Appendix B

Feasibility Level Investigation

GEOTECHNICAL PROFESSIONALS INC.

February 18, 2019

REALM
1201 Dove Street, Suite 520
Newport Beach, California 92660

Attention: Mr. Todd Cadwell

Subject: Feasibility-Level Investigation
Proposed Mixed-Use Apartment Development
NEC Magnolia Avenue and Banbury Drive
Riverside, California
GPI Project No. 2924.I

Dear Mr. Cadwell:

In accordance with your request, this letter present the results of our geotechnical feasibility investigation for the subject project. The site location is shown on the Site Location Map, Figure 1.

We understand that our evaluation of the site is desired to determine the feasibility of the project by REALM. The primary purpose of our review is to determine whether any significant geotechnical conditions ("fatal flaws") are present at the site that may impact the site for the development of a mixed-use apartment development. This letter is not intended to be a design-level document and should not be submitted to any regulatory agency for building design purposes.

PROJECT DESCRIPTION

Our understanding of the project conditions and requirements is as follows:

> Based on the conceptual plan provided and our discussions with you, we understand that the proposed development will consist of a new mixed-use apartment development at the subject site. The apartment portion of the development currently consists of 4-story wood framed structures surrounded by at-grade parking. The apartment buildings will be at-grade surrounding a leasing office, amenity buildings, and pool area. Two retail buildings will be located in front of the development along Magnolia Avenue. A park is planned at the northwest portion of the site beyond at-grade apartment parking. The preliminary site configuration is shown on the Site Plan, Figure 2.

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The existing site improvements consists of an abandoned parking lot, an abandoned retail building, areas of two former demolished buildings, and vacant land.

Structural load information is not available at this time. We have assumed column loads for the 4-story apartments are on the order of 100 kips and maximum wall loads of on the order of 5 kips per lineal foot. For the single-story retail, we have assumed column loads on the order of 30 kips and wall loads on the order of 2 to 3 kips.

SCOPE OF WORK

Our scope of work included review of published information, limited subsurface exploration, engineering evaluations, and preparation of this feasibility-level geotechnical letter report.

We performed five cone penetration tests (CPT's) to evaluate subsurface conditions at the site. The approximate CPT locations are shown on the Site Plan, Figure 2. The CPT's were advanced to depths ranging from 22 to 60 feet below existing grades. Three CPT's refused in very dense sands at depths ranging from 22 to 47 feet below existing grades. Details of the explorations and the Logs of CPT's are presented in Appendix A.

SOIL CONDITIONS

Our field investigation was based on CPT's only without borings. Identifying the depth of fill soils is not possible without borings or test pits. We anticipate that undocumented fills are present at the site but the depths are unknown.

The soils encountered in our CPT's have properties consistent with silty sands, silty clays, sandy silts, and sandy clays. In general, the soils in the upper 10 to 15 feet have properties consistent with loose to medium dense silty sands and soft to firm sandy silts. The soils below a depth of 15 feet are interbedded and have properties consistent with silty clays, silty sands, sandy silts, sandy clays, and sands. The clays and silts are very stiff to hard and the sands are medium dense to very dense. In general, the sands become denser with depth. The CPT's indicate that the near-surface silty sands and sandy silts have a low to moderate strength. The near surface soils are anticipated to have very low expansion potential.

Detailed descriptions of the soils encountered are shown on the Logs of CPT's in the Appendix A.

Groundwater was not encountered in the open holes from the CPT's to depths from 22 to 56 feet. Groundwater monitoring wells located 0.5 miles northeast and 0.6 miles southwest of the site indicate measured groundwater depths of 52 feet and 55 feet below grade, respectively, in 2016 (Department of Water Resources).

OBSERVATIONS AND FINDINGS

Based on the review of the available documents and our field investigation, we offer the following:

1. The site is not located in a Special Studies Fault Zone as defined by the Alquist-Priolo Earthquake Fault Zoning Act. The closest active fault is approximately 8 miles southwest of the site (earthquake.usgs.gov). Therefore, ground rupture due to faulting is considered unlikely at this site.

2. The site is not located in a Seismic Hazard Zone for liquefaction as the State of California has not yet mapped the area. The site is located in an area with a very high susceptibility for liquefaction as mapped by the County of Riverside (opendata.arcgis.com). The County of Riverside assigned a groundwater depth of 30 feet for this zone of very high susceptibility.

3. The site is flat with a very minor slope to the southwest. Elevations differ by approximately 2 to 4 feet over a distance of 400 to 500 feet based on elevations on Google Earth.

4. The northwest portion of the site is unpaved and the southeast portion adjacent to Magnolia Street is mainly paved with asphalt concrete in poor to fair condition. Based on a review of historic aerial photos (historicaerials.com), the site had been occupied by a retail center with a large retail box store on the northwest side of the site that was demolished in the late 2000's. Ungraded pads remain from the demolished buildings including 2 smaller demolished buildings along Magnolia Avenue. Historic aerials indicate that the site was undeveloped in 1967 and the retail buildings occupied the site in 1980.

5. The soils encountered to depths of 10 to 15 feet below existing grades have the properties of loose to medium dense silty sands and soft sandy silts. We anticipate that these soils may collapse upon wetting and may settle under seismic shaking. These soils are not suitable for foundation support in their current condition. These materials are expected to be suitable for pavement support provided the near-surface disturbed and loose soils are removed and compacted.

