

# MEMORANDUM

Project No. 210237

December 9, 2021

**To:** Beth Rood, PE, HDR Project Manager  
Jerry Bibee, PE, Civil/Stormwater Lead Engineer

**From:**



**Rory Kilkenny, PE**  
Project Geotechnical Engineer  
rkilkenny@aspectconsulting.com

**Henry H. Haselton, PE**  
Principal Geotechnical Engineer  
hhaselton@aspectconsulting.com

**Re: Marymoor Park Stormwater Improvements Exploration Plan**

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This memorandum was prepared by Aspect Consulting, LLC (Aspect) to summarize proposed geotechnical field investigations (investigations) associated with the Marymoor Park Stormwater Improvements Project (Project), located within Unincorporated King County in Marymoor Park (Site; Figure 1). The investigations will be used to support the design of a proposed Rain Garden (Alternative 4A) and proposed Culvert and Channel Improvements (Alternative 6A). The location of these proposed stormwater improvements can be seen on Figure 2.

The investigations will consist of borings completed as monitoring wells and small-scale pilot infiltration tests (PITs). These investigations will be used to characterize subsurface soil and groundwater conditions at the Site. Explorations to support Alternative 4A will include advancing one drilled soil boring (completed as a groundwater monitoring well) and conducting three PITs. Explorations to support Alternative 6A will include two drilled soil borings (completed as groundwater monitoring wells). The investigation locations can be found on Figure 2.

## Schedule

The field exploration program is planned for December 13 through December 17, 2021. Work is expected to begin each day after 7:30 a.m. and conclude before 5:00 p.m.

## Exploration Locations

The explorations will be located at Marymoor Park, along NE Marymoor Way. Exploration of Alternative 4A will occur south of NE Marymoor Way and extend east of the Marymoor Art and Maintenance Barns. Exploration of Alternative 6A will occur at a portion of the existing east-west drainage collector channel located north of NE Marymoor Way and south of Parking Lot K (Lot K), at the two Lot K entrance roads. Both areas consist of grass fields, trees, and paved roadways. Exploration locations are shown on Figure 2 and summarized in Table 1 below.

**Table 1. Exploration Summary**

Exploration ID	Type	Depth (feet)	Latitude & Longitude <sup>(1)</sup>
AMW-01	Drilled Boring and Monitoring Well	25.0	47°39'48.72"N, 122°7'8.83"W
AMW-02	Drilled Boring and Monitoring Well	30.0	47°39'39.51"N, 122°7'12.82"W
AMW-03	Drilled Boring and Monitoring Well	30.0	47°39'51.62"N, 122°7'17.54"W
APIT-01	Excavated Test Pit	5.0 <sup>(2)</sup>	47°39'51.02"N, 122°7'14.08"W
APIT-02	Excavated Test Pit	3.0 <sup>(2)</sup>	47°39'49.19"N, 122°7'11.59"W
APIT-03	Excavated Test Pit	3.5 <sup>(2)</sup>	47°39'49.14"N, 122°7'9.78"W

Notes:

- (1) Latitude and longitude reference WGS84 and are subject to minor modifications based on field conditions.
- (2) PIT depths are variable up to 5 feet bgs. Target PIT subgrade are at elevation 33 feet.

## Marking and Utilities

One-Call notifications were completed via the Washington Utility Notification Center web portal in accordance with Washington State Law. Exploration locations were marked with white paint on November 18, 2021. The locate ticket is included as Attachment 1 and lists utility purveyors that were notified. Aspect has also contracted with a private utility locator, Applied Professional Services, Inc., to clear the exploration areas of subsurface conductible utilities prior to beginning the work. If conflicts with utilities are discovered, the proposed exploration locations will be adjusted as appropriate.

## Equipment

The drilled soil borings will be completed with a rubber-track-mounted drill rig owned and operated by Holocene Drilling, Inc. of Puyallup, Washington. The excavated PITs will be completed with a rubber tracked mini-excavator owned and operated by Kelly's Excavating, Inc. (Kelly's) of Pacific, Washington. Kelly's will also bring a 2,000-gallon water truck for use during the PITs. Aspect personnel will have a standard passenger vehicle on-site during the explorations. The track-mounted drill rig and excavator/backhoe will be delivered on flatbed truck trailers that will be legally parked in Lot K after unloading equipment. The proposed parking location for the flat bed trucks is shown on Figure 2.

