#### State Environmental Policy Act (SEPA) ENVIRONMENTAL CHECKLIST File No.

#### PLEASE READ CAREFULLY BEFORE COMPLETING THE CHECKLIST!

#### **Purpose of Checklist:**

The State Environmental Policy Act (SEPA) chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An Environmental Impact Statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this 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 is required.

#### Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

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 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.

#### Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "*does not apply*."

IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (Part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

# A. BACKGROUND

1.	. Name of proposed project:						
2.	Ap	Applicant:					
3.	Ad	Address:					
	Cit	ty/State/Zip:Phone:					
	Ag	jent or Primary Contact:					
	Ad	ldress:					
	Cit	ty/State/Zip: Phone:					
	Lo	cation of Project:					
	Ad	ldress:					
	Se	ection: Quarter: Township: Range:					
	Та	x Parcel Number(s)					
4.	Da	ate checklist prepared:					
5.	Ag	ency requesting checklist:					
6.	Pr	Proposed timing or schedule (including phasing, if applicable):					
7.	a.	a. Do you have any plans for future additions, expansion, or further activity related to or connected					
		with this proposal? If yes, explain					
	b.	Do you own or have options on land nearby or adjacent to this proposal? If yes, explain,					
		, , , , , , , , , , , , , , , , <u> </u>					
8.	Lis	st any environmental information you know about that has been prepared, or will be prepared,					
	dir	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.
- 10. List any government approvals or permits that will be needed for your proposal, if known.

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.

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 application related to this checklist. \_\_\_\_\_

13. Does the proposed action lie within the Aquifer Sensitive Area (ASA)? The General Sewer Service Area? The Priority Sewer Service Area? The City of Spokane? (See: Spokane County's ASA Overlay Zone Atlas for boundaries.)

- 14. The following questions supplement Part A.
- a. Critical Aquifer Recharge Area (CARA) / Aquifer Sensitive Area (ASA)
  - (1) Describe any systems, other than those designed for the disposal of sanitary waste installed for the purpose of discharging fluids below the ground surface (includes systems such as those for the disposal of stormwater or drainage from floor drains). Describe the type of system, the amount of material to be disposed of through the system and the types of material likely to be disposed of (including materials which may enter the system inadvertently through spills or as a result of firefighting activities).

(2) Will any chemicals (especially organic solvents or petroleum fuels) be stored in aboveground or underground storage tanks? If so, what types and quantities of material will be stored?

(3) What protective measures will be taken to insure that leaks or spills of any chemicals stored or used on site will not be allowed to percolate to groundwater. This includes measures to keep chemicals out of disposal systems.

(4) Will any chemicals be stored, handled or used on the site in a location where a spill or leak will drain to surface or groundwater or to a stormwater disposal system discharging to surface or groundwater? b. Stormwater

	(1)	What are the depths on the site to groundwater and to bedrock (if known)?					
	(2)	Vill stormwater be discharged into the ground? If so, describe any potential impacts.					
в.	ENVIRONMENTAL ELEMENTS						
1.	Earth						
a.	Ger	General description of the site (check one):					
		Flat 🛛 Rolling 🔲 Hilly 🔲 Steep slopes 🔲 Mountainous					
	Oth	er:					
b.	Wha	at is the steepest slope on the site (approximate percent slope)?					
C.	Wha	at 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.

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

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:

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

- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt, or buildings)?
- h. Proposed measures to reduce or control erosion or other impacts to the earth, if any:

# 2. Air

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

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

#### 3. Water

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

(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.

- (3) Estimate the amount of fill and dredge material that would be placed in or removed from the 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? If yes, 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.

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

#### b. GROUNDWATER:

(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.

(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.

- c. WATER RUNOFF (INCLUDING STORMWATER):
- (1) Describe the source of runoff (including stormwater) 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. (2) Could waste materials enter ground or surface waters? If so, generally describe. (3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe. d. PROPOSED MEASURES to reduce or control surface, ground, and runoff water, and drainage patter impacts, if any.

# 4. Plants

a.	neck the type 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?					
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:				

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

# 5. Animals a. Check and 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: Birds: hawk heron eagle songbirds Other: Mammals: deer bear elk beaver Other: Fish: $\Box$ bass $\Box$ salmon $\Box$ trout $\Box$ herring $\Box$ shellfish Other: Other (*not* listed in above categories): b. List any threatened or endangered animal species known to be on or near the site. c. Is the site part of a migration route? If so, explain. d. Proposed measures to preserve or enhance wildlife, if any:

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

#### 6. Energy and natural resources

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

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

#### 7. Environmental health

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

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

(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.

- (3) Describe any toxic or hazardous chemicals/conditions 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.
- (4) Describe special emergency services that might be required.

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

b. NOISE:

8.

a.

b.

What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?				
(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.				
(3) Proposed measure to reduce or control noise impacts, if any:				
Land and shoreline use				
What is the current use of the site and adjacent properties? Will the proposal affect current lan uses on nearby or adjacent properties? If so, describe.				
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 use as a result of the proposal, if any? If resource lands have not been designated, how many acres i				
armland or forest land tax status will be converted to nonfarm or nonforest use?				

