-ARID*. Rainfall averaging less than 10 inches per year does not allow the soils to alter considerably. Once concentrated storm water or irrigation is introduced, the soil may receive in excess of 120 inches per year of water which may substantially alter its character. This issue is discussed further in the geohydrology and analysis sections.

This entire 'uplifted' mountain contains numerous faults including the by-products of fault gouge and clays.

4.2 Subsurface Investigation

We use the Burmister Soil Classification system which is detailed in Appendix A along with definitions of geological and engineering terms used in this report. The Burmister system provides additional soil description beyond the more commonly used Unified Soil Classification System (UCS) used by the engineering profession. Furthermore, the Burmister system is more "user friendly" for clients and contractors, and the Burmister table shows the UCS classification corresponding to the Burmister system.

Figure 1 contains the areas of estimated fault zones with areas marking former slide areas. All slide areas appear to be stable. Appendix A contains our test pit logs along with a topographic map with our test pit locations (Figure 2).

In a very general way the soil lithology (layers) contain the following generalized descriptions.

- Top layer- loose to compact fine sand and silt.
- Middle layer- loose to dense coarse, angular gravel.
- Bottom Layer- basalt bedrock.

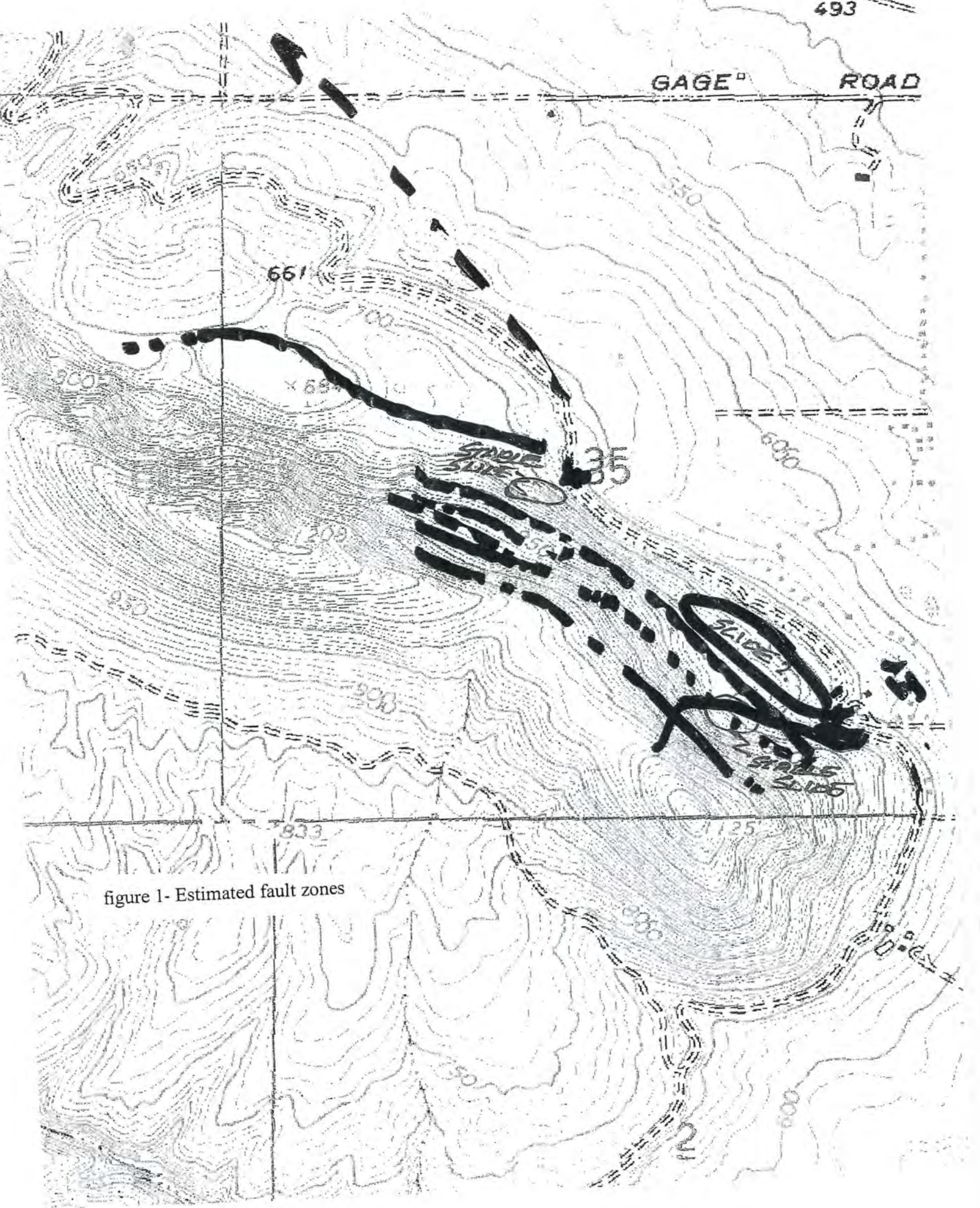


figure 1- Estimated fault zones

4.3 Laboratory Testing

The test pit logs show that a number of soil types exist across the project site. A report for an adjacent project¹ contains some applicable "Proctors" for guidance. They are as follows:

- Fine sandy silt- 101.0 @ 12.0 % moisture. This Standard Proctor (ASTM-698) may be appropriate for some areas and fills.
- Silty gravel with sand- 122.5 @ 13.0% moisture. This Standard Proctor will see much variance in grain sizes across the project and proof rolling with a Benkelman Beam will provide the most positive measurement of fill quality.

4.4 Geohydrology

We found no evidence of excessive soil moisture in any of our explorations.

5.0 ANALYSIS

This section uses the data presented in the previous section, 4.0 Investigation, to support our conclusions and recommendations. The method used for our analysis are presented along with the data source. The sub-sections necessarily address specific tasks necessary to design and construct the project.

5.1 Site Grading

Most of the site grading consists of removing the upper 12 to 18 inches of vegetative cover and disposal. Area 3 (see drawing) requires work on steep slopes requiring initial "dozer" work.

5.2 Foundations

Area 1 contains areas of loose slide debris that may not be stable when loaded or subjected to moisture. Area 2 contains relatively stable gravel and silts that should require only an overview of foundation construction activities. Area 3 contains steep slopes with very loose to loose topsoil, and fine sand and silt down to over 6 ft. deep. Area 3 requires careful attention to the design and construction of residences on individual lots. Since the road construction becomes part of the cut and fill operation, careful attention is needed to ensure the homes will be stable.

For scoping purposes only, we judge that the fine-grained soils should support approximately 1,500 psf, and the gravels should support approximately 2,800 psf.

5.3 Pavements

Either the City of Richland Standard Pavement Design or our recommended pavement design will suffice.

¹ Beck, Chris C., REPORT, Geotechnical Engineering Evaluation, Proposed Meadow Hills, No. 2 Subdivision, Proposed Westcliffe Subdivision, Richland Washington, HCI, January 28, 1994.

for this project.

5.4 Excavation of On-Site Soils

See section 5.1.

5.5 Storm and Irrigation water Management

Storm and irrigation water management poses a critical challenge to the success of the project. The slope analysis below considers the constructed, reinforced fill, for the down slope homes with a static water levels running down slope just under the fine sand and silt.

When the water table is eliminated, the factor of safety increases to approximately 3.0 *This clearly demonstrates the need to control the introduction of water into the soil column raises the factor of safety from imminent failure to a very conservative factor of safety of 3.0.*

5.6 Use of Native Materials for Structural Fill

Most of the native materials will serve as suitable structural fill. It is important that the gravel and fine-grained soils be blended, insofar as practicable, for maximum fill strength.

5.7 Lateral and Slope Stresses

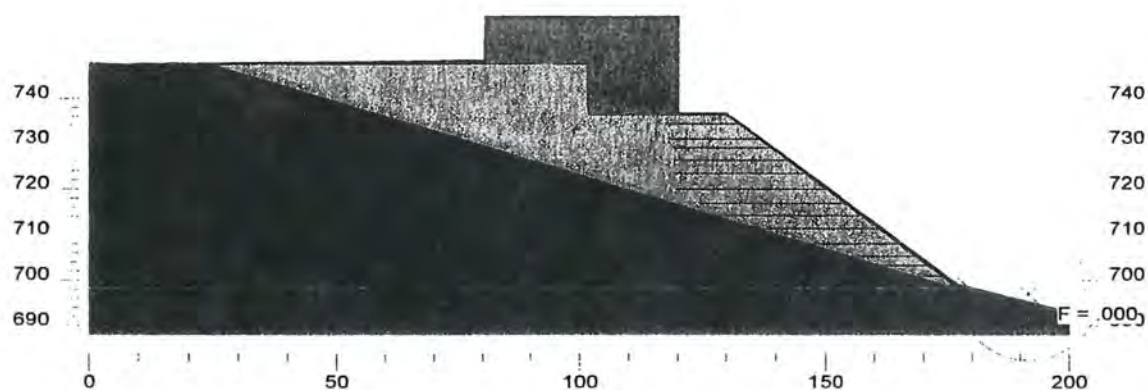
For scoping purposes only, we judge that a conservative equivalent soil pressure of 35 lbs. per cubic foot is appropriate for lateral stresses. As discussed in the previous section, the slopes require water infiltration control and soil reinforcement for the final slopes. The reinforcement serves to allow the fill slopes to maintain a 1:1 slope (100%) as opposed to a 2:1 unreinforced slope (50%).

DWR CONSULTANTS, Inc., Geotechnical Investigation
Meadow Hills, November 11, 1998

	Gammac		Phi	Piezo	Ru
	pcf	psf	deg	Surf.	
home or auto	5	1000	75	0	0
fine sand & silt	95	0	28	0	0
coarse gravel	145	0	34	1	0
bedrock	1	0	0	0	0

Seismic coefficient = .05

DWR Consultants Inc. - Pasco, WA
TMT
Meadow Hills Phase 2
Oct., 27, 1998
Lower (North) home at 32+50
Home is 70 ft. wide by 42 ft. deep



11/12/98 8:47:30 AM C:\WINDOWS\DESKTOP\MEADOW2.GSL DWR Consultants Inc. - Pasco, WA F = .000

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the data (Section 4.0) and analysis (Section 5.0) contained herein, this section presents our conclusions and recommendations.

6.1 Sub-grade Preparation

1. Remove all roots and organic material from areas planned for roads or homes down to approximately 18 inches deep.
2. The final sub-grade should be scarified to a depth of at least 4 inches, moisture conditioned and compacted with a 10,000 lb. vibratory roller for the homes. The dark brown soil layer should be compacted either by wheel rolling with a backhoe or larger piece of equipment for the roadways and sidewalks. The Geotechnical Engineer, or Civil Engineer of Record, should witness the initial process for compacting the sub-grade and approve the process or make alterations as required. This provides a "proof roll" verification as well.
3. Positive drainage away from the pavement sub-grade should be designed and constructed throughout the project.
4. Anticipate 15-25% shrinkage for fine-grained soils, and 5-10% shrinkage for gravel fill.
5. All select fill or base coarse should be compacted to at least 95% of maximum dry density per ASTM D1557. Native structural fill will generally be proof rolled and documented with a Bennkelman Beam by the Geotechnical Engineer.

6.2 Spread and Continuous (Strip) Footings

1. All footings should be placed at least 2 ft. below the lowest adjacent grade.
2. Design spread and strip footings to impart a maximum load of 1,400 psf for Area 2 residences. Specific site investigations are required for lots in Areas 1 and 3.
3. An allowable passive pressure against sides of foundation components of 270 psf per foot of depth may be used for design. Pour the foundations "neat" against the adjacent soil or provide compacted backfill in the void to fully mobilize the passive resistance. Assume the friction between the foundation base and underlying soil at 40% of the dead load.
4. For seismic design considerations, U.C. Earthquake guidance contains a static force procedure and a dynamic force procedure for design base shear calculations. I suggest using a spectral acceleration of 0.2 g spectra for soil type 3 (fig. 16-3, 1994 U.C. Code).
5. The site location in "Zone 2B" of the U.B.C. Seismic Zone Map and the character of the soils, provides

minimal opportunity for liquefaction.

6. Slab-on-grade floors may be supported on re-compacted fill materials free of debris and foreign material. Provide a firm and stable sub-grade. Over excavate and replace loose and yielding soils.
7. Provide a capillary break using at least 4 inches of free-draining (E.g... pea gravel) material. In areas sensitive to slab moisture (E.g... linoleum covered areas), provide a vapor barrier (E.g... 6 mill plastic membrane) beneath the slab. Place 2 inches of damp sand over the membrane, during construction, to protect it during construction and enhance concrete curing.

6.3 Pavements

The adequacy of the site pavements responds to the adequacy of the sub-grade. If native soil is to be used for fill under the pavement sections, the sand should be placed in maximum lifts of 8 inches and the gravel in maximum lifts of 12 inches to at least 92% of the Modified Proctor dry density. We recommend the following pavement sections:

- a. *Lightly loaded areas (parking and driveways):*
 1. Two inches of Asphalt Concrete (AC) over 4 inches of Crushed Rock Base (CRB) or;
 2. Two inches of AC over three inches of Asphalt Treated Base (ATB) material.
- b. *Heavily Loaded Areas (e.g. bus traffic)*
 1. Three inches of AC over 6 inches of CRB, or
 2. Three inches of AC over 4.5 inches of ATB.
- c. As an alternative, the City of Richland Standard Pavement sections may be used for roadways.

6.4 Excavation of On-Site Soils

1. A maximum 1.5 horizontal to 1 vertical slope is recommended for all unsupported sidewalls.
2. Any trenching or excavations over 4 ft. deep requires either the previously mentioned side slopes or shore/brace the excavation.

The above information on slope protection is based on OSHA regulations and is provided entirely as a service to our CLIENT. Under no circumstances should this information be interpreted to mean that DWR CONSULTANTS, Inc. assumes responsibility for construction site safety or the Contractor's activities; such responsibility is not being implied and should not be inferred.

6.5 Storm and Irrigation Water Management

The control of storm and irrigation water to the soil column presents a critical feature to the success of this

development. The following recommendations are offered:

- a. Design all storm water management systems to discharge down gradient and at least 50 ft. below the toe of any fill or slopes associated with Area 1 or 3 developments.
- b. Ensure that any up gradient developments by others or future projects maintain the same attention to mitigation of water infiltration to the soil column.
- c. Install the bio-engineered vegetation on all slope faces to add stability and assist with evapotranspiration.
- d. As a general requirement, use only "drip or bubbler" systems to irrigate the slopes, lawns and other project vegetation.
- e. Any proposed pools or ponds should be designed by a Registered Professional Engineer to mitigate the opportunity for the introduction of water to the soil column.

6.6 Structural Fill

Use a two inch minus pit run gravel fill or 3/4 minus crushed rock compacted to at least 95% of maximum dry density per the Modified Proctor method. Figure 4 presents the principal criteria for fill under floor slabs or pavement areas and non-load supporting areas. Although the figure presents backfill for trenches, it is applicable to general fill areas as well.

6.7 Lateral Earth Pressure

Use an equivalent fluid pressure of 35 pcf for lateral pressure on "in facility" retaining walls. For slope and cut faces, use the geotextile and vegetative reinforcement prescribed in Appendix A.

6.8 General

Two additional elements of geotechnical engineering service provide important support to the successful completion of this project:

1. **Consultation with design professionals during the design phase.** This ensures incorporation of the intent of our recommendations into design decisions related to the project and that any changes in the design concept properly consider the geotechnical parameters.
2. **Observation and monitoring during construction.** An engineering technician should be retained to observe the earthwork phases of this project, including site grading and foundation excavations to determine that subsurface conditions are compatible with those used in our analysis and design. During site grading, placement of fill should be observed and tested to confirm that proper compaction has been achieved.

7.0 LIMITATIONS

This geotechnical investigation contains limitations. These limitations are discussed in the following attachment *Important Information about your GEOTECHNICAL ENGINEERING REPORT*. We suggest that you carefully read the attachment prior to reaching project design and construction decisions.

In performing our professional services, we use recognized practices exercised under similar circumstances by members of our profession. No warranty, expressed or implied, is made or intended. Our conclusions and recommendations, will be developed from our investigation and will represent this firm's understanding of the project in concurrence with generally accepted practice. If new relevant information becomes available during the course or after our investigation, we require the opportunity to review the information and revise our scope and investigation as appropriate.

This report is prepared for the use of the CLIENT, design and construction professionals serving the CLIENT, and appropriate regulatory agencies. DWR Consultants, Inc. assumes no liability except to the CLIENT. Use of this report by third parties, without our written authorization, is prohibited.

*DWR CONSULTANTS, Inc., Geotechnical Investigation
Meadow Hills, November 11, 1998*

APPENDIX A-SPECIFICATION AND FIELD DATA

*DWR CONSULTANTS, Inc., Geotechnical Investigation
Meadow Hills, November 11, 1998*

**Specifications for Cut and Fill
Meadow Hill Project, Richland Washington
Residential Pad Development**

November 10, 1998

Meadow Hills, Residential Pad Development, November 10, 1998

1.0 References

- Test Pit Logs (attached)
- Figure 1- Sections for Pad Development, November 10, 1998
- Test Pit Locations (2 drawings)- October 29, 1998
- Cut and Fill Quantity Worksheets (2 each)
- Down Slope Reinforcement Schedule

2.0 Performance

2.1 Clearing and grubbing

Strip the top 18 inches of all surface soil (fine-grained soils). The stripped soil may be used for compacted fill if free of organic debris (roots, etc.)

2.2 Key

Install a "key" at the toe of each fill slope consisting of compacted gravel with fine sand and silt.

2.3 Cut and fill

Cut and fill the residential pads to the approximate dimensions shown on fig. 1, and the test pit locations drawing sheet 2 of 2. Actual dimensions will be determined by survey stakes shown at the site.

In general, the fine sand and silt overlying the coarse gravel or basalt bedrock is very loose to loose density. Therefore is necessary to strip, moisture condition, and compact the fine-grained fine sand and silt overlying the gravel. It is intended that excavated gravel be blended, insofar as practicable, with the fine grained soils. This is particularly important in the lower elevation portions of the downslope fill areas.

Since gravel ranges from coarse to cobbles with some boulders, common density (Proctor) measurements are not practical for this project. We intend to use a Benkelman Beam to measure the deflection afforded by a fully loaded dump truck on the fill. In general, we estimate that a fully loaded, 3 cu. yard loader or fully loaded 10 ton truck may be used to compact the fill in no more that 1 ft. high lifts with moisture conditioning. We also estimate that a 10,000 lb. vibratory roller may be used to compact the gravel and fine-grained mix in 24 inch lifts and 1 ft. lifts for the fine grained material. We estimate 8-10 passes with either the loaded truck or the vibratory roller.

2.4 Slope face Stabilization

2.4.1 Cut faces- Provide vegetative grass cover across the entire cut face, and brush or tree plants capable of developing a root system at least 8 ft. deep in the fine-grained soils and gravel on no more that 4 ft. centers. Install a "drip or bubbler" irrigation system to establish the planting.

2.4.2 Fill faces- Provide grass cover across all fill faces with irrigation from a drip or bubbler system.

Meadow Hills, Residential Pad Development, November 10, 1998

2.4.3 Review- Present the planting schedule to the Engineer for review.

3.0 Payment

- 3.1 Cut and fill operations- Payment will be based on the actual quantities cut or filled. Use the attached estimates for bid preparation. Your bid should be based on Cut per cubic yard, and IN-PLACE fill per cubic yard. Quantities will be determined by a Registered Land Surveyor.
- 3.2 Vegetative Slope Stabilization- Payment will be based on 100 square foot increments of cut or fill faces. Bid on fill and cut slopes separately.

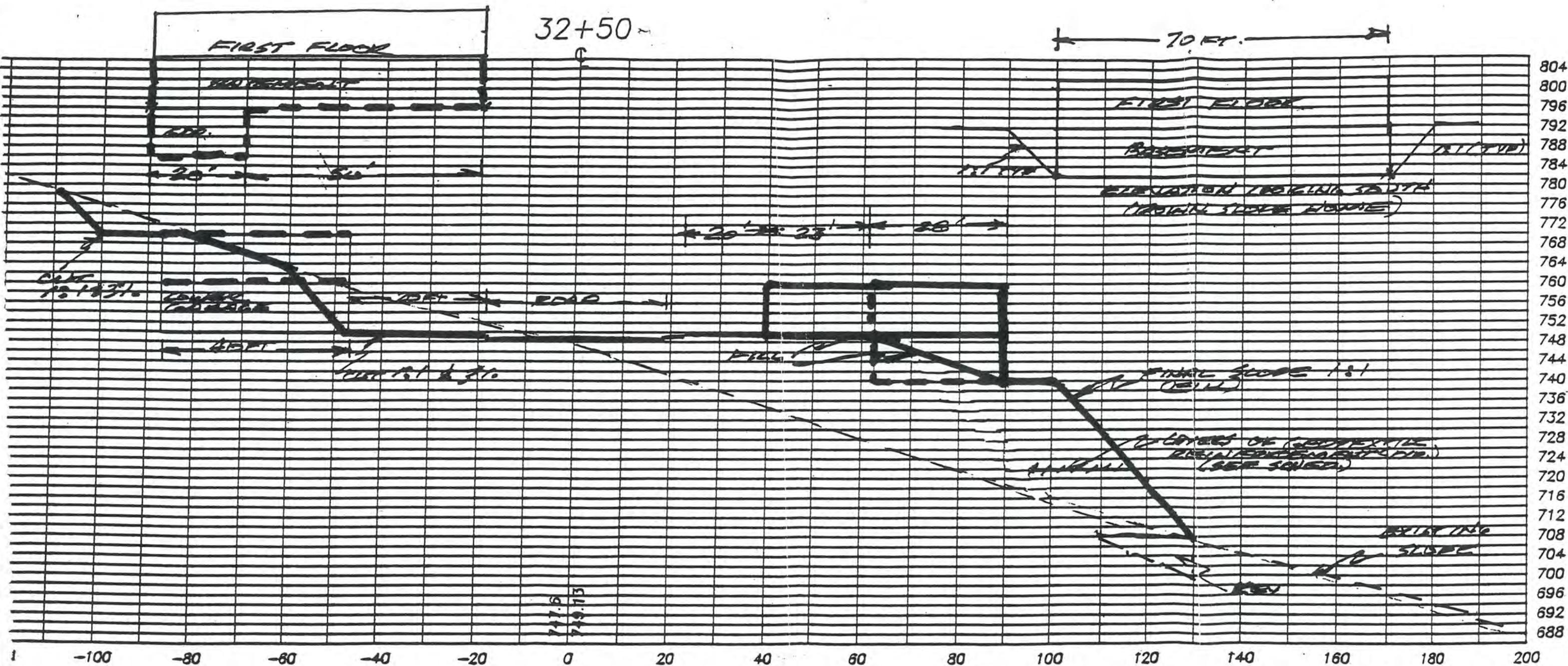
Downslope Geotextile Reinforcement Schedule

Layer No.	Ht. Above Key (ft.)	Length (ft.) from slope face (min.)
1	0.0	14.0
2	2.0	10.0
3	4.0	15.0
4	6.0	20.0
5	9.0	21.0
6	12.0	25.0
7	15.0	30.0
8	17.5	30.0
9	20.0	30.0
10	23.0	26.0
11	26.0	24.0
12	29.0	20.0
13 (as reqd.)	32.0	18.0
14 (as reqd.)	35.0	16.0

Notes:

3. Use AMOCO 2044 geotextile or approved equivalent by Engineer.
4. Place the machine direction (high strength) of the geotextile parallel with slope (parallel with roll width)
5. Lap all joints by at least 2 ft.

ELEVATION LOOKING SOUTH - UP SLOPE HOME



SCALE 1/4" = 20 FT
DWE CONSULTANTS, INC
545-0181





(5 0 9) 5 4 5 - 0 1 8 1 , P . O . B O X 2 1 8 8 , P A S C O , W A 9 9 3 0 2

September 3, 1998

Jay Marlow, P.E.
J-U-B ENGINEERS, Inc.
2810 W. Clearwater Ave. Ste. 201
Kennewick, Washington 99336

Subject: Summary findings for construction of a roadway extension for Meadow Hills Drive

Dear Jay:

This summary letter provides our findings supporting the subject project. This summary letter will be followed during the week of September 14, 1998 by a complete report.

- Most of the near surface soil in the current roadway and the proposed roadway contains very fine to fine grained soils which are hydro-sensitive and loose their shear strength when wet. As we discussed, we need to avoid introducing water into the soil column.
- We found no soils that could not be excavated with a light trackhoe to at least 10 ft. deep with the exception of Test Pit 11 which could not be excavated beyond 8 ft. deep.
- The existing roadway demonstrates stability and should not require any unusual preparation beyond City of Richland roadway specifications.
- The roadway will encounter basalt as shown on our test pit logs. Most of the Basalt is associated with the Badger Mountain Fault and is broken up and in some cases altered to clay gouge material.
- The surface fine sand and silts are loose and lack appreciable stability. We recommend the following for preparation of fine-grained soils forming the base for the roadway:
 1. Saturate the soil down to approximately 3 ft. deep and roll with either a sheepsfoot roller or a heavy wheel load vehicle (e.g. loaded dump truck)
 2. Place a geotextile layer (Amoco 2016 or approved equivalent) over the soil and bring the common City of Richland CRB over the geofabric.
- The fine grained soils overlying the basalt in the new roadway section exhibit accelerated surface creep and offer marginal stability. For any down gradient slopes for roadway construction, incorporate the following:
 1. Install a "key" at least 7 ft. wide down into the bedrock or gravel layer at the toe of the proposed slope.
 2. Fill the key with compacted soil, and install a Amoco geotextile layer at no more than 3 vertical foot increments.
 3. Continue installing the compacted soil and geotextile until road grade is achieved.
- Incorporate a cut slope of no more than 1 horizontal to 2 vertical for intact basalt; and 1

horizontal to 1 vertical for the fine-grained sand and gravel layers. These cut slope will be augmented by a bio-engineered slope stability system after construction which will be included in our final report.

- Compaction of the soils, on this project, will require a different approach to normal compaction monitoring activities as follows:
 1. Blend the fine-grained soils with available gravel insofar as practicable. For this approach, we will establish a compaction method which would normally require 6 passes with a heavy vibratory roller over moisture conditioned soil. We will principally use proof rolls to determine the acceptability of the methods since most of the gravel exceed Proctor maximum density testing limits. I expect lifts of 12 to 18 inches for this material.
 2. For fine-grained soils we will require either a sheepsfoot or heavy wheel roll compaction method. We expect that the Maximum Density (Standard Proctor) should be near 102 pcf at 12% moisture. We recommend using a minimum compaction of 92% of Standard Proctor and allowing no more than 10% moisture during compaction.
- For lightly loaded areas we recommend using two inches of Asphalt concrete over four inches of crushed rock base.

I will return to the office on September 14, 1998. Please contact me if you have any question or comments.

Respectfully Yours,

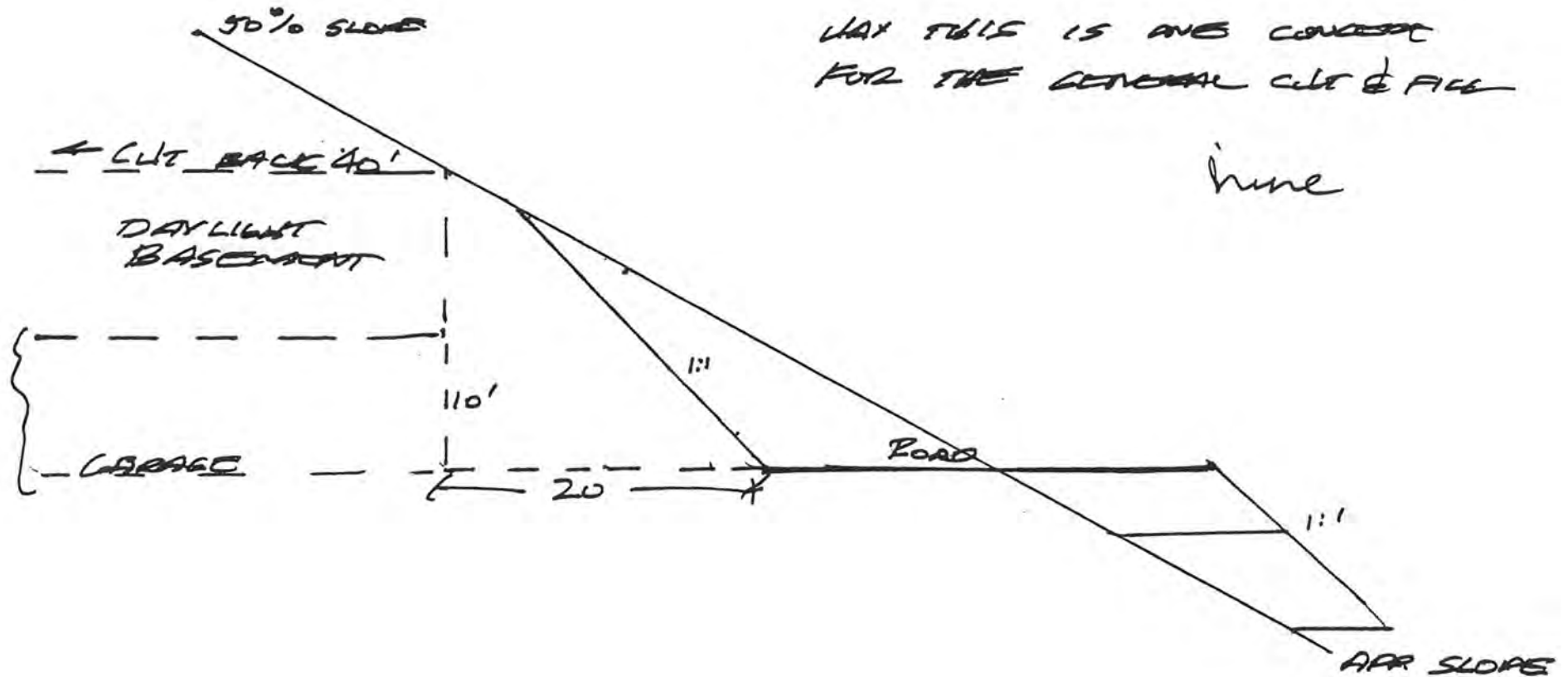


Michael Black, P.E., President
DWR CONSULTANTS, Inc.

Cc. Tony Tahvilli

STATION	AREAS		VOLUMES		CUMULATIVE VOLUMES	
	Square Feet		Cubic Yards		Cubic Yards	
	CUT	FILL	CUT	FILL	CUT	FILL
32+50	260.54	1202.91				
33+00	471.52	951.49	677.84	1994.81	677.84	1994.81
33+50	667.63	818.38	1054.77	1638.77	1732.61	3633.58
34+00	803.28	767.20	1361.96	1468.13	3094.57	5101.71
34+50	900.75	722.27	1577.81	1379.13	4672.38	6480.84
35+00	1041.40	644.21	1798.29	1265.25	6470.67	7746.10
35+50	1061.85	729.09	1947.46	1271.57	8418.12	9017.67
36+00	990.10	878.87	1899.96	1488.86	10318.08	10506.53
36+50	1027.39	978.04	1868.05	1719.36	12186.12	12225.89
37+00	1158.52	1027.41	2023.99	1856.90	14210.11	14082.79
37+50	1349.96	1047.99	2322.66	1921.67	16532.77	16004.46
38+00	1388.34	1209.70	2535.46	2090.45	19068.23	18094.91
38+50	1418.54	1442.18	2598.96	2455.45	21667.19	20550.36
39+00	1423.71	1657.46	2631.71	2870.04	24298.90	23420.39
39+50	1428.63	1697.37	2641.06	3106.32	26939.96	26526.72
40+00	1564.40	1708.91	2771.32	3153.96	29711.28	29680.68
40+50	1654.04	1666.05	2980.04	3124.96	32691.31	32805.64
41+00	1565.37	1629.85	2980.93	3051.76	35672.25	35857.40
41+50	1413.75	1603.75	2758.44	2994.08	38430.69	38851.47
42+00	1339.18	1623.94	2549.01	2988.61	40979.69	41840.08
42+50	1106.14	1367.06	2264.19	2769.44	43243.88	44609.53
43+00	902.42	983.22	1859.78	2176.18	45103.66	46785.71
43+50	829.63	581.48	1603.75	1448.80	46707.41	48234.51
			0.00	0.00	46707.41	48234.51

44,000 = 92.000



BURMISTER SOIL CLASSIFICATION SYSTEM

Essential Features and Comparison

Unified Soil Classification System*	Burmister Designation	Burmister Visual Criteria
Boulder	Boulder	Greater than 1 ft. along longest axis.
Cobble	Cobble	Greater than 3 in. and less than 1 ft. along longest axis.
G	Coarse Gravel (<u>c</u> G)	Upper limit size of billiard ball. Lower limit size of golf ball.
G	Medium Gravel (<u>m</u> G)	Olive or marble sized gravel.
G	Fine Gravel (<u>f</u> G)	Upper limit raisin and lower limit a BB.
S	Coarse Sand (<u>c</u> S)	Less than size of BB and greater than table salt.
S	Medium Sand (<u>m</u> S)	Table salt.
S	Fine Sand (<u>f</u> S)	Just able to distinguish individual grains with naked eye.
M,C,O & PT	Silt, clay, organic (clay) and peat.	Use dilatancy, dry strength, toughness, and test tube tests.

Burmister Descriptions

1. "and" means 35-50% by visual inspection.
2. "some" means 20-35% by visual inspection.
3. "little" means 10-20% by visual inspection.
4. "trace" means 0-10% by inspection.
5. List description in following order (1) density, (2) color, (3) underline "_" designates prominence, and (4) some shown as "-".

Consistency (fine-grained soils): very soft, soft, firm, stiff, or hard

Density (cohesionless soils): very loose, loose, compact, dense, very dense

Soil Descriptions

Structural Characteristics

Clastic- Pertaining to a rock or sediment composed principally of fragments derived from pre-existing rocks or minerals and transported some distance from their origin.

Heterogenous- Consisting of dissimilar constituents; mixed.

Homogenous- Of uniform structure.

Layered- Usually applied to cohesive soils. The thickness of individual layers varies from fractions of an inch up to several inches.

Lenses- A particular soil type exclusively different from the surrounding soils. A lense is usually small in dimension, several inches at the most, and is applied to granular soils.

Mottled- Shows the presence of spots, streaks or splotches of one or more colors in a soil mass of another predominant color. In mottled soils, the colors are not mixed and blended, but each is more or less distinct in the general ground color.

Parting- Paper-thin separation of one soil type within another. Usually applied to cohesive soils.

Pocket- An unexpected soil type of limited thickness found in a boring. Can be applied to all soil types.

Slickensided- A polished and scratched surface that results from friction along a fault plane. A slickensided surface looks like a piece of corrugated metal.

Stratified- Composed of, or arranged in, layers. Applies to granular soils. The layers are usually thicker than one inch, parallel to one another, and composed of soils visibly different from each other.

Varved- Consisting of alternate thin layers of sand, silt or clay. Each layer generally less than ½ inch in thickness. Applies to soil deposited in a glacial environment.

Geologic Description

Alluvial Soil- Any soil that has been deposited by stream transportation. Such soils usually contain some sand and rounded gravel or cobbles. The cross-section plot of the logs will show that the layers frequently thicken, thin, or pinch out.

Colluvial Soil- Soil moved by gravity (e.g. landslides, falls, flows, or creep).

Glacial Till- A non-stratified random mixture of clay, silt, sand, gravel and boulders deposited by glaciers. Alternating layers of clayey till and till containing boulders are possible.

Meadow Hills, Residential Pad Development, November 10, 1998

Lacustrine Soil- Soils formed beneath lakes or other bodies of water. Normally freshwater deposits receive this designation as saltwater deposits yield special marine designations.

Loess- A uniform aeolian (wind) deposit of silty material having an open structure and relatively high cohesion due to cementation of clay or calcareous material at grain contacts. A characteristic of loess deposits is that they display nearly vertical slopes.

Outwash- A stratified glacial deposit that is stream built as a result of the melt water carrying soil from a glacier.

Residual Soil- Soils that have formed in place due to the decomposition of rock. Shales form residual clays. Limestone forms lean brown and fat red clays. Granitic rocks form silty sand with angular sand grains.

Tephra- A collective term for all clastic materials ejected from a volcano and transported through the air. It includes volcanic dust, ash, cinders, lapilli, scoria, pumice, bombs and blocks.

Tufa- A chemical sedimentary rock composed of calcium carbonate formed by evaporation as an encrustation around the mouth of a stream, along a stream, or exceptionally as a thick concretionary deposit in a lake or along its shore.

TEST PIT LOGS

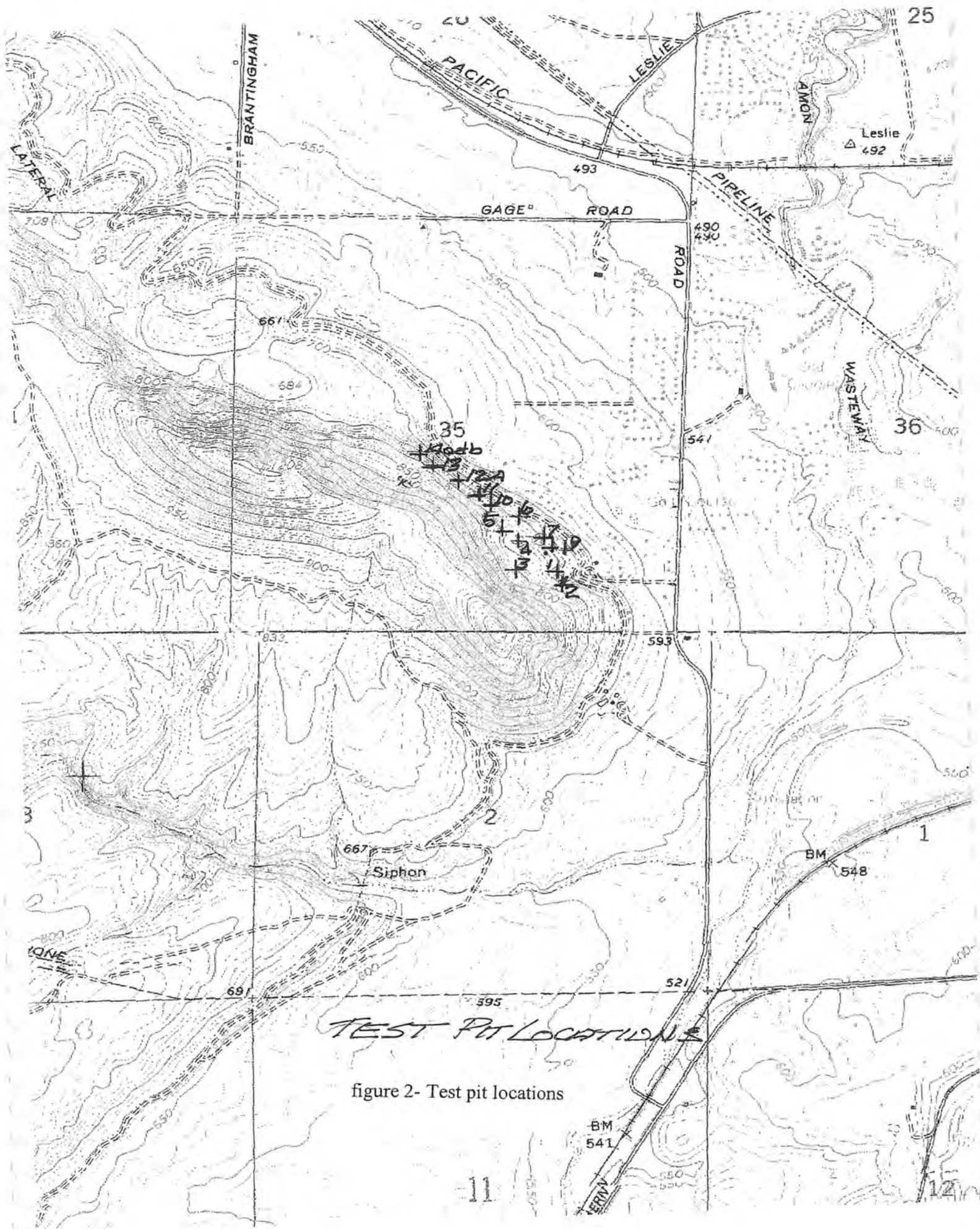


figure 2- Test pit locations

DWR CONSULTANTS, Inc.
Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 19+50, Located 120' north of center of road, Est. El.= 708

No: TP-1

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-2'	Loose to compact, 2.5Y6/3, yellowish brown, <u>Coarse</u> gravel, angular basalt pieces. Some reaction to HCL..			57/57
2-4'	Loose 2.5Y 6/3, yellowish brown fine sand. Some reaction to HCL.			
4-6'	Loose 2.5Y 6/3, yellowish brown very fine sand, some silt.			
6-8'	Very loose 2.5Y 6/3, yellowish brown very fine sand, some silt.	2		
8-10'	Compact 2.5Y 6/4 <u>fine</u> sand to medium sand, few gravel pieces, angular to sub-angular. Effervescent.			
10-12'	Compact, hard digging 2.5 6/3 yellowish brown, <u>fine</u> gravel. Reactive to HCL.			
@ 15'	Compact same as above.	15		

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X

Notes:

Meadow Hills, Residential Pad Development, November 10, 1998

DWR CONSULTANTS, Inc.
Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 21+00, Located 40' south of center of road, Est. El. = 732

No: TP-2

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-2'	Loose to compact, 6/3 yellowish brown, fine to <u>medium</u> sand.			52
2-4'	Loose, 6/3 yellowish brown, fine to <u>medium</u> sand, some silt, some large boulders. Easy digging. Some reaction to HCL.			
4-10'	Same as above.			
@12'	Compact, medium to <u>coarse</u> gravel, some fine sand and silt, large basalt pieces. Reactive to HCL.			
@14'	Same as above.			
@15'	Hard digging, compact medium to <u>coarse</u> gravel, some fine sand and silt, yellowish brown with black sand, large boulders and subrounded and rounded gravel, some clay and fine gravel. No HCL reaction.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X

Notes:

DWR CONSULTANTS, Inc.
Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 23+40, Located 95' south of center of road, Est. El. = 742

No: TP-3

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-2'	Loose, light yellow brown 6/3 2.5Y, <u>fine</u> gravel, one boulder. Some reaction to HCL.			20
2-4'	Loose, light brown, 6/3 2.5Y, <u>coarse</u> gravel, subangular, some very fine sand, some silt, colluvium.			
4-6'	Loose, light yellow brown, <u>fine</u> to medium sand, some gravel.			
6-8'	Same as above.			
8-10'	Loose to compact, harder to dig, light yellow brown, <u>fine</u> gravel, some basalt fragments. Strong HCL reaction, angular cobble, organic material.			
10-12'	Compact, hard to dig, rusty yellow brown, <u>fine</u> gravel, organic material.			
12-16'	Same as above, pieces of basalt, caliche, Touchet bed.			
16-18'	Compact, <u>medium</u> gravel, basalt. Top of basalt?			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X _____

DWR CONSULTANTS, Inc.
Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 26+40, Located 30' south of center of road, Est. El. = 745

No: TP-4

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-3'	Loose, light yellow brown, 2Y,6/3, <u>fine</u> grained sand, layered basaltic sand from 1.5-3.5'.			30/50
3-8'	Loose to compact, light yellow brown, 2.5Y 6/3, fine to <u>medium</u> sand.			
@8'	Touchet bed, compact, hard digging, <u>fine</u> sand well cemented.			
8-10'	Same as above. Reactive to HCL.			
10-12'	Compact, big chunks of sandy material.			
12-14'	Compact, light yellow brown 2.5Y 6/3, sub-angular <u>medium</u> gravel and some coarse sand. Slight reaction to HCL.			
14-16'	Compact, hard digging, yellow brown, <u>cobbles</u> and <u>coarse</u> sand.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X

Notes:

DWR CONSULTANTS, Inc.
Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 28+90, Located in roadway, Est. El. = 756

No: TP-5

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-3'	Loose to compact, light brown, <u>fine gravel</u> . Slight effervescent.			30-45
3-7'	Compact, light brown, <u>medium</u> sand and medium gravel, angular.			
@7'	Angular fine to medium gravel and cobble. Slight reaction to HCL.	22		
@9'	Compact, tan, medium to <u>coarse</u> gravel and cobble, little silt, all angular basaltic sand (colluvium), sand layer at 4-7' and 9', roots down to 8'.			
9-12'	Compact, light yellow brown, medium to <u>coarse</u> gravel, cobbles and <u>coarse</u> sand.			
12-14'	Compact, basaltic dark sand, medium sand with calcite deposit and medium gravel and cobble.			
14-15'	Compact, yellow brown, <u>medium</u> sand, angular medium gravel and cobbles, colluvium.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X _____

Notes:

DWR CONSULTANTS, Inc.
Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 17+85, Located in roadway, Est. El. = 722

No: TP-6

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-3'	Compact and hard digging, cobbles with some fine sand, dense caliche, light brown gravel. Strong HCL reaction.			
3-6'	Compact, light yellow brown 2.5Y 6/3, dense angular to sub-angular coarse gravel, little silt, occasional boulder.			
6-8'	Dense digging, light brown <u>coarse</u> sand, cobbles and some medium sand.			
8-10'	Compact, cobbles and some medium gravel with little fine sand, occasional angular boulder. All gravel angular.			
10-12'	Dense, cobbles and medium angular gravel and some sand.			
12-13'	Refusal, very hard, cobbles and medium gravel.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X

Notes:

DWR CONSULTANTS, Inc.

Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 14+85, Located in right-of-way, Est. El.=700

No: TP-7

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-4'	Loose, light yellow brown 2.5Y 6/3, <u>fine</u> sand, some silt, some medium gravel, occ. cobble.			12
4-7'	Loose to compact, light brown <u>coarse</u> to medium sand. Medium sand pocket at 4'. Some angular medium gravel. Slight effervescent.			
7-11'	Compact, light brown <u>medium</u> gravel, some fine sand, calcite on gravel.			
11-13'	Hard, light brown coarse gravel. Bedding at 13' - thin basaltic sand.			
14'	Loose, light brown fine to medium to <u>coarse</u> gravel, little medium to <u>coarse</u> sand, occasional boulder. All angular/subangular.			
15'	Loose to compact, fine to medium to <u>coarse</u> gravel and medium to coarse sand, occasional boulder.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X

Notes: 20% fine sand @ 5'

DWR CONSULTANTS, Inc.
Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 13+30, Located in right-of-way, Est. El.=698

No: TP-8

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-2'	Loose to compact, light brown medium to coarse, angular gravel. Weak HCL reaction.			14
2-5'	Loose to compact, light yellow brown medium to coarse gravel, angular, some silt and fine sand. Medium reaction to HCL. Roots to 4'.			
5-12'	Loose to compact, light brown medium to <u>coarse</u> gravel, some fine sand. Slightly effervescent.			
12-15'	Loose to compact, <u>medium</u> to coarse sand and fine to coarse gravel. Some reaction to HCL.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X

Notes:

DWR CONSULTANTS, Inc.
Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 2+00, Located 30' north of STA 2+00 , Est. El.=698

No: TP-9

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-2'	Loose, light yellow brown <u>fine</u> sand and silt, some medium to <u>coarse</u> sub-angular gravel. Highly effervescent.			0' - 32 2' - 38
2-7'	Loose to compact, light brown <u>medium</u> to coarse gravel and fine sand.			
7-10'	Loose to compact, light brown fine sand and silt. Few pieces of gravel.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X

Notes:

Meadow Hills, Residential Pad Development, November 10, 1998

DWR CONSULTANTS, Inc.
Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 32+70, Located on edge of right-of-way, Est. El.=754

No: TP-10

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-5'	Loose, light brown <u>fine</u> sand, occ. medium gravel.			36
5-7'	Loose, light brown <u>fine</u> sand, some medium to coarse gravel.			
7-8'	Loose, mustard color fine sand, some <u>medium</u> to coarse gravel.			
8-10'	@ 9.5' ran into mustard color flow top <u>medium</u> to coarse gravel, little medium sand. Strong reaction to HCL.			
10-13'	Compact, mustard color, still in flow top. Change in intensity of bubbles from 12 to 13.5'. Bedrock @ 5'. Slope 20% to the north.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X

Notes: 70% fine sand @ 4'

Meadow Hills, Residential Pad Development, November 10, 1998

DWR CONSULTANTS, Inc.

Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 35+25, Located in road, Est. El.= 746

No: TP-11

Date: 8/18/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-2'	Loose, light brown silt with fine sand, few cobbles.			
2-4'	Loose, light brown silt with fine sand, few cobbles and occasional boulders.			
4-7'	Compact, light brown <u>coarse</u> gravel, occasional cobbles and boulders, angular and subangular. 20% grade, 15% slope. Ice Harbor basalt?			
7-8'	Hard digging compact, light brown cobbles and coarse gravel, trace fine sand and a huge boulder. Refusal at 8'.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X

Notes:

DWR CONSULTANTS, Inc.

Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 38+00, Located in roadway, Est. El.= 768

No: TP-12A

Date: 8/19/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)	St. Pen. (kg/cm ²)
0-7'	Loose, light yellow brown, 2Y 6/3, <u>fine</u> sand with silt.		19
7-9'	Loose to compact, light yellow brown, medium to <u>coarse</u> gravel and some fine sand (colluvium). HCL reaction.		
10'	Hard digging, compact, mustard medium to <u>coarse</u> gravel. Top of basalt.		

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no X

Notes: Static Penetrometer Values at elevation 735 and 66 ft. down slope

Depth (ft.)	Value (tsf)
0.5	8
1.0	12
1.5	20
2.0	28
2.5	28
3.0	39
3.5	some gravel -40

most of lower slope shows evidence of accelerated surface creep down to at least 1.5 ft.

DWR CONSULTANTS, Inc.

Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 39+00, Located 125' south of center of road, Est. El.=825

No: TP-12B

Date: 8/19/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)	SSP (ft.-lbs.)	St. Pen. (kg/cm ²)
0-9'	Loose, light yellow brown fine sand and silt.		100@2.0' 150@3.0' 125@4.0' 125@5.0' 125@6.0' 125@7.0' 125@8.0' 225@8.75 gravel refusal	14@0.5' 20@1.0' 30@1.5' 30@2.0 31@2.5' 40@3.0' 30@3.5' 25@4.0' 28@4.5' 24@5.0' 30@5.5' 28@6.0' 14@6.5' 20@7.0'
9-12'	Loose to compact, light yellow brown <u>fine</u> sand and silt, some <u>fine</u> gravel.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no _____

Notes:

DWR CONSULTANTS, Inc.

Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 41+20, Located 40' south of center of road, Est. El.= 802

No: TP-13

Date: 8/19/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-4'	Loose, light yellow brown <u>fine</u> sand and silt. @ 4' intercepted medium to <u>coarse</u> gravel and some large angular basalt rock, caliche.			
4-6'	Hard digging, light yellow brown <u>coarse</u> gravel, little rounded and some angular basalt fragments.			
5-6'	Hard, light grey to light brown. Still in colluvium, lots of calcite.			
6-8'	Compact, light brown to dark grey, medium to <u>coarse</u> gravel. Still in colluvium.			
8-10'	@ 10' slickerslide, top of basalt and in fault zone. Fault contact @ colluvium, lots of clay. 20%/ 35% N10° W80° to West (surface).			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no _____

Notes:

DWR CONSULTANTS, Inc.

Test Pit Log

Project Name and No: TMT-0498

Location and Elevation of Test: STA 43+50, Located on edge of road south and north respectively, Est. El.= 783(A) 775(B)

No: TP-14A & B

Date: 8/19/98

By: NN/MTB

Depth (ft.)	Soil Description and Remarks	Dyn. Pen. (Blows*)		St. Pen. (kg/cm ²)
0-4'	Loose, light yellow brown <u>fine</u> sand and silt.			
4-9'	Hard, compact light brown medium to <u>coarse</u> gravel. @ 4' calcrete contact. @ 4' almost flat, no slope on calcrete.			
@ 9'	Hard, light brown medium to <u>coarse</u> gravel, some boulders. Still in colluvium.			
9-11'	Same as above.			

*Blows per 1.75 inch or 0.15 feet.

Water encountered? Yes _____ @ feet deep or no _____

Notes:



FEASIBILITY-LEVEL GEOTECHNICAL EVALUATION & CRITICAL AREAS ASSESSMENT

**PROPOSED MEADOW HILLS MULTI-FAMILY HOUSING
BENTON COUNTY ASSESSOR'S PARCEL NO. 135983000010001
MEADOW HILLS DRIVE, RICHLAND, WASHINGTON**

GNN PROJECT NO. 221-1434

NOVEMBER 2021

Prepared for

**TMT HOMES (NW), LLC
4001 KENNEDY ROAD, SUITE #13
WEST RICHLAND, WA 99353**

Prepared by

**GN NORTHERN, INC.
CONSULTING GEOTECHNICAL ENGINEERS
KENNEWICK, WASHINGTON
(509) 734-9320**

*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.

November 19, 2021

TMT Homes (NW), LLC
4001 Kennedy Road, Suite #13
West Richland, WA 99353

Attn: Nora Wolf, TMT Homes (NW), LLC
Harvey Prickett, Wave Design Group

**Subject: Feasibility-Level Geotechnical Evaluation & Critical Areas Assessment Report
Proposed Meadow Hills Multi-Family Housing Development
Benton County Assessor's Parcel No. 135983000010001
Meadow Hills Drive, Richland, Washington**

GNN Project No. 221-1434

Dear Ms. Wolf,

As requested, GN Northern (GNN) has completed a feasibility-level geotechnical site investigation and geologic hazards assessment / critical areas report for the referenced 10.24-acre site that TMT Homes (NW) LLC intends to develop for the multi-family development in Richland, Washington.

Based on the findings of our subsurface geotechnical/geologic study, we conclude that slopes across large portions of the project site are marginally stable and may not be suitable for the proposed construction without appropriate engineered remediation and stabilization efforts. Portions of the project site can be made suitable for the planned development provided that the geotechnical recommendations presented in this report, and any subsequent design-level geotechnical investigation report(s) are followed during the design and construction phases of the project.

This report describes the results of our investigation, summarizes our findings and presents our preliminary recommendations concerning earthwork and the design and construction for the proposed project. Once the final grading and drainage plans are prepared, a design-level geotechnical investigation should be completed. It is imperative that GNN work with your design team to provide consultation during the design development phase to ensure implementation of the geotechnical recommendations.

If you have any questions regarding this report, please contact us at 509-734-9320.

Respectfully submitted,

GN Northern, Inc.