## Methods

The drilled borings will be advanced using a combination of hollow-stem-auger and mud rotary drilling techniques. AMW-01 will extend to approximately 25 feet below ground surface (bgs).

AMW-02 and AMW-03 will extend to approximately 30 feet bgs. Boreholes are anticipated to be approximately 6 inches in diameter. Standard Penetration Tests (SPTs) will be conducted every 2.5 feet within the first 15 feet of the borings, and every 5 feet thereafter. All three borings will be completed with groundwater monitoring wells consisting of 2-inch-diameter slotted sandpipe piezometers with programmable transducers and data loggers (diver) to record groundwater levels for up to 12 months. Monitoring well logging can be extended beyond 12 months if requested by the County.

The monitoring wells will be backfilled with sand and will have flush-mounted monuments installed in concrete at the surface in accordance with Washington State regulations. The wells will be developed the same day as drilling utilizing a combination of surging and pumping to clear the well screen of any drill mud. Slug tests will be conducted within the monitoring wells to estimate the aquifer's horizontal hydraulic conductivity. Soil cuttings generated during drilling will be drummed and hauled off-site for disposal.

The excavated PITs will be completed in general accordance with Reference 6A of the 2021 King County Surface Water Design Manual (KCSWDM). The PITs are expected to be approximately 3 feet by 5 feet in plan area and extend to an approximate depth of 3 feet bgs, although they may extend up to 5 feet bgs. Water for the PITs will be ferried by water truck from an on-site hydrant at Parking Lot I, as shown in Figure 2. The water truck is expected to remain on the roadway and will not encroach onto vegetated areas. The test pits will be backfilled in 6"-12" maximum depth compacted lifts with the excavated soil and tamped into place with the excavator bucket to match surrounding adjacent grade and slope. Any remaining excavated soil after backfill will be hauled off-site for disposal. Test pit excavations will result in disturbance of the ground surface within a 10- to 15 foot radius. Additional settling is expected to occur over time.

Aspect personnel will monitor each exploration and retrieve representative soil samples. For both Alternatives 4A and 6A, geotechnical laboratory testing of selected soil will be conducted to characterize index and engineering properties, including moisture content, grain size, and Atterberg Limits tests.

### **Access & Staging**

Access to the Site will be via the western entrance to NE Marymoor Way from W Lake Sammamish Pkwy NE. Equipment will travel down NE Marymoor Way to Parking Lot K, as shown in Figure 2. From Lot K, each exploration location can be accessed via paved roads. Some exploration will require rubber tracked equipment to travel over grassy areas. Travel over private property will not be required.

### **Restoration**

The borings and excavated PITs will be backfilled to match existing grades. Surface restoration, including revegetation or placement of other surface cover will be conducted by others in accordance with our contract. Vehicles will use the existing paved roads to the extent practical to limit impacts to existing vegetation. Disturbance will be minimized to the extent practical.

**Permits**

No external permits are expected to be needed to complete this work. Access to the water hydrant is approved through King County. Traffic control will not be required.

**Contacts**

Project-specific contact information for this portion of the work is included in Table 2 below.

