File No. <u>EA2022-129</u>



<u>CITY OF RICHLAND</u> Determination of Non-Significance

Description of Proposal:	Construction of an approximately 20-foot exposed height reinforced earth wall and associated clearing and grading/filling of approximately 1,817 cubic yards of material for the future construction of a single-family residence.
Proponent:	Dule Mehic 1056 Allenwhite Drive Richland, WA 99352
Location of Proposal:	The project site is located at 1050 Allenwhite Drive,

Lead Agency: The project site is located at 1050 Allenwhite Drive, Richland, Washington upon Assessor's Parcel Number 123983070002008.

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

() There is no comment for the DNS.

(X) This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for fourteen days from the date of issuance.

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

Responsible Official: Mike Stevens Position/Title: Planning Manager Address: 625 Swift Blvd., MS #35, Richland, WA 99352 Date: September 21, 2022 Comments Due: October 6, 2022

Signature Math Fr

CITY OF RICHLAND www.ci.richland.wa.us Application for Grading Permit

PROJECT NAME / OWNER	RNAME	<u></u>		
Owner's or Tenant's Mailing	Address / City / State	e / Zip	Phone N	Number 509-539-93 87
Fax Number	Cell Num	ber	EMail	mehic D charter net
Property Owner (if different	from Project Owner)		Phone N 5 C	Number 29-539-9387
Property Owner's current Ad	ddress / City / State / Z	Zip		
Project Contact Name & Co DULE MEA	mpany 41 C	Contact Number 509-539-93	87 EMail	nehic@ chayter.net
ADDRESS OF PROPERTY	Le dr.		1	
Tax Parcel # 123983070002	oo 8 Subdi	vision	Lot	Block
Lender Information – requ	ired for projects ove	er \$5000 in valuatior	per RCW 19.2	7.095
If a lender or bond company	is not loaning monies	s on this project, plea	se check here:	
	Name/Address		Phone r	Value:
Description of project: (fully	describe the type of g	grading to be done, fi	I to be used, we	tlands, etc.)
Prepere lot	- to bu	ild hous	e. R	- Faining Wall
				/
ESTIMATED # OF CUBIC Y	ARDS OF EARTH TO	D BE MOVED, FILLE	D,	1817 OUDIO VADDO
CONTRACTOR FOR PRO.	IFCT (please note that all	sub-contractors also must	have a City of Rich	and husiness license)
Name	COT (please note that an	300-001020013 8130 1103	City Bus	siness License
Dule Me	chic		Require	ed prior to permit issuance
Address/City/State/Zip 1056 A Ilen u	hite dr.		Phone 509	-539-9383
Fax Number	C	ell Number	EMail	chic Dicha ter an
CIVIL ENGINEER (required for	or certain grading permits, s	ee Appendix J of the 2015	IBC)	
Name	St License #	Phone Number	Fax Nur	nber
Address/City/State/Zip			EMail	
SOILS ENGINEER (required	for certain grading permits,	see Appendix J of the 201	5 IBC)	
Ben Steahir	St License #	Phone Number 509-371-150	Fax Nur	mber
Address/City/State/Zip			EMail	
Billing Account: - check part	y responsible for fees	:	FOR OFFICI	E USE ONLY
Owner			PERMIT#	
Contractor				
Applicant			INITIALS	

Signature of Owner or Authorized Agent

6-30-2022 Date

\\cordata\Planning\BLUEPRINCE\applications\Grading_Appl.doc (12-26-18) Page 2 of 3



COMMUNITY DEVELOPMENT DEPARTMENT 625 Swift Blvd., Richland, WA 99352 Phone: 509-942-7794 Fax: 509-942-7764

AFFIDAVIT FOR GRADING OPERATIONS REQUIREMENTS FOR CITY INSPECTION OF GRADING

Address or legal description of property where project is being proposed

Prepare to build house, veloining Wall Description of project (i.e., new commercial building, addition, new residence, etc.)

