GeoEngineers

17425 NE Union Hill Road, Redmond, Washington 98052 - Telephone: 425-861-6000 www.geoengineers.com

Memorandum

To:	Windi Shapley, PE, Otak
From:	Nancy Tochko, PE, and Debra Overbay, PE, GeoEngineers
Date:	April 1, 2020
File:	2095-033-01
Subject:	Geotechnical Exploration Plan for McCollum Park Community Transit *Swift* Bus Rapid Transit (BRT) Orange Line

PROJECT DESCRIPTION

This exploration plan outlines the proposed geotechnical explorations across a portion of McCollum Park to support design of the Community Transit Swift BRT Orange Line project. The project will be constructed along an 11-mile route between Edmonds Community College (western terminus) to the existing McCollum Park Park & Ride (eastern terminus). The eastern terminus will include a new BRT turn-around and layover, a new Swift station and drop off station, local stop and layover area reconfiguration, driver restroom, pedestrian platform, lighting, sidewalks, parking lot reconfiguration and new south parking lot. We propose two types of explorations, shallow excavations to evaluate existing fill cover over the landfill liner and geotechnical borings. The purpose of the explorations are to 1) determine the depth to the landfill liner for design of shallow site improvements above the liner, 2) try to delineate the eastern edge of the liner for the purposes of siting the new sewer, and 3) evaluate the thickness of the landfill debris at three boring locations to evaluate design considerations and estimate long-term settlements. Proposed explorations are shown in the attached figures.

WORK DESCRIPTION

Utility Locate

Prior to mobilizing to the site, exploration locations will be marked and the One Call service will be notified for utility locates. We will also review available utility maps and accompany a private utility locator to clear individual exploration sites using RF multi-frequency locating equipment (for locating metallic pipe and cable/tracer wire).

Shallow Excavations to Record Depth to Liner

Shallow excavations will be completed with a small rubber-tired backhoe. GeoEngineers previously accomplished this at the site when improvements were completed in 2014. Excavations will proceed slowly and intermittently to stop and use hand tools to determine if the liner is within 6 to 12 inches of the excavated depth. After the liner is exposed, the depth will be recorded and a sample of the overlying fill material will be obtained. The excavated soils will be placed back in the hole and tamped with the bucket of the backhoe.

Borings

At the three locations where borings are planned, an approximate 4 feet by 4 feet portion of the liner will be exposed, and an I-shaped cut approximately 2 feet by 2 feet will be cut by our subcontractor, Northwest Linings. Based on existing data of the landfill thickness, we anticipate the borings will range from 20 to 25 feet in depth, and soil samples will be evaluated using standard penetration tests (SPT) at 2½-foot and 5-foot intervals to the depths explored. Samples obtained within the landfill debris will be evaluated on site and disposed of with the

cuttings. All cuttings from the borings will be placed in drums and left in the park at a location determined by the County. GeoEngineers and our drilling subcontractor will have individual Job Hazard Analyses (health and safety plans) for completing the drilling. After the borings are completed, the liner will be patched by Northwest Linings using an extrusion weld (see attached figure) and the area will be backfilled with the reserved fill soils from above the liner.

Surface Restoration

Existing sod will be peeled back to the extent possible and placed aside prior to completing the excavations. The on-site fill soils will be reused as backfill and tamped in place by the backhoe bucket, followed by replacing the reserved sod. Depending on weather and existing sod conditions, some reseeding might be necessary at a later date. In landscaped areas, beauty bark or topsoil will be used to relevel the surface if necessary. The borings will be backfilled in accordance with Department of Ecology regulations.

