Appendix G:

Geology and Soils Supporting Information

THIS PAGE INTENTIONALLY LEFT BLANK

G.1 - 2021 Geotechnical Investigation

THIS PAGE INTENTIONALLY LEFT BLANK

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

March 10, 2021

KA No. 012-21027

Mr. Jeffrey Harris
Wilson Homes
7550 N. Palm Avenue, Ste 102
Fresno, California 93711

RE: Geotechnical Engineering Investigation
Proposed Residential Development
Behymer and Armstrong Avenues
Clovis, California

Dear Mr. Harris:

In accordance with your request, we have completed a Geotechnical Engineering Investigation for the above-referenced site. The results of our investigation are presented in the attached report.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.



David R. Jarosz, II
Managing Engineer
RGE No. 2698/RCE No. 60185

DRJ:ht

TABLE OF CONTENTS

INTRODUCTION 1

PURPOSE AND SCOPE 1

PROPOSED CONSTRUCTION 2

SITE LOCATION, SITE HISTORY AND SITE DESCRIPTION 2

GEOLOGIC SETTING 2

FIELD AND LABORATORY INVESTIGATIONS 4

SOIL PROFILE AND SUBSURFACE CONDITIONS 4

GROUNDWATER 5

CONCLUSIONS AND RECOMMENDATIONS 5

Administrative Summary 5
Groundwater Influence on Structures/Construction 7
Site Preparation 8
Engineered Fill 9
Drainage and Landscaping 10
Utility Trench Backfill 11
Foundations 11
Floor Slabs and Exterior Flatwork 12
Lateral Earth Pressures and Retaining Walls 13
R-Value Test Results and Pavement Design 14
Seismic Parameters – 2019 CBC 16
Soil Cement Reactivity 16
Compacted Material Acceptance 17
Testing and Inspection 17

LIMITATIONS 17

SITE PLAN 19

LOGS OF BORINGS (1 TO 38) ..... **Appendix A**

GENERAL EARTHWORK SPECIFICATIONS ..... **Appendix B**

GENERAL PAVEMENT SPECIFICATIONS ..... **Appendix C**

March 10, 2021 KA Project No. 012-21027

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
BEHYMER AND ARMSTRONG AVENUES
CLOVIS, CALIFORNIA

INTRODUCTION

This report presents the results of our Geotechnical Engineering Investigation for the proposed Residential Development to be located at Behymer Avenue and Armstrong Avenue in Clovis, California. Discussions regarding site conditions are presented herein, together with conclusions and recommendations pertaining to site preparation, Engineered Fill, utility trench backfill, drainage and landscaping, foundations, concrete floor slabs and exterior flatwork, retaining walls, soil cement reactivity and pavement design.

A site plan showing the approximate boring locations is presented following the text of this report. A description of the field investigation, boring logs and the boring log legend are presented in Appendix A. Appendix A contains a description of laboratory testing phase of this study; along with laboratory test results. Appendices B and C contain guides to earthwork and pavement specifications. When conflicts in the text of the report occur with the general specifications in the appendices, the recommendations in the text of the report have precedence.

PURPOSE AND SCOPE

This investigation was conducted to evaluate the soil and groundwater conditions at the site, to make geotechnical engineering recommendations for use in design of specific construction elements and to provide criteria for site preparation and Engineered Fill construction.

Our scope of services was outlined in our proposal dated February 1, 2021 (KA Proposal No. P120-21) and included the following:

- A site reconnaissance by a member of our engineering staff to evaluate the surface conditions at the project site.
- A field investigation consisting of drilling 38 borings to depths ranging from approximately 4½ to 20 feet for evaluation of the subsurface conditions at the project site. Some of the borings were terminated due to auger refusal in very dense weathered rock.
- Performing laboratory tests on representative soil samples obtained from the borings to evaluate the physical and index properties of the subsurface soils.

- Evaluation of the data obtained from the investigation and an engineering analysis to provide recommendations for use in the project design and preparation of construction specifications.

- Preparation of this report summarizing the results, conclusions, recommendations, and findings of our investigation.

PROPOSED CONSTRUCTION

We understand that design of the proposed development is currently underway; structural load information and other final details pertaining to the structures are unavailable. On a preliminary basis, it is understood that development will consist of single-family residential lots. It is understood the buildings will be single- or two-story wood-framed structures utilizing concrete slab-on-grade construction. Footing loads are anticipated to be light to moderate. On-site landscaping and roadways will be associated with the project.

In the event these structural or grading details are inconsistent with the final design criteria, the Soils Engineer should be notified so that we may update this writing as applicable.

SITE LOCATION, SITE HISTORY AND SITE DESCRIPTION

The site is irregular in shape and encompasses approximately 168.68 acres. The center of the site is located at Perrin Road, between Behymer Avenue and Shepherd Avenue in Clovis, California. The site is identified by Assessor's Parcel Numbers (APN) 557-012-02, 28 and 29, 557-022-11, 557-031-24, 25 and 37. The site is surrounded by residential developments and agricultural land.

Site history was obtained by reviewing historical aerial photographs taken in 1998, 2006, 2014 and 2019. Review of the 1998 aerial photograph indicates the project site predominately consisted of agricultural land and rangeland. Rural residential developments were located in the southern and central portions of the site. Associated with the rural residential developments were several barns, sheds and trees.

Review of the 2006, 2014 and 2019 aerial photographs indicate that the project site conditions appeared to be relatively similar to that noted in the 1998 aerial photograph.

Presently, the site conditions appear relatively similar to that noted in the previous aerial photographs. Two rural residential developments with associated barns and sheds are located in the southern and central portions of the site. The remainder of the site is utilized as pastureland. Buried utility lines are located within the site associated with the existing developments. The site is covered by a sparse to moderate weed growth and the surface soils have a loose consistency. The site is relatively level with no major changes in grade and approximately 15 feet of relief across the property.

GEOLOGIC SETTING

The San Joaquin Valley, which includes the Clovis area, is a topographic and structural basin that is bounded on the east by the Sierra Nevada and on the west by the Coast Ranges. The Sierra Nevada, a fault block dipping gently southwestward, is made up of igneous and metamorphic rocks of pre-Tertiary

age that comprise the basement complex beneath the Valley. The Coast Ranges contain folded and faulted sedimentary rocks of Mesozoic and Cenozoic age, which are similar to those rocks that underlie the Valley at depth and nonconformably overlie the basement complex; gently dipping to nearly horizontal sedimentary rocks of Tertiary and Quaternary age overlie the older rocks. These younger rocks are mostly of continental origin and in the Clovis area, they were derived from the Sierra Nevada.

The San Joaquin River is the principal river in the area. Alluvial fans formed by this river are the largest geomorphic features in the Clovis area. The formation of the fans has resulted in rather flat regional topography.

The Coast Ranges evolved as a result of folding, faulting and accretion of diverse geologic terrains. They are composed chiefly of sedimentary and metamorphic rocks that are sharply deformed into complex structures. They are broken by numerous faults, the San Andreas Fault being the most notable structural feature.

Both the Sierra Nevada and Coast Range are geologically young mountain ranges and possess active and potentially active fault zones. Major active faults and fault zones occur at some distance to the east, west and south of the Clovis area. The Owens Valley Fault Zone bounds the eastern edge of the Sierra Nevada block and contains both active and potentially active faults.

Portions of the Ortigalita, Calaveras, Hayward and Rinconada Faults, which are to the west, are considered potentially active. The San Andreas Fault is possibly the best-known fault and is located approximately 60 to 70 miles to the west.

There are no active fault traces in the project vicinity. Accordingly, the project area is not within an Earth Quake Fault Zone (Special Studies Zone) and will not require a special site investigation by an Engineering Geologist.

Clovis residents could feel the effects of a large seismic event on one of the nearby active or potentially active fault zones. Clovis has experienced groundshaking from earthquakes in the historical past. According to the Five County Seismic Safety Element, groundshaking of VII intensity (Modified Mercali Scale) was felt in Clovis from the 1872 Owens Valley Earthquake. This is the largest known earthquake event affecting the Clovis area.

Secondary hazards from earthquakes include rupture, seiche, landslides, liquefaction and subsidence. Since there are no known faults within the immediate area, ground rupture from surface faulting should not be a potential problem. Seiche and landslides are not hazards in the area either. Liquefaction potential (sudden loss of shear strength in a saturated cohesionless soil) should be low since groundwater occurs below 60 feet. Lastly, deep subsidence problems may be low to moderate according to the conclusions of the Five County Seismic Safety Element. However, there are no known occurrences of structural or architectural damage due to deep subsidence in the Clovis area.

FIELD AND LABORATORY INVESTIGATIONS

Subsurface soil conditions were explored by drilling 38 borings to depths ranging from approximately 4½ to 20 feet below existing site grade, using a truck-mounted drill rig. Some of the borings were terminated due to auger refusal in very dense weathered rock. In addition, 12 bulk subgrade samples were obtained from the site for laboratory R-value testing. The approximate boring and bulk sample locations are shown on the site plan. During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency, obtain information regarding the engineering properties of the subsoils and to retain soil samples for laboratory testing. The soils encountered were continuously examined and visually classified in accordance with the Unified Soil Classification System. A more detailed description of the field investigation is presented in Appendix A.

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory-testing program was formulated with emphasis on the evaluation of natural moisture, density, gradation, shear strength, consolidation potential, expansion potential, plasticity, R-value and moisture-density relationships of the materials encountered. In addition, chemical tests were performed to evaluate the soil-cement reactivity. Details of the laboratory test program and the results of laboratory test are summarized in Appendix A. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

SOIL PROFILE AND SUBSURFACE CONDITIONS

Based on our findings, the subsurface conditions encountered appear typical of those found in the geologic region of the site. The upper soils are identified as by the Soil Conservation Service as belonging to the Atwater, Grangeville, Hanford, Ramona, San Joaquin, Visalia and several other Series. These Series are often underlain at a shallow depth by a clayey or cemented substratum locally referred to as "hardpan." The soils within these Series generally consist of sands, silts, and occasional clays.

More specifically, the surface soils consisted of approximately 6 to 12 inches of very loose silty sand, sand, clayey sand and sandy clay. These soils are disturbed, have low strength characteristics, and are highly compressible when saturated.

Below the loose surface soils, approximately 1 to 7½ feet of loose to dense silty sand, sandy silt, sand, clayey sand and clayey silt or firm to hard sandy clay were encountered. Some of these soils were weakly cemented in parts. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. The clayey soils have a low to moderate potential for expansion. Penetration resistance ranged from 8 to 54 blows per foot. Dry densities ranged from 96 to 126 pcf. Representative soil samples consolidated approximately 1 percent to 2 percent under a 2 ksf load when saturated. Representative soil samples had angles of internal friction of 34 to 36 degrees. Representative samples of the clayey soils had expansion indices ranging from 0 to 68. A plan showing the expansion index at various locations is included in the appendix of this report.

Below 1 to 2½ feet in some of the borings, very dense weakly cemented silty sand, sandy silt and clayey sand, locally referred to as hardpan, were encountered. The cemented nature of the subsoil hampered recovery of undisturbed soil samples. However, these cemented soils can be generally characterized as

relatively strong, slightly compressible, and have a low permeability. Penetration resistance was generally greater than 50 blows per 6 inches. These soils had higher strength characteristics than the upper soils.

Below 4 to 8½ feet, alternating layers of predominately loose to very dense silty sand, sandy silt, silty sand/clayey sand, clayey sand, sand, clayey sandy silt, sandy clayey silt, clayey silt, or weathered decomposed granite and very stiff to hard silty clay and sandy clay were encountered. Field and laboratory tests suggest that these soils/weathered rock had slightly stronger strength characteristics than the upper soils. Penetration resistance ranged from 7 blows per foot to greater than 50 blows per 6 inches. Dry densities ranged from 91 to 129 pcf. These soils/weathered rock extended to the termination depth of our borings. The weathered rock was predominately encountered in the northern portion of the site.

For additional information about the soils encountered, please refer to the boring logs in Appendix A.

GROUNDWATER

Test boring locations were checked for the presence of groundwater during and immediately following the drilling operations. Free groundwater was not encountered.

Cemented silty sands, locally referred to as "hardpan," were encountered below 1 to 2½ feet in several of the borings. This cementation retards the free percolation of the surface water into the soil stratum below the hardpan frequently resulting in a temporary perched water table condition at or near the ground surface.

It should be recognized that water table elevations may fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use and climatic conditions as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our field and laboratory investigations, along with previous geotechnical experience in the project area, the following is a summary of our evaluations, conclusions, and recommendations.

Administrative Summary

In brief, the subject site and soil conditions, with the exception of the loose surface soils, expansive nature of the clayey soils, previous development, existing development and shallow weathered rock appear to be conducive to the development of the project. The surface soils have a loose consistency. These soils are disturbed, have low strength characteristics and are highly compressible when saturated. Accordingly, it is recommended that the surface soils be recompacted. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation.

The on-site upper soils consist of silty sand, clayey sand, sandy clay and sand. The clayey soils appeared to have a low to moderate swell potential. The estimated swell pressures of the clayey soils may cause minor movement effecting slabs and possible stucco or similar brittle exterior finishes. To reduce potential soil movement, it is recommended the upper 18 inches of soil within slab-on-grade and exterior flatwork areas consist of non-expansive Engineered Fill. Preliminary testing indicates the on-site soils will be suitable for reuse as non-expansive Engineered Fill, provided they are cleansed of excessive organics and debris. During construction, it is recommended that additional tests be performed on the on-site soils to verify their physical and index properties.

Fill material was not encountered in our borings. However, fill may be encountered between the boring locations. It is anticipated fill soils will consist of silty sands, sandy silts, clayey sands and sandy clays. The thickness and extent of fill material was determined based on limited test borings and visual observation. Verification of the extent of fill should be determined during site grading. It is recommended that fill soils that have not been properly compacted and certified be excavated and recompacted. Prior to backfilling, the bottom of the excavation should be observed by Krazan & Associates, Inc. to verify no additional removal is required.

Trees are located within the project site and vicinity. Tree removal operations should include roots greater than 1 inch in diameter. The resulting excavations should be backfilled with Engineered Fill compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Two rural residential developments are located within the site. Associated with these developments are buried structures, such as utility lines, irrigation lines, drainage lines, septic systems and possible water wells. Demolition activities should include proper removal all buried structures. Water wells should be abandoned in accordance with county standards. The resulting excavations should be backfilled with Engineered Fill. It is suspected that demolition activities of the existing structures will disturb the upper soils. Following demolition activities, it is recommended that the disturbed soils be removed and/or recompacted. Any buried structures or loosely backfilled excavations encountered during construction should be properly removed and the resulting excavations backfilled with Engineered Fill. Disturbed areas caused by demolition activities should be recompacted.

Cemented silty sands, sandy silts and clayey sands, locally referred to as hardpan, were encountered below 1 to 2½ feet in some of the borings. Hardpan is an excellent foundation-bearing material because of its apparent rock-like properties caused by particle cementation. However, this same cementation also retards the free percolation of the surface water into the soil stratum below the hardpan, frequently resulting in a temporary perched water table condition at or near the ground surface. This perched water condition has a substantial affect on the strength characteristics of the surface soils. As a mitigation measure, very positive drainage should be established around the proposed structures.

Shallow decomposed rock was encountered within some of the borings located in the northern portion of the project site. In order to reduce post-construction differential settlement, it is recommended that the native soil and rock in areas of proposed structures that are in a soil/rock transition zone be cut a minimum of 2 feet below the proposed bottoms of footings. The excavation should be extended a

minimum of 5 feet beyond structural elements. The resulting excavation should be backfilled with Engineered Fill. In lieu of over-excavation, the footings of all connected structures may be embedded a minimum of 6 inches into the native decomposed rock.

Decomposed granite was encountered below 1 to 14 feet in some of the borings located in the northern portion of the site. In general, rock material should be able to be excavated to at least a depth of 10 feet, using a D10N or heavier tractor utilizing a single ripper. Areas resistant to excavation should be anticipated and would likely require the use of air-spade or possible blasting.

Relatively clean sands were encountered at various locations throughout the site. The possibility exists that site grading operations could expose these soils in areas of proposed buildings, pavements, and/or retaining walls. The Contractor should note that these soils lack the cohesion necessary to stand vertically, even in shallow excavations such as footing trenches. If these conditions are encountered, it will be necessary to over-excavate the affected area(s) to a minimum of 2 feet below the proposed bearing surface. These areas may be backfilled using a mix of the silty sand and sand soils that contains at least 20 percent fines and meeting the requirements for Engineered Fill. This material may be obtained from elsewhere at the site, imported to the site from an approved off-site source, or manufactured through blending of the excavated clean sand with other suitable material containing a higher percentage of fines to result in material meeting the requirements for Engineered Fill.

After completion of the recommended site preparation, the site should be suitable for shallow footing support. The proposed structure footings may be designed utilizing an allowable bearing pressure of 2,000 psf for dead-plus-live loads. Footings should have a minimum embedment of 12 inches.

Groundwater Influence on Structures/Construction

Although groundwater was not encountered during our field investigation or anticipated to rise within the zone of structural influence within the project area, it is common for surface runoff water to infiltrate the upper sandy soils and perch above the underlying lower permeable hardpan for extended periods during the winter and spring months. This condition, if encountered, could seriously impede grading by causing an unstable subgrade condition. Typical remedial measures include discing and aerating the soils during soil during dry weather, mixing the soil with dryer materials, removing and replacing the soil with an approved fill material, or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

Some structures in the Clovis area are founded on hardpan have experienced standing water for extended periods of time in crawl spaces below wooden floors or within sunken floor slab areas. The sources of the water were natural precipitation and landscape irrigation, and consequently, wood floor and sunken floor slab construction in hardpan soils are discouraged.

Site Preparation

General site clearing should include removal of vegetation; existing utilities; concrete structures including foundations; basement walls and floors; existing stockpiled soil; trees and associated root systems; rubble; rubbish; and any loose and/or saturated materials. Site stripping should extend to a minimum depth of 2 to 4 inches, or until all organics in excess of 3 percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for use as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.

Fill material was not encountered in our borings. However, fill may be encountered between and beyond the boring locations. It is anticipated fill soils will consist of silty sands, sandy silts, clayey sands and sandy clays. The thickness and extent of fill material was determined based on limited test borings and visual observation. Verification of the extent of fill should be determined during site grading. It is recommended that fill soils that have not been properly compacted and certified be excavated and recompacted. Prior to backfilling, the bottom of the excavation should be observed by Krazan & Associates, Inc. to verify no additional removal is required.

The site is presently occupied by two rural residential developments with associated barns and sheds. Associated with these developments are buried structures, such as utility lines, irrigation lines, septic systems, and water wells. Demolition activities should include proper removal of any buried structures. Any buried structures or loosely backfilled excavations encountered during construction should be properly removed and the resulting excavations backfilled. Excavations, depressions, or soft and pliant areas extending below planned finish subgrade level should be cleaned to firm undisturbed soil, and backfilled with Engineered Fill. In general, any septic tanks, debris pits, cesspools, or similar structures should be entirely removed. Concrete footings should be removed to an equivalent depth of at least 3 feet below proposed footing elevations or as recommended by the Soils Engineer. Water wells should be abandoned in accordance with county standards. Any other buried structures should be removed in accordance with the recommendations of the Soils Engineer. Resulting excavations should be backfilled with Engineered Fill.

Trees are located within the site. Tree removal operations should include roots greater than 1 inch in diameter. The resulting excavations should be backfilled with Engineered Fill compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Following stripping, fill removal, tree removal and demolition activities, the exposed subgrade within proposed building, exterior flatwork, and pavement areas should be excavated/scarified to a depth of at least 12 inches, worked until uniform and free from large clods, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Limits of recompaction should extend 5 feet beyond structural elements.

The on-site upper soils predominately consist of silty sand, clayey sand, sandy clay and sand. The clayey soils appeared to have a low to moderate swell potential. The estimated swell pressures of the clayey soils may cause minor movement effecting slabs and possible stucco or similar brittle exterior

finishes. To reduce potential soil movement, it is recommended the upper 18 inches of soil within slab-on-grade and exterior flatwork areas consist of non-expansive Engineered Fill. Preliminary testing indicates the on-site soils that do not contain clay will be suitable for reuse as non-expansive Engineered Fill, provided they are cleansed of excessive organics and debris. During construction, it is recommended that additional tests be performed on the on-site soils to verify their physical and index properties.

Shallow decomposed rock was encountered within some of the borings located in the northern portion of the project site. In order to reduce post-construction differential settlement, it is recommended that the native soil and rock in areas of proposed structures that are in a soil/rock transition zone be cut a minimum of 2 feet below the proposed bottoms of footings. The excavation should be extended a minimum of 5 feet beyond structural elements. The resulting excavation should be backfilled with Engineered Fill. In lieu of over-excavation, the footings of all connected structures may be embedded a minimum of 6 inches into the native decomposed rock.

The upper soils, during wet winter months, become very moist due to the absorptive characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils, which may require removal to grade a stable building foundation. Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase should be performed.

A representative of our firm should be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observation is an integral part of our service as acceptance of earthwork construction is dependent upon compaction of the material and the stability of the material. The Soils Engineer may reject any material that does not meet compaction and stability requirements. Further recommendations of this report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in this section and the Engineered Fill section.

Engineered Fill

The on-site, upper native soils are predominately silty sands, clayey sands, sandy clays, decomposed granite and sand. These soils will be suitable for reuse as Engineered Fill, provided they are cleansed of excessive organics, debris and fragments greater than 4 inches in maximum dimension. Soils with an expansion index greater than 20 will not be suitable for reuse as non-expansive Engineered Fill and should not be used in the upper 18 inches of slab-on-grade and exterior flatwork areas. These soils may be used for General Engineered Fill within non-structural areas, paved areas, and within slab-on-grade and exterior flatwork areas below 18 inches from finished pad grade, provided they are cleansed of excessive organics and debris. Clayey soils should be moisture-conditioned to at least 2 percent above optimum moisture content during placement. During construction it is recommended that additional tests be performed on the on-site soils to verify their physical and index properties.

Relatively clean sands were encountered at various locations throughout the site. The possibility exists that site grading operations could expose these soils in areas of proposed buildings, pavements, and/or retaining walls. The Contractor should note that these soils lack the cohesion necessary to stand vertically, even in shallow excavations such as footing trenches. If these conditions are encountered, it will be necessary to over-excavate the affected area(s) to a minimum of 2 feet below the proposed bearing surface. These areas may be backfilled using a mix of the silty sand and sand soils that contains at least 20 percent fines and meeting the requirements for Engineered Fill. This material may be obtained from elsewhere at the site, imported to the site from an approved off-site source, or manufactured through blending of the excavated clean sand with other suitable material containing a higher percentage of fines to result in material meeting the requirements for Engineered Fill.

The preferred materials specified for Engineered Fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the Contractor, since he has complete control of the project site at that time.

Imported Fill should consist of a well-graded, slightly cohesive, fine silty sand or sandy silt, with relatively impervious characteristics when compacted. This material should be approved by the Soils Engineer prior to use and should typically possess the following characteristics:

Percent Passing No. 200 Sieve	20 to 50
Plasticity Index	10 maximum
UBC Standard 29-2 Expansion Index	20 maximum

Fill soils should be placed in lifts approximately 6 inches thick, moisture-conditioned as necessary, and compacted to achieve at least 90 percent of maximum density based on ASTM D1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

Drainage and Landscaping

The ground surface should slope away from building pad and pavement areas toward appropriate drop inlets or other surface drainage devices. In accordance with Section 1804 of the 2019 California Building Code, it is recommended that the ground surface adjacent to foundations be sloped a minimum of 5 percent for a minimum distance of 10 feet away from structures, or to an approved alternative means of drainage conveyance. Swales used for conveyance of drainage and located within 10 feet of foundations should be sloped a minimum of 2 percent. Impervious surfaces, such as pavement and exterior concrete flatwork, within 10 feet of building foundations should be sloped a minimum of 1 percent away from the structure. Drainage gradients should be maintained to carry all surface water to collection facilities and off-site. These grades should be maintained for the life of the project.

Slots or weep holes should be placed in drop inlets or other surface drainage devices in pavement areas to allow free drainage of adjoining base course materials. Cutoff walls should be installed at pavement edges adjacent to vehicular traffic areas, these walls should extend to a minimum depth of 12 inches below pavement subgrades to limit the amount of seepage water that can infiltrate the pavements. Where cutoff walls are undesirable subgrade drains can be constructed to transport excess water away from planters to drainage interceptors. If cutoff walls can be successfully used at the site, construction of subgrade drains is considered unnecessary.

Utility Trench Backfill

Utility trenches should be excavated according to accepted engineering practice following OSHA (Occupational Safety and Health Administration) standards by a Contractor experienced in such work. The responsibility for the safety of open trenches should be borne by the Contractor. Traffic and vibration adjacent to trench walls should be reduced and cyclic wetting and drying of excavation side slopes should be avoided. Depending upon the location and depth of some utility trenches, groundwater flow into open excavations could be experienced, especially during or shortly following periods of precipitation.

Sandy soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy soils.

Utility trench backfill placed in or adjacent to buildings and exterior slabs should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. The utility trench backfill placed in pavement areas should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. Pipe bedding should be in accordance with pipe manufacturer's recommendations.

The Contractor is responsible for removing all water sensitive soils from the trench regardless of the backfill location and compaction requirements. The Contractor should use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction.

Foundations

The proposed structures may be supported on a shallow foundation system bearing on undisturbed native soil or Engineered Fill. Spread and continuous footings can be designed for the following maximum allowable soil bearing pressures:

Load	Allowable Loading
Dead Load Only	1,500 psf
Dead-Plus-Live Load	2,000 psf
Total Load, including wind or seismic loads	2,650 psf

The footings should have a minimum depth of 12 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. Footings should have a minimum width of 12 inches, regardless of load.

The footing excavations should not be allowed to dry out at any time prior to pouring concrete. It is recommended that all footings be reinforced by at least one No. 4 reinforcing bar in both top and bottom.

The total movement is not expected to exceed 1 inch. Differential movement should be less than 1 inch. Most of the settlement is expected to occur during construction as the loads are applied. However, additional post-construction settlement may occur if the foundation soils are flooded or saturated.

Resistance to lateral footing displacement can be computed using an allowable friction factor of 0.35 acting between the base of foundations and the supporting subgrade. Lateral resistance for footings can alternatively be developed using an allowable equivalent fluid passive pressure of 300 pounds per cubic foot acting against the appropriate vertical footing faces. The frictional and passive resistance of the soil may be combined without reduction in determining the total lateral resistance. A ⅓ increase in the above value may be used for short duration, wind, or seismic loads.

Floor Slabs and Exterior Flatwork

The 2010 California Residential Code (CRC) Section R506.2.3 specifies that "a 6-mil polyethylene or *approved* vapor retarder with joints lapped not less than 6 inches shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists." Prior to adoption of this code section, traditional construction practice in the Fresno/Clovis area was to place an additional layer of sand or rock dust (per American Concrete Institute) to act as a blotting layer between the vapor retarder and the underside of the concrete slab. This blotting layer acted not only to protect the vapor barrier from punctures or tears during construction, but also served to promote even curing of the concrete slab. In the semi-arid climate of the Fresno/Clovis area, placement of the vapor retarder directly beneath the concrete slab has been known to result in rapid curing of the upper slab surface, especially during periods of elevated temperatures and/or sustained wind, as compared to the lower slab surface. Uneven curing of the upper and lower slab surfaces can result in excessive slab cracking and/or slab curling.

Based on our conversations, it is our understanding that Wilson Homes has developed a standard design for residential interior concrete slab-on-grade floors. The design incorporates a 2-inch layer of sand as a capillary break over the compacted subgrade soil. The sand layer is overlain by a layer of 10-mil PVC vapor retarder membrane, which is overlain by a 2-inch layer of sand, and finally by a minimum 3½-inch thick concrete slab. This system has reportedly been utilized by Wilson Homes with success in the past and has resulted in adequate performance of interior flooring materials.

It is recommended that the concrete slabs be reinforced at a minimum with #3 bars at 18 inches on center to reduce crack separation and possible vertical offset at the cracks. Thicker floor slabs with increased concrete strength and reinforcement should be designed wherever heavy concentrated loads, heavy equipment, or machinery is anticipated.

After reviewing Wilson Homes' standard design for residential interior concrete slab-on-grade floors for use in the Fresno/Clovis area, it is our opinion that this design, while deviating from Section R506.2.3 of the 2010 CRC, is an acceptable equivalent alternative to the criteria specified in the 2010 CRC. Based on our recommendation, Krazan & Associates requests that the local building official, i.e., City of Clovis, allow this standard design to be utilized for the subject residential tract.

Because this standard design does potentially allow for excessive moisture to be contained in the upper sand or rock dust layer from either rainfall or excessive moistening prior to pouring the slab, Krazan & Associates recommends that the upper sand layer be inspected prior to concrete placement to confirm that no ponding or standing water is present.

Lateral Earth Pressures and Retaining Walls

Walls retaining horizontal backfill and capable of deflecting a minimum of 0.1 percent of its height at the top may be designed using an equivalent fluid active pressure of 40 pounds per square foot per foot of depth. Walls incapable of this deflection or are fully constrained walls against deflection may be designed for an equivalent fluid at-rest pressure of 60 pounds per square foot per foot of depth. Expansive soils should not be used for backfill against walls. The wedge of non-expansive backfill material should extend from the bottom of each retaining wall outward and upward at a slope of 2:1 (horizontal to vertical) or flatter. The stated lateral earth pressures do not include the effects of hydrostatic water pressures generated by infiltrating surface water that may accumulate behind the retaining walls; or loads imposed by construction equipment, foundations, or roadways.

Retaining and/or below grade walls should be drained with either perforated pipe encased in free-draining gravel or a prefabricated drainage system. The gravel zone should have a minimum width of 12 inches wide and should extend upward to within 12 inches of the top of the wall. The upper 12 inches of backfill should consist of native soils, concrete, asphaltic concrete, or other suitable backfill to reduce surface drainage into the wall drain system. The aggregate should conform to Class 2 permeable materials graded in accordance with CalTrans Standard Specifications (2018). Prefabricated drainage systems, such as Miradrain®, Enkadrain®, or an equivalent substitute, are acceptable alternatives in lieu of gravel provided they are installed in accordance with the manufacturer's recommendations. If a prefabricated drainage system is proposed, our firm should review the system for final acceptance prior to installation.

Drainage pipes should be placed with perforations down and should discharge in a non-erosive manner away from foundations and other improvements. The pipes should be placed no higher than 6 inches above the heel of the wall, in the center line of the drainage blanket and should have a minimum diameter of four inches. Collector pipes may be either slotted or perforated. Slots should be no wider than ⅛ inch in diameter, while perforations should be no more than ¼ inch in diameter. If retaining walls are less than 6 feet in height, the perforated pipe may be omitted in lieu of weep holes on 4 feet maximum spacing. The weep holes should consist of 4-inch diameter holes (concrete walls) or unmortared head joints (masonry walls) and not be higher than 18 inches above the lowest adjacent

grade. Two 8-inch square overlapping patches of geotextile fabric (conforming to CalTrans Standard Specifications for "edge drains") should be affixed to the rear wall opening of each weep hole to retard soil piping.

During grading and backfilling operations adjacent to any walls, heavy equipment should not be allowed to operate within a lateral distance of 5 feet from the wall, or within a lateral distance equal to the wall height, whichever is greater, to avoid developing excessive lateral pressures. Within this zone, only hand-operated equipment ("whackers," vibratory plates, or pneumatic compactors) should be used to compact the backfill soils.

R-Value Test Results and Pavement Design

Twelve subgrade soil samples were obtained from the project site for R-value testing at the locations shown on the attached site plan. The samples were tested in accordance with the State of California Materials Manual Test Designation 301. Results of the tests are as follows:

Sample	Depth	Description	R-Value at Equilibrium
1	12-24"	Silty Sand (SM)	59
2	12-24"	Silty Sand (SM)	48
3	12-24"	Clayey Sand/Sandy Clay (SC/CL)	16
4	12-24"	Sandy Clay (CL)	Less than 5
5	12-24"	Sandy Clay (CL)	Less than 5
6	12-24"	Sandy Clay (CL)	Less than 5
7	12-24"	Silty Sand (SM)	41
8	12-24"	Clayey Sand (SC)	26
9	12-24"	Silty Sand (SM)	53
10	12-24"	Silty Sand (SM)	46
11	12-24"	Silty Sand (SM)	59
12	12-24"	Silty Sand (SM)	58

The test results are low to moderate and indicate poor to good subgrade support characteristics under dynamic traffic loads. The following table shows the recommended pavement sections for various traffic indices based on an R-value of less than 5.

Traffic Index	Asphaltic Concrete	Class II Aggregate Base*	Class III Aggregate Subbase	Compacted Subgrade**
4.0	2.0"	8.5"	--	12.0"
4.0	2.0"	4.5"	4.5"	12.0"
4.5	3.0"	9.0"	--	12.0"
4.5	3.0"	4.0"	5.5"	12.0"

5.0	3.0"	11.0"	--	12.0"
5.0	3.0"	5.0"	6.5"	12.0"
5.5	3.0"	11.5"	--	12.0"
5.5	3.0"	5.0"	7.0"	12.0"
6.0	3.0"	13.5"	--	12.0"
6.0	3.0"	6.5"	8.0"	12.0"
6.5	3.5"	14.0"	--	12.0"
6.5	3.5"	6.0"	9.0"	12.0"
7.0	4.0"	15.5"	--	12.0"
7.0	4.0"	6.5"	10.0"	12.0"
7.5	4.0"	17.0"	--	12.0"
7.5	4.0"	7.5"	10.5"	12.0"

** 95% compaction based on ASTM Test Method D1557 or CAL 216*
*** 90% compaction based on ASTM Test Method D1557 or CAL 216*

The following table shows the recommended pavement sections for various traffic indices based on an R-value of 53.

Traffic Index	Asphaltic Concrete	Class II Aggregate Base*	Compacted Subgrade**
4.0	2.0"	4.0"	12.0"
4.5	2.5"	4.0"	12.0"
5.0	2.5"	4.0"	12.0"
5.5	3.0"	4.0"	12.0"
6.0	3.0"	4.0"	12.0"
6.5	3.5"	4.0"	12.0"
7.0	4.0"	4.0"	12.0"
7.5	4.0"	4.0"	12.0"

** 95% compaction based on ASTM Test Method D1557 or CAL 216*
*** 90% compaction based on ASTM Test Method D1557 or CAL 216*

If traffic indices are not available, an estimated (typical value) index of 4.5 may be used for light automobile traffic, and an index of 7.0 may be used for light truck traffic.

The following recommendations are for light-duty and heavy-duty Portland Cement Concrete Pavement Sections based on the design procedures developed by the Portland Cement Association.

PORTLAND CEMENT PAVEMENT
LIGHT DUTY

Traffic Index	Portland Cement Concrete***	Class II Aggregate Base*	Compacted Subgrade**
4.5	6.0"	5.0"	12.0"

HEAVY DUTY

Traffic Index	Portland Cement Concrete***	Class II Aggregate Base*	Compacted Subgrade**
7.0	7.0"	6.0"	12.0"

**** 95% compaction based on ASTM Test Method D1557 or CAL 216***
***** 90% compaction based on ASTM Test Method D1557 or CAL 216***
******Minimum Compressive Strength of 3000 psi***

It is recommended that any uncertified fill material encountered within pavement areas be removed and/or recompacted. The fill materials should be moisture-conditioned to near optimum moisture and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. As an alternative, the Owner may elect not to recompact the existing fill within paved areas. However, the Owner should be aware that the paved areas may settle which may require annual maintenance. At a minimum, it is recommended that the upper 12 inches of subgrade soil be moisture-conditioned to a minimum of 2 percent above optimum moisture content and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Seismic Parameters – 2019 California Building Code

The Site Class per Section 1613 of the 2019 California Building Code (2019 CBC) and ASCE 7-16, Chapter 20 is based upon the site soil conditions. It is our opinion that a Site Class D is most consistent with the subject site soil conditions. For seismic design of the structures based on the seismic provisions of the 2019 CBC, we recommend the following parameters:

Seismic Item	Value	CBC Reference
Site Class	D	Section 1613.2.2
Site Coefficient F_a	1.385	Table 1613.2.3 (1)
S_s	0.519	Section 1613.2.1
S_{MS}	0.719	Section 1613.2.3
S_{DS}	0.479	Section 1613.2.4
Site Coefficient F_v	2.180	Table 1613.2.3 (2)
S_1	0.210	Section 1613.2.1
S_{M1}	0.458	Section 1613.2.3
S_{D1}	0.305	Section 1613.2.4
T_S	0.637	Section 1613.2

* Based on Equivalent Lateral Force (ELF) Design Procedure being used.

Soil Cement Reactivity

Excessive sulfate in either the soil or native water may result in an adverse reaction between the cement in concrete (or stucco) and the soil. HUD/FHA and UBC have developed criteria for evaluation of sulfate levels and how they relate to cement reactivity with soil and/or water.

Soil samples were obtained from the site and tested in accordance with State of California Materials Manual Test Designation 417. The sulfate concentrations detected in these soil samples were less than 0.02 percent and are below the maximum allowable values established by HUD/FHA and UBC. Therefore, no special design requirements are necessary to compensate for sulfate reactivity with the cement.

Compacted Material Acceptance

Compaction specifications are not the only criteria for acceptance of the site grading or other such activities. However, the compaction test is the most universally recognized test method for assessing the performance of the Grading Contractor. The numerical test results from the compaction test cannot be used to predict the engineering performance of the compacted material. Therefore, the acceptance of compacted materials will also be dependent on the stability of that material. The Soils Engineer has the option of rejecting any compacted material regardless of the degree of compaction if that material is considered to be unstable or if future instability is suspected. A specific example of rejection of fill material passing the required percent compaction is a fill which has been compacted with an in situ moisture content significantly less than optimum moisture. This type of dry fill (brittle fill) is susceptible to future settlement if it becomes saturated or flooded.

Testing and Inspection

A representative of Krazan & Associates, Inc. should be present at the site during the earthwork activities to confirm that actual subsurface conditions are consistent with the exploratory fieldwork. This activity is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction testing and stability of the material. This representative can also verify that the intent of these recommendations is incorporated into the project design and construction. Krazan & Associates, Inc. will not be responsible for grades or staking, since this is the responsibility of the Prime Contractor.

LIMITATIONS

Soils Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using the most appropriate and most current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Soils Engineering, physical changes in the site, either due to excavation or fill placement, new agency regulations, or possible changes in the proposed structure after the soils report is completed may require the soils report to be professionally reviewed. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that 2 years be considered a reasonable time for the usefulness of this report.

Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions

do not vary significantly from those disclosed during our field investigation. If any variations or undesirable conditions are encountered during construction, the Soils Engineer should be notified so that supplemental recommendations may be made.

The conclusions of this report are based on the information provided regarding the proposed construction. If the proposed construction is relocated or redesigned, the conclusions in this report may not be valid. The Soils Engineer should be notified of any changes so the recommendations may be reviewed and re-evaluated.

This report is a Geotechnical Engineering Investigation with the purpose of evaluating the soil conditions in terms of foundation design. The scope of our services did not include any Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands. Any statements, or absence of statements, in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices and a degree of conservatism deemed proper for this project. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

If you have any questions or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

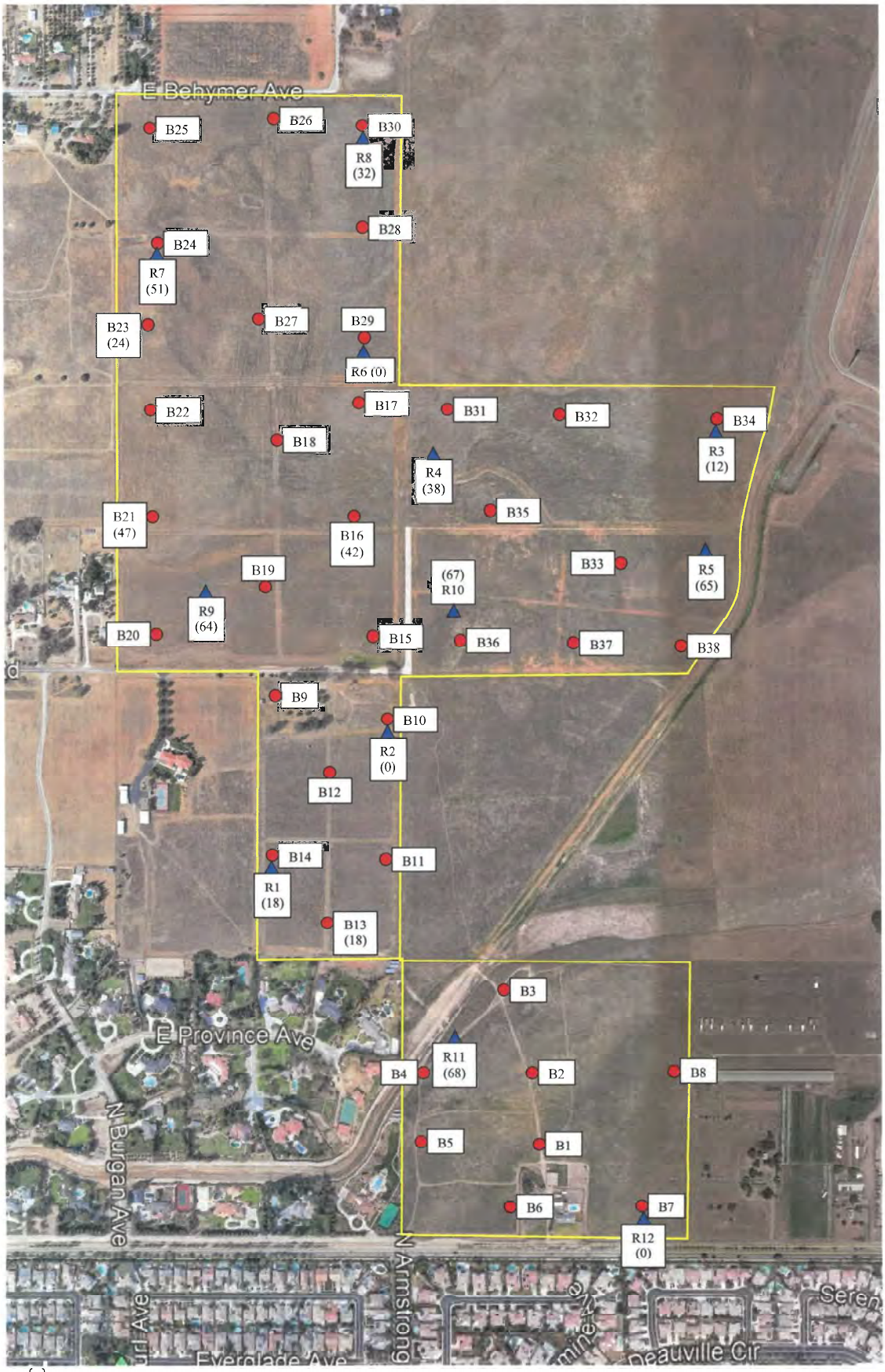
Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Steve Nelson
Project Engineer



David R. Jarosz, II
Managing Engineer
RGE No. 2698/RCE No. 60185

SN/DRJ:ht



[ ] EXPANSION INDEX

APPROXIMATE BORING LOCATION

APPROXIMATE R-VALUE LOCATION

N
W
E
S

SITE MAP	Scale: NTS	Date: March 2021	Krazan GEOTECHNICAL ENGINEERING
Residential Development **Behymer and Armstrong Avenues** **Clovis, California**	Drawn by: HT	Approved by: DJ	
	Project No. 012-21027	Figure No. 1	

APPENDIX A

FIELD AND LABORATORY INVESTIGATIONS

Field Investigation

The field investigation consisted of a surface reconnaissance and a subsurface exploratory program. Thirty-eight 4½-inch exploratory borings were advanced. The boring locations are shown on the site plan.

The soils encountered were logged in the field during the exploration and, with supplementary laboratory test data, are described in accordance with the Unified Soil Classification System.

Modified standard penetration tests were performed at selected depths. This test represents the resistance to driving a 2½-inch diameter core barrel sampler. The driving energy was provided by a hammer weighing 140 pounds falling 30 inches. Relatively undisturbed soil samples were obtained while performing this test. Bag samples of the disturbed soil were obtained from the auger cuttings. All samples were returned to our Clovis laboratory for evaluation.

Laboratory Investigation

The laboratory investigation was programmed to determine the physical and mechanical properties of the foundation soil underlying the site. Test results were used as criteria for determining the engineering suitability of the surface and subsurface materials encountered.

In situ moisture content, dry density, consolidation, direct shear and sieve analysis tests were determined for the undisturbed samples representative of the subsurface material. Atterberg limits, expansion index and R-value tests were completed for select bag samples obtained from the auger cuttings. These tests, supplemented by visual observation, comprised the basis for our evaluation of the site material.

The logs of the exploratory borings and laboratory determinations are presented in this Appendix.

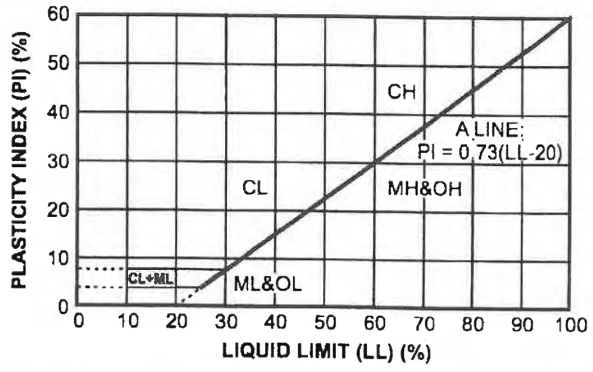
UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART			
COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

CONSISTENCY CLASSIFICATION	
Description	**Blows per Foot**
Granular Soils	
Very Loose	< 5
Loose	5 – 15
Medium Dense	16 – 40
Dense	41 – 65
Very Dense	> 65
Cohesive Soils	
Very Soft	< 3
Soft	3 – 5
Firm	6 – 10
Stiff	11 – 20
Very Stiff	21 – 40
Hard	> 40

GRAIN SIZE CLASSIFICATION		
Grain Type	*Standard Sieve Size*	*Grain Size in Millimeters*
Boulders	Above 12 inches	Above 305
Cobbles	12 to 13 inches	305 to 76.2
Gravel	3 inches to No. 4	76.2 to 4.76
Coarse-grained	3 to ¾ inches	76.2 to 19.1
Fine-grained	¾ inches to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
Coarse-grained	No. 4 to No. 10	4.76 to 2.00
Medium-grained	No. 10 to No. 40	2.00 to 0.042
Fine-grained	No. 40 to No. 200	0.042 to 0.074
Silt and Clay	Below No. 200	Below 0.074

PLASTICITY CHART



Log of Boring B1

Project: Residential Development

Project No: 012-21027

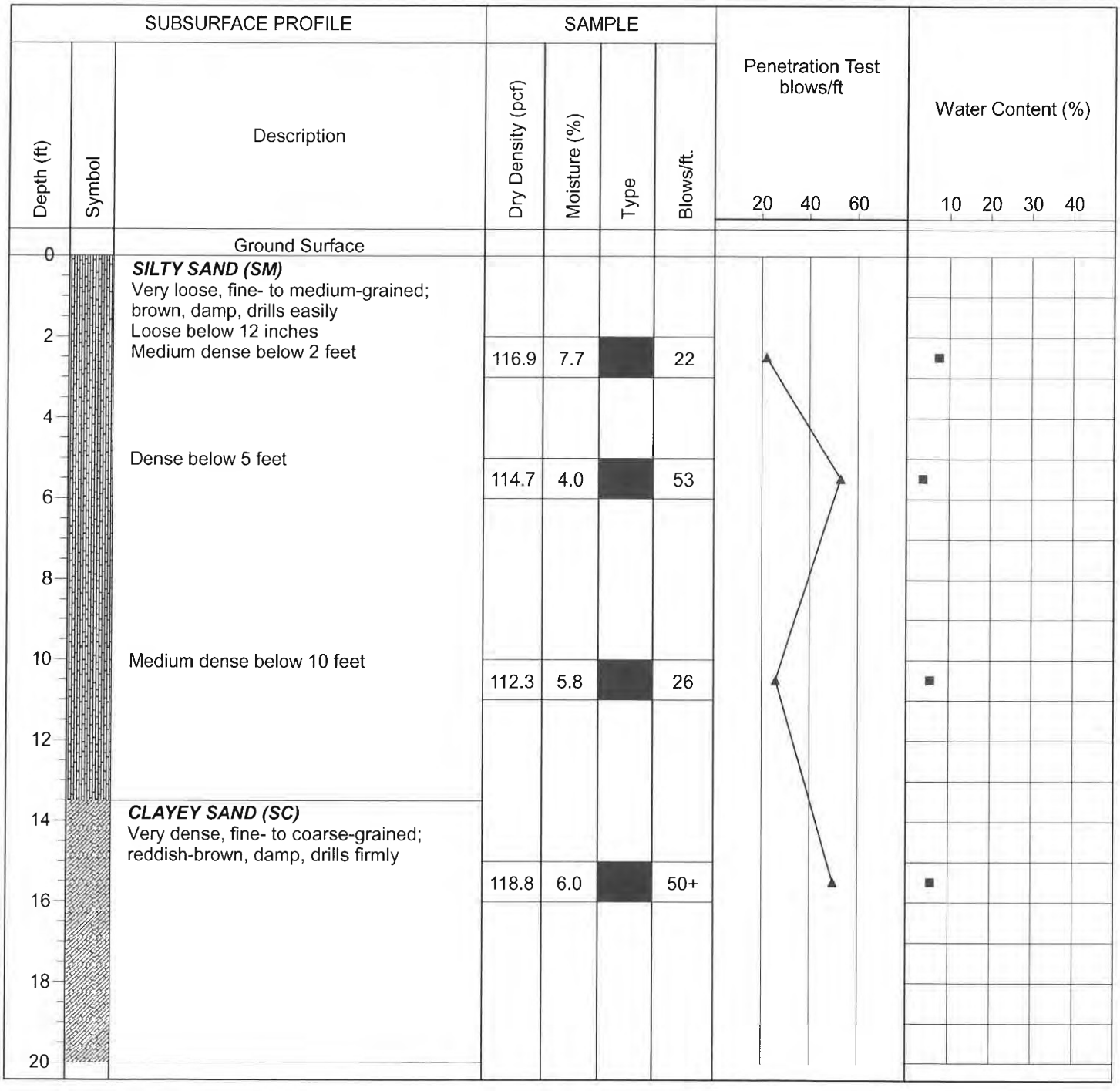
Client: Wilson Homes

Figure No.: A-1

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B2

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-2

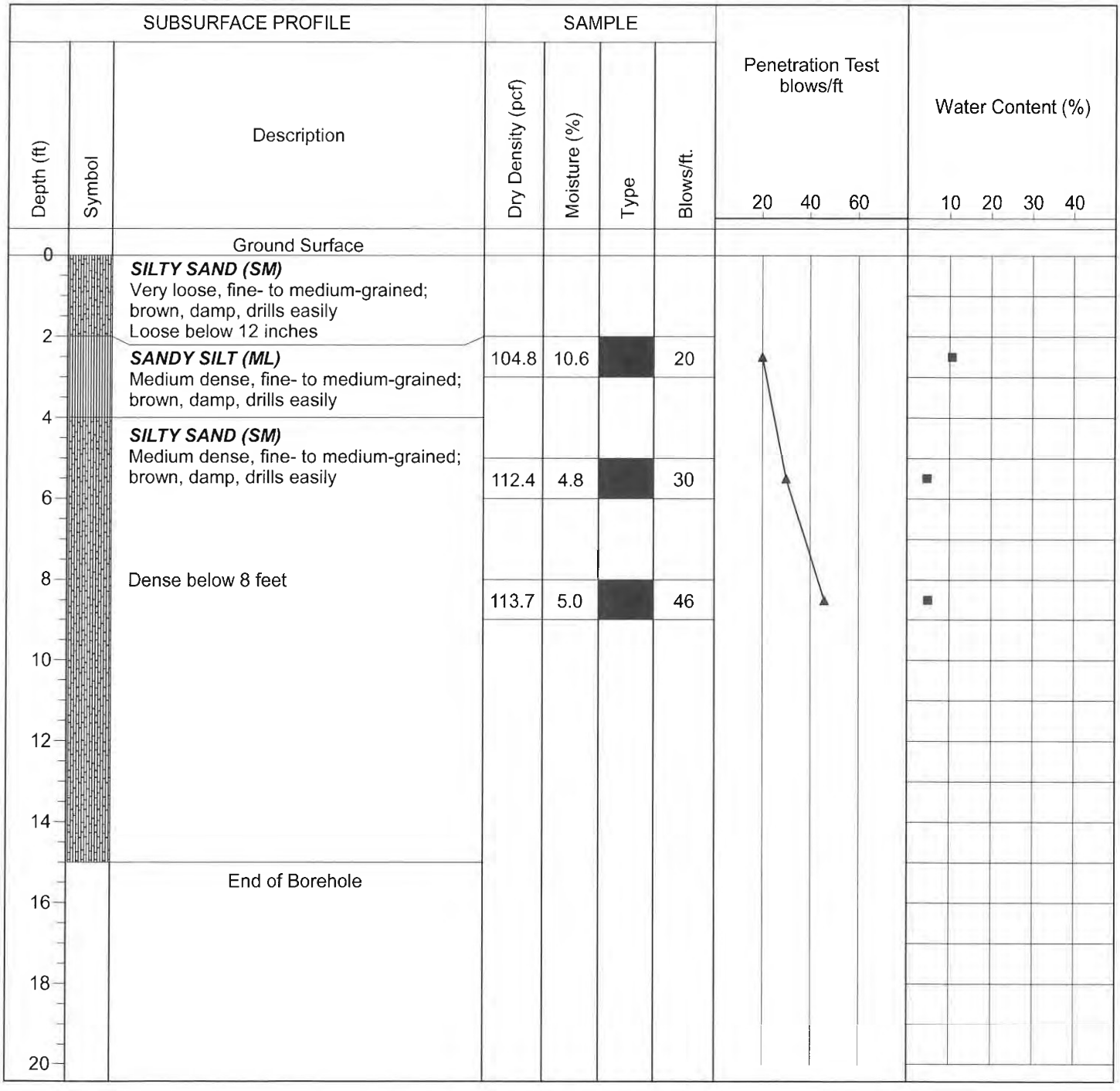
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Dave Adams

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B3

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-3

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
		SILTY SAND (SM) Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches				
2		***SAND (SP)*** Loose, fine- to medium-grained; brown, damp, drills easily	102.9	2.3		10
4		Medium dense below 5 feet				
6			107.7	3.4		17
8						
10		End of Borehole				
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Solid Flight

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-11-21

Hole Size: 4½ Inches

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B4

Project: Residential Development

Project No: 012-21027

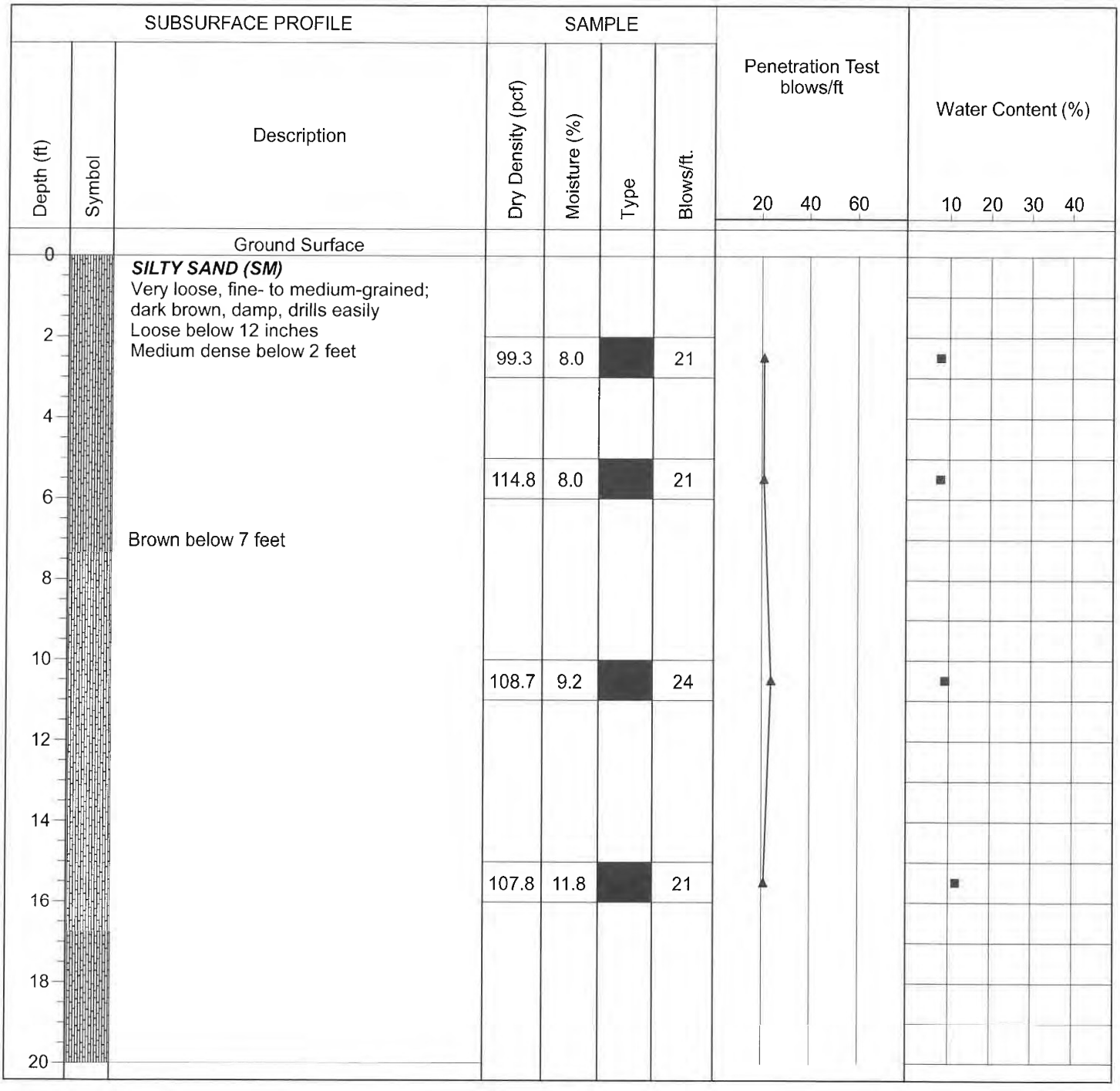
Client: Wilson Homes

Figure No.: A-4

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B5

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-5

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Dave Adams

Depth to Water>

Initial: None

At Completion: None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches Medium dense below 2 feet				
2			114.0	6.4		24
4						
6			110.6	2.1		43
8		***SANDY SILT (ML)*** Very dense, fine- to medium-grained, weakly cemented; brown, damp, drills firmly	112.3	5.0		50+
12		***SANDY SILT (ML)*** Very dense, fine- to medium-grained; brown, damp, drills firmly				
14						
16		End of Borehole				
18						
20						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B6

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-6

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches Medium dense below 2 feet				
2			114.4	8.2		29
4		Dense below 5 feet				
6			108.7	5.0		46
8						
10		End of Borehole				
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Solid Flight

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-11-21

Hole Size: 4½ Inches

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B7

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

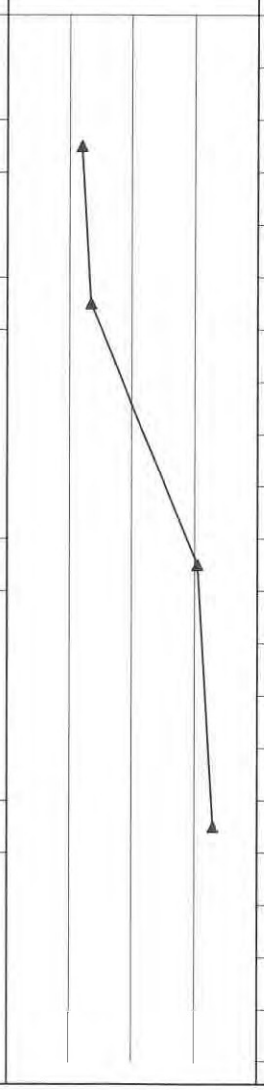
Figure No.: A-7

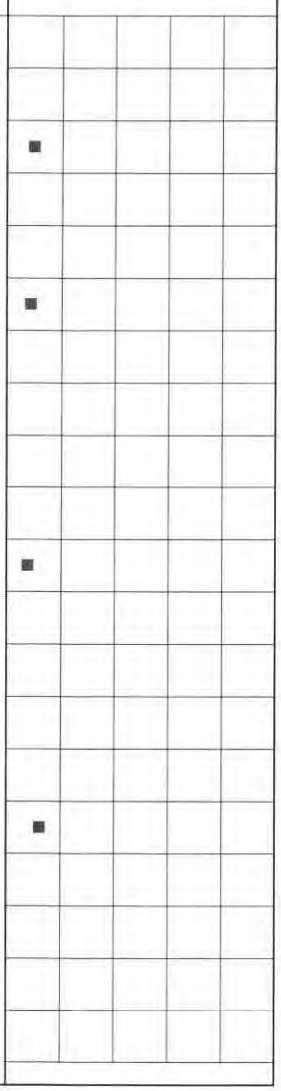
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches Medium dense below 2 feet				
2			105.1	5.1		24
4						
6			107.5	4.5		27
8						
10		***CLAYEY SAND (SC)*** Dense, fine- to coarse-grained; brown, damp, drills firmly	114.5	4.0		61
12						
14		***CLAYEY SANDY SILT (ML)*** Very dense, fine- to medium-grained; brown, damp, drills firmly				
16			109.1	6.2		66
18						
20						





Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B8

Project: Residential Development

Project No: 012-21027

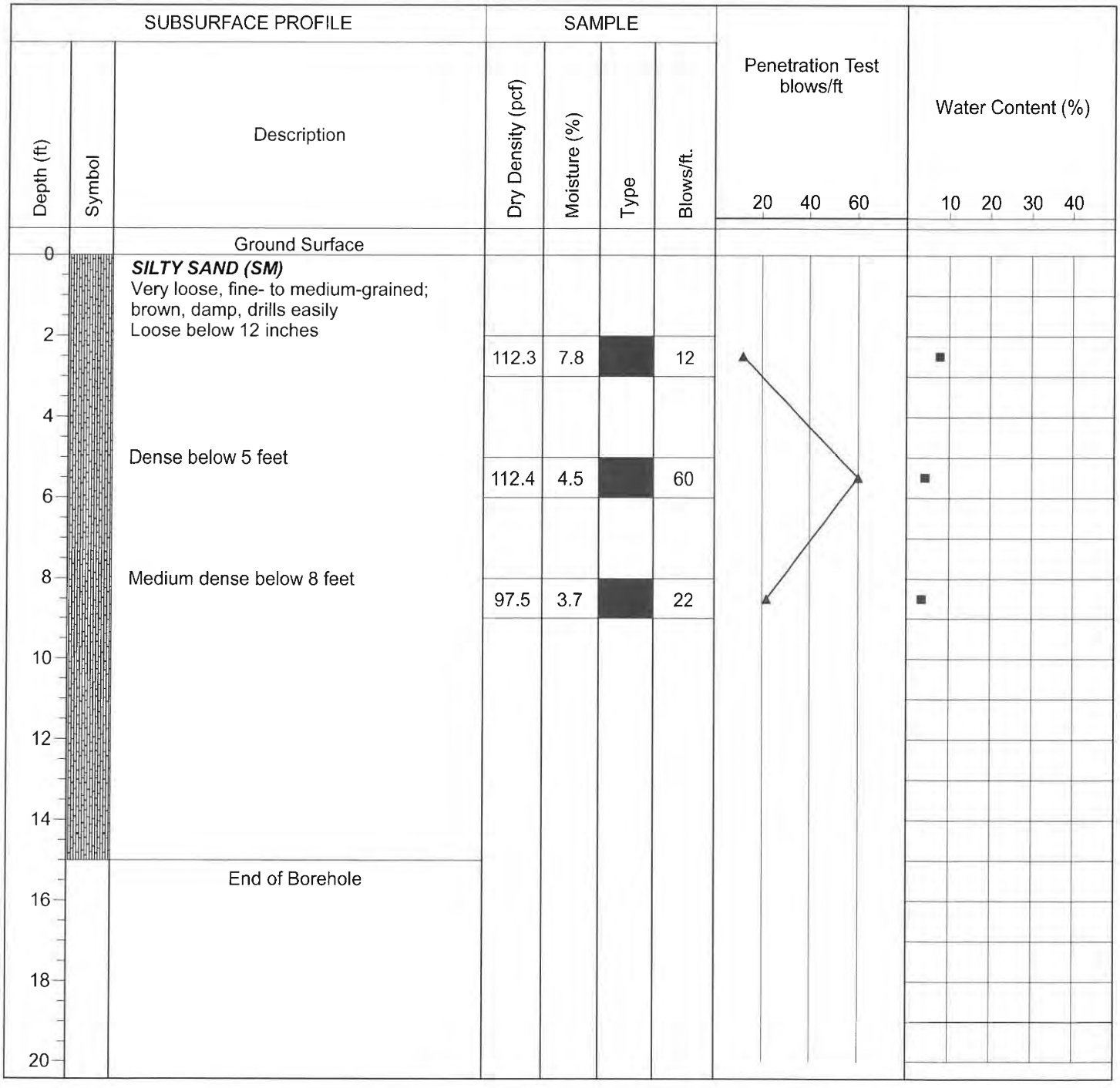
Client: Wilson Homes

Figure No.: A-8

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B9

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-9

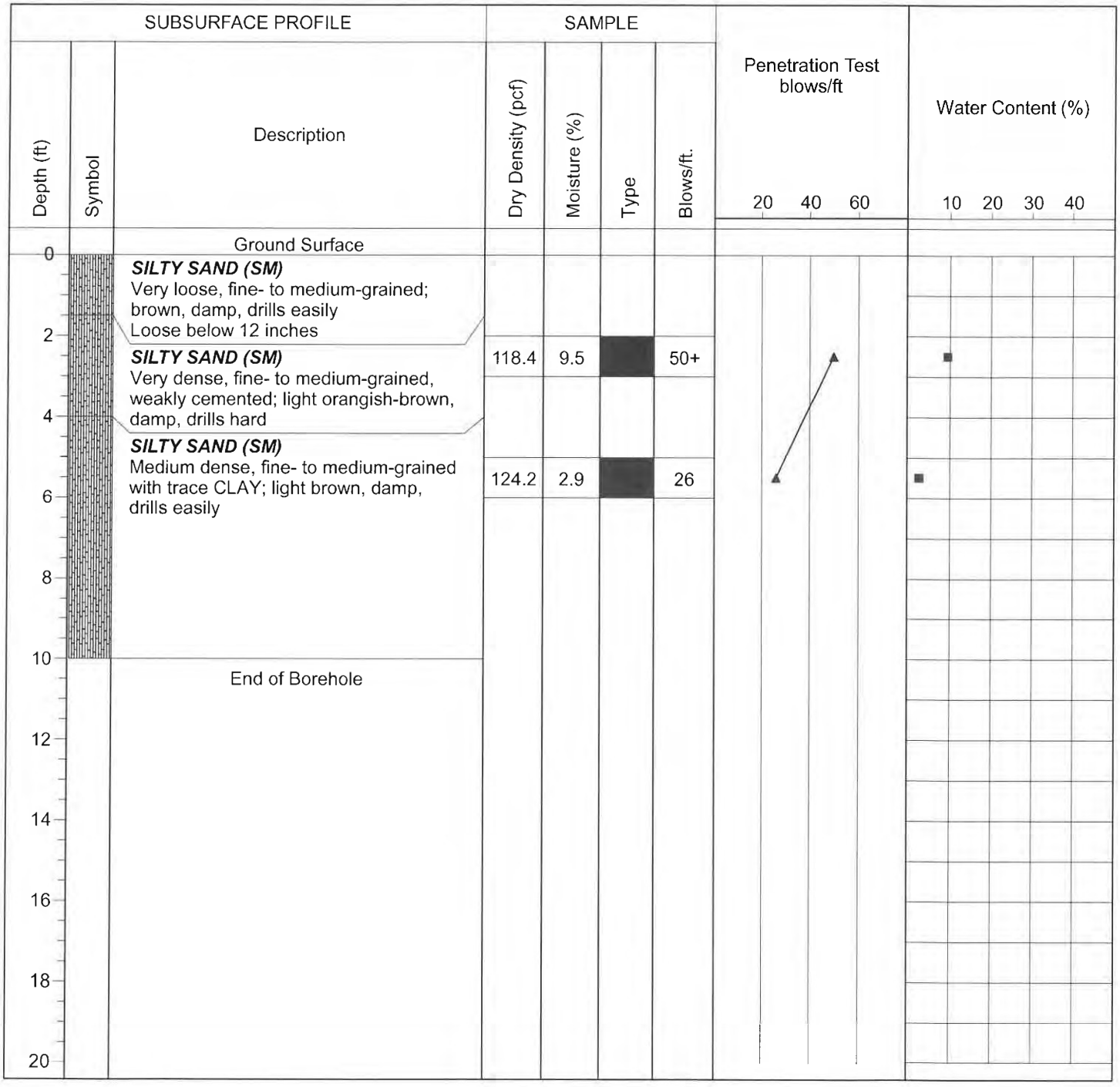
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B10

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-10

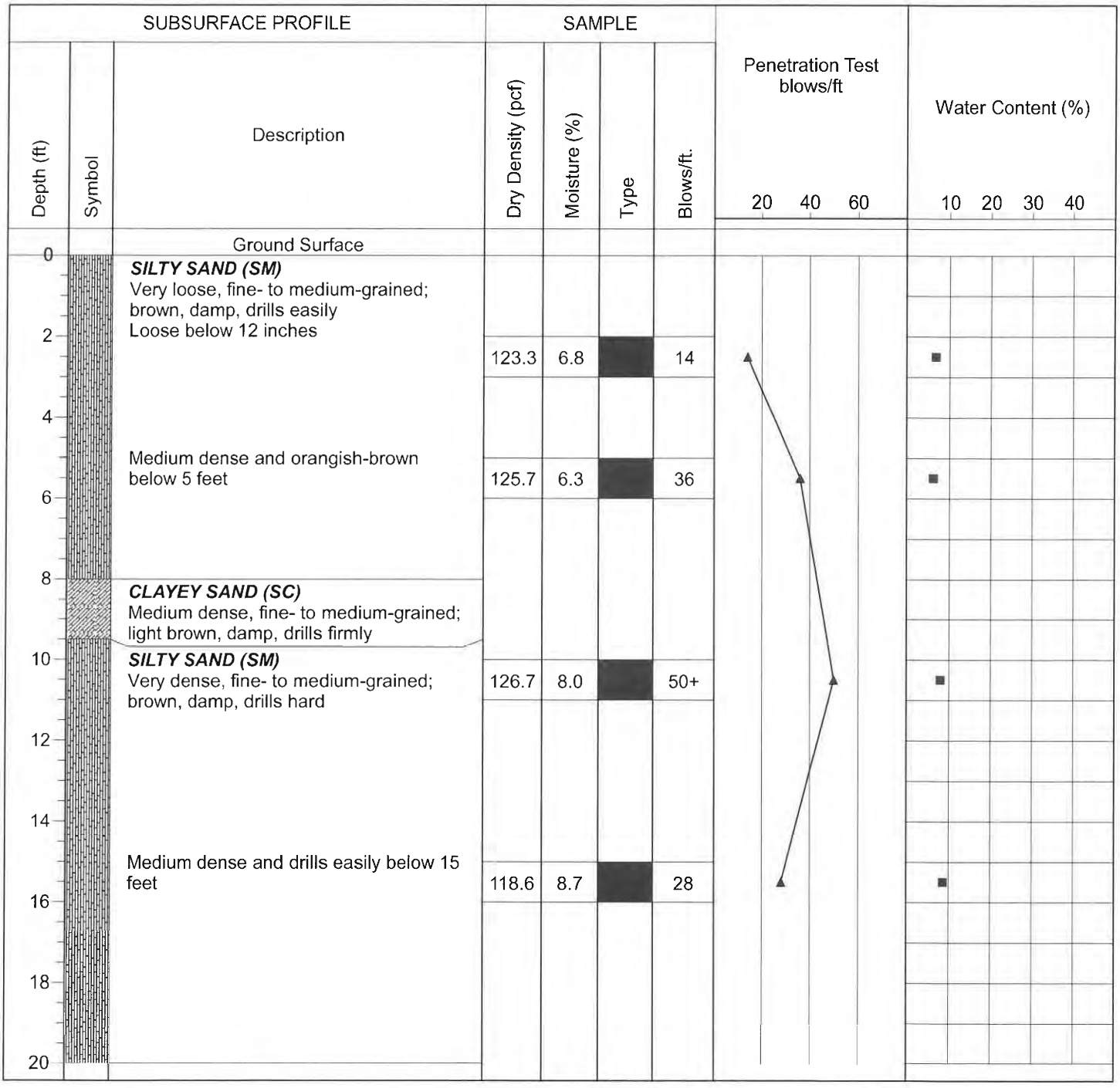
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B11

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-11

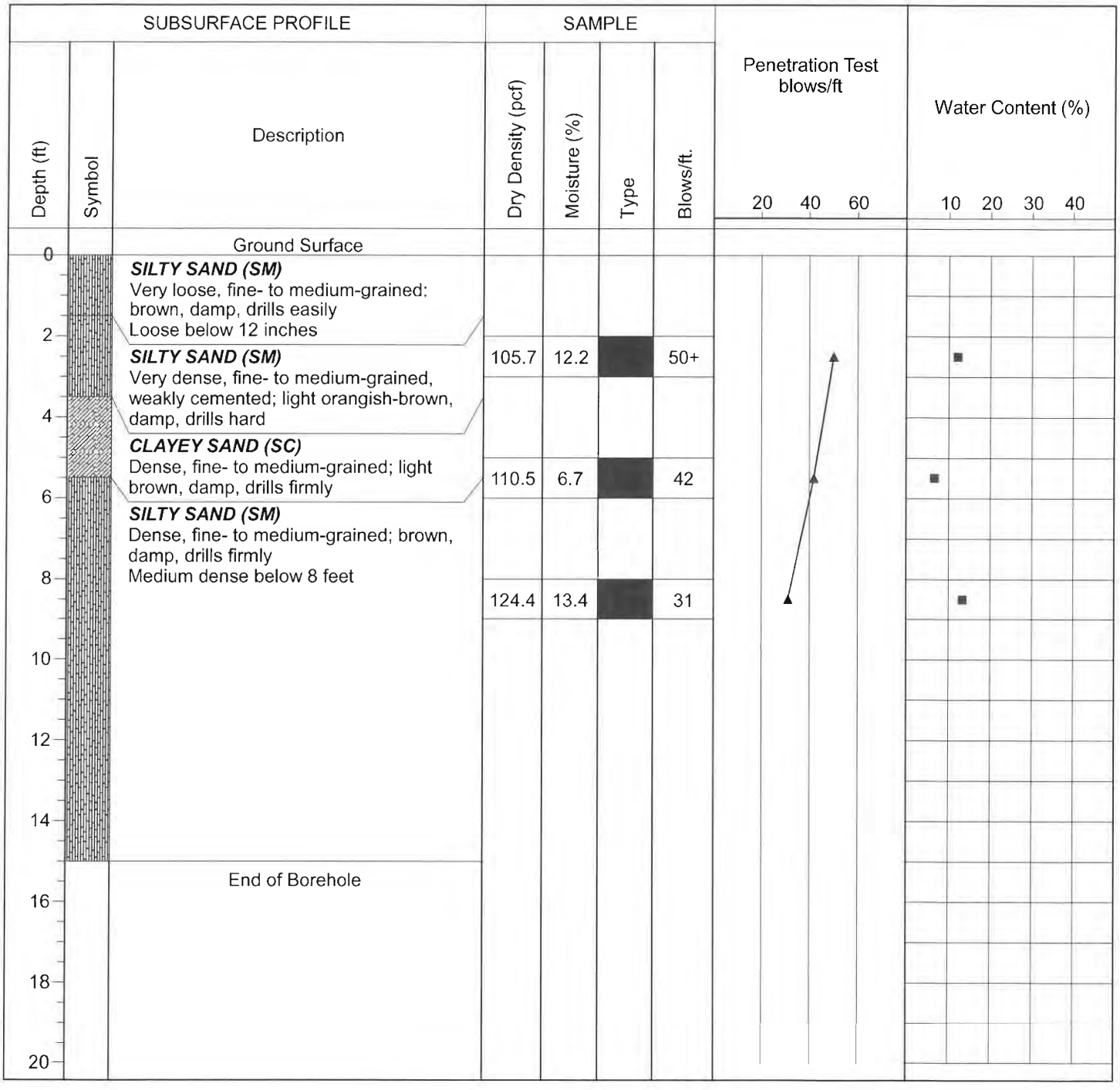
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B12

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-12

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
		SILTY SAND (SM) Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches						
2			113.0	7.2		54	■	■
		SILTY SAND (SM) Dense, fine- to medium-grained, weakly cemented; brown, damp, drills hard						
4								
		SILTY SAND (SM) Very dense, fine- to medium-grained; brown, damp, drills firmly	128.9	6.8		66	■	■
6								
8								
10		End of Borehole						
12								
14								
16								
18								
20								

Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B13

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-13

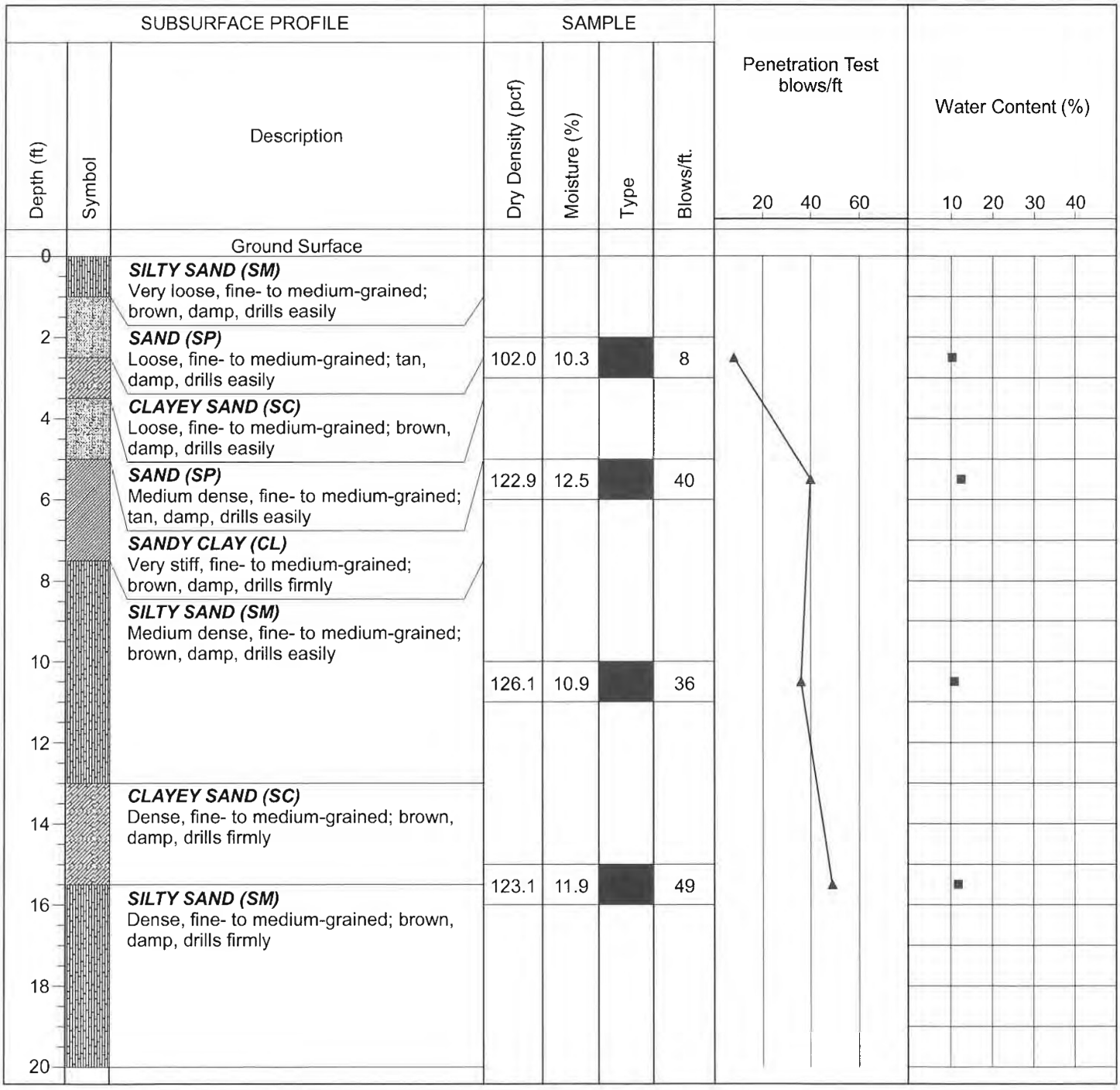
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B14

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-14

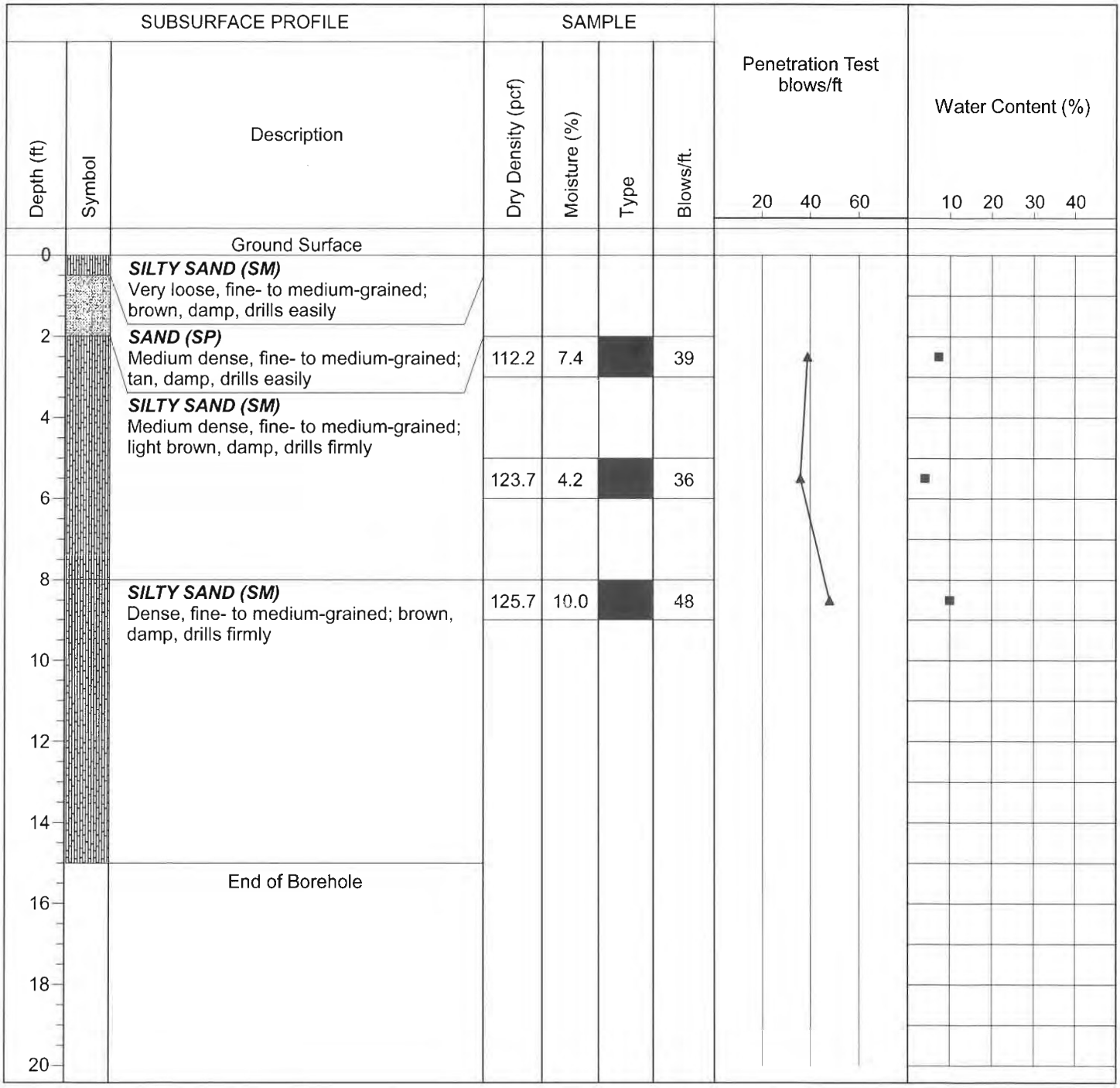
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 2-11-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B15

Project: Residential Development

Project No: 012-21027

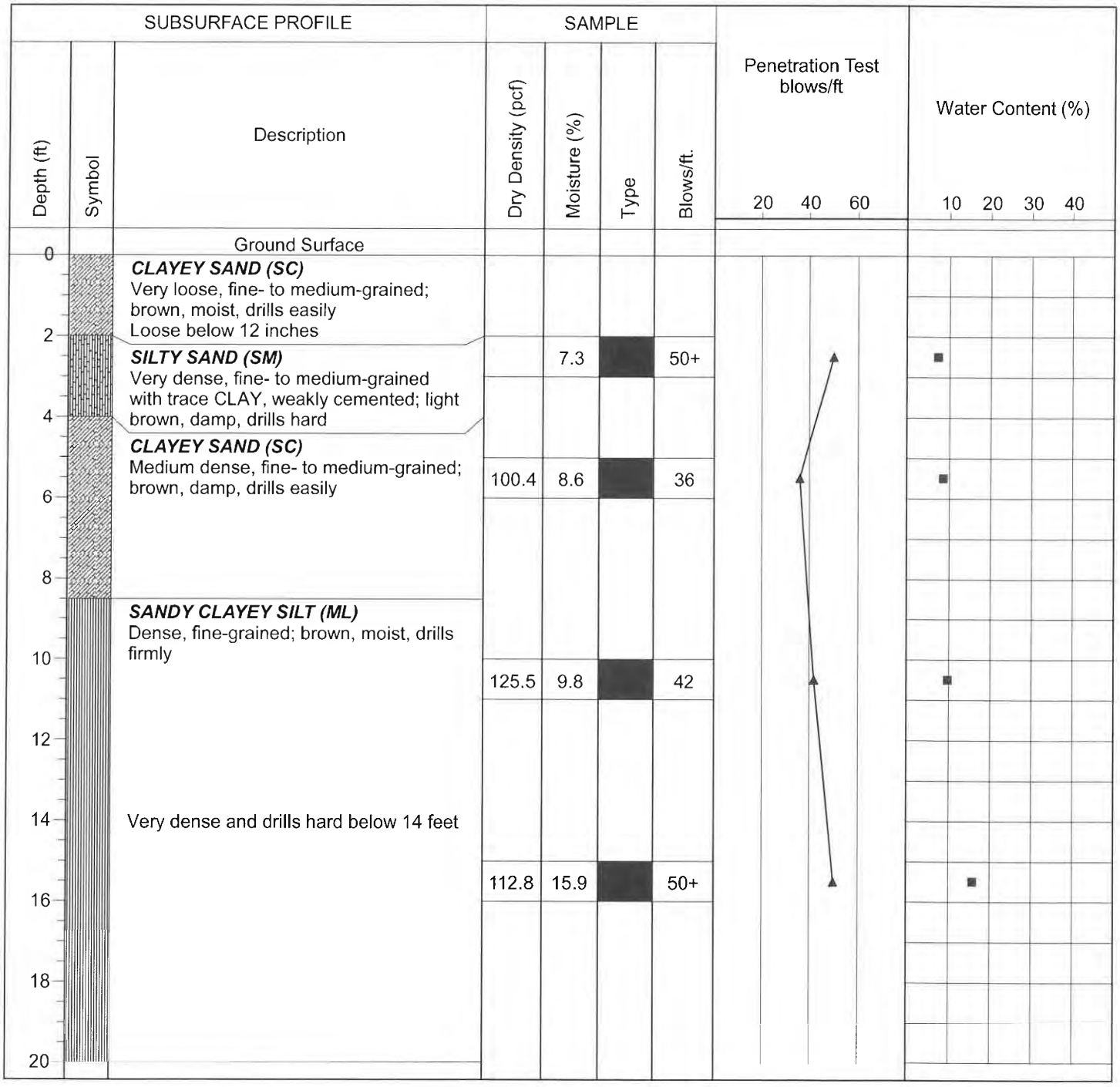
Client: Wilson Homes

Figure No.: A-15

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-15-21

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B16

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-16

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
2		***CLAYEY SAND (SC)*** Very loose, fine- to medium-grained; brown, moist, drills easily Loose below 12 inches Dense with increased CLAY below 1½ feet	124.4	7.6	■	46
4		***SILTY SAND/CLAYEY SAND (SM/SC)*** Very dense, fine- to medium-grained; light brown, damp, drills hard	113.0	5.7	■	50+
6		Dense below 7 feet				
8			114.8	3.9	■	54
10						
12						
14						
16		End of Borehole				
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Solid Flight

Drill Date: 2-15-21

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B17

Project: Residential Development

Project No: 012-21027

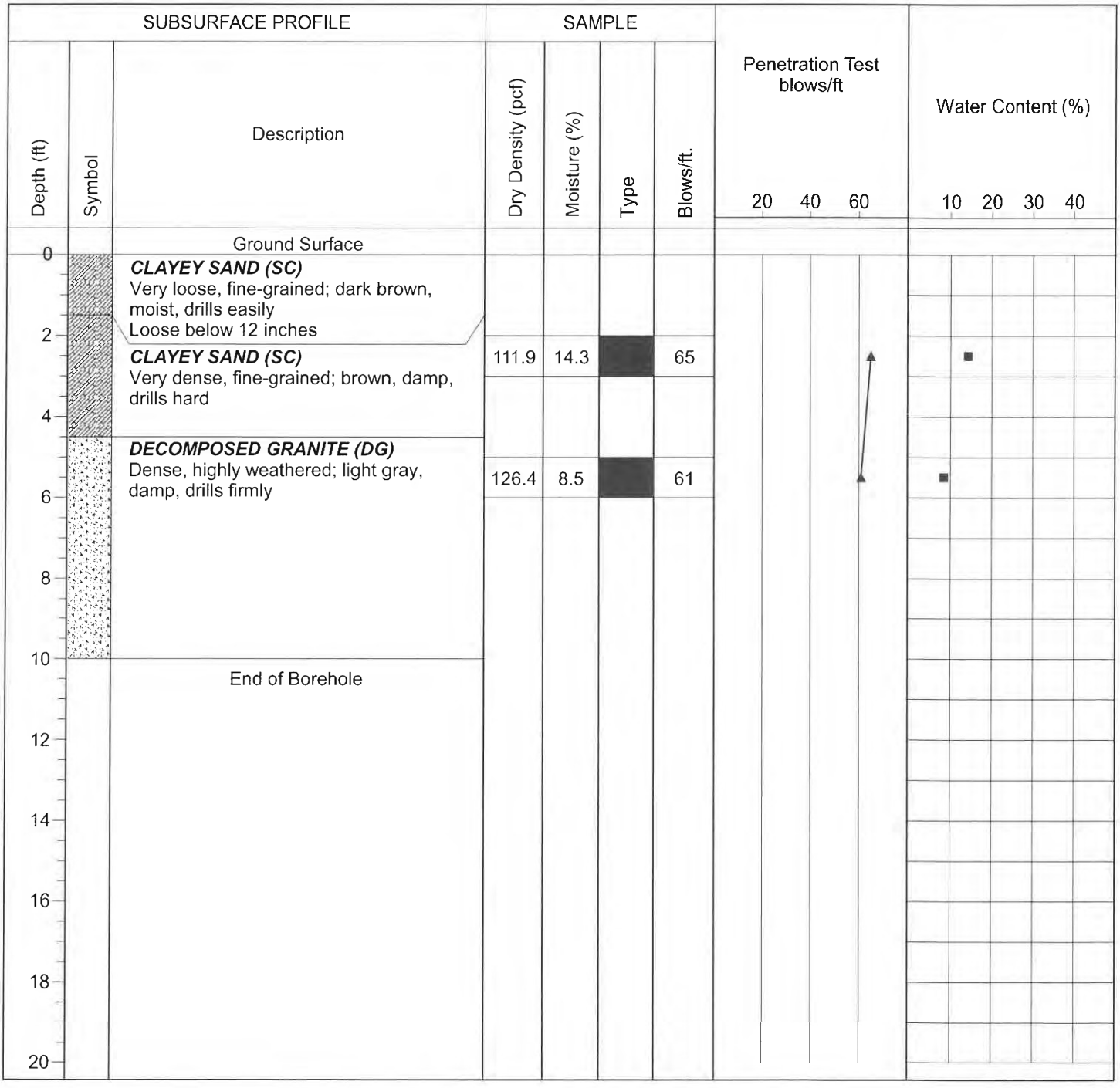
Client: Wilson Homes

Figure No.: A-17

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-15-21

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B18

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-18

Location: Behymer and Armstrong Avenues, Clovis, California

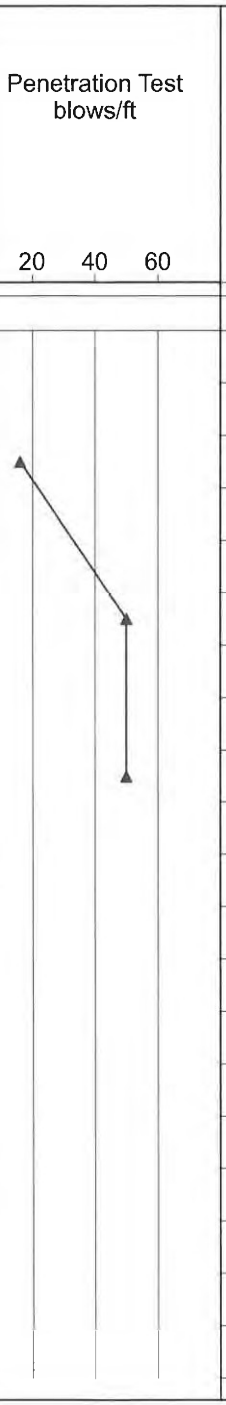
Logged By: Wayne Andrade

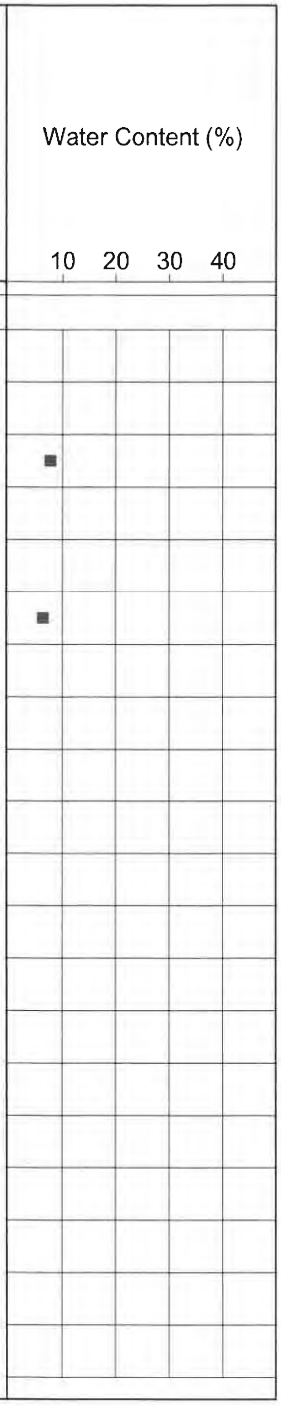
Depth to Water>

Initial: None

At Completion: None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***CLAYEY SAND (SC)*** Very loose, fine-grained; brown, moist, drills easily Loose below 12 inches Medium dense below 2 feet				
2			100.2	7.9	■	16
4		***DECOMPOSED GRANITE (DG)*** Very dense, highly weathered; light gray, damp, drills hard				
6			111.8	6.6	■	50+
8		***DECOMPOSED GRANITE (DG)*** Very dense, moderately weathered; gray, damp, drills hard				
10					■	50+
12		Auger refusal at 12 feet End of Borehole				
14						
16						
18						
20						





Drill Method: Solid Flight

Drill Date: 2-15-21

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 12 Feet

Sheet: 1 of 1

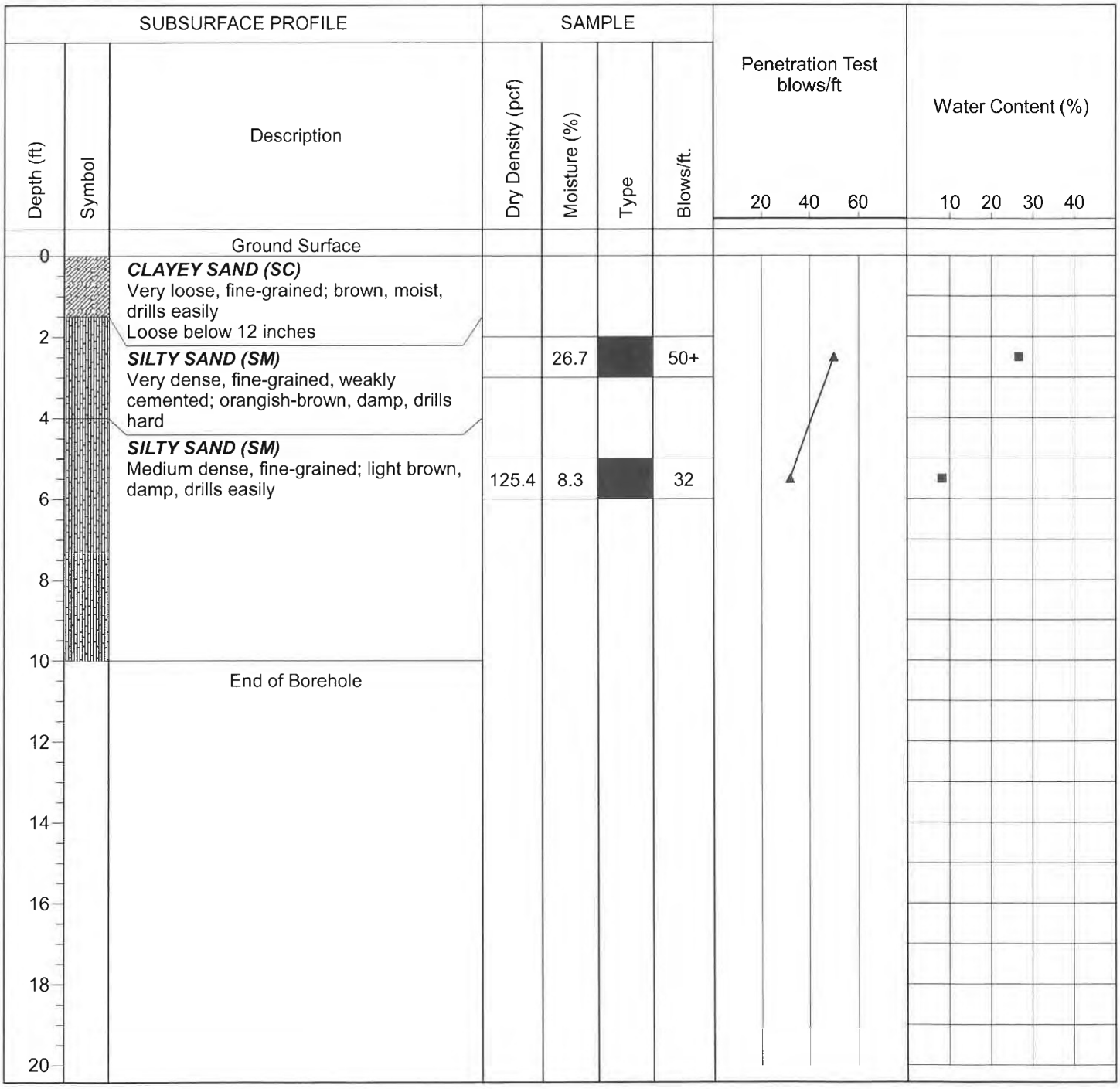
Log of Boring B19

Project: Residential Development | **Project No:** 012-21027

Client: Wilson Homes | **Figure No.:** A-19

Location: Behymer and Armstrong Avenues, Clovis, California | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** None | **At Completion:** None



Drill Method: Solid Flight | **Drill Date:** 2-15-21

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 4½ Inches

Driller: Chris Wyneken | **Elevation:** 10 Feet

Sheet: 1 of 1

Log of Boring B20

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-20

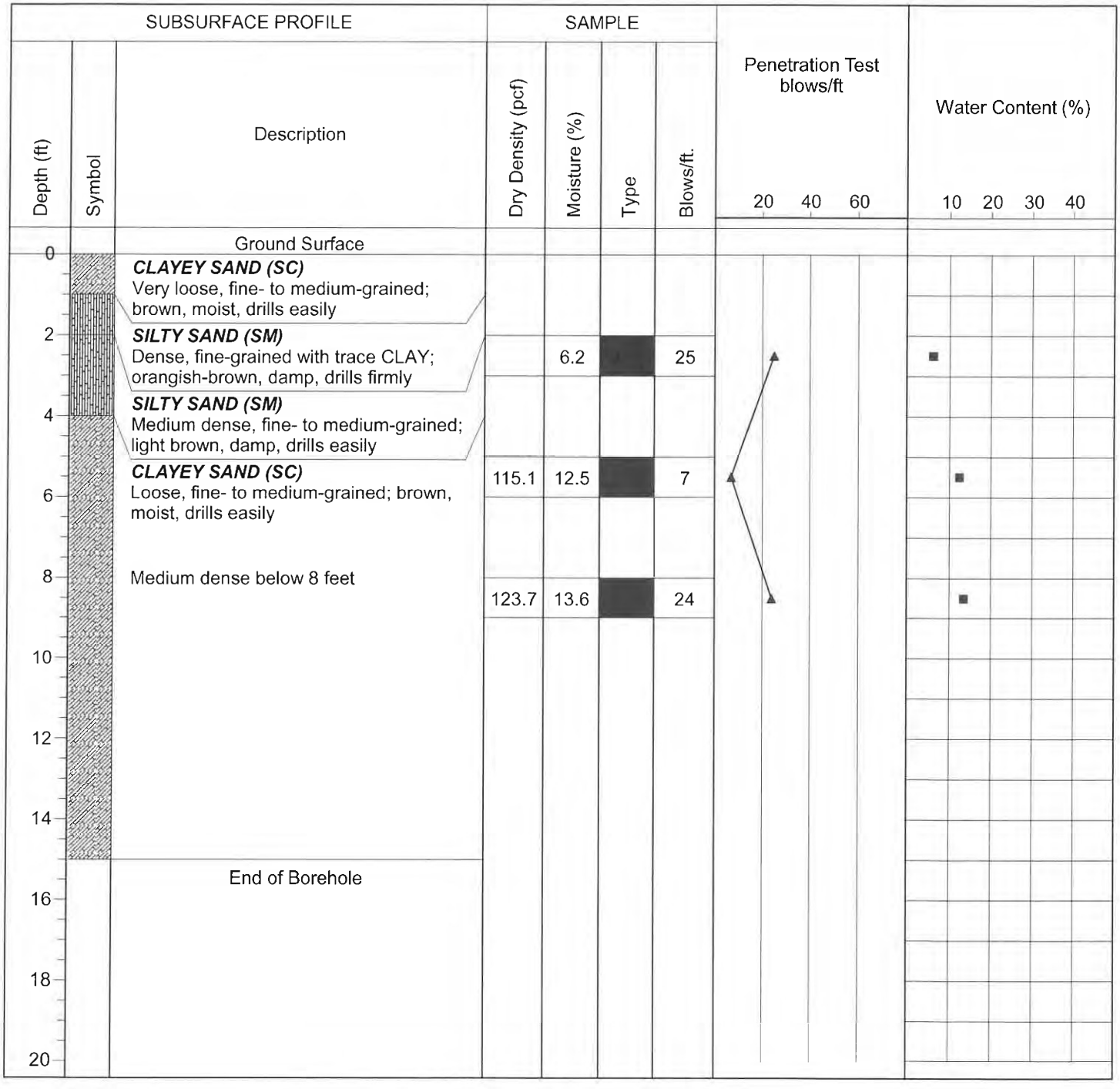
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Wayne Andrade

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 2-15-21

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B21

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-21

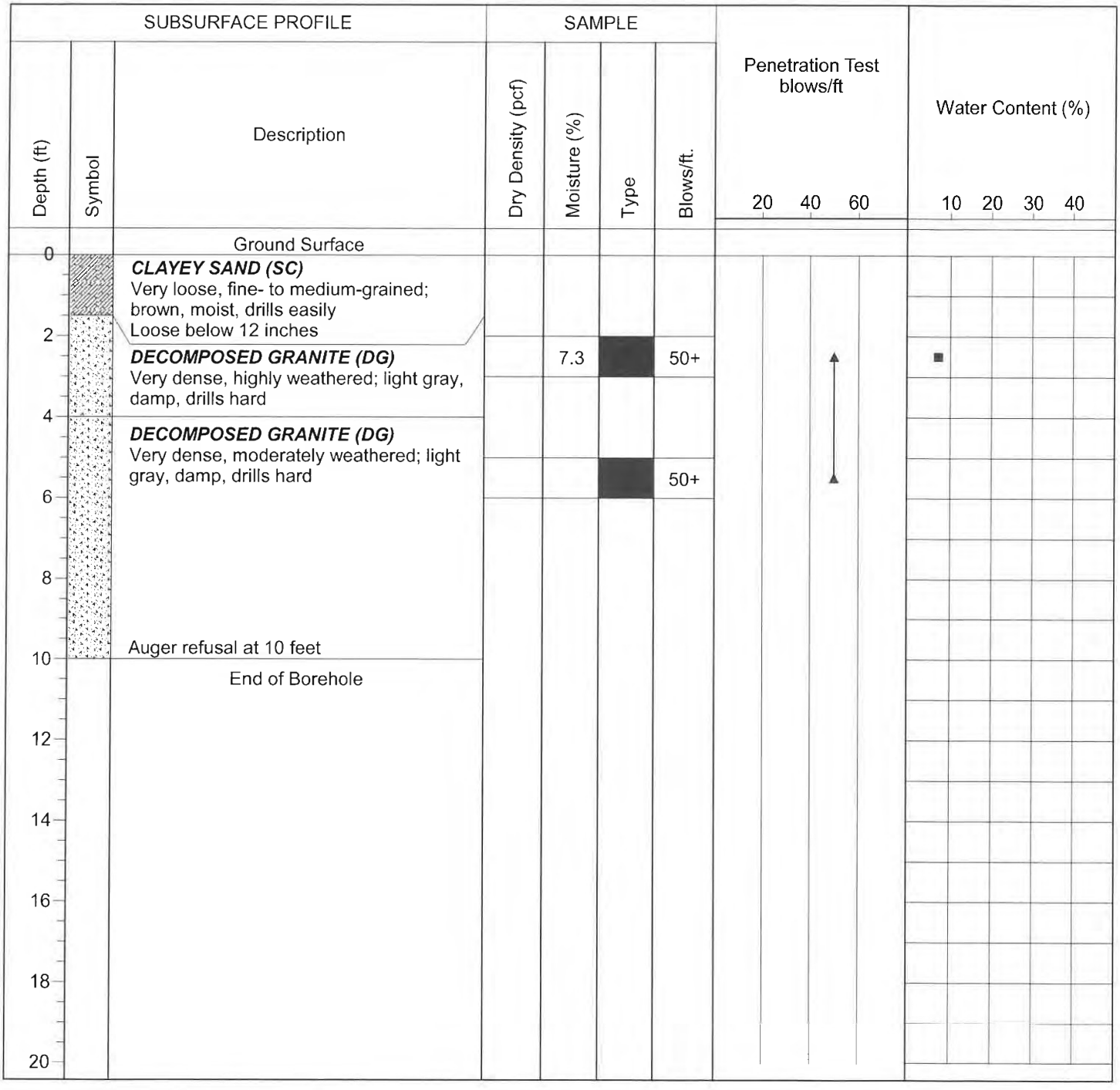
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Wayne Andrade

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 2-15-21

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B22

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-22

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
		CLAYEY SAND (SC) Very loose, fine- to medium-grained; brown, moist, drills easily				
2		***DECOMPOSED GRANITE (DG)*** Very dense, moderately weathered; light gray, damp, drills hard		6.8	■	50+
4		Auger refusal at 4½ feet				
		End of Borehole				
6						
8						
10						
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20 40 60 ▲

Water Content (%): 10 20 30 40 ■

Drill Method: Solid Flight

Drill Rig: CME 45C-1

Driller: Chris Wyneken

Krazan and Associates

Drill Date: 2-15-21

Hole Size: 4½ Inches

Elevation: 4½ Feet

Sheet: 1 of 1

Log of Boring B23

Project: Residential Development

Project No: 012-21027

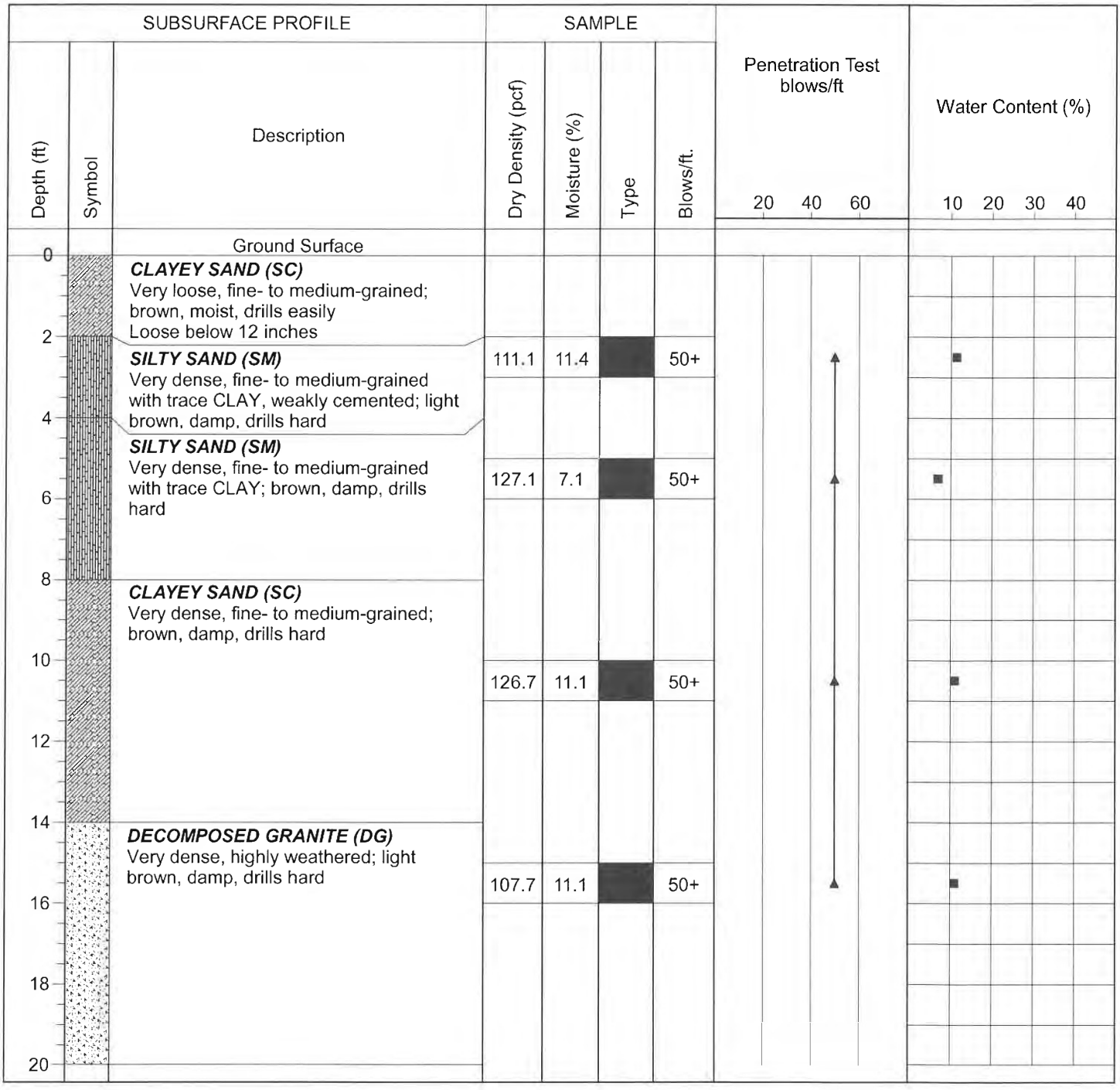
Client: Wilson Homes

Figure No.: A-23

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-15-21

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B24

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

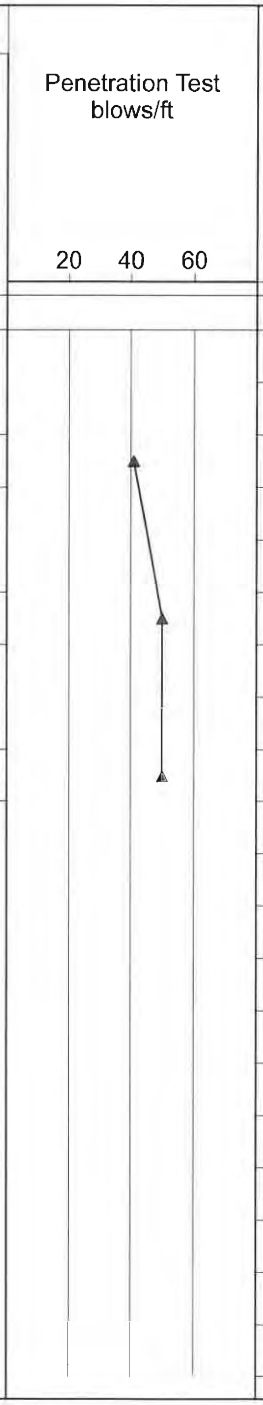
Figure No.: A-24

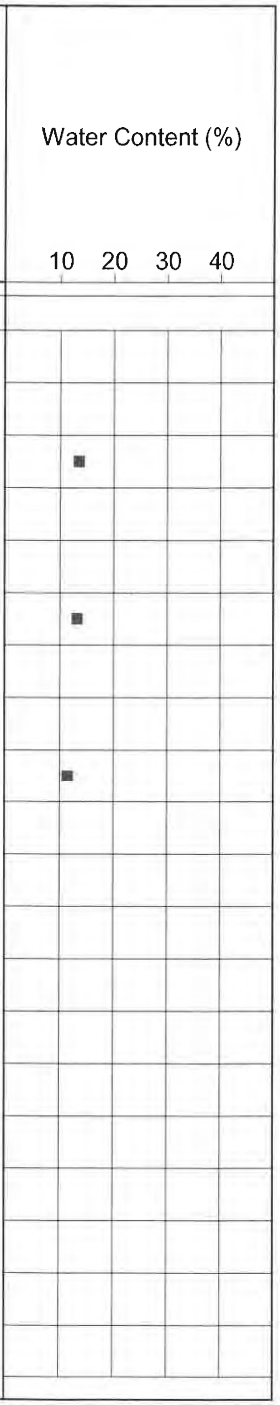
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Carlos Jimenez

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***CLAYEY SAND (SC)*** Very loose, fine- to medium-grained; brown, moist, drills easily Loose below 12 inches				
2		***SILTY SAND (SM)*** Very dense, fine-grained, weakly cemented; light brown, damp, drills hard	119.0	13.6	■	41
4						
6			123.2	13.3	■	50+
8		***SILTY SAND (SM)*** Very dense, fine-grained with trace CLAY; light brown, moist, drills hard	116.9	11.5	■	50+
10						
12						
14						
16		End of Borehole				
18						
20						