EXPLANATION OF CITY INSPECTION REQUIREMENTS

In accordance with the Appendix J of the IBC, it is the City's policy that grading operations shall require a permit. "Grading" is the movement of soil in the form of excavation and/or placement of fill. The City recognizes that grading is a necessary and beneficial activity when appropriately managed to reduce harmful effects to the community and the environment. Under an issued grading permit, multiple inspections will be specified. These City inspections are in addition to the required on-site observation and written field reports by the soils engineer AND are in addition to any required soils compaction testing by third-party testing agencies. To verify that you understand the requirements to receive a grading permit and to have the grading work inspected by the City, we are requiring the contractor, owner, or owner's agent who picks up the grading permit to sign this affidavit attesting that they understand the potential penalties allowed by law for failure to call for City inspection of the grading work.

The preliminary meeting noted in item #1 on the "green" permit sign-off card is MANDATORY. This meeting helps establish with the City inspector what the parameters of the grading operations will be, what kind of inspections will be needed, and how often.

As allowed by law in RMC Title 21 and building code Section 109, failure to call for inspections may result in fines of up to \$5000/day and other legal penalties to be levied against the owner of the property, as well as notices to "stop work".

The City does not want to hinder development work, but serious grading problems have occurred because of failure to follow permit requirements. The City does not want to delay your project, so please follow these inspection requirements.

AFFIDAVIT

By signing below, I hereby affirm that I have read and understand the inspection requirements. I further attest and affirm that I understand the legal ramifications, including penalties as noted by law, for failure to call for City inspection of the grading work for which this permit is being issued. My signature below represents a good faith effort to ensure that the grading contractor will call for City inspection of the grading work as noted on the permit sign-off card ("green card"). I will keep this sign-off card and the field set of approved plans on the job site for the City inspector to use during inspections. If a sub-contractor is hired to accomplish the grading work, I hereby affirm that all information relating to City inspections as noted herein and as noted on the permit sign-off card will be given to the sub-contractor. If I am not the owner of the property for which this permit is being issued, then by my signature, I attest that I am an authorized agent of the owner and have authority to sign this affidavit on behalf of the owner.

gnature of owner (or authorized representative of owner or corporation)

<u>6-30-2022</u> Date

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 <u>all parts of your proposal</u>, 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 <u>SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D)</u>. 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: MEHC RESIDENCE
- 2. Name of applicant: MEHIC DULE
- 3. Address and phone number of applicant and contact person: 1056 ALLEN WHITE DR. Richland, WA 97352

- 4. Date checklist prepared: $\frac{9}{29}$
- 5. Agency requesting checklist: Richland
- Proposed timing or schedule (including phasing, if applicable):

NO Phasing START 11/1/22 - complete 1/30/23 7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. NO

List any environmental information you know about that has been prepared, or will be

Geotechnical Innestigation Topographical Survey prepared, directly related to this proposal.

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. Grading Permit, Evilding Permit

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.)

Single family Residence on Ilelles SAFT of land 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: 123983070002008 Township: 09 Range: 28

Land Size: 16165 SAFT

B. Environmental Elements [HELP]

1. Earth [help]

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other <u>Slight Sape</u> where we

Section 23

Quarter SW PLAT Subdivision

Heritage Hills, NO. 7, BLOCK Z LOT 8. 1050 ALLENWHITE DR. Fichland, WA 99352

- b. What is the steepest slope on the site (approximate percent slope)? 50%
- 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. ML : SILT

- 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 till. Building will Reguisse grading a excavation & redistribute an site with f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. Acceptable grading.
- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

impervicus surfaces & 40% of lot

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

Landscoping, Terrace retaining WAIIS, Pervices surfaces

- 2. Air [help]
- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and, give approximate quantities if known. . Construction Equipment: Minimal Short dwation · Traffic : 1-2 CAR

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

- c. Proposed measures to reduce or control emissions or other impacts to air, if any: Construction Equipment will be turned off when not in use
- 3. Water [help]
- a. Surface Water: [help]
 - 1) Is there any surface water body on or in the immediate vicinity of the site (including vear-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.