	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:
C.	Describe any structures on the site.
d.	Will any structures be demolished? If so, which?
e.	What is the current zoning classification of the site?
f.	What is the current comprehensive plan designation of the site?
g.	If applicable, what is the current shoreline master program designation of the site?

h.	Has any part of the site been classified as a critical area by the city or the county? If so, specify
i.	Approximately how many people would reside or work in the completed project?
j.	Approximately how many people would the completed project displace?
k.	Proposed measures to avoid or reduce displacement impacts, if any:
I.	Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
m.	Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

### 9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or lowincome housing.
- Approximately how many units, if any, would be eliminated? Indicate whether high-, middle- or lowincome housing.
- c. Proposed measures to reduce or control housing impacts, if any:

#### **10. Aesthetics**

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?
- b. What views in the immediate vicinity would be altered or obstructed? \_\_\_\_\_\_

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

### 11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
- b. Could light or glare from the finished project be a safety hazard or interfere with views?
- c. What existing off-site sources of light or glare may affect your proposal?
- d. Proposed measures to reduce or control light and glare impacts, if any:

#### 12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?
- b. Would the proposed project displace any existing recreational uses? If so, describe.
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

#### 13. Historic and cultural preservation

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

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.

- 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 archaeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.
- 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\_\_\_\_\_

### 14. Transportation

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

b. Is 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 \_\_\_\_\_\_

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

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 non-passenger vehicles). What data or transportation models were used to make these estimates?

(Note: to assist in review and if known, indicate vehicle trips during PM peak, AM Peak, and Weekday (24 hours).)

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, general describe.

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

#### 15. Public services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.
- b. Proposed measures to reduce or control direct impacts on public services, if any:\_\_\_\_\_

### 16. Utilities

a. Check 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: \_\_\_\_\_

# C. SIGNATURE

I, the undersigned, swear under penalty of perjury that the above responses are made truthfully and to the best of my knowledge. I also understand that, should there be any willful misrepresentation or willful lack of full disclosure on my part, the *agency* must withdraw any determination of Nonsignificance that it might issue in reliance upon this checklist.

Date:		Signature:Sean W Agriss
Pleas	e Pr	int or Type:
Propo	nen	: Address:
Phone	e: _	
Perso	n co	mpleting form (if different from proponent):
Phone	e:	Address:
FOF	R ST	AFF USE ONLY
Staf	f me	mber(s) reviewing checklist:
Basec conclu	l on Ides	this staff review of the environmental checklist and other pertinent information, the staff that:
	A.	there are no probable significant adverse impacts and recommends a Determination of Nonsignificance.
	В.	probable significant adverse environmental impacts do exist for the current proposal and recommends a Mitigated Determination of Nonsignificance with conditions.
	C.	there are probable significant adverse environmental impacts and recommends a

Determination of Significance.

### D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

#### (Do not 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 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.

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?
 It

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, flood plains 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.

# C. SIGNATURE

I, the undersigned, swear under penalty of perjury that the above responses are made truthfully and to the best of my knowledge. I also understand that, should there be any willful misrepresentation or willful lack of full disclosure on my part, the *agency* may withdraw any Determination of Nonsignificance that it might issue in reliance upon this checklist.

Date:	Signature:	Sean W Agriss
Please Print or Type:		
Proponent:	/	Address:
Phone:		
Person completing form (if differ	ent from propor	ent):
Phone:	Ado	dress:

FOR STAFF USE ONLY			
Staff member(s) reviewing checklist:			
Based on this staff review of the environmental checklist and other pertinent information, the staff concludes that:			
A.  there are no probable significant adverse impacts and recommends a Determination of Nonsignificance.			
B. D probable significant adverse impacts do exist for the current proposal and recommends a Mitigated Determination of Nonsignificance with conditions.			
C.  there are probable significant adverse environmental impacts and recommends a Determination of Significance.			



USDA Natural Resources Conservation Service Web Soil Survey National Cooperative Soil Survey



USDA

# Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7107	Urban land, basalt bedrock substratum, 0 to 15 percent slopes	0.8	100.0%
Totals for Area of Interest		0.8	100.0%



# National Flood Hazard Layer FIRMette



# EXHIBIT B



Basemap Imagery Source: USGS National Map 2023

# EXHIBIT C



Priority Habitats and Species on the Web



# Report Date: 05/07/2024

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Big brown bat			Yes

PHS Species/Habitats Details:

Big brown bat			
Scientific Name	Eptesicus fuscus		
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at phsproducts@dfw.wa.gov for obtaining information about masked sensitive species and habitats.		
PHS Listing Status	PHS Listed Occurrence		
Sensitive	Y		
Display Resolution	TOWNSHIP		
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605		

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.



