APPENDIX I

PRELIMINARY GEOTECHNICAL EVALUATION

August 3, 2023

Park Pointe Development, Inc.
1500 West Bannock Street
Boise, Idaho 83702

Attention: Craig Groves [redacted]

RE: Preliminary Geotechnical Evaluation
Loomis Lane Development
Loomis Lane and Old State Road
Valley County, Idaho
ALLWEST Project No. 523-250G

Mr. Groves:

ALLWEST has completed the authorized preliminary geotechnical evaluation for the proposed Loomis Lane Development to be located on the southwest corner of Loomis Lane and Old State Road in Valley County just south of Donnelly, Idaho. The purpose of this evaluation was to characterize subsurface soil and water conditions at the site and provide preliminary geotechnical information and recommendations for the proposed development.

The recommendations provided herein are preliminary in nature and should be used for preliminary planning and design purposes only. As such, this submittal is not professionally sealed and should not be utilized for final design and construction. We should be afforded the opportunity to review final development/grading plans, to determine if additional evaluation is necessary to finalize our recommendations relative to the planned development.

We appreciate the opportunity to provide services for this project. If you have any questions or need additional information, please contact us at (208) 895-7898.

Sincerely,
ALLWEST

Kevin Dyekman, P.G.
Engineering Services Manager

Adrian Mascorro, P.E
Area Manager

PRELIMINARY GEOTECHNICAL EVALUATION
LOOMIS LANE DEVELOPMENT
LOOMIS LANE AND OLD STATE ROAD
VALLEY COUNTY, IDAHO
ALLWEST PROJECT NO. 523-250G

August 3, 2023

Prepared for:
PARK POINTE DEVELOPMENT, INC.
1500 WEST BANNOCK STREET
BOISE, IDAHO 83702

Prepared by:
ALLWEST
255 NORTH LINDER ROAD, SUITE 100
MERIDIAN, IDAHO 83642

EXECUTIVE SUMMARY

The following summarizes select geotechnical information/recommendations from this evaluation:

- Surficial soils containing significant vegetation, roots, and/or organic debris were observed during our exploration. These soils are considered compressible and can degrade with time; as such, these surficial soils should be stripped within planned fill and development areas, prior to earthwork construction.
- Surficial sandy silt and silty sand soils were observed to be soft and loose, respectively, to depths of 1.5 to 2.5 feet below existing ground. Soft and loose soils may be prone to settlement and are not suitable to support fill soils, structures, or other improvements.
- We understand that ponds may be constructed as part of the development. Slope stability analysis should be performed prior to development to establish suitable pond slope inclinations and heights, as well as structural setbacks (if needed).
- In general, subsurface soils within the observed test pits consisted of sandy lean clays, sandy silts, silts with sand, silty sands, poorly-graded sands, and poorly-graded sands with silt. Occasional silt interbeds were observed within select silty sand, poorly-graded sand, and poorly-graded sand with silt soil layers.
- At the time of exploration, we observed groundwater within each test pit at depths of 3 to 5.5 feet below existing ground.
- We recommend stormwater disposal occur within poorly-graded sand and/or poorly-graded sand with silt soils, as observed during our field exploration. A seepage rate of 4 inches per hour (in/hr) may be utilized for stormwater disposal into poorly-graded sands with silt and a seepage rate of 8 in/hr may be utilized for stormwater disposal into poorly-graded sands. Please note that the recommended seepage rate provided above assumes seasonal high groundwater will not restrict vertical seepage.
- Based on observations and laboratory results, the on-site native soils predominately consisted of silt and sand mixtures, and do not meet the gradation requirements of *Idaho Standards for Public Works Construction* (ISPWC) specifications for uncrushed/crushed aggregate. As such, on-site soils are not suitable to be used as materials for pavement section construction (subbase, base course, asphalt) or as granular structural fill.
- The on-site soils may be used as general site grading fills or as utility trench backfills.

Our services were provided in accordance with ALLWEST proposal no. 523-250P dated May 30, 2023. This summary should be used in conjunction with the entire report for preliminary design and construction purposes. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein.

PRELIMINARY GEOTECHNICAL EVALUATION
LOOMIS LANE DEVELOPMENT
LOOMIS LANE AND OLD STATE ROAD
VALLEY COUNTY, IDAHO

PRELIMINARY GEOTECHNICAL EVALUATION
LOOMIS LANE DEVELOPMENT
LOOMIS LANE AND OLD STATE ROAD
VALLEY COUNTY, IDAHO

1.0 PROJECT DOCUMENTS

The following project documents were reviewed by ALLWEST to help our understanding of the planned development:

- *Valley County Planning and Zoning (Parcel Map)* dated May 23, 2023.

2.0 PROJECT DESCRIPTION

Based on communication with you and Crestline Engineers, as well as our review of the project documents, we understand that development will consist of an approximate 160-acre residential subdivision with associated infrastructure, stormwater disposal facilities, and asphalt-paved roadways. Additionally, we understand ponds may be constructed as part of the development. We did not review development or grading plans, as they were not available at the time of this report, but we anticipate cuts and fills for general site grading to be 5 feet or less.

