Larson & Associates
surveyors, engineers and planners
9027 Pacific Avenue, Suite 4
Tacoma, WA 98444

INTER AVE COMMERCIAL

PRELIMINARY STORM DRAINAGE REPORT

PROPONENT:

RAYCO VENTURES, LLC
P.O. BOX 1563
SUMNER, WA. 98390
PHONE: (253) 389-2497

PREPARED BY:

Larson & Associates
surveyors, engineers and planners
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March 19, 2026

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PROJECT ENGINEER'S CERTIFICATION

I hereby state that this Preliminary Storm Drainage Report for **Inter Ave Commercial** has been prepared by me or under my supervision and meets the standard of care and expertise which is usual and customary in this community for professional engineers. I understand that City of Puyallup does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities prepared by me.

_____

Grant J. Middleton, P.E.

PRELIMINARY DRAINAGE REPORT

SECTION 1 - PROPOSED PROJECT DESCRIPTION

The proposed Inter Ave Commercial project is located in the SW1/4 of Section 26, Township 20 North, Range 4 East of the Willamette Meridian City of Puyallup in Pierce County, Washington. The subject project is associated with Parcel Number 2105200221 and consists of approximately 5.07 acres. The site address just west of the 23rd SE & INTER AVE intersection in Puyallup, WA. The zoning of the property is limited manufacturing (ML). Access to the site will be provided via Inter Avenue at the north-eastern corner of the parcel and an arch culvert (or approved equal) will be installed to "bridge" across the existing drainage course to allow access to the developed portion of the site. This project proposes construction of an asphalt driveway (approximate new impervious area of 17,166 S.F.), off of INTER AVE. and (2) commercial buildings (approximate total roof area of 7,500 S.F.) with an associated concrete sidewalk and uncovered gravel storage area (approximate new impervious area of 31,444 S.F.).

STORMWATER DESIGN CRITERIA

The design of storm drainage facilities for onsite management of stormwater runoff follows the requirements of the 2024 Stormwater Management Manual for Western Washington (SWMMWW) effective July, 2024 as adopted by the City of Puyallup. As defined in Section 1-3.3, Volume 1 of the SWMMWW, the proposed development must meet Minimum Requirements 1 through 9 for stormwater management because the proposed improvements will exceed the threshold for adding in excess of 5,000 SF of new hard surface area. A brief description of each Minimum Requirement and how they are being satisfied is provided later in this report.
This project will meet the LIDPS and utilize compost amended soils meeting BMPT5.13 for all disturbed pervious areas.

STORMWATER FACILITIES SUMMARY

The proposed onsite driveway area will be constructed with an inverted slope to direct stormwater into catch basins set within the flood plain and routed to and through and appropriately sized water quality filter vault and on to the properly sized underground infiltration trench. The roof runoff from each building will be tightline piped around the water quality treatment vault and directly to the properly sized infiltration trench as building roof runoff is defined "clean" per D.O.E. The proposed driveway area in the ROW will be constructed with an inverted driveway slope to direct stormwater into a water quality treatment catch basin and then routed to an existing culvert which discharges to the stream buffer.

SECTION 2 - EXISTING CONDITIONS

Surrounding parcels consist of commercial properties, undeveloped parcels and the railroad to the south. The site is primarily covered in vegetation and trees. Groundcover consists of grasses and trees along the north, west, and east boundaries. There is a drainage course and wetland areas located on site located to the east and west of the proposed developed site area. Which have been delineated by the project biologist with their requested buffers.

According to a field topographic survey by Larson & Associates, developable portion of the site is relatively flat with a high point at approximate elevation 62 (NAVD88) running north and south and slopes down to the east to approximate elevation 60 located in the east end of the project site and also sloped down to the west of the site to approximate elevation 40 located in the northwest portion of the project site near the noted onsite wetland areas.

SECTION 3 - INFILTRATION RATES/SOILS REPORT

US Dept. of Agriculture's (USDA) National Resource Conservation Survey (NRCS) identifies the underlying soil as 6A, Briscot loam, 29A Pilchuck fine sand and 31A, Puyallup fine sandy loam. the geotechnical consultant has also preliminary soil investigation work and has provided a preliminary design infiltration rates of 2.2 in/hr for design of stormwater infiltration BMP's for this project. See Appendix C for additional information and soil test pits from GeoResources.

SECTION 4 - WELLS AND SEPTIC SYSTEMS

To the best of our knowledge, there are no wells located onsite or in the direct vicinity of the site.

SECTION 5 - FUEL TANKS

To the best of our knowledge, there are no known existing fuel tanks located on or in the direct vicinity of the project property.