# EXHIBIT D

# SITE PLAN KEYNOTES SP

- SP-1ACCESSIBLE PATH W/ STRIPING TO TRASH ENCLOSURESP-2ADA ACCESSIBLE PARKING, ACCESSIBLE PARKING SIGNAGE AND WHEELSTOP, SEE CIVIL DWGS FOR DETAILS

- CIVIL DWGS FOR DETAILS SP-3 SWALE AREA, SEE CIVIL DWGS SP-4 LINE OF ROOF OVERHANG ABOVE SP-5 CONC SIDEWALK W/ MED BROOM FINISH, TYP, SEE CIVIL DWGS SP-6 6" CONC FILLED STL BOLLARDS, TYP SP-7 (1) REMOVABLE LAY DOWN BOLLARDS SP-8 MAILBOXES (13 DOOR FLORENCE CBU CLUSTER MAILBOX 4C13D-13-SM USPS APPROVED BLACK) APPROVED – BLACK)
- SP-9 EXISTING UTILITY POLE SP-10 TRASH ENCLOSURE W/ (2) 2 YARD CONTAINERS (14'-6" x 9' ENCLOSURE W/ ADA
- ACCESSIBLE GATE) SP-11 ELECTRIC METER AND PANEL SEE ELEC DWGS
- SP-12 FIRE RISER AND IRRIGATION CONTROL ROOM, SEE ELEC AND CIVIL DWGS FOR MORE INFORMATION
- SP-13 EXISTING SIDEWALK AND IMPROVEMENTS TO REMAIN SEE CIVIL FOR TIE IN TO NEW CONC.
- SP-14 STL COLUMN PER STRUCT., SEE STRUCT. FOR PROTECTION OF BASE, PAINT (P-1) SP-15 ELECTRICAL TRANSFORMER, SEE ELEC & CIVIL DWGS SP-16 ELECTRICAL COMMUNICATION ROOM
- SP-17 6'H VINYL COATED CHAIN LINK FENCE (BLACK) SP-18 SIGNAGE TO BE DETERMINED BY ARCHITECT AND OWNER
- SP-19 STEP IN SIDEWALK PER CIVIL SP-20 WIDENED SIDEWALK SEE CIVIL
- SP-21 1/2"Ø STEEL HANDRAIL, 36"H, EXTEND BEYOND TOP & BOTTOM RISERS 12", PAINT. CORE SP-21I/2 © STELE HANDKAL, 30 H, EXTEND BETOND TODRILL AND GROUT. (TYP BOTH SIDES AT STAIR)SP-22ADA RUBBER STRIP, SEE CIVIL DWGSSP-23CONC. INLET, SEE CIVIL DWGS



# TREKARCHITECTURE



ARCHITECT TREK ARCHITECTURE 122 S MONROE, STE #202 SPOKANE, WA 99201 509.315.4830 HELLO@TREKARCH.COM

OWNER INTERROWORKS, LLC 2618 W SINTO AVE SPOKANE, WA 99201

PROFESSIONAL SEAL

# NEW MULTI-FAMILY BUILDING FOR: **MADISON & SHARP** MULTIFAMILY

ADDRESS 1009 W SHARP AVE SPOKANE, WA 99202

<u>ЈОВ</u> 24.14

DRAWN BY

CHECKED BY

SCALE As indicated

DATE 02.14.24

PROJECT STATUS

REVISIONS # DESCRIPTION

DATE

SITE PLAN



# EXHBIT E



# **Geotechnical Evaluation Report**

Madison-Sharp Multi-Family 1009 West Sharp Avenue and 1232 North Madison Street Spokane, Washington

Prepared for: Madison Sharp, LLC Spokane, WA

# **Professional Certification:**

This report was prepared by me or under my direct supervision, and I am a duly registered engineer under the laws of the State of Washington.



Gregory J. Voigt, P.E. Geotechnical Engineer



Intermountain Materials Testing & Geotechnical Project No. S24651 May 14, 2024 **INTERMOUNTAIN MATERIALS TESTING & GEOTECHNICAL** 



9401 E. Appleway Blvd. Spokane Valley, WA 99206 (509) 474-9764

May 14, 2024 Project No. S24651

Sean Agriss Madison Sharp, LLC PO Box 10024 Spokane, WA 99209

Re: Geotechnical Evaluation Madison-Sharp Multi-Family 1009 West Sharp Avenue and 1232 North Madison Street Spokane, Washington

Dear Mr. Agriss:

We have completed the geotechnical evaluation for the proposed project located at the abovereferenced site in Spokane, Washington. The purpose of the evaluation was to assess the subsurface geologic conditions at selected exploration locations and evaluate their impact on the design and construction of foundations, slabs, pavements, underground utilities, and stormwater management facilities and in preparation of plans and specifications for construction.

We appreciate the opportunity to provide our services to you on this project. If you have any questions or need additional information, please do not hesitate to call us at (509) 474-9764 at your convenience.

Sincerely, INTERMOUNTAIN MATERIALS TESTING & GEOTECHNICAL

Gregory J. Voigt, P.E. Geotechnical Engineer

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#### Intermountain Materials Testing & Geotechnical

Geotechnical Engineering • Materials Testing • Construction Inspection •

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# **1.0 INTRODUCTION**

# **1.1 Project Description**

We understand the project will consist of the construction of two 4-story multi-family buildings at the site along with associated pavement areas and stormwater management facilities. The buildings will each have footprints of 3,800 square feet. We have assumed the proposed buildings will have wood-framing, slabs-on-grade, and will be supported on conventional spread foundations.

# **1.2 Purpose**

The purpose of the evaluation was to assess the subsurface geologic conditions at selected exploration locations and evaluate their impact on the design and construction of foundations, slabs, pavements, underground utilities, and stormwater management facilities and in preparation of plans and specifications for construction.