Drill Method: Solid Flight

Drill Date: 2-15-21

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B25

Project: Residential Development

Project No: 012-21027

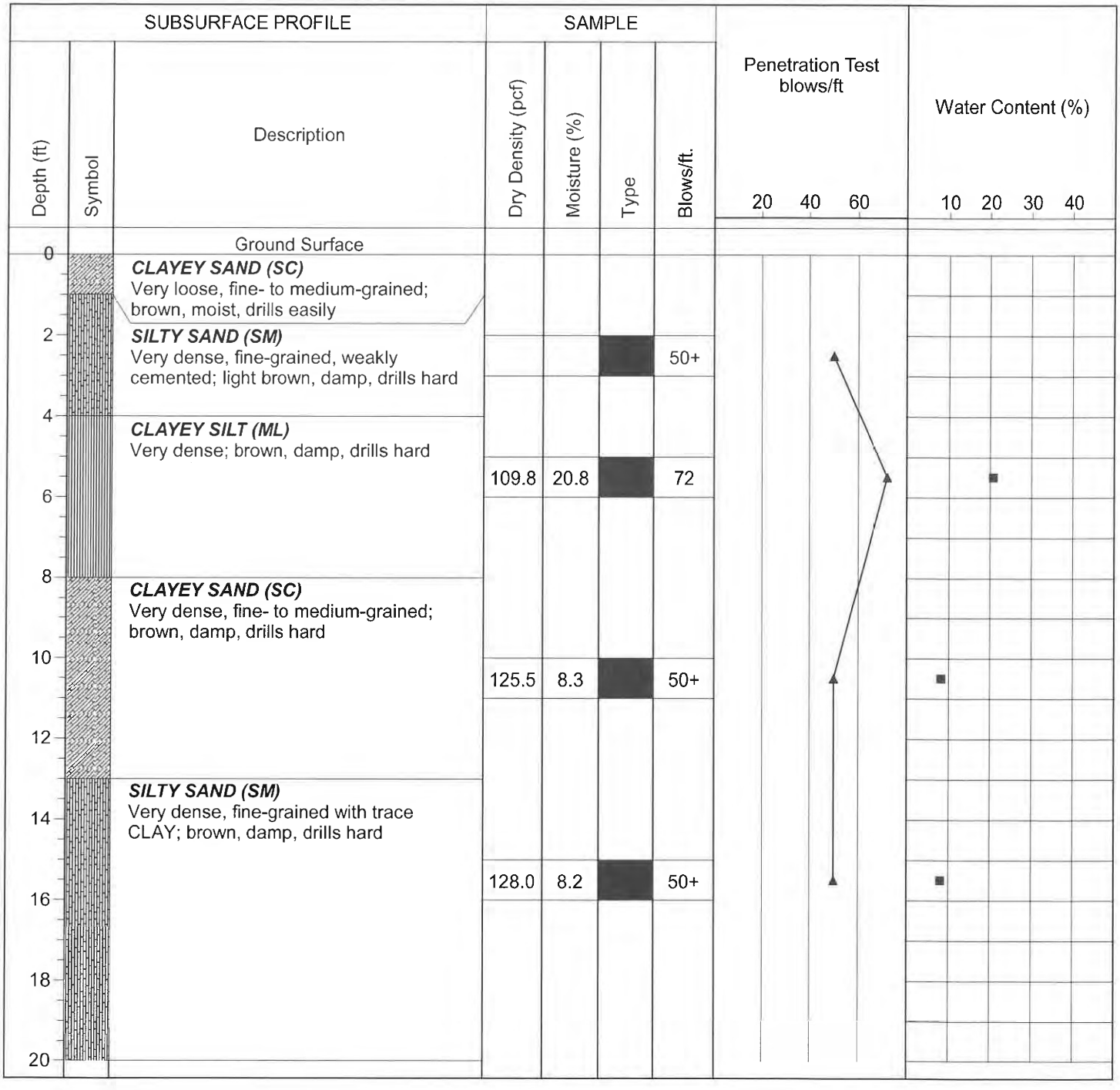
Client: Wilson Homes

Figure No.: A-25

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Carlos Jimenez

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-15-21

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 20 Feet

Log of Boring B26

Project: Residential Development

Project No: 012-21027

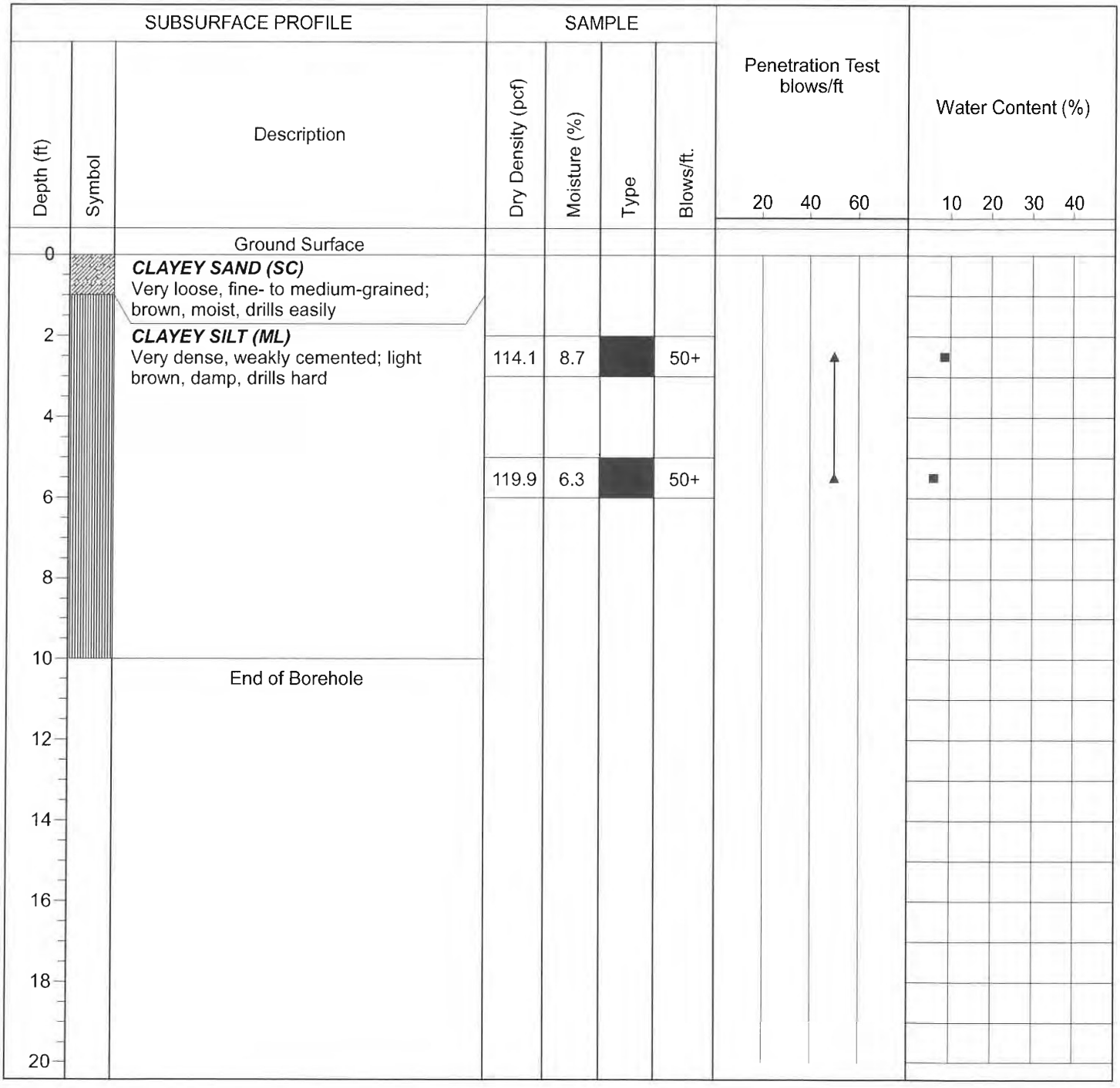
Client: Wilson Homes

Figure No.: A-26

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: Carlos Jimenez

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-15-21

Drill Rig: CME 45C-1

Krazan and Associates

Hole Size: 4½ Inches

Driller: Chris Wyneken

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B27

Project: Residential Development

Project No: 012-21027

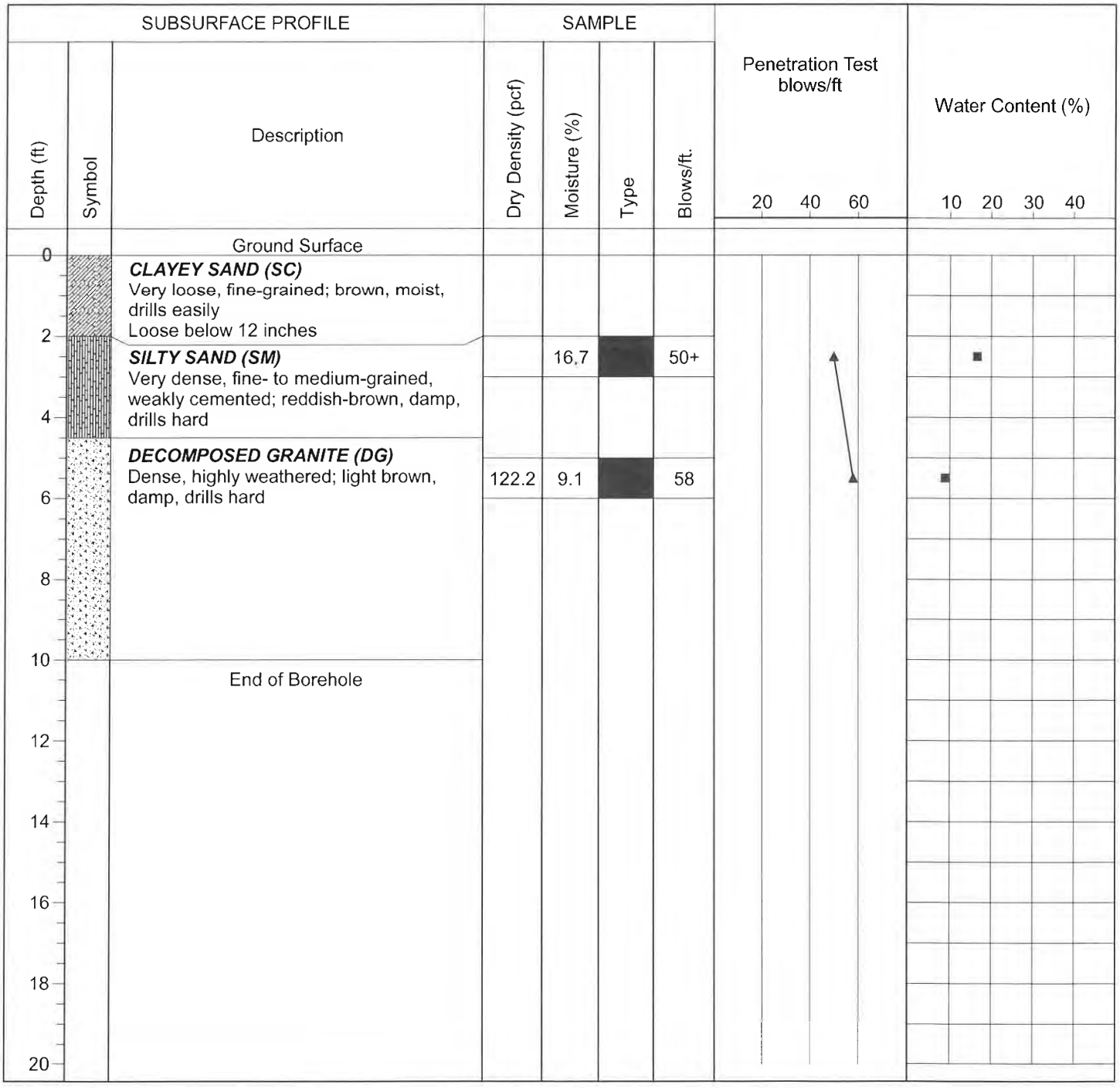
Client: Wilson Homes

Figure No.: A-27

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-19-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B28

Project: Residential Development

Project No: 012-21027

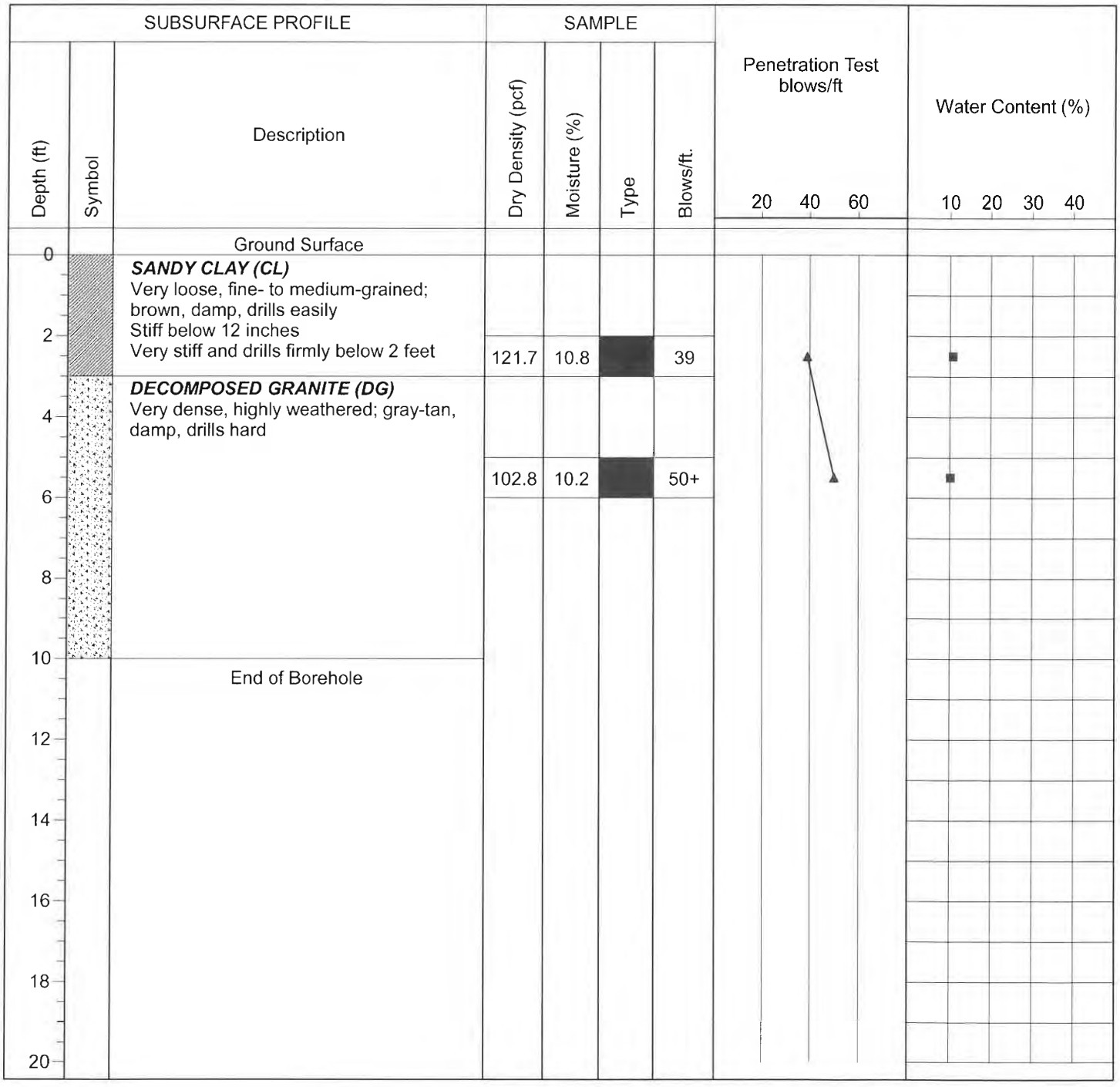
Client: Wilson Homes

Figure No.: A-28

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-19-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B29

Project: Residential Development

Project No: 012-21027

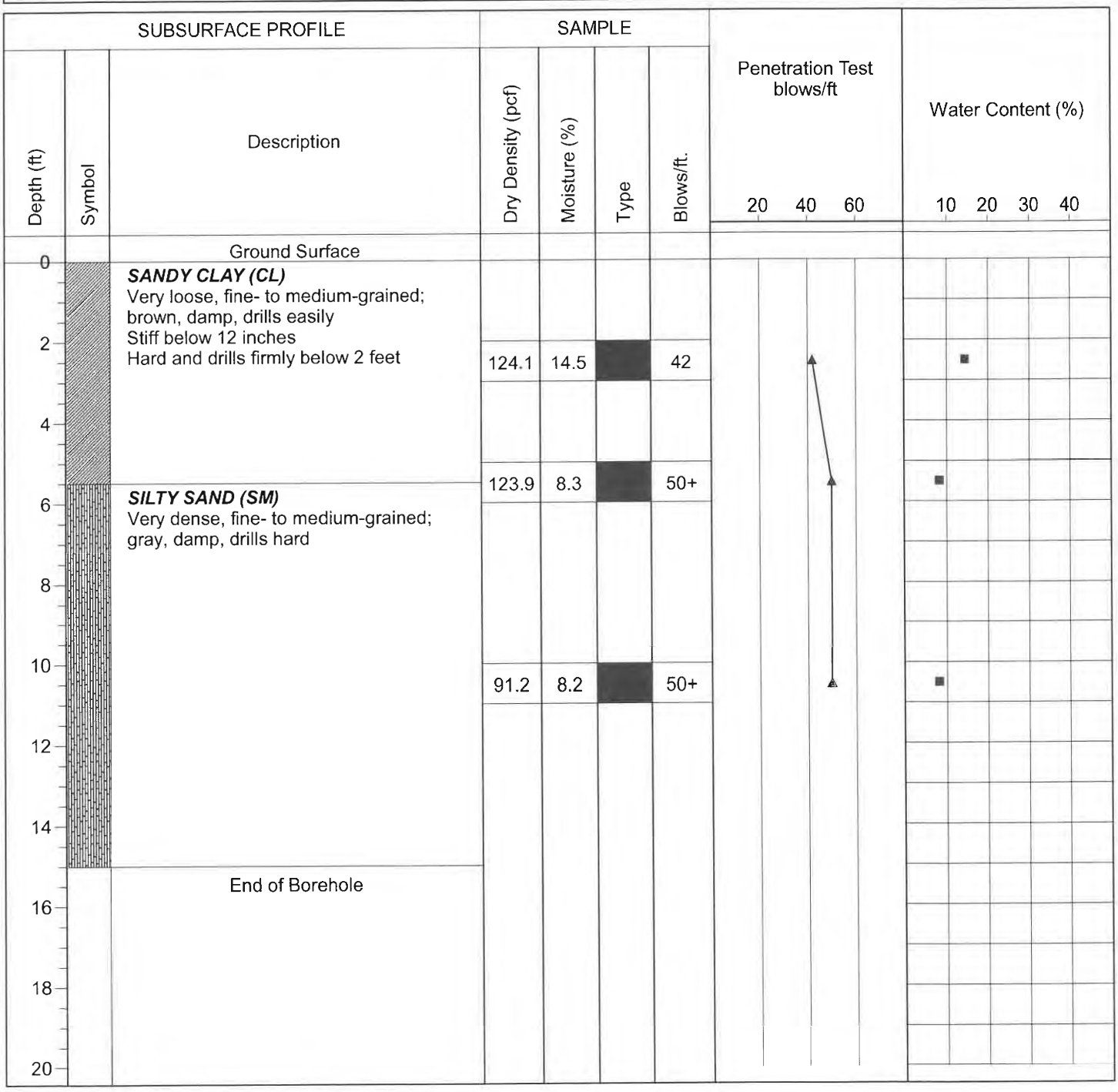
Client: Wilson Homes

Figure No.: A-29

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-19-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B30

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-30

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water>

Initial: None

At Completion: None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
0		***SANDY CLAY (CL)*** Very loose, fine- to medium-grained; brown, damp, drills easily Firm below 12 inches Very stiff and drills firmly below 2 feet						
2			116.6	13.8		36		■
4		***DECOMPOSED GRANITE (DG)*** Very dense, highly weathered; light gray, damp, drills hard						
6			103.4	7.9		50+		■
8								
10		End of Borehole						
12								
14								
16								
18								
20								

Drill Method: Solid Flight

Drill Date: 2-19-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B31

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-31

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
2		***SANDY CLAY (CL)*** Very loose, fine-grained; brown, damp, drills easily Stiff below 12 inches Hard below 2 feet	107.8	15.3		44
4		***SILTY CLAY (CL)*** Hard; reddish-brown, damp, drills firmly				
6		***SILTY SAND (SM)*** Dense, fine- to medium-grained; brown, damp, drills firmly	114.7	14.4		44
10		End of Borehole				

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Solid Flight

Drill Date: 2-19-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B32

Project: Residential Development

Project No: 012-21027

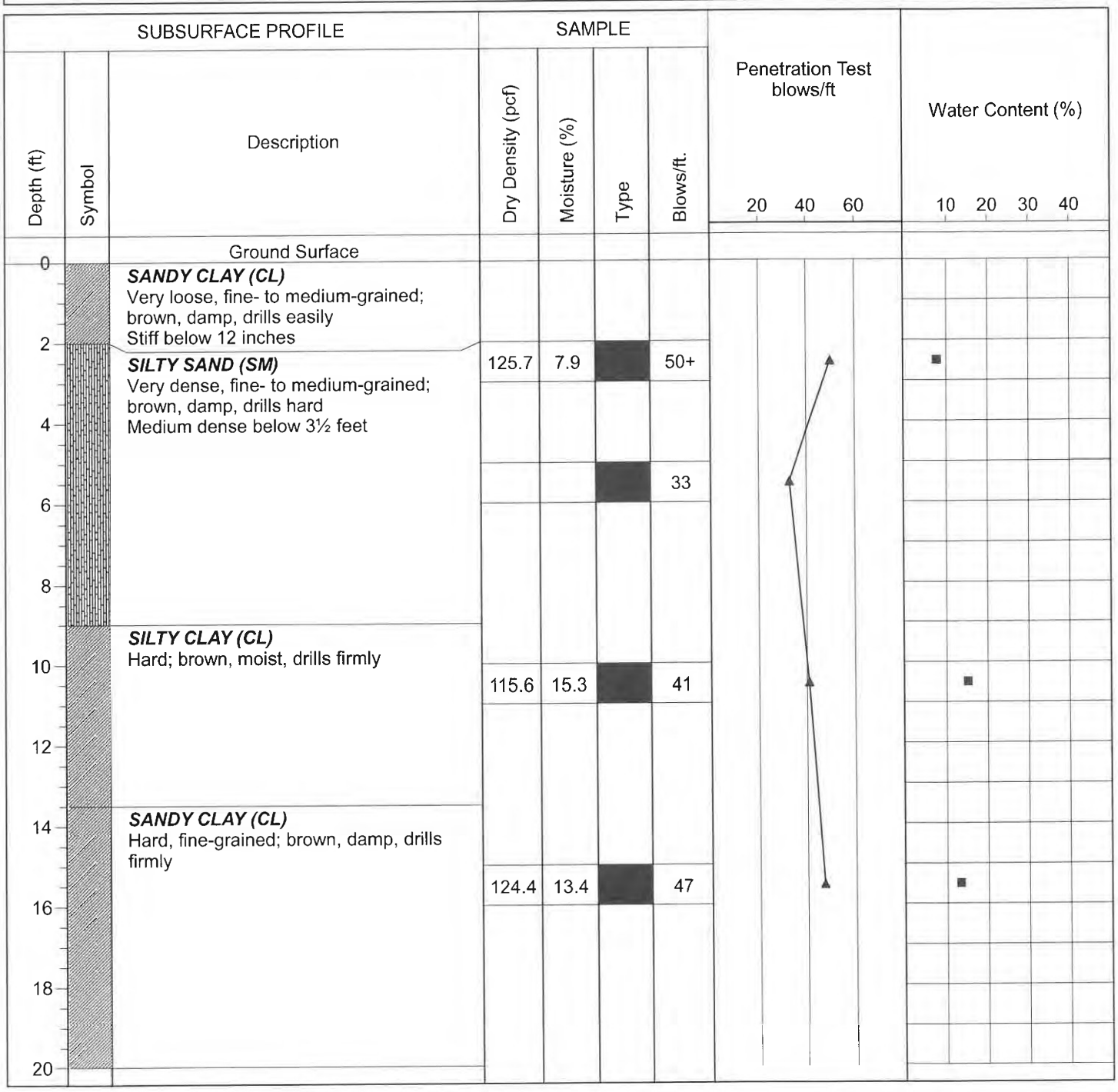
Client: Wilson Homes

Figure No.: A-32

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Rig: CME 45B

Driller: Brent Snyder

Krazan and Associates

Drill Date: 2-19-21

Hole Size: 4½ Inches

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B33

Project: Residential Development

Project No: 012-21027

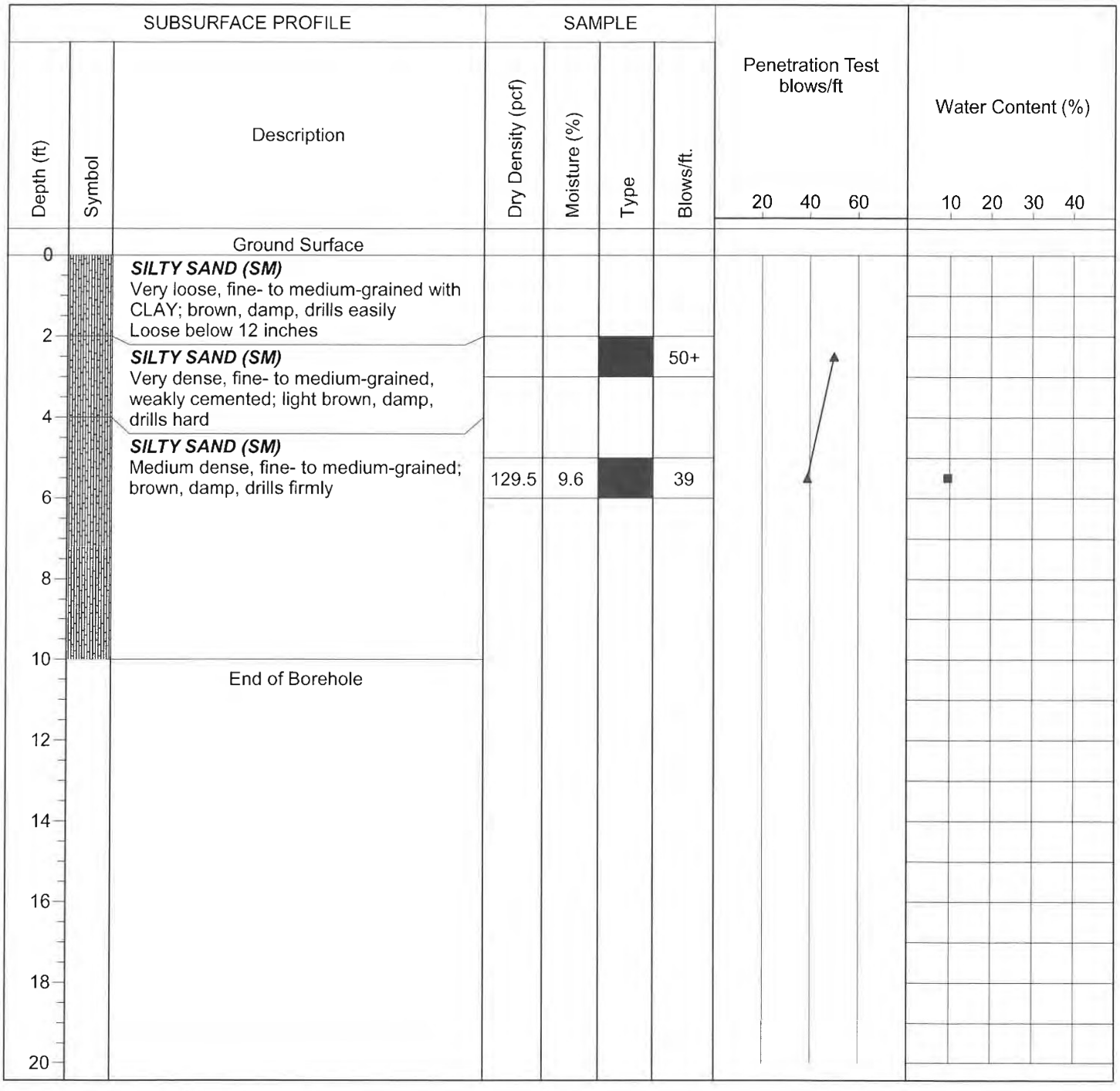
Client: Wilson Homes

Figure No.: A-33

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-19-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B34

Project: Residential Development

Project No: 012-21027

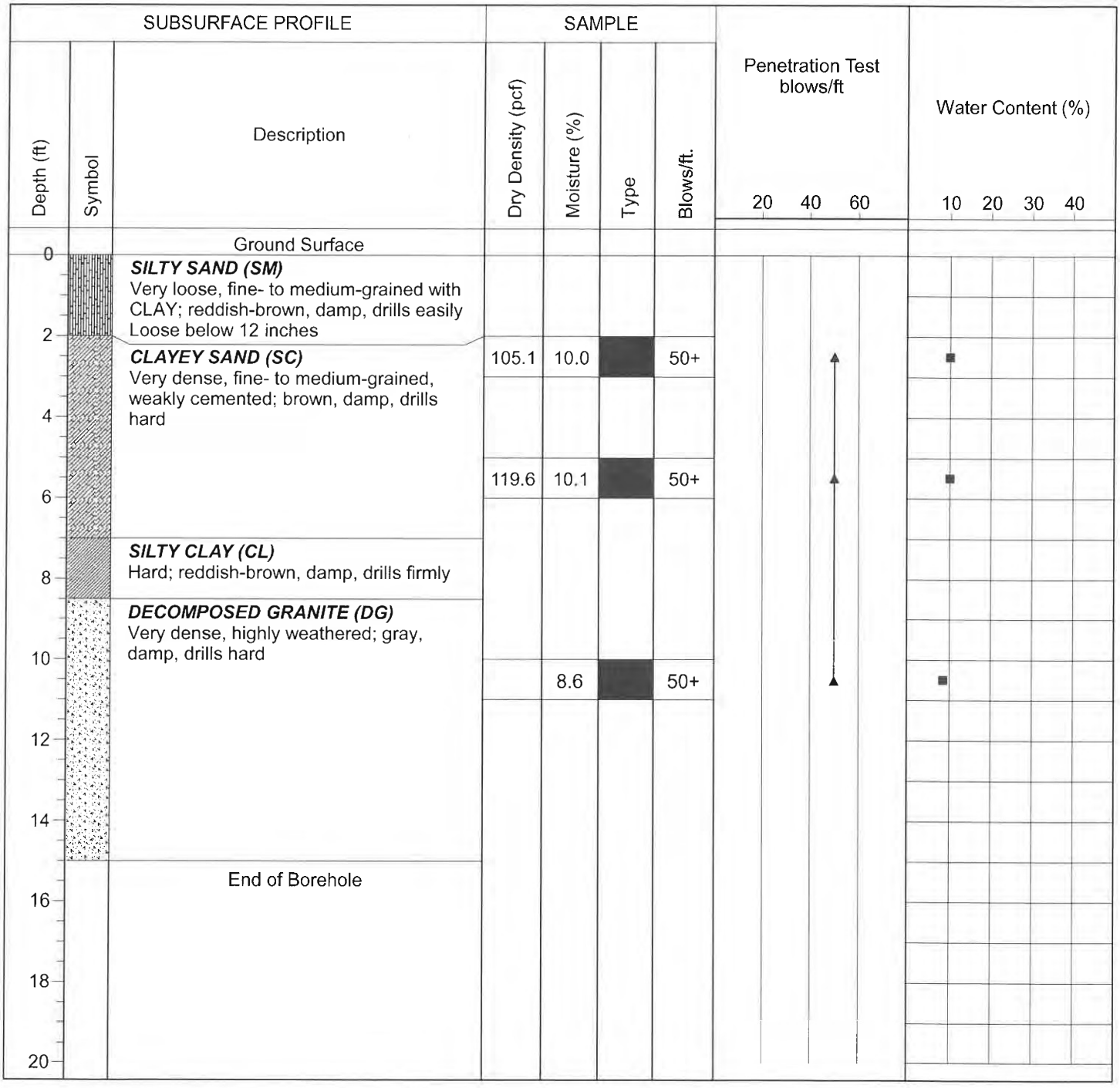
Client: Wilson Homes

Figure No.: A-34

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-19-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B35

Project: Residential Development

Project No: 012-21027

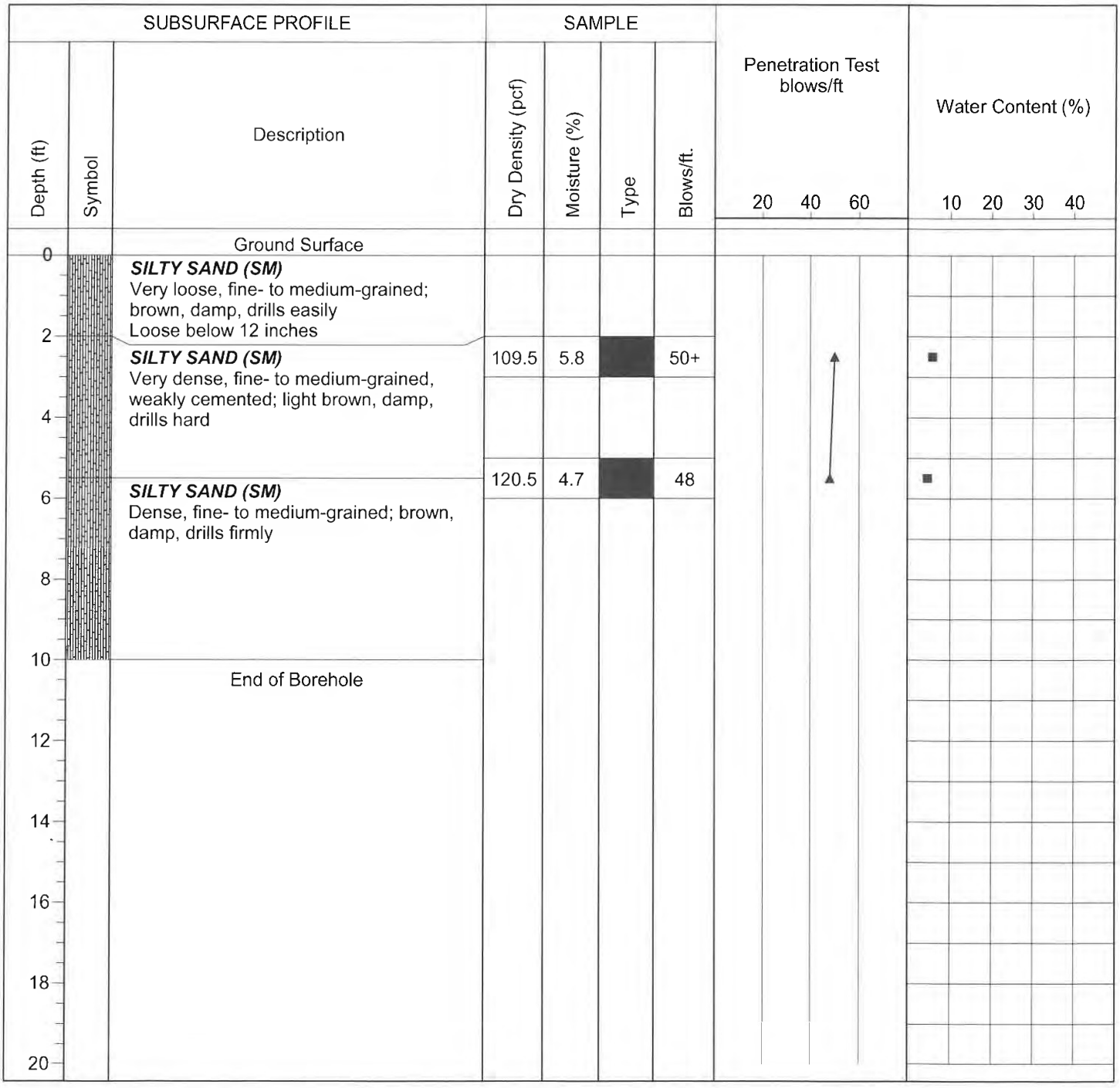
Client: Wilson Homes

Figure No.: A-35

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 2-19-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

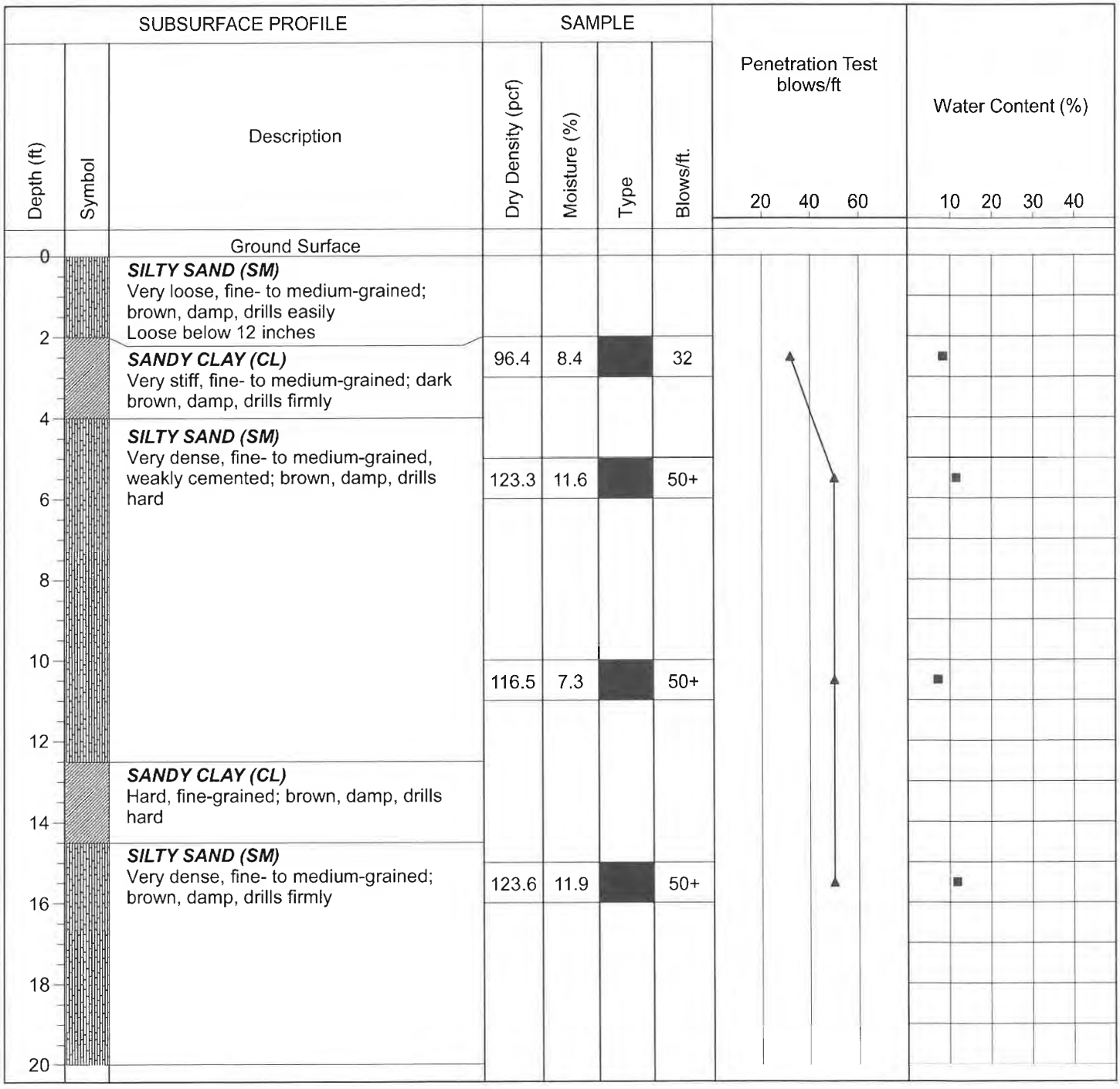
Log of Boring B36

Project: Residential Development | **Project No:** 012-21027

Client: Wilson Homes | **Figure No.:** A-36

Location: Behymer and Armstrong Avenues, Clovis, California | **Logged By:** R. Alexander

Depth to Water> | **Initial:** None | **At Completion:** None



Drill Method: Solid Flight | **Drill Date:** 2-19-21

Drill Rig: CME 45B | **Hole Size:** 4½ Inches

Driller: Brent Snyder | **Elevation:** 20 Feet

Krazan and Associates

Sheet: 1 of 1

Log of Boring B37

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

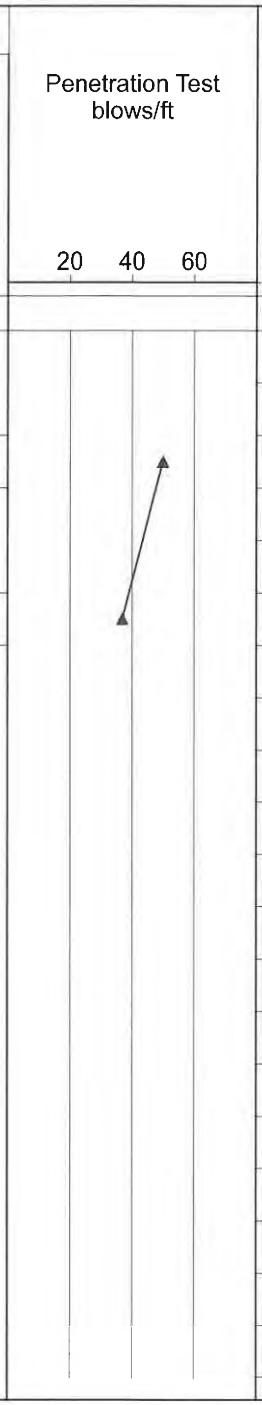
Figure No.: A-37

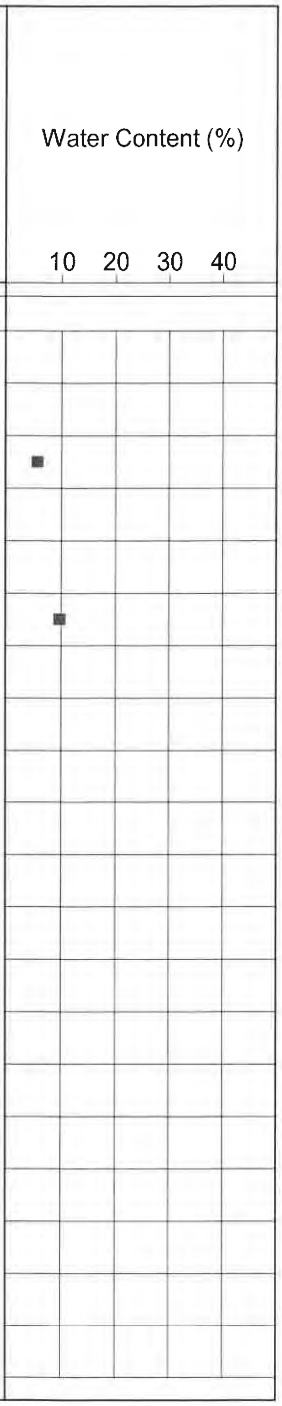
Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained with CLAY; brown, damp, drills easily				
2		Loose, fine-grained and light brown below 6 inches Very dense and drills hard below 2 feet	104.9	5.8		50+
4		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; brown, damp, drills firmly				
6			125.6	9.8		37
8						
10		End of Borehole				
12						
14						
16						
18						
20						





Drill Method: Solid Flight

Drill Rig: CME 45B

Driller: Brent Snyder

Krazan and Associates

Drill Date: 2-19-21

Hole Size: 4½ Inches

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B38

Project: Residential Development

Project No: 012-21027

Client: Wilson Homes

Figure No.: A-38

Location: Behymer and Armstrong Avenues, Clovis, California

Logged By: R. Alexander

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
2		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Medium dense below 12 inches Very dense, with trace CLAY and drills hard below 18 inches	115.3	5.0		50+
4		***SILTY SAND (SM)*** Very dense, fine- to medium-grained; brown, damp, drills hard	113.3	6.4		50+
8		***SAND (SP)*** Medium dense, fine- to medium-grained; brown, damp, drills easily	110.8	4.4		30
16		End of Borehole				

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Solid Flight

Drill Date: 2-19-21

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

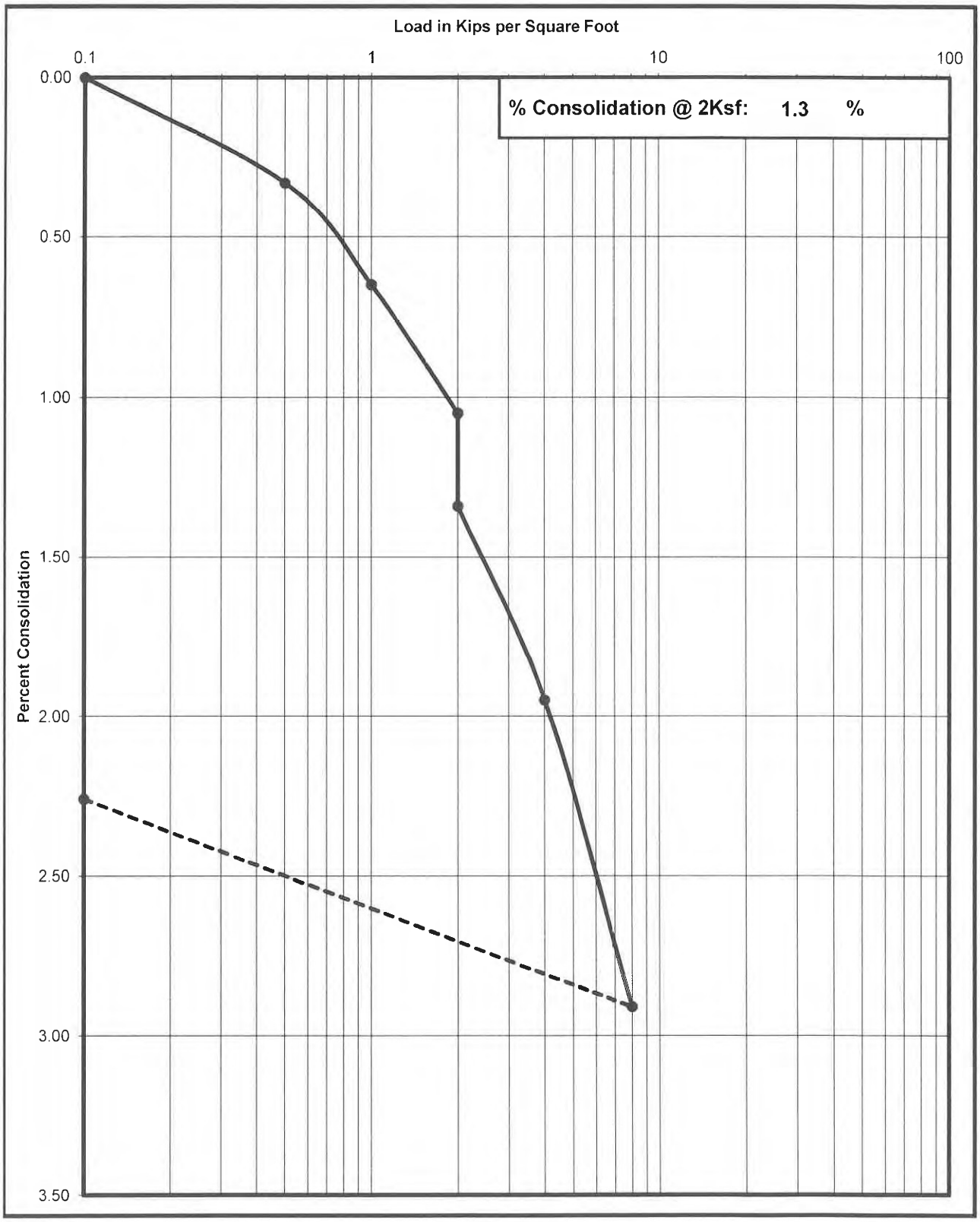
Driller: Brent Snyder

Elevation: 15 Feet

Sheet: 1 of 1

Consolidation Test

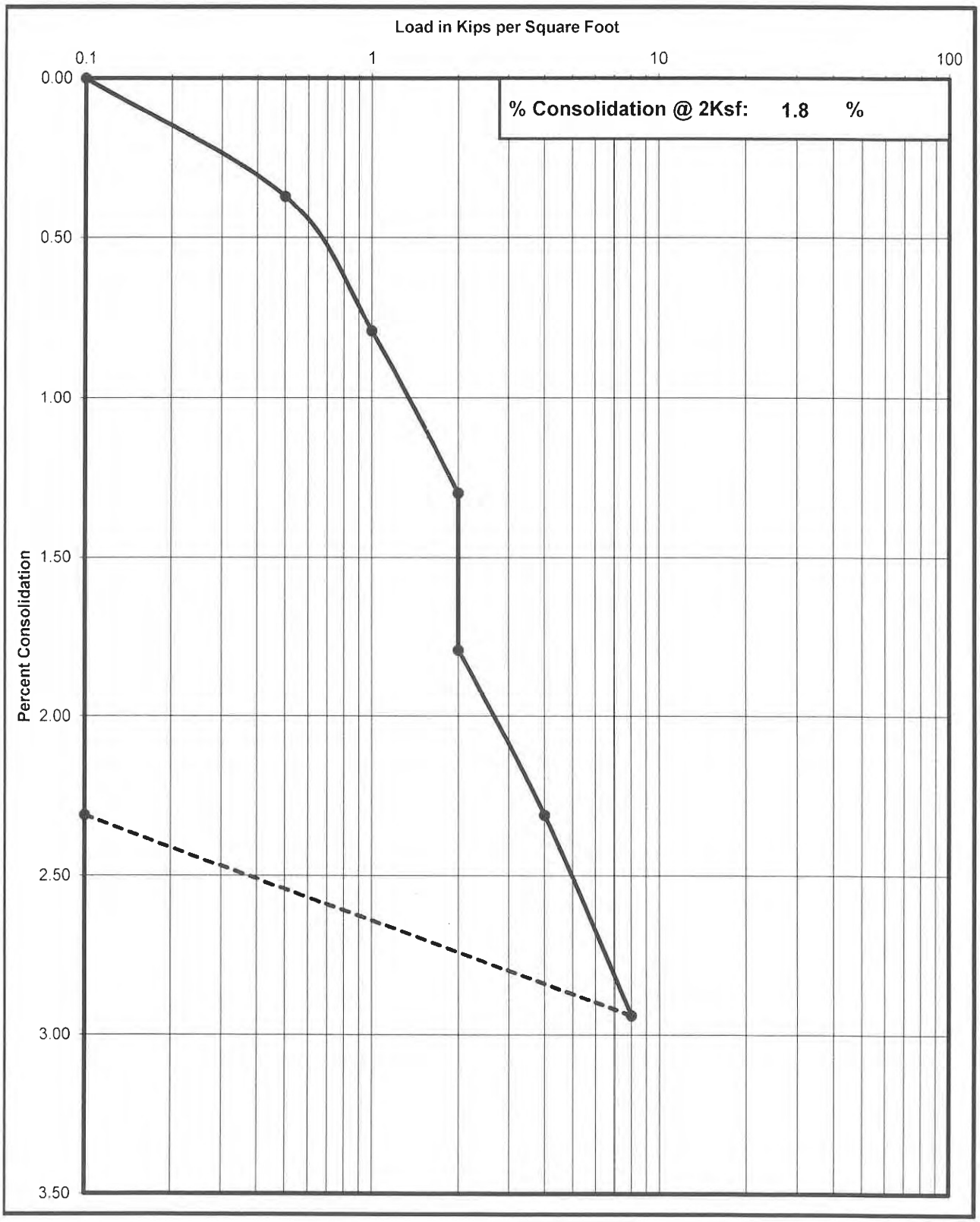
Project No	Boring No. & Depth	Date	Soil Classification
012-21027	B3 @ 2-3'	2/22/2021	SP



Krazan Testing Laboratory

Consolidation Test

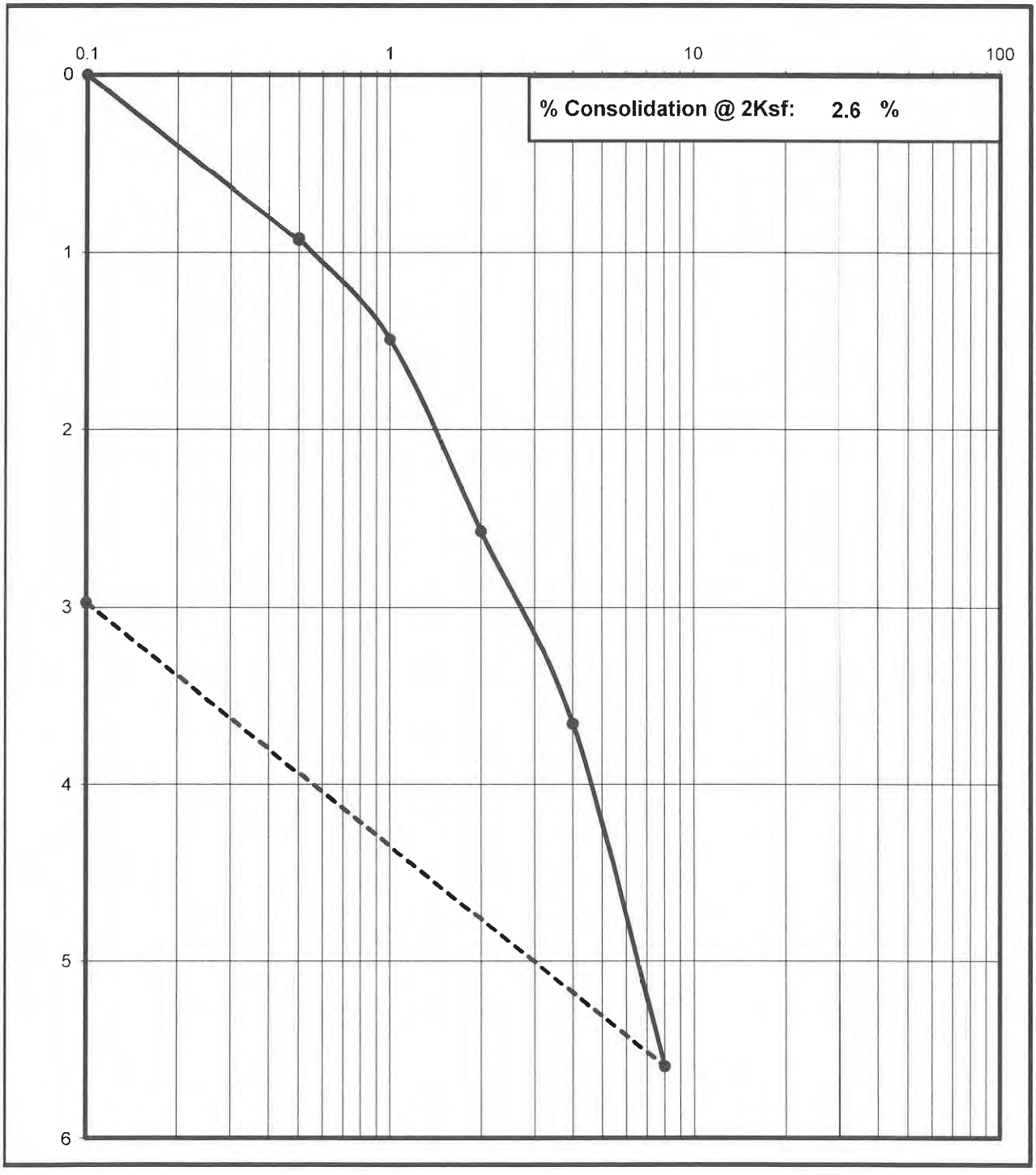
Project No	Boring No. & Depth	Date	Soil Classification
012-21027	B8 @ 2-3'	2/22/2021	SM



Krazan Testing Laboratory

Consolidation Test

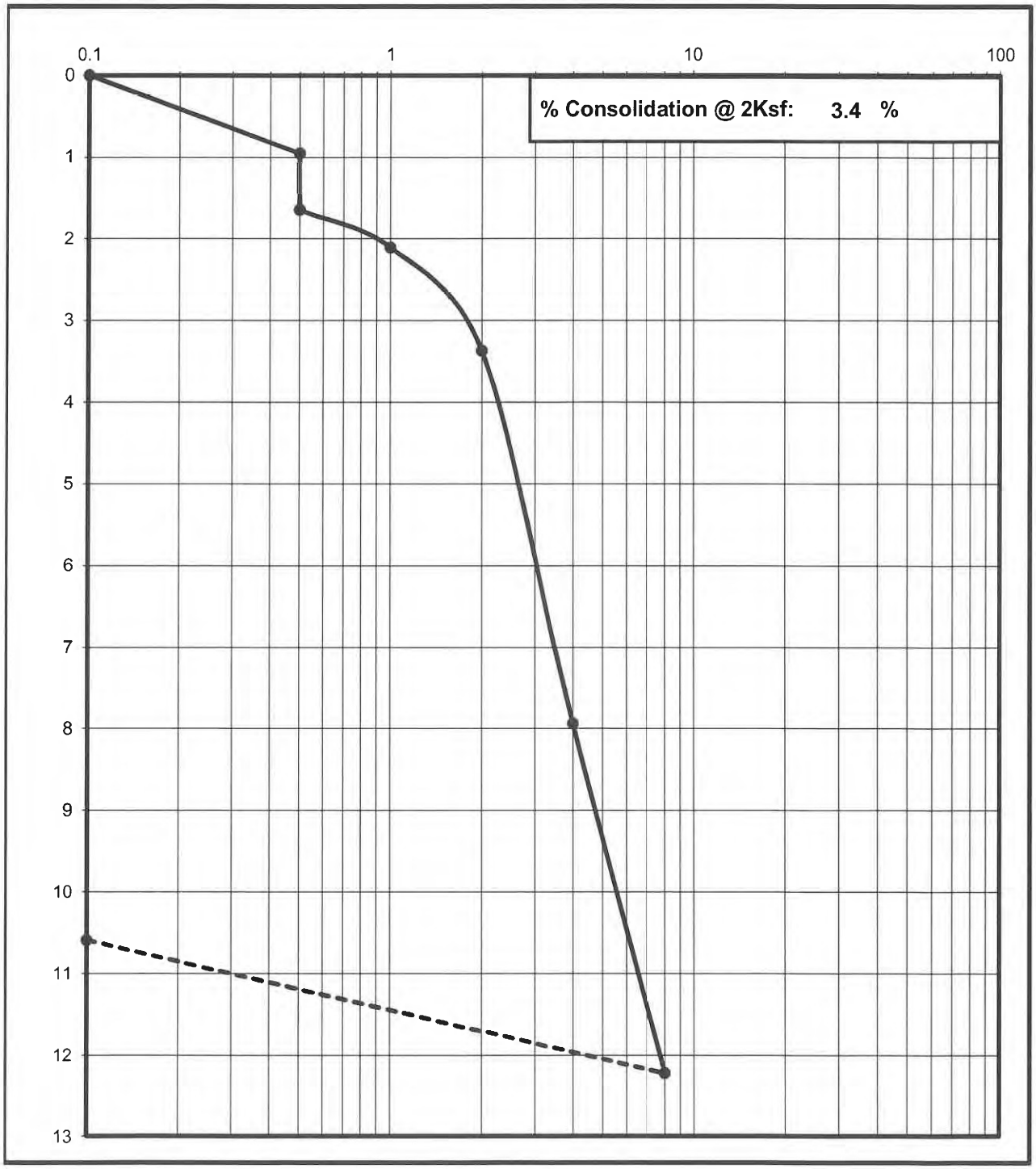
Project No	Boring No. & Depth	Date	Soil Classification
012-21027	B13 @ 2-3'	2/24/2021	SC



Krazan Testing Laboratory

Consolidation Test

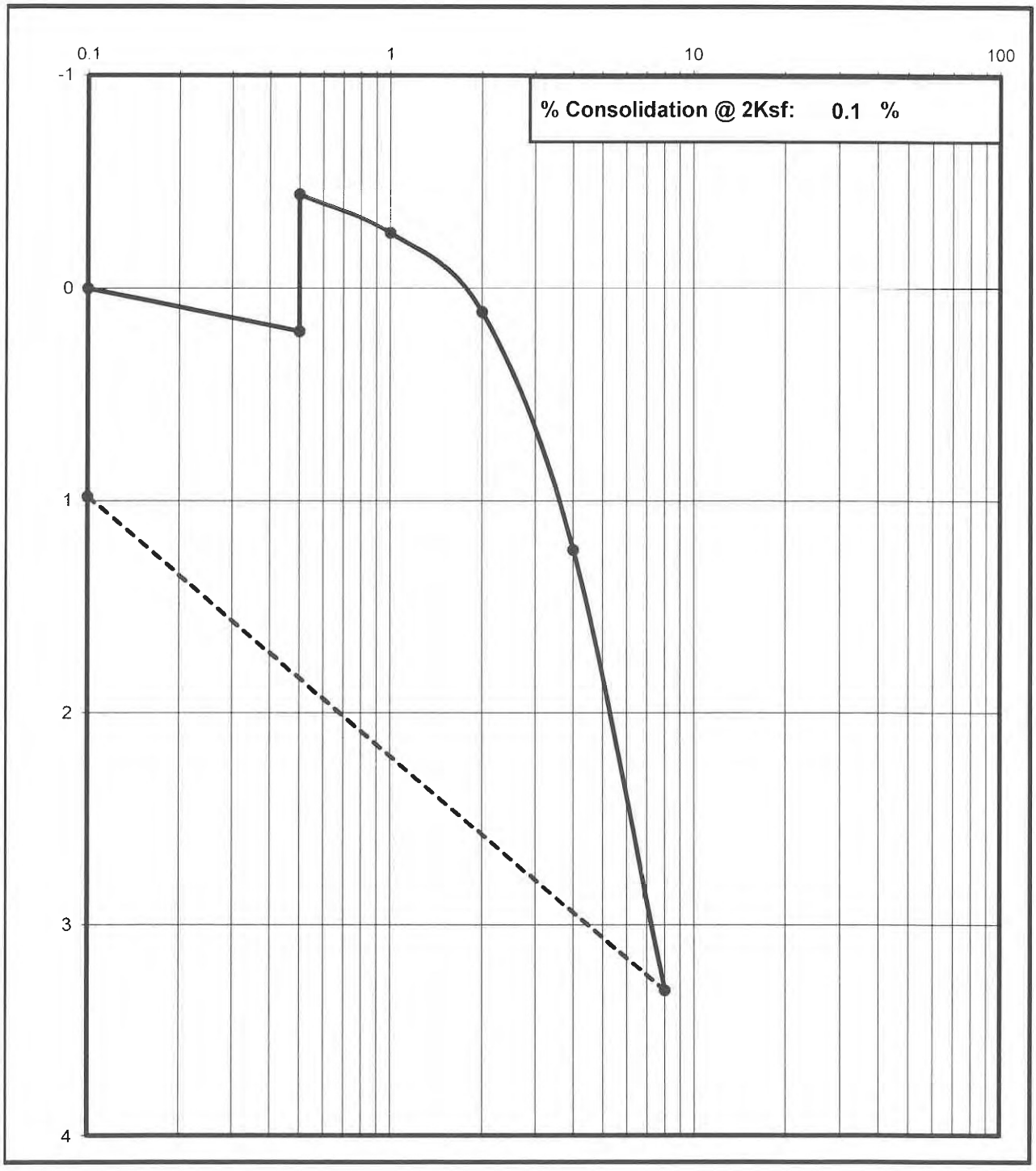
Project No	Boring No. & Depth	Date	Soil Classification
012-21027	B18 @ 2-3'	2/22/2021	SC



Krazan Testing Laboratory

Consolidation Test

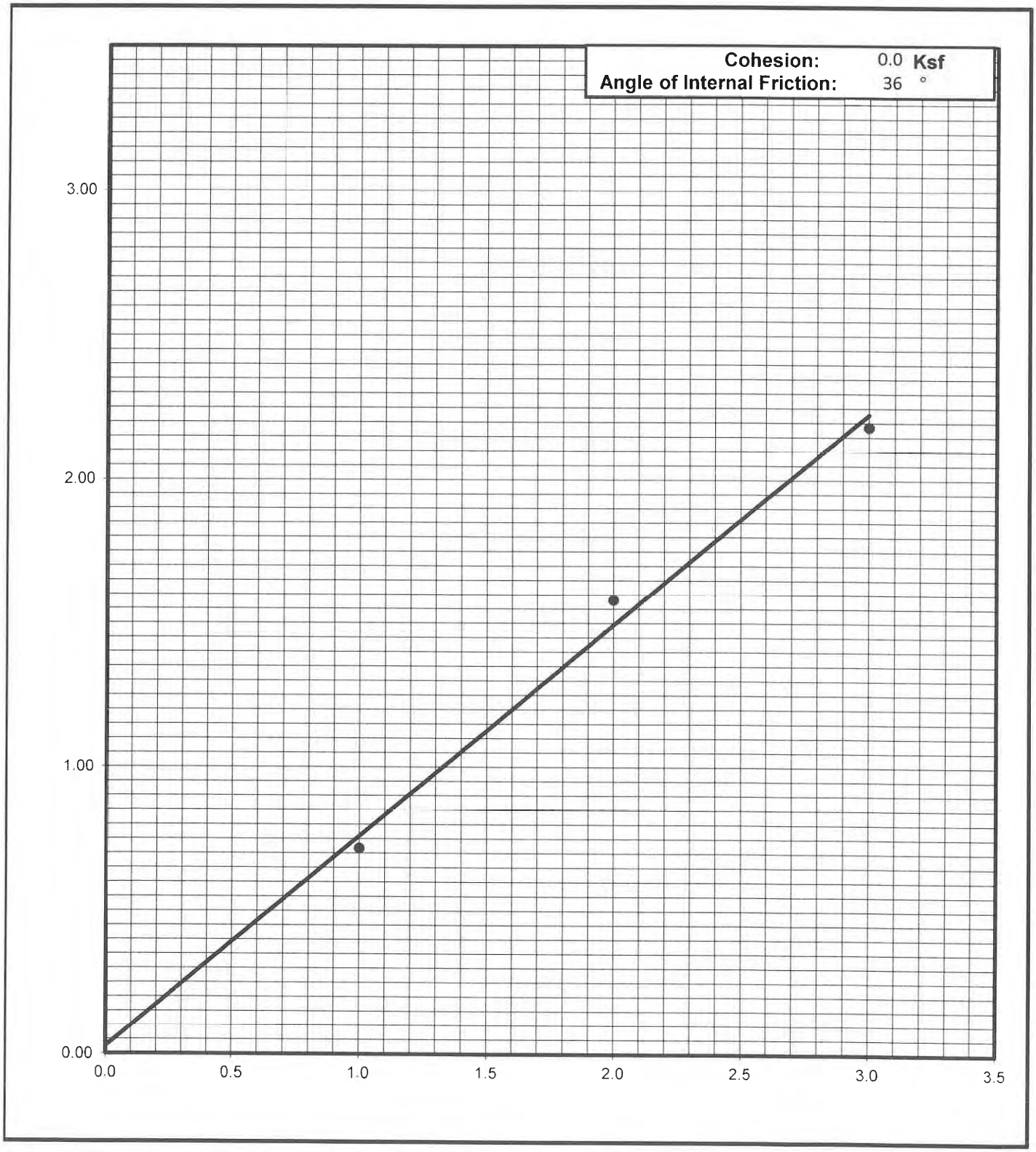
Project No	Boring No. & Depth	Date	Soil Classification
012-21027	B28 @ 2-3'	3/5/2021	CL



Krazan Testing Laboratory

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

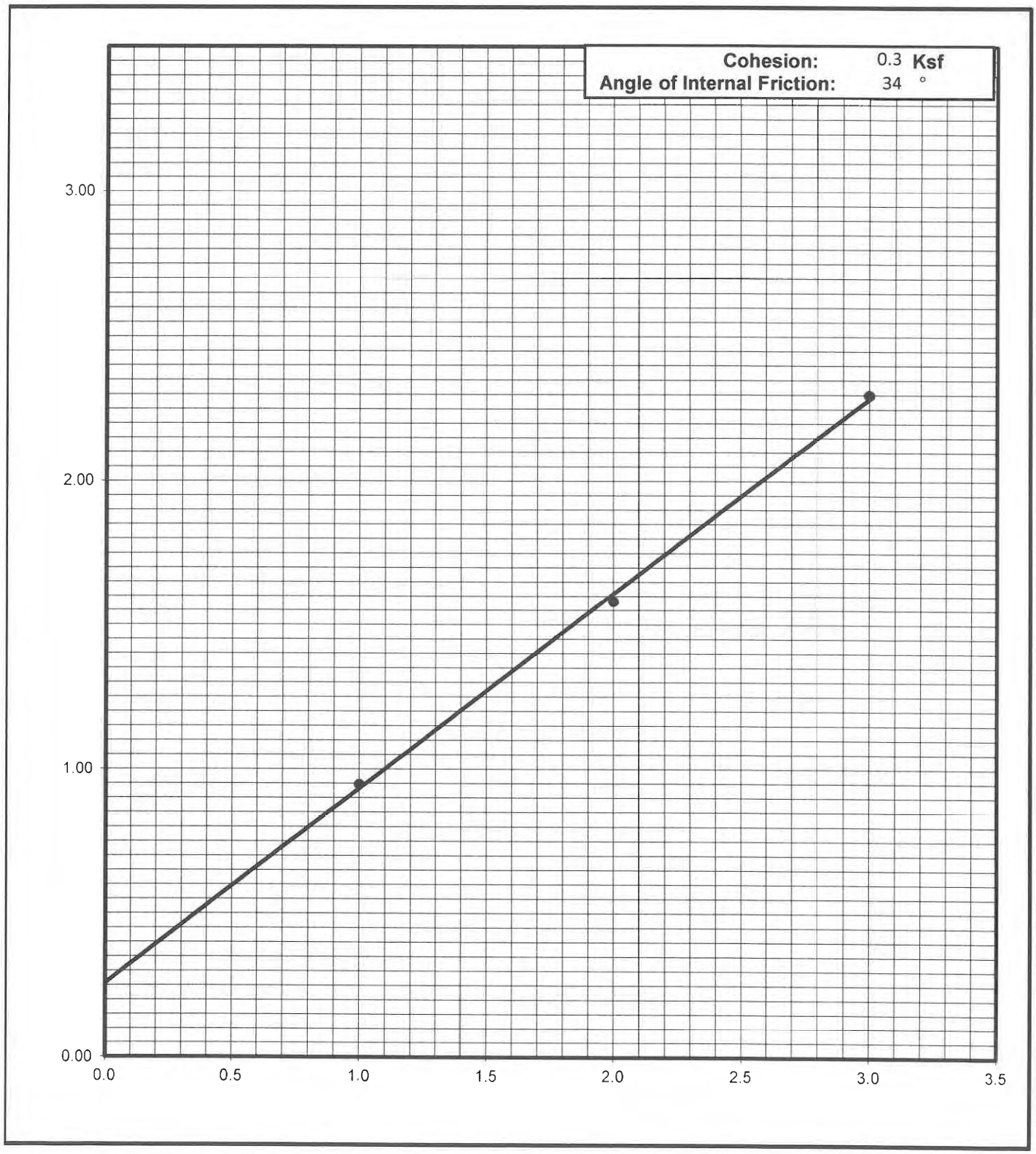
Project Number	Boring No. & Depth	Soil Type	Date
012-21027	B6 @ 2-3'	SM	2/22/2021



Krazan Testing Laboratory

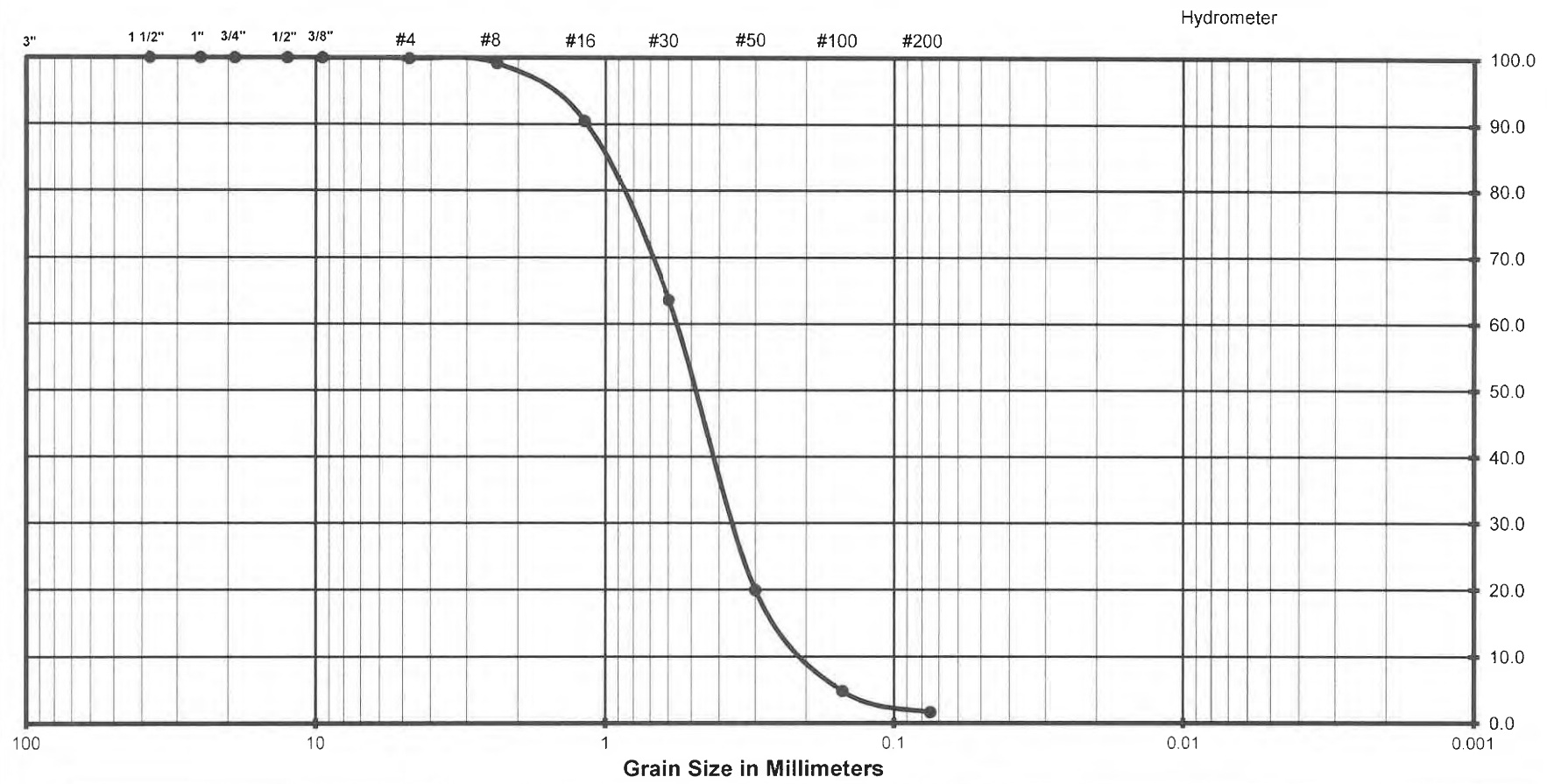
Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

Project Number	Boring No. & Depth	Soil Type	Date
012-21027	B20 @ 5-6'	SC	2/22/2021



Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Residental Development
Project Number	012-21027
Soil Classification	SP
Sample Number	B3 @ 2-3'

Krazan Testing Laboratory

Grain Size Analysis



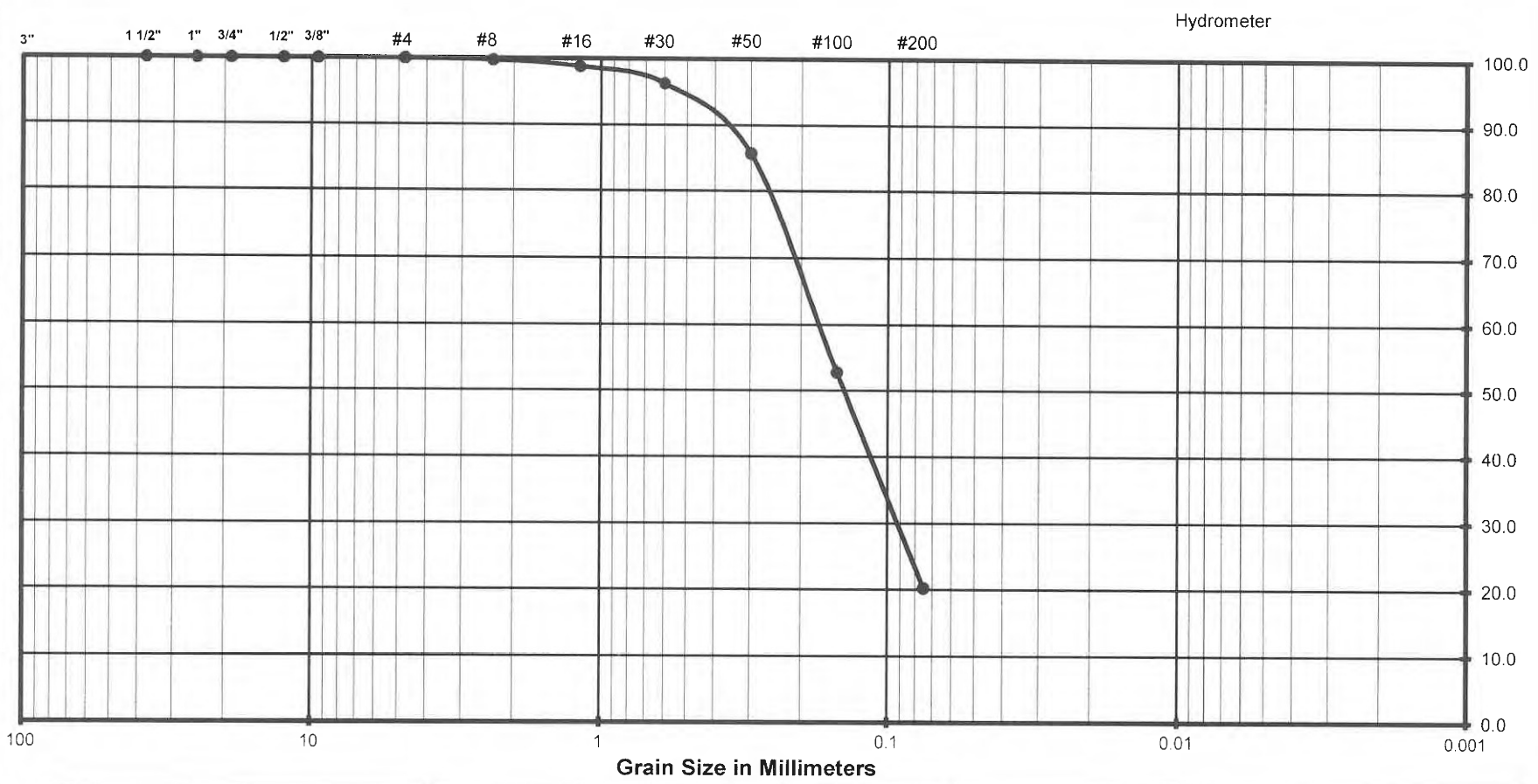
Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Residental Development
Project Number	012-21027
Soil Classification	SM
Sample Number	B8 @ 2-3'

Krazan Testing Laboratory

Grain Size Analysis

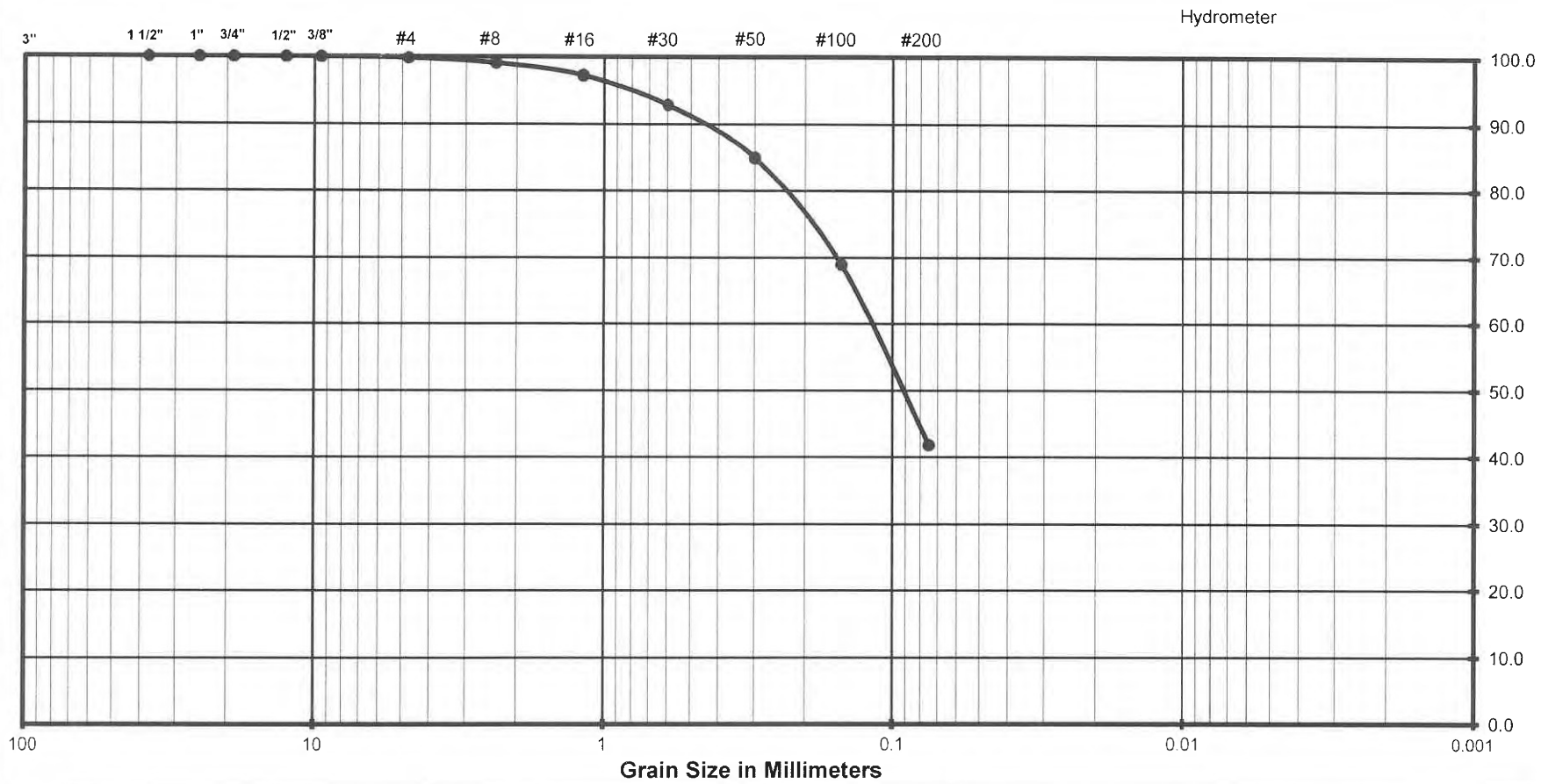


(Unified Soils Classification)

Project Name	Residental Development
Project Number	012-21027
Soil Classification	SC
Sample Number	B13 @ 2-3'

Krazan Testing Laboratory

Grain Size Analysis



(Unified Soils Classification)

Project Name	Residental Development
Project Number	012-21027
Soil Classification	SC
Sample Number	B18 @ 2-3'

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Residental Development
Project Number	022-21027
Soil Classification	CL
Sample Number	B28 @ 2-3'

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/22/2021
Sample location/ Depth	: B16 @ 0-2'
Sample Number	: X1A
Soil Classification	: SC

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	770.8		
Weight of Mold, gms	368.3		
Weight of Soil, gms	402.5		
Wet Density, Lbs/cu.ft.	121.4		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	182.0		
Moisture Content, %	9.9		
Dry Density, Lbs/cu.ft.	110.5		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	50.8		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.042

Expansion Index $_{measured}$ = 42

Expansion Index = **42**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/22/2021
Sample location/ Depth	: B21 @ 0-2'
Sample Number	: X2A
Soil Classification	: SC

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	771.4		
Weight of Mold, gms	368.5		
Weight of Soil, gms	402.9		
Wet Density, Lbs/cu.ft.	121.5		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	182.4		
Moisture Content, %	9.6		
Dry Density, Lbs/cu.ft.	110.8		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	50.1		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0472

Expansion Index $_{measured}$ = 47.2

Expansion Index = 47

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/22/2021
Sample location/ Depth	: 0-2'
Sample Number	: B23
Soil Classification	: SC

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	783.4		
Weight of Mold, gms	368.5		
Weight of Soil, gms	414.9		
Wet Density, Lbs/cu.ft.	125.1		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	184.8		
Moisture Content, %	8.2		
Dry Density, Lbs/cu.ft.	115.6		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	48.6		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0239

Expansion Index $_{measured}$ = 23.9

Expansion Index = 24

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 2.5'
Sample Number	: B13
Soil Classification	: SM w/ clay

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	787.6		
Weight of Mold, gms	367.3		
Weight of Soil, gms	420.3		
Wet Density, Lbs/cu.ft.	126.8		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	185.0		
Moisture Content, %	8.1		
Dry Density, Lbs/cu.ft.	117.3		
Specific Gravity of Soil			
Degree of Saturation, %	#VALUE!		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0178

Expansion Index $_{measured}$ = 17.8

Expansion Index = **18**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 2.5'
Sample Number	: X2
Soil Classification	: SM

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	805.3		
Weight of Mold, gms	368.3		
Weight of Soil, gms	437.0		
Wet Density, Lbs/cu.ft.	131.8		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	187.0		
Moisture Content, %	7.0		
Dry Density, Lbs/cu.ft.	123.2		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	51.1		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0

Expansion Index $_{measured}$ = 0

Expansion Index = **0**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 1.5'
Sample Number	: X3
Soil Classification	: ML

Trial #	1	2	3
Weight of Soil & Mold, gms	781.2		
Weight of Mold, gms	369.8		
Weight of Soil, gms	411.4		
Wet Density, Lbs/cu.ft.	124.1		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	183.2		
Moisture Content, %	9.2		
Dry Density, Lbs/cu.ft.	113.7		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	51.3		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0121

Expansion Index $_{measured}$ = 12.1

Expansion Index = **12**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 1.5'
Sample Number	: X4
Soil Classification	: SC

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	785.2		
Weight of Mold, gms	367.4		
Weight of Soil, gms	417.8		
Wet Density, Lbs/cu.ft.	126.0		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	184.3		
Moisture Content, %	8.5		
Dry Density, Lbs/cu.ft.	116.1		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	51.0		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0382

Expansion Index $_{measured}$ = 38.2

Expansion Index = 38

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 1.5'
Sample Number	: X5
Soil Classification	: CL

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	737.5		
Weight of Mold, gms	367.5		
Weight of Soil, gms	370.0		
Wet Density, Lbs/cu.ft.	111.6		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	177.6		
Moisture Content, %	12.6		
Dry Density, Lbs/cu.ft.	99.1		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	48.6		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0645

Expansion Index $_{measured}$ = 64.5

Expansion Index = 65

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 3'
Sample Number	: X6
Soil Classification	: SM

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	808.6		
Weight of Mold, gms	368.6		
Weight of Soil, gms	440.0		
Wet Density, Lbs/cu.ft.	132.7		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	187.3		
Moisture Content, %	6.8		
Dry Density, Lbs/cu.ft.	124.3		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	51.5		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0

Expansion Index $_{measured}$ = 0

Expansion Index = **0**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 1'
Sample Number	: X7
Soil Classification	: SC-CL

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	762.2		
Weight of Mold, gms	368.3		
Weight of Soil, gms	393.9		
Wet Density, Lbs/cu.ft.	118.8		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	181.3		
Moisture Content, %	10.3		
Dry Density, Lbs/cu.ft.	107.7		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	49.3		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0509

Expansion Index $_{measured}$ = 50.9

Expansion Index = **51**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 1'
Sample Number	: X8
Soil Classification	: SC

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	778.6		
Weight of Mold, gms	368.6		
Weight of Soil, gms	410.0		
Wet Density, Lbs/cu.ft.	123.7		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	183.6		
Moisture Content, %	8.9		
Dry Density, Lbs/cu.ft.	113.5		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	49.8		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0324

Expansion Index $_{measured}$ = 32.4

Expansion Index = 32

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 1.5'
Sample Number	: X9
Soil Classification	: CL

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	745.3		
Weight of Mold, gms	368.6		
Weight of Soil, gms	376.7		
Wet Density, Lbs/cu.ft.	113.6		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	178.0		
Moisture Content, %	12.4		
Dry Density, Lbs/cu.ft.	101.1		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	50.1		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0641

Expansion Index $_{measured}$ = 64.1

Expansion Index = 64

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 1.5'
Sample Number	: X10
Soil Classification	: CL

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	756.6		
Weight of Mold, gms	367.8		
Weight of Soil, gms	388.8		
Wet Density, Lbs/cu.ft.	117.3		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	181.0		
Moisture Content, %	10.5		
Dry Density, Lbs/cu.ft.	106.1		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	48.2		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0672

Expansion Index $_{measured}$ = 67.2

Expansion Index = 67

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 1.5'
Sample Number	: X11
Soil Classification	: CL

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	766.8		
Weight of Mold, gms	367.5		
Weight of Soil, gms	399.3		
Wet Density, Lbs/cu.ft.	120.4		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	181.0		
Moisture Content, %	10.5		
Dry Density, Lbs/cu.ft.	109.0		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	51.9		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0682

Expansion Index $_{measured}$ = 68.2

Expansion Index = 68

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 2'
Sample Number	: X12
Soil Classification	: SM

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	810.2		
Weight of Mold, gms	369.9		
Weight of Soil, gms	440.3		
Wet Density, Lbs/cu.ft.	132.8		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	187.6		
Moisture Content, %	6.6		
Dry Density, Lbs/cu.ft.	124.6		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	50.6		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0

Expansion Index $_{measured}$ = 0

Expansion Index = **0**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 3'
Sample Number	: X13
Soil Classification	: SM/SP

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	758.7		
Weight of Mold, gms	369.8		
Weight of Soil, gms	388.9		
Wet Density, Lbs/cu.ft.	117.3		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	180.8		
Moisture Content, %	10.6		
Dry Density, Lbs/cu.ft.	106.0		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	48.7		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0

Expansion Index $_{measured}$ = 0

Expansion Index = **0**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 2/15/2021
Sample location/ Depth	: 3'
Sample Number	: X14
Soil Classification	: SM

Trial #	**1**	**2**	**3**
Weight of Soil & Mold, gms	799.1		
Weight of Mold, gms	367.6		
Weight of Soil, gms	431.5		
Wet Density, Lbs/cu.ft.	130.1		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	186.4		
Moisture Content, %	7.3		
Dry Density, Lbs/cu.ft.	121.3		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	50.6		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0

Expansion Index $_{measured}$ = 0

Expansion Index = 0

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Expansion Index Test

ASTM D - 4829

Project Number	: 012-21027
Project Name	: Residental Development
Date	: 3/5/2021
Sample location/ Depth	: 2-3'
Sample Number	: X34
Soil Classification	: CL

Trial #	1	2	3
Weight of Soil & Mold, gms	761.1		
Weight of Mold, gms	369.8		
Weight of Soil, gms	391.3		
Wet Density, Lbs/cu.ft.	118.0		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	181.0		
Moisture Content, %	10.5		
Dry Density, Lbs/cu.ft.	106.8		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	49.1		

Time	Inital	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	--

Expansion Index $_{measured}$ = 0

Expansion Index = **0**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

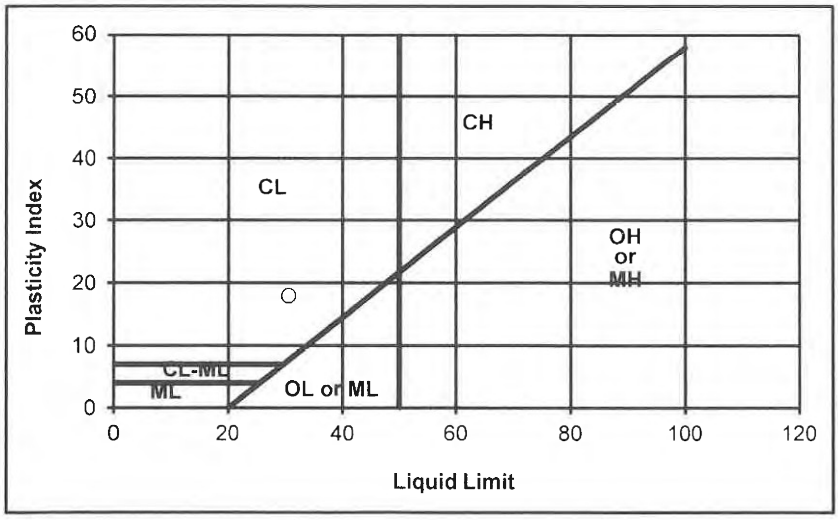
Project: **Residental Development**
Project Number: **012-21027**
Date Sampled: 2/14/2021
Sampled By: RA
Sample Number: X1
Sample Location: 2.5-3.5'
Sample Description: CL

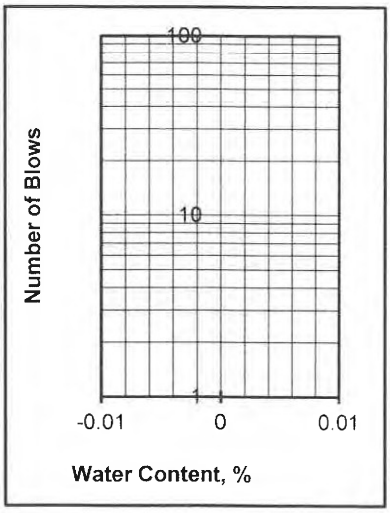
Date Tested: 2/23/2021
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	37.12	29.57		25.57	29.11	
Weight of Dry Soil & Tare (g)	34.71	27.72		22.47	25.67	
Weight of Tare (g)	17.00	13.67		12.62	14.18	
Weight of water (g)	2.42	1.85		3.09	3.44	
Weight of Dry Soil (g)	17.71	14.05		9.85	11.49	
Water Content (% of dry wt.)	13.7%	13.1%		31.4%	29.9%	
Number of Blows				22	28	

Plastic Limit : 13 **Liquid Limit : 31**

Plasticity Index : 18
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

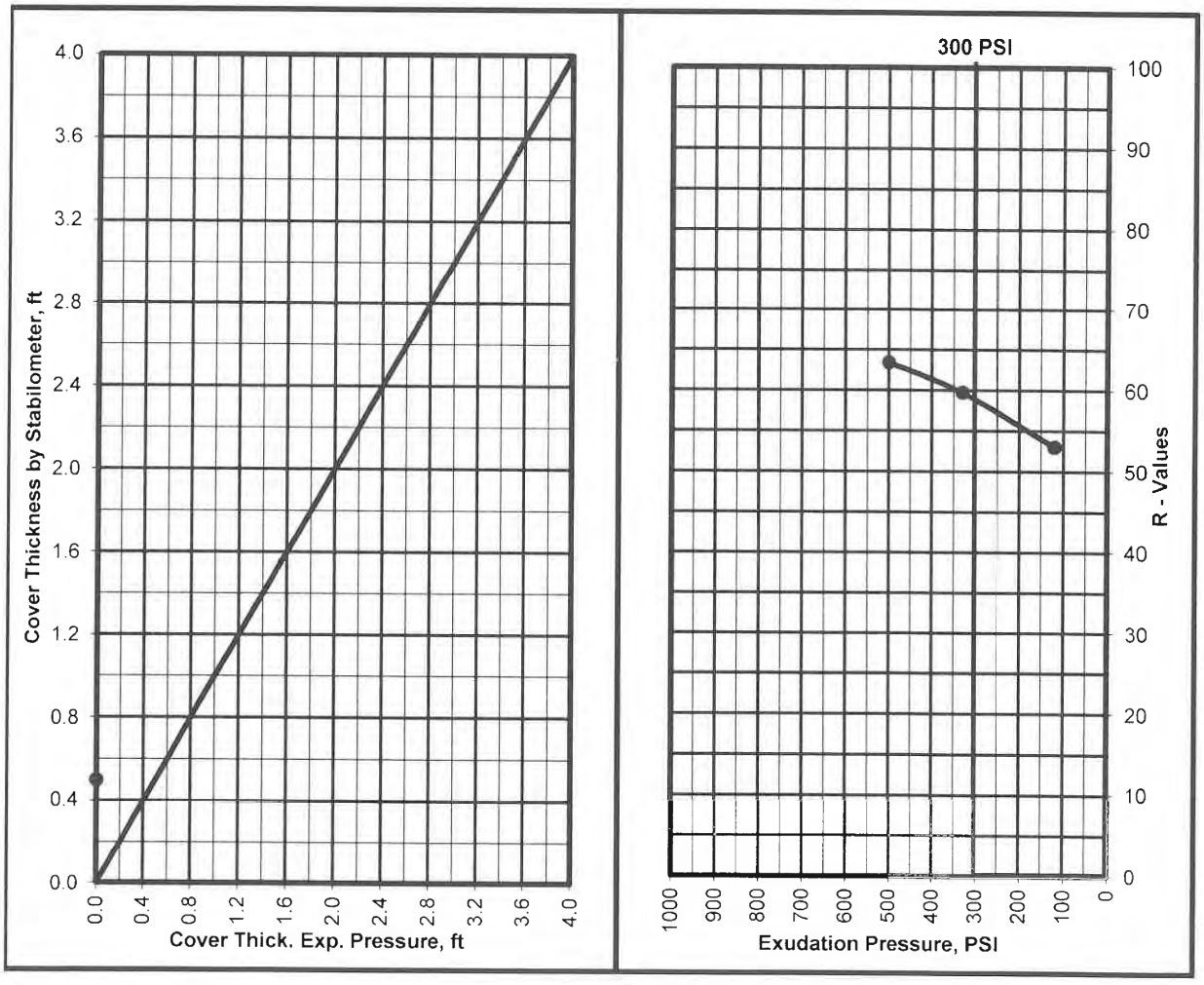
Unusual Conditions, Other Notes:

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	2/24/2021
Sample Location/Curve Number	:	RV#1
Soil Classification	:	SM/SP

TEST	A	B	C
Percent Moisture @ Compaction, %	11.7	11.2	10.7
Dry Density, lbm/cu.ft.	120.4	121.9	122.3
Exudation Pressure, psi	120	330	500
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	53	60	63

R Value at 300 PSI Exudation Pressure	**59**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



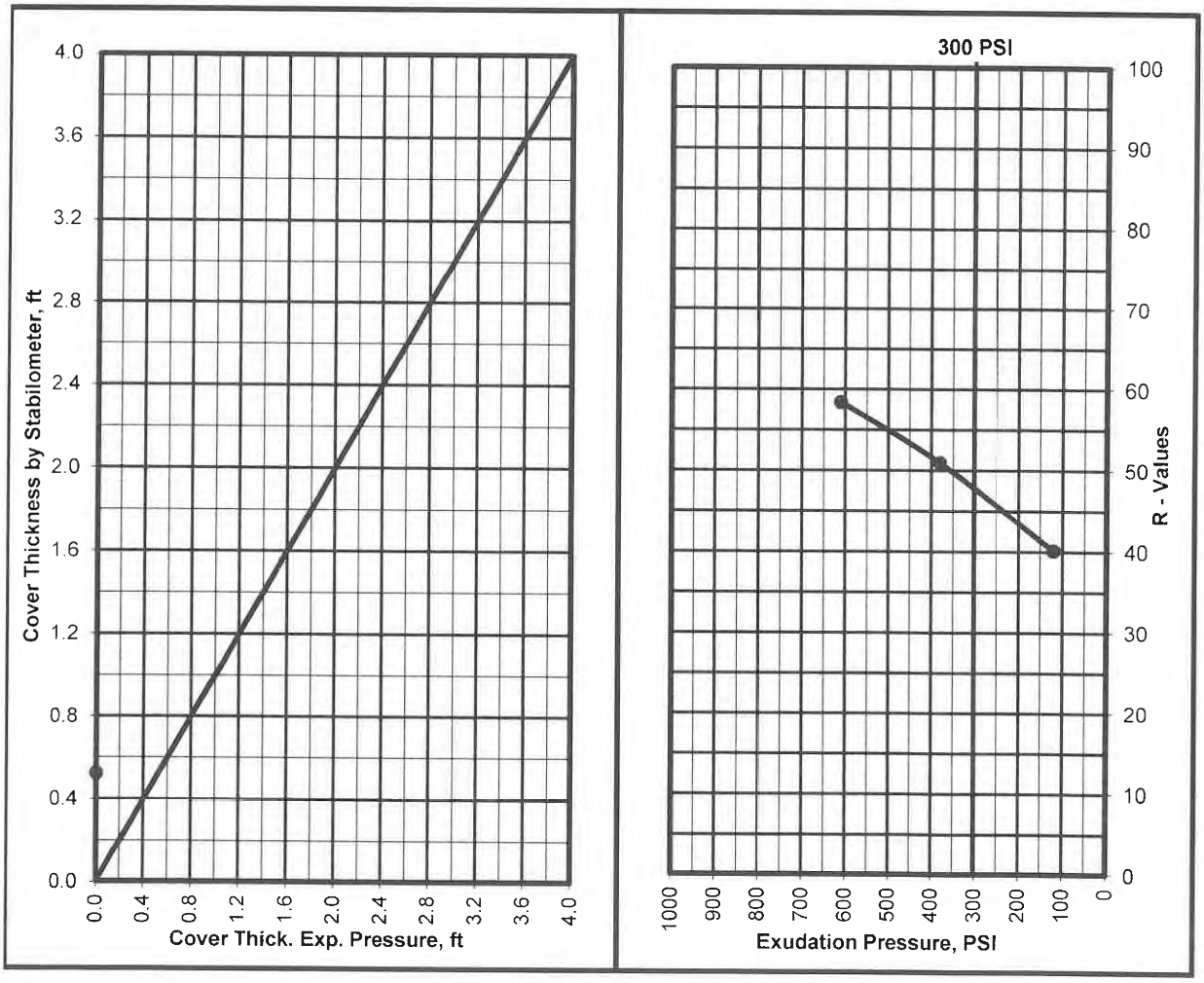
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	2/24/2021
Sample Location/Curve Number	:	RV#2
Soil Classification	:	SM

TEST	A	B	C
Percent Moisture @ Compaction, %	9.6	10.5	9.0
Dry Density, lbm/cu.ft.	132.7	131.1	133.8
Exudation Pressure, psi	380	120	610
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	51	40	58

R Value at 300 PSI Exudation Pressure	**48**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



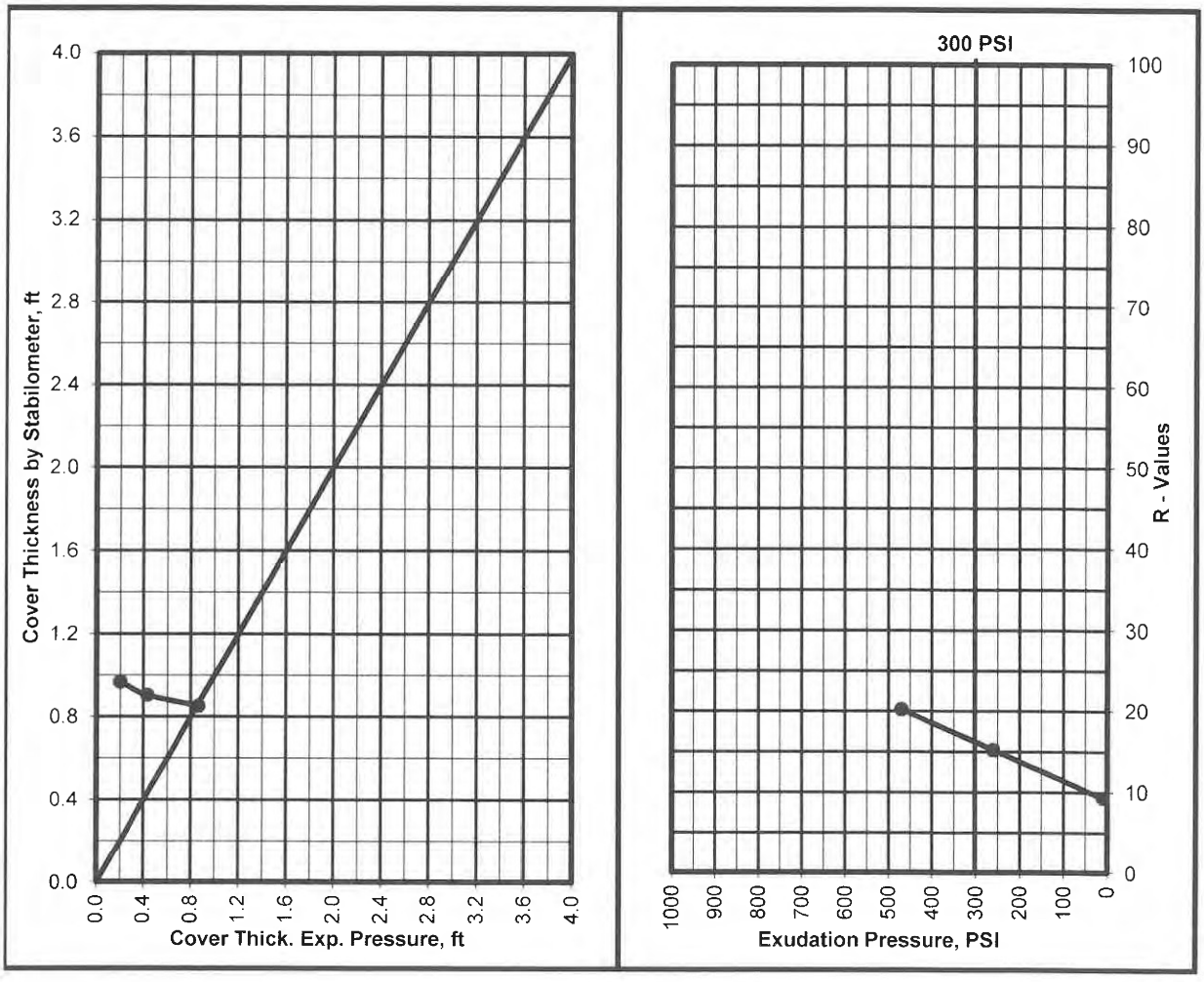
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	3/1/2021
Sample Location/Curve Number	:	RV#3
Soil Classification	:	SC-CL

TEST	A	B	C
Percent Moisture @ Compaction, %	11.8	12.8	13.5
Dry Density, lbm/cu.ft.	122.6	120.9	119.9
Exudation Pressure, psi	470	260	10
Expansion Pressure, (Dial Reading)	26	13	6
Expansion Pressure, psf	113	56	26
Resistance Value R	20	15	9

R Value at 300 PSI Exudation Pressure	**16**
R Value by Expansion Pressure (TI =): 5	**20**



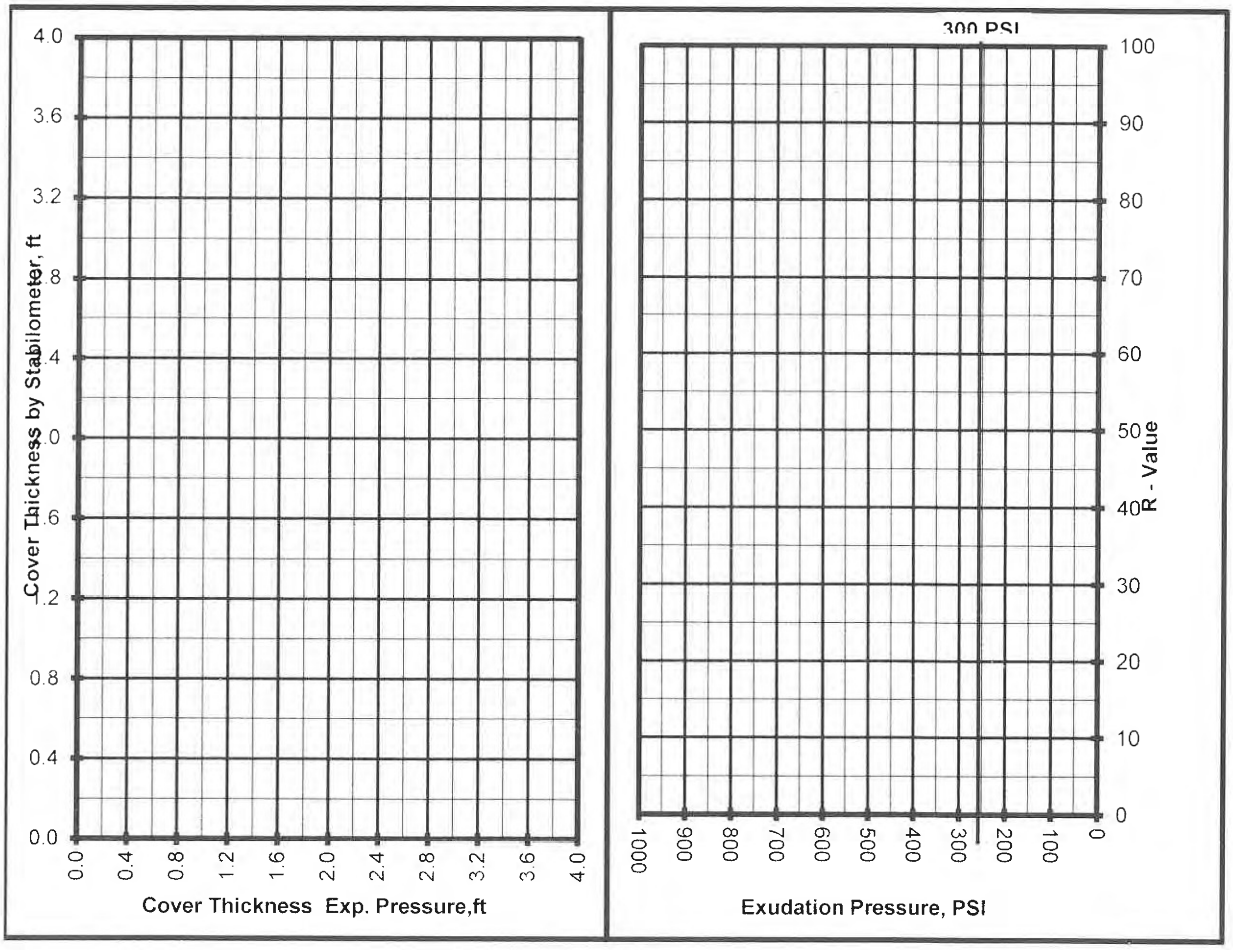
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	3/11/2021
Sample Location/Curve Number	:	RV#4
Soil Classification	:	CL

TEST	A	B	C
Percent Moisture @ Compaction, %			
Dry Density, lbm/cu.ft.	R - Value less than 5 Sample Exuded from bottom of Mold During test		
Exudation Pressure, psi			
Expansion Pressure, (Dial Reading)			
Expansion Pressure, psf			
Resistance Value R			

R - Value at 300 PSI Exudation Pressure	**< 5**
R - Value by Expansion Pressure	

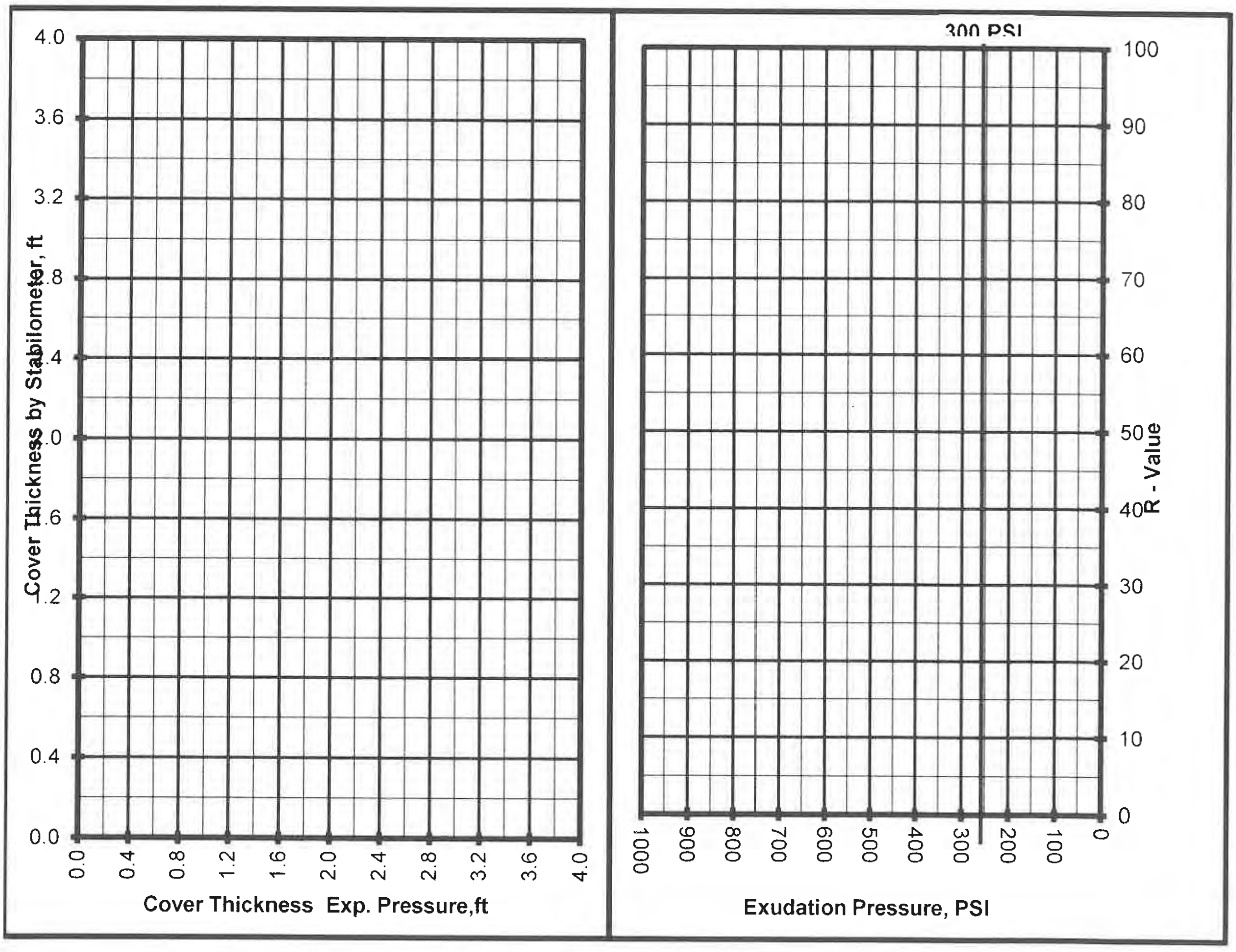


R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	3/10/2021
Sample Location/Curve Number	:	RV#5
Soil Classification	:	CL

TEST	A	B	C
Percent Moisture @ Compaction, %			
Dry Density, lbm/cu.ft.	R - Value less than 5 Sample Exuded from bottom of Mold During test		
Exudation Pressure, psi			
Expansion Pressure, (Dial Reading)			
Expansion Pressure, psf			
Resistance Value R			

R - Value at 300 PSI Exudation Pressure	**< 5**
R - Value by Expansion Pressure	

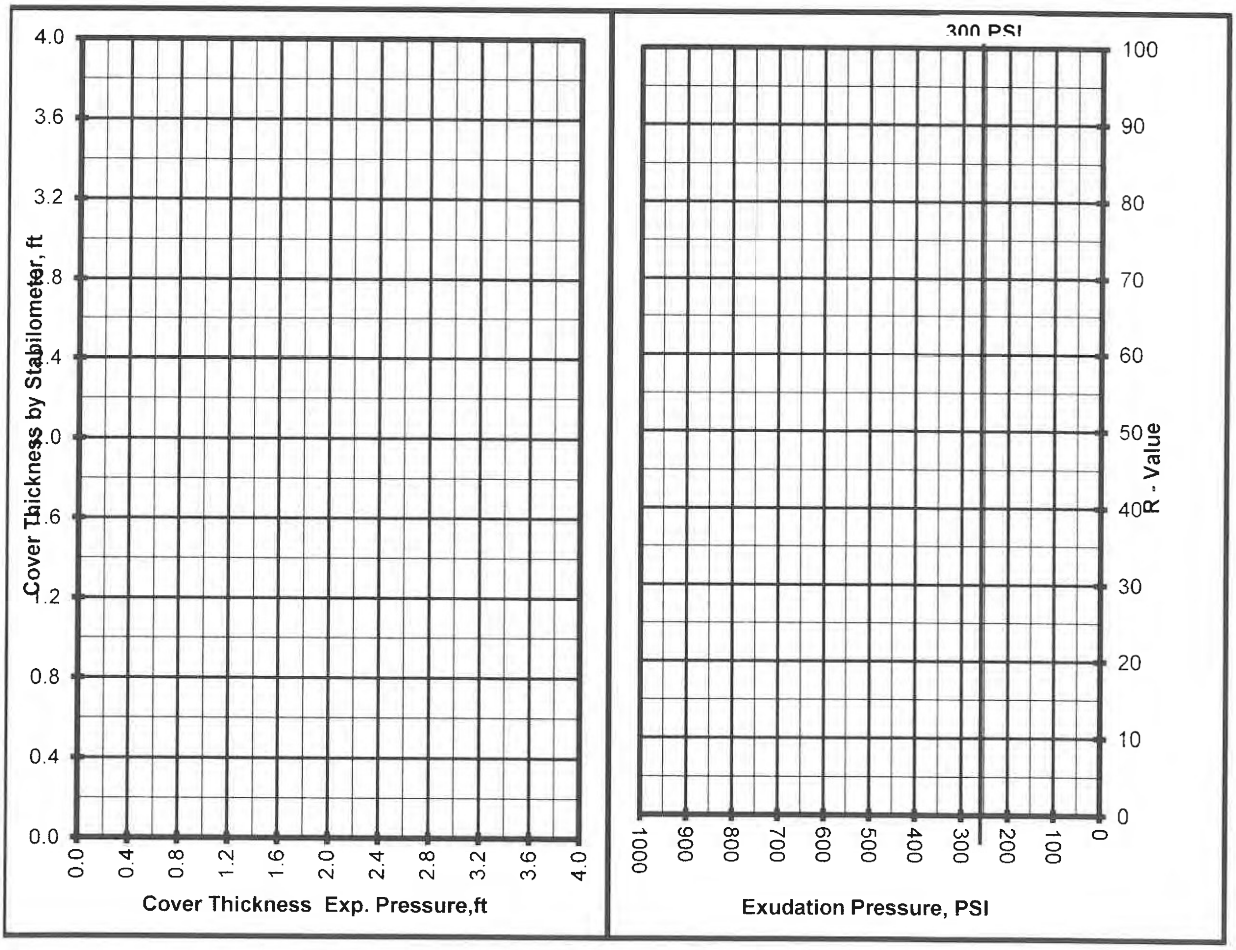


R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	3/10/2021
Sample Location/Curve Number	:	RV#6
Soil Classification	:	CL

