

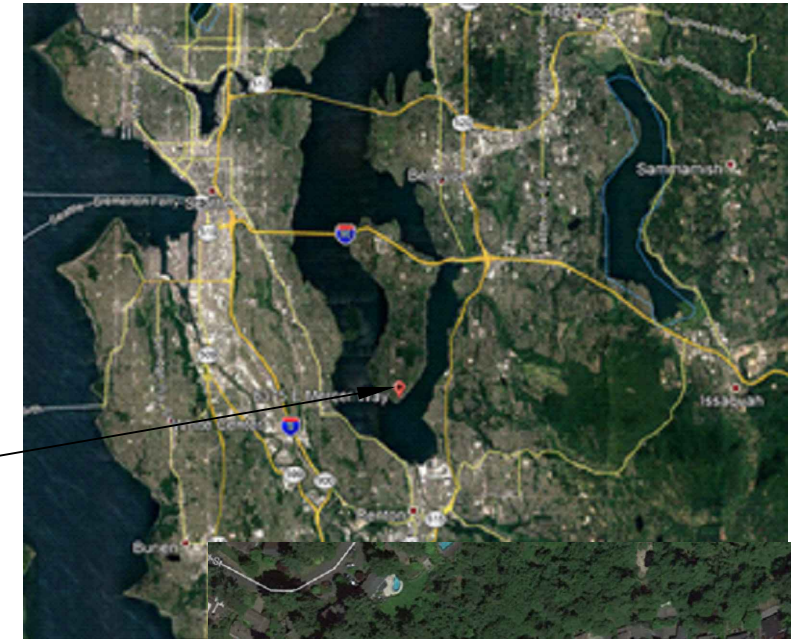
East Mercer Housing Development

Vibro Piers

PREPARED FOR:

**Yuanjuan Chen
8375 E. Mercer Way
Mercer Island, WA 98040**

VICINITY MAP



Project Location

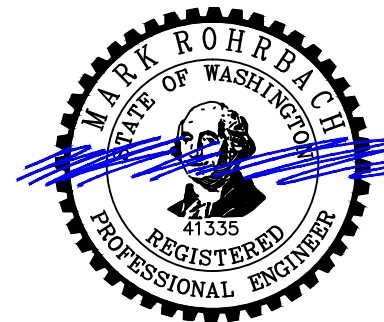


Project Location

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- HBI-1 Title Sheet
- HBI-2 Site Exploration Plan and Utility Layout
- HBI-3 Notes
- HBI-4 Standard Details
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ENGINEER OF RECORD



Exp. Date: 6/14/2019

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PROJECT:

East Mercer Housing Development
8375 E. Mercer Way
Mercer Island, WA 98040

SHEET TITLE:

TITLE SHEET

REVISIONS

NO.	BY	REASON	DATE
0	APG	Issued for Review	01/30/18
1	APG	Added Third Residence	04/13/18

DRAWINGS PRINT TO THE SCALE INDICATED WHEN PRINTED AT 11x17

DATE 01/30/2018

RELATED DRWG.

