Earth Engineers, Inc.

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December 10, 2021
Revised January 5, 2022

Portland Industrial Services Inc.
7715 Northeast 21st Avenue
Portland, Oregon 97211
Attention: Jason Bozarth

Phone: 503-504-3095
E-mail: jb-ridgeline@hotmail.com

Subject: **Limited Geotechnical Recommendations for New Fence Wall**
Portland Industrial Services
1033 Southeast Woodstock Boulevard
Portland, Multnomah County, Oregon
City of Portland Application # 21-096435-000-00-CO
EEI Report No. 21-248-1-*R1*

Dear Mr. Bozarth:

Per your request, **Earth Engineers, Inc. (EEI)** has completed a limited geotechnical evaluation of the proposed fence wall to be constructed at the Portland Industrial Services facility located the address referenced above. Our services have been conducted in accordance with EEI Proposal No. 21-P405 dated December 2, 2021, which you authorized by signing on December 2, 2021. ***This report has been revised to show the correct location of the fence wall in Figure 1 below, and to add a comment about the piles being in a restrained condition because of the pile cap. Revision additions are notated in bold, italics font.***

PROJECT BACKGROUND INFORMATION

Briefly, we understand that you plan to construct a new fence wall to replace an existing chain link fence. The fence wall has been designed by Massaad Engineering Group (M-Group), reference their drawings titled "Fence Wall, 10033 SE Woodstock Blvd, Portland, OR 97206," sheets S1 and S2, dated 9/21/21. The drawings show that the fence wall will be supported by 18-inch diameter reinforced concrete drilled piers that will be embedded 8 feet below finish grade, or 6 feet below the bottom of the pile caps. The drawings note that the drilled piers have been designed based on the following assumed parameters:

- Allowable bearing capacity: 1,500 psf when bearing on competent native soils
- Passive lateral earth pressure: 250 psf/foot