# 1.3 Scope

Our services were requested by Mr. Sean Agriss of Madison Sharp, LLC. Mr. Agriss authorized us to proceed on April 16, 2024. The scope of work agreed upon consisted of the following:

- Review of existing geotechnical data and reports, if available
- Observe the excavation of 4 test pits at the site to depths ranging from 5 to 15 feet
- Perform laboratory tests on samples obtained from the test pits, if necessary
- Classify the soils and prepare test pit logs
- Submit a geotechnical report containing logs of the test pits, results of our field investigation, our analyses and our recommendations for design and construction

# **1.4 Available Information**

We were provided a site plan for the project. The plan showed the locations of the proposed buildings, existing buildings, and property lines. The plan did not show an author and was undated.

# **1.5 Locations and Elevations**

The test pits were excavated at or near locations selected by us. The approximate test pit locations are shown on the Exploration Location Map in Appendix A. The test pits were performed by an excavator working under subcontract to Intermountain Materials Testing & Geotechnical (IMT). Surface elevations at the test pit locations were not obtained as part of our scope.

# 2.0 RESULTS

# 2.1 Logs

Log of Test Pit sheets indicating the vertical sequence of soils and materials encountered and groundwater observations are included in Appendix B. The strata changes were measured during excavation of the test pits. Please note that the depths shown as changes between the strata are only approximate. The changes are likely transitions, and the depths of changes vary between the test pits. Geologic origins for each stratum are based on the soil type, available geologic maps, previous geotechnical reports for this and adjacent sites, and available common knowledge of the depositional history of the site.

# 2.2 Site Conditions

The site is located at 1009 West Sharp Avenue and 1232 North Madison Street. Two residential buildings are present at the western end of the site. We understand these buildings will remain. The rest of the site generally consists of grass/weed covered open space. The proposed building areas are relatively level.

# 2.3 Soils

Geologic maps indicate the soils in this area consist primarily of glacial flood deposits and basalt bedrock. According to the Natural Resources Conservation Service (NRCS) Soil Survey of Spokane County, the site soils are classified as Urban land, basalt bedrock substratum (7107). The native soils encountered in the test pits generally consisted of glacial flood deposits.

At the surface, the test pits encountered topsoil to depths of up to about a ½ foot. Below the topsoil, the test pits encountered existing fill to depths of up to about 2 feet. Below the fill, the test pits encountered glacial flood deposits to their termination depths. The glacial flood deposits consisted of silty to poorly graded gravel.

# 2.4 Groundwater

Groundwater was not encountered in the test pits during or immediately after excavation. Seasonal and annual fluctuations of groundwater should be anticipated.

# 2.5 Laboratory Testing

Two moisture content (MC) tests and two percent passing the #200 sieve (P200) tests were performed on samples obtained from Test Pits TP-1 and TP-5. The tests were performed in accordance with ASTM D2216 and ASTM D1140, respectively. The results of the tests are listed on the test pit logs in Appendix B.

# 3.0 BASIS FOR RECOMMENDATIONS

# **3.1 Design Details**

We have assumed that wall loads for the buildings will be on the order of 3 to 4 kips per lineal foot and that column loads will be less than 100 kips. We have also assumed that grades at the site will remain within 5 feet of existing grades. Furthermore, we have assumed that traffic loads will consist primarily of light automobile traffic with occasional truck traffic.

We recommend our firm review the geotechnical aspects of the final design and specifications to evaluate whether the design is as expected and whether our recommendations have been incorporated into the construction documents.

# **3.2 Design and Construction Considerations**

Based on the data obtained from the test pits, it is our opinion the proposed buildings can be supported on conventional spread footings bearing on the native soils or on compacted structural fill placed over the native soils. The floor slabs can also be placed over the native soils or on compacted structural fill placed over the native soils.

In the pavement areas, the native soils should provide adequate support for the anticipated traffic loads. Based on the data obtained from the test pits and the laboratory testing performed, it is our opinion that swales with drywells would be suitable for the infiltration of stormwater.

# 4.0 ANALYSIS AND RECOMMENDATIONS

# 4.1 Site Preparation and Grading

We recommend that all topsoil and undocumented fill, if present, be excavated and removed from below proposed foundations, slabs, and pavements and their 1H:1V oversize areas. We also recommend that any materials associated with previous structures (foundations, slabs, pavements, etc.) and utilities be removed from these areas. After these soils and materials have been removed, we recommend surface compacting the exposed soils prior to placing structural fill or forms for footings.

# 4.2 Engineered Fill

Structural fill should be defined as soils placed as fill below foundations, slabs, and pavements and their 1H:1V oversize areas. We recommend that structural fill be specified to meet the following requirements:

- Free of organic or foreign materials
- Soils have an ASTM or USCS soil designation with a prefix letter of S or G (e.g. SM, SP, GP, etc.)
- 100% passing the 3-inch sieve (100% passing the 6-inch sieve in pavement areas)

- Less than 15% passing the #200 sieve (less than 30% passing the #200 sieve in pavement areas)
- Able to be placed and compacted by standard equipment per the requirements of this report

Granular soils with less than 5% passing the #200 sieve may be needed to accommodate work occurring during periods of wet or freezing weather.

Structural fill should be placed in 6 to 8-inch-thick loose lifts at or near optimum moisture content and compacted to a minimum of 95 percent of the maximum dry density determined in accordance with ASTM D1557 (modified Proctor). Non-structural fill should be placed in 12-inch-thick loose lifts and compacted to at least 85 percent of the modified Proctor maximum dry density.