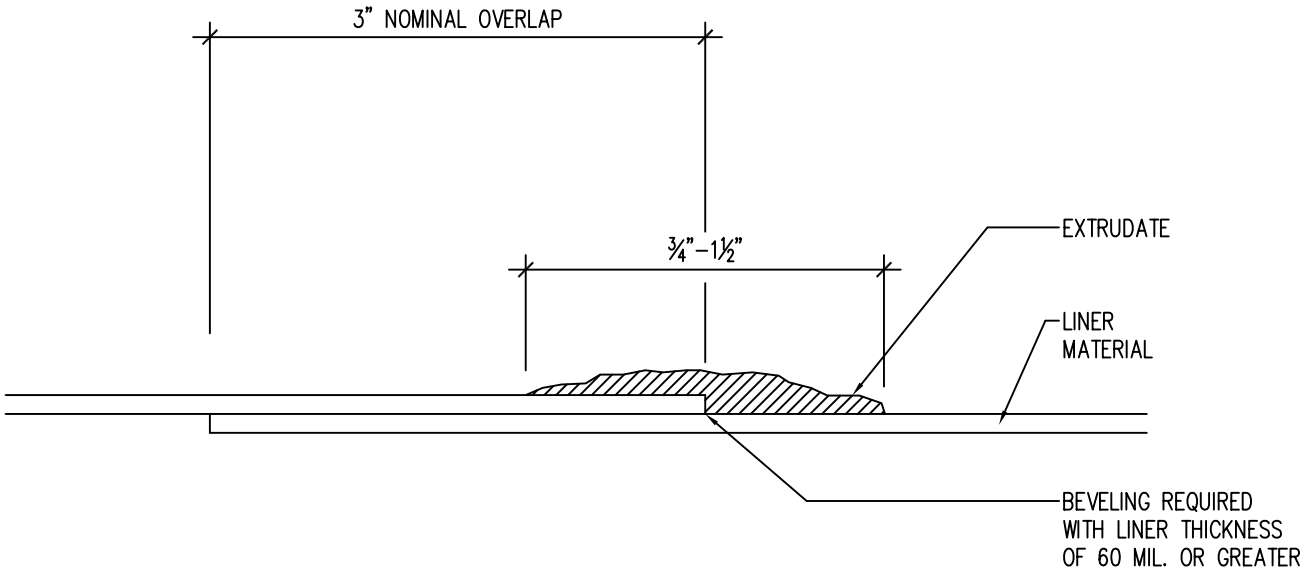
Schedule

We anticipate that the shallow excavations can be completed in about three days. The drilling will be scheduled for the last day of backhoe explorations, and the liner will be repaired following drilling (anticipated to begin the same day and may require one additional day).

COMMUNICATION PLAN

GeoEngineers will coordinate with Todd Jacobs of Community Transit and others at your direction regarding our schedule and anticipated days we will be on site. We will provide the type of work being done, the general location of the work, and the estimated completion date. Please contact us if you have any questions or if you need additional information.

Attachments:
Figures GE0302 to GE0307, Proposed Exploration Locations
Example Extrusion Weld



NOTES:

LINER SHEETS TACK WELDED TOGETHER AT OVERLAP TO FORM TEMPORARY BOND PRIOR TO WELDING

GRINDING NOT TO EXCEED 1/4" PAST 'SQUEEZE-OUT' ON EITHER SIDE. PROPER CARE SHOULD BE TAKEN IN NOT REMOVING TOO MUCH MATERIAL WHEN GRINDING