TEST	A	B	C
Percent Moisture @ Compaction, %			
Dry Density, lbm/cu.ft.	R - Value less than 5 Sample Exuded from bottom of Mold During test		
Exudation Pressure, psi			
Expansion Pressure, (Dial Reading)			
Expansion Pressure, psf			
Resistance Value R			

R - Value at 300 PSI Exudation Pressure	**< 5**
R - Value by Expansion Pressure	

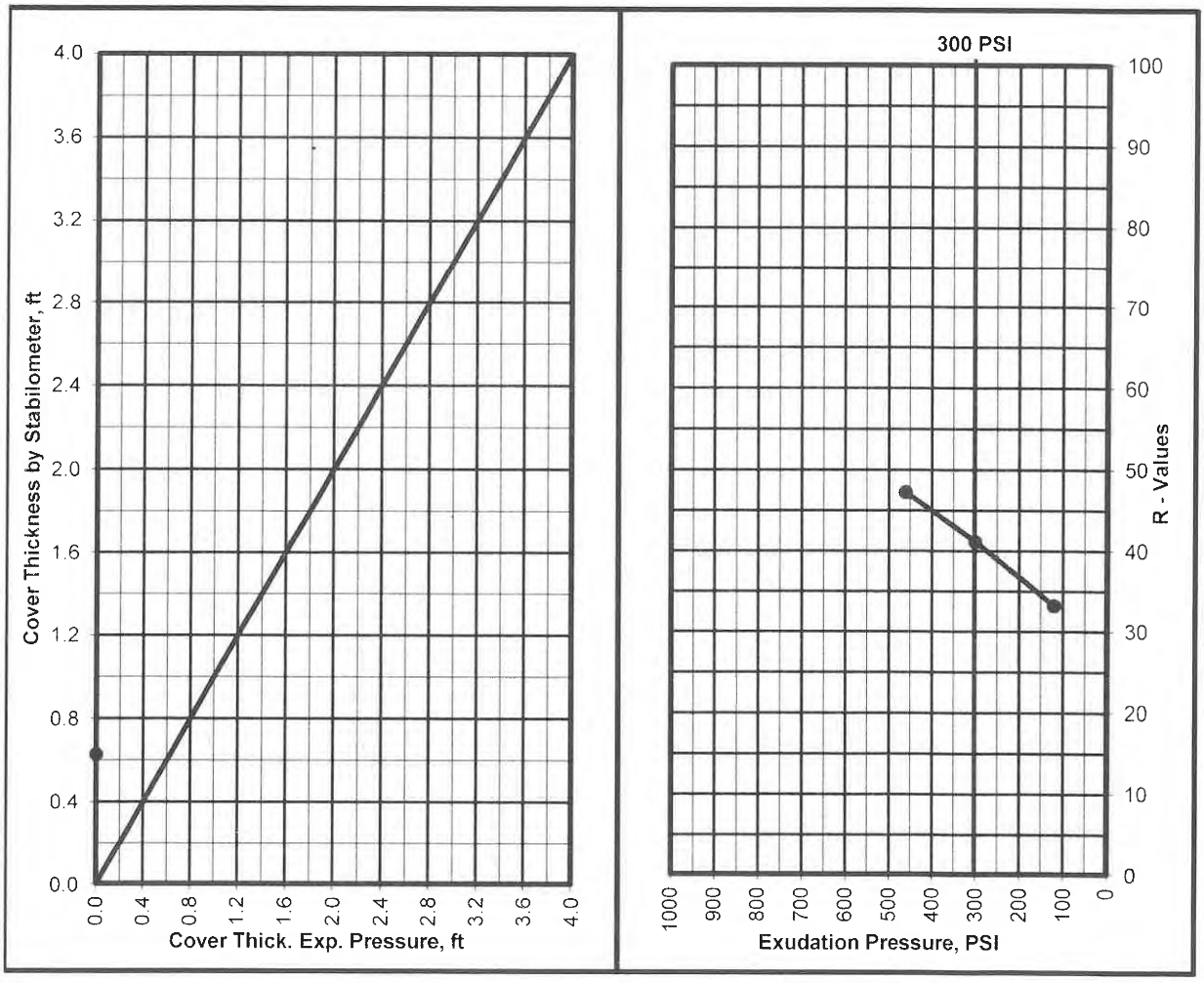


R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	3/11/2021
Sample Location/Curve Number	:	RV#7
Soil Classification	:	SM

TEST	A	B	C
Percent Moisture @ Compaction, %	9.7	10.2	9.2
Dry Density, lbm/cu.ft.	125.8	125.2	126.5
Exudation Pressure, psi	300	120	460
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	41	33	47

R Value at 300 PSI Exudation Pressure	**41**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



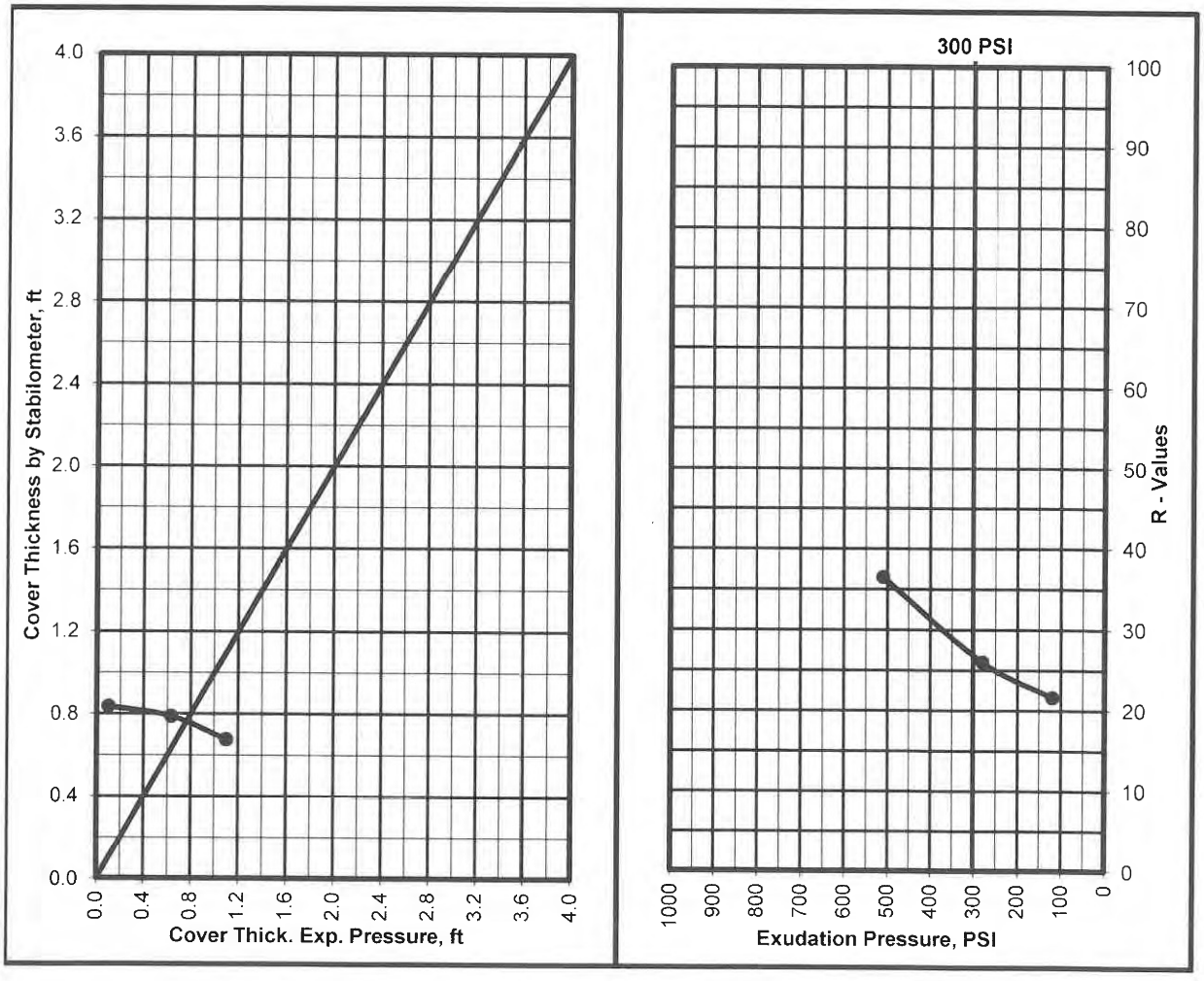
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	2/26/2021
Sample Location/Curve Number	:	RV#8
Soil Classification	:	SC

TEST	A	B	C
Percent Moisture @ Compaction, %	12.5	13.5	14.1
Dry Density, lbm/cu.ft.	121.1	117.5	116.6
Exudation Pressure, psi	510	280	120
Expansion Pressure, (Dial Reading)	33	19	3
Expansion Pressure, psf	143	82	13
Resistance Value R	37	26	22

R Value at 300 PSI Exudation Pressure	**26**
R Value by Expansion Pressure (TI =): 5	**27**



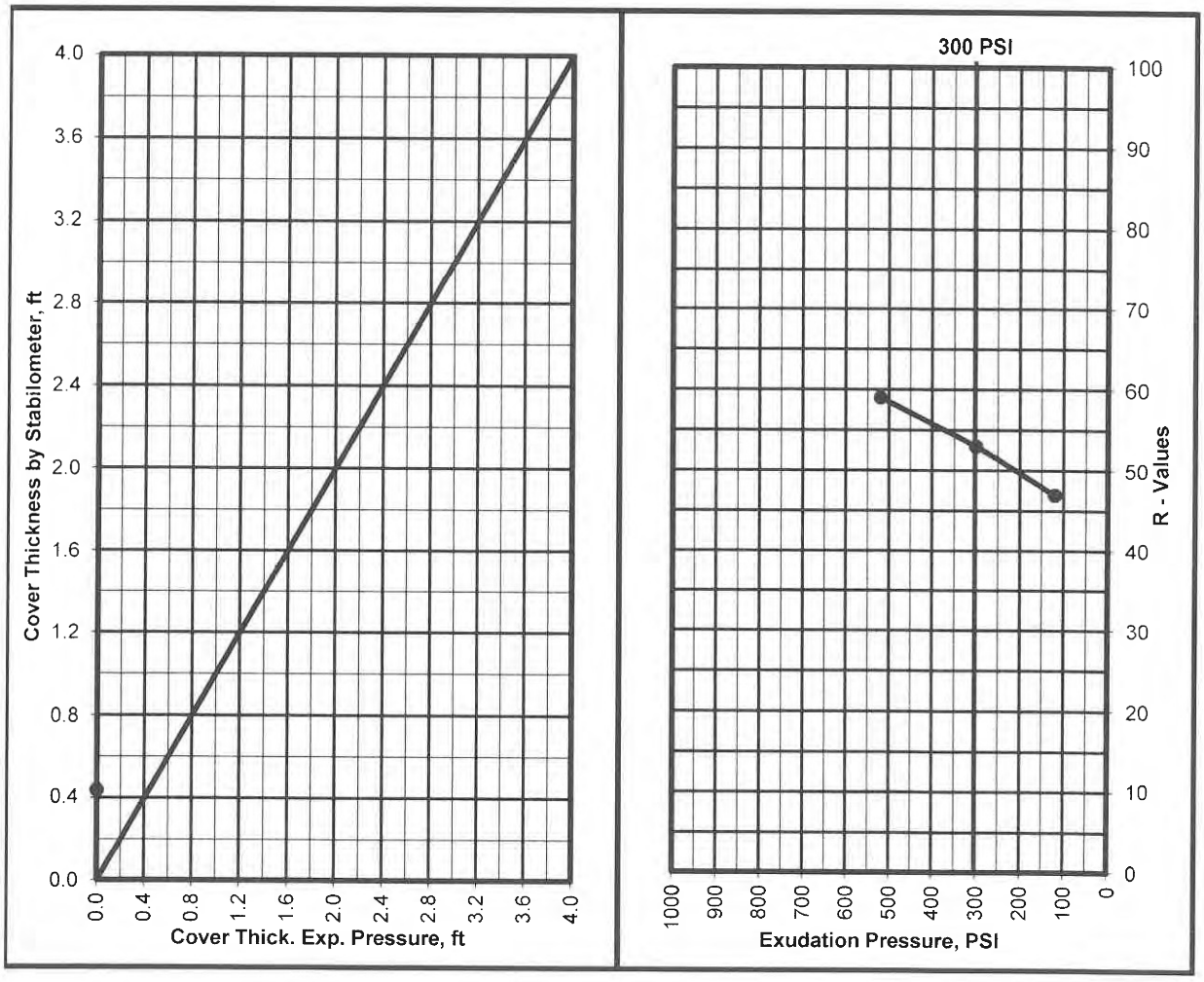
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	2/26/2021
Sample Location/Curve Number	:	RV#9
Soil Classification	:	SM

TEST	A	B	C
Percent Moisture @ Compaction, %	9.3	10.3	11.0
Dry Density, lbm/cu.ft.	127.1	125.4	124.7
Exudation Pressure, psi	520	300	120
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	59	53	47

R Value at 300 PSI Exudation Pressure	**53**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



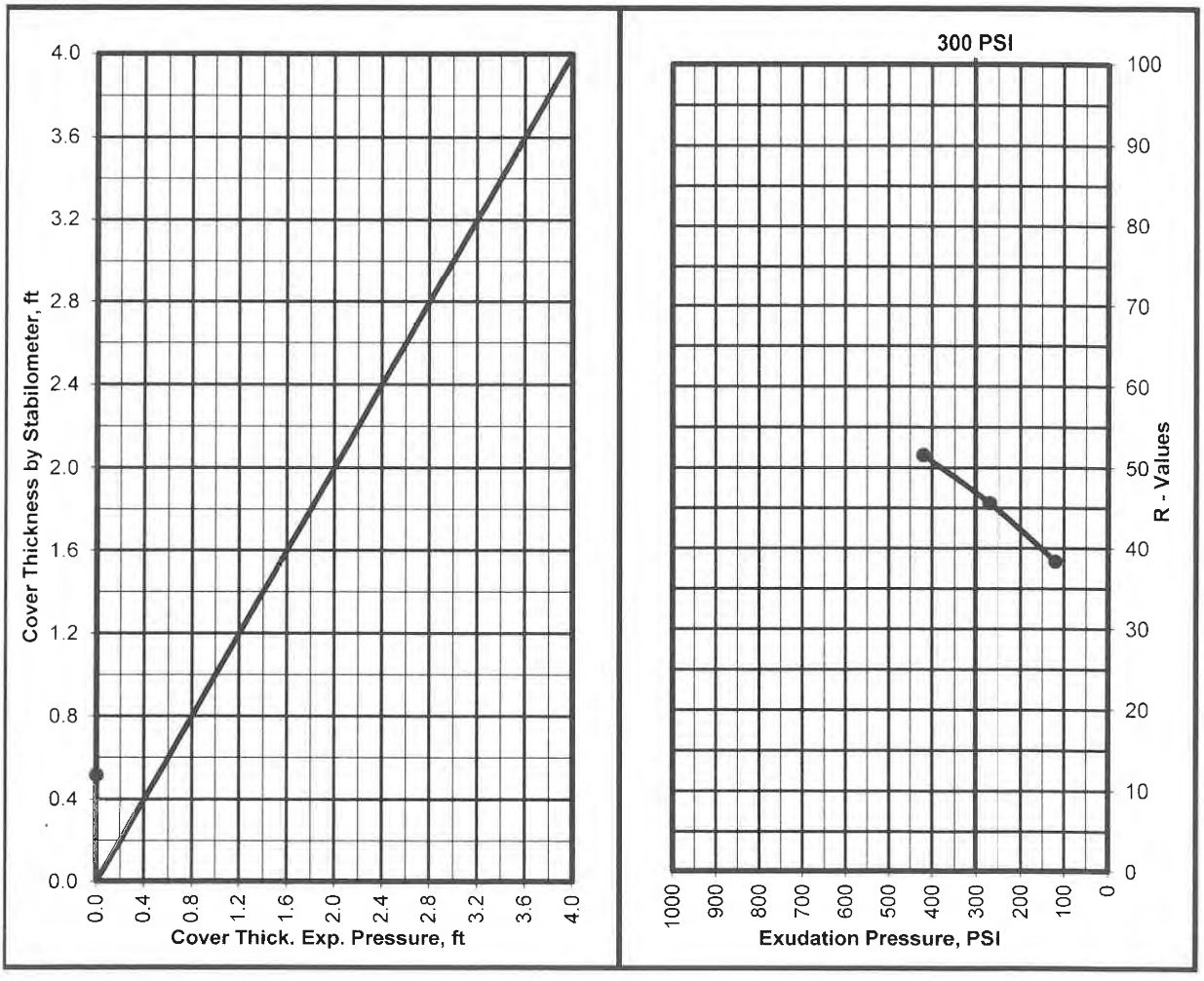
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	3/1/2021
Sample Location/Curve Number	:	RV#10
Soil Classification	:	SM

TEST	A	B	C
Percent Moisture @ Compaction, %	9.9	10.9	11.4
Dry Density, lbm/cu.ft.	127.8	126.0	125.5
Exudation Pressure, psi	420	270	120
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	52	46	38

R Value at 300 PSI Exudation Pressure	**46**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



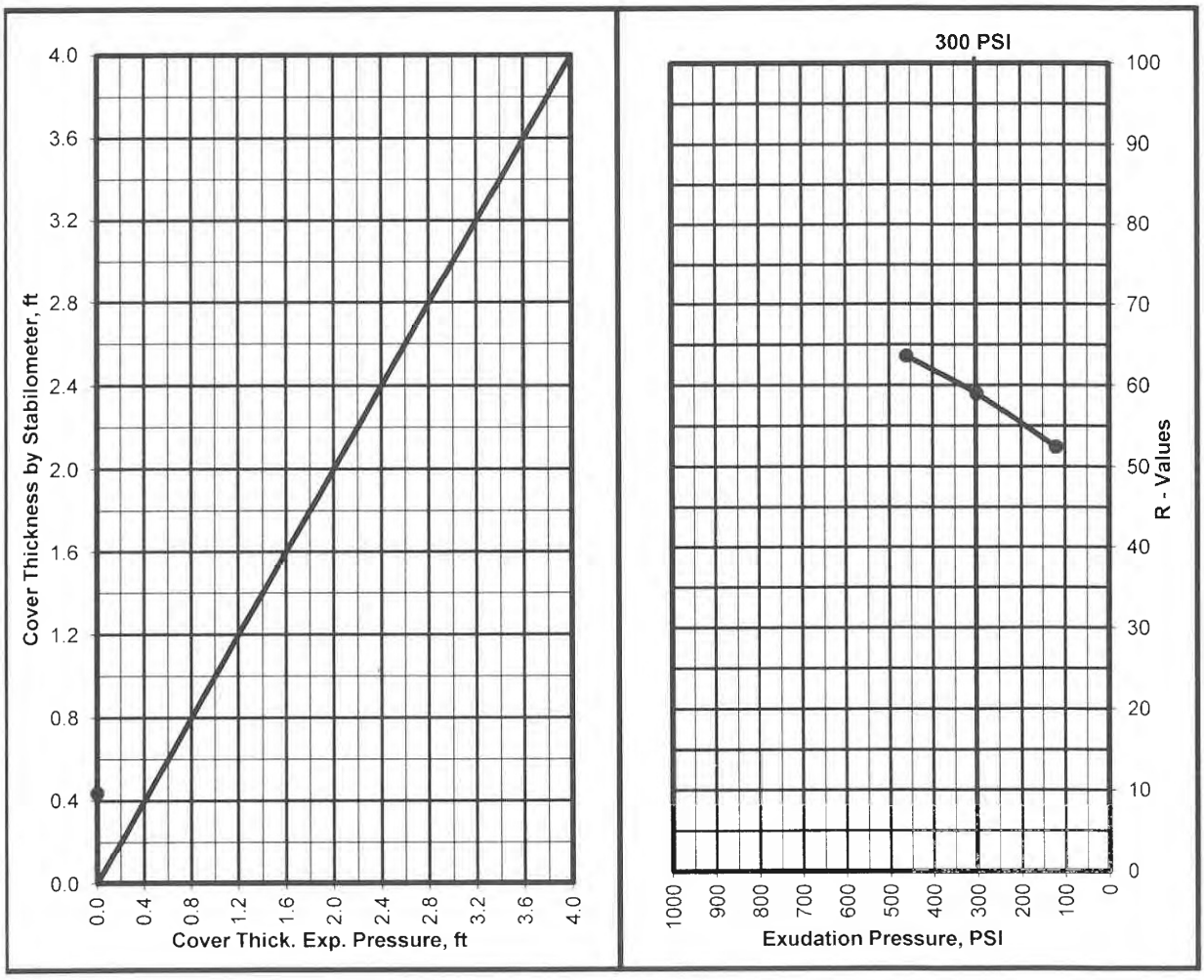
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	2/26/2021
Sample Location/Curve Number	:	RV#11
Soil Classification	:	SM/SP

TEST	A	B	C
Percent Moisture @ Compaction, %	13.3	12.5	13.9
Dry Density, lbm/cu.ft.	115.1	115.8	114.6
Exudation Pressure, psi	300	460	120
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	59	64	52

R Value at 300 PSI Exudation Pressure	**59**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



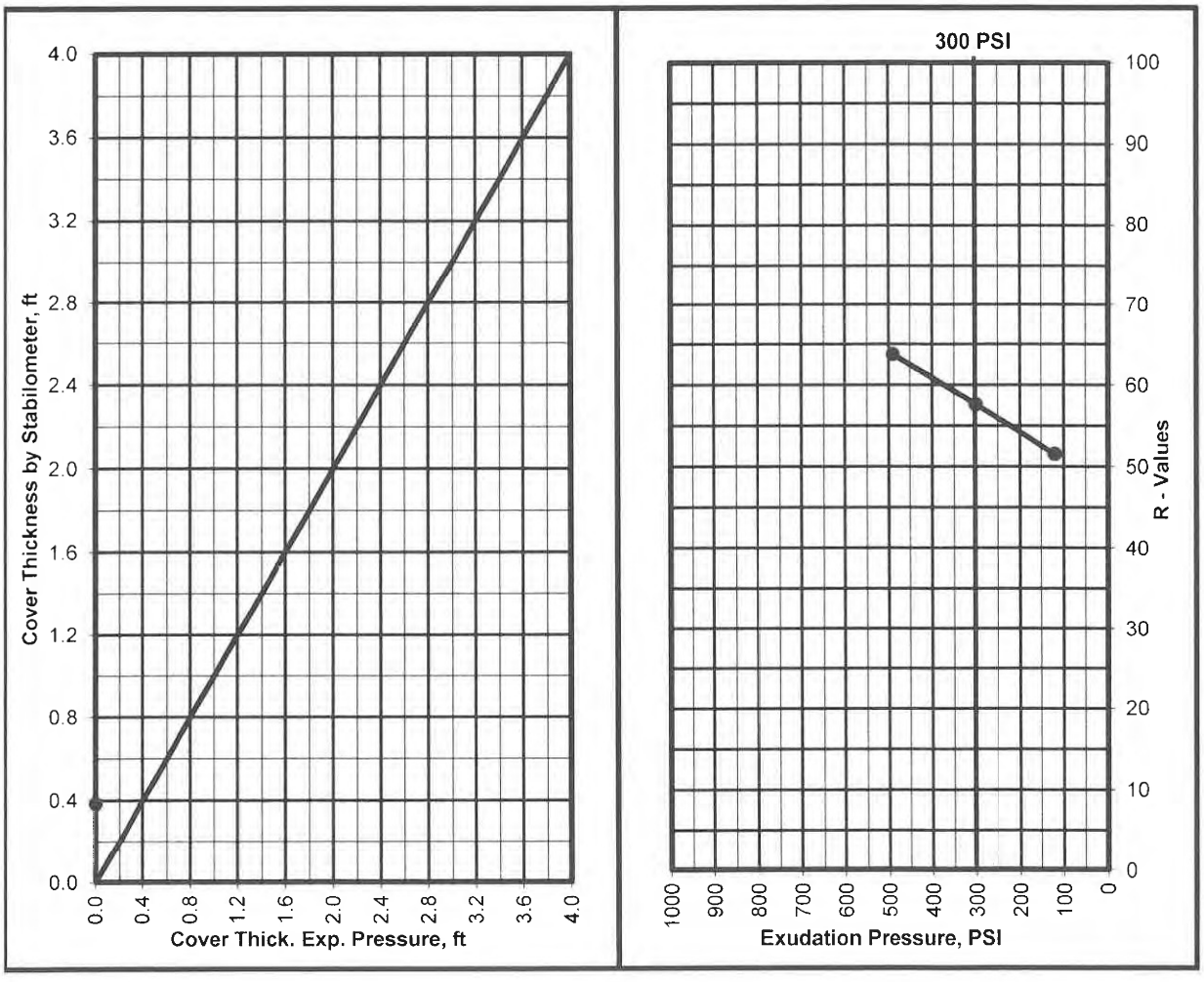
Krazan Testing Laboratory

R - VALUE TEST
ASTM D - 2844 / CAL 301

Project Number	:	012-21027
Project Name	:	Residental Development
Date	:	2/26/2021
Sample Location/Curve Number	:	RV#12
Soil Classification	:	SM

TEST	A	B	C
Percent Moisture @ Compaction, %	10.1	11.1	11.7
Dry Density, lbm/cu.ft.	122.3	122.2	121.1
Exudation Pressure, psi	490	120	300
Expansion Pressure, (Dial Reading)	0	0	0
Expansion Pressure, psf	0	0	0
Resistance Value R	64	52	58

R Value at 300 PSI Exudation Pressure	**58**
R Value by Expansion Pressure (TI =): 5	**Expansion Pressure nil**



Krazan Testing Laboratory

APPENDIX B

EARTHWORK SPECIFICATIONS

GENERAL

When the text of the report conflicts with the general specifications in this appendix, the recommendations in the report have precedence.

SCOPE OF WORK: These specifications and applicable plans pertain to and include all earthwork associated with the site rough grading, including but not limited to the furnishing of all labor, tools, and equipment necessary for site clearing and grubbing, stripping, preparation of foundation materials for receiving fill, excavation, processing, placement and compaction of fill and backfill materials to the lines and grades shown on the project grading plans, and disposal of excess materials.

PERFORMANCE: The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications. This work shall be inspected and tested by a representative of Krazan and Associates, Inc., hereinafter known as the Soils Engineer and/or Testing Agency. Attainment of design grades when achieved shall be certified to by the project Civil Engineer. Both the Soils Engineer and the Civil Engineer are the Owner's representatives. If the Contractor should fail to meet the technical or design requirements embodied in this document and on the applicable plans, he shall make the necessary readjustments until all work is deemed satisfactory as determined by both the Soils Engineer and the Civil Engineer. No deviation from these specifications shall be made except upon written approval of the Soils Engineer, Civil Engineer or project Architect.

No earthwork shall be performed without the physical presence or approval of the Soils Engineer. The Contractor shall notify the Soils Engineer at least 2 working days prior to the commencement of any aspect of the site earthwork.

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineers harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the soil negligence of the Owner or the Engineers.

TECHNICAL REQUIREMENTS: All compacted materials shall be densified to a density not less that 90 percent relative compaction based on ASTM Test Method D1557-78, UBC or CAL-216, as specified in the technical portion of the Soil Engineer's report. The location and frequency of field density tests shall be as determined by the Soils Engineer. The results of these tests and compliance with these specifications shall be the basis upon which satisfactory completion of work will be judged by the Soils Engineer.

SOILS AND FOUNDATION CONDITIONS: The Contractor is presumed to have visited the site and to have familiarized himself with existing site conditions and the contents of the data presented in the soil report.

The Contractor shall make his own interpretation of the data contained in said report, and the Contractor shall not be relieved of liability under the Contractor for any loss sustained as a result of any variance between conditions indicated by or deduced from said report and the actual conditions encountered during the progress of the work.

DUST CONTROL: The work includes dust control as required for the alleviation or prevention of any dust nuisance on or about the site or the borrow area, or off-site if caused by the Contractor's operation either during the performance of the earthwork or resulting from the conditions in which the Contractor leaves the site. The Contractor shall assume all liability, including court costs of codefendants, for all claims related to dust or windblown materials attributable to his work.

SITE PREPARATION

Site preparation shall consist of site clearing and grubbing and the preparations of foundation materials for receiving fill.

CLEARING AND GRUBBING: The Contractor shall accept the site in this present condition and shall demolish and/or remove from the area of designated project, earthwork all structures, both surface and subsurface, trees, brush, roots, debris, organic matter, and all other matter determined by the Soils Engineer to be deleterious. Such materials shall become the property of the Contractor and shall be removed from the site.

Tree root systems in proposed building areas should be removed to a minimum depth of 3 feet and to such an extent which would permit removal of all roots larger than 1 inch. Tree root removed in parking areas may be limited to the upper 1½ feet of the ground surface. Backfill or tree root excavation should not be permitted until all exposed surfaces have been inspected and the Soils Engineer is present for the proper control of backfill placement and compaction. Burning in areas which are to receive fill materials shall not be permitted.

SUBGRADE PREPARATION: Surfaces to receive Engineered Fill, building or slab loads shall be prepared as outlined above, scarified to a depth of 6 inches, moisture-conditioned as necessary, and compacted to 90 percent relative compaction.

Loose soil areas, areas of uncertified fill, and/or areas of disturbed soils shall be moisture-conditioned as necessary and recompacted to 90 percent relative compaction. All ruts, hummocks, or other uneven surface features shall be removed by surface grading prior to placement of any fill materials. All areas, which are to receive fill materials, shall be approved by the Soils Engineer prior to the placement of any of the fill material.

EXCAVATION: All excavation shall be accomplished to the tolerance normally defined by the Civil Engineer as shown on the project grading plans. All over excavation below the grades specified shall be backfilled at the Contractor's expense and shall be compacted in accordance with the applicable technical requirements.

FILL AND BACKFILL MATERIAL: No material shall be moved or compacted without the presence of the Soils Engineer. Material from the required site excavation may be utilized for construction site fills provided prior approval is given by the Soils Engineer. All materials utilized for constructing site fills shall be free from vegetation or other deleterious matter as determined by the Soils Engineer.

PLACEMENT, SPREADING AND COMPACTION: The placement and spreading of approved fill materials and the processing and compaction of approved fill and native materials shall be the responsibility of the Contractor. However, compaction of fill materials by flooding, ponding, or jetting shall not be permitted unless specifically approved by local code, as well as the Soils Engineer.

Both cut and fill shall be surface compacted to the satisfaction of the Soils Engineer prior to final acceptance.

SEASONAL LIMITS: No fill material shall be placed, spread, or rolled while it is frozen or thawing or during unfavorable wet weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until the Soils Engineer indicates that the moisture content and density of previously placed fill are as specified.

APPENDIX C

PAVEMENT SPECIFICATIONS

1. DEFINITIONS - The term "pavement" shall include asphaltic concrete surfacing, untreated aggregate base, and aggregate subbase. The term "subgrade" is that portion of the area on which surfacing, base, or subbase is to be placed.

The term "Standard Specifications": hereinafter referred to is the 2018 Standard Specifications of the State of California, Department of Transportation, and the "Materials Manual" is the Materials Manual of Testing and Control Procedures, State of California, Department of Public Works, Division of Highways. The term "relative compaction" refers to the field density expressed as a percentage of the maximum laboratory density as defined in the applicable tests outlined in the Materials Manual.

2. SCOPE OF WORK - This portion of the work shall include all labor, materials, tools, and equipment necessary for, and reasonably incidental to the completion of the pavement shown on the plans and as herein specified, except work specifically notes as "Work Not Included."

3. PREPARATION OF THE SUBGRADE - The Contractor shall prepare the surface of the various subgrades receiving subsequent pavement courses to the lines, grades, and dimensions given on the plans. The upper 12 inches of the soil subgrade beneath the pavement section shall be compacted to a minimum relative compaction of 90 percent. The finished subgrades shall be tested and approved by the Soils Engineer prior to the placement of additional pavement courses.

4. UNTREATED AGGREGATE BASE - The aggregate base material shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate base material shall conform to the requirements of Section 26 of the Standard Specifications for Class 2 material, 1½ inches maximum size. The aggregate base material shall be compacted to a minimum relative compaction of 95 percent. The aggregate base material shall be spread and compacted in accordance with Section 26 of the Standard Specifications. The aggregate base material shall be spread in layers not exceeding 6 inches and each layer of aggregate material course shall be tested and approved by the Soils Engineer prior to the placement of successive layers.

5. AGGREGATE SUBBASE - The aggregate subbase shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate subbase material shall conform to the requirements of Section 25 of the Standard Specifications for Class 2 material. The aggregate subbase material shall be compacted to a minimum relative compaction of 95 percent, and it shall be spread and compacted in accordance with Section 25 of the Standard Specifications. Each layer of aggregate subbase shall be tested and approved by the Soils Engineer prior to the placement of successive layers.

6. ASPHALTIC CONCRETE SURFACING - Asphaltic concrete surfacing shall consist of a mixture of mineral aggregate and paving grade asphalt, mixed at a central mixing plant and spread and compacted on a prepared base in conformity with the lines, grades and dimensions shown on the plans. The viscosity grade of the asphalt shall be PG 64-10. The mineral aggregate shall be Type B, ½ inch maximum size, medium grading and shall conform to the requirements set forth in Section 39. The drying, proportioning and mixing of the materials shall conform to Section 39.

The prime coat, spreading and compacting equipment and spreading and compacting mixture shall conform to the applicable chapters of Section 39, with the exception that no surface course shall be placed when the atmospheric temperature is below 50° F. The surfacing shall be rolled with a combination of steel wheel and pneumatic rollers, as described in Section 39-6. The surface course shall be placed with an approved self-propelled mechanical spreading and finishing machine.

7. FOG SEAL COAT - The fog seal (mixing type asphaltic emulsion) shall conform to and be applied in accordance with the requirements of Section 37.

THIS PAGE INTENTIONALLY LEFT BLANK

G.2 - 2024 Geotechnical Feasibility Evaluation

THIS PAGE INTENTIONALLY LEFT BLANK

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

December 7, 2023
Revised January 4, 2024

KA Project No. 012-22165

Ms. Goldie Lewis
Wilson Homes
7550 N. Palm Avenue, Suite 102
Fresno, California 93711

RE: GEOTECHNICAL FEASIBILITY EVALUATION
TRIANGLE DEVELOPMENT
SHEPHERD AVENUE AND LOCAN AVENUE
CLOVIS, CALIFORNIA

Dear Ms. Lewis:

In accordance with your request, we have completed a Geotechnical Feasibility Evaluation for the above-referenced property. The purpose of this investigation was to perform a study for the planned development adjacent to the Big Dry Creek Reservoir Dam to evaluate the on-site soil conditions, groundwater elevations, permeability characteristics, and liquefaction potential. The data obtained from this investigation will be used to determine a potential minimum setback for the planned residential structures.

PROPOSED CONSTRUCTION

We understand that design of the proposed development is currently underway; structural load information and other final details pertaining to the structures are unavailable. On a preliminary basis, it is understood that the development will include approximately 165 acres adjacent to the dam to be developed into a master planned community including single- and multi-family residential developments and ancillary uses. It is anticipated that the structures will include single- to three-story wood-framed buildings supported on conventional shallow footings and utilizing concrete slab-on-grade construction. Foundation loads are anticipated to be light to moderately heavy. On-site paved areas and underground utilities are also planned.

SOIL PROFILE AND SUBSURFACE CONDITIONS

Subsurface soil conditions were explored by drilling 32 borings to depths of approximately 8 to 50 feet below existing site grade, utilizing a truck-mounted drill rig. Boring Nos. 21-32 were terminated due to auger refusal in very dense weathered rock. The initial borings (B1-B6) were drilled at distances of 150 and 300 feet southwest of the property line. Boring Nos. B7-B26 were drilled near the property line and 150 feet southwest of the property line. Boring Nos. B27-B32 were drilled near the property line and 150

feet west of the spillway. The approximate boring locations are shown on the site plan. During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency and to obtain information regarding the engineering properties of the subsoils. Soil samples were retained for laboratory testing. The soils encountered were continuously examined and visually classified in accordance with the Unified Soil Classification System. A more detailed description of the field investigation is presented in Appendix A.

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. Details of the laboratory test program and results of the laboratory tests are summarized in Appendix A. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

In general, the upper soils within the site consist of approximately 6 to 12 inches of very loose silty sand, clayey sand, sandy clay and silty sand with trace clay. These soils are disturbed, have low strength characteristics, and are highly compressible when saturated.

Below the loose surface soils within the area southwest of the reservoir, approximately 8 to 17 feet of loose to very dense silty sand, sandy silt/sandy clay, silty sand/sandy silt, sandy silt, silty sand/sand, silty sand/clayey sand, clayey silty sand, clayey sand/sandy clay, clayey sand and clayey sandy silt or very stiff to hard sandy clay were encountered. Some of these soils contained traces of clay and gravel. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance ranged from 5 blows per foot to over 50 blows per 6 inches. Dry densities ranged from 71 to 129 pcf.

Below 8½ to 18 feet, layers of loose to very dense clayey silty sand, silty sand/sandy silt, clayey sand/sandy clay, clayey sand, silty sand, silty sand/sand, sand, clayey sandy silt, silty sand/clayey sand, sandy clayey silt and sandy silt or very stiff to hard sandy clay were encountered. Some of these soils included traces of clay and gravel. These soils had similar strength characteristics as the upper soils. Penetration resistance ranged from 9 blows per foot to over 50 blows per 6 inches. Dry densities ranged from 80 to 130 pcf. These soils extended to the termination depth of our borings. Boring Nos. B21-B26 were terminated in very dense metamorphic rock at depths of 27½ to 40½ feet below existing site grade.

Below the loose surface soils in the area west of the spillway (Boring Nos. B27-B32), approximately 4 to 9½ feet of medium dense to very dense silty sand, silty sand with clay, clayey sand/sandy clay and clayey sand or firm sandy clay were encountered. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance ranged from 22 blows per foot to over 50 blows per 6 inches. Dry densities ranged from 79 to 130 pcf.

Below 5 to 14½ feet, predominately very dense highly to slightly weathered metamorphic rock was encountered. These soils had higher strength characteristics than the upper soils. Penetration resistance was greater than 50 blows per 6 inches. Dry densities ranged from 83 to 115 pcf. These soils extended to the termination depth of our borings. The borings were terminated due to auger refusal at depths of 8 to 17 feet.

For additional information about the soils encountered, please refer to the attached logs of the borings.

PERMEABILITY TESTING

Seventeen permeability tests were conducted on undisturbed soil samples collected from depths of 5 to 41 feet below existing site grade. The permeability tests were performed in accordance with ASTM Test Method D2434. The test results are as follows:

Test No.	Depth (feet)	Coefficient of Permeability (cm/second)	Soil Type
B1	12-13	7.9×10^{-6}	Silty Sand/Sandy Silt (SM/ML)
B1	25-26	2.2×10^{-5}	Silty Sand (SM)
B1	35-36	9.0×10^{-7}	Clayey Sand/Sandy Clay (SC/CL)
B2	20-21	4.0×10^{-5}	Silty Sand (SM)
B3	10-11	2.3×10^{-5}	Silty Sand (SM)
B3	17-18	1.1×10^{-4}	Silty Sand/Sand (SM/SP)
B3	20-21	1.7×10^{-5}	Clayey Sand (SC)
B3	25-26	8.3×10^{-5}	Silty Sand (SM)
B3	35-36	4.6×10^{-5}	Silty Sand (SM)
B4	5-6	9.1×10^{-6}	Clayey Silty Sand (SM/SC)
B4	10-11	9.0×10^{-7}	Clayey Sand/Sandy Clay (SC/CL)
B4	15-16	2.6×10^{-5}	Silty Sand (SM)
B4	25-26	6.3×10^{-6}	Clayey Sand (SC)
B4	40-41	3.3×10^{-5}	Silty Sand (SM)
B5	30-31	7.5×10^{-6}	Clayey Sand (SC)
B6	30-31	6.4×10^{-5}	Silty Sand (SM)
B6	40-41	3.5×10^{-5}	Silty Sand (SM)

The test results indicate that the soils tested have fair to poor absorption characteristics.

PERCOLATION TESTING

Two percolation tests were performed within the site to evaluate the soils absorption characteristics. The percolation tests were performed inside test holes drilled near the borings. The percolation tests were performed at depths of 15 and 20 feet below the existing ground surface. Results of the tests are as follows:

Test No.	Depth (ft)	Percolation Rate (min/in)	Soil Type
1	20	60	Silty Sand (SM)
2	15	90	Silty Sand/Sandy Silt (SM/ML)

The test results indicate that the soils tested have fair absorption characteristics. The test results do not include a factor of safety. The percolation rates given are based on 1 inch of fall within a 6-inch diameter hole with a 12-inch head of water.

HISTORIC BIG DRY CREEK RESERVOIR STORAGE

The historic levels of water storage in the Big Dry Creek Reservoir were obtained from data available from the US Army Corps of Engineers website (www.spk-wc.usace.army.mil/plots/california.html). The data from after 2013 also provided the elevation of the water stored in the levee. The table below provides the maximum volume of water stored in the reservoir each year since 2006. Where available, the surface water elevation is also provided.

Year	Maximum Volume Stored (acre-ft)	Surface Water Elevation
2006	9,588	Not Published
2007	188	Not Published
2008	525	Not Published
2009	188	Not Published
2010	2,498	Not Published
2011	8,437	Not Published
2012	792	Not Published
2013	188	400.00
2014	188	400.00
2015	188	400.00
2016	1675	408.77
2017	11,197	421.42
2018	2096	410.00
2019	3375	412.65
2020	188	400.00
2021	188	400.00
2022	188	400.00
2023	10,457	420.81

GROUNDWATER

The test boring locations were checked for the presence of groundwater during and immediately following the drilling operations. During our initial field investigation performed in August 2022, free groundwater was encountered at approximately 26 to 39 feet below existing site grade. The initial water

level was approximately 29 to 39 feet and rose to depths of 24 to 34 feet after 24 hours. During our field investigations performed in February and April 2023, free groundwater was initially encountered at depths of 7 to 30 feet below existing site grade. The depth to groundwater was measured at depths of 3 to 23 feet below existing site grade after 24 hours. A table showing the initial and final groundwater elevations is provided below.

Boring No.	Date	Initial Depth to Groundwater	Final Depth to Groundwater
1	8-29-22	35	26
2	8-29-22	32	26
3	8-30-22	24	24
4	8-30-22	35	27
5	8-31-22	39	34
6	8-31-22	32	27
7	2-14-23	15	23
8	2-14-23	25	23
9	2-16-23	20	17
10	2-16-23	11	9
11	2-17-23	10	8
12	2-17-23	15	11
13	4-11-23	11	9½
14	4-11-23	13	15
15	4-11-23	15	20
16	4-12-23	12½	7
17	4-12-23	12½	6
18	4-13-23	7	3
19	4-13-23	15	4
20	4-14-23	10	10
21	4-17-23	7	3
22	4-17-23	25	4
23	4-18-23	22	3
24	4-18-23	30	3
25	4-18-23	20	4
26	4-19-23	7	10
27	7-7-23	NA	NA

28	7-7-23	NA	NA
29	7-7-23	NA	NA
30	7-7-23	NA	NA
31	7-7-23	NA	NA
32	7-7-23	NA	NA

It should be recognized that water table elevations may fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use, amount of water stored in the reservoir, and climatic conditions, as well as other factors. During the recent period of high-water storage in the reservoir, the hydrostatic pressure of the water associated with the reservoir resulted in much shallower water levels than during the period with little or no storage in the reservoir. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project.

SOIL LIQUEFACTION

Soil liquefaction is a state of soil particle suspension, caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs in soils, such as sands, in which the strength is purely frictional. However, liquefaction has occurred in soils other than clean sands. Liquefaction usually occurs under vibratory conditions, such as those induced by seismic events.

To evaluate the liquefaction potential of the site, the following items were evaluated:

1) Soil type

2) Relative density

3) Initial confining pressure

4) Intensity and duration of groundshaking

The predominate soils encountered in our soil borings advanced within the project site consist of silty sands, sandy silts, clayey sands, clayey silts, sandy clays and sands. Groundwater was encountered at depths of 3 to 39 feet below existing site grade during our exploratory drilling.

The potential for soil liquefaction during a seismic event was evaluated on each boring using the "LiquefyPro" computer program (version 5) developed by CivilTech Software. For the analysis, a maximum earthquake magnitude of 6.15 was used. A peak horizontal ground surface acceleration of 0.307g was used for the liquefaction analysis. To model a worst-case scenario, a groundwater depth of 2 feet was used for the analysis. The analysis indicates that soils above a depth of 2 feet are non-liquefiable due to the absence of groundwater. The soils below a depth of 2 feet have a very low to moderate potential for liquefaction under seismic shaking.

The evaluation performed by Krazan & Associates, Inc. indicates the subsurface soils beneath the site have a low potential for liquefaction under seismic conditions. The estimated seismic induced total and differential settlements are indicated to be less than 1 inch and ⅔ inch, respectively. A table is provided below showing the estimated seismic settlement at each boring location. The data used to determine the liquefaction potential and settlement was derived from the Standard Penetration Tests (SPT) performed at 2½ foot intervals in the upper 20 feet and 5 foot intervals between 20 and 50 feet.

Boring No.	Total Seismic Settlement	Differential Seismic Settlement
B1	0.18	0.12
B2	0.00	0.00
B3	0.00	0.00
B4	0.00	0.00
B5	0.16	0.11
B6	0.45	0.30
B7	0.80	0.54
B8	0.59	0.40
B9	0.77	0.52
B10	0.66	0.44
B11	0.71	0.48
B12	0.87	0.58
B13	0.11	0.08
B14	0.04	0.03
B15	0.36	0.24
B16	0.04	0.03
B17	0.87	0.58
B18	0.28	0.19
B19	0.00	0.00
B20	0.00	0.00
B21	0.04	0.03
B22	0.00	0.00
B23	0.16	0.11

GROUNDWATER AND SURFACE WATER CONSIDERATIONS

Surface water runoff associated with the existing reservoir levee is the predominate concern for the planned development. During the recent period of high-water storage in the reservoir, the toe drain for the levee was not able to handle the high volume of water. This resulting in piping of soil on the FMFCD property near the property line which resulted in surface water collecting on the parcels planned for development. Based on the historical storage volumes obtained from the US Army Corps of Engineers, it appears these high water levels have occurred 4 out of the last 18 years or 22 percent of the time. Within the eastern portion of the planned development located adjacent to the Big Dry Creek Reservoir levee, surface water has ponded on the site. Based on our observations in the field, this surface water is directly related to the water piping out of the soil immediately adjacent to the west side of the reservoir. The inadequacy of the toe drain has resulted in impacts to the subject property that will preclude development of a portion of the property and additional improvements to collect and drain water resulting from the reservoir onto this property. In order to intercept this water from the areas of planned construction, it is recommended interceptor trenches be installed at a distance of approximately 250 feet southwest of the property line adjacent to the levee and near the property line adjacent to the spillway.

The interceptor trench should be 2 feet wide and at least 10 feet deep. The trench sidewalls should be raked to reduce the effects of soil smearing, which may occur during construction and adversely affect soil permeability. A geotextile filter fabric should be installed along the trench walls. A Schedule 40 perforated pipe should be placed no higher than 6 inches above the bottom of the trench. The pipe should be at least 4 inches in diameter and of sufficient strength to resist applied soil pressure and external loads. The perforated drain pipe should be installed at a gradient of at least 1 percent and should discharge to a suitable project drainage system. A detail of the interceptor trench is shown in Figure 2.

The trench shall be backfilled with 9 feet of 1½-inch round river gravel or crushed rock. A permeable barrier, such as untreated construction paper, should be placed between the backfill gravel and native soils to prevent migration of fine materials into the gravel. Native backfill soils should then be backfilled over the paper. The backfill material should be placed in 6-inch lifts and compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Failure of the reservoir levee is outside of the scope of our evaluation.

CONCLUSION

Based on our evaluation, liquefaction and sand boils do not appear to be a geologic hazard at the site. In addition, the depth to naturally occurring groundwater is not a problem at the site. The primary concern for the development is water runoff resulting from the toe drain not properly collecting the water associated with the reservoir and resulting in piping of water out of the soil immediately west of the reservoir. This water associated with the reservoir results in ponding of water on the eastern edge of the project planned for development. Provided the groundwater interceptor is constructed as described above, our investigation indicates the setback for the residential structures can be reduced from 500 feet to 250 feet southwest of the levee. No minimum setback is required west of the spillway. Figures 3 through 7 show the estimated location of the interceptor trench.

LIMITATIONS

Soils Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using the most appropriate and most current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Soils Engineering, physical changes in the site, either due to excavation or fill placement, new agency regulations, or possible changes in the proposed structure after the soils report is completed, may require the soils report to be professionally reviewed. In light of this, the owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that 2 years be considered a reasonable time for the usefulness of this report.

Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions do not vary significantly from those disclosed during our field investigation. If any variations or undesirable conditions are encountered during construction, the Soils Engineer should be notified so that supplemental recommendations may be made.

This report is a Soil Liquefaction Evaluation with the purpose of evaluating the soil conditions in terms of foundation design. The scope of our services did not include any Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands. Any statements, or absence of statements, in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes, and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical information presented herein is based upon professional interpretation utilizing standard engineering practices and a degree of conservatism deemed proper for this project. It is not warranted that such information and interpretation cannot be superseded by future geotechnical developments. We emphasize that this report is valid for the project outlined above, and should not be used for any other site.

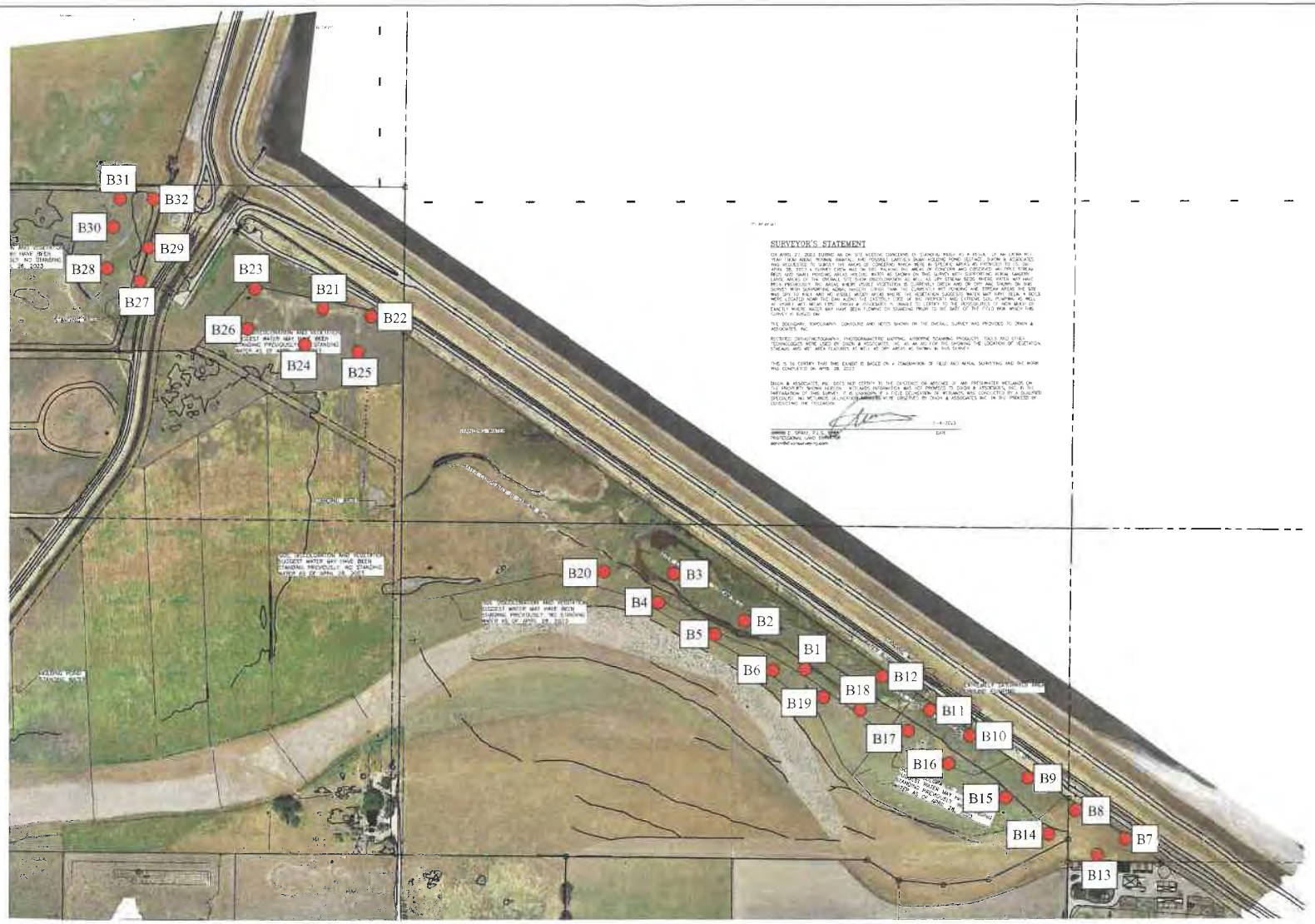
If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.



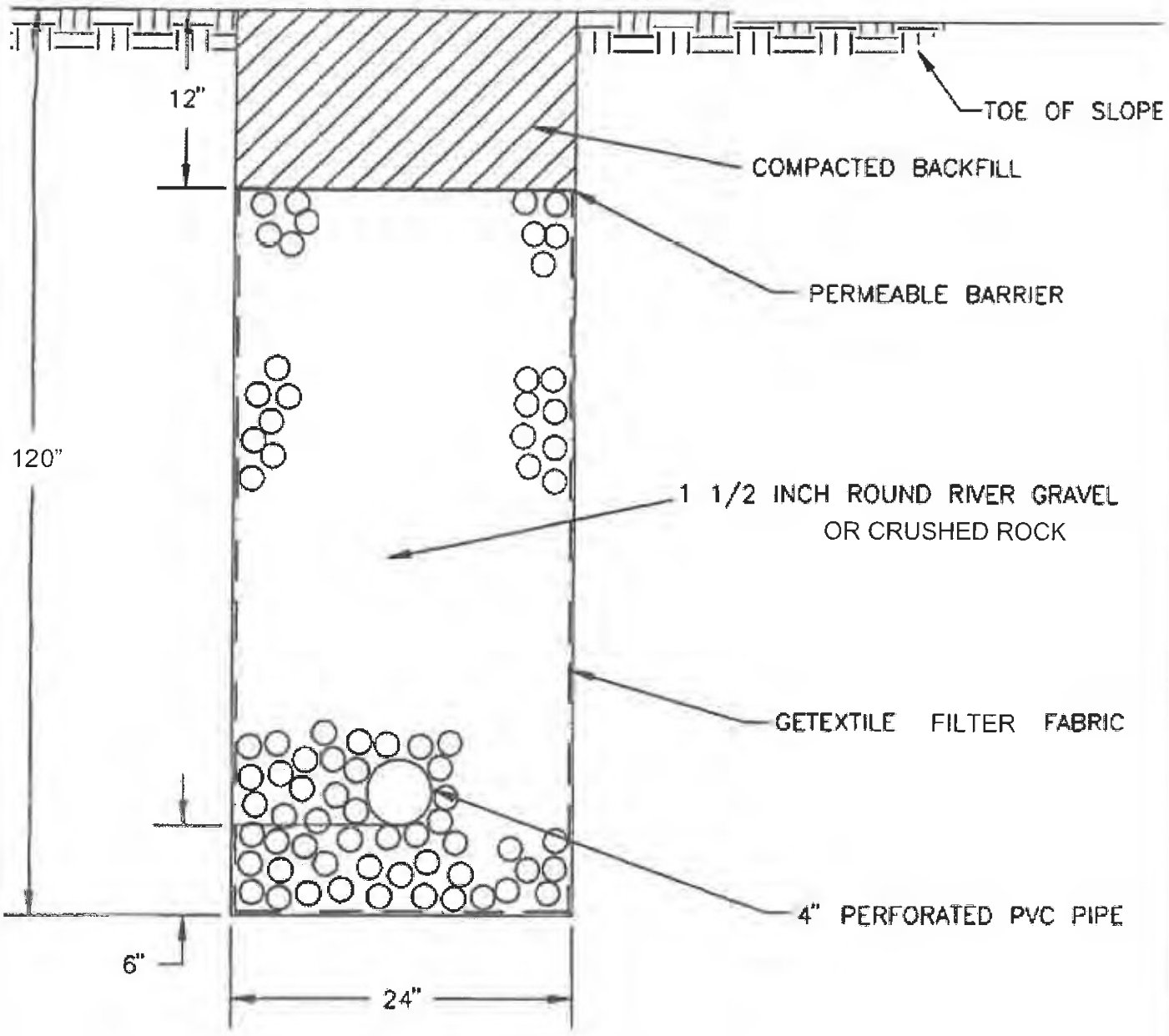
David R. Jarosz, II
Managing Engineer
RCE No. 60185/RGE No. 2698

DRJ:ht



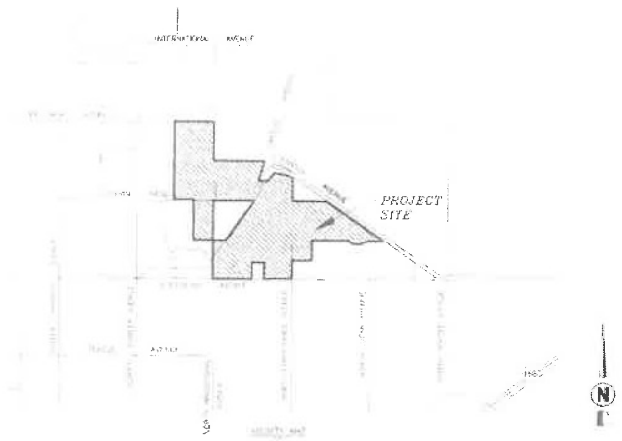
APPROXIMATE BORING LOCATION

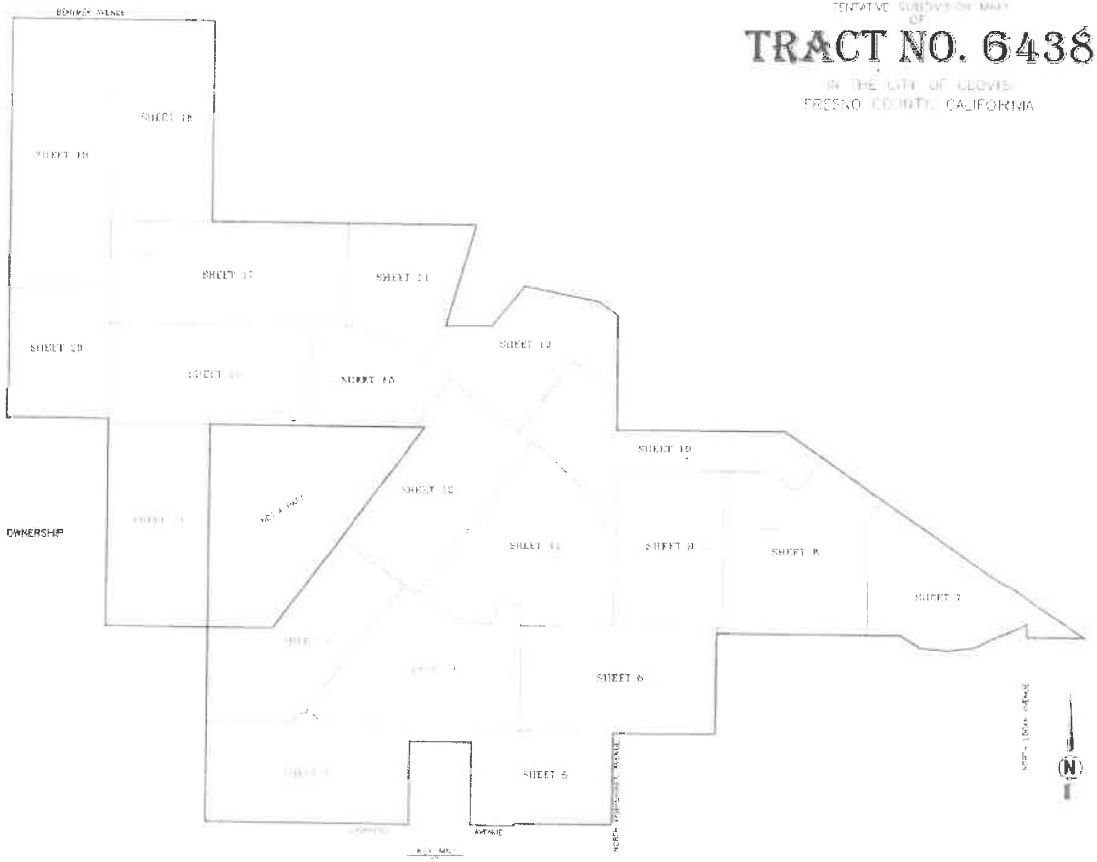
SITE MAP	Scale: NTS	Date: August 2023	Krazan GEOTECHNICAL ENGINEERING
Triangle Development **Shepherd Avenue and Locan Avenue** **Clovis, California**	Drawn by: HT	Approved by: DJ	
	Project No. 012-22165	Figure No. 1	



GROUND WATER INTERCEPTOR DETAIL

INTERCEPTOR DETAIL	Scale: NTS	Date: Sep. 2023	Krazan GEOTECHNICAL ENGINEERING
Triangle Development **Shepherd Avenue and Locan Avenue** **Clovis, California**	Drawn by: As Shown	Approved by: DJ	
	Project No. 012-22165	Figure No. 2	





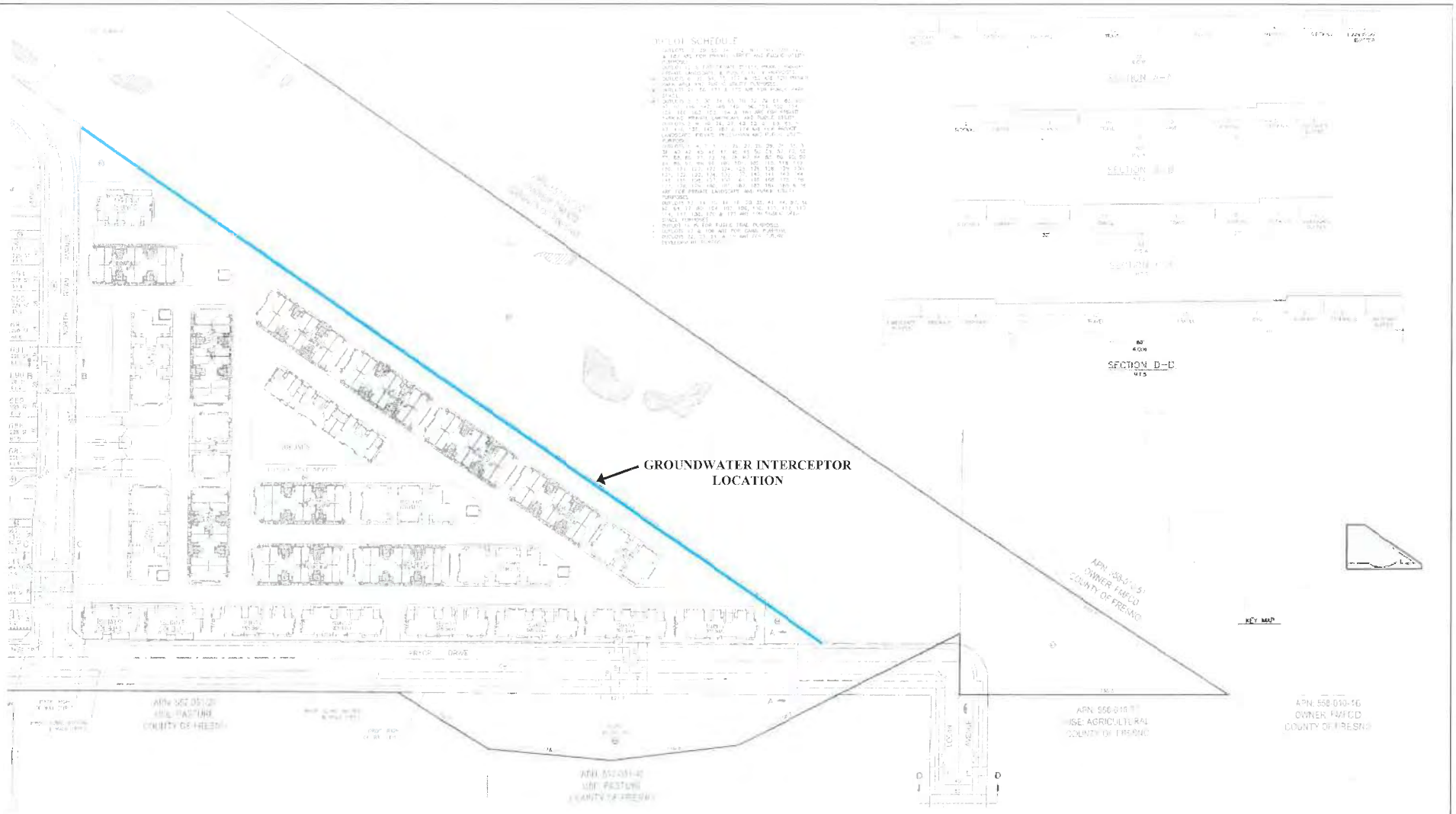
TRACT NO. 6438

IN THE CITY OF CLOVIS
FRESNO COUNTY, CALIFORNIA

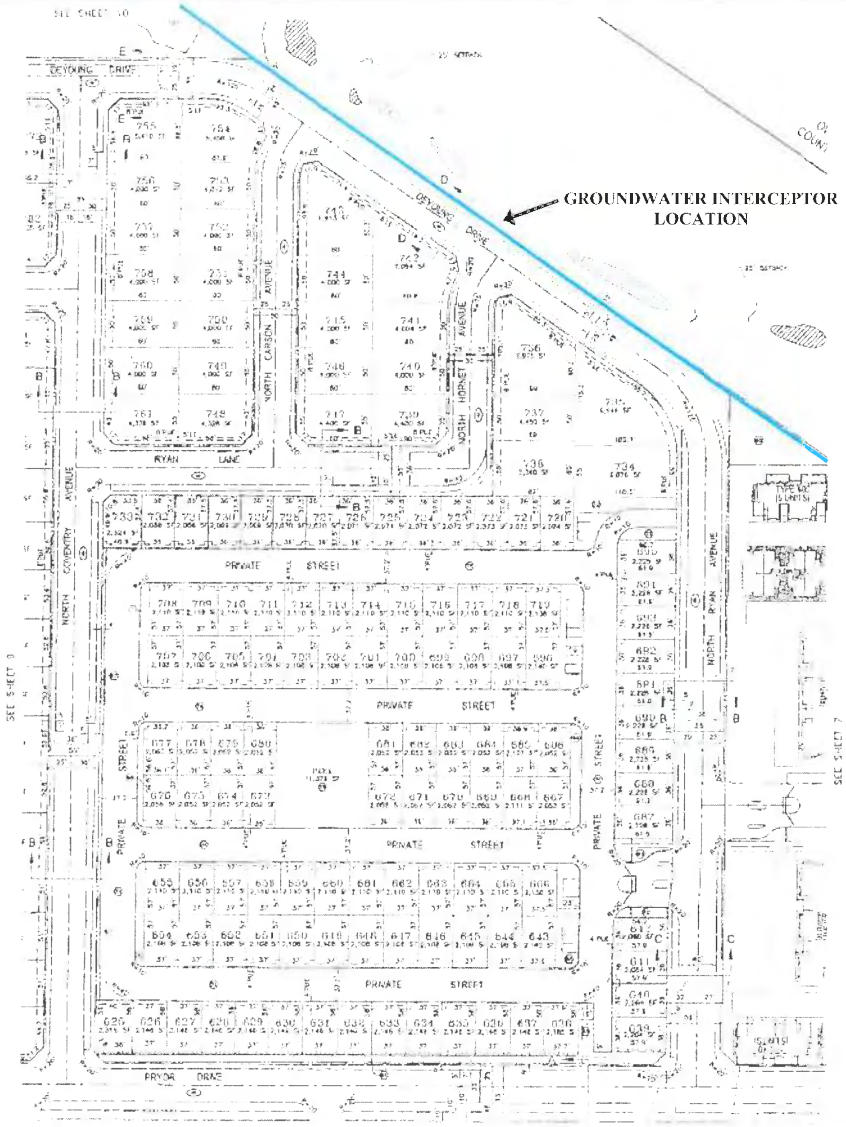
GAL DESCRIPTION:

ASSESSOR'S PARCEL NUMBER, SITE ADDRESS, USE & OWNERSHIP

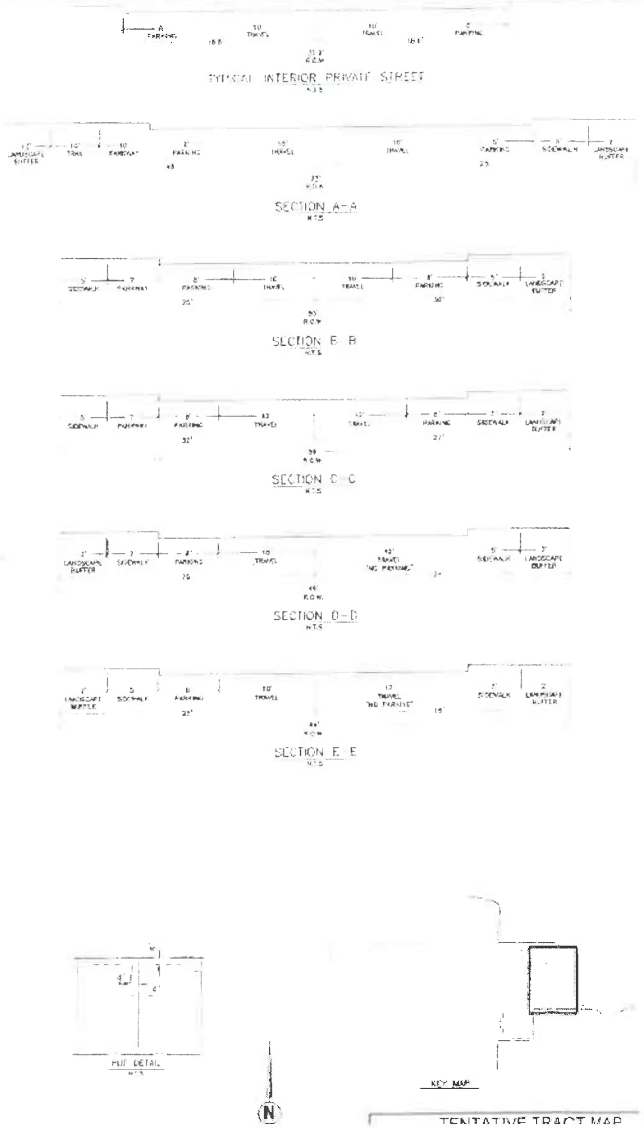
GROUNDWATER INTERCEPTOR LOCATION	Scale: NTS	Date: September 2023	Krazan GEOTECHNICAL ENGINEERING
Triangle Development **Shepherd Avenue and Locan Avenue** **Clovis, California**	Drawn by: HT	Approved by: DJ	
	Project No. 012-22165	Figure No. 3	



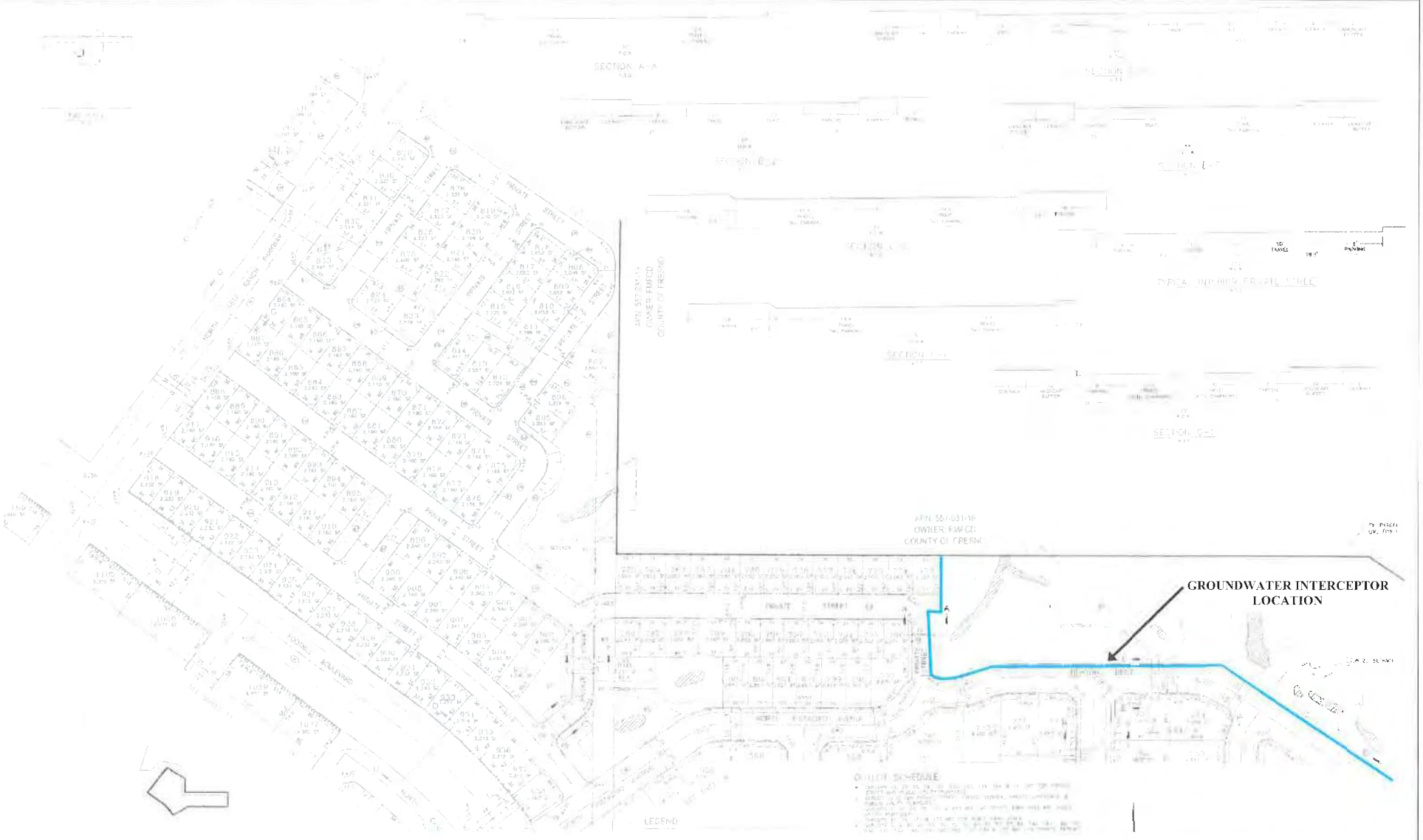
GROUNDWATER INTERCEPTOR LOCATION	Scale: NTS	Date: September 2023	Krazan GEOTECHNICAL ENGINEERING
Triangle Development Shepherd Avenue and Locan Avenue Clovis, California	Drawn by: HT	Approved by: DJ	
	Project No. 012-22165	Figure No. 4	







GROUNDWATER INTERCEPTOR LOCATION	**Scale:** NTS	**Date:** September 2023	Krazan GEOTECHNICAL ENGINEERING
Triangle Development **Shepherd Avenue and Locan Avenue** **Clovis, California**	**Drawn by:** HT	**Approved by:** DJ	
	Project No. 012-22165	**Figure No.** 5	



GROUNDWATER INTERCEPTOR LOCATION	Scale: NTS	Date: September 2023	Krazan GEOTECHNICAL ENGINEERING
Triangle Development Shepherd Avenue and Locan Avenue Clovis, California	Drawn by: HT	Approved by: DJ	
	Project No. 012-22165	Figure No. 6	



GROUNDWATER INTERCEPTOR LOCATION	Scale: NTS	Date: September 2023	Krazan GEOTECHINICAL ENGINEERING
Triangle Development Shepherd Avenue and Locan Avenue Clovis, California	Drawn by: HT	Approved by: DJ	
	Project No. 012-22165	Figure No. 7	

FIELD AND LABORATORY INVESTIGATIONS

Field Investigation

The field investigation consisted of a surface reconnaissance and a subsurface exploratory program. Thirty-two 4½-inch exploratory borings were advanced. The boring locations are shown on the site plan.

The soils encountered were logged in the field during the exploration and, with supplementary laboratory test data, are described in accordance with the Unified Soil Classification System.

Modified standard penetration tests and standard penetration tests were performed at selected depths. These tests represent the resistance to driving a 2½-inch and 1½-inch diameter split barrel sampler, respectively. The driving energy was provided by a hammer weighing 140 pounds falling 30 inches. Relatively undisturbed soil samples were obtained while performing this test. Bag samples of the disturbed soil were obtained from the auger cuttings. The modified standard penetration tests are identified in the sample type on the boring logs with a full shaded in block. The standard penetration tests are identified in the sample type on the boring logs with half of the block shaded. All samples were returned to our Clovis laboratory for evaluation.

Laboratory Investigation

The laboratory investigation was programmed to determine the physical and mechanical properties of the foundation soil underlying the site. Test results were used as criteria for determining the engineering suitability of the surface and subsurface materials encountered.

In situ moisture content, dry density, sieve analysis, Atterberg limits and permeability tests were determined for the undisturbed samples representative of the subsurface material. These tests, supplemented by visual observation, comprised the basis for our evaluation of the site material.

The logs of the exploratory borings and laboratory determinations are presented herein.

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

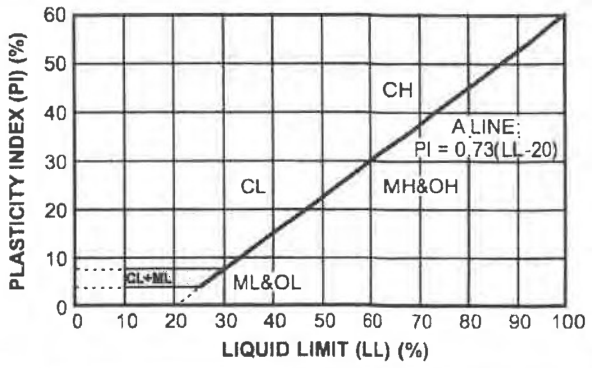
CONSISTENCY CLASSIFICATION

Description	Blows per Foot
Granular Soils	
Very Loose	< 5
Loose	5 – 15
Medium Dense	16 – 40
Dense	41 – 65
Very Dense	> 65
Cohesive Soils	
Very Soft	< 3
Soft	3 – 5
Firm	6 – 10
Stiff	11 – 20
Very Stiff	21 – 40
Hard	> 40

GRAIN SIZE CLASSIFICATION

Grain Type	*Standard Sieve Size*	*Grain Size in Millimeters*
Boulders	Above 12 inches	Above 305
Cobbles	12 to 13 inches	305 to 76.2
Gravel	3 inches to No. 4	76.2 to 4.76
Coarse-grained	3 to ¾ inches	76.2 to 19.1
Fine-grained	¾ inches to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
Coarse-grained	No. 4 to No. 10	4.76 to 2.00
Medium-grained	No. 10 to No. 40	2.00 to 0.42
Fine-grained	No. 40 to No. 200	0.42 to 0.074
Silt and Clay	Below No. 200	Below 0.074

PLASTICITY CHART



Log of Boring B1

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-1

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 35 Feet **At Completion:** 26 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches Medium dense below 2 feet				
2				7.9		16
4		Percent passing No. 200 - 43.6%	105.5	7.2		24
6		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained with CLAY; reddish-brown, damp, drills easily Percent passing No. 200 - 17.5%	120.7	4.4		28
8		***SANDY SILT/SANDY CLAY (ML/CL)*** Very stiff, fine- to medium-grained; reddish-brown, damp, drills easily Percent passing No. 200 - 64.1%	117.1	14.0		15
10		***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine- to medium-grained; brown, moist, drills easily Percent passing No. 200 - 52.9%	105.5	19.6		25
12		***CLAYEY SILTY SAND (SM/SC)*** Medium dense, fine- to medium-grained; brown, moist, drills easily Percent passing No. 200 - 40.1%	111.6	16.0		17
14			110.7	17.2		20
16		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; brown, moist, drills easily Percent passing No. 200 - 26.9%				
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-29-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B1

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

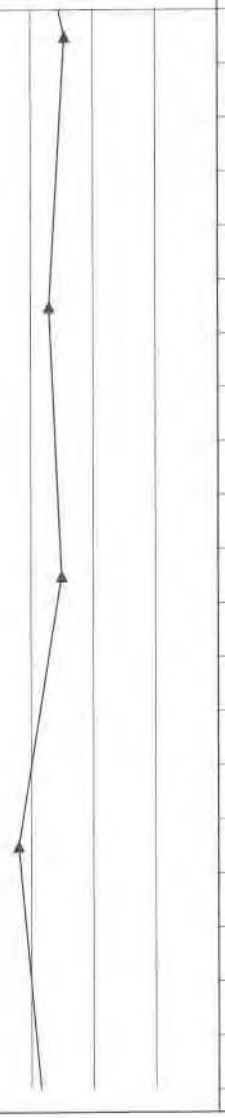
Figure No.: A-1

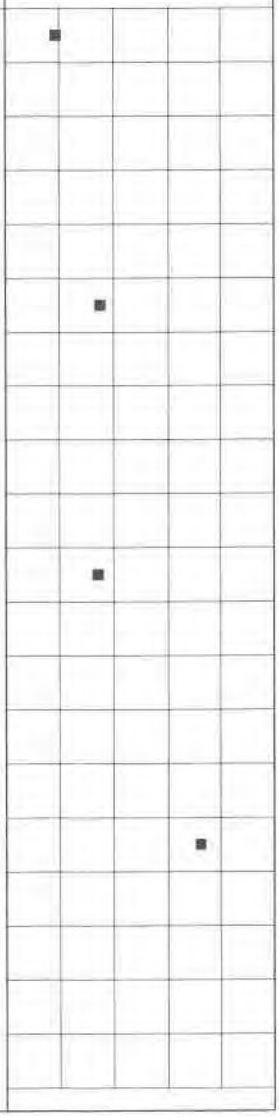
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 35 Feet **At Completion:** 26 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
20		Dense below 20 feet	113.9	9.5		31
22						
24						
26		Medium dense below 25 feet Percent passing No. 200 - 44.2% Saturated below 26 feet	110.7	17.6		26
28						
30		***SILTY SAND/SANDY SILT (SM/ML)*** Dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 49.8%	111.8	17.2		30
32						
34						
36		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 52.3%	80.4	36.2		16
38						
40						





Drill Method: Hollow Stem

Drill Date: 8-29-22

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B1

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-1

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 35 Feet **At Completion:** 26 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
42		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 35.9%	110.9	16.2		24		
44								
46		Very dense below 45 feet Percent passing No. 200 - 38.5%	109.4	17.3		22		
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-29-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Sheet: 3 of 3

Log of Boring B2

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

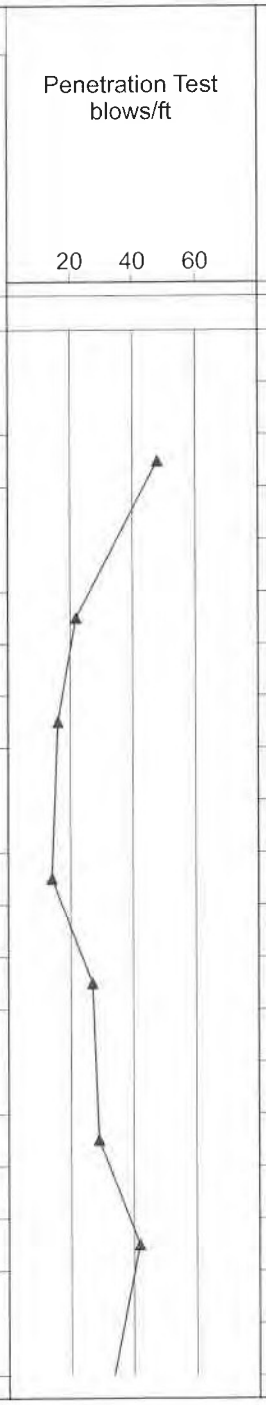
Figure No.: A-2

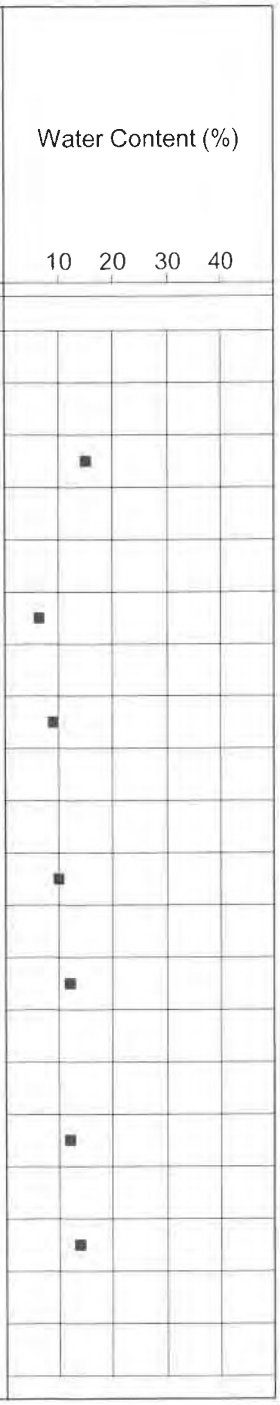
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 32 Feet **At Completion:** 26 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches				
2		***SANDY SILT (ML)*** Very dense, fine- to medium-grained; brown, damp, drills firmly	108.4	15.1		48
4						
6		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained with CLAY; brown, damp, drills easily Percent passing No. 200 - 27.9%	116.7	6.4		22
8		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; brown, damp, drills easily	118.0	9.1		16
10			115.3	10.1		14
12		Percent passing No. 200 - 43.4%	123.5	12.2		27
14		***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine- to medium-grained; brown, moist, drills easily Percent passing No. 200 - 48.9%	117.0	12.2		29
16		Dense below 17 feet	118.1	14.0		42
18						
20		Percent passing No. 200 - 34.5%				





Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-29-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B2

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

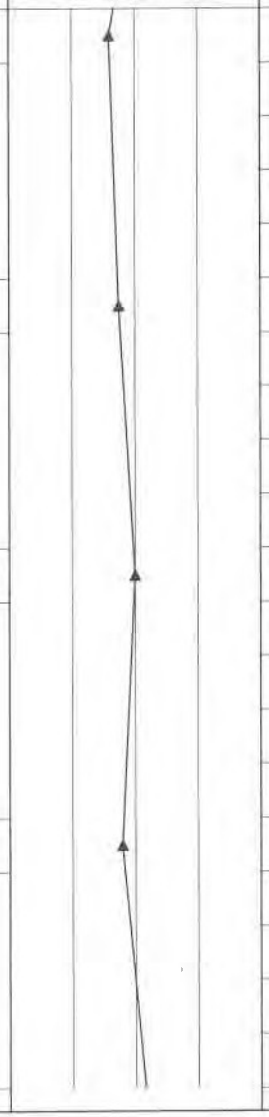
Figure No.: A-2

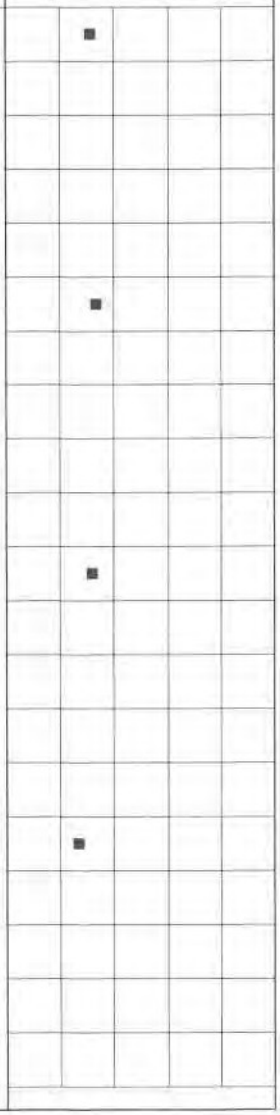
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 32 Feet **At Completion:** 26 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22	***SILTY SAND (SM)*** Dense, fine- to medium-grained; brown, damp, drills easily	109.2	15.7		32
24	***CLAYEY SAND (SC)*** Dense, fine- to medium-grained with thin lenses of SILTY SAND; reddish-brown, damp, drills easily				
26	Percent passing No. 200 - 39.7%	113.1	16.8		35
28					
30	Percent passing No. 200 - 34.6%	114.3	16.1		40
32	Saturated below 32 feet				
34	***CLAYEY SILTY SAND (SM/SC)*** Dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 26.4%	120.8	13.6		36
36					
38	***SILTY SAND (SM)*** Dense, fine- to medium-grained; brown, moist, drills easily Percent passing No. 200 - 33.0%				
40					





Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-29-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B2

Project: Triangle Development

Project No: 012-22165

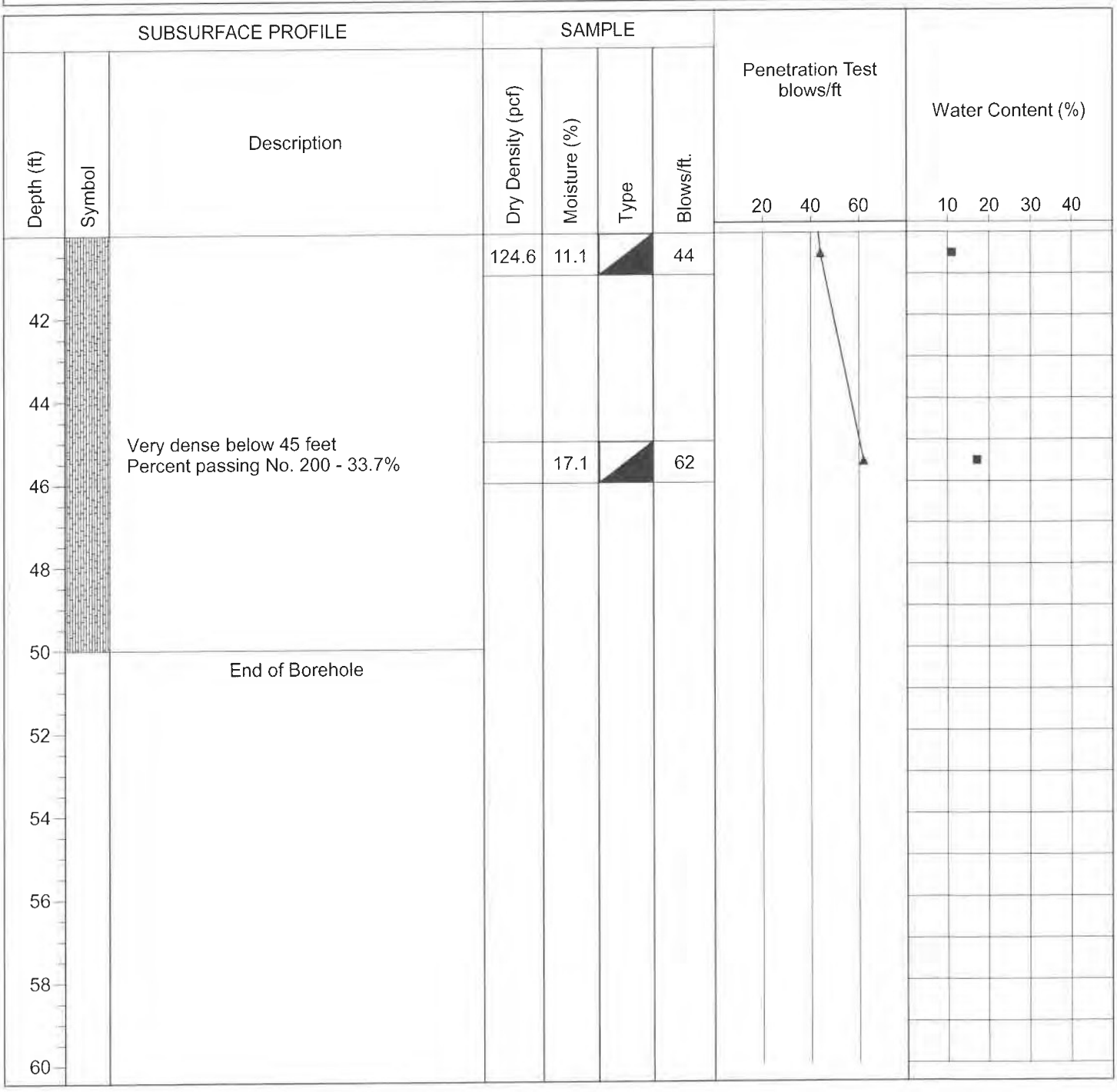
Client: Wilson Homes

Figure No.: A-2

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 32 Feet **At Completion:** 26 Feet



Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-29-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B3

Project: Triangle Development

Project No: 012-22165

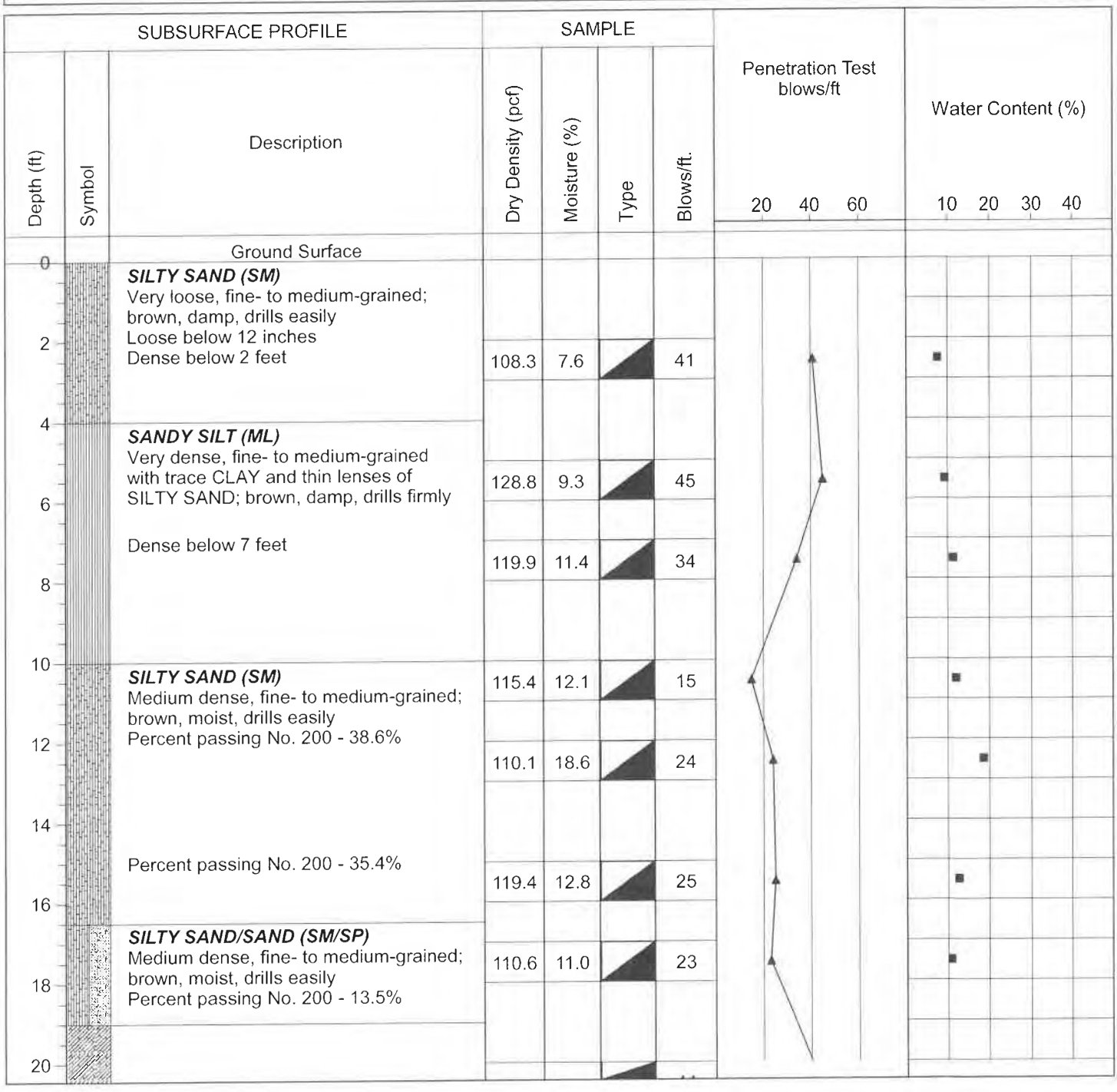
Client: Wilson Homes

Figure No.: A-3

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 29 Feet **At Completion:** 24 Feet



Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-30-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B3

Project: Triangle Development

Project No: 012-22165

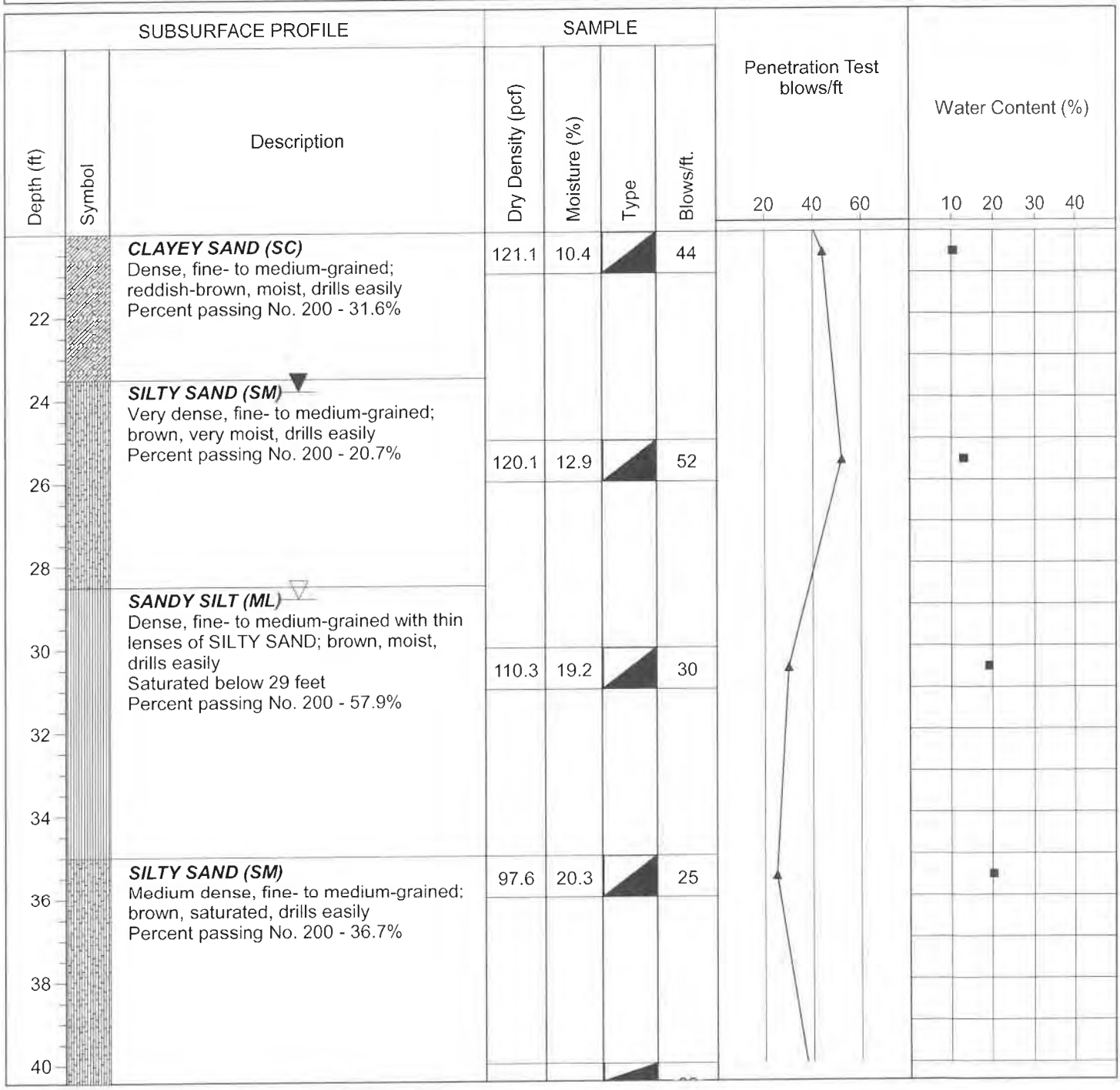
Client: Wilson Homes

Figure No.: A-3

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 29 Feet **At Completion:** 24 Feet



Drill Method: Hollow Stem

Drill Date: 8-30-22

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B3

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-3

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 29 Feet **At Completion:** 24 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
42		Percent passing No. 200 - 44.8%	104.5	20.8		39		
44								
46		***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 52.2%	90.1	26.6		27		
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-30-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B4

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-4

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 35 Feet **At Completion:** 27 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches Medium dense below 2 feet				
2			99.4	8.8		26
4		***CLAYEY SILTY SAND (SM/SC)*** Medium dense, fine- to medium-grained; brown, damp, drills easily Percent passing No. 200 - 43.8%				
6			123.9	6.1		21
8			122.8	7.6		17
10		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Medium dense, fine- to medium-grained; reddish-brown, damp, drills easily Percent passing No. 200 - 46.2%	119.9	13.9		26
12		***CLAYEY SAND (SC)*** Dense, fine- to medium-grained; brown, moist, drills easily Percent passing No. 200 - 39.6%	116.3	15.4		34
14		***SILTY SAND (SM)*** Dense, fine- to medium-grained; brown, damp, drills easily Percent passing No. 200 - 29.4% Medium dense below 17 feet	118.0	12.9		33
16			115.1	14.4		26
18						
20		Dense below 20 feet				

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-30-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B4

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

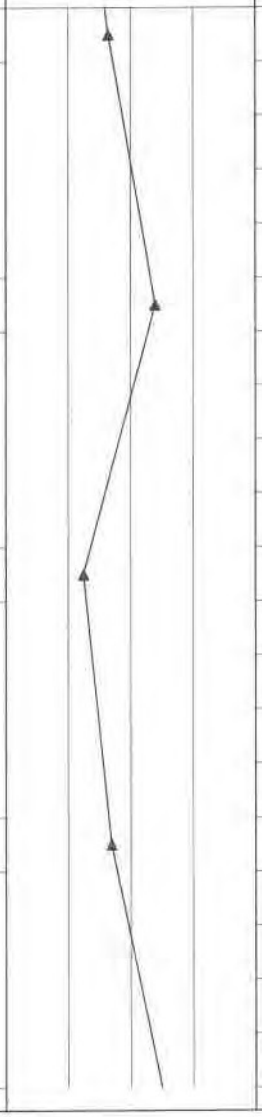
Figure No.: A-4

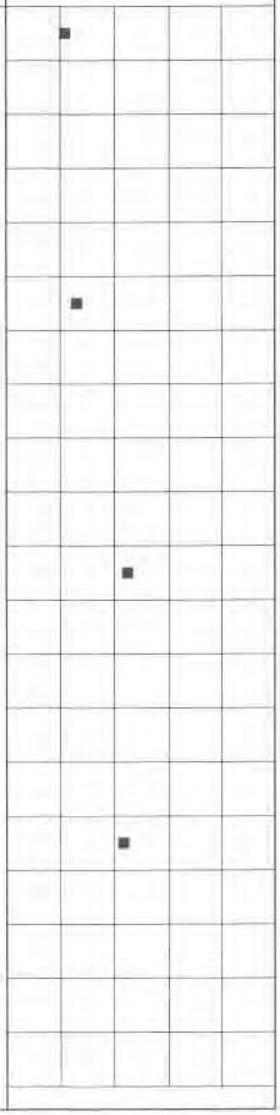
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 35 Feet **At Completion:** 27 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Percent passing No. 200 - 28.2%	113.0	10.9		33
22						
24		***CLAYEY SAND (SC)*** Very dense, fine- to medium-grained; brown, damp, drills firmly Percent passing No. 200 - 37.3%	97.9	13.1		48
26						
28						
30		***SANDY CLAY (CL)*** Very stiff, fine- to medium-grained; reddish-brown, moist, drills easily Percent passing No. 200 - 55.7%	97.0	22.5		25
32						
34		***SILTY SAND (SM)*** Dense, fine- to medium-grained with trace CLAY and thin lenses of SANDY SILT; brown, very moist, drills easily Saturated below 35 feet Percent passing No. 200 - 33.2%	105.2	21.8		34
36						
38						
40		Very dense and drills hard below 40 feet				





Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-30-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B4

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-4

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 35 Feet **At Completion:** 27 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
42		Percent passing No. 200 - 44.4%	98.3	24.3		52		
44		Percent passing No. 200 - 22.0%	120.8	11.2		51		
46								
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Date: 8-30-22

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B5

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-5

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 39 Feet **At Completion:** 34 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches Medium dense below 2 feet				
2				12.6		10
4		Percent passing No. 200 - 33.1%	101.1	4.2		16
6		***SANDY SILT (ML)*** Medium dense, fine- to medium-grained with trace CLAY; brown, damp, drills easily	97.1	7.1		18
8						
10		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, moist, drills easily Percent passing No. 200 - 29.4%	120.1	6.4		17
12			115.1	14.1		25
14		Percent passing No. 200 - 22.5%	120.6	10.1		25
16		***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine- to medium-grained with CLAY; brown, damp, drills easily	109.2	16.7		27
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-31-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B5

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-5

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 39 Feet **At Completion:** 34 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; brown, moist, drills easily Percent passing No. 200 - 36.7%	112.8	15.3		26
24						
26		Percent passing No. 200 - 36.3%	107.9	20.0		21
28		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, moist, drills easily				
30		Percent passing No. 200 - 42.7%	115.8	16.6		21
32						
34		▼				
36		Very moist below 35 feet Percent passing No. 200 - 44.4%	107.9	17.6		19
38		▽				
40						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Date: 8-31-22

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B5

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

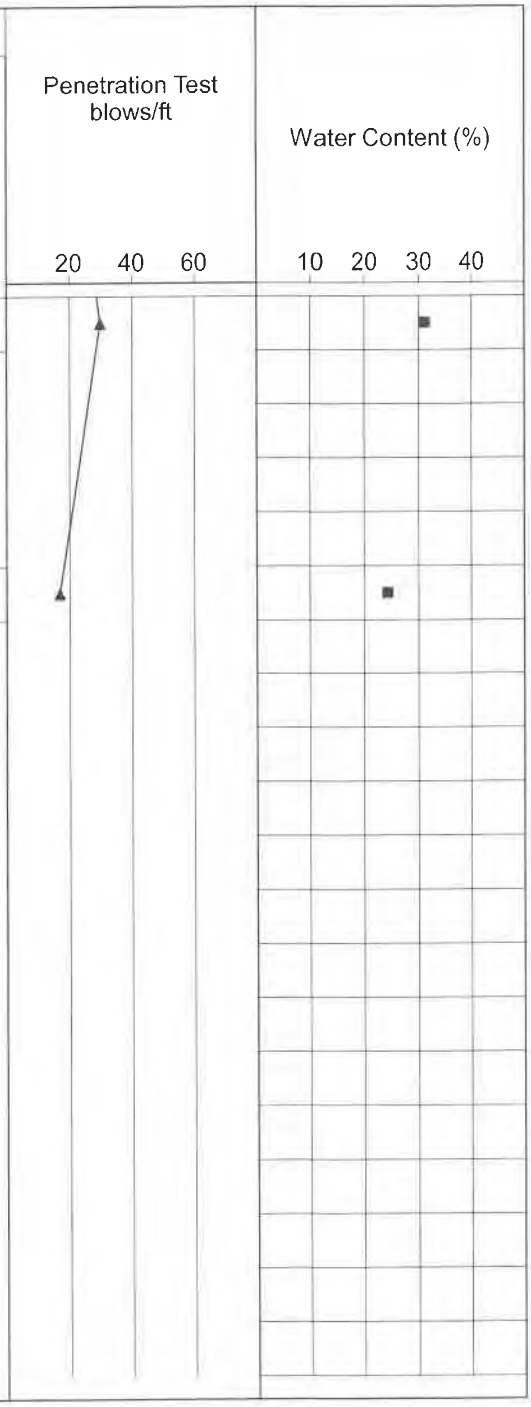
Figure No.: A-5

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 39 Feet **At Completion:** 34 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42		***SILTY SAND (SM)*** Dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 37.3%	85.1	31.2		30
44		***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 45.7%	94.7	24.5		17
46						
48						
50		End of Borehole				
52						
54						
56						
58						
60						



Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-31-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B6

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-6

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 32 Feet **At Completion:** 27 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches Medium dense below 2 feet Percent passing No. 200 - 43.5%						
2			76.9	10.3		12		
4								
6			88.9	8.1		13		
6		***CLAYEY SANDY SILT (ML)*** Medium dense, fine- to medium-grained; brown, damp, drills easily						
8			115.6	10.1		18		
10		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, damp, drills easily Percent passing No. 200 - 26.0%	112.2	5.6		26		
12		Percent passing No. 200 - 43.5%	116.7	14.5		26		
14								
16			111.5	12.9		25		
16		***SANDY CLAY (CL)*** Very stiff, fine- to medium-grained; brown, moist, drills easily						
18			105.3	14.4		17		
20								

Drill Method: Hollow Stem

Drill Date: 8-31-22

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B6

Project: Triangle Development

Project No: 012-22165

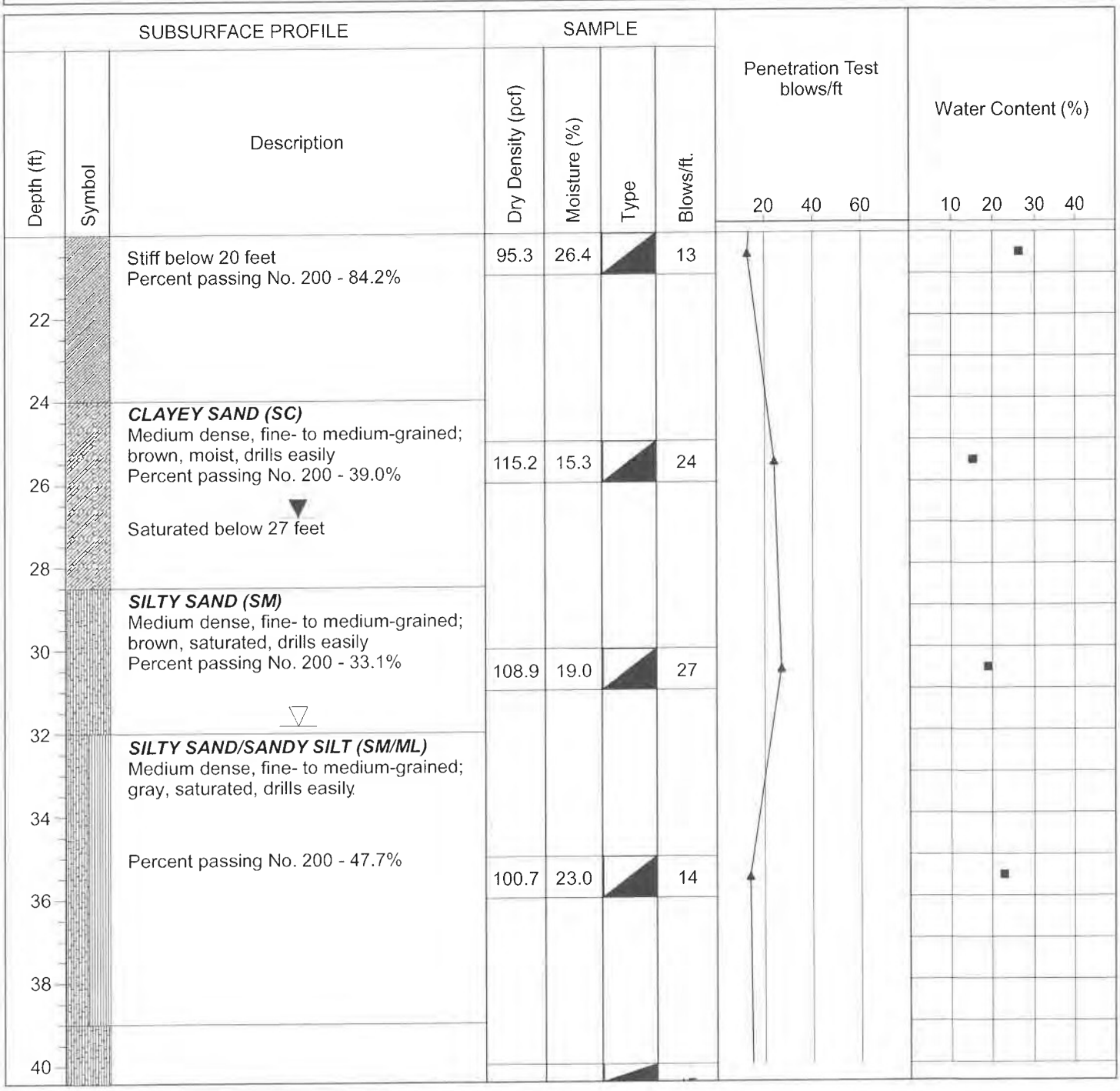
Client: Wilson Homes

Figure No.: A-6

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 32 Feet **At Completion:** 27 Feet



Drill Method: Hollow Stem

Drill Date: 8-31-22

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B6

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-6

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 32 Feet **At Completion:** 27 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
42		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 39.2%		19.6		15		
44								
46		Percent passing No. 200 - 42.1%	98.9	22.9		27		
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 8-31-22

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B32

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-32

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***WEATHERED ROCK*** Very loose, highly weathered; reddish-brown, damp, drills easily Medium dense below 12 inches Very dense and drills hard below 18 inches				
2			79.4	9.9		50+
4						
6			120.7	7.8		50+
		WEATHERED ROCK Very dense, moderately weathered; gray, damp, drills hard Auger refusal at 8 feet		4.4		50+
8		End of Borehole				
10						
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45B

Driller: Brent Snyder

Krazan and Associates

Drill Date: 7-7-23

Hole Size: 4½ Inches

Elevation: 8 Feet

Sheet: 1 of 1

Log of Boring B7

Project: Triangle Development

Project No: 012-22165

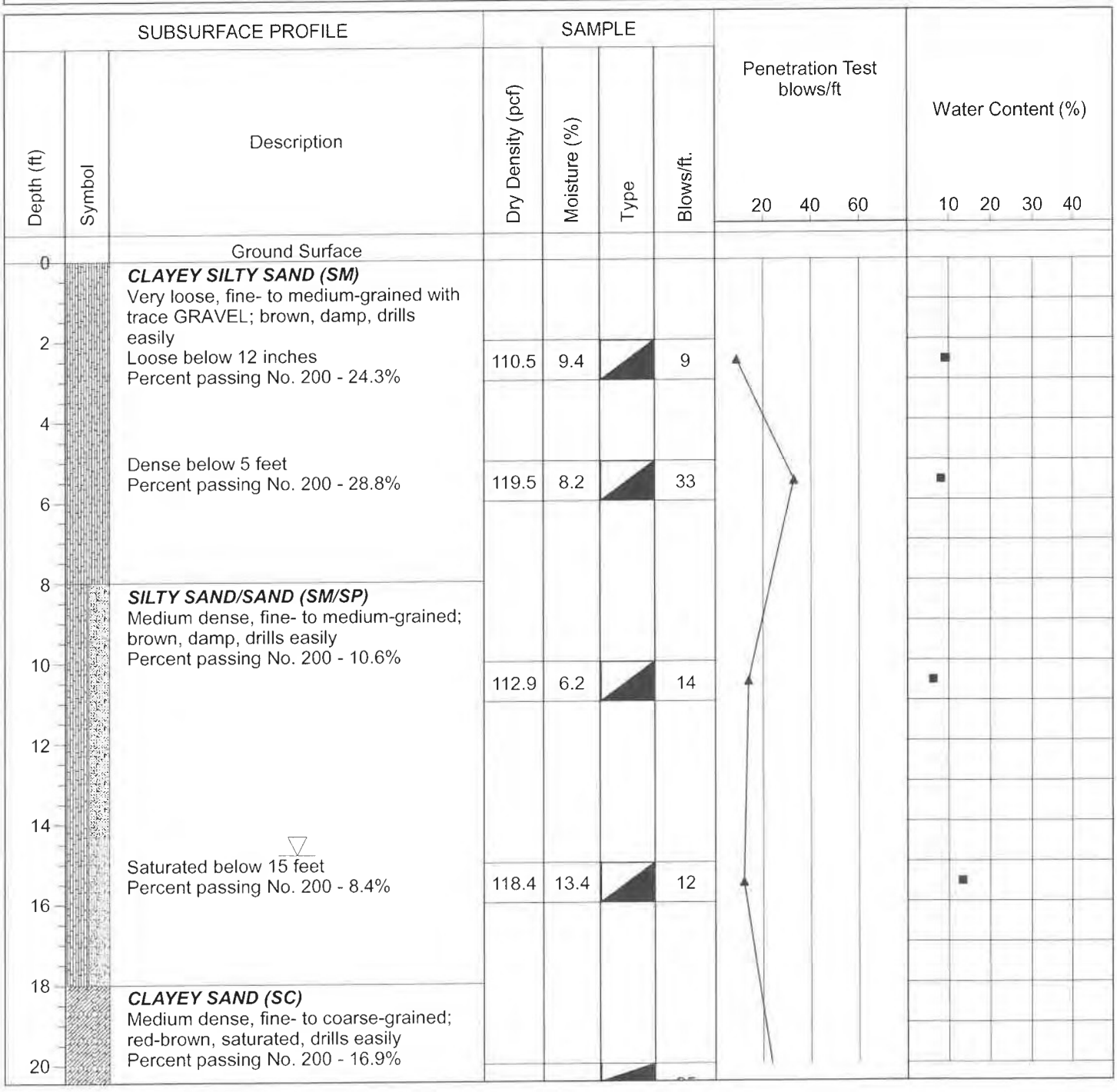
Client: Wilson Homes

Figure No.: A-7

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 15 Feet **At Completion:** 23 Feet