# 4.3 Foundations

We recommend that continuous foundations be placed at least 24 inches below the exposed ground surface for frost protection or as required by local building codes. Interior footings can be placed immediately below the slab. For unheated footings, we recommend that they be placed a minimum of 36 inches below the exposed ground surface.

We recommend that all subgrades be evaluated by a geotechnical engineer for support of the proposed construction. Soils judged to be unsuitable should be subexcavated and replaced with compacted structural fill. All foundation bearing surfaces should be free of loose soil and debris. If the foundation bearing soils are disturbed by excavation, the exposed soil should be recompacted to a minimum of 95 percent of the modified Proctor maximum dry density.

We recommend that any subexcavations be oversized (widened) 1 foot horizontally from the edges of the footings for each foot of excavation below bottom-of-footing grade (1:1 excavation oversizing). Attached in Appendix A is a cross section that illustrates 1:1 excavation oversizing.

If the foundation subgrades have been prepared as recommended above, it is our opinion that spread footings may be designed for a net allowable bearing pressure of up to 3,000 pounds per square foot (psf). This recommended bearing capacity includes a safety factor of at least 3.0 against shear failure. The maximum net allowable bearing pressure value may be increased up to 30 percent to account for transient loads such as wind and seismic.

If the previous recommendations are implemented, it is our opinion that total settlement will be less than 1 inch. It is also our opinion that differential settlement will be less than  $\frac{1}{2}$  inch across 40 feet.

We recommend that all backfill placed on the exterior sides of foundation walls be compacted to a minimum of 90 percent of the modified Proctor maximum dry density. Beneath slabs, steps, and pavements, it should be compacted to a minimum of 95 percent. Backfill should be brought

up uniformly on both sides of the foundation walls to minimize displacement of the foundation walls.

# 4.4 Lateral Resistance

Passive earth pressures and friction between the bottom of footings and the soil can resist lateral pressures. For passive pressures, we recommend using an equivalent fluid pressure of 300 pounds per cubic foot (pcf). For mass concrete placed over the native gravels or granular structural fill, we recommend using a coefficient of friction against sliding of 0.45.

These values assume that foundation subgrades will be prepared as recommended above. They also assume the on-site soils will be used as foundation wall backfill and will be placed and compacted in accordance with this report. The values are un-factored.

# 4.5 Floor Slabs

After the construction of the building pads has been completed, we anticipate the slab subgrades will consist of silty gravel or structural fill. Interior footing subgrades and mechanical trench backfill should be compacted to a minimum of 95 percent of the modified Proctor maximum dry density.

We recommend placing a minimum of 6 inches of crushed aggregate having less than 5 percent by weight passing a 200 sieve immediately below the slabs. This aggregate cushion will reduce moisture transmission to the floor slabs from the subgrade soils by creating a capillary break. The aggregate cushion should be compacted to a minimum of 95 percent of the modified Proctor maximum dry density.

If floor coverings or coatings will be used, a vapor retarder or barrier should be placed immediately beneath the slab. We also recommend consulting with the designer of the buildings and floor covering manufacturers regarding the appropriate type, use, and installation of the vapor retarder or barrier.

# 4.6 Exterior Slabs

The near surface soils at the site are considered to be low to moderately frost-susceptible. If these soils become saturated and freeze, heave may occur. This heave may become a nuisance for slabs or steps in front of doors or at other critical grade areas adjacent to building and could affect design drainage patterns.

One of the more conservative ways to reduce the potential for this heave is to remove the frostsusceptible soils down to bottom-of-footing grade or a maximum depth of 3 feet. The resulting excavation should then be replaced with non-frost-susceptible sand or sandy gravel. Sand or sandy gravel having less than 5 percent of the particles by weight passing a 200 sieve is considered to be non-frost-susceptible. We also recommend sloping the bottom of the excavation toward one or more collection points to remove any water entering the engineered fill. This approach will not be effective in controlling frost heave without removing the water. We would be available to discuss alternative approaches.

# 4.7 Seismic Conditions

We anticipate the 2018 International Building Code (IBC) will be used as the basis for design of the proposed buildings. Based on the test pits and our experience in the area, it is our opinion the site classifies as a seismic Site Class D. The following table gives recommended seismic design parameters which are based on the 2018 IBC. The 2018 IBC references the 2016 Minimum Design Loads for Buildings and Other Structures (ASCE 7-16).

Seismic Design Parameters	Recommended Parameters
Site Class	D
Mapped Spectral Response Acceleration at Short Periods (S <sub>S</sub> )	0.307
Mapped Spectral Response Acceleration at 1 Second Period (S <sub>1</sub> )	0.112
Site Amplification Factor at 0.2 Second Period (F <sub>a</sub> )	1.554
Site Amplification Factor at 1 Second Period (F <sub>v</sub> )	2.377

# 4.8 Utilities

We anticipate support soils for utilities will consist primarily of silty to poorly graded gravel. It is anticipated that utilities can be installed per manufacturer bedding requirements. Unsuitable soils (e.g., loose, soft, organic, etc.), if encountered, should be removed and replaced with structural fill. We recommend that utilities not be placed within the 1H:1V oversizing of foundations. For trench sidewall support, the site soils are considered to be Type C soils according to Occupational Safety and Health Administration (OSHA) guidelines.