Max B. Barnett, GIT
Project Geologist



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

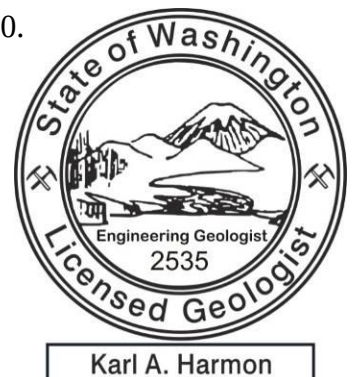
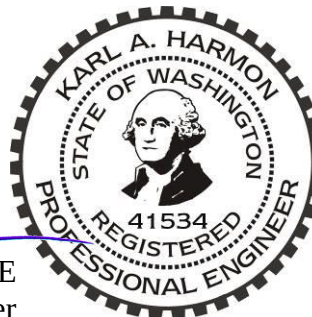


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EXECUTIVE SUMMARY

GN Northern (GNN) has prepared this executive summary to provide a general overview of the geotechnical site investigation and geologic hazards assessment / critical areas report for the proposed residential development at the subject site. The report itself should be relied upon for information about the findings, conclusions, recommendations, and other concerns.

We understand the client intends to develop the 10.24-acre property with multi-family apartments. The subject site currently consists of undeveloped hillside terrain with steep slopes and a moderate to dense growth of native grass/brush. A *Conceptual Grading Plan*, prepared by Wave Design Group, was provided by you via email on July 21, 2021.

Development on sloping ground poses an inherent risk related to global and local stability of the slopes. Surface soils are generally considered to be moderately to severely erodible. Portions of the proposed development are mapped within Benton County and City of Richland designated Critical Areas for geologic hazards including Erosion and Steep Slopes (>15%).

The intent of this report is to assess the risk from various geologic hazards and geotechnical constraints that may impact the proposed development and provide geotechnical related recommendations for mitigation of potential hazards as necessary. Our evaluation of potential geologic hazards has been prepared for general compliance with requirements of both Benton County and City of Richland's Critical Areas Regulations regarding proposed development within designated Geologically Hazardous Areas, including *Chapter 15.08 - Part 5*, and *Ordinance 16-21 Chapter 22.10 Article V*, respectively.

Our site assessment was performed to identify common geologic conditions in the project region, including soil and bedrock conditions, groundwater, slopes, drainage, erosion, and geologic hazards. A review of selected information pertaining to the project site and surrounding region was performed that included published technical literature, published geologic maps, available aerial photographs, and previous geotechnical/geologic studies prepared for other sites in the vicinity. Site-specific geologic and geotechnical data was obtained from our field exploration program to observe the subsurface soil/rock conditions and obtain samples for laboratory testing consisting of twelve (12) exploratory test-pits and six (6) infiltration tests along with a geophysical survey including seismic refraction and refraction micro-tremor (ReMi).

Based on our feasibility-level geotechnical site evaluation and analyses, our findings generally indicate that some portions of the proposed project can be constructed as planned, provided that the recommendations in this report and any subsequent design-level geotechnical investigations are incorporated in the final design and construction. However, large portions of the project site included steep native/undisturbed site slopes that are considered marginally stable based on our stability analyses. Appropriate design and construction for any proposed reconfigured slopes, as well as drainage/erosion control measures, to mitigate the noted geologic site constraints will be required. Remedial grading shall incorporate the recommendation of this reports and the requirements outlined in Appendix J of the 2018 IBC.

The project site is situated in an area where sheet flow and erosion may occur, and near-surface fine-grained site soils are known to exhibit a risk for erosion. Erosion concerns will require mitigation with appropriate best management practices (BMPs), including proper drainage design as well as collection and disposal (conveyance) of water to approved points of discharge in a non-erosive manner.

In our professional opinion, the following site constraints must be considered for any future development of the proposed project:

- ***As currently conceptualized, the proposed development at the site may be unfeasible and could pose a threat to the health or safety of the public by increasing the risk of geologic hazards at the subject site and to surrounding properties.***
- ***Large portions of the northwestern part of the project site includes existing steep native slope conditions that do not currently meet the minimum recommended factors of safety from potential failures and should not be considered for development without the application of appropriate and carefully engineered remedial efforts.***
- ***The southeastern portion of the project site may be feasible for development as planned, provided that the recommendations in this report and any subsequent design-level geotechnical evaluations are incorporated in the final design and construction.***
- ***Where determined to be feasible, proposed cut and fill slopes for the planned development will require appropriate grading measures as recommended within this report to***

minimize the risk of slope instability and increase safety factors of the reconfigured slopes.

- *Construction of stable slopes and building pads will require significant remedial grading incorporating retaining structures (retaining walls, soldier pile walls, soil nail walls, etc.) and engineered reinforced slopes.*
- *Near surface site soils may be subject to a significant threat of erosion that must be addressed with the application of stringent BMPs, appropriate project engineering design, and construction in order to properly mitigate the noted threat.*
- *The onsite loess soils (fine grained silty and sandy soils) exhibit a collapse potential when wetted. Overexcavation and replacement of these loess soils as engineered fill will be required to reduce the risk of foundation and building pad settlement.*
- *Stormwater management design must ensure that concentrated runoff and significant saturation of the underlying loess soils atop the buried bedrock surface is prevented.*

1.0 PURPOSE AND SCOPE OF SERVICES

This feasibility-level *Geotechnical Evaluation and Critical Areas Assessment Report* has been prepared for the 10.24-acre site that TMT Homes (NW), LLC intends to develop with multi-family apartment dwellings. The proposed development is located on the northeastern flanks of Little Badger Mountain in Richland, Washington (see Figure 1). The site is identified by Benton County Assessor as Parcel No. 135983000010001. The project site is mapped within Benton County and City of Richland designated Critical Areas for geologic hazards including Erosion and Steep Slopes.

The purpose of our services was to evaluate the surface and subsurface soil and bedrock conditions and potential geologic hazards as they relate to the proposed development, and provide professional opinions regarding the general feasibility of the proposed development and provide recommendation for mitigation of any identified geologic hazards and geotechnical constraints. Our study was completed in general accordance with our *Proposal for Geotechnical Investigation Critical Areas Geo-Hazards Site Evaluation Report* dated July 23, 2021; notice to proceed was

provided by you on August 19, 2021, in the form of a signed copy of the proposal. The scope of work included the following:

- A detailed reconnaissance of the site, mark proposed exploratory test locations and contact public utility locates
- Desktop study and review of selected published technical literature pertaining to the site/vicinity, including available geologic maps, soil maps, current and historical aerial photos, WA State DOE well logs, and USGS topographic maps
- Subsurface exploration by excavating 18 exploratory/infiltration test-pits, and included six (6) infiltration tests
- Slope stability analyses of existing and proposed post-construction site slopes, evaluate geologic hazard conditions, identify any potential concerns with native materials and cut slopes, and recommend mitigation measures to minimize slope related hazards based on site specific conditions
- Present a summary of our findings and recommendations

This report contains the following:

- Discussions on subsurface soil and groundwater conditions, regional and local geologic conditions.
- Graphic and tabulated results of laboratory tests and field studies.
- Discussion on groundwater and seasonal fluctuations.
- Soil infiltration rates and recommendations for onsite stormwater management.
- Summary of slope stability analyses and mitigation measures to minimize slope related hazards.
- Recommendations for remedial grading, requirements for terracing/benching, stability of cuts and fills slopes, maximum safe cut and fill heights and setback.
- Foundation design parameters and allowable soil bearing capacity.
- Seismic design considerations - Site Classification and Code-Based Seismic Design parameters per the ASCE 7-16 and IBC 2018.
- Grading recommendations for mass grading, fill placement, subgrade protection, construction and excavation considerations in accordance with 2018 IBC Code Appendix J.

- Sloping design criteria for temporary excavations.

1.1 Technical Literature and Aerial Photo Review

A review of selected information pertaining to the site and surrounding area was performed that included published technical literature, published geologic maps, aerial photographs and previous geotechnical and geologic reports prepared for other sites in the vicinity. The review was performed to identify typical geotechnical and geologic constraints that may affect the proposed development, including soil and bedrock conditions, groundwater, slopes, drainage, erosion, and geologic hazards.

1.2 Field Reconnaissance

An initial field reconnaissance of the subject property was performed prior to our subsurface exploration on August 27, 2021, to mark proposed points of explorations and observe the on-site surficial geologic and geotechnical conditions to confirm the data obtained from our technical literature review.

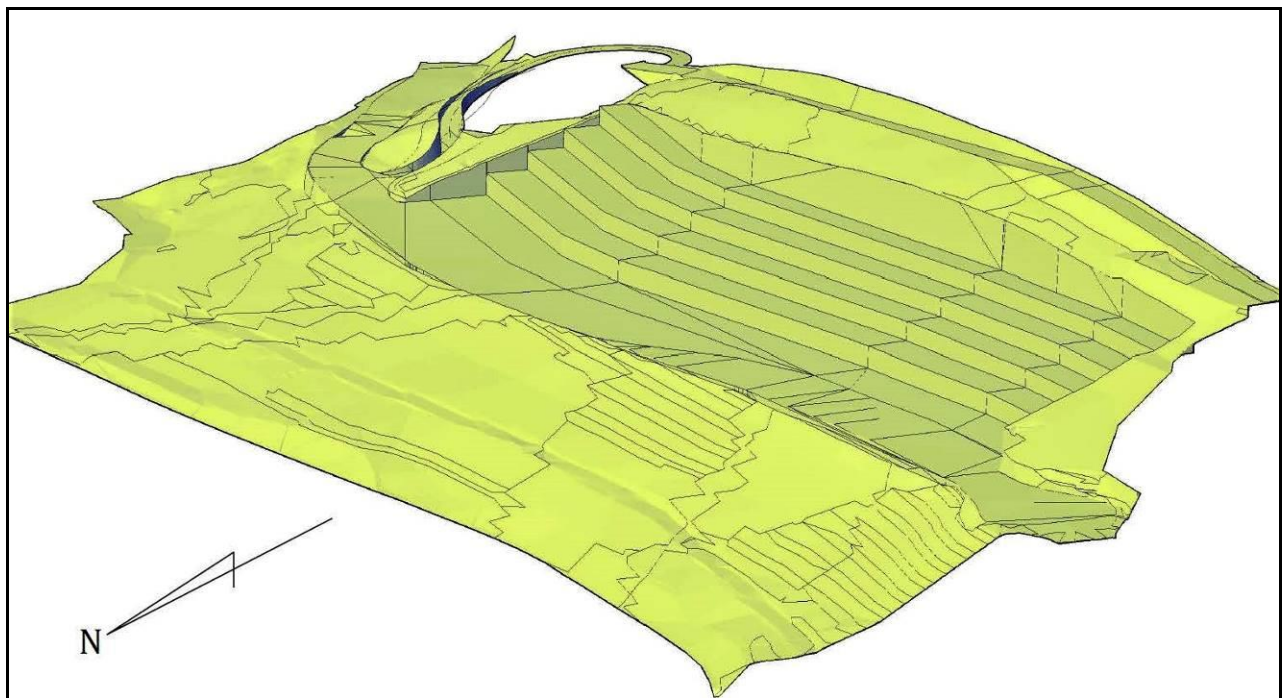
2.0 PROPOSED CONSTRUCTION

Based on the information provided by Wave Design Group and a *Conceptual Site Plan*, we understand that the currently proposed development will generally include six (6) multi-family apartment buildings with resident parking spaces to be constructed upslope from the planned future alignment of Meadow Hills Drive.



Associated infrastructure and planned site improvements will include a garden area, walking paths, a dog park, and stormwater management facilities to be developed downslope from Meadow Hills Drive. Access into the new development will be from the northwestern and southeastern extensions of Meadow Hills Drive.

Based on the provided *Conceptual Site Plan* (above) and the *Conceptual Grading Plan* (excerpt below), prepared by Wave Design Group, we understand that currently planned site development will include significant cut grading and some limited fills to develop a series of level benches into the hillside to support the planned apartment construction upslope from Meadow View Drive.



Some areas along the alignment of Meadow Hills Drive will receive fills for the planned widening and construction of the road. The currently proposed grading concept will call for graded bench elevation changes on the order ~10 to ~30 feet. Earthwork quantities for the project are currently estimated to include approximately 19,000 yd³ of fill and 180,000 yd³ of cut.

Analyses and engineering design of the required retaining structures and reinforced engineered slopes is beyond the current scope of GNN's services.

3.0 FIELD EXPLORATION

Our field exploration activities at the project site were completed between September 30th and October 1st, 2021. A local public utility clearance was obtained prior to the field exploration. Exploration and testing activities included twelve (12) exploratory test-pits, and six (6) infiltration tests.

The exploratory test-pits were excavated by Van Belle Excavating, LLC using a John Deere 35G mini excavator and a Hitachi Zaxis 160LC excavator to depths ranging from approximately 3.5 to 14 feet below existing ground surface (BGS). The exploratory test-pits and infiltration tests were logged by a GNN field engineer. Upon completion, the test-pits were loosely backfilled with the excavated soils. The exploratory test locations are shown on the *Site Exploration Map* (Figure 2, Appendix I).

Selected soil samples were sealed in containers and returned to our laboratory. 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 are presented in Appendix IV following this report. 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. The table below shows the depths and thicknesses of overburden soils, underlying gravels, and basalt bedrock as observed during our subsurface field exploration.

Table 1: Summary of Subsurface Exploration Data

Test Pit No.	Loess/ Overburden Thickness	Gravel/ Colluvium Thickness	Depth to Bedrock (BGS)	Total Depth Explored (BGS)
TP-1	3'	3'	6'	14'
TP-2	6'	6.5'	12.5'	13.5'
TP-3	5'	6'	11'	13'
TP-4	9.5'	1'	10.5'	11'
TP-5	6'	4'	NE	10'
TP-6	6'	3'	NE	9'
TP-7	3.5'	6.5'	NE	10'
TP-8	3'	3.5'	6.5'	7'

TP-9	4.5'	4.5'	5.8'	6'
TP-10	4'	2'	NE	6'
TP-11	8'	2'	10'	12'
TP-12	4'	5'	9'	12'
IT-1	6'	3'	4'	9'
IT-2	6.5'	2'	NE	8.5'
IT-3	5'	3.5'	NE	8.5'
IT-4	5.5'	NE	5.5'	6'
IT-5	5.5'	3'	5'	6'
IT-6	5'	1'	NE	6'

NE = Not Encountered

3.1 Seismic Refraction Survey

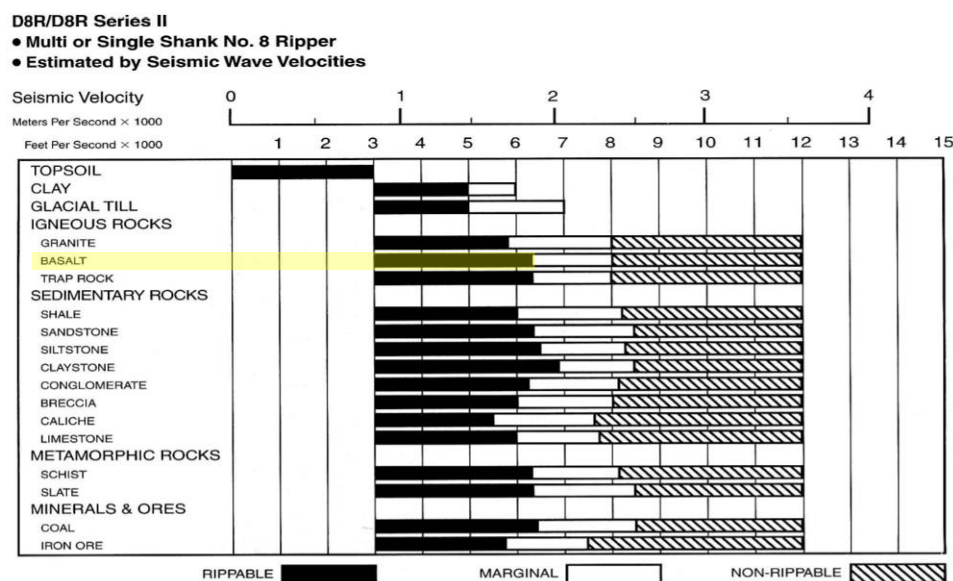
In an effort to better understand the subsurface soil/rock profile across the project site, GNN contracted Global Geophysics to complete a geophysical survey on November 5, 2021, extending along the existing trail connecting the current northwest and southeast terminuses of Meadow Hills Drive. The survey consisted of one (1) 920' long seismic refraction survey transect and included acquisition of refraction micro-tremor (ReMi) data at two (2) locations along the line.

Seismic refraction is the traditional method for determining the depth-to and rippability of the underlying buried bedrock material. The seismic refraction method is based on the measurement of arrival times of seismic energy from a source (shot) to a receiver (geophone). The seismic energy travels as a body wave through the subsurface and when the wave encounters a transition to denser (higher velocity) material, it is refracted into the lower layer as a head wave according to Snell's Law. When the wave's ray-path is incident to the density transition at the critical angle, the refracted wave travels along the interface between the two layers at a higher velocity (V2). The direct body wave arrivals, traveling at a slower velocity (V1), are recorded at the geophones. At some distance from the source, the refracted head waves, traveling at a velocity of V2, arrive before the body waves. This distance is called the crossover distance. The first-arrival times from several shot locations are picked from data recorded on a seismograph and plotted on graphs of travel-time versus distance. The shot-receiver geometry allows for measurement of travel times to calculate velocities (p-wave velocity, V_p) that are then analyzed to produce profiles of the depth to, and topography of, the density interface and velocity layering of the subsurface.

The collection of refraction micro-tremor data of ReMi method determines variations in surface wave velocities with increasing distances and wavelengths. The data from these measurements are used to model the shear wave velocities of the subsurface. This information can be used to infer rock/soil types, stratigraphy and soil conditions. It should be understood that the depths of subsurface soil/bedrock layers below ground surface obtained from geophysical testing are estimates and can vary significantly across the site in lateral extent. The survey was performed along a single path of exploration and represents subsurface data specifically along that path at the site. A full copy of the geophysical survey report is presented in Appendix VII.

Based on the results of the seismic refraction survey, the upper layer consists of fine-grained sands/silts (loess), as observed in our test pits, generally correlates with p-wave velocities (V_p) of 900 to 1,300 feet/sec. The interpreted 2nd layer appears to be a transitional layer consisting of slightly cemented gravels and/or highly weathered basalt rock with velocities at approximately 4,300 feet/sec. Based on the seismic refraction data, the underlying basalt bedrock exhibits p-wave velocity properties of approximately 5,300 feet/sec.

Based on ripper performance charts prepared by Caterpillar, basalt bedrock with p-wave velocities in the range of approximately 3,000 to ~6,000 feet/sec. are generally considered rippable with a CAT D8R ripper. The chart shown below is from the *Caterpillar Handbook of Ripping* (12th Edition) that displays rippability ranges based on estimated seismic wave velocities.



4.0 SOIL INFILTRATION TESTING

Six (6) soil infiltration tests were performed at locations across the northern, lower portion of the site within test-pits IT-1, IT-2, IT-3, IT-4, IT-5 & IT-6. The tests were performed at approximately 3.5 to 4 feet BGS. The infiltration tests were conducted using a single ring infiltrometer consisting of a 10-inch diameter steel pipe driven into the ground. After an initial pre-soak period, a constant water level was maintained in the ring with the use of a float valve and timed intervals of the water demand volumes were recorded. Continuous readings of the infiltration rates of water volumes required to maintain the constant head were recorded until a relatively constant rate was achieved, and the average infiltration rate was determined. The test results are indicative of the infiltration characteristics of the native subsurface soils encountered at the test location/depth using the specific test method. A sample was collected from each of the infiltration test elevations for cation exchange capacity (CEC) analysis. Results of the CEC analysis are attached to this report in Appendix III. The following table presents the results of the infiltration tests:

Table 2: Infiltration Test Results

Test ID	Approximate Location (GPS Coordinates)	Soil Type Tested	% Fines	Test Depth (BGS)	Field Infiltration Rate	CEC Value (meq/100g)
IT-1	46.218947°, -119.276344°	Sandy Silt (ML)	68.8	4 feet	0.5 in/hr	12.4
IT-2	46.218706°, -119.275844°	Sandy Silt (ML)	60.2	3.5 feet	0.9 in/hr	10.9
IT-3	46.218297°, -119.275476°	Sandy Silt (ML)	62.5	3.5 feet	0.9 in/hr	11.3
IT-4	46.218081°, -119.274837°	Sandy Silt (ML)	59.5	4 feet	0.5 in/hr	10.7
IT-5	46.217841°, -119.274607°	Silt with Sand (ML)	75.3	4 feet	0.8 in/hr	12.4
IT-6	46.217631°, -119.273810°	Silty Sand with Gravel (SM)	38.9	4 feet	1.2 in/hr	17.5

The infiltration rates presented herein represents the un-factored field soil infiltration rate. An appropriate factor of safety must be applied to the field infiltration rate to determine long-term design infiltration rate. Determination of safety factors for long-term design infiltration should consider the following: pretreatment, potential for biofouling, system maintainability, horizontal and vertical variability of soils, depth to groundwater, and type of infiltration testing. Typical factors of safety for these soils generally range from 2 to 2.5.

Considering that the mass-grading may significantly alter the site grades and the surface soil matrix, we recommend additional infiltration tests be conducted to confirm the design rates following completion of grading activities.

5.0 LABORATORY TESTING

Representative samples of the native soil obtained in the field during our subsurface exploration were selected for testing to determine the index properties of the soils in general accordance with ASTM procedures. The following laboratory tests were performed:

Table 3: 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
Cation Exchange Capacity (EPA 9081)	Relative ability of soils to store one particular group of nutrients, the cations

Results of the laboratory tests are presented in graphic form and the CEC properties are provided in Appendix III attached to the end of the report.

6.0 SITE CONDITIONS

The subject site consists of 10.24-acres on the northern hillside of Little Badger Mountain and upslope of the East Badger Lateral canal in Richland, Washington. The site is located in the NE $\frac{1}{4}$ of the SW $\frac{1}{4}$ and the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 35, Township 9 North and Range 28 East of the Willamette Meridian.

The undeveloped project site is covered with a moderate to dense growth of native grass and brush including numerous areas of dense and mature sagebrush. The majority of the project site slopes are relatively steep, typically exhibit approximate gradients ranging from ~30% to 100%, including some selected near-vertical cut slope faces along the pioneered trail of the future alignment of Meadow Hills Road. Existing elevations across the subject site generally range from approximately 870' above mean sea level (MSL) along the upper southwestern portion, down to approximately 670' MSL along the lower northeastern boundary for a total site relief on the order of approximately 200 feet.

The history of past use and development of the property was not investigated as part of our scope of services for this feasibility-level geotechnical/geologic evaluation. A review of selected available historic aerial photographs along with the noted onsite observations does not provide evidence of any significant previous development at the site. A gravel road connects Meadow Hills

Drive from the northwest to the southeast. Some related cuts and side-cast fills were noted along the road. Buried water and gas lines follow the road cut from end to end and an existing irrigation line is known to parallel the existing Badger Lateral Canal that defines the north/northeastern boundary of the subject property.

6.1 Regional & Local Geology

Benton County lies on the Columbia Basin physiographic province, a broad plain situated between the Cascade Range to the west and the Rocky Mountains to the east. The Columbia Basin was formed by a thick sequence of Miocene Age tholeiitic basalt flows, called the Columbia River Basalt Group (CRBG) that erupted from fissures in north central and northeastern Oregon, eastern Washington, and Western Idaho. Subsurface materials in the project vicinity include basalt flows from the Wanapum and Saddle Mountains Basalt Formations. The uppermost layers of the CRBG are fractured bedrock of the Wanapum Basalt formation. Regionally, the top surface of the Wanapum Basalt is known to slope toward the northeast, although local variations exist in the area.

Near the end of the Pleistocene, the Columbia Basin was subjected to a series of incredibly massive, high energy floods known as the Missoula Floods. During this time, a lobe of the Cordilleran ice sheet extended south into Idaho, damming up the Clark Fork River and creating Glacial Lake Missoula, impounding as much as 500 cubic miles of water. These ice dams periodically failed and then reformed numerous times during this period, draining the lake suddenly and unleashing a series of massive torrents of water that significantly scoured and altered landscapes in the Columbia Basin including significant erosion and deposition.

The subject site is situated on the northeastern side of Little Badger Mountain on the south side of Richland, Washington. Based on the *Geologic Map of the Richland 1:100,000 Quadrangle, Washington* (Reidel, 1994), the site is mapped along the peak of an anticline with the middle Miocene-aged Ice Harbor Member [Mv_{sih}] and Pomona Member [Mv_{sp}] of the Saddle Mountain Basalt with a sandwiched layer of Miocene-aged Elephant Mountain Member [Mv_{sem}] of the Saddle Mountain Basalt, part of the CRBG. The site and surroundings are also mapped as containing loess and Quaternary-age alluvium [Qa].

6.2 Soil/Bedrock Conditions

Our understanding of the subsurface soil/rock conditions across the 10.24-acre site of the proposed development is based on (18) widely scattered points of exploration and geophysical survey. Test-pit logs provided in Appendix II include more specific descriptions of the subsurface conditions encountered.

In general, the site is blanketed with a variably thick cover of wind-blown silts and fine sands (*Loess*), overlying basaltic colluvium identified as subrounded to angular gravels/cobbles in a silty/sandy matrix atop basalt bedrock. The upper silts/sands typically exhibited apparent ‘loose’ to ‘medium dense’ in-place density, while the deeper soil strata were noted to range from ‘dense’ to ‘very dense’ with some cementation in the gravelly layers.

6.3 NRCS Soil Survey

The soil survey map of the site prepared by the Natural Resources Conservation Service (NRCS) identifies the site soil over the majority of the site as *Shano silt loam, 30 to 65 percent slopes (Shf)*. Other soils present in lesser amounts in the northern portion of the site are identified as *Kiona very stony silt loam, 0 to 30 percent slopes (KnF)*. The landform settings for the site soils are identified as hillslopes, plateaus and ridges. The parent material for the *Shano* soils is identified as loess and the parent material for the *Kiona* soils is identified as mixed colluvium and residuum weathered from basalt and loess. According to the NRCS, both of these soil types consist of *well drained* materials with a capacity of the most limiting layer to transmit water (*Ksat*) generally identified as *moderately high to high* (0.57 to 1.98 in/hr). Refer to the *NRCS Soil Survey Map* in Appendix VIII for more details.

6.4 Groundwater

Free groundwater was not encountered in any of the test-pits during our exploration. No evidence of onsite surface ponding, springs or seeps was noted during our site reconnaissance. To further assist in our evaluation, we reviewed the WA-DOE database of nearby well logs (Appendix IX) and USGS Water Data for Nation online database to estimate groundwater levels in the vicinity. Based on our review of available data, groundwater in the site vicinity is believed to be greater than 50 feet BGS from the lowest elevations at the project site. Minor localized and seasonal perched groundwater conditions may occur beneath the site above underlying basalt layers.

Perched groundwater layers may fluctuate with precipitation, irrigation, drainage, and site grading, therefore, the absence of detected groundwater may not represent a permanent condition.

6.5 Geologic Hazards

Geologic hazards that may affect the development include seismic hazards (ground shaking, surface fault rupture, soil liquefaction, and other secondary earthquake-related hazards), slope instability, flooding, ground subsidence, and erosion. A discussion follows on the specific hazards to this site:

Surface Fault Rupture: For the purposes of this report, an active fault is defined as a fault that has had displacement within the Holocene epoch or last 11,000 years. The region is subject to areas of known faulting and deformation related to activity along the Yakima Fold Belts, a known active fault trace in the immediate site vicinity is identified as the *Rattlesnake Hills structures* thrust fault with a slip rate of less than 0.2mm per year. The exact location and trend of the nearby fault is unknown and is inferred in green as shown on the map below from the *USGS U.S. Quaternary Faults* map. While fault rupture would most likely occur along previously established fault traces, future fault rupture could occur at other locations. A nearby inferred thrust fault trace located northeast of the site was identified by the USGS (geologyportal.dnr.wa.gov). The inferred fault trace is delineated on a map shown below.



Seismic Conditions: The Tri-Cities area is generally not considered to be located within an area of high seismic activity. There are no confirmed major faults in the Benton County region capable of producing strong earthquakes. Anticipated ground motions in the region due to seismic activity along faults in other parts of the Northwest are relatively low.

Secondary Seismic Hazards: Secondary seismic hazards related to ground shaking include soil liquefaction, ground subsidence, tsunamis, and seiches. The site is far inland, so the hazard from tsunamis is non-existent. The potential hazard from seiches is also nil due to the lack of nearby surface water bodies and the noted low magnitudes of potential seismic shaking.

Soil Liquefaction: Liquefaction is the loss of soil strength from sudden shock (usually earthquake shaking), causing the soil to become a fluid mass. In general, for the effects of liquefaction to be manifested at the surface, groundwater levels must be within 50 feet of the ground surface and the soils within the saturated zone must also be susceptible to liquefaction. A detailed liquefaction analysis was beyond the scope of this report. Based on the published *Liquefaction Susceptibility Map of Benton County, Washington* (dated September 2004) prepared by Washington State Department of Natural Resources, the potential for liquefaction to occur at this site is considered ‘Low to Moderate’. However, based on our site-specific evaluation, the risk of liquefaction at the subject site is considered very low due to the apparent presence of relatively shallow basalt bedrock, fine grained near surface soils, and significant depth to groundwater (greater than 50 feet).

Site Slopes: Existing native site slopes across the parcel generally descend toward the north/northwest at gradients ranging from approximately 30% to 100%. It should be noted that slopes in the northwestern portion of the subject site are typically much taller and steeper than those within the southeast portion of the site.

A field reconnaissance of the subject property was performed to observe site conditions and correlate the information gathered from our preliminary research. During our reconnaissance we looked for common geomorphic features of landslides as well as indications of possible signs demonstrating recent activity and instability of slide masses. Aside from areas of obvious spalling and shallow failures along the overstepped roadway cut-face along the trail that connect the northwest and southeast ends of Meadow Hills Drive, no apparent indications of recent failures or significant slope instability were observed.

Flooding and Erosion: The subject property is not located in area mapped by FEMA regarding flooding concerns. The subject property is however situated in an area where sheet flow and erosion may occur. A large portion of the site is also mapped for *Erosion Hazard* due to easily-

erodible soils on slopes >15% and further mapped by the U.S. Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS) as *eroded*.

Erosion susceptibility from water is based on several factors, including the intensity of rainfall and runoff, soil erodibility, length and steepness of slopes, and surface condition. The erodibility factor of the soils is a measure of the soils resistance to erosion based on its physical characteristics. Typically, very fine sand, silt and clay soils are generally susceptible to erosion. Based on site specific field exploration, observations, and laboratory testing, the surficial soil exposed at the project site consists primarily of silt soils.

Soil erodibility is only one of several factors affecting the erosion susceptibility. Soil erosion by water also increases with the length and steepness of the site slopes due to the increased velocity of runoff and resulting greater degree of scour and sediment transport. Appropriate erosion and sediment control plan(s) and a drainage plan shall be prepared by the project civil engineer with the final construction drawings.

The need for and design of flood control devices and erosion protection measures is within the purview of the design Civil Engineer and/or Landscape Architect. In general, erosion should be mitigated with best management practices (BMPs) consisting of proper drainage design including collecting and disposal (conveyance) of water to approved points of discharge in a non-erosive manner, placement of vegetative covers and erosion control mats on slope surfaces. Appropriate project design, construction, and maintenance will be necessary to mitigate the site erosion hazards.

6.6 Seismic Considerations

As per the 2018 *International Building Code* (IBC), a Site Class ‘D’ may be used for seismic design purposes. Site class ‘D’ corresponds to ‘stiff soil’. The following site-specific design values may be used:

Table 4: IBC 2018 Design Response Spectra Parameters

Seismic Design Parameter	Value (unit)	Definition
S_S	0.430 (g)	MCE spectral response acceleration at short periods
S_1	0.163 (g)	MCE spectral response acceleration at 1-second period
F_a	1.456 (unitless)	Site coefficient for short periods
F_v	2.274 (unitless)	Site coefficient for 1-second period
S_{MS}	0.626 (g)	MCE spectral response acceleration at short periods as adjusted for site effects
S_{M1}	0.371 (g)	MCE spectral response acceleration at 1-second period as adjusted for site effects
S_{DS}	0.417 (g)	Design spectral response acceleration at short periods
S_{D1}	0.247 (g)	Design spectral response acceleration at 1-second period

7.0 SLOPE STABILITY ANALYSIS

Slope stability analyses were conducted on selected critical cross-sections representative of the existing slope conditions along with selected proposed graded slope conditions. The analyses were conducted using generalized geologic cross-section models developed from the existing site topography, and data obtained from our subsurface exploration. The output of our slope stability analyses is attached in Appendix VI.

The slope stability analyses were conducted by a two-dimensional limit equilibrium stability analysis of selected trial failure surfaces using the computer program *SLIDE (Version 7)*. Potential circular-arc failure surfaces were evaluated using the Spencer method. The computer program searched for critical potential failure surfaces with low computed factors of safety. The computed factor of safety (FS) against slope failure is simply the ratio of total resisting forces or moments (strength of the slope) to the total driving forces or moments for planar or circular failure surfaces respectively. A slope with a factor of safety of 1.0 is in equilibrium, indicating that the disturbing forces driving the slope down are equal to its strength to resist failure. Simply put, slope-failure results when the strength of the slope is overcome by gravity.

Although earthquakes are generally not a significant concern in the Richland region, and anticipated seismic accelerations are expected to be relatively low, the stability of the slope has been analyzed under both static and seismic conditions. Our analysis used the pseudostatic method which modifies the limit equilibrium method by incorporating a horizontal static seismic force to

simulate the potential inertial forces generated from earthquake ground accelerations. For slope stability analyses under seismic loading, a pseudostatic seismic coefficient, k_h (horizontal component), expressed in terms of acceleration (units of g), is typically estimated as a percentage of the horizontal peak ground acceleration (PGA). PGA for this site was calculated with a 2,475-year return interval (RI) using the USGS PSH Deaggregation tool for a 2% probability of exceedance in 50 years. For our analyses, we have selected a value of $k_h = 0.09g$, approximately half of the design PGA of 0.188g.

The selection of unit weight and shear strength parameters for the various earth materials were based on judgment and data obtained during our field investigation, laboratory testing, review of previous studies, research and previous experience with similar materials in similar geotechnical and geologic settings. Engineering and geologic judgment must be applied to the estimated shear strength parameters in order to consider lateral and vertical variations in the subsurface conditions, such as degree of cementation, fracturing, planes of weakness, and gradational characteristics. The following geotechnical strength parameters were used in our stability calculations:

Table 5: Estimated Strength Parameters

Material	Shear Strength Parameters		Unit Weight (pcf)
	Friction Angle: ϕ	Cohesion: c (psf)	
Fill (undocumented/side-cast)	29	0	110
Engineered Fill (derived onsite)	33	5	118
Sandy Silts (Loess)	31	5	115
Gravels (slightly cemented)	36	10	133
Weathered Basalt	44	375	140

GN Northern recommends that any existing or reconfigured slopes should meet or be designed and constructed to meet a minimum factor of safety of 1.5 for the static condition and 1.1 under seismic loading. Our analyses generally indicates that the existing native/undisturbed site slopes are marginally stable. The following range of safety factors were determined from our slope stability analysis across the various portions of the project site from the northwest toward the southeast:

Table 6: Calculated Static Factors of Safety for Existing Slopes

Section Analyzed*	Approx. Range of Factors of Safety for Static Analysis
A-A' – Northwest	0.9 to 1.1
B-B' – Central to Northwest	1.3 to 1.4
C-C' – Central to Southeast	1.4 to 1.5
G-G' – Southeast	1.8 to 1.9

*See Topographic Survey (prepared by Stratton) in Appendix V

The northwestern portion the project site includes the steepest and tallest slope conditions where calculated safety factors are noted be near 1. As previously discussed, a slope with a factor of safety of 1.0 is in equilibrium, indicating that the disturbing forces driving the slope down are equal to its strength to resist failure and therefore are generally unfeasible for development without significant remedial efforts. Existing native slopes in the southeastern portion of the site were found to generally meet or exceed the recommend minimum factors of safety.

Our slope stability analyses also included a site-specific check of stability of the lower portion of the project site. The current proposed development plan layout calls for stormwater management infiltration facilities to be constructed downslope form the future alignment of Meadow Hills Drive near the bottom of the slope. Our analysis indicates that if the silty overburden soils atop the underlying bedrock become over-saturate, the tenuous stability of the slope will be additionally weakened. It will be imperative that future design and construction of the stormwater management facilities provide appropriate protective measures to prevent oversaturation of the lower slopes.

Considering the conceptual site grading plan that includes terraced benches, GNN performed preliminary analyses to formulate possible solution addressing the short-term construction and long-term slope stability and performance concerns. Our analyses indicate that the uppermost vertical cut, up to 32 feet in height, will require construction of a soldier pile or soil nail wall. The remaining bench cuts, with vertical heights ranging from approximately 10' to 18', will require engineered retaining walls and tied concrete slabs. The lowermost bench along the future alignment of Meadow Hills Dive consists of fill and will require construction of a retaining structure for the lower face, and geogrid reinforcement to provide adequate stability. See Appendix VI for the preliminary stability option outputs for the conceptual development plan.

Selection of a feasible retaining support alternative should consider the conceptual excavation geometry and site subsurface conditions. In selecting a suitable option, cost and performance expectations should also be considered. Recommended support options may include soldier piles and lagging wall or soil nail shotcrete wall. Internal bracing will likely be required to provide adequate support for the resulting lateral loads. The design and installation of soldier pile walls or soil nail shotcrete walls should be the responsibility of the specialty geotechnical contractor. At-rest lateral earth pressure and surcharge loading should be used for design of the retaining support system.

We recommend that all future proposed cut or fill slopes at the project site shall be engineered and constructed to a maximum gradient of 2H:1V and maximum height of 10' in accordance with the recommendations (*Graded Slope Construction* section) of this report. Alternative slope gradients may be considered; however, they will require the inclusion of properly engineered retaining structures and/or engineered reinforcement to increase safety factors and reduce the potential for slope failure.

8.0 FINDINGS AND CONCLUSIONS

The following is a summary of our findings, conclusions and professional opinions based on the data obtained from a review of selected technical literature and the site evaluation. Once civil design plans are prepared, a design-level geotechnical investigation shall be performed presenting site-specific geotechnical recommendations for the proposed development.

Geologic/Geotechnical Constraints and Mitigation:

- The primary geologic hazards and geotechnical site constraints for the proposed development include slope failures and surface erosion. Engineered design and careful construction as recommended within this report and any subsequent design-level geotechnical evaluations will be required to mitigate these geologic constraints and increase safety to allow development of potentially geologically hazardous areas. Preventative measures to control runoff and reduce erosion should be incorporated into site grading plans.
- Other common geologic hazards, including fault rupture, liquefaction, and seismic shaking are considered low or negligible on this site.

- Development on sloping ground can pose a risk related to global and local stability of site slopes. Site development will require appropriate design and construction of project slopes as well as drainage/erosion control measures to mitigate the observed geotechnical and geologic site constraints.
- Our analysis generally indicates that the existing native/undisturbed site slopes are marginally stable. Existing slope conditions vary significantly along the length of the project site between the existing NW and SE terminuses of Meadow Hills Drive. Slopes in the northwestern portion of the project site are typically steeper and taller resulting in calculated safety factors that currently fall below recommended minimums.
- The currently proposed plan to develop the site with a series of benches cut into the hillside above the future alignment of Meadow Hills Drive (as depicted on the referenced *Conceptual Grading Plan*) will require design and construction of retaining structures, including soldier pile walls, retaining walls, and reinforced engineered slopes.
- Free groundwater was not encountered in any of the exploratory test-pits. While shallow static groundwater conditions are not anticipated to be a concern on this elevated hillside site, there remains a possibility of isolated perched conditions at various locations across the site.
- Considering that the mass-grading may significantly alter the site grades and the surface soil matrix, we recommend additional infiltration tests be conducted to confirm the design rates following completion of grading activities.
- Our stability analysis indicates that if the silty overburden soils atop the underlying bedrock become over-saturate near the lower portion of the project site, the tenuous stability of the slope will be additionally weakened. It will be imperative that future design and construction of the stormwater management facilities provide appropriate protective measures to prevent oversaturation of the lower slope soils.
- The near surface onsite soils are generally suitable for use as engineered fill and utility trench backfill, provided they are free significant organic or deleterious matter and rocks greater than 5 inches.
- Excavation of the upper on-site soils can be accomplished with most types of conventional earth excavation equipment. Rock excavation techniques will be required for deeper

excavations that may encounter cemented gravel and/or basalt bedrock. Refer to the geophysical survey report in Appendix VII regarding approximate depths to the cemented gravels and bedrock. The report also provides information regarding p-wave velocities of the underlying bedrock that can be correlated to the Caterpillar rippability table.

- Adherence to the preliminary grading recommendations in this report should reduce the potential risk of slope instability and erosion.
- Site grading, excavation, placement of fill, setbacks, drainage and terracing, and erosion control shall conform to the provisions of Appendix J, *Grading*, of the 2018 IBC.
- All slope faces shall be protected with appropriate erosion control measures (BMPs) to insure long-term surficial stability.

9.0 PRELIMINARY GEOTECHNICAL RECOMMENDATIONS

The following geotechnical recommendations are based on our current understanding of the proposed project as described in Section 2.0 of this report. The report is prepared to comply with the 2018 International Building Code Section 1803, Geotechnical Investigations, and as required by Subsection 1803.2, Investigations Required. Please note that Soil Design Parameters and Recommendations presented in this report are predicated upon appropriate geotechnical monitoring and testing of the site preparation and foundation and building pad construction by a representative of GNN's **Geotechnical-Engineer-of-Record (GER)**. Any deviation and nonconformity from this requirement may invalidate, partially or in whole, the following recommendations. We recommend that we be engaged to review grading and foundation plans in order to provide revised, augmented, and/or additional geotechnical recommendations as required.

9.1 Clearing and Grubbing

At the start of site grading, the construction areas should be cleared and stripped of all vegetation, topsoil, and any encountered undocumented fills. Due to the noted existing steep slope conditions across the site, appropriate care shall be used to limit the extent of degrubbing to only those areas under active construction activities. Appropriate BMPs to control the risk of erosion and sediment transport must be maintained. The topsoil and organic rich soils shall either be stockpiled on-site separately for future use or be removed from the construction area. Depth of stripping can be

minimized with real-time onsite observation of sufficient removals. A representative of the GER should observe site clearing, grading, and the bottoms of excavations before placing fill.

9.2 Site Development – Mass Grading

Site grading shall incorporate the requirements of IBC 2015 Appendix J. 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.

Do not commence site clearing and grading operations until temporary erosion and sedimentation control measures are in place. Provide erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff to adjacent properties, hardscape areas, paved roadways and walkways, according to Stormwater Pollution Protection Plan (SWPPP) and requirements of the Authorities Having Jurisdiction. Verify that flows of water are redirected from grading areas or runoff generated by construction activity do not enter work zones.

Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated on plans. Provide a smooth transition between adjacent existing grades and new grades. Use smooth bladed equipment to create undisturbed subgrades. Place backfill evenly adjacent to structures, piping, or conduit to required elevations. Wedging action shall be prevented of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift. A representative of the GER should verify the resulting subgrade consists of suitable, undisturbed soil and verify subgrade compaction and stability requirements are met.

Allow a representative of the GER to observe earth moving processes, to inspect and test subgrades and each fill or backfill layer, and to observe completed work. Proceed with subsequent earthmoving only after inspections confirm previously completed work complies with requirements. Inspections and tests include:

1. Determine prior to placement of fill that subgrade has been prepared in compliance with requirements of the Geotechnical Report and project specifications.
2. Determine that fill material classification and maximum lift thickness comply with requirements of the Geotechnical Report.
3. Determine, during placement and compaction, that in-place density of compacted fill complies with requirements of the Geotechnical Report and project specifications.

Mitigation of Loose or otherwise Unsatisfactory Soils: Over-excavate soft, loose, or wet soils, and areas of pumping or rutting, to a firm bearing surface or to a depth determined by the GER below working subgrade, extend overexcavation laterally beyond the delineated unstable area. A representative of the GER shall inspect the excavations when subgrade has reached the required elevation. If the GER determines that unsatisfactory soil is present, or that subgrade does not meet requirements specified herein, continue excavation and replace with suitable compacted granular backfill or fill material as directed. Place each lift of backfill and fill soil materials evenly to the required elevations. Condition each lift of fill to near-optimum moisture content and compact to specified density before placing subsequent lifts. Proof-roll the subgrade with two or three passes of heavy construction equipment, such as a water truck or tandem axle dump truck that is fully loaded, to identify remaining soft, loose, or pumping areas within the working subgrade. In areas not accessible by trucks for proof rolling, during wet weather, or when the exposed subgrade is unsuitable for proof rolling, the subgrade should be evaluated by observing excavation activity and probing with a steel T-probe.

Soil Moisture Control: All fill soils must be maintained within near-optimum moisture content at time of compaction. Uniformly moisten subgrade and each subsequent fill or backfill soil layer before compaction to near-optimum moisture content, unless indicated otherwise. For native soils, assume +/- two percent (2%) limit unless compaction efforts prove a higher tolerance is acceptable to meet compaction requirements. Remove and replace, or scarify and air dry, otherwise

satisfactory soil material that exceeds near-optimum moisture content and is too wet to compact to specified dry density. Do not place backfill or fill soil material on surfaces that are saturated, muddy, frozen, or contain frost, snow, or ice.

9.3 Wet Weather and Wet Soil Conditions

Native fine-grained silty and sands soils (loess soils) are moisture- and disturbance-sensitive due to fines content and may be susceptible to pumping when excessively moist or wet and disturbed by construction traffic. Soil disturbance will negatively impact the soils performance.

Disturbed and/or un-compacted soil shall not be allowed within building pad and hardscape areas. Accomplish earthwork in small sections and carry such work through to completion to reduce exposure to wet weather. Soils that become too wet for compaction are to be removed and replaced with clean, imported granular material.

Carefully stage equipment and/or stockpiles, route construction equipment away from subgrades, and implement aggressive site drainage procedures to help reduce saturating subgrades during wet weather conditions.

Cover work areas and stockpiles with plastic. Use straw bales, straw wattles, geotextile silt fences, and/or other measures as appropriate to control soil erosion.

Equipment with large tracks, lugs, or having toothed buckets has a significant potential to disturb the site soil prior to or following compaction. Rubber-tired vehicles should not access prepared subgrades unless the subgrade is sufficiently stiff to allow construction traffic without disturbance.

Maintain the subgrade in a compacted condition and protect subgrades from construction traffic disturbance after they have been prepared and meet compaction requirements. Consequently, do not operate construction equipment or vehicles on prepared subgrade areas during wet weather conditions.

Prior to rain and other events that may cause onsite native fine-grained soils to exceed optimum moisture content, stabilize such soils to minimize potential for erosion into adjacent excavations.

Earthwork should not be performed immediately after rainfall, or until soil can dry sufficiently to allow construction traffic without disturbing the subgrade. After inclement weather, inspect all subgrade areas prepared before the inclement weather conditions.

If necessary for continuing operations after wet weather, provide a layer of ballast rock or quarry spalls course for access or haul roads, with or without underlying geotextile fabric.

For soils exhibiting pumping, rutting, weaving, or otherwise exhibiting unstable performance, moisture-condition (typically dry) and re-compact the soil, or remove and replace the unstable soils as described below:

1. For any areas that become unstable, comply with recommendations of the GER. If moisture-conditioning is impractical or may create project delays, suitable options include, but are not limited to:
 - a. Over-excavate to firm bearing using smooth-bladed equipment, replace unsuitable material with imported crushed rock structural fill material compacted as appropriate for its location within the building pad and hardscape areas.
 - b. Mechanically stabilize subgrades with coarse crushed aggregate underlain with geotextile fabric, compacted into the subgrade.
 - c. Perform excavation and fill placement in the presence of a representative of the GER to verify that unsuitable materials are fully removed and that grading achieves suitable compaction and site drainage.

9.4 Subgrade Preparation

Due to the variability of the near-surface soils, we recommend scarifying and recompacting minimum 12 inches of the native subgrade below areas of proposed improvements including building lots, roadway and hardscapes. The depth of scarification and recompaction may be increased in real-time based on the exposed conditions at the discretion of the GER. This requirement for recompaction of 12 inches applies to the native subgrades prior to placement of any fill, as well as the finished cut subgrade. Fill materials, consisting of suitable onsite materials

or imported fill, shall be placed as engineered fill to the design grades. Where fill is placed on existing ground steeper than 5V:1H, the fill should be keyed and benched into firm native soil.

9.5 Subgrade Protection

The degree to which construction grading problems develop is expected to be dependent, in part, on the time of year that construction proceeds and the precautions which are taken by the contractor to protect the subgrade. The near-surface fine-grained soils currently present on site may be moisture and disturbance sensitive due to their fines content and may become unstable (pumping) if allowed to increase in moisture content and are disturbed (rutted) by construction traffic if wet. If necessary, the construction access road shall be covered with a layer of ballast or quarry spalls. The soils are also susceptible to erosion in the presence of moving water. The soils shall be stabilized to minimize the potential of erosion into the foundation excavation. The site shall be graded to prevent water from ponding within construction areas and/or flowing into excavations. Accumulated water must be removed immediately along with any unstable soil. Foundation concrete shall be placed and excavations backfilled as soon as possible to protect the bearing grade. We further recommend that soils that become unstable are to be either:

- Removed and replaced with structural compacted gravel fill, or
 - Mechanically stabilized with a coarse crushed aggregate and compacted into the subgrade.
1. Protect subgrades from damage and degradation from construction activities, weather, run-off or run-on, and other environmental or construction conditions.
 2. Protect subgrades against freezing temperatures and frost. If a subgrade freezes, it must be re-compacted and retested prior to acceptance.
 3. Protect subgrades from disturbance due to construction traffic. Rubber-tired vehicles should not access prepared subgrades unless the subgrade is sufficiently stiff to allow construction traffic without disturbance.
 4. Protect subgrades from softening and damage by rain or water accumulation. Repair subgrades that are disturbed, soft, or otherwise do not meet requirements stated herein.

5. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions. Scarify or remove and replace soil material to depth as directed by Geotechnical Engineer of Record; reshape and recompact at optimum moisture content to the required density.

9.6 Temporary Excavations

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 be able to monitor the subsurface conditions encountered. 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 regulation including the current OSHA Excavation and Trench Safety Standards, and OSHA Health and Safety Standards for Excavations, 29 CFR Part 1929, or successor regulations.

According to chapter 296-155 of the Washington Administrative Code (WAC), it is our opinion that the near-surface soil encountered at the site is classified as Type C soils. 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. Where unstable soils are encountered, flatter slopes may be required. 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.

Excavation of the on-site silty soils can be accomplished with most types of conventional earth excavation equipment. Where basalt rock or cemented strata are encountered within the excavations, rock excavation techniques will be necessary. Because of the potential massive nature of basalt blocks that may be encountered at the site, drilling and blasting may be required.

9.7 Re-Use of Onsite Soils as Engineered Fill

The onsite soils may be suitable for use as engineered fill, provided they are free of significant organic or deleterious matter, and rocks greater than 5 inches. Due to the noted variability of the onsite soil materials ranging from silts to gravels/cobble, re-use of onsite soils for placement as engineered fills should be screened and processed/blended as necessary to generate a relatively uniform fill material. Fill soils 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 onsite soils will require compaction to be performed within a range of $\pm 2\%$ of optimum moisture to achieve the proper degree of compaction. Compaction should be verified by testing.

The shrinkage factor for earthwork is expected to range from approximately 15% to 30% for the upper excavated or scarified silty site soils. This estimate is based on compactive effort to achieve a minimum relative compaction of 95% and may vary with contractor methods. Losses from site clearing will affect earthwork quantity calculations and should be considered.

9.8 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, or SW-SM with a maximum rock size of 3 inches, minimum 80% passing the No. 4 sieve, and 5 to 20% 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.

9.9 Compaction Requirements for Engineered 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 8 inches.

9.10 Proof-Compaction Alternative to Conventional Proctor Testing with a Nuclear Density Gauge

Material containing an oversize fraction (i.e. more than 30% material retained on the 3/4-inch sieve) is non-proctor testable per ASTM D1557 method and density testing using a nuclear density gauge is not applicable to verify field compaction. If excessive oversize material is present within the structural fill material, compact oversized material using method specification.

1. Proof-roll such soils to a dense and unyielding surface using a loaded, 30-ton, tandem-axle dump truck.
2. For narrow trenches, use a single- or double-drum tandem vibratory roller with a minimum operating weight of 4 to 4-1/2 tons or a 15,000 lbs. excavator and hoe-pack with minimum 5,500 lbs. of impulse force at 2,000 cycles per minute. Compact each lift by applying steady and uniform pressure until achieving a dense and unyielding condition.
3. Adjust lift thickness and moisture content, as recommended by the GER, until the place fill layer exhibits firm, unyielding conditions.
4. Method compaction shall be observed on a full-time basis by a representative of the GER and shall achieve a dense, unyielding, and interlocking fill surface.
5. Over-excavate and recompact areas displaying pumping during proof-compaction, as direct by the GER.

9.11 Imported Crushed Rock Structural Fill

Imported crushed rock structural fill shall consist of well-graded, crushed aggregate material meeting the grading requirements of WSDOT 2018 Standard Specifications, Section 9-03.9(3) (1-1/4 inch minus Base Course Material) presented here:

Table 7: WSDOT Standard Spec. 9-03.9(3) (1-1/4" minus Base Course)

Sieve Size	Percent Passing (by Weight)
1 1/4 Inch Square	99 - 100
1 Inch Square	80 - 100
5/8 Inch Square	50 – 80
U.S. No. 4	25 - 45
U.S. No. 40	3 – 18
U.S. No. 200	Less than 7.5

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).

9.12 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. To minimize trench subgrade disturbance during excavation, the excavator should use a smooth-edged bucket rather than a toothed bucket.

Pipe bedding and pipe zone materials shall conform to Section 9-03.12(3) of the Washington State Department of Transportation (WSDOT) 2018 Standard Specifications. 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.

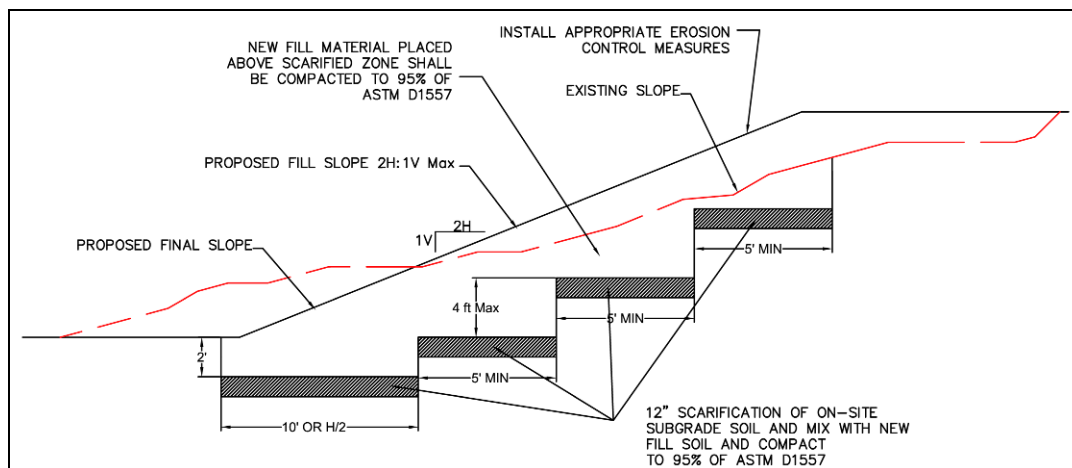
Placement of bedding material is particularly critical where maintenance of precise grades is essential. Backfill placed within the first 12 inches above utility lines should be compacted to at least 90% of the maximum dry density (ASTM D1557), such that the utility lines are not damaged during backfill 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.