Drill Method: Hollow Stem

Drill Date: 2-14-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B7

Project: Triangle Development

Project No: 012-22165

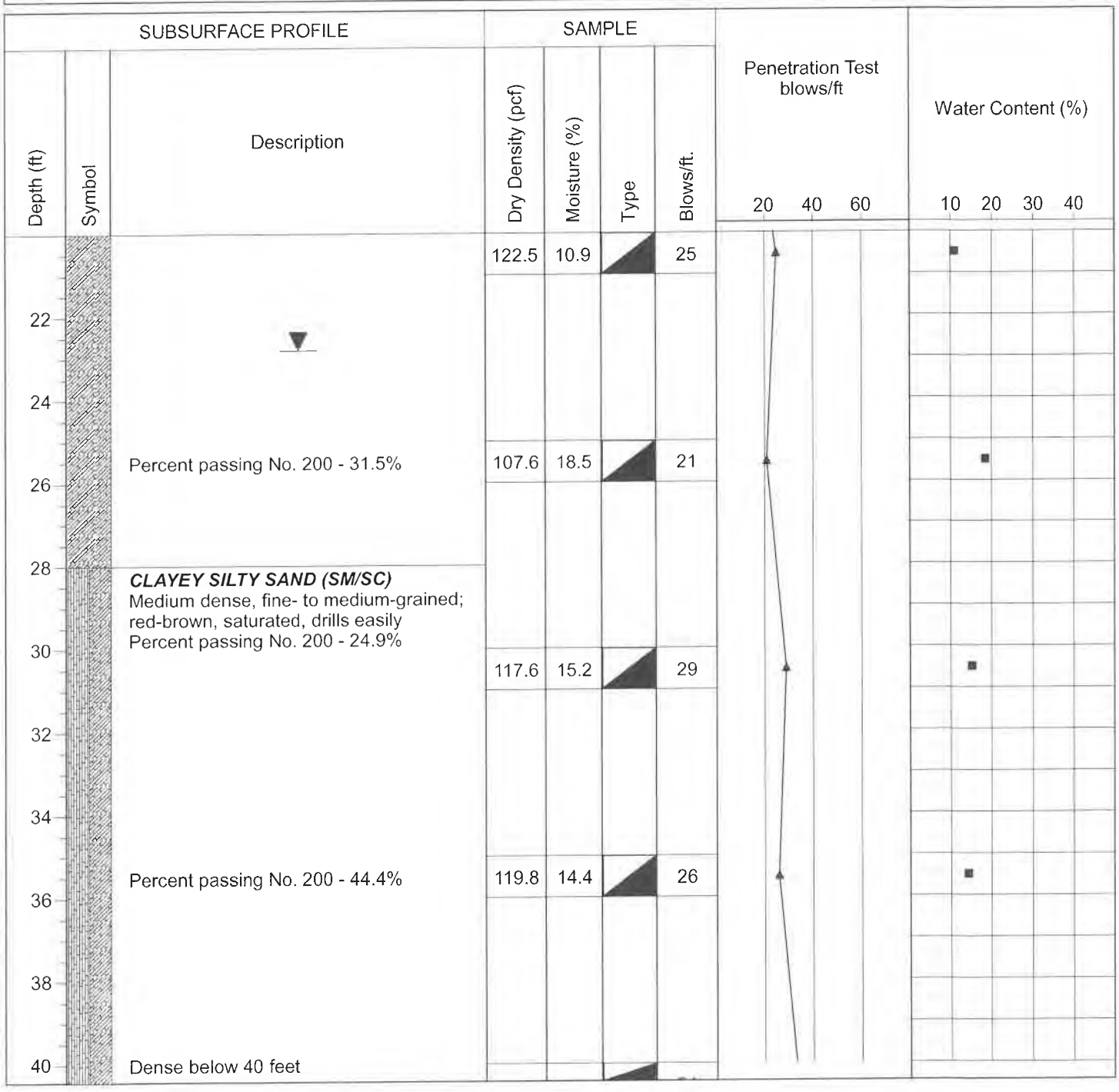
Client: Wilson Homes

Figure No.: A-7

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 15 Feet **At Completion:** 23 Feet



Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-14-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B7

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-7

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 15 Feet **At Completion:** 23 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
42		Percent passing No. 200 - 37.8%	119.7	15.2		34		
44		***SILTY SAND (SM)*** Dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 36.1%	126.3	13.6		41		
46								
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Date: 2-14-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B8

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-8

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 25 Feet **At Completion:** 23 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		SUBSURFACE PROFILE / SAMPLE				
0		Ground Surface				
0		***CLAYEY SILTY SAND (SM/SC)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches Percent passing No. 200 - 28.1%				
2			128.6	8.2		12
4		***SAND (SP)*** Medium dense, fine- to coarse-grained with trace GRAVEL; gray, damp, drills easily Percent passing No. 200 - 3.3%	107.7	2.7		12
6						
8		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to coarse-grained with GRAVEL; gray, damp, drills easily				
10		Percent passing No. 200 - 8.2%	117.0	2.9		14
12						
14		***SILTY SAND/SANDY SILT (SM/ML)*** Loose, fine- to medium-grained; brown, damp, drills easily Percent passing No. 200 - 46.4%	111.5	17.1		9
16						
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-14-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B8

Project: Triangle Development

Project No: 012-22165

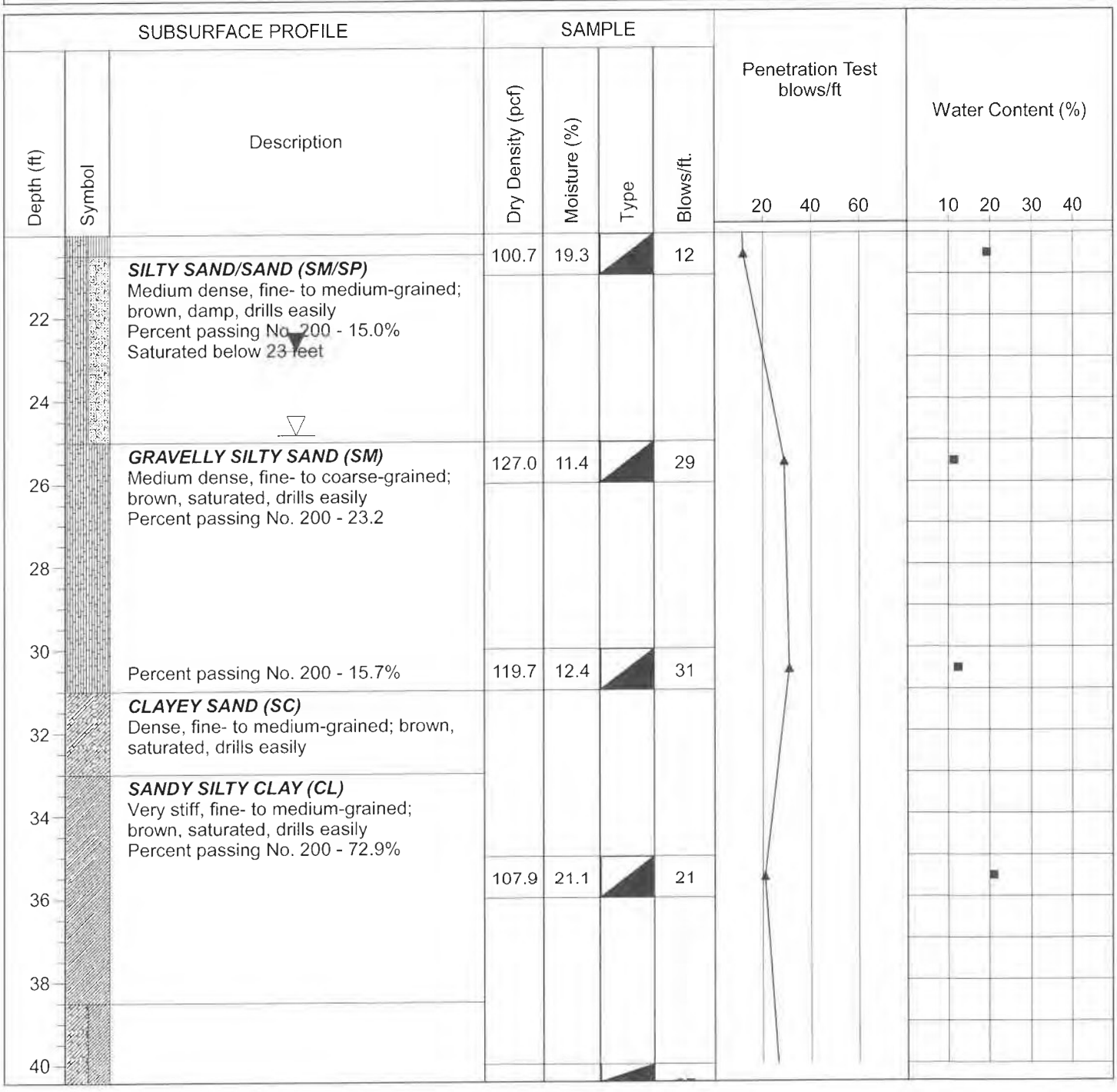
Client: Wilson Homes

Figure No.: A-8

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 25 Feet **At Completion:** 23 Feet



Drill Method: Hollow Stem

Drill Date: 2-14-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B8

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-8

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 25 Feet **At Completion:** 23 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 50.6%	103.1	16.6		27
44						
46		Dense below 45 feet Percent passing No. 200 - 46.2%	119.5	18.5		41
48						
50		End of Borehole				
52						
54						
56						
58						
60						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-14-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B9

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-9

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 20 Feet **At Completion:** 17 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***CLAYEY SANDY SILT (ML)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches Medium dense below 2 feet Percent passing No. 200 - 62.0%	91.6	21.7		10
4		***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine- to medium-grained with trace CLAY; brown, damp, drills easily Percent passing No. 200 - 50.5%	111.2	4.4		18
8		***SAND (SP)*** Medium dense, fine- to coarse-grained with trace GRAVEL; light brown, damp, drills easily Percent passing No. 4.5%	106.9	1.6		12
14		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to coarse-grained; light brown, damp, drills easily Percent passing No. 200 - 8.3% ▼	116.4	3.3		14
18		▽ Saturated below 20 feet				

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-16-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B9

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-9

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 20 Feet **At Completion:** 17 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Percent passing No. 200 - 9.1%	119.2	10.6		21
22						
24		***CLAYEY SILTY SAND (SM)*** Medium dense, fine- to medium-grained with thin lenses of CLAYEY SAND; brown, saturated, drills easily Percent passing No. 200 - 20.8%	113.1	14.4		20
26						
28						
30		Percent passing No. 200 - 19.8%	121.4	12.6		20
32						
		With increased fines below 33 feet				
34						
		Percent passing No. 200 - 41.9%	114.6	17.1		19
36						
38						
40						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-16-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B9

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-9

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 20 Feet **At Completion:** 17 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42		***CLAYEY SAND (SC)*** Dense, fine- to medium-grained; brown, saturated, drills firmly Percent passing No. 200 - 37.0%	106.4	20.8		40
44						
46		Very dense below 45 feet Percent passing No. 200 - 43.7%	108.1	19.3		52
48						
50		End of Borehole				
52						
54						
56						
58						
60						

SUBSURFACE PROFILE

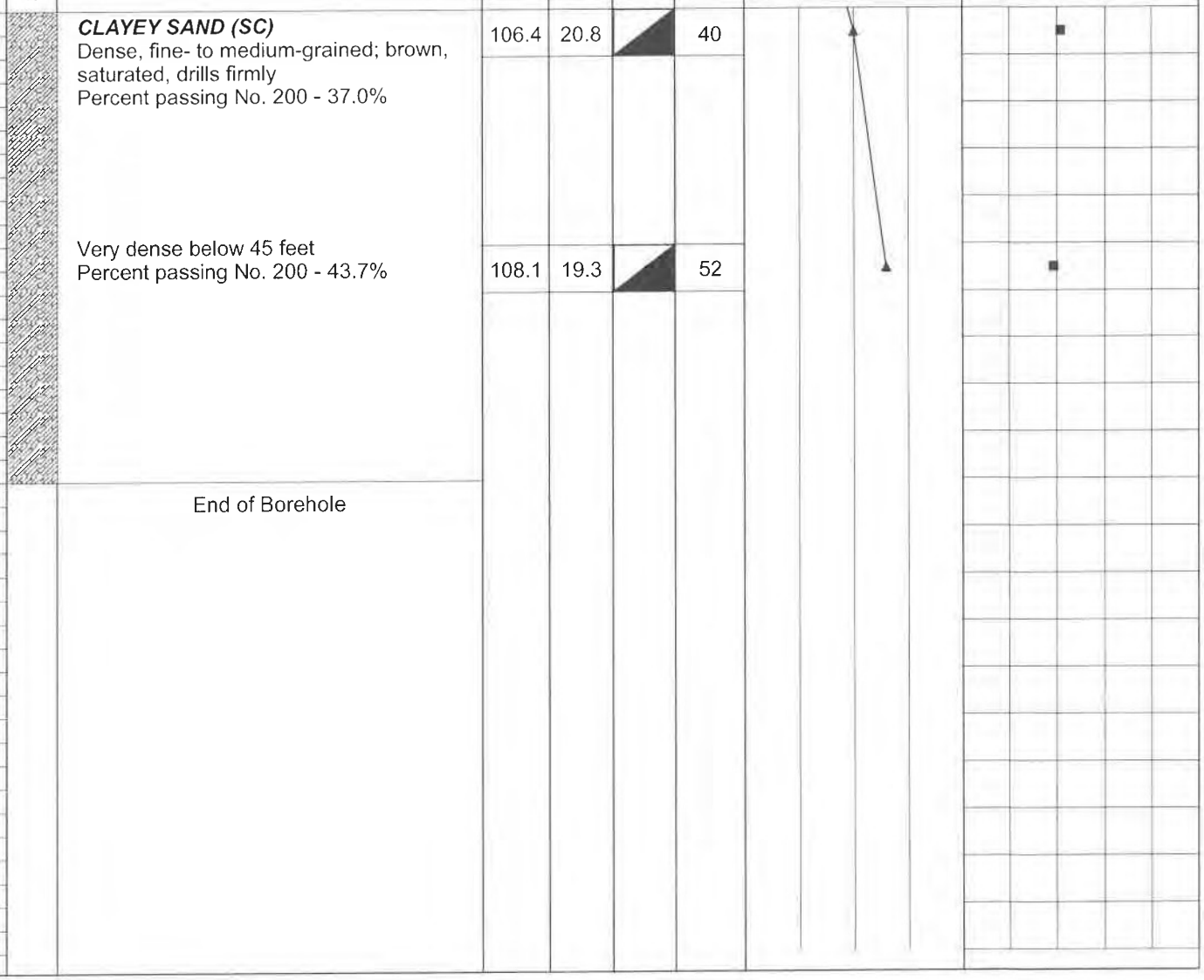
SAMPLE

Penetration Test blows/ft

20 40 60

Water Content (%)

10 20 30 40



Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-16-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B10

Project: Triangle Development

Project No: 012-22165

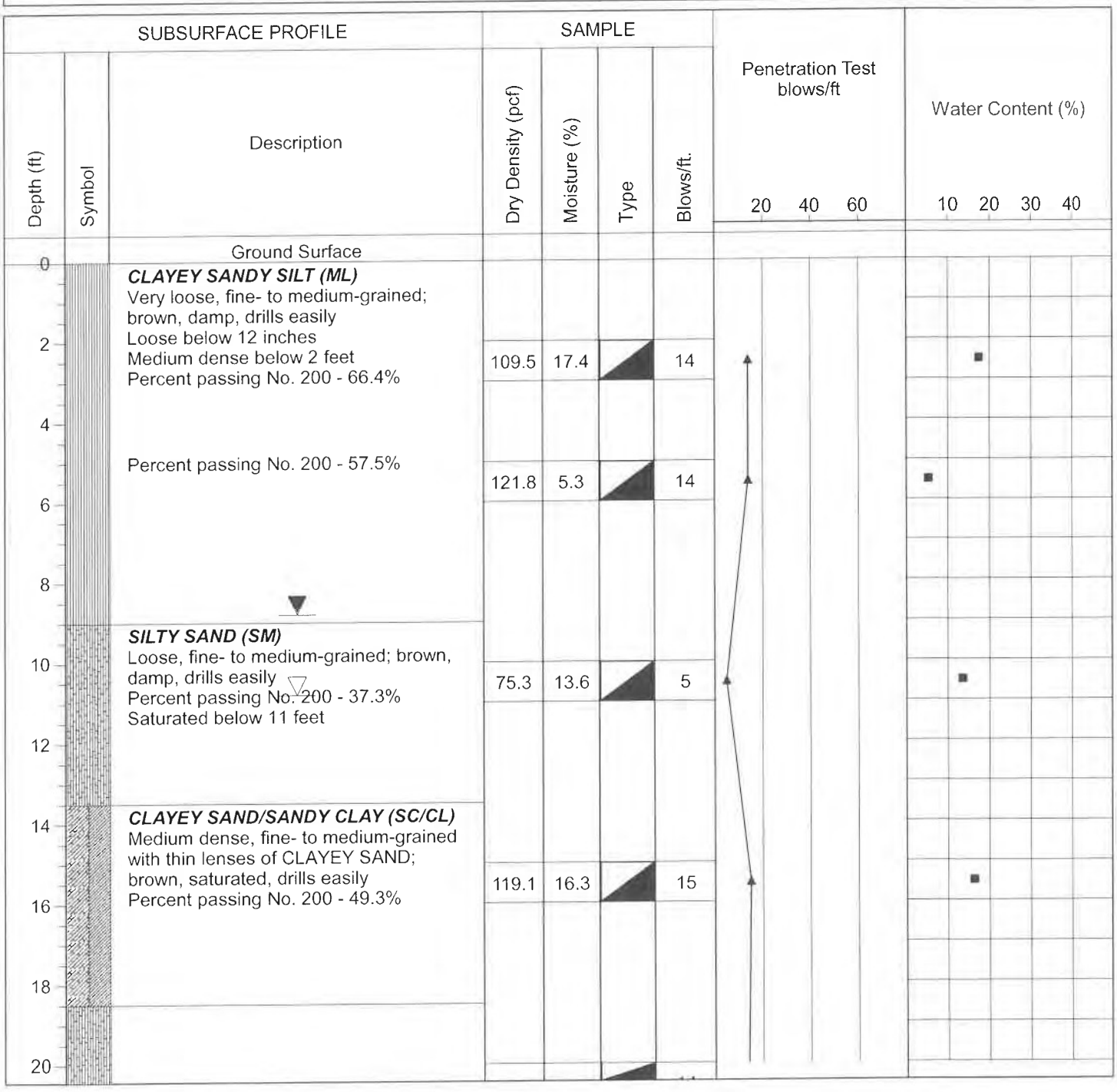
Client: Wilson Homes

Figure No.: A-10

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 11 Feet **At Completion:** 9 Feet



Drill Method: Hollow Stem

Drill Date: 2-16-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B10

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-10

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 11 Feet **At Completion:** 9 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		***SILTY SAND (SM)*** Medium dense, fine- to coarse-grained with CLAY; red-brown, saturated, drills easily Percent passing No. 18.1%	119.3	14.4		14
24		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; gray, saturated, drills easily Percent passing No. 200 - 30.6%	107.7	17.6		20
26						
28						
30		Percent passing No. 200 - 41.9%	104.8	20.5		17
32						
34						
36		With thin lenses of SAND below 35 feet Percent passing No. 200 - 40.8%	106.2	21.4		21
38						
40						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-16-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B10

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-10

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 11 Feet **At Completion:** 9 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42		Percent passing No. 200 - 43.5%	95.7	22.2		21
44						
46		Percent passing No. 200 - 36.4%	108.3	20.5		21
48						
50		End of Borehole				
52						
54						
56						
58						
60						

SUBSURFACE PROFILE

SAMPLE

Penetration Test blows/ft

20 40 60

Water Content (%)

10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-16-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B11

Project: Triangle Development

Project No: 012-22165

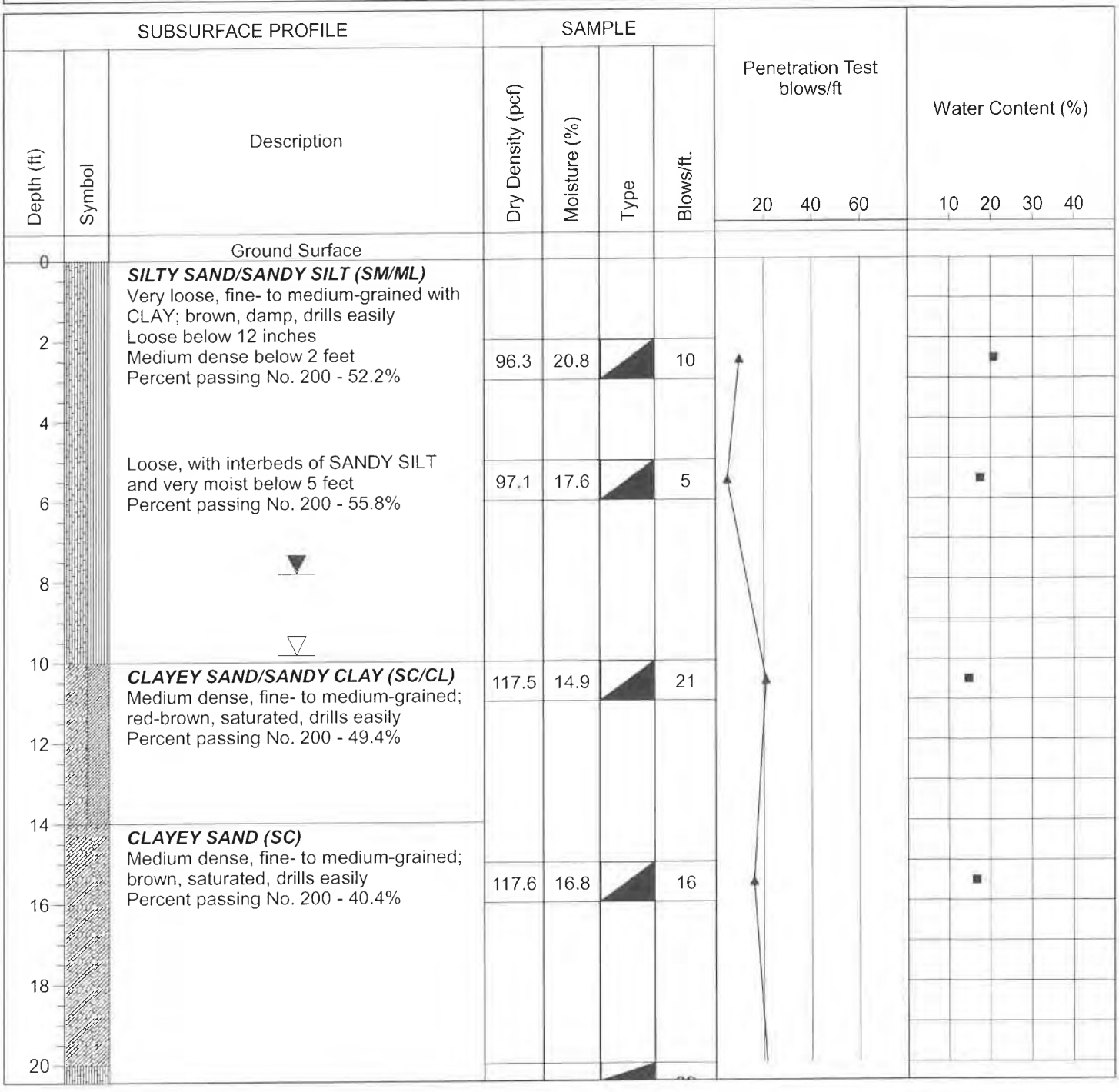
Client: Wilson Homes

Figure No.: A-11

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 10 Feet **At Completion:** 8 Feet



Drill Method: Hollow Stem

Drill Date: 2-17-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B11

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-11

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 10 Feet **At Completion:** 8 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 34.1%	118.5	14.4		22
24		Percent passing No. 200 - 20.7%	115.2	16.3		23
26						
28						
30		***SILTY SAND/CLAYEY SAND (SM/SC)*** Medium dense, fine- to coarse-grained; brown, saturated, drills easily Percent passing No. 43.5%	109.7	18.8		14
32		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily				
34		Percent passing No. 200 - 54.8%	95.0	25.6		11
36						
38						
40						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-17-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B11

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-11

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 10 Feet **At Completion:** 8 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained with CLAY and thin lenses of CLAYEY SANDY SILT; brown, saturated, drills easily Percent passing No. 200 - 19.1%	116.5	13.9		17
44						
46		Percent passing No. 200 - 16.9%	108.5	15.7		21
48						
50		End of Borehole				
52						
54						
56						
58						
60						

SUBSURFACE PROFILE

SAMPLE

Penetration Test blows/ft

20 40 60

Water Content (%)

10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-17-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B12

Project: Triangle Development

Project No: 012-22165

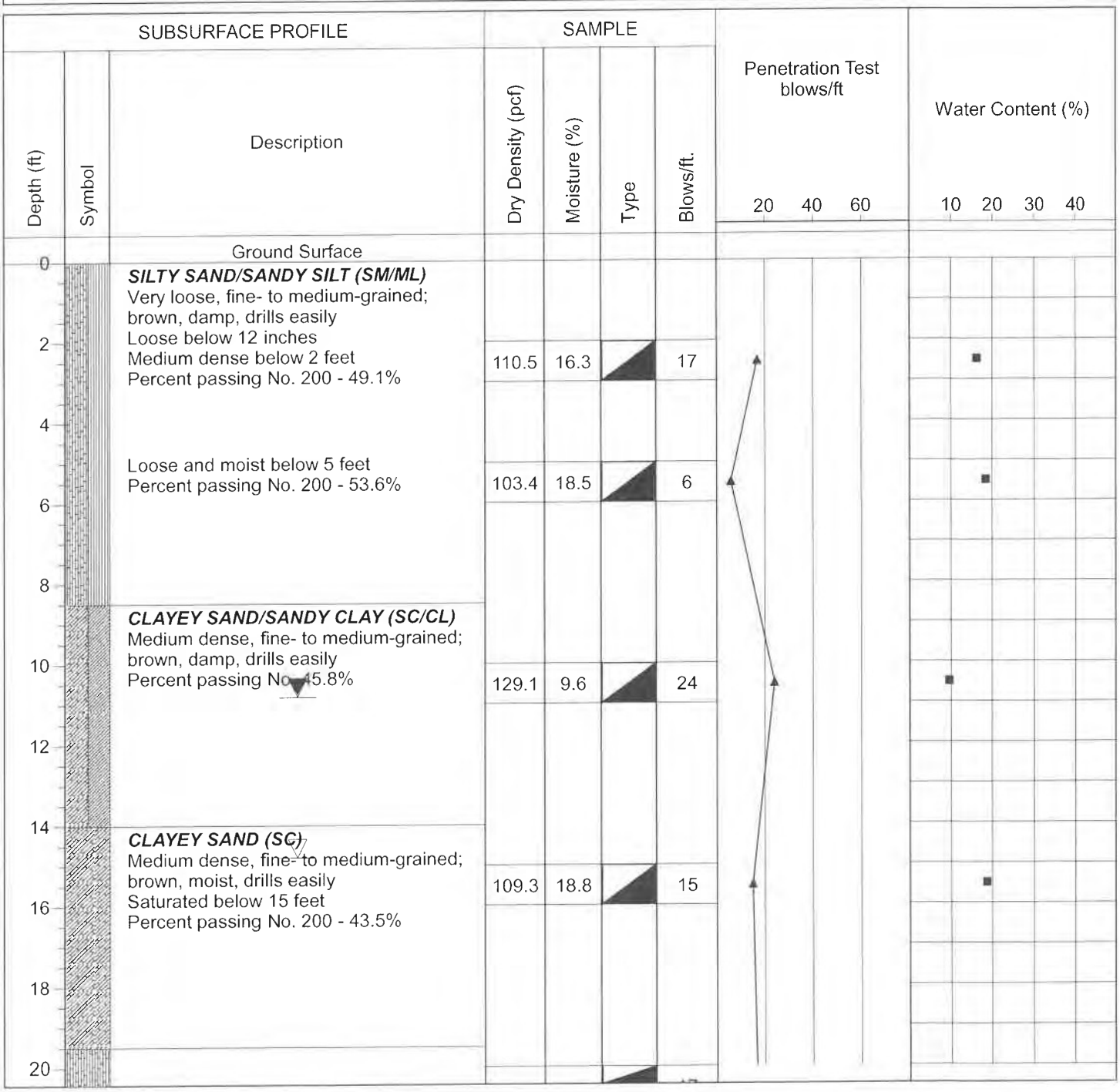
Client: Wilson Homes

Figure No.: A-12

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 15 Feet **At Completion:** 11 Feet



Drill Method: Hollow Stem

Drill Date: 2-17-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B12

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-12

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 15 Feet **At Completion:** 11 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 43.2%	98.6	25.6		17
24						
26		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 36.6%	108.9	17.9		14
28						
30		***SILTY SAND (SM)*** Dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 37.8%	100.4	23.5		30
32						
34						
36		Medium dense below 35 feet Percent passing No. 200 - 32.7%	110.0	18.5		13
38						
40						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-17-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B12

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-12

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 15 Feet **At Completion:** 11 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
42		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 38.4%	107.2	20.8		23		
44		***SILTY SAND/CLAYEY SAND (SM/SC)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 36.6%						
46			106.9	20.5		24		
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 2-17-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B13

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-13

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 11 Feet **At Completion:** 9½ Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; dark brown, damp, drills easily Loose below 12 inches				
2			115.3	9.6		9
4		Medium dense below 5 feet Percent passing No. 200 - 29.3%	102.5	9.3		13
6		Very dense and drills firmly below 7 feet	125.4	10.1		58
8		Medium dense and drills easily below 9 feet. Percent passing No. 200 - 35.1% Saturated below 9½ feet	70.9	11.4		11
10		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained with trace GRAVEL; brown, saturated, drills easily	116.1	12.6		16
12			111.9	13.8		18
14		With increased SAND below 15 feet Percent passing No. 200 - 17.6%	92.0	13.8		18
16						
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-11-23

Hole Size: 6½ Inches

Elevation: 50 Feet

Log of Boring B13

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-13

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 11 Feet **At Completion:** 9½ Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily	118.3	12.9		28
24						
26		Dense below 25 feet Percent passing No. 200 - 21.3%	115.0	13.1		36
28						
30		Very dense, orange-brown and drills firmly below 30 feet	123.7	11.7		47
32						
34						
36		Drills hard below 35 feet	112.2	13.8		50+
38						
40		Dense below 40 feet				

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-11-23

Hole Size: 6½ Inches

Elevation: 50 Feet

Log of Boring B13

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

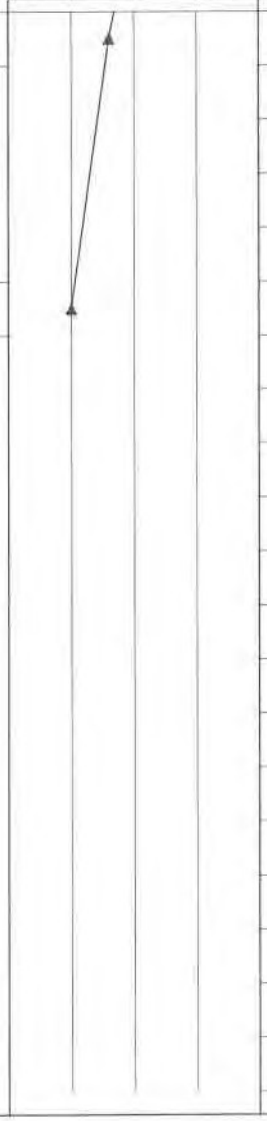
Figure No.: A-13

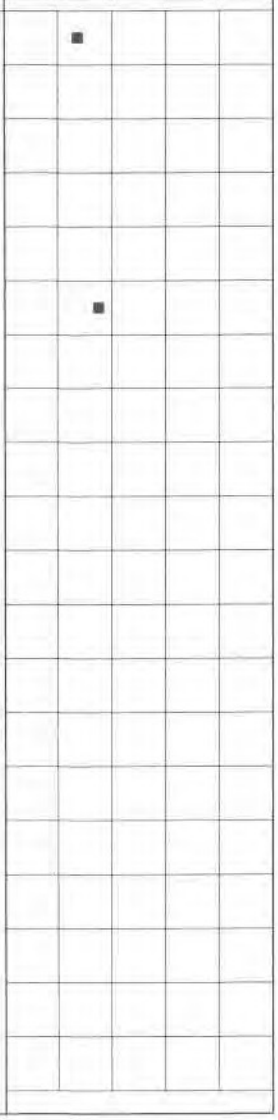
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 11 Feet **At Completion:** 9½ Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42		Percent passing No. 200 - 39.3%	122.0	13.6		32
44						
46		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 44.7%	110.4	17.6		20
48						
50		End of Borehole				
52						
54						
56						
58						
60						





Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-11-23

Hole Size: 6½ Inches

Elevation: 50 Feet

Log of Boring B14

Project: Triangle Development

Project No: 012-22165

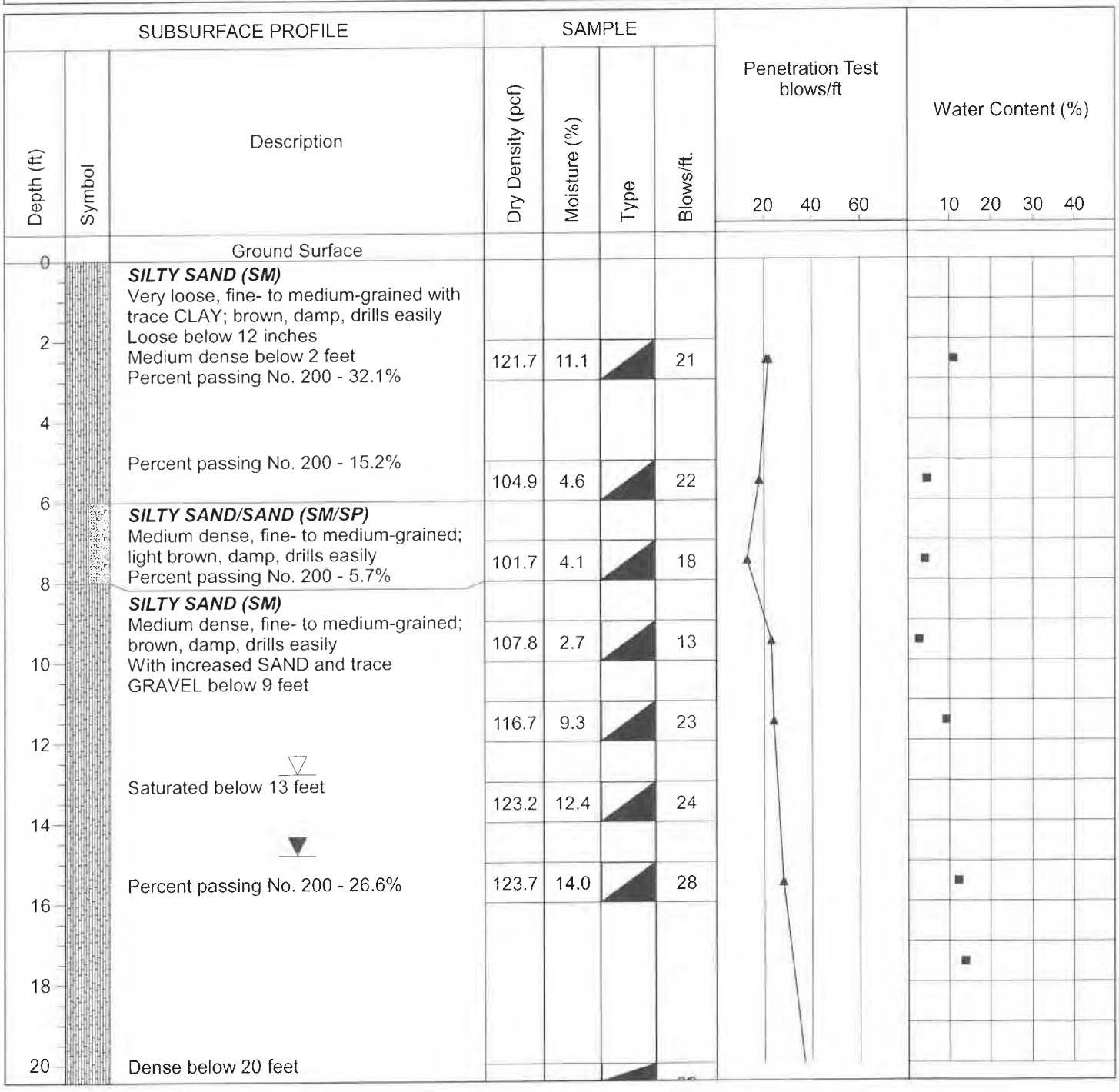
Client: Wilson Homes

Figure No.: A-14

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 13 Feet **At Completion:** 15 Feet



Drill Method: Hollow Stem

Drill Date: 4-11-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 6½ Inches

Driller: One Way Drilling

Elevation: 50 Feet

Log of Boring B14

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-14

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 13 Feet **At Completion:** 15 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Percent passing No. 200 - 20.0%	125.6	11.6		38
22						
24						
		Percent passing No. 200 - 22.3%	119.5	13.3		30
26						
28						
30		Very dense below 30 feet	118.7	13.0		47
32						
34						
36		***SANDY CLAY (CL)*** Hard, fine- to medium-grained; brown, saturated, drills firmly Percent passing No. 200 - 58.8%	116.7	25.7		45
38						
40						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-11-23

Hole Size: 6½ Inches

Elevation: 50 Feet

Log of Boring B14

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-14

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 13 Feet **At Completion:** 15 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42		***SANDY CLAY (CL)*** Very stiff, fine- to medium-grained; reddish-brown, saturated, drills easily Percent passing No. 200 - 78.1%	97.5	25.9		26
44						
46		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Medium dense, fine- to medium-grained; red-brown, saturated, drills easily Percent passing No. 200 - 51.3%	105.5	20.3		22
48						
50		End of Borehole				
52						
54						
56						
58						
60						

SUBSURFACE PROFILE

SAMPLE

Penetration Test blows/ft

20 40 60

Water Content (%)

10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-11-23

Hole Size: 6½ Inches

Elevation: 50 Feet

Log of Boring B15

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-15

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 15 Feet **At Completion:** 20 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained with trace CLAY; dark brown, damp, drills easily				
2		Loose below 12 inches	97.7	17.1		9
4		Medium dense, with increased SAND, trace GRAVEL and no CLAY below 5 feet	115.4	11.6		14
6		Percent passing No. 200 - 34.7				
8		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to coarse-grained; brown, damp, drills easily	104.0	4.1		11
10		Percent passing No. 200 - 7.6	111.8	4.4		12
12			123.9	11.4		15
14		▽	115.4	13.3		12
16		***SILTY SAND (SM)*** Medium dense, fine- to coarse-grained; brown, moist, drills easily	116.0	15.1		16
18						
20		▼				

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-11-23

Hole Size: 6½ Inches

Elevation: 50 Feet

Log of Boring B15

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-15

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 15 Feet **At Completion:** 20 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to coarse-grained; brown, moist, drills easily Percent passing No. 200 - 10.3%	112.4	11.1		24
24		Percent passing No. 200 - 10.6	120.7	10.6		27
26						
28						
30		***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine- to medium-grained with trace CLAY; brown, saturated, drills easily	117.6	12.7		16
32						
34						
36		Percent passing No. 200 - 49.9%	104.4	20.5		18
38						
40		With decreased SAND below 40 feet				

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-11-23

Hole Size: 6½ Inches

Elevation: 50 Feet

Log of Boring B15

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-15

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 15 Feet **At Completion:** 20 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42			105.2	19.3		23
44						
46		Percent passing No. 200 - 45.2%	112.6	17.6		22
48						
50		End of Borehole				
52						
54						
56						
58						
60						

SUBSURFACE PROFILE

SAMPLE

Penetration Test blows/ft

20 40 60

Water Content (%)

10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-11-23

Hole Size: 6½ Inches

Elevation: 50 Feet

Log of Boring B16

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-16

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 12½ Feet **At Completion:** 7 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
		SILTY SAND (SM) Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches				
2			93.3	19.8		9
4		Medium dense below 5 feet Percent passing No. 200 - 35.2%	107.2	11.5		14
6		Saturated below 7 feet ▼				
8			115.2	15.1		13
10		Percent passing No. 200 - 30.6%	119.2	12.6		14
12		Red-brown, with increased SAND and trace GRAVEL below 12½ feet ▽	118.7	12.2		22
14		With interbeds of SILTY SAND/SANDY SILT below 15 feet Percent passing No. 200 - 45.2%	115.2	15.6		28
16						
18						
20		With decreased SAND and brown below 20 feet				

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-12-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B16

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-16

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 12½ Feet **At Completion:** 7 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		Percent passing No. 200 - 43.4%	104.6	18.5		21
24						
26		Percent passing No. 200 - 31.7%	111.2	16.3		20
28						
30		Percent passing No. 200 - 53.3%	103.8	22.2		12
32						
34						
36		Dense below 35 feet Percent passing No. 200 - 25.9%	113.4	15.7		36
38						
40						

SUBSURFACE PROFILE

SAMPLE

Penetration Test blows/ft

20 40 60

Water Content (%)

10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-12-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B16

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-16

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 12½ Feet **At Completion:** 7 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
		Percent passing No. 200 - 24.7%	124.7	12.6		43		
42								
44								
		Percent pasing No. 200 - 35.4%	115.5	16.1		30		
46								
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-12-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B17

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-17

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 12½ Feet **At Completion:** 6 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
		SILTY SAND (SM) Very loose, fine- to medium-grained with trace CLAY; dark brown, moist, drills easily				
2		Loose below 12 inches Medium dense below 2 feet	109.4	27.4		13
4		Percent passing No. 200 - 29.6%				
		▼	120.3	12.9		14
6		Saturated below 6 feet				
8			114.7	14.0		17
10		Percent passing No. 200 - 26.4%	122.8	12.0		18
12		▽ With trace GRAVEL and red-brown below 12½ feet	118.4	12.7		21
14						
		SANDY CLAY (CL) Very stiff, fine- to medium-grained; brown, saturated, drills easily	108.3	19.3		19
16		Percent passing No. 200 - 68%				
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-12-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B17

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-17

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 12½ Feet **At Completion:** 6 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22	Percent passing No. 200 - 57.6%	106.4	19.9		18
24	***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 18%	111.4	12.4		15
30	***SILTY SAND (SM)*** Loose, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 20.1%	103.1	18.5		9
36	Medium dense with interbeds of SAND below 35 feet Percent passing No. 200 - 19.4%	110.5	16.3		30

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-12-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B17

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

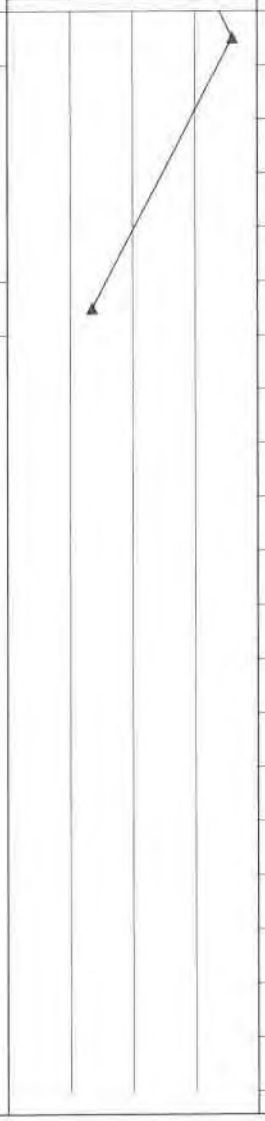
Figure No.: A-17

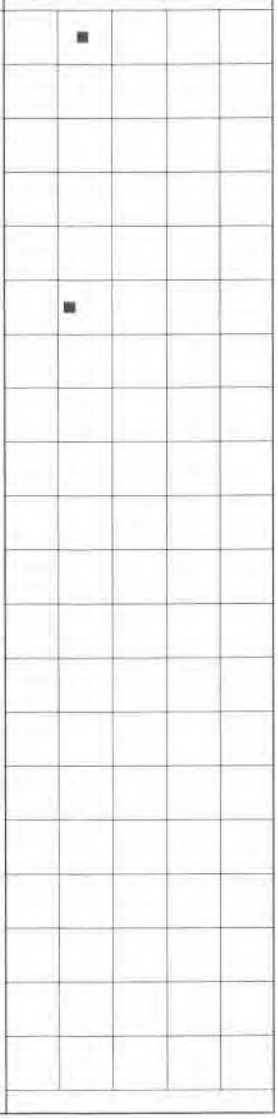
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 12½ Feet **At Completion:** 6 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42		***SILTY SAND (SM)*** Very dense, fine- to medium-grained; red-brown, saturated, drills hard Percent passing No. 200 - 26.5%	115.1	14.5		72
44		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to medium-grained; light brown, saturated, drills easily Percent passing No. 200 - 5.5%				
46		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; red-brown, saturated, drills easily	118.9	12.2		27
48						
50		End of Borehole				
52						
54						
56						
58						
60						





Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-12-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B18

Project: Triangle Development

Project No: 012-22165

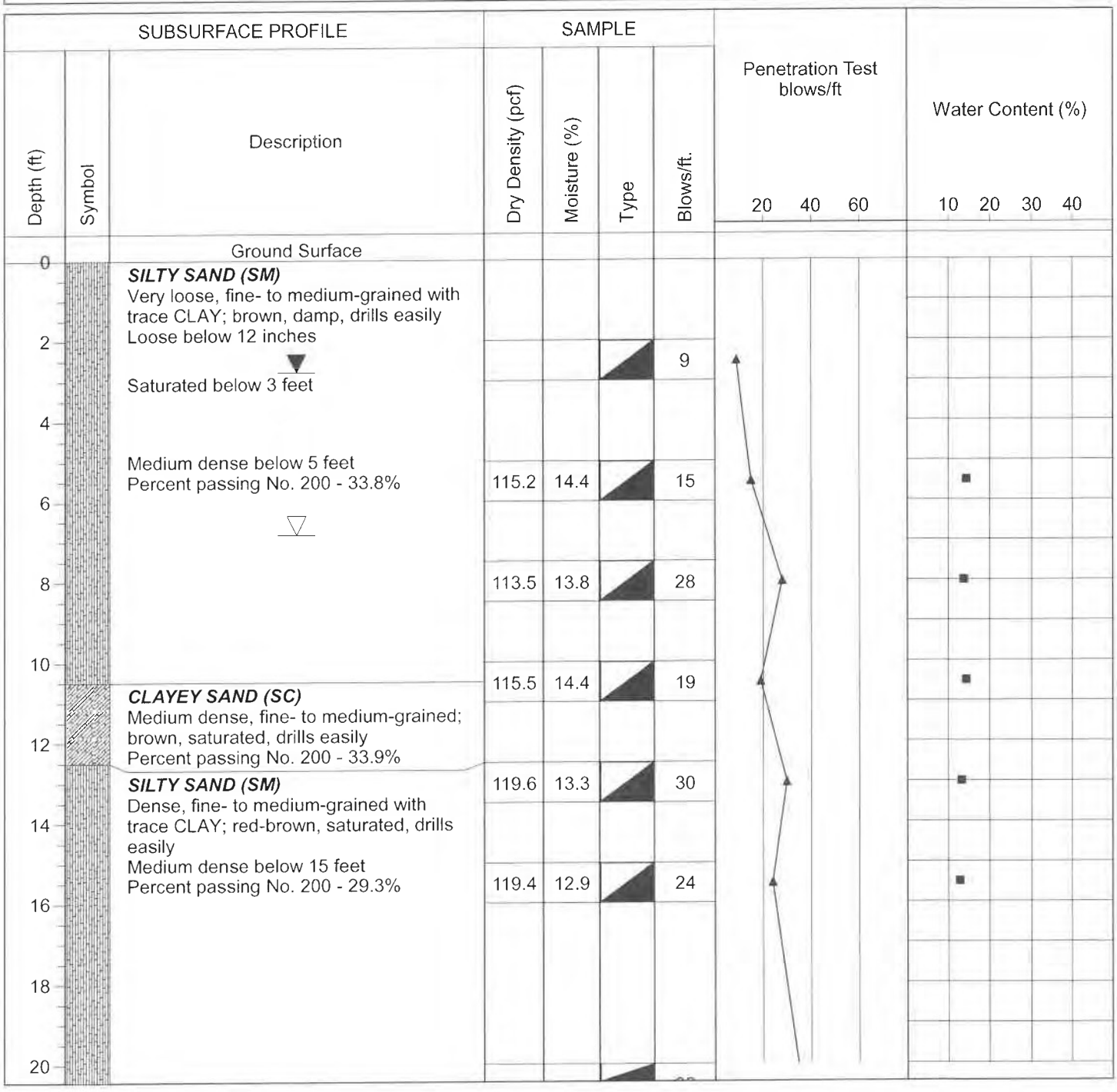
Client: Wilson Homes

Figure No.: A-18

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 7 Feet **At Completion:** 3 Feet



Drill Method: Hollow Stem

Drill Date: 4-13-23

Drill Rig: CME 75

Krazan and Associates

Hole Size: 4½ Inches

Driller: One Way Drilling

Elevation: 50 Feet

Log of Boring B18

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

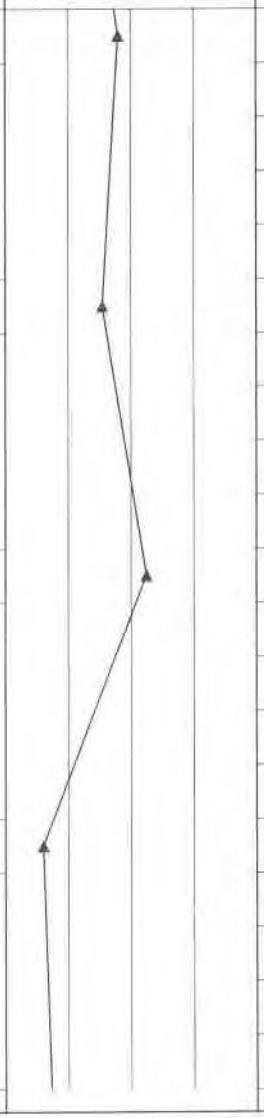
Figure No.: A-18

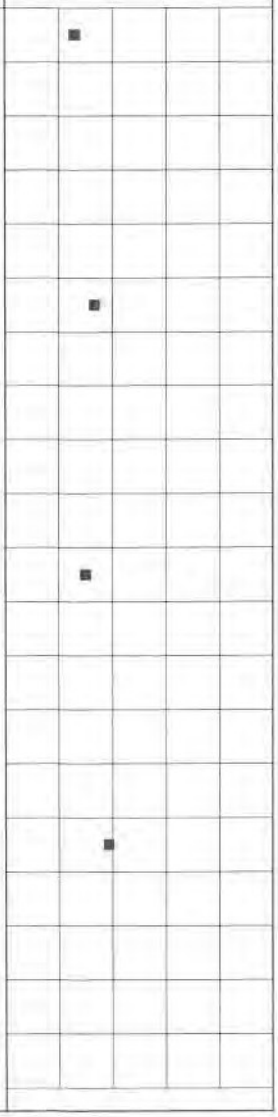
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 7 Feet **At Completion:** 3 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
	Percent passing No. 200 - 20.1%	118.1	12.9		36
22	***CLAYEY SAND (SC)*** Dense, fine- to medium-grained; red-brown, saturated, drills easily				
24					
26	Percent passing No. 200 - 23.1%	107.5	16.6		31
28					
30	***SILTY SAND/SANDY SILT (SM/ML)*** Very dense, fine- to medium-grained with CLAY; brown, saturated, drills easily Percent passing No. 200 - 45.5%	116.5	14.9		45
32					
34					
36	***CLAYEY SAND/SANDY CLAY (SC/CL)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 45.6%	101.5	19.3		12
38					
40					





Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-13-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B18

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-18

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 7 Feet **At Completion:** 3 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
42		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 40.8%	97.6	24.4		15		
44								
46		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained with trace CLAY; brown, saturated, drills easily Percent passing No. 200 - 44.2%	102.2	17.6		29		
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-13-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Sheet: 3 of 3

Log of Boring B19

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-19

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 15 Feet **At Completion:** 4 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained with trace CLAY; brown, damp, drills easily				
2		Loose below 12 inches	120.4	13.6		23
4		Medium dense below 2 feet ▼				
6		***SANDY CLAY (CL)*** Stiff, fine- to medium-grained; red-brown, saturated, drills easily Percent passing No. 200 - 77.9%	109.4	17.6		9
8		Very stiff below 7½ feet	122.8	11.7		26
10		Hard below 10 feet Percent passing No. 200 - 60.2%	121.4	11.9		47
12			125.3	11.9		64
14		▽				
16		***CLAYEY SAND (SC)*** Dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 34.7%	119.3	10.4		32
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-13-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B19

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-19

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 15 Feet **At Completion:** 4 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 49.3%	116.6	16.8		20
24						
26		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained with trace CLAY; brown, saturated, drills easily Percent passing No. 200 - 28.6%	108.9	17.1		20
28						
30		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 31.5%	115.2	14.9		26
32						
34		***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily Percent passing No. 200 - 48.8%	110.2	17.9		29
36						
38						
40						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-13-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B19

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-19

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 15 Feet **At Completion:** 4 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42		***SILTY SAND (SM)*** Very dense, fine- to medium-grained; brown, saturated, drills hard Percent passing No. 200 - 22.1%	130.1	11.2		66
44		With interbeds of SILTY SAND/SAND below 44 feet Percent passing No. 200 - 14.8%	123.4	10.6		77
46						
48						
50		End of Borehole				
52						
54						
56						
58						
60						

SUBSURFACE PROFILE | SAMPLE

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-13-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B20

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-20

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 10 Feet **At Completion:** 10 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Very loose, fine- to medium-grained; dark brown, moist, drills easily Loose below 12 inches				
2		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained with trace GRAVEL; red, moist, drills easily	122.0	13.4		29
4		Dense below 5 feet Percent passing No. 200 - 30.5%	117.2	12.1		44
6						
8		Medium dense below 7½ feet	124.5	11.7		22
10		▽ Saturated below 10 feet Percent passing No. 200 - 19.5%	118.2	12.7		29
12			108.7	18.7		22
14		***SANDY CLAY (CL)*** Very stiff, fine- to medium-grained; brown, saturated, drills easily				
16		Hard below 15 feet Percent passing No. 200 - 69.1%	109.3	18.8		33
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Date: 4-14-23

Drill Rig: CME 75

Krazan and Associates

Hole Size: 4½ Inches

Driller: One Way Drilling

Elevation: 50 Feet

Log of Boring B20

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-20

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 10 Feet **At Completion:** 10 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Percent passing No. 200 - 62.1%	107.4	21.4		22
22						
24						
26		***SILTY SAND/SANDY SILT (SM/ML)*** Very dense, fine- to medium-grained with CLAY; brown, saturated, drills firmly Percent passing No. 200 - 51.4%	116.8	15.7		50+
28						
30		Dense below 30 feet Percent passing No. 200 - 49.8%	116.0	15.2		30
32						
34						
36		***SILTY SAND (SM)*** Very dense, fine- to coarse-grained with trace GRAVEL; red-brown, saturated, drills hard Percent passing No. 200 - 37.4%	112.6	18.1		50+
38						
40						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-14-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B20

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-20

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 10 Feet **At Completion:** 10 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
42		Percent passing No. 200 - 39.2%	109.7	17.9		50+
44						
46		Dense below 45 feet Percent passing No. 200 - 25.9%	102.6	23.0		38
48						
50		End of Borehole				
52						
54						
56						
58						
60						

SUBSURFACE PROFILE

SAMPLE

Penetration Test blows/ft

20 40 60

Water Content (%)

10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-14-23

Hole Size: 4½ Inches

Elevation: 50 Feet

Log of Boring B21

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

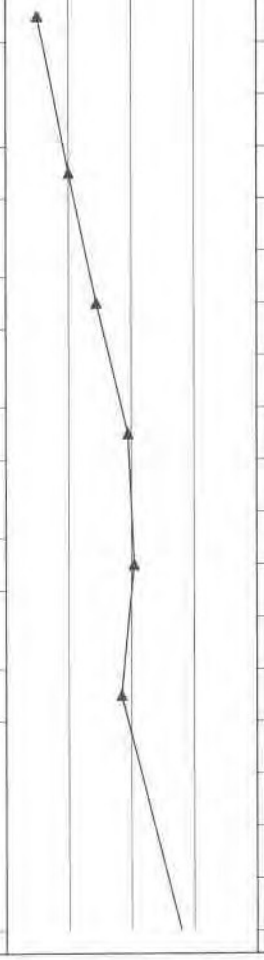
Figure No.: A-21

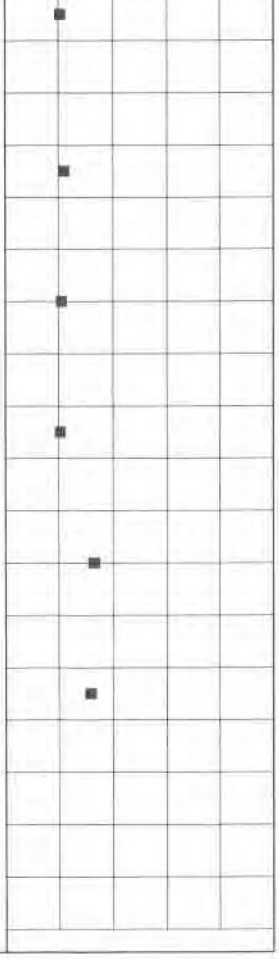
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 7 Feet **At Completion:** 3 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained with trace GRAVEL; light red-brown, moist, drills easily				
2		Loose below 12 inches	120.1	10.4		10
4		Medium dense below 2 feet Saturated below 3 feet				
6		Percent passing No. 200 - 22.4%	121.9	11.1		20
8			121.2	10.6		29
10		Dense below 10 feet Percent passing No. 200 - 20.8%	124.5	10.4		39
12		***SANDY CLAY (CL)*** Hard, fine- to medium-grained; brown, saturated, drills firmly	114.4	16.6		41
14						
16		Percent passing No. 200 - 58.7%	112.0	16.0		37
18						
20						





Drill Method: Hollow Stem

Drill Date: 4-17-23

Drill Rig: CME 75

Krazan and Associates

Hole Size: 4½ Inches

Driller: One Way Drilling

Elevation: 35 Feet

Log of Boring B21

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-21

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 7 Feet **At Completion:** 3 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22	***SILTY SAND (SM)*** Very dense, fine- to medium-grained with trace CLAY; red-brown, saturated, drills hard Percent passing No. 200 - 43.7%	118.8	13.1		58
24					
26	***SANDY CLAY (CL)*** Hard, fine- to medium-grained; light brown, saturated, drills firmly Percent passing No. 200 - 30.5%	117.0	14.7		49
28					
30	Percent passing No. 200 - 55.1%	110.8	18.2		69
32					
34	***WEATHERED ROCK*** Very dense, moderately weathered; brown, saturated, drills hard Auger refusal at 35 feet	117.4	10.9		50+
36	End of Borehole				
38					
40					

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-17-23

Hole Size: 4½ Inches

Elevation: 35 Feet

Log of Boring B22

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

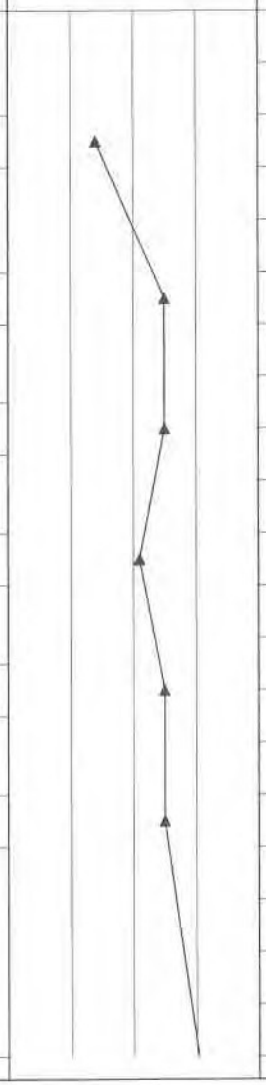
Figure No.: A-22

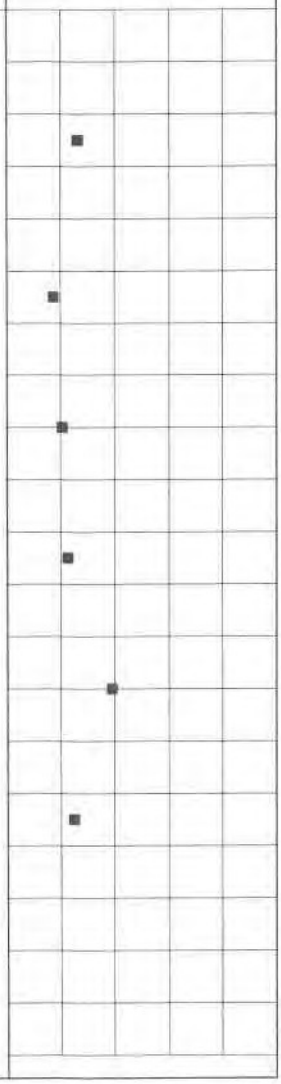
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 25 Feet **At Completion:** 4 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained with trace CLAY; brown, damp, drills easily				
2		Loose below 12 inches	118.9	13.1		28
		Medium dense below 2 feet Percent Passing No. 200 - 43.9%				
4		▼ Saturated below 4 feet				
6		***SILTY SAND (SM)*** Very dense, fine- to medium-grained, weakly cemented; red-brown, saturated, drills hard	110.4	8.7		50+
		Percent passing No. 200 - 40.2%				
8			124.0	10.4		50+
10		***CLAYEY SAND (SC)*** Dense, fine- to medium-grained; red-brown, saturated, drills hard	115.9	11.4		42
		Percent passing No. 200 - 31.4%				
12		Very dense below 12 feet	101.2	19.6		50+
14		***SANDY SILT (ML)*** Very dense, fine- to medium-grained; gray-brown, saturated, drills hard				
16		***SILTY SAND (SM)*** Very dense, fine- to medium-grained; orange-brown, saturated, drills hard	107.7	12.6		50+
		Percent passing No. 200 - 39.6%				
18						
20						





Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-17-23

Hole Size: 4½ Inches

Elevation: 27½ Feet

Log of Boring B22

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-22

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 25 Feet **At Completion:** 4 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		***SANDY SILT (ML)*** Very dense, fine- to medium-grained; orange-brown, saturated, drills hard	114.7	16.3		62
24		Percent passing No. 200 - 71.1%	100.4	22.2		58
26						
28		***WEATHERED ROCK*** Very dense, moderately weathered; gray, saturated, drills hard Auger refusal at 27½ feet	112.5	14.7		50+
30		End of Borehole				
32						
34						
36						
38						
40						

SUBSURFACE PROFILE

SAMPLE

Penetration Test blows/ft

20 40 60

Water Content (%)

10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-17-23

Hole Size: 4½ Inches

Elevation: 27½ Feet

Log of Boring B23

Project: Triangle Development

Project No: 012-22165

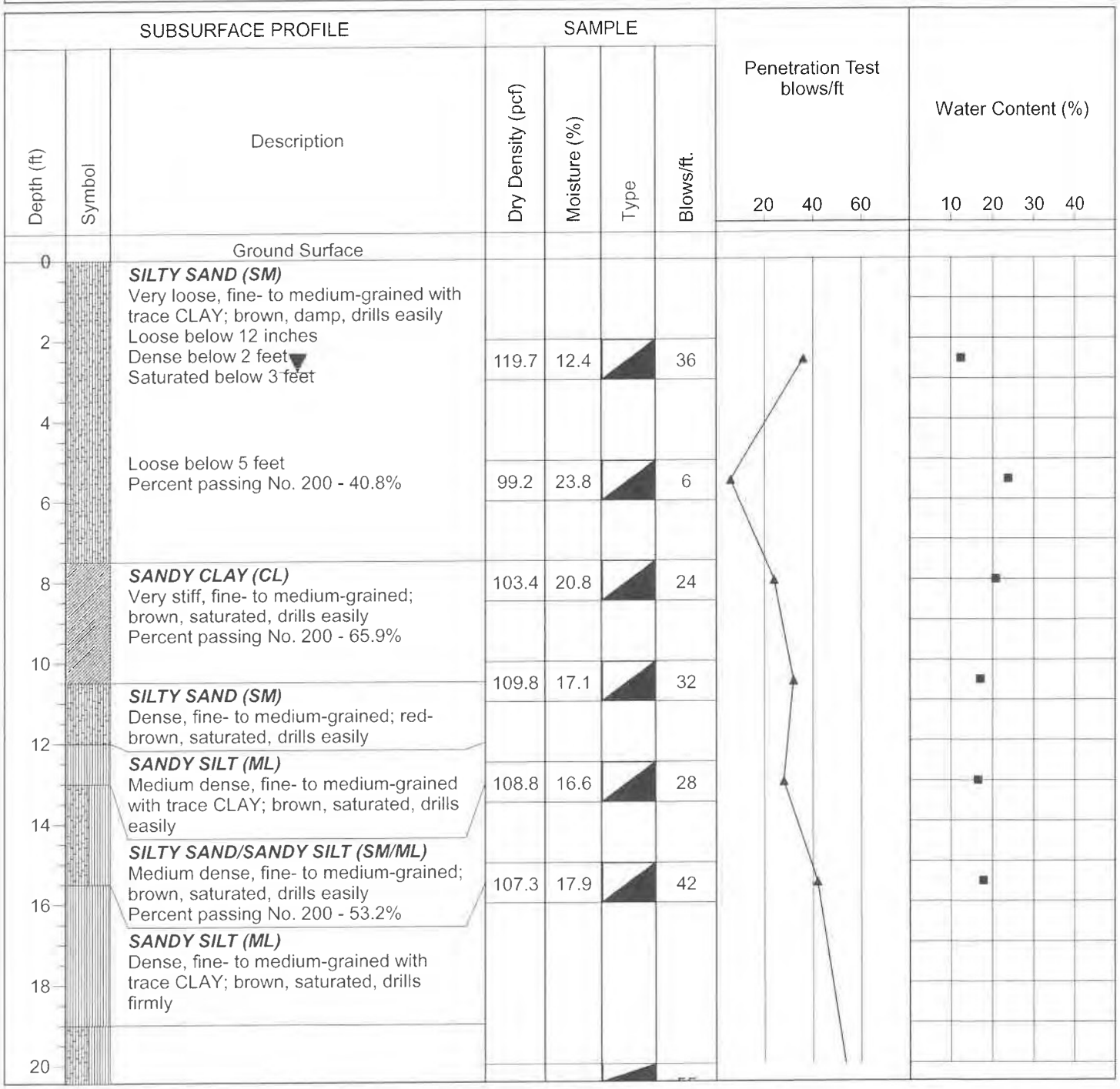
Client: Wilson Homes

Figure No.: A-23

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 22 Feet **At Completion:** 3 Feet



Drill Method: Hollow Stem

Drill Date: 4-18-23

Drill Rig: CME 75

Krazan and Associates

Hole Size: 4½ Inches

Driller: One Way Drilling

Elevation: 27½ Feet

Log of Boring B23

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

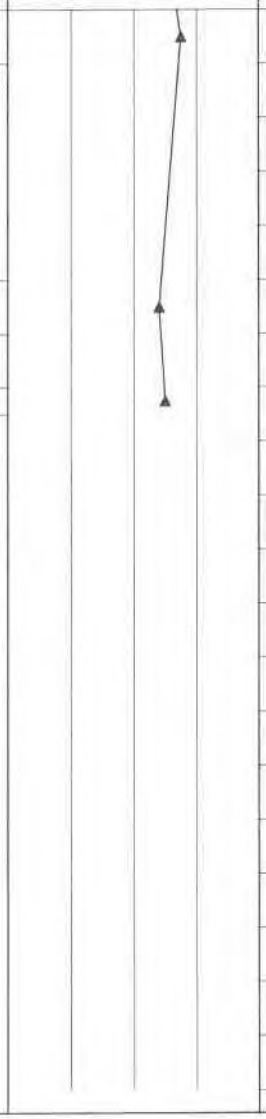
Figure No.: A-23

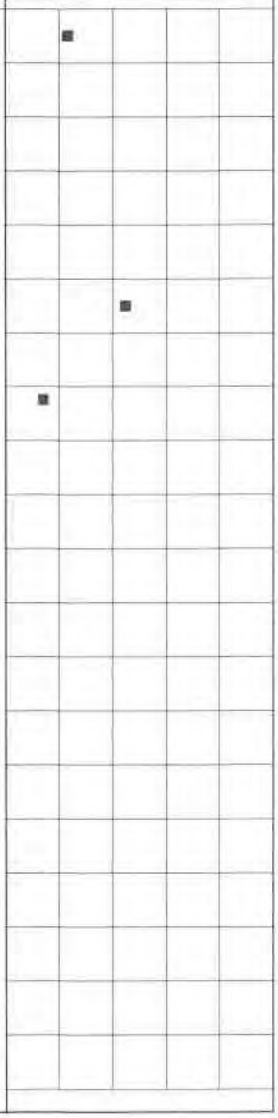
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 22 Feet **At Completion:** 3 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		***SILTY SAND/SANDY SILT (SM/ML)*** Very dense, fine-grained; brown, saturated, drills firmly ▽ Percent passing No. 200 - 55.2%	119.3	11.6		55
24						
26		***WEATHERED ROCK*** Very dense, highly weathered; brown, saturated, drills firmly Percent passing No. 200 - 42.4%	105.8	22.5		48
28		***WEATHERED ROCK*** Very dense, moderately weathered; light gray, saturated, drills hard Auger refusal at 27½ feet	127.4	7.1		50+
30		End of Borehole				
32						
34						
36						
38						
40						





Drill Method: Hollow Stem

Drill Date: 4-18-23

Drill Rig: CME 75

Krazan and Associates

Hole Size: 4½ Inches

Driller: One Way Drilling

Elevation: 27½ Feet

Log of Boring B24

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

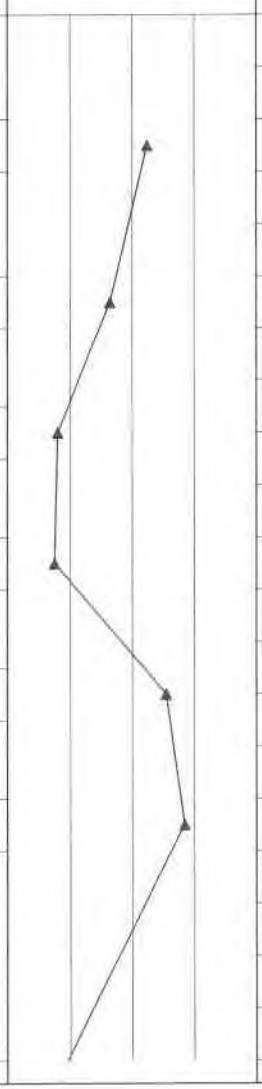
Figure No.: A-24

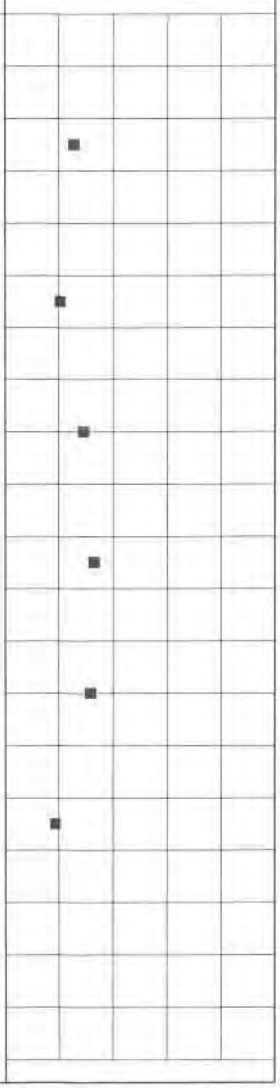
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 30 Feet **At Completion:** 3 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained with trace CLAY; brown, damp, drills easily				
2		Loose below 12 inches Very dense and drills firmly below 2 feet Saturated below 3 feet	117.3	12.9		45
4		Dense below 5 feet Percent passing No. 200 - 33.3%	123.2	10.4		33
6		Medium dense below 7½ feet	116.8	14.7		16
8		Percent passing No. 200 - 36.8%	111.9	16.6		15
10		***SANDY CLAY (CL)*** Hard, fine- to medium-grained; brown, saturated, drills firmly	108.6	16.0		51
12		Percent passing No. 200 - 60.0%	123.3	9.4		57
14						
16						
18						
20						





Drill Method: Hollow Stem

Drill Date: 4-18-23

Drill Rig: CME 75

Krazan and Associates

Hole Size: 4½ Inches

Driller: One Way Drilling

Elevation: 41½ Feet

Log of Boring B24

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

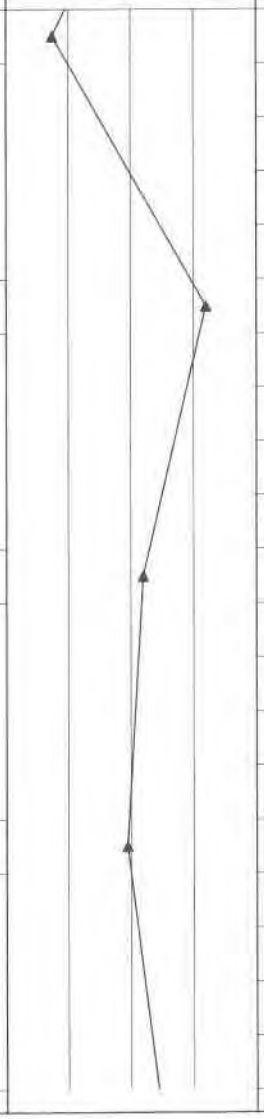
Figure No.: A-24

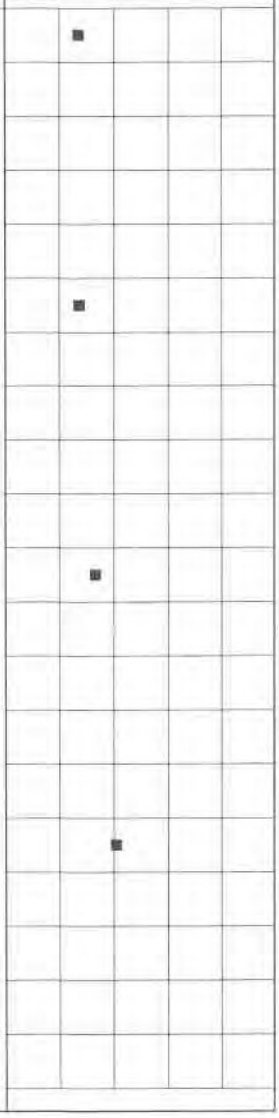
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 30 Feet **At Completion:** 3 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Medium dense, fine- to medium-grained; red-brown, saturated, drills easily Percent passing No. 200 - 47.4%	108.5	13.4		15
24						
26		***CLAYEY SAND (SC)*** Very dense, fine- to medium-grained; red-brown, saturated, drills hard Percent passing No. 200 - 41.6%	116.9	13.6		64
28						
30		***SILTY SAND (SM)*** Dense, fine- to medium-grained with CLAY; red-brown, saturated, drills firmly Percent passing No. 200 - 44.8%	113.0	16.6		44
32						
34						
36		***SANDY CLAYEY SILT (ML)*** Dense, fine- to medium-grained; red-brown, saturated, drills firmly Percent passing No. 200 - 60.5%	109.4	20.5		39
38						
40						





Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-18-23

Hole Size: 4½ Inches

Elevation: 41½ Feet

Log of Boring B24

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-24

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 30 Feet **At Completion:** 3 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		CLAYEY SAND (SC) Very dense, fine- to medium-grained; red-brown, saturated, drills hard	102.1	22.2		50+
				17.4		50+
42		***WEATHERED ROCK*** Very dense, moderately weathered; gray, saturated, drills hard Auger refusal at 41½ feet				
44		End of Borehole				
46						
48						
50						
52						
54						
56						
58						
60						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-18-23

Hole Size: 4½ Inches

Elevation: 41½ Feet

Log of Boring B25

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-25

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 20 Feet **At Completion:** 4 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND/CLAYEY SAND (SM/SC)*** Very loose, fine- to medium-grained; red-brown, damp, drills easily				
2		Loose below 12 inches Dense below 2 feet Percent passing No. 200 - 42.3%	116.4	12.6		30
4		▼ Very dense, saturated and drills hard below 4 feet	122.3	8.2		50+
6						
8			118.9	9.9		50+
10		Weakly cemented below 10 feet	121.0	10.4		50+
12						
12		***SILTY SAND (SM)*** Very dense, fine- to medium-grained with trace CLAY; brown, saturated, drills hard	113.2	14.7		50+
14		Percent passing No. 200 - 42.9%				
16			118.7	10.9		50+
18						
20		▽				

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-18-23

Hole Size: 4½ Inches

Elevation: 40½ Feet

Log of Boring B25

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-25

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 20 Feet **At Completion:** 4 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		Percent passing No. 200 - 29.2%	116.6	11.4		62
24						
26			125.5	10.1		50+
28						
30		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Very dense, fine- to medium-grained; red-brown, saturated, drills firmly Percent passing No. 200 - 48.3%	116.1	15.5		63
32						
34						
36		***SILTY SAND (SM)*** Very dense, fine- to medium-grained with trace CLAY and GRAVEL; red-brown, saturated, drills hard Percent passing No. 200 - 43.8%	104.6	21.1		50+
38						
40						50+

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-18-23

Hole Size: 4½ Inches

Elevation: 40½ Feet

Log of Boring B25

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-25

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 20 Feet **At Completion:** 4 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
		WEATHERED ROCK Very dense, moderately weathered; light gray, saturated, drills hard	118.5	11.1		50+		
42		Auger refusal at 40½ feet						
		End of Borehole						
44								
46								
48								
50								
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-18-23

Hole Size: 4½ Inches

Elevation: 40½ Feet

Log of Boring B26

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

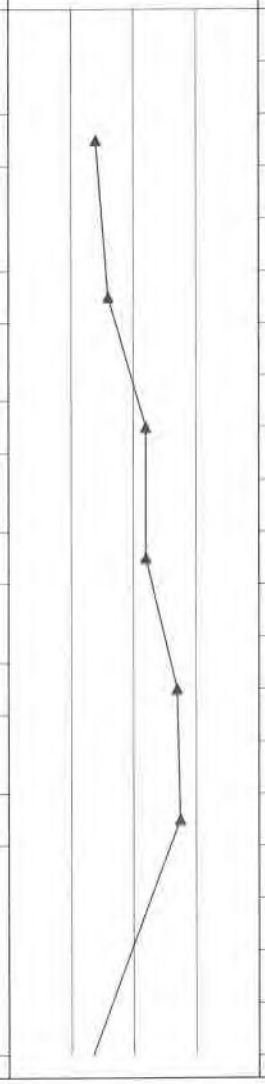
Figure No.: A-26

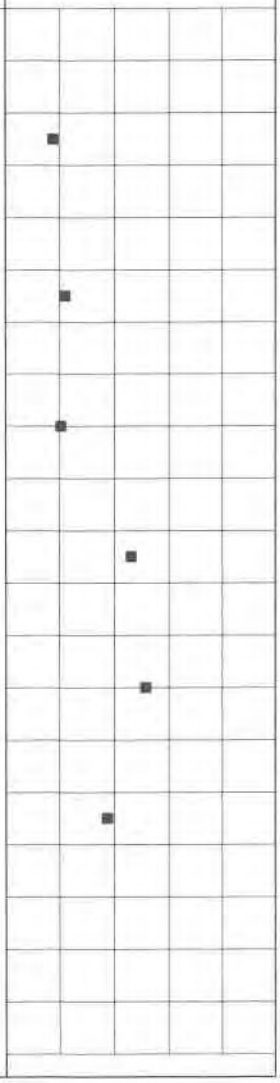
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 7 Feet **At Completion:** 10 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained with trace CLAY; brown, damp, drills easily				
2		Loose below 12 inches Medium dense below 2 feet	125.4	8.9		28
4						
6		Dense below 10 feet Percent passing No. 200 - 32.4%	123.3	11.1		32
8			122.6	10.4		44
10		Saturated below 10 feet	99.8	23.2		44
12		Very dense below 12 feet Percent passing No. 200 - 39.8%	92.5	25.9		54
14						
16		***SILTY SAND/SANDY SILT (SM/ML)*** Very dense, fine- to medium-grained with trace CLAY; red-brown, saturated, drills firmly	99.2	18.8		55
18						
20		Medium dense and drills easily below 20 feet				





Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-19-23

Hole Size: 4½ Inches

Elevation: 35½ Feet

Log of Boring B26

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

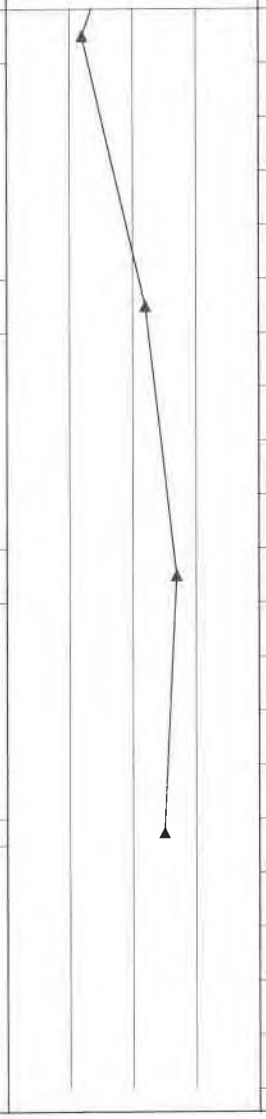
Figure No.: A-26

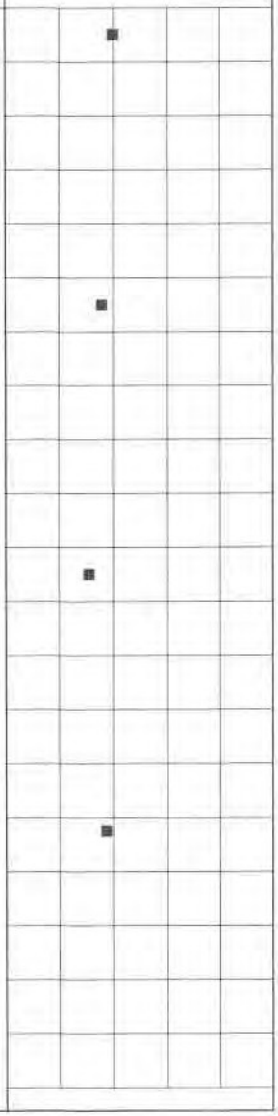
Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** 7 Feet **At Completion:** 10 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
	Percent passing No. 200 - 48%	102.4	19.9		24
22					
24	Dense, light red-brown and drills firmly below 25 feet	112.3	17.9		44
26					
28					
30	***CLAYEY SAND/SANDY CLAY (SC/CL)*** Very dense, fine- to medium-grained; brown, saturated, drills firmly Percent passing No. 200 - 52%	113.1	15.5		54
32					
34					
	WEATHERED ROCK Very dense, moderately weathered; light gray, saturated, drills hard Auger refusal at 35½ feet	109.1	18.8		50+
36	End of Borehole				
38					
40					





Drill Method: Hollow Stem

Drill Rig: CME 75

Driller: One Way Drilling

Krazan and Associates

Drill Date: 4-19-23

Hole Size: 4½ Inches

Elevation: 35½ Feet

Log of Boring B27

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-27

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water>

Initial: None

At Completion: None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained with trace CLAY; brown, damp, drills easily				
2		Medium dense below 12 inches Very dense and drills hard below 18 inches	82.4	7.8		50+
4						
6		***WEATHERED ROCK*** Very dense, moderately weathered; gray, moist, drills hard	115.3	8.2		50+
8			95.4	1.8		50+
		Auger refusal at 9 feet				
		End of Borehole				
10						
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Date: 7-7-23

Drill Rig: CME 55

Krazan and Associates

Hole Size: 4½ Inches

Driller: Eddie Tapia

Elevation: 9 Feet

Sheet: 1 of 1

Log of Boring B28

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-28

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** None **At Completion:** None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
		Ground Surface						
0		***CLAYEY SAND (SC)*** Very loose, fine- to medium-grained; red-brown, damp, drills easily Medium dense below 12 inches Very dense and drills hard below 2 feet						
2			126.1	9.9		50+		
4								
6			123.5	10.4		50+		
8			105.1	12.6		50+		
10		***WEATHERED ROCK*** Very dense, moderately weathered; gray, moist, drills hard	120.6	14.2		50+		
12				7.5		50+		
14								
16		Auger refusal at 16 feet	86.4	6.4		50+		
		End of Borehole						
18								
20								

Drill Method: Hollow Stem

Drill Rig: CME 55

Driller: Eddie Tapia

Krazan and Associates

Drill Date: 7-7-23

Hole Size: 4½ Inches

Elevation: 16 Feet

Log of Boring B29

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-29

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SANDY CLAYEY SILT (ML)*** Very loose, with trace fine-grained SAND; brown, moist, drills easily Loose below 12 inches				
2			102.4	10.1		5
4						
6		***SILTY SAND (SM)*** Very dense, fine-grained; gray, moist, drills hard	122.9	8.7		50+
8		***WEATHERED ROCK*** Very dense, moderately weathered; grayish-brown, moist, drills hard Auger refusal at 8 feet		6.6		50+
		End of Borehole				
10						
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Rig: CME 45B

Driller: Brent Snyder

Krazan and Associates

Drill Date: 7-7-23

Hole Size: 4½ Inches

Elevation: 8 Feet

Log of Boring B30

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-30

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine-grained; brown, moist, drills easily Loose below 12 inches Medium dense below 2 feet Percent passing No. 200 - 30.5				
2			127.2	10.6		22
4		***CLAYEY SAND (SC)*** Dense, fine-grained; reddish-brown, moist, drills firmly Percent passing No. 200 - 29.2%				
6			129.7	10.6		37
8		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Very dense, fine-grained; reddish-brown, moist, drills firmly Percent passing No. 200 - 48.8%	107.0	11.9		53
10		***SILTY SAND (SM)*** Medium dense, fine-grained with trace CLAY; grayish-brown, moist, drills easily Percent passing No. 200 - 41.4% With interbeds of SILTY SAND/SANDY SILT with CLAY below 12 feet Percent passing No. 200 - 48.1%	108.1	14.9		46
12			113.4	8.9		24
14		***SANDY SILT (ML)*** Medium dense, fine-grained with trace CLAY; grayish-brown, moist, drills easily				
16		***WEATHERED ROCK*** Very dense, highly weathered; grayish-brown, moist, drills hard Percent passing No. 200 - 47.0% Percent passing No. 200 - 72.8% Auger refusal at 17 feet	103.1	5.9		50+
18		End of Borehole		4.6		
20						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Rig: CME 45B

Driller: Brent Snyder

Krazan and Associates

Drill Date: 7-7-23

Hole Size: 4½ Inches

Elevation: 17 Feet

Sheet: 1 of 1

Log of Boring B31

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-31

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Sarah Redondo

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***CLAYEY SAND (SC)*** Very loose, fine- to medium-grained; red-brown, damp, drills easily Medium dense below 12 inches Very dense and drills hard below 2 feet				
2			124.2	11.6		50+
4						
6		***WEATHERED ROCK*** Very dense, moderately weathered; gray, moist, drills hard	110.1	11.1		50+
8		Auger refusal at 8½ feet	85.1	5.9		50+
		End of Borehole				
10						
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Hollow Stem

Drill Date: 7-7-23

Drill Rig: CME 55

Krazan and Associates

Hole Size: 4½ Inches

Driller: Eddie Tapia

Elevation: 8½ Feet

Sheet: 1 of 1

Log of Boring B32

Project: Triangle Development

Project No: 012-22165

Client: Wilson Homes

Figure No.: A-32

Location: Shepherd Avenue and Locan Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***WEATHERED ROCK*** Very loose, highly weathered; reddish-brown, damp, drills easily				
2		Medium dense below 12 inches Very dense and drills hard below 18 inches	79.4	9.9		50+
4						
6			120.7	7.8		50+
		WEATHERED ROCK Very dense, moderately weathered; gray, damp, drills hard				
8		Auger refusal at 8 feet		4.4		50+
		End of Borehole				
10						
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45B

Driller: Brent Snyder

Krazan and Associates

Drill Date: 7-7-23

Hole Size: 4½ Inches

Elevation: 8 Feet

Sheet: 1 of 1

Sieve Analysis

Project Number : 012-22165
Project Name : Triangle Development
Date : 9/19/2022
Sample Location : B1 @ 12-13'
Soil Classification : SM/ML

Wet Weight	:	50.00
Dry Weight	:	41.80
Moisture Content	:	20%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50				100.0
#4	4.75				100.0
#8	2.36				100.0
#16	1.18	0.3	0.7	0.7	99.3
#30	0.60	0.5	1.2	1.9	98.1
#50	0.30	1.4	3.3	5.3	94.7
#100	0.15	7.1	17.0	22.2	77.8
#200	0.08	10.4	24.9	47.1	52.9

Krazan Testing Laboratory

Sieve Analysis

Project Number : 012-22165
Project Name : Triangle Development
Date : 9/19/2022
Sample Location : B1 @ 12-13'
Soil Classification : SM/ML

Wet Weight	:	50.00
Dry Weight	:	41.80
Moisture Content	:	20%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50				100.0
#4	4.75				100.0
#8	2.36				100.0
#16	1.18	0.3	0.7	0.7	99.3
#30	0.60	0.5	1.2	1.9	98.1
#50	0.30	1.4	3.3	5.3	94.7
#100	0.15	7.1	17.0	22.2	77.8
#200	0.08	10.4	24.9	47.1	52.9

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM/ML
Sample Number	B1 @ 12-13'

Krazan Testing Laboratory

Hydrometer Anaylsis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/19/2022
Sample Location	: B1 @ 20-21'
Soil Classification	: SM

Dry Weight Used	113.2 g
Temperature	20.0 C
Soil Specific Gravity	2.65
Solution Spec. Grav.	1.003
K Value	0.01365
Correction Factor	0.00000

Elapsed Time (min)	Hydro. Reading	Hydro. Corrected	% Passing	Particle Diameter
2	1.02	1.02	24.2	0.0320
5	1.018	1.018	21.3	0.0207
15	1.017	1.017	19.9	0.0121
30	1.016	1.016	18.5	0.0087
60	1.014	1.014	15.6	0.0063
250	1.013	1.013	14.2	0.0031
1440	1.009	1.009	8.5	0.0013

Particle Diameter	Percent Passing
0.005	15.1
0.002	10.7
0	NA

Krazan Testing Laboratory

Sieve Analysis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/19/2022
Sample Location	: B1 @ 20-21'
Soil Classification	: SM

Wet Weight	:	200.00
Dry Weight	:	182.70
Moisture Content	:	9%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50				100.0
#4	4.75				100.0
#8	2.36	1.0	0.5	0.5	99.5
#16	1.18	3.1	1.7	2.2	97.8
#30	0.60	9.6	5.3	7.5	92.5
#50	0.30	35.8	19.6	27.1	72.9
#100	0.15	52.0	28.5	55.6	44.4
#200	0.08	32.1	17.6	73.1	26.9

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM
Sample Number	B1 @ 20-21'

Krazan Testing Laboratory

Hydrometer Anaylsis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/16/2022
Sample Location	: B2 @ 15-16'
Soil Classification	: SM/ML

Dry Weight Used	89.7 g
Temperature	20.0 C
Soil Specific Gravity	2.65
Solution Spec. Grav.	1.003
K Value	0.01365
Correction Factor	0.00000

Elapsed Time (min)	Hydro. Reading	Hydro. Corrected	% Passing	Particle Diameter
2	1.02	1.02	30.5	0.0320
5	1.018	1.018	26.9	0.0207
15	1.017	1.017	25.1	0.0121
30	1.016	1.016	23.3	0.0087
60	1.015	1.015	21.5	0.0062
250	1.014	1.014	19.7	0.0031
1440	1.011	1.011	14.3	0.0013

Particle Diameter	Percent Passing
0.005	20.8
0.002	16.5
0	NA

Sieve Analysis

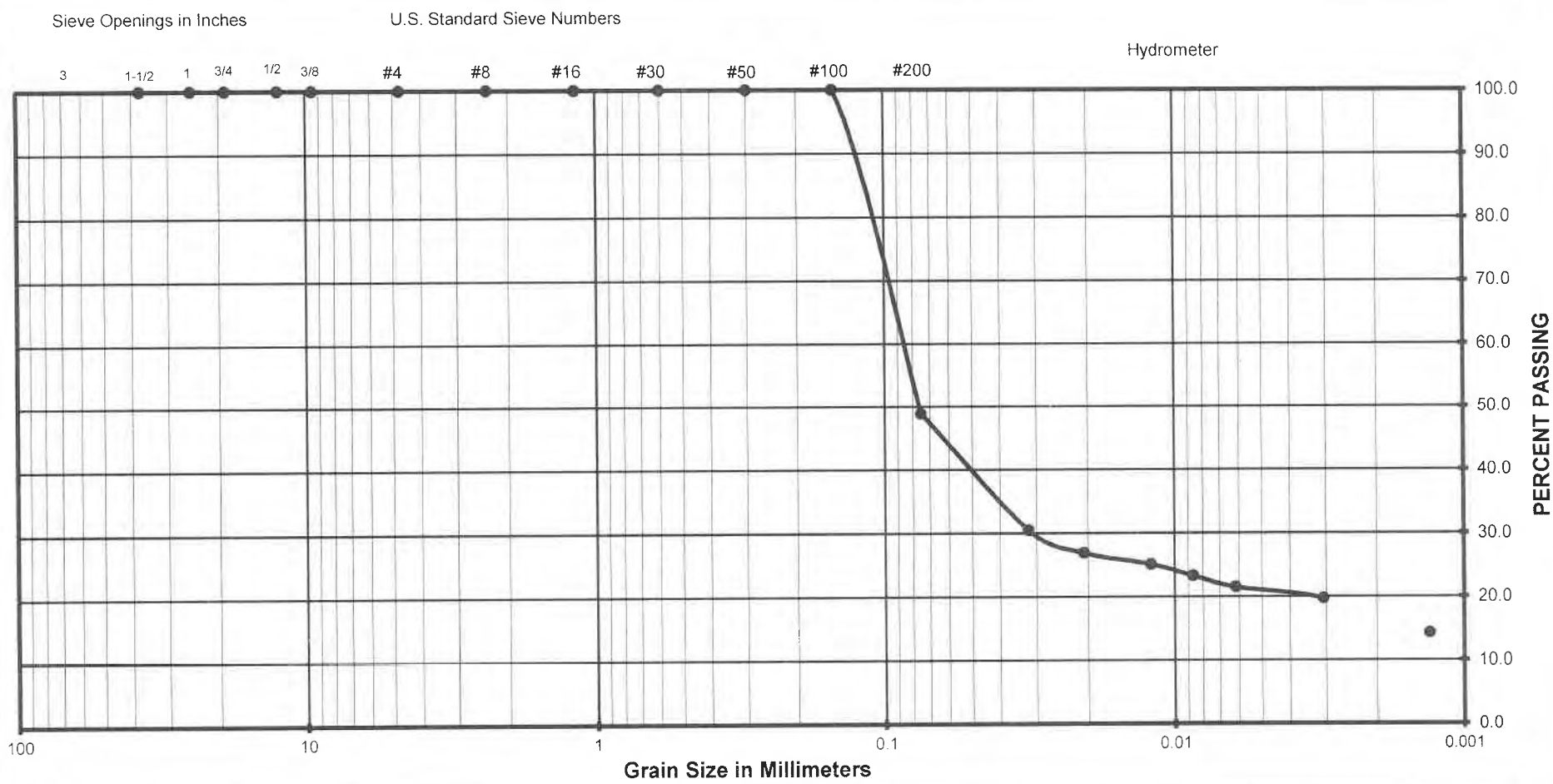
Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/16/2022
Sample Location	: B2 @ 15-16'
Soil Classification	: SM/ML

Wet Weight	:	100.00
Dry Weight	:	89.10
Moisture Content	:	12%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50				100.0
#4	4.75				100.0
#8	2.36				100.0
#16	1.18				100.0
#30	0.60				100.0
#50	0.30				100.0
#100	0.15				100.0
#200	0.08	45.5	51.1	51.1	48.9

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM/ML
Sample Number	B2 @ 15-16'

Krazan Testing Laboratory

Hydrometer Anaylsis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/21/2022
Sample Location	: B2 @ 25-26'
Soil Classification	: SC

Dry Weight Used	111.9 g
Temperature	20.0 C
Soil Specific Gravity	2.65
Solution Spec. Grav.	1.003
K Value	0.01365
Correction Factor	0.00000

Elapsed Time (min)	Hydro. Reading	Hydro. Corrected	% Passing	Particle Diameter
2	1.028	1.028	35.9	0.0288
5	1.025	1.025	31.6	0.0190
15	1.021	1.021	25.9	0.0115
30	1.018	1.018	21.6	0.0085
60	1.015	1.015	17.3	0.0062
250	1.011	1.011	11.5	0.0032
1440	1.007	1.007	5.8	0.0014

Particle Diameter	Percent Passing
0.005	15.0
0.002	7.8
0	NA

Krazan Testing Laboratory

Sieve Analysis

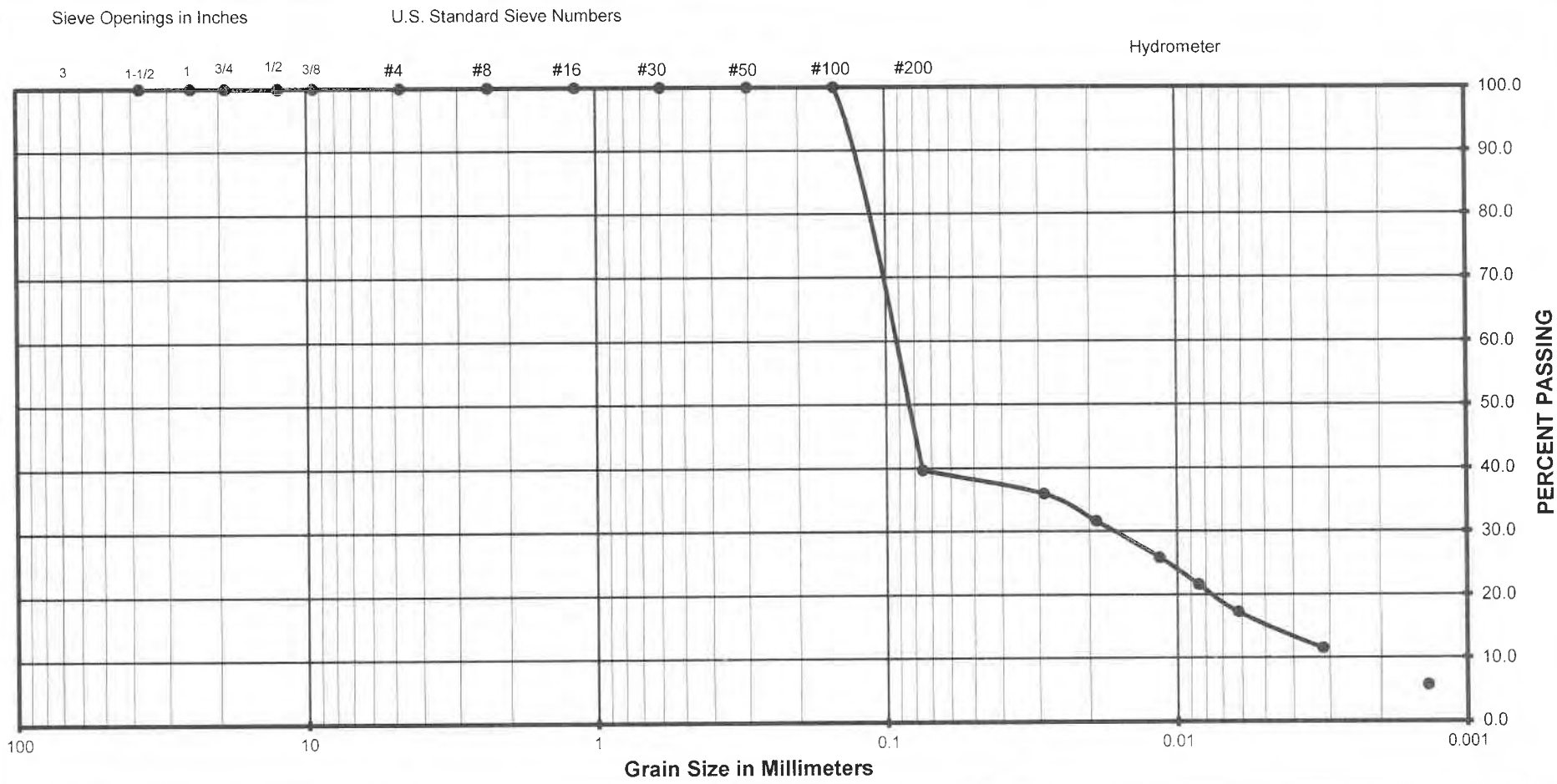
Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/21/2022
Sample Location	: B2 @ 25-26'
Soil Classification	: SC

Wet Weight	:	50.00
Dry Weight	:	42.80
Moisture Content	:	17%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50				100.0
#4	4.75				100.0
#8	2.36				100.0
#16	1.18				100.0
#30	0.60				100.0
#50	0.30				100.0
#100	0.15				100.0
#200	0.08	25.8	60.3	60.3	39.7

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SC
Sample Number	B2 @ 25-26'

Krazan Testing Laboratory

Hydrometer Anaylsis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/21/2022
Sample Location	: B4 @ 12-13'
Soil Classification	: SC

Dry Weight Used	102.2 g
Temperature	20.0 C
Soil Specific Gravity	2.65
Solution Spec. Grav.	1.003
K Value	0.01365
Correction Factor	0.00000

Elapsed Time (min)	Hydro. Reading	Hydro. Corrected	% Passing	Particle Diameter
2	1.026	1.026	36.2	0.0296
5	1.022	1.022	29.9	0.0198
15	1.019	1.019	25.2	0.0118
30	1.016	1.016	20.5	0.0087
60	1.015	1.015	18.9	0.0062
250	1.012	1.012	14.2	0.0031
1440	1.009	1.009	9.4	0.0013

Particle Diameter	Percent Passing
0.005	17.1
0.002	11.2
0	NA

Krazan Testing Laboratory

Sieve Analysis

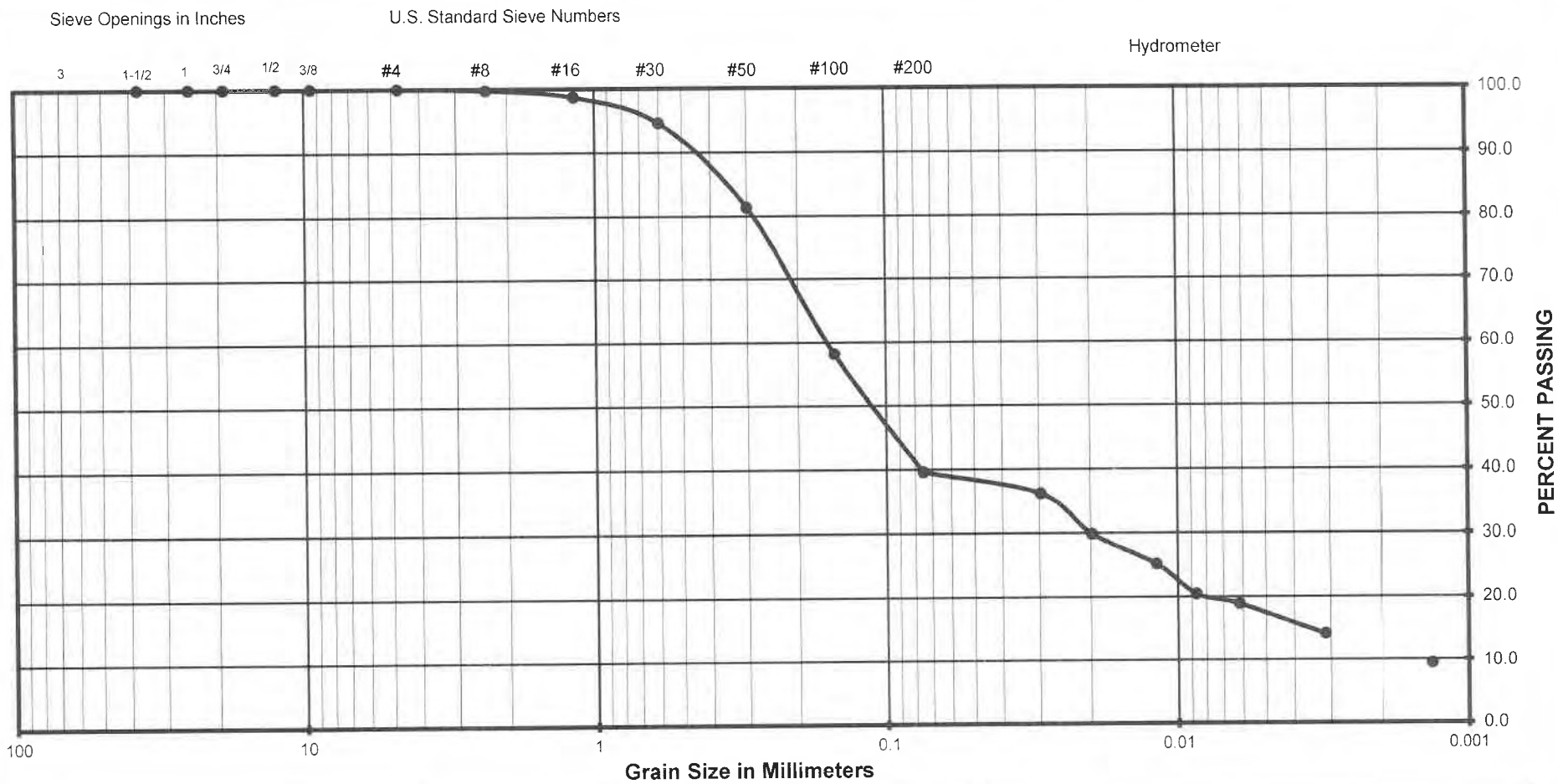
Project Number : 012-22165
Project Name : Triangle Development
Date : 9/21/2022
Sample Location : B4 @ 12-13'
Soil Classification : SC

Wet Weight	:	150.00
Dry Weight	:	130.00
Moisture Content	:	15%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50				100.0
#4	4.75				100.0
#8	2.36	0.3	0.2	0.2	99.8
#16	1.18	1.4	1.1	1.3	98.7
#30	0.60	5.3	4.1	5.4	94.6
#50	0.30	17.2	13.2	18.6	81.4
#100	0.15	30.2	23.2	41.8	58.2
#200	0.08	24.1	18.5	60.4	39.6

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SC
Sample Number	B4 @ 12-13'

Krazan Testing Laboratory

Hydrometer Anaylsis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/21/2022
Sample Location	: B4 @ 20-21'
Soil Classification	: SM

Dry Weight Used	104.6 g
Temperature	20.0 C
Soil Specific Gravity	2.65
Solution Spec. Grav.	1.003
K Value	0.01365
Correction Factor	0.00000

Elapsed Time (min)	Hydro. Reading	Hydro. Corrected	% Passing	Particle Diameter
2	1.019	1.019	24.6	0.0324
5	1.017	1.017	21.5	0.0210
15	1.015	1.015	18.5	0.0124
30	1.014	1.014	16.9	0.0088
60	1.012	1.012	13.8	0.0064
250	1.01	1.01	10.8	0.0032
1440	1.008	1.008	7.7	0.0014

Particle Diameter	Percent Passing
0.005	12.5
0.002	8.8
0	NA

Krazan Testing Laboratory

Sieve Analysis

Project Number : 012-22165
Project Name : Triangle Development
Date : 9/21/2022
Sample Location : B4 @ 20-21'
Soil Classification : SM

Wet Weight	:	150.00
Dry Weight	:	135.30
Moisture Content	:	11%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50				100.0
#4	4.75	0.5	0.4	0.4	99.6
#8	2.36	2.4	1.8	2.1	97.9
#16	1.18	5.3	3.9	6.1	93.9
#30	0.60	11.7	8.6	14.7	85.3
#50	0.30	27.4	20.3	35.0	65.0
#100	0.15	33.6	24.8	59.8	40.2
#200	0.08	16.3	12.0	71.8	28.2

Krazan Testing Laboratory

Grain Size Analysis



Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM
Sample Number	B4 @ 20-21'

Krazan Testing Laboratory

Hydrometer Anaylsis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/16/2022
Sample Location	: B5 @ 17-18'
Soil Classification	: SM/ML w/ trace of clay

Dry Weight Used	95.5 g
Temperature	20.0 C
Soil Specific Gravity	2.65
Solution Spec. Grav.	1.003
K Value	0.01365
Correction Factor	0.00000

Elapsed Time (min)	Hydro. Reading	Hydro. Corrected	% Passing	Particle Diameter
2	1.028	1.028	42.1	0.0288
5	1.026	1.026	38.8	0.0187
15	1.022	1.022	32.0	0.0114
30	1.021	1.021	30.3	0.0082
60	1.02	1.02	28.6	0.0058
250	1.017	1.017	23.6	0.0030
1440	1.013	1.013	16.8	0.0013

Particle Diameter	Percent Passing
0.005	27.2
0.002	19.7
0	NA

Krazan Testing Laboratory

Sieve Analysis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/16/2022
Sample Location	: B5 @ 17-18'
Soil Classification	: SM/ML w/ trace of clay

Wet Weight	:	100.00
Dry Weight	:	85.70
Moisture Content	:	17%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50				100.0
#4	4.75				100.0
#8	2.36				100.0
#16	1.18	0.9	1.1	1.1	98.9
#30	0.60	2.2	2.6	3.6	96.4
#50	0.30	6.1	7.1	10.7	89.3
#100	0.15	12.7	14.8	25.6	74.4
#200	0.08	20.6	24.0	49.6	50.4

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM/ML w/ trace of clay
Sample Number	B5 @ 17-18'

Krazan Testing Laboratory

Hydrometer Anaylsis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/16/2022
Sample Location	: B5 @ 25-26'
Soil Classification	: SM

Dry Weight Used	106.0 g
Temperature	20.0 C
Soil Specific Gravity	2.65
Solution Spec. Grav.	1.003
K Value	0.01365
Correction Factor	0.00000

Elapsed Time (min)	Hydro. Reading	Hydro. Corrected	% Passing	Particle Diameter
2	1.022	1.022	28.8	0.0313
5	1.02	1.02	25.8	0.0202
15	1.017	1.017	21.3	0.0121
30	1.016	1.016	19.7	0.0087
60	1.014	1.014	16.7	0.0063
250	1.012	1.012	13.7	0.0031
1440	1.01	1.01	10.6	0.0013

Particle Diameter	Percent Passing
0.005	15.5
0.002	11.8
0	NA

Krazan Testing Laboratory

Sieve Analysis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/16/2022
Sample Location	: B5 @ 25-26'
Soil Classification	: SM

Wet Weight	:	200.00
Dry Weight	:	166.60
Moisture Content	:	20%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50				100.0
#4	4.75				100.0
#8	2.36				100.0
#16	1.18				100.0
#30	0.60				100.0
#50	0.30				100.0
#100	0.15				100.0
#200	0.08	106.2	63.7	63.7	36.3

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM
Sample Number	B5 @ 25-26'

Krazan Testing Laboratory

Hydrometer Anaylsis

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/21/2022
Sample Location	: B6 @ 25-26'
Soil Classification	: SC

Dry Weight Used	104.6 g
Temperature	20.0 C
Soil Specific Gravity	2.65
Solution Spec. Grav.	1.003
K Value	0.01365
Correction Factor	0.00000

Elapsed Time (min)	Hydro. Reading	Hydro. Corrected	% Passing	Particle Diameter
2	1.026	1.026	35.4	0.0296
5	1.025	1.025	33.8	0.0190
15	1.024	1.024	32.3	0.0111
30	1.022	1.022	29.2	0.0081
60	1.019	1.019	24.6	0.0059
250	1.016	1.016	20.0	0.0030
1440	1.012	1.012	13.8	0.0013

Particle Diameter	Percent Passing
0.005	23.2
0.002	16.4
0	NA

Krazan Testing Laboratory

Sieve Analysis

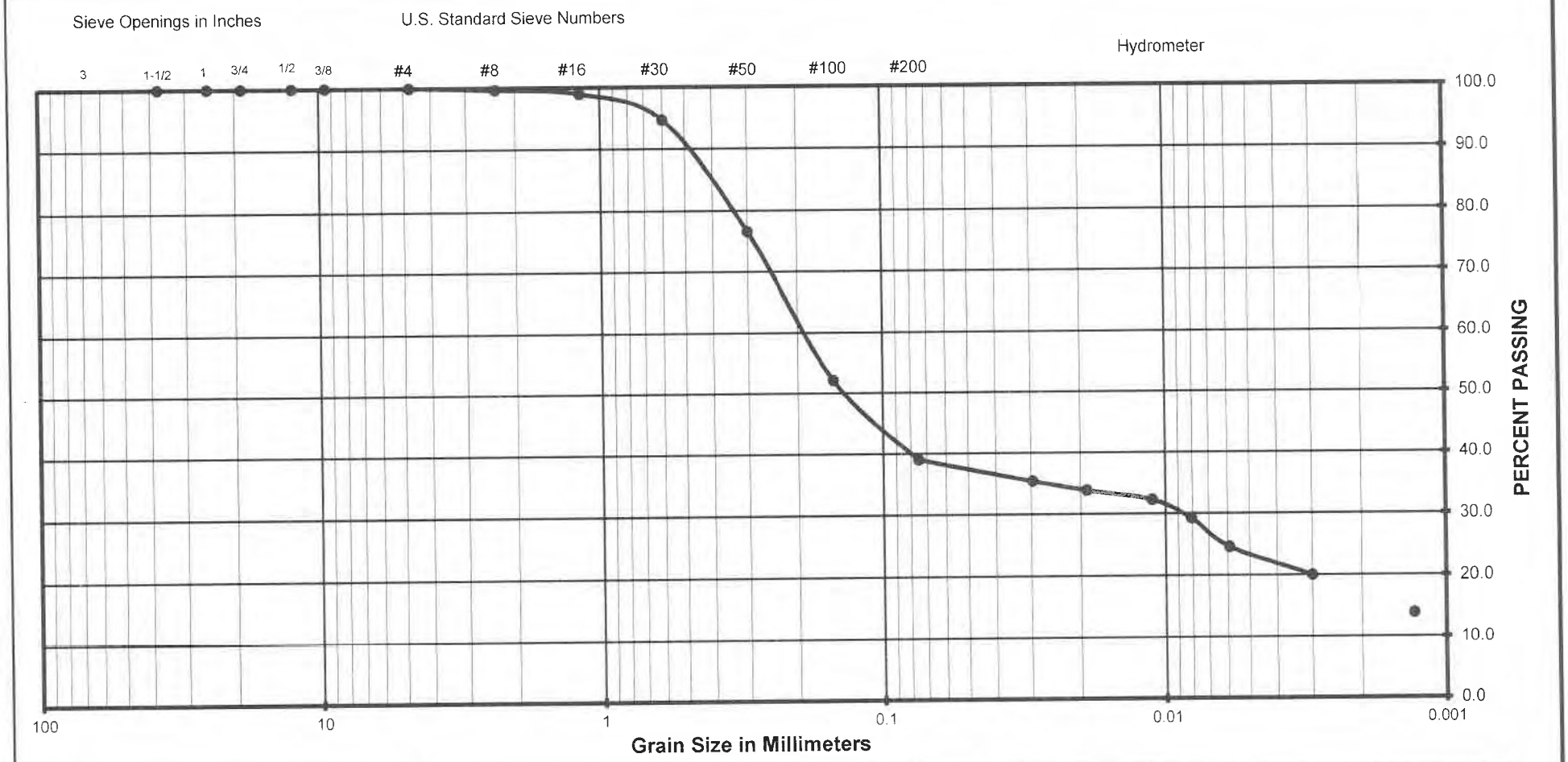
Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/21/2022
Sample Location	: B6 @ 25-26'
Soil Classification	: SC