Backfill placed over the utilities should consist of a debris-free mineral soil. Soils from the trench excavation can be used as backfill above the pipe provided that large particles, organics, and all debris is removed. Backfill should be placed and compacted to a minimum of 95 percent of the modified Proctor maximum dry density. Compaction to 85 percent would be suitable in landscaped areas.

# 4.9 Site Grading and Drainage

We recommend that the site be graded to provide positive runoff away from proposed structures. We recommend that landscape areas be sloped a minimum of 6 inches within 10 feet of structures and that slabs be sloped a minimum of 2 percent.

# 4.10 Stormwater Recommendations

Based on the data obtained from the test pits and the laboratory testing performed, it is our opinion that swales with drywells would be suitable for the infiltration of stormwater. We estimated design outflow rates for single-depth drywells using the results of the laboratory testing and the procedures described in the Spokane Regional Stormwater Manual (SRSM), Appendix 4A (Spokane 200 Method). The following table summarizes the results of the analysis.

Test Pit	Depth (feet)	USCS Classification	Percent Fines	Normalized Outflow Rate (cfs/ft)	Recommended Design Drywell Outflow Rate (cfs) Single-Depth
TP-1	8	GP	4.8	0.084	0.3
TP-5	8	GP	5.0	0.079	0.3

These recommended design outflow rates include a safety factor of 1.3 as required by the SRSM. Active drywell barrels should be placed in the poorly graded gravel (GP) soils.

# 4.11 Pavements

# 4.11.a Subgrade Preparation

After removing the topsoil and any undocumented fill as recommended in Section 4.1, we recommend that the upper 8-inches of the resulting subgrade be scarified, moistened or dried to within 3 percent of optimum moisture, and compacted to a minimum of 95 percent of the modified Proctor maximum dry density. Where fill is required, we recommend that it be similarly moisture conditioned and compacted. If there are areas that cannot be compacted, we recommend that the unstable soils be removed and replaced with soils similar to the surrounding subgrade soils.

We recommend that the subgrade surface be shaped to provide for positive drainage to minimize the potential for water to pond in the subgrade. It is important to avoid creating "bathtubs" in the subgrade where water can pond and freeze, which could heave the pavement.

After preparing the subgrade, we anticipate it will consist primarily of silty gravel or structural fill. These soils are low to moderately sensitive to disturbance, especially when wet. If these soils are wet, we recommend that construction traffic be minimized where these soils are exposed. If these soils become unstable, other measures such as excavation and replacement or geotextile fabric may be necessary.

# 4.11.b Test Rolling

Prior to placing the aggregate base, we recommend that all subgrade areas be proof-rolled with a loaded dump truck. This precautionary measure would assist in detecting any localized soft areas. Any soft areas discovered during the proof-rolling operation should be excavated and replaced with a suitable structural fill material. The structural fill should be similar to the existing subgrade soil type to provide a uniform subgrade. We recommend that the proof-rolling process be observed by an experienced geotechnical engineer to make the final evaluation of the subgrade.

# 4.11.c Pavement Section Design

Based on the data obtained from the test pits and the assumed traffic loads, we recommend a pavement section consisting of a minimum of 2 inches of asphalt over 6 inches of crushed gravel

base for the on-site parking areas. The asphalt thickness should be increased to 3 inches if significant truck traffic is anticipated.

If anticipated traffic data becomes available, we should be notified so we can review our pavement recommendations and provide revisions if necessary.

# 4.11.d Materials and Compaction

We recommend specifying crushed gravel base meeting the requirements of the Washington Department of Transportation (WSDOT) Standard Specification 9-03.9(3) for crushed gravel surfacing (base course and/or top course). The crushed gravel surfacing should be compacted to a minimum of 95 percent of the modified Proctor maximum dry density.

We recommend that the asphalt pavement meets the requirements of the WSDOT Standard Specification for Class <sup>1</sup>/<sub>2</sub> inch hot-mixed asphalt pavements. The asphalt should be compacted to a minimum of 92 percent of the Rice density.

# **5.0 CONSTRUCTION**

# 5.1 Excavation

Based on the test pits, it is our opinion the on-site soils can be excavated with standard soil excavation equipment. For footing excavations, we recommend a backhoe with a smooth-lipped bucket to minimize disturbance. The native soils and existing fill are considered to be Type C soils under OSHA guidelines. Unsupported excavations in Type C soils should be maintained at a gradient no steeper than 1½:1 (H:V). Deeper excavations should be shored or braced in accordance with OSHA specifications and local codes. The contractor is responsible for providing appropriate trench wall support and/or slopes.

# **5.2 Excavation Dewatering**

We do not anticipate groundwater being encountered in excavations. However, if stormwater accumulates in excavations, we recommend dewatering. When final plans are available, we should be contacted to discuss dewatering options.

# **5.3 Observations**

We recommend that a geotechnical engineer from IMT observe all subgrades prior to placing fill or forms for footings to evaluate if the soils are suitable for support of the proposed construction and to evaluate whether the subsurface conditions are consistent with the test pits.