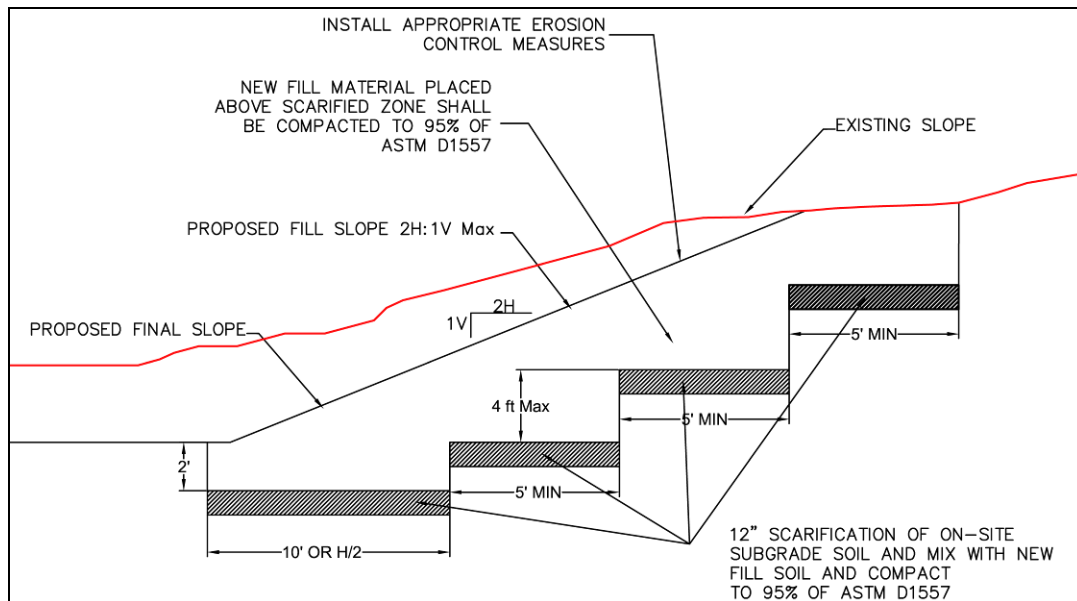
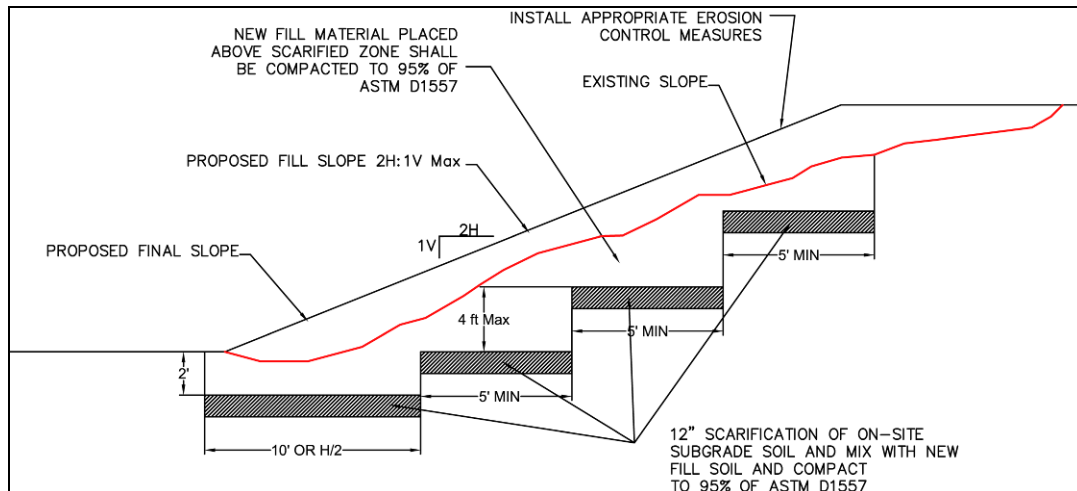
Onsite soils are considered suitable for utility trench backfill provided they are free of oversize material, significant organic/deleterious matter and can be adequately compacted. All excavations should be wide enough to allow for compaction around the haunches of pipes and underground tanks. We recommend that utility trenching, installation, and backfilling conform to all applicable federal, state, and local regulations such as OSHA and WISHA for open excavations.

9.13 Graded Slope Construction

Development on sloping ground poses an inherent risk related to global and local stability of site slopes. In order to mitigate the potential hazards of erosion and slope instability, site development will require appropriate design and construction including slope stabilization and drainage/erosion control measures to mitigate the observed geotechnical and geologic site constraints. Proposed development of the site will require areas of significant slope grading in addition to the use of earth retaining structures and/or engineered reinforced slope construction. Based on our slope stability analyses, properly re-constructed cut/fill slopes can be safely developed at gradients as steep as 2:1 with a total net height of 10-feet or less provided the recommendations in this report are followed during design and construction.

In general, we recommend that all future proposed cut or fill slopes at the project site shall be engineered and constructed to a maximum gradient of 2H:1V and a maximum height of 10-feet in accordance with the recommendations of this section. Grading details for proper slope construction are shown below:





Fill Slopes (2H:1V Maximum Gradient & Maximum Height of 10')

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. Benching dimensions into existing native slopes shall be a minimum 5 feet horizontal and maximum 4 feet vertical from the lowest adjacent soil grade. 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 (8-10 inch loose thickness, depending upon compaction equipment). Each lift should be moisture-conditioned and thoroughly compacted. The desired moisture condition 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 (2H:1H Maximum Gradient & Maximum Height of 10')

We recommend reconstruction of any proposed cut-slope faces by keying and benching into native soils, along with replacement with engineered fill. A key shall be constructed at the toe of the proposed cut slope, 24-inches deep, with horizontal dimensions of 10 feet of H/2 (where H is the finished height of the slope). Benching dimensions into native cut slopes shall be a minimum 5 feet horizontal and maximum 4 feet vertical from the lowest adjacent soil grade. The exposed native surface of the overcut bench should be scarified, moisture conditioned, and recompacted to a dense and non-yielding surface prior to replacement with engineered fill. The reconstructed cut slope faces shall be overbuilt and cut back to grade, exposing the firm and compacted surface. The

GER, or their representatives, should monitor cut slopes during construction, to check for adverse geologic features exposed within the cut face.

A representative of the GER, should monitor cut slopes during construction, to check for adverse geologic features exposed within the cut face. Although not anticipate, proposed slopes may require finished at a shallower gradient or reconstruction as buttressed slopes if adverse geologic conditions are exposed during construction.

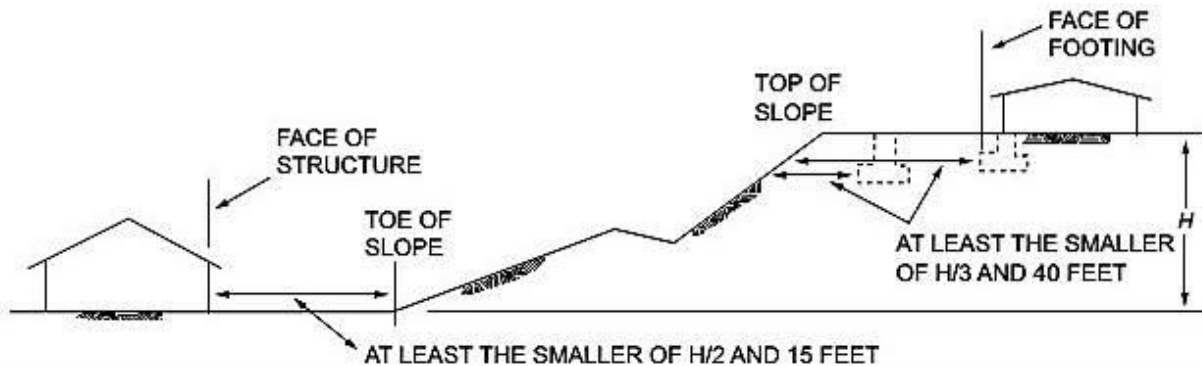
Optional Engineered Reinforced Slopes

Slopes constructed at gradients steeper than 2H:1V and/or taller than 10' will require an engineered reinforcement design to increase the factor of safety against slope failure to acceptable minimums. Several methods of engineered slope reinforcement are available. One of the more cost-effective methods for slope reinforcement will consist of the inclusion of multiple layers of reinforcements (geogrids) placed horizontally during grading operations to construct the proposed slopes. The commonly used term of mechanically stabilized earth (MSE) best describes this method of soil reinforcement, or reinforced soils slopes (RSS) for use in engineered strengthened slopes. Design requirements for MSE slope structures should be developed in accordance with the Federal Highway Administration's "Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Design and Construction Guidelines" (FHWA NHI-10-024, 2009).

In addition to slope angle and soil strength parameters, the stability of the slopes is also controlled in part by the overall slope height and surcharge loads. Surface erosion control and internal drainage are also important integral parts of the final design and construction of the reinforced soils slopes. The engineered reinforcement should be designed to result in a stable slope with a minimum computed factor of safety of 1.5 for the static condition. Because of the numerous variables controlling the effectiveness of the engineered reinforcement for optional steeper and/or taller regraded slopes, a specific reinforced slope design, including geogrids specification, spacing and embedment depths should be prepared for all proposed slopes. Careful site layout, planning and construction sequencing will be necessary to ensure that reinforced slopes are not weekend by subsequent construction of future improvements.

9.14 Slope Setbacks

In accordance with IBC 2018 Section 1808.7 *Foundations on or Adjacent to Slopes*: “foundations on or adjacent to slope surfaces shall be founded in firm material with an embedment and setback from the slope surface sufficient to provide vertical and lateral support for the foundation without detrimental settlement.” IBC Figure 1808.7.1 (presented below) defines the appropriate minimum setbacks from ascending and descending slope surfaces:



The long-term performance of the structure near slopes is dependent on the protection of slopes from erosion or over steepening from subsequent slope grading. Slopes should be maintained to prevent erosion or undermining of the toe.

9.15 Slope Maintenance and Erosion Protection

Future proposed building sites will require appropriate setbacks from adjacent ascending or descending slopes in accordance with 2018 IBC Section 1808.7. Proper slope protection and maintenance will help minimize slope erosion and improve the stability of the project slopes. The project soils are prone to erosion and will require appropriate BMP 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 no-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 the project. Landscaping should take into consideration the engineering characteristics of the slopes, especially with regards to the surficial stability.

The need for and design of flood control and erosion protection measures is within the purview of the design civil engineer. In general, erosion should be mitigated with best management practices (BMPs) consisting of proper drainage design including collecting and disposal (conveyance) of water to approved points of discharge in a non-erosive manner. Appropriate project design, construction, and maintenance will be necessary to mitigate the site erosion concerns. If during the course of grading, adverse or potentially adverse geologic conditions are encountered, the Geotechnical Engineer should analyze and make recommendations to treat these problems in real time.

9.16 Building Pad & Foundation Subgrade Preparation

Based on the existing site grades, we anticipate that mass grading for development of the apartment lots and infrastructure will result in lots graded with cut/fill transitions. To provide a uniform bearing support and minimize the potential for differential settlement of the structure resulting from a straddle condition, we recommend limiting the maximum differential of the thickness of fill material within the building pad footprint to 50%; i.e. if the thickest fill section within a given portion of the building pad is 8 feet, then no portion of the building pad shall be constructed with less than 4 feet of fill material across the footprint. This requirement shall apply to all building lots where the proposed thickness of fill exceeds 4 feet. This will require delineating building envelopes on the proposed residential lots. Subgrade preparation, fill placement and compaction shall be completed in accordance with the recommendations of this report and any subsequent design-level geotechnical evaluations.

9.17 Foundations

In our opinion, residential structures can be supported on conventional foundations bearing on competent native soils/rock and/or appropriately placed engineered fill as recommended in this report and any subsequent site- and structure-specific design-level geotechnical evaluations. The minimum footing depth shall be 24 inches below adjacent grades for frost protection and bearing capacity considerations.

It shall be noted that foundation elements shall not be designed or constructed to straddle a transitional cut to fill subgrade support condition. Preparation of the foundation subgrades and compaction of foundation support zone shall be verified by a representative of the GER prior to foundation construction.

Considering that the foundation bearing support zone is prepared in accordance with the recommendations of this and any subsequent report, all foundations shall bear on a minimum of 12 inches of 1-1/4 inch minus imported crushed rock structural fill meeting the quality and grading requirements of this report. The crushed rock shall be moisture conditioned and compacted to minimum 95% of the maximum dry density as determined by the Modified Proctor (ASTM D1557). Prior to placement of crushed aggregate fill, the subgrade soils shall be prepared per the recommendations of the *Building Pad & Foundation Subgrade Preparation* section. Furthermore, the native subgrade shall be scarified to a minimum depth of 12-inches, then moisture-conditioned and recompact to minimum 95% of the maximum dry density as determined by ASTM D1557 for minimum depth of 12 inches. The crushed rock and recompaction of the native subgrade shall extend minimum 12 inches beyond all sides of the foundations.

Footings constructed in accordance with the above recommendations of this report may be designed for an allowable 2,000 pounds per square foot (psf) bearing pressure. The allowable bearing pressure presented above may be increased by 1/3 for short-term, transient loading conditions. Provided footing subgrades are prepared in accordance with the recommendations presented in this report, based on theory of elasticity we estimate total foundation settlements will 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 an allowable passive earth pressure for compacted onsite fill of 220 psf per foot of embedment depth at depths greater than 2 feet below adjacent grades. 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. An appropriate factor of safety should be used to calculate sliding resistance at the base of footings.

9.18 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 percent of the maximum dry density as determined by the ASTM D1557 method. Prior to

placement of crushed aggregate fill, the subgrade soils shall be prepared per the recommendations of the *Building Pad & Foundation Subgrade Preparation* section.

9.19 Retaining Walls

The following table presents recommended lateral earth pressures for use in the design of retaining and below-grade walls. The values are given in terms of equivalent fluid pressures without surcharge loads and assume that proper drainage is provided behind the wall and that no-buildup of hydrostatic pressure occurs.

Table 8: Lateral Earth Pressures

Lateral Pressures	Granular Backfill
Active Pressure*	40 pcf (level ground) 58 pcf (max. 3H:1V slope)
At-Rest Pressure	60 pcf (level ground) 88 pcf (max. 3H:1V slope)

*use when wall is permitted to rotate 0.1 to 0.2% of wall height

9.20 Drainage for Retaining Walls

To reduce hydrostatic pressure and the potential of moisture-related problems within the proposed daylight basements, we recommend that a perimeter drain-tile or equivalent system of backfill drainage be incorporated into the sublevel foundation wall design. The outside surface of the foundation walls should be damp-proofed with a water-resistant membrane to inhibit the transmission of moisture and moisture vapor. Damp-proofing and installation of the water-resistant membrane should be installed according to the manufacturer's specifications.

The drain-tile should be installed adjacent to the outside of the footing at the bottom of the footing elevation. The drain-tile should be covered with a minimum of 6 inches of ½- to ¾-inch free-draining gravel and wrapped with a water-permeable geo-textile fabric to limit the migration of fines that could clog the system. An alternative pre-wrapped perforated drain-tile may be considered that would eliminate the need for wrapped aggregate around the drain pipe.

Backfill immediately behind the below-grade retaining structure above the drain-tile should be a free-draining granular material. The upper 6 inches of backfill should be of lower permeable material consisting of topsoil, silt, or clay to limit infiltration of surface water into the perimeter drain system.

9.21 Surface Drainage

With respect to surface water drainage, we recommend that the ground surface be sloped to drain away from future structures. 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 5% 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. Catch basins, drainage swales, or other drainage facilities should be aptly located. 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.

10.0 CONTINUING GEOTECHNICAL 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

11.0 LIMITATIONS OF THE GEOTECHNICAL EVALUATION REPORT

This FEASIBILITY GEOTECHNICAL EVALUATION & CRITICAL AREAS 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. 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. Provided that the site conditions are not disturbed or altered after the planned grading is completed, the report will be valid for a period of **5 years** 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)

Geologic Hazards Map (Figure 3)

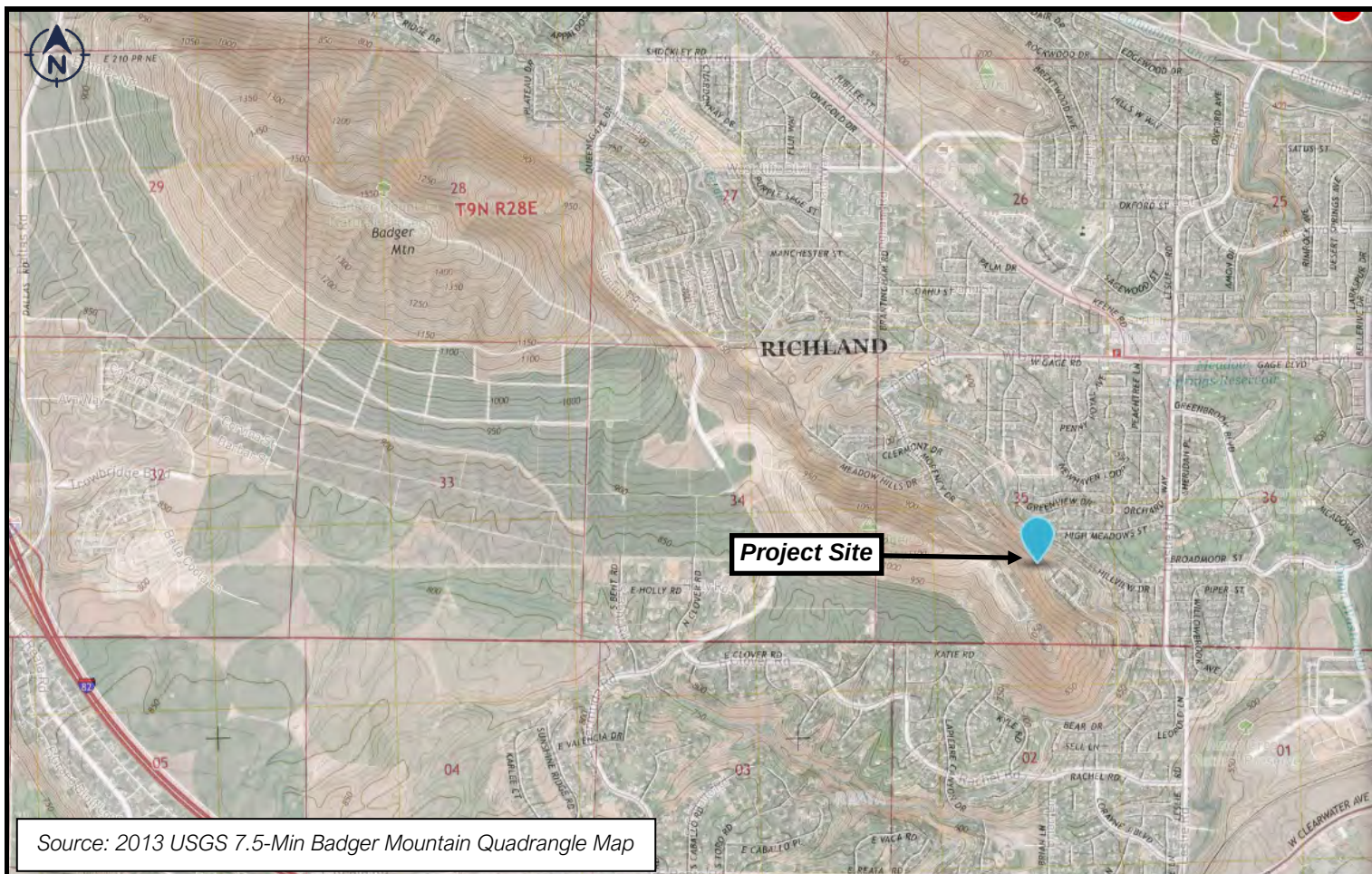


FIGURE 1: VICINITY MAP

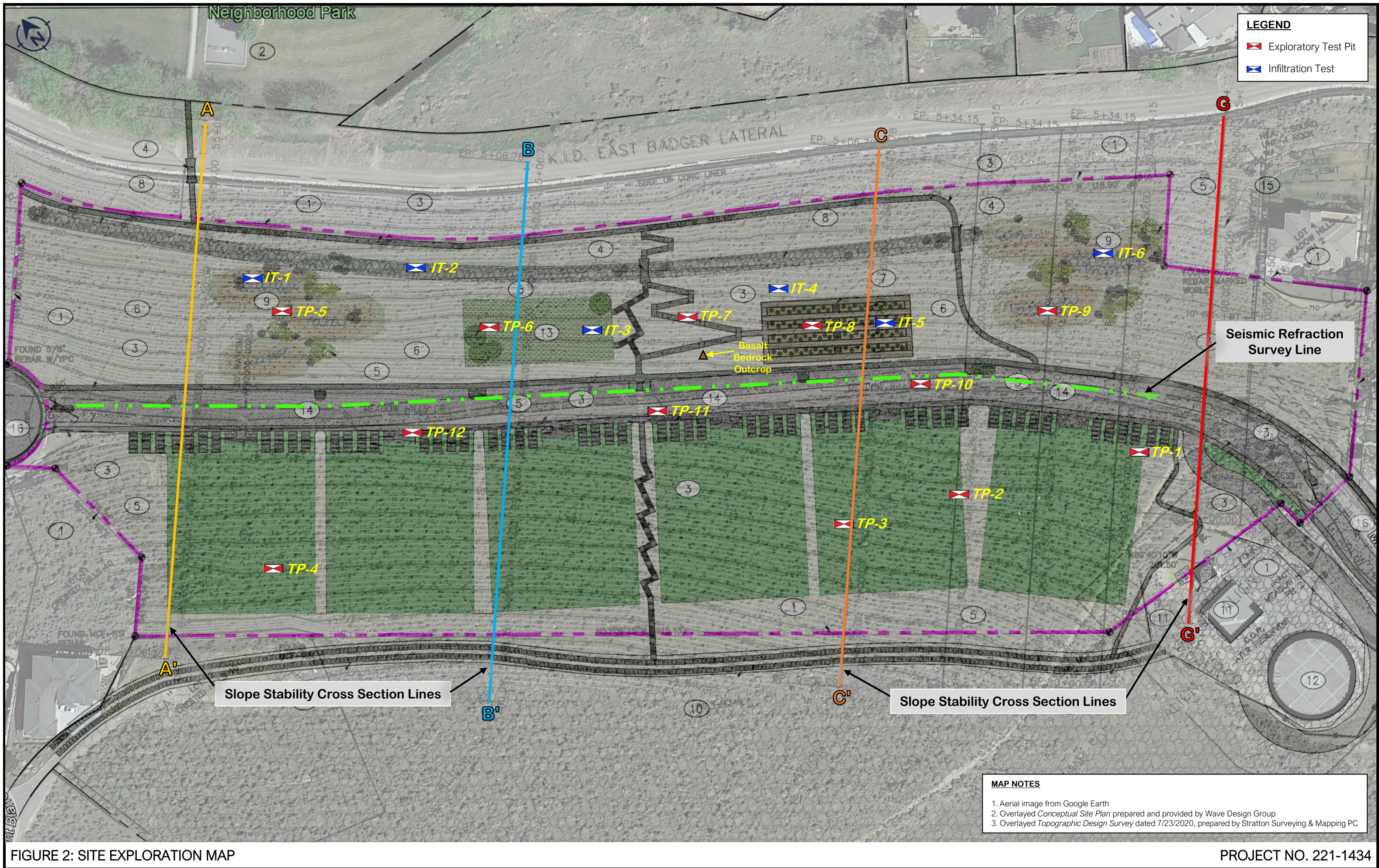




FIGURE 3: GEOLOGIC HAZARDS MAP

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



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TEST PIT NUMBER TP-1

PAGE 1 OF 1

CLIENT <u>TMT Homes (NW), LLC</u>	PROJECT NAME <u>Meadow Hills Proposed Multi-Family Housing</u>
PROJECT NUMBER <u>221-1434</u>	PROJECT LOCATION <u>Meadow Hills Drive, Richland, WA</u>
DATE STARTED <u>9/30/21</u> COMPLETED <u>9/30/21</u>	GROUND ELEVATION <u>~764 ft</u> TEST PIT SIZE <u>30 x 72 inches</u>
EXCAVATION CONTRACTOR <u>Van Belle Excavating, LLC</u>	GROUND WATER LEVELS:
EXCAVATION METHOD <u>Hitachi 160LC</u>	AT TIME OF EXCAVATION <u>---</u>
LOGGED BY <u>MBB</u> CHECKED BY <u>KAH</u>	AT END OF EXCAVATION <u>---</u>
NOTES <u>Approx. GPS Coords.: 46.217173°, -119.274168°</u>	AFTER EXCAVATION <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0.0					
				BRUSH / WEEDS / ROOTS	763.5
		ML		SILT WITH SAND, (ML) light brown, dry, appears medium dense, roots to ~2.5' BGS	
2.5					
					761.0
		GM		SILTY GRAVEL WITH SAND, (GM) brown to dark brown, subrounded to subangular, dry to damp, appears dense, with white caliche layers (COLLUVIUM)	
5.0					
					758.0
				HIGHLY WEATHERED / HIGHLY FRACTURED BASALT BEDROCK, dark brown	
7.5					
10.0				- appears very dense	
12.5					
					750.0
14.0					

- Test pit terminated at ~14' BGS due to bucket refusal on basalt bedrock
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020
prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 14.0 feet.



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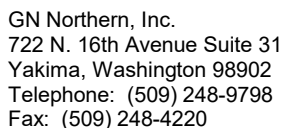
TEST PIT NUMBER TP-2

PAGE 1 OF 1

CLIENT <u>TMT Homes (NW), LLC</u>	PROJECT NAME <u>Meadow Hills Proposed Multi-Family Housing</u>
PROJECT NUMBER <u>221-1434</u>	PROJECT LOCATION <u>Meadow Hills Drive, Richland, WA</u>
DATE STARTED <u>9/30/21</u> COMPLETED <u>9/30/21</u>	GROUND ELEVATION <u>~784 ft</u> TEST PIT SIZE <u>30 x 72 inches</u>
EXCAVATION CONTRACTOR <u>Van Belle Excavating, LLC</u>	GROUND WATER LEVELS:
EXCAVATION METHOD <u>Hitachi 160LC</u>	AT TIME OF EXCAVATION <u>---</u>
LOGGED BY <u>MBB</u> CHECKED BY <u>KAH</u>	AT END OF EXCAVATION <u>---</u>
NOTES <u>Approx. GPS Coords.: 46.217377°, -119.274790°</u>	AFTER EXCAVATION <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S. GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
				BRUSH / WEEDS / ROOTS
				0.5
				SILT WITH SAND, (ML) light brown, dry, appears medium dense
2.5				
			ML	
5.0				
				6.0
	GB	MC = 3% Fines = 82%		SILTY GRAVEL WITH SAND, (GM) brown, dry, appears dense (COLLUVIUM)
7.5				
			GM	
10.0				
				12.5
12.5				BASALT BEDROCK, brown
				13.5

- Test pit terminated at ~13.5' BGS due to bucket refusal on basalt bedrock
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 13.5 feet.



PAGE 1 OF 1

PROJECT NAME Meadow Hills Proposed Multi-Family Housing

PROJECT LOCATION Meadow Hills Drive, Richland, WA

GROUND ELEVATION ~804 ft **TEST PIT SIZE** 30 x 72 inches

GROUND WATER LEVELS:

AT TIME OF EXCAVATION ---

AT END OF EXCAVATION ---

AFTER EXCAVATION ---

MATERIAL DESCRIPTION

- Test pit terminated at ~13' BGS due to refusal on basalt bedrock
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.



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TEST PIT NUMBER TP-4

PAGE 1 OF 1

CLIENT	TMT Homes (NW), LLC	PROJECT NAME	Meadow Hills Proposed Multi-Family Housing
PROJECT NUMBER	221-1434	PROJECT LOCATION	Meadow Hills Drive, Richland, WA
DATE STARTED	9/30/21	COMPLETED	9/30/21
EXCAVATION CONTRACTOR	Van Belle Excavating, LLC	GROUND ELEVATION	~839 ft
EXCAVATION METHOD	Hitachi 160LC	TEST PIT SIZE	30 x 72 inches
LOGGED BY	MBB	CHECKED BY	KAH
NOTES	Approx. GPS Coords.: 46.218329°, -119.276956°		
		GROUND WATER LEVELS:	
		AT TIME OF EXCAVATION	---
		AT END OF EXCAVATION	---
		AFTER EXCAVATION	---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
				BRUSH / WEEDS / ROOTS
				SILT WITH SAND, (ML) light brown, dry, appears medium dense
2.5				
				- trace gravel, trace cobbles
5.0		ML		
				- some gravel
7.5				
10.0		GM		SILTY GRAVEL WITH SAND, (GM) brown, dry, appears dense, cemented (COLLUVIUM)
				BASALT BEDROCK, brown

- Test pit terminated at ~11' BGS due to bucket refusal on basalt bedrock
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 11.0 feet.



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TEST PIT NUMBER TP-5

PAGE 1 OF 1

CLIENT <u>TMT Homes (NW), LLC</u>	PROJECT NAME <u>Meadow Hills Proposed Multi-Family Housing</u>
PROJECT NUMBER <u>221-1434</u>	PROJECT LOCATION <u>Meadow Hills Drive, Richland, WA</u>
DATE STARTED <u>9/30/21</u> COMPLETED <u>9/30/21</u>	GROUND ELEVATION <u>~726 ft</u> TEST PIT SIZE <u>30 x 72 inches</u>
EXCAVATION CONTRACTOR <u>Van Belle Excavating, LLC</u>	GROUND WATER LEVELS:
EXCAVATION METHOD <u>Hitachi 160LC</u>	AT TIME OF EXCAVATION <u>---</u>
LOGGED BY <u>MBB</u> CHECKED BY <u>KAH</u>	AT END OF EXCAVATION <u>---</u>
NOTES <u>Approx. GPS Coords.: 46.218833°, -119.276334°</u>	AFTER EXCAVATION <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S. GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
				BRUSH / WEEDS / ROOTS
				0.5
				SILT WITH SAND, (ML) light brown, dry, appears medium dense
2.5				
			ML	
	GB	MC = 2% Fines = 71%		
5.0				
				6.0
				SILTY GRAVEL WITH SAND, (GM) brown, dry, appears dense (COLLUVIUM)
7.5				
			GM	
				- with cobbles
10.0				
				10.0
				716.0

- Test pit terminated at ~10' BGS due to caving soils
 - Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
- Bottom of test pit at 10.0 feet.



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TEST PIT NUMBER TP-6

PAGE 1 OF 1

CLIENT	TMT Homes (NW), LLC	PROJECT NAME	Meadow Hills Proposed Multi-Family Housing
PROJECT NUMBER	221-1434	PROJECT LOCATION	Meadow Hills Drive, Richland, WA
DATE STARTED	9/30/21	COMPLETED	9/30/21
EXCAVATION CONTRACTOR	Van Belle Excavating, LLC	GROUND ELEVATION	~735 ft
EXCAVATION METHOD	Hitachi 160LC	TEST PIT SIZE	30 x 72 inches
LOGGED BY	MBB	CHECKED BY	KAH
NOTES	Approx. GPS Coords.: 46.218468°, -119.275768°		
		GROUND WATER LEVELS:	
		AT TIME OF EXCAVATION	---
		AT END OF EXCAVATION	---
		AFTER EXCAVATION	---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
				BRUSH / WEEDS / ROOTS
				SILT WITH SAND, (ML) light brown, dry, appears medium dense
2.5		ML		
5.0				
				SILTY GRAVEL WITH SAND, (GM) brown, dry, appears dense, with cobbles, trace boulders (COLLUVIUM)
7.5		GM		
				- with boulders, cemented
9.0				

- Test pit terminated at ~9' BGS due to bucket refusal on cemented gravel and boulders
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020
prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 9.0 feet.

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 11/18/21 13:40 - C:\USERS\YONG LEE\ONE DRIVE\PUBLIC\ACTIVE PROJECTS\221-1434 MEADOW HILLS, CRITICAL AREAS ASSESSMENT, RICHLAND WA\APPENDIX\221-1434 LOGS.GPJ



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TEST PIT NUMBER TP-7

PAGE 1 OF 1

CLIENT <u>TMT Homes (NW), LLC</u>	PROJECT NAME <u>Meadow Hills Proposed Multi-Family Housing</u>
PROJECT NUMBER <u>221-1434</u>	PROJECT LOCATION <u>Meadow Hills Drive, Richland, WA</u>
DATE STARTED <u>9/30/21</u> COMPLETED <u>9/30/21</u>	GROUND ELEVATION <u>~729 ft</u> TEST PIT SIZE <u>30 x 72 inches</u>
EXCAVATION CONTRACTOR <u>Van Belle Excavating, LLC</u>	GROUND WATER LEVELS:
EXCAVATION METHOD <u>Hitachi 160LC</u>	AT TIME OF EXCAVATION <u>---</u>
LOGGED BY <u>MBB</u> CHECKED BY <u>KAH</u>	AT END OF EXCAVATION <u>---</u>
NOTES <u>Approx. GPS Coords.: 46.218170°, -119.275168°</u>	AFTER EXCAVATION <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0.0					
				BRUSH / WEEDS / ROOTS	728.5
				SILT WITH SAND, (ML) light brown, dry, appears medium dense	
2.5		ML			
					725.5
				SILTY GRAVEL WITH SAND, (GM) brown, dry, appears dense (COLLUVIUM)	
5.0					
				- some cobbles	
7.5		GM			
				- becomes cemented	
10.0					719.0

- Test pit terminated at ~10' BGS due to bucket refusal on cemented gravel
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 10.0 feet.



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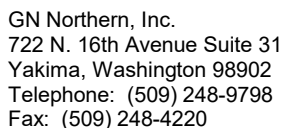
TEST PIT NUMBER TP-8

PAGE 1 OF 1

CLIENT TMT Homes (NW), LLC	PROJECT NAME Meadow Hills Proposed Multi-Family Housing
PROJECT NUMBER 221-1434	PROJECT LOCATION Meadow Hills Drive, Richland, WA
DATE STARTED 9/30/21 COMPLETED 9/30/21	GROUND ELEVATION ~730 ft TEST PIT SIZE 30 x 72 inches
EXCAVATION CONTRACTOR Van Belle Excavating, LLC	GROUND WATER LEVELS:
EXCAVATION METHOD Hitachi 160LC	AT TIME OF EXCAVATION ---
LOGGED BY MBB CHECKED BY KAH	AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46.217953°, -119.274825°	AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0.0					
				BRUSH / WEEDS / ROOTS	729.5
		ML		SILT WITH SAND, (ML) light brown, dry, appears medium dense	
2.5					
				SILTY GRAVEL WITH SAND, (GM) brown, dry, appears dense (COLLUVIUM)	727.0
5.0		GM			
				BASALT BEDROCK, brown	723.5
					723.0

- Test pit terminated at ~7' BGS due to bucket refusal on basalt bedrock
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020
prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 7.0 feet.



PAGE 1 OF 1

PROJECT NAME Meadow Hills Proposed Multi-Family Housing

PROJECT LOCATION Meadow Hills Drive, Richland, WA

GROUND ELEVATION ~726 ft **TEST PIT SIZE** 30 x 72 inches

GROUND WATER LEVELS:

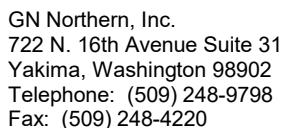
AT TIME OF EXCAVATION ---

AT END OF EXCAVATION ---

AFTER EXCAVATION ---

MATERIAL DESCRIPTION

- Test pit terminated at ~6' BGS due to bucket refusal on basalt bedrock
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.



PAGE 1 OF 1

PROJECT NAME Meadow Hills Proposed Multi-Family Housing

PROJECT LOCATION Meadow Hills Drive, Richland, WA

GROUND ELEVATION ~746 ft **TEST PIT SIZE** 30 x 72 inches

GROUND WATER LEVELS:

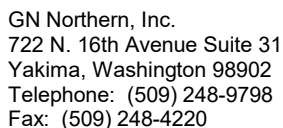
AT TIME OF EXCAVATION ---

AT END OF EXCAVATION ---

AFTER EXCAVATION ---

MATERIAL DESCRIPTION

- Test pit terminated at ~6' BGS due to bucket refusal on boulders and cemented material
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 6.0 feet.



PAGE 1 OF 1

PROJECT NAME Meadow Hills Proposed Multi-Family Housing

PROJECT LOCATION Meadow Hills Drive, Richland, WA

GROUND ELEVATION ~766 ft **TEST PIT SIZE** 30 x 72 inches

GROUND WATER LEVELS:

AT TIME OF EXCAVATION ---

AT END OF EXCAVATION ---

AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0.0				BRUSH / WEEDS / ROOTS	765.5
0.5				SILT WITH SAND, (ML) light brown, dry, appears medium dense	
2.5					
5.0		ML			
7.5					
8.0				SILTY GRAVEL WITH SAND, (GM) brown, dry, appears dense (COLLUVIUM)	758.0
10.0		GM			
10.0				BASALT BEDROCK, brown	756.0
12.0					754.0

- Test pit terminated at ~12' BGS due to bucket refusal on basalt bedrock
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 12.0 feet.

Bottom of test pit at 12.0 feet.

GENERAL BH / TP / WELL - GINT STD US LAB GDT - 11/18/21 13:40 - C:\USERS\YONG LEE\ONE DRIVE\PUBLIC\ACTIVE PROJECTS\221-1434 MEADOW HILLS CRITICAL AREAS ASSESSMENT RICH AND WA\APPENDIX\221-1434 LOGS.GPJ



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TEST PIT NUMBER TP-12

PAGE 1 OF 1

CLIENT TMT Homes (NW), LLC	PROJECT NAME Meadow Hills Proposed Multi-Family Housing
PROJECT NUMBER 221-1434	PROJECT LOCATION Meadow Hills Drive, Richland, WA
DATE STARTED 9/30/21 COMPLETED 9/30/21	GROUND ELEVATION ~782 ft TEST PIT SIZE 30 x 72 inches
EXCAVATION CONTRACTOR Van Belle Excavating, LLC	GROUND WATER LEVELS:
EXCAVATION METHOD Hitachi 160LC	AT TIME OF EXCAVATION ---
LOGGED BY MBB CHECKED BY KAH	AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46.218379°, -119.276237°	AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0.0					
				BRUSH / WEEDS / ROOTS	781.5
				SILT WITH SAND, (ML) light brown, dry, appears medium dense	
2.5		ML			
					778.0
				SILTY GRAVEL WITH SAND, (GM) brown, dry, appears dense (COLLUVIUM)	
5.0		GM			
7.5					
					773.0
				HIGHLY WEATHERED / HIGHLY FRACTURED BASALT BEDROCK	
10.0					
					770.0
12.0					

- Test pit terminated at ~12' BGS due to bucket refusal on basalt bedrock
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 12.0 feet.



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722 N. 16th Avenue Suite 31
Yakima, Washington 98902
Telephone: (509) 248-9798
Fax: (509) 248-4220

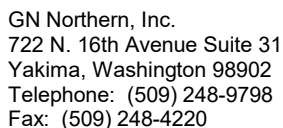
INFILTRATION TEST IT-1

PAGE 1 OF 1

CLIENT TMT Homes (NW), LLC	PROJECT NAME Meadow Hills Proposed Multi-Family Housing
PROJECT NUMBER 221-1434	PROJECT LOCATION Meadow Hills Drive, Richland, WA
DATE STARTED 10/1/21 COMPLETED 10/1/21	GROUND ELEVATION ~710 ft TEST PIT SIZE 30 x 72 inches
EXCAVATION CONTRACTOR Van Belle Excavating, LLC	GROUND WATER LEVELS:
EXCAVATION METHOD John Deere 35G Mini Excavator	AT TIME OF EXCAVATION ---
LOGGED BY MBB CHECKED BY KAH	AT END OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46.218947°, -119.276344°	AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S. GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
				BRUSH / WEEDS / ROOTS
				0.5
				SANDY SILT, (ML) light brown, dry, appears medium dense
2.5				
			ML	
	GB	MC = 4% Fines = 69%		
5.0				
				6.0
				SILTY GRAVEL WITH SAND, (GM) brown, dry, appears dense (COLLUVIUM)
7.5			GM	
				9.0
				709.5
				704.0
				701.0

- Infiltration test performed at ~4' BGS
 - Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
- Bottom of test pit at 9.0 feet.



PAGE 1 OF 1

PROJECT NAME Meadow Hills Proposed Multi-Family Housing

PROJECT LOCATION Meadow Hills Drive, Richland, WA

GROUND ELEVATION ~707 ft **TEST PIT SIZE** 30 x 72 inches

GROUND WATER LEVELS:

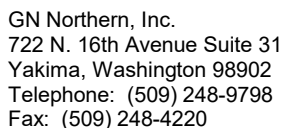
AT TIME OF EXCAVATION ---

AT END OF EXCAVATION ---

AFTER EXCAVATION ---

- Infiltration test performed at ~3.5' BGS
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 8.5 feet.

GENERAL BH/TP/ WELL - GINT STD US LAB GDT - 11/18/21 13:40 - C:\USERS\YONG LEE\ONE DRIVE\PUBLIC\ACTIVE PROJECTS\221 - 1434 MEADOW HILLS S. CRITICAL AREAS ASSESSMENT RICH/LAND WA/PEND\X221 - 1434 LOGS.GPJ



PAGE 1 OF 1

PROJECT NAME Meadow Hills Proposed Multi-Family Housing

PROJECT LOCATION Meadow Hills Drive, Richland, WA

GROUND ELEVATION ~735 ft **TEST PIT SIZE** 30 x 72 inches

GROUND WATER LEVELS:

AT TIME OF EXCAVATION ---

AT END OF EXCAVATION ---

AFTER EXCAVATION ---

- Infiltration test performed at ~3.5' BGS
- Groundwater not encountered at time of excavation
- Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
Bottom of test pit at 8.5 feet.

GENERAL BH/TP/ WELL - GINT STD US LAB GDT - 11/18/21 13:40 - C:\USERS\YONG LEE\ONE DRIVE\PUBLIC\ACTIVE PROJECTS\221 - 1434 MEADOW HILLS S. CRITICAL AREAS ASSESSMENT RICH/LAND WA/PEND\X221 - 1434 LOGS.GPJ



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INFILTRATION TEST IT-4

PAGE 1 OF 1

CLIENT TMT Homes (NW), LLC	PROJECT NAME Meadow Hills Proposed Multi-Family Housing
PROJECT NUMBER 221-1434	PROJECT LOCATION Meadow Hills Drive, Richland, WA
DATE STARTED 10/1/21	COMPLETED 10/1/21
EXCAVATION CONTRACTOR Van Belle Excavating, LLC	GROUND ELEVATION ~718 ft
EXCAVATION METHOD John Deere 35G Mini Excavator	TEST PIT SIZE 30 x 72 inches
LOGGED BY MBB	GROUND WATER LEVELS:
CHECKED BY KAH	AT TIME OF EXCAVATION ---
NOTES Approx. GPS Coords.: 46.218081°, -119.274837°	AT END OF EXCAVATION ---
	AFTER EXCAVATION ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0					
					BRUSH / WEEDS / ROOTS
					SANDY SILT, (ML) light brown, dry, appears medium dense
2.5			ML		
	GB	MC = 3% Fines = 60%			
5.0					
					BASALT BEDROCK, brown

- Infiltration test performed at ~4' BGS
 - Test pit terminated at ~6' BGS due to bucket refusal on basalt bedrock
 - Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
- Bottom of test pit at 6.0 feet.

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 11/18/21 13:40 - C:\USERS\YONG LEE\ONE DRIVE\PUBLIC\ACTIVE PROJECTS\221-1434 MEADOW HILLS, CRITICAL AREAS ASSESSMENT, RICHLAND WA\APPENDIX\221-1434 LOGS.GPJ



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Yakima, Washington 98902
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INFILTRATION TEST IT-5

PAGE 1 OF 1

CLIENT	TMT Homes (NW), LLC	PROJECT NAME	Meadow Hills Proposed Multi-Family Housing
PROJECT NUMBER	221-1434	PROJECT LOCATION	Meadow Hills Drive, Richland, WA
DATE STARTED	10/1/21	COMPLETED	10/1/21
EXCAVATION CONTRACTOR	Van Belle Excavating, LLC	GROUND ELEVATION	~730 ft
EXCAVATION METHOD	John Deere 35G Mini Excavator	TEST PIT SIZE	30 x 72 inches
LOGGED BY	MBB	CHECKED BY	KAH
NOTES	Approx. GPS Coords.: 46.217841°, -119.274607°		
		GROUND WATER LEVELS:	
		AT TIME OF EXCAVATION	---
		AT END OF EXCAVATION	---
		AFTER EXCAVATION	---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S. GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				
				BRUSH / WEEDS / ROOTS
				SILT WITH SAND, (ML) light brown, dry, appears medium dense
2.5			ML	
	GB	MC = 3% Fines = 75%		
5.0				
			GM	SILTY GRAVEL WITH SAND, (GM) brown, dry, appears dense, slightly cemented (COLLUVIUM)
				BASALT BEDROCK, brown

- Infiltration test performed at ~4' BGS
 - Test pit terminated at ~7' BGS due to bucket refusal on basalt bedrock
 - Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
- Bottom of test pit at 7.0 feet.



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INFILTRATION TEST IT-6

PAGE 1 OF 1

CLIENT	TMT Homes (NW), LLC	PROJECT NAME	Meadow Hills Proposed Multi-Family Housing
PROJECT NUMBER	221-1434	PROJECT LOCATION	Meadow Hills Drive, Richland, WA
DATE STARTED	10/1/21	COMPLETED	10/1/21
EXCAVATION CONTRACTOR	Van Belle Excavating, LLC	GROUND ELEVATION	~710 ft
EXCAVATION METHOD	John Deere 35G Mini Excavator	TEST PIT SIZE	30 x 72 inches
LOGGED BY	MBB	CHECKED BY	KAH
NOTES	Approx. GPS Coords.: 46.217631°, -119.273810°		
		GROUND WATER LEVELS:	
		AT TIME OF EXCAVATION	---
		AT END OF EXCAVATION	---
		AFTER EXCAVATION	---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	
0.0						
					BRUSH / WEEDS / ROOTS	709.5
			ML		SANDY SILT, (ML) light brown, dry, appears medium dense	
2.5						
			SM		SILTY SAND WITH GRAVEL, (SM) grayish brown, fine to coarse grained, dry, appears dense	707.0
	GB	MC = 4% Fines = 39%				
5.0			GM		SILTY GRAVEL WITH SAND, (GM) brown, dry, appears very dense, cemented (COLLUVIUM)	705.0
						704.0

- Infiltration test performed at ~4' BGS
 - Test pit terminated at ~6' BGS due to bucket refusal on cemented gravels
 - Groundwater not encountered at time of excavation
 - Referenced elevations are approximate and based on Topographic Design Survey dated 7/23/2020 prepared by Stratton Surveying & Mapping P.C.
- Bottom of test pit at 6.0 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	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	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

- Group Name
- Group Symbol
- Color
- Moisture content
- Density / consistency
- Cementation
- Particle size (if applicable)
- Odor (if present)
- 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	0.079	0.0171	0.0029
Boulders	Cobbles	Gravel		Sand		
		Coarse	Fine	Coarse	Medium	Fine
						Silt and Clay

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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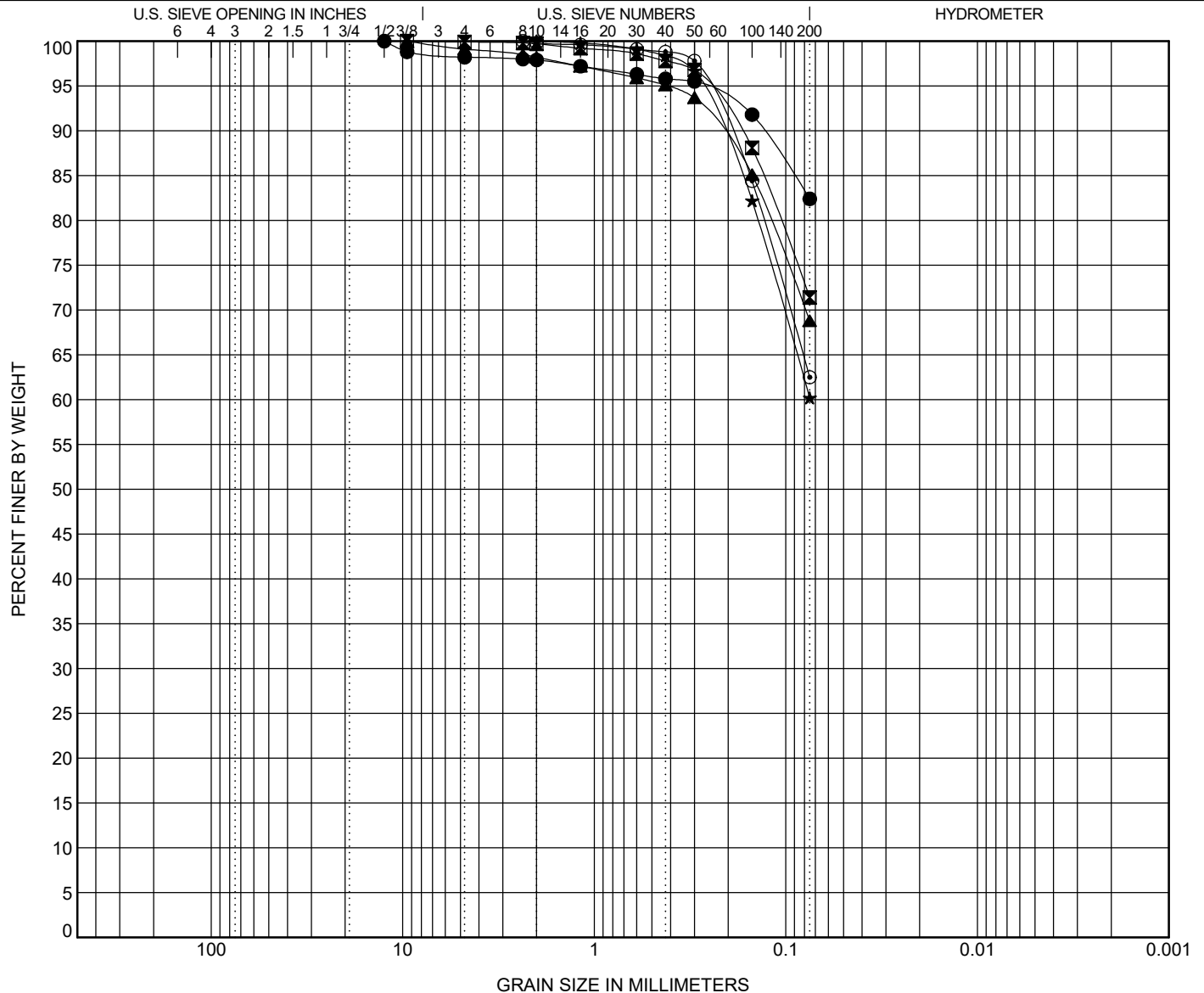
GRAIN SIZE DISTRIBUTION

CLIENT TMT Homes (NW), LLC

PROJECT NAME Meadow Hills Proposed Multi-Family Housing

PROJECT NUMBER 221-1434

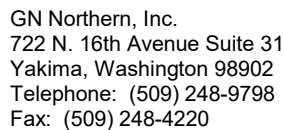
PROJECT LOCATION Meadow Hills Drive, Richland, WA



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

TEST PIT	DEPTH	Classification					LL	PL	PI	Cc	Cu
● TP-2	6.0	SILT WITH SAND (ML)									
✕ TP-5	4.0	SILT WITH SAND (ML)									
▲ IT-1	4.0	SANDY SILT (ML)									
★ IT-2	3.5	SANDY SILT (ML)									
⊙ IT-3	3.5	SANDY SILT (ML)									
TEST PIT	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt		%Clay	
● TP-2	6.0	12.5				1.8	15.8	82.4			
✕ TP-5	4.0	9.5				0.1	28.5	71.4			
▲ IT-1	4.0	9.5				0.9	30.3	68.8			
★ IT-2	3.5	2				0.0	39.8	60.2			
⊙ IT-3	3.5	2.36				0.0	37.5	62.5			

GRAIN SIZE - TEMPLATE_JESSE.GDT - 11/12/21 14:24 - C:\USERS\YONG LEE\ONE DRIVE\PUBLIC\ACTIVE PROJECTS\221-1434 MEADOW HILLS_CRITICAL AREAS ASSESSMENT, RICHLAND WA\APPENDIX\221-1434 LOGS.GPJ

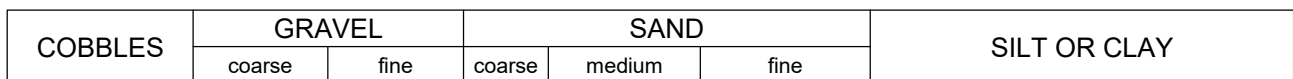


CLIENT TMT Homes (NW), LLC

PROJECT NAME Meadow Hills Proposed Multi-Family Housing

PROJECT NUMBER 221-1434

PROJECT LOCATION Meadow Hills Drive, Richland, WA

[illegible]