CONCLUSIONS AND PRELIMINARY RECOMMENDATIONS

Based on our observations and findings, subsurface investigation, and experience in the area, we conclude the following:

1. There is a potential that the site development will be subjected to strong ground motion during its life. Based on published information (seismicmaps.org), the site could be subjected to a peak horizontal ground acceleration of 0.50g. This acceleration has a 2 percent chance of being exceeded in 50 years.

2. Based on the results of our CPT's, the subsurface soils at the site exhibit a minor potential for liquefaction at depths greater than the groundwater depth of 30 feet provided in the County's liquefaction map. Should groundwater rise

from the current depths anticipated at just greater than 50 feet to depths of 30 feet below existing grade, preliminary estimates are that seismically-induced settlement may be on the order of ¼ to ½ inches with the ground motions presented above. Our analysis indicates that this liquefaction induced settlement would occur in the sandy soils between depths of 40 to 60 feet. The depth and thicknesses of these potentially liquefiable soils make foundation bearing failure unlikely in the event of liquefaction.

3. Seismic ground subsidence (not related to liquefaction induced settlements) occurs when loose, granular (sandy) soils above the groundwater are densified during strong earthquake shaking. Based on preliminary evaluations, we anticipate seismic settlement on the order of ¼ to ½ inch are possible in the upper 15 feet of the soil profile.

4. If the silty sands and sandy silts in the upper 15 feet are dry or slightly moist, collapse of these soils may occur if wetted under load. Further laboratory testing of samples of these soils will be required after borings are performed at the site.

5. Undocumented fills within the building pads should be removed and replaced as properly compacted engineered fill. The depth of undocumented fills will need to be determined from samples collected when performing exploratory borings.

6. The major geotechnical constraint at the site is the loose to medium dense silty sands and soft sandy silts in the upper 15 feet of the soil profile. A portion of these soils will need to be removed and recompacted as engineered fill. The depth of removals is dependent on the building loads, in-situ moisture content, and collapse potential. Based on our experience with similar soil conditions for these type of structures, we anticipate removals will be required under the footprint of the buildings to depths of approximately 5 to 10 feet below existing grades. Recompaction of the existing soils to the above depths should reduce the potential settlement from static settlement, collapse, and seismic settlements under the building footprints to an acceptable level.

7. With a proper level of remedial grading, the apartment and retail buildings may be supported on conventional spread footings and slab-on-grade floors. If desired, the apartment buildings may also be supported on post-tensioned slab foundations.

8. In pavement areas, removals should be performed for better long-term performance of the pavements. While silty sands and sandy silts typically provide adequate subgrade support when properly compacted, the existing asphalt concrete pavements at the site are in poor to fair condition. We anticipate removals in the pavement areas to depths of 1 to 2 feet will provide a sufficient layer of properly compacted soils to support the pavements. Near surface sampling of the soils during borings will provide

better information to determine a depth of removal in the pavement areas.

9. When properly compacted, the near-surface soils are acceptable for direct support of slab-on-grade floors and exterior flatwork. Based on the CPT data, we anticipate that the near surface soils will have a very low expansion potential. Removals in the flatwork areas will likely be similar to the pavement areas.

10. Storm water infiltration is typically feasible in the type of soils encountered at depths to 10 to 15 feet below existing ground surface. However in each CPT, a consistent layer of impermeable clay with a thickness varying from 5 to 15 feet thick was encountered directly below the upper soils consisting of loose to medium dense silty sands and soft sandy silts. Infiltration of a significant amount of storm water may cause collapse or mounding of water on the clay layer. The loose to medium dense silty sands, if saturated, would be susceptible to liquefaction settlement under the design earthquake load. Infiltration devices would need to be placed at a sufficient distance from the new apartment and retail buildings and existing buildings on adjacent properties or deepened to the dense sands underlying the site. Further evaluation and field percolation testing should be performed during the design phase investigation.

11. In general, we did not find evidence of geotechnical constraints that will significantly impact the feasibility of the project site. Exploratory borings, laboratory testing, and analyses should be performed during a design-level investigation in order to provide final geotechnical recommendations. The CPT's performed for this feasibility investigation are sufficient for the proposed project and can be incorporated in the design-level investigation.

LIMITATIONS

The geotechnical investigation reported herein was performed for the exclusive use by REALM and their consultants, in evaluating the feasibility of constructing the proposed improvements. This report should not be used for evaluating the feasibility of developing the site for other uses or for the detailed design of the proposed project, because this report does not contain sufficient or appropriate information for such use.

Soil deposits may vary in type, strength, and many other important properties between points of exploration due to non-uniformity of the geologic formations or to man-made cut and fill operations. While we cannot evaluate the consistency of the properties of materials in areas not explored, the conclusions drawn in this report are based on the assumption that the data obtained in the field and laboratory are reasonably representative of field conditions and are conducive to interpolation and extrapolation.