YAKIMA RIVER - FLOWS into Columbia

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 - Yakima is 600'-0" Hway
```

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.



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



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.

ND

- 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.

ND - City utilities

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.

STORM water collected throughout site & directed to grassy landscaped areas SMALL SCALE SWALLS

- 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,

ND

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

ND

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

All storm water will be managed on site

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

Landscaping Pervious surfaces

4. Plants [help]

All Storm water will be cantained an site 3 imprave dramage Check the types of vegetation found on the s a.

_deciduous tree: alder, maple, aspen, other

___evergreen tree: fir, cedar, pine, other

<u> X g</u>rass

____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?

- c. List threatened and endangered species known to be on or near the site.
- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Landscaping will meet City of Richland Municipal case

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

None

5. Animals [help]

a. <u>List</u> any birds and <u>other</u> 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, <u>congbirds</u> other: mammals: deer, bear, elk, beaver, other: fish: bass, salmon, trout, herring, shellfish, other

- b. List any threatened and endangered species known to be on or near the site. Now e
- c. Is the site part of a migration route? If so, explain.

Yes, Pacific Flyway

- d. Proposed measures to preserve or enhance wildlife, if any:
- e. List any invasive animal species known to be on or near the site.

None

3

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. Huting cooling
```

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

ND: FAR enough Distance a way & not tall enough to effect neighbor's.

c. What kinds of energy conservation features are included in the plans of this proposal? .Keep impervices coreauce or control energy impacts, if any: • Keep impervices curfaces to Minimum • Light Paint Material Colors • South Facing wind as to have averhages • Trees on South Side Environmental Health [help]

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. Nanc
 - 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.

Nane

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

Describe special emergency services that might be required.

None

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

N/A

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

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

Traft + construction 6:00Am - 7:00 pm

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

Any land work will be done during typical working hows of day.

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.

Land USE is 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?

Nane NA

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, undeveloped

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? p_{-1-12}
- g. If applicable, what is the current shoreline master program designation of the site? N/A
- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

YCS; Greological HAZARD

- i. Approximately how many people would reside or work in the completed project? 2
- j. Approximately how many people would the completed project displace? NUNC X
- k. Proposed measures to avoid or reduce displacement impacts, if any:

- L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: Simily Residence
- m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

NA

- 9. Housing [help]
- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
 N)
- c. Proposed measures to reduce or control housing impacts, if any:

N/A

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?

30'-D" SIDing Stuce Shingles

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

None

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

Will mut City Standards of Aesthetics

11. Light and Glare [help]

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

None

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

No Adequate overhargs & Main views Ave to the Nerth

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

None

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

```
overhanges (Awnings
```

12. Recreation [help]

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

Yakima Fiver, Heritage Hills Park

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:

Nane

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.

ND

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

NO

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

NA

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.

Arress off of Allenwhite Dr.

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 - CLOSEST is Riverwood St. at Hillwood St. I Mile Away

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

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).

NO

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

ND

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?

Z trips Per Day 7:00 Am 3 5:00 pm Petter Times NO MULES

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:

N/A

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; I ADDED Family FOR FIRE, Police protection. No. Additional Staff/Vesources would be Required

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
- Describe the utilities that are proposed for the project, the utility providing the service, C. and the general construction activities on the site or in the immediate vicinity which might be needed.

Internet · Spectrum Refuse Services · Benten PUD TV · Direct TV Naturalgas · Cascade Natural gas Water . Richland City

SEPA Environmental checklist (WAC 197-11-960)

July 2016

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:	MO			
Name of signed	Maggic	Ogden	/	
Position and Ag	jency/Organizatior	Arch. Designer	Draftco	Designs
Date Submitted	: <u>8/29/22</u>	=)

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?

Minimal traffic impact

Proposed measures to avoid or reduce such increases are:

Rive share

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

ADDing more regitation landscaping to Area

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

xeniscape) natural low maintenance plants

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

electricity consumption

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

· Building size forientation · Solar panels · overhary 5/ Awnings

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?

NA

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?

N/A

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?

ADDing I family home

Proposed measures to reduce or respond to such demand(s) are:

- · RIDEShare · Solar panels · Public transportation
- 7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

N/A none







June 28, 2022

Dule Mehic Via: dmehic@charter.net

> Geotechnical Engineering Evaluation Reinforced Retaining Wall Design 1050 Allenwhite Drive Richland, Washington Job number: 4035427

Mr. Mehic:

This letter summarizes the results of our geotechnical engineering evaluation for the proposed retaining wall at 1050 Allenwhite Drive in Richland, Washington.

INTRODUCTION

The purpose of this study is to explore and characterize the surface and subsurface conditions for the reinforced earth retaining wall utilizing segmental wall blocks. We understand through discussions with you that you would like to construct an approximately 20.0-foot exposed height reinforced earth wall roughly 100 feet behind back of curb. The intent of the wall is to support a single story daylight basement home at the south side of the property. You have requested that Applus evaluate the site area and provide recommendations for the design and installation of a retaining wall system.