3.0 EVALUATION PROCEDURES

To complete this evaluation, we reviewed published geologic/soil information and observed the excavation of exploratory test pits on-site to evaluate the subsurface conditions. The general location of the site is shown on *Figure A-1: Vicinity Map* in Appendix A.

We observed the excavation of 16 test pits (TP-1 through TP-16) on June 12, 2023, utilizing a Caterpillar 310 Mini-Excavator with a 24-inch-wide toothed excavation bucket. Test pits were advanced to maximum depths of 7 to 10.5 feet below existing ground. Maximum depths varied due to caving conditions encountered during excavation. The approximate locations of the test pits are shown on *Figure A-2: Exploration Location Map* in Appendix A.

The soils observed in the test pits were visually described and classified in general accordance with ASTM D2488. We logged the subsurface profiles and obtained soil samples at select depths for further identification and laboratory testing.

We also performed 5 field seepage tests within select test pits throughout the site. Information obtained from the field evaluation, laboratory testing, and geotechnical analysis was utilized to develop the recommendations presented in this report.

4.0 SITE CONDITIONS

At the time of exploration, the site consisted of undeveloped farmland and pastureland. The site is generally bordered by Loomis Lane to the north, Old State Road to the east, and residential developments to the west and south.

4.1 Published Geologic and Soil Information

The geologic conditions at the site are mapped as Outwash of late-Pleistocene Glaciation, Undivided (map symbol – Qgo_1) on the *Surficial Geologic Map of Long Valley, Valley County, Idaho,* by Breckenridge and Othberg, 2006. This unit is described as coarse sand with a silty fine sand matrix of thicknesses ranging from 10 to more than 30 feet.

The USDA Natural Resources Conservation Service (NRCS), which classifies the upper 5 feet of soil, has mapped the site as Donnel sandy loam, Duston sandy loam, and Roseberry coarse sandy loam. These soils consist of sandy loam, coarse sandy loam, stratified loamy sand to sandy loam, slightly to moderately decomposed plant material, coarse sand, loamy coarse sand, and fine sandy loam. The parent materials of these soils include mixed alluvium and outwash derived from granite.

The soils encountered in test pits are generally consistent with published information.

4.2 Subsurface Soil Conditions

At the time of exploration, the site contained approximately 8 to 12 inches of surficial roots and vegetation at the ground surface. In general, subsurface soils within the observed test pits consisted of sandy lean clays, sandy silts, silts with sand, silty sands, poorly-graded sands, and poorly-graded sands with silt. Occasional silt interbeds were observed within select silty sand, poorly-graded sand, and poorly-graded sand with silt soil layers.

Detailed descriptions of the soils observed are presented on the individual test pit logs in Appendix B. The descriptive soil terms used on the test pit logs, and in this report, can be referenced by the *Unified Soil Classification System (USCS)*. A summary of the USCS is included in Appendix B. The subsurface conditions may vary between exploration locations; such changes in subsurface conditions may not be apparent until construction.

4.3 Groundwater Conditions

At the time of exploration, we observed groundwater within each test pit at depths of 3 to 5.5 feet below existing ground. Groundwater in the area is typically influenced by water levels of Cascade Lake (approximately 1,200 feet southeast of the site) and snowmelt. Groundwater may also be influenced by precipitation, local irrigation, on-site construction, and development of adjacent sites. Groundwater elevations will fluctuate throughout the different seasons of the year and will likely peak during snowmelt and irrigation seasons (March to October).

We installed slotted PVC pipes within each of the observed test pits for future groundwater monitoring. If requested, ALLWEST can perform monthly groundwater monitoring to help establish a seasonal high groundwater elevation at the site.

5.0 LABORATORY TESTING

We performed laboratory testing to supplement field classifications and to assess some of the soil engineering properties and parameters. Laboratory testing included fines content (ASTM D1140), moisture content (ASTM D2216), and liquid and plastic limits (ASTM D4318). The laboratory test results are included in Appendix C, and are also summarized on the test pit logs in Appendix B.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our field observations, testing, and preliminary evaluation, in our opinion the site is suitable for the planned development. However, once final grading and development plans are established, we should be afforded the opportunity to review these plans to determine if additional exploration, testing, and evaluation should be accomplished to provide final recommendations to assist the planned development. These recommendations are based on our understanding of the proposed development at the time of this report, the conditions observed within exploration locations, laboratory test results, and engineering analysis. As such, the following opinions and recommendations should be considered preliminary in nature.

6.1 Geotechnical / Geological Constraints and Hazards

The following is a discussion of on-site conditions observed or additional constraints/hazards that should be considered for the proposed subdivision development.

Compressible Soils

Surficial soils containing significant vegetation, roots, and/or organic debris were observed during our exploration to depths of 8 to 12 inches below existing ground surfaces. These soils are considered compressible and can degrade with time; as such, these surficial soils should be stripped within planned fill and development areas, prior to earthwork construction.