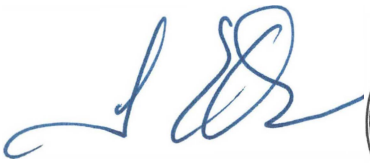
As noted previously, additional geotechnical investigations will be needed for design and construction. Furthermore, our recommendations were developed with the assumption that a proper level of field observation and construction review will be provided by a qualified geotechnical consulting firm during grading, excavation, and foundation construction. If design- and construction-phase geotechnical services are performed by others they must

accept full responsibility for all geotechnical aspects of the project.

Our investigation and evaluations were performed using generally accepted engineering approaches and principles available at this time and the degree of care and skill ordinarily exercised under similar circumstances by reputable Geotechnical Engineers practicing in this area. No other representation, either expressed or implied, is included or intended in our report.

Respectfully submitted,
Geotechnical Professionals Inc.

Donald A. Cords, G.E.
Principal



James E. Harris, G.E.
Principal

Enclosures: References
Site Location Map - Figure 1
Site Plan - Figure 2
Appendix A - Cone Penetration Tests

Distribution: Addressee (via email)

REFERENCES

Department of Water Resources, Water Data Library, Station 339024N2274697W001 and Station 339153N1174576W001, http:/wdl.water.ca.gov/waterdatalibrary.

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http://www.historicaerials.com, Aerial Photography from the Past and Present", National Environmental Title Research, LLC.

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United States Geological Survey (2014), 2008 National Seismic Hazard Maps, Source Parameters, http://geohazards.usgs.gov/cfusion/hazfaults_search/hf_search_main.cfm

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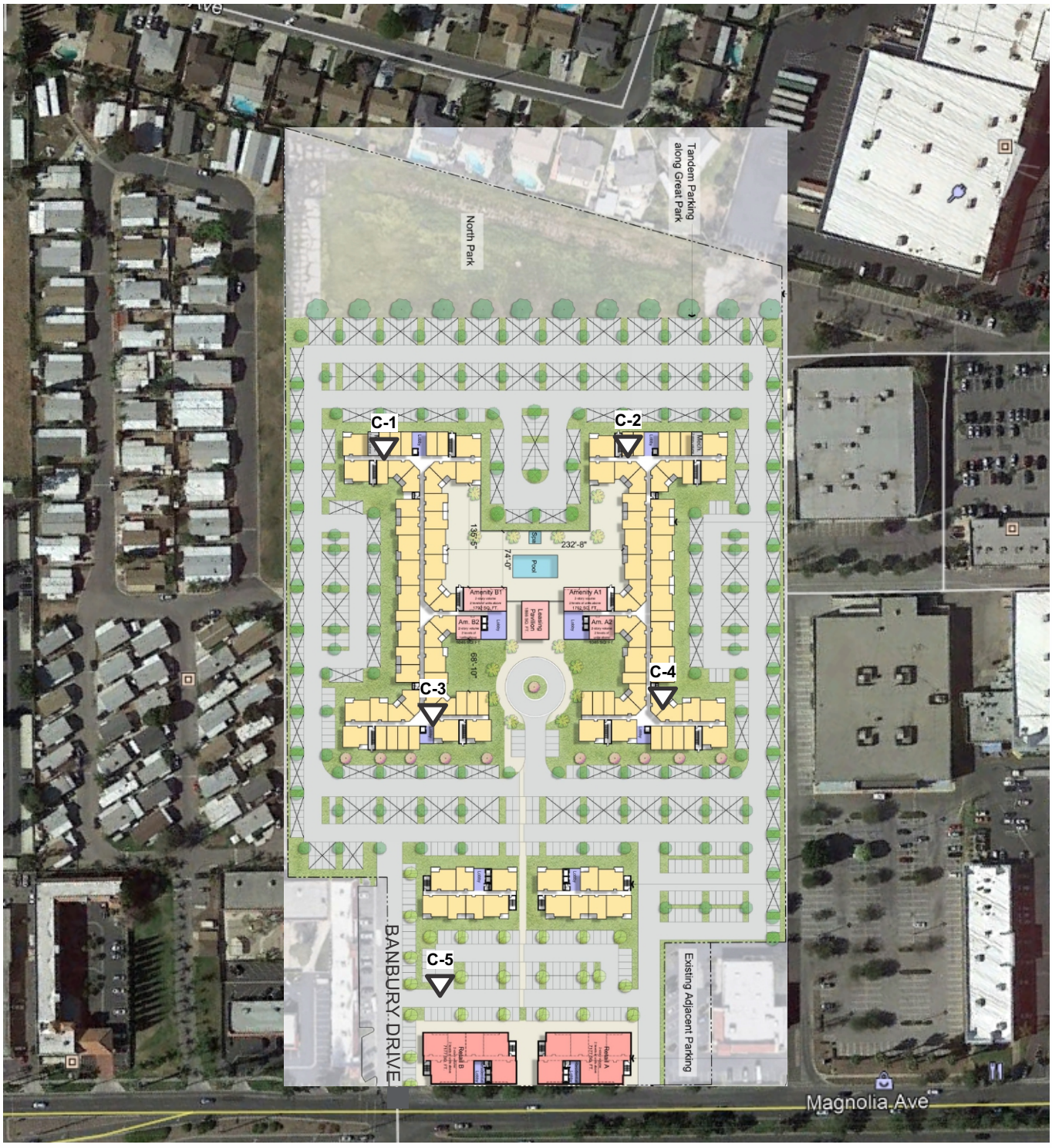
MAGNOLIA AVENUE & BANBURY DRIVE