SCOPE

The purpose of this study is to explore and characterize the site subsurface conditions and provide our opinions and recommendations regarding the proposed grading and associated retaining wall system. Specifically, our scope of services includes the following:

- Review soil and geologic maps of the site area and provided information.
- Evaluate surface/subsurface soil and groundwater conditions through the performance of hand tools within the site, if required.

- Conduct laboratory classification and analyses on selected soil samples for soil classification, as necessary.
- Provide recommendations for earthwork, including cuts and fills.
- Provide recommendations for temporary slopes, as warranted.
- Provide recommendations for retaining walls.
- Provide general recommendations for site drainage and erosion control.
- Document the results of our findings, conclusions, and recommendations in a written geotechnical letter.

SITE CONDITIONS

Surface Conditions

The property is a rectangular-shaped parcel located at 1050 Allenwhite Drive, in Richland, WA. The site consists of a level fill approximately 25-30 in width adjacent to the existing curb. Following the level area, the grade slopes down at nearly a 1H:1V slope, to the point it meets a more gradual 5H:1V slope. The site has mostly been cleared of native vegetation. We did not observe any surface water on the site or in its vicinity during our site visit on April 7, 2022.

Subsurface Conditions

Geology: The geologic units for this area are shown on the <u>Geologic Map of the</u> <u>Richland 1:100,000 Quadrangle, Washington</u>, by Reidel and Fecht, (USDNR, 1994). The site is mapped primarily as Palouse Formation loess (QI), with a thin portion of the southeast portion mapped as Ice Harbor Member basalt flow (Mv_{sih}). The QI deposits are described as eolian silt and fine sand. The Mv_{sih} deposits Ice Harbor Member basalt flows of the Columbia River Basalt Group. Based on our observations and experience, it is likely the Mv_{sih} underly the site, with thin loess deposits above.

Explorations: We conducted 4 bore holes (BH-1 through BH-4) along the wall base. All borings met refusal on cobble and gravel between 1.3 and 3.3 feet below grade. We also observed basalt outcroppings in the road cut between this lot and Columbia Park trail below at approximately 2-3 feet below original surface grade. This reinforces our interpretation that the site is underlain by basalts, with only thin surficial silt and fine sand deposits above. Our boring logs are attached.

Hydrologic Conditions

Groundwater seepage was not encountered in our explorations. If groundwater were to be encountered, we would interpret this water to be perched water. Perched water occurs when surface water infiltrates through less dense, more permeable soils, and accumulates on top of a relatively low permeability material. Perched water does not represent a regional groundwater "table" within the upper soil horizons. Perched water tends to vary spatially and is dependent upon the amount of rainfall. We would expect the amount of perched groundwater to decrease during drier times of the year and increase during wetter periods.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

It is our opinion from a geotechnical standpoint that the site is generally compatible with the planned retaining wall and that a reinforced earth retaining wall, such as the proposed Anchor block wall, could be utilized to support the slope area. The total height of the wall would be limited to 20.0 feet in exposed height, and would include an additional embedment requirement down to competent rock below the wall base. We understand that you intend to construct a single-story home with daylight basement above the wall, however the house will be setback far enough to not add additional surcharge on the wall. A schematic detail of the reinforced block wall is shown on the Retaining Wall Section in Figure 3. The wall recommendations are discussed further in the **Wall Design and Construction Recommendations** subsection of this letter. We recommend that Applus be retained to review and approve final wall layout and configuration prior to construction.

The surficial soils encountered on this site are considered moisture-sensitive and may disturb easily when wet. To lessen the potential impacts of construction and to reduce cost overruns and delays, we recommend that construction take place during dry weather, if possible. If construction takes place during the rainy months, additional expenses and delays should be expected. These extra expenses could include additional erosion control and temporary drainage measures to protect the proposed development area including placement of a blanket of rock spalls to protect exposed subgrades, and the need for importing all-weather materials for structural fill.

The proposed retaining wall and the slope should be monitored on an on-going basis after construction especially during the wet season for any signs of instability, and corrective actions promptly taken should any signs of instability be observed.