Wet Weight	:	100.00
Dry Weight	:	86.70
Moisture Content	:	15%

Sieves Size/Number	Sieve Size, mm	Retained Weight	Retained. %	Cum % Retained	Cum. % Passing.
1-1/2"	37.50				100.0
1"	25.00				100.0
3/4"	19.00				100.0
1/2"	12.50				100.0
3/8"	9.50				100.0
#4	4.75				100.0
#8	2.36	0.3	0.3	0.3	99.7
#16	1.18	0.6	0.7	1.0	99.0
#30	0.60	3.7	4.3	5.3	94.7
#50	0.30	15.7	18.1	23.4	76.6
#100	0.15	21.2	24.5	47.9	52.1
#200	0.08	11.4	13.1	61.0	39.0

Krazan Testing Laboratory

Grain Size Analysis



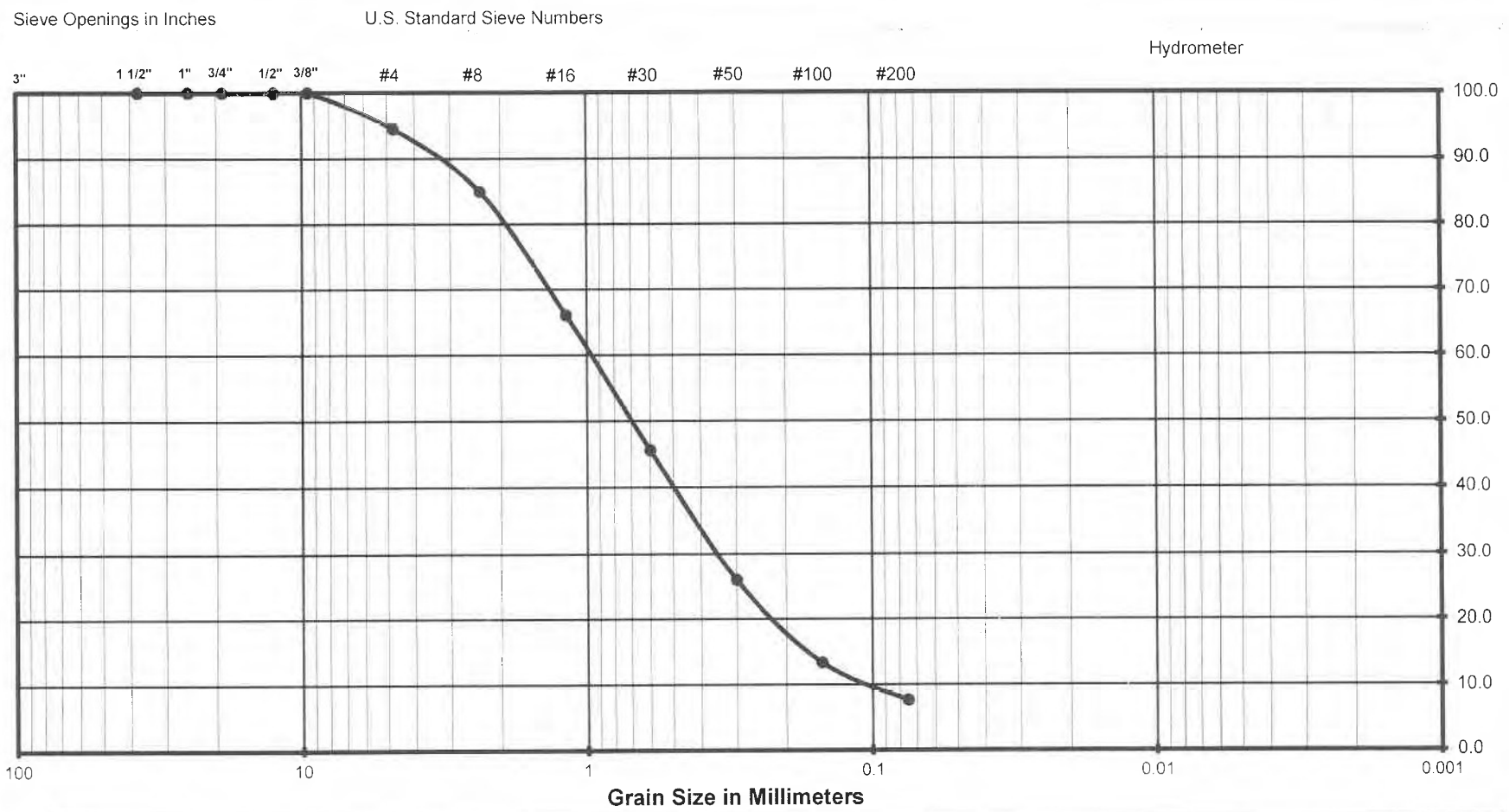
Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SC
Sample Number	B6 @ 25-26'

Krazan Testing Laboratory

Grain Size Analysis

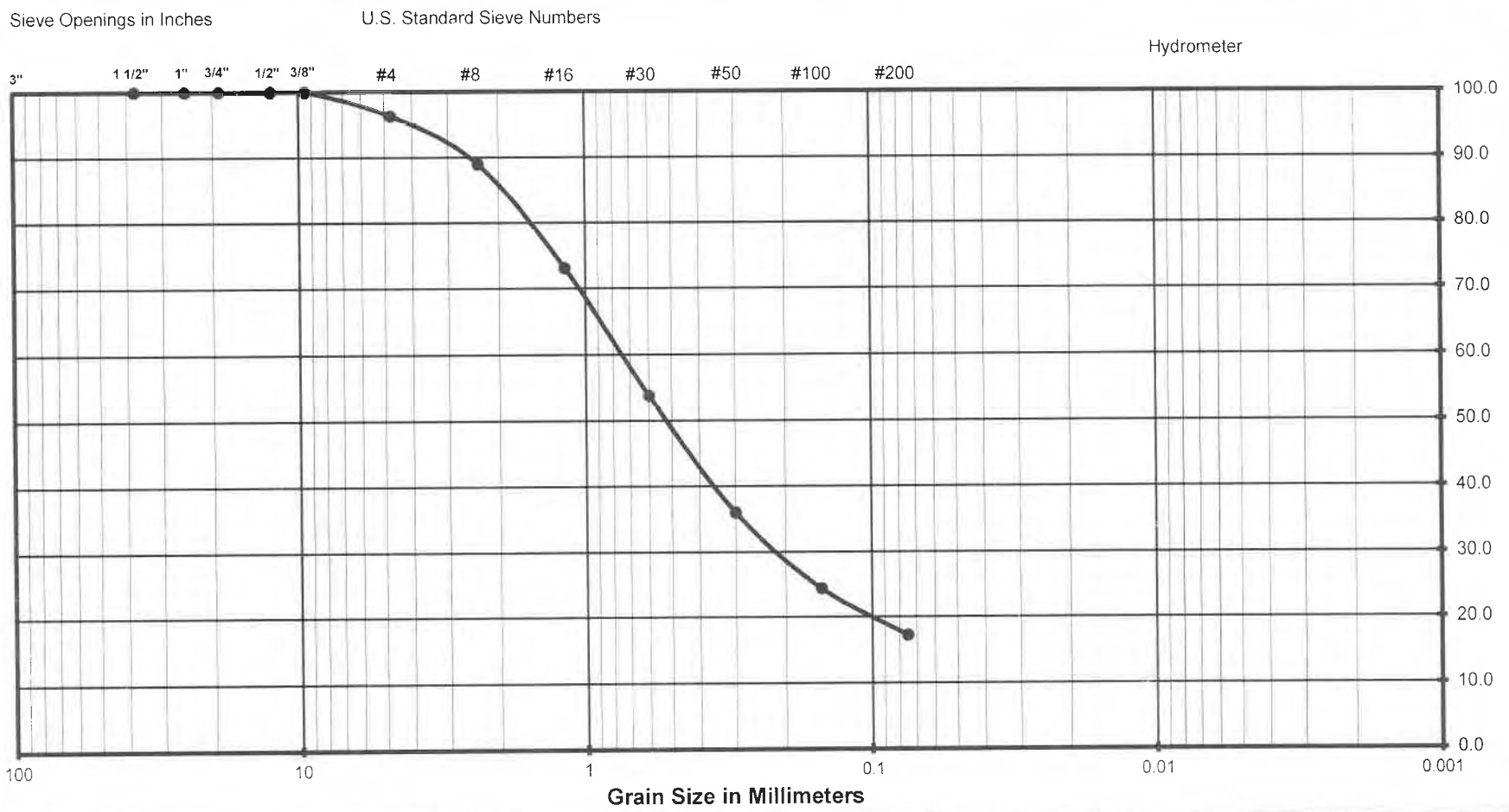


(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM/SP
Sample Number	B15 @ 9-10'

Krazan Testing Laboratory

Grain Size Analysis



(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM w/ trace of clay
Sample Number	B15 @ 15-16'

Krazan Testing Laboratory

Grain Size Analysis



(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM/SP
Sample Number	B15 @ 20-21'

Krazan Testing Laboratory

Grain Size Analysis

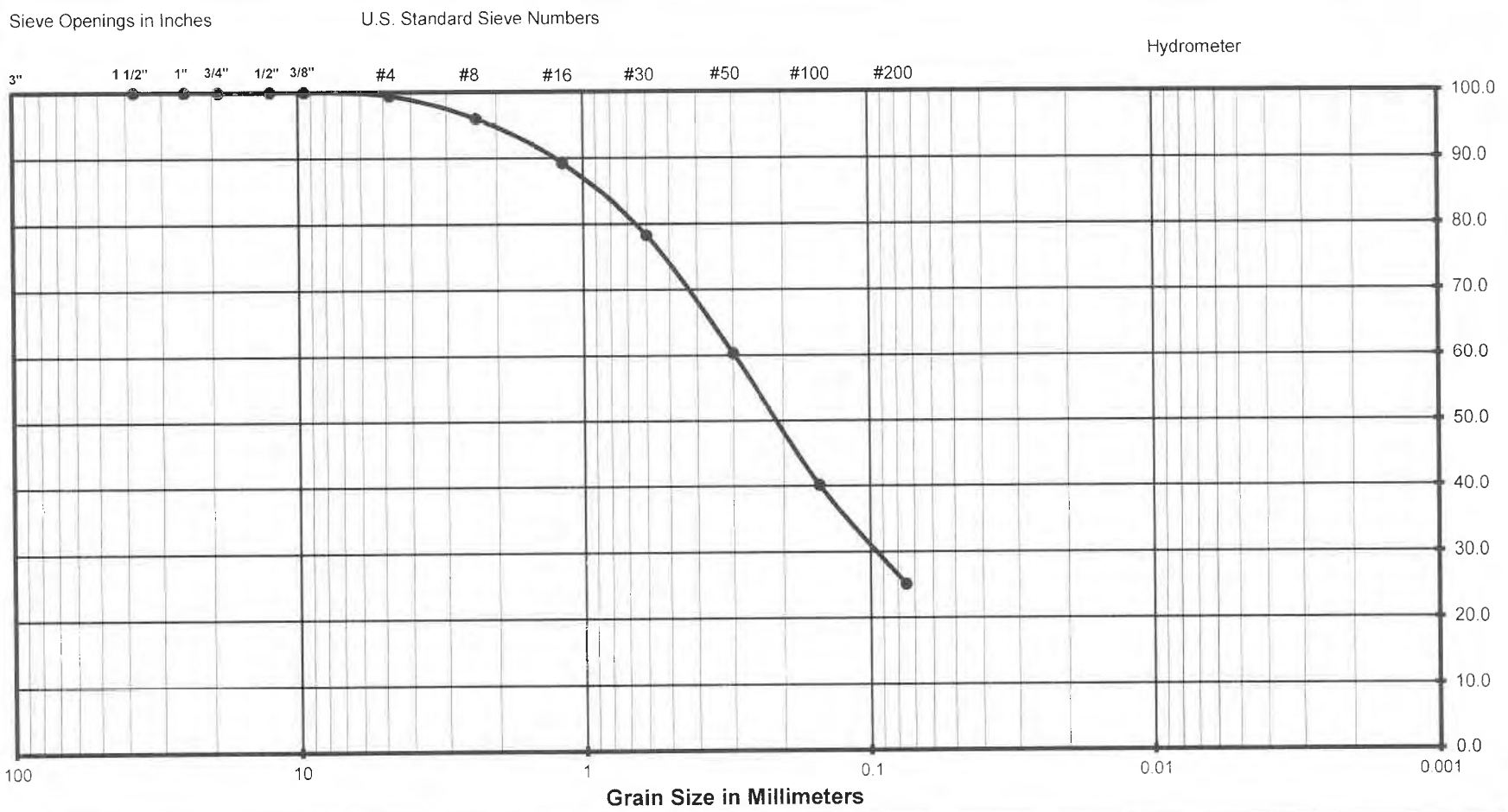


(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM/SP
Sample Number	B15 @ 25-26'

Krazan Testing Laboratory

Grain Size Analysis



(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22165
Soil Classification	SM
Sample Number	B15 @ 30-31'

Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22233
Soil Classification	SM w/ trace of clay
Sample Number	B29 @ 5-6'

Krazan Testing Laboratory

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

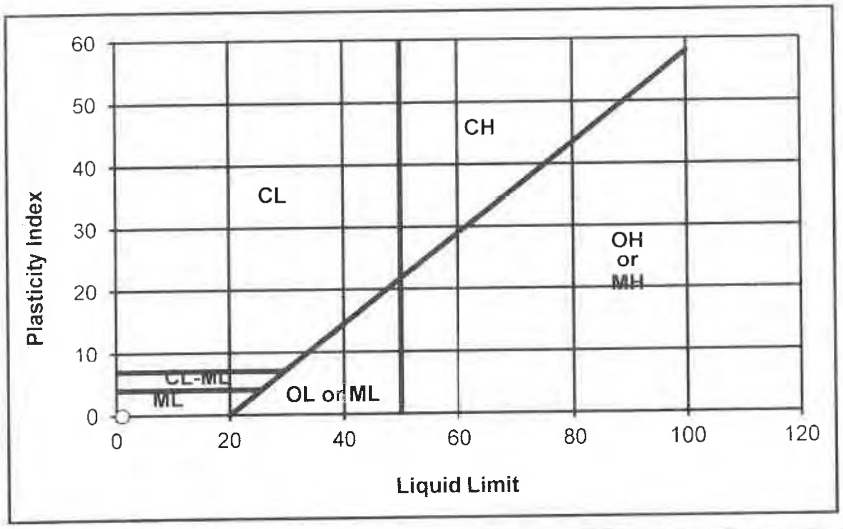
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B1 @ 7-8'
Sample Description: SM

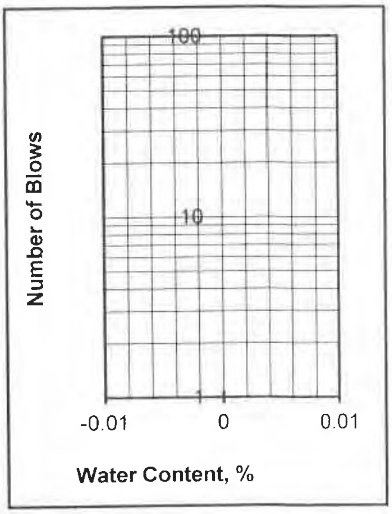
Date Tested: 9/16/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

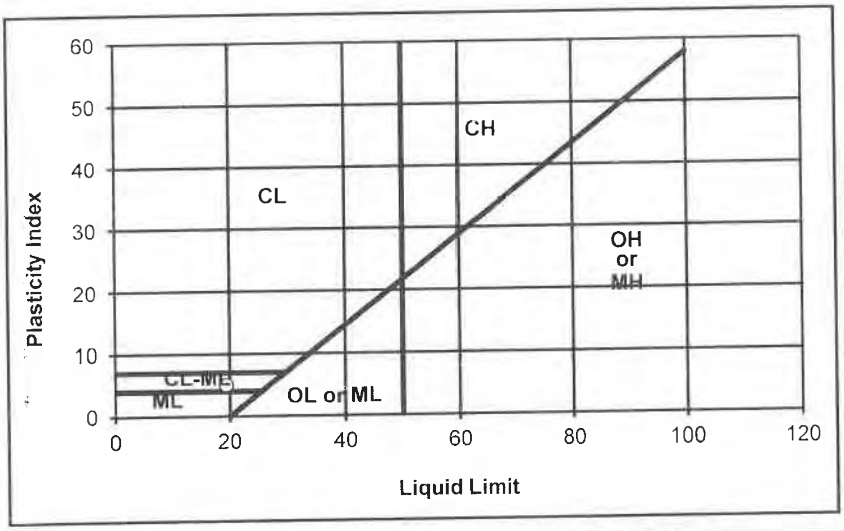
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B1 @ 10-11'
Sample Description: ML/CL

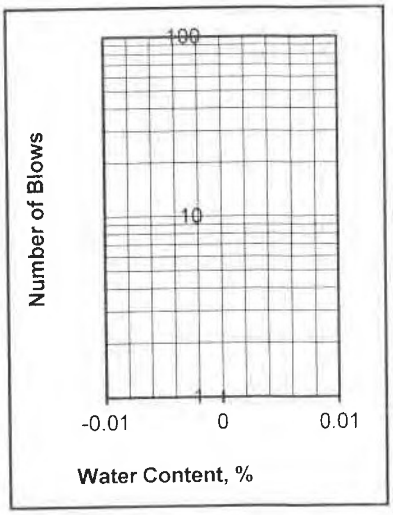
Date Tested: 9/16/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	36.36	37.81		40.03	33.48	
Weight of Dry Soil & Tare (g)	34.83	36.13		37.38	31.16	
Weight of Tare (g)	23.64	23.52		23.37	19.51	
Weight of water (g)	1.53	1.68		2.65	2.32	
Weight of Dry Soil (g)	11.19	12.61		14.01	11.65	
Water Content (% of dry wt.)	13.7%	13.4%		18.9%	19.9%	
Number of Blows				27	23	

Plastic Limit : 14 **Liquid Limit : 19**

Plasticity Index : 5
Unified Soil Classification : CL-ML
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B1 @ 15-16'
Sample Description: SM/SC

Date Tested: 9/16/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	36.18	34.84		40.41	34.59	
Weight of Dry Soil & Tare (g)	34.51	33.32		37.33	32.55	
Weight of Tare (g)	23.21	23.23		22.36	23.32	
Weight of water (g)	1.67	1.51		3.08	2.04	
Weight of Dry Soil (g)	11.30	10.10		14.97	9.23	
Water Content (% of dry wt.)	14.8%	15.0%		20.6%	22.0%	
Number of Blows				25	23	

Plastic Limit : 15

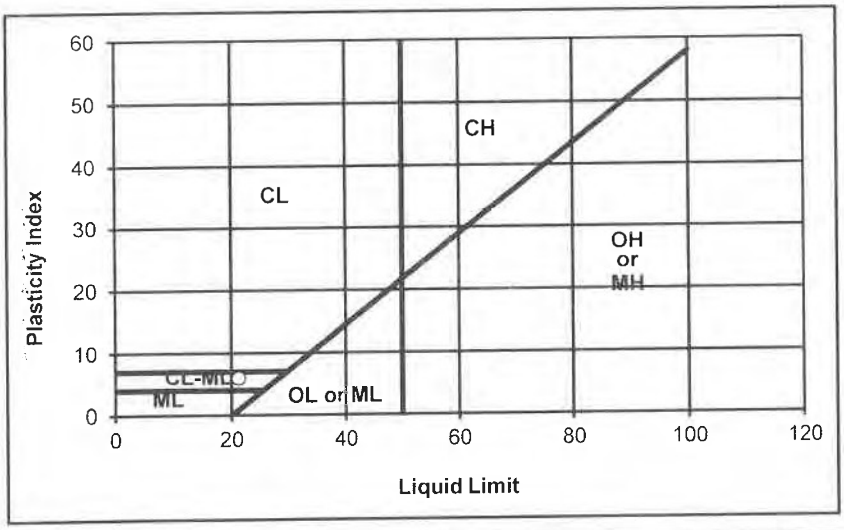
Liquid Limit : 21

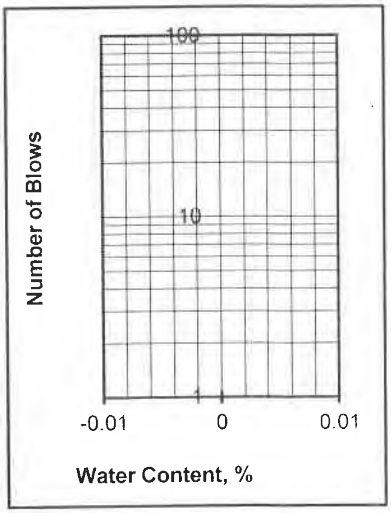
Plasticity Index : 6

Unified Soil Classification : CL-ML

Requirement:

Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

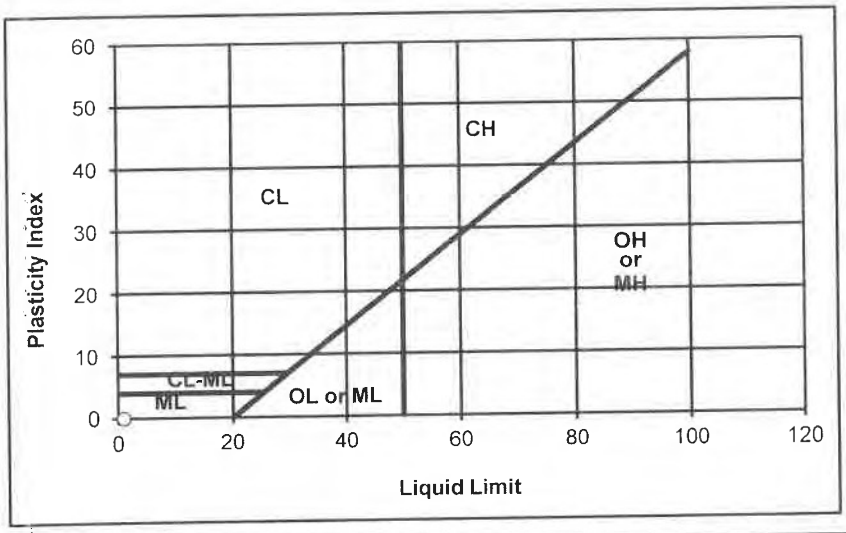
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B1 @ 25-26'
Sample Description: SM

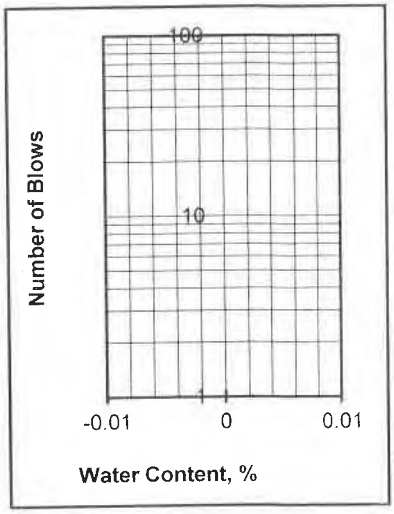
Date Tested: 9/16/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

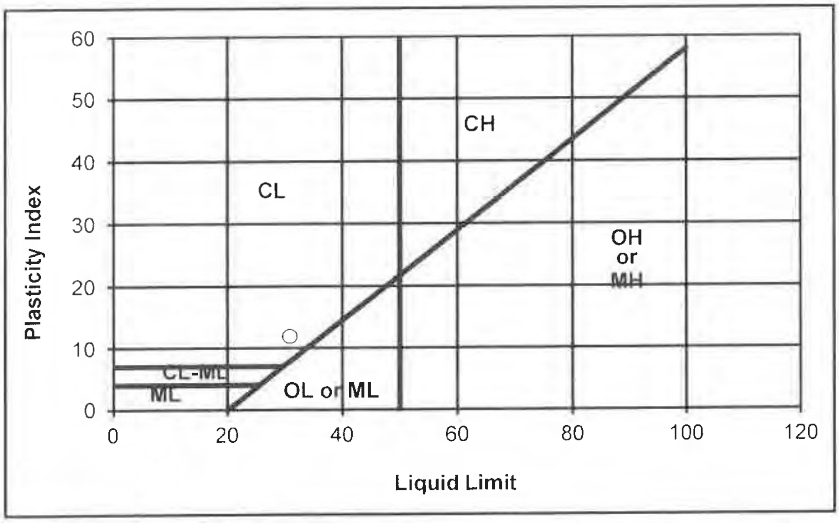
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B1 @ 35-36'
Sample Description: SC/CL

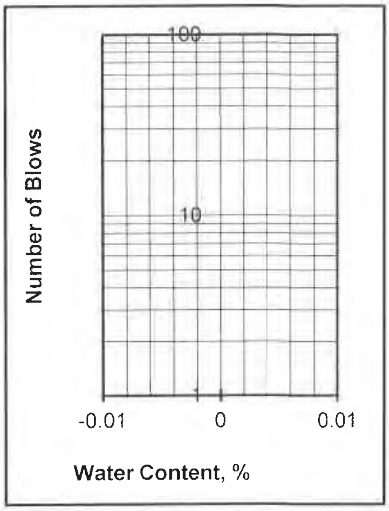
Date Tested: 9/16/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	31.77	31.40		38.08	38.28	
Weight of Dry Soil & Tare (g)	30.41	30.01		34.62	34.78	
Weight of Tare (g)	23.38	22.84		23.46	23.42	
Weight of water (g)	1.37	1.39		3.46	3.50	
Weight of Dry Soil (g)	7.02	7.17		11.16	11.36	
Water Content (% of dry wt.)	19.5%	19.4%		31.0%	30.8%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 31**

Plasticity Index : 12
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

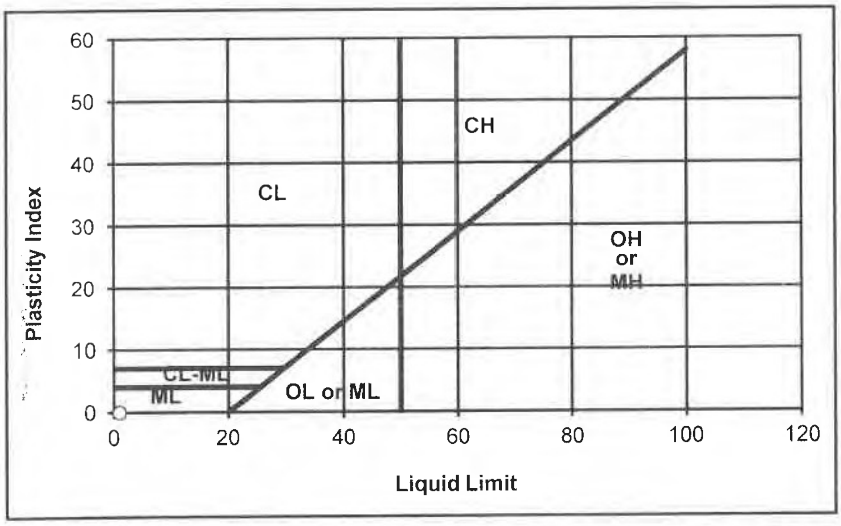
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B1 @ 45-46'
Sample Description: SM

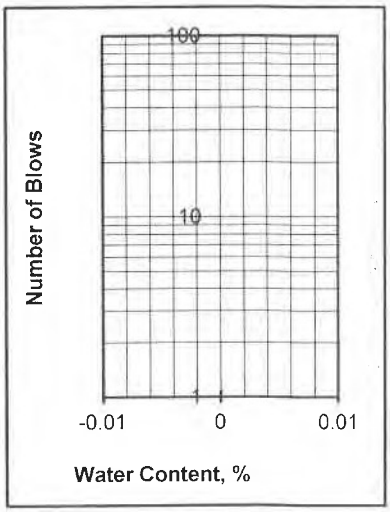
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

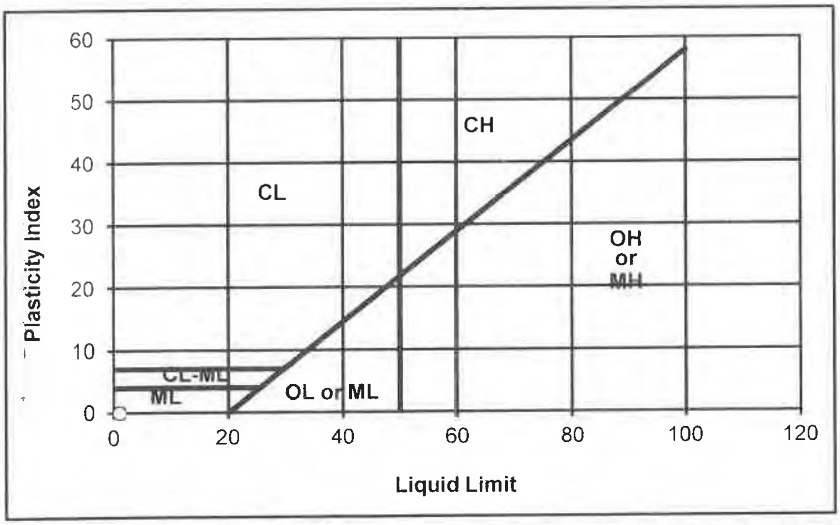
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B2 @ 5-6'
Sample Description: SM

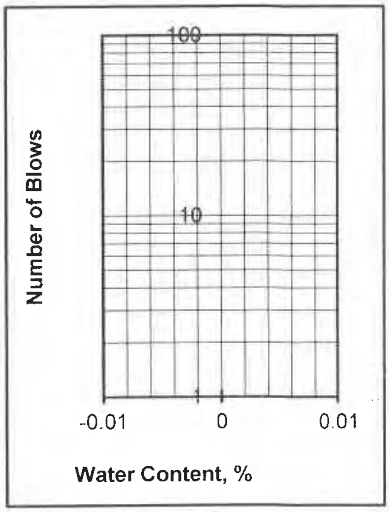
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

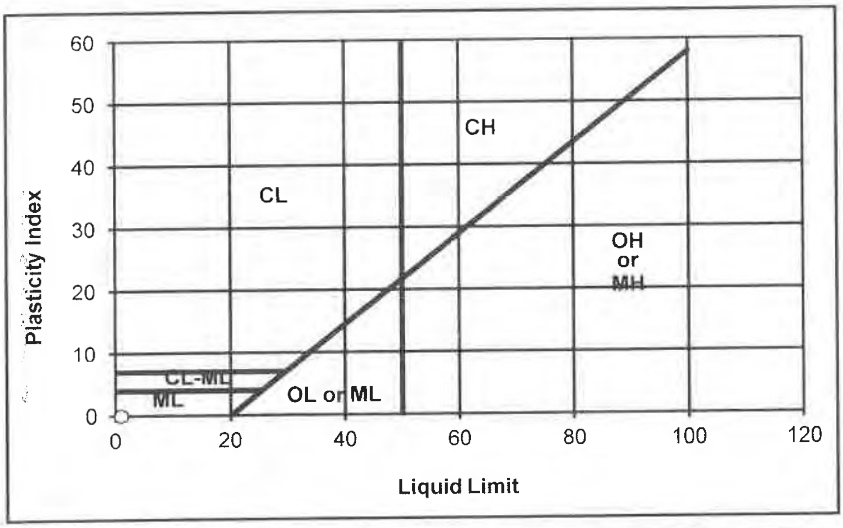
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B2 @ 10-11'
Sample Description: SM

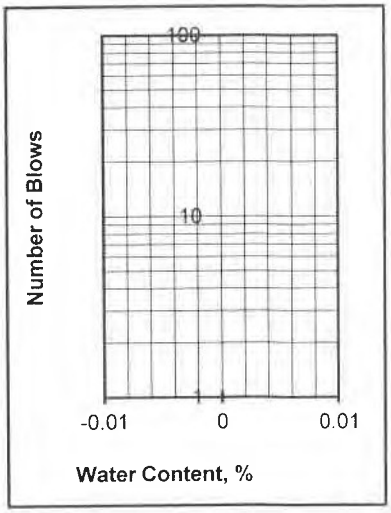
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

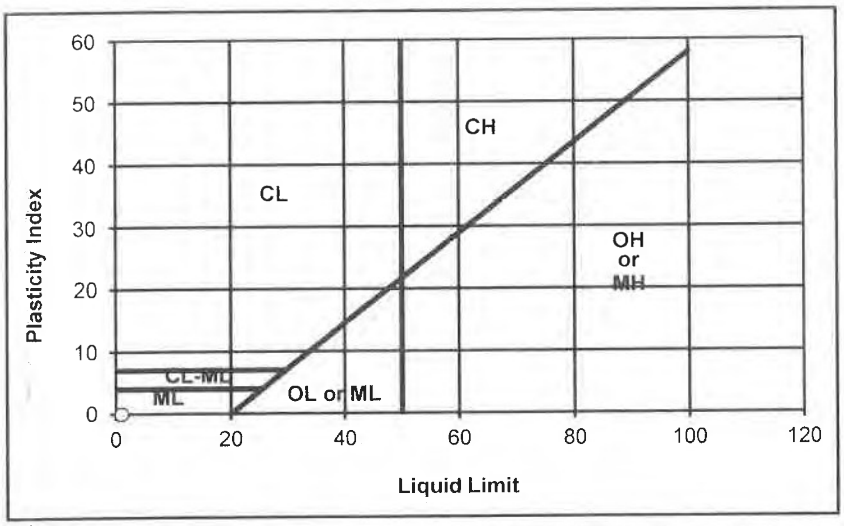
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B2 @ 15-16'
Sample Description: SM/ML

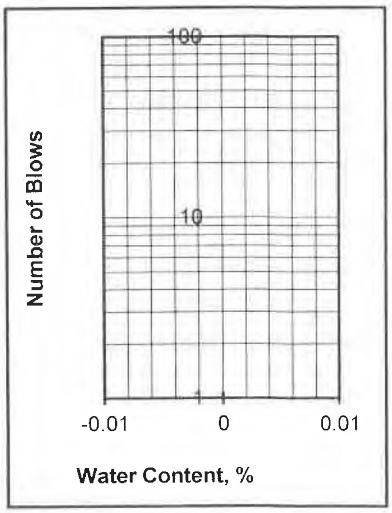
Date Tested: 9/16/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

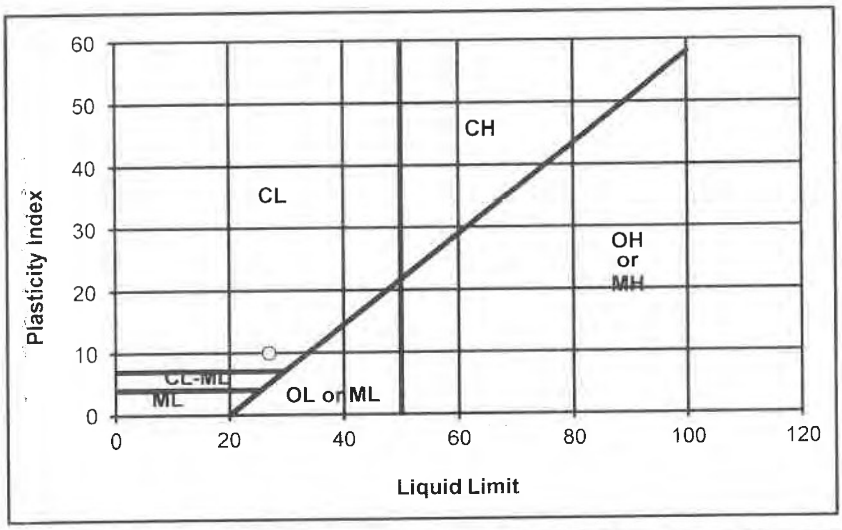
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B2 @ 25-26'
Sample Description: SC

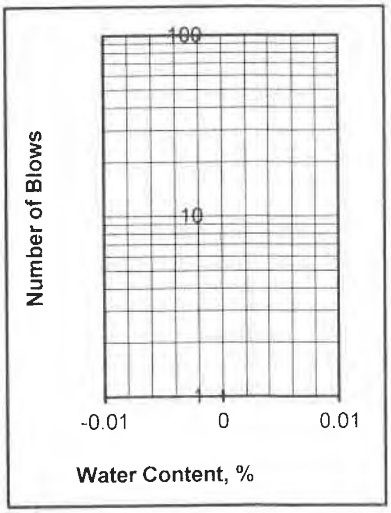
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	42.20	40.81		39.76	38.01	
Weight of Dry Soil & Tare (g)	39.51	38.30		36.30	34.05	
Weight of Tare (g)	23.65	23.51		23.37	19.51	
Weight of water (g)	2.70	2.51		3.46	3.96	
Weight of Dry Soil (g)	15.86	14.79		12.94	14.54	
Water Content (% of dry wt.)	17.0%	17.0%		26.7%	27.2%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 27**

Plasticity Index : 10
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

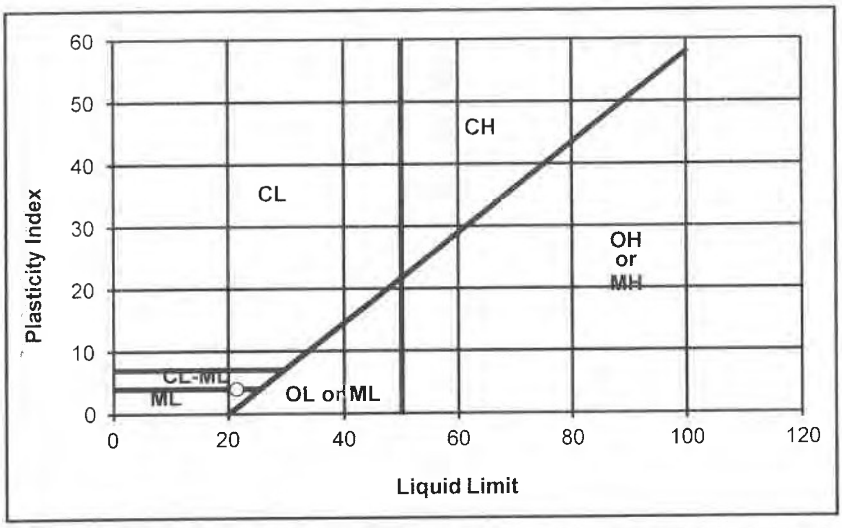
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B2 @ 35-36'
Sample Description: SC/SM

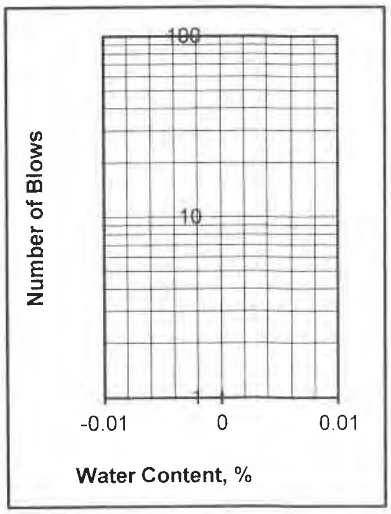
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	36.17	33.30		39.15	39.62	
Weight of Dry Soil & Tare (g)	34.29	31.77		36.37	36.78	
Weight of Tare (g)	23.40	22.84		23.45	23.42	
Weight of water (g)	1.89	1.54		2.78	2.84	
Weight of Dry Soil (g)	10.89	8.93		12.91	13.36	
Water Content (% of dry wt.)	17.3%	17.2%		21.6%	21.3%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 21**

Plasticity Index : 4
Unified Soil Classification : CL-ML **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

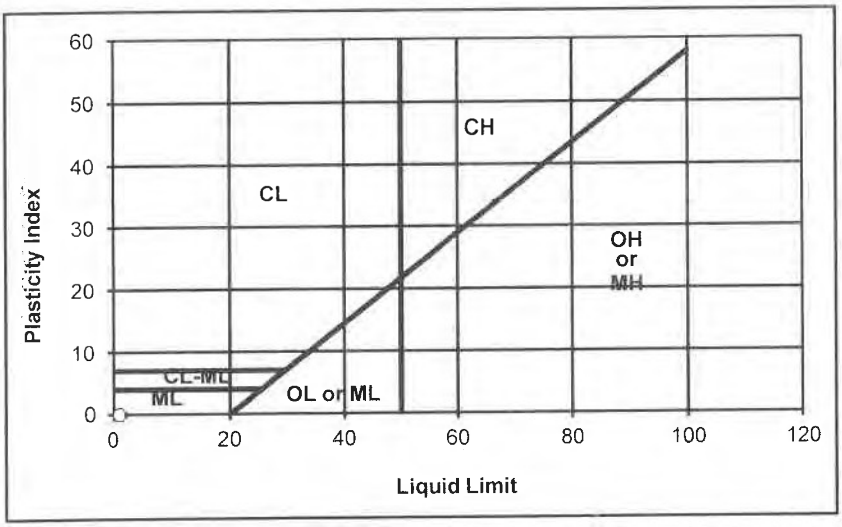
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/29/2022
Sampled By: DA
Sample Number: -
Sample Location: B2 @ 45-46'
Sample Description: SM

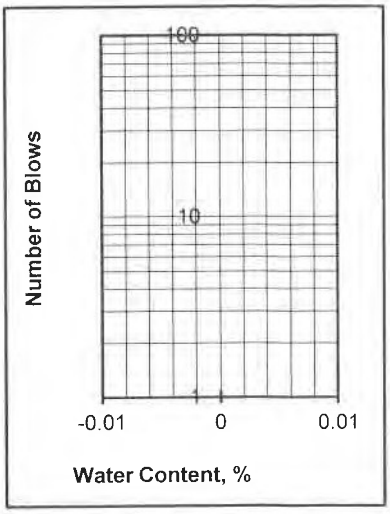
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

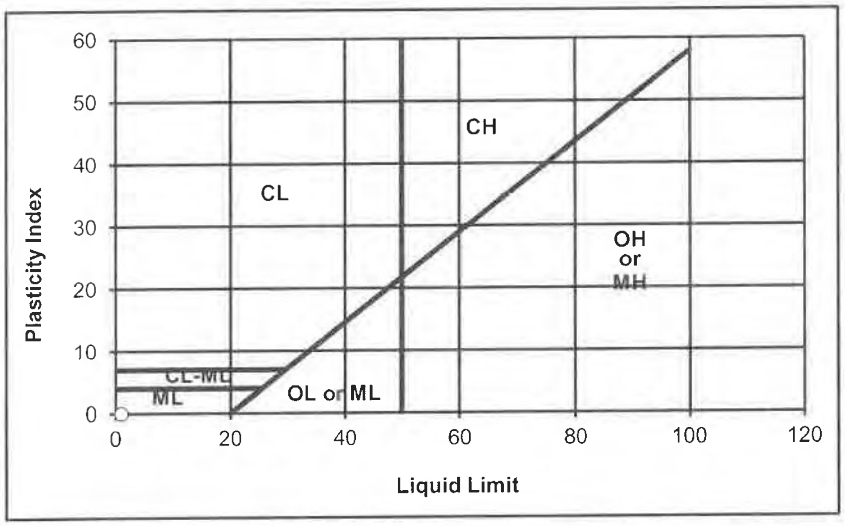
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B3 @ 10-11'
Sample Description: SM

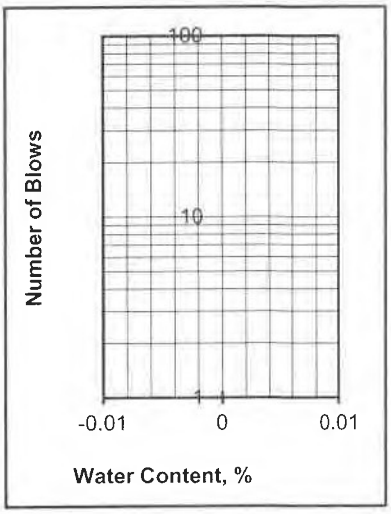
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

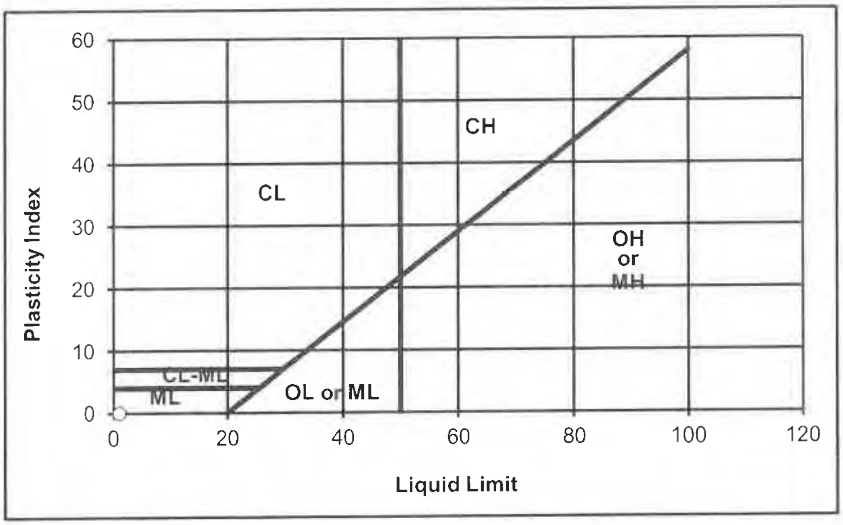
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B3 @ 15-16'
Sample Description: SM

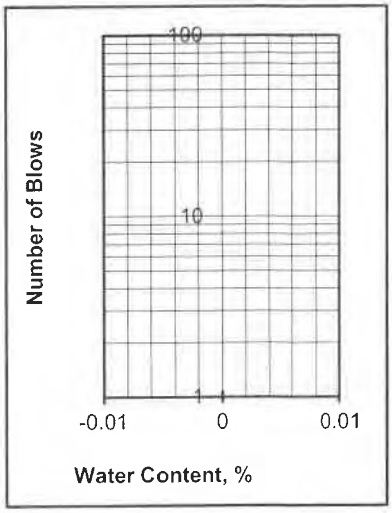
Date Tested: 9/16/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

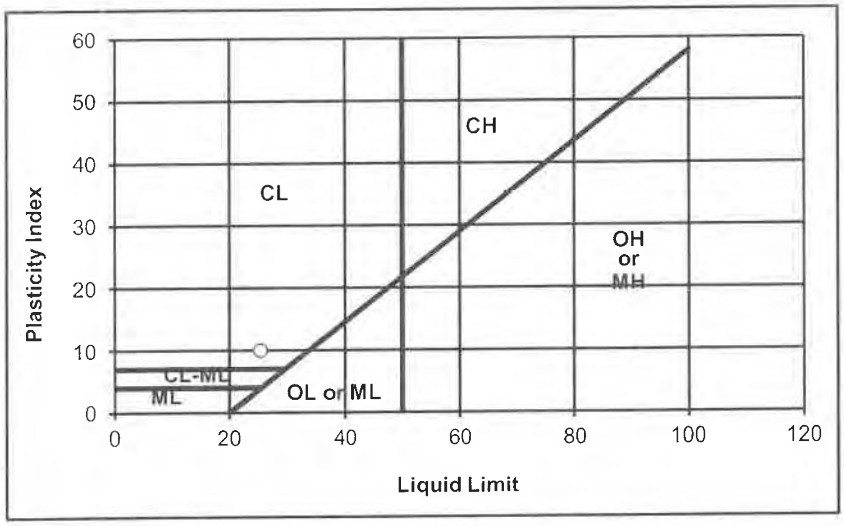
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B3 @ 20-21'
Sample Description: SC

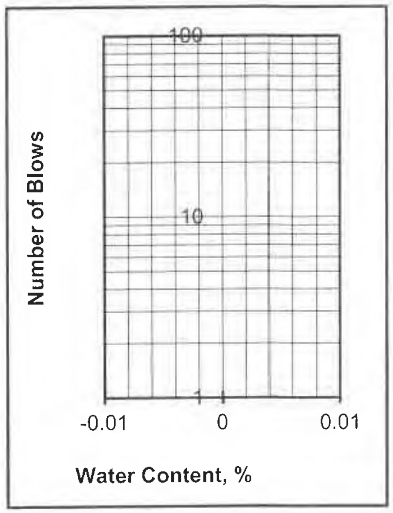
Date Tested: 9/16/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	38.11	37.08		38.49	38.48	
Weight of Dry Soil & Tare (g)	36.23	35.31		35.23	35.42	
Weight of Tare (g)	23.20	23.24		22.38	23.32	
Weight of water (g)	1.88	1.77		3.26	3.06	
Weight of Dry Soil (g)	13.03	12.07		12.86	12.10	
Water Content (% of dry wt.)	14.4%	14.7%		25.3%	25.3%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 25**

Plasticity Index : 10
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

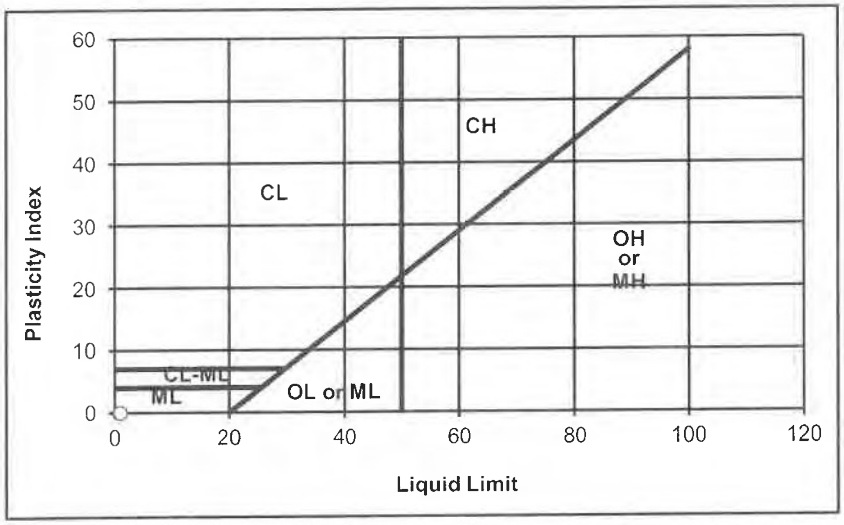
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B3 @ 25-26'
Sample Description: SM

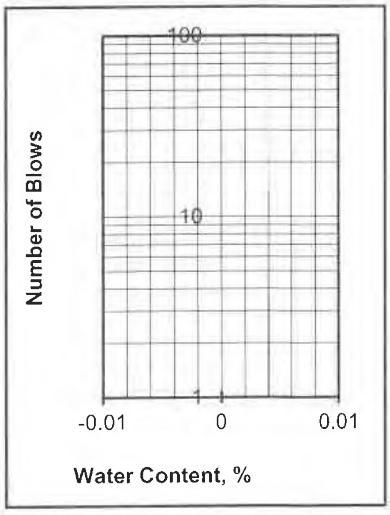
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B4 @ 10-11'
Sample Description: SC/CL

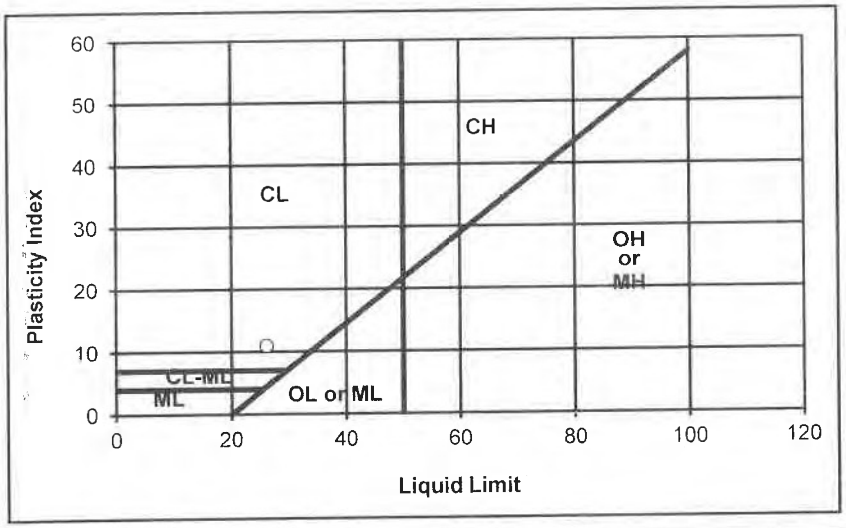
Date Tested: 9/16/2022
Tested By: JM
Verified By: JG

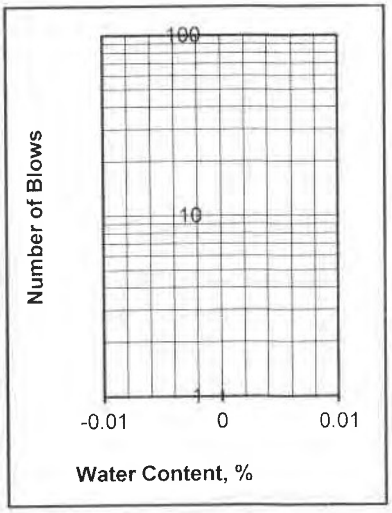
Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	41.18	35.13		37.49	37.74	
Weight of Dry Soil & Tare (g)	38.82	33.54		34.57	34.78	
Weight of Tare (g)	23.38	22.84		23.45	23.42	
Weight of water (g)	2.36	1.59		2.92	2.96	
Weight of Dry Soil (g)	15.44	10.70		11.12	11.36	
Water Content (% of dry wt.)	15.3%	14.8%		26.3%	26.1%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 26**

Plasticity Index : 11
Unified Soil Classification : CL

Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/30/2022
Sample Number	: -
Sample Location	: B4 @ 15-16'
Soil Classification	: SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	116.5	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	12.5	Initial Length,cm	7.11	% Passing # 200	29.4
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	5:15	5:32	0.18	2.94	9.86	7.10	21.5	19.8	22.5
2	5:32	5:55	2.94	5.68	7.10	4.36	21.5	19.8	22.5
3	5:58	6:31	0.34	5.12	9.80	5.02	21.5	19.8	22.5
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1020	0.75404	2.6E-05	2.601E-05
2	1380	0.67618	2.7E-05	2.664E-05
3	1980	0.57094	2.7E-05	2.66E-05
4				
5				
6				

Permeability
2.64E-05 cm/sec
2.64E-07 m/sec

Krazan Testing Laboratory

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

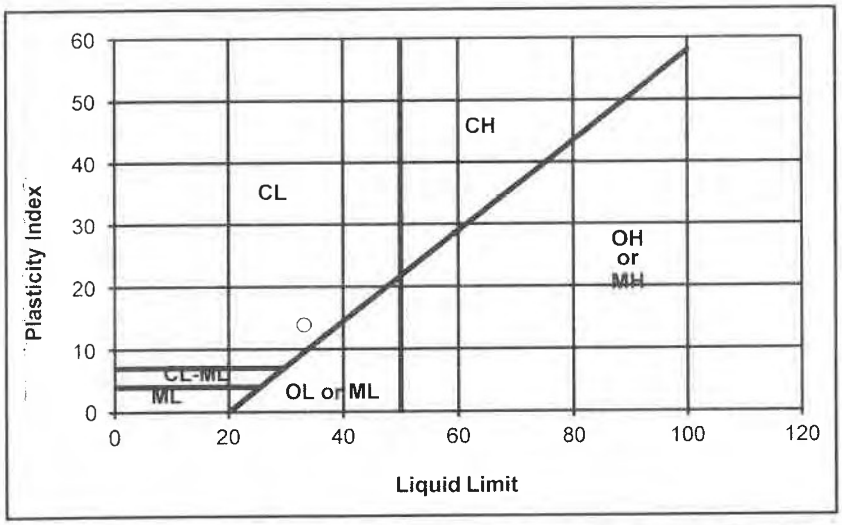
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B4 @ 25-26'
Sample Description: SC

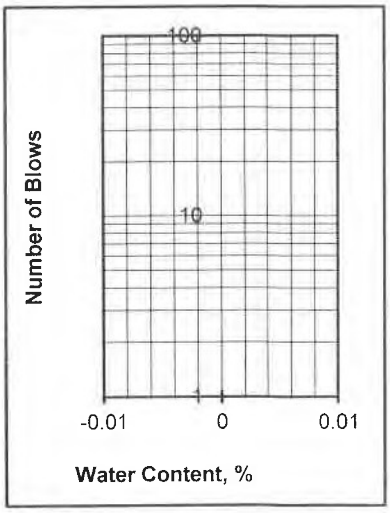
Date Tested: 9/19/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	32.98	36.46		38.30	41.63	
Weight of Dry Soil & Tare (g)	31.44	34.40		34.31	37.09	
Weight of Tare (g)	23.22	23.23		22.38	23.32	
Weight of water (g)	1.54	2.06		3.98	4.54	
Weight of Dry Soil (g)	8.22	11.18		11.93	13.77	
Water Content (% of dry wt.)	18.7%	18.4%		33.4%	33.0%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 33**

Plasticity Index : 14
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

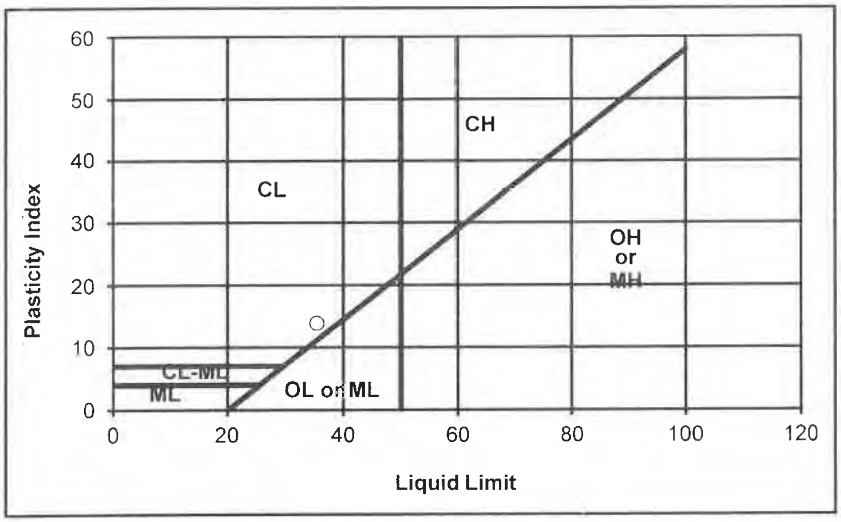
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B4 @ 30-31'
Sample Description: CL

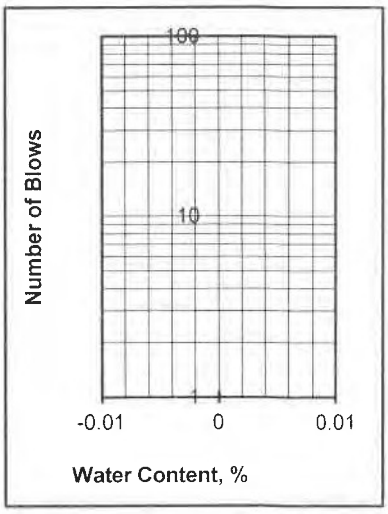
Date Tested: 9/19/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	39.05	38.40		35.91	35.72	
Weight of Dry Soil & Tare (g)	36.33	35.70		32.66	32.50	
Weight of Tare (g)	23.38	22.84		23.47	23.43	
Weight of water (g)	2.73	2.70		3.25	3.22	
Weight of Dry Soil (g)	12.95	12.86		9.19	9.07	
Water Content (% of dry wt.)	21.1%	21.0%		35.3%	35.6%	
Number of Blows				25	25	

Plastic Limit : 21 **Liquid Limit : 35**

Plasticity Index : 14
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B5 @ 10-11'
Sample Description: SC

Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	47.58	49.70		43.44	47.87	
Weight of Dry Soil & Tare (g)	44.68	46.43		39.66	43.44	
Weight of Tare (g)	23.47	23.23		22.38	23.32	
Weight of water (g)	2.90	3.27		3.78	4.43	
Weight of Dry Soil (g)	21.21	23.20		17.28	20.13	
Water Content (% of dry wt.)	13.7%	14.1%		21.9%	22.0%	
Number of Blows				25	25	

Plastic Limit : 14

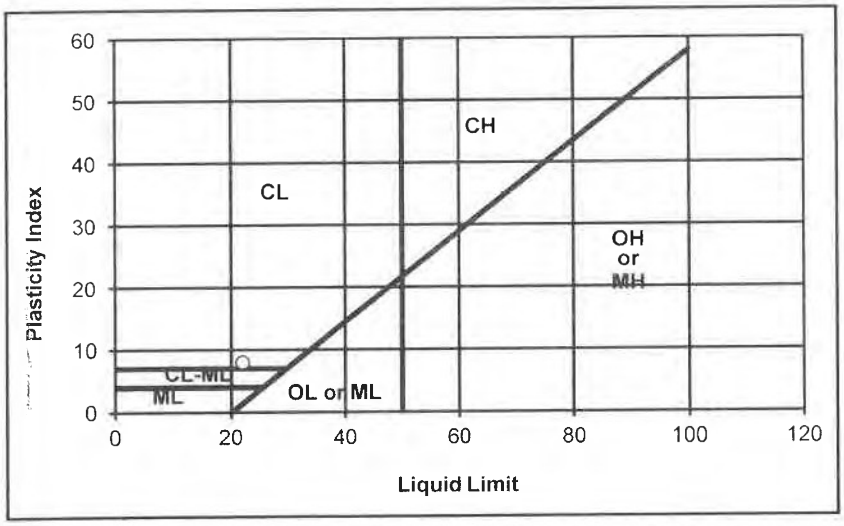
Liquid Limit : 22

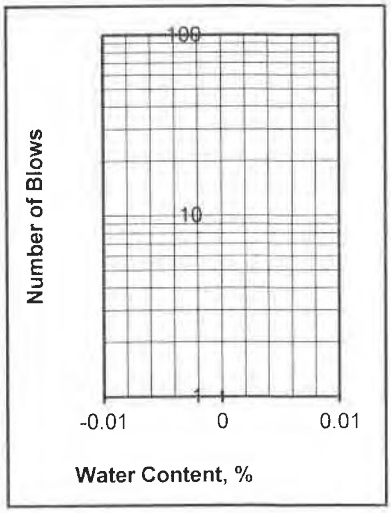
Plasticity Index : 8

Unified Soil Classification : CL

Requirement:

Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

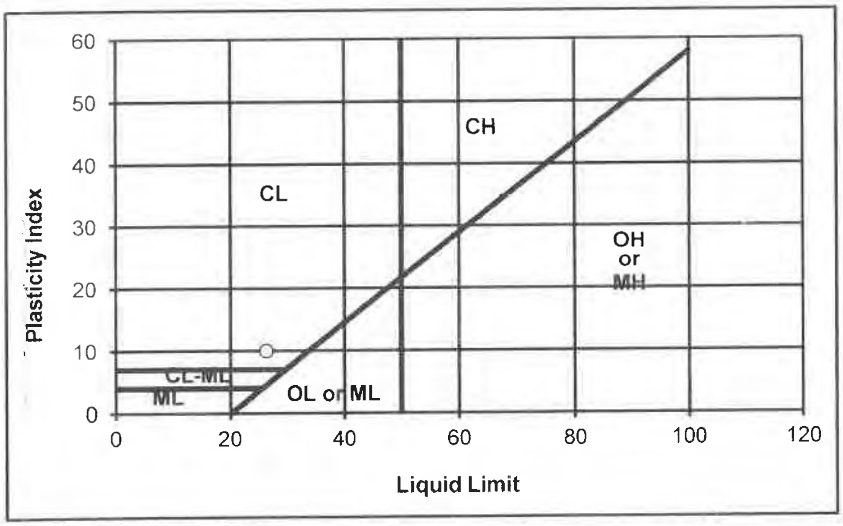
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B5 @ 15-16'
Sample Description: SC

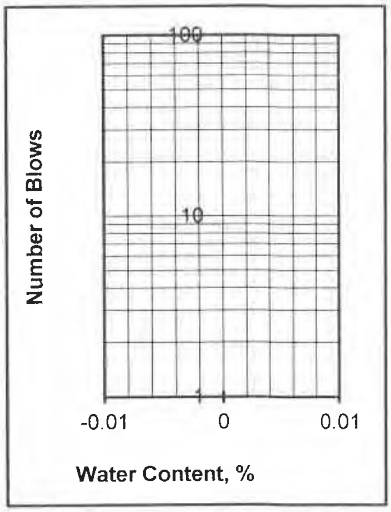
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	37.93	34.92		36.62	35.28	
Weight of Dry Soil & Tare (g)	35.90	33.29		33.83	32.81	
Weight of Tare (g)	23.39	22.85		23.22	23.42	
Weight of water (g)	2.03	1.63		2.79	2.47	
Weight of Dry Soil (g)	12.51	10.45		10.62	9.40	
Water Content (% of dry wt.)	16.3%	15.6%		26.3%	26.3%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 26**

Plasticity Index : 10
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

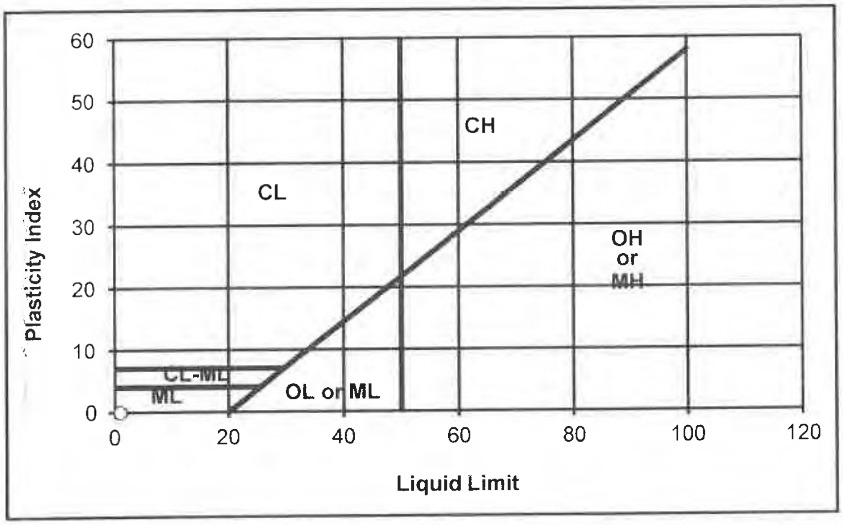
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B5 @ 20-21'
Sample Description: SM

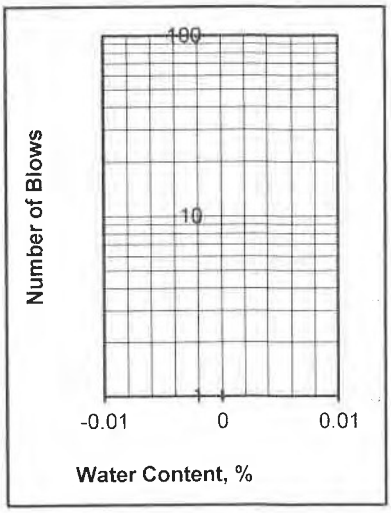
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B5 @ 30-31'
Sample Description: SC

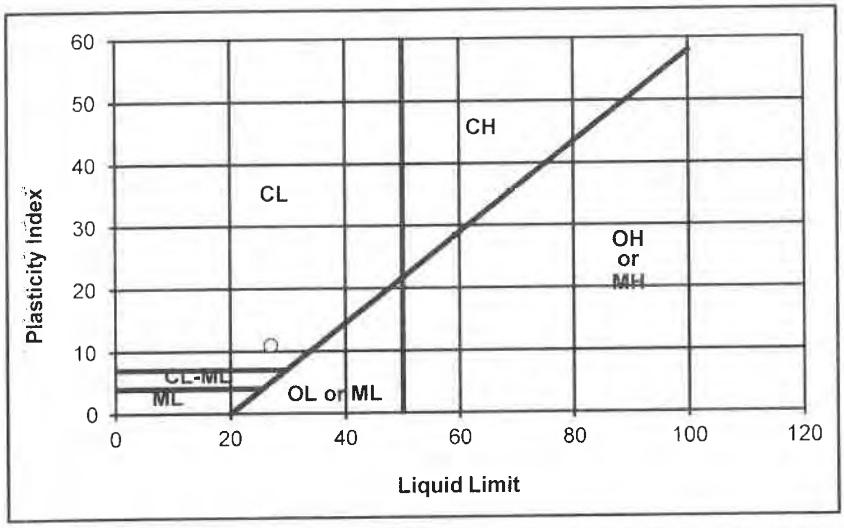
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

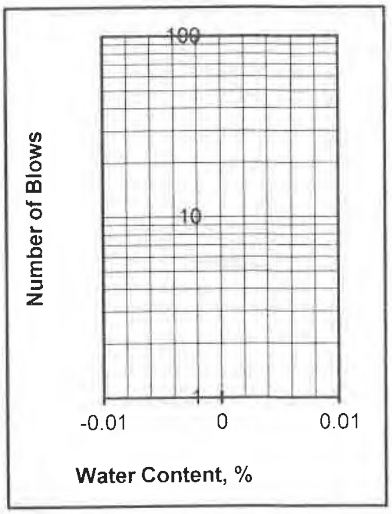
Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	37.45	39.24		42.10	42.52	
Weight of Dry Soil & Tare (g)	35.51	37.07		38.01	38.46	
Weight of Tare (g)	23.27	23.28		22.88	23.38	
Weight of water (g)	1.95	2.17		4.09	4.07	
Weight of Dry Soil (g)	12.24	13.79		15.13	15.08	
Water Content (% of dry wt.)	15.9%	15.7%		27.0%	27.0%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 27**

Plasticity Index : 11
Unified Soil Classification : CL

Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

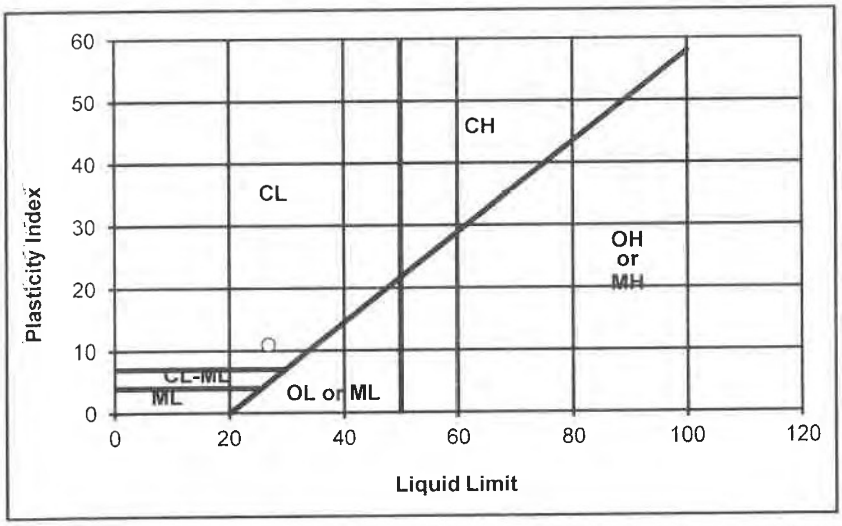
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B5 @ 35-36'
Sample Description: SC

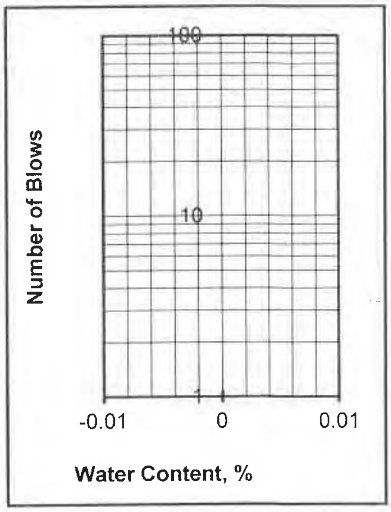
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	39.88	42.32		40.49	37.83	
Weight of Dry Soil & Tare (g)	37.63	39.76		36.88	33.96	
Weight of Tare (g)	23.65	23.53		23.38	19.54	
Weight of water (g)	2.25	2.56		3.60	3.87	
Weight of Dry Soil (g)	13.98	16.23		13.51	14.42	
Water Content (% of dry wt.)	16.1%	15.8%		26.7%	26.9%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 27**

Plasticity Index : 11
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

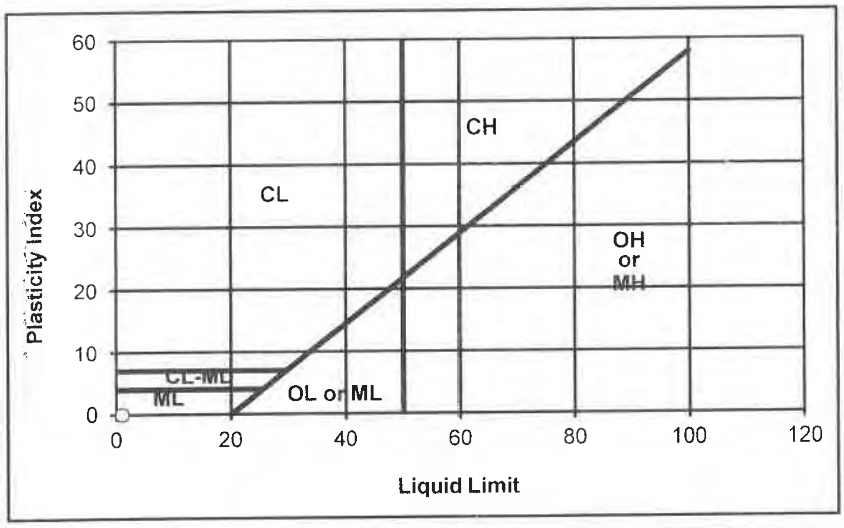
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B6 @ 5-6'
Sample Description: SM

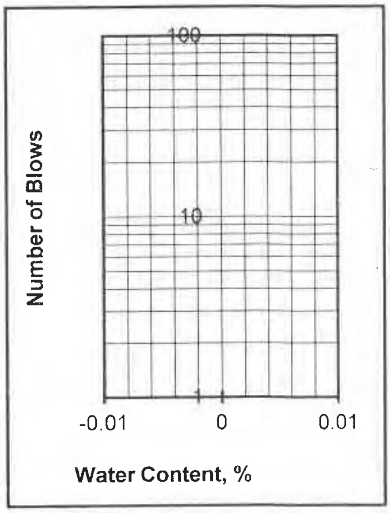
Date Tested: 9/19/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

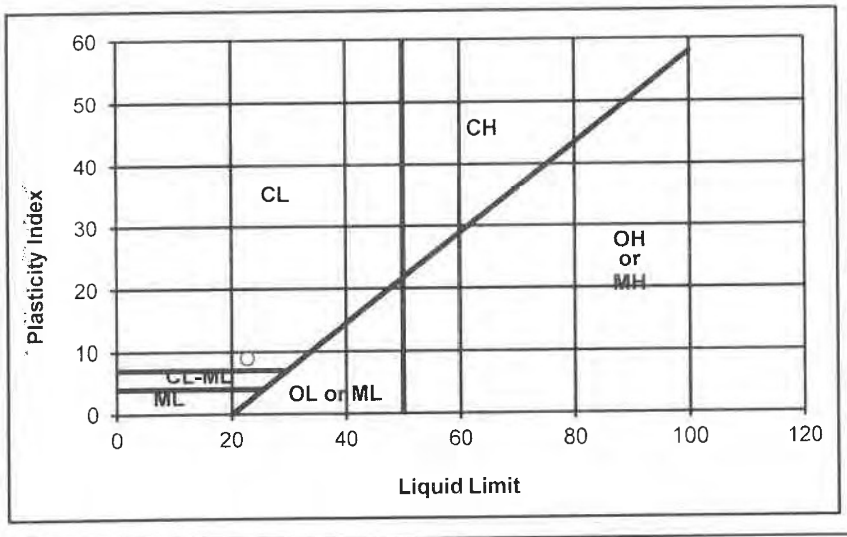
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B6 @ 10-11'
Sample Description: SC

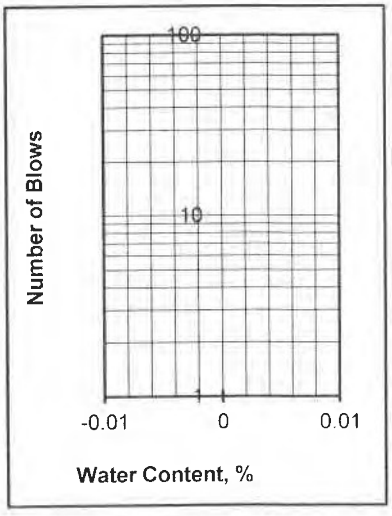
Date Tested: 9/21/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	39.07	41.36		35.15	35.29	
Weight of Dry Soil & Tare (g)	37.07	39.12		32.79	33.11	
Weight of Tare (g)	23.22	23.38		22.38	23.52	
Weight of water (g)	1.99	2.24		2.36	2.18	
Weight of Dry Soil (g)	13.85	15.75		10.41	9.59	
Water Content (% of dry wt.)	14.4%	14.2%		22.7%	22.7%	
Number of Blows				25	25	

Plastic Limit : 14 **Liquid Limit : 23**

Plasticity Index : 9
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

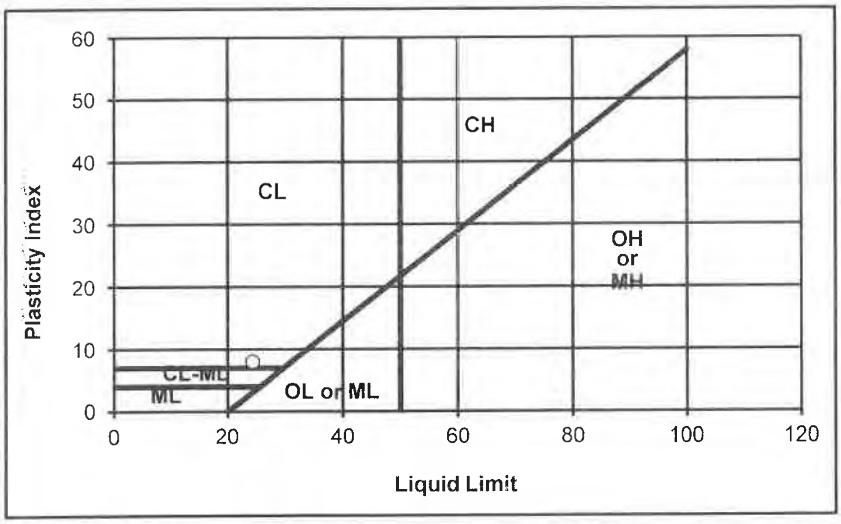
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B6 @ 15-16'
Sample Description: SC

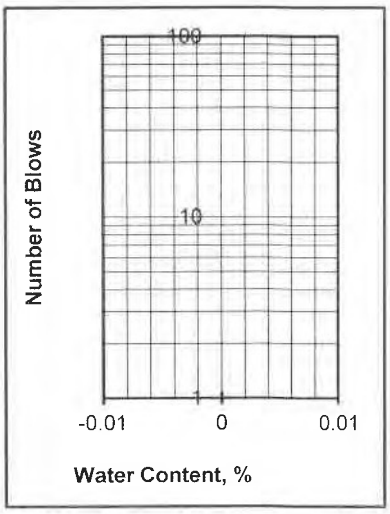
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	39.54	43.27		36.76	43.93	
Weight of Dry Soil & Tare (g)	37.38	40.52		34.20	39.92	
Weight of Tare (g)	23.40	23.22		23.47	23.64	
Weight of water (g)	2.16	2.76		2.56	4.01	
Weight of Dry Soil (g)	13.98	17.30		10.73	16.28	
Water Content (% of dry wt.)	15.4%	15.9%		23.8%	24.7%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 24**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

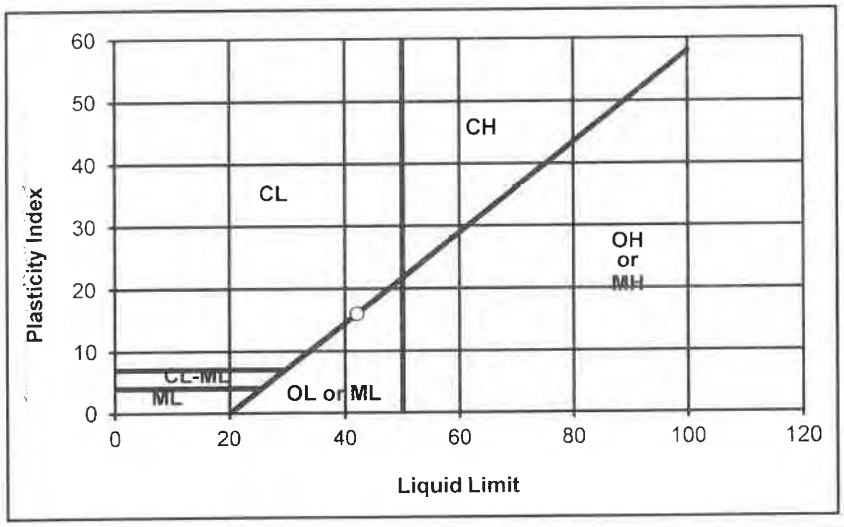
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B6 @ 20-21'
Sample Description: CL

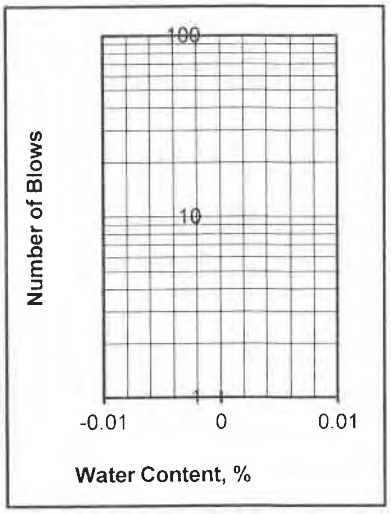
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	41.70	38.88		30.82	37.17	
Weight of Dry Soil & Tare (g)	37.97	35.72		27.45	32.96	
Weight of Tare (g)	23.43	23.32		19.53	22.84	
Weight of water (g)	3.73	3.16		3.37	4.22	
Weight of Dry Soil (g)	14.54	12.40		7.92	10.12	
Water Content (% of dry wt.)	25.6%	25.5%		42.6%	41.7%	
Number of Blows				25	25	

Plastic Limit : 26 **Liquid Limit : 42**

Plasticity Index : 16
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

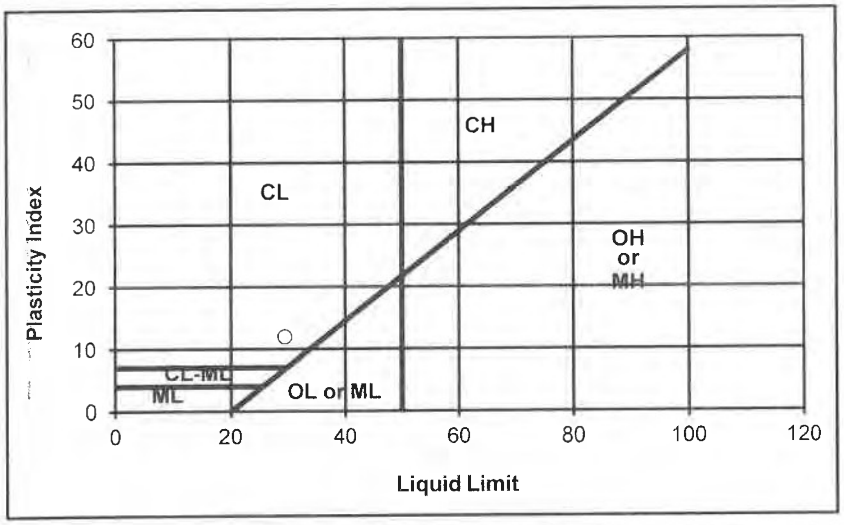
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 8/30/2022
Sampled By: DA
Sample Number: -
Sample Location: B6 @ 25-26'
Sample Description: SC

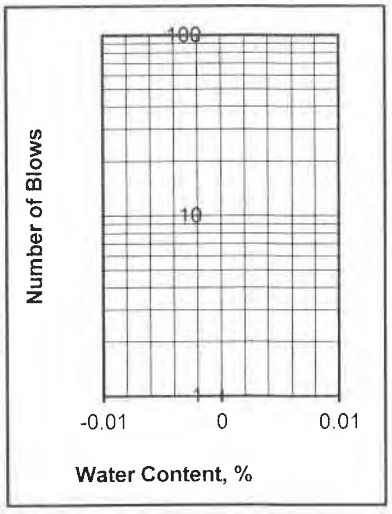
Date Tested: 9/15/2022
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	36.96	45.22		39.89	40.10	
Weight of Dry Soil & Tare (g)	34.96	42.10		36.02	36.31	
Weight of Tare (g)	23.26	23.26		22.90	23.39	
Weight of water (g)	2.00	3.12		3.87	3.78	
Weight of Dry Soil (g)	11.70	18.84		13.12	12.92	
Water Content (% of dry wt.)	17.1%	16.5%		29.5%	29.3%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 29**

Plasticity Index : 12
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

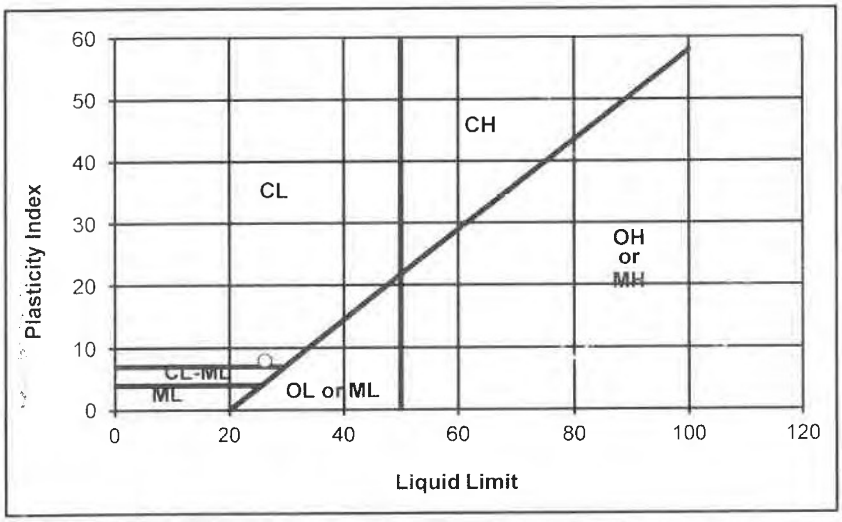
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B7 @ 20-21'
Sample Description: SC

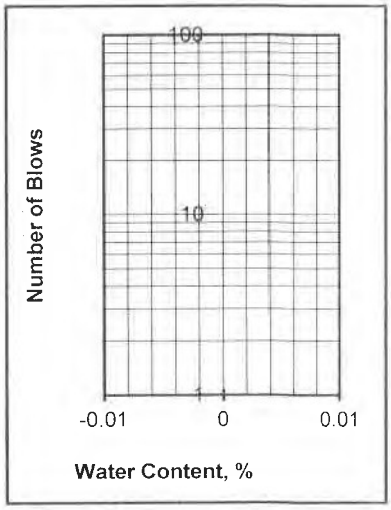
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	31.22	30.56		38.74	39.86	
Weight of Dry Soil & Tare (g)	29.72	28.94		34.57	35.84	
Weight of Tare (g)	21.17	19.66		18.45	20.58	
Weight of water (g)	1.50	1.62		4.17	4.02	
Weight of Dry Soil (g)	8.55	9.28		16.12	15.26	
Water Content (% of dry wt.)	17.6%	17.5%		25.9%	26.3%	
Number of Blows				25	25	

Plastic Limit : 18 **Liquid Limit : 26**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

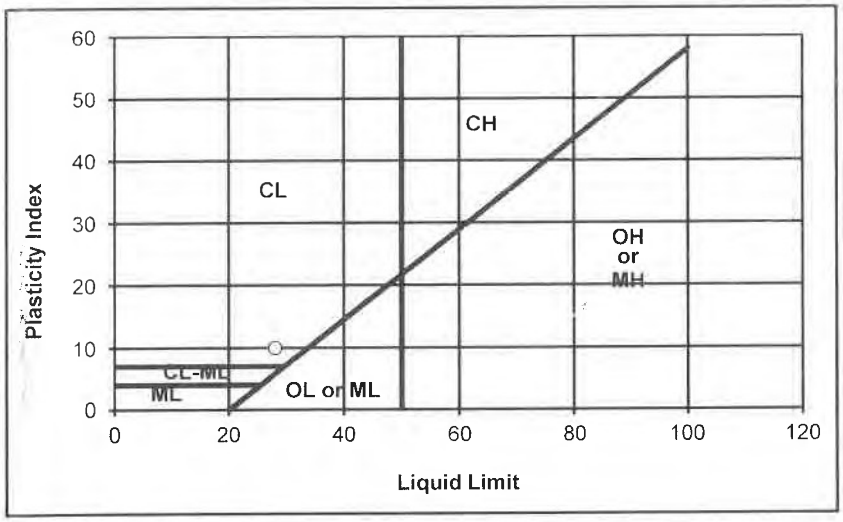
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B7 @ 25-26'
Sample Description: SC

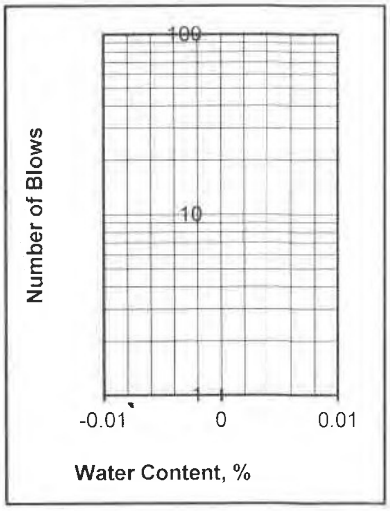
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	32.13	34.82		38.39	40.17	
Weight of Dry Soil & Tare (g)	30.21	32.98		35.24	36.58	
Weight of Tare (g)	19.58	22.67		23.79	24.02	
Weight of water (g)	1.92	1.84		3.15	3.59	
Weight of Dry Soil (g)	10.63	10.31		11.45	12.56	
Water Content (% of dry wt.)	18.1%	17.8%		27.5%	28.6%	
Number of Blows				25	25	

Plastic Limit : 18 **Liquid Limit : 28**

Plasticity Index : 10
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

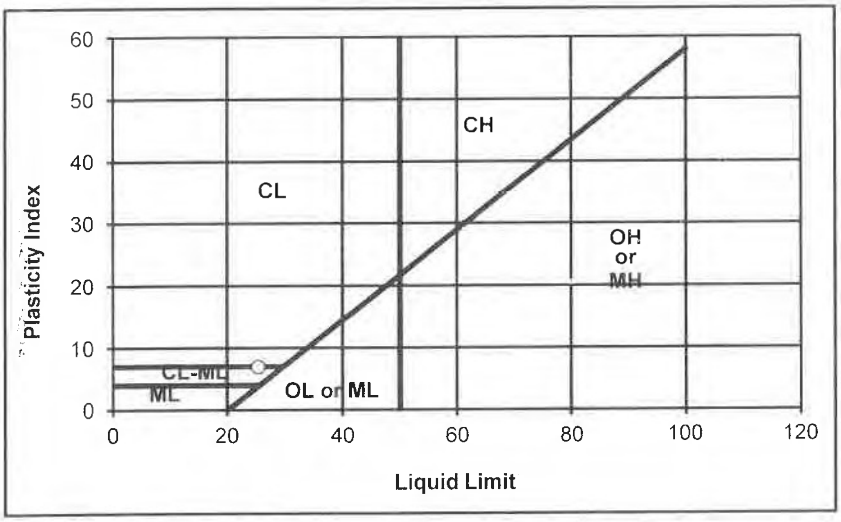
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B7 @ 30-31'
Sample Description: SC/SM

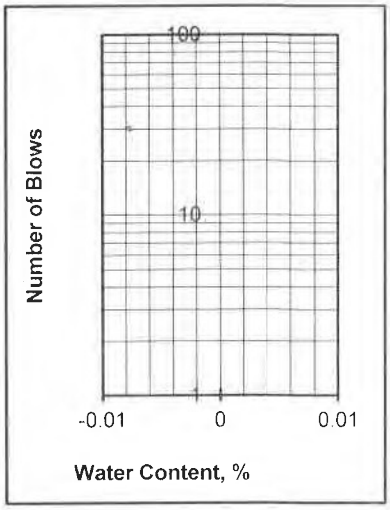
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	37.75	37.99		37.73	41.04	
Weight of Dry Soil & Tare (g)	35.71	35.89		34.90	37.75	
Weight of Tare (g)	24.00	24.10		23.79	24.68	
Weight of water (g)	2.04	2.10		2.83	3.29	
Weight of Dry Soil (g)	11.71	11.79		11.11	13.07	
Water Content (% of dry wt.)	17.4%	17.8%		25.5%	25.2%	
Number of Blows				25	25	

Plastic Limit : 18 **Liquid Limit : 25**

Plasticity Index : 7
Unified Soil Classification : CL-ML **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

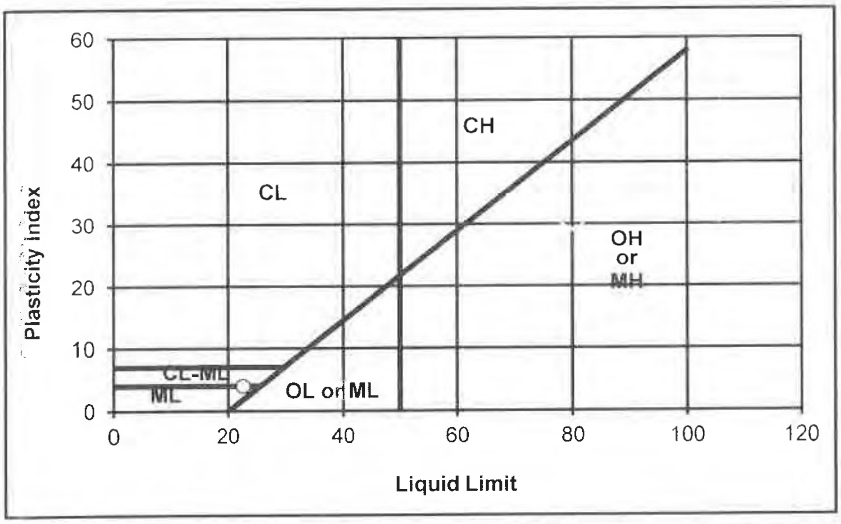
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B7 @ 35-36'
Sample Description: SC/SM

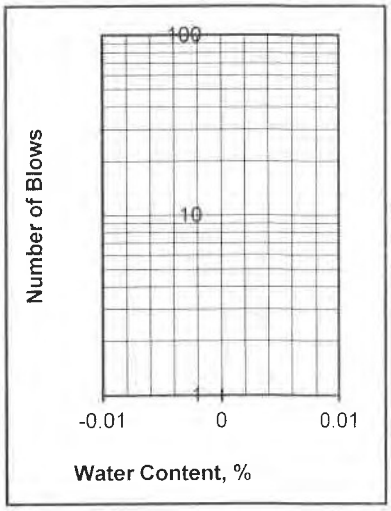
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	38.38	36.71		46.18	43.48	
Weight of Dry Soil & Tare (g)	36.11	34.72		42.07	40.04	
Weight of Tare (g)	24.03	24.12		23.86	24.77	
Weight of water (g)	2.27	1.99		4.11	3.44	
Weight of Dry Soil (g)	12.08	10.60		18.21	15.27	
Water Content (% of dry wt.)	18.8%	18.8%		22.6%	22.5%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 23**

Plasticity Index : 4
Unified Soil Classification : CL-ML **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

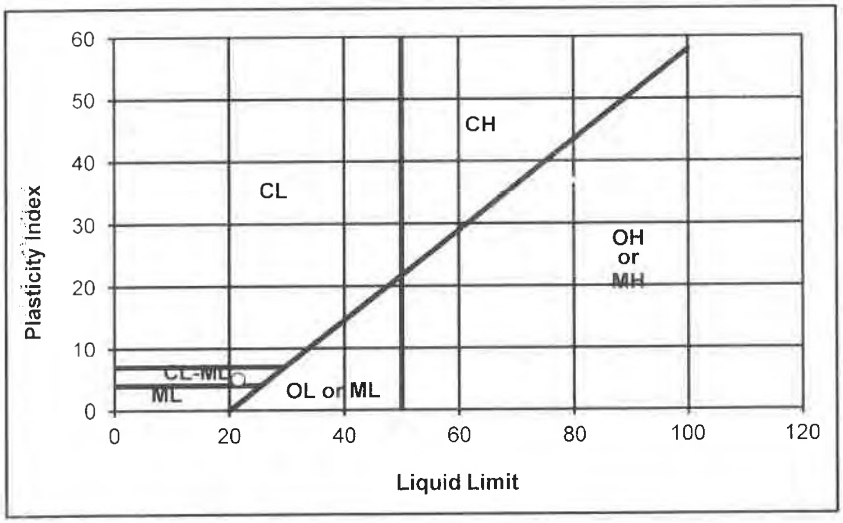
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B7 @ 40-41'
Sample Description: SC/SM

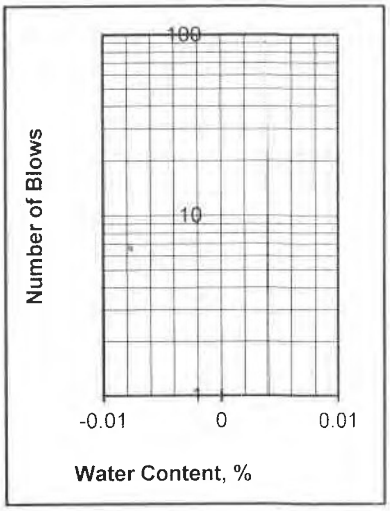
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	31.97	36.38		43.49	39.90	
Weight of Dry Soil & Tare (g)	30.85	34.65		40.11	37.14	
Weight of Tare (g)	23.72	23.80		24.24	24.36	
Weight of water (g)	1.12	1.73		3.38	2.76	
Weight of Dry Soil (g)	7.13	10.85		15.87	12.78	
Water Content (% of dry wt.)	15.7%	15.9%		21.3%	21.6%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 21**

Plasticity Index : 5
Unified Soil Classification : CL-ML **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

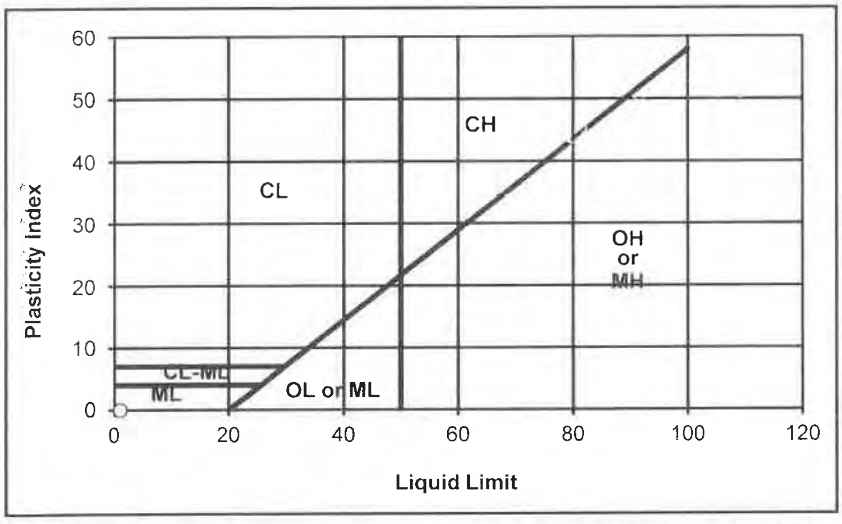
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B7 @ 45-46'
Sample Description: SM

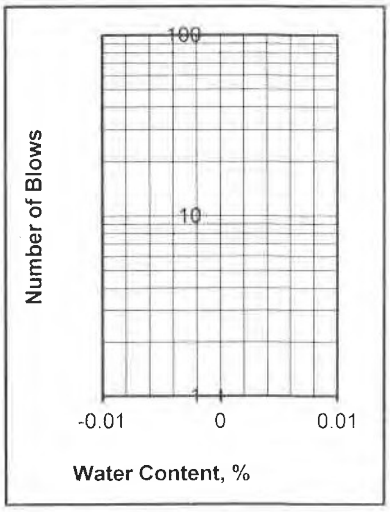
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

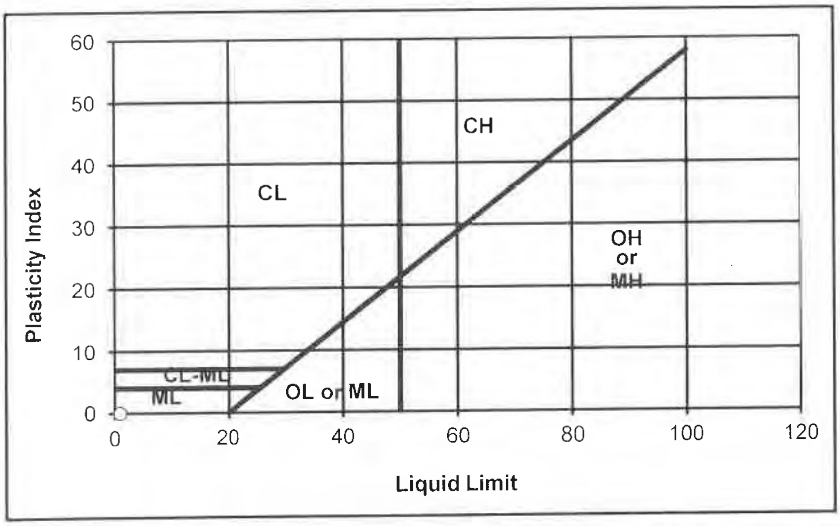
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B8 @ 20-21'
Sample Description: SM/ML

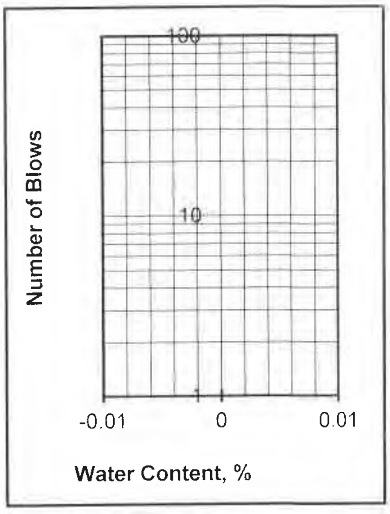
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

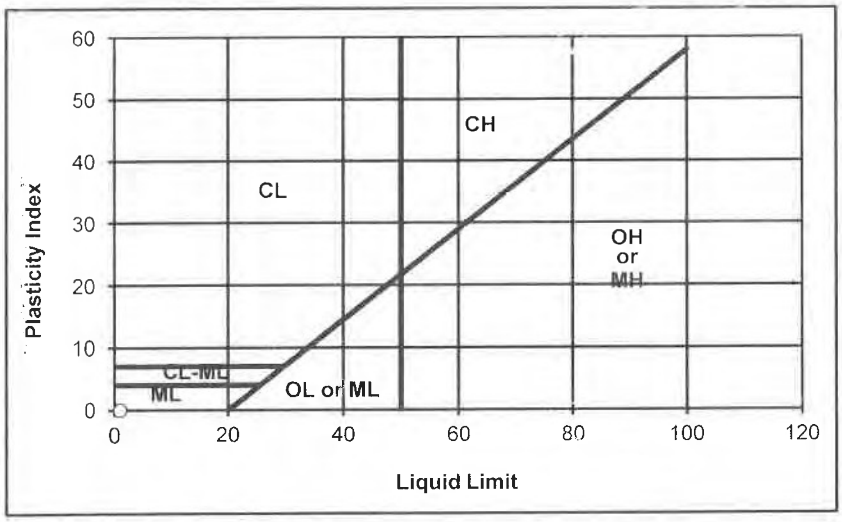
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B8 @ 25-26'
Sample Description: SM

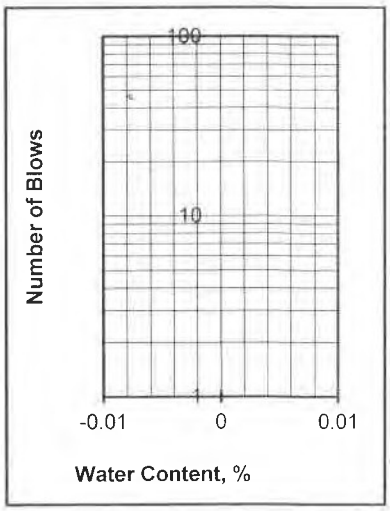
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

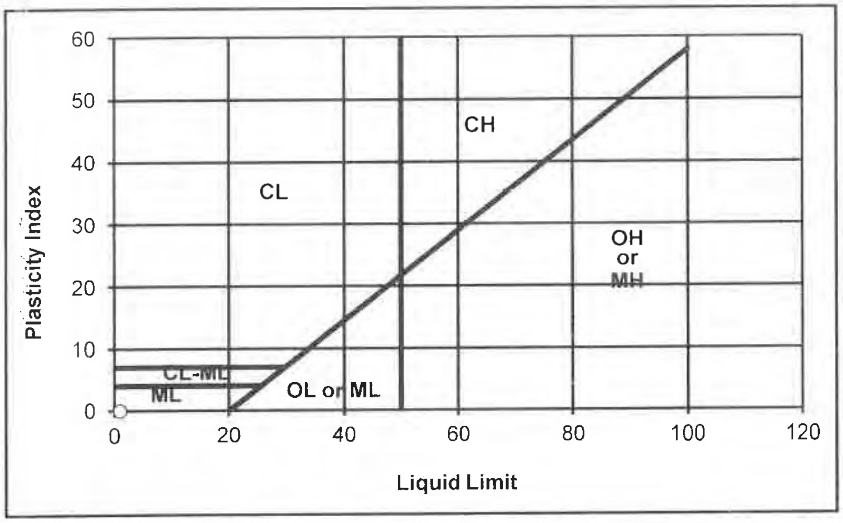
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B8 @ 30-31'
Sample Description: SM

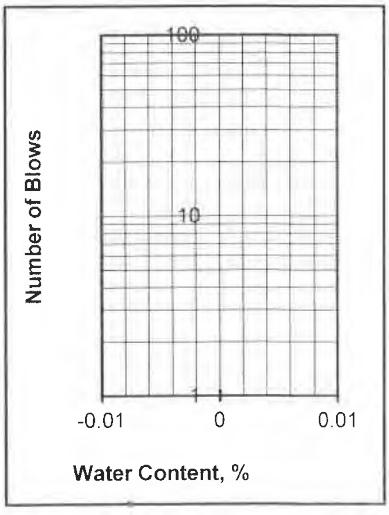
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

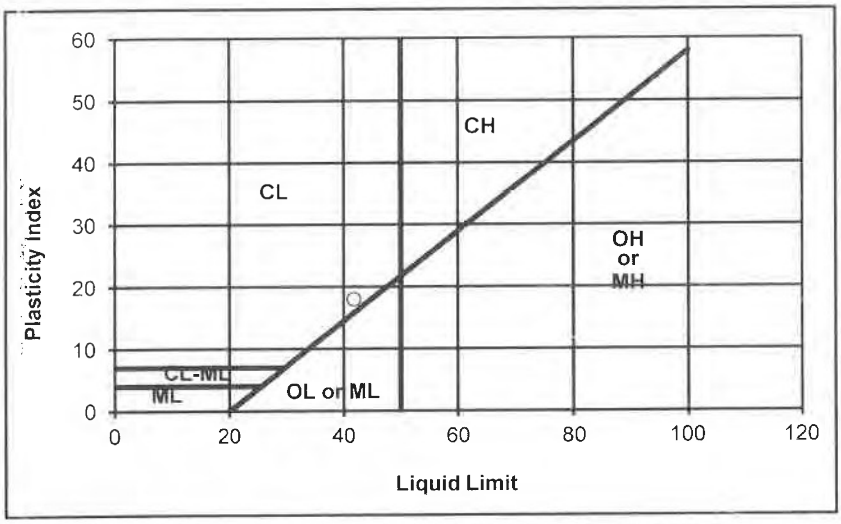
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B8 @ 35-36'
Sample Description: CL

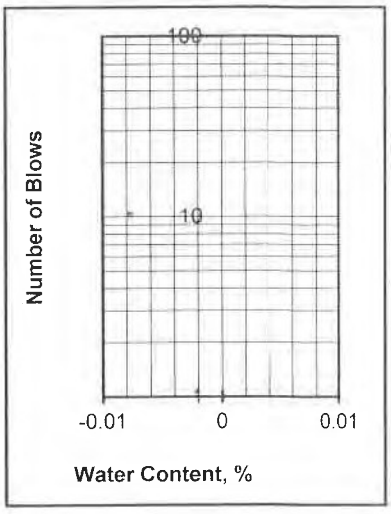
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.52	35.59		41.48	43.29	
Weight of Dry Soil & Tare (g)	33.26	33.33		36.27	37.77	
Weight of Tare (g)	24.01	24.09		23.78	24.60	
Weight of water (g)	2.26	2.26		5.21	5.52	
Weight of Dry Soil (g)	9.25	9.24		12.49	13.17	
Water Content (% of dry wt.)	24.4%	24.5%		41.7%	41.9%	
Number of Blows				25	25	

Plastic Limit : 24 **Liquid Limit : 42**

Plasticity Index : 18
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

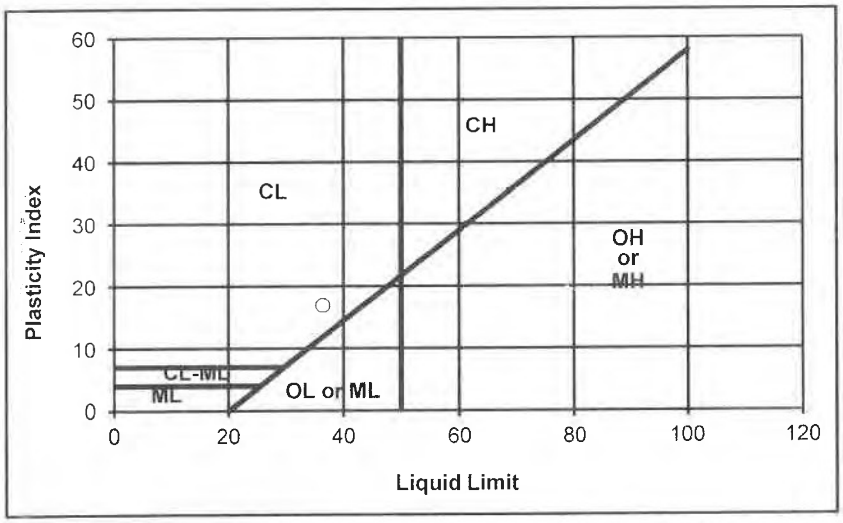
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B8 @ 40-41'
Sample Description: SC/CL

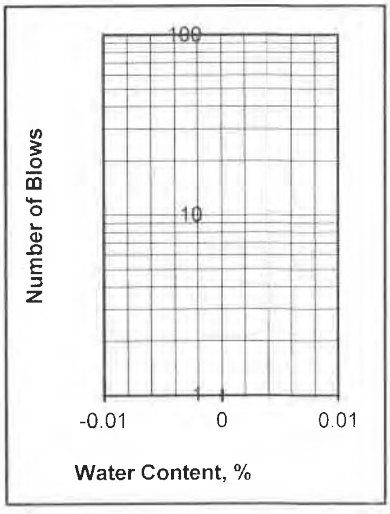
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	38.18	45.69		41.52	37.82	
Weight of Dry Soil & Tare (g)	35.89	42.33		36.93	34.25	
Weight of Tare (g)	23.74	23.82		24.33	24.43	
Weight of water (g)	2.29	3.36		4.59	3.57	
Weight of Dry Soil (g)	12.15	18.51		12.60	9.82	
Water Content (% of dry wt.)	18.8%	18.2%		36.4%	36.4%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 36**

Plasticity Index : 17
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

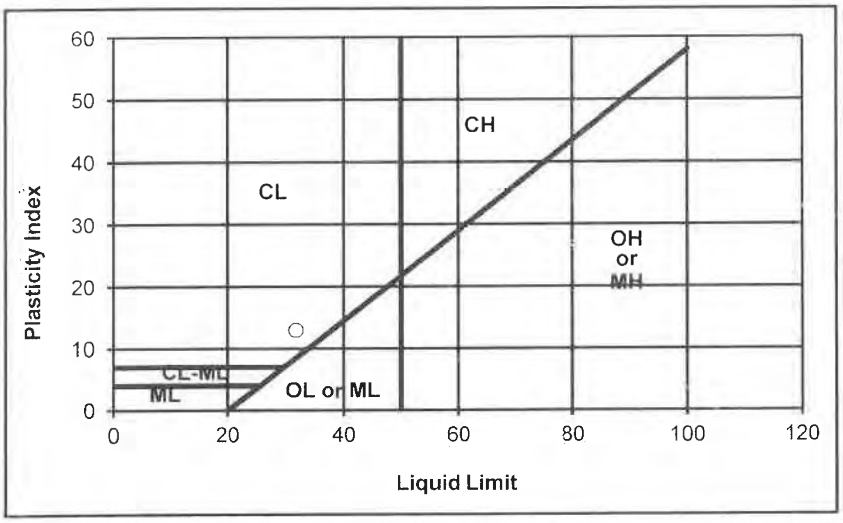
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/14/2023
Sampled By: DA
Sample Number: -
Sample Location: B8 @ 45-46'
Sample Description: SC/CL

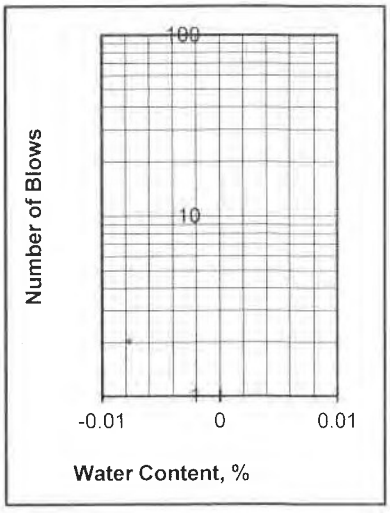
Date Tested: 2/22/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	31.60	33.14		35.39	39.80	
Weight of Dry Soil & Tare (g)	29.68	31.49		32.58	36.01	
Weight of Tare (g)	19.58	22.68		23.75	24.02	
Weight of water (g)	1.92	1.65		2.81	3.79	
Weight of Dry Soil (g)	10.10	8.81		8.83	11.99	
Water Content (% of dry wt.)	19.0%	18.7%		31.8%	31.6%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 32**

Plasticity Index : 13
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

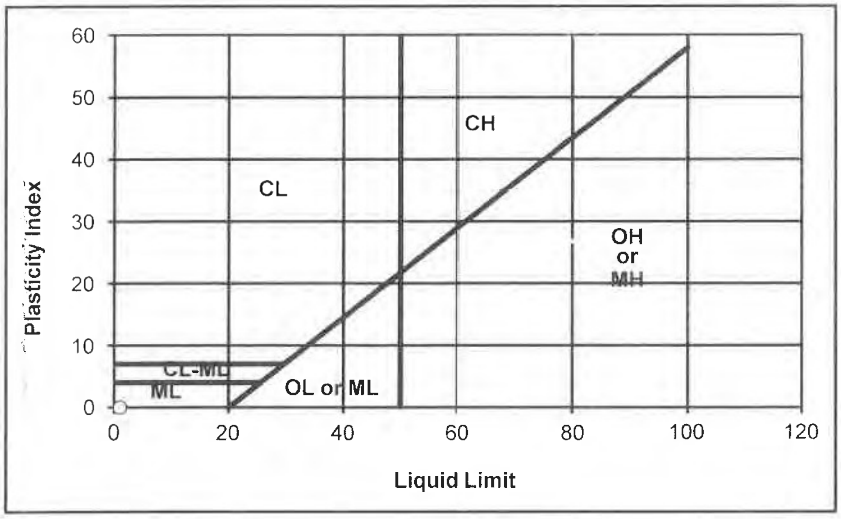
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B9 @ 2-3'
Sample Description: ML

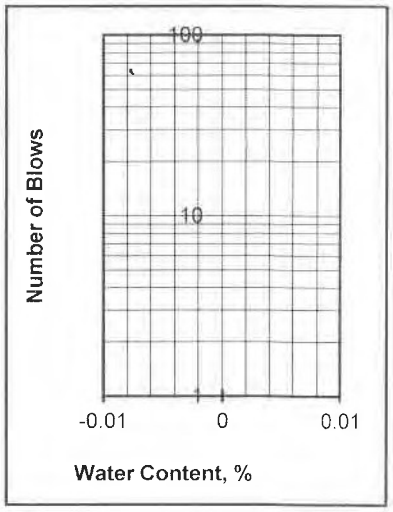
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