GPI PROJECT NO.:2924.I | SCALE: 1" = 2000'

SITE LOCATION MAP

FIGURE 1



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0 200 400 FEET

EXPLANATION

C-5 APPROXIMATE LOCATION AND NUMBER OF CONE PENETRATION TEST

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MAGNOLIA AVENUE & BANBURY DRIVE

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SITE PLAN

FIGURE 2

APPENDIX A

APPENDIX A

CONE PENETRATION TESTS

The subsurface conditions were investigated by performing five Cone Penetration Tests (CPT's) at the site. The soundings were advanced to depths of 22 to 60 feet below existing grades. Three CPT's refused in very dense sands at depths from 22 to 47 feet below existing grades. The locations of the CPT's are shown on the Site Plan, Figure 2.

The Cone Penetration Test consists of pushing a cone-tipped probe into the soil deposit while simultaneously recording the cone tip resistance and side friction resistance of the soil to penetration (refer to Figure A-1). The CPT's described in this report were conducted in general accordance with ASTM specifications (ASTM D 5778) using an electric cone penetrometer.

The CPT equipment consists of a cone assembly mounted at the end of a series of hollow sounding rods. A set of hydraulic rams is used to push the cone and rods into the soil while a continuous record of cone and friction resistance versus depth is obtained in both analog and digital form at the ground surface.

Data obtained during a CPT consists of continuous stratigraphic information with close vertical resolution. Stratigraphic interpretation is based on relationships between cone tip resistance and friction resistance. The calculated friction ratio (CPT friction sleeve resistance divided by cone tip resistance) is used as an indicator of soil type. Granular soils typically have low friction ratios and high cone resistance, while cohesive or organic soils have high friction ratios and low cone resistance. These stratigraphic material categories form the basis for all subsequent calculations, which utilize the CPT data.

Computer plots of the reduced CPT data acquired for this investigation are presented in Figures A-2 through A-6 of this appendix. The field testing and computer processing for the current investigation was performed by Kehoe Testing under subcontract to Geotechnical Professionals Inc. (GPI). The interpreted soil descriptions were prepared by GPI.

The CPT locations were laid out in the field by measuring from existing features at the site. Upon completion, the CPT hole was backfilled above caving with a bentonite plug. The ground surface elevations at the CPT locations were estimated from Google Earth and should be considered very approximate.