SECTION 6 - SUB-BASIN DESCRIPTION

Based on the topography of the site, we do not expect offsite runoff to contribute to the developed portion of the site. The developed portion of the site that will "bypass" this proposed onsite infiltration facility will consist of a small portion of the purposed driveway in INTER AVE. this driveway runoff will be collected in associated water quality treatment catchbasin located in driveway "inverted" flowline and safely piped to the existing discharge culvert which directs existing stormwater from INTER AVE. to the onsite drainage course.

SECTION 7 - ANALYSIS OF THE 100-YEAR FLOOD

A copy of the Flood Insurance Rate Map (FIRM) for the project site is provided in **Appendix A,** and it shows the project site is located in Zone X.

SECTION 8 - AESTHETIC CONSIDERATIONS FOR FACILITIES

Catch basin lids will be visible in the public roadways. No other aesthetic considerations for the stormwater facilities are being proposed.

SECTION 9 - FACILITY SIZING AND DOWNSTREAM ANALYSIS

FACILITY SIZING

As described in Section 1, the primary stormwater management facility for this project will be the infiltration trench located at the east side of the lot. Design of the infiltration trench follows Section 3.4, Volume III of the SWMSDM. The proposed building roof area runoff shall be tightlined to the proposed infiltration trench located on the east side of the site. the proposed onsite driveway area will be constructed with an "inverted" slope to direct stormwater to catch basins set long the pavement flowline where stormwater will then be tightlined routed to the properly sized onsite infiltration trench. The proposed driveway area in the ROW of INTER AVE. on the east side of the proposed drainage culvert crossing will be constructed with an "inverted" driveway slope to direct stormwater into a treatment catch basin and then routed to an existing culvert which discharges to existing drainage course. All disturbed pervious areas will be amended per the Soil Preservation and Amendment BMP T5.13.

Soil Preservation and Amendment (Section 3.1, Volume III, SWMSDM)

Lawn and landscaped (pervious) areas including the lot yard areas, will incorporate SPA compost amended soils as outlined in Section 3.1, Volume III of the SWMSDM. During clearing and grading of the site, existing topsoil will be stripped and stockpiled. The stockpiled topsoil will be amended with compost (and additional imported soil as necessary to provide sufficient quantity of topsoil) before spreading on to the landscaped areas. Any unused topsoil or compost amended topsoil not used will be hauled to a landfill or bio-reuse facility.

DOWNSTREAM ANALYSIS

A complete ¼ mile qualitative downstream analysis will be provided during the final engineering stage of this project.

SECTION 10 – UTILITIES

Not applicable.

SECTION 11 - COVENANTS, DEDICATIONS, AND EASEMENTS

Not applicable.

SECTION 12 - HOMEOWNERS ASSOCIATION ARTICLES OF INCORPORATION

Not applicable to this Commercial Development.

SECTION 13 - OTHER PERMITS OR CONDITIONS PLACED ON THE PROJECT

Not applicable.

Minimum Requirements 1-9:

a. Minimum Requirement #1: Preparation of Stormwater Site Plan
This report and the associated site development plan set fulfill this requirement.

b. Minimum Requirement #2: Construction SWPPP
A separate document titled "Preliminary Construction SWPPP" fulfills this requirement.

c. Minimum Requirement #3: Source Control of Pollution
A separate document titled "Maintenance and Source Control Manual "will contain data on Source Control BMPs to consider for all activities related to the proposed development. This separate document will be provided during the final engineering stages of this project.

d. Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls
It is the intent of the selection and use of the stormwater BMPs described herein to preserve existing natural drainage systems and outfalls to the greatest extent feasible by "treating" and infiltrating runoff associated with onsite improvements into the native soils. There will be a small portion of proposed driveway surface located on the east side of proposed arch culvert crossing that will "bypass" the onsite infiltration facility. This stormwater will be "treated" via storm filter catchbasin prior to the release to the existing drainage course.

e. Minimum Requirement #5: On-Site Stormwater Management
Existing soil conditions will allow the on-site management of stormwater runoff associated with disturbed pervious and impervious areas utilizing infiltration BMPs as described within this report. Compost amended soils meeting BMPT5.13 are proposed for all pervious areas.

f. Minimum Requirement #6: Runoff Treatment
All new development and redevelopment projects meeting the Project Thresholds in I-3.3 Applicability of the Minimum Requirements shall apply Runoff Treatment BMPs in accordance with the following thresholds, standards, and requirements to remove pollutants from stormwater runoff. This project will employ "basic" water quality treatment BMPs to meet this requirement as described on the preliminary drainage plan.