VACUUM TESTING IS THE NONDESTRUCTIVE SEAM TEST METHOD FOR EXTRUSION WELDS

EXTRUSION WELD

NTS

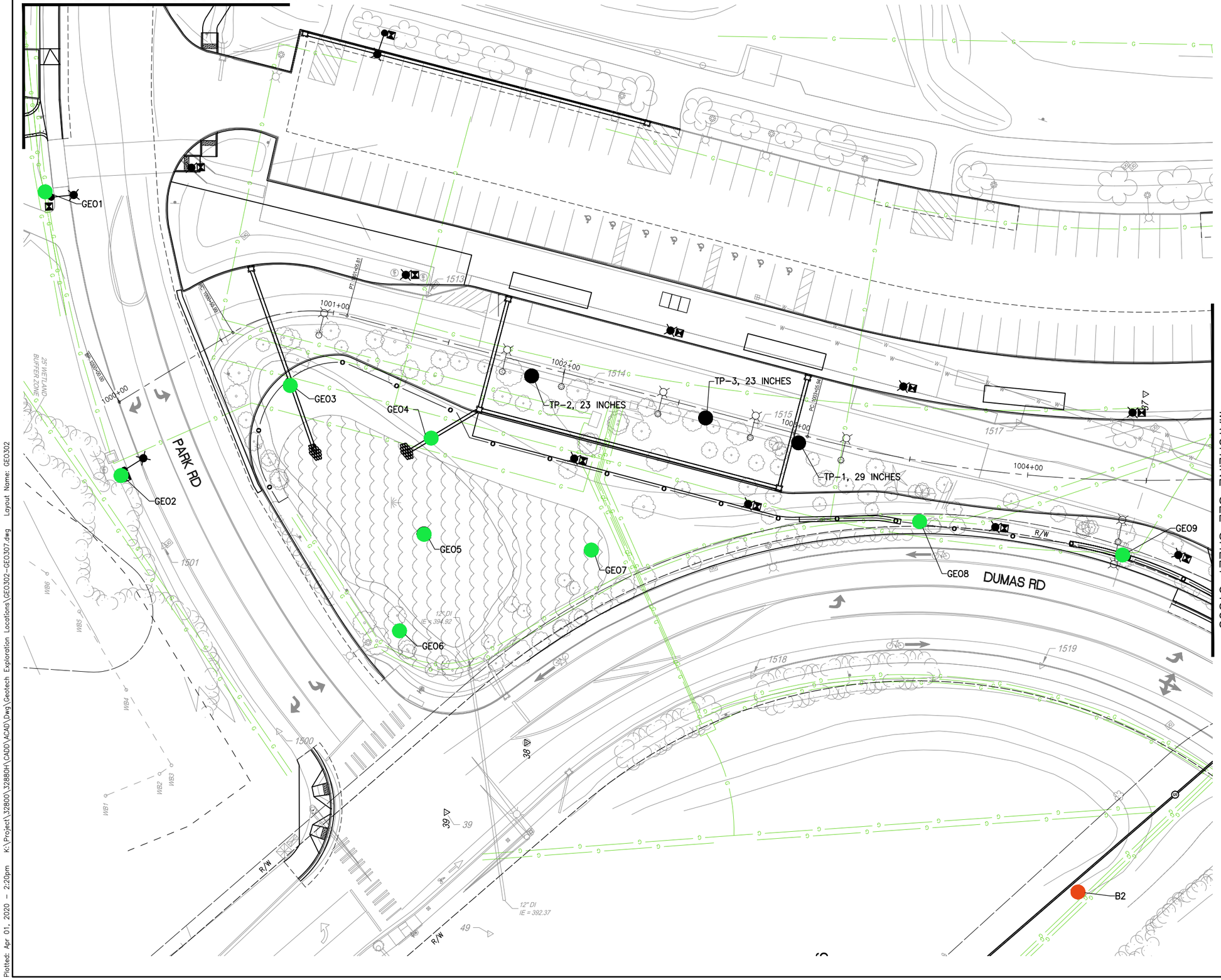
SHEET NO.	DETAIL

NORTHWEST LININGS &
GEOTEXTILE PRODUCTS, Inc.
www.northwestlinings.com
21000 77TH AVE. SOUTH
KENT, WA. 98032
(253) 872-0244 (253) 872-0245 FAX

JOB NAME:			
JOB NO.			
DATE:		CHECKED:	
BY:		SCALE:	

XREF LIST

SEE SHEET UT305 FOR CONTINUATION



LEGEND

- EXISTING R/W
- R/W EASEMENT
- PROPERTY LINE
- PERMANENT EASEMENT
- UTILITY EASEMENT
- TCE — TEMPORARY CONSTRUCTION EASEMENT
- E — EXIST. POWER
- P — PROPOSED POWER
- T — EXIST. COMMUNICATION
- TV — EXIST.COMMUNICATION
- FO — EXIST. FIBER OPTIC
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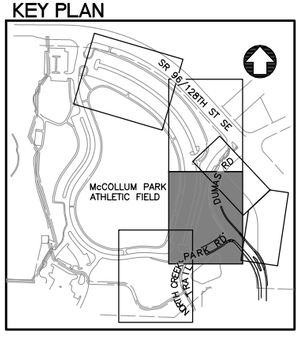
- W — EXIST. WATER
- W — PROPOSED WATER
- EXIST. PIPE
- PROPOSED PIPE
- PROPOSED NEW SHALLOW EXPLORATION TO EXPOSE LINER
- 2014 TEST PIT AND DEPTH TO LINER BELOW GROUND SURFACE
- PROPOSED BORING

NOTES

1.

KEY PLAN



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Swift ORANGE LINE
TERMINI GEOTECH EXPLORATION PLANS
EASTERN TERMINUS - McCOLLUM PARK (STATION # EB 3223 & WB 3224)

TITLE

Otak
11241 Willows Road NE, Suite 200
Redmond, WA 98052
425.822.4446
www.otak.com

PROJECT NUMBER
GEO302

DRAWING NO.