Erosion Control and Slope Protection

The on-site soils can have a moderate to high potential for erosion, depending on how the site is graded and how water is allowed to concentrate. Best Management Practices (BMPs) should be used to control erosion. Areas disturbed during construction should be protected from erosion. Measures taken may include diverting surface water away from the stripped areas. Silt fences or straw bales should be erected to prevent muddy water from flowing over the site slopes or into an existing storm system. Disturbed areas should be replanted with vegetation at the end of construction. The vegetation should be maintained until established. Final grading should incorporate appropriate erosion control measures to route stormwater runoff away from slopes and the proposed wall location to an appropriate discharge location.

All runoff generated within the site should be collected into an approved Stormawater management system. Under no circumstances should runoff be allowed to flow over the slope either during construction or on a permanent basis after construction has been completed. We understand that you intend to install a drainage system to collect roof runoff and pipe the stormwater into the area below the wall, similar to the system installed on your current property to the east. The placement of the wall should allow approximately 60 feet for installation of a drainage system. Any system should be placed a minimum of 20-feet from the face of wall. All areas disturbed during wall and residence construction should be compacted to a non-yielding condition, covered with jute netting, and a vegetative cover established within such areas.

Vegetation on the slope should consist of deep-rooted, drought-resisting vegetation. Irrigation systems on the slope should be avoided. Future yard waste, grass clippings, or any waste material should never be cast over the site slopes or piled near the walls. Such activity could lead to future slope instability.

Site Preparation and Grading

After erosion control measures are implemented, site preparation within the wall area should consist of over-excavating the wall block and reinforced-fill zone down to the competent basalts below. The stripped soil should be removed from the site or stockpiled for later use as a structural fill. The exposed subgrade soils should be compacted to a non-yielding condition. Areas observed to pump or weave during compaction should be reworked to structural fill specifications or over-excavated and replaced with properly compacted structural fill or rock spalls. A minimum 6-inch layer of 1 - 1/4-inch minus crushed gravel (or engineer approved equal) should then be placed and compacted within the wall base. We should be retained to observe subgrade preparation and structural fill placement. If significant surface water flow is encountered during construction, this flow should be diverted around areas to be developed, and the exposed subgrades should be maintained in a semi-dry condition.

In wet conditions, it may be necessary to cover the exposed subgrade with a layer of crushed rock as soon as it is exposed to protect the moisture sensitive soils from disturbance by machine or foot traffic during construction. The prepared subgrade should be protected from construction traffic and surface water should be diverted around areas of prepared subgrade.

The site soils are considered to be moisture-sensitive and can disturb when wet. We recommend that construction take place during the dry weather if possible. However, if construction takes place during the wet season, additional expenses and delays should be expected due to the wet conditions. Additional expenses could include the need for placing a blanket of rock spalls on exposed subgrades, construction traffic areas, and paved areas prior to placing structural fill. Wet weather grading will also require additional erosion control and site drainage measures. Applus should be retained to evaluate the suitability of all on-site and imported structural fill material during construction. The exposed subgrade should be compacted to a non-yielding condition. The sloping area above the wall locations should be benched to allow placement of the walls and for wall backfill placement.

Temporary and Permanent Slopes

Temporary cut slope stability is a function of many factors, including the type and consistency of soils, depth of the cut, surcharge loads adjacent to the excavation, length of time a cut remains open, and the presence of surface or groundwater. It is exceedingly difficult under these variable conditions to estimate a stable, temporary, cut slope angle. Therefore, it should be the responsibility of the contractor to maintain safe slope configurations since he is continuously at the job site, able to observe the subsurface materials and groundwater conditions encountered and able to monitor the nature and condition of the cut slopes.

The following information is provided solely for the benefit of the owner and other design consultants and should not be construed to imply that Applus. assumes responsibility for job site safety. Job site safety is the sole responsibility of the project contractor.

For planning purposes, we recommend that temporary cuts in the on-site soils be no steeper than 2.0 Horizontal to 1 Vertical (2.0H: 1V) if greater than 4.0 feet in height. If significant groundwater seepage or surface water flow were encountered, we would expect that flatter inclinations would be necessary. We recommend that cut slopes be protected from erosion. The slope protection measures may include covering cut slopes with plastic sheeting and diverting surface runoff away from the top of cut slopes. We do not recommend vertical slopes for cuts deeper than four feet, if worker access is necessary. We recommend that cut slope heights and inclinations conform to appropriate OSHA/WISHA regulations.