g. Minimum Requirement #7: Flow Control
All new development and redevelopment projects meeting the Project Thresholds in I-3.3 Applicability of the Minimum Requirements shall apply Flow Control BMPs in accordance with the following thresholds, standards, and requirements to reduce the impacts of stormwater runoff from hard surfaces and land cover conversions. This project will employ an infiltration bmp to meet this requirement as described on the attached preliminary drainage plan.

h. Minimum Requirement #8: Wetlands Protection

All new development and redevelopment projects meeting the Project Thresholds in I-3.3 Applicability of the Minimum Requirements shall include Stormwater Management BMPs in accordance with the following thresholds, standards, and requirements to reduce the impacts of stormwater runoff to wetlands. This project will employ erosion control BMP's such as stabilized construction entrance, silt fence, amendment of disturbed soils, sediment pond, temporary interceptor swales/ check dams, ect to satisfy this requirement. This will be included in our final engineering documents

i. Minimum Requirement #9: Operation and Maintenance

All new development and redevelopment projects meeting the Project Thresholds in I-3.3 Applicability of the Minimum Requirements shall create an operation and maintenance (O&M) manual for all BMPs used to meet I-3.4.6 MR6: Runoff Treatment, I-3.4.7 MR7: Flow Control, and/or I-3.4.8 MR8: Wetlands Protection. The O&M manual shall identify: l Maintenance requirements that are consistent with the provisions in Volume V, and l The party (or parties) responsible for the operation, maintenance, and long-term funding source(s). At private facilities, a copy of the O&M manual shall be retained on site or within reasonable access to the site, and shall be transferred with the property to the new owner. A log of maintenance activity that indicates what actions were taken shall be kept and be available for inspection by the local government. This requirement will be satisfied during the final engineering stage of this project.

End of Report

APPENDIX “A”
PROJECT MAPS

LARSON & ASSOCIATES, INC
SURVEYORS, ENGINEERS AND PLANNERS
9027 PACIFIC AVENUE, SUITE 4
TACOMA, WA 98444 (253) 474-3404

National Flood Hazard Layer FIRMette

FEMA

122°16'18"W 47°11'31"N

122°15'40"W 47°11'7"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

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Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/13/2026 at 10:21 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX “B”
MGSFLOOD CALCULATIONS

LARSON & ASSOCIATES, INC
SURVEYORS, ENGINEERS AND PLANNERS
9027 PACIFIC AVENUE, SUITE 4
TACOMA, WA 98444 (253) 474-3404

MGS FLOOD
PROJECT REPORT

Program Version: MGSFlood 4.70
Program License Number: 200810005
Project Simulation Performed on: 03/13/2026 11:02 AM
Report Generation Date: 03/13/2026 11:11 AM

Input File Name: Infiltration Trench #1 Sizing.fld
Project Name: Inter Ave
Analysis Title: Infiltration Trench Sizing
Comments:

PRECIPITATION INPUT

Computational Time Step (Minutes): 15

Extended Precipitation Time Series Selected

Full Period of Record Available used for Routing

Climatic Region Number: 19
Precipitation Station : 96004205 Puget East 42 in_5min 10/01/1939-10/01/2147
Evaporation Station : 961042 Puget East 42 in MAP

Evaporation Scale Factor : 0.750

HSPF Parameter Region Number: 1
HSPF Parameter Region Name : Ecology Default

********** Default HSPF Parameters Used (Not Modified by User) **********

********** WATERSHED DEFINITION **********

Predevelopment/Post Development Tributary Area Summary

	Predeveloped	Post Developed
Total Subbasin Area (acres)	1.497	1.497
Area of Links that Include Precip/Evap (acres)	0.000	0.000
Total (acres)	1.497	1.497

----------SCENARIO: PREDEVELOPED
Number of Subbasins: 1

---------- Subbasin : Subbasin 1 ----------
-------Area (Acres) --------
C, Forest, Flat 1.497

Subbasin Total 1.497

----------SCENARIO: POSTDEVELOPED
Number of Subbasins: 2

---------- Subbasin : Subbasin 1 ----------

	-------Area (Acres) --------
C, Pasture, Flat	0.191
ROADS/FLAT	1.039
ROOF TOPS/FLAT	0.172
SIDEWALKS/FLAT	0.019
Subbasin Total	1.421

---------- Subbasin : Bypass Road Area ----------

	-------Area (Acres) --------
ROADS/FLAT	0.076
Subbasin Total	0.076

********** **LINK DATA** **********

----------SCENARIO: PREDEVELOPED
Number of Links: 0

********** **LINK DATA** **********

----------SCENARIO: POSTDEVELOPED
Number of Links: 2

Link Name: New Infilt Trench Lnk1
Link Type: Infiltration Trench
Downstream Link Name: New Copy Lnk2