Settlement

Surficial sandy silt and silty sand soils were observed to be soft and loose, respectively, to depths of 1.5 to 2.5 feet below existing ground. These soft and loose soils may be prone to settlement and are not suitable to support fill soils, structures, or other improvements. These soils should be further evaluated prior to construction to determine the appropriate remediation based on the planned development.

Slope Stability

We understand that ponds may be constructed as part of the development. Slope stability analysis should be performed prior to development to establish suitable pond slope inclinations and heights, as well as structural setbacks (if needed).

6.2 Soil Reusability

Based on observations and laboratory results, the on-site native soils predominately consisted of silt and sand mixtures, and do not meet the gradation requirements of *Idaho Standards for Public Works Construction* (ISPWC) specifications for uncrushed/crushed aggregate. As such, the on-site soils are not suitable to be used as materials for pavement section construction (subbase, base course, asphalt) or as granular structural fill. On-site soils may be used as general site grading fills or as utility trench backfills.

6.3 General Site Preparation

- Prior to conducting site grading, surficial soil containing vegetation, roots, and organics should be removed below proposed site grading fill areas and any other development areas. We anticipate approximately 12 inches of site stripping will be required for most of the site to remove surficial vegetation and roots.

- Where trees are encountered and will be removed as part of the development, large root systems should be completely over-excavated and replaced with suitable fill soils. Tree roots depths will not fully be known until construction, but we anticipate approximately 3 to 4 feet of over-excavation will be required to remove large tree root systems.

- Loose test pit backfill will settle with time, so where any test pits are located below proposed development areas, the loose test pit backfill soil should be re-excavated its entire depth and replaced with suitably moisture-conditioned and compacted fill soils. Over-excavated soils can be reused to backfill the test pits, provided the soils are not overly saturated, and they can be suitably compacted. Test pit locations that were observed by ALLWEST may be identified in the field by the presence of white PVC pipes. Approximate test pit locations are shown on *Figure A-2: Exploration Location Plan*. We recommend test pit areas be accurately surveyed so that they may be located and remediated prior to earthwork construction and development.

6.4 Stormwater

During our field exploration we performed field seepage testing in test pits TP-3, -8, -10, -14, and -16 within silty sand, poorly-graded sand, and poorly-graded sand with silt soils. We obtained field-measured seepage rates of less than 0.25 inches per hour (in/hr) within the silty sand soils, and 6 in/hr to greater than 15 in/hr within poorly-graded sand with silt soils, and greater than 15 in/hr within poorly-graded sand soils.

We recommend stormwater disposal occur within poorly-graded sand and poorly-graded sand with silt soils, as observed during our field exploration. Based on field seepage test results and our experience with similar soil types, we recommend the following seepage rates be utilized for on-site civil stormwater disposal design.

- Poorly-graded sands with silt ……..……..……...…. 4 in/hr
- Poorly-graded sands ……..……...…. 8 in/hr

Once stormwater disposal facility locations have been established, large-scale seepage testing should be accomplished within those locations to confirm or update the recommended seepage rates.

Please note that the recommended seepage rate provided above assumes seasonal high groundwater will not restrict vertical seepage. Based on our field exploration and experience in the area, seasonal high groundwater may be shallower than the observed poorly-graded sand (with or without silt) layers that are suitable for stormwater disposal. If this occurs, the seasonal high groundwater will prevent vertical seepage into the underlying poorly-graded sand (with or without silt) soils, and lateral seepage will occur within the overlying sandy silt and/or silty sand soil, which are anticipated to exhibit very poor infiltration. Groundwater monitoring throughout snowmelt and irrigation seasons will be critical to establish the seasonal high groundwater and determine whether it will restrict vertical seepage. If it is determined that seasonal high groundwater will restrict vertical seepage, we do not recommend subsurface stormwater disposal on-site and that stormwater be managed/stored via methods that do not utilize infiltration, such as surface swales and/or evaporation ponds.

Stormwater disposal facilities should be constructed a minimum of 1 foot into the recommended receiving soil. Filter fabric should be properly utilized to separate native soils from stormwater disposal facility drain rock and filter sand materials to help prevent fine-soil migration into drainable/filtering media, as required by civil design.

The proper separation from bottom of stormwater disposal facilities and seasonal high groundwater should be maintained. As such, groundwater monitoring should be performed to help establish seasonal high groundwater throughout the site.

We installed slotted PVC pipes within each of the observed test pits, for future groundwater monitoring. If requested, ALLWEST will perform monthly groundwater monitoring.

6.5 Asphalt Pavements

Proposed roadway subgrade soils are not known at this time and may consist of native soils or site grading fills. As such, once final grading plans are developed and roadway subgrade elevations are established, additional exploration, sampling, and laboratory testing will be required to provide an asphalt pavement section design for roadways.