**Northwest Agricultural
Consultants**

2545 W Falls Avenue
Kennewick, WA 99336
509.783.7450
www.nwag.com
lab@nwag.com

PAP-Accredited

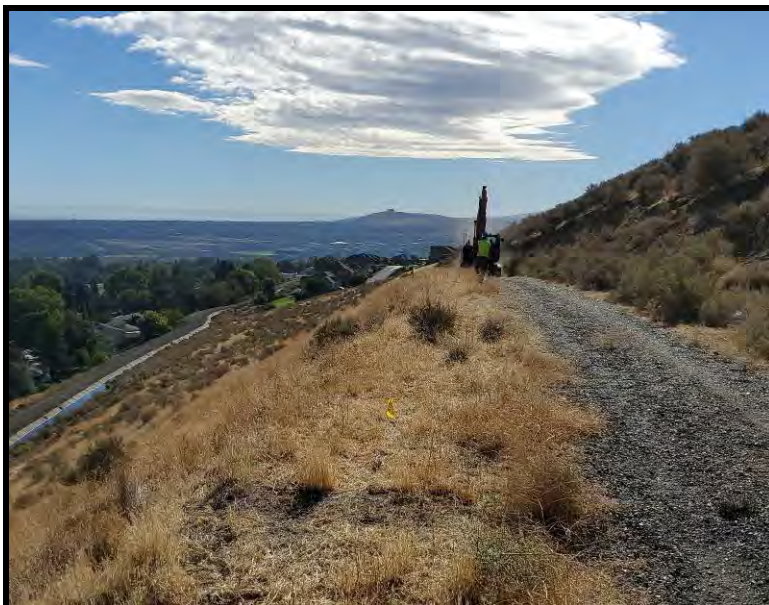


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YAKIMA, WA 98902

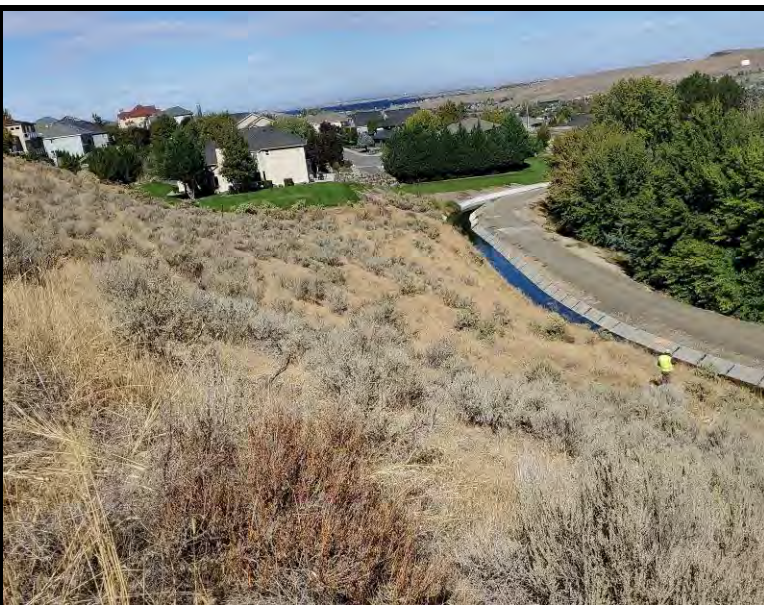
Report: 56988-1-1
Date: October 2, 2021
Project No: 221-1434
Project Name: Meadow Hills, Richland

Sample ID	Cation Exchange Capacity
IT-1 @ 4'	12.4 meq/100g
IT-2 @ 3.5'	10.9 meq/100g
IT-3 @ 3.5'	11.3 meq/100g
IT-4 @ 4'	10.7 meq/100g
IT-5 @ 4'	12.4 meq/100g
IT-6 @ 4'	17.5 meq/100g
Method	EPA 9081

Appendix IV
Site & Exploration Photographs



View of site conditions, looking southeast



View of site conditions, looking north/northwest



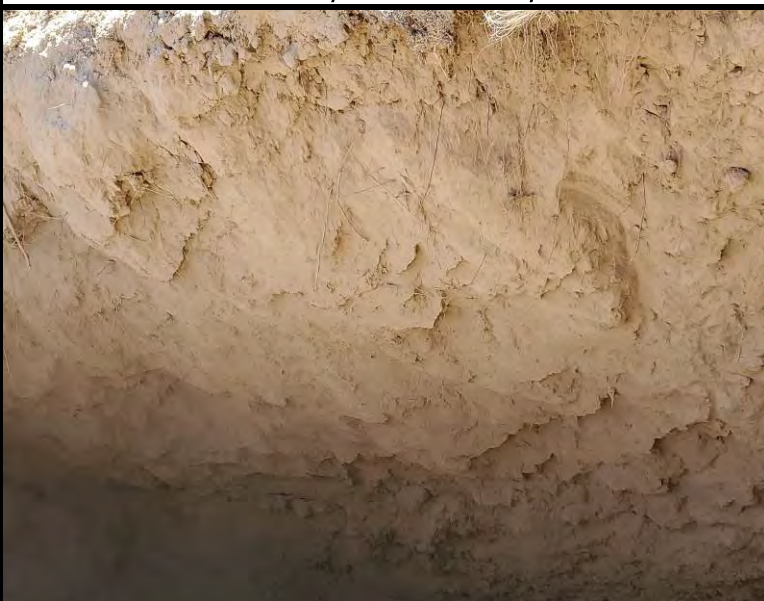
Excavation of test pit TP-1, view looking northwest



Subsurface soil profile within test pit TP-1



Excavation of test pit TP-2, view looking northeast



Subsurface soil profile within test pit TP-2



View of surface conditions near test pit TP-3



Subsurface soil profile within test pit TP-3



Mobilization to test pit TP-4, view looking south



Excavation of test pit TP-4



Subsurface soil profile within test pit TP-4



Excavation of test pit TP-5, view looking northwest



Subsurface soil profile within test pit TP-5



Subsurface soil profile within test pit TP-6



Subsurface soil profile within test pit TP-7



Excavation of test pit TP-8, view looking northwest



Subsurface soil profile within test pit TP-8



Subsurface soil profile within test pit TP-9



Subsurface soil profile within test pit TP-10



Subsurface soil profile within test pit TP-11



Subsurface soil profile within test pit TP-12



Infiltration test setup at IT-1



Infiltration test setup at IT-3

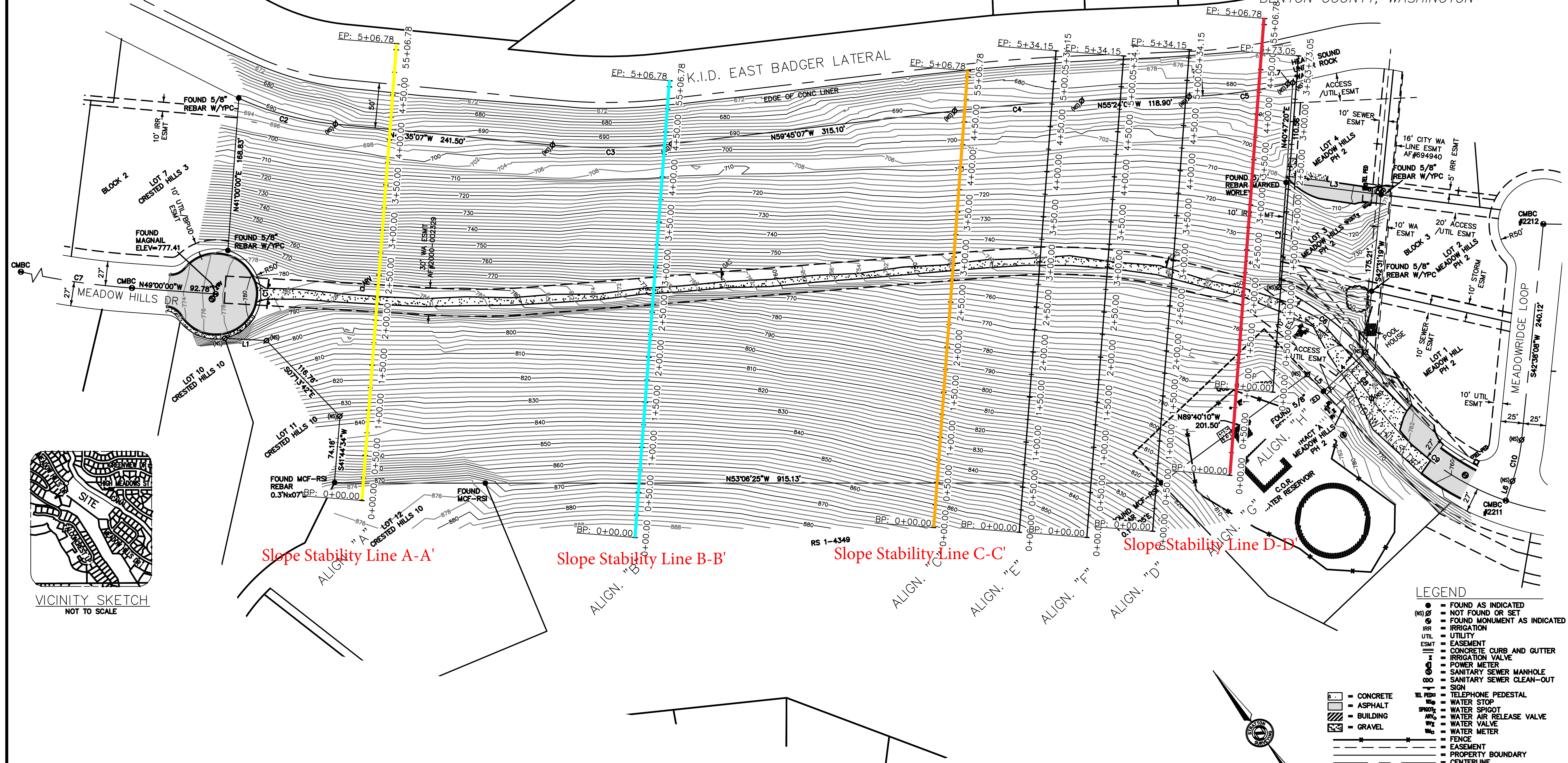


Infiltration test setup at IT-6

Appendix V
Topographic Survey Map &
Existing/Native Slope Profiles

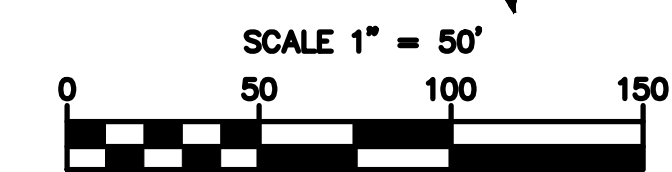
TOPOGRAPHIC DESIGN SURVEY

S. 1/2 OF SEC. 35, T.09N., R.28E., W.M.,
CITY OF RICHLAND,
BENTON COUNTY, WASHINGTON



LEGEND

- = FOUND AS INDICATED
- (NS) = NOT FOUND OR SET
- ⊙ = FOUND MONUMENT AS INDICATED
- IRR = IRRIGATION
- UTIL = UTILITY
- ESMT = EASEMENT
- = CONCRETE CURB AND GUTTER
- = IRRIGATION VALVE
- = POWER METER
- = SANITARY SEWER MANHOLE
- = SANITARY SEWER CLEAN-OUT
- = SIGN
- TEL PED = TELEPHONE PEDESTAL
- WS = WATER STOP
- SPWOT = WATER SPIGOT
- ARV = WATER AIR RELEASE VALVE
- WV = WATER VALVE
- WM = WATER METER
- = FENCE
- = EASEMENT
- = PROPERTY BOUNDARY
- = CENTERLINE



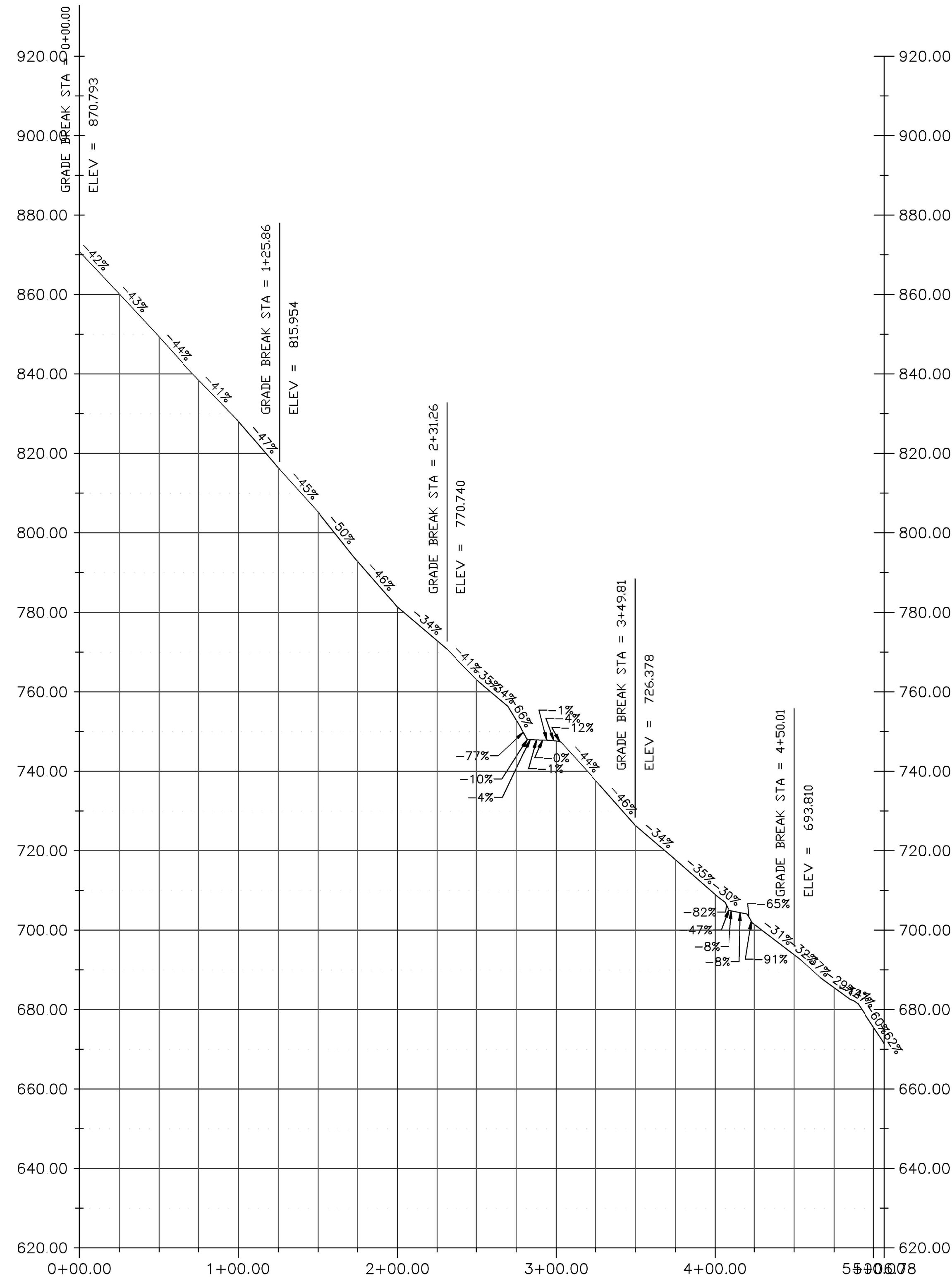
BASIS OF BEARING
WA STATE GRID
BASIS OF ELEVATION
CITY OF RICHLAND
PNT NO.2210
NAVD 88 DATUM
ELEV=739.03'

EQUIPMENT USED
A THREE-SECOND TOTAL STATION
SPECTRA PRECISION RTK GPS

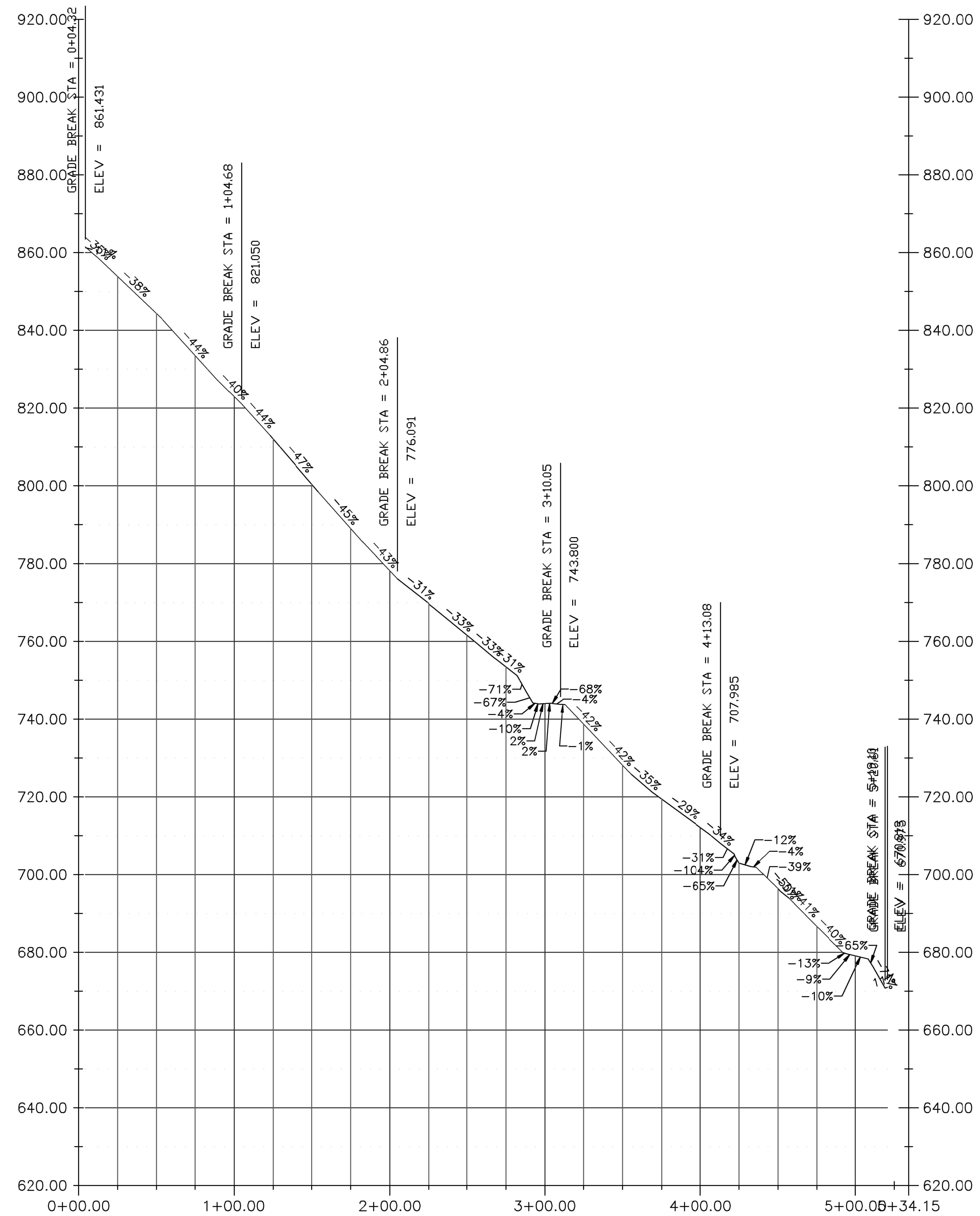
TOPOGRAPHIC SURVEY FOR TMT HOMES	
STRATTON SURVEYING & MAPPING P.C.	
313 NORTH MORAIN STREET KENNEWICK, WA 99336 (509) 735-7364 FAX: (509) 735-6560 www.strattonsurvey.com	
5724TP1.DWG	© 2020
DATE: 07/23/20	SHT. 1 OF 1
DRAWN BY: DCI	JOB # 5724



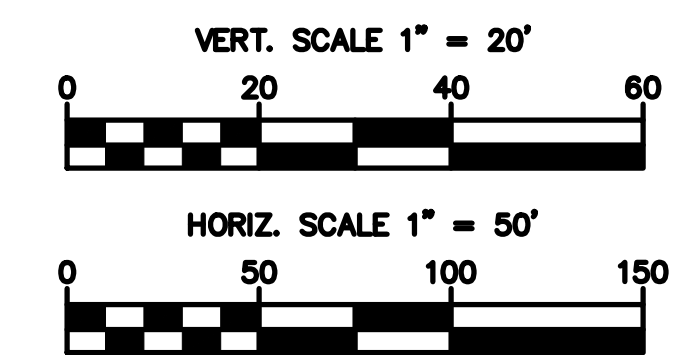
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	STRATTON SURVEYING & MAPPING P.C.
	313 NORTH MORAIN STREET KENNEBICK, WA 98336 (509) 735-5368
	FAX: (509) 735-5560 www.strattonsurvey.com
	© 2020
5724TP1.DWG	
DATE: 07/23/20	SHT. 1 OF 1
DRAWN BY: DCI	JOB # 5724



ALIGN. "C"



ALIGN. "E"

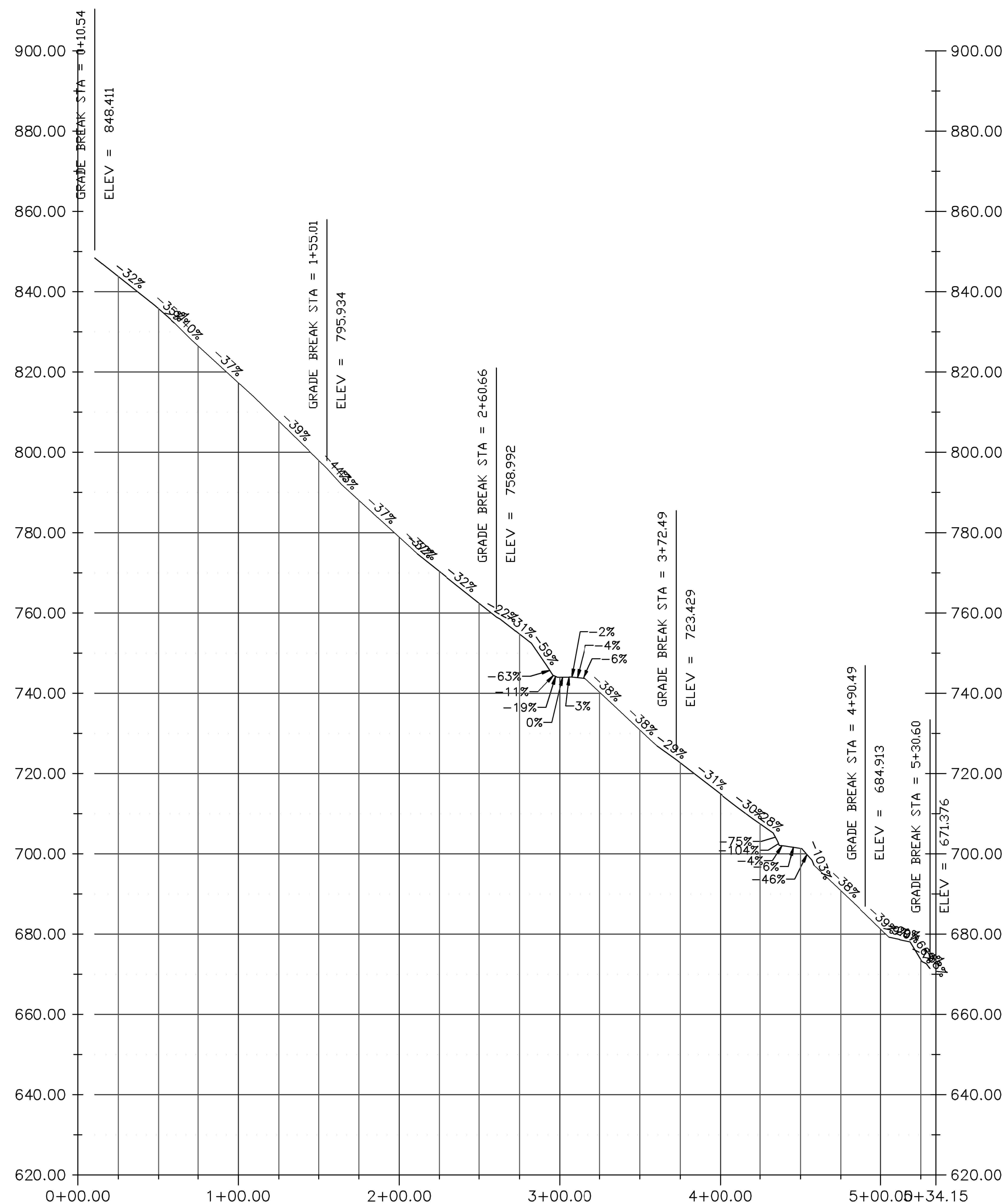


BASIS OF BEARING
WA STATE GRID

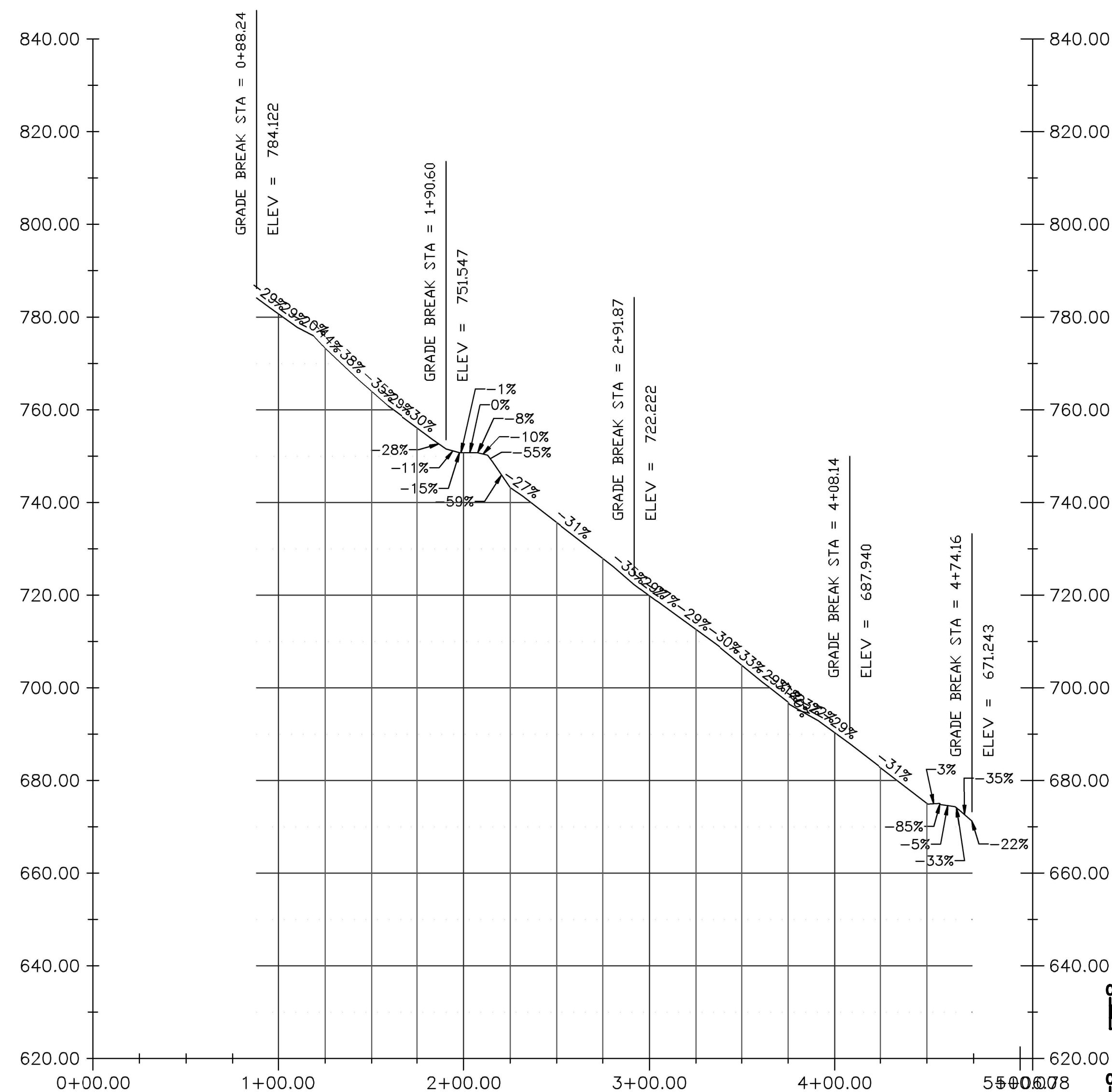
BASIS OF ELEVATION
CITY OF RICHLAND
PNT NO.2210
NAVD 88 DATUM
ELEV=739.03'

EQUIPMENT USED
A THREE-SECOND TOTAL STATION
SPECTRA PRECISION RTK GPS

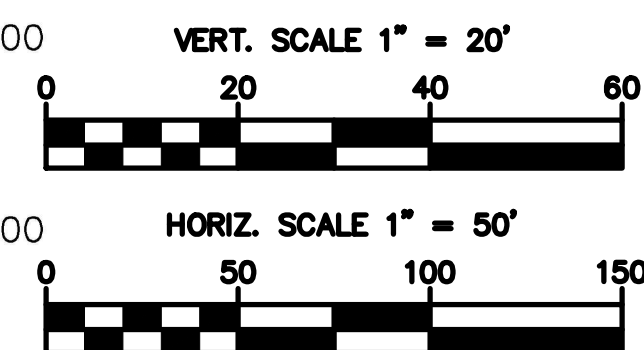
TOPOGRAPHIC SURVEY FOR <i>TMT HOMES</i>	
STRATTON SURVEYING & MAPPING P.C.	
313 NORTH MORAIN STREET KENNEWICK, WA 99336 (509) 735-7364 FAX: (509) 735-6560 www.strattonsurvey.com	
5724TP1.DWG	© 2020
DATE: 07/23/20	SHT. 1 OF 1
DRAWN BY: DCI	JOB # 5724



ALIGN. "F"



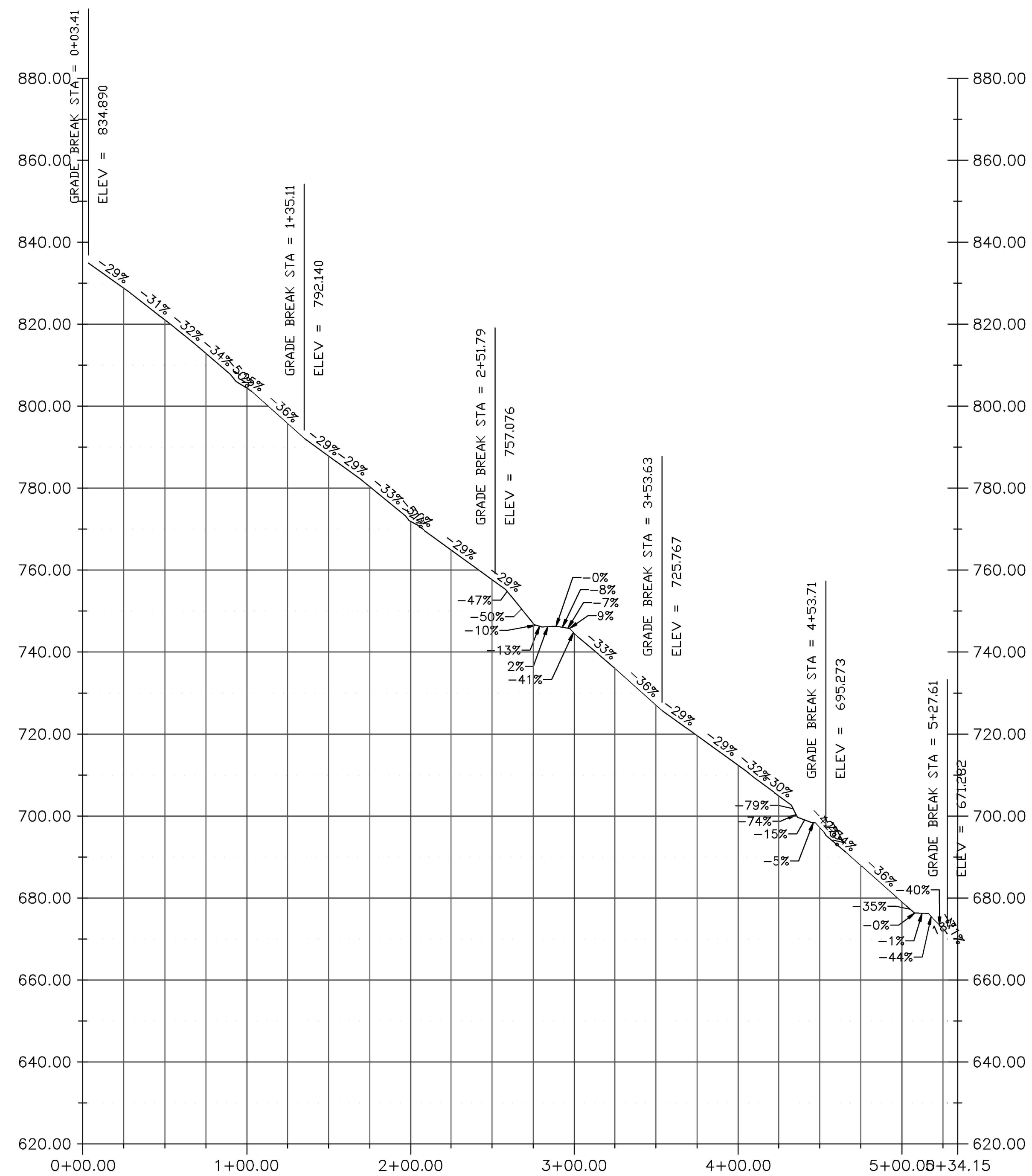
ALIGN. "D"



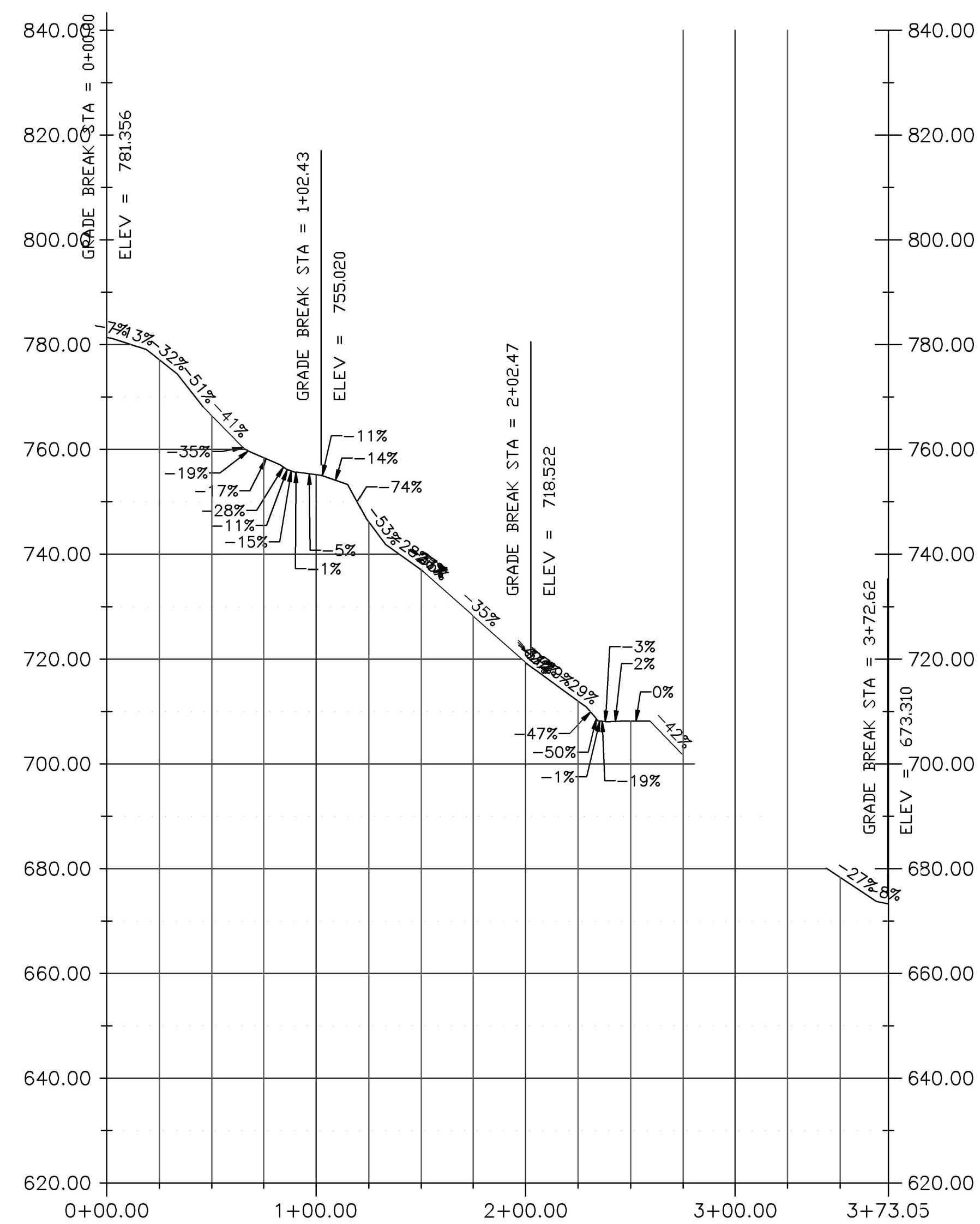
BASIS OF BEARING
WA STATE GRID
BASIS OF ELEVATION
CITY OF RICHLAND
PNT NO.2210
NAVD 88 DATUM
ELEV=739.03'

EQUIPMENT USED
A THREE-SECOND TOTAL STATION
SPECTRA PRECISION RTK GPS

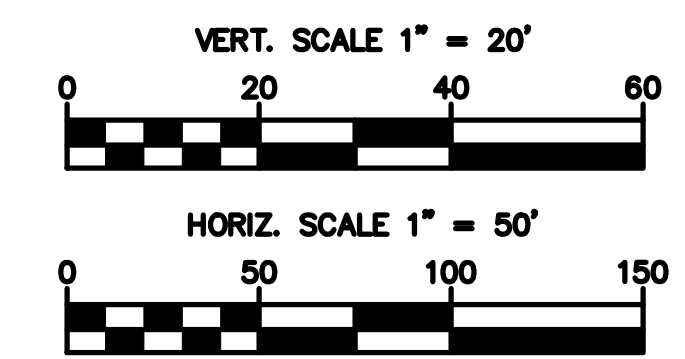
TOPOGRAPHIC SURVEY FOR TMT HOMES	
STRATTON SURVEYING & MAPPING P.C. 313 NORTH MORAIN STREET KENNEWICK, WA 99336 (509) 735-7364 FAX: (509) 735-6560 www.strattonsurvey.com	
5724TP1.DWG	© 2020
DATE: 07/23/20	SHT. 1 OF 1
DRAWN BY: DCI	JOB # 5724



ALIGN. "G"



ALIGN. "H"



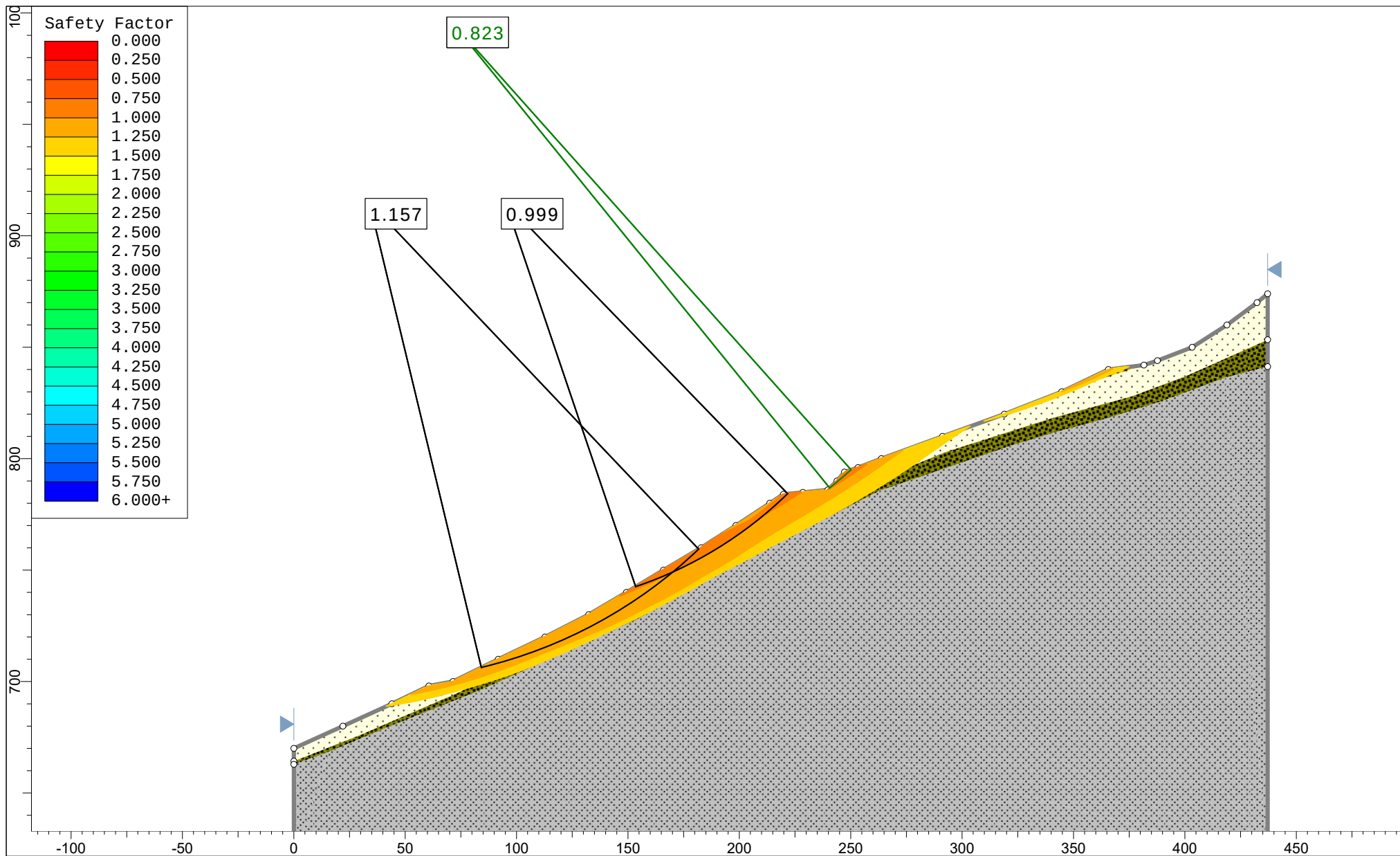
BASIS OF BEARING
WA STATE GRID

BASIS OF ELEVATION
CITY OF RICHLAND
PNT NO.2210
NAVD 88 DATUM
ELEV=739.03'

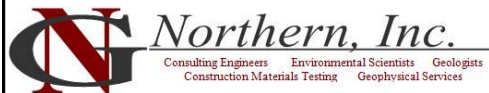
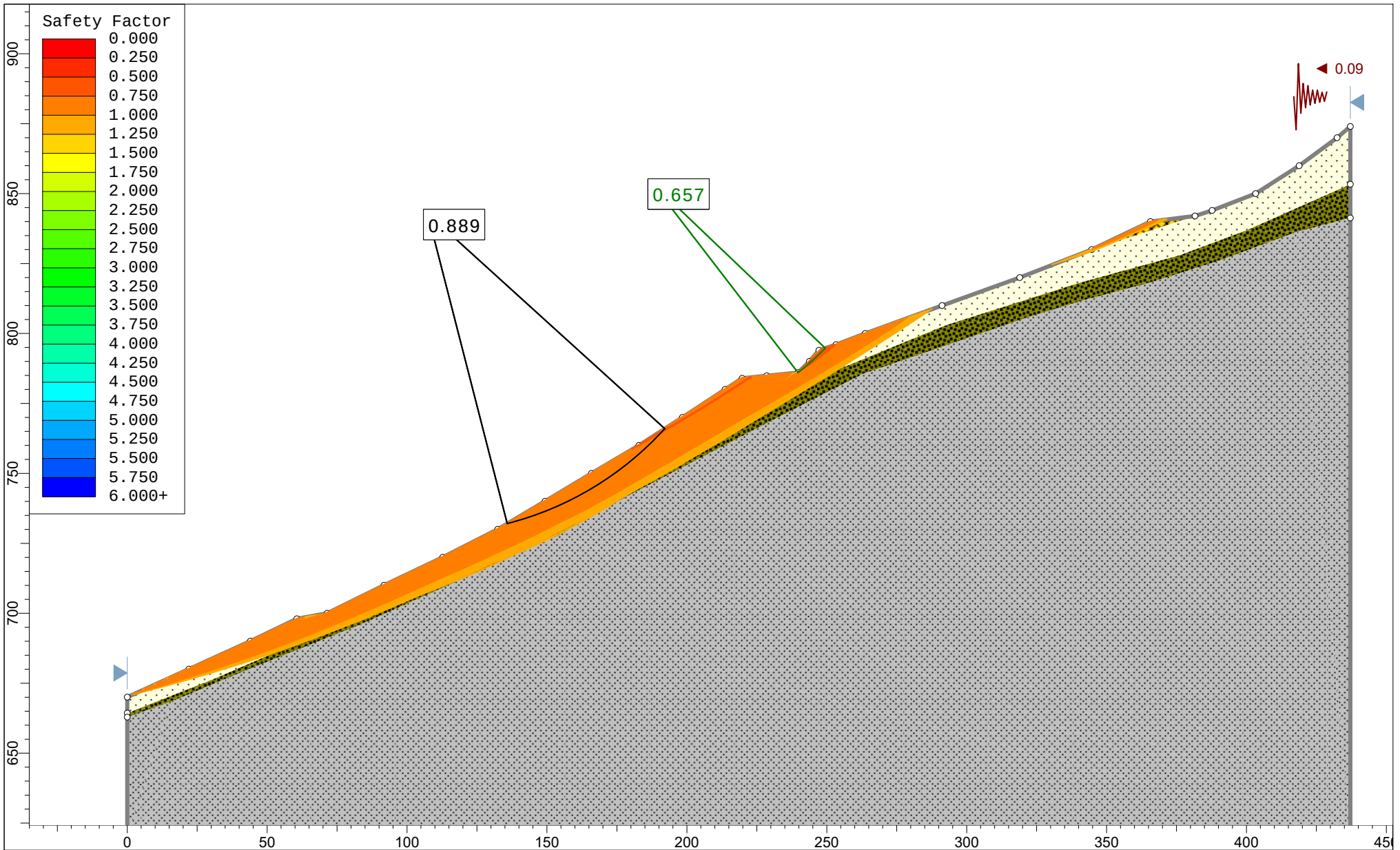
EQUIPMENT USED
A THREE-SECOND TOTAL STATION
SPECTRA PRECISION RTK GPS

TOPOGRAPHIC SURVEY FOR <i>TMT HOMES</i>	
STRATTON SURVEYING & MAPPING P.C.	
313 NORTH MORAIN STREET KENNEWICK, WA 99336 (509) 735-7364 FAX: (509) 735-6560 www.strattonsurvey.com	
5724TP1.DWG	© 2020
DATE: 07/23/20	SHT. 1 OF 1
DRAWN BY: DCI	JOB # 5724

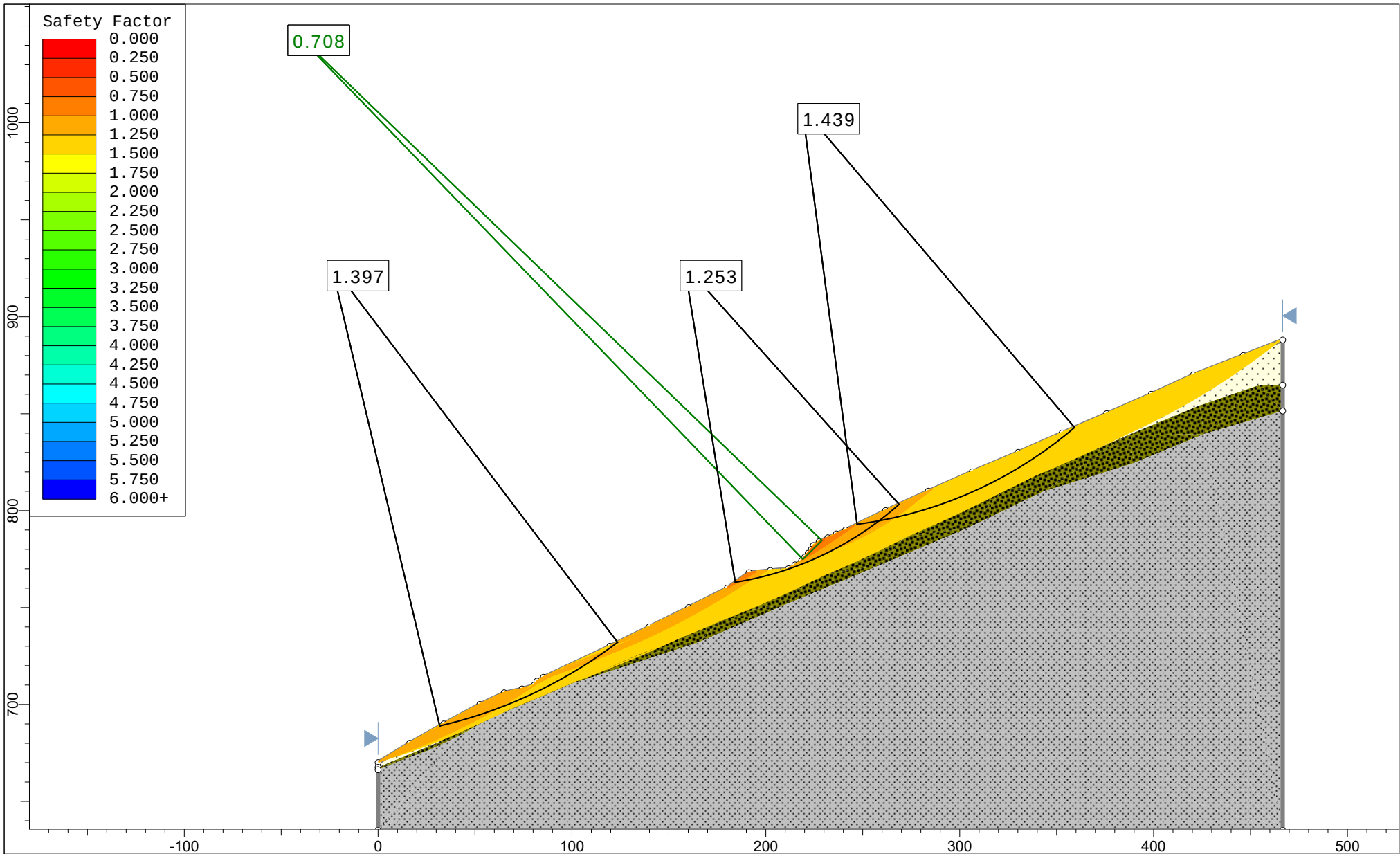
Appendix VI
Slope Stability Analyses



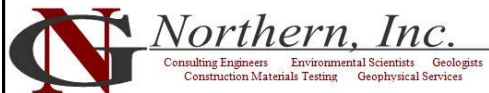
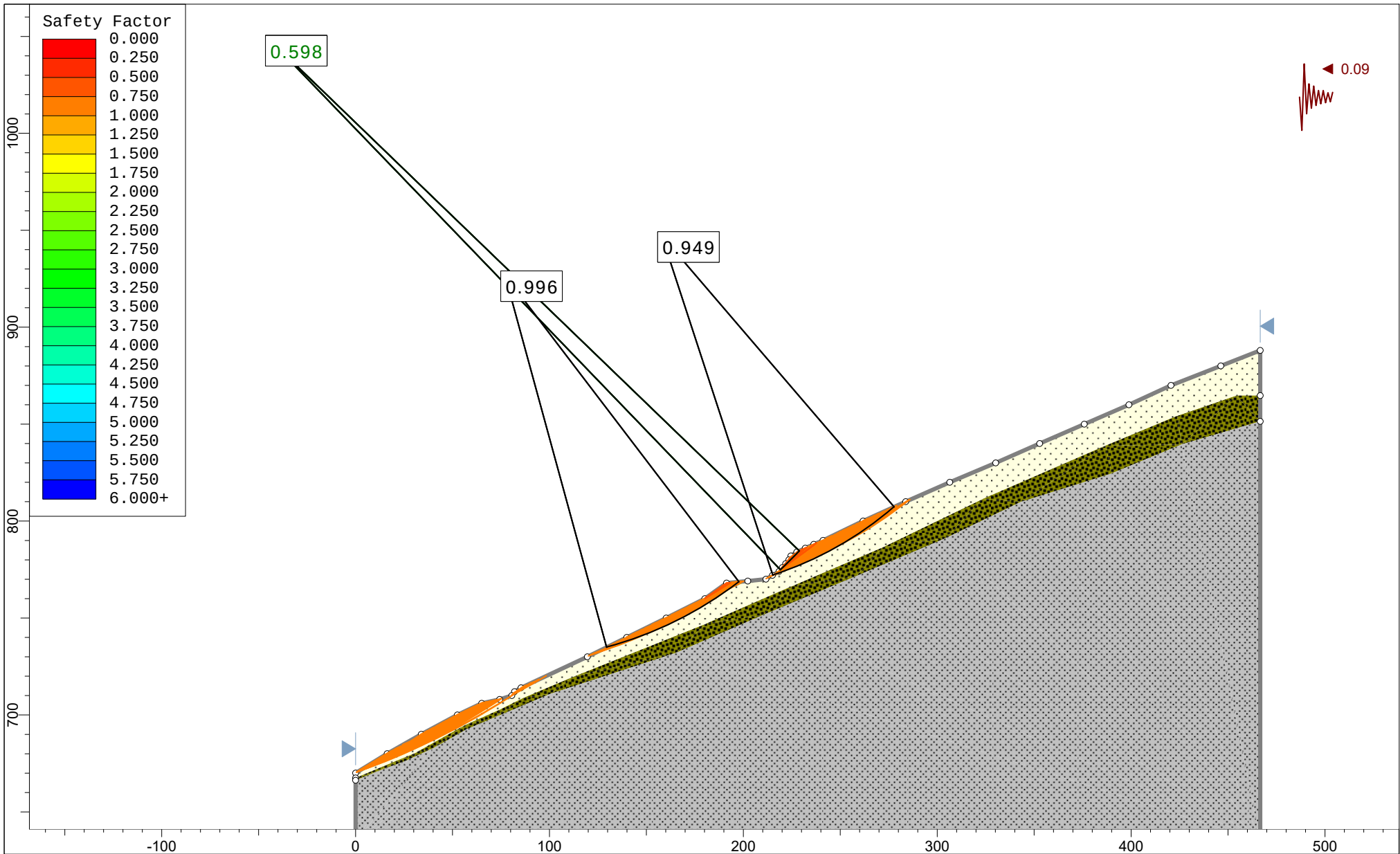
Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
Section A-A' - Static			
Drawn By	KAH	Scale	1:715
Date	11/12/2021, 10:37:22 AM	Company	GN Northern, Inc.
		File Name	A-A' Static.slim