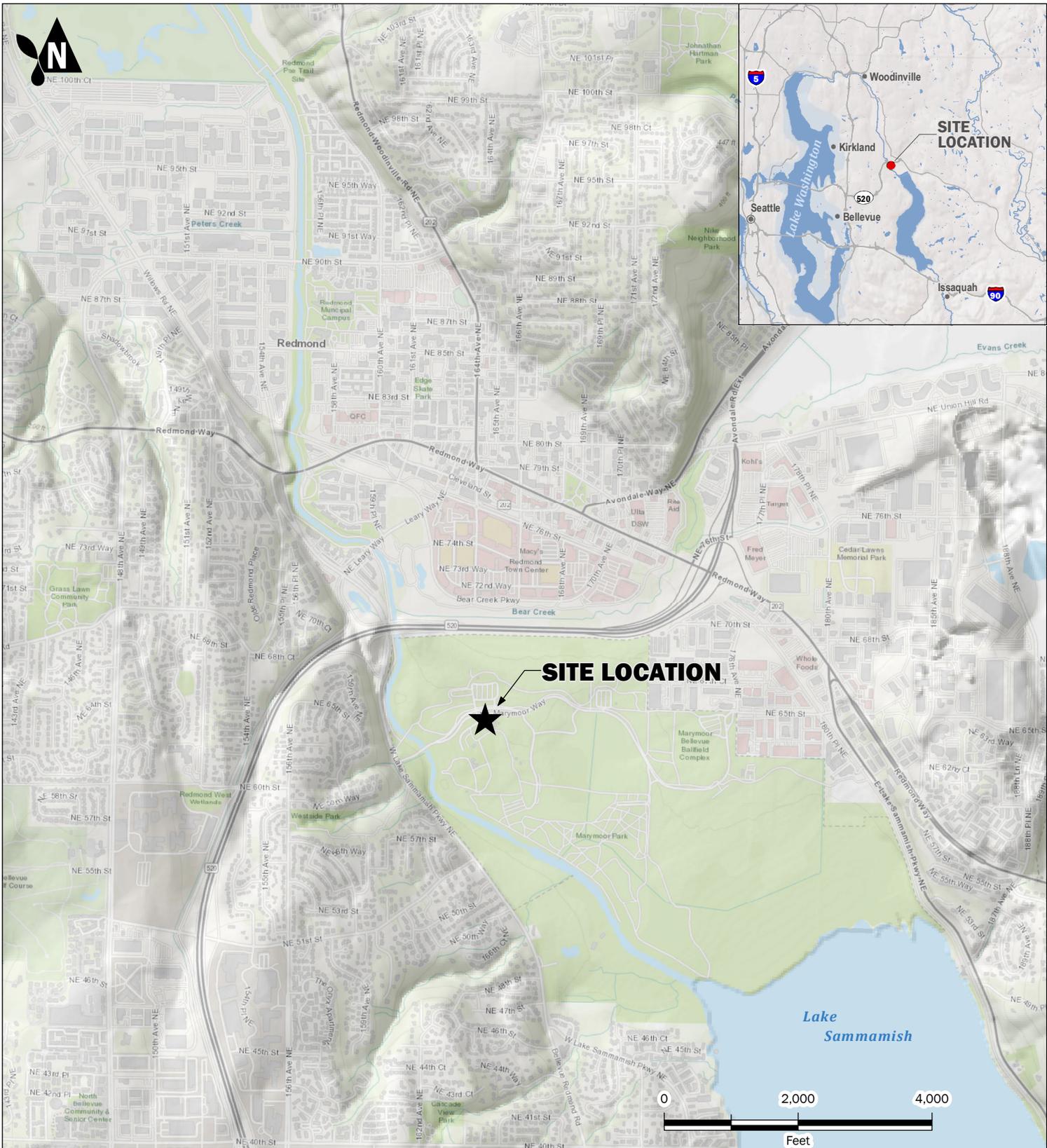
**Table 2. Contact Information**

<b>Name</b>	<b>Role</b>	<b>Cell Phone Number</b>
Julia Martz	Field Personnel	630.815.4566
Rory Kilkenny, PE	Project Manager	541.256.0037
Henry H. Haselton, PE	Principal Engineer	206.225.7379

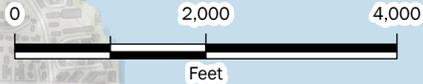
- Attachments: Figure 1 – Vicinity Map  
Figure 2 – Exploration Plan  
Attachment 1 – Utility Locate Ticket

V:\210237 Engineering Svcs for Marymoor Pk SW Improvements\Deliverables\Exploration Plan\Final\Exploration Plan\_Final\_12.9.21.docx