Permanent cut and fill slopes should be no steeper than 2H: 1V, unless specifically approved by Applus. Also, flatter inclinations may be required in areas where loose soils are encountered. Permanent slopes should be vegetated and the vegetative cover maintained until established.

Retaining Wall Design and Construction

Wall Location

We understand the intended purpose of the wall is to provide a level surface to support a daylight basement home within the southern portion of the property. Per our site meeting with you, the wall be approximately 100 feet from back of curb, and adjacent to the upper rockery wall located on your property to the east. You as the contractor will be responsible for field locating the wall based on the approximate location from the Site Plan in Figure 2.

We understand that a 10-foot-wide storm easement exists along the western property line. Under no circumstances should the wall extend into the easement. It shall be your responsibility as the contractor to ensure that the wall does not encroach upon the easement.

Reinforced Block Wall

The top height of block wall should remain consistent across the length of the retaining wall, and we understand that it will generally be up to 20.0 feet in exposed height, not including the additional embedment. We understand that the house will be setback far enough, or footings embedded deep enough to not impart a surcharge load on the wall. We have provided a wall design for up to 20.0 –feet total exposed height with geogrid-reinforced fill utilizing Anchor Diamond Pro blocks. Alternate wall blocks are acceptable but should be approved by Applus prior to use. A geogrid-reinforced wall detail and construction notes are shown in Figure 3, with a wall profile in Figure 4, and additional wall cross-sections in Figures 5.1 through 5.18. The retained fill zone should consist of imported granular material

compacted to structural fill specifications or approved on-site materials. The drainage system, as indicated on the detail, should be installed along the base of the blocks and behind the wall facing.

The block facing should consist of 8.0-inch Anchor Diamond Pro blocks. The block facing should be placed on a minimum of 6-inch thick crushed rock leveling pad placed over competent native basalt. The subgrade should be level and compacted to a non-yielding condition before placing the blocks or backfill. If undocumented fill soils are encountered at the foundation subgrade elevation of the retaining wall, we recommend that the foundation area be over-excavated down to medium dense or better native soils. The engineer should approve all subgrade preparation prior to placement of the leveling pad.

A drainage blanket of 12 inches of free-draining ³/₄-inch clean crushed rock should be placed between the blocks and the retained fill zone. The block cavities should also be filled with the crushed rock. A 4-inch perforated drainpipe should be placed at the bottom of the drainage blanket. The drain should be sloped to drain into an approved system below the retaining wall or daylighted through the wall a minimum of every 50 –feet.

A general profile view of the wall is shown in Figure 4. Additional wall sections are included in Figures 5.1 through 5.18. The wall should be constructed according to these details. Grid lengths will lessen with lessening wall height. If any questions on installation of the wall arise, please contact us prior to proceeding.

All fill placed in the retained fill zone behind the retaining walls should be placed as structural fill. Structural fill, by definition, is placed in accordance with prescribed methods and standards and is monitored by an experienced geotechnical professional or soils technician. Field monitoring procedures would include the performance of a representative number of in-place density tests to document the attainment of the desired degree of relative compaction. The fill subgrade should consist of native medium dense or better soil compacted to a non-yielding condition. The area to receive block or wall backfill should be excavated into a level bench and be free of all fill soils or loose material.

Structural fill should consist of a good quality, imported granular soil, free of organics and other deleterious material and be well graded to a maximum size of about three inches. The material should have no more than 15 percent by weight of the portion passing the US #200 Sieve. The on-site soils are likely suitable for use as structural fill, however additional import fill will be required for construction.

Following subgrade preparation, placement of structural fill may proceed. All fill placements should be accomplished in uniform lifts of no more than 8-inches in loose placed thickness. Each lift should be spread evenly and be thoroughly compacted prior to placement of subsequent lifts. All structural fill should be compacted to a minimum of 95 percent of the material's maximum dry density. Maximum dry density, in this report, refers to that density as determined by the ASTM D 1557 Compaction Test procedure. The moisture content of the soils to be compacted should be within about two percent of optimum so that a readily compactable condition exists. It may be necessary to over-excavate and remove wet soils in cases where drying to a compactable condition is not feasible. All compaction should be accomplished by equipment of a type and size sufficient to attain the desired degree of compaction. As an alternate, compaction can be verified by developing an approved compaction technique as approved by the geotechnical engineer. All material must be compacted to a firm and unyielding condition as verified by the engineer, or to the structural fill specifications above.