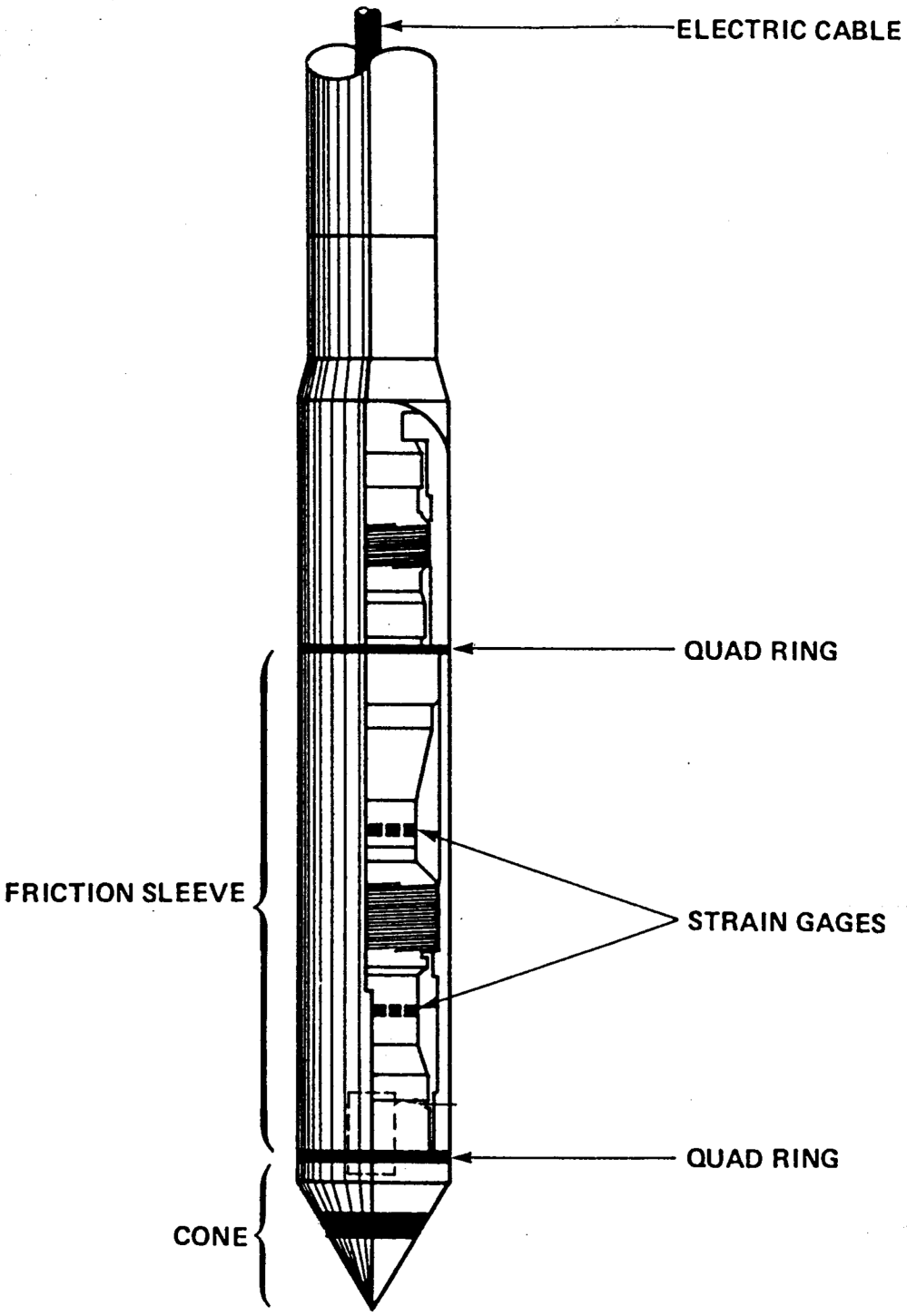

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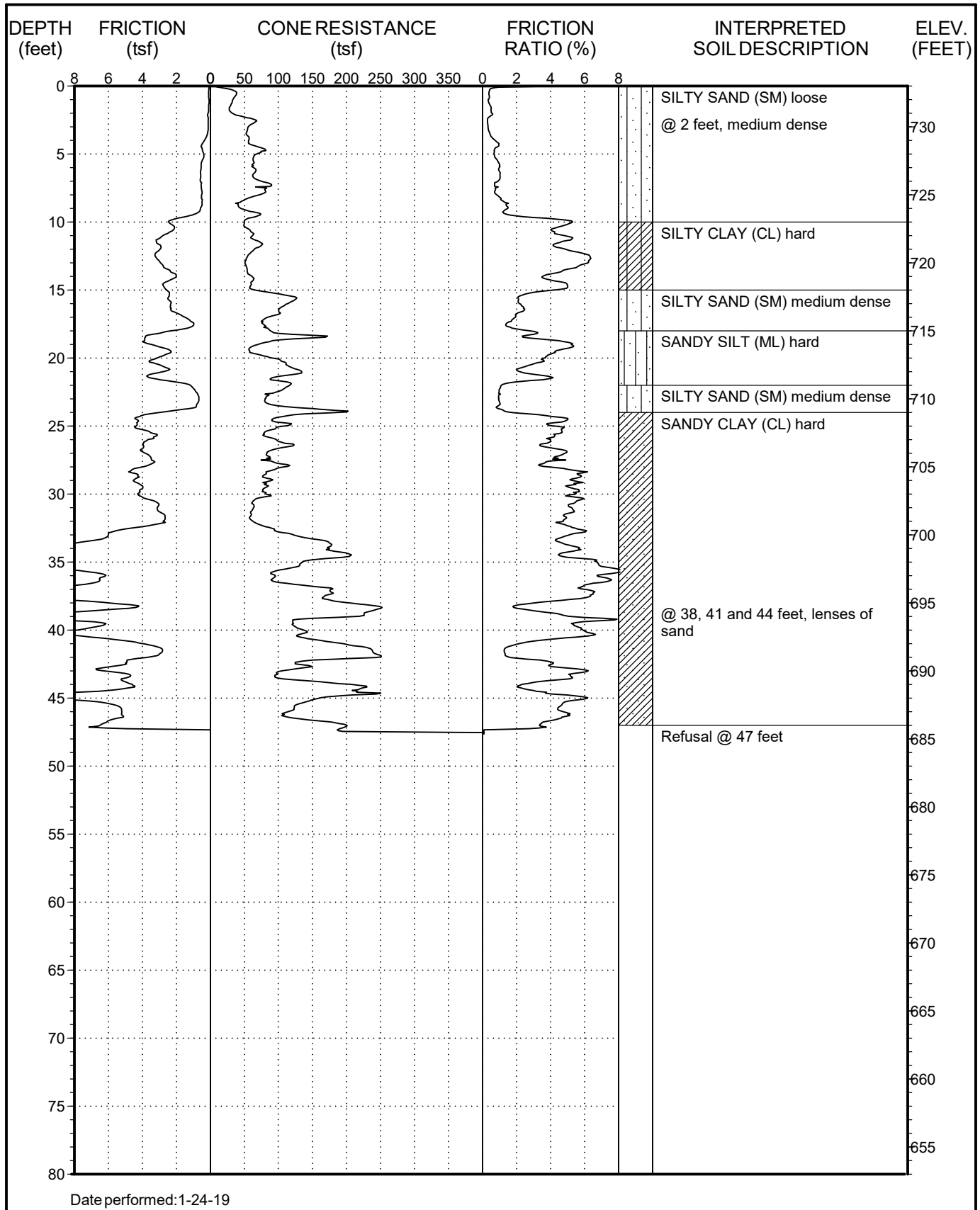
FIGURE