SHEET ---- OF 45

Plotted: Apr 01, 2020 – 2:20pm K:\Project\32800\32880H\CADD\ACAD\Dwg\Geotech Exploration Locations\GEO302-GEO307.dwg Layout Name: GEO302

XREF_LIST

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═══════	EXIST. PIPE
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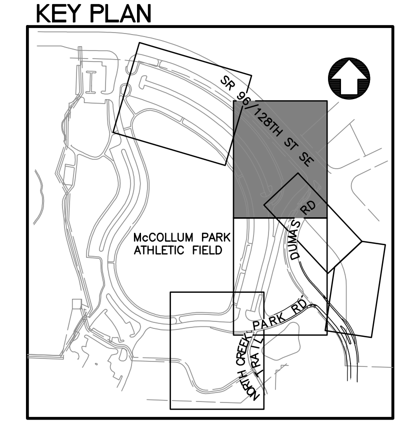
● (green)	PROPOSED NEW SHALLOW EXPLORATION TO EXPOSE LINER
● (black)	2014 TEST PIT AND DEPTH TO LINER BELOW GROUND SURFACE
● (red)	PROPOSED BORING

NOTES

1.

KEY PLAN



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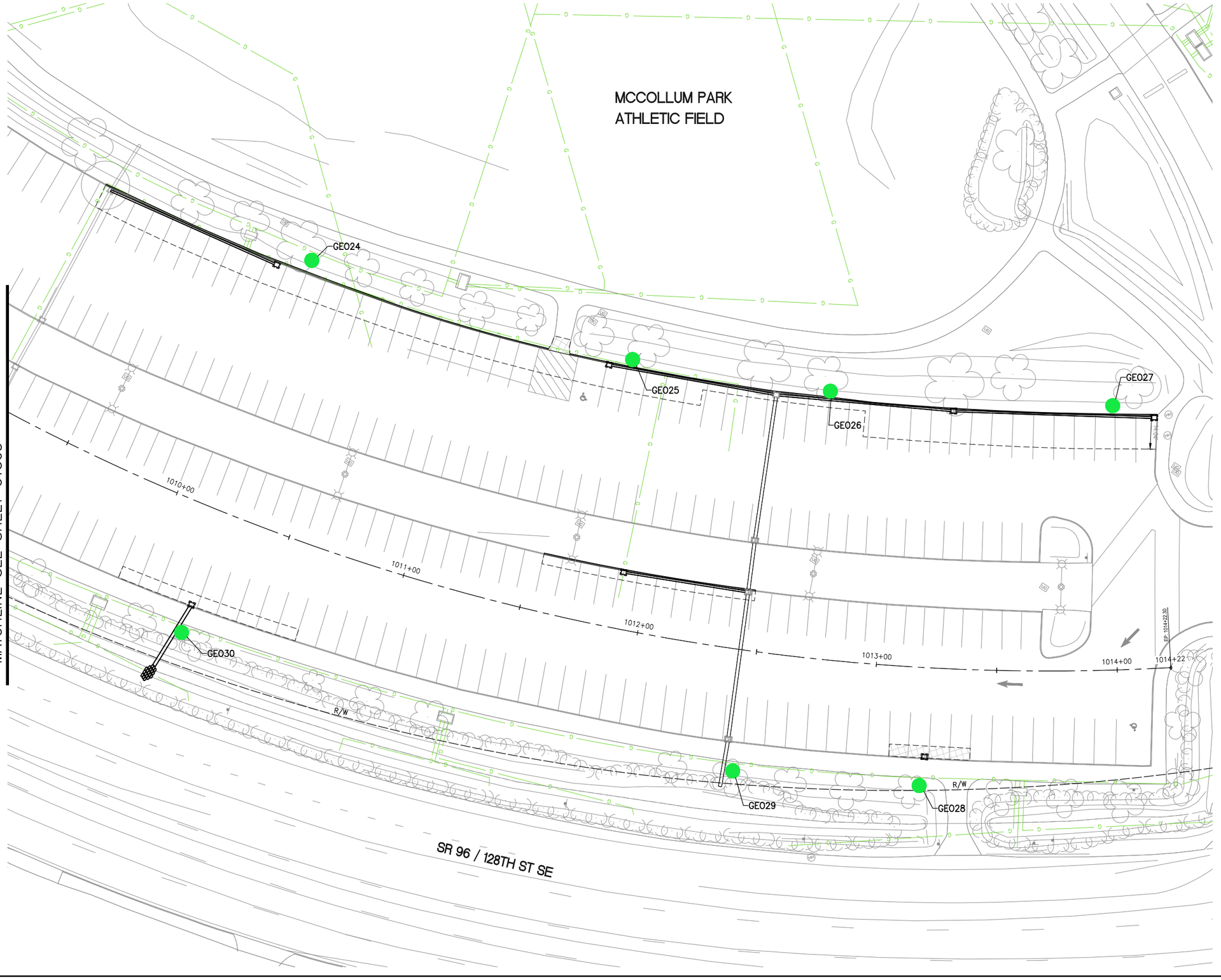