# 5.4 Backfills and Fills

Backfills and fills should be moisture conditioned to near optimum moisture content to achieve adequate compaction and placed in thin lifts not exceeding 6 to 8 inches. It is our opinion that engineered fill should meet the requirements provided in Section 4.2 of this report. Based on the test pits, the native, inorganic gravels at the site would be suitable for reuse as structural fill

provided large particles are removed. Furthermore, based on the test pits, it is our opinion that the existing fill is not suitable for reuse as structural fill in the building areas but could be reused in pavement and landscaped areas provided that large particles and all debris is removed.

# 5.5 Testing

We recommend in-place density tests be performed on all fill placed. Density testing should be performed at the frequencies recommended as follows:

Fill Location	Recommended Testing Frequency
Building Area, Pavement Area, Mass Grading	2,500 square feet, each 1-foot lift
Foundation Subgrade and Wall Backfill	50 linear feet, each 1-foot lift
Utility Trench Backfill	100 linear feet, each 2-foot lift

# **5.6 Cold Weather**

If site grading and construction are anticipated during cold weather, we recommend that good winter construction practices be observed. All snow and ice should be removed from excavated and fill areas prior to additional earthwork or construction. No fill, footings, or slabs should be placed on soils which have frozen or contain frozen material. Frozen soils should not be used as backfill or fill.

Concrete delivered to the site should meet the temperature requirements of ASTM C94. Concrete should not be placed upon frozen soils or soils which contain frozen material. Concrete should be protected from freezing until the necessary strength is achieved. Frost should not be permitted to penetrate below footings bearing on frost-susceptible soils since such freezing could heave and crack the footings and/or foundation walls.

# 5.7 Wet Weather

The soils encountered at the site are low to moderately sensitive to disturbance when wet. If these soils become wet and unstable, we recommend that construction traffic be minimized where these soils are exposed. Low ground pressure (tracked) equipment should be used to minimize disturbance. For high traffic areas, such as access or haul roads, we recommend placing a woven, water-permeable geotextile fabric and 12 to 18 inches of crushed gravel to reduce disturbance. Specific options should be evaluated during construction in order to select the most cost-effective option.

# **6.0 PROCEDURES**

# 6.1 Excavation and Sampling

The test pits were excavated on May 6, 2024 using a backhoe operated by an independent firm working under subcontract to IMT. A geotechnical engineer from our firm continuously observed the test pit excavations and logged the surface and subsurface conditions. The test pits were backfilled after excavation.

# 6.2 Soil Classification

The soils encountered in the test pits were visually and manually classified in the field by our field personnel in accordance with ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedures)".

# 7.0 GENERAL RECOMMENDATIONS

# 7.1 Basis of Recommendations

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

# 7.2 Groundwater Fluctuations

We made water level observations in the test pits at the times and conditions stated on the test pit logs. This data was interpreted in the text of this report. The period of observation was relatively short and fluctuation in the groundwater level may occur due to rainfall, flooding, irrigation, spring thaw and other seasonal and annual factors not evident at the time the observations were made. Design drawings and specifications and construction planning should recognize the possibility of fluctuations.

# 7.3 Use of Report

This report is for the exclusive use of the addressed parties. In the absence of our written approval, we make no representations and assume no responsibility to other parties regarding this report. The data, analyses, and recommendations may not be appropriate for other parties or projects.

# 7.4 Level of Care

Services performed for this project have been conducted in a manner consistent with that level of care ordinarily exercised by reputable members of the profession currently practicing in this area under similar circumstances. No warranty, express or implied, is intended or made.

# APPENDIX A

# EXPLORATION LOCATION MAP, EXCAVATION OVERSIZING ILLUSTRATION





# APPENDIX B

# LOGS OF TEST PITS AND DESCRIPTIVE TERMINOLOGY



TP-1						TP-1
Project:	ect: Madison-Sharp Multi-Family					S24651
Location:		Spokane, WA	С	)ate	:	5/6/24
Client:		Madison Sharp, LLC	L	.ogg	jed By:	GV
Test Pit Loc.						
Depth (Ft.) Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL		Tests or Notes
0	SM	SILTY SAND, fine to medium-grained, with				
	GM	roots, trace of gravel, dark brown to black, damp. (Topsoil)				
	GM	FILL: Silty Gravel with Sand, fine to coarse- grained, with Cobbles, dark brown to black, damp. SILTY GRAVEL with SAND, fine to coarse- grained, with Cobbles, brown, damp. (Glacial Flood Deposit)				
8 -	GP	POORLY GRADED GRAVEL with SAND, fine- grained, brown and gray, damp. (Glacial Flood Deposit)			ŗ	MC=4.1%, P200=4.8%
		End of test pit (due to caving). Groundwater not encountered.				
10 -		Test pit backfilled.				
12 -						
14 -						



TP-2
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Projec	roject: Madison-Sharp Multi-Family		Project: Madison-Sharp Multi-Family				Proje	ect No:	S24651
Locati	cation: Spokane, WA			D	)ate	:	5/6/24		
Client	:	Madison Sharp, LLC			Madison Sharp, LLC Logged By: GV				GV
Test F	Pit Loc.:		See attached map.	E	leva	ation:			
Depth (Ft.)	Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL		Tests or Notes		
0	* * * * * * * * * * * * * *	SM	SILTY SAND, fine to medium-grained, with						
		GM	roots, trace of gravel, dark brown to black, damp. (Topsoil) FILL: Silty Gravel with Sand, fine to coarse- grained, with Cobbles, with debris (concrete),						
- - 4 -		GM	(Glacial Flood Deposit)						
6 — - -		GP	POORLY GRADED GRAVEL with SAND, fine- grained, brown and gray, damp. (Glacial Flood Deposit)						
8 –	· · · ·		End of test pit (due to caving)						
-			Groundwater not encountered. Test pit backfilled.						
10 — - -									
12 — - -									
14 —									