Date performed:1-24-19

This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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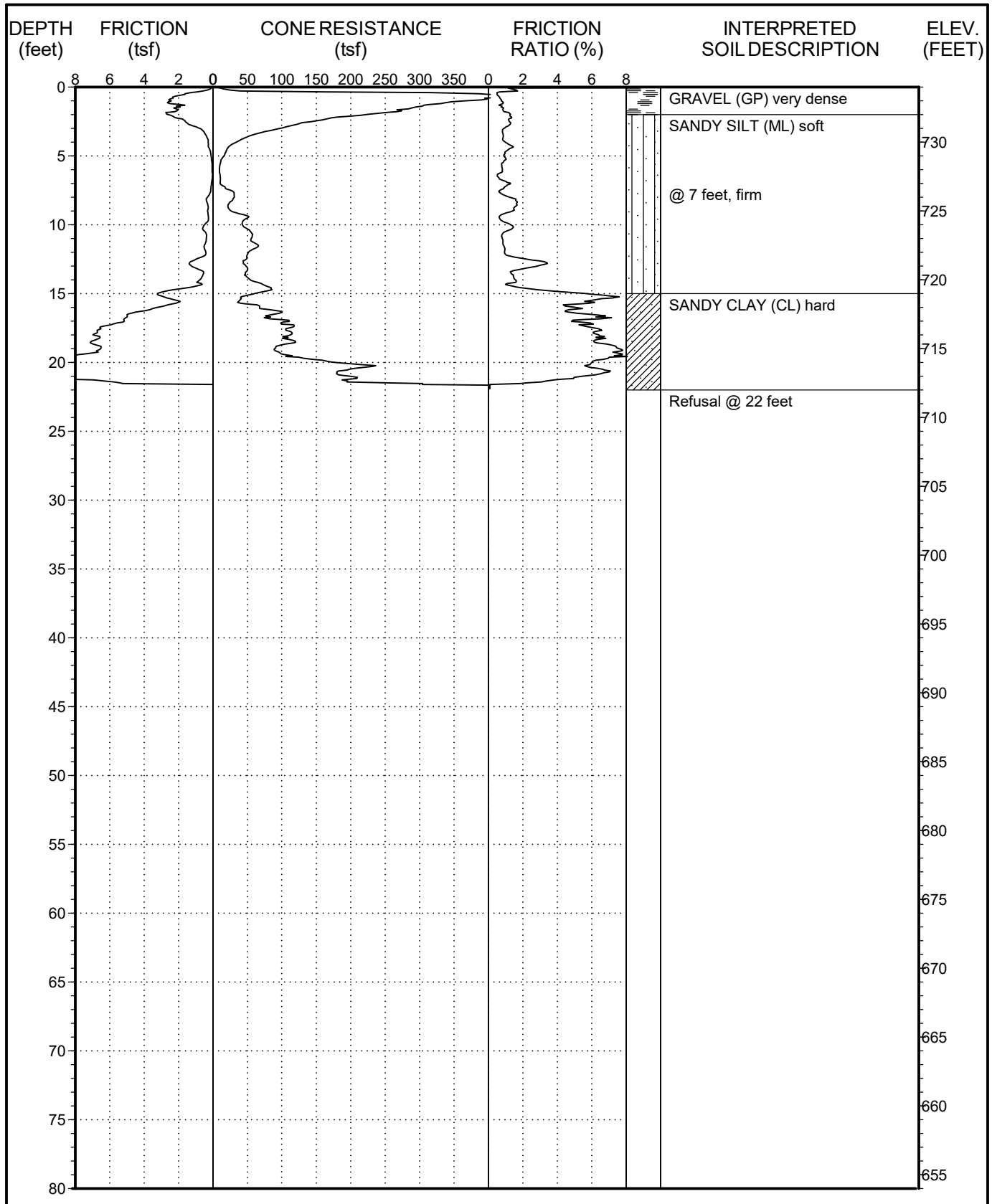
LOG OF CPT NO. C-1