Trench Type	:	Trench on Embankment Sideslope
Trench Length (ft)	:	98.00
Trench Width (ft)	:	40.00
Trench Depth (ft)	:	4.00
Trench Bottom Elev (ft)	:	100.00
Trench Rockfill Porosity (%)	:	30.00

Constant Infiltration Option Used
Infiltration Rate (in/hr): 2.20

Link Name: New Copy Lnk2
Link Type: Copy
Downstream Link: None

**********FLOOD FREQUENCY AND DURATION STATISTICS**********

----------SCENARIO: PREDEVELOPED
Number of Subbasins: 1
Number of Links: 0

----------SCENARIO: POSTDEVELOPED
Number of Subbasins: 2
Number of Links: 2

*************Groundwater Recharge Summary ***************
Recharge is computed as input to Perlnd Groundwater Plus Infiltration in Structures

Total Predeveloped Recharge During Simulation

Model Element	Recharge Amount (ac-ft)
Subbasin: Subbasin 1	362.001
Total:	362.001

Total Post Developed Recharge During Simulation

Model Element		Recharge Amount (ac-ft)
Subbasin: Subbasin 1		43.080
Subbasin: Bypass Road Area		0.000
Link:	New Infilt Trench Ln	Not Computed
Link:	New Copy Lnk2	0.000
Total:		43.080

Total Predevelopment Recharge is Greater than Post Developed
Average Recharge Per Year, (Number of Years= 208)
Predeveloped: 1.740 ac-ft/year, Post Developed: 0.207 ac-ft/year

*************Water Quality Facility Data ***************

----------SCENARIO: PREDEVELOPED

Number of Links: 0

----------SCENARIO: POSTDEVELOPED

Number of Links: 2

********** Link: New Copy Lnk2 **********

2-Year Discharge Rate : 0.032 cfs

15-Minute Timestep, Water Quality Treatment Design Discharge
On-line Design Discharge Rate (91% Exceedance): 0.01 cfs

Off-line Design Discharge Rate (91% Exceedance): 0.01 cfs

Infiltration/Filtration Statistics----------
Inflow Volume (ac-ft): 47.75
Inflow Volume Including PPT-Evap (ac-ft): 47.75
Total Runoff Infiltrated (ac-ft): 0.00, 0.00%
Total Runoff Filtered (ac-ft): 0.00, 0.00%
Primary Outflow To Downstream System (ac-ft): 47.75
Secondary Outflow To Downstream System (ac-ft): 0.00
Volume Lost to ET (ac-ft): 0.00
Percent Treated (Infiltrated+Filtered+ET)/Total Volume: 0.00%

************Compliance Point Results **************

Scenario Predeveloped Compliance Subbasin: Subbasin 1

Scenario Postdeveloped Compliance Link: New Copy Lnk2

***** Point of Compliance Flow Frequency Data *****
Recurrence Interval Computed Using Gringorten Plotting Position

Predevelopment Runoff		Postdevelopment Runoff	
Tr (Years)	Discharge (cfs)	Tr (Years)	Discharge (cfs)
2-Year	3.731E-02	2-Year	3.194E-02
5-Year	6.138E-02	5-Year	4.387E-02
10-Year	8.287E-02	10-Year	5.160E-02
25-Year	0.107	25-Year	6.653E-02
50-Year	0.138	50-Year	8.611E-02
100-Year	0.196	100-Year	0.163
200-Year	0.241	200-Year	0.282
500-Year	0.276	500-Year	0.339

** Record too Short to Compute Peak Discharge for These Recurrence Intervals

****** Flow Duration Performance ******

Excursion at Predeveloped 50%Q2 (Must be Less Than or Equal to 0%):	-96.5%	PASS
Maximum Excursion from 50%Q2 to Q2 (Must be Less Than or Equal to 0%):	-96.5%	PASS
Maximum Excursion from Q2 to Q50 (Must be less than 10%):	0.0%	PASS
Percent Excursion from Q2 to Q50 (Must be less than 50%):	0.0%	PASS

MEETS ALL FLOW DURATION DESIGN CRITERIA: PASS

****** LID Duration Performance ******

Excursion at Predeveloped 8%Q2 (Must be Less Than 0%):	-76.7%	PASS
Maximum Excursion from 8%Q2 to 50%Q2 (Must be Less Than 0%):	-80.5%	PASS