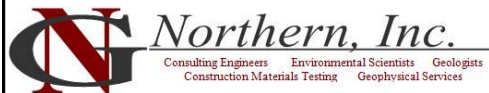
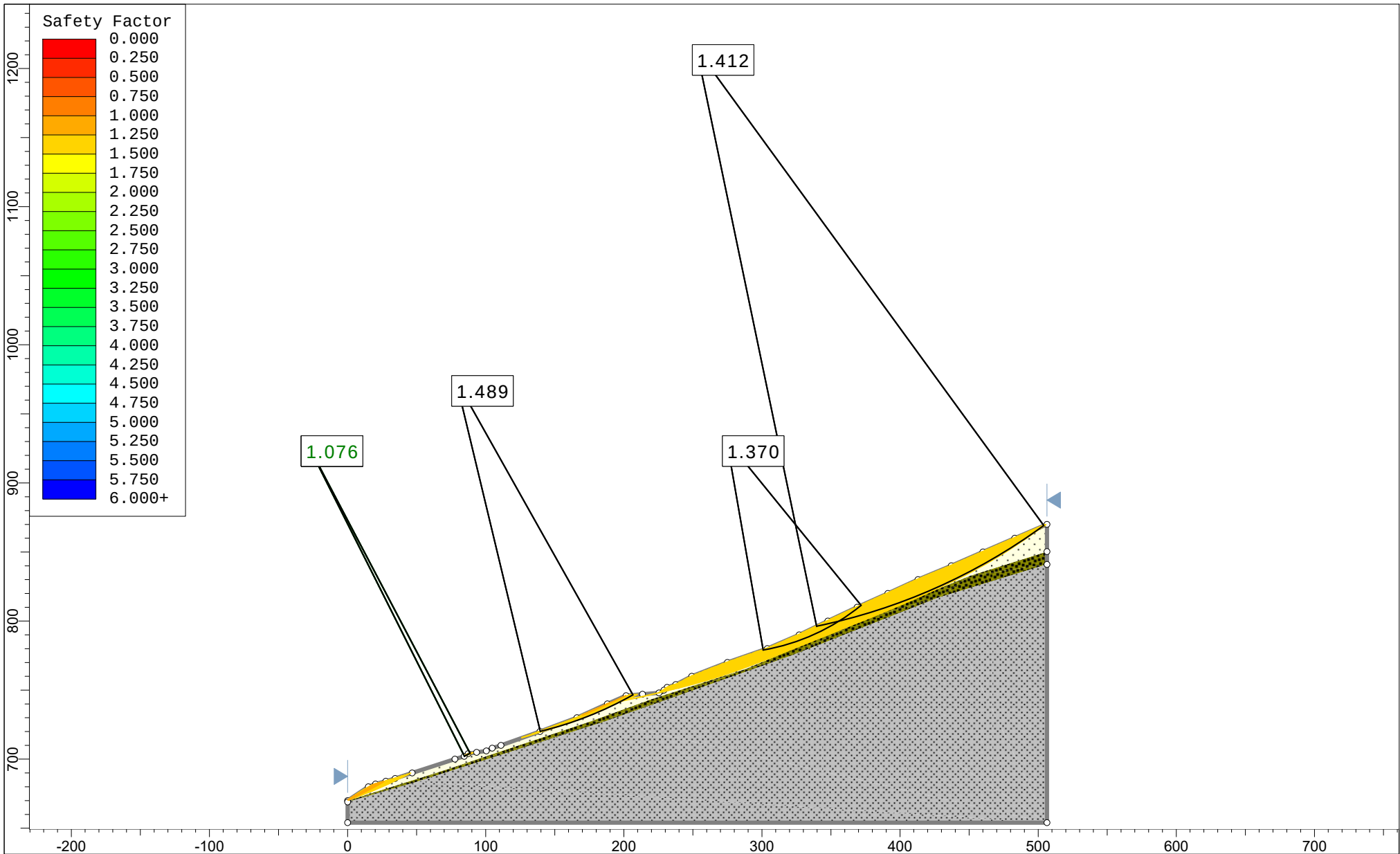
Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
Section A-A' - Seismic			
Drawn By	KAH	Scale	1:567
Company		GN Northern, Inc.	
Date	11/12/2021, 10:37:22 AM		File Name
		A-A' Seismic.slim	



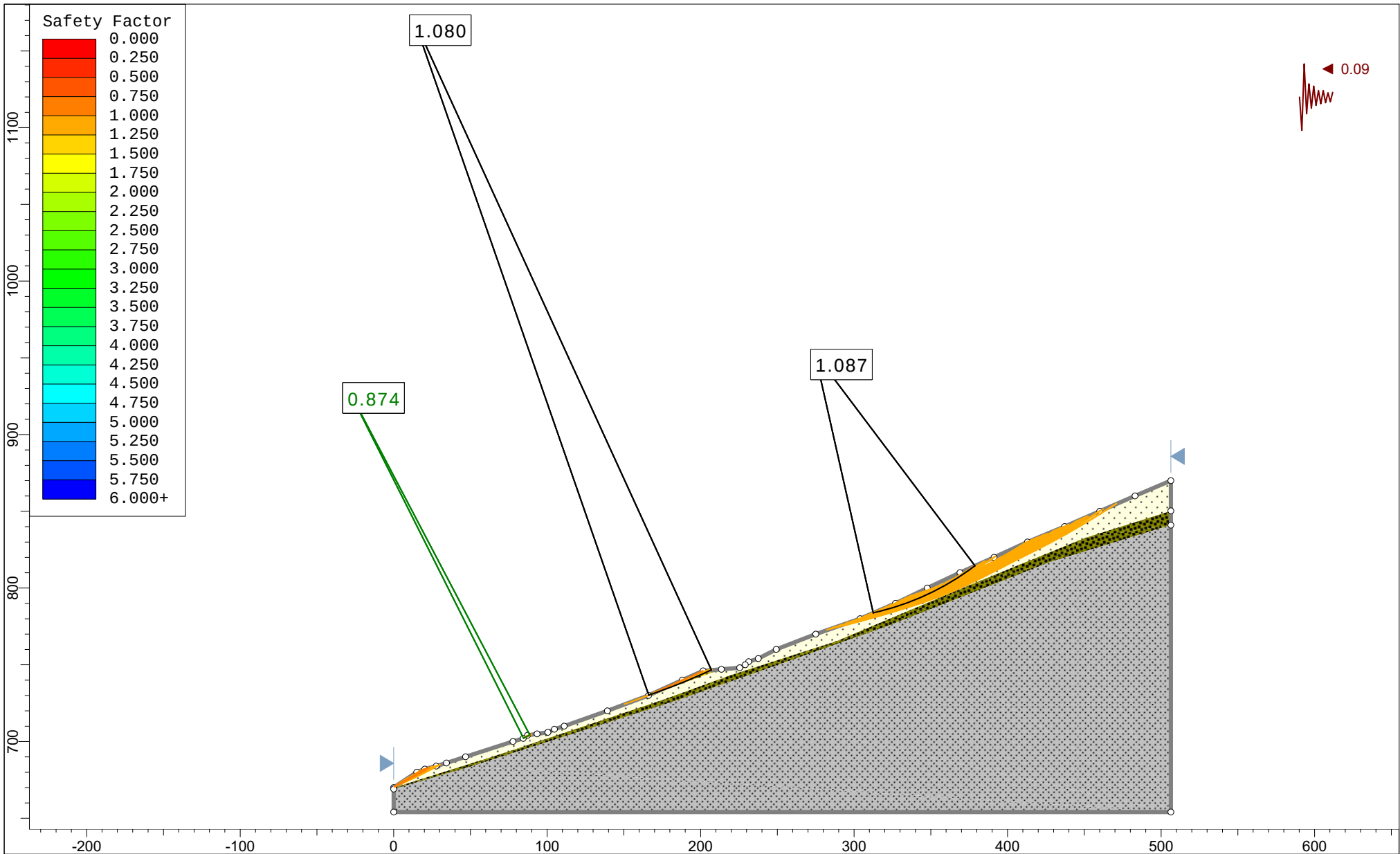
Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
Section B-B' - Static			
Drawn By	KAH	Scale	1:822
		Company	GN Northern, Inc.
Date	11/12/2021, 10:37:22 AM		File Name
		B-B' Static.slim	



Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
Section B-B' - Seismic			
Drawn By	KAH	Scale	1:822
		Company	GN Northern, Inc.
Date	11/12/2021, 10:37:22 AM		File Name
		B-B' Seismic.slim	



Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
Section C-C' - Static			
Drawn By	KAH	Scale	1:1154
		Company	GN Northern, Inc.
Date	11/12/2021, 10:37:22 AM		File Name
		C-C' Static.slim	



Project

Meadow Hills Proposed Multi-Family Housing Development

Analysis Description

Section C-C' - Seismic

Drawn By

KAH

Scale

1:1039

Company

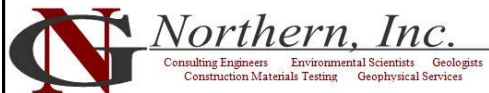
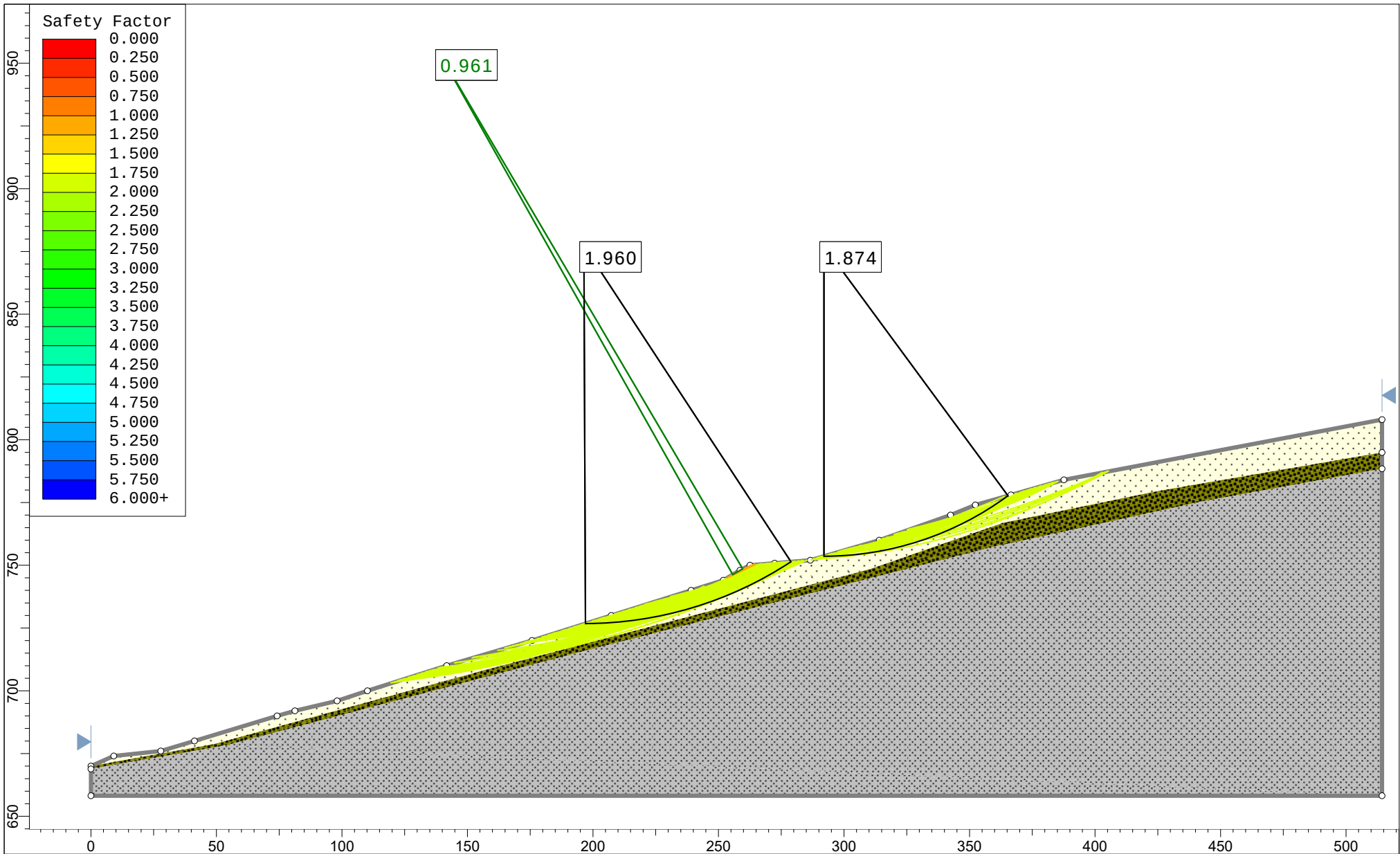
GN Northern, Inc.

Date

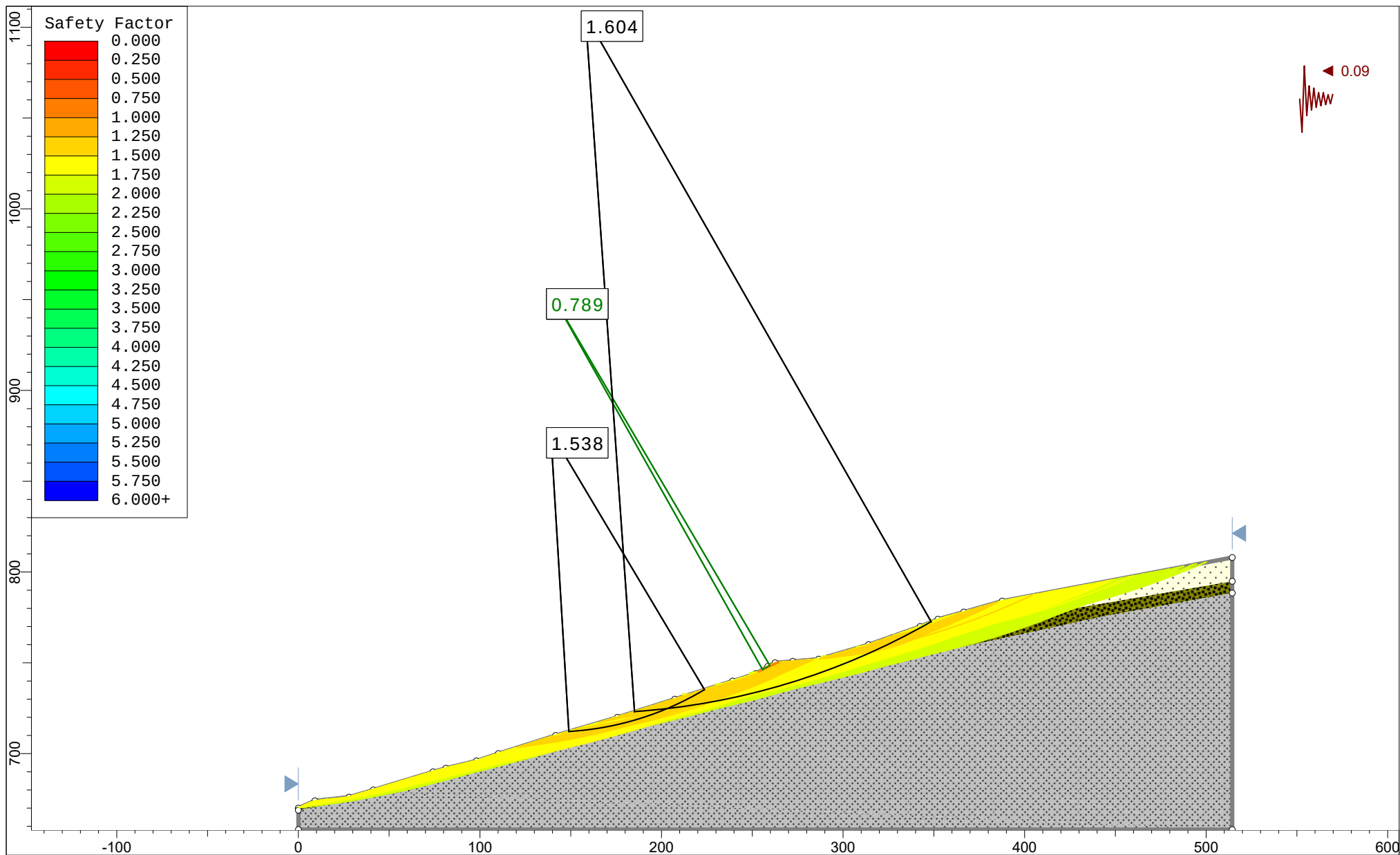
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File Name

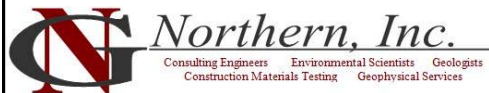
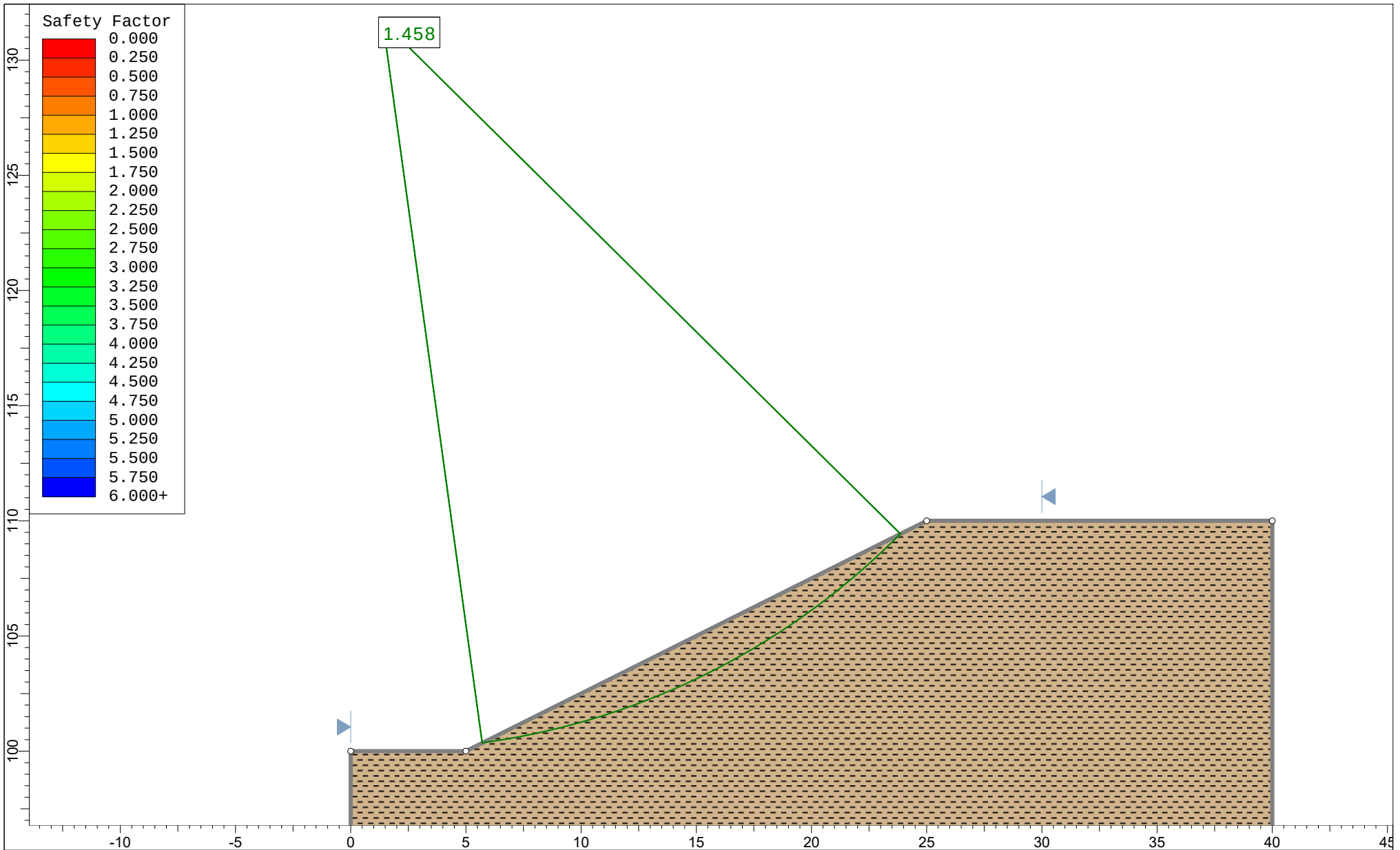
C-C' Seismic.slim



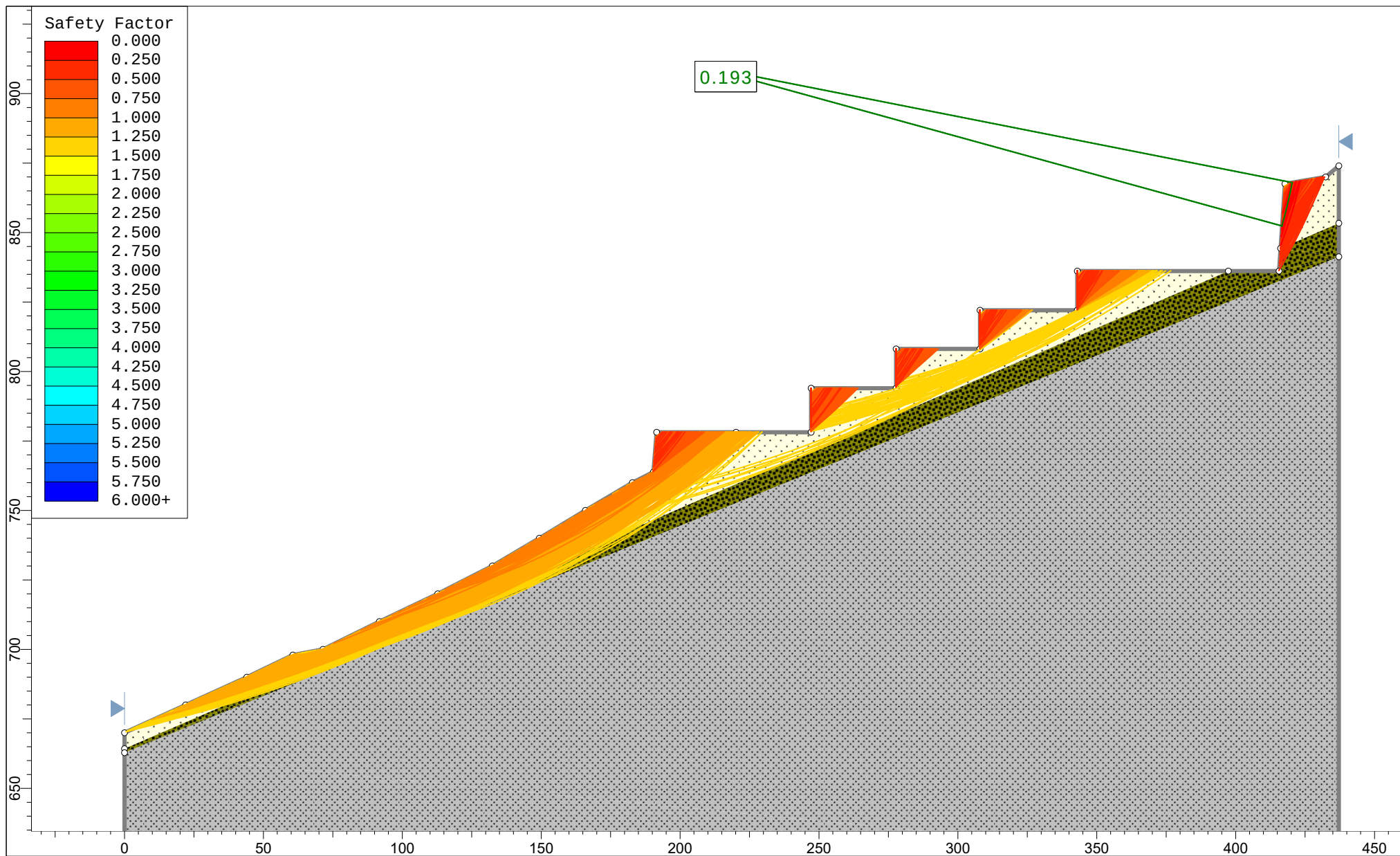
Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
Section G-G' - Static			
Drawn By	KAH	Scale	1:635
Date		Company	GN Northern, Inc.
11/12/2021, 10:37:22 AM		File Name	G-G' Static.slim



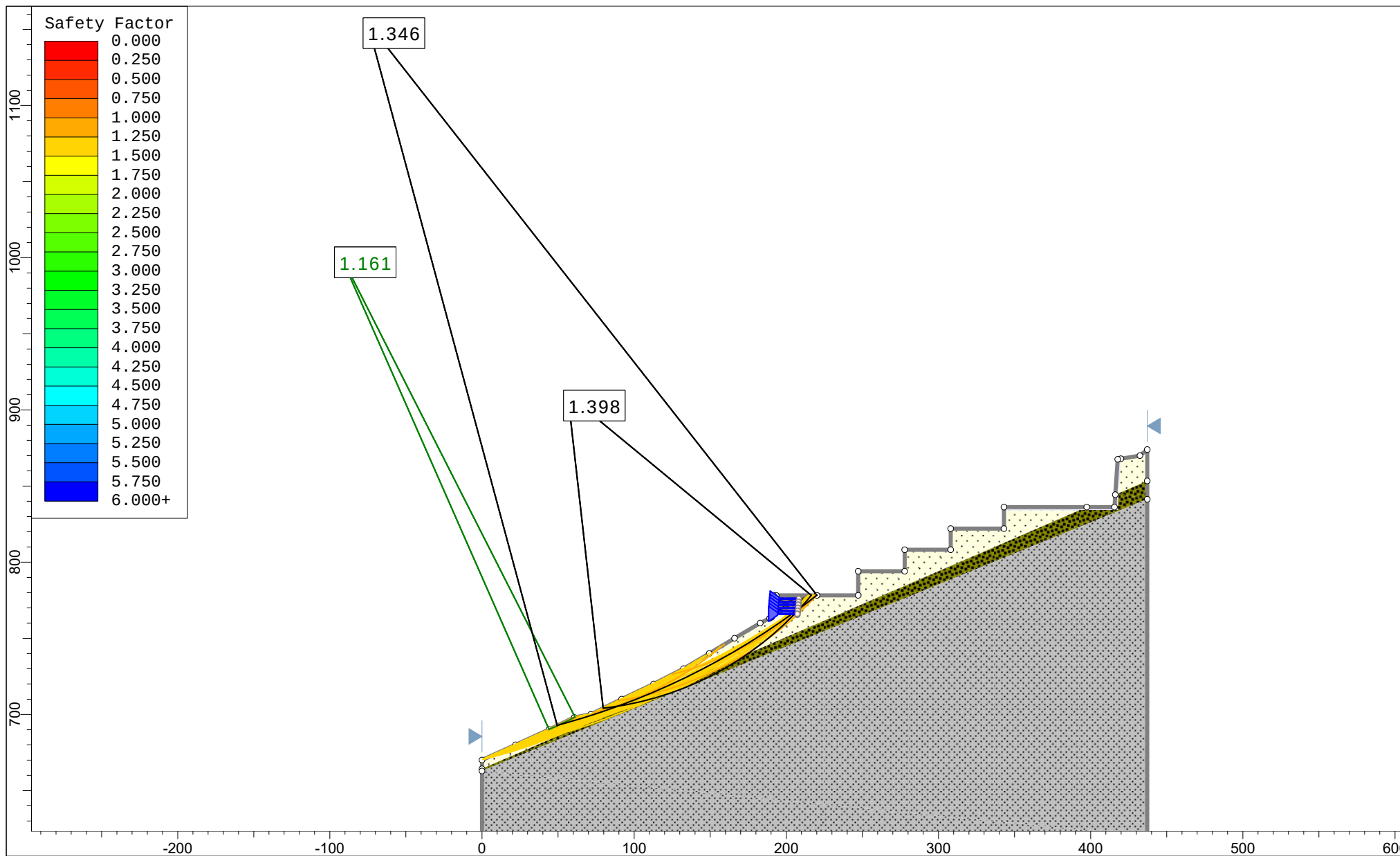
Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
Section G-G' - Static			
Drawn By	KAH	Scale	1:877
		Company	GN Northern, Inc.
Date	11/12/2021, 10:37:22 AM		File Name
		G-G' Seismic.slim	



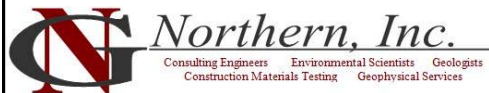
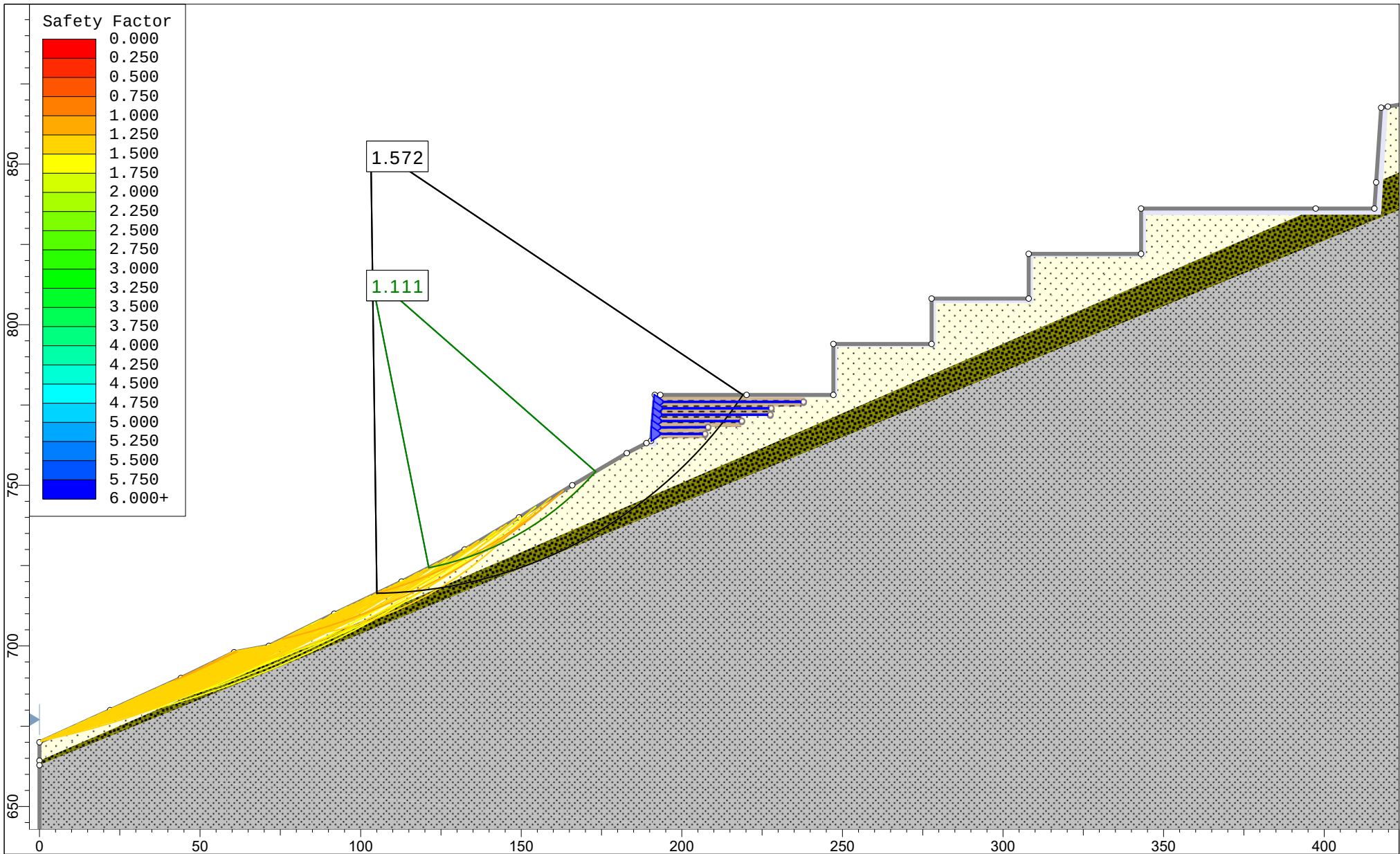
Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
2H:1V Engineered Fill Slope (Max Height 10') - Static			
Drawn By	KAH	Scale	1:69
		Company	GN Northern, Inc.
Date	11/12/2021, 10:37:22 AM		File Name
		2H to 1V Engineered Fill Slope Static.slim	



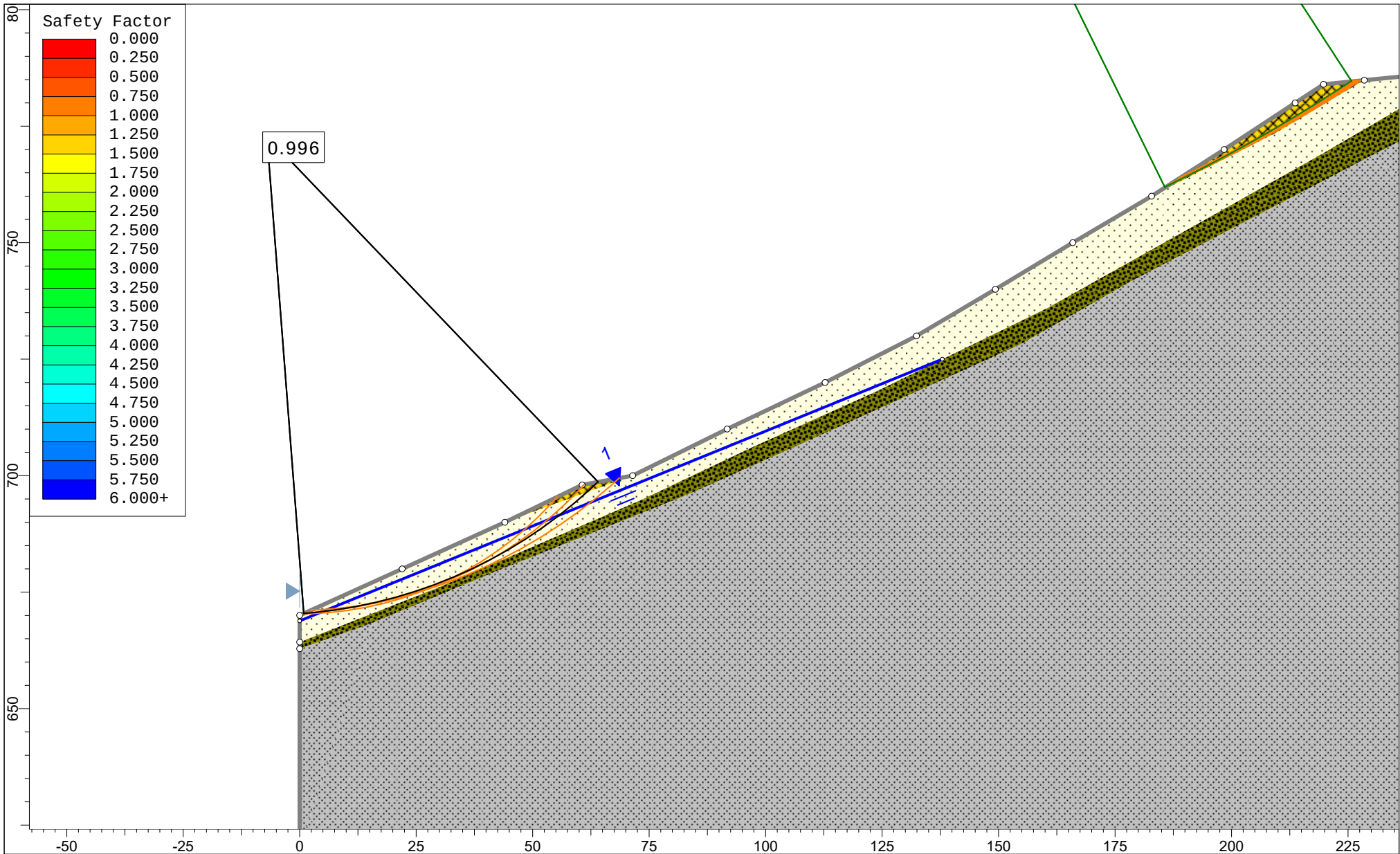
Project			Meadow Hills Proposed Multi-Family Housing Development		
Analysis Description			Section A-A' - Short Term Construction - Static		
Drawn By	KAH		Scale	1:574	Company
					GN Northern, Inc.
Date	11/12/2021, 10:37:22 AM			File Name	Short Term Construction Phase A-A' Static.slim



Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
Section A-A' - With Walls, Slab, & Geogrid Reinforcement - Static			
Drawn By	KAH	Scale	1:1047
Date	11/12/2021, 10:37:22 AM	Company	GN Northern, Inc.
		File Name	Walls, Slab, Grids A-A' Static.slim

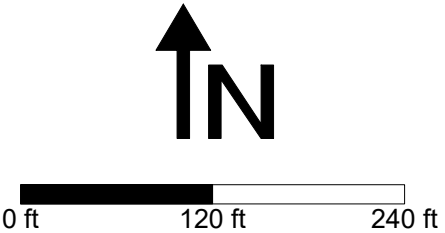


Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
Section A-A' - With Walls, Slab, & Geogrid Reinforcement - Static			
Drawn By	KAH	Scale	1:496
Date		Company	GN Northern, Inc.
11/12/2021, 10:37:22 AM		File Name	Walls, Slab, Grids A-A' Static.slim

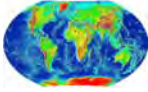


Project			
Meadow Hills Proposed Multi-Family Housing Development			
Analysis Description			
Section A-A' - Saturated Lower Slope - Static			
Drawn By	KAH	Scale	1:342
Date	11/12/2021, 10:37:22 AM	Company	GN Northern, Inc.
		File Name	A-A' Lower Slope Static.slim

Appendix VII
Geophysical Survey Report



PROJECT			
Seismic Refraction survey in Richland Washington			
TITLE			
Site Map			
Global Geophysics P.O. Box 2229 Redmond, WA 98073-2229 Tel: 425-890-4321	Project #: 111-1106.000		FILE No.
	DESIGN	--	SCALE AS SHOWN
	CADD	EJ	REV.
	CHECK	JL	
	REVIEW	--	
FIGURE 1			



November 10, 2021

Our Ref.: 111-1106.000

GN Northern Inc.
722 North 16th Avenue, Suite 31
Yakima, WA 98902

Attention: Mr. Imran Magsi

**RE: REPORT ON THE GEOPHYSICAL SURVEYS AT A PROPERTY ON
MEADOW HILLS DRIVE, RICHLAND, WA**

Dear Mr. Magsi:

This letter report presents the results of the geophysical survey performed by Global Geophysics. The seismic refraction survey was carried out along 1 transect and refraction micro-tremor (ReMi) at 2 locations on November 5, 2021 at a property on Meadow Hills Drive in Richland, WA. The objective of the geophysical survey is to depth to bedrock and bedrock rippability at this location, and provide Vs100 for seismicity study.

GEOPHYSICAL METHODS AND FIELD PROCEDURES

Seismic refraction was used to determine the depth to bedrock and measure compressional wave velocities. The ReMi was used to provide Vs100. The following paragraphs describe the method and field procedures.

Seismic Refraction

Seismic refraction is the traditional method for determining the rock velocity for rock rippability using a controlled energy source (hammer, blank shotgun shells, or chemical explosives) to generate a seismic signal. The seismic signals are received by a series of geophones (24, for example) that are connected to a seismic cable laid on the surface in a linear manner. The geophones, evenly spaced along the geophone cable, are placed on the ground surface. The seismic energy source (explosive) is discharged at several places along the array and off both ends.

The seismic wavelets travel through the earth to the geophones that convert the acoustic energy in the ground to an electric signal in the geophone cable. The seismograph detects the arriving electric signals with respect to time and stores the records for future data processing. The seismic data is processed to determine the seismic velocity of the earth material through which the energy has traveled and to model the subsurface geology.

This geophysical model depicts the earth in cross-section showing the velocity and thickness of the subsurface layers below the seismic line.

The seismic refraction survey was conducted using a Geometrics Geode 24-channel digital seismograph. The sensors used were Mark Products 4.5-Hz vertical geophones and the seismic energy source was a 20 lb. sledgehammer. The typical field procedure consisted of laying out the cables and planting the geophones at 7 ft intervals. The shots were set off at seven locations along the geophone array. Data was collected and saved in digital format and a field record was produced on the computer screen to check the data quality in real time.

Refraction Microtremor (ReMi)

The ReMi method determines variations in surface wave velocities with increasing distances and wavelengths. The data from these measurements are used to model the shear wave velocities of the subsurface. This information can then be used to infer rock/soil types, stratigraphy and soil conditions.

The ReMi survey requires a seismic source, to generate surface-waves, and at least 24 geophones, to measure the ground response at increasing distances from the source. Surface waves are a special type of seismic wave whose propagation is confined to the near surface medium. The depth of subsurface penetration of a surface-wave is directly proportional to its wavelength. In a non-homogeneous medium, surface-waves are dispersive, i.e. each wavelength has a characteristic velocity stemming from subsurface heterogeneities. The relationship between surface-wave velocity and wavelength is used to calculate the shear-wave velocity of the medium with increasing depth.

The seismic source can be either active or passive, depending on the application and location of the survey. Examples of active sources include explosives, weight-drops, and vibrating pads. Examples of passive sources are drill rigs, road traffic, micro-tremors, and water-wave action (in near-shore environments). Geophone measures the arrival time of the various components of the surface wave-train traveling from the seismic source.

The surface-wave velocity with respect to frequency (called the ‘dispersion curve’) is determined by measuring the delay time in wave propagation between the geophones. The dispersion curve is then matched to a theoretical dispersion curve using an iterative forward-modeling procedure. The result is a profile of shear-wave velocity versus depth. This shear wave profile can be with used other parameters such as density, to estimate the dynamic shear modulus of the medium as a function of depth.

The ReMi survey was conducted using a Geometrics Geode 24-channel digital seismograph with acquisition software. The sensors were Mark Products 4.5-Hz vertical geophones placed at 5 ft spacing and the seismic energy source was ambient noise.

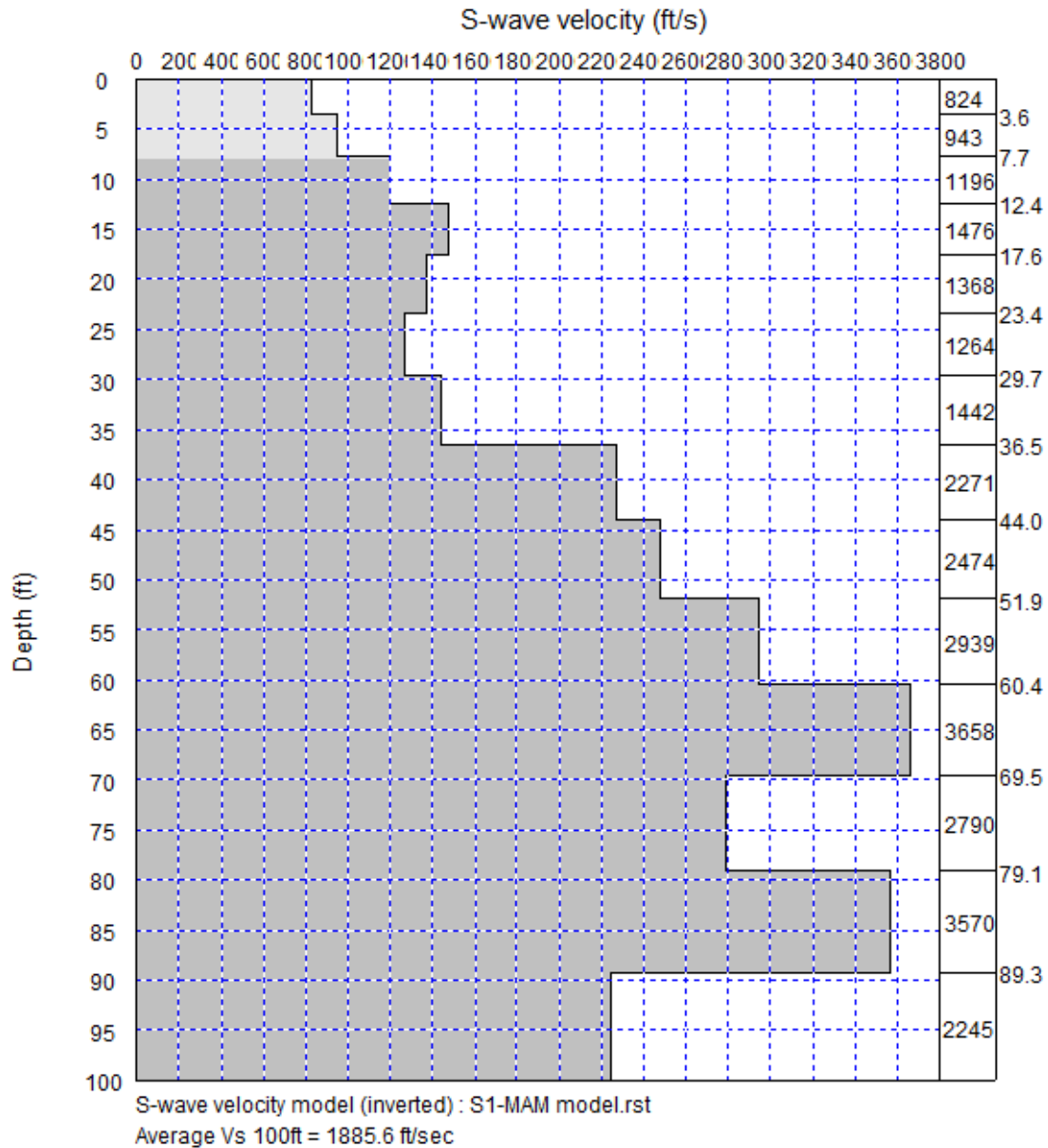
ANALYSIS AND RESULTS

The seismic refraction was conducted along 1 transect. The locations of the transect is shown in Figure 1.

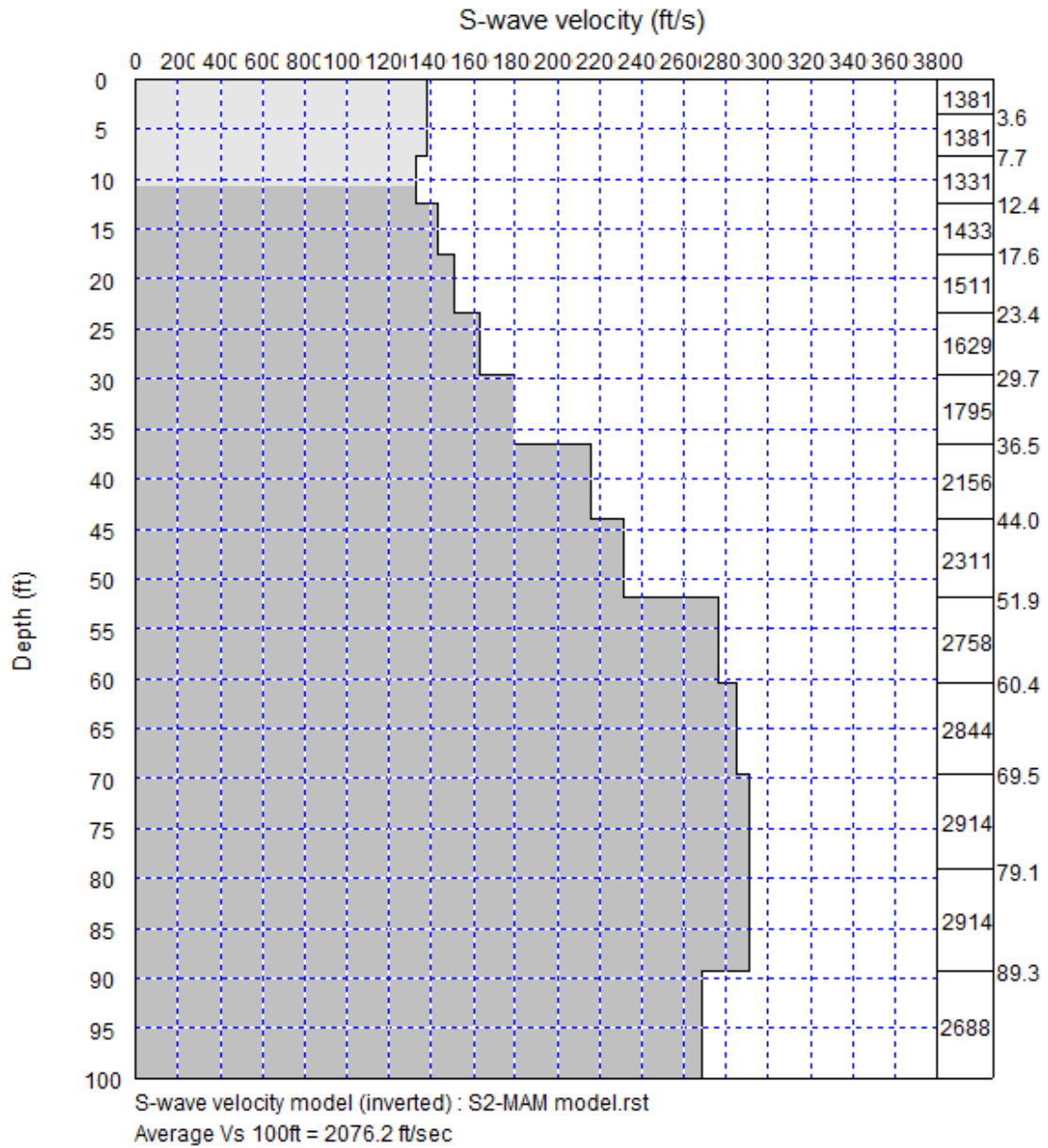
The interpreted depth profiles are presented in Figure 2. Three geological units were interpreted.

- The surface layer: 900-1300 ft/s; Unconsolidated top soil;
- 2nd layer: 4300 ft/s; Highly weathered rock.
- Basal layer: 5300 ft/s, Weathered rock.

The S-wave model at Station 2+88 (S 1) is show below



The S-wave model at Station 8+63 (S 2) is show below



CLOSURE

Global Geophysics services will be conducted in a manner consistent with the level of care and skill ordinarily exercised by other members of the geophysical community currently practicing under similar conditions subject to the time limits and financial and physical constraints applicable to the services. However, seismic refraction is a remote sensing geophysical method that may not detect all subsurface conditions. Furthermore, velocity inversion and hidden layers are the limitations of seismic refraction. In general, the errors in the interpreted depths and velocities, dependent on the resolution of the technique, are estimated to be approximately $\pm 15\%$ of the true depths and velocities.

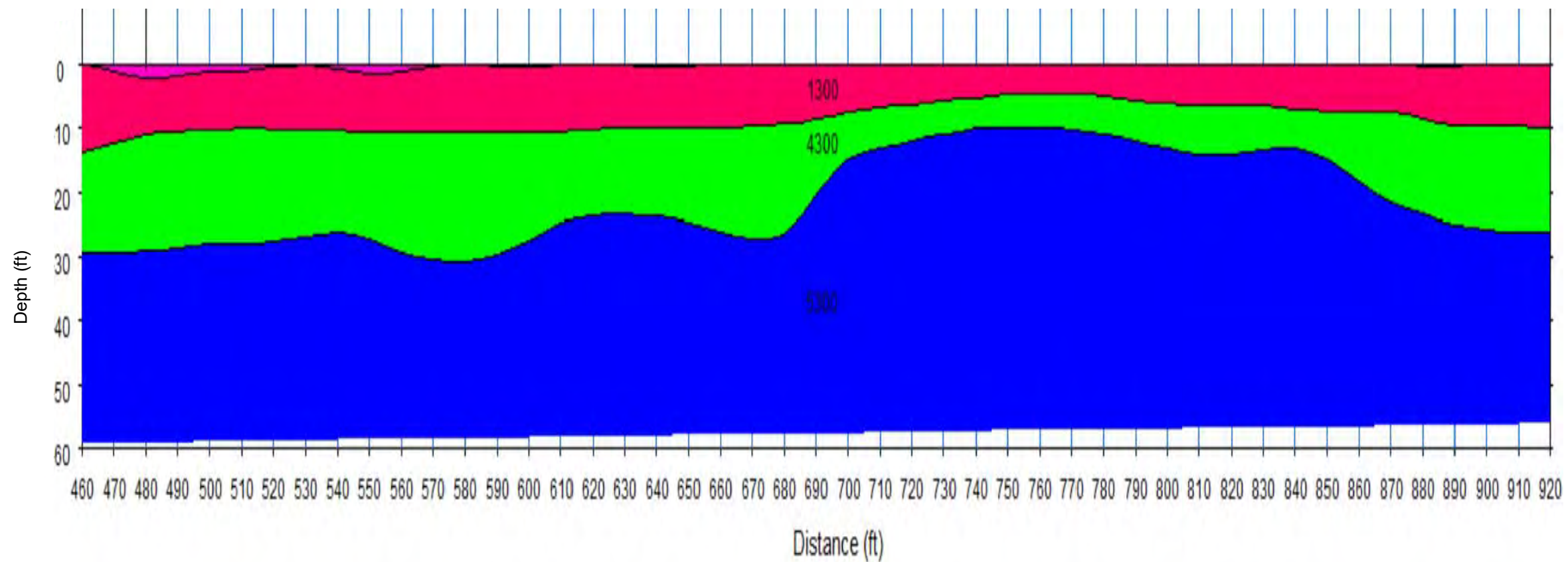
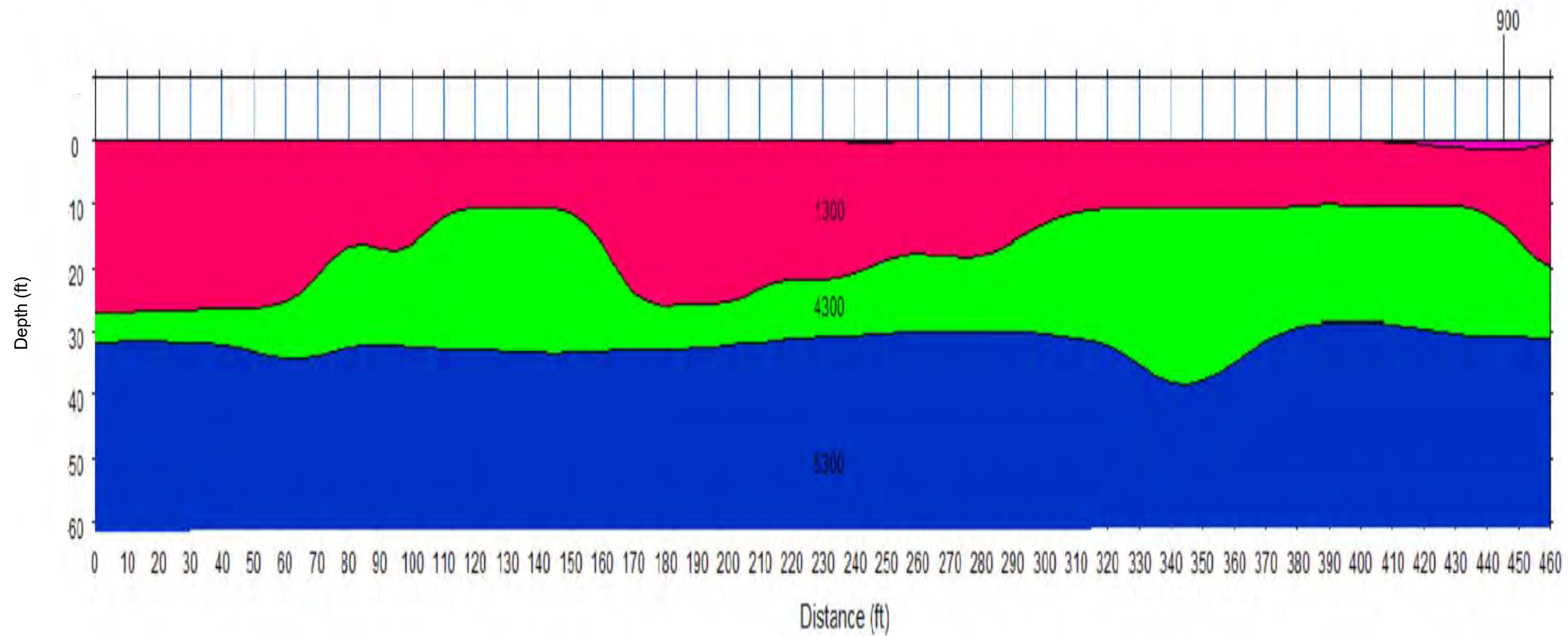
We appreciate the opportunity to work with you on this project, and we hope that you find the results of the geophysical survey useful to your investigation. If you have any questions regarding this report, please call the undersigned at 425-890-4321. We look forward to providing you with additional geophysical services in the future.