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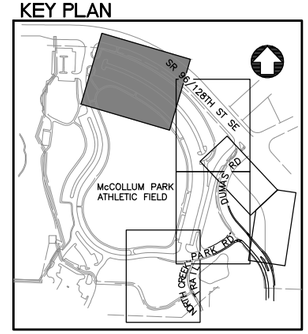

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GEO31
GEO32
GEO033
GEO035
GEO034
GEO36
GEO037
GEO038
GEO01
PARK ROAD
200' WETLAND BUFFER
SNOHOMISH COUNTY
CITY OF MILL CREEK
NORTH CREEK TRAIL
1504
1505
1502
1503
WC9
WC10
WC11
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SEE SHEET UT302 FOR CONTINUATION

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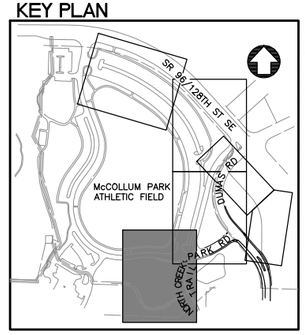

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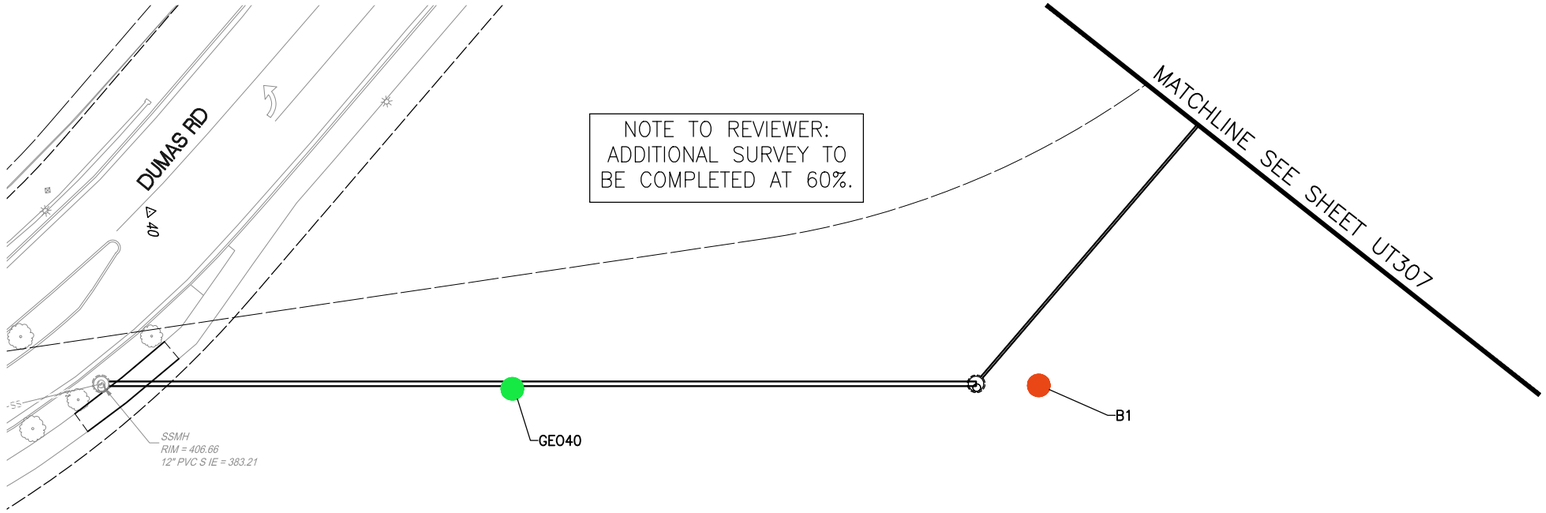

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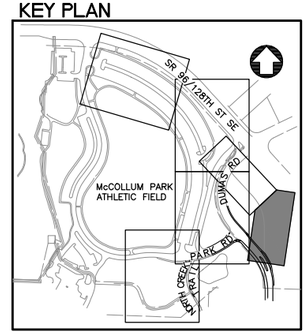