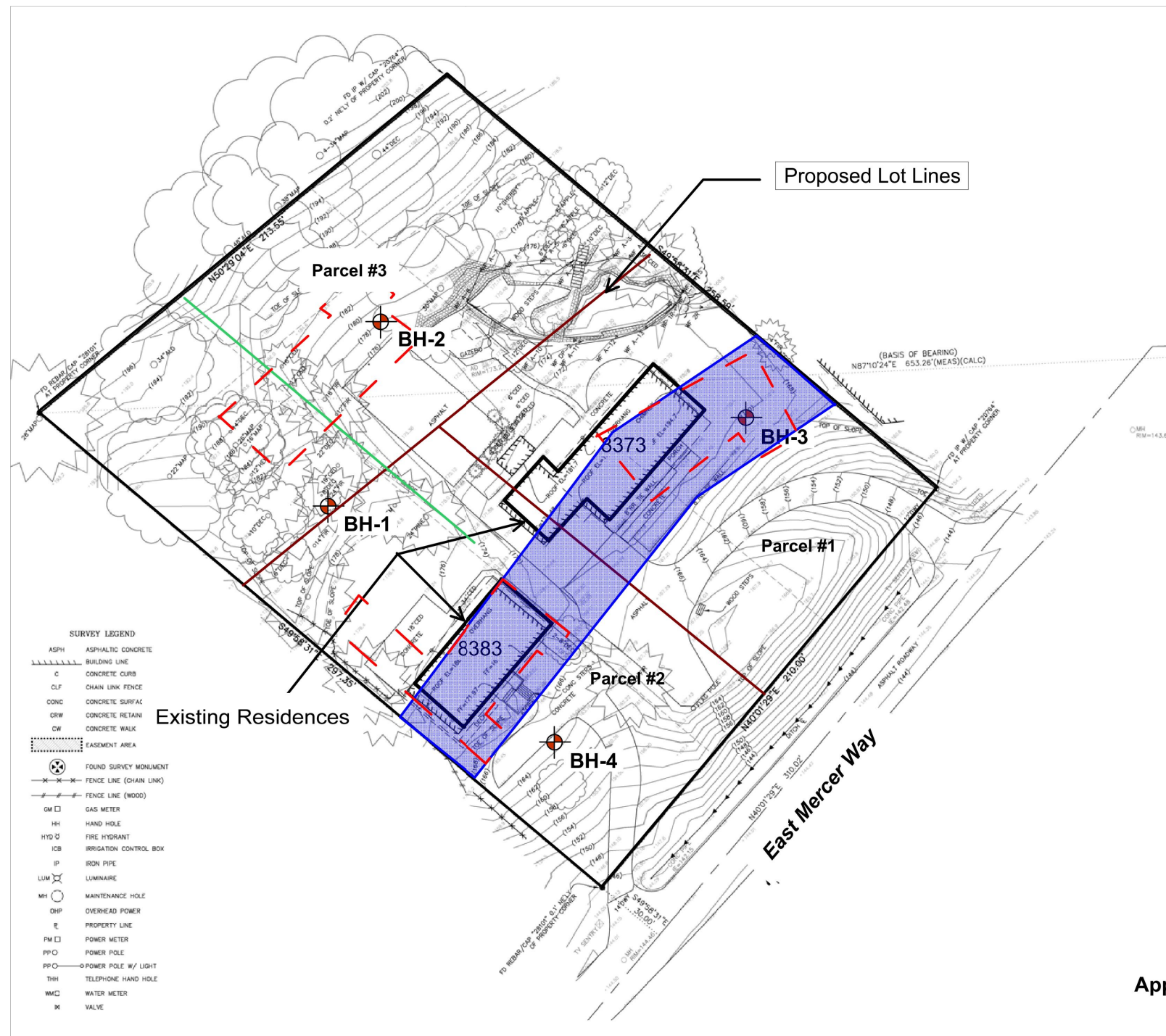
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APRVD. BY M. ROHRBACH

HBI-1

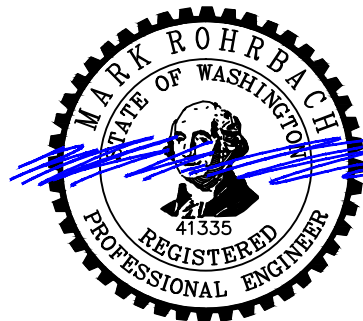


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Plan Fig 2.grf 2/3/16 (17:44) SHE

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	Proposed Development 8375 & 8383 E Mercer Way Mercer Island, Washington	SITE AND EXPLORATION PLAN	
		Project No. 14-206	Figure No. 2

PROJECT: East Mercer Housing Development 8375 E. Mercer Way Mercer Island, WA 98040	SHEET TITLE: SITE EXPLORATION PLAN AND UTILITY LAYOUT	REVISIONS			
		NO.	BY	REASON	DATE
		0	APG	Issued for Review	01/30/18
		1	APG	Added Third Residence	04/13/18
		DATE	01/30/2018	RELATED DRWG.	
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GENERAL NOTES