Sincerely,

Global Geophysics.

A handwritten signature in black ink, appearing to read 'John Liu', with a stylized flourish at the end.

John Liu, Ph.D., R.G.
Principal Geophysicist



0 ft 40 ft 80 ft

H:V = 1:2

PROJECT			
Seismic Refraction survey in Richland Washington			
TITLE			
Interpreted Profiles			
Global Geophysics P.O. Box 2229 Redmond, WA 98073-2229 Tel: 425-890-4321	Project #: 111-1106.000		FILE No.
	DESIGN	--	SCALE AS SHOWN
	CADD	EJ	REV.
	CHECK	JL	
	REVIEW	--	
FIGURE 2			

Appendix VIII
NRCS Soil Survey



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Benton County Area, Washington**

**Meadow Hills Drive, Richland,
WA**



November 9, 2021

Custom Soil Resource Report Soil Map



Benton County Area, Washington

KnE—Kiona very stony silt loam, 0 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2bcq
Elevation: 400 to 2,500 feet
Mean annual precipitation: 6 to 12 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 140 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Kiona

Setting

Landform: Hillslopes, plateaus, ridges
Parent material: Mixed colluvium and residuum weathered from basalt and loess

Typical profile

H1 - 0 to 4 inches: very stony silt loam
H2 - 4 to 20 inches: very stony silt loam
H3 - 20 to 60 inches: very gravelly loam

Properties and qualities

Slope: 0 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: R007XY102WA - LOAMY 6-10 PZ
Hydric soil rating: No

ShF—Shano silt loam, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2bdx

Custom Soil Resource Report

Elevation: 500 to 2,300 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 125 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Shano

Setting

Landform: Hillslopes
Parent material: Loess

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 33 inches: silt loam
H3 - 33 to 60 inches: silt loam

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R007XY102WA - LOAMY 6-10 PZ
Hydric soil rating: No

*Appendix **IX***
Washington Department of Ecology Well Logs

MONITORING WELL REPORT

43062X6

Well ID# SOIL BORING
Start Card # SE430629

(1) OWNER/PROJECT

Name BAUER WELL NO. _____Address 2475 Monray RdCity Richland State WA Zip 99352

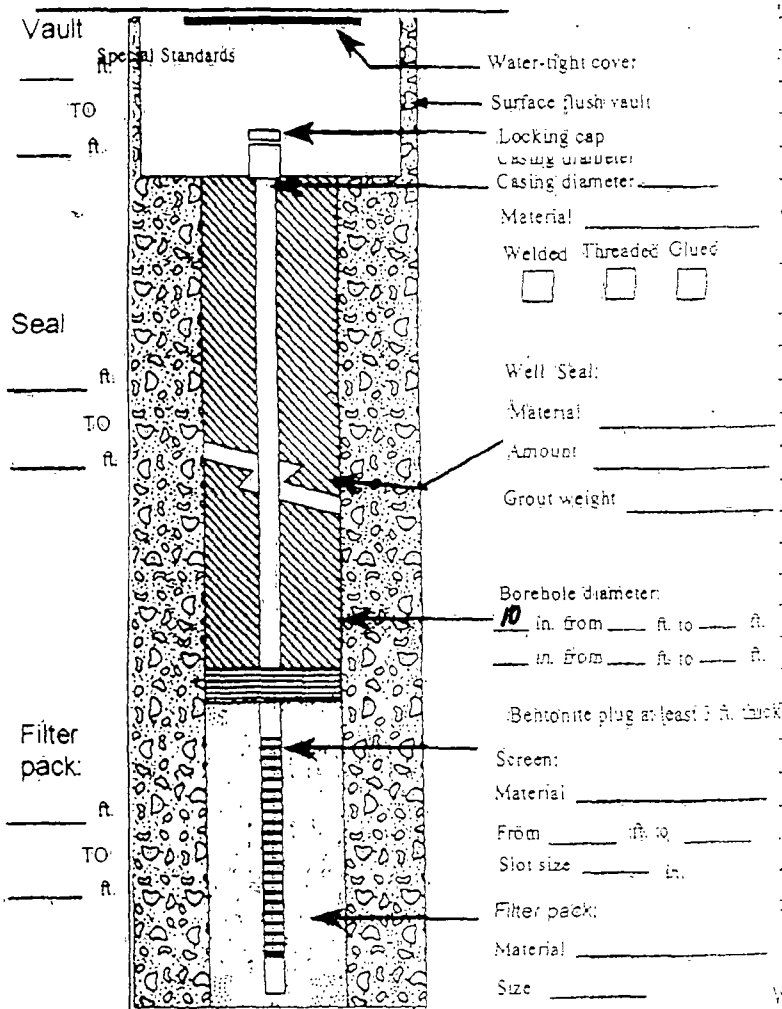
(2) TYPE OF WORK

- ☒ New construction ☐ Alteration (Repair/Recondition)
☐ Conversion ☐ Deepening ☐ Abandonment

(3) DRILLING METHOD

- ☐ Rotary Air ☐ Rotary Mud ☐ Cable
☒ Hollow Stem Auger ☐ Other _____

(4) BORE HOLE CONSTRUCTION:

Special Standards ☐ Yes ☒ No Depth of Completed Well 21.5 ft

(5) WELL TESTS:

- ☐ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Permeability _____ Yield _____ GPM

Conductivity _____ pH _____

Temperature of water _____ OF/°C Depth artesian flow found _____ ft.

Was water analysis done? ☐ Yes ☐ No

By whom? _____

Depth of strata to be analyzed From _____ ft. to _____ ft.

Remarks _____

Name Of Supervising Geologist/Engineer GN Northern Inc.

(5) LOCATION OF WELL By legal description:

County Benton Latitude _____ Longitude _____Township 9N (N or S) Range 28E (E or W) Section 35
NE 1/4 of SW 1/4 of above sectionStreet address of well location 480 Mont Blanc Way
Richland, WA 99352Tax lot number of well location 1359B3220000002

(6) STATIC WATER LEVEL

N/A Ft. below land surface. Date _____

Unesian Pressure _____ lb/sq. in. Date _____

(8) WATER BEARING ZONES:

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Material	From	To	SWL
Sand, gravel, cobbles	0	10	
Sand	10	21.5	

RECEIVED

OCT 24 2011

DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Date started 09/22/11 Completed 09/20/11

WELL CONSTRUCTION CERTIFICATION:

I, the undersigned, hereby certify that I have constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Type of Print Name Jeremy Carlson License No. 2989

Trainee Name _____ License No. _____

Drilling Company Holocene Drilling Inc.(Signed) _____ License No. 2989Address 11412 62nd Ave E Puyallup, WA 98373Registration No. HOLDCEIO44KH Date 10/10/11

WATER WELL REPORT
STATE OF WASHINGTON

Application No.

Permit No.

(1) OWNER: Name PAUL C WALKUP Address Rt 2 Box 7C REXLAND, WA

(2) LOCATION OF WELL: County BENTON Section 5 1/2 SE 1/4 Sec. 35 T. 9 N. R. 28 E. W. M. R
and distance from section or subdivision corner 550' From N-S. line

(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 230 ft. Depth of completed well 230 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 4 " Diam. from 0 ft. to 52 ft.
Threaded ☐ 5 " Diam. from 52 ft. to 211 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? ft.
Material used in seal
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name Remington
Type: 3D-12-100 Subm HP 1

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 159 ft. below top of well Date 10/23/72
Artesian pressure lbs. per square inch. Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level.
Was a pump test made? Yes ☒ No ☐ If yes, by whom? DRILLER
Yield: 8 gal./min. with 5-5 ft. drawdown after 142 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(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
SOIL	0	5'
BROKEN BASALT	5	52
" " and sediment		103
Med. Hard Basalt		133
Clay		150
Clay + Dec. Basalt		155
Clay		158
Clay + Dec. Basalt		186
Clay		197
Med. Hard Basalt		224
Dec Basalt - Shale		229
Basalt		230

Work started Sept 25, 1972. Completed Oct 23, 1972

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 CASCADE DRILLING
(Person, firm, or corporation) (Type or print)

Address PO DRAWER, Kennewick, WA 99336

[Signed] (Well Driller)

License No. Date 19...

NOT AVAILABLE WHEN FORM FILED OUT



CITY OF RICHLAND NOTICE OF APPLICATION, PUBLIC HEARING & OPTIONAL DNS (PUD2021-102 & EA2021-116)

Notice is hereby given that Wave Design Group, applicant, on behalf of TMT Homes NW, LLC, owner, have filed an application for the proposed development commonly referred to as Skyhous.

Proposal: Development of approximately 10.24-acres with six (6) 8-unit multi-family condominium buildings and the completion of Meadow Hills Drive.

Location: The project site is located upon Assessor's Parcel Nos. 135983000010002 & 135984060003022, and is generally located northwest of the City of Richland water reservoir located at 303 Meadow Hills Drive, Richland, WA.

Public Hearing: The Richland Hearings Examiner will conduct a public hearing and review of the application at 6:00 p.m., Monday, June 20, 2022 in the Richland City Hall Council Chambers, 625 Swift Boulevard. All interested parties are invited to attend and present testimony at the public hearing or by visiting the City of Richland website (www.ci.richland.wa.us) and joining via Zoom. Copies of the complete application packet, SEPA Checklist and related materials can be obtained by visiting the City of Richland website (www.ci.richland.wa.us).

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

Public Comment: Any person desiring to express their views or to be notified of any decisions pertaining to this application should notify Mike Stevens, Planning Manager, 625 Swift Boulevard, MS #35, Richland, WA 99352. Comments may also be emailed to mstevens@ci.richland.wa.us. Written comments should be received no later than 5:00 p.m. on Friday, June 3, 2022, to be incorporated into the staff report. Comments received after that date will be entered into the record at the hearing. Written comment will not be accepted after 6 p.m. on Sunday, June 19, 2022; however verbal comments may be presented during the public hearing.

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

Vicinity Map

Item: Planned Unit Development (Zoning)
Applicant: TMT Homes NE, LLC
File #: PUD2021-101



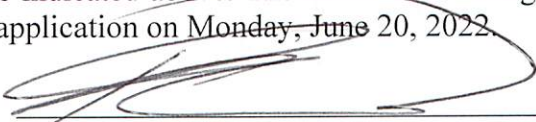
AFFIDAVIT OF MAILING

STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

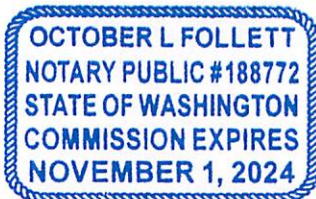
COMES NOW, Kevin Damrell, who, being first duly sworn upon oath deposes and says:

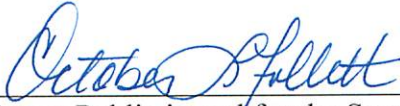
1. I am an employee in the Planning Division of the Development Services Department for the City of Richland.

2. On the 9th day of May, 2022, I mailed a copy of the attached NOTICE OF APPLICATION AND PUBLIC HEARING & OPTIONAL DNS (PUD2021-102 & EA2021-116) to the attached list of individuals via regular USPS on the date indicated above. The Richland Hearing Examiner will conduct a public hearing and review of the application on Monday, June 20, 2022.


Signed: Kevin Damrell

SIGNED AND SWORN to before me this 9th day of May, 2022 by Kevin Damrell.




Notary Public in and for the State of Washington,

October L. Follett
Print Name
Residing at West Richland
My appointment expires: 11-1-2024

CITY OF RICHLAND
625 SWIFT BLVD. MS-09
RICHLAND , WA 99352

THOMPSON TRENT P & ELIZABETH M
2426 MORENCY DR
RICHLAND, WA 99352

BUNCH BRYSON & KAYLEE
2414 MORENCY DR
RICHLAND, WA 99352

WILCOX WADE & AMY
8019 REDONDA DR
PASCO, WA 99301

DENSLOW MICHAEL & KAYTE
461 MONT BLANC WAY
RICHLAND, WA 99352

IULIANO EDWARD M & SUMINTRA
455 MONT BLANC WAY
RICHLAND, WA 99352

KIRKLEY JR DONALD & STREIT LISA
DEFRANCE
449 MONT BLANC WAY
RICHLAND, WA 99352

MONSON BLAKE W
26208 S 816 PR SE
KENNEWICK, WA 99338

HUPF VINCENT & JESSICA
239 HIGH MEADOWS ST
RICHLAND, WA 99352

ANDREWS CHRISTOPHER W & LECRETA
251 HIGH MEADOWS ST
RICHLAND, WA 99352-8435

GRALL CHAD W & TERESA M
249 GREENVIEW DR
RICHLAND, WA 99352-7624

ERWIN THOMAS H & MARIA A
258 HIGH MEADOWS ST
RICHLAND, WA 99352-9665

GROVES KEVIN C & TASHA L
261 HIGH MEADOWS ST
RICHLAND, WA 99352

INGHAM KARI
257 HIGH MEADOWS ST
RICHLAND, WA 99352

GROVES KEVIN C & TASHA L
261 HIGH MEADOWS ST
RICHLAND, WA 99352

BUCHANAN GARY LEE & MICHELE
LOUISE
225 HILLVIEW DR
RICHLAND, WA 99352

SONG KYOSUP & JEAN
7994 172ND PL NE
REDMOND, WA 98052

CITY OF RICHLAND
625 SWIFT BLVD. MS-09
RICHLAND , WA 99352

MONK JOHN G
8220 W GAGE BLVD #139
KENNEWICK, WA 99336

MACKLEY BRIAN & SCHOENCKER
MICHAEL
245 HIGH MEADOWS STREET
RICHLAND , WA 99352

HALL SCOTT A & CHRISTENSEN
COURTNEY M
237 HILLVIEW DR
RICHLAND, WA 99352

TMT HOMES NW LLC
4001 KENNEDY RD STE 13
WEST RICHLAND, WA 99353

ZWEIFEL DAVID L & KRISTI KAY
2025 GREENVIEW DR
RICHLAND, WA 99352-9698

ORCHARD HILLS #4 HMOWNERS ASSC
237 ORCHARD WAY
RICHLAND, WA 99352-7622

REESE ARLEN & SHIRLEY
414 MEADOW HILLS DR
RICHLAND, WA 99352

VANDERHOOGT TODD
1801 S FILLMORE ST
KENNEWICK, WA 99338

VANDERHOOGT TODD
1801 S FILLMORE ST
KENNEWICK, WA 99338

DOCK STREET REAL ESTATE LLC
PO BOX 518
COLVILLE , WA 99114

ALDERMAN DAVID WAYNE & CINDY ANN
409 CLERMONT DR
RICHLAND, WA 99352-9525

GUSTAVSON ROBERT D & DONNA L
277 MEADOWRIDGE LOOP
RICHLAND, WA 99352

LAMBERT TRUSTEE DEBORAH A
896 ROYAL BIRKDALE DR
TARPON SPRINGS, FL 34688

TMT HOMES NW LLC
4001 KENNEDY RD STE 13
WEST RICHLAND, WA 99353

TMT HOMES NW LLC
4001 KENNEDY RD STE 13
WEST RICHLAND, WA 99353

WENDELL KATHERINE M
262 MEADOWRIDGE LOOP
RICHLAND, WA 99352

OHL FAMILY TRUST
272 MEADOWRIDGE LOOP
RICHLAND, WA 99352

MEEK COLTON R & JULIE L
276 MEADOWRIDGE LOOP
RICHLAND, WA 99352

TMT HOMES NW LLC
4001 KENNEDY RD STE 13
WEST RICHLAND, WA 99353

BROWN DARYL R & SUSAN M
300 MEADOW HILLS DR
RICHLAND , WA 99352

ALTON TRUSTEES TERRANCE E &
CATHERINE M
284 MEADOWRIDGE LOOP
RICHLAND , WA 99352

TMT HOMES NW LLC
4001 KENNEDY RD STE 13
WEST RICHLAND, WA 99353

CITY OF RICHLAND
625 SWIFT BLVD. MS-09
RICHLAND , WA 99352

CARTER TRAVIS S & REBECCA R
474 MONT BLANC WAY
RICHLAND, WA 99352

STEWART ROSALITA D
2516 FALCONCREST LOOP
RICHLAND, WA 99352

MOHAMED ESLAM
2509 JASON LOOP
RICHLAND, WA 99352

TRUSTEES CHOE JUNO & SHIN TAMMY
2500 FALCONCREST LOOP
RICHLAND, WA 99352

SCHATZ AMY REBECCA & HAYFIELD
JOHN PHIL
2508 FALCONCREST LOOP
RICHLAND, WA 99352

CARNEVALI JOSEPH
8637 E PARALSO DR
SCOTTSDALE, AZ 85255

CITY OF RICHLAND
625 SWIFT BLVD. MS-09
RICHLAND , WA 99352



CITY OF RICHLAND NOTICE OF APPLICATION, PUBLIC HEARING & OPTIONAL DNS (PUD2021-102 & EA2021-116)

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Vicinity Map

Item: Planned Unit Development (Zoning)
Applicant: TMT Homes NE, LLC
File #: PUD2021-101



AFFIDAVIT OF POSTING

STATE OF WASHINGTON)
) ss.
COUNTY OF BENTON)

COMES NOW, **Mike Stevens**, who, being first duly sworn upon oath deposes and says:

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

2. On the 11th day of May 2022, I posted the attached NOTICE OF PUBLIC HEARING, File Number PUD2021-102 in the following location:

At the east and west terminus of Meadow Hills Drive, Richland, WA.

Signed: Mike Stevens

SIGNED AND SWORN to before me this 13th day of May 2022, by Mike Stevens.

Signature of Notary

Carly Kirkpatrick

Printed Name

Notary Public in and for the State of Washington,

Residing in Richland, WA

My appointment expires: Oct. 6, 2023





Beaufort Gazette
Belleville News-Democrat
Bellingham Herald
Bradenton Herald
Centre Daily Times
Charlotte Observer
Columbus Ledger-Enquirer
Fresno Bee

The Herald - Rock Hill
Herald Sun - Durham
Idaho Statesman
Island Packet
Kansas City Star
Lexington Herald-Leader
Merced Sun-Star
Miami Herald

el Nuevo Herald - Miami
Modesto Bee
Raleigh News & Observer
The Olympian
Sacramento Bee
Fort Worth Star-Telegram
The State - Columbia
Sun Herald - Biloxi

Sun News - Myrtle Beach
The News Tribune Tacoma
The Telegraph - Macon
San Luis Obispo Tribune
Tri-City Herald
Wichita Eagle

AFFIDAVIT OF PUBLICATION

Account #	Order Number	Identification	Order PO	Amount	Cols	Depth
36823	260331	Print Legal Ad - IPL0072474		\$187.52	1	76 L

Attention: Jana Duncan
CITY OF RICHLAND/LEGALS
625 SWIFT BLVD. MS-05
RICHLAND, WA 99352

CITY OF RICHLAND NOTICE OF APPLICATION & PUBLIC HEARING

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IPL0072474
May 15 2022

COUNTY OF BENTON)

SS

STATE OF WASHINGTON)

Stephanie Hatcher, being duly sworn, deposes and says, I am the Legals Clerk of The Tri-City Herald, a daily newspaper. That said newspaper is a local newspaper and has been approved as a legal newspaper by order of the superior court in the county in which it is published and it is now and has been for more than six months prior to the date of the publications hereinafter referred to, published continually as a daily newspaper in Benton County, Washington. That the attached is a true copy as it was printed in the regular and entire issue of the Tri-City Herald and not in a supplement thereof, ran 1 time(s) commencing on 05/15/2022, and ending on 05/15/2022 and that said newspaper was regularly distributed to its subscribers during all of this period.

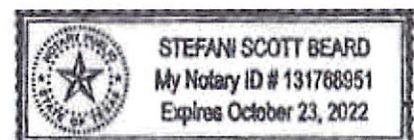
Stephanie Hatcher

(Signature of Legals Clerk)

Sworn to and subscribed before me this 16th day of May in the year of 2022

Stefani Beard

Notary Public in and for the state of Texas, residing in Dallas County



Extra charge for lost or duplicate affidavits.
Legal document please do not destroy!

Exhibit D



File No. EA2021-116

CITY OF RICHLAND **Mitigated Determination of Non-Significance**

Description of Proposal: Development of approximately 10.24-acres with six (6) 8-unit multi-family condominium buildings and the completion of Meadow Hills Drive.

Proponent: Wave Design Group on behalf of TMT Homes NW
418 N. Kellogg St., Suite B
Kennewick, WA 99336

Location of Proposal: The project site is located upon Assessor's Parcel Nos. 135983000010002 & 135984060003022, and is generally located northwest of the City of Richland water reservoir located at 303 Meadow Hills Drive, Richland, WA.

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.

() 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.

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

Responsible Official: Mike Stevens

Position/Title: Planning Manager

Address: 625 Swift Blvd., MS #35, Richland, WA 99352

Date: June 13, 2022

Signature 

CONDITIONS FOR MITIGATING ENVIRONMENTAL IMPACTS

1. A Fish & Wildlife Habitat Conservation Area (FWHCA) report shall be prepared for the site and shall not be submitted to the City for review until consultation and agreement with WDFW, the Yakama Indian Tribe and Confederated Tribes of the Umatilla Indian Reservation has occurred. The FWHCA report shall be prepared in accordance with RMC22.10.200.
2. A detailed Archaeological Survey shall be performed by a licensed archaeologist and submitted to the City of Richland, Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation and Department of Archaeological and Historic Preservation prior to issuance of any development permits for the subject property.

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

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

Instructions for applicants:

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

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

Instructions for Lead Agencies:

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

Use of checklist for nonproject proposals:

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

A. Background [\[HELP\]](#)

1. Name of proposed project, if applicable:
Meadow Hills Phase 3 Multifamily Development Skyhous
2. Name of applicant:
TMT Homes NW, LLC - Nora Wolf

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

4001 Kennedy Road Suite #13, West Richland, WA 99353. (509) 627-0743

4. Date checklist prepared:

February 24, 2021

5. Agency requesting checklist:

City of Richland

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

Construction of infrastructure and first building to begin spring 2022 and remaining buildings to be constructed in subsequent phases with completion estimated in 2025

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

None

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

None

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

No

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

None

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.)

Development 10.24 acres with construction of six individual 8-unit multifamily buildings on the south portion of the lot and the north 5.76 acres to be open public space

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.

Parcel ID: 135983000010001

Legal Description: Section 35 Township 9 Range 28. THAT PORTION OF THE SOUTH HALF OF SECTION 35, TOWNSHIP 9 NORTH, RANGE 28 EAST, W.M. BENTON COUNTY, WASHINGTON LYING WESTERLY OF THE KENNEWICK IRRIGATION DISTRICT BADGER EAST LATERAL AND EASTERLY AND SOUTHERLY OF THE

Rectangular shaped property located on the north face of Little Badger Mountain that stretched from the westerly boundary of the plat of Meadow Hills Phase Two and the easterly boundary of the plats of Crested Hills No. 3 and No. 10

B. Environmental Elements [\[HELP\]](#)

1. Earth [\[help\]](#)

a. General description of the site:

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

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

60%

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.

Sandy Loam

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

No

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.

Grading to primarily impact south portion of site with estimation 150,000 cy of cut and 20,000 cy of fill. All fill sourced onsite.

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)?

40%

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

None

2. Air [\[help\]](#)

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

Negligible amount as developer will implement dust control measures during construction and excavation.

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:

Typical dust control measures

3. Water [\[help\]](#)

a. Surface Water: [\[help\]](#)

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

No

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.

None

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

No

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

No

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

No

b. Ground Water: [\[help\]](#)

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

No

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.

Domestic sewer servicing 48 residential units

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.

Stormwater to be collected and treated on site with bioinfiltration systems

- 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:

Stormwater collection of building and streets and routed to bioinfiltration system

4. Plants [\[help\]](#)

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

☐ deciduous tree: alder, maple, aspen, other

☐ evergreen tree: fir, cedar, pine, other

☒ shrubs

☒ 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?

Schrubs within the building footprint and along new roadway.

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:

The landscape design strategy will promote the growth and preservation of the native vegetation (shrub-steppe) and ecosystem. Xeriscape landscape planting immediately adjacent to the residential structures.

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

None known

5. **Animals** [\[help\]](#)

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

Examples include:

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

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

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

None

- 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.

No

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

Approximately 57% of the parcel to be designated for public as natural open space.

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

None

6. **Energy and Natural Resources** [\[help\]](#)

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

Electric and natural gas for typical residential use.

- 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?

List other proposed measures to reduce or control energy impacts, if any:

Wastewater management

Green roofs

7. **Environmental Health** [\[help\]](#)

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

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)?

None

- 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.

Typical residential construction during working hours.

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

None

8. Land and Shoreline Use [\[help\]](#)

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

Currently undeveloped land surrounded by low density residential

- 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-1-12 - Single Family Residential

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

LDR - Low Density Residential

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

None

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

Yes. Geological Hazards

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

±75-100

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

None

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

None

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

Proposed use is high density residential.

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

None

9. Housing [\[help\]](#)

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

48 units high income

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

None

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

Not applicable

10. Aesthetics [\[help\]](#)

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

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

None

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

Not applicable

11. Light and Glare [\[help\]](#)

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

Residential Lighting. Dusk to 10pm

- 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?

No

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

Dark sky exterior lighting to be implemented

12. Recreation [\[help\]](#)

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

Open public space to the north of the parcel and neighborhood park to the south.

- 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:

Public open space proposed on the north portion of the site and a staircase that bisects the property to connect the open public space south of the property to the proposed north public open space.

13. Historic and cultural preservation [\[help\]](#)

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

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.

None

- 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.

None

- 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 [\[help\]](#)

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

Meadow Hills Drive

- 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?

No. ±1 mile

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

144 residential parking spaces to be provided. Shared public and residential parallel parking along north side of Meadow Hills Drive. ±200 spaces.

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

The project includes a new road the will infill the missing connection of Meadow Hills drive.

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

Proposed to be private and gated on the east and west boundary lines.

- 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?

Typical residential use for 48 families.

- 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:

Yes, gates expected to reduce speeds of vehicles

15. Public Services [\[help\]](#)

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

Yes. Typical increase by residential growth

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

None

16. Utilities [\[help\]](#)

- a. Circle utilities currently available at the site:

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

- 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.

Electricity: BPUD

Gas: Cascade natural gas

Irrigation: Badger mountain irrigation district

Sewer: City of Richland

Refuse Service: City of Richland

C. Signature [\[HELP\]](#)

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

Signature: _____

Name of signee Kyle Lepper

Position and Agency/Organization Architect / Wave Design Group

Date Submitted: 03/01/21

D. Supplemental sheet for nonproject actions [\[HELP\]](#)

(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?

Proposed measures to avoid or reduce such increases are:

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

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?

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?

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:

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:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

Exhibit E

Stevens, Mike

From: art kelly <summerfest.44@gmail.com>
Sent: Wednesday, June 1, 2022 6:37 AM
To: Stevens, Mike
Subject: Proposed Housing Development - Badger

1 June 2022

Dear Mike Stevens:

I would like to submit my comments to you concerning the TMT Housing Developer for the proposal to build a new condo development in the Badger Mt area per a recent Tri-City Herald article. I called TMT a couple of weeks ago and from their perspective, this proposal has been granted approval.

According to Jon Amundson, this proposal has yet to be given the final approval. I am not in favor of this development because it is taking away more of the natural beauty of Badger Mountain and related hillsides and changing this landscape into an unnatural setting for the people of the Tri-Cities.

Thank you for reading this comment.

Sincerely,

Art Kelly

Stevens, Mike

From: B.E. Beldin <grandflic@gmail.com>
Sent: Tuesday, May 31, 2022 10:12 AM
To: Stevens, Mike
Subject: Little Badger Residential Development

Mr. Stevens:

I was advised by a city staff member to contact you and provide comments regarding the proposed residential (condo) development on the slope of Little Badger Mountain in south Richland.

I am adamantly opposed to any such development. The exotic design and proposed colors will only further result in destruction of the natural landscape and also the native habitat of that location. That area is already saturated with single family homes and the impact of the exponential increase in vehicular traffic, so let's leave it as it currently is and allow the nearby residents and those who have a clear view of the terrain to enjoy the remaining natural landscape.

I'm disappointed that the city allowed residences atop the ridge southwest of Meadow Springs as they, too, certainly detract from the natural landscape and invade and destroy the native habitat. But that's a done deal and I'll just have to live with it, hoping that this latest development is not approved to further ruin the landscape.

I hope you will include my comments in the background you provide to the Hearing Examiner regarding this PUD.

Thank you for your time and consideration,

Bernie Beldin
469 Winesap Court, Richland
(509) 713-3289

Stevens, Mike

From: bin shan <bshan25@yahoo.com>
Sent: Friday, June 3, 2022 12:53 PM
To: Stevens, Mike
Subject: Meadow Hill 3 Project

Dear Mr. Stevens,

I write this email to express my objection against Meadow Hill 3 Project. I live at 200 Meadow Ridge Loop. I strongly believe the construction of the new condos will harm our community that is a small single-family neighborhood. Addition of a new dense residence will disrupt the harmony our neighborhood has. It will bring more traffic which is a concern to many families raising young children, especially during its long estimated construction phase. It will also stress the natural environment and harm the ecology here. I hope the city will critically review the construction and consider the voices of our community in its reviewing processes.

Best regards,

Bin

Stevens, Mike

From: Bob Gustavson <saxmangus@gmail.com>
Sent: Friday, June 3, 2022 4:39 PM
To: Stevens, Mike
Subject: Public Comment on Consideration of Rezoning Proposal for Planned Unit Development PUD2021-102

Dear Mr. Stevens:

I am a life-long resident of Richland for 70 years. I currently reside at 277 Meadowridge Loop, which is within the Meadow Hills Phase 2 development. I recently received from the City of Richland a Notice of Application, Public hearing & Optional DNS (PUD2021-102 & EA2021-116). The proposal under consideration is to rezone the 10.4 acre parcel known as Meadow Hills Phase 3 from Single Family residences R-1-12 to R3 Multi-Family residences. It is proposed that this rezoning be accomplished through a Planned Unit Development (PUD) for the purposes of allowing the owner/developer (TMT Homes NW, LLC) to build a large and massive complex of condominiums on the land. The subject area is immediately adjacent to our neighborhood, and the rezoning proposal, if approved, will have direct negative impact to our neighborhood, as well as the other single-family neighborhoods surrounding the subject area.

I was previously aware of the rezoning effort, and I have looked deeply into the proposal and its impact on the surrounding neighborhoods, the Public, and the City of Richland. I am strongly opposed to approval of the rezoning effort and the proposed PUD, which demonstrates zero benefit, except to the Owner/Developer. I urge the City to reject the proposal based on its inconsistency with the intents and purposes of a PUD, as well as other specific negative impacts resulting from construction of high-density condominiums in this area of single-family residential homes.

Some of my comments are briefly outlined below for your information and consideration. I intend to further expound in detail these comments, and present other items for consideration at the Public Hearing scheduled for June 20, 2021, with the Richland Hearings Examiner.

1. The proposed PUD district development is incompatible with nearby developments and uses. The subject area is surrounded by neighborhoods with single family use homes only. This is inconsistent with the criteria for a PUD, and incompatible with nearby developments and uses.
2. The proposed rezoning and PUD to construct and sell condominiums provides no demonstrable benefit to either the Public, the city, or the surrounding neighborhoods. Conversely, the proposal appears to benefit only the Owner/Developer in a financial sense. By its own verbal admittance, the Owner/Developer believes that building single family homes on the property, much of it unbuildable, can only result in 14 single family homes being built. The proposal with its condominiums would result in 48 family units, resulting in an increase in the number of residents of approximately 343% over that for the residences that could be built under the current R-1-12 zoning in effect. It is apparent that this proposal is driven toward maximizing profit to the Owner/Developer versus maintaining consistency in the area's neighborhoods, providing benefit to interested and affected parties, and limiting deleterious effects to the surrounding neighborhoods, the Public, and The City.
3. The character and consistency of the surrounding neighborhoods will be significantly impacted resulting in a marked departure from the original planning intents.
4. With the significant increase in residency, traffic through the neighborhoods of Crested Hills and Meadow Hills Phases 1 and 2 will increase sharply. This will be even more significant if through traffic is allowed as part of the proposal. Both Meadow Hills Drive and Meadow Hills Loop to the south of the proposed building site are already in poor condition, disrepair and in need of repaving. Accessing the main arterial Leslie Drive from Meadow Hills Drive is already difficult and dangerous, and the need for installation of a traffic signal or construction of a roundabout will be a necessity with the increase in traffic resulting from the proposed project. The current neighborhood of Meadow Hills Phase 2 has only local traffic, which was a desirable quality considered by the homeowners when they purchased their homes. This quality and character will be forever altered in a negative

sense by the significant traffic increase that will result from the development of condominiums, rather than single-family homes as originally planned and envisioned.

5. Should the proposal be approved, it is recommended that the connection of Meadow Hills Drive for the development be gated to reduce the negative impact of through traffic on the existing neighborhoods through which access and egress must occur.
6. The proposed condominium site is on a High Hazard Area for landslides. It is very steep sloped. The primary cause for landslides is disturbing the natural vegetation and soil, reducing the natural drainage capability of a site, and/or changing the contours of existing slopes.
7. Traditionally, based on intent, development of mixed zoning with condominiums using a PUD occur near commercial zoning, major arterials, and on the edges of existing developments, especially those designated as single family use. In the case of this proposal, it is situated within the middle of an area of a Single Family Residential use neighborhoods, far from commercial property and arterial roads. The proposed siting scheme is inappropriate for either multi-family housing or PUD.
8. The open area of the Phase 3 development proposed to be deeded to the City for Open Greenspace is essentially land that cannot easily be built upon due to concern with very steep slopes. The City should not be fooled into thinking the Owner/Developer is giving up anything of valuable use for the purpose of meeting the criteria and requirements of a PUD.

In summary, it is firmly believed that the proposed zoning change and PUD do not meet the requirements, criteria, or tests the City is required to apply in their evaluation. The evaluation by the planning department should rigorously, clearly, and forthrightly apply the applicable siting and PUD criteria in their evaluation of the proposal, such that new, unfavorable, noncompliant, unbeneficial, or inconsistent precedence is not set during performance of the department's responsibility to provide recommendations with clear basis to the Planning Commission.

With Regard-

Robert D. Gustavson
277 Meadowridge Loop
Richland, WA 99352

Sent from [Mail](#) for Windows

Stevens, Mike

From: Jennings, Tyler
Sent: Tuesday, May 10, 2022 7:38 AM
To: Stevens, Mike
Subject: RE: Skyhous PUD2021-102

Mike –

Without a thorough review of the construction plans, particularly a means of egress plan showing where rated walls occur, it is difficult to imagine how the proposed building will be compliant with the *IBC*. Particularly, as apartments, that portion of the means of egress shared between units (the common stairways and tram) must be separated from the dwellings. Given that the dwellings have windows facing into this area, the lack of an enclosed elevator (tram does not have a shaft), and overall apparent length of the stairway, I struggle to imagine how the designer will demonstrate a design compliant with *IBC Ch. 10*. As such, I believe it likely that a significant redesign will be required for the common stair and tram running midline of each building. It is foreseeable that this change may require an alteration to the visual appearance of the building, thus I believe a comment at this stage is likely necessary.

Please let me know if you have any questions or need further elaboration.

Thanks!



Ty Jennings, CBO · CFM · MCP
Plans Examiner
625 Swift Blvd., MS-35 | Richland, WA 99352
(509) 942-7793

From: Stevens, Mike <mstevens@CI.RICHLAND.WA.US>
Sent: Monday, May 9, 2022 4:06 PM
To: Anthony Muai <anthony.muai@ci.kennewick.wa.us>; Anthony Von Moos <anthony.vonmoos@co.benton.wa.us>; Ashley Morton <AshleyMorton@ctuir.org>; Badger Mountain Irrigation District <bmidmanager@badgermountainirrigation.com>; Benton County - Segregations <Segregations@co.benton.wa.us>; Benton PUD, Broadband <osp@noanet.net>; Benton PUD, Electrical <engservice@bentonpud.org>; Bill Barlow <bbarlow@bft.org>; Buechler, Ken <KBuechler@CI.RICHLAND.WA.US>; Carrie Thompson <carrie.thompson@bnsf.com>; Casey Barney, Yakama Nation <Casey_Barney@Yakama.com>; Catherine Dickson <catherinedickson@ctuir.org>; Clark Posey <clark.posey@co.benton.wa.us>; Corrine Camuso, Yakama Nation <Corrine_Camuso@Yakama.com>; Hamilton, Craig <C.Hamilton@bces.wa.gov>; DAHP SEPA Reviews <sepa@dahp.wa.gov>; DAlessandro, Carlo <cdalessandro@CI.RICHLAND.WA.US>; Damrell, Kevin <kdamrell@CI.RICHLAND.WA.US>; Darrick Dietrich <darrick@basindisposal.com>; Davis, Deanna <d.davis@bces.wa.gov>; Deborah Rodgers <dxrodders@bpa.gov>; Deskins, John <jdeskins@CI.RICHLAND.WA.US>; Eric Mendenhall <emendenhall@westrichland.org>; FormerOrchards@ecy.wa.gov; Greg Wendt <greg.wendt@co.benton.wa.us>; Gwen Clear <gcle461@ecy.wa.gov>; Hill, Kelly <khill@CI.RICHLAND.WA.US>; Jason McShane <jmcshane@kid.org>; Jennings, Tyler <tjennings@CI.RICHLAND.WA.US>; Jerrod Macpherson <Jerrod.Macpherson@co.benton.wa.us>; Jessica Lally, Yakama Nation <Jessica_Lally@Yakama.com>; John Lyle <john.lyle@bentoncleanair.org>; Jordon, Joshua <jojordon@CI.RICHLAND.WA.US>; Joseph Cottrell <jecottrell@bpa.gov>; Junior Campos <junior.campos@charter.com>; Katherine Cichy <katherine.cichy@ziply.com>; Kelly Cooper <kelly.cooper@doh.wa.gov>; Kevin Knodel <kevin.knodel@rsd.edu>; Kevin Sliger <KSliger@bft.org>; KID Development <development@kid.org>; KID Webmaster <webmaster@kid.org>; M. Deklyne <mjdeklyne@bpa.gov>; Map BCES <map@bces.wa.gov>; Mattheus, Pamela

<pmattheus@CI.RICHLAND.WA.US>; Michael Tovey <michael.tovey@ziply.com>; Noah Lee <noah.lee@bentoncleanair.org>; Noah Oliver, Yakama Nation <Noah_Oliver@Yakama.com>; Paul Gonseth <gonsetp@wsdot.wa.gov>; Reathaford, Jason <JReathaford@CI.RICHLAND.WA.US>; Review Team <reviewteam@commerce.wa.gov>; Richard Krasner <richard.krasner@rsd.edu>; USPS Richland Postmaster <99352RichlandWA-Postmaster@usps.gov>; Rick Dawson <rickd@bfhd.wa.gov>; Robin Priddy <robin.priddy@bentoncleanair.org>; Sarah Gates <s.gates@bces.wa.gov>; Schiessl, Joe <JSchiessl@CI.RICHLAND.WA.US>; SEPA Center <sepacenter@dnr.wa.gov>; SEPA Register <separegister@ecy.wa.gov>; SEPA Unit <sepaunit@ecy.wa.gov>; Seth DeFoe <SDefoe@kid.org>; South Central Region Planning <scplanning@wsdot.wa.gov>; T.S. "Max" Platts <PlattsT@wsdot.wa.gov>; Tyutyunnik, Ruvim <rtutyunnik@CI.RICHLAND.WA.US>; WA Dept of Fish & Wildlife <lopezlal@dfw.wa.gov>; WA Dept of Fish & Wildlife <rittemwr@dfw.wa.gov>; Westphal, Nichole <nwestphal@ci.richland.wa.us>; William Simpson <william.simpson@commerce.wa.gov>

Subject: Skyhous PUD2021-102

ATTENTION:

The City of Richland has received an application for a proposed Planned Unit Development commonly referred to as Skyhous. Due to the size of the application packet, the Notice of Application, SEPA Checklist and related information may be viewed by visiting the following:

[PUD2021-102 Skyhous Referral Packet.pdf](#).

A public hearing will be held before the Richland Hearing Examiner at 6:00 PM on Monday, June 20, 2022.

Please review and submit any comments you may have by 5:00 PM, Wednesday, June 8, 2022 (or sooner).

Thank you,



Mike Stevens
Planning Manager
625 Swift Blvd., MS-35 | Richland, WA 99352
(509) 942-7596

Disclaimer: Emails and attachments sent to or from the City of Richland are public records subject to release under the Washington Public Records Act, Chapter 42.56 RCW. Sender and Recipient have no expectation of privacy in emails transmitted to or from the City of Richland.

June 2, 2022

Mr. Mike Stevens, Planning Manager
City of Richland
625 Swift Boulevard, MS #35
Richland, Washington 99352

RE: PUD 2021-102 and EA 2021-116
Planned Unit Development
TMT Homes NE, LLC

Dear Mr. Stevens,

The purpose of this letter is to address a number of negative issues regarding the above referenced proposed development by TMT Homes. As part of the Crested Hills development, I am writing to express my opposition to this proposed development of the property. As initially highlighted in the September 22, 2010 staff report, the homeowners in both Meadow Hills and Crested Hills subdivisions were told by the City of Richland and developers to expect that Meadow Hills Phase 3 would be a continuation of the current surrounding developments.

The Comprehensive Plan use for this site is not consistent with the applicant's proposal. Based on the size of the project, the applicant will always fail to provide an adequate transition. The initial complaint by both the City's staff and the attorney hired to contest TMT Home's previous attempt at this development, was the failure by the developer to provide compatibility and proper transition between the proposed use and nearby residential homes. As noted in a letter from Attorney John Ziobro, who represented homeowners from the developer's previous attempt, to Rick Simmons in 2010: "In some instances, the proposed condominiums will be adjacent to existing homes. In this regard, there is no buffering or transition. Rather, there is abrupt change in land use type and intensity."

This proposed development is vastly different and inconsistent with the surrounding existing developments. The size of the proposed development is more in line with a commercial property development rather than the approved single-family housing. Multi-family developments such as this development tend to be located closer to other land uses, such as commercial and office, as opposed to being placed in the center of a pre-existing residential community. Traditionally a development of this size would have been designed much earlier so that the infrastructures such as storm water drainage and other utilities would not create unnecessary demands and problems to the pre-existing homes.

Additionally, the proposed development would not be completed within a reasonable amount of time. The developer has previously stated that the scope of work would be between 5 to 7 years to complete. With normal single-family housing, the site work would be finished within a few weeks. The enormous scale of the site work to have this development terraced into the hillside could create unforeseen problems for the entire neighborhoods that surround the proposed development. Rather than staggering weeks for each single-family home, it would be months of massive foundation groundworks.

As the TMT Homes CEO mentioned in her newspaper article, this type and scope of construction has not been previously completed in this area nor has this vast scope of work ever been performed by this developer. Even though the city's requirement may be met during the construction phase, the inexperienced mentioned by the CEO could lead to potential issues that in the future could become problematic. Additionally, the CEO mentioned they have been planning this type of development for 15 years. Though TMT Homes might have always wanted this, that information was not provided to the public when homeowners purchased their lots and/or residential single family homes. This developer purchased the land while it was designated for single-family homes only. This is what homeowners were told when they explored this area prior to purchasing their properties.

In summary, the following issues are a concern to the neighborhoods surrounding the proposed planned unit:

1. Contrary to the development plan (city's Comprehensive Master Plan).
2. Appearance is overbearing and the scale of the development means it would have a negative impact on the neighboring homes, and is out of character for the surrounding developments (Meadow Hills, Falcon Crest, and Crested Hills).
3. Length of time of construction during the construction phase.
4. Infrastructure issues from multi-family units being placed in spot zone.
5. Traffic, parking and access issues.
6. Noise volumes, loss of privacy and illumination issues created by density of the development.

Although small changes are sometimes made to the original Comprehensive Plan, such a dramatic change would greatly affect the homeowners who have purchased their properties based on the reliance of the Planning Department and the City of Richland. Therefore, I am asking that the Planning Department and City Council reject the application of this applicant. Thank you for the opportunity to share these concerns.

Sincerely,

Cindy Alderman
409 Clermont Drive
Richland, Washington



Allyson Brooks Ph.D., Director
State Historic Preservation Officer

May 23, 2022

Mike Stevens
Planning Manager
City of Richland
505 Swift Blvd. MS #35
Richland, WA 99352

In future correspondence please refer to:
Project Tracking Code: 2022-05-03391
Property: City of Richland_Skyhous Residential Development (PUD2021-102)
Re: Survey Requested

Dear Mike Stevens:

Thank you for contacting the Washington State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) and providing documentation regarding the above referenced project. These comments are based on the information available at the time of this review and on behalf of the SHPO in conformance Washington State law. Should additional information become available, our assessment may be revised.

While our statewide predictive model indicates that there is a low to moderate probability of encountering cultural resources within the proposed project area, archaeological material has been identified on similar landforms with similar probability elsewhere in the Tri-Cities region. Identification during construction is not a recommended detection method because inadvertent discoveries often result in costly construction delays and damage to the resource. Therefore, we recommend a professional archaeological survey of the project area be conducted and a report be produced prior to ground disturbing activities. This report should meet DAHP's [Standards for Cultural Resource Reporting](#).

We also recommend that any historic buildings or structures (45 years in age or older) located within the project area are evaluated for eligibility for listing in the National Register of Historic Places on Historic Property Inventory (HPI) forms. We highly encourage the SEPA lead agency to ensure that these evaluations are written by a cultural resource professional meeting the [SOI Professional Qualification Standards in Architectural History](#).

Please note that the recommendations provided in this letter reflect only the opinions of DAHP. Any interested Tribes may have different recommendations. We appreciate receiving any correspondence or comments from Tribes or other parties concerning cultural resource issues that you receive.

Thank you for the opportunity to comment on this project. Please ensure that the DAHP Project Tracking Number is shared with any hired cultural resource consultants and is attached to any communications or submitted reports. Please also ensure that any reports, site forms, and/or historic property inventory (HPI) forms are uploaded to WISAARD by the consultant(s).



Should you have any questions, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Sydney Hanson". The signature is fluid and cursive, with a long horizontal line extending from the end.

Sydney Hanson
Transportation Archaeologist
(360) 280-7563
Sydney.Hanson@dahp.wa.gov



Stevens, Mike

From: cdberkowitz@charter.net
Sent: Friday, June 3, 2022 12:16 PM
To: Stevens, Mike
Subject: PUD2021-102 and EA2021-116 Skyhous

Hi Mike,

This application includes a large area of shrub steppe that is considered PHS in the RMC. And yet, I do not see a FWHCA report in the application. That makes me think the application is incomplete and should be returned to the applicant to do the appropriate FWHCA report prior to resubmittal to the SEPA process.

Thank you for considering this comment.

Debbie Berkowitz

Stevens, Mike

From: darylbrown@charter.net
Sent: Thursday, May 26, 2022 12:45 PM
To: Stevens, Mike
Cc: susiebrown@charter.net
Subject: Proposed Extension of Meadow Hills Dr. and Zoning Change Requested by TMT

My wife and I are against the proposed zoning change. In our opinion, the proposed condominiums would not fit in with the esthetics of the surrounding neighborhoods, which are all single-family, detached residences. In addition, we are concerned about the significant increase in traffic relative to keeping the existing zoning.

If Meadow Hills Dr. is extended, we are in favor of making the new section a relatively narrow, private street, similar to the section of street on the south side of Crested Hills Park.

Finally, if Meadow Hills Dr. is extended in front of our house at 300 Meadow Hills Dr., we would like the City to make sure that TMT pays the entire cost, including sidewalks, for the section fronting our property.

Thank you.

Daryl and Sue Brown
300 Meadow Hills Drive
Richland



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Central Region Office
1250 West Alder St., Union Gap, WA 98903-0009 • 509-575-2490

June 1, 2022

Mike Stevens
City of Richland
PO Box 190
Richland, WA 99352

Re: SEPA Register 202202262, PUD2021-102, EA2021-116

Dear Mike Stevens:

Thank you for the opportunity to comment during the Optional Determination of Non Significance process for the Meadow Hills Phase 3 multifamily development, proposed by Wave Design Group. We have reviewed the documents and have the following comments.

WATER QUALITY

Project with Potential to Discharge Off-Site

If your project anticipates disturbing ground with the potential for stormwater discharge off-site, the NPDES Construction Stormwater General Permit is recommended. This permit requires that the SEPA checklist fully disclose anticipated activities including building, road construction and utility placements. Obtaining a permit may take 38-60 days.

The permit requires that a Stormwater Pollution Prevention Plan (Erosion Sediment Control Plan) shall be prepared and implemented for all permitted construction sites. These control measures must be able to prevent soil from being carried into surface water and storm drains by stormwater runoff. Permit coverage and erosion control measures must be in place prior to any clearing, grading, or construction.

In the event that an unpermitted Stormwater discharge does occur off-site, it is a violation of Chapter 90.48 RCW, Water Pollution Control and is subject to enforcement action.

More information on the stormwater program may be found on Ecology's stormwater website at: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/>. Please submit an

Mike Stevens

June 1, 2022

Page 2

application or contact **Lloyd Stevens Jr.** at the Dept. of Ecology, (509) 571-3866 or lloyd.stevensjr@ecy.wa.gov with questions about this permit.

WATER RESOURCES

Dust Control from a Well

If the plan to use water for dust suppression at your project site, be sure that you have a legal right. In Washington State, prospective water users must obtain authorization from the Department of Ecology before diverting surface water or withdrawing ground water, with one exception. Ground water withdrawals of up to 5,000 gallons per day used for single or group domestic supply, up to 5,000 gallons per day used for industrial purposes, stock watering, and for the irrigation of up to one-half acre of non-commercial lawn and garden are exempt from the permitting process. Water use under the RCW 90.44.050 exemption establishes a water right that is subject to the same privileges, restrictions, laws and regulations as a water right permit or certificate obtained directly from Ecology. Temporary permits may be obtainable in a short time-period. The concern of Water Resources is for existing water rights. In some instances water may need to be obtained from a different area and hauled in or from an existing water right holder.

If you have any questions or would like to respond to these Water Resources comments, please contact **Christopher Kossik** at (509) 454-7872 or email at christopher.kossik@ecy.wa.gov .

Sincerely,



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

Stevens, Mike

From: Buechler, Ken
Sent: Thursday, May 19, 2022 11:05 AM
To: Stevens, Mike
Cc: Jordon, Joshua; VanBeek, Michael; Jennings, Tyler
Subject: RE: Skyhous PUD2021-102

Mike,

This is a pretty awesome and unique project. We look forward to work with TMT to bring this to our community. This is a pretty in depth “subdivision” type review, but its good to let them know upfront of the special circumstances that this project brings with it.

We took quite a bit of time to figure out how to apply the intent of the code to this project. Our best approach is to look at Skyhous as a 6 story building since we have no access from the top and there are both vertical and horizontal fire and life safety considerations. The submittal also illustrates the units as one over the other, just as you would have in a 6 story building.

1. Keynote #6 on page 18 shows pedestrian path/emergency access. To their benefit, we are looking at this as more of an urban interface access since by design the access to the building itself is extremely limited from the top down. IFC Section D requires access within 150’ to any point and this will meet that need as best as we can achieve on the steep hillside. Since illustration #6 is a fire apparatus access road, it will need to have 20’ wide driving surface. Since it is over 150’ in length it would need an outlet or a turnaround. Seems it would be best to look at an outlet on the water tank side. This will not be a normal daily driving street, but rather provide building access in an emergency. [Drop down](#) bollards will need to be placed at both ends, per city standards.
2. I don’t think this will be an issue, but.
Wild-land Areas. 33.21.01.030 Wild-land areas are areas which are undeveloped, uncultivated or unfit for cultivation, or considered by the city of Richland to be wasteland or desert, or which are any combination of these descriptions and which are deemed by the city of Richland as a hazard for wild fire purposes. The following requirements apply to buildings and structures constructed on, in, or near wild-land areas:
 - a. All structures within 30 feet of a property line adjoining a wild-land area shall have noncombustible siding, soffit, and skirting on the side adjacent to the wild-land area when the wild-land area is in excess of five contiguous acres. This requirement shall not apply to interior lots of platted parcels of land and development phases whose streets are accessible and whose water system is operational.

- b. Decks and porches 36 inches or less in height shall have skirting if within 30 feet of adjacent wild-land areas when the wild-land area is in excess of five contiguous acres. Skirting shall be sufficiently constructed so as not to allow the accumulation of combustible material under the deck or porch. The area under the deck or porch shall not be used for storage.
 - c. When determined by the Fire marshal, noncombustible siding or soffit material shall be required on the downhill side(s) of a structure that is within 30 feet of a grade that is 15 percent or greater in steepness. The grade shall be determined by the predominate slope on the downhill side measured from the structure or building and extending a maximum of 300 feet.
3. NFPA limits 13R to residential structures of four stories or less. This would then require a NFPA 13 fire sprinkler system. The riser room would need to be near the building entry shown as item 2 on page 19. Per the municipal code, a one hour rated riser room with direct access to the outside must be provided. Because the incline elevator divides the condo stairways from right to left as illustrated item 7 & 8, a standpipe connections will need to be provided at each level on both the right and left stairways. Due to the code requirement of a hydrant within 100' of a FDC, a hydrant will need to be placed outside the main entrances to the buildings, as shown as item 2 on page 19. The fire sprinkler system will obviously require a monitored fire alarm system.
4. The incline elevator interior size requirements are designed for the EMS cot and to be able to provide patient care in the elevator.
- All passenger elevators shall have a minimum interior dimension of 80" in width and 51" in depth per RMC Title 20 chapter 20.08.