7.0 ADDITIONAL RECOMMENDED SERVICES

Once final grading and development plans are available for our review, we can prepare an additional scope of services, in order to provide final geotechnical engineering recommendations and design to assist earthwork construction and civil design.

8.0 EVALUATION LIMITATIONS

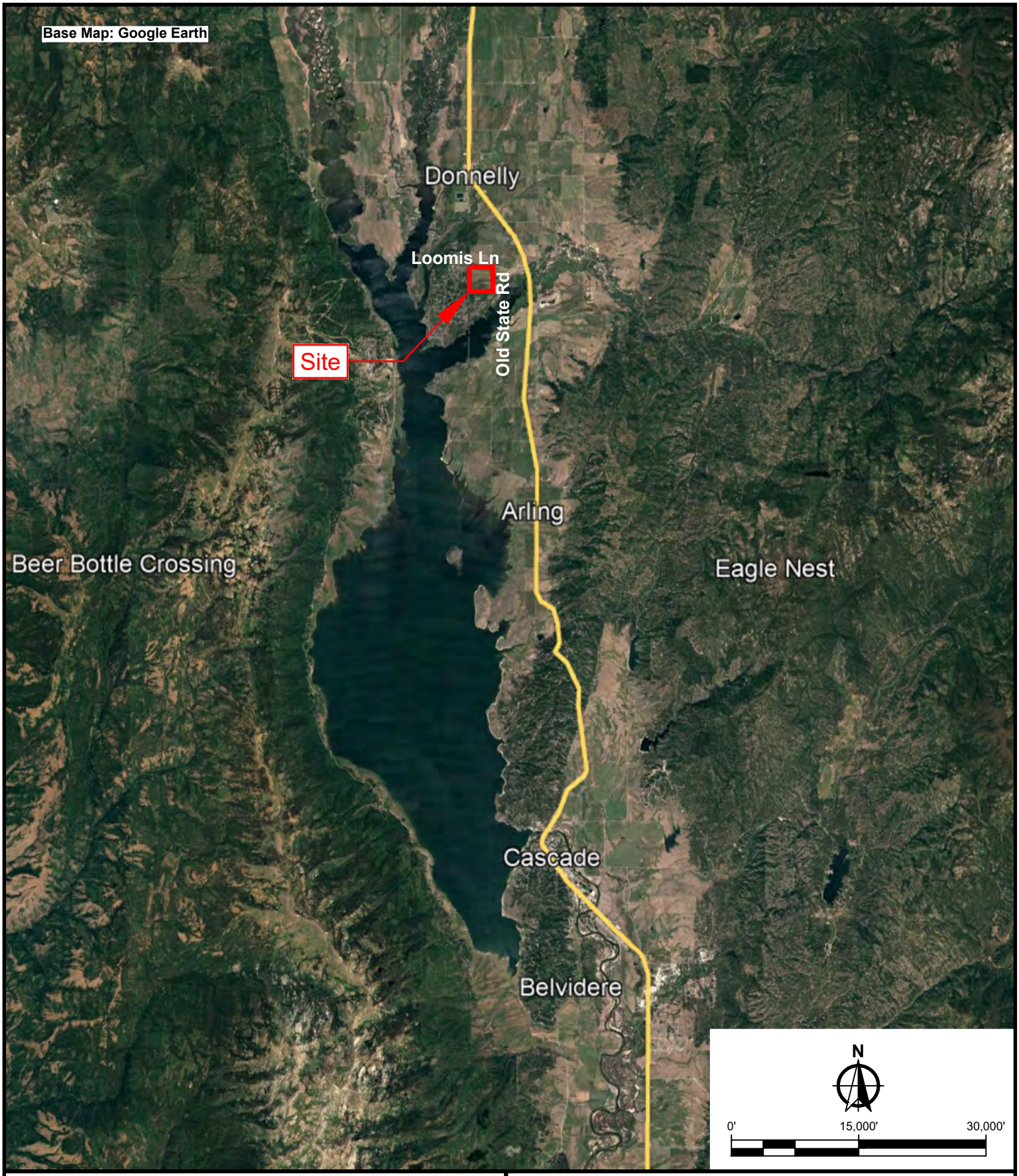
This preliminary geotechnical evaluation has been prepared to provide subsurface soil information and preliminary recommendations to assist general planning of the proposed Loomis Lane Development located at Loomis Lane and Old State Road in Valley County, Idaho. This evaluation does not contain final recommendations and should not be utilized for final design and construction. Reliance by any other party is prohibited without the written authorization of ALLWEST. Our services consist of professional opinions and conclusions made in accordance with generally accepted geotechnical engineering principles and practices in the local area at the time this report was prepared. This acknowledgement is in lieu of all warranties, express or implied.