1. Prior to HBI mobilizing to the project site the General Contractor shall locate sufficient layout stone column installation points as required by the HBI Superintendent as well as provide coordinates for these points.
2. Horizontal and vertical layout of the individual Aggregate Pier (AP) elements shall be provided by the General Contractor. HBI will coordinate with the General Contractor in determining the layout sequencing.
3. General Contractor to provide a working grade at the elevations shown on these drawings. Work surface shall be constructed and managed by the General Contractor such that HBI personnel and equipment can efficiently traverse the site. HBI is not responsible for returning the site to its original grade or condition. HBI anticipates that after completion of our work in may be necessary to remove at least one foot of the working platform.
4. HBI will provide a qualified full time quality control (QC) representative. This representative is titled HBI superintendent, foreman or HBI field engineer. Third party testing or inspection is provided by the General Contractor, if required.
5. APs will be installed to design depth or practical refusal. Practical refusal is defined below.
6. If obstructions are encountered during AP construction and the on-site AP equipment cannot penetrate through it, the General Contractor is responsible for removing the obstruction and backfilling the excavation with engineered fill (minimum 95% modified proctor, ASTM D1557) per the engineer's requirements. This work is to be done in a timely manner such that it does not delay the AP work.
7. Utility locates, protection, removal, and restoration of above ground and below ground utilities is the responsibility of the General Contractor. HBI is not responsible for damage to existing utilities.
8. After the completion of the AP work, the General Contractor is responsible for protection of the work. Proper site drainage to prevent ponding of water in the area of APs and control and coordination of earthwork activities shall be managed such that existing APs are not damaged. Allowing surface water and/or storm water to drain through the highly permeable APs is not acceptable as it can soften the soil surrounding the APs.
9. The AP locations shown on the approved AP drawings are for AP site layout. This plan should not be used for foundation layout. Footing locations, sizes and orientation shown on these drawings are for information only. Refer to the "For Construction" structural package for specific foundation dimensions and locations. HBI shall be notified immediately if information included in these plans or in the AP calculation package conflicts with the project structural or architectural drawings. It is the general contractor's responsibility to confirm foundations supported by APs are shown accurately on these drawings.
10. In the event that the no-dig zone (as shown on these drawings) is compromised or stone columns are undermined for any reason at an elevation below bottom of footing, it is acceptable to this design to place and compact AASHTO #57 stone, or well graded granular structural fill acceptable to the project geotechnical engineer. This fill should be compacted with an impact style compactor to a firm and not yielding condition. This operation should be monitored by the geotechnical engineer of record. The project geotechnical engineer should document the placement and compaction and provide an opinion regarding appropriateness and acceptability. The project geotechnical engineer may also recommend, or require, other material be used as structural fill.
11. The ground improvement engineer is the registered professional engineer whose stamp resides on these drawings.
12. HBI is not the owner or the General Contractor. The owner and General Contractor are defined in the contract documents.
13. APs are columns of compacted permeable gravel. When the establishing construction schedule/sequencing, the GC should carefully consider the potential for excavations below

groundwater to experience significant groundwater inflow.

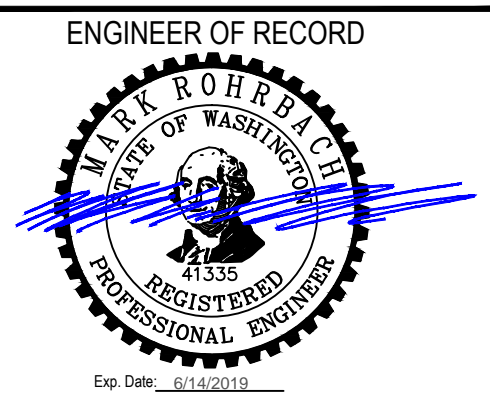
STONE COLUMN SUPPORTED FOUNDATIONS

14. The top of each AP shall be protected by the General Contractor. A one foot layer of soil is adequate to protect the top of the APs. Excavations to the top of the APs shall not be left open for more than 24 hours. If immediate foundation preparation and placement of structural fill is not possible, a "mud mat" consisting of at least 3 inches of lean concrete may be placed over the foundation sub grade.
15. Water shall not pool or collect in foundation excavations.
16. Mechanical tamping of the foundation sub grade is required prior to placing structural fill or any permanent system. Compaction shall be performed over the entire foundation sub grade to compact loose soil and AP stone. If soft areas are encountered, this material should be removed and replaced with AASHTO #57 stone (or other acceptable granular fill) under the inspection of a qualified engineer.
17. A testing agency or the project geotechnical engineer shall inspect each foundation excavation and approve it prior to placing structural fill or placing a "mud mat". This inspection should be documented in a report that provides an opinion regarding appropriateness and acceptability for every portion of the foundation excavation(s).
18. All proposed underground utilities within and adjacent to AP supported foundations shall be field verified by the General Contractor and coordinated with HBI prior to utility trench excavation and utility installation. See "Adjacent Excavation Detail" is this drawing package.
19. HBI is not responsible for settlements of non-AP supported foundations/slabs or for differential settlements between AP supported foundations and non-AP supported foundations/slabs.

evaluated by the HBI geotechnical engineer. HBI will provide the composite friction angle required by the Project Geotechnical Engineer to satisfy their slope stability calculations.