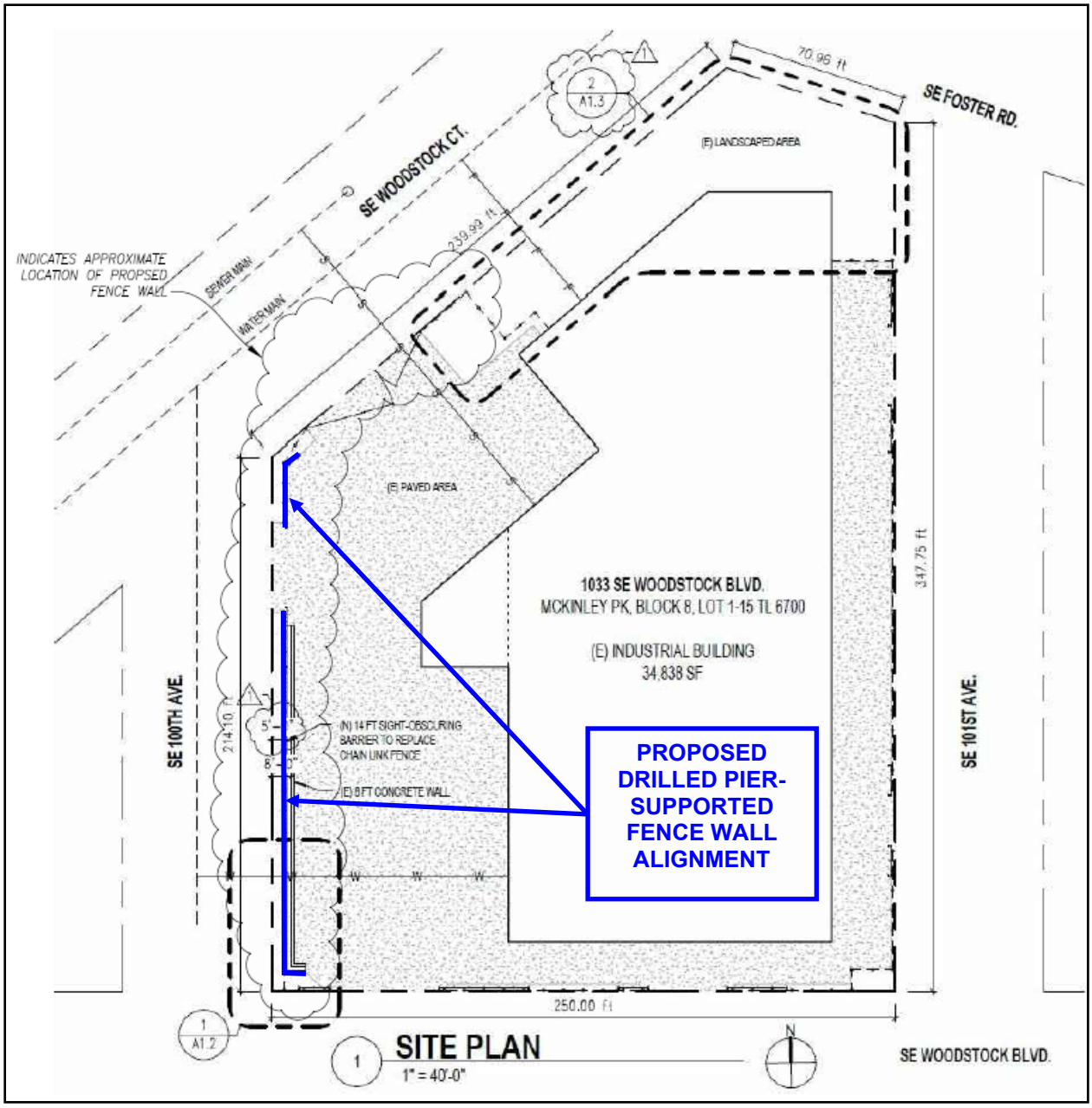


Figure 1: Site plan showing the location of the proposed fence wall ***in blue*** (base drawing source: S2 by M-Group).

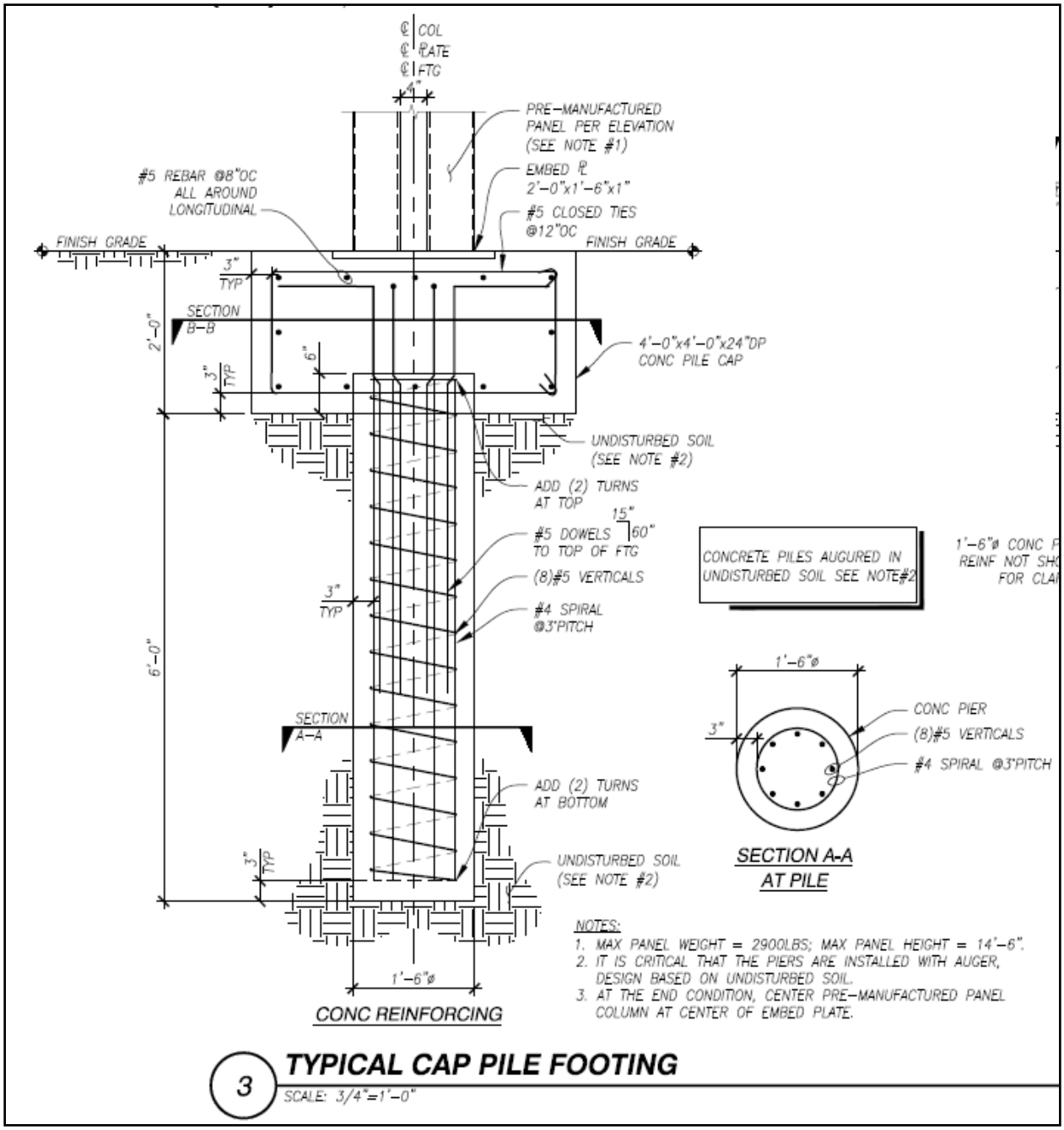


Figure 2: Site plan showing the location of the proposed fence wall (base drawing source: S2 by M-Group).