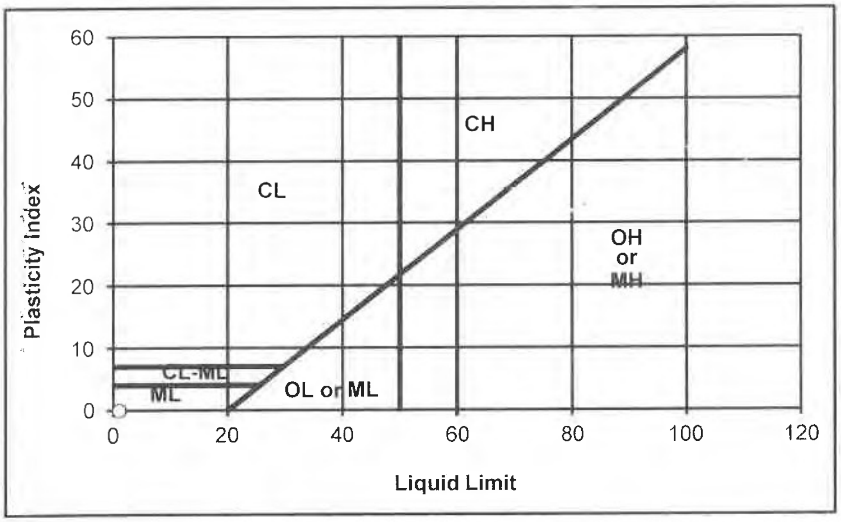
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B9 @ 5-6'
Sample Description: SM/ML

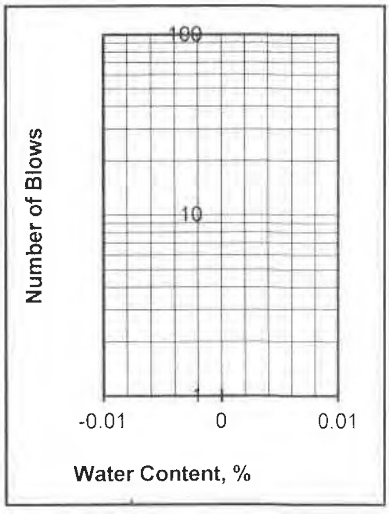
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

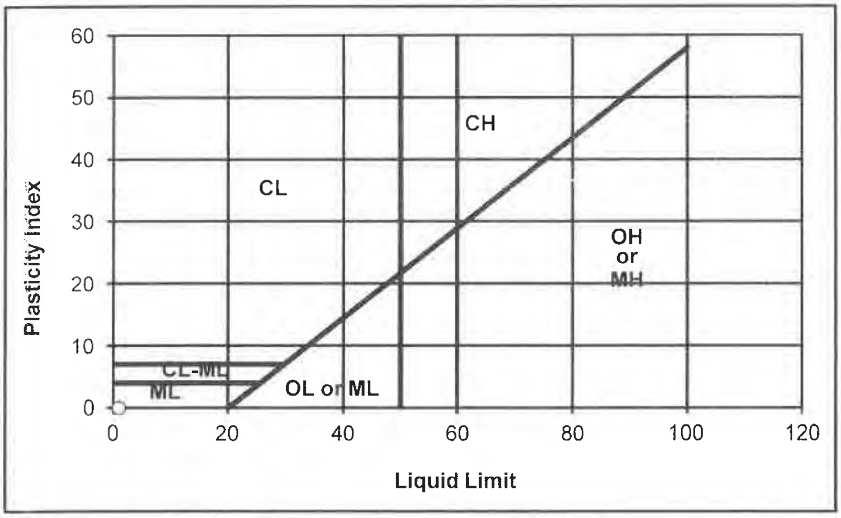
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B9 @ 25-26'
Sample Description: SM

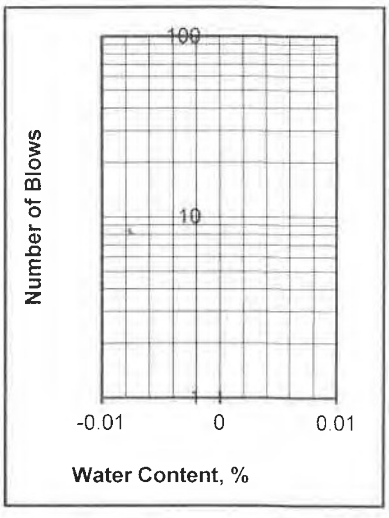
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

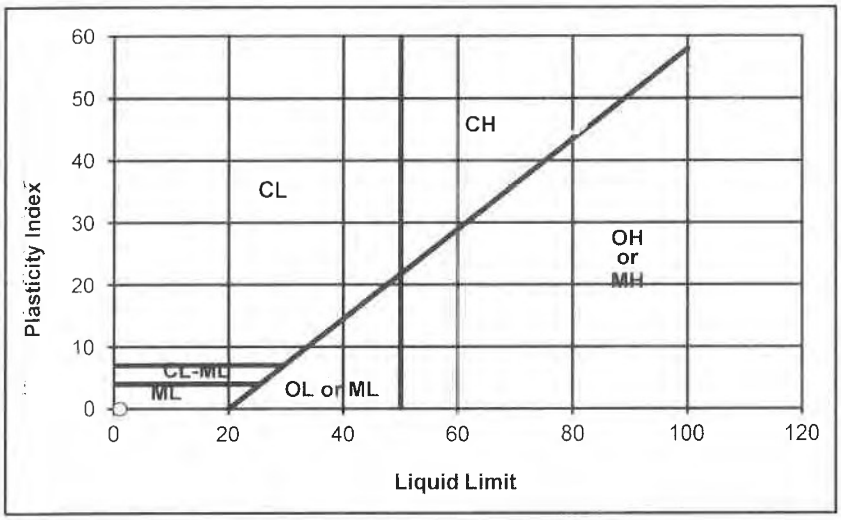
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B9 @ 30-31'
Sample Description: SM

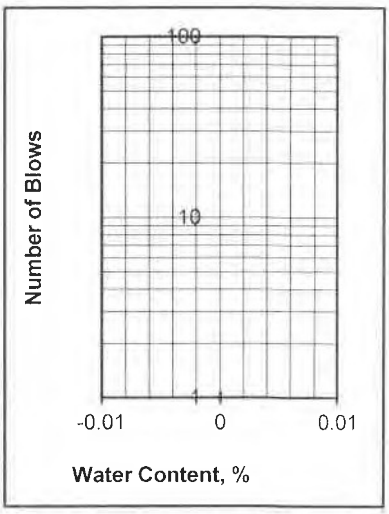
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit 1	Plastic Limit 2	Plastic Limit 3	Liquid Limit 1	Liquid Limit 2	Liquid Limit 3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

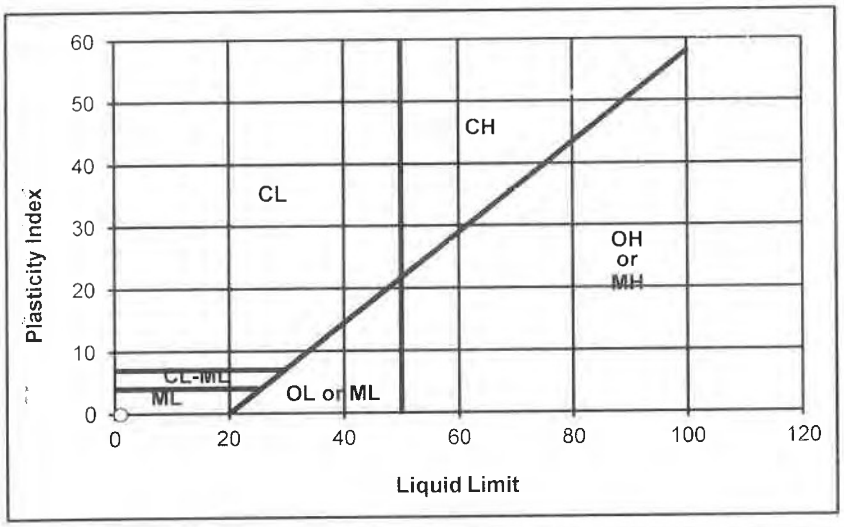
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B9 @ 35-36'
Sample Description: SM

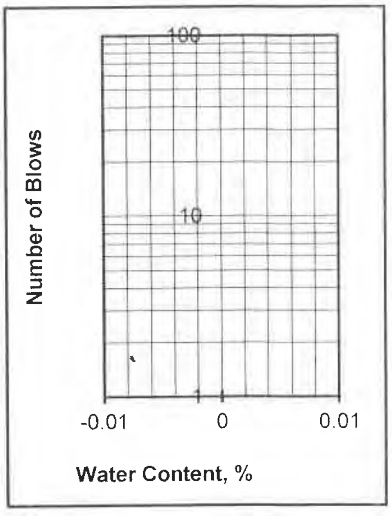
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

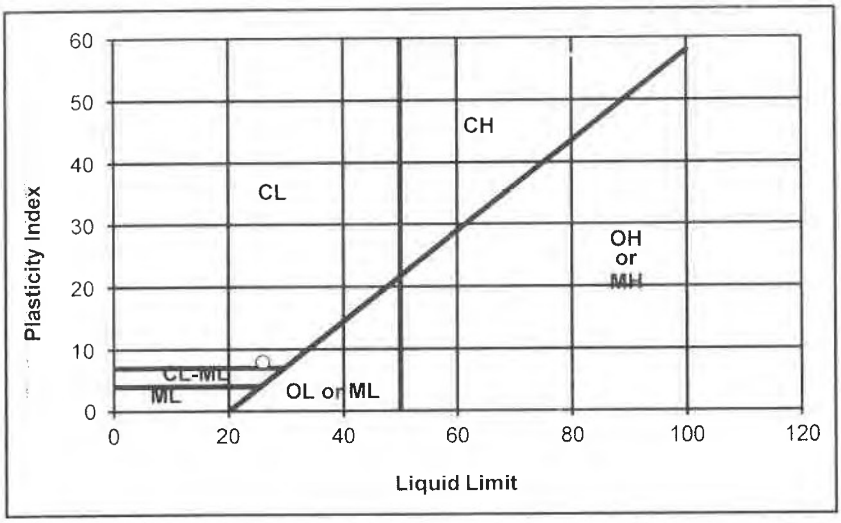
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B9 @ 40-41'
Sample Description: SC

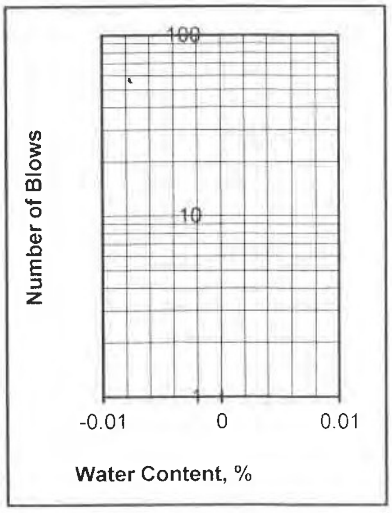
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	39.22	39.53		37.83	38.90	
Weight of Dry Soil & Tare (g)	36.92	37.27		35.02	36.02	
Weight of Tare (g)	24.10	24.18		24.08	25.00	
Weight of water (g)	2.30	2.26		2.81	2.88	
Weight of Dry Soil (g)	12.82	13.09		10.94	11.02	
Water Content (% of dry wt.)	17.9%	17.3%		25.7%	26.1%	
Number of Blows				25	25	

Plastic Limit : 18 **Liquid Limit : 26**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

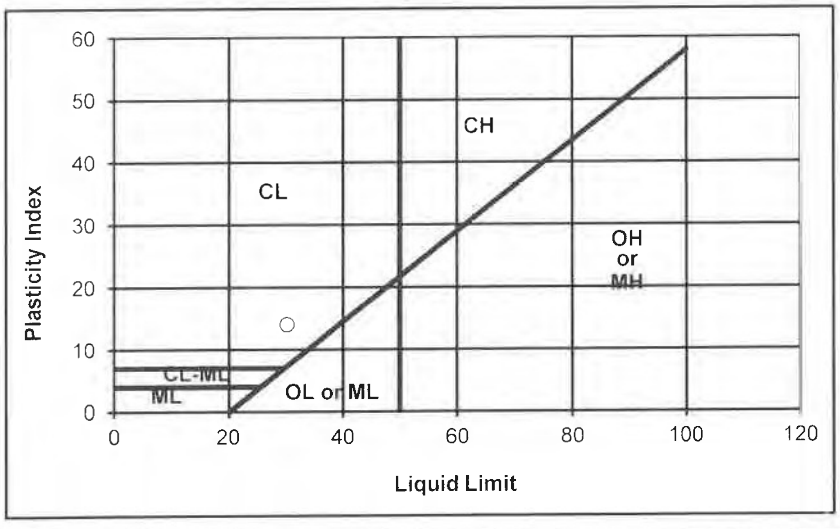
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B9 @ 45-46'
Sample Description: SC

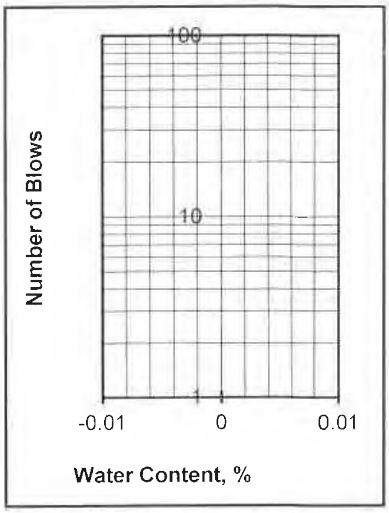
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	39.43	42.09		41.92	37.24	
Weight of Dry Soil & Tare (g)	37.23	39.59		37.75	34.39	
Weight of Tare (g)	24.07	24.15		23.96	24.89	
Weight of water (g)	2.20	2.50		4.17	2.85	
Weight of Dry Soil (g)	13.16	15.44		13.79	9.50	
Water Content (% of dry wt.)	16.7%	16.2%		30.2%	30.0%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 30**

Plasticity Index : 14
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

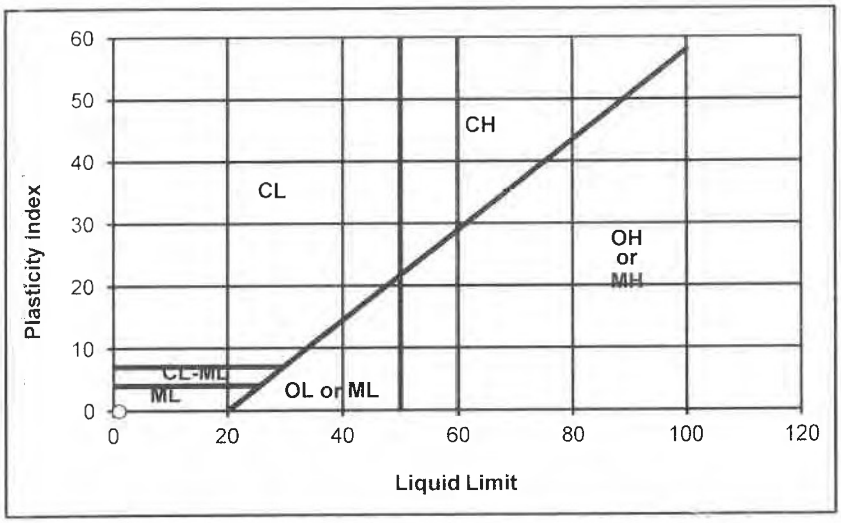
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B10 @ 2-3'
Sample Description: ML

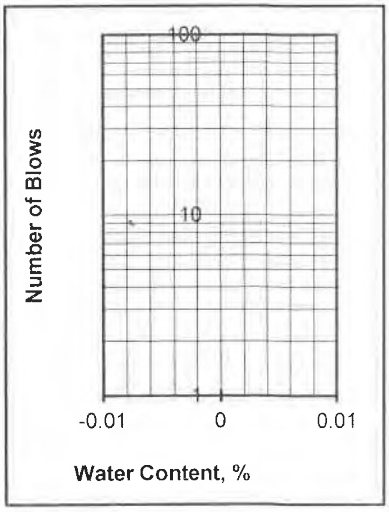
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

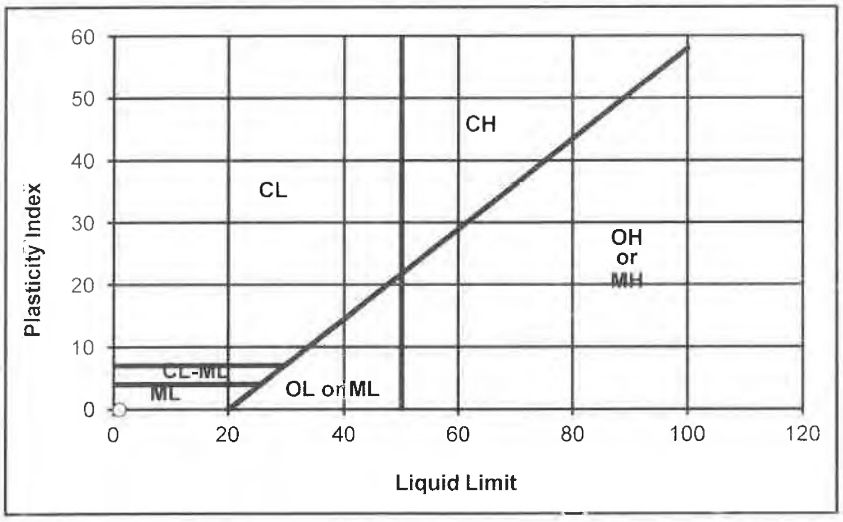
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B10 @ 5-6'
Sample Description: ML

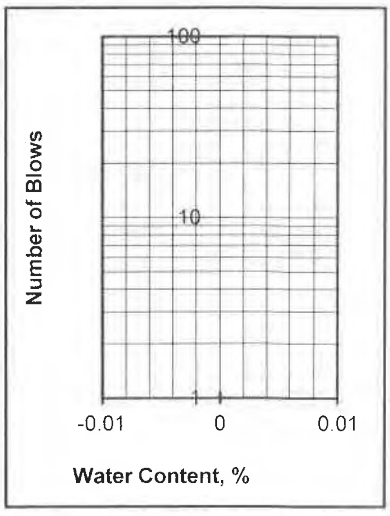
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

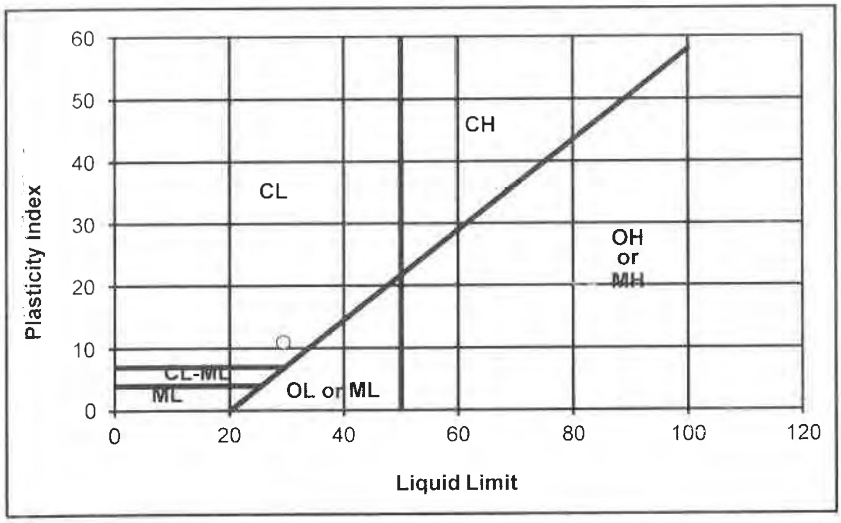
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B10 @ 15-16'
Sample Description: SC/CL

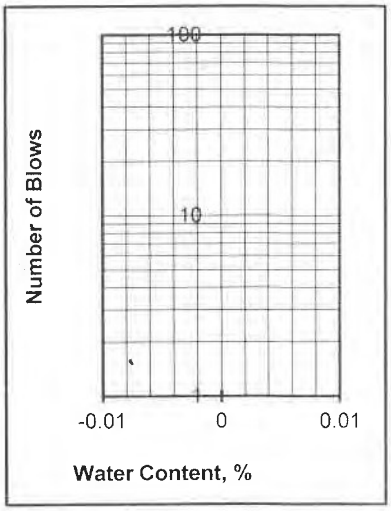
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	38.61	38.90		39.07	40.24	
Weight of Dry Soil & Tare (g)	37.10	36.66		35.65	36.78	
Weight of Tare (g)	28.61	24.16		24.05	24.96	
Weight of water (g)	1.51	2.24		3.42	3.46	
Weight of Dry Soil (g)	8.49	12.50		11.60	11.82	
Water Content (% of dry wt.)	17.8%	17.9%		29.5%	29.3%	
Number of Blows				25	25	

Plastic Limit : 18 **Liquid Limit : 29**

Plasticity Index : 11
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

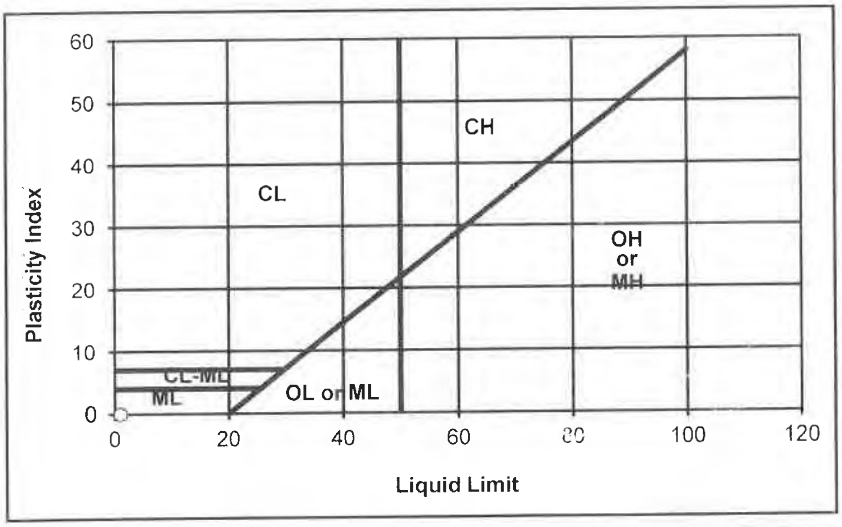
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B10 @ 20-21'
Sample Description: SM

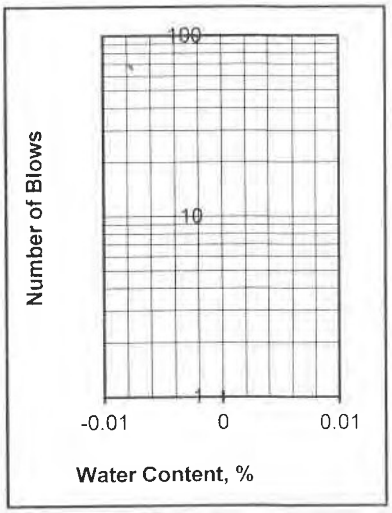
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

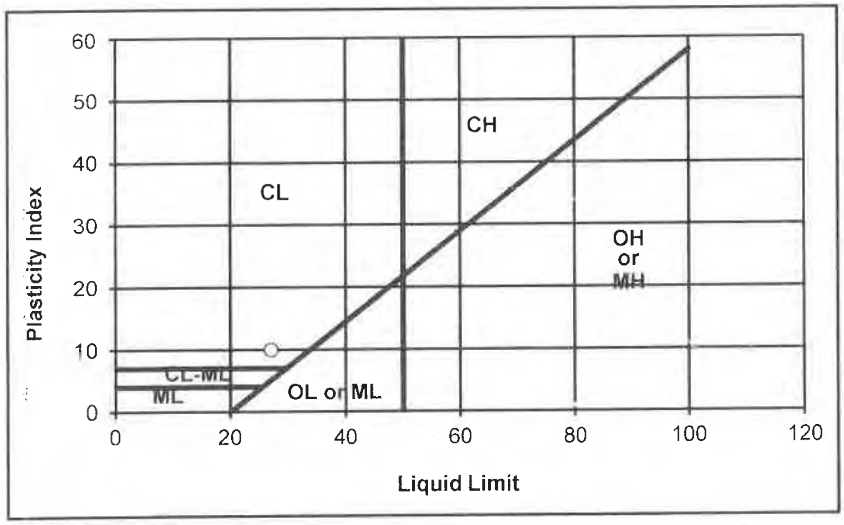
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B10 @ 25-26'
Sample Description: SC

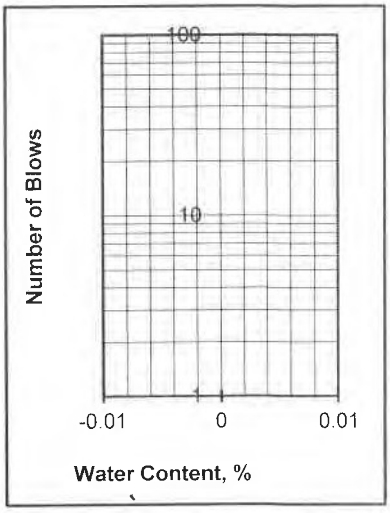
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	39.36	39.07		42.74	37.18	
Weight of Dry Soil & Tare (g)	37.00	36.57		38.61	34.00	
Weight of Tare (g)	23.44	21.81		23.38	22.19	
Weight of water (g)	2.36	2.50		4.13	3.18	
Weight of Dry Soil (g)	13.56	14.76		15.23	11.81	
Water Content (% of dry wt.)	17.4%	16.9%		27.1%	26.9%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 27**

Plasticity Index : 10
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

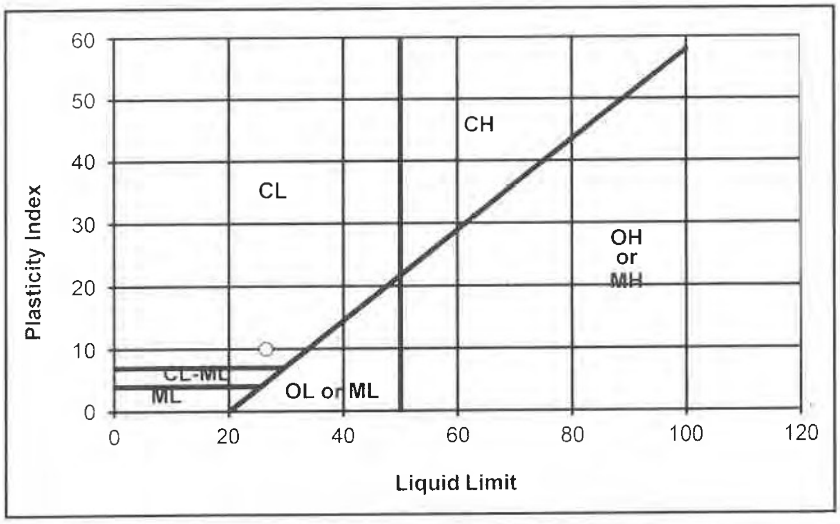
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B10 @ 30-31'
Sample Description: SC

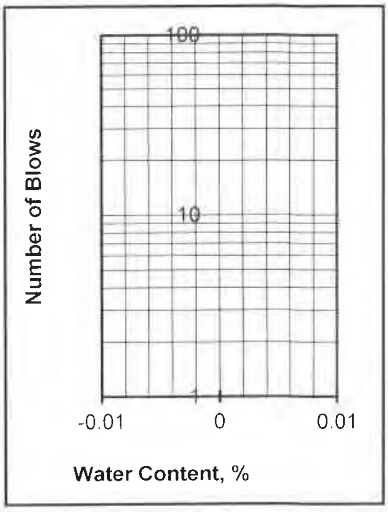
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	42.12	39.88		42.14	38.39	
Weight of Dry Soil & Tare (g)	39.66	37.72		38.40	35.51	
Weight of Tare (g)	23.80	23.87		24.23	24.62	
Weight of water (g)	2.46	2.16		3.74	2.88	
Weight of Dry Soil (g)	15.86	13.85		14.17	10.89	
Water Content (% of dry wt.)	15.5%	15.6%		26.4%	26.4%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 26**

Plasticity Index : 10
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

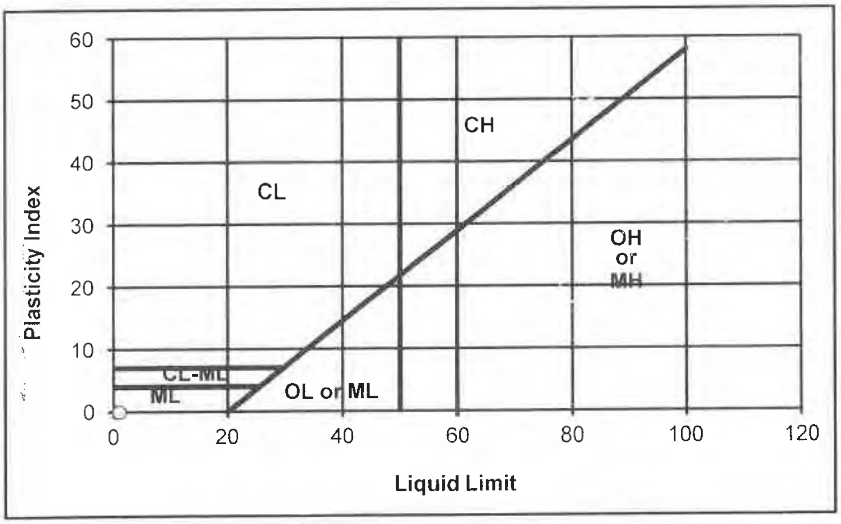
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B11 @ 2-3'
Sample Description: SM/ML

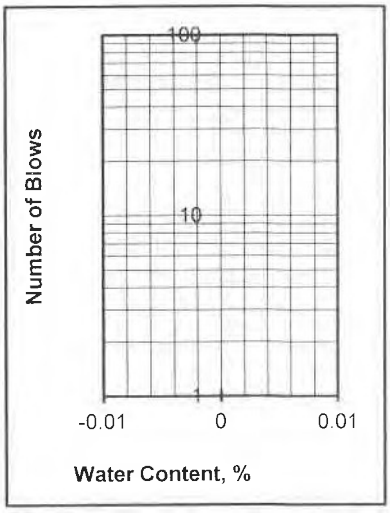
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

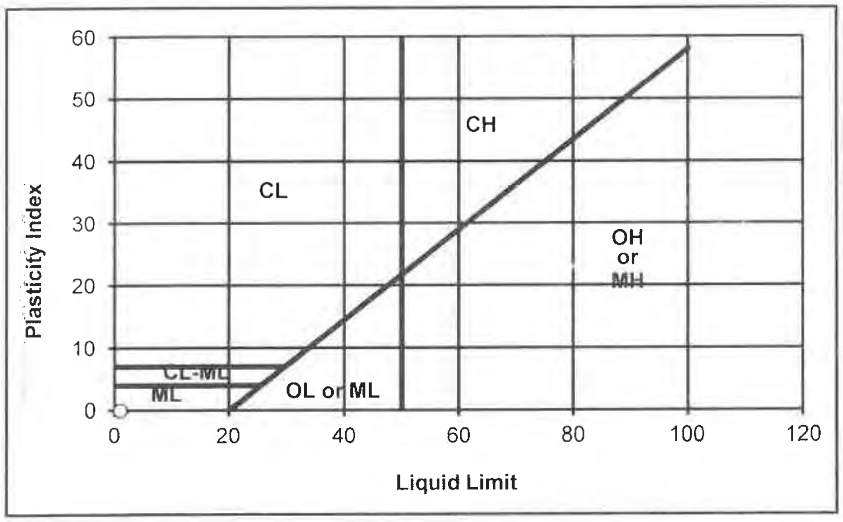
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B11 @ 5-6'
Sample Description: ML

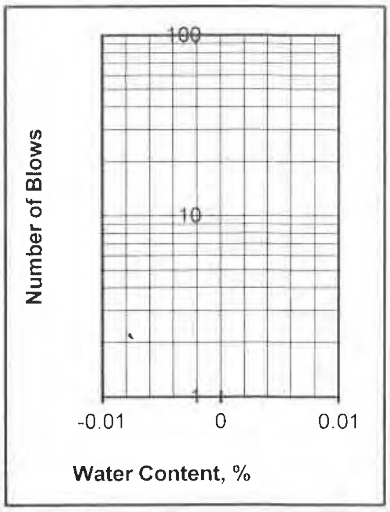
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

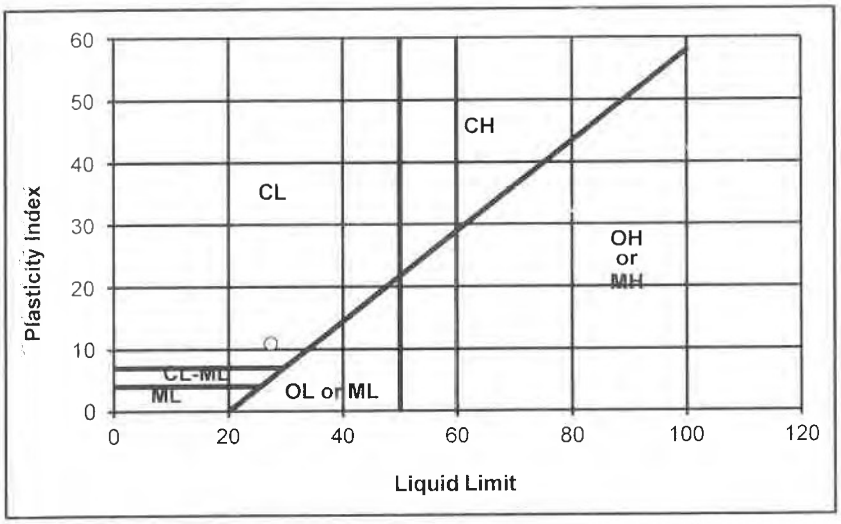
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B11 @ 10-11'
Sample Description: SC/CL

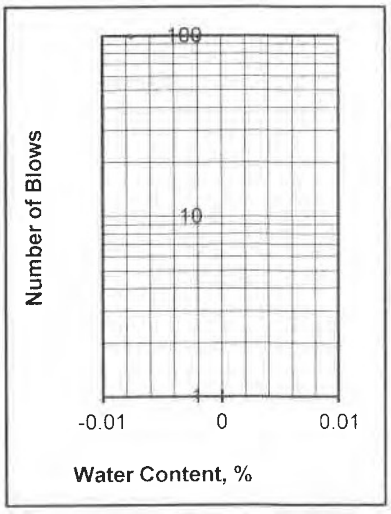
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	40.17	40.11		38.15	38.17	
Weight of Dry Soil & Tare (g)	37.93	37.92		35.07	35.32	
Weight of Tare (g)	24.02	24.18		23.88	24.79	
Weight of water (g)	2.24	2.19		3.08	2.85	
Weight of Dry Soil (g)	13.91	13.74		11.19	10.53	
Water Content (% of dry wt.)	16.1%	15.9%		27.5%	27.1%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 27**

Plasticity Index : 11
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

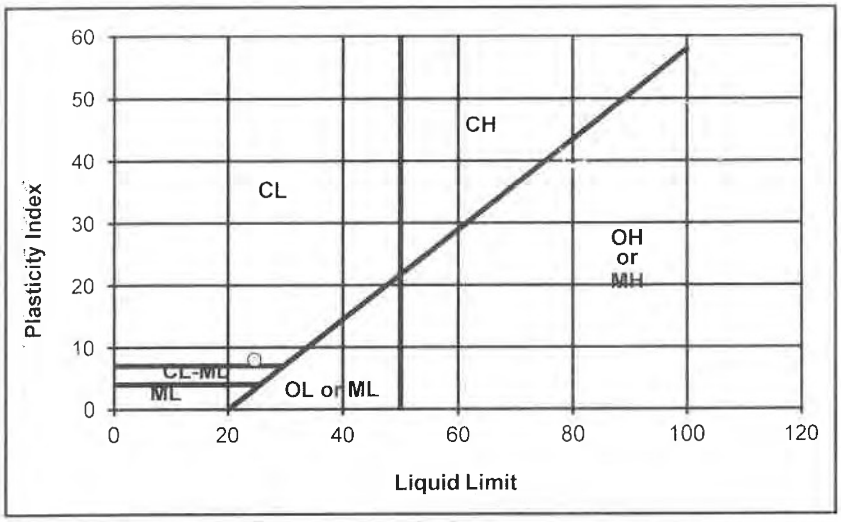
ASTM D4318/AASHTO T89 T90/CT 204

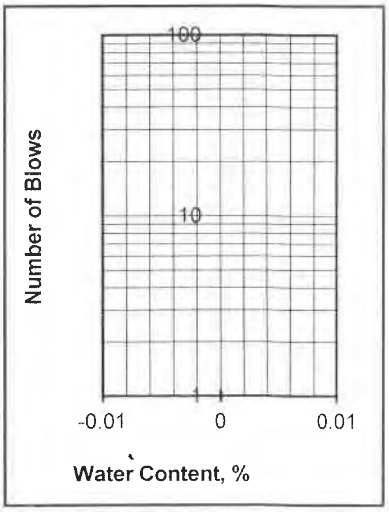
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B11 @ 15-16'
Sample Description: SC

Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	42.45	39.48		46.48	38.25	
Weight of Dry Soil & Tare (g)	39.67	37.17		42.11	35.56	
Weight of Tare (g)	23.75	23.83		24.43	24.49	
Weight of water (g)	2.78	2.31		4.37	2.69	
Weight of Dry Soil (g)	15.92	13.34		17.68	11.07	
Water Content (% of dry wt.)	17.5%	17.3%		24.7%	24.3%	
Number of Blows				25	25	
	Plastic Limit : 17			**Liquid Limit : 25**		

Plasticity Index : 8
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

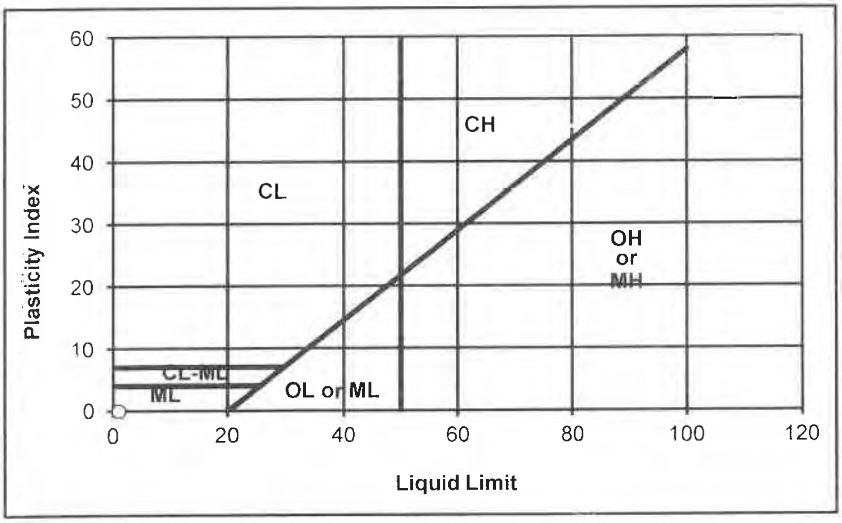
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B11 @ 20-21'
Sample Description: SM

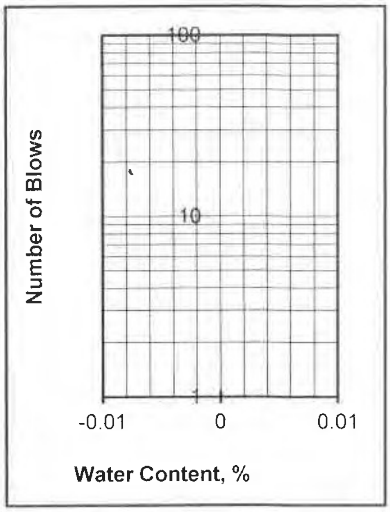
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

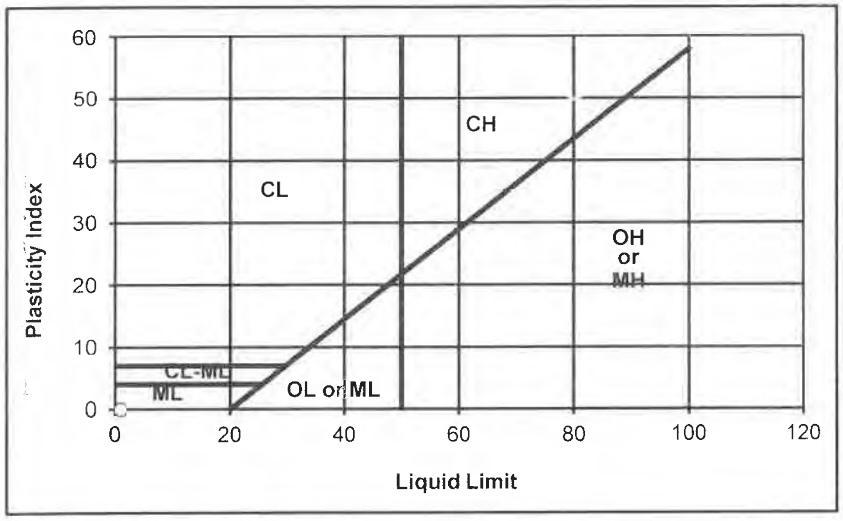
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B11 @ 25-26'
Sample Description: SM

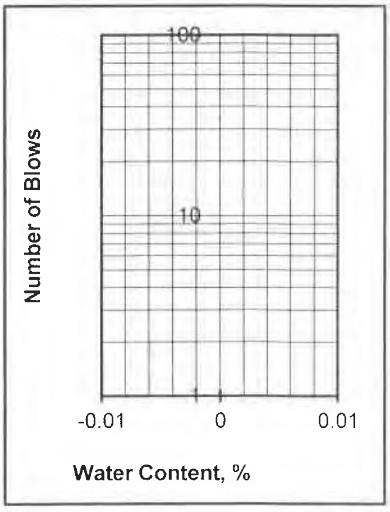
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

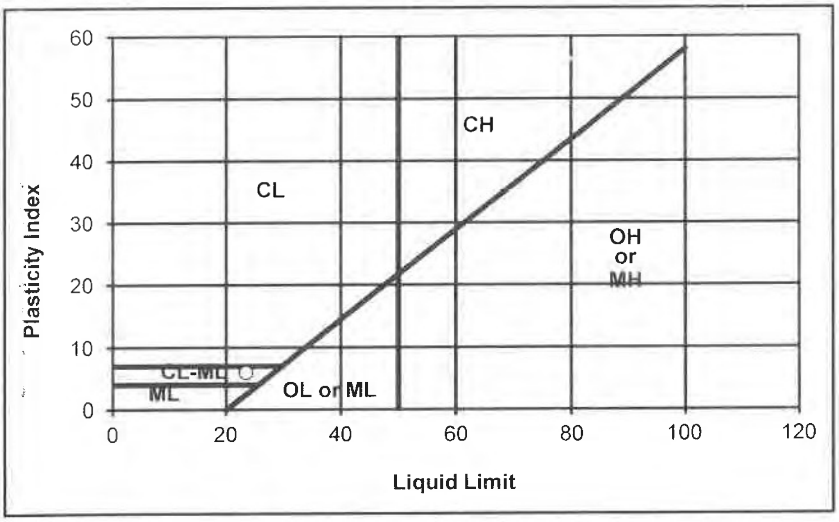
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B11 @ 30-31'
Sample Description: SC/SM

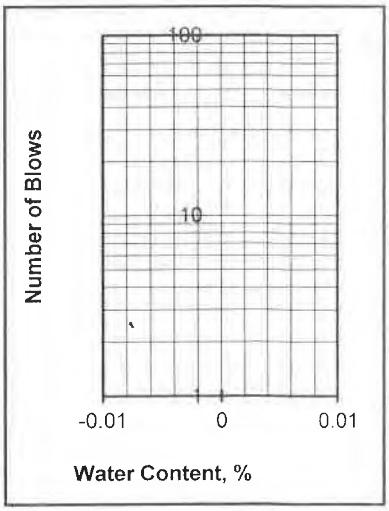
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	32.51	41.01		43.10	44.57	
Weight of Dry Soil & Tare (g)	30.62	38.30		39.41	40.67	
Weight of Tare (g)	19.60	22.68		23.82	23.83	
Weight of water (g)	1.89	2.71		3.69	3.90	
Weight of Dry Soil (g)	11.02	15.62		15.59	16.84	
Water Content (% of dry wt.)	17.2%	17.3%		23.7%	23.2%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 23**

Plasticity Index : 6
Unified Soil Classification : CL-ML **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

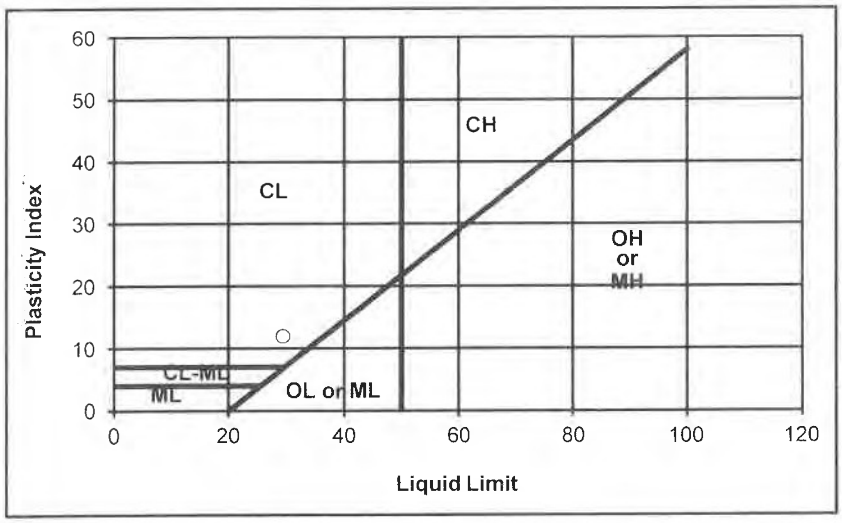
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B11 @ 35-36'
Sample Description: SC/CL

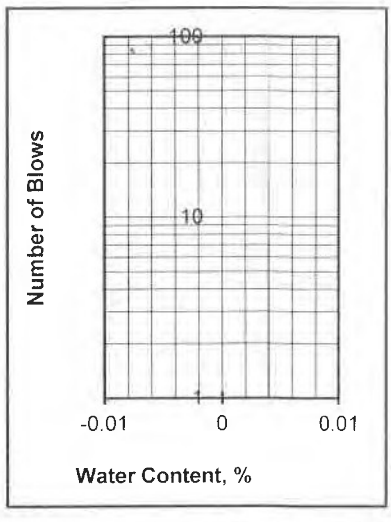
Date Tested: 3/6/2023
Tested By: JM`
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	44.36	39.10		40.85	38.00	
Weight of Dry Soil & Tare (g)	41.37	36.63		36.86	34.43	
Weight of Tare (g)	23.45	21.83		23.39	22.20	
Weight of water (g)	2.99	2.47		3.99	3.57	
Weight of Dry Soil (g)	17.92	14.80		13.47	12.23	
Water Content (% of dry wt.)	16.7%	16.7%		29.6%	29.2%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 29**

Plasticity Index : 12
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

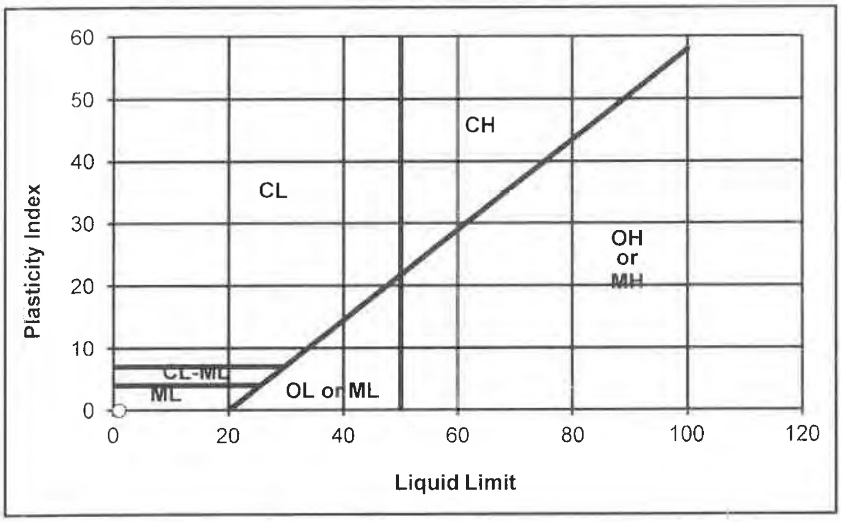
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B11 @ 40-41'
Sample Description: SM

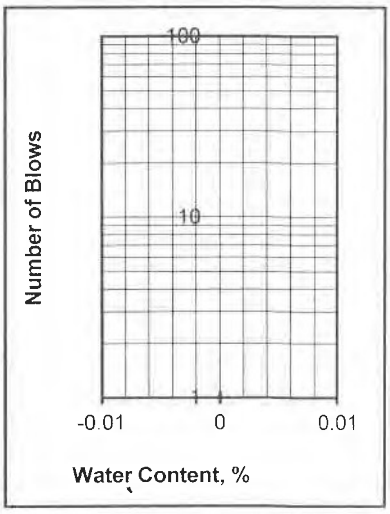
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

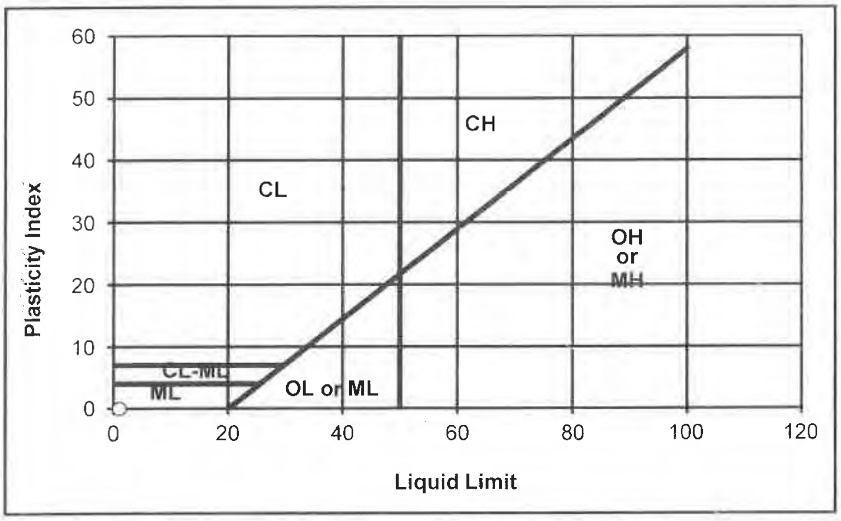
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B11 @ 45-46'
Sample Description: SM

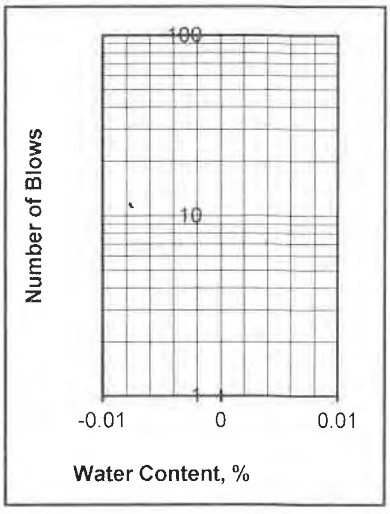
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

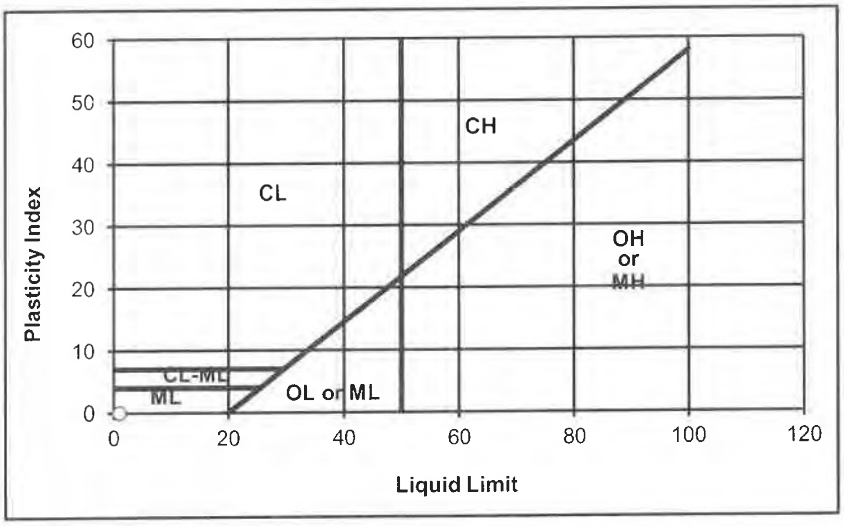
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B12 @ 2-3'
Sample Description: SM/ML

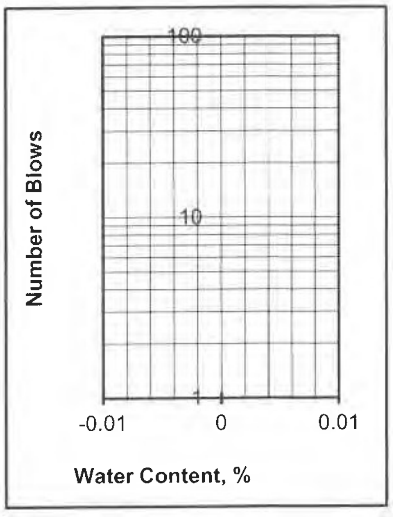
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

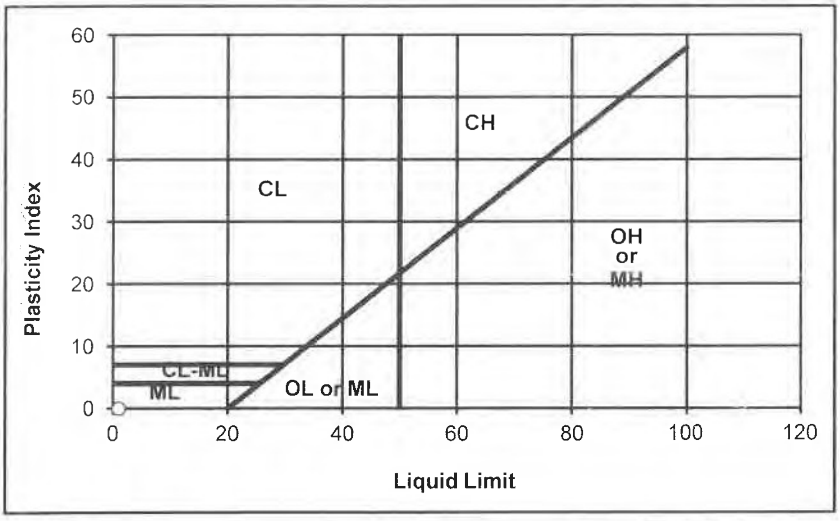
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B12 @ 5-6'
Sample Description: SM/ML

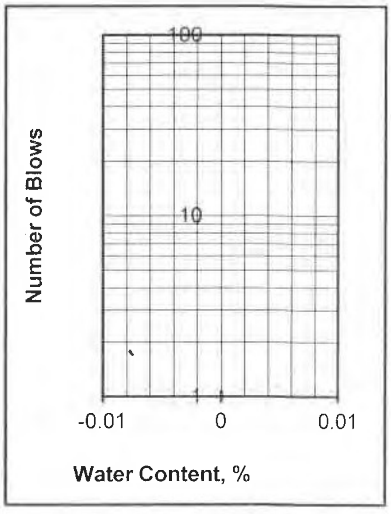
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

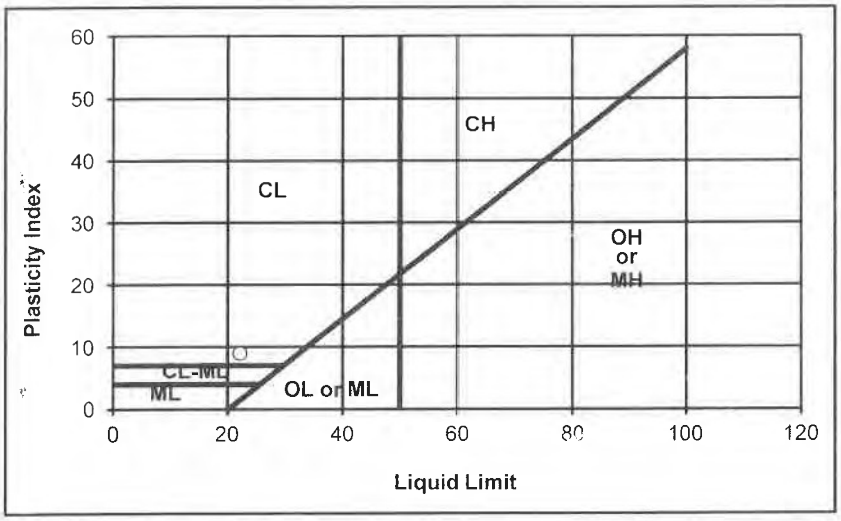
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B12 @ 10-11'
Sample Description: SC/CL

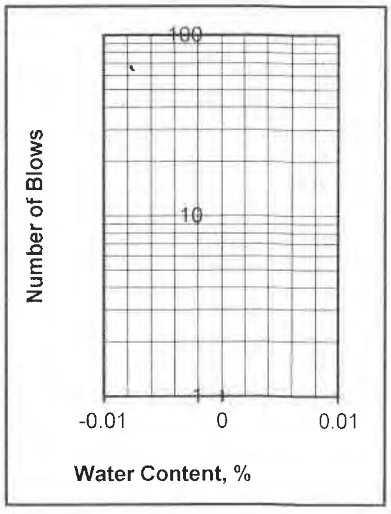
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	34.95	38.98		40.04	42.16	
Weight of Dry Soil & Tare (g)	33.62	37.18		37.20	38.97	
Weight of Tare (g)	23.73	23.82		24.39	24.48	
Weight of water (g)	1.33	1.80		2.84	3.19	
Weight of Dry Soil (g)	9.89	13.36		12.81	14.49	
Water Content (% of dry wt.)	13.4%	13.5%		22.2%	22.0%	
Number of Blows				25	25	

Plastic Limit : 13 **Liquid Limit : 22**

Plasticity Index : 9
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

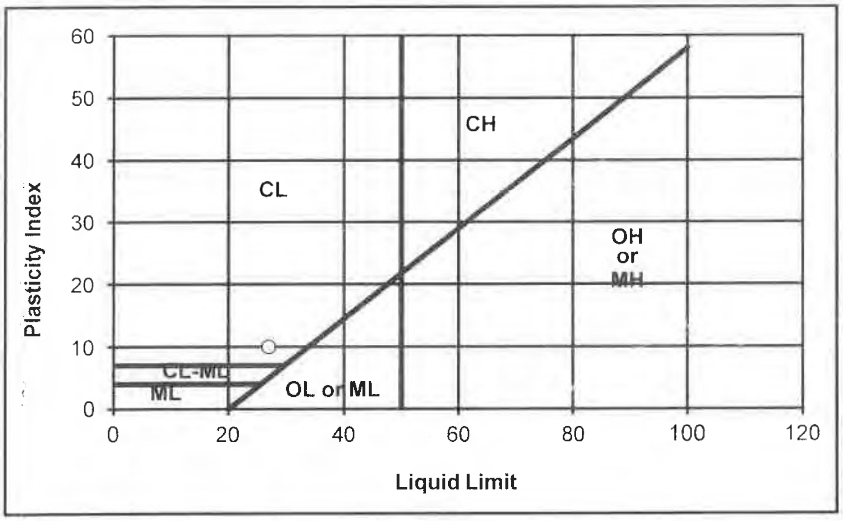
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B12 @ 15-16'
Sample Description: SC

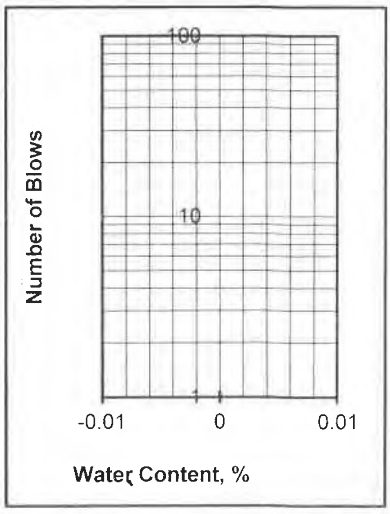
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	34.72	36.19		42.75	40.95	
Weight of Dry Soil & Tare (g)	32.49	34.20		38.75	37.36	
Weight of Tare (g)	19.59	22.68		23.80	24.06	
Weight of water (g)	2.23	1.99		4.00	3.59	
Weight of Dry Soil (g)	12.90	11.52		14.95	13.30	
Water Content (% of dry wt.)	17.3%	17.3%		26.8%	27.0%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 27**

Plasticity Index : 10
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

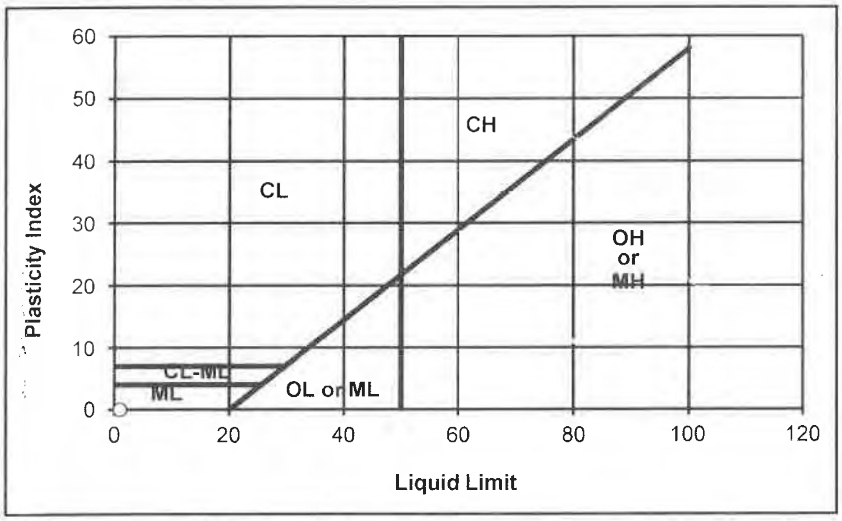
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B12 @ 20-21'
Sample Description: SM

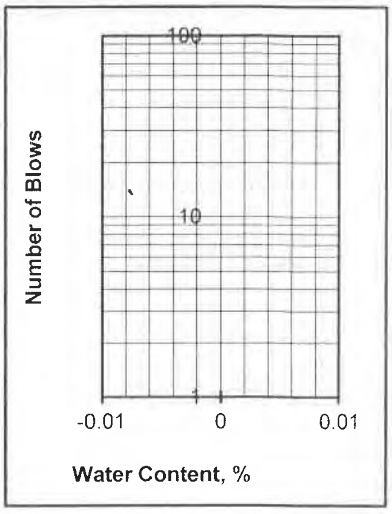
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

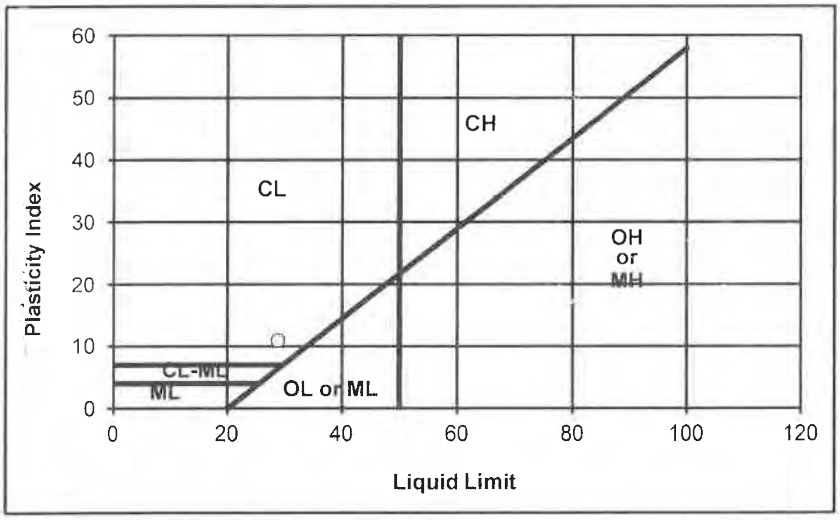
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B12 @ 25-26'
Sample Description: SC

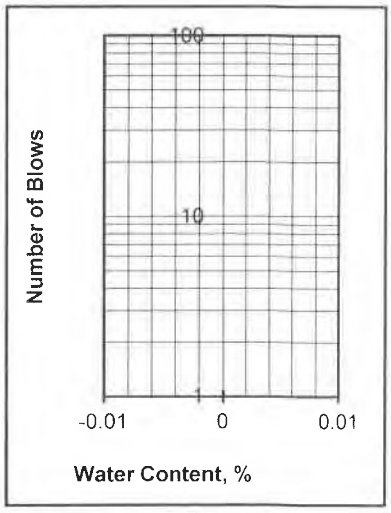
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	34.29	37.48		41.38	40.17	
Weight of Dry Soil & Tare (g)	32.49	35.06		37.43	36.22	
Weight of Tare (g)	22.45	21.07		23.62	22.62	
Weight of water (g)	1.80	2.42		3.95	3.95	
Weight of Dry Soil (g)	10.04	13.99		13.81	13.60	
Water Content (% of dry wt.)	17.9%	17.3%		28.6%	29.0%	
Number of Blows				25	25	

Plastic Limit : 18 **Liquid Limit : 29**

Plasticity Index : 11
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

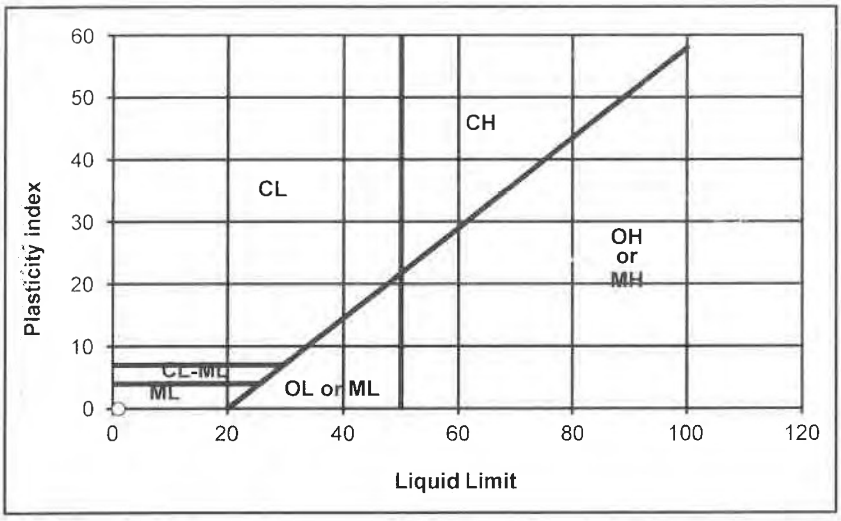
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B12 @ 30-31'
Sample Description: SM

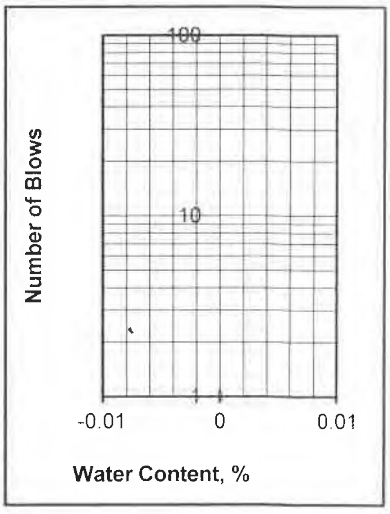
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

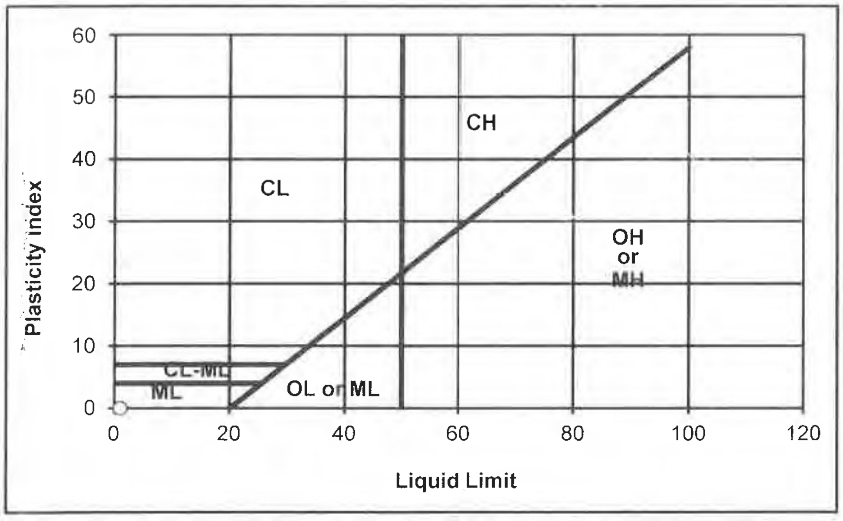
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B12 @ 35-36'
Sample Description: SM

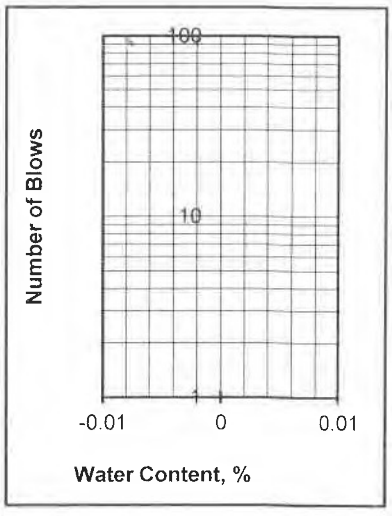
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

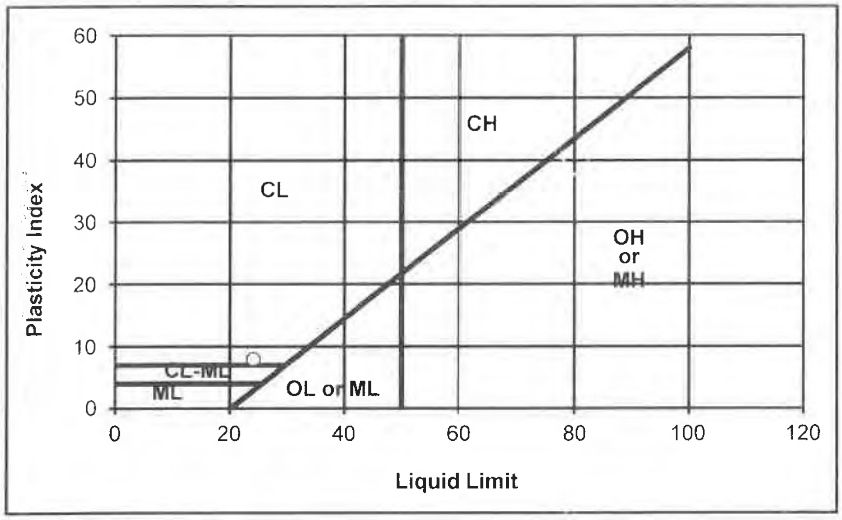
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B12 @ 40-41'
Sample Description: SC

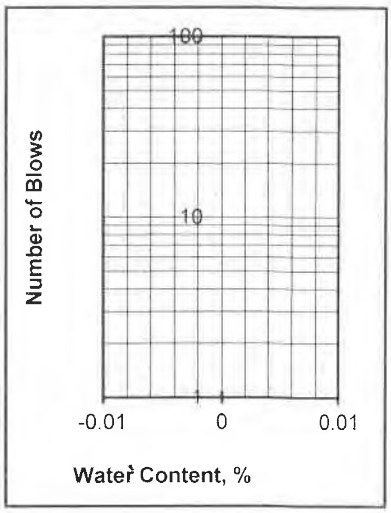
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	42.93	45.71		40.33	38.96	
Weight of Dry Soil & Tare (g)	40.31	42.74		37.14	36.23	
Weight of Tare (g)	24.03	24.12		23.90	24.81	
Weight of water (g)	2.62	2.97		3.19	2.73	
Weight of Dry Soil (g)	16.28	18.62		13.24	11.42	
Water Content (% of dry wt.)	16.1%	16.0%		24.1%	23.9%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 24**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

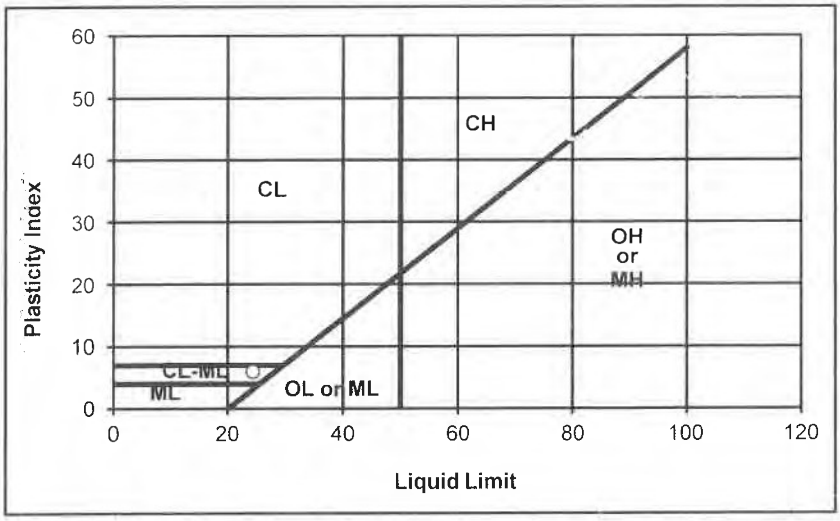
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 2/16/2023
Sampled By: DA
Sample Number: -
Sample Location: B12 @ 45-46'
Sample Description: SC/SM

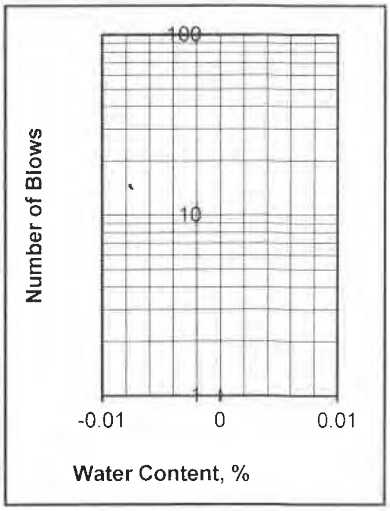
Date Tested: 3/6/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.47	41.24		41.53	38.89	
Weight of Dry Soil & Tare (g)	32.98	38.38		38.10	35.93	
Weight of Tare (g)	19.59	22.69		23.87	23.88	
Weight of water (g)	2.49	2.86		3.43	2.96	
Weight of Dry Soil (g)	13.39	15.69		14.23	12.05	
Water Content (% of dry wt.)	18.6%	18.2%		24.1%	24.6%	
Number of Blows				25	25	

Plastic Limit : 18 **Liquid Limit : 24**

Plasticity Index : 6
Unified Soil Classification : CL-ML **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

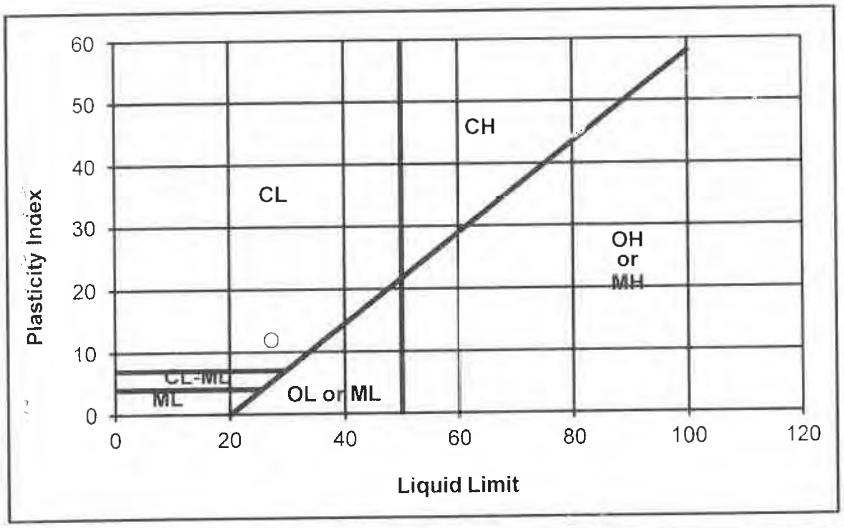
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B13 @ 25-26'
Sample Description: SC

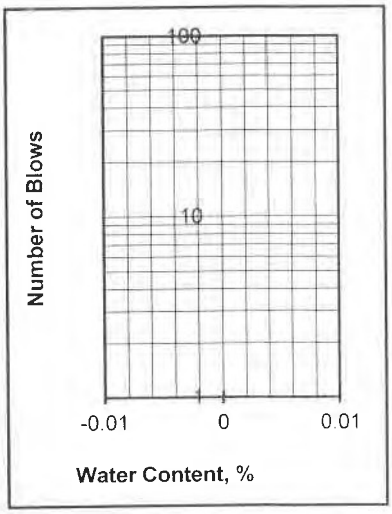
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	31.95	34.61		36.26	35.56	
Weight of Dry Soil & Tare (g)	30.35	33.02		32.79	32.17	
Weight of Tare (g)	19.74	22.80		20.06	19.64	
Weight of water (g)	1.60	1.59		3.47	3.39	
Weight of Dry Soil (g)	10.61	10.22		12.73	12.53	
Water Content (% of dry wt.)	15.1%	15.6%		27.3%	27.1%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 27**

Plasticity Index : 12
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

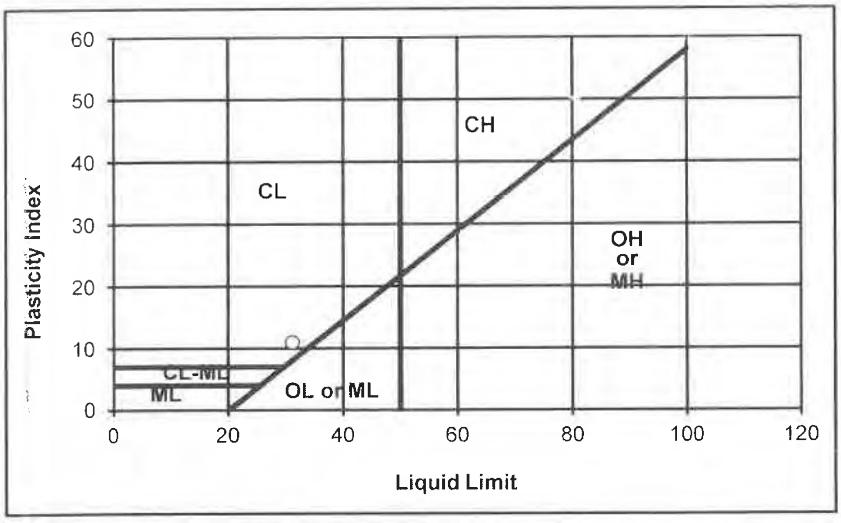
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B13 @ 40-41'
Sample Description: SC

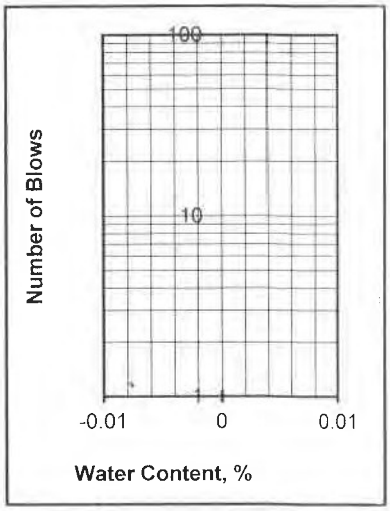
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.85	45.48		35.88	37.80	
Weight of Dry Soil & Tare (g)	33.93	41.87		33.00	33.58	
Weight of Tare (g)	24.31	24.30		23.79	20.01	
Weight of water (g)	1.92	3.61		2.88	4.22	
Weight of Dry Soil (g)	9.62	17.57		9.21	13.57	
Water Content (% of dry wt.)	20.0%	20.5%		31.3%	31.1%	
Number of Blows				25	25	

Plastic Limit : 20 **Liquid Limit : 31**

Plasticity Index : 11
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

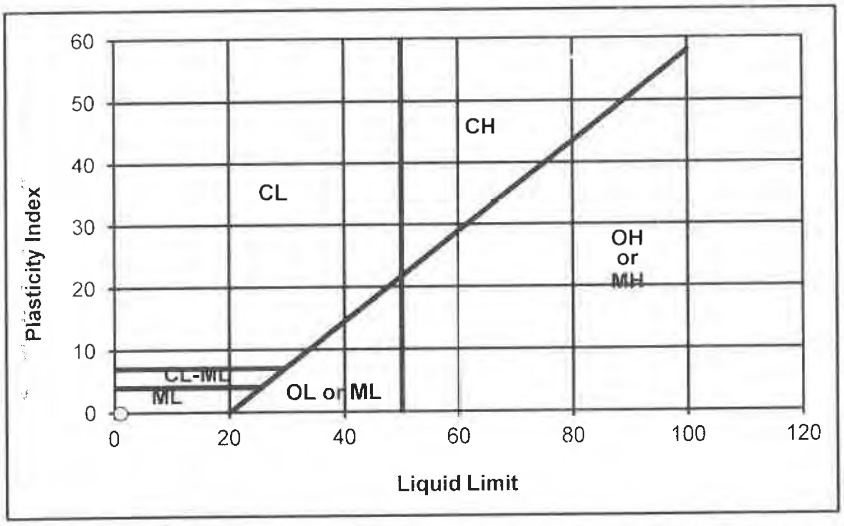
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B13 @ 45-46'
Sample Description: SM

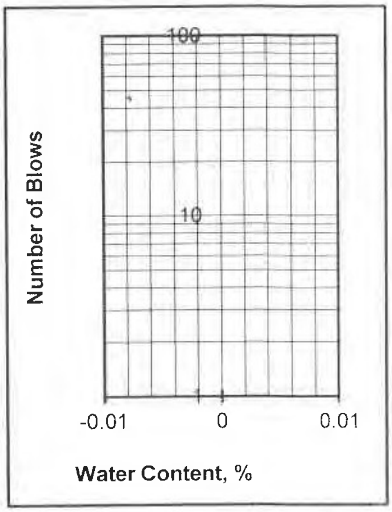
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

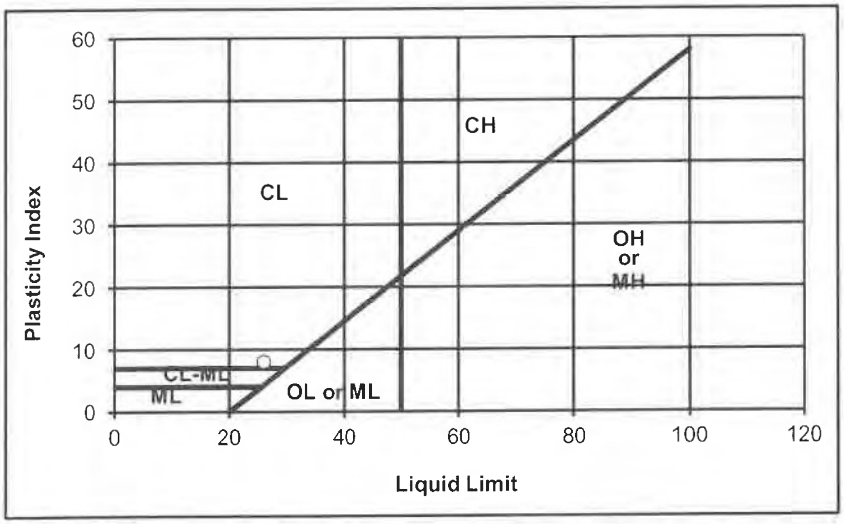
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B14 @ 35-36'
Sample Description: CL

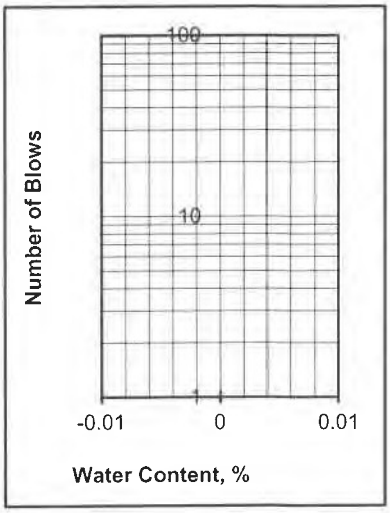
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	38.19	36.58		39.35	35.12	
Weight of Dry Soil & Tare (g)	36.08	34.69		36.15	32.02	
Weight of Tare (g)	24.34	24.34		23.83	20.04	
Weight of water (g)	2.11	1.89		3.20	3.10	
Weight of Dry Soil (g)	11.74	10.35		12.32	11.98	
Water Content (% of dry wt.)	18.0%	18.3%		26.0%	25.9%	
Number of Blows				25	25	

Plastic Limit : 18 **Liquid Limit : 26**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

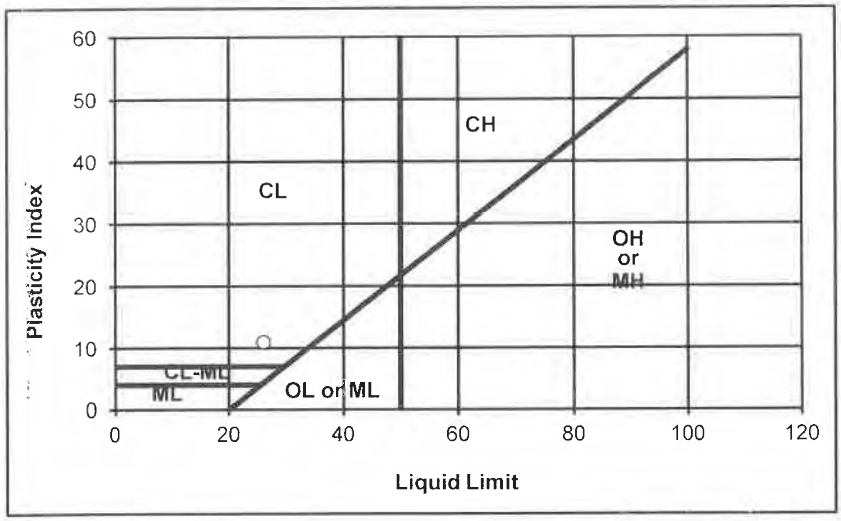
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B14 @ 40-41'
Sample Description: CL

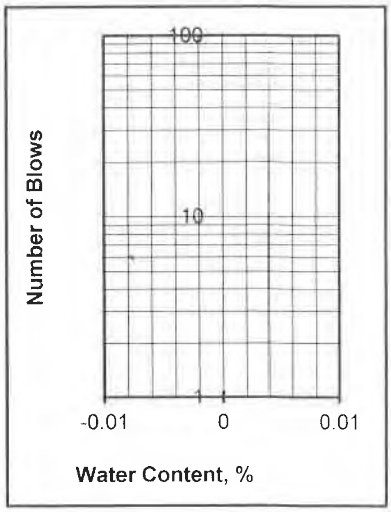
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	32.42	36.96		35.96	32.20	
Weight of Dry Soil & Tare (g)	30.42	35.15		33.34	29.99	
Weight of Tare (g)	16.49	23.04		23.30	21.50	
Weight of water (g)	2.00	1.81		2.62	2.21	
Weight of Dry Soil (g)	13.93	12.11		10.04	8.49	
Water Content (% of dry wt.)	14.4%	14.9%		26.1%	26.0%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 26**

Plasticity Index : 11
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

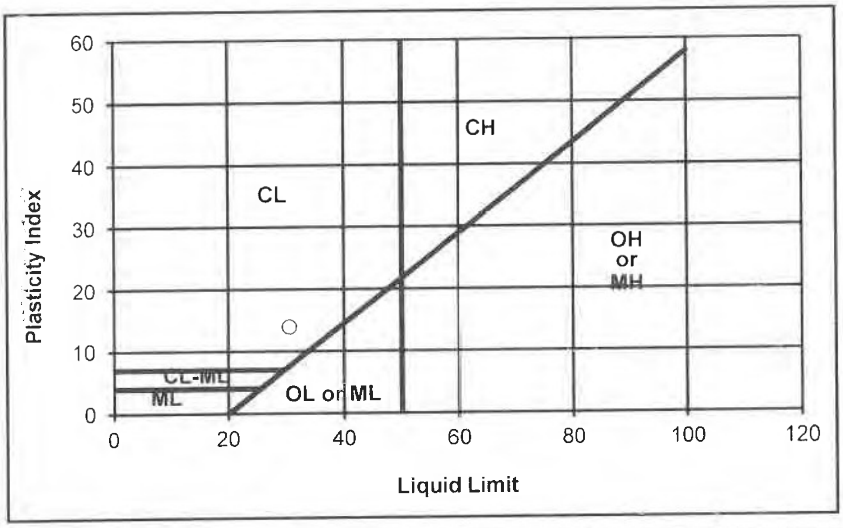
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B14 @ 45-46'
Sample Description: SC/CL

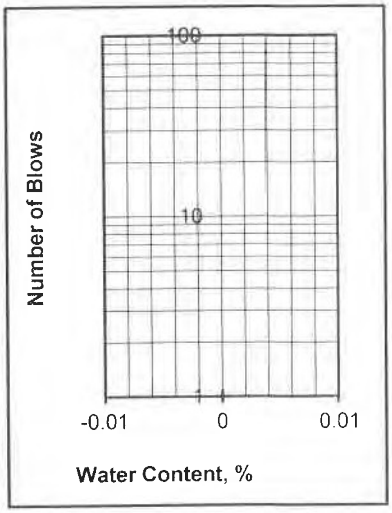
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	33.54	35.70		32.58	34.44	
Weight of Dry Soil & Tare (g)	32.13	34.01		30.19	31.33	
Weight of Tare (g)	24.05	24.07		22.26	21.28	
Weight of water (g)	1.41	1.69		2.39	3.11	
Weight of Dry Soil (g)	8.08	9.94		7.93	10.05	
Water Content (% of dry wt.)	17.5%	17.0%		30.1%	30.9%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 31**

Plasticity Index : 14
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

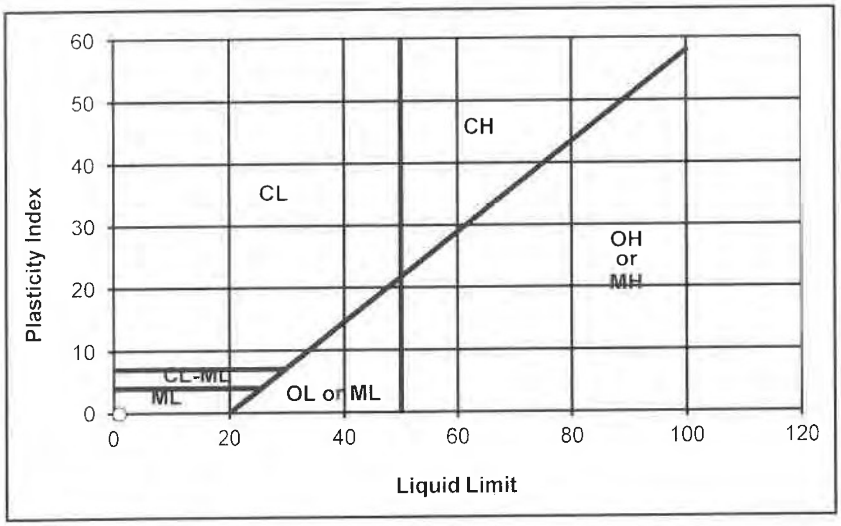
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B15 @ 30-31'
Sample Description: SM/ML

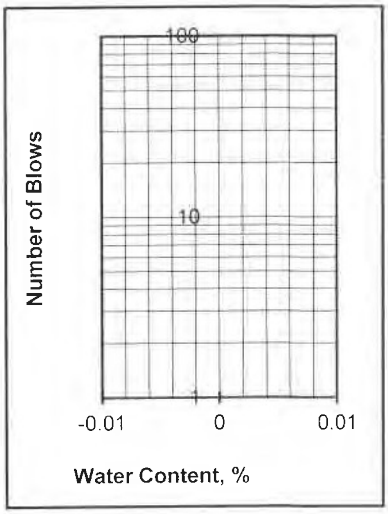
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

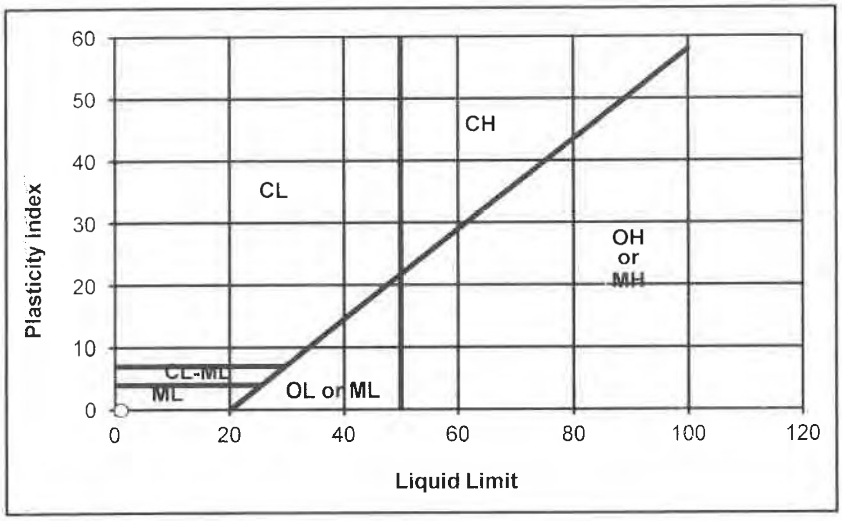
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B15 @ 35-36'
Sample Description: SM/ML

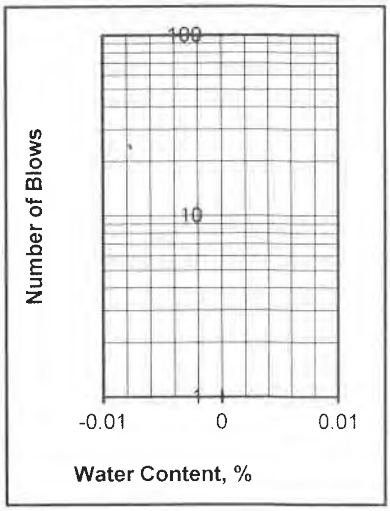
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

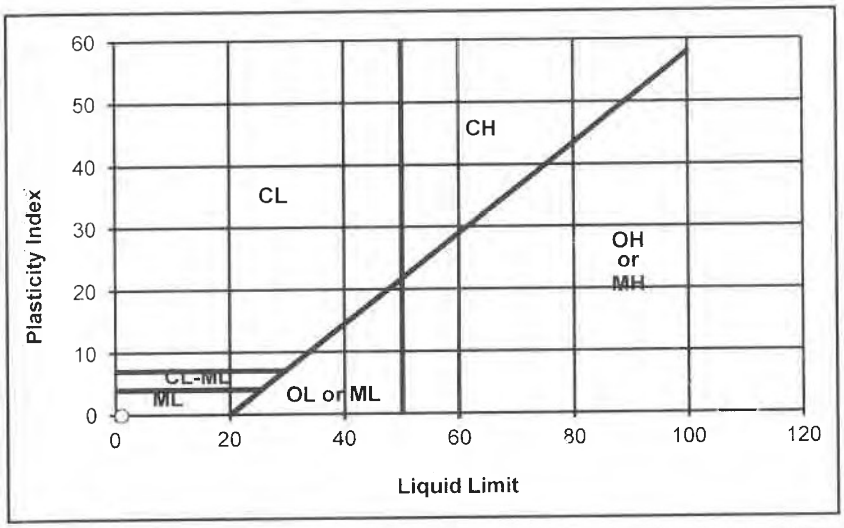
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B15 @ 45-46'
Sample Description: SM/ML w/ trace of clay

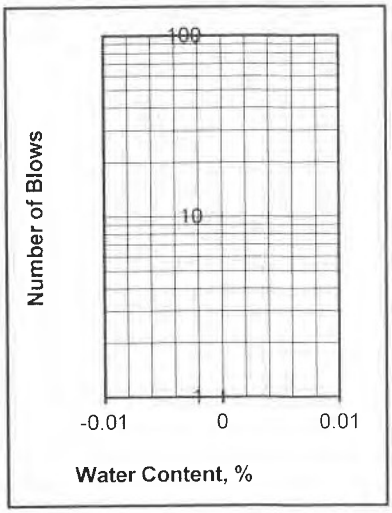
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

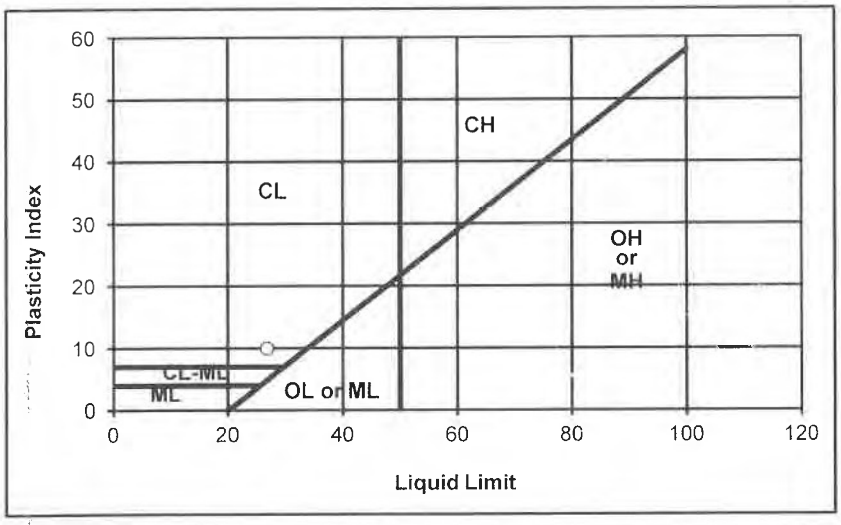
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B17 @ 20-21'
Sample Description: CL

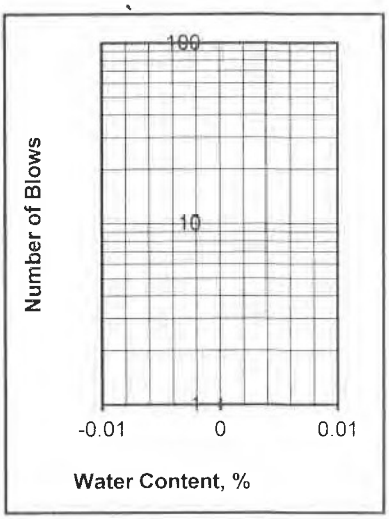
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	42.15	39.95		33.71	32.71	
Weight of Dry Soil & Tare (g)	39.60	37.68		31.26	30.30	
Weight of Tare (g)	24.03	24.06		22.16	21.24	
Weight of water (g)	2.55	2.27		2.45	2.41	
Weight of Dry Soil (g)	15.57	13.62		9.10	9.06	
Water Content (% of dry wt.)	16.4%	16.7%		26.9%	26.6%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 27**

Plasticity Index : 10
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

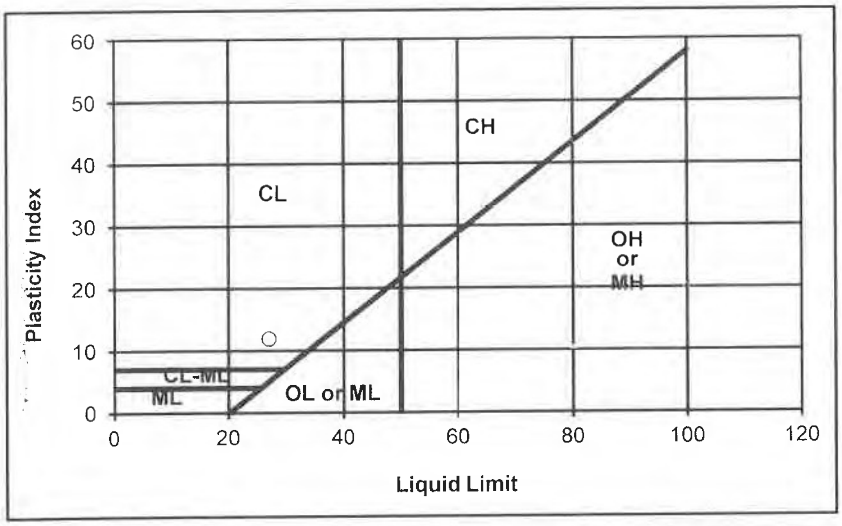
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B17 @ 25-26'
Sample Description: SC

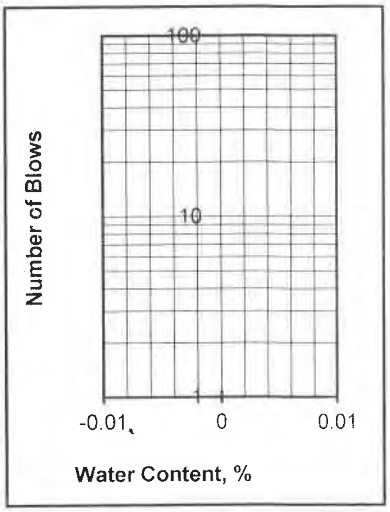
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.01	38.77		40.20	37.81	
Weight of Dry Soil & Tare (g)	33.55	36.80		36.40	34.27	
Weight of Tare (g)	24.04	24.05		22.22	21.20	
Weight of water (g)	1.46	1.97		3.80	3.54	
Weight of Dry Soil (g)	9.51	12.75		14.18	13.07	
Water Content (% of dry wt.)	15.4%	15.5%		26.8%	27.1%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 27**

Plasticity Index : 12
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

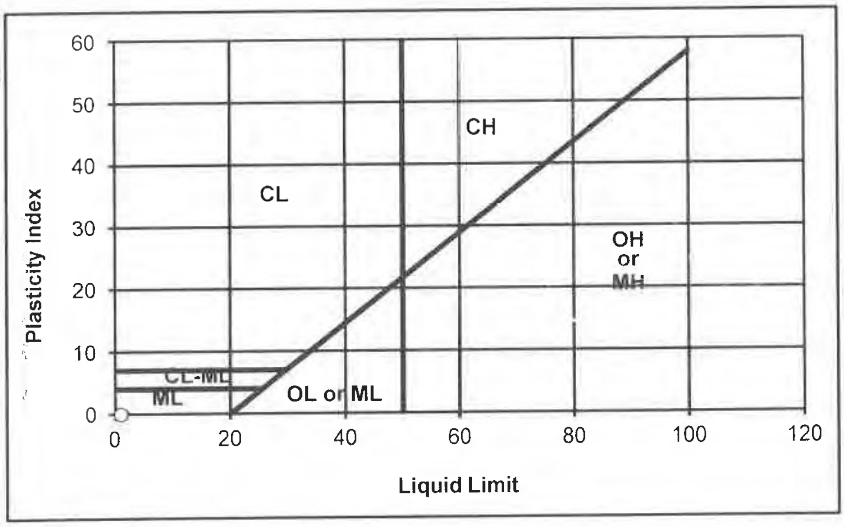
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B17 @ 30-31'
Sample Description: SM

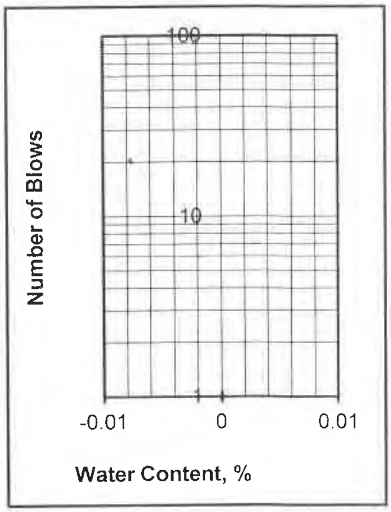
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

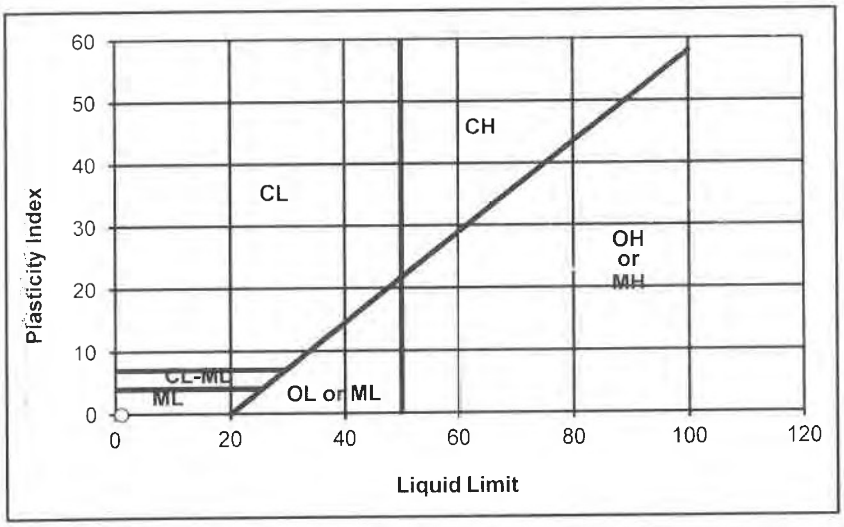
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B18 @ 10-11'
Sample Description: SM

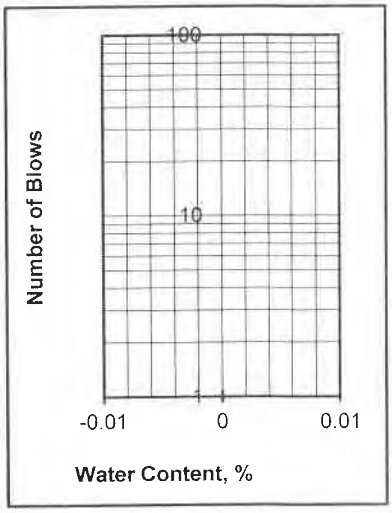
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

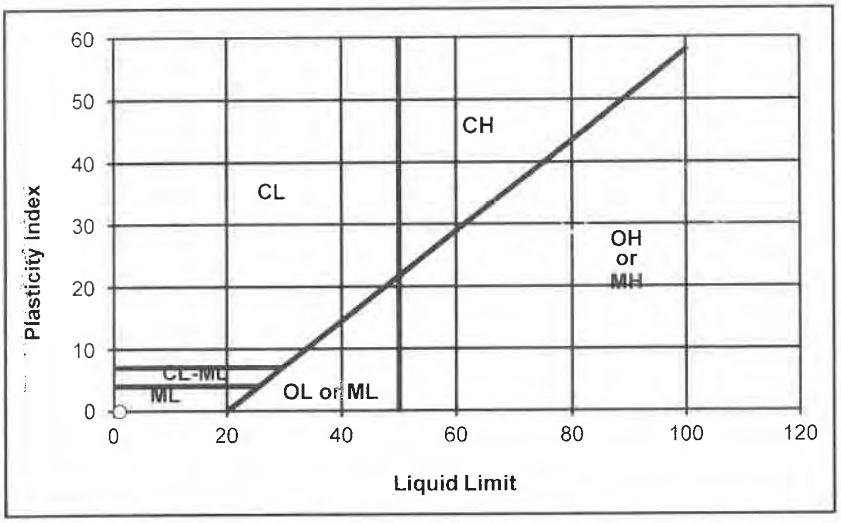
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B18 @ 20-21'
Sample Description: SM

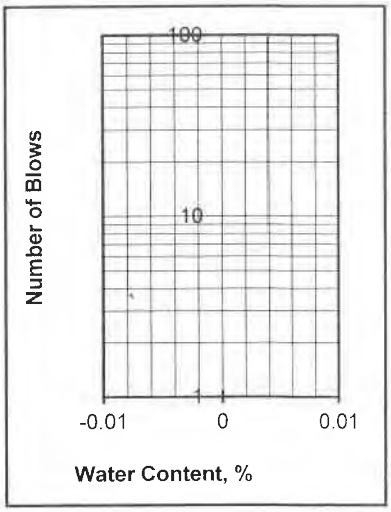
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

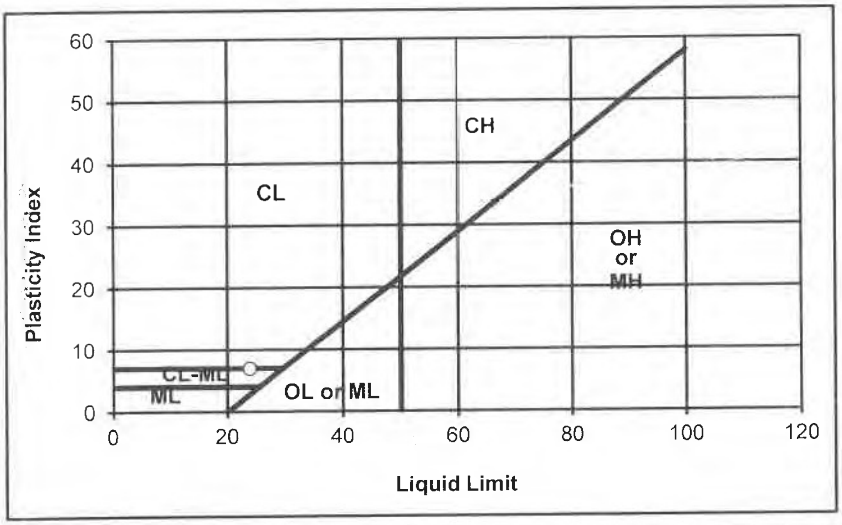
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B18 @ 30-31'
Sample Description: SM/ML

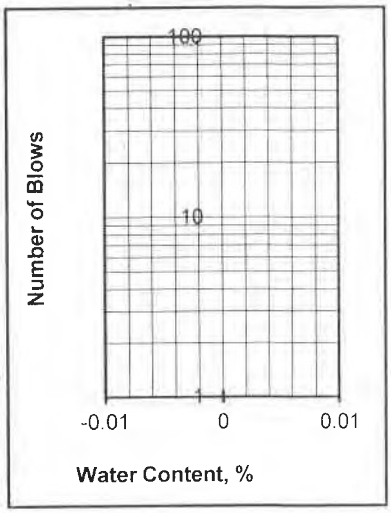
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.16	39.36		29.48	31.55	
Weight of Dry Soil & Tare (g)	32.91	36.91		27.65	29.26	
Weight of Tare (g)	19.70	22.77		20.02	19.61	
Weight of water (g)	2.25	2.46		1.83	2.29	
Weight of Dry Soil (g)	13.21	14.14		7.63	9.65	
Water Content (% of dry wt.)	17.0%	17.4%		24.0%	23.7%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 24**

Plasticity Index : 7
Unified Soil Classification : CL-ML **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

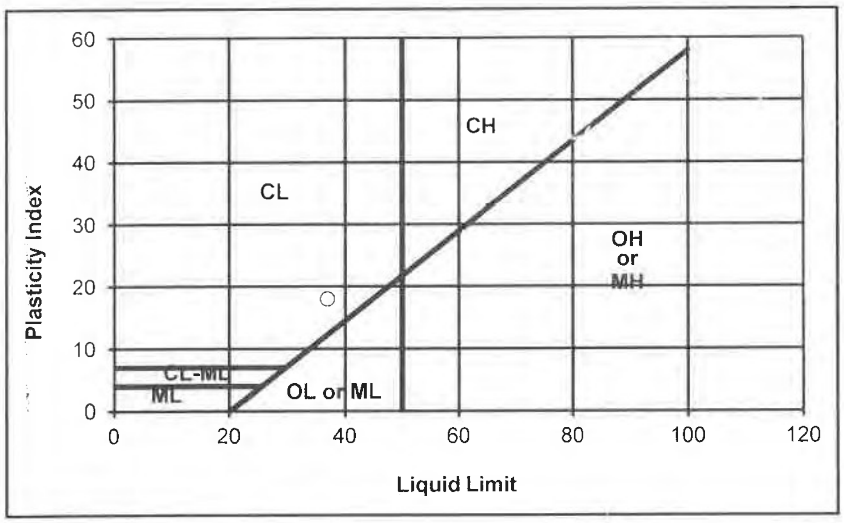
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B18 @ 35-36'
Sample Description: SC/CL

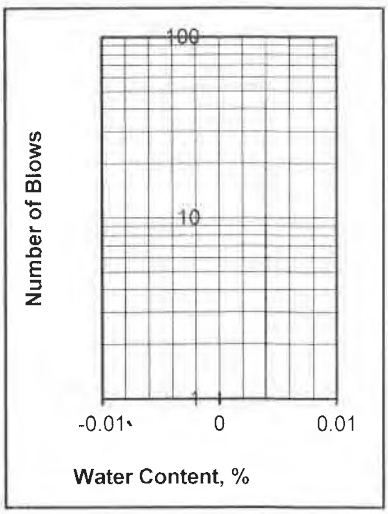
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	36.27	40.42		40.61	32.07	
Weight of Dry Soil & Tare (g)	33.94	37.70		35.80	27.92	
Weight of Tare (g)	21.47	23.29		23.02	16.46	
Weight of water (g)	2.33	2.72		4.81	4.15	
Weight of Dry Soil (g)	12.47	14.41		12.78	11.46	
Water Content (% of dry wt.)	18.7%	18.9%		37.6%	36.2%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 37**

Plasticity Index : 18
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

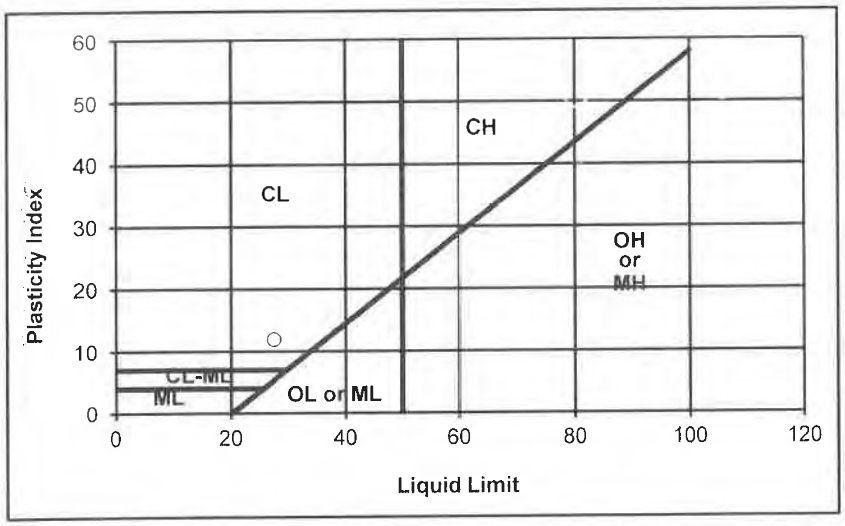
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B18 @ 40-41'
Sample Description: SC

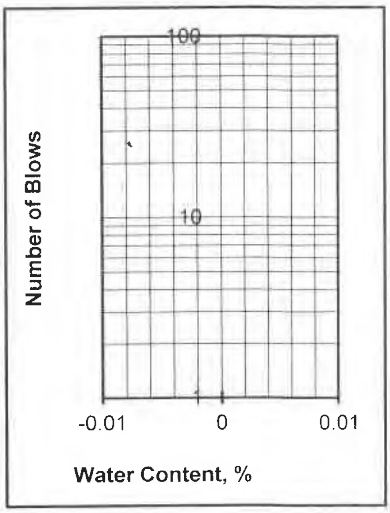
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	40.36	38.40		40.48	33.35	
Weight of Dry Soil & Tare (g)	38.22	36.57		36.85	30.51	
Weight of Tare (g)	24.31	24.31		23.76	20.01	
Weight of water (g)	2.14	1.83		3.63	2.84	
Weight of Dry Soil (g)	13.91	12.26		13.09	10.50	
Water Content (% of dry wt.)	15.4%	14.9%		27.7%	27.0%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 27**

Plasticity Index : 12
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

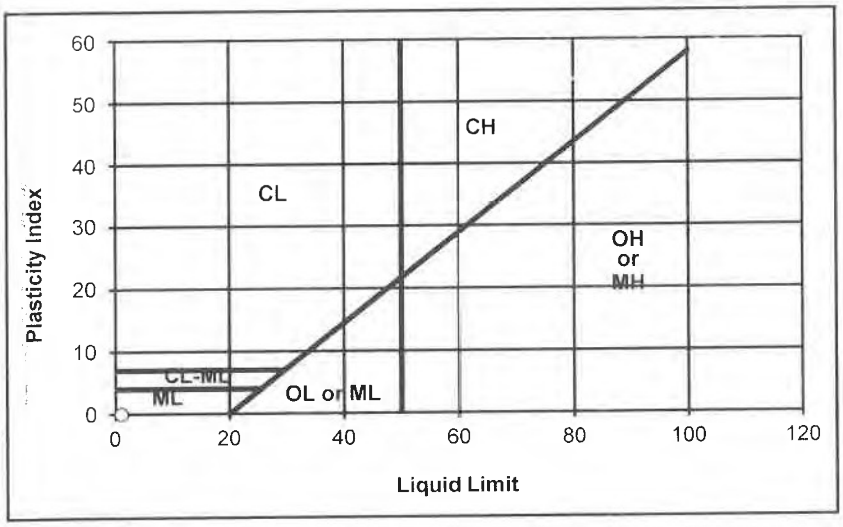
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B18 @ 45-46'
Sample Description: SM w/ trace of clay