The following appendices complete this report:

Appendix A – Vicinity Map, Exploration Location Map
Appendix B – Test Pit Logs, Unified Soil Classification System
Appendix C – Laboratory Test Results

Appendix A

A-1: Vicinity Map
A-2: Exploration Location Map



ALLWEST
255 N. LINDER ROAD, SUITE 100
MERIDIAN IDAHO, 83642
PHONE [redacted] FAX [redacted]

FIGURE A-1: VICINITY MAP

GEOTECHNICAL EVALUATION

LOOMIS LANE DEVELOPMENT

VALLEY COUNTY, IDAHO

CLIENT: PARK POINTE DEVELOPMENT, INC.

PROJECT NO.: 523-250G	DATE: AUGUST 2023

ALLWEST
255 N. LINDER ROAD, SUITE 100
MERIDIAN IDAHO, 83642
PHONE [redacted] FAX [redacted]

FIGURE A-2: EXPLORATION LOCATION MAP

GEOTECHNICAL EVALUATION

LOOMIS LANE DEVELOPMENT

VALLEY COUNTY, IDAHO

CLIENT: PARK POINTE DEVELOPMENT, INC.

PROJECT NO.: 523-250G	DATE: AUGUST 2023

Appendix B

Test Pit Logs
Unified Soil Classification System

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 1

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°42'5.688" (44.70158°)
LONGITUDE (DEGREES): W -116°4'39.2196" (-116.077561°)

TOTAL DEPTH: 8.5'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, stiff, moist			Significant roots and vegetation observed to 12 inches.
2	SP	Poorly-graded SAND; tan, medium dense, moist to saturated			
4					▽
5		...orange iron staining observed from 4 to 7 feet			
7		...becomes gray at 7 feet			
8		Test pit terminated at 8.5 feet due to caving. Slotted PVC pipe installed.			

WATER LEVELS
4' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 2

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°42'5.598" (44.701555°)
LONGITUDE (DEGREES): W -116°4'28.632" (-116.07462°)

TOTAL DEPTH: 8'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	CL	Sandy Lean CLAY (Native); dark brown, firm, moist			Significant roots and vegetation observed to 12 inches.
1	ML	Sandy SILT; dark brown, soft, moist			
2	SP-SM	Poorly-graded SAND with Silt; tan, medium dense, moist to saturated			
3					
4					
4.5' ▽		...occasional silt interbeds observed throughout soil layer			▽
5					
6		...varying amounts of orange iron staining observed from 4.5 to 8 feet			
7					
8		Test pit terminated at 8 feet due to caving. Slotted PVC pipe installed.			
9					
10					
11					
12					
13					
14					
15					

WATER LEVELS
▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 3

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°42'5.454" (44.701515°)
LONGITUDE (DEGREES): W -116°4'17.7132" (-116.071587°)

TOTAL DEPTH: 10'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist		Bag 0.5' - 1'	Significant roots and vegetation observed to 12 inches.
2	SM	Silty SAND; tan, medium dense, moist to saturated		Bag 2.5' - 3' Bag 3' - 3.5'	Passing No. 200 sieve = 49% Moisture content = 16% LL = 20, PL = 19, PI = 1 Passing No. 200 sieve = 35% Moisture content = 20% Field seepage test performed at 3.5 feet. Field seepage rate < 0.25 in/hr.
5		...orange iron staining observed at 5 feet			▽
		...occasional silt interbeds observed throughout soil layer			
10		Test pit terminated at 10 feet due to caving. Slotted PVC pipe installed.			

WATER LEVELS
5' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 4

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°42'5.598" (44.701555°)
LONGITUDE (DEGREES): W -116°4'7.248" (-116.06868°)

TOTAL DEPTH: 8'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 8 inches.
2	SP	Poorly-graded SAND; tan, medium dense, moist to saturated		Bag 2' - 2.5'	
5 ▽		...occasional silt interbeds observed throughout soil layer			▽
8		Test pit terminated at 8 feet due to caving. Slotted PVC pipe installed.			

WATER LEVELS
5' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 5

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'57.5448" (44.699318°)
LONGITUDE (DEGREES): W -116°4'39.1764" (-116.077549°)

TOTAL DEPTH: 10.5'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	SM	Silty SAND (Native); dark brown to light brown, loose to medium dense, moist		Bag 0.5' - 1'	Significant roots and vegetation observed to 8 inches. Passing No. 200 sieve = 41% Moisture content = 24%
3	ML	SILT with Sand; tan, stiff, moist		Bag 3' - 3.5'	Passing No. 200 sieve = 84% Moisture content = 22% LL = 25, PL = 24, PI = 1
4 ▽	SP	Poorly-graded SAND; tan, medium dense, moist to saturated			▽
7		...varying amounts of orange iron staining observed throughout soil layer			
10		Test pit terminated at 10.5 feet due to caving. Slotted PVC pipe installed.			