# FIGURES



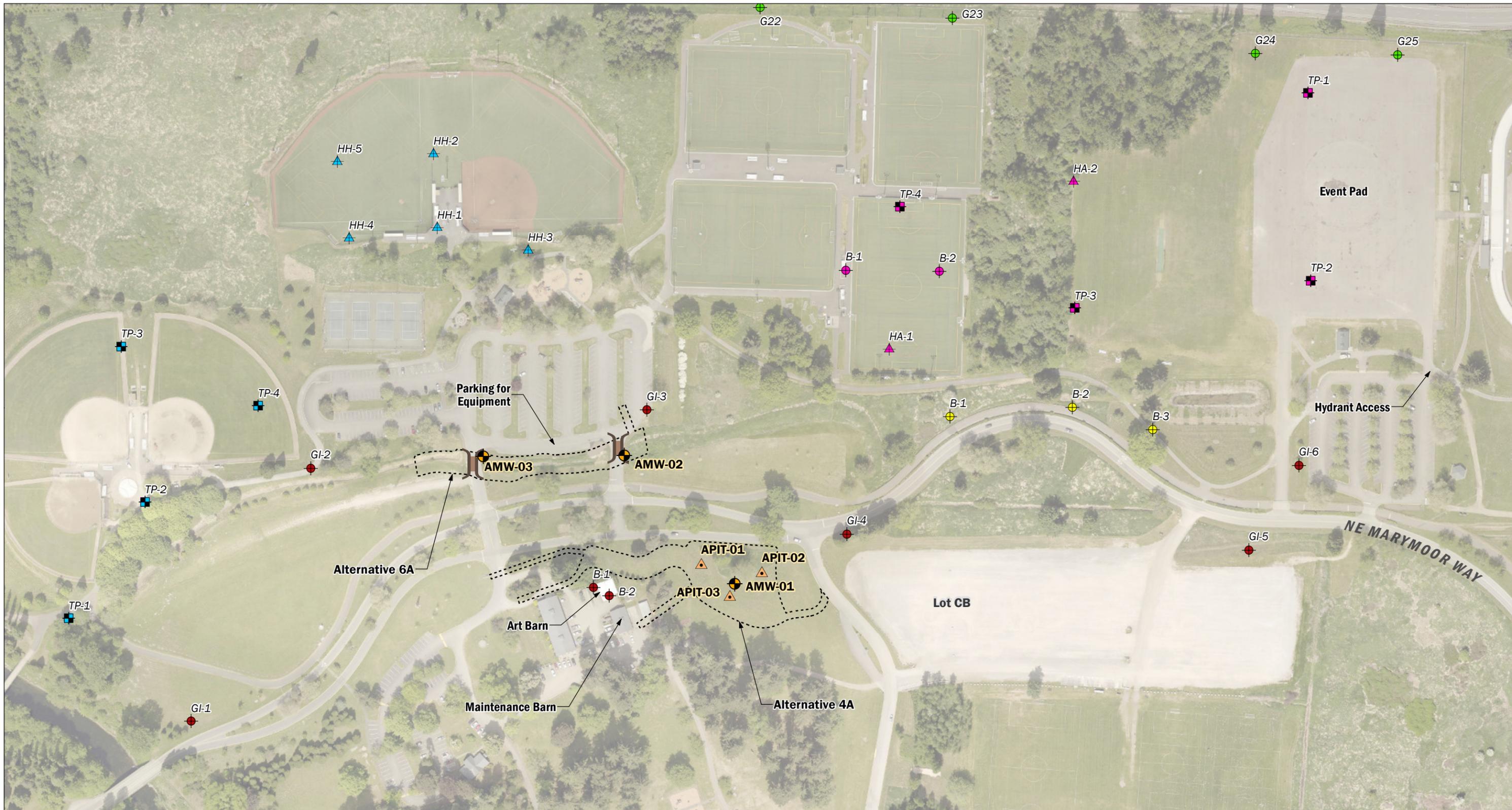
**SITE LOCATION**



**Vicinity Map**  
 Geotechnical Exploration Plan  
 Marymoor Park  
 Redmond, Washington

	NOV-2021	BY: CRS / WEG	FIGURE NO. <b>1</b>
	PROJECT NO. 180379-03	REVISED BY: ---	

GIS Path: I:\Projects\_8\KingCounty\_MarymoorPark\_180379\_Deliverables\Geotechnical Exploration Plan\01 Vicinity Map.rxd | Coordinate System: NAD\_1983 StatePlane Washington North FIPS 4601 Feet | Date Saved: 11/22/2021 | User: twilen | Print Date: 11/22/2021