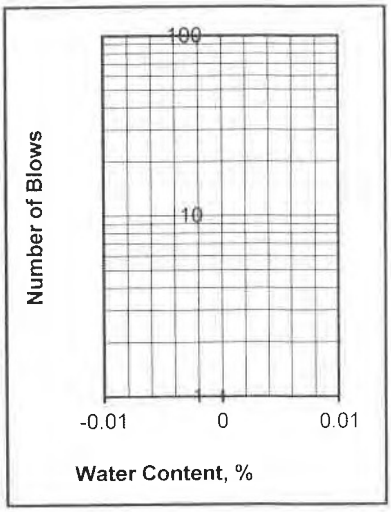
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

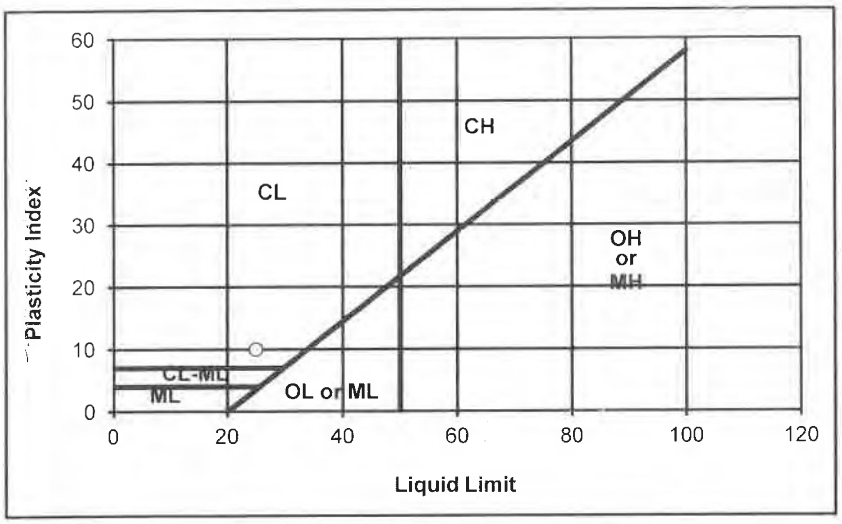
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B19 @ 10-11'
Sample Description: CL

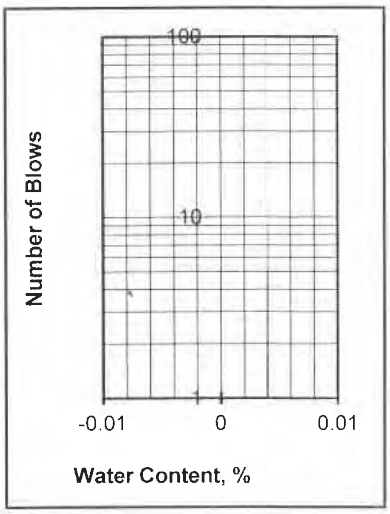
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.35	37.27		34.63	40.18	
Weight of Dry Soil & Tare (g)	33.87	35.57		32.10	36.49	
Weight of Tare (g)	24.03	24.07		22.18	21.28	
Weight of water (g)	1.48	1.70		2.53	3.69	
Weight of Dry Soil (g)	9.84	11.50		9.92	15.21	
Water Content (% of dry wt.)	15.0%	14.8%		25.5%	24.3%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 25**

Plasticity Index : 10
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

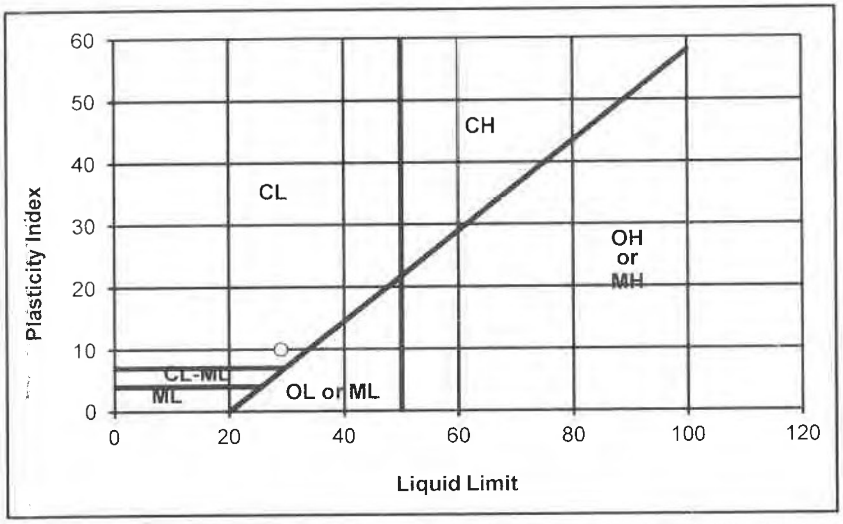
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B19 @ 15-16'
Sample Description: SC

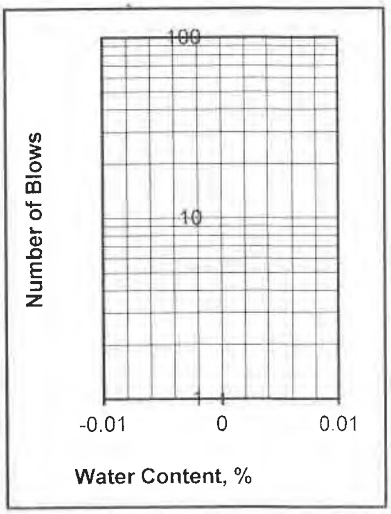
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	30.57	35.76		36.27	31.00	
Weight of Dry Soil & Tare (g)	28.86	33.73		32.62	28.44	
Weight of Tare (g)	19.71	22.78		20.01	19.60	
Weight of water (g)	1.71	2.03		3.65	2.56	
Weight of Dry Soil (g)	9.15	10.95		12.61	8.84	
Water Content (% of dry wt.)	18.7%	18.5%		28.9%	28.9%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 29**

Plasticity Index : 10
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

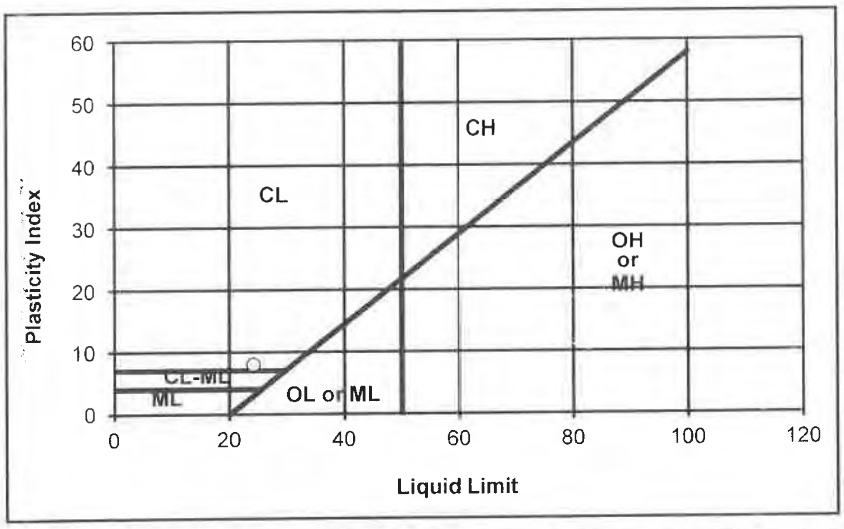
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B19 @ 20-21'
Sample Description: SC/CL

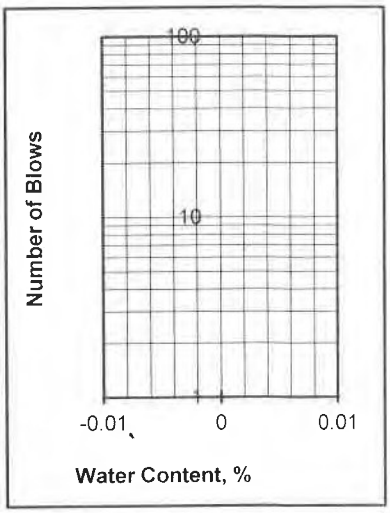
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.49	35.72		43.53	38.14	
Weight of Dry Soil & Tare (g)	32.88	33.96		39.62	34.89	
Weight of Tare (g)	16.46	23.01		23.29	21.47	
Weight of water (g)	2.61	1.76		3.91	3.25	
Weight of Dry Soil (g)	16.42	10.95		16.33	13.42	
Water Content (% of dry wt.)	15.9%	16.1%		23.9%	24.2%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 24**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

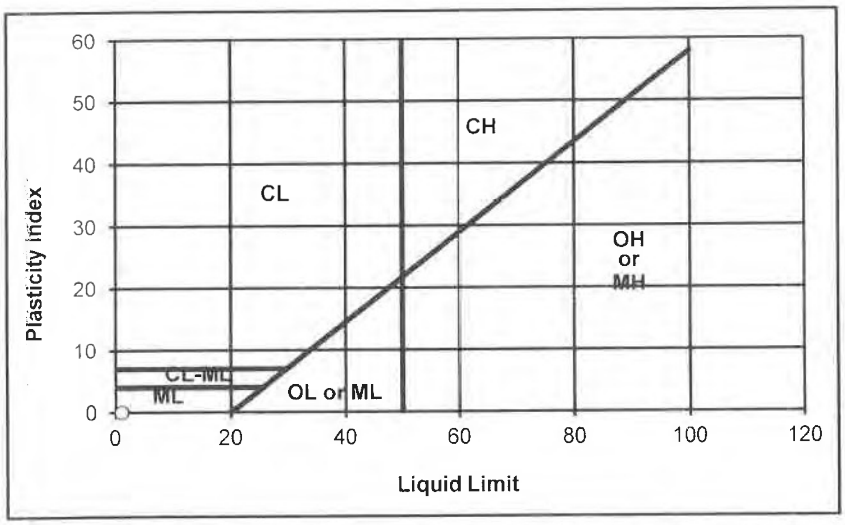
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B19 @ 25-26'
Sample Description: SM w/ trace of clay

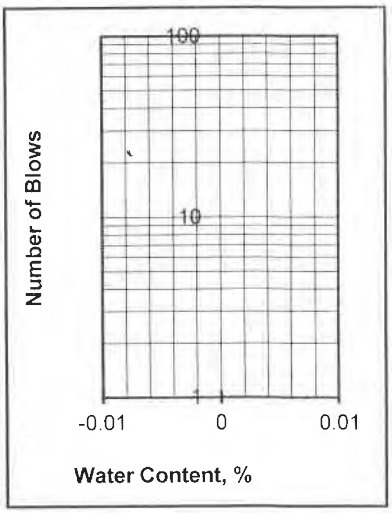
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

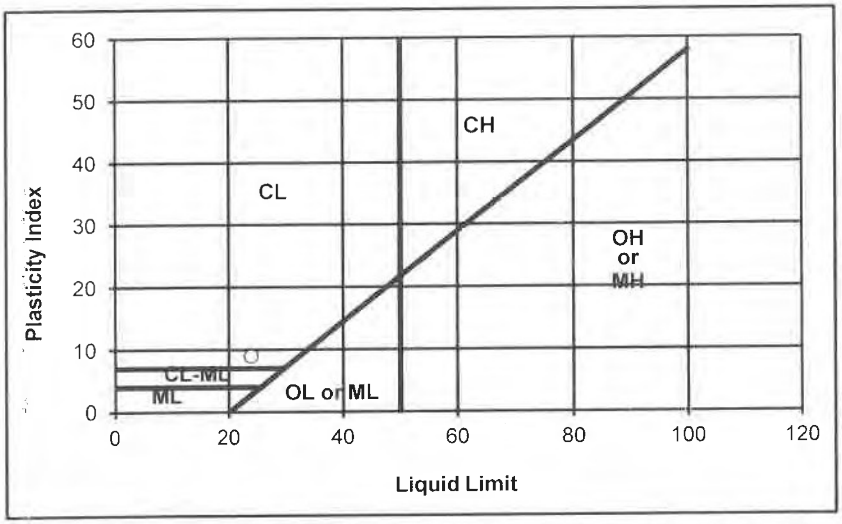
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B19 @ 30-31'
Sample Description: SC

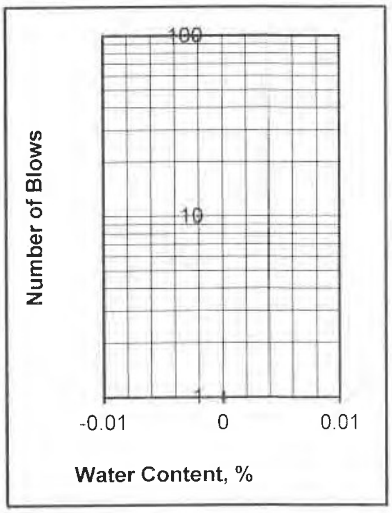
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	30.86	37.09		33.32	37.10	
Weight of Dry Soil & Tare (g)	28.99	35.19		31.04	34.44	
Weight of Tare (g)	16.46	23.02		21.47	23.29	
Weight of water (g)	1.87	1.90		2.28	2.66	
Weight of Dry Soil (g)	12.53	12.17		9.57	11.15	
Water Content (% of dry wt.)	14.9%	15.6%		23.8%	23.9%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 24**

Plasticity Index : 9
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

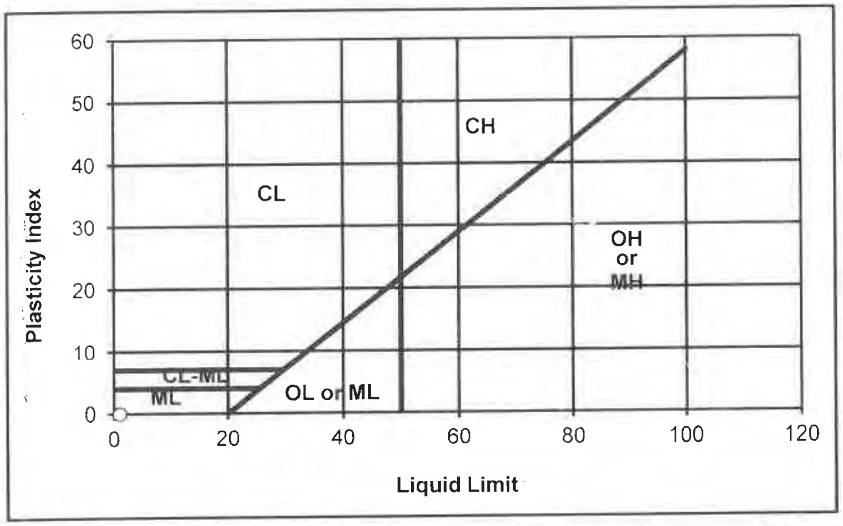
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B19 @ 35-36'
Sample Description: SM/ML

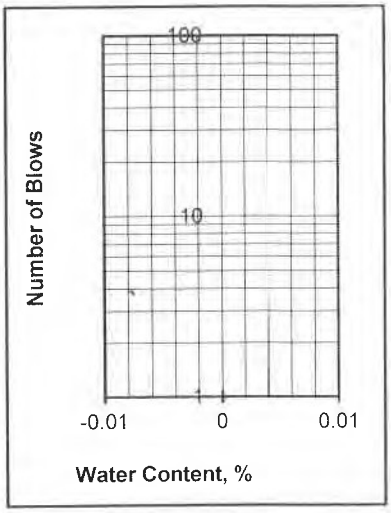
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

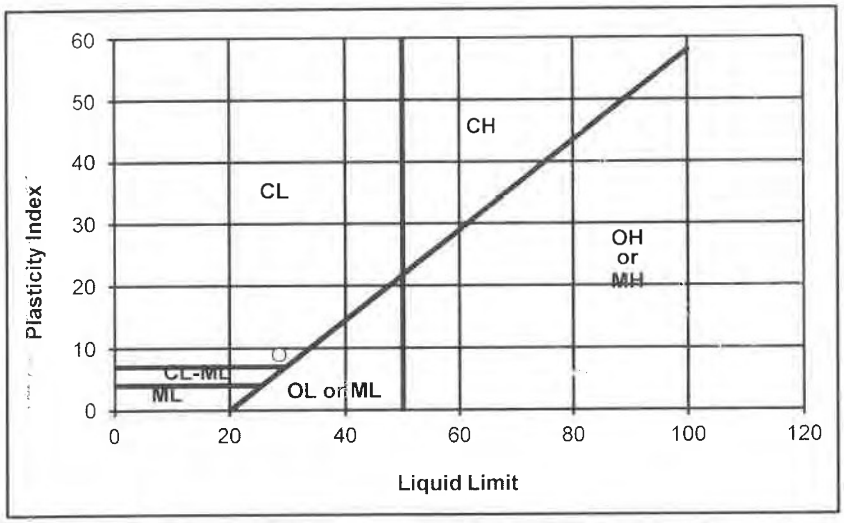
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B20 @ 15-16'
Sample Description: CL

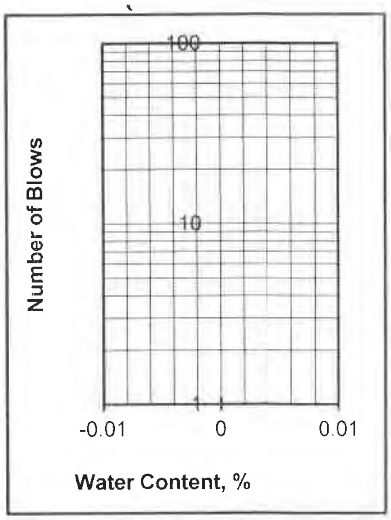
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	40.20	36.80		38.22	40.39	
Weight of Dry Soil & Tare (g)	37.60	34.76		34.65	36.14	
Weight of Tare (g)	24.03	24.06		22.13	21.22	
Weight of water (g)	2.60	2.04		3.57	4.25	
Weight of Dry Soil (g)	13.57	10.70		12.52	14.92	
Water Content (% of dry wt.)	19.2%	19.1%		28.5%	28.5%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 28**

Plasticity Index : 9
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

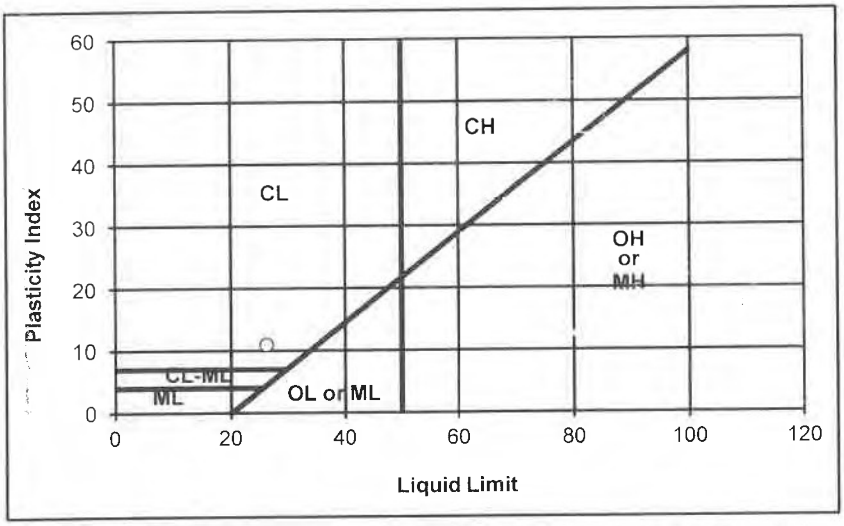
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B20 @ 20-21'
Sample Description: CL

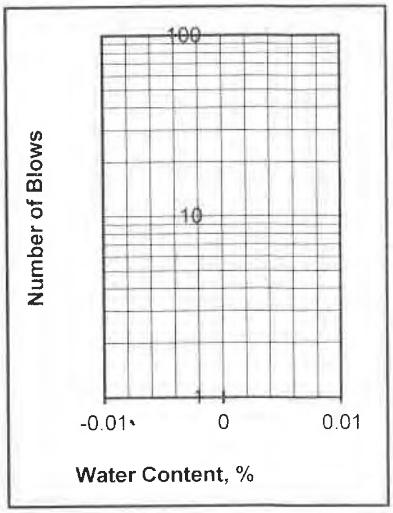
Date Tested: 4/28/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	40.05	43.85		38.81	36.58	
Weight of Dry Soil & Tare (g)	37.97	41.30		35.69	33.12	
Weight of Tare (g)	24.29	24.29		23.75	19.94	
Weight of water (g)	2.08	2.55		3.12	3.46	
Weight of Dry Soil (g)	13.68	17.01		11.94	13.18	
Water Content (% of dry wt.)	15.2%	15.0%		26.1%	26.3%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 26**

Plasticity Index : 11
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

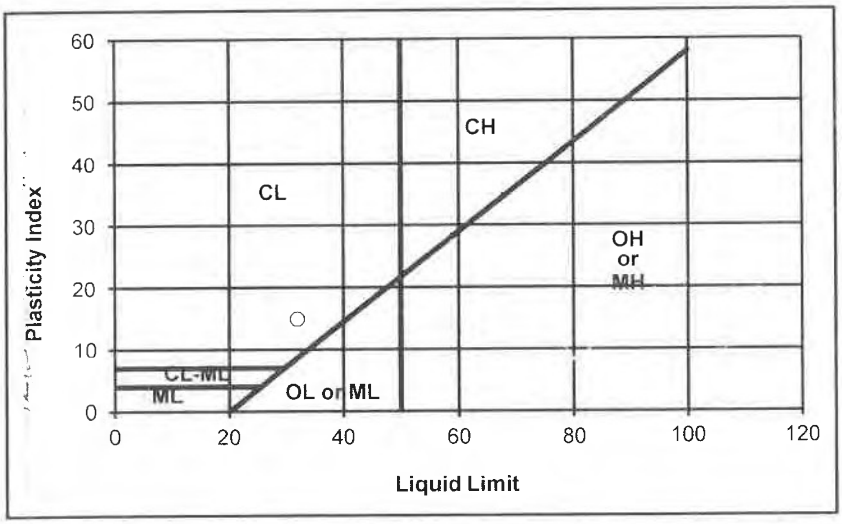
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B21 @ 12.5-13.5'
Sample Description: CL

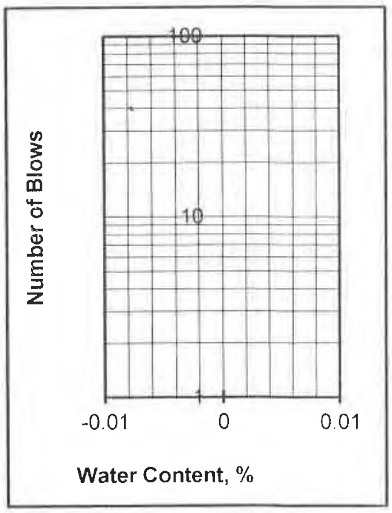
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	32.34	37.57		38.83	40.28	
Weight of Dry Soil & Tare (g)	30.14	35.43		35.03	35.76	
Weight of Tare (g)	16.87	22.74		23.27	21.37	
Weight of water (g)	2.20	2.14		3.80	4.52	
Weight of Dry Soil (g)	13.27	12.69		11.76	14.39	
Water Content (% of dry wt.)	16.6%	16.9%		32.3%	31.4%	
Number of Blows				25	25	

Plastic Limit : 17 **Liquid Limit : 32**

Plasticity Index : 15
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

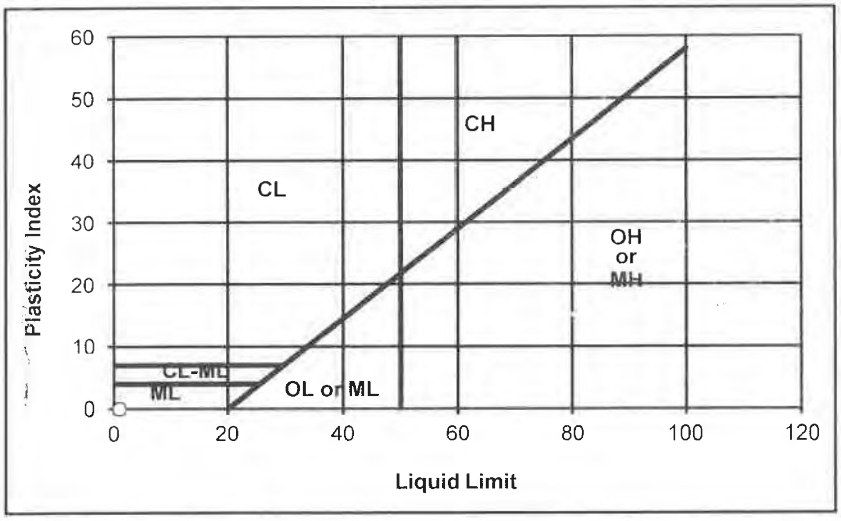
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B21 @ 25-26'
Sample Description: SM w/ clay

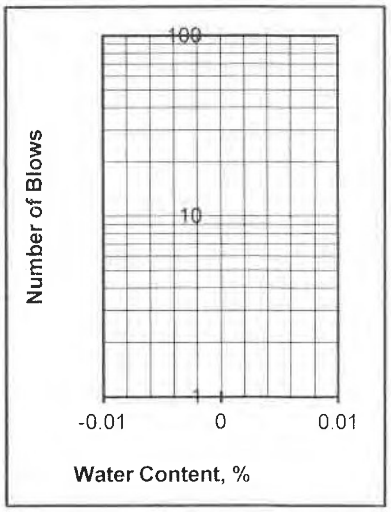
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

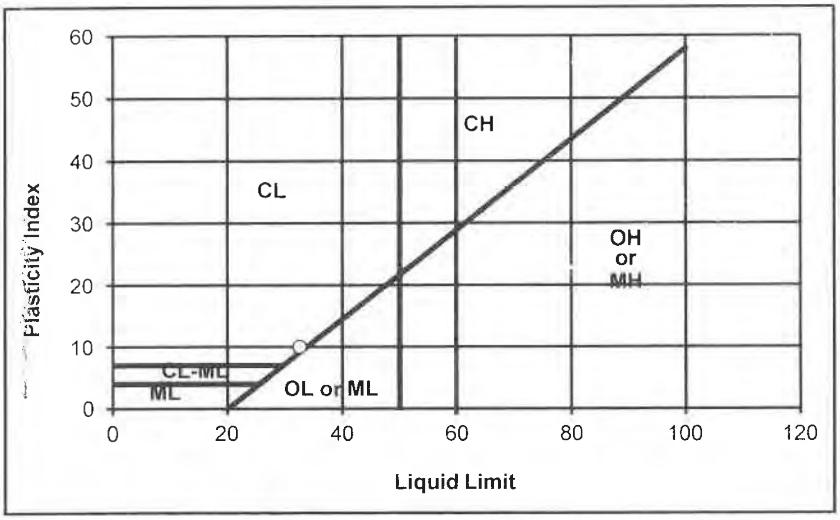
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B21 @ 30-31'
Sample Description: CL

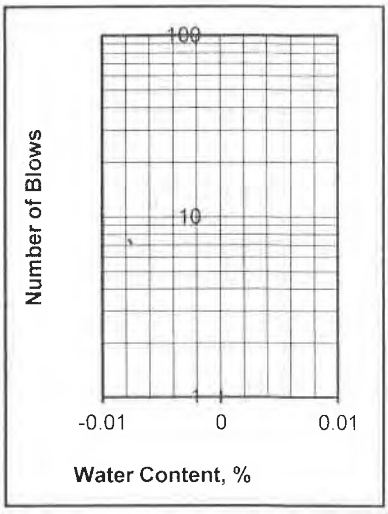
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	40.99	39.90		29.89	39.12	
Weight of Dry Soil & Tare (g)	37.40	36.89		26.17	35.20	
Weight of Tare (g)	21.97	23.29		14.72	23.21	
Weight of water (g)	3.59	3.01		3.72	3.92	
Weight of Dry Soil (g)	15.43	13.60		11.45	11.99	
Water Content (% of dry wt.)	23.3%	22.1%		32.5%	32.7%	
Number of Blows				25	25	

Plastic Limit : 23 **Liquid Limit : 33**

Plasticity Index : 10
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

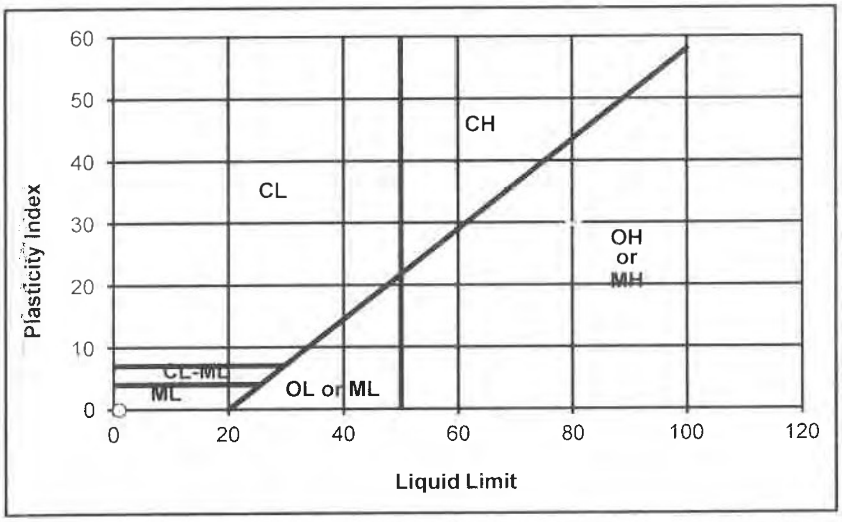
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B22 @ 2-3'
Sample Description: SM

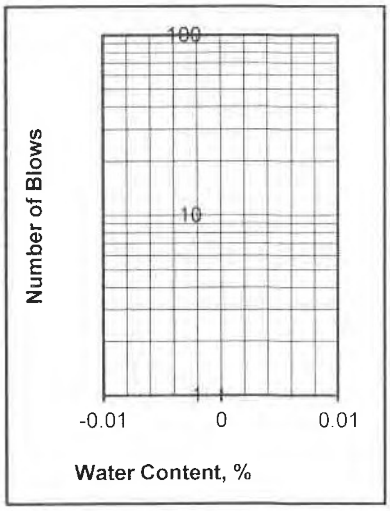
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

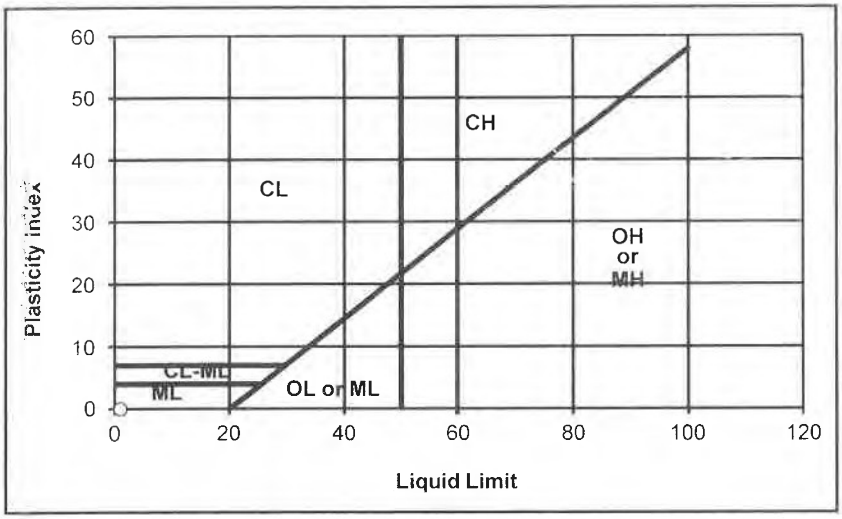
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B22 @ 5-6'
Sample Description: SM

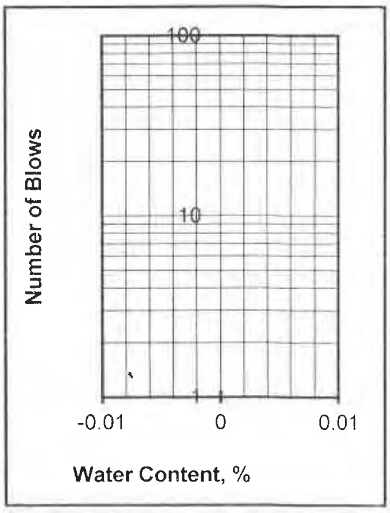
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

Trial Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

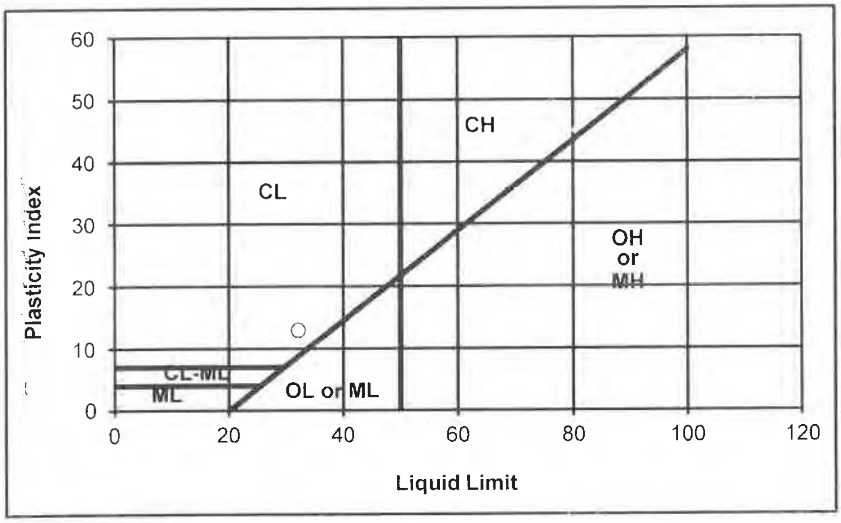
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B22 @ 10-11'
Sample Description: SC

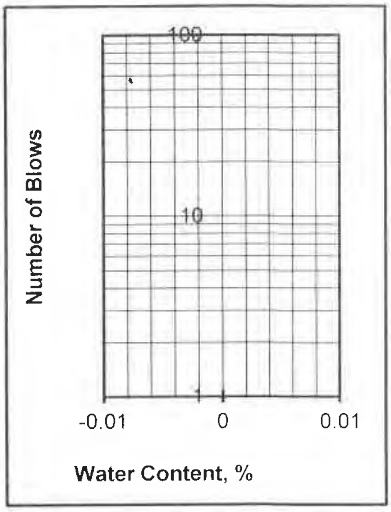
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	25.83	28.37		39.03	36.05	
Weight of Dry Soil & Tare (g)	24.87	27.49		34.65	32.07	
Weight of Tare (g)	19.83	22.79		20.99	19.68	
Weight of water (g)	0.96	0.88		4.38	3.98	
Weight of Dry Soil (g)	5.04	4.70		13.66	12.39	
Water Content (% of dry wt.)	19.0%	18.7%		32.1%	32.1%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 32**

Plasticity Index : 13
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

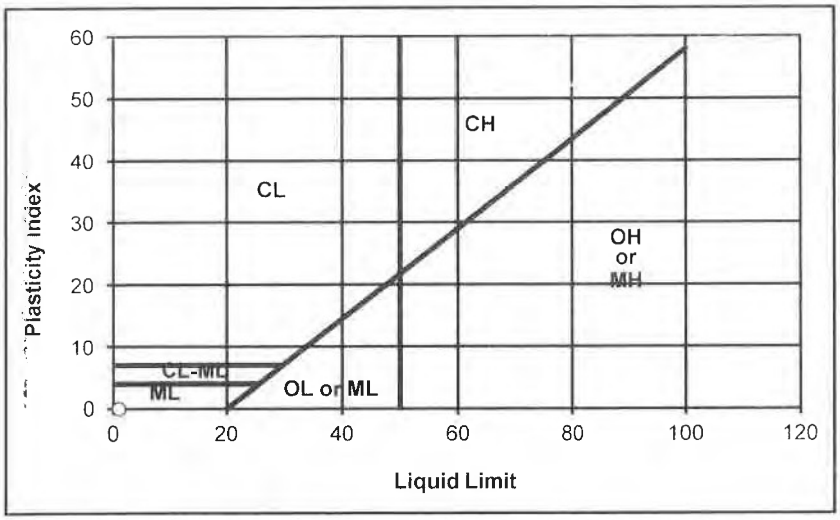
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B22 @ 15-16'
Sample Description: SM

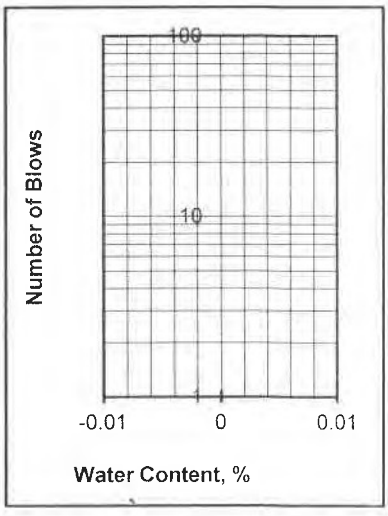
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

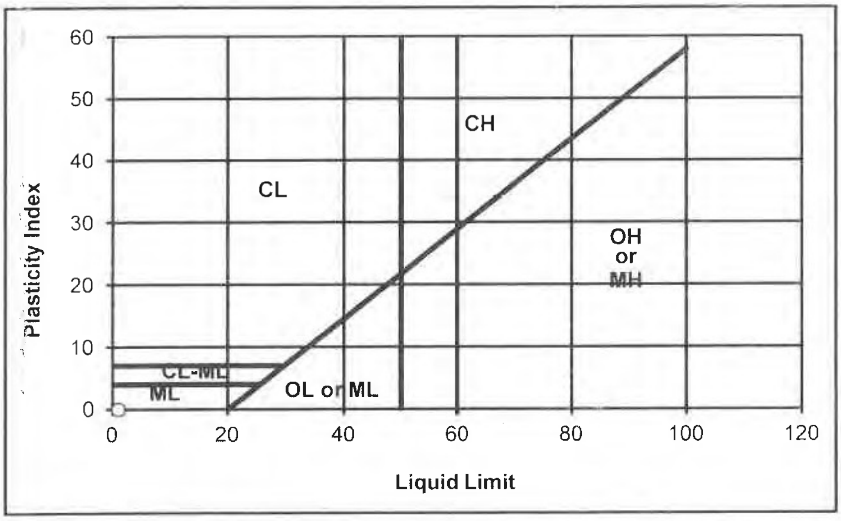
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B23 @ 5-6'
Sample Description: SM

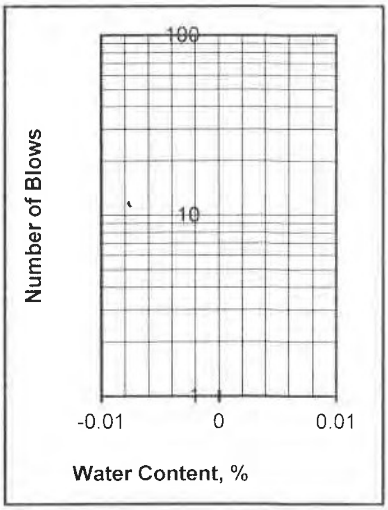
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

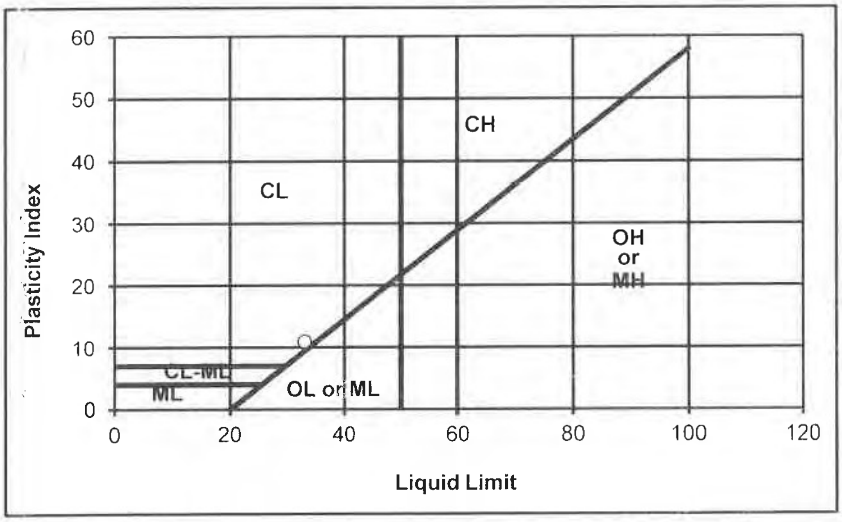
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B23 @ 7.5-8.5'
Sample Description: CL

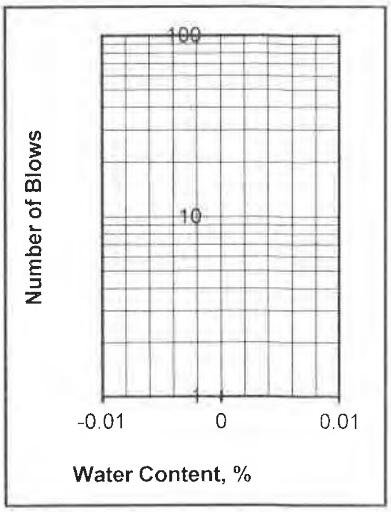
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.41	39.90		37.35	45.00	
Weight of Dry Soil & Tare (g)	32.56	36.79		33.14	38.69	
Weight of Tare (g)	19.83	22.81		20.34	19.66	
Weight of water (g)	2.85	3.11		4.21	6.31	
Weight of Dry Soil (g)	12.73	13.98		12.80	19.03	
Water Content (% of dry wt.)	22.4%	22.2%		32.9%	33.2%	
Number of Blows				25	25	

Plastic Limit : 22 **Liquid Limit : 33**

Plasticity Index : 11
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

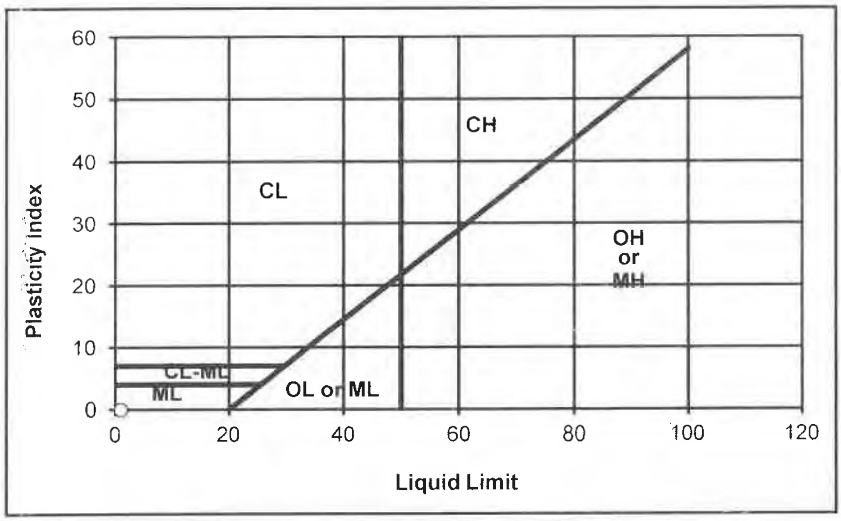
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B23 @ 15-16'
Sample Description: ML

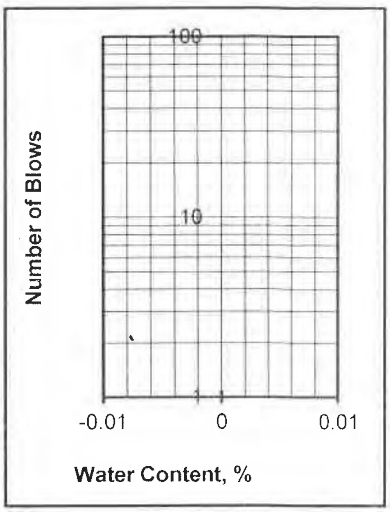
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

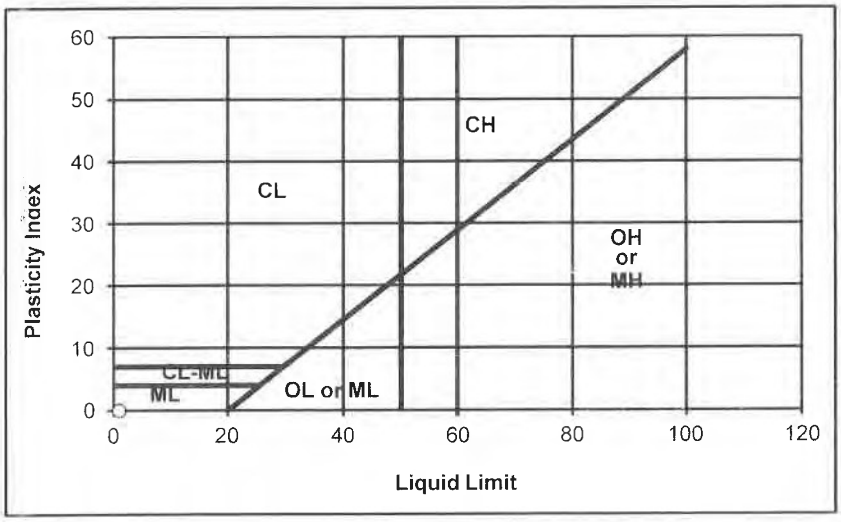
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B23 @ 20-21'
Sample Description: SM/ML

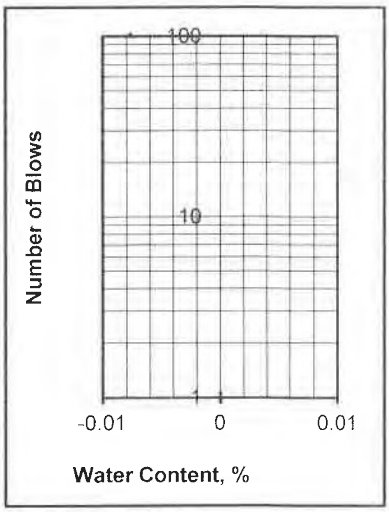
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

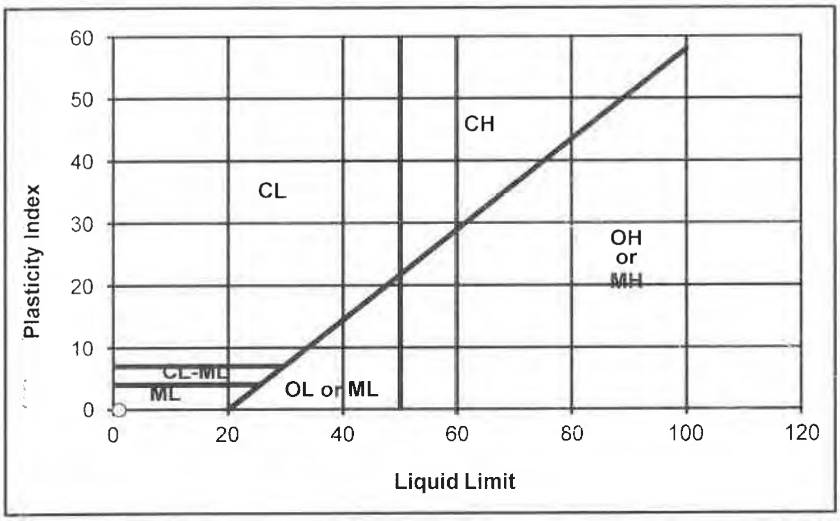
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B24 @ 5-6'
Sample Description: SM w/ clay

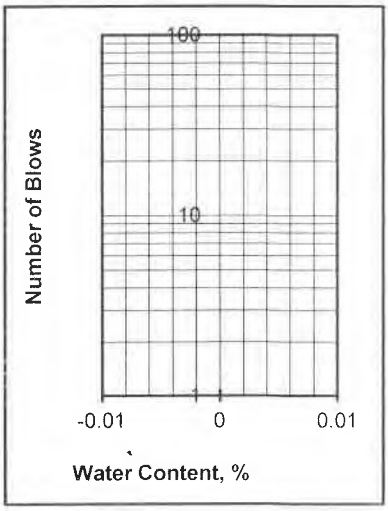
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

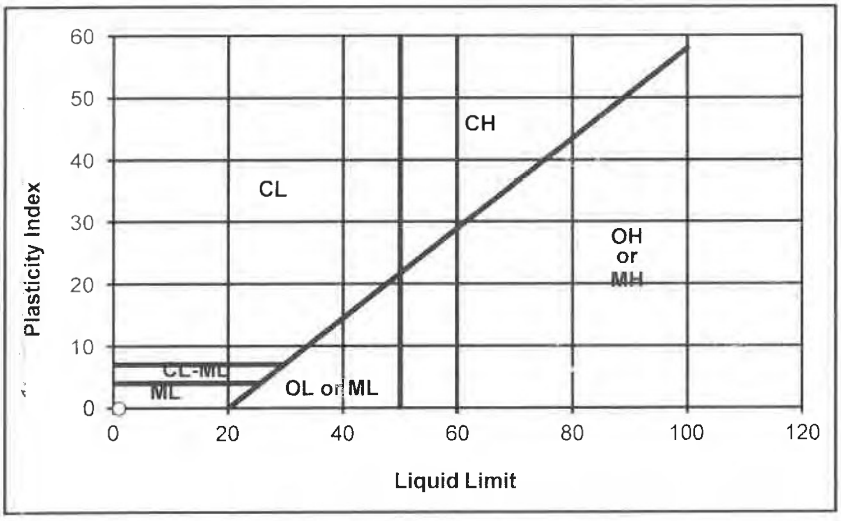
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B24 @ 10-11'
Sample Description: SM

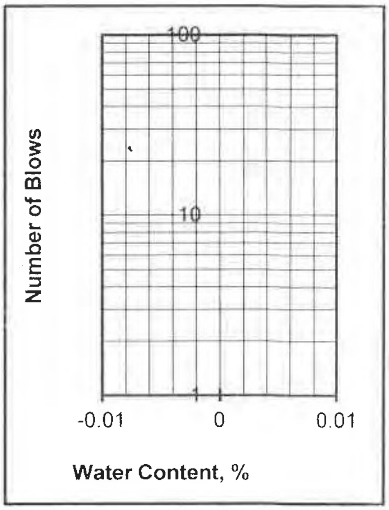
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

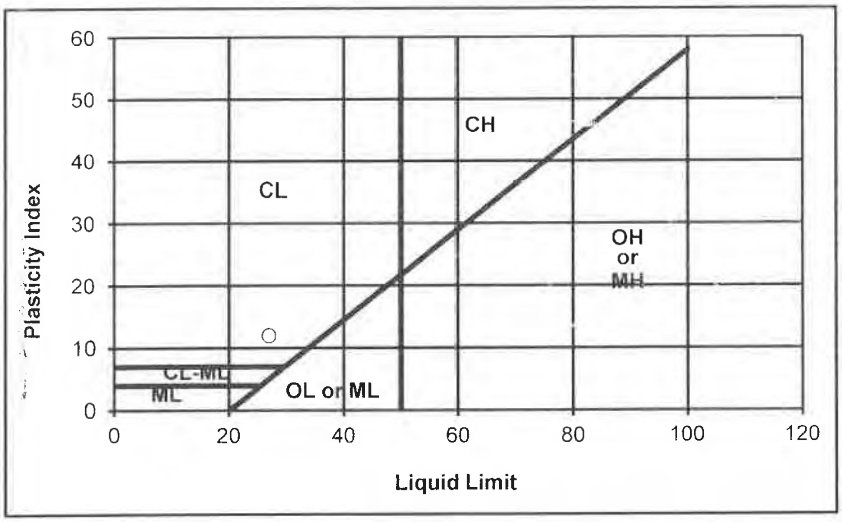
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B24 @ 15-16'
Sample Description: CL

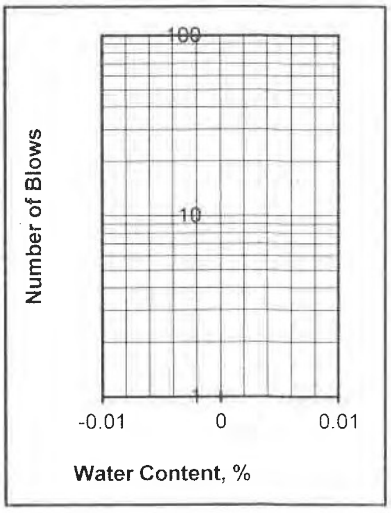
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	36.77	29.00		31.63	41.90	
Weight of Dry Soil & Tare (g)	34.81	28.25		28.05	37.95	
Weight of Tare (g)	21.96	23.24		14.75	23.30	
Weight of water (g)	1.96	0.75		3.58	3.95	
Weight of Dry Soil (g)	12.85	5.01		13.30	14.65	
Water Content (% of dry wt.)	15.3%	15.0%		26.9%	27.0%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 27**

Plasticity Index : 12
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

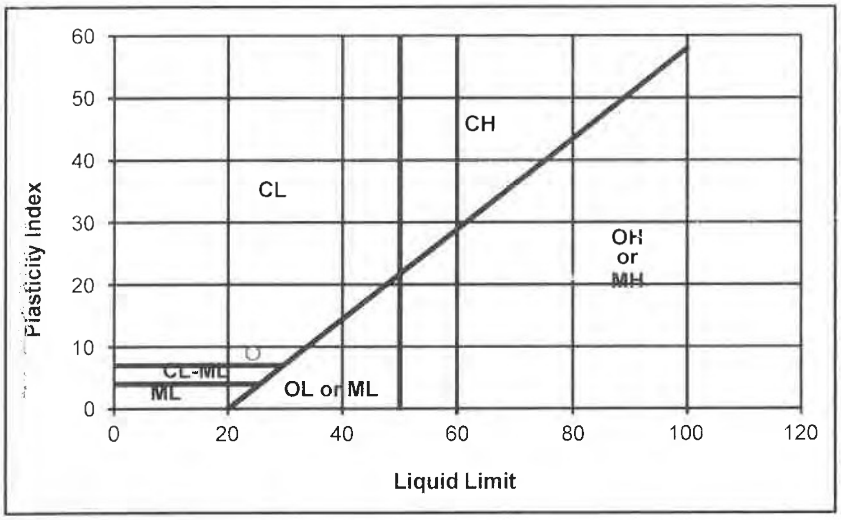
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B24 @ 20-21'
Sample Description: SC/CL

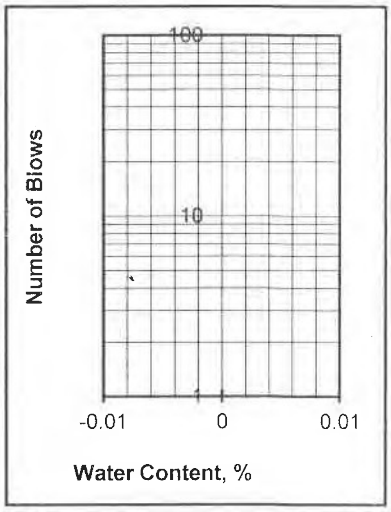
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.08	39.11		35.90	39.24	
Weight of Dry Soil & Tare (g)	33.68	37.21		32.21	35.55	
Weight of Tare (g)	24.37	24.31		17.19	20.20	
Weight of water (g)	1.40	1.90		3.69	3.69	
Weight of Dry Soil (g)	9.31	12.90		15.02	15.35	
Water Content (% of dry wt.)	15.0%	14.7%		24.6%	24.0%	
Number of Blows				25	25	

Plastic Limit : 15 **Liquid Limit : 24**

Plasticity Index : 9
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

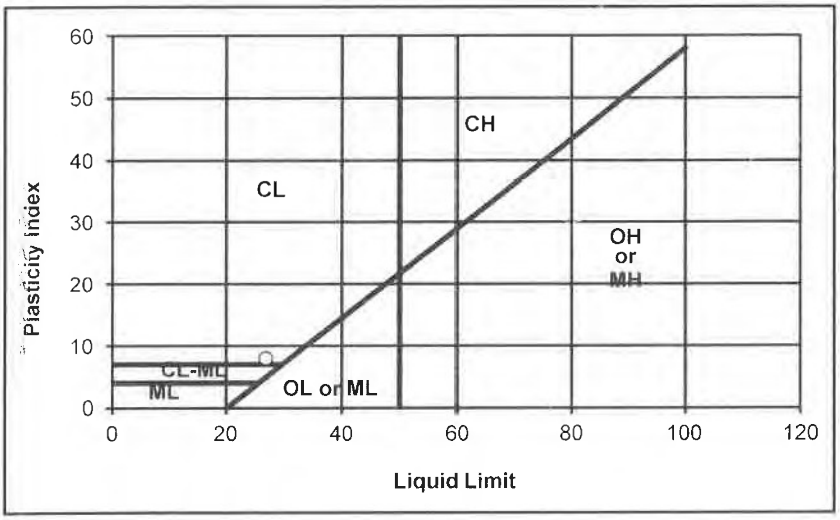
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B24 @ 25-26'
Sample Description: SC

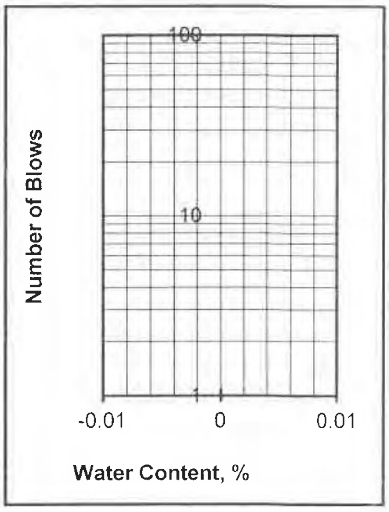
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	40.60	45.86		34.48	36.26	
Weight of Dry Soil & Tare (g)	37.94	42.41		31.95	33.14	
Weight of Tare (g)	24.07	24.07		22.56	21.46	
Weight of water (g)	2.66	3.45		2.53	3.12	
Weight of Dry Soil (g)	13.87	18.34		9.39	11.68	
Water Content (% of dry wt.)	19.2%	18.8%		26.9%	26.7%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 27**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

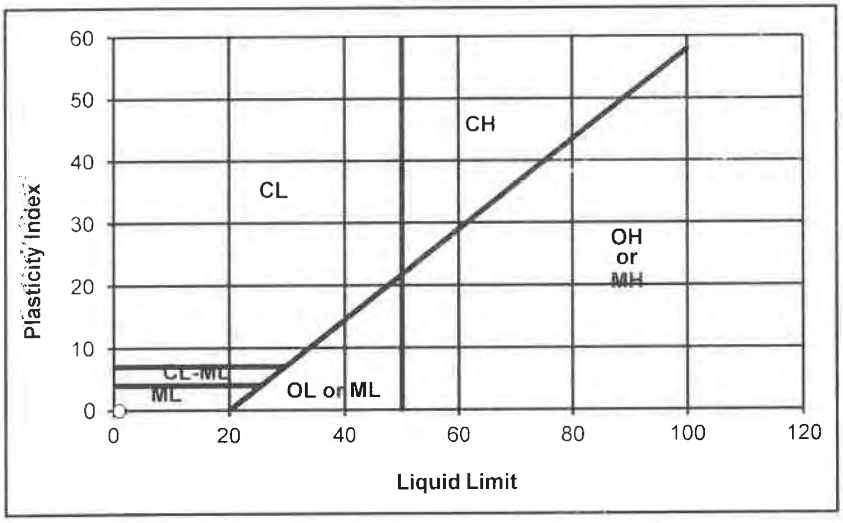
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B24 @ 30-31'
Sample Description: SM

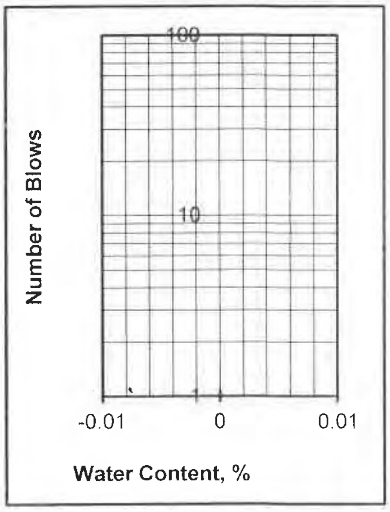
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

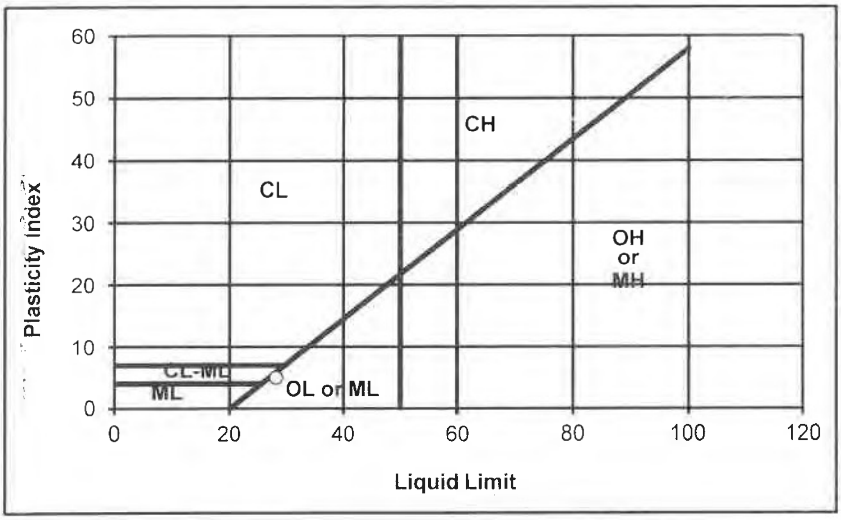
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B24 @ 35-36'
Sample Description: ML

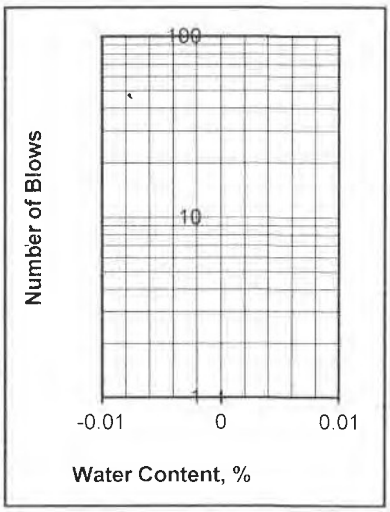
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.85	40.88		37.30	36.71	
Weight of Dry Soil & Tare (g)	33.70	37.83		33.54	32.45	
Weight of Tare (g)	24.35	24.31		20.19	17.35	
Weight of water (g)	2.15	3.05		3.76	4.26	
Weight of Dry Soil (g)	9.35	13.52		13.35	15.10	
Water Content (% of dry wt.)	23.0%	22.6%		28.2%	28.2%	
Number of Blows				25	25	

Plastic Limit : 23 **Liquid Limit : 28**

Plasticity Index : 5
Unified Soil Classification : ML or OL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

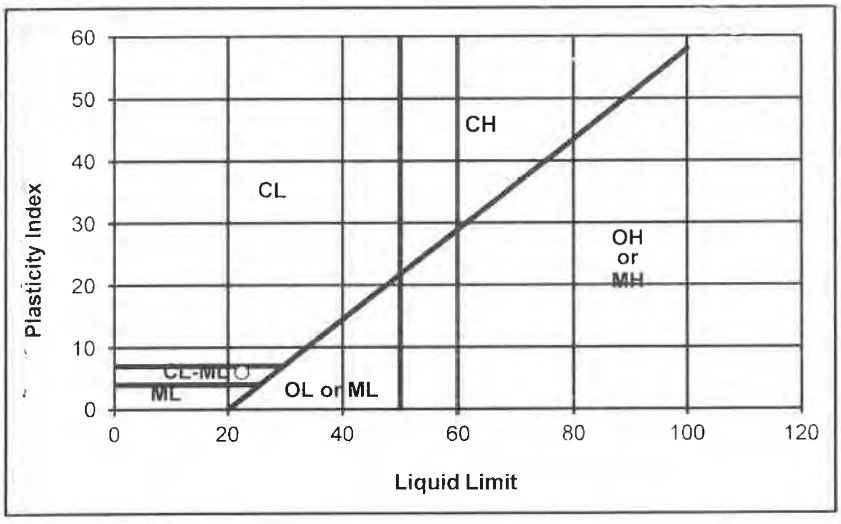
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B25 @ 2-3'
Sample Description: SC/SM

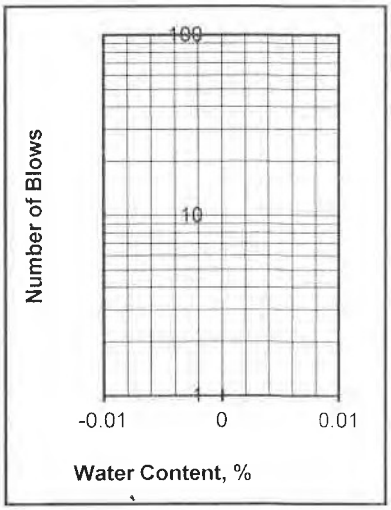
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	39.30	37.70		39.16	39.32	
Weight of Dry Soil & Tare (g)	36.72	35.65		35.64	35.82	
Weight of Tare (g)	19.80	22.80		20.27	19.73	
Weight of water (g)	2.58	2.05		3.52	3.50	
Weight of Dry Soil (g)	16.92	12.85		15.37	16.09	
Water Content (% of dry wt.)	15.2%	16.0%		22.9%	21.8%	
Number of Blows				25	25	

Plastic Limit : 16 **Liquid Limit : 22**

Plasticity Index : 6
Unified Soil Classification : CL-ML **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

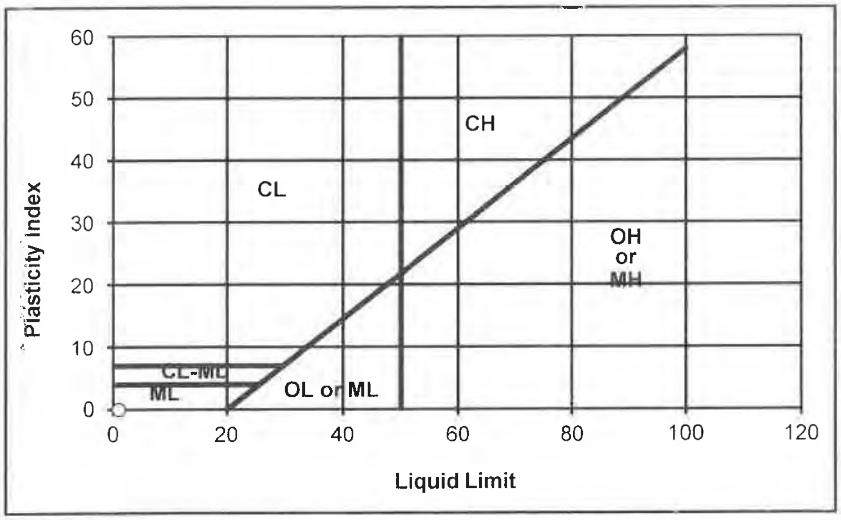
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B25 @ 12.5-13.5'
Sample Description: SM

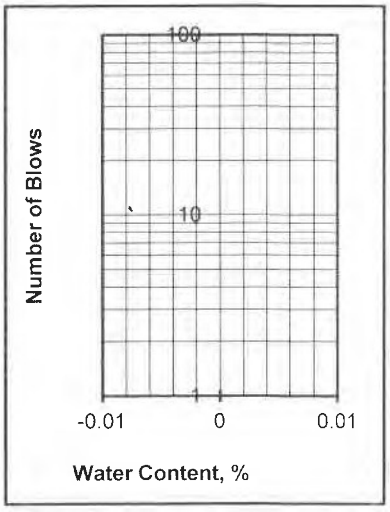
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

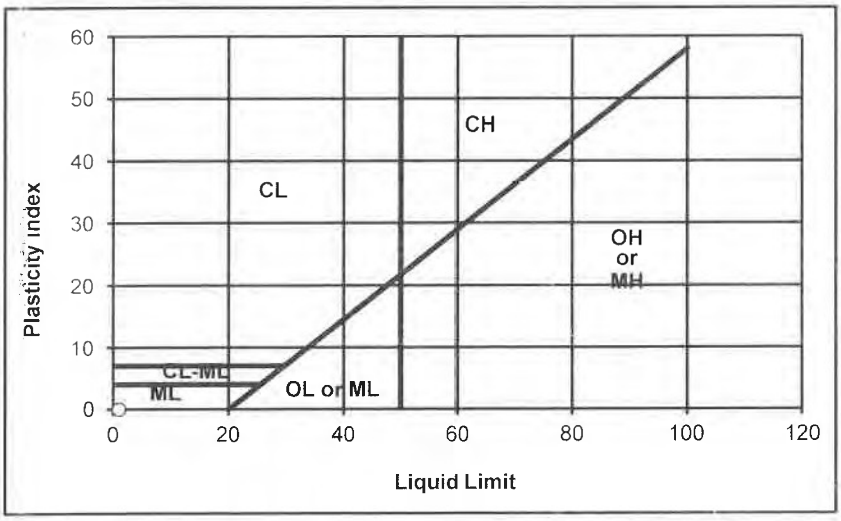
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B25 @ 20-21'
Sample Description: SM w/ trace of clay

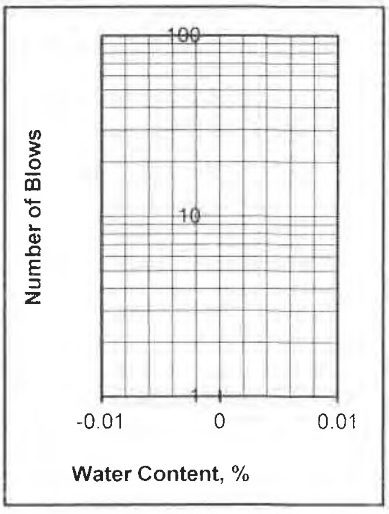
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

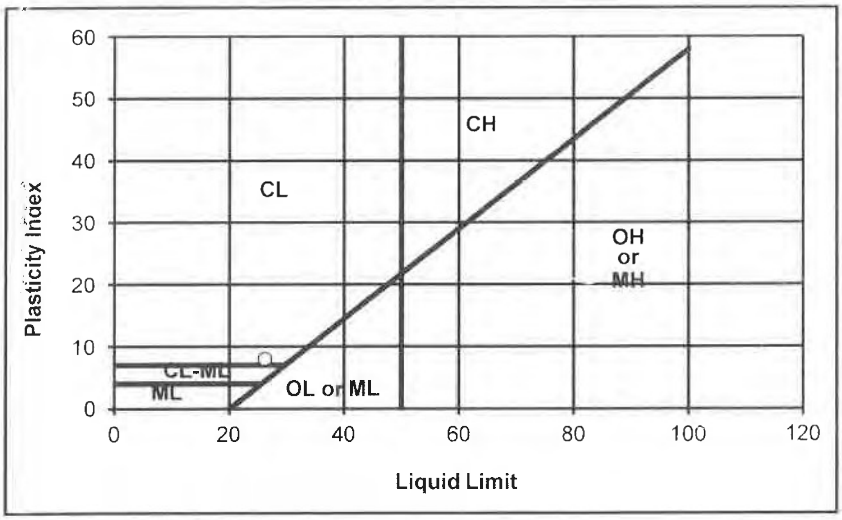
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B25 @ 30-31'
Sample Description: SC/CL

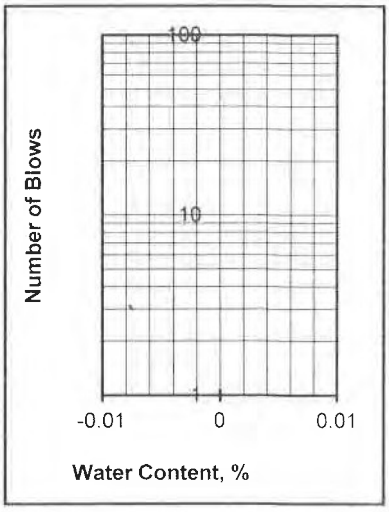
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	44.47	46.28		38.70	39.26	
Weight of Dry Soil & Tare (g)	41.40	42.82		34.34	35.27	
Weight of Tare (g)	24.36	24.32		17.40	20.22	
Weight of water (g)	3.08	3.45		4.36	3.99	
Weight of Dry Soil (g)	17.04	18.50		16.95	15.05	
Water Content (% of dry wt.)	18.1%	18.7%		25.7%	26.5%	
Number of Blows				25	25	

Plastic Limit : 18 **Liquid Limit : 26**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

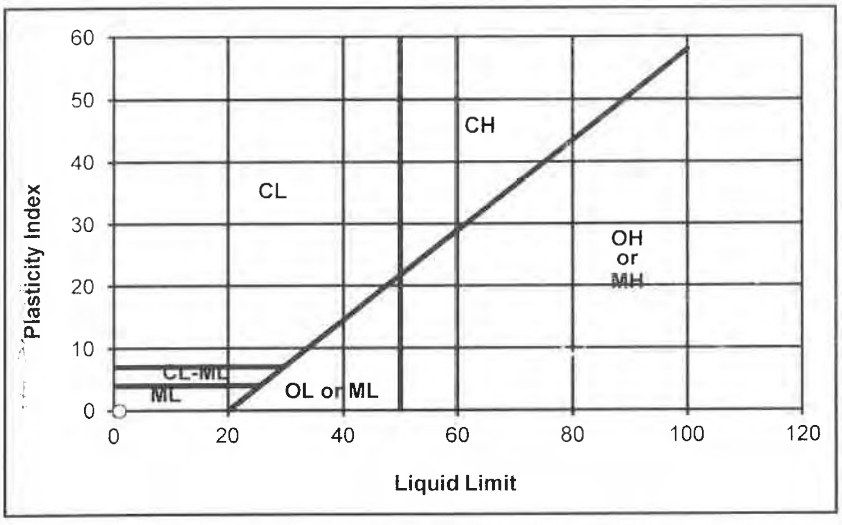
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B26 @ 5-6'
Sample Description: SM w/ trace of clay

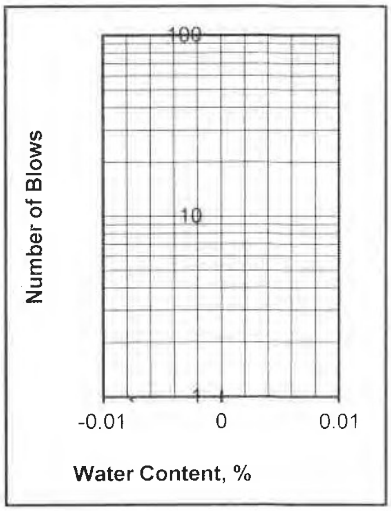
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

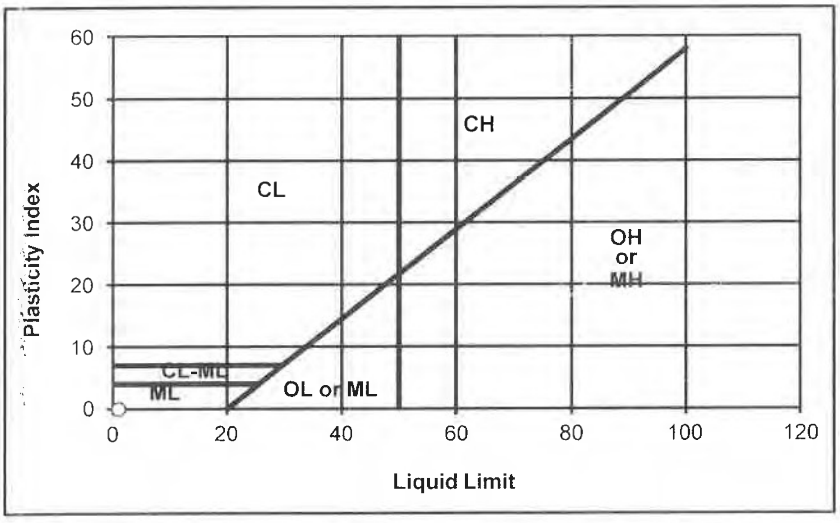
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B26 @ 12.5-13.5'
Sample Description: SM

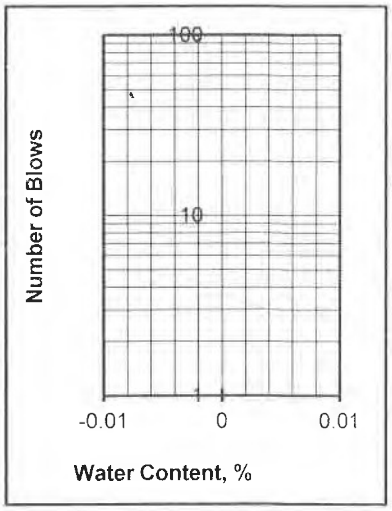
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

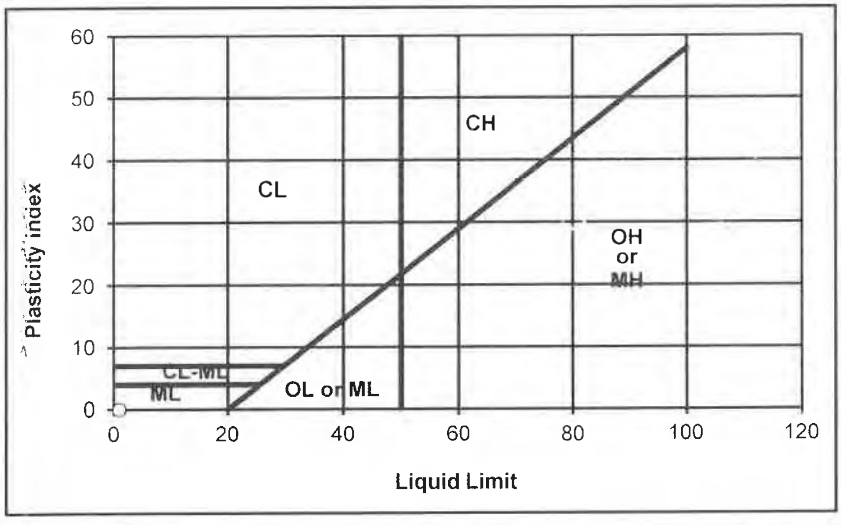
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B26 @ 20-21'
Sample Description: SM/ML w/ trace of clay

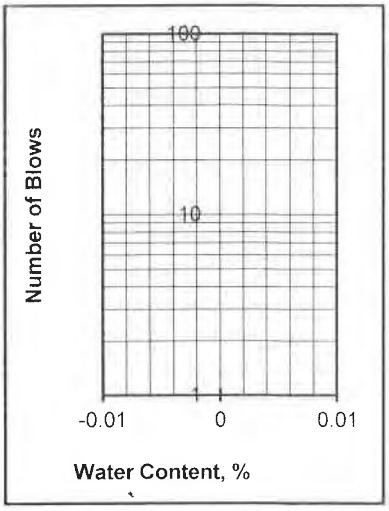
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

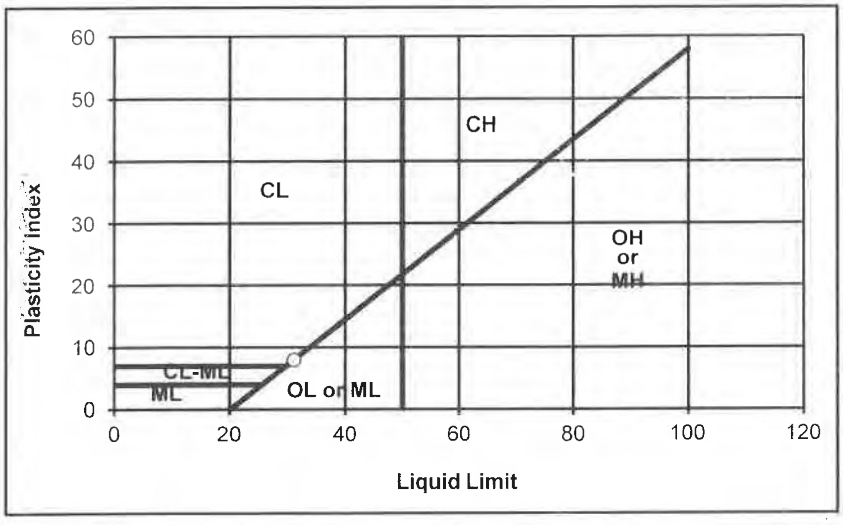
Project: **Triangle Development**
Project Number: **012-22165**
Date Sampled: 4/11/2023
Sampled By: SR
Sample Number: -
Sample Location: B26 @ 30-31'
Sample Description: SC/CL

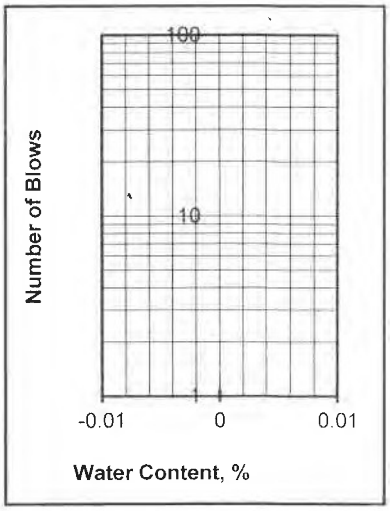
Date Tested: 5/18/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	40.69	40.85		43.81	35.12	
Weight of Dry Soil & Tare (g)	37.64	37.76		38.78	31.87	
Weight of Tare (g)	24.08	24.08		22.54	21.45	
Weight of water (g)	3.05	3.09		5.03	3.25	
Weight of Dry Soil (g)	13.56	13.68		16.23	10.42	
Water Content (% of dry wt.)	22.5%	22.6%		31.0%	31.2%	
Number of Blows				25	25	

Plastic Limit : 23 **Liquid Limit : 31**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

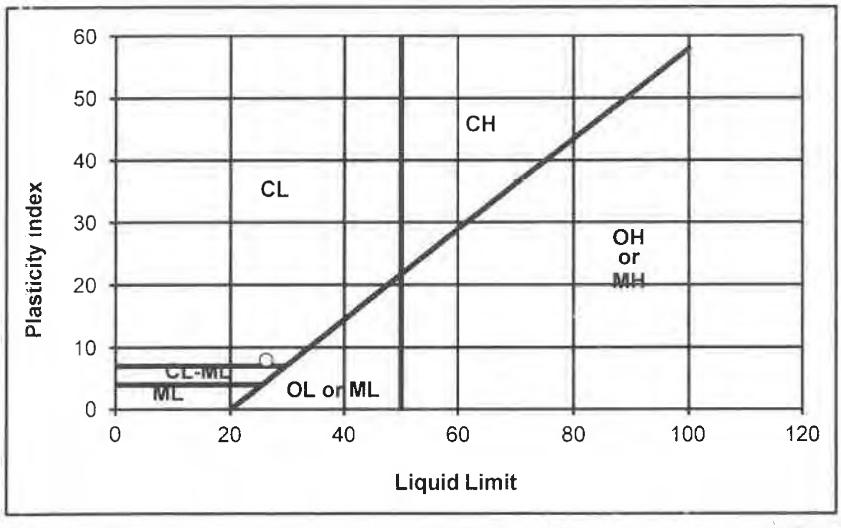
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 7/7/2023
Sampled By: SR / MR
Sample Number: -
Sample Location: B30 @ 5-6'
Sample Description: SC

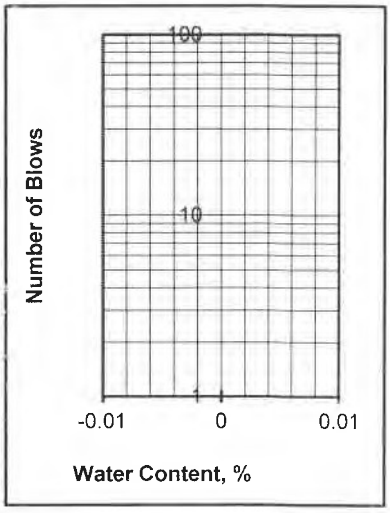
Date Tested: 7/17/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	41.22	39.42		31.42	39.40	
Weight of Dry Soil & Tare (g)	38.70	37.15		28.13	35.39	
Weight of Tare (g)	24.35	24.37		15.57	20.09	
Weight of water (g)	2.52	2.27		3.29	4.01	
Weight of Dry Soil (g)	14.35	12.78		12.56	15.30	
Water Content (% of dry wt.)	17.6%	17.8%		26.2%	26.2%	
Number of Blows				25	25	

Plastic Limit : 18 **Liquid Limit : 26**

Plasticity Index : 8
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

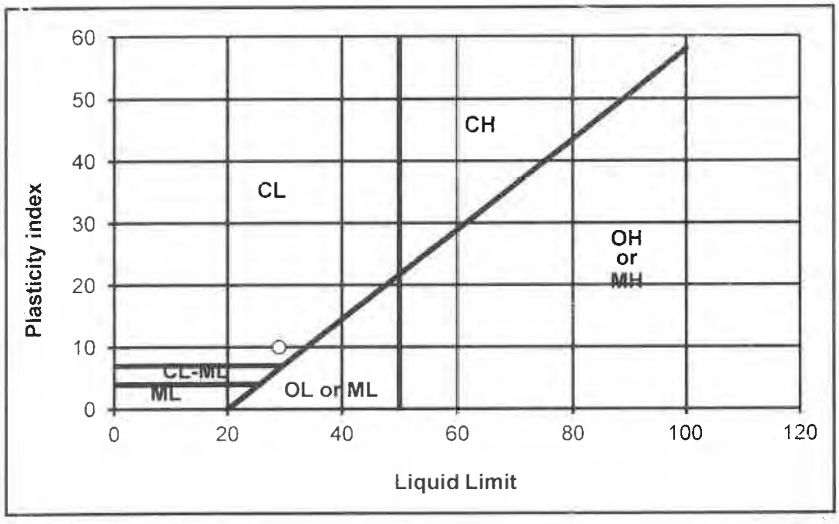
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 7/7/2023
Sampled By: SR / MR
Sample Number: -
Sample Location: B30 @ 7.5-8.5'
Sample Description: SC/CL

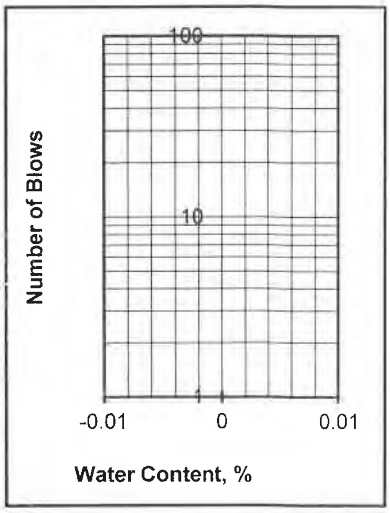
Date Tested: 7/17/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	45.05	46.36		35.09	29.88	
Weight of Dry Soil & Tare (g)	41.67	42.74		32.25	27.90	
Weight of Tare (g)	24.20	24.17		22.27	21.19	
Weight of water (g)	3.38	3.62		2.84	1.98	
Weight of Dry Soil (g)	17.47	18.57		9.98	6.71	
Water Content (% of dry wt.)	19.3%	19.5%		28.5%	29.5%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 29**

Plasticity Index : 10
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/16/2022
Sample Number	: -
Sample Location	: B1 @ 12-13'
Soil Classification	: SM/ML

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	105.5	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	19.0	Initial Length,cm	7.11	% Passing # 200	52.9
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:45	5:08	0.34	1.82	9.78	8.30	23.4	21.2	24.4
2	5:08	5:20	1.82	2.54	8.30	7.56	23.4	21.2	24.4
3	5:20	5:45	2.54	3.94	7.56	6.18	23.4	21.2	24.4
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1380	0.89319	7.7E-06	7.691E-06
2	720	0.94055	8.0E-06	8E-06
3	1500	0.88109	7.9E-06	7.93E-06
4				
5				
6				

Permeability
7.87E-06 cm/sec
7.87E-08 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	012-22165
Project Name	Triangle Development
Date	9/19/2022
Sample Number	-
Sample Location	B1 @ 25-26'
Soil Classification	SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	110.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	16.5	Initial Length,cm	7.11	% Passing # 200	44.2
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:25	5:12	0.52	5.20	9.44	4.76	20.1	18.6	21.1
2	5:15	6:45	0.42	7.46	9.58	2.54	20.1	18.6	21.1
3									
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	2820	0.51879	2.2E-05	2.187E-05
2	5400	0.28580	2.2E-05	2.179E-05
3				
4				
5				
6				

Permeability
2.18E-05 cm/sec
2.18E-07 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/19/2022
Sample Number	: -
Sample Location	: B1 @ 35-36'
Soil Classification	: SC/CL

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	80.4	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	36.0	Initial Length,cm	7.11	% Passing # 200	52.3
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:02	6:15	0.32	1.54	9.82	8.60	33.0	30.3	34.0
2	6:15	7:33	1.54	2.20	8.60	7.92	33.0	30.3	34.0
3									
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	7980	0.92661	9.0E-07	8.975E-07
2	4680	0.95613	9.0E-07	9.008E-07
3				
4				
5				
6				

Permeability
8.99E-07 cm/sec
8.99E-09 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/16/2022
Sample Number	: -
Sample Location	: B2 @ 20-21'
Soil Classification	: SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	109.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	14.0	Initial Length,cm	7.11	% Passing # 200	34.5
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:50	5:19	0.32	5.84	9.78	4.24	18.2	16.6	19.2
2	5:22	6:02	0.36	7.12	9.84	3.08	18.2	16.6	19.2
3	6:05	6:36	0.24	5.96	9.66	3.94	18.2	16.6	19.2
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1740	0.47689	4.0E-05	3.999E-05
2	2400	0.36357	4.0E-05	3.961E-05
3	1860	0.45546	4.0E-05	3.973E-05
4				
5				
6				

Permeability
3.98E-05 cm/sec
3.98E-07 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/21/2022
Sample Number	: -
Sample Location	: B3 @ 10-11'
Soil Classification	: SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	114.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	12.0	Initial Length,cm	7.11	% Passing # 200	38.6
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:30	4:58	0.20	3.84	9.86	6.24	17.5	15.9	18.5
2	5:01	5:40	0.54	5.12	9.72	5.14	17.5	15.9	18.5
3	5:43	6:20	0.18	4.66	9.74	5.26	17.5	15.9	18.5
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1680	0.66037	2.3E-05	2.321E-05
2	2340	0.56336	2.3E-05	2.304E-05
3	2220	0.57656	2.3E-05	2.331E-05
4				
5				
6				

Permeability
2.32E-05 cm/sec
2.32E-07 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/21/2022
Sample Number	: -
Sample Location	: B3 @ 17-18'
Soil Classification	: SM/SP

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	110.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	11.0	Initial Length,cm	7.11	% Passing # 200	13.5
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:20	4:36	0.24	7.12	9.86	2.98	16.0	14.5	17.0
2	4:39	5:05	0.18	8.46	9.84	1.56	16.0	14.5	17.0
3							16.0	14.5	17.0
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	960	0.31991	1.1E-04	0.0001116
2	1560	0.18125	1.0E-04	0.0001029
3				
4				
5				
6				

Permeability
1.07E-04 cm/sec
1.07E-06 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	012-22165
Project Name	Triangle Development
Date	9/23/2022
Sample Number	-
Sample Location	B3 @ 20-21'
Soil Classification	SC

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	118.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	11.0	Initial Length,cm	7.11	% Passing # 200	31.6
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	5:07	5:29	0.22	3.12	9.86	6.94	24.3	22.1	25.3
2	5:29	6:06	3.12	6.84	6.94	3.32	24.3	22.1	25.3
3	6:08	6:43	1.16	5.44	9.64	5.36	24.3	22.1	25.3
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1320	0.79090	1.7E-05	1.67E-05
2	2220	0.66988	1.7E-05	1.696E-05
3	2100	0.68471	1.7E-05	1.695E-05
4				
5				
6				

Permeability
1.69E-05 cm/sec
1.69E-07 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/23/2022
Sample Number	: -
Sample Location	: B3 @ 25-26'
Soil Classification	: SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	120.1	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	11.0	Initial Length,cm	7.11	% Passing # 200	20.7
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:45	5:06	0.20	6.92	9.76	3.04	18.0	16.5	19.0
2	5:09	5:28	0.24	6.64	9.84	3.44	18.0	16.5	19.0
3	5:30	5:52	0.16	7.12	9.82	2.86	18.0	16.5	19.0
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1260	0.33104	8.2E-05	8.245E-05
2	1140	0.36637	8.3E-05	8.277E-05
3	1320	0.31098	8.3E-05	8.315E-05
4				
5				
6				

Permeability
8.28E-05 cm/sec
8.28E-07 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	:012-22165
Project Name	:Triangle Development
Date	:9/30/2022
Sample Number	:-
Sample Location	:B3 @ 35-36'
Soil Classification	:SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	100.2	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	18.0	Initial Length,cm	7.11	% Passing # 200	36.7
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	5:15	5:38	0.26	5.14	9.78	4.90	17.9	16.4	18.9
2	5:41	6:13	0.40	6.38	9.56	3.58	17.9	16.4	18.9
3									
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1380	0.51437	4.5E-05	4.527E-05
2	1920	0.39261	4.6E-05	4.576E-05
3				
4				
5				
6				

Permeability
4.55E-05 cm/sec
4.55E-07 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/26/2022
Sample Number	: -
Sample Location	: B4 @ 5-6'
Soil Classification	: SM/SC

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	123.9	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	6.1	Initial Length,cm	7.11	% Passing # 200	--
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	6:10	6:50	0.24	3.78	9.68	6.14	22.5	19.7	23.5
2	6:50	7:23	3.78	6.12	6.14	3.80	22.5	19.7	23.5
3									
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	2400	0.79269	9.1E-06	9.096E-06
2	1980	0.82713	9.0E-06	9.007E-06
3				
4				
5				
6				

Permeability
9.05E-06 cm/sec
9.05E-08 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/28/2022
Sample Number	: -
Sample Location	: B4 @ 10-11
Soil Classification	: SC/CL

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	119.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	14.0	Initial Length,cm	7.11	% Passing # 200	46.2
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	5:30	6:54	0.20	1.62	9.84	8.44	31.5	26.4	32.5
2	6:54	7:29	1.62	2.18	8.44	7.88	31.5	26.4	32.5
3									
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	5040	0.95284	9.0E-07	9.006E-07
2	2100	0.98026	8.9E-07	8.92E-07
3				
4				
5				
6				

Permeability
8.96E-07 cm/sec
8.96E-09 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/30/2022
Sample Number	: -
Sample Location	: B4 @ 15-16'
Soil Classification	: SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	116.5	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	12.5	Initial Length,cm	7.11	% Passing # 200	29.4
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	5:15	5:32	0.18	2.94	9.86	7.10	21.5	19.8	22.5
2	5:32	5:55	2.94	5.68	7.10	4.36	21.5	19.8	22.5
3	5:58	6:31	0.34	5.12	9.80	5.02	21.5	19.8	22.5
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1020	0.75404	2.6E-05	2.601E-05
2	1380	0.67618	2.7E-05	2.664E-05
3	1980	0.57094	2.7E-05	2.66E-05
4				
5				
6				

Permeability
2.64E-05 cm/sec
2.64E-07 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/26/2022
Sample Number	: -
Sample Location	: B4 @ 25-26'
Soil Classification	: SC

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	--	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	--	Initial Length,cm	7.11	% Passing # 200	--
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (B Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	5:35	6:02	0.24	2.12	9.72	7.84	24.2	21.2	25.2
2	6:02	6:58	2.12	5.44	7.84	4.52	24.2	21.2	25.2
3									
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1620	0.89670	6.3E-06	6.324E-06
2	3360	0.79657	6.4E-06	6.361E-06
3				
4				
5				
6				

Permeability
6.34E-06 cm/sec
6.34E-08 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 9/28/2022
Sample Number	: -
Sample Location	: B4 @ 40-41'
Soil Classification	: SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	98.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	24.0	Initial Length,cm	7.11	% Passing # 200	44.4
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:45	5:03	0.46	4.12	9.78	6.12	23.7	21.9	24.7
2	5:04	5:28	0.54	5.24	9.84	5.14	23.7	21.9	24.7
3	5:30	6:05	0.36	6.50	9.74	3.60	23.7	21.9	24.7
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1080	0.68573	3.3E-05	3.282E-05
2	1440	0.59750	3.4E-05	3.361E-05
3	2100	0.47229	3.4E-05	3.357E-05
4				
5				
6				

Permeability
3.33E-05 cm/sec
3.33E-07 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 10/3/2022
Sample Number	: B5
Sample Location	: 30-31
Soil Classification	: SC

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	115.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	16.0	Initial Length,cm	7.11	% Passing # 200	42.7
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:30	4:51	0.44	1.88	9.80	8.36	25.6	23.2	26.6
2	4:51	5:29	1.88	4.12	8.36	6.12	25.6	23.2	26.6
3	5:29	6:19	4.12	6.52	6.12	3.72	25.6	23.2	26.6
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1260	0.90364	7.6E-06	7.556E-06
2	2280	0.83412	7.5E-06	7.475E-06
3	3000	0.78693	7.5E-06	7.505E-06
4				
5				
6				

Permeability
7.51E-06 cm/sec
7.51E-08 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 10/3/2022
Sample Number	: -
Sample Location	: B6 @ 30-31'
Soil Classification	: SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	110.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	14.0	Initial Length,cm	7.11	% Passing # 200	33.1
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (B Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:25	4:56	0.24	7.44	9.78	2.58	19.0	17.5	20.0
2	4:59	5:38	0.18	8.12	9.70	1.76	19.0	17.5	20.0
3									
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1860	0.28379	6.4E-05	6.363E-05
2	2340	0.20617	6.3E-05	6.341E-05
3				
4				
5				
6				

Permeability
6.35E-05 cm/sec
6.35E-07 m/sec

Krazan Testing Laboratory

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-22165
Project Name	: Triangle Development
Date	: 10/5/2022
Sample Number	: -
Sample Location	: B6 @ 40-41'
Soil Classification	: SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	114.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	12.0	Initial Length,cm	7.11	% Passing # 200	39.2
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	5:10	5:38	0.14	5.70	9.82	4.26	17.8	16.0	18.8
2	5:41	6:15	0.18	6.42	9.84	3.60	17.8	16.0	18.8
3	6:18	6:56	0.14	6.86	9.74	3.02	17.8	16.0	18.8
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1680	0.52658	3.6E-05	3.587E-05
2	2040	0.46902	3.5E-05	3.487E-05
3	2280	0.42471	3.5E-05	3.529E-05
4				
5				
6				

Permeability
3.53E-05 cm/sec
3.53E-07 m/sec

Krazan Testing Laboratory

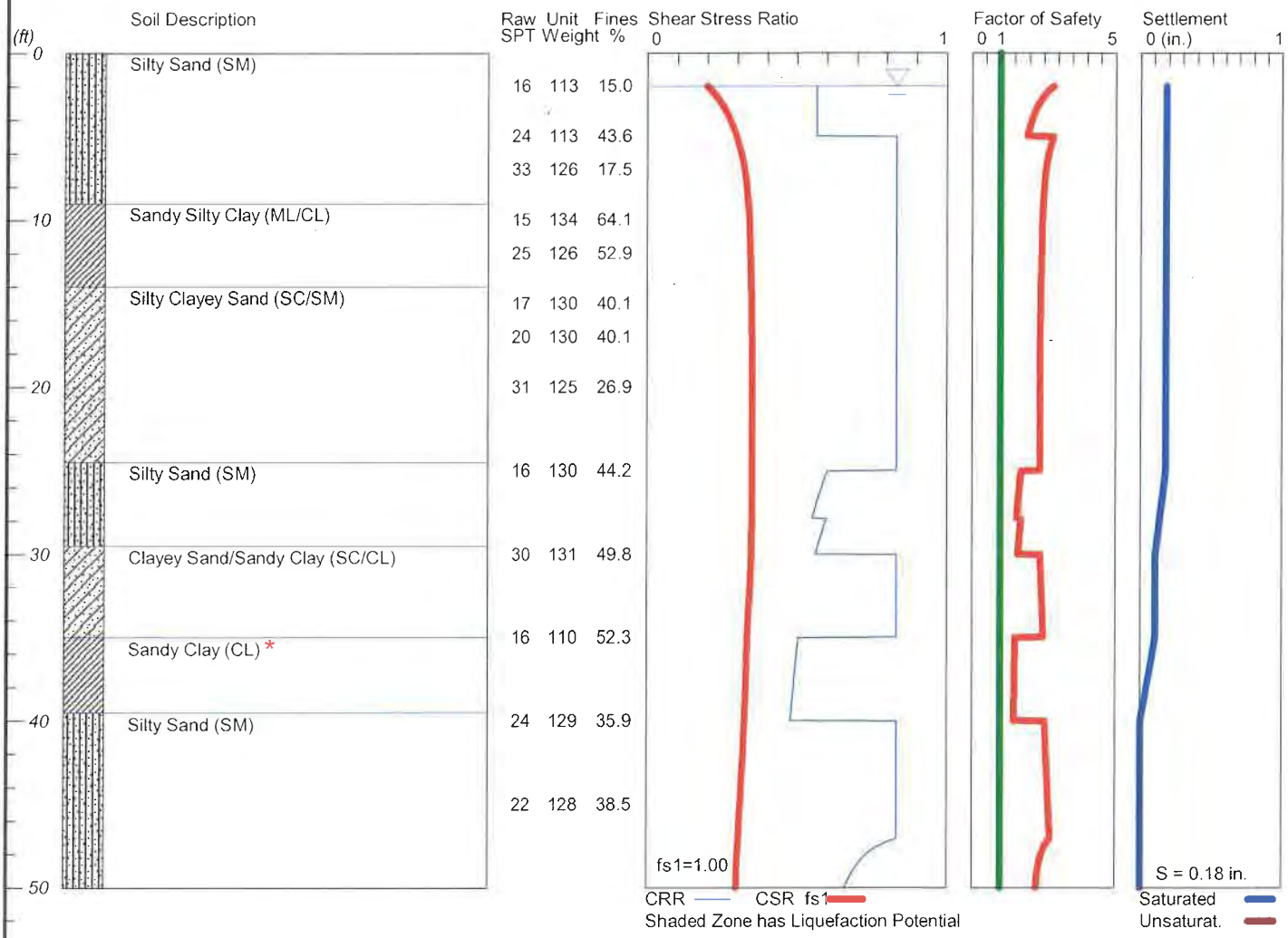
LIQUEFACTION ANALYSES

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B1 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



*Note: Sandy Clay layer at 35 feet is potentially liquefiable.