WATER LEVELS

4.5' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 6

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'57.4872" (44.699302°)
LONGITUDE (DEGREES): W -116°4'28.7148" (-116.074643°)

TOTAL DEPTH: 8.5'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 12 inches.
2	SP	Poorly-graded SAND; tan, medium dense, moist to saturated ...varying amounts of red iron staining observed throughout soil layer			
4 ▽					▽
5	ML	SILT with Sand; light gray, stiff, saturated			
8		Test pit terminated at 8.5 feet due to caving. Slotted PVC pipe installed.			
15					

WATER LEVELS
4' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 7

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'57.426" (44.699285°)
LONGITUDE (DEGREES): W -116°4'17.8356" (-116.071621°)

TOTAL DEPTH: 8'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 12 inches.
2	SP	Poorly-graded SAND; tan, medium dense, moist to saturated ...varying amounts of orange iron staining observed throughout soil layer			
3 ▽					▽
4	ML	SILT with Sand; gray, stiff, saturated ...varying amounts of orange iron staining observed throughout soil layer		Bag 5' - 5.5'	Passing No. 200 sieve = 71% Moisture content = 22% LL = 32, PL = 26, PI = 6
8		Test pit terminated at 8 feet due to caving. Slotted PVC pipe installed.			
15					

WATER LEVELS
3' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 8

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'57.192" (44.69922°)
LONGITUDE (DEGREES): W -116°4'7.4136" (-116.068726°)

TOTAL DEPTH: 9'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 12 inches.
3	SP-SM	Poorly-graded SAND with Silt; reddish-brown, medium dense, moist to saturated		Bag 2.5' - 3'	Passing No. 200 sieve = 11% Moisture content = 16% Field seepage test performed at 3.5 feet. Field seepage rate = 6 in/hr.
4		▽			▽
5		...becomes tan at 5 feet			
6		...varying amounts of orange iron staining observed throughout soil layer			
9		Test pit terminated at 9 feet due to caving. Slotted PVC pipe installed.			

WATER LEVELS

4.5' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 9

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'50.3412" (44.697317°)
LONGITUDE (DEGREES): W -116°4'39.216" (-116.07756°)

TOTAL DEPTH: 9'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	SM	Silty SAND (Native); dark brown, loose, moist to saturated		Bag 0.5' - 1'	Significant roots and vegetation observed to 8 inches. Passing No. 200 sieve = 32% Moisture content = 25% LL = 31, PL = 30, PI = 1
1					
2		...becomes tan and medium dense at 2 feet			
3					
4					
4.5' ▽					▽
5					
6					
7					
8		...becomes gray at 8 feet			
9		Test pit terminated at 9 feet due to caving. Slotted PVC pipe installed.			
10					
11					
12					
13					
14					
15					

WATER LEVELS
▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 10

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'50.2836" (44.697301°)
LONGITUDE (DEGREES): W -116°4'28.7544" (-116.074654°)

TOTAL DEPTH: 8'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 12 inches.
2	SP-SM	Poorly-graded SAND with Silt; reddish-brown, medium dense, moist to saturated		Bag 2.5' - 3'	Passing No. 200 sieve = 6% Moisture content = 10% Field seepage test performed at 3 feet. Field seepage rate > 15 in/hr.
4		...varying amounts of red iron staining observed throughout soil layer			
5					▽
6					
7	ML	SILT with Sand; gray, stiff, saturated ...varying amounts of orange iron staining observed throughout soil layer			
8		Test pit terminated at 8 feet due to caving. Slotted PVC pipe installed.			
9					
10					
11					
12					
13					
14					
15					

WATER LEVELS
5' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 11

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'50.2836" (44.697301°)
LONGITUDE (DEGREES): W -116°4'17.8788" (-116.071633°)

TOTAL DEPTH: 8'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 8 inches.
1					
2		...becomes tan and stiff at 1.5 feet		Bag 1.5' - 2'	Passing No. 200 sieve = 54% Moisture content = 18%
3					
4 ▽	SP	Poorly-graded SAND; tan, medium dense, moist to saturated			▽
5		...varying amounts of orange iron staining observed throughout soil layer			
6	ML	SILT with Sand; gray, stiff, saturated			
7		...varying amounts of orange iron staining observed throughout soil layer			
8		Test pit terminated at 8 feet due to caving. Slotted PVC pipe installed.			
9					
10					
11					
12					
13					
14					
15					

WATER LEVELS
4' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 12

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'50.0496" (44.697236°)
LONGITUDE (DEGREES): W -116°4'7.3344" (-116.068704°)

TOTAL DEPTH: 8.5'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 12 inches.
2	SP	Poorly-graded SAND; tan, medium dense, moist to saturated			
5 ▽	SP	...varying amounts of orange iron staining observed throughout soil layer			▽
8		Test pit terminated at 8.5 feet due to caving. Slotted PVC pipe installed.			

WATER LEVELS
5' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 13

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'43.0512" (44.695292°)
LONGITUDE (DEGREES): W -116°4'39.2592" (-116.077572°)

TOTAL DEPTH: 7'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 8 inches.
2	SM	Silty SAND; light brown, medium dense, moist			
3	SP	Poorly-graded SAND; tan, medium dense, moist to saturated			
4 ▽					▽
5		...varying amounts of orange iron staining observed throughout soil layer			
7		Test pit terminated at 7 feet due to caving. Slotted PVC pipe installed.			