MEETS ALL LID DURATION DESIGN CRITERIA: PASS

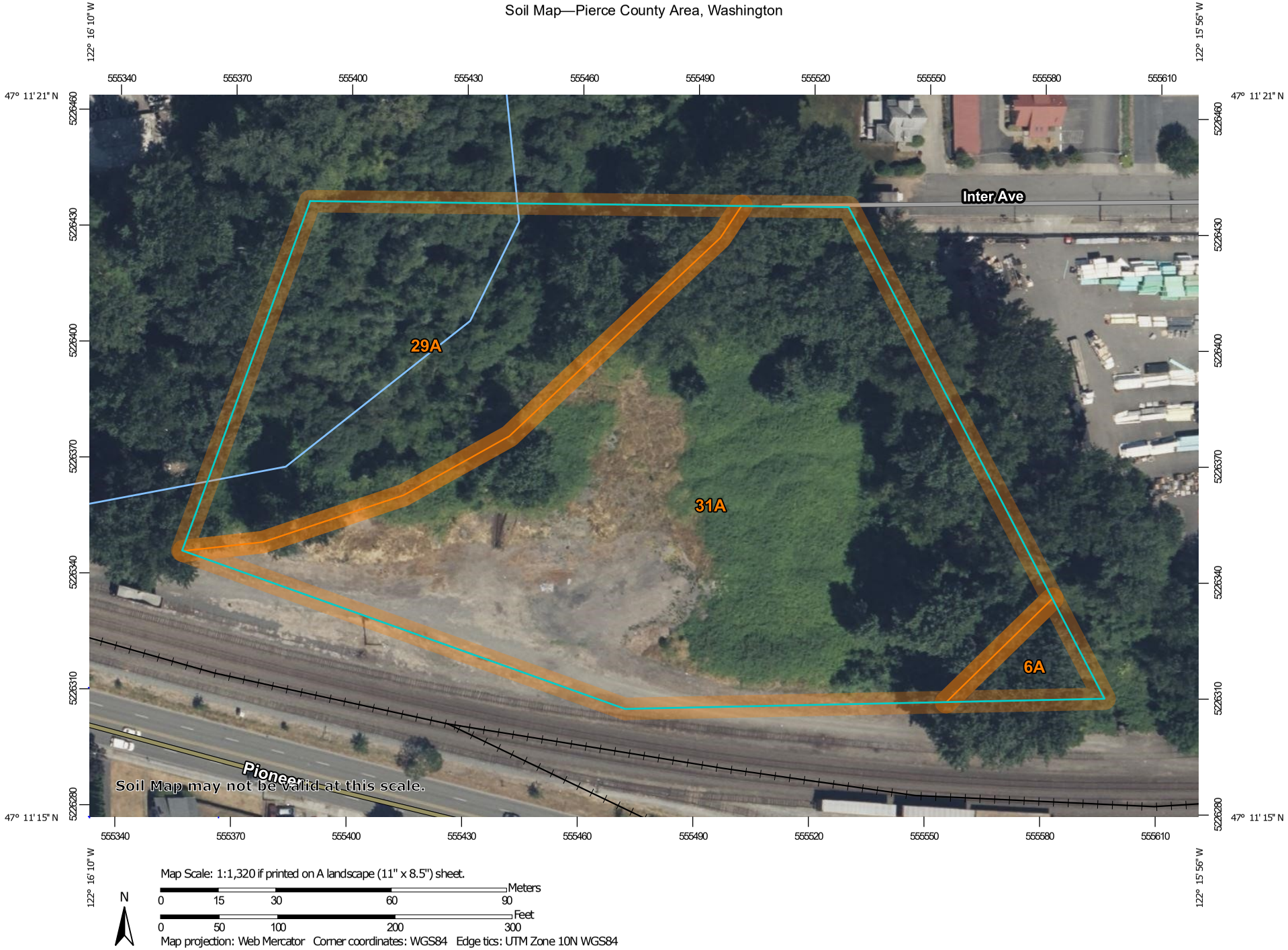
APPENDIX “C”
NCRS SOIL MAP AND DATA

LARSON & ASSOCIATES, INC

SURVEYORS, ENGINEERS AND PLANNERS

9027 PACIFIC AVENUE, SUITE 4

TACOMA, WA 98444 (253) 474-3404



Map Scale: 1:1,320 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pierce County Area, Washington
Survey Area Data: Version 21, Aug 28, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 31, 2022—Aug 8, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6A	Briscot loam	0.1	2.3%
29A	Pilchuck fine sand	1.8	31.0%
31A	Puyallup fine sandy loam	3.8	66.6%
Totals for Area of Interest		**5.7**	**100.0%**

Pierce County Area, Washington

6A—Briscot loam

Map Unit Setting

National map unit symbol: 2hrc
Elevation: 20 to 250 feet
Mean annual precipitation: 30 to 55 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Briscot, drained, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Briscot, Drained