PROJECT SPECIFIC NOTES

20. HBI's portion of this project involves construction of a bottom feed compacted aggregate pier displacement ground improvement system designed by HBI and shown on these drawings.
21. The structure is to be supported on shallow foundations as follows:
 - A. Foundation sizes, locations and loads are as shown on these drawings;
 - B. Allowable post-improvement soil bearing pressure: 3000 pounds per square foot (psf)
 - C. Allowable post-improvement static settlement
 - a. 1 inch of total post-construction settlement
 - b. 0.5 inch per 50 feet of post construction differential settlement
 - c. Post improvement Composite Friction Angle: 34 degrees.
22. HBI's design is based on the following documents and performance requirements:
 - A. Revised Geotechnical Report prepared by PanGEO, Inc., titled "Proposed Development at 8375 and 8383 East Mercer Way, Mercer Island, WA," dated September 9th, 2014 and revised February 4th, 2016;
 - B. Site Plan Drawing A0.0, prepared by Ripple Design Studio, dated August 28th, 2017
23. If any of these basis-of-design documents change, this design is no longer appropriate unless and until HBI and reviewed the changes and updated the design (if needed).
24. HBI has no reason to suspect any of the basis-of-design documents to be in error and is not responsible for errors or omissions in those documents that may affect the parameter values used in this design or the construction of the APs. If the subsurface conditions are found to differ from the information provided in the above referenced documents, HBI will notify the project team immediately.
25. This design is based upon treatment as defined by the Project Geotechnical Engineer in the referenced geotechnical report. HBI has provided an aggregate pier design to support vertical building loads and control of vertical settlement. Horizontal soil movement was not