WATER LEVELS

4.5' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 14

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'43.0224" (44.695284°)
LONGITUDE (DEGREES): W -116°4'28.8768" (-116.074688°)

TOTAL DEPTH: 7'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 12 inches.
2	SP	Poorly-graded SAND; tan, medium dense, moist to saturated		Bag 3.5' - 4'	Passing No. 200 sieve = 3% Moisture content = 7%
4 ▽		...varying amounts of orange iron staining observed throughout soil layer			Field seepage test performed at 4 feet. Field seepage rate > 15 in/hr. ▽
7		Test pit terminated at 7 feet due to caving. Slotted PVC pipe installed.			

WATER LEVELS
4.5' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 15

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'42.7596" (44.695211°)
LONGITUDE (DEGREES): W -116°4'17.8356" (-116.071621°)

TOTAL DEPTH: 8.5'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 12 inches.
3	ML	SILT with Sand; tan, stiff, moist			
5 ▽	SP	Poorly-graded SAND; tan, medium dense, moist to saturated			▽
8		Test pit terminated at 8.5 feet due to caving. Slotted PVC pipe installed.			

WATER LEVELS
5.5' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

ALLWEST
MERIDIAN, IDAHO
GEOTECHNICAL SECTION

TEST PIT LOG

DATE STARTED: 6/12/2023
DATE FINISHED: 6/12/2023
OPERATOR: Bon
COMPANY: N/A
LOGGER: Parker Norris
WEATHER: Sunny

TP - 16

EXCAVATOR: CAT 310
EXCAVATION METHOD: 24-inch wide toothed bucket

PROJECT: 523-250G
Loomis Lane Development

NOTES: See Figure A-2 in Appendix A for approximate test pit location.

LATITUDE (DEGREES): N 44°41'42.846" (44.695235°)
LONGITUDE (DEGREES): W -116°4'7.2912" (-116.068692°)

TOTAL DEPTH: 8.5'

DEPTH (ft)	USCS	DESCRIPTION	GRAPHIC LOG	SAMPLE	NOTES
0	ML	Sandy SILT (Native); dark brown, soft, moist			Significant roots and vegetation observed to 12 inches.
2	SP	Poorly-graded SAND; tan, medium dense, moist to saturated		Bag 3' - 3.5'	Passing No. 200 sieve = 2% Moisture content = 5% Field seepage test performed at 3.5 feet. Field seepage rate > 15 in/hr.
5 ▽					▽
8		Test pit terminated at 8.5 feet due to caving. Slotted PVC pipe installed.			

WATER LEVELS
5' ▽ WHILE EXCAVATING
▼ AT COMPLETION
▼ AFTER EXCAVATING

Unified Soil Classification System

MAJOR DIVISIONS			SYMBOL	TYPICAL NAMES
COARSE GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	Well-Graded Gravel, Gravel-Sand Mixtures.
			GP	Poorly-Graded Gravel, Gravel-Sand Mixtures.
		GRAVELS WITH FINES	GM	Silty Gravel, Gravel-Sand-Silt Mixtures.
			GC	Clayey Gravel, Gravel-Sand-Clay Mixtures.
	SANDS	CLEAN SANDS	SW	Well-Graded Sand, Gravelly Sand.
			SP	Poorly-Graded Sand, Gravelly Sand.
		SANDS WITH FINES	SM	Silty Sand, Sand-Silt Mixtures.
			SC	Clayey Sand, Sand-Clay Mixtures.
FINE GRAINED SOILS	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50%		ML	Inorganic Silt, Silty or Clayey Fine Sand.
			CL	Inorganic Clay of Low to Medium Plasticity, Sandy or Silty Clay.
			OL	Organic Silt and Clay of Low Plasticity.
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH	Inorganic Silt, Elastic Silt, Micaceous Silt, Fine Sand or Silt.
			CH	Inorganic Clay of High Plasticity, Fat Clay.
			OH	Organic Clay of Medium to High Plasticity.
Highly Organic Soils			PT	Peat, Muck and Other Highly Organic Soils.