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 11 inches: loam
H2 - 11 to 38 inches: stratified fine sand to silt loam
H3 - 38 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 35 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Ecological site: F002XA007WA - Puget Lowlands Wet Hemlock Forest
Forage suitability group: Seasonally Wet Soils (G002XN202WA)
Other vegetative classification: Seasonally Wet Soils (G002XN202WA)
Hydric soil rating: Yes

Minor Components

Briscot, undrained

Percent of map unit: 5 percent
Landform: Flood plains
Other vegetative classification: Seasonally Wet Soils (G002XN202WA)
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Pierce County Area, Washington
Survey Area Data: Version 21, Aug 28, 2025

Pierce County Area, Washington

29A—Pilchuck fine sand

Map Unit Setting

National map unit symbol: 2hq6
Elevation: 0 to 690 feet
Mean annual precipitation: 35 to 60 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Pilchuck and similar soils: 85 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pilchuck

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 36 inches: fine sand
H3 - 36 to 60 inches: very gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A
Ecological site: F002XA008WA - Puget Lowlands Riparian Forest
Forage suitability group: Droughty Soils (G002XN402WA)
Other vegetative classification: Droughty Soils (G002XN402WA)
Hydric soil rating: No

Minor Components

Aquic xerofluvents
Percent of map unit: 10 percent
Landform: Flood plains
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Pierce County Area, Washington
Survey Area Data: Version 21, Aug 28, 2025

Pierce County Area, Washington

31A—Puyallup fine sandy loam

Map Unit Setting

National map unit symbol: 2hq9
Elevation: 0 to 390 feet
Mean annual precipitation: 35 to 60 inches
Mean annual air temperature: 50 degrees F
Frost-free period: 170 to 200 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Puyallup and similar soils: 85 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Puyallup

Setting

Landform: Flood plains, Low terraces
Parent material: Alluvium

Typical profile

H1 - 0 to 13 inches: ashy fine sandy loam
H2 - 13 to 29 inches: loamy fine sand
H3 - 29 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 48 to 79 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

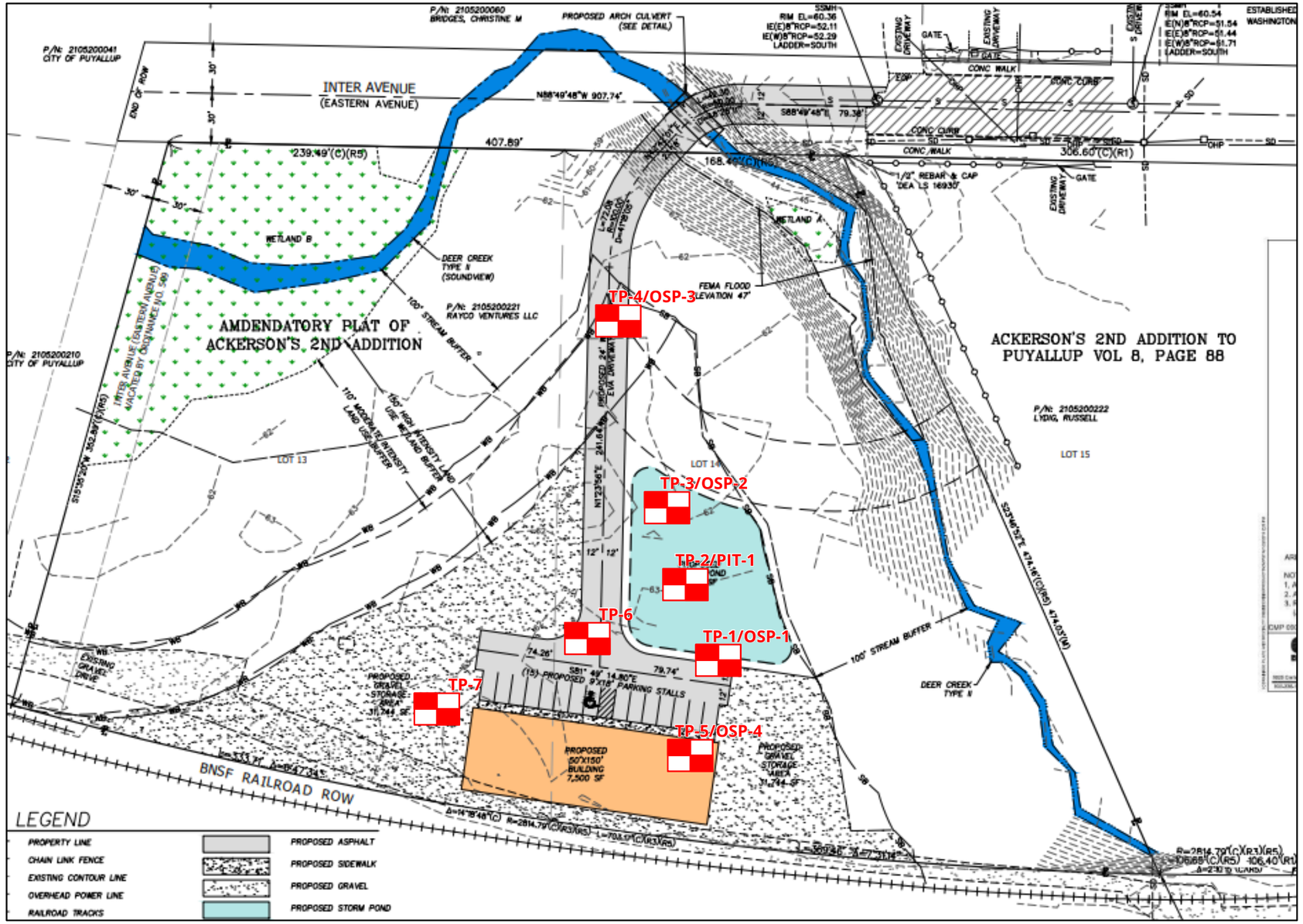
Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A
Ecological site: F002XA008WA - Puget Lowlands Riparian Forest
Forage suitability group: Droughty Soils (G002XN402WA)
Other vegetative classification: Droughty Soils (G002XN402WA)
Hydric soil rating: No