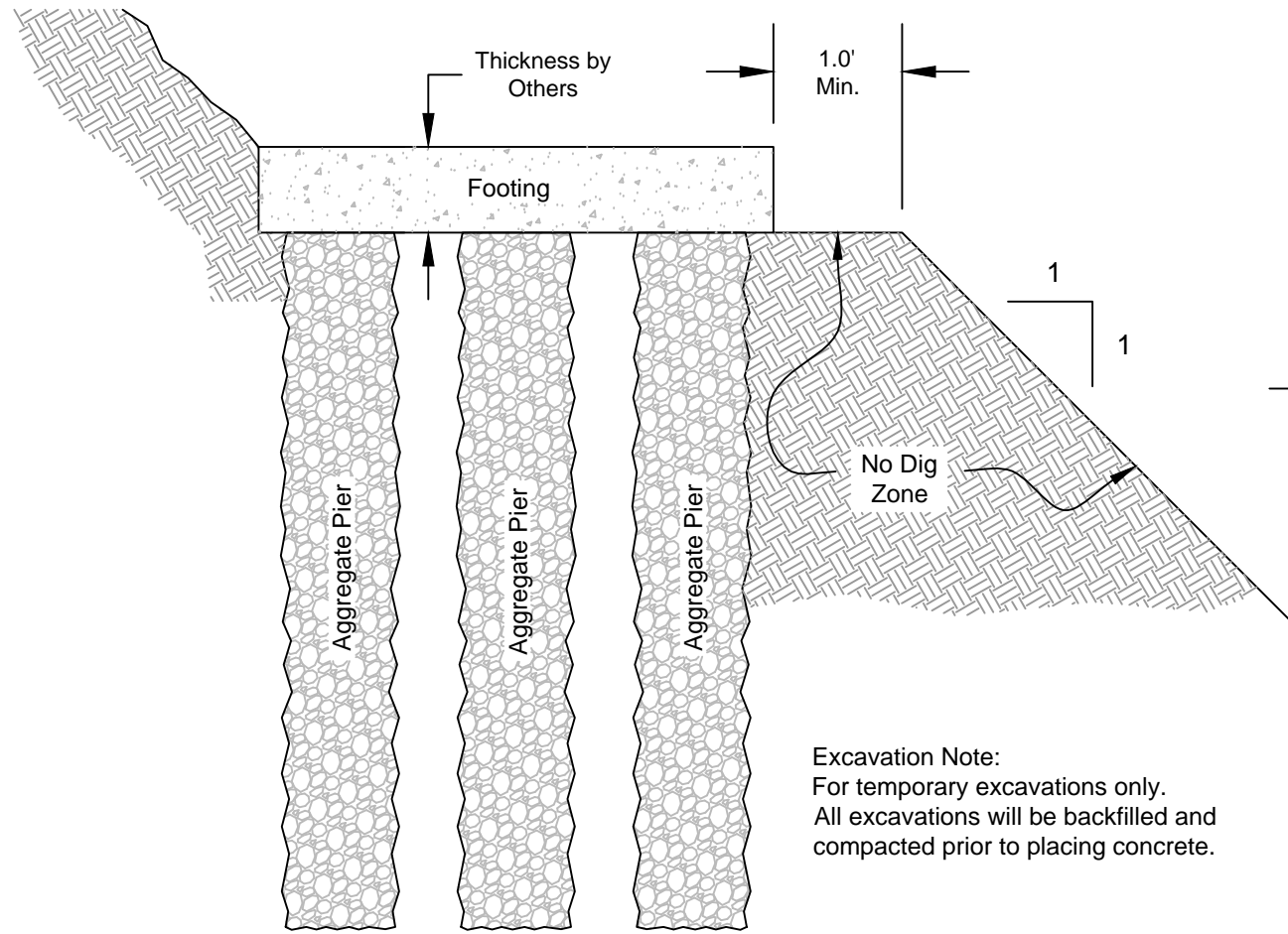


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PROJECT: East Mercer Housing Development 8375 E. Mercer Way Mercer Island, WA 98040	SHEET TITLE: NOTES	REVISIONS			
		NO.	BY	REASON	DATE
		0	APG	Issued for Review	01/30/18
		1	APG	Added Third Residence	04/13/18
		DATE	01/30/2018	RELATED DRWG.	DRWG. NO.
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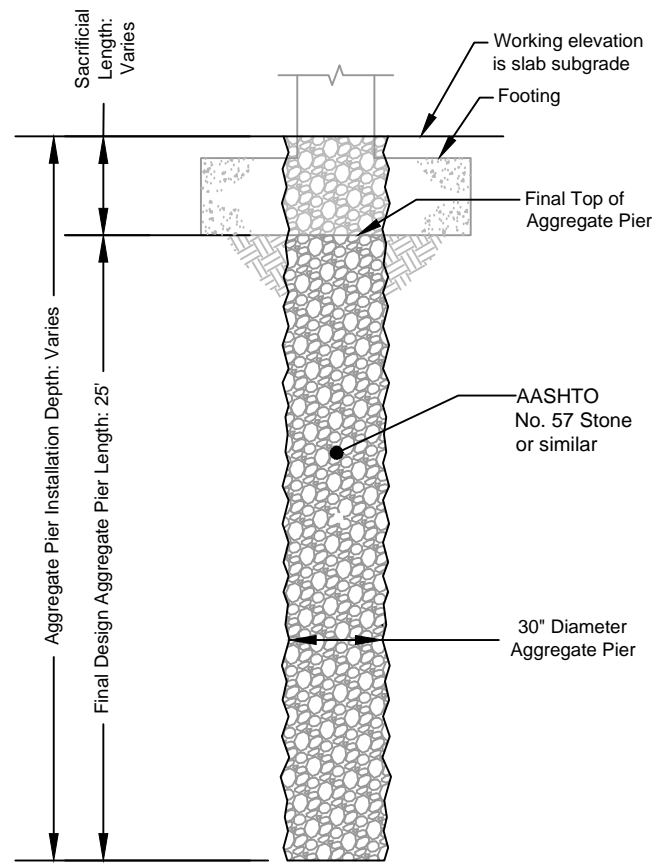