Kenneth L Buechler
Fire Marshal 172
625 Swift Blvd., MS-16 | Richland, WA 99352
(509) 942-7556
(509) 578-9321

From: Stevens, Mike <mstevens@CI.RICHLAND.WA.US>

Sent: Monday, May 9, 2022 4:06 PM

To: Anthony Muai <anthony.muai@ci.kennewick.wa.us>; Anthony Von Moos <anthony.vonmoos@co.benton.wa.us>; Ashley Morton <AshleyMorton@ctuir.org>; Badger Mountain Irrigation District <bmidmanager@badgermountainirrigation.com>; Benton County - Segregations <Segregations@co.benton.wa.us>; Benton PUD, Broadband <osp@noanet.net>; Benton PUD, Electrical <engservice@bentonpud.org>; Bill Barlow <bbarlow@bft.org>; Buechler, Ken <KBuechler@CI.RICHLAND.WA.US>; Carrie Thompson <carrie.thompson@bnsf.com>; Casey Barney, Yakama Nation <Casey_Barney@Yakama.com>; Catherine Dickson <catherinedickson@ctuir.org>; Clark Posey <clark.posey@co.benton.wa.us>; Corrine Camuso, Yakama Nation <Corrine_Camuso@Yakama.com>; Hamilton, Craig <C.Hamilton@bces.wa.gov>; DAHP SEPA Reviews <sepa@dahp.wa.gov>; DAlessandro, Carlo

<cdalessandro@CI.RICHLAND.WA.US>; Damrell, Kevin <kdamrell@CI.RICHLAND.WA.US>; Darrick Dietrich <darrick@basindisposal.com>; Davis, Deanna <d.davis@bces.wa.gov>; Deborah Rodgers <dxrogers@bpa.gov>; Deskins, John <jdeskins@CI.RICHLAND.WA.US>; Eric Mendenhall <emendenhall@westrichland.org>; FormerOrchards@ecy.wa.gov; Greg Wendt <greg.wendt@co.benton.wa.us>; Gwen Clear <gcle461@ecy.wa.gov>; Hill, Kelly <khill@CI.RICHLAND.WA.US>; Jason McShane <jmcshane@kid.org>; Jennings, Tyler <tjennings@CI.RICHLAND.WA.US>; Jerrod Macpherson <Jerrod.Macpherson@co.benton.wa.us>; Jessica Lally, Yakama Nation <Jessica_Lally@Yakama.com>; John Lyle <john.lyle@bentoncleanair.org>; Jordon, Joshua <jojordon@CI.RICHLAND.WA.US>; Joseph Cottrell <jecottrell@bpa.gov>; Junior Campos <junior.campos@charter.com>; Katherine Cichy <katherine.cichy@ziply.com>; Kelly Cooper <kelly.cooper@doh.wa.gov>; Kevin Knodel <kevin.knodel@rsd.edu>; Kevin Sliger <KSliger@bft.org>; KID Development <development@kid.org>; KID Webmaster <webmaster@kid.org>; M. Deklyne <mjddeklyne@bpa.gov>; Map BCES <map@bces.wa.gov>; Mattheus, Pamela <pmattheus@CI.RICHLAND.WA.US>; Michael Tovey <michael.tovey@ziply.com>; Noah Lee <noah.lee@bentoncleanair.org>; Noah Oliver, Yakama Nation <Noah_Oliver@Yakama.com>; Paul Gonseth <gonsetp@wsdot.wa.gov>; Reathafor, Jason <JReathafor@CI.RICHLAND.WA.US>; Review Team <reviewteam@commerce.wa.gov>; Richard Krasner <richard.krasner@rsd.edu>; USPS Richland Postmaster <99352RichlandWA-Postmaster@usps.gov>; Rick Dawson <rickd@bfhd.wa.gov>; Robin Priddy <robin.priddy@bentoncleanair.org>; Sarah Gates <s.gates@bces.wa.gov>; Schiessl, Joe <JSchiessl@CI.RICHLAND.WA.US>; SEPA Center <sepacenter@dnr.wa.gov>; SEPA Register <separegister@ecy.wa.gov>; SEPA Unit <sepaunit@ecy.wa.gov>; Seth DeFoe <SDefoe@kid.org>; South Central Region Planning <scplanning@wsdot.wa.gov>; T.S. "Max" Platts <PlattsT@wsdot.wa.gov>; Tyutyunnik, Ruvim <rtutyunnik@CI.RICHLAND.WA.US>; WA Dept of Fish & Wildlife <lopezla@dfw.wa.gov>; WA Dept of Fish & Wildlife <ritemwr@dfw.wa.gov>; Westphal, Nichole <nwestphal@ci.richland.wa.us>; William Simpson <william.simpson@commerce.wa.gov>

Subject: Skyhous PUD2021-102

ATTENTION:

The City of Richland has received an application for a proposed Planned Unit Development commonly referred to as Skyhous. Due to the size of the application packet, the Notice of Application, SEPA Checklist and related information may be viewed by visiting the following:

[PUD2021-102 Skyhous Referral Packet.pdf](#).

A public hearing will be held before the Richland Hearing Examiner at 6:00 PM on Monday, June 20, 2022.

Please review and submit any comments you may have by 5:00 PM, Wednesday, June 8, 2022 (or sooner).

Thank you,



Mike Stevens
Planning Manager
625 Swift Blvd., MS-35 | Richland, WA 99352
(509) 942-7596

Disclaimer: Emails and attachments sent to or from the City of Richland are public records subject to release under the Washington Public Records Act, Chapter 42.56 RCW. Sender and Recipient have no expectation of privacy in emails transmitted to or from the City of Richland.

238 Meadowridge Loop
Richland, WA 99352

June 3, 2022

Mike Stevens
City of Richland Planning Manager
625 Swift Boulevard, MS #35
Richland, WA 99352

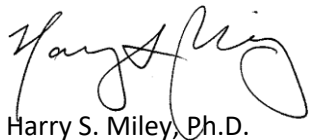
Dear Mr. Stevens:

I am a Richland resident writing to oppose rezoning property on Little Badger Mountain in response to application PUD2021-102 submitted by TMT Homes NW. I am aware of and agree with serious objections based on expectations of a PUD decision, for example compatibility with nearby developments, transitions to nearby external uses, consistency with master plans for the area. I would like to note that our hill carries and focuses sounds, such that we can hear cars, golf clubs striking balls, conversations, and dogs barking from a surprising distance, so the noise of high-density dwellings will be heard by far more than on a flat surface in town. And those folks dwelling on the flat parts of Richland and even Pasco will have the visual slap of a big building on the hill, and very concentrated lights at night. In the end, I see no benefit to anyone but the developers.

However much I agree with those points raised by others, my personal objection relates to the issue of the geological soundness of construction on this hill. Besides myself, many other homeowners in the adjacent housing areas have experienced subsidence to greater or lesser degrees. The developers of this new project will state that their geotechnical and engineering approach allays all those concerns, but they also built many of the homes on this hillside that have experienced subsidence issues. They repoured my driveway, for example, when it sank 4 inches. (It has sunk since then, too, and I have cracks in stucco and drywall.) While these subsidence problems are mostly mild for those on Meadowridge Loop, they could be major for the precariously supported new condos and require frequent construction repair, further disturbing our area. Also, I see in the plan that these condos will all be equipped with pools. Where will the water go if there is a subsidence-driven crack? I suspect it will inundate the property of current homeowners, and thus risk the foundations of our houses.

So, while there may be expert assurances that nuisances and hazards are mitigated, the residents of the neighborhoods adjacent will disproportionately bear the unpleasantness of the construction period and the risks of future hazards, and have no positive outcomes from the project, only negative ones. Said another way, only the developers will benefit, and will be long gone when issues arise.

Sincerely,

A handwritten signature in black ink, appearing to read "Harry S. Miley". The signature is fluid and cursive, with a large loop at the end.

Harry S. Miley, Ph.D.
238 Meadowridge Loop
Richland, WA 99352

Stevens, Mike

From: Davidson, James (WTCC) <jfdavids@Bechtel.com>
Sent: Friday, June 3, 2022 4:33 PM
To: Stevens, Mike
Subject: PUD2021-102 & EA2021-116 Skyhous

Mr. Stevens

In short, we are not in favor of the proposed condo project at its current size and construction duration.

My Mother and I purchased property at 220 Meadow Hills Drive back in 2007 for the view and her relaxation in her senior years.

While we understand the need for progress and the project looks wonderful on paper (from the view shown) we question its timing and placement. Per the previous City of Richlands decision that found the project not suitable, what has changed? In all the presentations I never seen what this complex would look on the skyline, because it will look like a huge block of concrete when complete. Do we have a view from Gage? During construction it will look like an open pit quarry for years.

Beside the aesthetic issues:

- The construction schedule – 3 to 5 years. This is a long period to disrupt an established neighborhood
Do we have a traffic/safety plan
Increased traffic – we will have years of issues of truck traffic at Meadow Hills Drive and Leslie
Do we have a road repair plan in place? Is this being paid by the contractor?
- Noise - We have how the hill acts as amphitheater – now you are placing a speaker for 48 units (this triples our neighborhood – but not the acreage).
- Plan to repair the city streets
The construction area has insufficient area for material storage or workers to park.
TMT has a past practice of not controlling their waste/trash or dust
Insufficient parking for the proposed dog park

Do we have sufficient performance bond in case they fail to complete their construction? What happens if TMT changes their plan from high-end condominiums to apartments
Flood control – during and after construction – mitigation plans
The proposed dog park is actually the flood zone containment – is it sufficient?

This is a large scale Geotech project – does TMT have the expertise to produce
Geotech questions for the surrounding homes – is a seismic plan to monitor. Pre-inspection the surrounding homes.

I also recently contacted the City Building/Permitting Inspection department regarding another project in town and received the run around on who protects the public for safety - not them. They sent me to L&I, I wondered, and called, they only address employee safety.

This is one question I will ask during the city meeting will be who is responsible to report issues to if we proceed with this project.

This could have been a wonderful project if done years ago (like 20) , but with only one residential road in and out (multiple blind spots) the impacts/hazards to the area are not gained versus standard residential housing.

Regards
James Davidson
220 Meadow Hills Drive
Richland, WA

Stevens, Mike

From: Judith Connell <Judy.Connell@fluorgov.com>
Sent: Friday, June 3, 2022 4:01 PM
To: Stevens, Mike
Cc: cwconnell@charter.net; Judy Connell
Subject: Comments on Proposed Skyhous Development: Parcel # 135984060003022, Zoning R-1-12

My husband Carl and I live at 2520 Falconcrest Loop, on the ridge above the proposed Skyhous Development on Little Badger Mountain. We oppose the development for several reasons, the most significant being that it **increases liabilities for homeowners with residences on the ridge immediately above the proposed location. The geotechnical reports included with the Skyhous application raise unusual alarms about the stability of the slope and the need to ensure water sources are properly considered in the design.** The findings cited below cause significant concern:

- **As currently conceptualized, the *proposed development at the site may be unfeasible and could pose a threat to the health or safety of the public by increasing the risk of geologic hazards at the subject site and to surrounding properties.***
- ***Construction of stable slopes and building pads will require significant remedial grading incorporating retaining structures (retaining walls, soldier pile walls, soil nail walls, etc.) and engineered reinforced slopes.***
- ***Near surface site soils may be subject to a significant threat of erosion that must be addressed with the application of stringent BMPs, appropriate project engineering design, and construction in order to properly mitigate the noted threat.***
- ***The onsite loess soils (fine grained silty and sandy soils) exhibit a collapse potential when wetted. Over-excavation and replacement of these loess soils as engineered fill will be required to reduce the risk of foundation and building pad settlement.***
- ***Stormwater management design must ensure that concentrated runoff and significant saturation of the underlying loess soils atop the buried bedrock surface is prevented.***

The reports do not appear to consider the impacts of water sources from the Falconcrest Loop and Falcon Lane developments above the planned development. There are significant contributions of irrigation water and storm water from these sources that could be a factor in causing the types of damage postulated in the geotechnical reports. Any storm water runoff or leaked water (e.g., broken pipes from swimming pools, hot tubs and irrigation systems) could reach the Skyhous development as either subsurface flow or surface flow. A subsurface flow in the soil zone above the bedrock could severely weaken the stability of the slope and could cause the buildings to slide unless special measures were taken to anchor the building to the slope (perhaps to the bedrock itself). A surface flow could rapidly erode away dozens if not hundreds of cubic yards of soil on the slope. Note that a major water-caused slide of over 100 cubic yards occurred when Millo Bauder's (Morency Drive) house was being built. The slide was caused by a vandal who opened a hose bibb. The water ran undetected for several days, eventually creating the slide.

Additional concerns are given below.

1. The proposed development brings **a higher density of population than originally intended (i.e., at least double the number of people living below us in comparison to the case in which current zoning requirements remain unchanged) and puts increased traffic onto roads and through neighborhoods not built to accommodate the load.**
2. It poses the potential for significant **light glare shining up at the houses above the development from the buildings and street lights, if dark sky lighting requirements are not implemented.** The SEPA

submittal indicates that dark sky lighting will be implemented. However, because Richland has not adopted the international standards in its code (although RMC 23.58 contains some of the elements), we recommend that, if the development is built, the international dark sky requirements be codified in the CCRs.

3. It poses the **potential for additional noise pollution**. The plan calls for the development to be a gated community to help minimize traffic (and presumably traffic noise). This objective would be met with gates at each end of the development. A requirement that the gates be kept in good working order should be codified. We believe the greatest noise concern would be realized if the penthouse roofs were converted into patios where large parties could be hosted. Sound travels efficiently uphill. There are various ways of preventing rooftops from being converted into patios, and we recommend, that if the proposed development is built, the CCRs specifically restrict the use of the roofs for all activities except maintenance.

We appreciate the beauty and serenity of the Falconcrest neighborhood ... seeing the majestic Columbia River and watching for soaring falcons and hawks that look for prey in the natural grassland below us. Rather than enhance the community, this development will detract from it ---- reduce property and home values, impact the quality of life, and add liabilities for current residents.

Sincerely,
Carl & Judy Connell
2520 Falconcrest Loop
Richland, WA 99352
(509) 531-4484

Judith Connell | **FLUOR** | Senior Director, Nuclear and Civil Communications & Strategic Planning, Mission Solutions|
Judy.Connell@Fluorgov.com | M +1.509.531.4484

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June 3, 2022

City of Richland Planning Department, MS #35
Attn: Mike Stevens
Richland City Hall
325 Swift Boulevard
Richland, WA 99352
mstevens@ci.richland.wa.us

Justine T. Koehle

Attorney

jkoehle@walkerhey.com
Direct 509.537.0291

David Gamboa

Paralegal

dgamboa@walkerhey.com
Direct 509.537.1211

Re: Public Hearing, PUD 2021-102 and EA2021-116 (SKYHOUS PROJECT)

Dear Mr. Stevens:

I represent the Meadow Hills Homeowners' Association (hereinafter the "Association"). The Association submits this letter as its official comments on the above referenced "Skyhous Project", PUD 2021-102 and EA2021-116.

The neighborhood the Association governs is commonly known as Meadow Hills and is located immediately east of the proposed Skyhous Project. Meadow Hills is currently comprised of 27 single-family detached homes, six vacant lots in the plat of Meadow Hills Phase 2, and the 10.4-acre un-platted parcel that is the location of the proposed Skyhous Project (hereinafter "Meadow Hills Phase 3"). The six vacant lots and Meadow Hills Phase 3 are currently owned by the applicant, TMT Homes (NW), LLC (hereinafter the "Developer").

The current Covenants, Conditions, and Restrictions for Meadow Hills (hereinafter the "Covenants") do not restrict the Developer from re-zoning Meadow Hills Phase 3. However, after the Developer gave a presentation of the proposed Skyhous Project to the Association on May 17, 2021 and after review of the current referral packet, the Association strongly opposes rezoning Meadow Hills Phase 3 to increase the residential density and to allow single-family attached or multi-family residential housing. Furthermore, the Association strongly opposes granting a broad, unrestricted Planned Unit Development designation for Meadow Hills Phase 3.

More specifically, the Association offers the following comments in support of its opposition:

- 1. Aesthetic Concerns:** The proposed six 8-unit, 6-story multi-family condominium buildings for a total of 48 units will be an eye-sore and blight on the Richland sky line. The

natural flow of single-family detached homes running the length of Little Badger Mountain to Badger Mountain will be disrupted by the proposed concrete monoliths.

2. **Traffic:** The Association anecdotally reports many near-misses of traffic accidents at the corner of Leslie Drive and Meadow Hills Drive. If the City were to allow the proposed Skyhous Project, the residential density of Meadow Hills Phase 3 will effectively double and will add additional traffic pressure to this situation. The Association is also concerned about traffic on Meadow Hills Drive and wants a private, gated drive linking the Meadow Hills Phase 2 and Crested Hills developments to be constructed to alleviate traffic concerns should the City approve the Skyhous Project.
3. **Construction Schedule and Developer History:** The size and scope of Skyhous Project is significantly larger than any single construction project the Developer has performed within Meadow Hills. The proposed project will disrupt the Meadow Hills neighborhood significantly more than simply building single-family detached houses one at a time, which has been the norm for all development in Meadow Hills to date. Given the Association's past experiences with the Developer and the size of the project, there is a general concern that the proposed project will take a significant amount of time to complete, even without considering potential construction delays, and that the final project will not look like the plans submitted to the City.
4. **Parking:** The proposed project does not adequately support the parking needs for the proposed number of residents or the public for use of the proposed open space. Two-car tandem parking with an additional third tandem space in a driveway is an unrealistic amount of parking for the residents, let alone the public who will utilize the public space. The lack of parking will clearly cause overflow parking on Meadow Hills Drive, which is not desirable to the Association or the Meadow Hills neighborhood and will only cause additional congestion
5. **Public Park:** The proposed public park area (suggested as a dog park and a pea patch) and any associated public trails do not have designated parking which will lead to congestion on Meadow Hills' residential streets and unauthorized use of the private driveways immediately east of the proposed Skyhous Project.
6. **Garbage and Recycle Service:** Neither garbage nor recycle service is addressed in the proposed Skyhous Project documentation. The proposed plan does not provide room between tandem parking driveways for curbside garbage or recycle service. It is unrealistic to expect 48 units to store their garbage and recycle bins inside their limited garage space and there is simply no room for 48 garbage or recycle bins on the street for the designated pickup day. This could result in residents having to take their bins to the closest end of their development for pickup with the east end of the development being on the Association's section of Meadow Hills Drive.
7. **Connecting Roads.** The Association strongly opposes utilizing Meadow Hills Drive as a planned connecting link between the Badger Mountain Trail system and Leslie Drive for connection to the Amon Creek Trail system.

8. **No Public Benefit.** The proposed rezoning and construction of condominiums offers no benefit to the public or the adjoining neighborhoods. The Association currently has access to public parks and greenspace. The addition of 48 luxury condominiums in place of 26 luxury single-family homes only benefits the Developer while detrimentally changing the character and flow of the surrounding neighborhoods.

In addition to these comments, the Association respectfully requests the attached letter from the Developer to Anita Bruce, former Association President, dated May 25, 2021, be included in the Public Comment record in which the Developer committed to the following actions:

1. Construction of roads and sidewalks will be completed at the Developer's expense.
2. Revision of the Covenants to separate Meadow Hills Phase 2 and Meadow Hills Phase 3 (aka Skyhous Project).
3. Prior to construction initiation, a Silt and Construction Debris Fence will be installed at the Developer's expense to protect current Meadow Hills Phase 2 homes.
4. Prior to Certificate of Occupancy being issued, the Developer will install a six-foot Ironesque fence along the property lines of the abutting Meadow Hills Phase 2 single-family homes at the Developer's expense.
5. All construction access to the Skyhous Project will be through and from Meadow Hills Drive. Construction parking and material stock piling will be wholly on the Meadow Hills Phase 3 parcel and will in no way utilize Meadow Hills Phase 2 private drives.

If the Skyhous Project were to proceed against the overwhelming and strong opposition by neighboring developments, the Association respectfully requests the following restrictions on the Skyhous Project:

1. Limit the Skyhous Project to four, 8-unit, 5-story multi-family condominium buildings for a total of 32 units – OR – to five, 6-unit, 4 story multi-family condominiums buildings for a total of 30 units. This limitation will somewhat reduce the aesthetic impact on the Richland skyline and will effectively mitigate the traffic concerns to be similar to those the Meadow Hills neighborhood would expect with approximately 26 single-family detached units with the current R-1-12 zoning.
2. Strictly enforce the proposed construction to above Meadow Hills Drive with a minimum construction buffer of 300 feet of natural land from the nearest Meadow Hills Phase 2 home to reduce the abrupt continuity change from single-family residential construction to multi-family residential construction.
3. Require additional public parking within the Skyhous Project, and wholly on Meadow Hills Phase 3, to adequately support enough parking for residents, residential guests, and members of the public who will utilize the open space and/ or park.

4. Strictly enforce and require the Developer to install, at Developer's expense, a private gated drive linking the Meadow Hills Phase 2 and Crested Hills developments.
5. Provide a traffic light at the corner of Meadow Hills Drive and Leslie Boulevard to mitigate additional traffic pressure on this dangerous corner.

If you or the Planning Department should have any questions concerning the Association's comments or if you require additional information, please do not hesitate to contact me. Thank you for your consideration.

Sincerely,



JUSTINE T. KOEHLE

JTK/dg
File #2468.01





TMT HOMES (NW), LLC
4001 Kennedy Road, Suite 13
West Richland, WA 99353
(509) 627-0743 - Fax (509) 737-9711

May 25, 2021

Anita Bruce, HOA President
Meadow Hills Phase Two and Three Home Owner's Association

In Re: Pending zoning change and PUD application

Mrs. Bruce:

Thank you for your efforts to gather input from the neighborhood regarding our pending zoning change of the 10.24 acres parcel known as Meadow Hills Phase Three. It is our hope, that through overwhelming public support of a gated private road extension of Meadow Hills Drive, the City will grant it.

Please note that TMT Homes is not just the developer, but also the declarant of the prevailing Declaration of Covenants, Conditions and Restrictions of Meadow Hills Phase Two and Three as recorded with Benton County on May 30th, 2002. Within the CC&Rs there are multiple instances throughout the document in which it was made clear that the declarant intended all along to pursue a multi-family zoning change of the 10.24 acres lot known as Meadow Hills Phase Three:

1.4.6 "Home" shall mean and refer to any structure located on a Lot or a particular lot, which structure is designed and intended for use and occupancy as residence by a single family or multi family as deemed by the zoning thru the developer of the Phases or which is intended for use in connection with such residence.

1.4.13 "Plat Map" The Plat of Meadow Hills Two which has been recorded and the future Plat of Meadow Hills 3. to be zoned by Declarant (Owner).

6.4 Residential Use. All Lots and improvements located thereon shall be used, improved and devoted exclusively to residential use. No structures or buildings of any kind shall be erected, altered, placed or permitted to remain on any Lot other than - In Meadow Hills phase Two: one detached single-family dwelling for single-family occupancy only, not to exceed two stories and daylight or subterranean basement with a private garage or carpet for not more than four standard sized passenger automobiles. In Meadow Hills Phase 3: Single-family dwellings or multifamily attached dwellings for Meadow Hills Phase Three, to be zoned by Declarants. at Declarants sole discretion. The Declarant will provide an addendum to these CC&R's when Meadow Hills Phase Three is developed.



TMT HOMES (NW), LLC

4001 Kennedy Road, Suite 13
West Richland, WA 99353
(509) 627-0743 - Fax (509) 737-9711

6.6 Restriction on Further Subdivision for Meadow Hills Two. No Lot or portion of a Lot in this plat shall be divided and sold or re-sold. or ownership changed or transferred whereby the ownership of any portion of this plat shall be less than the area required for the use district in which located; provided. the foregoing shall not prohibit deeds of correction, deeds to resolve boundary disputes and/or similar corrective instruments. Lot adjustments and boundary changes can be made at any time by the Declarant, at Declarants sole discretion. Meadow Hills Three: Lot lines. zoning, divisions of lots will be made at Declarants sole discretion.

6.11 Zoning Regulations. Zoning Regulations, building regulations, environmental regulations and other similar governmental regulations applicable to the Properties subject to this Declaration shall be observed. (Meadow Hills Phase Three to be zoned by Declarants at Declarants sole discretion.)

13.2 Plat Map. The Plat Map may be amended and revised by the Declarant at the Declarant's sole discretion at any time.

13.3 Amendments to Conform to Construction. Declarant. upon Declarant's sole signature. and as an attorney in-fact for all Lot Owners with an irrevocable power coupled with an interest. may at any time. until all Lots have been sold by Declarant. file an amendment to the Declaration and to the Plat Map to conform data depicted therein to improvements as actually constructed and to establish. vacate and relocate utility easements and access road easements.

Furthermore, the board and each owner is herby requested follow the provisions allowing the declarant at the declarant's sole discretion to pursue a zoning change to multi-family within our pending PUD application.

8.1.1 Compliance. Each Owner, Board member and the Association shall comply strictly with the provisions of this declaration and with the Bylaws and administrative rules and regulations adopted by the Association (as the same may be lawfully amended from time to time). Failure to comply shall be grounds for an action to recover sums due for damages, or injunctive relief, or both, maintainable by the Board (acting through its officers on behalf of the Association and the Owners), or by the aggrieved Owner on his own against the party (including an Owner or the Association) failing to comply.



TMT HOMES (NW), LLC

4001 Kennedy Road, Suite 13
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(509) 627-0743 - Fax (509) 737-9711

That said, the declarant/PUD applicant does agree to the following:

1. It is our desire for a gated private road extension of Meadow Hills Drive. Upon approval of the PUD, the road improvement along with sidewalks will be the completed at the declarant's sole expense.
2. Upon approval of the PUD, the declarant will exercise the right to provide an addendum that effectively amends the Declaration of Covenants, Conditions and Restrictions of Meadow Hills Phase Two and Three by removing reference to Meadow Hills Phase Three and amending the plat map removing Meadow Hills Phase Three's Multi-Family and Public Open Space from the Meadow Hills Phase Two oversight and responsibility. A separate association will be formed through a new Declaration of Covenants, Conditions and Restrictions of Meadow Hills Phase Three.
3. Upon approval of the PUD application and prior to construction, a Silt and Construction Debris Fence will be installed prior to construction and site work in accordance with City standards.
4. Upon approval of the PUD and prior to certificate of occupancy, a 6' Ironesque fence will be installed along the property lines of the abutting single family homesites at the declarant's sole expense.
5. Upon approval of the PUD, any construction access would be from Meadow Hills Drive. Construction parking and material stock piling will be wholly on the Meadow Hills Phase Three parcel and will in no way utilize the private drives.

We do welcome your comments and will do our best to address all your concerns.

Thank you,



Nora Wolf, CEO



2015 South Ely Street
Kennewick, WA 99337
Customer Service 509-586-9111
Business 509-586-6012
FAX 509-586-7663
www.kid.org

May 25, 2022

Mike Stevens, Planning Manager
City of Richland – Development Services
625 Swift Blvd., MS-35
Richland, WA 99352

Subject: Review Comments for Planned Unit Development PUD2021-102 – Meadow Hills Ph 3
– Skyhous

Dear Mr. Stevens:

This letter provides Kennewick Irrigation District (KID) review comments for Planned Unit Development (PUD) PUD2021-102 submitted by Wave Design Group (“Applicant”)¹ on behalf of TMT Home NW, LLC proposing six 8-unit multi-family condominium buildings and the completion of Meadow Hills Drive on approximately 10.24-acres on Little Badger Mountain. **These comments are preliminary and subject to KID Board approval on June 7th, 2022. A final comment letter will be provided to the County after June 7th, 2022.** The property is generally located at 303 Meadow Hills Drive, Richland, WA, in Section 35, Township 9 North, Range 28 East, W.M. The parent parcel(s) are listed as follows:

- Parcel #: 135983000010002 (10.30 **non-irrigable** acres)
- Parcel #: 135984060003022 (0.34 **non-irrigable** acres)

A majority of the subject property is located within the boundaries of KID. The property within this PUD is not classified as irrigable land. Accordingly, KID provides the following comments to be included as required conditions of approval by the legislative authority under RCW 58.17.310(2):

- 1) *The plat shall include the following irrigation easements consistent with KID requirements:*
 - a. *On all lots within the plat, dedicate to KID an irrigation easement 10 feet in width, or five (5) feet in width if adjacent to a utility easement, located along the road frontage or access easements of each lot. An irrigation easement may be included within the ‘sidewalk and utility’ easement if one is proposed, denoting the easement as a “Sidewalk, Utility, and Irrigation Easement.”*

¹ Reference to the “Applicant” throughout this comment letter shall refer to the property owner and/or developer of the proposed plat.

In addition, pursuant to RCW 58.17.310 (1), KID would like to inform the City of the following information regarding the effect of the proposed PUD upon the structural integrity (including lateral support) of KID's facilities, other risk exposures, and the safety of the public and irrigation district, and related conditions of approval that KID deems to be necessary as a result:

- 2) *There exists KID Right-of-Way (ROW) along the north property line for the Badger East Lateral Canal. The Applicant must show this ROW on the plat. A copy of the ROW maps are available upon request. The proximity of the proposed residential development to the KID ROW increases the risk of harm to KID facilities and exposes residents to risk of injury. To mitigate these risks, KID requires the following:*
 - a. *At the time of final plat, Applicant shall either: (1) deed to KID a tract of land that fully contains the KID ROW, subject to the Applicant and KID entering a license agreement under which the Applicant agrees to construct and maintain fencing, or, (2) place the KID ROW into separate tracts, convey such tracts to a homeowner's association or similar entity responsible for constructing and maintaining fencing and landscaping, subject to an easement benefitting KID with terms acceptable to KID.*
 - b. *No permanent structures within the KID ROW.*
 - c. *A note on the face of the plat that states: "No grading may be performed or any permanent structure built within Kennewick Irrigation District (KID) right-of-way without an approved permit from KID, when applicable."*
 - d. *For each phase of the project, include a note on the face of the Final Plat stating as follows: "This property is located within the boundaries of the Kennewick Irrigation District and in the immediate vicinity of irrigation infrastructure. Please refer to www.kid.org for further information."*
 - e. *KID ROW signage to be installed by the Applicant along the ROW that has been approved by KID prior to final plat approval of each phase abutting the ROW.*
- 3) *A portion of the plat lies above a lined earthen canal section (Badger East Lateral Canal). Without adequate mitigation, increased runoff resulting from the proposed residential development increases the likelihood of a canal embankment breach requiring significant repairs to portions of the canal. Should a canal embankment breach occur near this development, there is additional potential for the public safety to be at risk. To mitigate these risks, KID will require:*
 - a. *Stormwater systems for the project shall be designed to retain, at minimum, a 100-year storm event above the Badger East Lateral Canal and minimize the introduction of water into the soils up-gradient of the canal.*
 - b. *Please provide an exhibit map prepared by the project civil engineer which shows location of stormwater overflow from any proposed retention basins to where the flow will exit the site.*
 - c. *The PUD shows bioswales located up-gradient of the Badger East Canal. The applicant must complete a geotechnical analysis of the area surrounding this*

- proposed facility to determine the risk that the proposed storm facility poses to the canal stability.*
- d. Rights-of-way shown on the plat that shall include all reasonably necessary features to allow KID to operate, maintain and replace the canal and KID facilities, including the irrigation system.*
 - e. Stormwater systems shall be designed to minimize the introduction of water into the soils up-gradient of the canal. KID review and approval of all stormwater plans is required prior to final plat approval.*
 - f. As an alternative to conditions 3.a.,b., and c., pursuant to KID Policy 4.3, the Applicant may enter into a written agreement with KID to provide other acceptable means of protecting persons and property. This may include the lining or piping of canals where appropriate and increasing the canal embankment height along the canal. In instances where KID agrees that canals may be lined or piped as an alternate to providing drainage, the KID Board of Directors may negotiate a cost share or contribution to the expense of lining.*
- 4) For each phase of the project, KID review and approval of grading and construction plans is required to allow KID to assure all reasonable measures to protect any easements and ROWs. Such review and approval will be coordinated as part of the City's review and PUD approval process.*
- 5) The Applicant shall include the potential failure of KID system components in its public offering statement for the plat pursuant to RCW 58.19.055(1)(r), which requires a public offering statement to include "[a] list of any physical hazards known to the developer which particularly affect the development or the immediate vicinity in which the developer is located and which are not readily ascertainable by the purchaser."*
- 6) The Applicant shall post signs in appropriate areas with KID's easements and ROW's identifying KID's facilities (with locations and design approved by KID).*
- 7) The Applicant shall provide fencing for the protection of KID facilities, which shall include but not be limited to adjacent KID ROW, with fencing locations and design approved by KID.*
- 8) The Applicant shall apply for a permit from KID for any work within the canal ROW, which includes proposed canal crossings such as pedestrian bridges.*

Finally, KID requests the following additional conditions of PUD approval:

- 9) The following fees for review must be paid prior to KID signature on the plat:*
- a. A PUD review fee (at the time of application, fee is \$175.00).*

- b. Fees are subject to change and depend on the date the plat is submitted for final approval.
- c. Please call KID customer service at the number listed above to arrange for payment. Payment may be made by 1) check via mail, 2) check over the phone, 3) check placed in the KID drop-box, and 4) credit card over the phone (please note there is a 2.75% surcharge added to all credit card transactions).

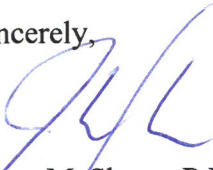
10) Please include the following irrigation title block on future final plats related to the proposed PUD:

- a. I HEREBY CERTIFY THAT THE PROPERTY DESCRIBED HEREON IS LOCATED WITHIN THE BOUNDARIES OF THE KENNEWICK IRRIGATION DISTRICT BUT THAT THIS PROPERTY IS NOT CLASSIFIED AS IRRIGABLE LAND AND IS NOT ENTITLED TO IRRIGATION WATER UNDER THE EXISTING OPERATING RULES AND REGULATIONS OF THIS DISTRICT. I FURTHER CERTIFY THAT THE IRRIGATION EASEMENTS SHOWN ON THIS PLAT ARE ADEQUATE TO SERVE ALL LOTS SHOWN HEREON PER THE REQUIREMENTS OF RCW 58.17.310.

11) All subdivisions of land are required to be approved by the KID Board of Directors during a KID Board Meeting. KID Board Meetings are regularly scheduled on the first and third Tuesdays of each month. All conditions must be completed prior to submittal to KID for final approval. The submittal for final approval must be received by KID a minimum of one week prior to a regularly scheduled Board Meeting to be considered at that meeting. This change can potentially extend the approval process by a minimum of one week.

If you have any questions regarding these comments, please contact me at the address/phone number listed above.

Sincerely,


Jason McShane, P.E.
Engineering & Operations Manager

Enc: Invoice

cc: LB\correspondence\File: [35-9-28]
Applicant via mail – Wave Design Group, ATTN: Kyle Lepper, 418 N. Kellogg St. Suite B, Kennewick, WA 99336

CUSTOMER INVOICE



Customer # MiscReceipts Invoice # 26528
Invoice Date 5/25/2022

Parcels: 135983000010002 & 135984060003022
PUD 2021-102 Meadow Hills Ph-3 Skyhous

Submitted by Wave Design Group -Kyle Lepper

Kennewick Irrigation District
2015 S. Ely Street
Kennewick, WA 99337

Wave Design Group
418 N Kellogg St. Suite B
Kennewick, WA 99336

Items			
Description	Qty	Rate	Amount
Preliminary Plat Review (without water entitlement)	1.000	175.000	\$175.00
Total			\$175.00



Detach and return the bottom remittance portion with your payment.



Customer # MiscReceipts Invoice # 26528
Invoice Date 5/25/2022

Total Now Due and Payable \$175.00

Wave Design Group
418 N Kellogg St. Suite B
Kennewick, WA 99336

Amount Enclosed

\$

Katherine Wendell
262 Meadow Ridge Loop
Richland, WA 99352

June 3, 2022

Mike Stevens
City of Richland Planning Manager
625 Swift Boulevard, MS #35
Richland, WA 99352

Dear Mr. Stevens:

RE: PUD2021-102 REZONING APPLICATION FROM WAVE DESIGN GROUP &
TMT HOMES NW

I am a Richland resident writing to oppose rezoning property on Little Badger Mountain in response to application PUD2021-102 submitted by Wave Design Group on behalf of TMT Homes NW. My home is within 500-feet of the proposed development submitted by TMT Homes NW. Use of Planned Unit Development (PUD) zoning is being proposed as a means to retroactively rezone from R-1-12 to R-3 to allow multi-family dwellings to the benefit of the developer, without public benefit. I am concerned with the visual impact this project will make across much of the region, the noise impact of high-density housing in a hillside setting, and the failure to meet the criteria for PUD zoning.

The Hearing Examiner's Criteria

RMC 23.50.040(B) sets forth four criteria for the Hearing Examiner to evaluate a zoning application:

1. The PUD district development will be compatible with nearby developments and uses;
2. Peripheral treatment ensures proper transition between PUD uses and nearby external uses and developments;
3. The development will be consistent with the comprehensive plan and with the purpose of the PUD district; and
4. The development can be completed within a reasonable period of time.

The sections below address each of these criteria for consideration, specific to PUD2021-102.

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

The project area is currently zoned R-1-12 Single-Family Residential. The proposed project is adjacent to the Meadow Hills Phase Two neighborhood that is zoned R-1-12 Single-Family Residential. The adjacent Falconcrest neighborhood and the adjacent Crested Hills neighborhood are zoned R-1-10 Single-Family Residential. There is an existing PUD on the north side of the Kennewick Irrigation District Badger East Lateral canal, but it consists only of houses developed under R-1-10 Single-Family Residential and three community parks owned and operated by the Orchard Hills #4 Home Owners Association. An island of multi-family housing in the middle of low-density Single-Family Residential housing on the Little Badger Mountain hillside does not demonstrate compatibility with nearby developments.

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

The City of Richland's Badger Mountain Subarea Plan Housing Element Policy 3.3 is to encourage higher density housing close to employment centers, retail and services, and along arterials to support the efficient expansion of public transit. Historically, the City of Richland has approved PUD zoning for development of mixed zoning with condominiums and commercial on the edges of a development, near an arterial. The existing Meadow Hills Drive is a local road in the center of a Single-Family Residential area, far from commercial property and arterial roads and thus, does not represent appropriate siting for multi-family housing.

In contrast, Badger Mountain South (BMS) is a master-planned community intended to be developed with 5,000 homes, including multi-family homes, and other commercial activities. This forward-thinking planned community is the way to implement mixed uses such as high-density and low-density housing with peripheral treatment between the PUD and nearby developments. Again, an island of multi-family housing placed retroactively in the middle of Single-Family Residential does not provide a transition between the proposed PUD and nearby developments.

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

The City of Richland Comprehensive Plan, 2017-2037, updated on October 1, 2019, shows that the area of the proposed project is designated Low Density Residential. The development of multi-family housing in an area designated in the Comprehensive Land Use Plan as low density residential is an incompatible land use. In the Comprehensive Plan, Land Use Goal 3 is to maintain a broad range of residential land use designations to accommodate a variety of lifestyles and housing opportunities. Policy 2 supporting this Land Use Goal is to encourage higher residential densities, especially in and near the Central Business District area. As stated in the Comprehensive Plan, “*Richland’s bustling Central Business District is developed as a mixed-use village with pedestrian amenities, transit access, and bike paths.*” Allowing a condominium complex that is isolated from amenities, transit access, and is not part of a mixed-use village is not consistent with the land use goals of the Comprehensive Plan.

The purpose of a PUD, as stated in RMC 23.50.010 is “*to provide opportunities to create a more desirable environment through the application of flexible design and development standards to tracts of land under common ownership or control.*” This implies that the proposed multi-family housing development would be part of a larger community plan. This might have been a valid argument if multi-family housing was proposed as part of the original three-phased Meadow Hills plat. According to their application the TMT Homes NW project proposed as PUD2021-102 consists only of the multi-family housing development together with Open Public Space to the north and south of the development. The Natural Open Space in the TMT Homes NW proposal is simply undevelopable land of no value to the developer. The 5.76-acres of public open space proposed in the application is an insignificant contribution to the existing public open space on Little Badger Mountain. Parcel 102881012378010 provides 16.17-acres of Public Open Space and is adjacent to parcel 135983000001042 that provides 15.72-acres of public open space. These two parcels lie south of the proposed project and already provide the critical link between the Little Badger Preserve and the Amon Preserve. The proposed stormwater drainage swale “park” that preserves the native vegetation (Application p. 13) to the north of the proposed project will not improve connectivity beyond that provided by the completion of Meadow Hills Drive. The proposed function serves exclusively as common area for the condominium complex and not

anything of value or access to the community. That area is bounded on the east and west by private property. There is no access except via Meadow Hills Drive. Given that the proposed project benefits only TMT Homes NW and provides no public benefit, this application does not support the purpose for a PUD.

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

The timeline for construction of the TMT Homes NW project is in excess of 3 years (SEPA Checklist item 6). According to the developer, the six condominium buildings would be built consecutively rather than concurrently. Construction on subsequent buildings would not commence until the preceding building is completely sold. The inexperience of TMT Homes NW with a project of this scale and the planned tandem schedule will result in a construction timeline that far exceeds the 3+ years presented in the proposal by TMT Homes NW.

Visual and Noise Impacts

Many types of environmental impacts would be similar whether the TMT Homes NW land was developed as multi-family or single-family homes. Land disturbance will result in impacts such as the destruction and fragmentation of habitat and the potential discovery of cultural resources. However, there are two types of environmental impacts that are unique to the development of the multi-family housing proposed by TMT Homes NW: visual impacts and noise impacts.

Visual impacts, changes to the scenic attributes of the landscape, would be significant if the development of hillside condominiums is permitted. The six proposed six-story octo-plexes are **significantly** larger than the adjacent single-family homes. See page 19 of the PUD2021-102 application to determine the massive scale and scope of the visual impact regarding only one of these six structures. In addition to local residents in South Richland, Little Badger Mountain is visible from vehicles travelling along WA-240 and I-182, including the stretch of I-182 in Franklin County. These 6-story buildings would be a significant visual contrast resulting in negative visual impact throughout the region. Construction risk is high for the proposed mammoth buildings in a zone of geological hazard. The visual blight will be far worse if this project is left incomplete due to engineering or financial issues.

Allowing high density housing on Little Badger Mountain will produce nuisance noise far beyond what could be expected without the hillside acoustics. Particularly as these condominiums are touted in the Application as providing *“a luxury lifestyle that blurs the boundary of indoor and outdoor living.”* Residents of neighborhoods from Meadow Springs through Falconcrest would inherit a significant impact and degradation on the quality of life should this application be approved.

Lack of Public Benefit

The application claims to support the goals and policies from the Housing Element within the City of Richland Comprehensive Plan. As stated in the introduction to the Housing Element section of the Comprehensive Plan, *“Providing affordable housing for all groups is a priority for Richland. Providing housing near shopping and transportation and offering multiple choices for owner and renter occupied housing would also benefit the City’s vision for diversity.”* That does not establish the need for more *“high end luxury units”* such as already exist along the riverfront in Richland. I also object to TMT HomesNW’s use of the word *“diversity”* when describing their project as it diverts our attention from the City of Richland’s Housing Element Goal 2, *“Improve affordable housing opportunities for lower-income individuals, households, and first time homebuyers.”* This should be what is meant by *“housing diversity”* in our community. These high end luxury condominiums would limit and constrict the City of Richland’s intended goal.

Another TMT Homes NW claim of public benefit is the addition of 50 more housing units which would be built under the current R-1-12 zoning. According to the TMT Homes NW application (p. 6), this project *“improves the high-density zoning percentage (1.85%) in Richland and better aligns housing supply with demand and contributes to the diversity of housing.”* Given the proximity of the 5,000-unit Badger Mountain South planned community and other nearby developments, the numbers speculated by TMT Homes NW will become increasingly insignificant before construction can be completed on their project.

The Zillow® Walk Score for the Meadow Hills neighborhood, a measure of how walkable an address is based on the distance to nearby amenities, is zero, meaning residents of the area are car-dependent. The proposed project will not change the need to use a car to access amenities. The Little Badger Mountain area will still have a walkability score of zero when the definition of

walkability consistently aligns with the Badger Mountain South LUDR (p. 35).

“A walkable community locates goods (such as housing, offices, and retail) and services (such as transportation, schools, libraries) that a resident or employee needs on a regular basis within an easy and safe walk.”

TMT Homes NW also stated on page 7 of their application that “...adjacent neighboring properties will also profit as the investment of a high-end, luxury development such as Skyhouse will certainly increase surrounding property values.” Starting at \$1.5 million to \$3 million, the proposed condominiums may be priced higher than surrounding homes, yet the presence of condominiums in the area is a detriment, not a benefit, to the neighbors. I would like to know the proposed cost of ownership or rent these condos would be to our City.

Conclusion

TMT Homes NW’s application PUD2021-102 requesting PUD zoning as a vehicle for R-3 high-density zoning should be denied for the following reasons:

- The requested high-density zoning is inconsistent with the Land Use Plan.
- The proposal represents incompatible land use in the Little Badger Mountain area.
- The TMT Homes NW application is devoid of the required public benefit for a PUD.
- Visual impacts to the region would be significant and negative.
- Noise due to hillside sound concentration would be significant in the area.

Take note of the recent lesson learned by Benton County regarding the proposed 24-mile long wind farm planned by Scout Energy. Once the City of Richland rules a project is consistent with our Comprehensive Plan, the City will not be making an exception which also sets precedent. There will be no grounds on which further inconsistent land use actions can be denied. Please do not let that happen to our community.

Respectfully,

A handwritten signature in black ink, appearing to read "Katherine Wendell", written in a cursive style.

Katherine Wendell

Stevens, Mike

From: Chris Sittman <CSittman@kid.org>
Sent: Tuesday, May 24, 2022 8:01 AM
To: Stevens, Mike
Subject: RE: Skyhous PUD2021-102

KID has no comments

Sincerely,

Chris D. Sittman

Engineering Dept./CAD Specialist
Kennewick Irrigation District
2015 S. Ely St.
Kennewick, WA 99337
Desk: 509-460-5435
Cell: 509-873-1123

From: Stevens, Mike <mstevens@CI.RICHLAND.WA.US>
Sent: Monday, May 9, 2022 4:06 PM
To: Anthony Muai <anthony.muai@ci.kennewick.wa.us>; Anthony Von Moos <anthony.vonmoos@co.benton.wa.us>; Ashley Morton <AshleyMorton@ctuir.org>; Badger Mountain Irrigation District <bmidmanager@badgermountainirrigation.com>; Benton County - Segregations <Segregations@co.benton.wa.us>; Benton PUD, Broadband <osp@noanet.net>; Benton PUD, Electrical <engservice@bentonpud.org>; Bill Barlow <bbarlow@bft.org>; Buechler, Ken <KBuechler@CI.RICHLAND.WA.US>; Carrie Thompson <carrie.thompson@bnsf.com>; Casey Barney, Yakama Nation <Casey_Barney@Yakama.com>; Catherine Dickson <catherinedickson@ctuir.org>; Clark Posey <clark.posey@co.benton.wa.us>; Corrine Camuso, Yakama Nation <Corrine_Camuso@Yakama.com>; Hamilton, Craig <C.Hamilton@bces.wa.gov>; DAHP SEPA Reviews <sepa@dahp.wa.gov>; DAlessandro, Carlo <cdalessandro@CI.RICHLAND.WA.US>; Damrell, Kevin <kdamrell@CI.RICHLAND.WA.US>; Darrick Dietrich <darrick@basindisposal.com>; Davis, Deanna <d.davis@bces.wa.gov>; Deborah Rodgers <dxrogers@bpa.gov>; Deskins, John <jdeskins@CI.RICHLAND.WA.US>; Eric Mendenhall <emendenhall@westrichland.org>; FormerOrchards@ecy.wa.gov; Greg Wendt <greg.wendt@co.benton.wa.us>; Gwen Clear <gcle461@ecy.wa.gov>; Hill, Kelly <khill@CI.RICHLAND.WA.US>; Jason McShane <JMcShane@kid.org>; Jennings, Tyler <tjennings@CI.RICHLAND.WA.US>; Jerrod Macpherson <Jerrod.Macpherson@co.benton.wa.us>; Jessica Lally, Yakama Nation <Jessica_Lally@Yakama.com>; John Lyle <john.lyle@bentoncleanair.org>; Jordon, Joshua <jojordon@CI.RICHLAND.WA.US>; Joseph Cottrell <jecottrell@bpa.gov>; Junior Campos <junior.campos@charter.com>; Katherine Cichy <katherine.cichy@ziply.com>; Kelly Cooper <kelly.cooper@doh.wa.gov>; Kevin Knodel <kevin.knodel@rsd.edu>; Kevin Sliger <KSliger@bft.org>; Development <development@kid.org>; Matthew Berglund <MBerglund@kid.org>; M. Deklyne <mjddeklyne@bpa.gov>; Map BCES <map@bces.wa.gov>; Mattheus, Pamela <pmattheus@CI.RICHLAND.WA.US>; Michael Tovey <michael.tovey@ziply.com>; Noah Lee <noah.lee@bentoncleanair.org>; Noah Oliver, Yakama Nation <Noah_Oliver@Yakama.com>; Paul Gonseth <gonsetp@wsdot.wa.gov>; Reathafor, Jason <JReathafor@CI.RICHLAND.WA.US>; Review Team <reviewteam@commerce.wa.gov>; Richard Krasner <richard.krasner@rsd.edu>; USPS Richland Postmaster <99352RichlandWA-Postmaster@usps.gov>; Rick Dawson <rickd@bfhd.wa.gov>; Robin Priddy <robin.priddy@bentoncleanair.org>; Sarah Gates <s.gates@bces.wa.gov>; Schiessl, Joe <JSchiessl@CI.RICHLAND.WA.US>; SEPA Center <sepacenter@dnr.wa.gov>; SEPA Register <separegister@ecy.wa.gov>;

SEPA Unit <sepaunit@ecy.wa.gov>; Seth Defoe <SDefoe@kid.org>; South Central Region Planning <scplanning@wsdot.wa.gov>; T.S. "Max" Platts <PlattsT@wsdot.wa.gov>; Tyutyunnik, Ruvim <rtutyunnik@CI.RICHLAND.WA.US>; WA Dept of Fish & Wildlife <lopezlal@dfw.wa.gov>; WA Dept of Fish & Wildlife <rittemwr@dfw.wa.gov>; Westphal, Nichole <nwestphal@ci.richland.wa.us>; William Simpson <william.simpson@commerce.wa.gov>
Subject: Skyhous PUD2021-102

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

ATTENTION:

The City of Richland has received an application for a proposed Planned Unit Development commonly referred to as Skyhous. Due to the size of the application packet, the Notice of Application, SEPA Checklist and related information may be viewed by visiting the following:

[PUD2021-102 Skyhous Referral Packet.pdf](#).

A public hearing will be held before the Richland Hearing Examiner at 6:00 PM on Monday, June 20, 2022.

Please review and submit any comments you may have by 5:00 PM, Wednesday, June 8, 2022 (or sooner).

Thank you,



Mike Stevens
Planning Manager
625 Swift Blvd., MS-35 | Richland, WA 99352
(509) 942-7596

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Stevens, Mike

From: Mark Lambert <MarkLambert@crowngroup.com>
Sent: Friday, June 3, 2022 4:45 PM
To: Stevens, Mike
Subject: PUD 2021-102 / Lambert Objection

Mike,

I am a resident of Richland and live at 292 Meadows Hill Drive. I have reviewed the information made available regarding the subject PUD and I hereby submit my objection to the planned condominium project for the following reasons:

1. This type of housing is typically used as a buffer to single family homes, not as a project set between two single family neighborhoods.
2. This type of housing will change the esthetics and character of the adjoining single family neighborhoods.
3. The single family homeowners in adjacent neighborhoods purchased their properties based on the existing single family zoning being applied to the yet undeveloped property owned by the petitioner.
4. The market will support single family construction.
5. If and when Meadow Hills Drive is connected, even if for single family, a traffic study should be required regarding the intersection of Meadow Hills Drive and Leslie Road as it will incur increased traffic not only related to any new homes but also from the Crested Hills neighborhoods seeking a better route to their destinations.

Please pass my objection and supporting reasons regarding the subject PUD onto the appropriate Richland approving bodies.

Thank You,

Mark Lambert

Comments on PUD2021-102 & EA2021-116
Skyhous Condominiums SEPA Threshold Determination

Patrick Paulson
Laurie Ness

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Acronyms

DNS -Determination of No Significance	1, 3
FWHCA - Fish and Wildlife Habitat Conservation Areas	3
PHS - Priority Habitat and Species	3
PUD - Planned Unit Development.....	1
SEPA -State Environmental Policy Act.....	2
WAC - Washington Administrative Code	1, 3
WDFW – Washington Department of Fish and Wildlife	3

We¹ request the City of Richland withdraw the Determination of nonsignificance (DNS) for the Skyhous application. This project will create substantial adverse impacts to the shrub steppe and Eastside steppe habitats and no mitigation for these impacts are given in the notice.

1. Introduction, Procedural Facts, and Standard of Review

We are commenting on the Site Plan Review for the Skyhous Planned Unit Development (PUD). The Notice of Application states this project is a “Development of approximately 10.24-acres with six (6) 8-unit multi-family condominium buildings and the completion of Meadow Hills Drive”²

Washington Administrative Code (WAC) 197-11-355 specifies the “optional DNS process” be used *only* when it is unlikely that substantial adverse environmental impacts will occur, or all mitigations for such impacts are listed in the *Notice*.

A site plan review is submitted to the Hearings examiner for approval as a Type IIIA permit application³. RMC 19.60.060 requires a Type III permit application be “supported by proof that it conforms to the applicable elements of the city’s development regulations, comprehensive plan and that any significant adverse environmental impacts have been adequately addressed”.⁴

¹ Patrick Paulson, Patrick@3rivers-ashtanga.org, 509-845-1062. Laurie Ness, pennifurs.mom@gmail.com, 509-430-5338. Mailing address: 2253 Davison Avenue, Richland, WA 99354.

² *Notice of Application, Public Hearing & Optional DNS (PUD2021-102 & EA2021-116)*. City of Richland. Referral Packet: <https://www.ci.richland.wa.us/home/showpublisheddocument/13471/637877078719570000>.

³ RMC 23.50.040.B. “The hearing examiner shall conduct an open record public hearing and review of the request for reclassification to PUD and preliminary PUD plan approval as required by RMC Title [19](#) for Type IIIA permit application”

⁴ RMC 19.60.060. “Except for Type IV actions, the burden of proof is on the proponent. The project permit application must be supported by proof that it conforms to the applicable elements of the city’s development regulations, comprehensive plan and that any significant adverse environmental impacts have been adequately addressed”. By RMC 19.20.010.C, this requirement applies to Type III actions, which include Preliminary Plats such as Ladera: “Type III permits include the following types of permit applications: 1. Preliminary plats or major revisions thereof; ...”

Further RMC 19.60.095 states approval for a Type III application requires findings and conclusions that “The development application ... meets the requirements and intent of the Richland Municipal Code” and “Impacts of the development have been appropriately identified and mitigated under Chapter 22.09 RMC.”

1.1 Importance of Complete and Accurate SEPA Checklists

WAC 197-11-960, adopted by the City in RMC 22.09.200, contains guidance for State Environmental Policy Act (SEPA) checklists. The purpose of the SEPA checklist is "to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS [Environmental Impact Statement] is required.”

The stated purpose of the checklist, under WAC 197-11-060, is to allow agencies to “to determine whether the environmental impacts of your proposal are significant”. Therefore, the SEPA checklist should be complete and self-contained. The checklist should not refer to external documents, which would require the agency and the public to track down the referenced document.

The SEPA checklist guidance stresses that the developer "must answer each question accurately and carefully”; referencing other documents may leave the question unanswered or require an agency to weed through unnecessary detail. Rather than refer to external documents, the relevant information should be put into the checklist to make the checklist a standalone document.