If groundwater seepage is encountered or if excessive rainfall occurs during construction of specific aspects, we recommend that the contractor slope the bottom of the excavations and direct the water to ditches and small sump pits. The collected water can then be directed to a suitable discharge point.

USE OF THIS LETTER

Applus has prepared this letter for Dule Mehic and his agents for use in the planning and design of the retaining wall on this site only. This letter is a specific evaluation of the retaining wall area and should not be considered an evaluation of the entire site or the existing residence. The scope of our work does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractors' methods, techniques, sequences, or procedures, except as specifically described in our letter for consideration in design. There are possible variations in subsurface conditions between the explored and unexplored areas and also with time. Our letter, conclusions, and interpretations should not be construed as a warranty of subsurface conditions. A contingency for unanticipated conditions should be included in the budget and schedule.

We recommend that Applus be retained to review project plans prior to construction and to monitor wall Construction. These additional services are intended to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether or not construction activities comply with specifications. We should be contacted a minimum of one week prior to construction activities and could attend preconstruction meetings if requested.

Within the limitations of scope, schedule and budget, our services have been performed in accordance with generally accepted geotechnical engineering practices in effect in this area at the time this letter was prepared. No other warranty, expressed or implied, is made. Our observations, findings, and opinions are a means to identify and reduce the inherent risks to the owner.

0-0-0

We appreciate the opportunity to be of service to you. If there are any questions concerning this letter, or if we can provide additional services, please call.

Sincerely,

Applus, Inc.



Benjamin P. Staehr, PE **Principal Geotechnical Engineer**

Six Figures Attached Boring Logs Attached (4)







Number and approximate location of
 Hand Auger Test



|--|

F	T	

		No.	Date	Revision	Ву	СK
DULE MEHIC		H	6/27/22	Original	BPS	
1050 ALLENWHITE WALL	Arnhice					
RICHLAND, WA						
EXPLORATION SITE PLAN						

Project Number 4035427

FIGURE 2

NOTES:

SPECIFICATIONS FOR REINFORCED WALL

General

1. The contractor shall have an approved set of plans and specifications on site at all times during the construction of the wall. The wall layout is the responsibility of the contractor.

2. Applus should observe and monitor the construction of the wall.

3. Mirafi geogrid 3XT or equivalent shall be used for this project. All geogrid and facing materials shall be approved by Applus prior

to installation.

4. The contractor may use longer geogrid lengths than the design sections for ease of construction. The geogrid lengths may not be shorter unless approved by Applus.

Subgrade Preparation

1. The ground should be prepared by removing surficial organics and loose soil to expose competent native soils as approved by the Applus.

2. A generally level bench with a minimum width equal to the design length of the geogrid is required for placement of the reinforced fill

3. The excavation shall be cleaned of all excess material and protected, as necessary, from construction traffic to maintain the integrity of the subgrade.

4. The base of the excavation should be deep enough to satisfy a minimum embedment of 1.0 feet.

Geogrid Placement

1. The reinforcement shall be rolled out, cut to length, and laid at the proper elevation, location, and orientation. Orientation of the reinforcement is of extreme importance since geogrids vary in strength with roll direction. The contractor shall be responsible for the correct orientation

2. Geogrid shall be placed at the location and elevations shown on the plans. The geogrid length is measured from the back of the block.

3. Prior to placing the fill, the geogrid shall be pulled to remove the slack and stretched by hand until taut and free of wrinkles.

Fill Placement

1. Structural fill, consisting of granular import soils, would then be placed upon the subgrade and geogrid. If larger rock is used in the fill, additional layers of geogrid may need to be used in the reinforcement. The contractor shall prevent damage to the geogrid by placing the first lift of structural fill with at least a 1-foot thickness. Applus shall approve the material placed in the reinforced zone, before placement.

2. Structural fill should consist of 1-inch clean crushed gravel with no more than 15% passing the number 200 sieve or an engineer approved equal.

3. Soil density tests should be performed as designated by the geotechnical engineer.

4. Fill soils in the wall area shall be compacted to at least 95 percent of the Maximum Dry Density (MDD) as determined by ASTM D-1557 or according to a compaction method approved by the geotechnical engineer.