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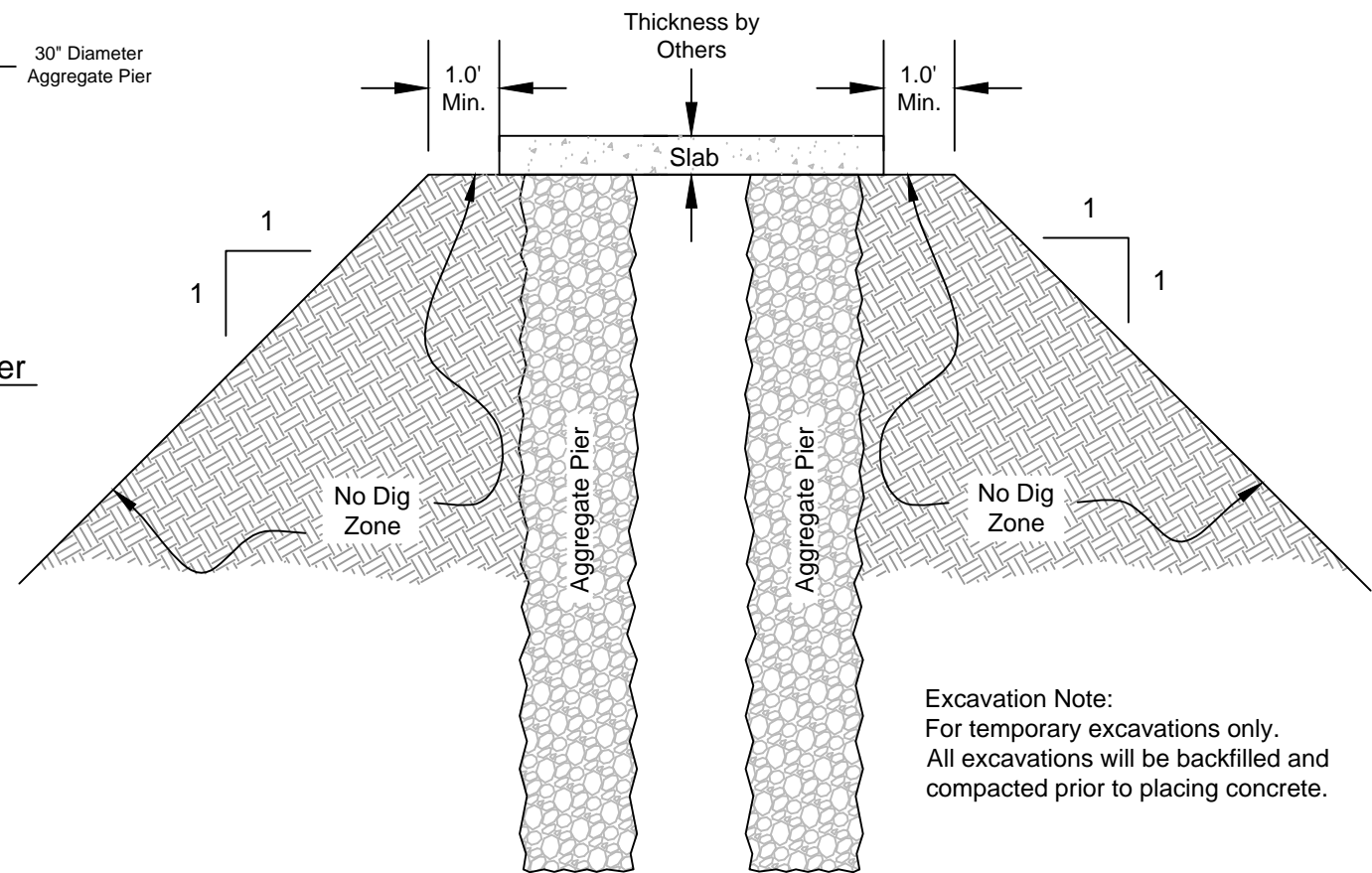


Detail 2
No-Dig Zone: Spread Footing
N.T.S.

Excavation Note:
For temporary excavations only.
All excavations will be backfilled and
compacted prior to placing concrete.



Detail 1
Typical Aggregate Pier
N.T.S.



Detail 3
No-Dig Zone: Slab
N.T.S.

Excavation Note:
For temporary excavations only.
All excavations will be backfilled and
compacted prior to placing concrete.

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Exp. Date: 6/14/2019

PROJECT:
East Mercer Housing
Development
8375 E. Mercer Way
Mercer Island, WA 98040