ALLWEST

Appendix C

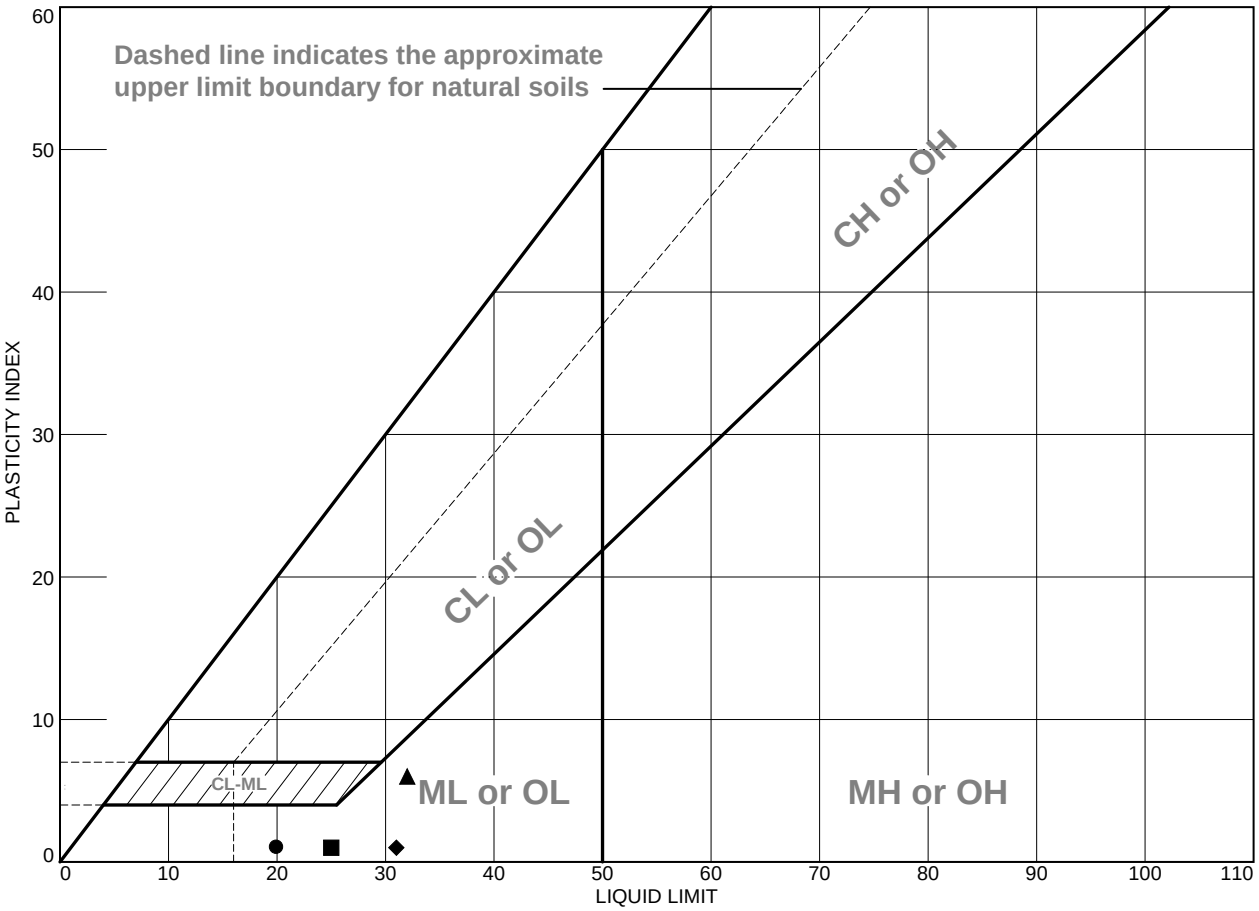
Laboratory Test Results

Table C-1: Summary of Laboratory Test Results

Test Pit	Depth (Feet)	Moisture Content (%)	Gradation			Atterberg Limits			Sample Classification (USCS)
			Gravel (%)	Sand (%)	Silt/Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	
TP-3	2.5 - 3	16			49	20	19	1	Silty SAND (SM)
TP-3	3 - 3.5	20			35				Silty SAND (SM)
TP-5	0.5 - 1	24			41				Silty SAND (SM)
TP-5	3 - 3.5	22			84	25	24	1	SILT with Sand (ML)
TP-7	5 - 5.5	22			71	32	26	6	SILT with Sand (ML)
TP-8	2.5 - 3	16			11				Poorly-graded SAND with Silt (SP-SM)
TP-9	0.5 - 1	25			32	31	30	1	Silty SAND (SM)
TP-10	2.5 - 3	10			6				Poorly-graded SAND with Silt (SP-SM)
TP-11	1.5 - 2	18			54				Sandy SILT (ML)
TP-14	3.5 - 4	7			3				Poorly-graded SAND (SP)
TP-16	3 - 3.5	5			2				Poorly-graded SAND (SP)

255 N. Linder Road, Suite 100 • Meridian, Idaho 83642 • [redacted] • Fax [redacted]

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Silty Sand	20	19	1	--	49%	SM
■	Silt with sand	25	24	1	--	84%	ML
▲	Silt with sand	32	26	6	--	71%	ML
◆	Silty Sand	31	30	1	--	32%	SM

Project No. 523-250G **Client:** Park Pointe Development, Inc.

Project: Loomis Lane Development

●**Location:** TP-3 **Depth:** 2.5'-3'
■**Location:** TP-5 **Depth:** 3'-3.5'
▲**Location:** TP-7 **Depth:** 5'-5.5'
◆**Location:** TP-9 **Depth:** 0.5'-1'

Remarks:

ALLWEST

Figure C-1

Tested By: C. Downes **Checked By:** J. Varozza