Minor Components

Briscot, undrained
Percent of map unit: 2 percent
Landform: Depressions
Other vegetative classification: Seasonally Wet Soils (G002XN202WA)
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Pierce County Area, Washington
Survey Area Data: Version 21, Aug 28, 2025



Not To Scale

Prelimianry Site Plan prepared by Larson & Associates dated September 10, 2025

TP-# Test pit number and approximate location (GeoResources 2026)

North

GEORESOURCES
earth science & geotechnical engineering
4809 Pacific Hwy. E. | Fife, WA 98424 | 253.896.1011 | www.georesourcesllc.com

Site & Exploration Plan

Proposed Commercial Development
xxx-Inter Ave
Puyallup, Washington
PN: 2105200221

Doc ID: RaycoVentures.InterAveCommercial.SEP	January 2026	Figure 2

Test Pit TP-1/OSP-1

Location: Proposed storm pond
Approximate Elevation: 63' (NAVD88)

Depth (ft)			Soil Type	Soil Description
0	-	1	-	Topsoil
1	-	2¼	SM	Brown silty SAND (loose, moist) (weathered alluvium)
2¼	-	9	SM	Grey silty SAND with some thin interbedded silt layers approximately 1-2 inches thick (loose to medium dense, moist to wet) (alluvium)

Terminated at 9 feet below ground surface (BGS)
Mottling observed at approximately 8 feet BGS.
Slight caving observed throughout excavation
Slow groundwater seepage observed at approximately 8 feet BGS.
Open stand piezometer installed at approximately 9 feet BGS.

Test Pit TP-2/PIT-1

Location: Proposed storm pond
Approximate Elevation: 63' (NAVD88)

Depth (ft)			Soil Type	Soil Description
0	-	¾	-	Topsoil
¾	-	1½	SM	Brown silty SAND (loose, moist) (weathered alluvium)
1½	-	10	SM	Grey silty SAND with some thin interbedded silt layers approximately 1-2 inches thick (loose to medium dense, moist to wet) (alluvium)

Terminated at 10 feet BGS.
No mottling observed at time of excavation
Slight caving observed throughout excavation
No groundwater seepage observed at time of excavation
Pilot Infiltration Test conducted at approximately 2½ feet BGS.

.

Logged by: DWC **Observed on: January 9, 2026**

Test Pit TP-3/OSP-2

Location: Proposed storm pond
Approximate Elevation: 62' (NAVD88)

Depth (ft)			Soil Type	Soil Description
0	-	1	-	Topsoil
1	-	1¾	SM	Brown silty SAND (loose, moist) (weathered alluvium)
1¾	-	9½	SM	Grey silty SAND with some thin interbedded silt layers approximately 1-2 inches thick (loose to medium dense, moist to wet) (alluvium)

Terminated at 9½ feet BGS
Mottling observed at approximately 8½ feet BGS.
Slight caving observed throughout excavation
Slow groundwater seepage observed at approximately 8¾ feet BGS.
Open stand piezometer installed at approximately 9½ feet BGS.