SHEET TITLE:
**STANDARD
DETAILS**

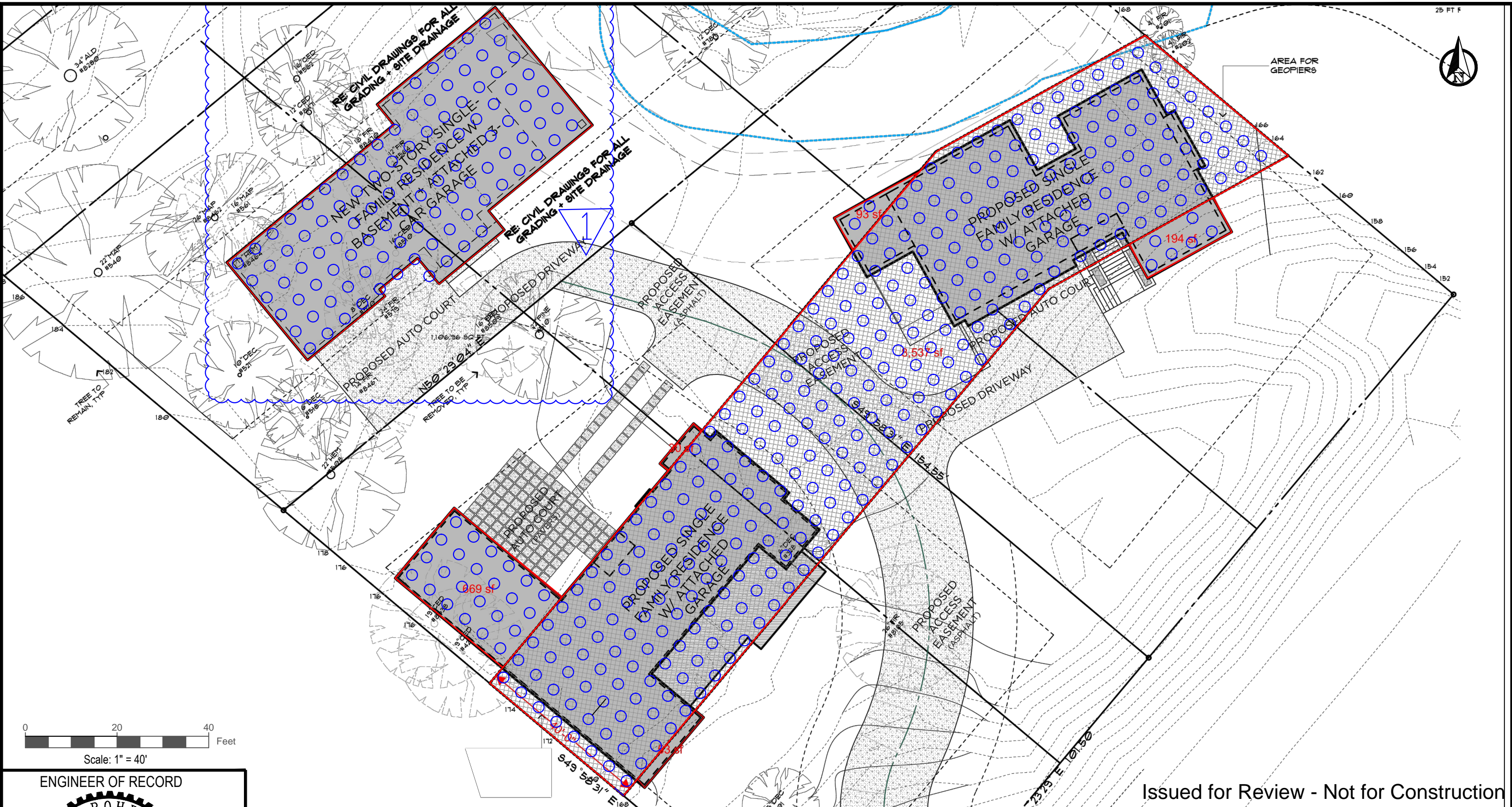
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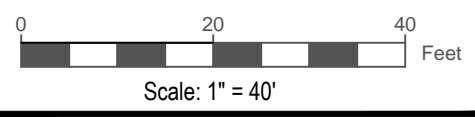
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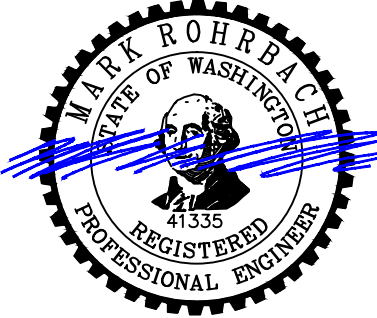
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AREA FOR GEOPIERS



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Legend:

- SC Length = 25' ; Dia. = 30"
- Spacing 5.25' Square
- 18% Area Replacement

PROJECT:
 East Mercer Housing
 Development
 8375 E. Mercer Way
 Mercer Island, WA 98040

SHEET TITLE:
**Aggregate
 Pier Layout**

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RELATED DRWG.
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