FIGURE A-2



Date performed: 1-24-19

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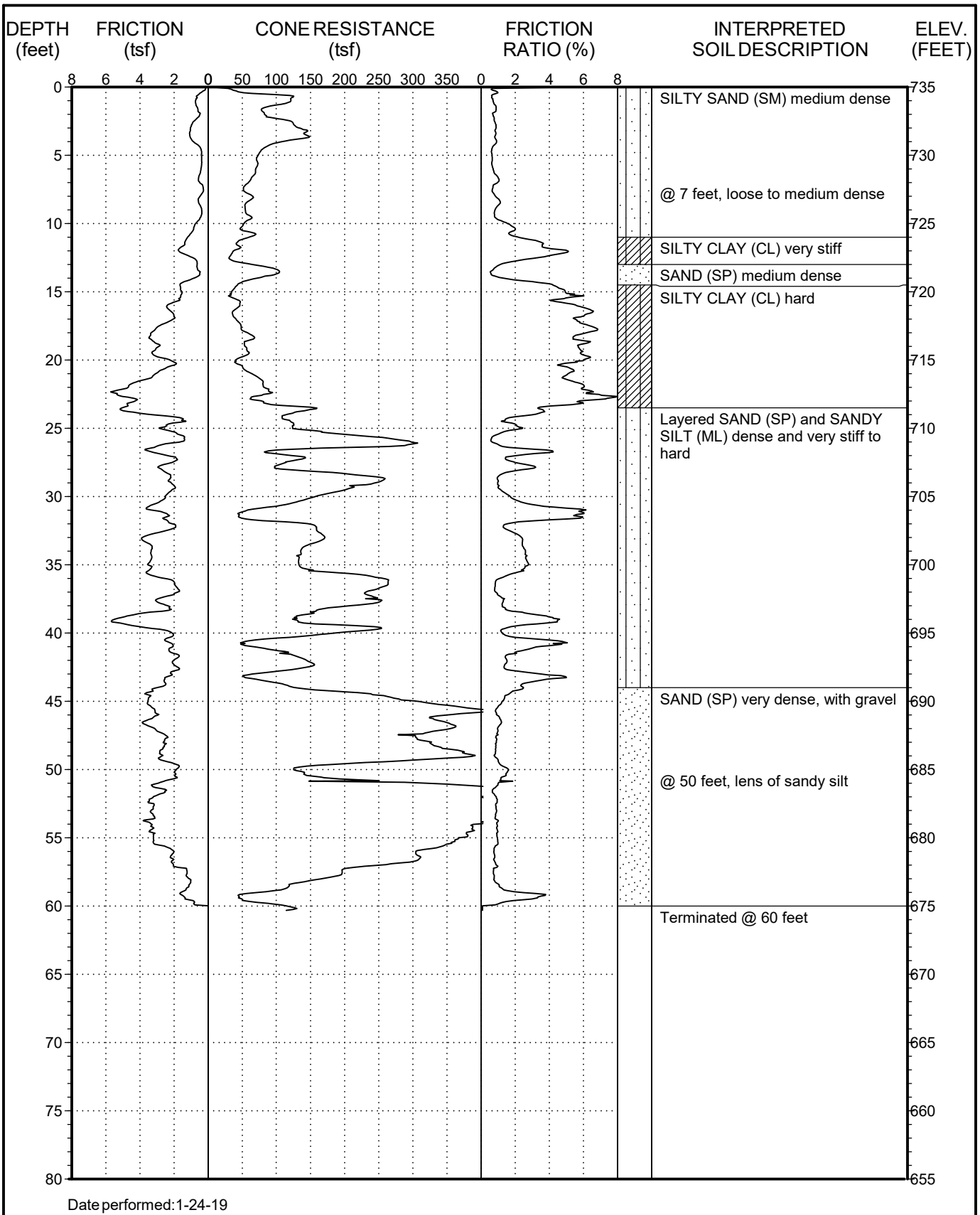
LOG OF CPT NO. C-2

FIGURE A-3



Date performed:1-24-19

This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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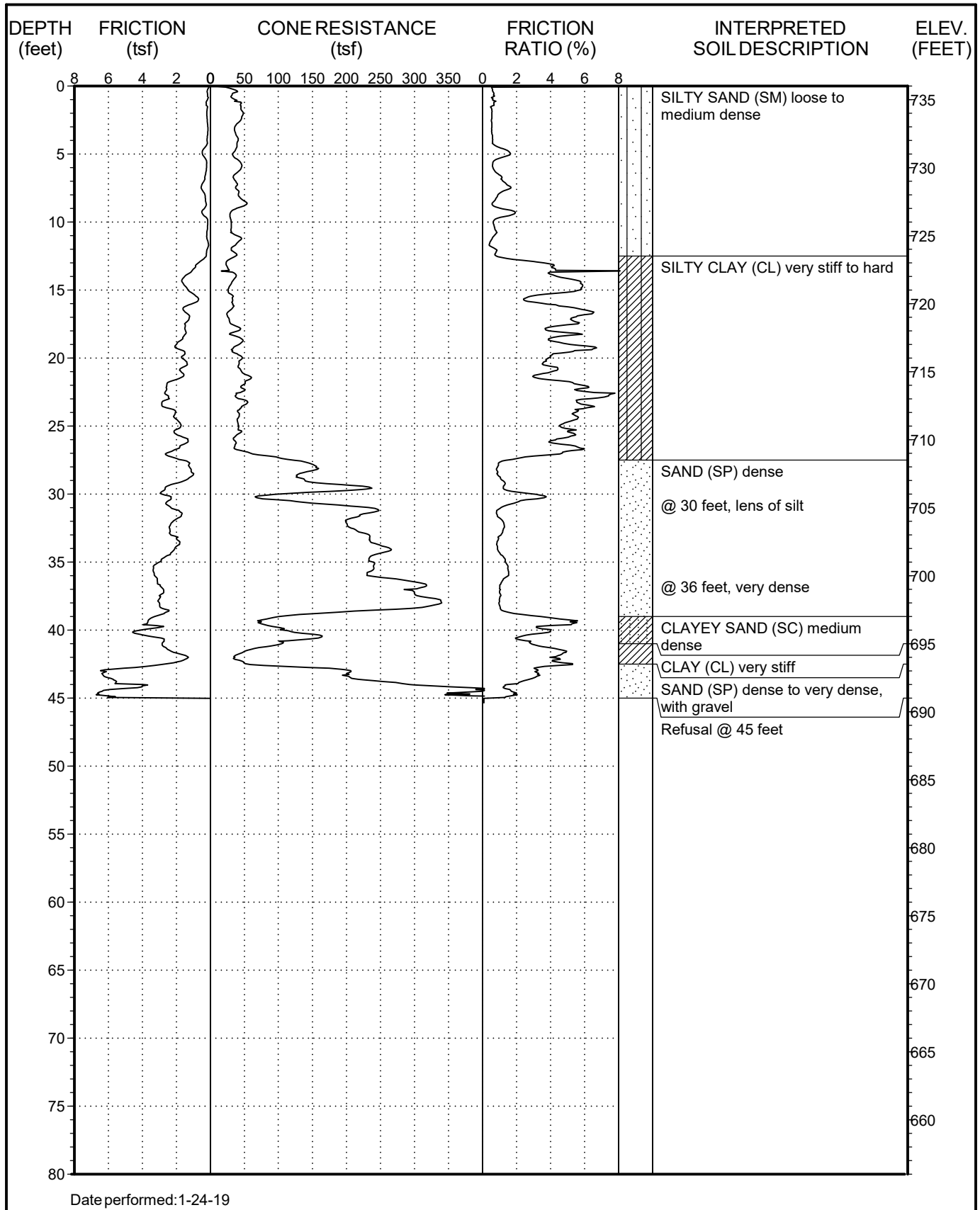
LOG OF CPT NO. C-3