5. The soil shall be placed in relatively uniform horizontal lifts not exceeding 10 or 12 inches in thickness. The lift thickness shall not

exceed the manufacturer's recommended depth for the compactive device used on the project.

Drainage

1. A specific drainage system is shown on the plans. Alternative drains can be used based on conditions found in the field and the material used within the reinforced zone. Changes to the drainage system should be approved by Applus prior to placement. 2. The backfill material used in the reinforced fill zone will provide free drainage within the wall section. A non-woven geotextile fabric (Tencate Mirafi 140N or equal) shall be placed between native or backfill soils and the free-draining backfill to prevent migration of fines into the drain rock.

3. A 4-inch rigid perforated pipe embedded in a minimum of one foot of pea gravel or washed rock and wrapped with filter fabric should be installed at the bottom of the drainage blanket

4. Surface water shall not be allowed to pond in or near the reinforced fill zone during or after construction.

5. Suitable clean-outs should be installed every 50 feet for future maintenance.

Design Parameters

Reinforced Wall Fill: 30 degrees, 0 PSF, 115 PCF Retained Backfill: 30 degrees, 0 PSF, 115 PCF Foundation Soil: 38 degrees, 0 PSF, 135 PCF

External Stability of Wall

Minimum Factor of Safety against Base Sliding: 1.5 Minimum Factor of Safety against Overturning: 2.0 Minimum Factor of Safety against Bearing Capacity: 2.0

Internal Stability of Wall

Minimum Factor of Safety on Geogrid Strength: 1.5 Minimum Factor of Safety on Geogrid Pullout: 1.5 Soil-Geogrid Interaction Coefficient: 1.0 Percent Coverage of Geogrid: 100 Percent

External Loading None

Inspection Wall construction shall be periodically inspected under the direction of Applus.



REINFORCED EARTH RETAINING WALL SECTION (TYP)

NOTE- FOR SPECIFIC DESIGN VALUES, SEE FIGURES 4-8



Project Number			No.	Date	Revision	Ву	CK
4035427	DULE MEHIC		1	6/27/22	Original	BPS	
	1050 ALLENWHITE WALL	4					
		Acouse					
FIGURE 3	RICHLAND, WA						
	RETAINING WALL SPECIFICATION						

Dimensions are imperial (1H:1V)



	_				
	X				
	> >	Š			
	á	ВР			
TW 100.33	on	lar			
10_3XT — 16.50 ft	evisi	rigir			
ID_3XT — 16.50 ft.	Å	0			
ID_3XT - 16.50 ft	ate	7/22			
ND 3XT - 16.50 ft	D	6/2			
ID_3XT - 16.50_ft	<u>.</u>	—			
ND 3XT - 16.50 ft	z				
ND_3XT — 16.50 ft					
ID 3XT - 16.50 ft			Ģ		
			E U)	
TOB 77.33					
$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$					
05 10 15 20				F	
20 10 05			A	Ę	
05 10 15 00 05			A		
20 10 15 0 05			AL		
20 10 05			A		N
20 15 05					NTION
20 15 00					ICATION
20 15 10				WA	ECIFICATION
20 15 10		EHIC	HITE WALL	D, WA	SPECIFICATION
20 15 10		E MEHIC		-AND, WA	VLL SPECIFICATION
20		DULE MEHIC		CHLAND, WA	WALL SPECIFICATION
20		DULE MEHIC		RICHLAND, WA	NG WALL SPECIFICATION
20		DULE MEHIC	1050 ALLENWHITE WALL	RICHLAND, WA	VINING WALL SPECIFICATION
20		DULE MEHIC	1050 ALLENWHITE WALL	RICHLAND, WA	ETAINING WALL SPECIFICATION
20		DULE MEHIC	1050 ALLENWHITE WALL	RICHLAND, WA	RETAINING WALL SPECIFICATION
20	ber	DULE MEHIC	1050 ALLENWHITE WALL	RICHLAND, WA	RETAINING WALL SPECIFICATION
20	lumber	427 DULE MEHIC		RICHLAND, WA	RETAINING WALL SPECIFICATION
20	ict Number	035427 DULE MEHIC		GURE 3 RICHLAND, WA	RETAINING WALL SPECIFICATION
	roject Number	4035427 DULE MEHIC	1050 ALLENWHITE WALL	FIGURE 3 RICHLAND, WA	RETAINING WALL SPECIFICATION