TP-3						
Project:	Madison-Sharp Multi-Family	F	Proj	ect No:	S24651	
Location:	Spokane, WA	Date: 5/6/24				
Client:	Madison Sharp, LLC	Logged By: GV				
Test Pit Loc.:	See attached map.	E				
Depth (Ft.) Graphic Log USCS Classification	SOIL DESCRIPTION	Sample	WL		Tests or Notes	
0 SM GM 2 - GM 4	SILTY SAND, fine to medium-grained, with roots, trace of gravel, dark brown to black, damp. (Topsoil) FILL: Silty Gravel with Sand, fine to coarse- grained, with Cobbles, dark brown to black, damp. SILTY GRAVEL with SAND, fine to coarse- grained, with Cobbles, brown, damp. (Glacial Flood Deposit)					
6 - GP-GM	POORLY GRADED GRAVEL with SILT and SAND, fine to coarse-grained, with Cobbles, brown, moist. (Glacial Flood Deposit)					
	End of test pit (due to caving). Groundwater not encountered. Test pit backfilled.					
10						



TP-5								
Project:		Madison-Sharp Multi-Family	F	ect No: S24651				
Location:		Spokane, WA	Date: 5/6/24					
Client:		ged By: GV						
Test Pit Loc.:	Loc.: See attached map. Elevation:							
Depth (Ft.) Graphic Log	USCS Classification	SOIL DESCRIPTION	Sample	WL	. Tests or Notes			
0	SM	SILTY SAND, fine to medium-grained, with						
2	SM	roots, trace of gravel, dark brown to black, damp. (Topsoil) FILL: Silty Sand with Gravel, fine to medium- grained, with debris (bricks), dark brown to	-					
- - - - - - - - - - - - - - - - - - -	GM	SILTY GRAVEL with SAND, fine to coarse- grained, with Cobbles, brown, damp. (Glacial Flood Deposit)						
8-	GP	POORLY GRADED GRAVEL with SAND, fine- grained, brown and gray, damp. (Glacial Flood Deposit)			MC=4.7%, P200=5.0%			
- 10 -		End of test pit (due to caving). Groundwater not encountered. Test pit backfilled.						
12 -								
14 -								

	MAJOR DIVISION		GROUP SYMBOL	LETTER SYMBOL	GROUP NAME
		GRAVEL WITH		GW	Well-graded GRAVEL
		<u>* 5% FINES</u>		GP	Poorly graded GRAVEL
	GRAVEL AND GRAVELLY			GW-GM	Well-graded GRAVEL with silt
	SOILS MORE THAN			GW-GC	Well-graded GRAVEL with clay
	COARSE FRACTION	AND 12% FINES		GP-GM	Poorty graded GRAVEL with silt
	RETAINED ON NO. 4 SIEVE			GP-GC	Poorly graded GRAVEL with clay
COARSE		GRAVEL WITH		GM	Silty GRAVEL
GRAINED SOILS		<u>&gt;</u> 12% FINES	(A) (A) (A)	GC	Clayey GRAVEL
CONTAINS MORE THAN 50% FINES		SAND WITH		SW	Well-graded SAND
JU% FINES		<u>* 5% FINES</u>		SP	Poorly graded SAND
	SAND AND	SAND WITH		SW-SM	Well-graded SAND with silt
	MORE THAN 50% OF			SW-SC	Well-graded SAND with clay
	COARSE FRACTION	AND 12% FINES		SP-SM	Poorly graded SAND with silt
	NO. 4 SIEVE			SP-SC	Poorly graded SAND with clay
		SAND WITH		SM	Silty SAND
		<u>&gt;</u> 12% FINES		SC	Clayey SAND
				ML	Inorganic SILT with low plasticity
FINE		LIQUID LIMIT LESS THAN 50		CL	Lean inorganic CLAY with low plasticity
GRAINED	SILT			OL	Organic SILT with low plasticity
CONTAINS MORE THAN 50% FINES	CLAY			MH	Elastic inorganic SILT with moderate to high plasticity
JU% FINES		LIQUID LIMIT GREATER THAN 50		СН	Fat inorganic CLAY with moderate to high plasticity
				OH	Organic SILT or CLAY with moderate to high plasticity
HIGHLY ORGANIC SOILS			<u> </u>	PT	PEAT soils with high organic contents

# **UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2488**

NOTES:

- 1) Sample descriptions are based on visual field and laboratory observations using classification methods of ASTM D2488. Where laboratory data are available, classifications are in accordance with ASTM D2487.
- 2) Solid lines between soil descriptions indicate change in interpreted geologic unit. Dashed lines indicate stratigraphic change within the unit.
- 3) Fines are material passing the U.S. Std. #200 Sieve.

Intermountain Materials Testing & Geotechnical

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