The design has been submitted to the City of Portland and the Bureau of Development Services has issued a Site Development Checksheet dated November 12, 2021. Checksheet Item #1 and #3 require a response from a geotechnical engineer.

Checksheet Item #1 indicates that soils special inspection will be required. **As a condition of issuing this report, we are requiring that we be retained to perform the soils special inspections required by the City of Portland and the structural drawings—this is consistent with what the City of Portland is requiring as part of the building permit.**

Checksheet Item #2 discusses whether the pile head should be considered to be in a restrained or non-restrained condition at the ground surface. While this is ultimately a structural issue that should be satisfied by the Structural Engineer, we can comment that it is our understanding from speaking with Sam Rediske at M-Group that the pile cap was enlarged and made more rigid (i.e. 4 feet by 4 feet by 2 feet deep) to create a restrained condition for the pile head. In addition, the pile cap design was purposefully embedded by M-Group a significant amount (2 feet) to essentially create a surficial keyway for the piles that provides passive earth pressure to constrain the piles on all sides.

Checksheet Item #3 states that a geotechnical report is required to address the lateral bearing pressure recommendation—as stated above, M-Group assumed a value of 250 psf/foot. So essentially, our scope is to verify whether or not that is an appropriate value for the site soils within the length of the proposed drilled piers (i.e. approximately 8 feet below grade).

EEI has not performed a subsurface investigation (i.e. borings or test pits) to base our lateral bearing pressure recommendation on. Instead, because this is a simple fence wall project and not an occupied building structure, we are basing our recommendations on other subsurface investigations we have performed in the near vicinity of the site and then will verify the soil conditions when we are scheduled to be on site to continuously observe the augering of the drilled pier foundations as required by the City of Portland permit.

A review of our other nearby project files indicates that the soil conditions in this area of Portland typically consist of gravel with silt and sand that is generally medium dense to very dense. **Based on the anticipated generally dense gravelly soils and the relatively conservative lateral earth pressure assumed by M-Group (250 psf/foot), we recommend that the design lateral earth pressure is acceptable from a geotechnical standpoint. In fact, even if the site soils consist of firm silt (not gravel), we would still be comfortable recommending 250 psf/foot.**

During drilled pier construction, EEI will need to be scheduled to be on site to observe the drilling and backfilling of each pier. At that time, we will verify the soil conditions. If soft soil conditions are encountered that we determine are not appropriate for an allowable lateral earth pressure of 250 psf/foot, then we will provide mitigation recommendations, which would likely include adding drilled piers or increasing the diameter of the drilled piers.

LIMITATIONS

Our scope is limited to a review of the lateral earth pressure value used in the drilled pier design. Our scope does not include reviewing the overall stability analysis of the fence wall.

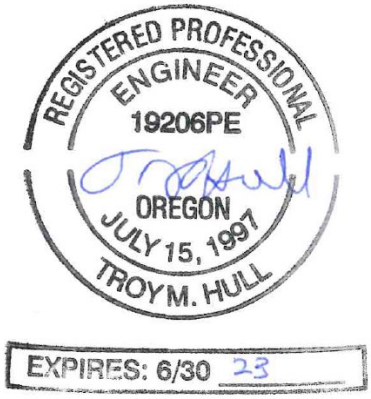
The limited geotechnical recommendations presented in this report are based on the available project information described in this report. If any of the noted information is incorrect, please inform EEI in writing so that we may amend the recommendations presented in this report if appropriate and if desired by the client. EEI will not be responsible for the implementation of its recommendations when it is not notified of changes in the project.

As is standard practice in the geotechnical industry, the conclusions contained in our report are considered preliminary because they are based on assumptions made about the soil and groundwater conditions exposed at the site during our limited subsurface investigation. A more complete extent of the actual subsurface conditions can only be identified when they are exposed during construction. Therefore, EEI should be retained as your consultant during construction to observe the actual conditions and to provide our final conclusions. If a different geotechnical consultant is retained to perform geotechnical inspection during construction then they should be relied upon to provide final design conclusions and recommendations, and should assume the role of geotechnical engineer of record, as is the typical procedure required by the City of Portland.