GIS Path: \\projects\_8\KingCounty\_MarymoorPark\_180379\Delivered\Geotechnical Exploration Plan\02 Exploration Plan.mxd | Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet | Date Saved: 12/2/2021 | User: dgrimm | Print Date: 12/2/2021

**Proposed Explorations**

-  Monitoring Well, Aspect
-  Pilot Infiltration Testing Location, Aspect
- Historical Investigations from Proposed Investigations**
-  Boring
-  Hand Auger/Hand Hole
-  Test Pit
-  Unknown

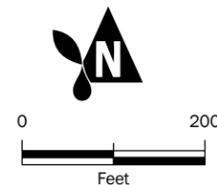
**Consultant**

-  King County, 2020
-  Golder Associates Inc, 2019
-  GeoDesign Inc, 2007
-  HWA GeoSciences Inc, 1999
-  Giles Engineering Associates, 1998

-  Stormwater Facility Alternative Potential Site Disturbance Limit
-  Culvert to be Replaced

**Notes:**

- Site features are approximate.
- Aerial imagery from King County, 2019.
- Locations of Alternatives sourced from HDR and King County CAD file, December 2021.



**Exploration Plan**  
Geotechnical Exploration Plan  
Marymoor Park  
Redmond, Washington



PROJECT NO. 180379-03	BY: CRS / WEG / TDR	REVISOR: RPK / WEG	FIGURE NO. <b>2</b>
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# **ATTACHMENT 1**

## **Utility Locate Ticket**

[+ Larger Font](#) | [- Smaller Font](#)

### WASHINGTON UTILITY NOTIFICATION CENTER

Washington Ticket#:	21524406	<b>2 FULL BUSINESS DAYS</b>		
Original Call Date:	11/18/21	Time:	1:33 PM	Type: WEB
Work to Begin Date:	12/07/21	Time:	12:00 AM	
Viewing Date:	11/18/21	Time:	2:29 PM	

#### Caller Information

Company:	ASPECT CONSULTING, LLC	Type:	CONTRACTOR
Contact Name:	JULIA MARTZ	Phone:	(630) 815-4566
Alt. Contact:	RORY KILKENNY	Phone:	(541) 256-0037
Best Time:		Fax:	
Address:	710 2ND AVE; SEATTLE, WA 98104		
Caller Email:	JMARTZ@ASPECTCONSULTING.COM		

#### Dig Site Information

Type of Work: GEOTECHNICAL EXPLORATION  
 Work Being Done For: KING COUNTY

#### Dig Site Location

County:	KING	State:	WA
Place:	REDMOND		
Address / Street:	NE MARYMOOR WAY		
Nearest Intersection:	LOT K		

#### Location of Work:

SEVEN EXPLORATION LOCATIONS ON THE NORTH AND SOUTH SIDE OF NE MARYMOOR WAY AND ON THE EAST SIDE OF THE ART AND MAINTENANCE BARN. REFER TO ATTACHED IMAGE  
 GO TO [LINK](#) TO OBTAIN ADDITIONAL INFORMATION THAT WAS PROVIDED BY THE EXCAVATOR REGARDING THIS LOCATION.

#### Remarks:

AREA MARKED IN WHITE PAINT

Caller Twp:	25N	Rng:	5E	Sect-Qtr:	12-SW		
Map Twp:	25N	Rng:	5E	Sect-Qtr:	12-SW,11-SE		
Caller Lat:	47.664294	Lon:	-122.116012	Zone:		Caller Nad:	27
<b>Excavation Coordinates for # Polygons: 1</b>							
Poly 1: NW Lat:	47.6653921	Lon:	-122.1224492	SE Lat:	47.6620683	Lon:	-122.1177177