FIGURE A-4



Date performed:1-24-19

This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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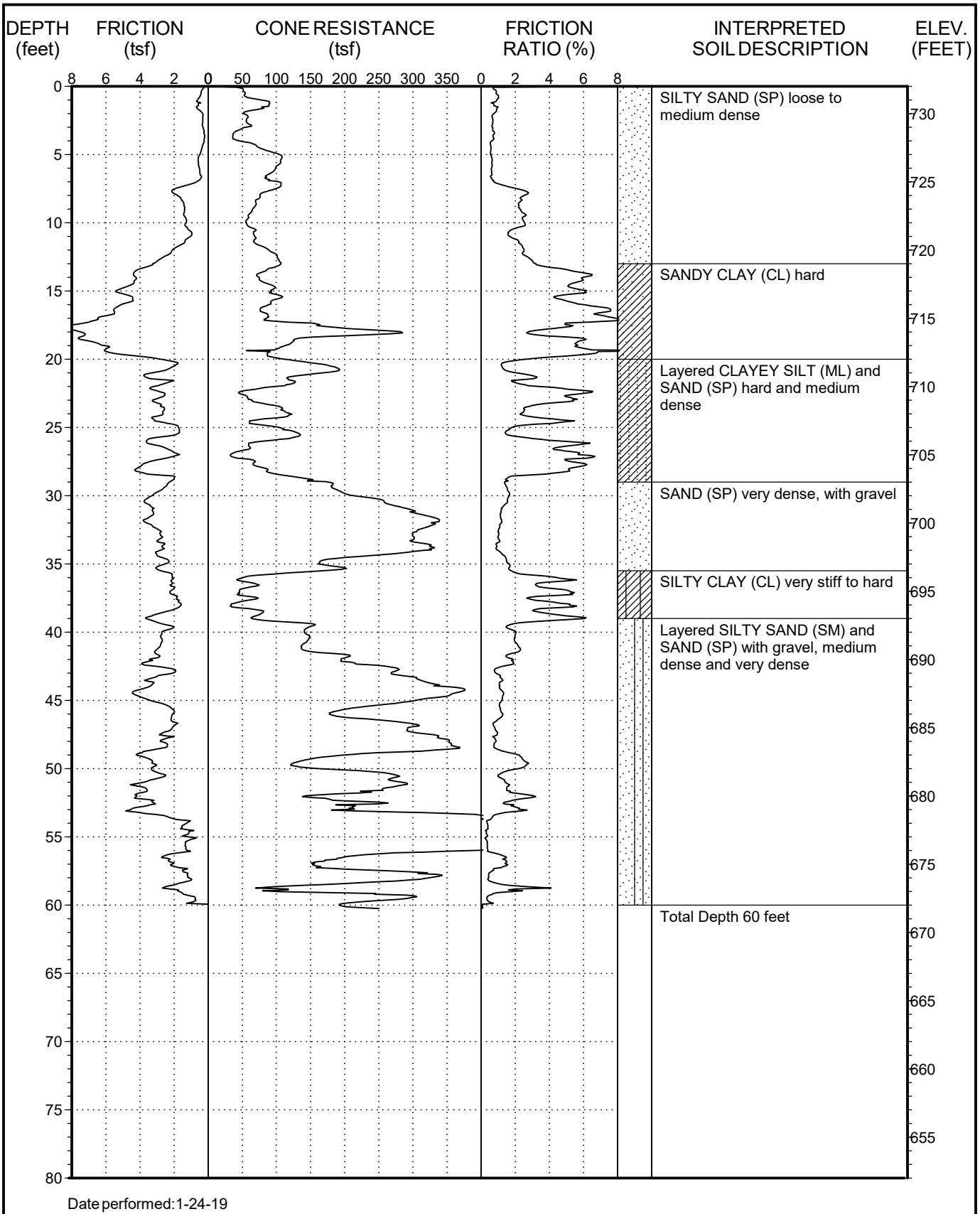
LOG OF CPT NO. C-4

FIGURE A-5



Date performed:1-24-19

This summary applies only at the location of this cone penetration test and at the time of the exploration. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The interpreted soil description is derived from the friction ratio and cone resistance and is a simplification of actual conditions encountered.

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LOG OF CPT NO. C-5

FIGURE A-6