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GEO306

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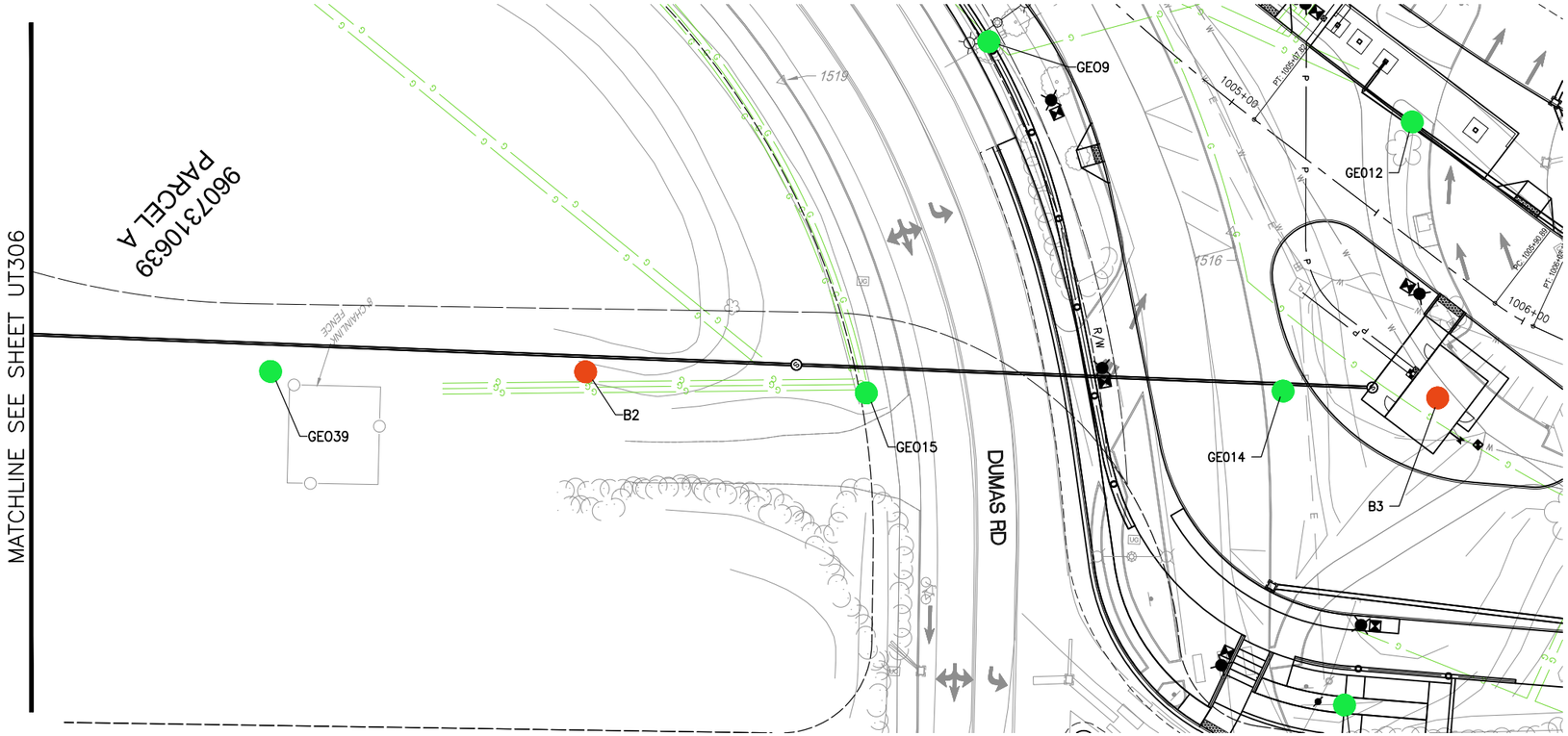
NOTE TO REVIEWER:
ADDITIONAL SURVEY TO
BE COMPLETED AT 60%.



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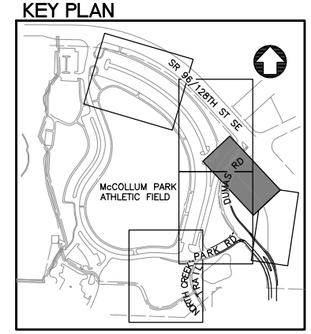

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