WAC 197-11-330 (adopted by the City under RMC 22.09.080) requires that

In making a threshold determination, the responsible official shall:

(a) Review the environmental checklist, if used:

(i) *Independently evaluating the responses of any applicant and indicating the result of its evaluation in the DS, in the DNS, or on the checklist* [our emphasis]; and

(ii) Conducting its initial review of the environmental checklist and any supporting documents without requiring additional information from the applicant.

...

The incomplete checklist and incorrect answers in the applicant’s checklist show Richland has failed to properly review and evaluate the applicant’s responses, leaving it to citizens and

agencies to ferret out information that should have been provided in the project's application packet.

2. DNS for Skyhous Should be Withdrawn

We request the City of Richland withdraw the DNS determination for the Skyhous PUD Application.

- As detailed in Section 5 below, The project will result in substantial adverse impacts to the shrub steppe and Eastside step habitats, which are Priority Habitats (PHS) listed by the Washington Department of Fish and Wildlife (WDFW);
- The City recognizes all areas associated with PHS as Critical Areas, specifically Fish and Wildlife Habitat Conservation Areas (FWHCA)⁵;
- Washington Administrative Code (WAC) 197-11-355 specifies that the “optional DNS process” be used *only* when it is unlikely that substantial adverse environmental impacts will occur, or all mitigations for such impacts are listed in the *Notice*.

For these reasons the project does not meet the requirements for a DNS threshold determination, the threshold determination should be changed to a Determination of Significance.

3. Skyhous Application does not meet criteria required for Application approval

Since the City incorrectly issued an DNS for this project without ensuring there would be no substantial environmental impacts, this project fails to conform to “the requirements and intent of the Richland Municipal Code” as required by RMC 19.60.060.⁶ We also show in Section 4 below that the City failed to independently evaluate the SEPA checklist submitted by the applicant as required by WAC 197-11-330 (adopted by the City under RMC 22.09.080). The

⁵ RMC 22.10.185.A.2: “Fish and wildlife habitat conservation areas include ... State priority habitats and areas associated with state priority species”.

⁶ RMC 19.60.060: “The project permit application must be supported by proof that it conforms to the applicable elements of the city’s development regulations, comprehensive plan and that any significant adverse environmental impacts have been adequately addressed.”

application does not include a habitat conservation area report, which is required when “development is proposed within a fish and wildlife habitat conservation area or its buffer.”⁷ Further, the project will result in substantial impacts to critical areas and those impacts have not been “appropriately identified and mitigated under Chapter 22.09 RMC.”⁸ The project therefore does not meet the requirements needed to be recommended for approval by the Hearings Examiner under RMC 19.60.095.

4. Incomplete and Incorrect SEPA Checklist

The SEPA checklist provided by the applicant has several items which are clearly incorrect or incomplete. We note several of these in this section and emphasize that SEPA checklist guidance stresses that the developer “must answer each question accurately and carefully” and WAC 197-11-330 requires that the City independently evaluate the responses of any applicant when making a SEPA threshold determination.

SEPA checklist item B.4.b asks, “What kind and amount of vegetation will be removed or altered”. The applicant responds “Schrubs [sic] within the building footprint and along new roadway,” but fails to mention vegetation removal required for the stormwater handling and park improvements as shown in pp. 13-14 of the application.⁹

The applicant responds “None” to item B.5.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.” During a short survey on May 28, 2022, we observed cottontail rabbit and areas where mule deer had bedded down. For bird species, we observed California Quail, Anna’s Hummingbird, Cooper’s Hawk, Say’s Phoebe, Northern Rough-winged Swallow, American Robin, House Finch, American Goldfinch, Bullock’s Oriole, Western Tanager, and Lazuli Bunting. Of these, the Anna’s Hummingbird, House Finch, and Lazuli Bunting were likely nesting specially in th shrubsteppe that will be destroyed by the proposed development.

⁷ RMC 22.10.200

⁸ 19.60.095.B: “[no application for type III permit shall be approved unless] [i]mpacts of the development have been appropriately identified and mitigated under Chapter 22.09 RMC.”

⁹ At p. 11 of packet.

Item B.8.h of the checklist asks “Has any part of the site been classified as a critical area by the city or county? If so, specify.”. The applicant’s response, “Yes. Geological Hazards”, fails to mention the site includes FWHCAs (see Section 5 below), which are critical areas protected by the City of Richland.

5. Fish and Wildlife Habitat Conservation Areas Impacted by Skyhous PUD

The proposed project will adversely impact Fish and Wildlife Habitat Conservation Areas recognized by Richland and fails to provide any mitigation for these impacts. RMC 22.10.220.A specifies that “Adverse impacts to habitat functions and values shall be mitigated to the extent feasible and reasonable” and that mitigation actions may include “Compensating for the impact by replacing, enhancing, or providing similar substitute resources or environments. Preference shall be given to measures that replace the impacted functions on site or in the immediate vicinity of the impact”.

The proposal maintains lower quality habitat in the more northern, lower portion of the site as natural open space; however the high quality shrubsteppe habitat on the southern portion of the lot will be totally removed ([Figure 1](#)). The proposal also fragments a viable wildlife corridor that is a link situated between large tracts of priority habitat.

RMC 22.10.190 states

To determine the location and extent of fish and wildlife habitat conservation areas, the city shall use best available science, including current information contained in priority habitats and species maps as maintained by the Washington State Department of Fish and Wildlife...[t]he actual type, extent, and boundaries of habitat areas shall be determined by a qualified professional according to the procedures, definitions, and criteria established by this article. In the event of any conflict between the habitat location or type shown on maps and the criteria or standards of this article, the criteria and standards resulting from the field investigation shall control.

No on-site field investigation is documented in the application, so we must rely on the PHS mapping tools, which indicate the area contains shrubsteppe PHS, considered a FWHCA by Richland.

RMC 22.10.200 requires the preparation of a habitat conservation area report when “development is proposed within a fish and wildlife habitat conservation area;” no report is

included in the application. Although under RMC 22.10.200.E the “administrator may waive the requirement for the preparation of a habitat conservation area report” under certain condition, such a waiver must be made in writing. No such waiver is included in the application.

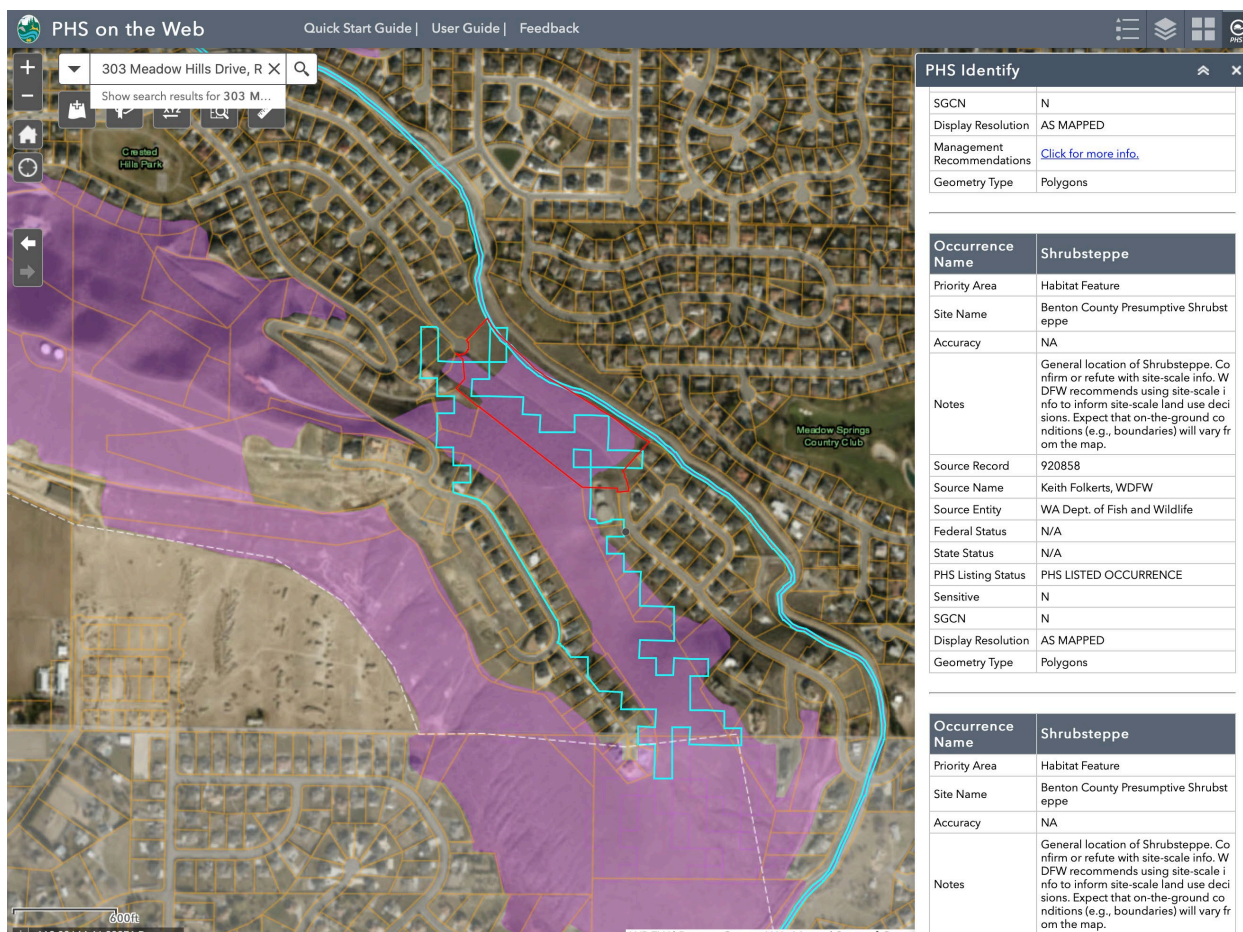


Figure 1. WDFW PHS Mapping Tool shows Shrubsteppe PHS (outlined in aqua) on project site (outlined in red). The purple indicates other priority habitat areas.¹⁰

In addition to WDFW’s PHS mapping tool, evidence of shrubsteppe on the development site is provided by photos of extensive mature sagebrush in site photographs from the Geotechnical

¹⁰ WDFW, PHS On the Web, accessed 6/1/2022.

<https://geodataservices.wdfw.wa.gov/hp/phs/>.

Report in the application packet¹¹ ([Figure 2](#)). On our May 28th survey of this year, we observed the typical characteristics of healthy, mature shrubsteppe¹²: tracts of mature sage and smaller sage plants showing recruitment and regeneration along with other native bunchgrasses and forbs associated with shrubsteppe. There is healthy crypto-biotic crust over much of the site. In addition, the site is adjacent to large tracts of healthy or recovering shrubsteppe ([Figure 3](#) - [Figure 5](#)).



Figure 2. Extensive Mature Sagebrush on project site.¹³

¹¹ GN Northern, Inc. Feasibility-Level *Geotechnical Evaluation & Critical Areas Assessment, Proposed Meadow Hills Multi-Family Housing, Benton County, Assessor's Parcel No. 135983000010001 Meadow Hills Drive, Richland, Washington*. November 2021, pp. 83-199 of application packet.

¹² See, e.g., WDFW: Shrubsteppe Ecosystem (<https://wdfw.wa.gov/species-habitats/ecosystems/shrubsteppe#desc-range>) and Appendix 9, "A protocol for identifying, mapping, and assessing quality of shrubsteppe on an individual parcel", pp. A-25 to A-44 in: Azerrad, J. M., K. A. Divens, M. F. Livingston, M. S. Teske, H. L. Ferguson, and J. L. Davis. 2011 (Revised 2020). *Management recommendations for Washington's priority habitats: managing shrubsteppe in developing landscapes*. Washington Department of Fish and Wildlife. <https://wdfw.wa.gov/publications/01333>

¹³ Geotechnical Evaluation Appendix IV Site & Exploration Photographs, pp. 160-161 of application packet.



Figure 3. Sagebrush, Carey's Balsamroot, native bunchgrasses and other shrubsteppe forbs on proposed site.



Figure 4. Shrubsteppe vegetation: Yarrow, native bunchgrass.



Figure 5. Healthy Crypto-biotic soil and mosses under phlox. Site adjacent to large tract of recovering shrubsteppe to the southeast.

6. Conclusion

We have shown that the SkyHous PUD application relies on a incomplete and inaccurate SEPA checklist and will clearly result in significate impacts to shrubsteppe--PHS regarded as an FWHCA critical area by the City of Richland. The optional DNS process used was therefore inappropriate for threshold determination.

Despite the clear impact to FWHCA from this project, no wildlife habitat assessment report was prepared, contrary requirements in Richland's critical area ordinance.

Because significant impacts to shrubsteppe are not mitigated the issuance of a DNS should be withdrawn by the City of Richland.

Finally, this project does not meet the requirements required for a recommendation of approval from the Hearings Examiner because 1) it does not "conform to the applicable elements of the city's development regulation" and 2) it significant adverse environmental impacts without required mitigation. The project results in the destruction of a FWHCA, clearly an adverse environmental impact that is not mitigated. The project does not conform to development regulations because

- The City failed to independently verify the incomplete and incorrect responses given by the applicant in the SEPA checklist,

- The City failed to require the applicant provide a wildlife habitat assessment report, as required under the City's critical area ordinance, and
- The "optional DNS" process was used even though it was clear that the project would result in significant environmental impact.

We ask the City to withdraw the DNS determination for the Skyhous PUD. We also ask the Hearings examiner to consider the arguments made here and find that the Skyhous PUD application cannot be recommended for approval.

**Phillip & Diane Ohl
272 Meadow Ridge Loop
Richland, WA 99352**

June 3, 2022

Mr. Mike Stevens, Planning Manager
City of Richland Planning Department, MS #35
Richland City Hall
325 Swift Boulevard
Richland, WA 99352
mstevens@ci.richland.wa.us

Subject: PUBLIC HEARING, PUD2021-102 & EA2021-116 (SKYHOUS PROJECT)

Dear Mr. Stevens:

Thank you for the opportunity to provide written comment on the subject rezoning proposal. We live in a home within 300 ft of the subject parcels with a private driveway that abuts the subject parcels. While we understand the current Covenants, Conditions, and Restrictions for the Meadow Hills Phase Two and Three do not restrict the developer from re-zoning the Meadow Hills Phase 3 Parcel, we respectfully oppose rezoning this parcel to increase the residential density from 26 single-family residences to 48 single-family residences. We do not see a public benefit nor a benefit to our neighborhood in increasing the residential density of these parcels.

We do not offer a strong opinion on single-family detached homes vs multi-family attached homes commonly referred to as condominiums. We do not oppose limiting the project to four, 8-unit, 5-story multi-family condominium buildings for a total of 32 units – OR – to five, 6-unit, 4 story multi-family condominium buildings for a total of 30 units. We do not offer a strong opinion on completion of Meadow Hills Drive as a private gated road or a public road.

In addition, we offer the following comments and concerns for your consideration:

- 1) Please include the attached letter from TMT Homes (NW), LLC, dated May 25, 2021 in the Public Comment record in which TMT Homes (NW), LLC committed to the following actions if the PUD is approved:
 - a. Construction of roads and sidewalks will be completed at developer expense.
 - b. Revision of the CC&Rs to separate Meadow Hills Phase 2 and Phase 3.
 - c. Prior to construction initiation, a Silt and Construction Debris Fence will be installed to protect current Meadow Hills Phase 2 homes.
 - d. Prior to Certificate of Occupancy, a six-foot Ironesque fence will be installed along the property lines of the abutting Meadow Hills Phase 2 single-family homes at the developer's expense.
 - e. All construction access will be from Meadow Hills Drive. Construction parking and material stock piling will be wholly on the Meadow Hills Phase 3 parcel and will in no way utilize Meadow Hills Phase 2 private drives.

- 2) Our private driveway shared with 276, 280, and 284 Meadowridge Loop directly abuts the subject parcels. If the PUD is approved, the developer has committed to providing Ironesque fencing along our property lines to prevent walking access between our homes along our private driveway and any proposed public park or open space. The developer has also committed to not using our private driveway for construction access during this project.
- 3) We are concerned that the proposed construction schedule is unrealistic and at a high risk for leaving unfinished excavations and partial foundations on the Tri-City skyline near our home while the developer addresses potential unresolved construction issues associated with finance, engineering, subcontractors, legal or any of the other issues the developer may not be prepared to address.
- 4) We are extremely concerned about the developer's actual construction being significantly different than the proposed architectural renderings if given broad rezoning approval. Without significant restrictions, we are concerned the developer will construct 6 story structures with minimum greenspace buffer transition between Meadow Hills Phase 3 and our neighborhood. The requested R-3 Zoning code would allow 10.1 or more dwellings per acre, which would allow the developer to build 105 or more dwellings on the combined 10.4 acres without significant code restrictions.
- 5) While we enjoy and wholly support the Badger Mountain Trail System, we oppose utilizing our section of Meadow Hills Drive being incorporated as a planned section of the trail connecting the current Little Badger Section to the Amon Creek Trail. There is insufficient parking to support our section of Meadow Hills Drive turning into an alternative trailhead.

We look forward to presenting these concerns at the public hearing on June 20, 2022.

Sincerely,



Phillip Ohl
Resident



Diane Ohl
Resident

Attachment (1)



TMT HOMES (NW), LLC
4001 Kennedy Road, Suite 13
West Richland, WA 99353
(509) 627-0743 - Fax (509) 737-9711

May 25, 2021

Anita Bruce, HOA President
Meadow Hills Phase Two and Three Home Owner's Association

In Re: Pending zoning change and PUD application

Mrs. Bruce:

Thank you for your efforts to gather input from the neighborhood regarding our pending zoning change of the 10.24 acres parcel known as Meadow Hills Phase Three. It is our hope, that through overwhelming public support of a gated private road extension of Meadow Hills Drive, the City will grant it.

Please note that TMT Homes is not just the developer, but also the declarant of the prevailing Declaration of Covenants, Conditions and Restrictions of Meadow Hills Phase Two and Three as recorded with Benton County on May 30th, 2002. Within the CC&Rs there are multiple instances throughout the document in which it was made clear that the declarant intended all along to pursue a multi-family zoning change of the 10.24 acres lot known as Meadow Hills Phase Three:

1.4.6 "Home" shall mean and refer to any structure located on a Lot or a particular lot, which structure is designed and intended for use and occupancy as residence by a single family or multi family as deemed by the zoning thru the developer of the Phases or which is intended for use in connection with such residence.

1.4.13 "Plat Map" The Plat of Meadow Hills Two which has been recorded and the future Plat of Meadow Hills 3. to be zoned by Declarant (Owner).

6.4 Residential Use. All Lots and improvements located thereon shall be used, improved and devoted exclusively to residential use. No structures or buildings of any kind shall be erected, altered, placed or permitted to remain on any Lot other than - In Meadow Hills phase Two: one detached single-family dwelling for single-family occupancy only, not to exceed two stories and daylight or subterranean basement with a private garage or carpet for not more than four standard sized passenger automobiles. In Meadow Hills Phase 3: Single-family dwellings or multifamily attached dwellings for Meadow Hills Phase Three, to be zoned by Declarants. at Declarants sole discretion. The Declarant will provide an addendum to these CC&R's when Meadow Hills Phase Three is developed.



TMT HOMES (NW), LLC

4001 Kennedy Road, Suite 13
West Richland, WA 99353
(509) 627-0743 - Fax (509) 737-9711

6.6 Restriction on Further Subdivision for Meadow Hills Two. No Lot or portion of a Lot in this plat shall be divided and sold or re-sold. or ownership changed or transferred whereby the ownership of any portion of this plat shall be less than the area required for the use district in which located; provided. the foregoing shall not prohibit deeds of correction, deeds to resolve boundary disputes and/or similar corrective instruments. Lot adjustments and boundary changes can be made at any time by the Declarant, at Declarants sole discretion. Meadow Hills Three: Lot lines. zoning, divisions of lots will be made at Declarants sole discretion.

6.11 Zoning Regulations. Zoning Regulations, building regulations, environmental regulations and other similar governmental regulations applicable to the Properties subject to this Declaration shall be observed. (Meadow Hills Phase Three to be zoned by Declarants at Declarants sole discretion.)

13.2 Plat Map. The Plat Map may be amended and revised by the Declarant at the Declarant's sole discretion at any time.

13.3 Amendments to Conform to Construction. Declarant. upon Declarant's sole signature. and as an attorney in-fact for all Lot Owners with an irrevocable power coupled with an interest. may at any time. until all Lots have been sold by Declarant. file an amendment to the Declaration and to the Plat Map to conform data depicted therein to improvements as actually constructed and to establish. vacate and relocate utility easements and access road easements.

Furthermore, the board and each owner is herby requested follow the provisions allowing the declarant at the declarant's sole discretion to pursue a zoning change to multi-family within our pending PUD application.

8.1.1 Compliance. Each Owner, Board member and the Association shall comply strictly with the provisions of this declaration and with the Bylaws and administrative rules and regulations adopted by the Association (as the same may be lawfully amended from time to time). Failure to comply shall be grounds for an action to recover sums due for damages, or injunctive relief, or both, maintainable by the Board (acting through its officers on behalf of the Association and the Owners), or by the aggrieved Owner on his own against the party (including an Owner or the Association) failing to comply.



TMT HOMES (NW), LLC

4001 Kennedy Road, Suite 13
West Richland, WA 99353
(509) 627-0743 - Fax (509) 737-9711

That said, the declarant/PUD applicant does agree to the following:

1. It is our desire for a gated private road extension of Meadow Hills Drive. Upon approval of the PUD, the road improvement along with sidewalks will be the completed at the declarant's sole expense.
2. Upon approval of the PUD, the declarant will exercise the right to provide an addendum that effectively amends the Declaration of Covenants, Conditions and Restrictions of Meadow Hills Phase Two and Three by removing reference to Meadow Hills Phase Three and amending the plat map removing Meadow Hills Phase Three's Multi-Family and Public Open Space from the Meadow Hills Phase Two oversight and responsibility. A separate association will be formed through a new Declaration of Covenants, Conditions and Restrictions of Meadow Hills Phase Three.
3. Upon approval of the PUD application and prior to construction, a Silt and Construction Debris Fence will be installed prior to construction and site work in accordance with City standards.
4. Upon approval of the PUD and prior to certificate of occupancy, a 6' Ironesque fence will be installed along the property lines of the abutting single family homesites at the declarant's sole expense.
5. Upon approval of the PUD, any construction access would be from Meadow Hills Drive. Construction parking and material stock piling will be wholly on the Meadow Hills Phase Three parcel and will in no way utilize the private drives.

We do welcome your comments and will do our best to address all your concerns.

Thank you,



Nora Wolf, CEO

**CITY OF RICHLAND
PUBLIC WORKS ENGINEERING
DEVELOPMENT COMMENTS**

DATE: June 7, 2022

TO: MIKE STEVENS, PLANNING MANAGER

PLAT REVIEW BY: JASON REATHAFORD, ENGINEERING TECH 4
PETE ROGALSKY, PUBLIC WORKS DIRECTOR
CARLO D'ALESSANDRO, TRANSPORTATION & DEVELOPMENT MANAGER

PROJECT NAME: SKYHOUS PUD (PUD2021-102)

PROJECT LOCATION: 290 MEADOW HILLS DRIVE.

The Public Works Engineering Division has reviewed the PUD application received in this office on May 9, 2022 for the above referenced property and has the following conditions.

General Conditions:

1. All final, approved 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 full size (and electronic) format. Electronic copies of the construction plans are required prior to the pre-con meeting along with the multiple sets of paper drawings. When construction of the public infrastructure has been substantially completed, the applicant shall provide paper and electronic record drawings in accordance with the City's "Record Drawing Requirements". The electronic record drawings shall be submitted in an AutoCAD format compatible with the City's standard CAD software. The final record drawings 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.
2. 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. 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.
3. Any work within the public right-of-way or easements or involving public infrastructure will require the applicant to obtain a right-of-way construction permit prior to beginning work, per RMC Chapter 12.08. The applicant shall pay a plan review fee based on a cost-per-sheet of engineering infrastructure plans. This public infrastructure plan review fee shall apply each time a project is submitted for review. This fee will be different for commercial projects versus subdivision projects. Please visit the Public Works Private Development page on the City's webpage to find the current per-sheet fee. A permit fee in the amount equal to 3% of the construction costs of the work within the right-of-way or easement will be collected at the time the construction 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 approved plan submittal.
4. 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 final plat acceptance.

5. 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.
6. All plan sheets involving construction of public infrastructure shall have the stamp of a current Washington State licensed professional engineer.
7. 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:

8. 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, Public Infrastructure Design Guidelines 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. Fire hydrant location shall be reviewed and approved by the City Fire Marshal.
 - C. All utilities shall be extended to the adjacent property (properties) at the time of construction.
 - D. 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 streets. 12% can be allowed for local streets for short distances.
 - E. The minimum centerline radius for local streets shall be 100-feet.
 - F. 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.
 - G. All public improvements shall comply with the State of Washington and City of Richland requirements, standards and codes.
 - H. 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.
9. If the project will be built in phases the applicant shall submit a comprehensive 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.
10. If the City Fire Marshal requires a secondary emergency vehicle access (SEVA), it shall be included in the construction plan set and be designed to the following standards:
 - A. 2-inches compacted gravel, minimum (temp. SEVAs 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.

11. **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) and 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:

- 12. The proposed Meadow Hills Drive extension shall remain open and be dedicated as public right-of-way. Development plans for this area have long relied on this segment of Meadow Hills drive to provide travel options and distribute traffic volumes more evenly among the available access routes. The Public Works Department does not think it is in the public interest to eliminate this segment as a public street.
- 13. This portion of Meadow Hills Drive shall utilize the City's single frontage local street standard, however sidewalks shall be installed along both sides of the roadway at the time of project construction. On-street parking will be available on the North side of Meadow Hills Drive.
- 14. Since this road segment will include a significantly long and relatively straight street segment, and the proposed park will attract users from outside the immediate area, it is considered prudent to include traffic calming features in the street design. In addition to the on-street parking, the project shall include chokers or a narrowed curb section at the east and west end of the project. Additionally, the mid-block crosswalk in the middle of the project shall be designed as a raised crosswalk. These traffic calming features will require specialized design and approval by the Public Works Department.
- 15. The proximity of multiple driveways along the south side of Meadow Hills Drive creates a situation that is not compliant with city standards. To remedy this, the curb & gutter along the south side of Meadow Hills Drive can either be a "rolled" style curb which allows for vehicles to drive over it, or it can be a continuous depressed curb with an adequate gutter for storm water. Either of these options represents a variance to RMC Chapter 12. The applicant will have to seek a variance from Public Works to implement the proposed design.
- 16. The "Skyhous PUD" project is subject to the City's traffic impact fee program (RMC 12.03). Since this property is included within the traffic impact fee program, and since staff analysis indicates the project will create no unusual or unanticipated traffic impacts, it is exempt from the SEPA-related traffic study requirement (TIA).

17. The proposed park improvements shall not encumber the public right-of-way.
18. The developer and his engineer shall demonstrate on the construction plans that all future driveway entrances, sidewalks and pedestrian ramps will meet City and ADA requirements.
19. Pedestrian ramps shall be designed to current City standard details and A.D.A. standards. The road profile shall be designed to accommodate this.
20. Meadow Hills Drive shall be limited to on-street parking on the north side of the street only. Street signs indicating restricted parking shall be installed by the developer. The restricted parking areas shall be indicated on the construction plans and on the final plat.
21. All roads shall be constructed to provide for adequate fire truck & solid waste collection truck access & turnaround movements.

Domestic Water:

22. The existing 12-inch "Tapteal III" domestic water main that crosses this property shall be protected and be provided the standard amount of cover (4-feet). If the proposed road design will be removing any of this cover, the developer shall reinstall this water main to the correct depth per city standards.
23. The existing 12-inch "Tapteal II" water main that crosses the east end of the property may be too shallow to meet city standards. Extending Meadow Hills Drive as proposed will require the developer to reinstall this water main to the correct depth (4-feet of cover).
24. The existing City domestic water pump station adjacent to the reservoirs is currently sited on property that belongs to the proposed developer. The preliminary plat and the construction plans shall provide the City a segregated parcel of adequate size. This parcel can be dedicated to the City on the final plat.
25. The proposed access revision to the City's water facility appears problematic. Any proposed revision to the current driveway access to this facility shall require review and approval by the Public Works Department.
26. The City requires a water easement to install a new water pipeline across the east end of the property. It appears from the development plan that this easement will not impact the proposed development plan. The City will seek dedication of this easement during infrastructure permitting for the project. Appropriate compensation will be discussed during that process.
27. 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.
28. The fire hydrant layout shall be approved by the City Fire Marshal.
29. In accordance with Richland Municipal Code Chapter 18.16.080, 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.

Sanitary Sewer:

30. 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.
31. 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.

Storm Water:

32. 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. The Developer shall be responsible for compliance with the permit conditions. 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. 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.
33. All public storm drainage systems shall have their flow rate and storage capacity designed by a professional engineer following the core elements defined in the latest editions of the Stormwater Management Manual for Eastern Washington, the current Richland municipal codes, the Phase II Municipal Stormwater Permit, and the City's "Public Infrastructure Construction Plan Requirements and Design Guidelines". The storm water calculations shall be stamped by a professional engineer and shall include a profile of the storm system showing the hydraulic grade line. The calculations should include an accurate delineation of the contributing drainage area to accurately size the stormwater facilities. Passing the storm water downhill to an existing storm system will require an analysis of the downstream storm system to determine its capability of accepting the storm water without being overwhelmed. The applicant's design shall provide runoff protection to downstream property owners.
34. 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.
35. 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").
36. Any proposed storm drainage retention facilities within the boundary of the proposed preliminary plat shall not adversely affect neighboring properties.
37. 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 72 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 percolate within 72 hours.

38. The amount of post-development storm runoff from the proposed site shall be in compliance with RMC Chapter 16.06.
39. The parcel occupied by the city stormwater basin shall be identified as a separate parcel or tract on the final plat and shall be dedicated to the City stormwater utility. The design of the basin shall include access features meeting the city's needs for maintenance.
40. The developer shall consider the long-term appearance of the city storm basin, particularly if it will occupy a prominent location in the development. The City's typical storm pond maintenance practices consist of semi-annual vegetation trimming and silt and debris removal. If the pond location is deemed by City staff as being in a prominent location the developer shall design and install fencing and/or landscaping to mitigate the pond's visible character for the surrounding properties. If the City requires this type of treatment to the pond site the developer may propose landscaping treatments consistent with the development and establish maintenance responsibilities to remain with the development. These maintenance responsibilities shall be noted on the final plat. Basins designed as detention and evaporative basins need to include plantings that will tolerate or thrive in standing water. Planting designs for areas not routinely exposed to water shall include plants that will thrive without irrigation unless the developer intends to maintain an irrigated pond site. At a minimum the landscaping plan should be consistent with the City's intended maintenance standard as described above.
41. The developer shall be responsible for landscaping the city storm pond and for its maintenance and the plantings through the one-year infrastructure warranty period. At 11 months after the final acceptance date the developer shall clean the storm system and basin of all accumulated oil, sediment, and debris. After this maintenance is completed and inspected the City will begin routine maintenance of the system and basin. The developer shall replace any plantings that have failed to survive the warranty period. The developer shall also perform trimmings required to control weeds in excess of 18-inches in height for the 12-months following the date of final plat acceptance.

Solid Waste:

42. The roadway shall be designed to accommodate solid waste collection vehicle turning movements.

Final Platting Requirements:

43. 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. All final punchlist items shall be completed or financially guaranteed prior to recording of the final plat.
44. 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 or right-of-ways 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.
45. 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.

46. 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. They will also be required where the plat is adjacent to an existing right-of-way.
47. 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.
48. 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 these roads, and are to be maintained by the benefitting owners. The City of Richland accepts no maintenance responsibility for these private roads"*.
49. Any roads narrower than 34-feet shall have parking restricted on one side, and any roads narrower than 27-feet 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.
50. All landscaped areas within the plat that are in the public Right of Way shall be the responsibility of the property owners to maintain.
51. The intended use and ownership of all tracts within the plat shall be noted on the final plat.
52. Property with an unpaid L.I.D. assessment towards it must be paid in full or segregated per Richland Municipal Code 3.12.095.
53. Any restricted parking areas shall be indicated on the final plats.

238 Meadowridge Loop
Richland, WA 99352

June 3, 2022

Mike Stevens
City of Richland Planning Manager
625 Swift Boulevard, MS #35
Richland, WA 99352

Dear Mr. Stevens:

I am a Richland resident writing to oppose rezoning property on Little Badger Mountain in response to application PUD2021-102 submitted by Wave Design Group on behalf of TMT Homes NW. Use of Planned Unit Development (PUD) zoning is being proposed as a means to retroactively rezone from R-1-12 to R-3 to allow multi-family dwellings to the benefit of the developer, without public benefit. I am concerned with the visual impact this project will make across much of the region, the noise impact of high-density housing in a hillside setting, and the failure to meet the criteria for PUD zoning.

The Hearing Examiner's Criteria

RMC 23.50.040(B) sets forth four criteria for the Hearing Examiner to evaluate a zoning application:

1) The PUD district development will be compatible with nearby developments and uses; 2) Peripheral treatment ensures proper transition between PUD uses and nearby external uses and developments; 3) The development will be consistent with the comprehensive plan and with the purpose of the PUD district; and 4) The development can be completed within a reasonable period of time. The sections below address each of these criteria for consideration, specific to PUD2021-102.

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

The project area is currently zoned R-1-12 Single Family Residential. The proposed project is adjacent to the Meadow Hills Phase Two neighborhood that is zoned R-1-12 Single Family Residential. The adjacent Falconcrest neighborhood and the adjacent Crested Hills neighborhood are zoned R-1-10 Single Family Residential. There is an existing PUD on the north side of the Kennewick Irrigation District Badger East Lateral canal, but it consists only of houses developed under R-1-10 Single Family Residential and three community parks owned and operated by the Orchard Hills #4 Homeowners Association. An island of multi-family housing in the middle of the low-density Single Family Residential housing on the Little Badger Mountain hillside does not demonstrate compatibility with nearby developments.

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

The City of Richland's Badger Mountain Subarea Plan Housing Element Policy 3.3 is to encourage higher density housing close to employment centers, retail and services, and along arterials to support the efficient expansion of public transit. Historically, the City of Richland has approved PUD zoning for development of mixed zoning with condominiums and commercial on the edges of a development, near an arterial. The existing Meadow Hills Drive is a local road in the center of a Single Family Residential area, far from commercial property and arterial roads, and thus does not represent appropriate siting for multi-family housing.

In contrast, Badger Mountain South (BMS) is a master-planned community intended to be developed with 5,000 homes, including multi-family homes, and other commercial activities. This forward-thinking planned community is the way to implement mixed uses such as high-density and low-density housing with peripheral treatment between the PUD and nearby developments. Again, an island of multi-family housing placed retroactively in the middle of Single Family Residential does not provide a transition between the proposed PUD and nearby developments.

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

The City of Richland Comprehensive Plan, 2017-2037, updated on October 1, 2019, shows that the area of the proposed project is designated Low Density Residential. The development of multi-family housing in an area designated in the Comprehensive Land Use Plan as low density residential is an incompatible land use. In the Comprehensive Plan, Land Use Goal 3 is to maintain a broad range of residential land use designations to accommodate a variety of lifestyles and housing opportunities. Policy 2 supporting this Land Use Goal is to encourage higher residential densities, especially in and near the Central Business District area. As stated in the Comprehensive Plan, "Richland's bustling Central Business District is developed as a mixed-use village with pedestrian amenities, transit access, and bike paths." Allowing a condominium complex that is isolated from amenities and transit access, and that is not part of a mixed-use village, is not consistent with the land use goals of the Comprehensive Plan.

The purpose of a PUD, as stated in RMC 23.50.010 is "to provide opportunities to create a more desirable environment through the application of flexible design and development standards to tracts of land under common ownership or control." This would seem to imply that the proposed multi-family housing development would be part of a larger community plan. This might have been a valid argument if multi-family housing was proposed as part of the original three-phased Meadow Hills plat. According to their application, the TMT Homes NW project proposed as PUD2021-102 consists only of the multi-family housing development together with Open Public Space to the north and south of the development. The Natural Open Space in the TMT Homes NW proposal is simply undevelopable land of no value to the developer. The 5.76 acres of public open space proposed in the application is an insignificant contribution to the existing public open space on Little Badger Mountain. Parcel 102881012378010 provides 16.17 acres of Public Open Space and is adjacent to parcel 135983000001042 that provides 15.72 acres of public open space. These two parcels lie south of the proposed project and already provide the critical link between the Little Badger Preserve and the Amon Preserve. The proposed stormwater drainage swale "park" that preserves the native vegetation (Application p. 13) to the north of the proposed project will not improve connectivity beyond that provided by the completion of Meadow Hills Drive, and it seems to be proposed more as common area for the condominium complex and not anything of value to the community. That area is bounded on the east and west by private property, so there is no access except via Meadow Hills Drive. Given that the proposed project benefits only TMT Homes NW and provides no public benefit, this application does not support the purpose for a PUD.

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

The timeline for construction of the TMT Homes NW project is in excess of 3 years (SEPA Checklist item 6). According to the developer, the six condominium buildings would be built consecutively rather than concurrently. Construction on subsequent buildings would not commence until the preceding building

is completely sold. The inexperience of TMT Homes NW with a project of this scale and the planned tandem schedule will result in a construction timeline that far exceeds the 3+ years presented in the proposal by TMT Homes NW.

Visual and Noise Impacts

Many types of environmental impacts would be the same whether the TMT Homes NW land was developed as multi-family or single-family homes. Land disturbance will result in impacts such as the destruction and fragmentation of habitat and the potential discovery of cultural resources. However, there are two types of environmental impacts that are unique to the development of the multi-family housing proposed by TMT Homes NW, visual impacts and noise impacts.

Visual impacts, changes to the scenic attributes of the landscape, would be significant if the development of hillside condominiums is permitted. The six proposed six story 8-plexes are significantly larger than the adjacent single-family homes. See page 19 of the PUD2021-102 application to get a feeling for the massive scale of the visual impact of just one of these six buildings. In addition to local residents in South Richland, Little Badger Mountain is visible from vehicles travelling along WA-240 and I-182, including the stretch of I-182 in Franklin County. These 6-story buildings will be a significant visual contrast and will be a negative visual impact throughout the region. Construction risk is high for the proposed mammoth buildings in a zone of geological hazard. The visual blight will be far worse if this project is left unfinished due to engineering or financial issues.

I live on the north side of Little Badger Mountain, just above the Kennewick Irrigation District canal. This area is a natural amphitheater and carries outdoor noise up and down the hillside. I can hear the traffic on Leslie Road and voices of people standing on the top of the hill as if each was occurring on my property. Allowing high density housing on Little Badger Mountain will produce nuisance noise far beyond what could be expected without the hillside acoustics. Particularly as these condominiums are touted in the Application as providing “a luxury lifestyle that blurs the boundary of indoor and outdoor living.” For the residents of neighborhoods from Meadow Springs up to Falconcrest, this would be a significant impact and degradation of the quality of life.

Lack of Public Benefit

The application claims to support the goals and policies from the Housing Element within the City of Richland Comprehensive Plan. As stated in the introduction to the Housing Element section of the Comprehensive Plan, “Providing affordable housing for all groups is a priority for Richland. Providing housing near shopping and transportation and offering multiple choices for owner and renter occupied housing would also benefit the City’s vision for diversity.” That does not establish the need for more “high end luxury units” such as already exist along the riverfront in Richland. I also object to TMT Homes NW’s use of the word “diversity” when describing their project as it diverts our attention from the City of Richland’s Housing Element Goal 2, “Improve affordable housing opportunities for lower-income individuals, households, and first time homebuyers.” This should be what is meant by housing diversity in our community

Another TMT Homes NW claim of public benefit is the addition of 50 more housing units than would be built under the current R-1-12 zoning. According to the TMT Homes NW application (p. 6), this project “improves the high-density zoning percentage (1.85%) in Richland and better aligns housing supply with

demand and contributes to the diversity of housing.” Given the proximity of the 5000-unit Badger Mountain South planned community and other nearby developments, the numbers cited by TMT Homes NW will become more and more insignificant before construction can be completed on their project.

The Zillow® Walk Score for the Meadow Hills neighborhood, a measure of how walkable an address is based on the distance to nearby amenities, is zero, meaning residents of the area are car-dependent. The proposed project will not change the need to use a car to access amenities. The Little Badger Mountain area will still have a walkability score of zero when the definition of walkability is described consistently with the Badger Mountain South LUDR (p. 35).

“A walkable community locates goods (such as housing, offices, and retail) and services (such as transportation, schools, libraries) that a resident or employee needs on a regular basis within an easy and safe walk.”

TMT Homes NW also stated on page 7 of their application that “...adjacent neighboring properties will also profit as the investment of a high-end, luxury development such as Skyhaus will certainly increase surrounding property values.” Starting at \$1.5 million to \$3 million, the proposed condominiums may be priced higher than surrounding homes, but the presence of condominiums in the area is a detriment, not a benefit, to the neighbors.

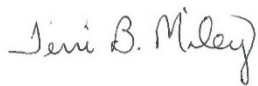
Conclusion

TMT Homes NW’s application PUD2021-102 requesting PUD zoning as a vehicle for R-3 high-density zoning should be denied for the following reasons:

- The requested high-density zoning is inconsistent with the Land Use Plan.
- The proposal represents incompatible land use in the Little Badger Mountain area.
- The TMT Homes NW application is devoid of the required public benefit for a PUD.
- Visual impacts to the region would be significant and negative.
- Noise due to hillside sound concentration would be significant in the area.

Take note of the recent lesson learned by Benton County regarding the proposed 24-mile long wind farm planned by Scout Energy. Once the City of Richland rules that a project is consistent with our Comprehensive Plan, the City will not be making an exception but will be setting a precedent. There will be no grounds on which further inconsistent land use actions can be denied. Please do not let that happen to our community.

Sincerely,



Terri B. Miley

Stevens, Mike

From: tomayche@charter.net
Sent: Friday, June 3, 2022 11:36 AM
To: Stevens, Mike
Subject: Rezoning property on Little Badger Mountain in response to application PUD2021-102 submitted by Wave Design Group on behalf of TMT Homes NW

256 Meadow Ridge Loop
Richland, WA 99352

June 3, 2022

Mike Stevens
City of Richland Planning Manager
625 Swift Boulevard, MS #35
Richland, WA 99352

Subject: Rezoning property on Little Badger Mountain in response to application PUD2021-102 submitted by Wave Design Group on behalf of TMT Homes NW

Dear Mr. Stevens:

I am a resident of Richland and I am writing to you to oppose rezoning property on Little Badger Mountain in response to application PUD2021-102 submitted by Wave Design Group on behalf of TMT Homes NW. The rezoning from R-1-12 to R-3 to allow multi-family dwellings will only benefit the developer, without public benefit.

My largest concern is the visual impact this project will make across much of Richland and Kennewick, we the residents will lose the serene beauty of the hillside only to have a large monstrosity of a building taking away from the beauty of Richland. Which also fails to meet criteria for PUD zoning.

The development should be consistent with the comprehensive plan and with the purpose of the PUD district. The City of Richland Comprehensive Plan, 2017-2037, updated on October 1, 2019, shows that the area of the proposed project is designated Low Density Residential. This proposed condominium complex is isolated from amenities and transit access, and that is not part of a mixed-use village, and is not consistent with the land use goals of the Comprehensive Plan.

TMT Homes NW will make big promises but that will greatly differ from what they will deliver, they will promise a 10 while only delivering a 3.

Please say NO to the rezoning property on Little Badger Mountain in response to application PUD2021-102.

Thank you

Thomas Hoertkorn
256 Meadow Ridge Loop
Richland Wa 99352

Stevens, Mike

From: Terry Alton Acct <terryalton@charter.net>
Sent: Sunday, May 22, 2022 2:37 PM
To: Stevens, Mike
Subject: Meadow Hills Phase III Proposal

Private Road : **AGREE**

Condos: **Disagree**

Neighborhood needs to remain “ **single family detached**”

Sent from my iPhone

Terry and Cathy Alton
284 Meadow Ridge Loop
Richland, Washington 99352
(509) 539-9804 Terry
(509) 430-9722 Cathy



State of Washington
Department of Fish and Wildlife
Habitat Program

2620 North Commercial Avenue, Pasco, WA 99301
Phone: (509) 543-3319, E-mail, Michael.Ritter@dfw.wa.gov

June 3, 2022

Mike Stevens
Planning Manager
City of Richland Planning Department
625 Swift Blvd MS-35
Richland, WA 99352

Subject: TMT Homes NW: (PUD2021-102 & EA2021-116)

Dear Mike,

A City of Richland Critical Area (Fish and Wildlife Habitat Conservation Area) and a Washington Department of Fish and Wildlife (WDFW) Priority Habitat (shrubsteppe) will be permanently impacted by the proposed project. However, we understand that development and conservation of native habitats within urban areas is challenging. The project proposes to retain as much native vegetation as possible within the buildable area and also deed over 50% of the total project area to the city as open space. While WDFW supports the open space concept, any native vegetation that persists will occur in small fragmented areas adjacent to the development or as ancillary features of the deeded area that will convert native habitat into trails, biofiltration swales, dog park, etc.

We appreciate the opportunity to provide these comments and are willing to assist the proposed development with conservation and restoration of native habitats.

Please contact me with any questions at Michael.ritter@dfw.wa.gov or at 509-543-3319.

Sincerely,

A handwritten signature in black ink that reads "Michael Ritter".

Michael Ritter
Habitat Biologist
Statewide Technical Lead: Wind and Solar

Stevens, Mike

From: Ya Wen <wenya22@gmail.com>
Sent: Thursday, May 26, 2022 10:15 PM
To: Stevens, Mike
Subject: Regarding Skyhous proposal on Meadow Hills Dr

To Mr. Stevens as Planning Manager, Richland City Council Members, and whomever it may concern:

We, the residents of Meadow Hills Dr, and the surrounding Crested Hills neighborhood, strongly oppose the proposed condo project Skyhous. A set of condos would greatly increase the traffic through two cul-de-sacs without any major road access. This greatly endangers the children of the neighborhood, will make it unsafe to walk to the nearby community park, and unsafe bus access.

Meadow Hills Dr was always meant to be finished with individual houses and placing multiple condo complexes in this space makes no sense, especially without any major road access. I ask the city of Richland council members to walk through these neighborhoods, picture yourself raising your children here, and see how you would feel about the quiet cul-de-sac being turned into a condo access point. The proposed project allows for 48 units. Assuming each unit has 1-2 cars, this is increasing traffic at least 50-100 fold. As a local emergency department physician, my first and foremost concern is safety. I'm sure there are also environmental impacts as well, with the erosion of the hillside, increased pollution, etc.

I don't know why TMT chose to pursue building of condos when they had outside interest in building single family homes. (I know because we tried to build with them in one of the plots, but we were ghosted by their real estate agent after the initial meeting).

To them, this is a business deal that they take no personal responsibility. To us, this is our home, our future, and the safety of our kids. Please have TMT take those plans elsewhere and deny the permit to build this on Meadow Hills Dr. The council correctly denied this proposal in 2012 and our hope is that you continue to have the people of these current neighborhoods' best interest in mind.

Thank you for your time and consideration,

Dr. Ya Wen
Dr. Jeff Zhang

Stevens, Mike

From: Jessica Lally <Jessica_Lally@Yakama.com>
Sent: Thursday, May 26, 2022 3:25 PM
To: Stevens, Mike
Cc: Corrine Camuso; Hanson, Sydney (DAHP)
Subject: Re: Skyhous PUD2021-102

Hello Mike,

This proposed project is located in a culturally sensitive area. Yakama Nation CRP requests an archaeological survey.

Jessica Lally
Yakama Nation Archaeologist
Cultural Resources Program
509-865-5121 x4766

From: Stevens, Mike <mstevens@CI.RICHLAND.WA.US>
Sent: Monday, May 9, 2022 4:05 PM
To: Anthony Muai; Anthony Von Moos; Ashley Morton; Badger Mountain Irrigation District; Benton County - Segregations; Benton PUD, Broadband; Benton PUD, Electrical; Bill Barlow; Buechler, Ken; Carrie Thompson; Casey Barney; Catherine Dickson; Clark Posey; Corrine Camuso; Hamilton, Craig; DAHP SEPA Reviews; DAlessandro, Carlo; Damrell, Kevin; Darrick Dietrich; Davis, Deanna; Deborah Rodgers; Deskins, John; Eric Mendenhall; FormerOrchards@ecy.wa.gov; Greg Wendt; Gwen Clear; Hill, Kelly; Jason McShane; Jennings, Tyler; Jerrod Macpherson; Jessica Lally; John Lyle; Jordon, Joshua; Joseph Cottrell; Junior Campos; Katherine Cichy; Kelly Cooper; Kevin Knodel; Kevin Sliger; KID Development; KID Webmaster; M. Deklyne; Map BCES; Mattheus, Pamela; Michael Tovey; Noah Lee; Noah Oliver; Paul Gonseth; Reathaford, Jason; Review Team; Richard Krasner; USPS Richland Postmaster; Rick Dawson; Robin Priddy; Sarah Gates; Schiessl, Joe; SEPA Center; SEPA Register; SEPA Unit; Seth DeFoe; South Central Region Planning; T.S. "Max" Platts; Tyutyunnik, Ruvim; WA Dept of Fish & Wildlife; WA Dept of Fish & Wildlife; Westphal, Nichole; William Simpson
Subject: Skyhous PUD2021-102

ATTENTION:

The City of Richland has received an application for a proposed Planned Unit Development commonly referred to as Skyhous. Due to the size of the application packet, the Notice of Application, SEPA Checklist and related information may be viewed by visiting the following:

[PUD2021-102 Skyhous Referral Packet.pdf](#).

A public hearing will be held before the Richland Hearing Examiner at 6:00 PM on Monday, June 20, 2022.

Please review and submit any comments you may have by 5:00 PM, Wednesday, June 8, 2022 (or sooner).

Thank you,



Mike Stevens

Planning Manager

625 Swift Blvd., MS-35 | Richland, WA 99352

(509) 942-7596

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Stevens, Mike

From: Cichy, Katherine <katherine.cichy@ziply.com>
Sent: Tuesday, May 17, 2022 4:15 PM
To: Stevens, Mike
Subject: RE: Skyhous PUD2021-102

Ziply does not have any comments. We are interested in potentially getting services in.

Thank you,

Katherine Cichy
OSP Engineer
509-410-5035
[Katherine.cichy@ziply.com](mailto:katherine.cichy@ziply.com)



From: Stevens, Mike <mstevens@CI.RICHLAND.WA.US>
Sent: Monday, May 9, 2022 4:06 PM
To: Anthony Muai <anthony.muai@ci.kennewick.wa.us>; Anthony Von Moos <anthony.vonmoos@co.benton.wa.us>; Ashley Morton <AshleyMorton@ctuir.org>; Badger Mountain Irrigation District <bmidmanager@badgermountainirrigation.com>; Benton County - Segregations <Segregations@co.benton.wa.us>; Benton PUD, Broadband <osp@noanet.net>; Benton PUD, Electrical <engservice@bentonpud.org>; Bill Barlow <bbarlow@bft.org>; Buechler, Ken <KBuechler@CI.RICHLAND.WA.US>; Carrie Thompson <carrie.thompson@bnsf.com>; Casey Barney, Yakama Nation <Casey_Barney@Yakama.com>; Catherine Dickson <catherinedickson@ctuir.org>; Clark Posey <clark.posey@co.benton.wa.us>; Corrine Camuso, Yakama Nation <Corrine_Camuso@Yakama.com>; Hamilton, Craig <C.Hamilton@bces.wa.gov>; DAHP SEPA Reviews <sepa@dahp.wa.gov>; DAlessandro, Carlo <cdalessandro@CI.RICHLAND.WA.US>; Damrell, Kevin <kdamrell@CI.RICHLAND.WA.US>; Darrick Dietrich <darrick@basindisposal.com>; Davis, Deanna <d.davis@bces.wa.gov>; Deborah Rodgers <dxrogers@bpa.gov>; Deskins, John <jdeskins@CI.RICHLAND.WA.US>; Eric Mendenhall <emendenhall@westrichland.org>; FormerOrchards@ecy.wa.gov; Greg Wendt <greg.wendt@co.benton.wa.us>; Gwen Clear <gcle461@ecy.wa.gov>; Hill, Kelly <khill@CI.RICHLAND.WA.US>; Jason McShane <jmcshane@kid.org>; Jennings, Tyler <tjennings@CI.RICHLAND.WA.US>; Jerrod Macpherson <Jerrod.Macpherson@co.benton.wa.us>; Jessica Lally, Yakama Nation <Jessica_Lally@Yakama.com>; John Lyle <john.lyle@bentoncleanair.org>; Jordon, Joshua <jojordon@CI.RICHLAND.WA.US>; Joseph Cottrell <jecottrell@bpa.gov>; Junior Campos <junior.campos@charter.com>; Cichy, Katherine <katherine.cichy@ziply.com>; Kelly Cooper <kelly.cooper@doh.wa.gov>; Kevin Knodel <kevin.knodel@rsd.edu>; Kevin Sliger <KSliger@bft.org>; KID Development <development@kid.org>; KID Webmaster <webmaster@kid.org>; M. Deklyne <mjddeklyne@bpa.gov>; Map BCES <map@bces.wa.gov>; Mattheus, Pamela <pmattheus@CI.RICHLAND.WA.US>; Tovey, Michael <michael.tovey@ziply.com>; Noah Lee <noah.lee@bentoncleanair.org>; Noah Oliver, Yakama Nation <Noah_Oliver@Yakama.com>; Paul Gonseth <gonsetp@wsdot.wa.gov>; Reathafor, Jason <JReathafor@CI.RICHLAND.WA.US>; Review Team <reviewteam@commerce.wa.gov>; Richard Krasner <richard.krasner@rsd.edu>; USPS Richland Postmaster <99352RichlandWA-Postmaster@usps.gov>; Rick Dawson <rickd@bfhd.wa.gov>; Robin Priddy <robin.priddy@bentoncleanair.org>; Sarah Gates <s.gates@bces.wa.gov>; Schiessl, Joe <JSchiessl@CI.RICHLAND.WA.US>; SEPA Center <sepacenter@dnr.wa.gov>; SEPA Register <separegister@ecy.wa.gov>; SEPA Unit <sepaunit@ecy.wa.gov>; Seth DeFoe <SDeFoe@kid.org>; South Central Region Planning <scplanning@wsdot.wa.gov>; T.S. "Max" Platts <PlattsT@wsdot.wa.gov>; Tyutyunnik, Ruvim

<rtutyunnik@CI.RICHLAND.WA.US>; WA Dept of Fish & Wildlife <lopezlal@dfw.wa.gov>; WA Dept of Fish & Wildlife <rittemwr@dfw.wa.gov>; Westphal, Nichole <nwestphal@ci.richland.wa.us>; William Simpson <william.simpson@commerce.wa.gov>
Subject: Skyhous PUD2021-102

WARNING: External email. Please verify sender before opening attachments or clicking on links.

ATTENTION:

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Vicinity Map

Item: Planned Unit Development (Zoning)
Applicant: TMT Homes NE, LLC
File #: PUD2021-101