Test Pit TP-4/OSP-3

Location: North end of proposed driveway
Approximate Elevation: 63' (NAVD88)

Depth (ft)			Soil Type	Soil Description
0	-	1¼	-	Topsoil
1¼	-	2¼	SM	Brown silty SAND (loose, moist) (weathered alluvium)
2¼	-	10½	SM	Grey silty SAND with some thin interbedded silt layers approximately 1-2 inches thick (loose to medium dense, moist to wet) (alluvium)

Terminated at 10½ feet BGS.
No mottling observed at time of excavation
Slight caving observed throughout excavation
No groundwater seepage observed at time of excavation
Open stand piezometer installed at approximately 10 feet BGS.

.

Logged by: DWC **Observed on: January 9, 2026**

Test Pit TP-5/OSP-4

Location: East side of proposed building
Approximate Elevation: 62' (NAVD88)

Depth (ft)			Soil Type	Soil Description
0	-	1	-	Topsoil
1	-	9½	SM	Grey silty SAND with some thin interbedded silt layers approximately 1-2 inches thick (loose to medium dense, moist to wet) (alluvium)

Terminated at 9½ feet BGS
Mottling observed at approximately 9 feet BGS.
Slight caving observed throughout excavation
Slow groundwater seepage observed at approximately 9 feet BGS.
Open stand piezometer installed at approximately 9½ feet BGS.

Test Pit TP-6

Location: North of proposed building
Approximate Elevation: 62' (NAVD88)

Depth (ft)			Soil Type	Soil Description
0	-	¾	-	Topsoil
¾	-	9¾	SP-SM	Grey fine poorly graded SAND with some silt (loose to medium dense, moist) (alluvium)

Terminated at 9¾ feet BGS.
No mottling observed at time of excavation
Significant caving from 5 feet BGS and below.
No groundwater seepage observed at time of excavation

.

Logged by: DWC **Observed on: January 9, 2026**

Test Pit TP-7

Location: West side of proposed building
Approximate Elevation: 62' (NAVD88)

Depth (ft)			Soil Type	Soil Description
0	-	1	-	Topsoil
1	-	1½	SM	Brown silty SAND (loose, moist) (weathered alluvium)
1½	-	9¼	SP-SM	Grey fine poorly graded SAND with some silt (loose to medium dense, moist) (alluvium)

Terminated at 9¼ feet BGS.
No mottling observed at time of excavation
Significant caving from 5 feet BGS and below.
No groundwater seepage observed at time of excavation

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Logged by: DWC **Observed on: January 9, 2026**

Appendix B

Laboratory Test Results

From: Davis Carlsen <DavisC@georesources.us>
Sent: Monday, February 2, 2026 10:07 AM
To: Grant Middleton <gmiddleton@rrlarson.com>; Jacob Ray <jacob@terhuneray.com>
Cc: Keith Schembs <KeithS@georesources.us>
Subject: Inter Ave

Hi All,

I just wanted to reach out with a status update on this project. The CPT subcontractor is scheduled but they have been scheduling about two months out so the drill date isn't until March 5. I have included our preliminary infiltration rate below based on our PIT so we don't hold up things on that end. I have also attached the exploration plan and test pit logs.

In Situ Infiltration Testing

We performed one small scale Pilot Infiltration Tests (PITs) in the area of the proposed infiltration facility in accordance with the 2019 SWMMWW. The approximate location of each Small-Scale PIT is labeled on the attached Site & Exploration Plan, Figure 2.

The design infiltration rate was determined based on the procedure provided in Volume V Chapter 5, of the 2019 SWMMWW. Three correction factors, described below, were applied to measured rates. These include correction factors for testing ($F_{testing}$), geometry ($F_{geometry}$) and plugging ($F_{plugging}$). The design infiltration rates were determined as follows:

Where: $ksat_{design} = ksat_{initial} \text{ X } CF_V \text{ X } CF_T \text{ X } CF_M$

$ksat_{design}$ = Infiltration rate to be used for design of infiltration facility
$ksat_{initial}$ = Infiltration rate measured in the field
CF_T = A correction factor of 0.5 was used since we used the small-scale Pilot infiltration test (PIT) in the field.
CF_v = A correction factor of 0.5 was used for site variability
CF_M = A correction factor of 0.9 was used for degree of influent control to prevent siltation and bio-buildup

TABLE 1:
INFILTRATION RATES for INFILTRATION FACILITIES

Small-Scale Pilot Infiltration Test Number	Soil Type at Approximate Bottom of Infiltration Test	Measured Infiltration Rate (in/hr)	Design Infiltration Rate (in/hr)
PIT-1	Silty SAND (SM)	10.1	2.2

I also wanted to confirm with you two that we will be doing wet season groundwater monitoring for the remainder of the wet season? Let me know if you have any questions or concerns. Thanks,