This report has been prepared for the exclusive use of Portland Industrial Services for the specific application to the proposed fence wall to be located at 10033 Southeast Woodstock in Portland, Oregon. EEI does not authorize the use of the advice herein nor the reliance upon the report by third parties without prior written authorization by EEI.

We appreciate the opportunity to perform this geotechnical engineering evaluation. If you have any questions pertaining to this report, or if we may be of further service, please contact Troy Hull at 360-567-1806 (office) or 360-903-2784 (cell).

Sincerely,
Earth Engineers, Inc.



Troy Hull, P.E., G.E.
Principal Geotechnical Engineer

Reviewed by:

Adam Reese, C.E.G.
Principal Engineering Geologist

Attachment: November 12, 2021 City of Portland Site Development Checksheet

Distribution (e-mail only):
Addressee
Gaby Massaad, Massaad Engineering Group (gaby@mgroupengineering.com)
Sam Rediske, Massaad Engineering Group (sam@mgroupengineering.com)

City of Portland, Oregon
Bureau of Development Services
Site Development
FROM CONCEPT TO CONSTRUCTION

Dan Ryan, Commissioner
Rebecca Esau, Director
Phone: (503) 823-6892
Fax: (503) 823-5433
TTY: (503) 823-6868
www.portland.gov/bds

SITE DEVELOPMENT CHECKSHEET

Application #: **21-096435-000-00-CO**

Review Date: November 12, 2021

To:	APPLICANT	**MIKE COYLE** **FASTER PERMITS** **2000 SW 1ST AVE, STE 420** **PORTLAND, OR 97201**	Primary Work Email	503 680-5497 503 447-3400 mike@fasterpermits.com
From:	BDS GEOTECHNICAL ENGINEER	**ERICKA KOSS**	Phone Email	503-823-7537 Ericka.koss@portlandoregon.gov
Cc:	OWNER	**SMURFIT-STONE CONTAINER CORP** **3950 SHACKLEFORD RD** **DULUTH, GA 30096**		

PROJECT INFORMATION

Street Address:	**10033 SE WOODSTOCK BLVD**
Description of Work:	**SINGLE PDF - INSTALL NEW 14' SIGHT-OBSCURING FENCE TO REPLACE EXISTING CHAIN LINK FENCE.**

PLAN REVIEW

Based on the plans and specifications submitted, the following items appear to be missing or not in conformance with the Oregon Structural Specialty Code, Oregon Residential Specialty Code and/or other city, state, or federal requirements.

Item #	Location on Plans	Code Section	Clarification / Correction Required
1		PCC 24.20.010	Special inspection will be required for this permit. Please complete the attached *Soils Special Inspections* form. Please return the completed form by email to specialinspectionschecksheets@portlandoregon.gov.
2		1807.3	The structural calculations indicate that the pile condition was considered restrained at the ground surface such as by a rigid floor or pavement. It doesn't appear that the piles are constrained. Please revise using the nonconstrained pile embedment design method of OSSC 1807.3.2.1 or other approved design method.
3		1807.3	Revise the calculations using the presumptive lateral bearing pressure as defined in Table 1806.2 of the OSSC or provide a geotechnical report which includes a lateral bearing pressure recommendation.

INSTRUCTIONS

To respond to this Checksheet, you may need to revise your plans, your supporting documents, or provide additional information. When you finish with your changes, please submit your updated plans and supporting documents. Make sure to include the attached Checksheet Response Form. Visit the BDS Permit Review Process website for more helpful information and available services: https://www.portland.gov/bds/permit-review-process

If you want to report a delay, a regulatory conflict or other issue that you have been unable to resolve with your City review team, please visit https://www.portland.gov/bds/development-permit-processes/report-problem

If you have questions about this Checksheet, please contact me at the email address or phone number listed above. To check the status of your project, go to https://www.portlandmaps.com/advanced/?action=permits. Or you may request the status to be faxed to you, by calling 503.823.7000 and selecting option 4. Please have your IVR number and fax number available.

Application fees cover an initial plan review and two checksheets. Starting with the third checksheet, additional fees will be added. These fees are based on the current Fee Schedule: https://www.portland.gov/bds/current-fee-schedules#toc-city-of-portland-fee-schedules

Appeals: Pursuant to City Code Chapters 24.10, 25.07, 26.03, 27.02, and 28.03, you may appeal any code provision cited in this Checksheet to the BDS Administrative Board of Appeal within 180 calendar days of the review date. For information on the appeals process and costs, including forms, appeal fee, payment methods and fee waivers, go to www.portland.gov/bds/file-appeal or call (503) 823-7300 for assistance. Permit application expiration will not be extended pending resolution of any administrative appeal.