LiquefyPro CivilTech Software USA www.civiltech.com

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 10/10/2022 2:04:37 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B1\01222165 B1 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B1
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B1
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: Based on Analysis

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	16.00	113.00	15.00
5.00	24.00	113.00	43.60
7.00	33.00	126.00	17.50
10.00	15.00	134.00	64.10
12.00	25.00	126.00	52.90
15.00	17.00	130.00	40.10
17.00	20.00	130.00	40.10
20.00	31.00	125.00	26.90
25.00	16.00	130.00	44.20
30.00	30.00	131.00	49.80
35.00	16.00	110.00	52.30
40.00	24.00	129.00	35.90
45.00	22.00	128.00	38.50

Output Results:
Settlement of Saturated Sands=0.18 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.18 in.
Differential Settlement=0.088 to 0.116 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.57	0.20	2.85	0.18	0.00	0.18
2.05	0.57	0.20	2.81	0.18	0.00	0.18
2.10	0.57	0.20	2.77	0.18	0.00	0.18
2.15	0.57	0.21	2.74	0.18	0.00	0.18
2.20	0.57	0.21	2.71	0.18	0.00	0.18
2.25	0.57	0.21	2.67	0.18	0.00	0.18
2.30	0.57	0.21	2.64	0.18	0.00	0.18
2.35	0.57	0.22	2.62	0.18	0.00	0.18
2.40	0.57	0.22	2.59	0.18	0.00	0.18
2.45	0.57	0.22	2.56	0.18	0.00	0.18
2.50	0.57	0.22	2.54	0.18	0.00	0.18
2.55	0.57	0.23	2.51	0.18	0.00	0.18
2.60	0.57	0.23	2.49	0.18	0.00	0.18
2.65	0.57	0.23	2.47	0.18	0.00	0.18
2.70	0.57	0.23	2.44	0.18	0.00	0.18
2.75	0.57	0.23	2.42	0.18	0.00	0.18
2.80	0.57	0.24	2.40	0.18	0.00	0.18
2.85	0.57	0.24	2.38	0.18	0.00	0.18
2.90	0.57	0.24	2.36	0.18	0.00	0.18
2.95	0.57	0.24	2.35	0.18	0.00	0.18
3.00	0.57	0.24	2.33	0.18	0.00	0.18
3.05	0.57	0.24	2.31	0.18	0.00	0.18
3.10	0.57	0.25	2.30	0.18	0.00	0.18
3.15	0.57	0.25	2.28	0.18	0.00	0.18
3.20	0.57	0.25	2.26	0.18	0.00	0.18
3.25	0.57	0.25	2.25	0.18	0.00	0.18
3.30	0.57	0.25	2.23	0.18	0.00	0.18
3.35	0.57	0.25	2.22	0.18	0.00	0.18
3.40	0.57	0.26	2.21	0.18	0.00	0.18
3.45	0.57	0.26	2.19	0.18	0.00	0.18
3.50	0.57	0.26	2.18	0.18	0.00	0.18
3.55	0.57	0.26	2.17	0.18	0.00	0.18
3.60	0.57	0.26	2.16	0.18	0.00	0.18
3.65	0.57	0.26	2.14	0.18	0.00	0.18
3.70	0.57	0.27	2.13	0.18	0.00	0.18
3.75	0.57	0.27	2.12	0.18	0.00	0.18
3.80	0.57	0.27	2.11	0.18	0.00	0.18
3.85	0.57	0.27	2.10	0.18	0.00	0.18
3.90	0.57	0.27	2.09	0.18	0.00	0.18
3.95	0.57	0.27	2.08	0.18	0.00	0.18
4.00	0.57	0.27	2.07	0.18	0.00	0.18
4.05	0.57	0.27	2.06	0.18	0.00	0.18
4.10	0.57	0.28	2.05	0.18	0.00	0.18
4.15	0.57	0.28	2.04	0.18	0.00	0.18
4.20	0.57	0.28	2.03	0.18	0.00	0.18
4.25	0.57	0.28	2.03	0.18	0.00	0.18
4.30	0.57	0.28	2.02	0.18	0.00	0.18
4.35	0.57	0.28	2.01	0.18	0.00	0.18
4.40	0.57	0.28	2.00	0.18	0.00	0.18
4.45	0.57	0.28	1.99	0.18	0.00	0.18
4.50	0.57	0.28	1.99	0.18	0.00	0.18
4.55	0.57	0.29	1.98	0.18	0.00	0.18
4.60	0.57	0.29	1.97	0.18	0.00	0.18
4.65	0.57	0.29	1.96	0.18	0.00	0.18
4.70	0.57	0.29	1.96	0.18	0.00	0.18
4.75	0.57	0.29	1.95	0.18	0.00	0.18
4.80	0.57	0.29	1.94	0.18	0.00	0.18
4.85	0.57	0.29	1.94	0.18	0.00	0.18
4.90	0.57	0.29	1.93	0.18	0.00	0.18
4.95	0.57	0.29	1.92	0.18	0.00	0.18
5.00	0.83	0.29	2.82	0.18	0.00	0.18
5.05	0.83	0.30	2.81	0.18	0.00	0.18
5.10	0.83	0.30	2.80	0.18	0.00	0.18
5.15	0.83	0.30	2.79	0.18	0.00	0.18
5.20	0.83	0.30	2.78	0.18	0.00	0.18
5.25	0.83	0.30	2.77	0.18	0.00	0.18
5.30	0.83	0.30	2.77	0.18	0.00	0.18
5.35	0.83	0.30	2.76	0.18	0.00	0.18
5.40	0.83	0.30	2.75	0.18	0.00	0.18
5.45	0.83	0.30	2.74	0.18	0.00	0.18

5.50	0.83	0.30	2.74	0.18	0.00	0.18
5.55	0.83	0.30	2.73	0.18	0.00	0.18
5.60	0.83	0.31	2.72	0.18	0.00	0.18
5.65	0.83	0.31	2.71	0.18	0.00	0.18
5.70	0.83	0.31	2.71	0.18	0.00	0.18
5.75	0.83	0.31	2.70	0.18	0.00	0.18
5.80	0.83	0.31	2.69	0.18	0.00	0.18
5.85	0.83	0.31	2.69	0.18	0.00	0.18
5.90	0.83	0.31	2.68	0.18	0.00	0.18
5.95	0.83	0.31	2.67	0.18	0.00	0.18
6.00	0.83	0.31	2.67	0.18	0.00	0.18
6.05	0.83	0.31	2.66	0.18	0.00	0.18
6.10	0.83	0.31	2.66	0.18	0.00	0.18
6.15	0.83	0.31	2.65	0.18	0.00	0.18
6.20	0.83	0.31	2.64	0.18	0.00	0.18
6.25	0.83	0.31	2.64	0.18	0.00	0.18
6.30	0.83	0.32	2.63	0.18	0.00	0.18
6.35	0.83	0.32	2.63	0.18	0.00	0.18
6.40	0.83	0.32	2.62	0.18	0.00	0.18
6.45	0.83	0.32	2.62	0.18	0.00	0.18
6.50	0.83	0.32	2.61	0.18	0.00	0.18
6.55	0.83	0.32	2.61	0.18	0.00	0.18
6.60	0.83	0.32	2.60	0.18	0.00	0.18
6.65	0.83	0.32	2.60	0.18	0.00	0.18
6.70	0.83	0.32	2.59	0.18	0.00	0.18
6.75	0.83	0.32	2.59	0.18	0.00	0.18
6.80	0.83	0.32	2.58	0.18	0.00	0.18
6.85	0.83	0.32	2.58	0.18	0.00	0.18
6.90	0.83	0.32	2.57	0.18	0.00	0.18
6.95	0.83	0.32	2.57	0.18	0.00	0.18
7.00	0.83	0.32	2.56	0.18	0.00	0.18
7.05	0.83	0.32	2.56	0.18	0.00	0.18
7.10	0.83	0.32	2.56	0.18	0.00	0.18
7.15	0.83	0.33	2.55	0.18	0.00	0.18
7.20	0.83	0.33	2.55	0.18	0.00	0.18
7.25	0.83	0.33	2.55	0.18	0.00	0.18
7.30	0.83	0.33	2.55	0.18	0.00	0.18
7.35	0.83	0.33	2.54	0.18	0.00	0.18
7.40	0.83	0.33	2.54	0.18	0.00	0.18
7.45	0.83	0.33	2.54	0.18	0.00	0.18
7.50	0.83	0.33	2.53	0.18	0.00	0.18
7.55	0.83	0.33	2.53	0.18	0.00	0.18
7.60	0.83	0.33	2.53	0.18	0.00	0.18
7.65	0.83	0.33	2.53	0.18	0.00	0.18
7.70	0.83	0.33	2.52	0.18	0.00	0.18
7.75	0.83	0.33	2.52	0.18	0.00	0.18
7.80	0.83	0.33	2.52	0.18	0.00	0.18
7.85	0.83	0.33	2.52	0.18	0.00	0.18
7.90	0.83	0.33	2.51	0.18	0.00	0.18
7.95	0.83	0.33	2.51	0.18	0.00	0.18
8.00	0.83	0.33	2.51	0.18	0.00	0.18
8.05	0.83	0.33	2.51	0.18	0.00	0.18
8.10	0.83	0.33	2.51	0.18	0.00	0.18
8.15	0.83	0.33	2.50	0.18	0.00	0.18
8.20	0.83	0.33	2.50	0.18	0.00	0.18
8.25	0.83	0.33	2.50	0.18	0.00	0.18
8.30	0.83	0.33	2.50	0.18	0.00	0.18
8.35	0.83	0.33	2.50	0.18	0.00	0.18
8.40	0.83	0.33	2.49	0.18	0.00	0.18
8.45	0.83	0.33	2.49	0.18	0.00	0.18
8.50	0.83	0.33	2.49	0.18	0.00	0.18
8.55	0.83	0.33	2.49	0.18	0.00	0.18
8.60	0.83	0.33	2.49	0.18	0.00	0.18
8.65	0.83	0.33	2.48	0.18	0.00	0.18
8.70	0.83	0.33	2.48	0.18	0.00	0.18
8.75	0.83	0.33	2.48	0.18	0.00	0.18
8.80	0.83	0.34	2.48	0.18	0.00	0.18
8.85	0.83	0.34	2.48	0.18	0.00	0.18
8.90	0.83	0.34	2.47	0.18	0.00	0.18
8.95	0.83	0.34	2.47	0.18	0.00	0.18
9.00	0.83	0.34	2.47	0.18	0.00	0.18

9.05	0.83	0.34	2.47	0.18	0.00	0.18
9.10	0.83	0.34	2.47	0.18	0.00	0.18
9.15	0.83	0.34	2.47	0.18	0.00	0.18
9.20	0.83	0.34	2.46	0.18	0.00	0.18
9.25	0.83	0.34	2.46	0.18	0.00	0.18
9.30	0.83	0.34	2.46	0.18	0.00	0.18
9.35	0.83	0.34	2.46	0.18	0.00	0.18
9.40	0.83	0.34	2.46	0.18	0.00	0.18
9.45	0.83	0.34	2.46	0.18	0.00	0.18
9.50	0.83	0.34	2.46	0.18	0.00	0.18
9.55	0.83	0.34	2.45	0.18	0.00	0.18
9.60	0.83	0.34	2.45	0.18	0.00	0.18
9.65	0.83	0.34	2.45	0.18	0.00	0.18
9.70	0.83	0.34	2.45	0.18	0.00	0.18
9.75	0.83	0.34	2.45	0.18	0.00	0.18
9.80	0.83	0.34	2.45	0.18	0.00	0.18
9.85	0.83	0.34	2.45	0.18	0.00	0.18
9.90	0.83	0.34	2.44	0.18	0.00	0.18
9.95	0.83	0.34	2.44	0.18	0.00	0.18
10.00	0.83	0.34	2.44	0.18	0.00	0.18
10.05	0.83	0.34	2.44	0.18	0.00	0.18
10.10	0.83	0.34	2.44	0.18	0.00	0.18
10.15	0.83	0.34	2.44	0.18	0.00	0.18
10.20	0.83	0.34	2.44	0.18	0.00	0.18
10.25	0.83	0.34	2.44	0.18	0.00	0.18
10.30	0.83	0.34	2.44	0.18	0.00	0.18
10.35	0.83	0.34	2.44	0.18	0.00	0.18
10.40	0.83	0.34	2.44	0.18	0.00	0.18
10.45	0.83	0.34	2.44	0.18	0.00	0.18
10.50	0.83	0.34	2.44	0.18	0.00	0.18
10.55	0.83	0.34	2.44	0.18	0.00	0.18
10.60	0.83	0.34	2.44	0.18	0.00	0.18
10.65	0.83	0.34	2.43	0.18	0.00	0.18
10.70	0.83	0.34	2.43	0.18	0.00	0.18
10.75	0.83	0.34	2.43	0.18	0.00	0.18
10.80	0.83	0.34	2.43	0.18	0.00	0.18
10.85	0.83	0.34	2.43	0.18	0.00	0.18
10.90	0.83	0.34	2.43	0.18	0.00	0.18
10.95	0.83	0.34	2.43	0.18	0.00	0.18
11.00	0.83	0.34	2.43	0.18	0.00	0.18
11.05	0.83	0.34	2.43	0.18	0.00	0.18
11.10	0.83	0.34	2.43	0.18	0.00	0.18
11.15	0.83	0.34	2.43	0.18	0.00	0.18
11.20	0.83	0.34	2.43	0.18	0.00	0.18
11.25	0.83	0.34	2.43	0.18	0.00	0.18
11.30	0.83	0.34	2.43	0.18	0.00	0.18
11.35	0.83	0.34	2.43	0.18	0.00	0.18
11.40	0.83	0.34	2.43	0.18	0.00	0.18
11.45	0.83	0.34	2.43	0.18	0.00	0.18
11.50	0.83	0.34	2.43	0.18	0.00	0.18
11.55	0.83	0.34	2.43	0.18	0.00	0.18
11.60	0.83	0.34	2.43	0.18	0.00	0.18
11.65	0.83	0.34	2.43	0.18	0.00	0.18
11.70	0.83	0.34	2.43	0.18	0.00	0.18
11.75	0.83	0.34	2.42	0.18	0.00	0.18
11.80	0.83	0.34	2.42	0.18	0.00	0.18
11.85	0.83	0.34	2.42	0.18	0.00	0.18
11.90	0.83	0.34	2.42	0.18	0.00	0.18
11.95	0.83	0.34	2.42	0.18	0.00	0.18
12.00	0.83	0.34	2.42	0.18	0.00	0.18
12.05	0.83	0.34	2.42	0.18	0.00	0.18
12.10	0.83	0.34	2.42	0.18	0.00	0.18
12.15	0.83	0.34	2.42	0.18	0.00	0.18
12.20	0.83	0.34	2.42	0.18	0.00	0.18
12.25	0.83	0.34	2.42	0.18	0.00	0.18
12.30	0.83	0.34	2.42	0.18	0.00	0.18
12.35	0.83	0.34	2.42	0.18	0.00	0.18
12.40	0.83	0.34	2.42	0.18	0.00	0.18
12.45	0.83	0.34	2.42	0.18	0.00	0.18
12.50	0.83	0.34	2.41	0.18	0.00	0.18
12.55	0.83	0.34	2.41	0.18	0.00	0.18

12.60	0.83	0.34	2.41	0.18	0.00	0.18
12.65	0.83	0.34	2.41	0.18	0.00	0.18
12.70	0.83	0.34	2.41	0.18	0.00	0.18
12.75	0.83	0.34	2.41	0.18	0.00	0.18
12.80	0.83	0.34	2.41	0.18	0.00	0.18
12.85	0.83	0.34	2.41	0.18	0.00	0.18
12.90	0.83	0.34	2.41	0.18	0.00	0.18
12.95	0.83	0.34	2.41	0.18	0.00	0.18
13.00	0.83	0.35	2.41	0.18	0.00	0.18
13.05	0.83	0.35	2.41	0.18	0.00	0.18
13.10	0.83	0.35	2.41	0.18	0.00	0.18
13.15	0.83	0.35	2.41	0.18	0.00	0.18
13.20	0.83	0.35	2.41	0.18	0.00	0.18
13.25	0.83	0.35	2.40	0.18	0.00	0.18
13.30	0.83	0.35	2.40	0.18	0.00	0.18
13.35	0.83	0.35	2.40	0.18	0.00	0.18
13.40	0.83	0.35	2.40	0.18	0.00	0.18
13.45	0.83	0.35	2.40	0.18	0.00	0.18
13.50	0.83	0.35	2.40	0.18	0.00	0.18
13.55	0.83	0.35	2.40	0.18	0.00	0.18
13.60	0.83	0.35	2.40	0.18	0.00	0.18
13.65	0.83	0.35	2.40	0.18	0.00	0.18
13.70	0.83	0.35	2.40	0.18	0.00	0.18
13.75	0.83	0.35	2.40	0.18	0.00	0.18
13.80	0.83	0.35	2.40	0.18	0.00	0.18
13.85	0.83	0.35	2.40	0.18	0.00	0.18
13.90	0.83	0.35	2.40	0.18	0.00	0.18
13.95	0.83	0.35	2.40	0.18	0.00	0.18
14.00	0.83	0.35	2.40	0.18	0.00	0.18
14.05	0.83	0.35	2.39	0.18	0.00	0.18
14.10	0.83	0.35	2.39	0.18	0.00	0.18
14.15	0.83	0.35	2.39	0.18	0.00	0.18
14.20	0.83	0.35	2.39	0.18	0.00	0.18
14.25	0.83	0.35	2.39	0.18	0.00	0.18
14.30	0.83	0.35	2.39	0.18	0.00	0.18
14.35	0.83	0.35	2.39	0.18	0.00	0.18
14.40	0.83	0.35	2.39	0.18	0.00	0.18
14.45	0.83	0.35	2.39	0.18	0.00	0.18
14.50	0.83	0.35	2.39	0.18	0.00	0.18
14.55	0.83	0.35	2.39	0.18	0.00	0.18
14.60	0.83	0.35	2.39	0.18	0.00	0.18
14.65	0.83	0.35	2.39	0.18	0.00	0.18
14.70	0.83	0.35	2.39	0.18	0.00	0.18
14.75	0.83	0.35	2.39	0.18	0.00	0.18
14.80	0.83	0.35	2.39	0.18	0.00	0.18
14.85	0.83	0.35	2.39	0.18	0.00	0.18
14.90	0.83	0.35	2.39	0.18	0.00	0.18
14.95	0.83	0.35	2.39	0.18	0.00	0.18
15.00	0.83	0.35	2.39	0.18	0.00	0.18
15.05	0.83	0.35	2.39	0.18	0.00	0.18
15.10	0.83	0.35	2.39	0.18	0.00	0.18
15.15	0.83	0.35	2.39	0.18	0.00	0.18
15.20	0.83	0.35	2.38	0.18	0.00	0.18
15.25	0.83	0.35	2.38	0.18	0.00	0.18
15.30	0.83	0.35	2.38	0.18	0.00	0.18
15.35	0.83	0.35	2.38	0.18	0.00	0.18
15.40	0.83	0.35	2.38	0.18	0.00	0.18
15.45	0.83	0.35	2.38	0.18	0.00	0.18
15.50	0.83	0.35	2.38	0.18	0.00	0.18
15.55	0.83	0.35	2.38	0.18	0.00	0.18
15.60	0.83	0.35	2.38	0.18	0.00	0.18
15.65	0.83	0.35	2.38	0.18	0.00	0.18
15.70	0.83	0.35	2.38	0.18	0.00	0.18
15.75	0.83	0.35	2.38	0.18	0.00	0.18
15.80	0.83	0.35	2.38	0.18	0.00	0.18
15.85	0.83	0.35	2.38	0.18	0.00	0.18
15.90	0.83	0.35	2.38	0.18	0.00	0.18
15.95	0.83	0.35	2.38	0.18	0.00	0.18
16.00	0.83	0.35	2.38	0.18	0.00	0.18
16.05	0.83	0.35	2.38	0.18	0.00	0.18
16.10	0.83	0.35	2.38	0.18	0.00	0.18

16.15	0.83	0.35	2.38	0.18	0.00	0.18
16.20	0.83	0.35	2.38	0.18	0.00	0.18
16.25	0.83	0.35	2.38	0.18	0.00	0.18
16.30	0.83	0.35	2.38	0.18	0.00	0.18
16.35	0.83	0.35	2.38	0.18	0.00	0.18
16.40	0.83	0.35	2.38	0.18	0.00	0.18
16.45	0.83	0.35	2.38	0.18	0.00	0.18
16.50	0.83	0.35	2.38	0.18	0.00	0.18
16.55	0.83	0.35	2.38	0.18	0.00	0.18
16.60	0.83	0.35	2.38	0.18	0.00	0.18
16.65	0.83	0.35	2.38	0.18	0.00	0.18
16.70	0.83	0.35	2.38	0.18	0.00	0.18
16.75	0.83	0.35	2.38	0.18	0.00	0.18
16.80	0.83	0.35	2.38	0.18	0.00	0.18
16.85	0.83	0.35	2.38	0.18	0.00	0.18
16.90	0.83	0.35	2.38	0.18	0.00	0.18
16.95	0.83	0.35	2.38	0.18	0.00	0.18
17.00	0.83	0.35	2.38	0.18	0.00	0.18
17.05	0.83	0.35	2.38	0.18	0.00	0.18
17.10	0.83	0.35	2.38	0.18	0.00	0.18
17.15	0.83	0.35	2.38	0.18	0.00	0.18
17.20	0.83	0.35	2.38	0.18	0.00	0.18
17.25	0.83	0.35	2.38	0.18	0.00	0.18
17.30	0.83	0.35	2.38	0.18	0.00	0.18
17.35	0.83	0.35	2.38	0.18	0.00	0.18
17.40	0.83	0.35	2.38	0.18	0.00	0.18
17.45	0.83	0.35	2.38	0.18	0.00	0.18
17.50	0.83	0.35	2.38	0.18	0.00	0.18
17.55	0.83	0.35	2.38	0.18	0.00	0.18
17.60	0.83	0.35	2.38	0.18	0.00	0.18
17.65	0.83	0.35	2.38	0.18	0.00	0.18
17.70	0.83	0.35	2.38	0.18	0.00	0.18
17.75	0.83	0.35	2.38	0.18	0.00	0.18
17.80	0.83	0.35	2.38	0.18	0.00	0.18
17.85	0.83	0.35	2.38	0.18	0.00	0.18
17.90	0.83	0.35	2.38	0.18	0.00	0.18
17.95	0.83	0.35	2.38	0.18	0.00	0.18
18.00	0.83	0.35	2.38	0.18	0.00	0.18
18.05	0.83	0.35	2.38	0.18	0.00	0.18
18.10	0.83	0.35	2.38	0.18	0.00	0.18
18.15	0.83	0.35	2.38	0.18	0.00	0.18
18.20	0.83	0.35	2.38	0.18	0.00	0.18
18.25	0.83	0.35	2.38	0.18	0.00	0.18
18.30	0.83	0.35	2.38	0.18	0.00	0.18
18.35	0.83	0.35	2.38	0.18	0.00	0.18
18.40	0.83	0.35	2.38	0.18	0.00	0.18
18.45	0.83	0.35	2.38	0.18	0.00	0.18
18.50	0.83	0.35	2.38	0.18	0.00	0.18
18.55	0.83	0.35	2.38	0.18	0.00	0.18
18.60	0.83	0.35	2.38	0.18	0.00	0.18
18.65	0.83	0.35	2.38	0.18	0.00	0.18
18.70	0.83	0.35	2.38	0.18	0.00	0.18
18.75	0.83	0.35	2.38	0.18	0.00	0.18
18.80	0.83	0.35	2.38	0.18	0.00	0.18
18.85	0.83	0.35	2.38	0.18	0.00	0.18
18.90	0.83	0.35	2.38	0.18	0.00	0.18
18.95	0.83	0.35	2.38	0.18	0.00	0.18
19.00	0.83	0.35	2.38	0.18	0.00	0.18
19.05	0.83	0.35	2.38	0.18	0.00	0.18
19.10	0.83	0.35	2.38	0.18	0.00	0.18
19.15	0.83	0.35	2.38	0.18	0.00	0.18
19.20	0.83	0.35	2.38	0.18	0.00	0.18
19.25	0.83	0.35	2.38	0.18	0.00	0.18
19.30	0.83	0.35	2.38	0.18	0.00	0.18
19.35	0.83	0.35	2.38	0.18	0.00	0.18
19.40	0.83	0.35	2.38	0.18	0.00	0.18
19.45	0.83	0.35	2.38	0.18	0.00	0.18
19.50	0.83	0.35	2.38	0.18	0.00	0.18
19.55	0.83	0.35	2.38	0.18	0.00	0.18
19.60	0.83	0.35	2.38	0.18	0.00	0.18
19.65	0.83	0.35	2.38	0.18	0.00	0.18

19.70	0.83	0.35	2.38	0.18	0.00	0.18
19.75	0.83	0.35	2.38	0.18	0.00	0.18
19.80	0.83	0.35	2.38	0.18	0.00	0.18
19.85	0.83	0.35	2.38	0.18	0.00	0.18
19.90	0.83	0.35	2.38	0.18	0.00	0.18
19.95	0.83	0.35	2.38	0.18	0.00	0.18
20.00	0.83	0.35	2.38	0.18	0.00	0.18
20.05	0.83	0.35	2.38	0.18	0.00	0.18
20.10	0.83	0.35	2.38	0.18	0.00	0.18
20.15	0.83	0.35	2.38	0.18	0.00	0.18
20.20	0.83	0.35	2.38	0.18	0.00	0.18
20.25	0.83	0.35	2.38	0.18	0.00	0.18
20.30	0.83	0.35	2.38	0.18	0.00	0.18
20.35	0.83	0.35	2.38	0.18	0.00	0.18
20.40	0.83	0.35	2.38	0.18	0.00	0.18
20.45	0.83	0.35	2.38	0.18	0.00	0.18
20.50	0.83	0.35	2.38	0.18	0.00	0.18
20.55	0.83	0.35	2.38	0.18	0.00	0.18
20.60	0.83	0.35	2.37	0.18	0.00	0.18
20.65	0.83	0.35	2.37	0.18	0.00	0.18
20.70	0.83	0.35	2.37	0.18	0.00	0.18
20.75	0.83	0.35	2.37	0.18	0.00	0.18
20.80	0.83	0.35	2.37	0.18	0.00	0.18
20.85	0.83	0.35	2.37	0.18	0.00	0.18
20.90	0.83	0.35	2.37	0.18	0.00	0.18
20.95	0.83	0.35	2.37	0.18	0.00	0.18
21.00	0.83	0.35	2.37	0.18	0.00	0.18
21.05	0.83	0.35	2.37	0.18	0.00	0.18
21.10	0.83	0.35	2.37	0.18	0.00	0.18
21.15	0.83	0.35	2.37	0.18	0.00	0.18
21.20	0.83	0.35	2.37	0.18	0.00	0.18
21.25	0.83	0.35	2.37	0.18	0.00	0.18
21.30	0.83	0.35	2.37	0.18	0.00	0.18
21.35	0.83	0.35	2.37	0.18	0.00	0.18
21.40	0.83	0.35	2.37	0.18	0.00	0.18
21.45	0.83	0.35	2.37	0.18	0.00	0.18
21.50	0.83	0.35	2.37	0.18	0.00	0.18
21.55	0.83	0.35	2.37	0.18	0.00	0.18
21.60	0.83	0.35	2.37	0.18	0.00	0.18
21.65	0.83	0.35	2.37	0.18	0.00	0.18
21.70	0.83	0.35	2.37	0.18	0.00	0.18
21.75	0.83	0.35	2.37	0.18	0.00	0.18
21.80	0.83	0.35	2.37	0.18	0.00	0.18
21.85	0.83	0.35	2.37	0.18	0.00	0.18
21.90	0.83	0.35	2.37	0.18	0.00	0.18
21.95	0.83	0.35	2.37	0.18	0.00	0.18
22.00	0.83	0.35	2.37	0.18	0.00	0.18
22.05	0.83	0.35	2.37	0.18	0.00	0.18
22.10	0.83	0.35	2.37	0.18	0.00	0.18
22.15	0.83	0.35	2.37	0.18	0.00	0.18
22.20	0.83	0.35	2.37	0.18	0.00	0.18
22.25	0.83	0.35	2.37	0.18	0.00	0.18
22.30	0.83	0.35	2.37	0.18	0.00	0.18
22.35	0.83	0.35	2.37	0.18	0.00	0.18
22.40	0.83	0.35	2.37	0.18	0.00	0.18
22.45	0.83	0.35	2.37	0.18	0.00	0.18
22.50	0.83	0.35	2.37	0.18	0.00	0.18
22.55	0.83	0.35	2.37	0.18	0.00	0.18
22.60	0.83	0.35	2.37	0.18	0.00	0.18
22.65	0.83	0.35	2.37	0.18	0.00	0.18
22.70	0.83	0.35	2.37	0.18	0.00	0.18
22.75	0.83	0.35	2.37	0.18	0.00	0.18
22.80	0.83	0.35	2.37	0.18	0.00	0.18
22.85	0.83	0.35	2.37	0.18	0.00	0.18
22.90	0.83	0.35	2.37	0.18	0.00	0.18
22.95	0.83	0.35	2.37	0.18	0.00	0.18
23.00	0.83	0.35	2.37	0.18	0.00	0.18
23.05	0.83	0.35	2.37	0.18	0.00	0.18
23.10	0.83	0.35	2.37	0.18	0.00	0.18
23.15	0.83	0.35	2.37	0.18	0.00	0.18
23.20	0.83	0.35	2.37	0.18	0.00	0.18

23.25	0.83	0.35	2.37	0.18	0.00	0.18
23.30	0.83	0.35	2.37	0.18	0.00	0.18
23.35	0.83	0.35	2.37	0.18	0.00	0.18
23.40	0.83	0.35	2.37	0.18	0.00	0.18
23.45	0.83	0.35	2.37	0.18	0.00	0.18
23.50	0.83	0.35	2.37	0.18	0.00	0.18
23.55	0.83	0.35	2.37	0.18	0.00	0.18
23.60	0.83	0.35	2.37	0.18	0.00	0.18
23.65	0.83	0.35	2.37	0.18	0.00	0.18
23.70	0.83	0.35	2.37	0.18	0.00	0.18
23.75	0.83	0.35	2.37	0.18	0.00	0.18
23.80	0.83	0.35	2.37	0.18	0.00	0.18
23.85	0.83	0.35	2.37	0.18	0.00	0.18
23.90	0.83	0.35	2.37	0.18	0.00	0.18
23.95	0.83	0.35	2.37	0.18	0.00	0.18
24.00	0.83	0.35	2.37	0.18	0.00	0.18
24.05	0.83	0.35	2.37	0.18	0.00	0.18
24.10	0.83	0.35	2.37	0.18	0.00	0.18
24.15	0.83	0.35	2.37	0.18	0.00	0.18
24.20	0.83	0.35	2.37	0.18	0.00	0.18
24.25	0.83	0.35	2.37	0.18	0.00	0.18
24.30	0.83	0.35	2.37	0.18	0.00	0.18
24.35	0.83	0.35	2.37	0.18	0.00	0.18
24.40	0.83	0.35	2.37	0.18	0.00	0.18
24.45	0.83	0.35	2.37	0.18	0.00	0.18
24.50	0.83	0.35	2.37	0.18	0.00	0.18
24.55	0.83	0.35	2.37	0.18	0.00	0.18
24.60	0.83	0.35	2.37	0.18	0.00	0.18
24.65	0.83	0.35	2.37	0.18	0.00	0.18
24.70	0.83	0.35	2.37	0.18	0.00	0.18
24.75	0.83	0.35	2.37	0.18	0.00	0.18
24.80	0.83	0.35	2.37	0.18	0.00	0.18
24.85	0.83	0.35	2.37	0.18	0.00	0.18
24.90	0.83	0.35	2.37	0.18	0.00	0.18
24.95	0.83	0.35	2.37	0.18	0.00	0.18
25.00	0.83	0.35	2.37	0.18	0.00	0.18
25.05	0.60	0.35	1.72	0.18	0.00	0.18
25.10	0.60	0.35	1.71	0.17	0.00	0.17
25.15	0.60	0.35	1.71	0.17	0.00	0.17
25.20	0.60	0.35	1.71	0.17	0.00	0.17
25.25	0.60	0.35	1.70	0.17	0.00	0.17
25.30	0.60	0.35	1.70	0.17	0.00	0.17
25.35	0.60	0.35	1.70	0.17	0.00	0.17
25.40	0.59	0.35	1.69	0.17	0.00	0.17
25.45	0.59	0.35	1.69	0.17	0.00	0.17
25.50	0.59	0.35	1.69	0.17	0.00	0.17
25.55	0.59	0.35	1.69	0.17	0.00	0.17
25.60	0.59	0.35	1.68	0.17	0.00	0.17
25.65	0.59	0.35	1.68	0.17	0.00	0.17
25.70	0.59	0.35	1.68	0.17	0.00	0.17
25.75	0.59	0.35	1.67	0.17	0.00	0.17
25.80	0.59	0.35	1.67	0.17	0.00	0.17
25.85	0.58	0.35	1.67	0.17	0.00	0.17
25.90	0.58	0.35	1.67	0.17	0.00	0.17
25.95	0.58	0.35	1.66	0.16	0.00	0.16
26.00	0.58	0.35	1.66	0.16	0.00	0.16
26.05	0.58	0.35	1.66	0.16	0.00	0.16
26.10	0.58	0.35	1.65	0.16	0.00	0.16
26.15	0.58	0.35	1.65	0.16	0.00	0.16
26.20	0.58	0.35	1.65	0.16	0.00	0.16
26.25	0.58	0.35	1.65	0.16	0.00	0.16
26.30	0.58	0.35	1.64	0.16	0.00	0.16
26.35	0.58	0.35	1.64	0.16	0.00	0.16
26.40	0.57	0.35	1.64	0.16	0.00	0.16
26.45	0.57	0.35	1.64	0.16	0.00	0.16
26.50	0.57	0.35	1.63	0.16	0.00	0.16
26.55	0.57	0.35	1.63	0.16	0.00	0.16
26.60	0.57	0.35	1.63	0.16	0.00	0.16
26.65	0.57	0.35	1.63	0.15	0.00	0.15
26.70	0.57	0.35	1.62	0.15	0.00	0.15
26.75	0.57	0.35	1.62	0.15	0.00	0.15

26.80	0.57	0.35	1.62	0.15	0.00	0.15
26.85	0.57	0.35	1.62	0.15	0.00	0.15
26.90	0.57	0.35	1.62	0.15	0.00	0.15
26.95	0.56	0.35	1.61	0.15	0.00	0.15
27.00	0.56	0.35	1.61	0.15	0.00	0.15
27.05	0.56	0.35	1.61	0.15	0.00	0.15
27.10	0.56	0.35	1.61	0.15	0.00	0.15
27.15	0.56	0.35	1.60	0.15	0.00	0.15
27.20	0.56	0.35	1.60	0.15	0.00	0.15
27.25	0.56	0.35	1.60	0.15	0.00	0.15
27.30	0.56	0.35	1.60	0.14	0.00	0.14
27.35	0.56	0.35	1.60	0.14	0.00	0.14
27.40	0.56	0.35	1.59	0.14	0.00	0.14
27.45	0.56	0.35	1.59	0.14	0.00	0.14
27.50	0.56	0.35	1.59	0.14	0.00	0.14
27.55	0.56	0.35	1.59	0.14	0.00	0.14
27.60	0.55	0.35	1.59	0.14	0.00	0.14
27.65	0.55	0.35	1.58	0.14	0.00	0.14
27.70	0.55	0.35	1.58	0.14	0.00	0.14
27.75	0.55	0.35	1.58	0.14	0.00	0.14
27.80	0.55	0.35	1.58	0.14	0.00	0.14
27.85	0.55	0.35	1.58	0.14	0.00	0.14
27.90	0.60	0.35	1.71	0.13	0.00	0.13
27.95	0.60	0.35	1.71	0.13	0.00	0.13
28.00	0.60	0.35	1.71	0.13	0.00	0.13
28.05	0.59	0.35	1.70	0.13	0.00	0.13
28.10	0.59	0.35	1.70	0.13	0.00	0.13
28.15	0.59	0.35	1.70	0.13	0.00	0.13
28.20	0.59	0.35	1.69	0.13	0.00	0.13
28.25	0.59	0.35	1.69	0.13	0.00	0.13
28.30	0.59	0.35	1.69	0.13	0.00	0.13
28.35	0.59	0.35	1.69	0.13	0.00	0.13
28.40	0.59	0.35	1.68	0.13	0.00	0.13
28.45	0.59	0.35	1.68	0.13	0.00	0.13
28.50	0.59	0.35	1.68	0.13	0.00	0.13
28.55	0.59	0.35	1.68	0.13	0.00	0.13
28.60	0.58	0.35	1.67	0.13	0.00	0.13
28.65	0.58	0.35	1.67	0.13	0.00	0.13
28.70	0.58	0.35	1.67	0.13	0.00	0.13
28.75	0.58	0.35	1.67	0.12	0.00	0.12
28.80	0.58	0.35	1.66	0.12	0.00	0.12
28.85	0.58	0.35	1.66	0.12	0.00	0.12
28.90	0.58	0.35	1.66	0.12	0.00	0.12
28.95	0.58	0.35	1.66	0.12	0.00	0.12
29.00	0.58	0.35	1.66	0.12	0.00	0.12
29.05	0.58	0.35	1.65	0.12	0.00	0.12
29.10	0.58	0.35	1.65	0.12	0.00	0.12
29.15	0.57	0.35	1.65	0.12	0.00	0.12
29.20	0.57	0.35	1.65	0.12	0.00	0.12
29.25	0.57	0.35	1.64	0.12	0.00	0.12
29.30	0.57	0.35	1.64	0.12	0.00	0.12
29.35	0.57	0.35	1.64	0.12	0.00	0.12
29.40	0.57	0.35	1.64	0.12	0.00	0.12
29.45	0.57	0.35	1.64	0.12	0.00	0.12
29.50	0.57	0.35	1.63	0.11	0.00	0.11
29.55	0.57	0.35	1.63	0.11	0.00	0.11
29.60	0.57	0.35	1.63	0.11	0.00	0.11
29.65	0.57	0.35	1.63	0.11	0.00	0.11
29.70	0.57	0.35	1.62	0.11	0.00	0.11
29.75	0.57	0.35	1.62	0.11	0.00	0.11
29.80	0.56	0.35	1.62	0.11	0.00	0.11
29.85	0.56	0.35	1.62	0.11	0.00	0.11
29.90	0.56	0.35	1.62	0.11	0.00	0.11
29.95	0.56	0.35	1.61	0.11	0.00	0.11
30.00	0.56	0.35	1.61	0.11	0.00	0.11
30.05	0.83	0.35	2.39	0.11	0.00	0.11
30.10	0.83	0.35	2.39	0.11	0.00	0.11
30.15	0.83	0.35	2.39	0.11	0.00	0.11
30.20	0.83	0.35	2.39	0.11	0.00	0.11
30.25	0.83	0.35	2.39	0.11	0.00	0.11
30.30	0.83	0.35	2.39	0.11	0.00	0.11

30.35	0.83	0.35	2.39	0.11	0.00	0.11
30.40	0.83	0.35	2.39	0.11	0.00	0.11
30.45	0.83	0.35	2.39	0.11	0.00	0.11
30.50	0.83	0.35	2.40	0.11	0.00	0.11
30.55	0.83	0.35	2.40	0.11	0.00	0.11
30.60	0.83	0.35	2.40	0.11	0.00	0.11
30.65	0.83	0.35	2.40	0.11	0.00	0.11
30.70	0.83	0.35	2.40	0.11	0.00	0.11
30.75	0.83	0.35	2.40	0.11	0.00	0.11
30.80	0.83	0.35	2.40	0.11	0.00	0.11
30.85	0.83	0.35	2.40	0.11	0.00	0.11
30.90	0.83	0.35	2.40	0.11	0.00	0.11
30.95	0.83	0.35	2.40	0.11	0.00	0.11
31.00	0.83	0.35	2.41	0.11	0.00	0.11
31.05	0.83	0.35	2.41	0.11	0.00	0.11
31.10	0.83	0.35	2.41	0.11	0.00	0.11
31.15	0.83	0.34	2.41	0.11	0.00	0.11
31.20	0.83	0.34	2.41	0.11	0.00	0.11
31.25	0.83	0.34	2.41	0.11	0.00	0.11
31.30	0.83	0.34	2.41	0.11	0.00	0.11
31.35	0.83	0.34	2.41	0.11	0.00	0.11
31.40	0.83	0.34	2.41	0.11	0.00	0.11
31.45	0.83	0.34	2.41	0.11	0.00	0.11
31.50	0.83	0.34	2.42	0.11	0.00	0.11
31.55	0.83	0.34	2.42	0.11	0.00	0.11
31.60	0.83	0.34	2.42	0.11	0.00	0.11
31.65	0.83	0.34	2.42	0.11	0.00	0.11
31.70	0.83	0.34	2.42	0.11	0.00	0.11
31.75	0.83	0.34	2.42	0.11	0.00	0.11
31.80	0.83	0.34	2.42	0.11	0.00	0.11
31.85	0.83	0.34	2.42	0.11	0.00	0.11
31.90	0.83	0.34	2.42	0.11	0.00	0.11
31.95	0.83	0.34	2.42	0.11	0.00	0.11
32.00	0.83	0.34	2.43	0.11	0.00	0.11
32.05	0.83	0.34	2.43	0.11	0.00	0.11
32.10	0.83	0.34	2.43	0.11	0.00	0.11
32.15	0.83	0.34	2.43	0.11	0.00	0.11
32.20	0.83	0.34	2.43	0.11	0.00	0.11
32.25	0.83	0.34	2.43	0.11	0.00	0.11
32.30	0.83	0.34	2.43	0.11	0.00	0.11
32.35	0.83	0.34	2.43	0.11	0.00	0.11
32.40	0.83	0.34	2.43	0.11	0.00	0.11
32.45	0.83	0.34	2.43	0.11	0.00	0.11
32.50	0.83	0.34	2.44	0.11	0.00	0.11
32.55	0.83	0.34	2.44	0.11	0.00	0.11
32.60	0.83	0.34	2.44	0.11	0.00	0.11
32.65	0.83	0.34	2.44	0.11	0.00	0.11
32.70	0.83	0.34	2.44	0.11	0.00	0.11
32.75	0.83	0.34	2.44	0.11	0.00	0.11
32.80	0.83	0.34	2.44	0.11	0.00	0.11
32.85	0.83	0.34	2.44	0.11	0.00	0.11
32.90	0.83	0.34	2.44	0.11	0.00	0.11
32.95	0.83	0.34	2.44	0.11	0.00	0.11
33.00	0.83	0.34	2.45	0.11	0.00	0.11
33.05	0.83	0.34	2.45	0.11	0.00	0.11
33.10	0.83	0.34	2.45	0.11	0.00	0.11
33.15	0.83	0.34	2.45	0.11	0.00	0.11
33.20	0.83	0.34	2.45	0.11	0.00	0.11
33.25	0.83	0.34	2.45	0.11	0.00	0.11
33.30	0.83	0.34	2.45	0.11	0.00	0.11
33.35	0.83	0.34	2.45	0.11	0.00	0.11
33.40	0.83	0.34	2.45	0.11	0.00	0.11
33.45	0.83	0.34	2.46	0.11	0.00	0.11
33.50	0.83	0.34	2.46	0.11	0.00	0.11
33.55	0.83	0.34	2.46	0.11	0.00	0.11
33.60	0.83	0.34	2.46	0.11	0.00	0.11
33.65	0.83	0.34	2.46	0.11	0.00	0.11
33.70	0.83	0.34	2.46	0.11	0.00	0.11
33.75	0.83	0.34	2.46	0.11	0.00	0.11
33.80	0.83	0.34	2.46	0.11	0.00	0.11
33.85	0.83	0.34	2.46	0.11	0.00	0.11

33.90	0.83	0.34	2.46	0.11	0.00	0.11
33.95	0.83	0.34	2.47	0.11	0.00	0.11
34.00	0.83	0.34	2.47	0.11	0.00	0.11
34.05	0.83	0.34	2.47	0.11	0.00	0.11
34.10	0.83	0.34	2.47	0.11	0.00	0.11
34.15	0.83	0.34	2.47	0.11	0.00	0.11
34.20	0.83	0.34	2.47	0.11	0.00	0.11
34.25	0.83	0.34	2.47	0.11	0.00	0.11
34.30	0.83	0.34	2.47	0.11	0.00	0.11
34.35	0.83	0.34	2.47	0.11	0.00	0.11
34.40	0.83	0.34	2.48	0.11	0.00	0.11
34.45	0.83	0.34	2.48	0.11	0.00	0.11
34.50	0.83	0.34	2.48	0.11	0.00	0.11
34.55	0.83	0.34	2.48	0.11	0.00	0.11
34.60	0.83	0.34	2.48	0.11	0.00	0.11
34.65	0.83	0.33	2.48	0.11	0.00	0.11
34.70	0.83	0.33	2.48	0.11	0.00	0.11
34.75	0.83	0.33	2.48	0.11	0.00	0.11
34.80	0.83	0.33	2.48	0.11	0.00	0.11
34.85	0.83	0.33	2.48	0.11	0.00	0.11
34.90	0.83	0.33	2.49	0.11	0.00	0.11
34.95	0.83	0.33	2.49	0.11	0.00	0.11
35.00	0.83	0.33	2.49	0.11	0.00	0.11
35.05	0.51	0.33	1.51	0.11	0.00	0.11
35.10	0.50	0.33	1.51	0.11	0.00	0.11
35.15	0.50	0.33	1.51	0.10	0.00	0.10
35.20	0.50	0.33	1.51	0.10	0.00	0.10
35.25	0.50	0.33	1.51	0.10	0.00	0.10
35.30	0.50	0.33	1.51	0.10	0.00	0.10
35.35	0.50	0.33	1.51	0.10	0.00	0.10
35.40	0.50	0.33	1.51	0.10	0.00	0.10
35.45	0.50	0.33	1.51	0.10	0.00	0.10
35.50	0.50	0.33	1.51	0.10	0.00	0.10
35.55	0.50	0.33	1.51	0.10	0.00	0.10
35.60	0.50	0.33	1.51	0.10	0.00	0.10
35.65	0.50	0.33	1.51	0.09	0.00	0.09
35.70	0.50	0.33	1.51	0.09	0.00	0.09
35.75	0.50	0.33	1.51	0.09	0.00	0.09
35.80	0.50	0.33	1.51	0.09	0.00	0.09
35.85	0.50	0.33	1.50	0.09	0.00	0.09
35.90	0.50	0.33	1.50	0.09	0.00	0.09
35.95	0.50	0.33	1.50	0.09	0.00	0.09
36.00	0.50	0.33	1.50	0.09	0.00	0.09
36.05	0.50	0.33	1.50	0.09	0.00	0.09
36.10	0.50	0.33	1.50	0.08	0.00	0.08
36.15	0.50	0.33	1.50	0.08	0.00	0.08
36.20	0.50	0.33	1.50	0.08	0.00	0.08
36.25	0.50	0.33	1.50	0.08	0.00	0.08
36.30	0.50	0.33	1.50	0.08	0.00	0.08
36.35	0.50	0.33	1.50	0.08	0.00	0.08
36.40	0.50	0.33	1.50	0.08	0.00	0.08
36.45	0.50	0.33	1.50	0.08	0.00	0.08
36.50	0.50	0.33	1.50	0.08	0.00	0.08
36.55	0.50	0.33	1.50	0.08	0.00	0.08
36.60	0.50	0.33	1.50	0.07	0.00	0.07
36.65	0.50	0.33	1.50	0.07	0.00	0.07
36.70	0.50	0.33	1.50	0.07	0.00	0.07
36.75	0.50	0.33	1.50	0.07	0.00	0.07
36.80	0.49	0.33	1.50	0.07	0.00	0.07
36.85	0.49	0.33	1.50	0.07	0.00	0.07
36.90	0.49	0.33	1.49	0.07	0.00	0.07
36.95	0.49	0.33	1.49	0.07	0.00	0.07
37.00	0.49	0.33	1.49	0.07	0.00	0.07
37.05	0.49	0.33	1.49	0.07	0.00	0.07
37.10	0.49	0.33	1.49	0.06	0.00	0.06
37.15	0.49	0.33	1.49	0.06	0.00	0.06
37.20	0.49	0.33	1.49	0.06	0.00	0.06
37.25	0.49	0.33	1.49	0.06	0.00	0.06
37.30	0.49	0.33	1.49	0.06	0.00	0.06
37.35	0.49	0.33	1.49	0.06	0.00	0.06
37.40	0.49	0.33	1.49	0.06	0.00	0.06

37.45	0.49	0.33	1.49	0.06	0.00	0.06
37.50	0.49	0.33	1.49	0.06	0.00	0.06
37.55	0.49	0.33	1.49	0.05	0.00	0.05
37.60	0.49	0.33	1.49	0.05	0.00	0.05
37.65	0.49	0.33	1.49	0.05	0.00	0.05
37.70	0.49	0.33	1.49	0.05	0.00	0.05
37.75	0.49	0.33	1.49	0.05	0.00	0.05
37.80	0.49	0.33	1.49	0.05	0.00	0.05
37.85	0.49	0.33	1.49	0.05	0.00	0.05
37.90	0.49	0.33	1.49	0.05	0.00	0.05
37.95	0.49	0.33	1.49	0.05	0.00	0.05
38.00	0.49	0.33	1.49	0.04	0.00	0.04
38.05	0.49	0.33	1.48	0.04	0.00	0.04
38.10	0.49	0.33	1.48	0.04	0.00	0.04
38.15	0.49	0.33	1.48	0.04	0.00	0.04
38.20	0.49	0.33	1.48	0.04	0.00	0.04
38.25	0.49	0.33	1.48	0.04	0.00	0.04
38.30	0.49	0.33	1.48	0.04	0.00	0.04
38.35	0.49	0.33	1.48	0.04	0.00	0.04
38.40	0.49	0.33	1.48	0.04	0.00	0.04
38.45	0.49	0.33	1.48	0.04	0.00	0.04
38.50	0.49	0.33	1.48	0.03	0.00	0.03
38.55	0.49	0.33	1.48	0.03	0.00	0.03
38.60	0.49	0.33	1.48	0.03	0.00	0.03
38.65	0.49	0.33	1.48	0.03	0.00	0.03
38.70	0.48	0.33	1.48	0.03	0.00	0.03
38.75	0.48	0.33	1.48	0.03	0.00	0.03
38.80	0.48	0.33	1.48	0.03	0.00	0.03
38.85	0.48	0.33	1.48	0.03	0.00	0.03
38.90	0.48	0.33	1.48	0.03	0.00	0.03
38.95	0.48	0.33	1.48	0.02	0.00	0.02
39.00	0.48	0.33	1.48	0.02	0.00	0.02
39.05	0.48	0.33	1.48	0.02	0.00	0.02
39.10	0.48	0.33	1.48	0.02	0.00	0.02
39.15	0.48	0.33	1.48	0.02	0.00	0.02
39.20	0.48	0.33	1.48	0.02	0.00	0.02
39.25	0.48	0.33	1.48	0.02	0.00	0.02
39.30	0.48	0.33	1.48	0.02	0.00	0.02
39.35	0.48	0.33	1.48	0.02	0.00	0.02
39.40	0.48	0.33	1.48	0.01	0.00	0.01
39.45	0.48	0.33	1.48	0.01	0.00	0.01
39.50	0.48	0.33	1.47	0.01	0.00	0.01
39.55	0.48	0.33	1.47	0.01	0.00	0.01
39.60	0.48	0.33	1.47	0.01	0.00	0.01
39.65	0.48	0.33	1.47	0.01	0.00	0.01
39.70	0.48	0.33	1.47	0.01	0.00	0.01
39.75	0.48	0.33	1.47	0.01	0.00	0.01
39.80	0.48	0.33	1.47	0.01	0.00	0.01
39.85	0.48	0.33	1.47	0.00	0.00	0.00
39.90	0.48	0.33	1.47	0.00	0.00	0.00
39.95	0.48	0.33	1.47	0.00	0.00	0.00
40.00	0.48	0.33	1.47	0.00	0.00	0.00
40.05	0.83	0.33	2.55	0.00	0.00	0.00
40.10	0.83	0.32	2.56	0.00	0.00	0.00
40.15	0.83	0.32	2.56	0.00	0.00	0.00
40.20	0.83	0.32	2.56	0.00	0.00	0.00
40.25	0.83	0.32	2.56	0.00	0.00	0.00
40.30	0.83	0.32	2.56	0.00	0.00	0.00
40.35	0.83	0.32	2.56	0.00	0.00	0.00
40.40	0.83	0.32	2.56	0.00	0.00	0.00
40.45	0.83	0.32	2.56	0.00	0.00	0.00
40.50	0.83	0.32	2.57	0.00	0.00	0.00
40.55	0.83	0.32	2.57	0.00	0.00	0.00
40.60	0.83	0.32	2.57	0.00	0.00	0.00
40.65	0.83	0.32	2.57	0.00	0.00	0.00
40.70	0.83	0.32	2.57	0.00	0.00	0.00
40.75	0.83	0.32	2.57	0.00	0.00	0.00
40.80	0.83	0.32	2.57	0.00	0.00	0.00
40.85	0.83	0.32	2.57	0.00	0.00	0.00
40.90	0.83	0.32	2.58	0.00	0.00	0.00
40.95	0.83	0.32	2.58	0.00	0.00	0.00

41.00	0.83	0.32	2.58	0.00	0.00	0.00
41.05	0.83	0.32	2.58	0.00	0.00	0.00
41.10	0.83	0.32	2.58	0.00	0.00	0.00
41.15	0.83	0.32	2.58	0.00	0.00	0.00
41.20	0.83	0.32	2.58	0.00	0.00	0.00
41.25	0.83	0.32	2.58	0.00	0.00	0.00
41.30	0.83	0.32	2.59	0.00	0.00	0.00
41.35	0.83	0.32	2.59	0.00	0.00	0.00
41.40	0.83	0.32	2.59	0.00	0.00	0.00
41.45	0.83	0.32	2.59	0.00	0.00	0.00
41.50	0.83	0.32	2.59	0.00	0.00	0.00
41.55	0.83	0.32	2.59	0.00	0.00	0.00
41.60	0.83	0.32	2.59	0.00	0.00	0.00
41.65	0.83	0.32	2.59	0.00	0.00	0.00
41.70	0.83	0.32	2.60	0.00	0.00	0.00
41.75	0.83	0.32	2.60	0.00	0.00	0.00
41.80	0.83	0.32	2.60	0.00	0.00	0.00
41.85	0.83	0.32	2.60	0.00	0.00	0.00
41.90	0.83	0.32	2.60	0.00	0.00	0.00
41.95	0.83	0.32	2.60	0.00	0.00	0.00
42.00	0.83	0.32	2.60	0.00	0.00	0.00
42.05	0.83	0.32	2.60	0.00	0.00	0.00
42.10	0.83	0.32	2.61	0.00	0.00	0.00
42.15	0.83	0.32	2.61	0.00	0.00	0.00
42.20	0.83	0.32	2.61	0.00	0.00	0.00
42.25	0.83	0.32	2.61	0.00	0.00	0.00
42.30	0.83	0.32	2.61	0.00	0.00	0.00
42.35	0.83	0.32	2.61	0.00	0.00	0.00
42.40	0.83	0.32	2.61	0.00	0.00	0.00
42.45	0.83	0.32	2.61	0.00	0.00	0.00
42.50	0.83	0.32	2.62	0.00	0.00	0.00
42.55	0.83	0.32	2.62	0.00	0.00	0.00
42.60	0.83	0.32	2.62	0.00	0.00	0.00
42.65	0.83	0.32	2.62	0.00	0.00	0.00
42.70	0.83	0.32	2.62	0.00	0.00	0.00
42.75	0.83	0.32	2.62	0.00	0.00	0.00
42.80	0.83	0.32	2.62	0.00	0.00	0.00
42.85	0.83	0.32	2.62	0.00	0.00	0.00
42.90	0.83	0.32	2.63	0.00	0.00	0.00
42.95	0.83	0.32	2.63	0.00	0.00	0.00
43.00	0.83	0.32	2.63	0.00	0.00	0.00
43.05	0.83	0.32	2.63	0.00	0.00	0.00
43.10	0.83	0.32	2.63	0.00	0.00	0.00
43.15	0.83	0.32	2.63	0.00	0.00	0.00
43.20	0.83	0.32	2.63	0.00	0.00	0.00
43.25	0.83	0.32	2.63	0.00	0.00	0.00
43.30	0.83	0.32	2.64	0.00	0.00	0.00
43.35	0.83	0.32	2.64	0.00	0.00	0.00
43.40	0.83	0.31	2.64	0.00	0.00	0.00
43.45	0.83	0.31	2.64	0.00	0.00	0.00
43.50	0.83	0.31	2.64	0.00	0.00	0.00
43.55	0.83	0.31	2.64	0.00	0.00	0.00
43.60	0.83	0.31	2.64	0.00	0.00	0.00
43.65	0.83	0.31	2.64	0.00	0.00	0.00
43.70	0.83	0.31	2.65	0.00	0.00	0.00
43.75	0.83	0.31	2.65	0.00	0.00	0.00
43.80	0.83	0.31	2.65	0.00	0.00	0.00
43.85	0.83	0.31	2.65	0.00	0.00	0.00
43.90	0.83	0.31	2.65	0.00	0.00	0.00
43.95	0.83	0.31	2.65	0.00	0.00	0.00
44.00	0.83	0.31	2.65	0.00	0.00	0.00
44.05	0.83	0.31	2.65	0.00	0.00	0.00
44.10	0.83	0.31	2.66	0.00	0.00	0.00
44.15	0.83	0.31	2.66	0.00	0.00	0.00
44.20	0.83	0.31	2.66	0.00	0.00	0.00
44.25	0.83	0.31	2.66	0.00	0.00	0.00
44.30	0.83	0.31	2.66	0.00	0.00	0.00
44.35	0.83	0.31	2.66	0.00	0.00	0.00
44.40	0.83	0.31	2.66	0.00	0.00	0.00
44.45	0.83	0.31	2.67	0.00	0.00	0.00
44.50	0.83	0.31	2.67	0.00	0.00	0.00

44.55	0.83	0.31	2.67	0.00	0.00	0.00
44.60	0.83	0.31	2.67	0.00	0.00	0.00
44.65	0.83	0.31	2.67	0.00	0.00	0.00
44.70	0.83	0.31	2.67	0.00	0.00	0.00
44.75	0.83	0.31	2.67	0.00	0.00	0.00
44.80	0.83	0.31	2.67	0.00	0.00	0.00
44.85	0.83	0.31	2.68	0.00	0.00	0.00
44.90	0.83	0.31	2.68	0.00	0.00	0.00
44.95	0.83	0.31	2.68	0.00	0.00	0.00
45.00	0.83	0.31	2.68	0.00	0.00	0.00
45.05	0.83	0.31	2.68	0.00	0.00	0.00
45.10	0.83	0.31	2.68	0.00	0.00	0.00
45.15	0.83	0.31	2.68	0.00	0.00	0.00
45.20	0.83	0.31	2.69	0.00	0.00	0.00
45.25	0.83	0.31	2.69	0.00	0.00	0.00
45.30	0.83	0.31	2.69	0.00	0.00	0.00
45.35	0.83	0.31	2.69	0.00	0.00	0.00
45.40	0.83	0.31	2.69	0.00	0.00	0.00
45.45	0.83	0.31	2.69	0.00	0.00	0.00
45.50	0.83	0.31	2.69	0.00	0.00	0.00
45.55	0.83	0.31	2.69	0.00	0.00	0.00
45.60	0.83	0.31	2.70	0.00	0.00	0.00
45.65	0.83	0.31	2.70	0.00	0.00	0.00
45.70	0.83	0.31	2.70	0.00	0.00	0.00
45.75	0.83	0.31	2.70	0.00	0.00	0.00
45.80	0.83	0.31	2.70	0.00	0.00	0.00
45.85	0.83	0.31	2.70	0.00	0.00	0.00
45.90	0.83	0.31	2.70	0.00	0.00	0.00
45.95	0.83	0.31	2.70	0.00	0.00	0.00
46.00	0.83	0.31	2.71	0.00	0.00	0.00
46.05	0.83	0.31	2.71	0.00	0.00	0.00
46.10	0.83	0.31	2.71	0.00	0.00	0.00
46.15	0.83	0.31	2.71	0.00	0.00	0.00
46.20	0.83	0.31	2.71	0.00	0.00	0.00
46.25	0.83	0.31	2.71	0.00	0.00	0.00
46.30	0.83	0.31	2.71	0.00	0.00	0.00
46.35	0.83	0.31	2.72	0.00	0.00	0.00
46.40	0.83	0.31	2.72	0.00	0.00	0.00
46.45	0.83	0.31	2.72	0.00	0.00	0.00
46.50	0.83	0.31	2.72	0.00	0.00	0.00
46.55	0.83	0.31	2.72	0.00	0.00	0.00
46.60	0.83	0.31	2.72	0.00	0.00	0.00
46.65	0.83	0.30	2.72	0.00	0.00	0.00
46.70	0.83	0.30	2.73	0.00	0.00	0.00
46.75	0.83	0.30	2.73	0.00	0.00	0.00
46.80	0.83	0.30	2.73	0.00	0.00	0.00
46.85	0.83	0.30	2.73	0.00	0.00	0.00
46.90	0.83	0.30	2.73	0.00	0.00	0.00
46.95	0.83	0.30	2.73	0.00	0.00	0.00
47.00	0.83	0.30	2.73	0.00	0.00	0.00
47.05	0.83	0.30	2.73	0.00	0.00	0.00
47.10	0.83	0.30	2.73	0.00	0.00	0.00
47.15	0.82	0.30	2.70	0.00	0.00	0.00
47.20	0.81	0.30	2.68	0.00	0.00	0.00
47.25	0.80	0.30	2.65	0.00	0.00	0.00
47.30	0.80	0.30	2.63	0.00	0.00	0.00
47.35	0.79	0.30	2.61	0.00	0.00	0.00
47.40	0.78	0.30	2.59	0.00	0.00	0.00
47.45	0.78	0.30	2.57	0.00	0.00	0.00
47.50	0.77	0.30	2.56	0.00	0.00	0.00
47.55	0.77	0.30	2.54	0.00	0.00	0.00
47.60	0.76	0.30	2.53	0.00	0.00	0.00
47.65	0.76	0.30	2.51	0.00	0.00	0.00
47.70	0.75	0.30	2.50	0.00	0.00	0.00
47.75	0.75	0.30	2.49	0.00	0.00	0.00
47.80	0.75	0.30	2.48	0.00	0.00	0.00
47.85	0.74	0.30	2.47	0.00	0.00	0.00
47.90	0.74	0.30	2.46	0.00	0.00	0.00
47.95	0.74	0.30	2.45	0.00	0.00	0.00
48.00	0.73	0.30	2.44	0.00	0.00	0.00
48.05	0.73	0.30	2.43	0.00	0.00	0.00

48.10	0.73	0.30	2.42	0.00	0.00	0.00
48.15	0.72	0.30	2.41	0.00	0.00	0.00
48.20	0.72	0.30	2.40	0.00	0.00	0.00
48.25	0.72	0.30	2.39	0.00	0.00	0.00
48.30	0.72	0.30	2.39	0.00	0.00	0.00
48.35	0.71	0.30	2.38	0.00	0.00	0.00
48.40	0.71	0.30	2.37	0.00	0.00	0.00
48.45	0.71	0.30	2.37	0.00	0.00	0.00
48.50	0.71	0.30	2.36	0.00	0.00	0.00
48.55	0.70	0.30	2.35	0.00	0.00	0.00
48.60	0.70	0.30	2.35	0.00	0.00	0.00
48.65	0.70	0.30	2.34	0.00	0.00	0.00
48.70	0.70	0.30	2.34	0.00	0.00	0.00
48.75	0.70	0.30	2.33	0.00	0.00	0.00
48.80	0.69	0.30	2.32	0.00	0.00	0.00
48.85	0.69	0.30	2.32	0.00	0.00	0.00
48.90	0.69	0.30	2.31	0.00	0.00	0.00
48.95	0.69	0.30	2.31	0.00	0.00	0.00
49.00	0.69	0.30	2.31	0.00	0.00	0.00
49.05	0.68	0.30	2.30	0.00	0.00	0.00
49.10	0.68	0.30	2.30	0.00	0.00	0.00
49.15	0.68	0.30	2.29	0.00	0.00	0.00
49.20	0.68	0.30	2.29	0.00	0.00	0.00
49.25	0.68	0.30	2.28	0.00	0.00	0.00
49.30	0.68	0.30	2.28	0.00	0.00	0.00
49.35	0.68	0.30	2.28	0.00	0.00	0.00
49.40	0.67	0.30	2.27	0.00	0.00	0.00
49.45	0.67	0.30	2.27	0.00	0.00	0.00
49.50	0.67	0.30	2.27	0.00	0.00	0.00
49.55	0.67	0.30	2.26	0.00	0.00	0.00
49.60	0.67	0.30	2.26	0.00	0.00	0.00
49.65	0.67	0.30	2.26	0.00	0.00	0.00
49.70	0.67	0.30	2.25	0.00	0.00	0.00
49.75	0.66	0.30	2.25	0.00	0.00	0.00
49.80	0.66	0.30	2.25	0.00	0.00	0.00
49.85	0.66	0.30	2.24	0.00	0.00	0.00
49.90	0.66	0.30	2.24	0.00	0.00	0.00
49.95	0.66	0.29	2.24	0.00	0.00	0.00
50.00	0.66	0.29	2.23	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

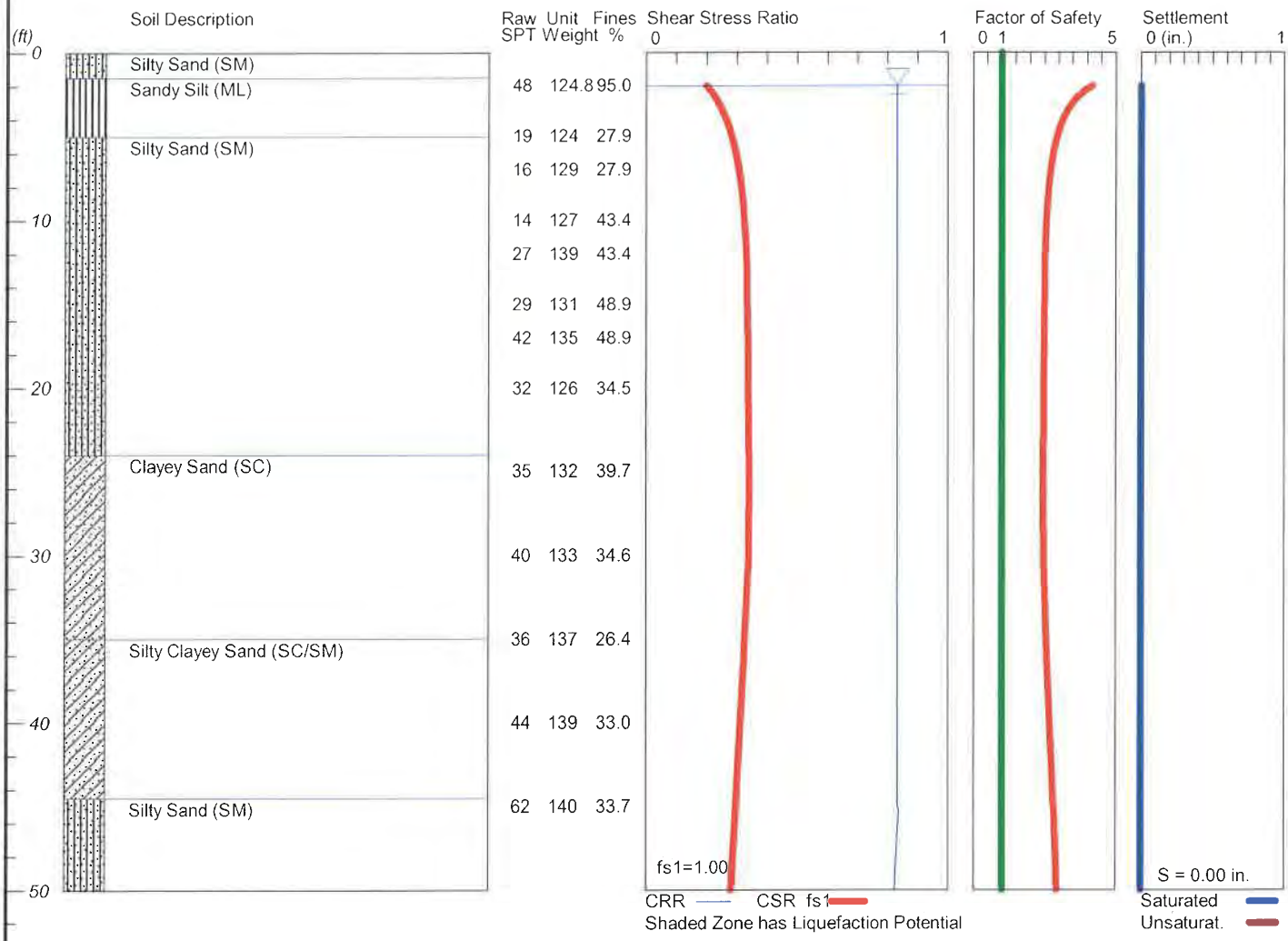
1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B2 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

Krazan

012-22165

Plate A-1

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 10/10/2022 2:03:34 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B2\01222165 B2 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B2
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B2
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	48.00	124.80	95.00
5.00	19.00	124.00	27.90
7.00	16.00	129.00	27.90
10.00	14.00	127.00	43.40
12.00	27.00	139.00	43.40
15.00	29.00	131.00	48.90
17.00	42.00	135.00	48.90
20.00	32.00	126.00	34.50
25.00	35.00	132.00	39.70
30.00	40.00	133.00	34.60
35.00	36.00	137.00	26.40
40.00	44.00	139.00	33.00
45.00	62.00	140.00	33.70

Output Results:
Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.00 in.
Differential Settlement=0.000 to 0.000 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.83	0.20	4.18	0.00	0.00	0.00
2.05	0.83	0.20	4.13	0.00	0.00	0.00
2.10	0.83	0.20	4.08	0.00	0.00	0.00
2.15	0.83	0.21	4.04	0.00	0.00	0.00
2.20	0.83	0.21	3.99	0.00	0.00	0.00
2.25	0.83	0.21	3.95	0.00	0.00	0.00
2.30	0.83	0.21	3.91	0.00	0.00	0.00
2.35	0.83	0.21	3.87	0.00	0.00	0.00
2.40	0.83	0.22	3.84	0.00	0.00	0.00
2.45	0.83	0.22	3.80	0.00	0.00	0.00
2.50	0.83	0.22	3.77	0.00	0.00	0.00
2.55	0.83	0.22	3.74	0.00	0.00	0.00
2.60	0.83	0.22	3.71	0.00	0.00	0.00
2.65	0.83	0.23	3.68	0.00	0.00	0.00
2.70	0.83	0.23	3.65	0.00	0.00	0.00
2.75	0.83	0.23	3.62	0.00	0.00	0.00
2.80	0.83	0.23	3.59	0.00	0.00	0.00
2.85	0.83	0.23	3.57	0.00	0.00	0.00
2.90	0.83	0.23	3.54	0.00	0.00	0.00
2.95	0.83	0.24	3.52	0.00	0.00	0.00
3.00	0.83	0.24	3.49	0.00	0.00	0.00
3.05	0.83	0.24	3.47	0.00	0.00	0.00
3.10	0.83	0.24	3.45	0.00	0.00	0.00
3.15	0.83	0.24	3.43	0.00	0.00	0.00
3.20	0.83	0.24	3.41	0.00	0.00	0.00
3.25	0.83	0.25	3.39	0.00	0.00	0.00
3.30	0.83	0.25	3.37	0.00	0.00	0.00
3.35	0.83	0.25	3.35	0.00	0.00	0.00
3.40	0.83	0.25	3.33	0.00	0.00	0.00
3.45	0.83	0.25	3.31	0.00	0.00	0.00
3.50	0.83	0.25	3.30	0.00	0.00	0.00
3.55	0.83	0.25	3.28	0.00	0.00	0.00
3.60	0.83	0.25	3.27	0.00	0.00	0.00
3.65	0.83	0.26	3.25	0.00	0.00	0.00
3.70	0.83	0.26	3.23	0.00	0.00	0.00
3.75	0.83	0.26	3.22	0.00	0.00	0.00
3.80	0.83	0.26	3.21	0.00	0.00	0.00
3.85	0.83	0.26	3.19	0.00	0.00	0.00
3.90	0.83	0.26	3.18	0.00	0.00	0.00
3.95	0.83	0.26	3.16	0.00	0.00	0.00
4.00	0.83	0.26	3.15	0.00	0.00	0.00
4.05	0.83	0.26	3.14	0.00	0.00	0.00
4.10	0.83	0.27	3.13	0.00	0.00	0.00
4.15	0.83	0.27	3.11	0.00	0.00	0.00
4.20	0.83	0.27	3.10	0.00	0.00	0.00
4.25	0.83	0.27	3.09	0.00	0.00	0.00
4.30	0.83	0.27	3.08	0.00	0.00	0.00
4.35	0.83	0.27	3.07	0.00	0.00	0.00
4.40	0.83	0.27	3.06	0.00	0.00	0.00
4.45	0.83	0.27	3.05	0.00	0.00	0.00
4.50	0.83	0.27	3.04	0.00	0.00	0.00
4.55	0.83	0.27	3.03	0.00	0.00	0.00
4.60	0.83	0.28	3.02	0.00	0.00	0.00
4.65	0.83	0.28	3.01	0.00	0.00	0.00
4.70	0.83	0.28	3.00	0.00	0.00	0.00
4.75	0.83	0.28	2.99	0.00	0.00	0.00
4.80	0.83	0.28	2.98	0.00	0.00	0.00
4.85	0.83	0.28	2.97	0.00	0.00	0.00
4.90	0.83	0.28	2.96	0.00	0.00	0.00
4.95	0.83	0.28	2.96	0.00	0.00	0.00
5.00	0.83	0.28	2.95	0.00	0.00	0.00
5.05	0.83	0.28	2.94	0.00	0.00	0.00
5.10	0.83	0.28	2.93	0.00	0.00	0.00
5.15	0.83	0.28	2.92	0.00	0.00	0.00
5.20	0.83	0.28	2.92	0.00	0.00	0.00
5.25	0.83	0.29	2.91	0.00	0.00	0.00
5.30	0.83	0.29	2.90	0.00	0.00	0.00
5.35	0.83	0.29	2.90	0.00	0.00	0.00
5.40	0.83	0.29	2.89	0.00	0.00	0.00
5.45	0.83	0.29	2.88	0.00	0.00	0.00

5.50	0.83	0.29	2.87	0.00	0.00	0.00
5.55	0.83	0.29	2.87	0.00	0.00	0.00
5.60	0.83	0.29	2.86	0.00	0.00	0.00
5.65	0.83	0.29	2.85	0.00	0.00	0.00
5.70	0.83	0.29	2.85	0.00	0.00	0.00
5.75	0.83	0.29	2.84	0.00	0.00	0.00
5.80	0.83	0.29	2.84	0.00	0.00	0.00
5.85	0.83	0.29	2.83	0.00	0.00	0.00
5.90	0.83	0.29	2.82	0.00	0.00	0.00
5.95	0.83	0.29	2.82	0.00	0.00	0.00
6.00	0.83	0.30	2.81	0.00	0.00	0.00
6.05	0.83	0.30	2.81	0.00	0.00	0.00
6.10	0.83	0.30	2.80	0.00	0.00	0.00
6.15	0.83	0.30	2.80	0.00	0.00	0.00
6.20	0.83	0.30	2.79	0.00	0.00	0.00
6.25	0.83	0.30	2.79	0.00	0.00	0.00
6.30	0.83	0.30	2.78	0.00	0.00	0.00
6.35	0.83	0.30	2.78	0.00	0.00	0.00
6.40	0.83	0.30	2.77	0.00	0.00	0.00
6.45	0.83	0.30	2.77	0.00	0.00	0.00
6.50	0.83	0.30	2.76	0.00	0.00	0.00
6.55	0.83	0.30	2.76	0.00	0.00	0.00
6.60	0.83	0.30	2.75	0.00	0.00	0.00
6.65	0.83	0.30	2.75	0.00	0.00	0.00
6.70	0.83	0.30	2.74	0.00	0.00	0.00
6.75	0.83	0.30	2.74	0.00	0.00	0.00
6.80	0.83	0.30	2.73	0.00	0.00	0.00
6.85	0.83	0.30	2.73	0.00	0.00	0.00
6.90	0.83	0.30	2.73	0.00	0.00	0.00
6.95	0.83	0.31	2.72	0.00	0.00	0.00
7.00	0.83	0.31	2.72	0.00	0.00	0.00
7.05	0.83	0.31	2.71	0.00	0.00	0.00
7.10	0.83	0.31	2.71	0.00	0.00	0.00
7.15	0.83	0.31	2.71	0.00	0.00	0.00
7.20	0.83	0.31	2.70	0.00	0.00	0.00
7.25	0.83	0.31	2.70	0.00	0.00	0.00
7.30	0.83	0.31	2.70	0.00	0.00	0.00
7.35	0.83	0.31	2.69	0.00	0.00	0.00
7.40	0.83	0.31	2.69	0.00	0.00	0.00
7.45	0.83	0.31	2.69	0.00	0.00	0.00
7.50	0.83	0.31	2.68	0.00	0.00	0.00
7.55	0.83	0.31	2.68	0.00	0.00	0.00
7.60	0.83	0.31	2.68	0.00	0.00	0.00
7.65	0.83	0.31	2.68	0.00	0.00	0.00
7.70	0.83	0.31	2.67	0.00	0.00	0.00
7.75	0.83	0.31	2.67	0.00	0.00	0.00
7.80	0.83	0.31	2.67	0.00	0.00	0.00
7.85	0.83	0.31	2.66	0.00	0.00	0.00
7.90	0.83	0.31	2.66	0.00	0.00	0.00
7.95	0.83	0.31	2.66	0.00	0.00	0.00
8.00	0.83	0.31	2.66	0.00	0.00	0.00
8.05	0.83	0.31	2.65	0.00	0.00	0.00
8.10	0.83	0.31	2.65	0.00	0.00	0.00
8.15	0.83	0.31	2.65	0.00	0.00	0.00
8.20	0.83	0.31	2.64	0.00	0.00	0.00
8.25	0.83	0.31	2.64	0.00	0.00	0.00
8.30	0.83	0.31	2.64	0.00	0.00	0.00
8.35	0.83	0.31	2.64	0.00	0.00	0.00
8.40	0.83	0.32	2.64	0.00	0.00	0.00
8.45	0.83	0.32	2.63	0.00	0.00	0.00
8.50	0.83	0.32	2.63	0.00	0.00	0.00
8.55	0.83	0.32	2.63	0.00	0.00	0.00
8.60	0.83	0.32	2.63	0.00	0.00	0.00
8.65	0.83	0.32	2.62	0.00	0.00	0.00
8.70	0.83	0.32	2.62	0.00	0.00	0.00
8.75	0.83	0.32	2.62	0.00	0.00	0.00
8.80	0.83	0.32	2.62	0.00	0.00	0.00
8.85	0.83	0.32	2.61	0.00	0.00	0.00
8.90	0.83	0.32	2.61	0.00	0.00	0.00
8.95	0.83	0.32	2.61	0.00	0.00	0.00
9.00	0.83	0.32	2.61	0.00	0.00	0.00

9.05	0.83	0.32	2.61	0.00	0.00	0.00
9.10	0.83	0.32	2.60	0.00	0.00	0.00
9.15	0.83	0.32	2.60	0.00	0.00	0.00
9.20	0.83	0.32	2.60	0.00	0.00	0.00
9.25	0.83	0.32	2.60	0.00	0.00	0.00
9.30	0.83	0.32	2.60	0.00	0.00	0.00
9.35	0.83	0.32	2.59	0.00	0.00	0.00
9.40	0.83	0.32	2.59	0.00	0.00	0.00
9.45	0.83	0.32	2.59	0.00	0.00	0.00
9.50	0.83	0.32	2.59	0.00	0.00	0.00
9.55	0.83	0.32	2.59	0.00	0.00	0.00
9.60	0.83	0.32	2.59	0.00	0.00	0.00
9.65	0.83	0.32	2.58	0.00	0.00	0.00
9.70	0.83	0.32	2.58	0.00	0.00	0.00
9.75	0.83	0.32	2.58	0.00	0.00	0.00
9.80	0.83	0.32	2.58	0.00	0.00	0.00
9.85	0.83	0.32	2.58	0.00	0.00	0.00
9.90	0.83	0.32	2.58	0.00	0.00	0.00
9.95	0.83	0.32	2.57	0.00	0.00	0.00
10.00	0.83	0.32	2.57	0.00	0.00	0.00
10.05	0.83	0.32	2.57	0.00	0.00	0.00
10.10	0.83	0.32	2.57	0.00	0.00	0.00
10.15	0.83	0.32	2.57	0.00	0.00	0.00
10.20	0.83	0.32	2.57	0.00	0.00	0.00
10.25	0.83	0.32	2.56	0.00	0.00	0.00
10.30	0.83	0.32	2.56	0.00	0.00	0.00
10.35	0.83	0.32	2.56	0.00	0.00	0.00
10.40	0.83	0.32	2.56	0.00	0.00	0.00
10.45	0.83	0.32	2.56	0.00	0.00	0.00
10.50	0.83	0.33	2.56	0.00	0.00	0.00
10.55	0.83	0.33	2.55	0.00	0.00	0.00
10.60	0.83	0.33	2.55	0.00	0.00	0.00
10.65	0.83	0.33	2.55	0.00	0.00	0.00
10.70	0.83	0.33	2.55	0.00	0.00	0.00
10.75	0.83	0.33	2.55	0.00	0.00	0.00
10.80	0.83	0.33	2.55	0.00	0.00	0.00
10.85	0.83	0.33	2.55	0.00	0.00	0.00
10.90	0.83	0.33	2.54	0.00	0.00	0.00
10.95	0.83	0.33	2.54	0.00	0.00	0.00
11.00	0.83	0.33	2.54	0.00	0.00	0.00
11.05	0.83	0.33	2.54	0.00	0.00	0.00
11.10	0.83	0.33	2.54	0.00	0.00	0.00
11.15	0.83	0.33	2.54	0.00	0.00	0.00
11.20	0.83	0.33	2.54	0.00	0.00	0.00
11.25	0.83	0.33	2.53	0.00	0.00	0.00
11.30	0.83	0.33	2.53	0.00	0.00	0.00
11.35	0.83	0.33	2.53	0.00	0.00	0.00
11.40	0.83	0.33	2.53	0.00	0.00	0.00
11.45	0.83	0.33	2.53	0.00	0.00	0.00
11.50	0.83	0.33	2.53	0.00	0.00	0.00
11.55	0.83	0.33	2.53	0.00	0.00	0.00
11.60	0.83	0.33	2.53	0.00	0.00	0.00
11.65	0.83	0.33	2.52	0.00	0.00	0.00
11.70	0.83	0.33	2.52	0.00	0.00	0.00
11.75	0.83	0.33	2.52	0.00	0.00	0.00
11.80	0.83	0.33	2.52	0.00	0.00	0.00
11.85	0.83	0.33	2.52	0.00	0.00	0.00
11.90	0.83	0.33	2.52	0.00	0.00	0.00
11.95	0.83	0.33	2.52	0.00	0.00	0.00
12.00	0.83	0.33	2.52	0.00	0.00	0.00
12.05	0.83	0.33	2.52	0.00	0.00	0.00
12.10	0.83	0.33	2.52	0.00	0.00	0.00
12.15	0.83	0.33	2.52	0.00	0.00	0.00
12.20	0.83	0.33	2.51	0.00	0.00	0.00
12.25	0.83	0.33	2.51	0.00	0.00	0.00
12.30	0.83	0.33	2.51	0.00	0.00	0.00
12.35	0.83	0.33	2.51	0.00	0.00	0.00
12.40	0.83	0.33	2.51	0.00	0.00	0.00
12.45	0.83	0.33	2.51	0.00	0.00	0.00
12.50	0.83	0.33	2.51	0.00	0.00	0.00
12.55	0.83	0.33	2.51	0.00	0.00	0.00

12.60	0.83	0.33	2.51	0.00	0.00	0.00
12.65	0.83	0.33	2.51	0.00	0.00	0.00
12.70	0.83	0.33	2.51	0.00	0.00	0.00
12.75	0.83	0.33	2.51	0.00	0.00	0.00
12.80	0.83	0.33	2.51	0.00	0.00	0.00
12.85	0.83	0.33	2.51	0.00	0.00	0.00
12.90	0.83	0.33	2.51	0.00	0.00	0.00
12.95	0.83	0.33	2.51	0.00	0.00	0.00
13.00	0.83	0.33	2.51	0.00	0.00	0.00
13.05	0.83	0.33	2.51	0.00	0.00	0.00
13.10	0.83	0.33	2.51	0.00	0.00	0.00
13.15	0.83	0.33	2.51	0.00	0.00	0.00
13.20	0.83	0.33	2.51	0.00	0.00	0.00
13.25	0.83	0.33	2.51	0.00	0.00	0.00
13.30	0.83	0.33	2.51	0.00	0.00	0.00
13.35	0.83	0.33	2.51	0.00	0.00	0.00
13.40	0.83	0.33	2.51	0.00	0.00	0.00
13.45	0.83	0.33	2.51	0.00	0.00	0.00
13.50	0.83	0.33	2.51	0.00	0.00	0.00
13.55	0.83	0.33	2.51	0.00	0.00	0.00
13.60	0.83	0.33	2.51	0.00	0.00	0.00
13.65	0.83	0.33	2.51	0.00	0.00	0.00
13.70	0.83	0.33	2.51	0.00	0.00	0.00
13.75	0.83	0.33	2.51	0.00	0.00	0.00
13.80	0.83	0.33	2.51	0.00	0.00	0.00
13.85	0.83	0.33	2.50	0.00	0.00	0.00
13.90	0.83	0.33	2.50	0.00	0.00	0.00
13.95	0.83	0.33	2.50	0.00	0.00	0.00
14.00	0.83	0.33	2.50	0.00	0.00	0.00
14.05	0.83	0.33	2.50	0.00	0.00	0.00
14.10	0.83	0.33	2.50	0.00	0.00	0.00
14.15	0.83	0.33	2.50	0.00	0.00	0.00
14.20	0.83	0.33	2.50	0.00	0.00	0.00
14.25	0.83	0.33	2.50	0.00	0.00	0.00
14.30	0.83	0.33	2.50	0.00	0.00	0.00
14.35	0.83	0.33	2.50	0.00	0.00	0.00
14.40	0.83	0.33	2.50	0.00	0.00	0.00
14.45	0.83	0.33	2.50	0.00	0.00	0.00
14.50	0.83	0.33	2.50	0.00	0.00	0.00
14.55	0.83	0.33	2.50	0.00	0.00	0.00
14.60	0.83	0.33	2.50	0.00	0.00	0.00
14.65	0.83	0.33	2.50	0.00	0.00	0.00
14.70	0.83	0.33	2.50	0.00	0.00	0.00
14.75	0.83	0.33	2.50	0.00	0.00	0.00
14.80	0.83	0.33	2.50	0.00	0.00	0.00
14.85	0.83	0.33	2.50	0.00	0.00	0.00
14.90	0.83	0.33	2.50	0.00	0.00	0.00
14.95	0.83	0.33	2.50	0.00	0.00	0.00
15.00	0.83	0.33	2.50	0.00	0.00	0.00
15.05	0.83	0.33	2.50	0.00	0.00	0.00
15.10	0.83	0.33	2.50	0.00	0.00	0.00
15.15	0.83	0.33	2.50	0.00	0.00	0.00
15.20	0.83	0.33	2.50	0.00	0.00	0.00
15.25	0.83	0.33	2.50	0.00	0.00	0.00
15.30	0.83	0.33	2.50	0.00	0.00	0.00
15.35	0.83	0.33	2.50	0.00	0.00	0.00
15.40	0.83	0.33	2.50	0.00	0.00	0.00
15.45	0.83	0.33	2.50	0.00	0.00	0.00
15.50	0.83	0.33	2.50	0.00	0.00	0.00
15.55	0.83	0.33	2.50	0.00	0.00	0.00
15.60	0.83	0.33	2.49	0.00	0.00	0.00
15.65	0.83	0.33	2.49	0.00	0.00	0.00
15.70	0.83	0.33	2.49	0.00	0.00	0.00
15.75	0.83	0.33	2.49	0.00	0.00	0.00
15.80	0.83	0.33	2.49	0.00	0.00	0.00
15.85	0.83	0.33	2.49	0.00	0.00	0.00
15.90	0.83	0.33	2.49	0.00	0.00	0.00
15.95	0.83	0.33	2.49	0.00	0.00	0.00
16.00	0.83	0.33	2.49	0.00	0.00	0.00
16.05	0.83	0.33	2.49	0.00	0.00	0.00
16.10	0.83	0.33	2.49	0.00	0.00	0.00

16.15	0.83	0.33	2.49	0.00	0.00	0.00
16.20	0.83	0.33	2.49	0.00	0.00	0.00
16.25	0.83	0.33	2.49	0.00	0.00	0.00
16.30	0.83	0.33	2.49	0.00	0.00	0.00
16.35	0.83	0.33	2.49	0.00	0.00	0.00
16.40	0.83	0.33	2.49	0.00	0.00	0.00
16.45	0.83	0.33	2.49	0.00	0.00	0.00
16.50	0.83	0.33	2.49	0.00	0.00	0.00
16.55	0.83	0.33	2.49	0.00	0.00	0.00
16.60	0.83	0.33	2.49	0.00	0.00	0.00
16.65	0.83	0.33	2.49	0.00	0.00	0.00
16.70	0.83	0.33	2.49	0.00	0.00	0.00
16.75	0.83	0.33	2.49	0.00	0.00	0.00
16.80	0.83	0.33	2.49	0.00	0.00	0.00
16.85	0.83	0.33	2.48	0.00	0.00	0.00
16.90	0.83	0.33	2.48	0.00	0.00	0.00
16.95	0.83	0.33	2.48	0.00	0.00	0.00
17.00	0.83	0.33	2.48	0.00	0.00	0.00
17.05	0.83	0.33	2.48	0.00	0.00	0.00
17.10	0.83	0.33	2.48	0.00	0.00	0.00
17.15	0.83	0.33	2.48	0.00	0.00	0.00
17.20	0.83	0.33	2.48	0.00	0.00	0.00
17.25	0.83	0.33	2.48	0.00	0.00	0.00
17.30	0.83	0.33	2.48	0.00	0.00	0.00
17.35	0.83	0.33	2.48	0.00	0.00	0.00
17.40	0.83	0.33	2.48	0.00	0.00	0.00
17.45	0.83	0.33	2.48	0.00	0.00	0.00
17.50	0.83	0.33	2.48	0.00	0.00	0.00
17.55	0.83	0.33	2.48	0.00	0.00	0.00
17.60	0.83	0.33	2.48	0.00	0.00	0.00
17.65	0.83	0.33	2.48	0.00	0.00	0.00
17.70	0.83	0.33	2.48	0.00	0.00	0.00
17.75	0.83	0.33	2.48	0.00	0.00	0.00
17.80	0.83	0.33	2.48	0.00	0.00	0.00
17.85	0.83	0.33	2.48	0.00	0.00	0.00
17.90	0.83	0.33	2.48	0.00	0.00	0.00
17.95	0.83	0.33	2.48	0.00	0.00	0.00
18.00	0.83	0.33	2.48	0.00	0.00	0.00
18.05	0.83	0.33	2.48	0.00	0.00	0.00
18.10	0.83	0.33	2.48	0.00	0.00	0.00
18.15	0.83	0.33	2.48	0.00	0.00	0.00
18.20	0.83	0.33	2.48	0.00	0.00	0.00
18.25	0.83	0.33	2.48	0.00	0.00	0.00
18.30	0.83	0.33	2.48	0.00	0.00	0.00
18.35	0.83	0.33	2.48	0.00	0.00	0.00
18.40	0.83	0.33	2.48	0.00	0.00	0.00
18.45	0.83	0.33	2.48	0.00	0.00	0.00
18.50	0.83	0.33	2.48	0.00	0.00	0.00
18.55	0.83	0.33	2.48	0.00	0.00	0.00
18.60	0.83	0.34	2.48	0.00	0.00	0.00
18.65	0.83	0.34	2.48	0.00	0.00	0.00
18.70	0.83	0.34	2.48	0.00	0.00	0.00
18.75	0.83	0.34	2.48	0.00	0.00	0.00
18.80	0.83	0.34	2.48	0.00	0.00	0.00
18.85	0.83	0.34	2.48	0.00	0.00	0.00
18.90	0.83	0.34	2.48	0.00	0.00	0.00
18.95	0.83	0.34	2.48	0.00	0.00	0.00
19.00	0.83	0.34	2.48	0.00	0.00	0.00
19.05	0.83	0.34	2.48	0.00	0.00	0.00
19.10	0.83	0.34	2.48	0.00	0.00	0.00
19.15	0.83	0.34	2.48	0.00	0.00	0.00
19.20	0.83	0.34	2.48	0.00	0.00	0.00
19.25	0.83	0.34	2.48	0.00	0.00	0.00
19.30	0.83	0.34	2.48	0.00	0.00	0.00
19.35	0.83	0.34	2.48	0.00	0.00	0.00
19.40	0.83	0.34	2.48	0.00	0.00	0.00
19.45	0.83	0.34	2.48	0.00	0.00	0.00
19.50	0.83	0.34	2.48	0.00	0.00	0.00
19.55	0.83	0.34	2.48	0.00	0.00	0.00
19.60	0.83	0.34	2.48	0.00	0.00	0.00
19.65	0.83	0.34	2.48	0.00	0.00	0.00

19.70	0.83	0.34	2.48	0.00	0.00	0.00
19.75	0.83	0.34	2.48	0.00	0.00	0.00
19.80	0.83	0.34	2.48	0.00	0.00	0.00
19.85	0.83	0.34	2.48	0.00	0.00	0.00
19.90	0.83	0.34	2.48	0.00	0.00	0.00
19.95	0.83	0.34	2.48	0.00	0.00	0.00
20.00	0.83	0.34	2.48	0.00	0.00	0.00
20.05	0.83	0.34	2.48	0.00	0.00	0.00
20.10	0.83	0.34	2.48	0.00	0.00	0.00
20.15	0.83	0.34	2.48	0.00	0.00	0.00
20.20	0.83	0.34	2.48	0.00	0.00	0.00
20.25	0.83	0.34	2.48	0.00	0.00	0.00
20.30	0.83	0.34	2.48	0.00	0.00	0.00
20.35	0.83	0.34	2.48	0.00	0.00	0.00
20.40	0.83	0.34	2.48	0.00	0.00	0.00
20.45	0.83	0.34	2.48	0.00	0.00	0.00
20.50	0.83	0.34	2.47	0.00	0.00	0.00
20.55	0.83	0.34	2.47	0.00	0.00	0.00
20.60	0.83	0.34	2.47	0.00	0.00	0.00
20.65	0.83	0.34	2.47	0.00	0.00	0.00
20.70	0.83	0.34	2.47	0.00	0.00	0.00
20.75	0.83	0.34	2.47	0.00	0.00	0.00
20.80	0.83	0.34	2.47	0.00	0.00	0.00
20.85	0.83	0.34	2.47	0.00	0.00	0.00
20.90	0.83	0.34	2.47	0.00	0.00	0.00
20.95	0.83	0.34	2.47	0.00	0.00	0.00
21.00	0.83	0.34	2.47	0.00	0.00	0.00
21.05	0.83	0.34	2.47	0.00	0.00	0.00
21.10	0.83	0.34	2.47	0.00	0.00	0.00
21.15	0.83	0.34	2.47	0.00	0.00	0.00
21.20	0.83	0.34	2.47	0.00	0.00	0.00
21.25	0.83	0.34	2.47	0.00	0.00	0.00
21.30	0.83	0.34	2.47	0.00	0.00	0.00
21.35	0.83	0.34	2.47	0.00	0.00	0.00
21.40	0.83	0.34	2.47	0.00	0.00	0.00
21.45	0.83	0.34	2.47	0.00	0.00	0.00
21.50	0.83	0.34	2.47	0.00	0.00	0.00
21.55	0.83	0.34	2.47	0.00	0.00	0.00
21.60	0.83	0.34	2.47	0.00	0.00	0.00
21.65	0.83	0.34	2.47	0.00	0.00	0.00
21.70	0.83	0.34	2.47	0.00	0.00	0.00
21.75	0.83	0.34	2.47	0.00	0.00	0.00
21.80	0.83	0.34	2.47	0.00	0.00	0.00
21.85	0.83	0.34	2.47	0.00	0.00	0.00
21.90	0.83	0.34	2.47	0.00	0.00	0.00
21.95	0.83	0.34	2.47	0.00	0.00	0.00
22.00	0.83	0.34	2.47	0.00	0.00	0.00
22.05	0.83	0.34	2.47	0.00	0.00	0.00
22.10	0.83	0.34	2.47	0.00	0.00	0.00
22.15	0.83	0.34	2.47	0.00	0.00	0.00
22.20	0.83	0.34	2.47	0.00	0.00	0.00
22.25	0.83	0.34	2.46	0.00	0.00	0.00
22.30	0.83	0.34	2.46	0.00	0.00	0.00
22.35	0.83	0.34	2.46	0.00	0.00	0.00
22.40	0.83	0.34	2.46	0.00	0.00	0.00
22.45	0.83	0.34	2.46	0.00	0.00	0.00
22.50	0.83	0.34	2.46	0.00	0.00	0.00
22.55	0.83	0.34	2.46	0.00	0.00	0.00
22.60	0.83	0.34	2.46	0.00	0.00	0.00
22.65	0.83	0.34	2.46	0.00	0.00	0.00
22.70	0.83	0.34	2.46	0.00	0.00	0.00
22.75	0.83	0.34	2.46	0.00	0.00	0.00
22.80	0.83	0.34	2.46	0.00	0.00	0.00
22.85	0.83	0.34	2.46	0.00	0.00	0.00
22.90	0.83	0.34	2.46	0.00	0.00	0.00
22.95	0.83	0.34	2.46	0.00	0.00	0.00
23.00	0.83	0.34	2.46	0.00	0.00	0.00
23.05	0.83	0.34	2.46	0.00	0.00	0.00
23.10	0.83	0.34	2.46	0.00	0.00	0.00
23.15	0.83	0.34	2.46	0.00	0.00	0.00
23.20	0.83	0.34	2.46	0.00	0.00	0.00

23.25	0.83	0.34	2.46	0.00	0.00	0.00
23.30	0.83	0.34	2.46	0.00	0.00	0.00
23.35	0.83	0.34	2.46	0.00	0.00	0.00
23.40	0.83	0.34	2.46	0.00	0.00	0.00
23.45	0.83	0.34	2.46	0.00	0.00	0.00
23.50	0.83	0.34	2.46	0.00	0.00	0.00
23.55	0.83	0.34	2.46	0.00	0.00	0.00
23.60	0.83	0.34	2.46	0.00	0.00	0.00
23.65	0.83	0.34	2.46	0.00	0.00	0.00
23.70	0.83	0.34	2.46	0.00	0.00	0.00
23.75	0.83	0.34	2.46	0.00	0.00	0.00
23.80	0.83	0.34	2.46	0.00	0.00	0.00
23.85	0.83	0.34	2.46	0.00	0.00	0.00
23.90	0.83	0.34	2.46	0.00	0.00	0.00
23.95	0.83	0.34	2.46	0.00	0.00	0.00
24.00	0.83	0.34	2.46	0.00	0.00	0.00
24.05	0.83	0.34	2.46	0.00	0.00	0.00
24.10	0.83	0.34	2.46	0.00	0.00	0.00
24.15	0.83	0.34	2.46	0.00	0.00	0.00
24.20	0.83	0.34	2.46	0.00	0.00	0.00
24.25	0.83	0.34	2.46	0.00	0.00	0.00
24.30	0.83	0.34	2.46	0.00	0.00	0.00
24.35	0.83	0.34	2.46	0.00	0.00	0.00
24.40	0.83	0.34	2.46	0.00	0.00	0.00
24.45	0.83	0.34	2.46	0.00	0.00	0.00
24.50	0.83	0.34	2.46	0.00	0.00	0.00
24.55	0.83	0.34	2.46	0.00	0.00	0.00
24.60	0.83	0.34	2.46	0.00	0.00	0.00
24.65	0.83	0.34	2.46	0.00	0.00	0.00
24.70	0.83	0.34	2.46	0.00	0.00	0.00
24.75	0.83	0.34	2.46	0.00	0.00	0.00
24.80	0.83	0.34	2.46	0.00	0.00	0.00
24.85	0.83	0.34	2.46	0.00	0.00	0.00
24.90	0.83	0.34	2.46	0.00	0.00	0.00
24.95	0.83	0.34	2.45	0.00	0.00	0.00
25.00	0.83	0.34	2.45	0.00	0.00	0.00
25.05	0.83	0.34	2.45	0.00	0.00	0.00
25.10	0.83	0.34	2.45	0.00	0.00	0.00
25.15	0.83	0.34	2.45	0.00	0.00	0.00
25.20	0.83	0.34	2.45	0.00	0.00	0.00
25.25	0.83	0.34	2.45	0.00	0.00	0.00
25.30	0.83	0.34	2.45	0.00	0.00	0.00
25.35	0.83	0.34	2.46	0.00	0.00	0.00
25.40	0.83	0.34	2.46	0.00	0.00	0.00
25.45	0.83	0.34	2.46	0.00	0.00	0.00
25.50	0.83	0.34	2.46	0.00	0.00	0.00
25.55	0.83	0.34	2.46	0.00	0.00	0.00
25.60	0.83	0.34	2.46	0.00	0.00	0.00
25.65	0.83	0.34	2.46	0.00	0.00	0.00
25.70	0.83	0.34	2.46	0.00	0.00	0.00
25.75	0.83	0.34	2.46	0.00	0.00	0.00
25.80	0.83	0.34	2.46	0.00	0.00	0.00
25.85	0.83	0.34	2.46	0.00	0.00	0.00
25.90	0.83	0.34	2.46	0.00	0.00	0.00
25.95	0.83	0.34	2.46	0.00	0.00	0.00
26.00	0.83	0.34	2.46	0.00	0.00	0.00
26.05	0.83	0.34	2.46	0.00	0.00	0.00
26.10	0.83	0.34	2.46	0.00	0.00	0.00
26.15	0.83	0.34	2.46	0.00	0.00	0.00
26.20	0.83	0.34	2.46	0.00	0.00	0.00
26.25	0.83	0.34	2.46	0.00	0.00	0.00
26.30	0.83	0.34	2.46	0.00	0.00	0.00
26.35	0.83	0.34	2.46	0.00	0.00	0.00
26.40	0.83	0.34	2.46	0.00	0.00	0.00
26.45	0.83	0.34	2.46	0.00	0.00	0.00
26.50	0.83	0.34	2.46	0.00	0.00	0.00
26.55	0.83	0.34	2.46	0.00	0.00	0.00
26.60	0.83	0.34	2.46	0.00	0.00	0.00
26.65	0.83	0.34	2.46	0.00	0.00	0.00
26.70	0.83	0.34	2.46	0.00	0.00	0.00
26.75	0.83	0.34	2.46	0.00	0.00	0.00

26.80	0.83	0.34	2.46	0.00	0.00	0.00
26.85	0.83	0.34	2.46	0.00	0.00	0.00
26.90	0.83	0.34	2.46	0.00	0.00	0.00
26.95	0.83	0.34	2.46	0.00	0.00	0.00
27.00	0.83	0.34	2.46	0.00	0.00	0.00
27.05	0.83	0.34	2.46	0.00	0.00	0.00
27.10	0.83	0.34	2.46	0.00	0.00	0.00
27.15	0.83	0.34	2.46	0.00	0.00	0.00
27.20	0.83	0.34	2.46	0.00	0.00	0.00
27.25	0.83	0.34	2.46	0.00	0.00	0.00
27.30	0.83	0.34	2.46	0.00	0.00	0.00
27.35	0.83	0.34	2.46	0.00	0.00	0.00
27.40	0.83	0.34	2.46	0.00	0.00	0.00
27.45	0.83	0.34	2.46	0.00	0.00	0.00
27.50	0.83	0.34	2.46	0.00	0.00	0.00
27.55	0.83	0.34	2.46	0.00	0.00	0.00
27.60	0.83	0.34	2.46	0.00	0.00	0.00
27.65	0.83	0.34	2.46	0.00	0.00	0.00
27.70	0.83	0.34	2.46	0.00	0.00	0.00
27.75	0.83	0.34	2.46	0.00	0.00	0.00
27.80	0.83	0.34	2.46	0.00	0.00	0.00
27.85	0.83	0.34	2.46	0.00	0.00	0.00
27.90	0.83	0.34	2.46	0.00	0.00	0.00
27.95	0.83	0.34	2.46	0.00	0.00	0.00
28.00	0.83	0.34	2.46	0.00	0.00	0.00
28.05	0.83	0.34	2.46	0.00	0.00	0.00
28.10	0.83	0.34	2.46	0.00	0.00	0.00
28.15	0.83	0.34	2.46	0.00	0.00	0.00
28.20	0.83	0.34	2.46	0.00	0.00	0.00
28.25	0.83	0.34	2.46	0.00	0.00	0.00
28.30	0.83	0.34	2.46	0.00	0.00	0.00
28.35	0.83	0.34	2.46	0.00	0.00	0.00
28.40	0.83	0.34	2.46	0.00	0.00	0.00
28.45	0.83	0.34	2.46	0.00	0.00	0.00
28.50	0.83	0.34	2.46	0.00	0.00	0.00
28.55	0.83	0.34	2.46	0.00	0.00	0.00
28.60	0.83	0.34	2.46	0.00	0.00	0.00
28.65	0.83	0.34	2.46	0.00	0.00	0.00
28.70	0.83	0.34	2.46	0.00	0.00	0.00
28.75	0.83	0.34	2.46	0.00	0.00	0.00
28.80	0.83	0.34	2.46	0.00	0.00	0.00
28.85	0.83	0.34	2.46	0.00	0.00	0.00
28.90	0.83	0.34	2.46	0.00	0.00	0.00
28.95	0.83	0.34	2.46	0.00	0.00	0.00
29.00	0.83	0.34	2.46	0.00	0.00	0.00
29.05	0.83	0.34	2.46	0.00	0.00	0.00
29.10	0.83	0.34	2.46	0.00	0.00	0.00
29.15	0.83	0.34	2.46	0.00	0.00	0.00
29.20	0.83	0.34	2.46	0.00	0.00	0.00
29.25	0.83	0.34	2.46	0.00	0.00	0.00
29.30	0.83	0.34	2.46	0.00	0.00	0.00
29.35	0.83	0.34	2.46	0.00	0.00	0.00
29.40	0.83	0.34	2.46	0.00	0.00	0.00
29.45	0.83	0.34	2.46	0.00	0.00	0.00
29.50	0.83	0.34	2.46	0.00	0.00	0.00
29.55	0.83	0.34	2.46	0.00	0.00	0.00
29.60	0.83	0.34	2.46	0.00	0.00	0.00
29.65	0.83	0.34	2.46	0.00	0.00	0.00
29.70	0.83	0.34	2.46	0.00	0.00	0.00
29.75	0.83	0.34	2.46	0.00	0.00	0.00
29.80	0.83	0.34	2.46	0.00	0.00	0.00
29.85	0.83	0.34	2.46	0.00	0.00	0.00
29.90	0.83	0.34	2.46	0.00	0.00	0.00
29.95	0.83	0.34	2.46	0.00	0.00	0.00
30.00	0.83	0.34	2.46	0.00	0.00	0.00
30.05	0.83	0.34	2.47	0.00	0.00	0.00
30.10	0.83	0.34	2.47	0.00	0.00	0.00
30.15	0.83	0.34	2.47	0.00	0.00	0.00
30.20	0.83	0.34	2.47	0.00	0.00	0.00
30.25	0.83	0.34	2.47	0.00	0.00	0.00
30.30	0.83	0.34	2.47	0.00	0.00	0.00

30.35	0.83	0.34	2.47	0.00	0.00	0.00
30.40	0.83	0.34	2.47	0.00	0.00	0.00
30.45	0.83	0.34	2.47	0.00	0.00	0.00
30.50	0.83	0.34	2.47	0.00	0.00	0.00
30.55	0.83	0.34	2.47	0.00	0.00	0.00
30.60	0.83	0.34	2.48	0.00	0.00	0.00
30.65	0.83	0.34	2.48	0.00	0.00	0.00
30.70	0.83	0.34	2.48	0.00	0.00	0.00
30.75	0.83	0.34	2.48	0.00	0.00	0.00
30.80	0.83	0.34	2.48	0.00	0.00	0.00
30.85	0.83	0.33	2.48	0.00	0.00	0.00
30.90	0.83	0.33	2.48	0.00	0.00	0.00
30.95	0.83	0.33	2.48	0.00	0.00	0.00
31.00	0.83	0.33	2.48	0.00	0.00	0.00
31.05	0.83	0.33	2.48	0.00	0.00	0.00
31.10	0.83	0.33	2.49	0.00	0.00	0.00
31.15	0.83	0.33	2.49	0.00	0.00	0.00
31.20	0.83	0.33	2.49	0.00	0.00	0.00
31.25	0.83	0.33	2.49	0.00	0.00	0.00
31.30	0.83	0.33	2.49	0.00	0.00	0.00
31.35	0.83	0.33	2.49	0.00	0.00	0.00
31.40	0.83	0.33	2.49	0.00	0.00	0.00
31.45	0.83	0.33	2.49	0.00	0.00	0.00
31.50	0.83	0.33	2.49	0.00	0.00	0.00
31.55	0.83	0.33	2.49	0.00	0.00	0.00
31.60	0.83	0.33	2.49	0.00	0.00	0.00
31.65	0.83	0.33	2.50	0.00	0.00	0.00
31.70	0.83	0.33	2.50	0.00	0.00	0.00
31.75	0.83	0.33	2.50	0.00	0.00	0.00
31.80	0.83	0.33	2.50	0.00	0.00	0.00
31.85	0.83	0.33	2.50	0.00	0.00	0.00
31.90	0.83	0.33	2.50	0.00	0.00	0.00
31.95	0.83	0.33	2.50	0.00	0.00	0.00
32.00	0.83	0.33	2.50	0.00	0.00	0.00
32.05	0.83	0.33	2.50	0.00	0.00	0.00
32.10	0.83	0.33	2.50	0.00	0.00	0.00
32.15	0.83	0.33	2.51	0.00	0.00	0.00
32.20	0.83	0.33	2.51	0.00	0.00	0.00
32.25	0.83	0.33	2.51	0.00	0.00	0.00
32.30	0.83	0.33	2.51	0.00	0.00	0.00
32.35	0.83	0.33	2.51	0.00	0.00	0.00
32.40	0.83	0.33	2.51	0.00	0.00	0.00
32.45	0.83	0.33	2.51	0.00	0.00	0.00
32.50	0.83	0.33	2.51	0.00	0.00	0.00
32.55	0.83	0.33	2.51	0.00	0.00	0.00
32.60	0.83	0.33	2.51	0.00	0.00	0.00
32.65	0.83	0.33	2.52	0.00	0.00	0.00
32.70	0.83	0.33	2.52	0.00	0.00	0.00
32.75	0.83	0.33	2.52	0.00	0.00	0.00
32.80	0.83	0.33	2.52	0.00	0.00	0.00
32.85	0.83	0.33	2.52	0.00	0.00	0.00
32.90	0.83	0.33	2.52	0.00	0.00	0.00
32.95	0.83	0.33	2.52	0.00	0.00	0.00
33.00	0.83	0.33	2.52	0.00	0.00	0.00
33.05	0.83	0.33	2.52	0.00	0.00	0.00
33.10	0.83	0.33	2.52	0.00	0.00	0.00
33.15	0.83	0.33	2.53	0.00	0.00	0.00
33.20	0.83	0.33	2.53	0.00	0.00	0.00
33.25	0.83	0.33	2.53	0.00	0.00	0.00
33.30	0.83	0.33	2.53	0.00	0.00	0.00
33.35	0.83	0.33	2.53	0.00	0.00	0.00
33.40	0.83	0.33	2.53	0.00	0.00	0.00
33.45	0.83	0.33	2.53	0.00	0.00	0.00
33.50	0.83	0.33	2.53	0.00	0.00	0.00
33.55	0.83	0.33	2.53	0.00	0.00	0.00
33.60	0.83	0.33	2.53	0.00	0.00	0.00
33.65	0.83	0.33	2.54	0.00	0.00	0.00
33.70	0.83	0.33	2.54	0.00	0.00	0.00
33.75	0.83	0.33	2.54	0.00	0.00	0.00
33.80	0.83	0.33	2.54	0.00	0.00	0.00
33.85	0.83	0.33	2.54	0.00	0.00	0.00

33.90	0.83	0.33	2.54	0.00	0.00	0.00
33.95	0.83	0.33	2.54	0.00	0.00	0.00
34.00	0.83	0.33	2.54	0.00	0.00	0.00
34.05	0.83	0.33	2.54	0.00	0.00	0.00
34.10	0.83	0.33	2.55	0.00	0.00	0.00
34.15	0.83	0.33	2.55	0.00	0.00	0.00
34.20	0.83	0.33	2.55	0.00	0.00	0.00
34.25	0.83	0.33	2.55	0.00	0.00	0.00
34.30	0.83	0.33	2.55	0.00	0.00	0.00
34.35	0.83	0.33	2.55	0.00	0.00	0.00
34.40	0.83	0.33	2.55	0.00	0.00	0.00
34.45	0.83	0.33	2.55	0.00	0.00	0.00
34.50	0.83	0.33	2.55	0.00	0.00	0.00
34.55	0.83	0.33	2.55	0.00	0.00	0.00
34.60	0.83	0.33	2.56	0.00	0.00	0.00
34.65	0.83	0.32	2.56	0.00	0.00	0.00
34.70	0.83	0.32	2.56	0.00	0.00	0.00
34.75	0.83	0.32	2.56	0.00	0.00	0.00
34.80	0.83	0.32	2.56	0.00	0.00	0.00
34.85	0.83	0.32	2.56	0.00	0.00	0.00
34.90	0.83	0.32	2.56	0.00	0.00	0.00
34.95	0.83	0.32	2.56	0.00	0.00	0.00
35.00	0.83	0.32	2.56	0.00	0.00	0.00
35.05	0.83	0.32	2.56	0.00	0.00	0.00
35.10	0.83	0.32	2.57	0.00	0.00	0.00
35.15	0.83	0.32	2.57	0.00	0.00	0.00
35.20	0.83	0.32	2.57	0.00	0.00	0.00
35.25	0.83	0.32	2.57	0.00	0.00	0.00
35.30	0.83	0.32	2.57	0.00	0.00	0.00
35.35	0.83	0.32	2.57	0.00	0.00	0.00
35.40	0.83	0.32	2.57	0.00	0.00	0.00
35.45	0.83	0.32	2.57	0.00	0.00	0.00
35.50	0.83	0.32	2.58	0.00	0.00	0.00
35.55	0.83	0.32	2.58	0.00	0.00	0.00
35.60	0.83	0.32	2.58	0.00	0.00	0.00
35.65	0.83	0.32	2.58	0.00	0.00	0.00
35.70	0.83	0.32	2.58	0.00	0.00	0.00
35.75	0.83	0.32	2.58	0.00	0.00	0.00
35.80	0.83	0.32	2.58	0.00	0.00	0.00
35.85	0.83	0.32	2.58	0.00	0.00	0.00
35.90	0.83	0.32	2.58	0.00	0.00	0.00
35.95	0.83	0.32	2.59	0.00	0.00	0.00
36.00	0.83	0.32	2.59	0.00	0.00	0.00
36.05	0.83	0.32	2.59	0.00	0.00	0.00
36.10	0.83	0.32	2.59	0.00	0.00	0.00
36.15	0.83	0.32	2.59	0.00	0.00	0.00
36.20	0.83	0.32	2.59	0.00	0.00	0.00
36.25	0.83	0.32	2.59	0.00	0.00	0.00
36.30	0.83	0.32	2.59	0.00	0.00	0.00
36.35	0.83	0.32	2.60	0.00	0.00	0.00
36.40	0.83	0.32	2.60	0.00	0.00	0.00
36.45	0.83	0.32	2.60	0.00	0.00	0.00
36.50	0.83	0.32	2.60	0.00	0.00	0.00
36.55	0.83	0.32	2.60	0.00	0.00	0.00
36.60	0.83	0.32	2.60	0.00	0.00	0.00
36.65	0.83	0.32	2.60	0.00	0.00	0.00
36.70	0.83	0.32	2.60	0.00	0.00	0.00
36.75	0.83	0.32	2.60	0.00	0.00	0.00
36.80	0.83	0.32	2.61	0.00	0.00	0.00
36.85	0.83	0.32	2.61	0.00	0.00	0.00
36.90	0.83	0.32	2.61	0.00	0.00	0.00
36.95	0.83	0.32	2.61	0.00	0.00	0.00
37.00	0.83	0.32	2.61	0.00	0.00	0.00
37.05	0.83	0.32	2.61	0.00	0.00	0.00
37.10	0.83	0.32	2.61	0.00	0.00	0.00
37.15	0.83	0.32	2.61	0.00	0.00	0.00
37.20	0.83	0.32	2.62	0.00	0.00	0.00
37.25	0.83	0.32	2.62	0.00	0.00	0.00
37.30	0.83	0.32	2.62	0.00	0.00	0.00
37.35	0.83	0.32	2.62	0.00	0.00	0.00
37.40	0.83	0.32	2.62	0.00	0.00	0.00

37.45	0.83	0.32	2.62	0.00	0.00	0.00
37.50	0.83	0.32	2.62	0.00	0.00	0.00
37.55	0.83	0.32	2.62	0.00	0.00	0.00
37.60	0.83	0.32	2.63	0.00	0.00	0.00
37.65	0.83	0.32	2.63	0.00	0.00	0.00
37.70	0.83	0.32	2.63	0.00	0.00	0.00
37.75	0.83	0.32	2.63	0.00	0.00	0.00
37.80	0.83	0.32	2.63	0.00	0.00	0.00
37.85	0.83	0.32	2.63	0.00	0.00	0.00
37.90	0.83	0.32	2.63	0.00	0.00	0.00
37.95	0.83	0.32	2.63	0.00	0.00	0.00
38.00	0.83	0.32	2.63	0.00	0.00	0.00
38.05	0.83	0.32	2.64	0.00	0.00	0.00
38.10	0.83	0.31	2.64	0.00	0.00	0.00
38.15	0.83	0.31	2.64	0.00	0.00	0.00
38.20	0.83	0.31	2.64	0.00	0.00	0.00
38.25	0.83	0.31	2.64	0.00	0.00	0.00
38.30	0.83	0.31	2.64	0.00	0.00	0.00
38.35	0.83	0.31	2.64	0.00	0.00	0.00
38.40	0.83	0.31	2.64	0.00	0.00	0.00
38.45	0.83	0.31	2.65	0.00	0.00	0.00
38.50	0.83	0.31	2.65	0.00	0.00	0.00
38.55	0.83	0.31	2.65	0.00	0.00	0.00
38.60	0.83	0.31	2.65	0.00	0.00	0.00
38.65	0.83	0.31	2.65	0.00	0.00	0.00
38.70	0.83	0.31	2.65	0.00	0.00	0.00
38.75	0.83	0.31	2.65	0.00	0.00	0.00
38.80	0.83	0.31	2.65	0.00	0.00	0.00
38.85	0.83	0.31	2.66	0.00	0.00	0.00
38.90	0.83	0.31	2.66	0.00	0.00	0.00
38.95	0.83	0.31	2.66	0.00	0.00	0.00
39.00	0.83	0.31	2.66	0.00	0.00	0.00
39.05	0.83	0.31	2.66	0.00	0.00	0.00
39.10	0.83	0.31	2.66	0.00	0.00	0.00
39.15	0.83	0.31	2.66	0.00	0.00	0.00
39.20	0.83	0.31	2.66	0.00	0.00	0.00
39.25	0.83	0.31	2.67	0.00	0.00	0.00
39.30	0.83	0.31	2.67	0.00	0.00	0.00
39.35	0.83	0.31	2.67	0.00	0.00	0.00
39.40	0.83	0.31	2.67	0.00	0.00	0.00
39.45	0.83	0.31	2.67	0.00	0.00	0.00
39.50	0.83	0.31	2.67	0.00	0.00	0.00
39.55	0.83	0.31	2.67	0.00	0.00	0.00
39.60	0.83	0.31	2.67	0.00	0.00	0.00
39.65	0.83	0.31	2.68	0.00	0.00	0.00
39.70	0.83	0.31	2.68	0.00	0.00	0.00
39.75	0.83	0.31	2.68	0.00	0.00	0.00
39.80	0.83	0.31	2.68	0.00	0.00	0.00
39.85	0.83	0.31	2.68	0.00	0.00	0.00
39.90	0.83	0.31	2.68	0.00	0.00	0.00
39.95	0.83	0.31	2.68	0.00	0.00	0.00
40.00	0.83	0.31	2.68	0.00	0.00	0.00
40.05	0.83	0.31	2.69	0.00	0.00	0.00
40.10	0.83	0.31	2.69	0.00	0.00	0.00
40.15	0.83	0.31	2.69	0.00	0.00	0.00
40.20	0.83	0.31	2.69	0.00	0.00	0.00
40.25	0.83	0.31	2.69	0.00	0.00	0.00
40.30	0.83	0.31	2.69	0.00	0.00	0.00
40.35	0.83	0.31	2.69	0.00	0.00	0.00
40.40	0.83	0.31	2.70	0.00	0.00	0.00
40.45	0.83	0.31	2.70	0.00	0.00	0.00
40.50	0.83	0.31	2.70	0.00	0.00	0.00
40.55	0.83	0.31	2.70	0.00	0.00	0.00
40.60	0.83	0.31	2.70	0.00	0.00	0.00
40.65	0.83	0.31	2.70	0.00	0.00	0.00
40.70	0.83	0.31	2.70	0.00	0.00	0.00
40.75	0.83	0.31	2.70	0.00	0.00	0.00
40.80	0.83	0.31	2.71	0.00	0.00	0.00
40.85	0.83	0.31	2.71	0.00	0.00	0.00
40.90	0.83	0.31	2.71	0.00	0.00	0.00
40.95	0.83	0.31	2.71	0.00	0.00	0.00

41.00	0.83	0.31	2.71	0.00	0.00	0.00
41.05	0.83	0.31	2.71	0.00	0.00	0.00
41.10	0.83	0.31	2.71	0.00	0.00	0.00
41.15	0.83	0.31	2.72	0.00	0.00	0.00
41.20	0.83	0.31	2.72	0.00	0.00	0.00
41.25	0.83	0.31	2.72	0.00	0.00	0.00
41.30	0.83	0.31	2.72	0.00	0.00	0.00
41.35	0.83	0.31	2.72	0.00	0.00	0.00
41.40	0.83	0.31	2.72	0.00	0.00	0.00
41.45	0.83	0.31	2.72	0.00	0.00	0.00
41.50	0.83	0.30	2.72	0.00	0.00	0.00
41.55	0.83	0.30	2.73	0.00	0.00	0.00
41.60	0.83	0.30	2.73	0.00	0.00	0.00
41.65	0.83	0.30	2.73	0.00	0.00	0.00
41.70	0.83	0.30	2.73	0.00	0.00	0.00
41.75	0.83	0.30	2.73	0.00	0.00	0.00
41.80	0.83	0.30	2.73	0.00	0.00	0.00
41.85	0.83	0.30	2.73	0.00	0.00	0.00
41.90	0.83	0.30	2.74	0.00	0.00	0.00
41.95	0.83	0.30	2.74	0.00	0.00	0.00
42.00	0.83	0.30	2.74	0.00	0.00	0.00
42.05	0.83	0.30	2.74	0.00	0.00	0.00
42.10	0.83	0.30	2.74	0.00	0.00	0.00
42.15	0.83	0.30	2.74	0.00	0.00	0.00
42.20	0.83	0.30	2.74	0.00	0.00	0.00
42.25	0.83	0.30	2.75	0.00	0.00	0.00
42.30	0.83	0.30	2.75	0.00	0.00	0.00
42.35	0.83	0.30	2.75	0.00	0.00	0.00
42.40	0.83	0.30	2.75	0.00	0.00	0.00
42.45	0.83	0.30	2.75	0.00	0.00	0.00
42.50	0.83	0.30	2.75	0.00	0.00	0.00
42.55	0.83	0.30	2.75	0.00	0.00	0.00
42.60	0.83	0.30	2.75	0.00	0.00	0.00
42.65	0.83	0.30	2.76	0.00	0.00	0.00
42.70	0.83	0.30	2.76	0.00	0.00	0.00
42.75	0.83	0.30	2.76	0.00	0.00	0.00
42.80	0.83	0.30	2.76	0.00	0.00	0.00
42.85	0.83	0.30	2.76	0.00	0.00	0.00
42.90	0.83	0.30	2.76	0.00	0.00	0.00
42.95	0.83	0.30	2.76	0.00	0.00	0.00
43.00	0.83	0.30	2.77	0.00	0.00	0.00
43.05	0.83	0.30	2.77	0.00	0.00	0.00
43.10	0.83	0.30	2.77	0.00	0.00	0.00
43.15	0.83	0.30	2.77	0.00	0.00	0.00
43.20	0.83	0.30	2.77	0.00	0.00	0.00
43.25	0.83	0.30	2.77	0.00	0.00	0.00
43.30	0.83	0.30	2.77	0.00	0.00	0.00
43.35	0.83	0.30	2.78	0.00	0.00	0.00
43.40	0.83	0.30	2.78	0.00	0.00	0.00
43.45	0.83	0.30	2.78	0.00	0.00	0.00
43.50	0.83	0.30	2.78	0.00	0.00	0.00
43.55	0.83	0.30	2.78	0.00	0.00	0.00
43.60	0.83	0.30	2.78	0.00	0.00	0.00
43.65	0.83	0.30	2.78	0.00	0.00	0.00
43.70	0.83	0.30	2.79	0.00	0.00	0.00
43.75	0.83	0.30	2.79	0.00	0.00	0.00
43.80	0.83	0.30	2.79	0.00	0.00	0.00
43.85	0.83	0.30	2.79	0.00	0.00	0.00
43.90	0.83	0.30	2.79	0.00	0.00	0.00
43.95	0.83	0.30	2.79	0.00	0.00	0.00
44.00	0.83	0.30	2.79	0.00	0.00	0.00
44.05	0.83	0.30	2.80	0.00	0.00	0.00
44.10	0.83	0.30	2.80	0.00	0.00	0.00
44.15	0.83	0.30	2.80	0.00	0.00	0.00
44.20	0.83	0.30	2.80	0.00	0.00	0.00
44.25	0.83	0.30	2.80	0.00	0.00	0.00
44.30	0.83	0.30	2.80	0.00	0.00	0.00
44.35	0.83	0.30	2.80	0.00	0.00	0.00
44.40	0.83	0.30	2.81	0.00	0.00	0.00
44.45	0.83	0.30	2.81	0.00	0.00	0.00
44.50	0.83	0.30	2.81	0.00	0.00	0.00

44.55	0.83	0.30	2.81	0.00	0.00	0.00
44.60	0.83	0.30	2.81	0.00	0.00	0.00
44.65	0.83	0.30	2.81	0.00	0.00	0.00
44.70	0.83	0.30	2.81	0.00	0.00	0.00
44.75	0.83	0.30	2.82	0.00	0.00	0.00
44.80	0.83	0.29	2.82	0.00	0.00	0.00
44.85	0.83	0.29	2.82	0.00	0.00	0.00
44.90	0.83	0.29	2.82	0.00	0.00	0.00
44.95	0.83	0.29	2.82	0.00	0.00	0.00
45.00	0.83	0.29	2.82	0.00	0.00	0.00
45.05	0.83	0.29	2.82	0.00	0.00	0.00
45.10	0.84	0.29	2.84	0.00	0.00	0.00
45.15	0.84	0.29	2.84	0.00	0.00	0.00
45.20	0.84	0.29	2.84	0.00	0.00	0.00
45.25	0.84	0.29	2.85	0.00	0.00	0.00
45.30	0.84	0.29	2.85	0.00	0.00	0.00
45.35	0.84	0.29	2.85	0.00	0.00	0.00
45.40	0.83	0.29	2.85	0.00	0.00	0.00
45.45	0.83	0.29	2.85	0.00	0.00	0.00
45.50	0.83	0.29	2.85	0.00	0.00	0.00
45.55	0.83	0.29	2.85	0.00	0.00	0.00
45.60	0.83	0.29	2.85	0.00	0.00	0.00
45.65	0.83	0.29	2.85	0.00	0.00	0.00
45.70	0.83	0.29	2.85	0.00	0.00	0.00
45.75	0.83	0.29	2.85	0.00	0.00	0.00
45.80	0.83	0.29	2.86	0.00	0.00	0.00
45.85	0.83	0.29	2.86	0.00	0.00	0.00
45.90	0.83	0.29	2.86	0.00	0.00	0.00
45.95	0.83	0.29	2.86	0.00	0.00	0.00
46.00	0.83	0.29	2.86	0.00	0.00	0.00
46.05	0.83	0.29	2.86	0.00	0.00	0.00
46.10	0.83	0.29	2.86	0.00	0.00	0.00
46.15	0.83	0.29	2.86	0.00	0.00	0.00
46.20	0.83	0.29	2.86	0.00	0.00	0.00
46.25	0.83	0.29	2.86	0.00	0.00	0.00
46.30	0.83	0.29	2.87	0.00	0.00	0.00
46.35	0.83	0.29	2.87	0.00	0.00	0.00
46.40	0.83	0.29	2.87	0.00	0.00	0.00
46.45	0.83	0.29	2.87	0.00	0.00	0.00
46.50	0.83	0.29	2.87	0.00	0.00	0.00
46.55	0.83	0.29	2.87	0.00	0.00	0.00
46.60	0.83	0.29	2.87	0.00	0.00	0.00
46.65	0.83	0.29	2.87	0.00	0.00	0.00
46.70	0.83	0.29	2.87	0.00	0.00	0.00
46.75	0.83	0.29	2.87	0.00	0.00	0.00
46.80	0.83	0.29	2.88	0.00	0.00	0.00
46.85	0.83	0.29	2.88	0.00	0.00	0.00
46.90	0.83	0.29	2.88	0.00	0.00	0.00
46.95	0.83	0.29	2.88	0.00	0.00	0.00
47.00	0.83	0.29	2.88	0.00	0.00	0.00
47.05	0.83	0.29	2.88	0.00	0.00	0.00
47.10	0.83	0.29	2.88	0.00	0.00	0.00
47.15	0.83	0.29	2.88	0.00	0.00	0.00
47.20	0.83	0.29	2.88	0.00	0.00	0.00
47.25	0.83	0.29	2.88	0.00	0.00	0.00
47.30	0.83	0.29	2.88	0.00	0.00	0.00
47.35	0.83	0.29	2.89	0.00	0.00	0.00
47.40	0.83	0.29	2.89	0.00	0.00	0.00
47.45	0.83	0.29	2.89	0.00	0.00	0.00
47.50	0.83	0.29	2.89	0.00	0.00	0.00
47.55	0.83	0.29	2.89	0.00	0.00	0.00
47.60	0.83	0.29	2.89	0.00	0.00	0.00
47.65	0.83	0.29	2.89	0.00	0.00	0.00
47.70	0.83	0.29	2.89	0.00	0.00	0.00
47.75	0.83	0.29	2.89	0.00	0.00	0.00
47.80	0.83	0.29	2.89	0.00	0.00	0.00
47.85	0.83	0.29	2.90	0.00	0.00	0.00
47.90	0.83	0.29	2.90	0.00	0.00	0.00
47.95	0.83	0.29	2.90	0.00	0.00	0.00
48.00	0.83	0.29	2.90	0.00	0.00	0.00
48.05	0.83	0.29	2.90	0.00	0.00	0.00

48.10	0.83	0.28	2.90	0.00	0.00	0.00
48.15	0.83	0.28	2.90	0.00	0.00	0.00
48.20	0.83	0.28	2.90	0.00	0.00	0.00
48.25	0.83	0.28	2.90	0.00	0.00	0.00
48.30	0.83	0.28	2.90	0.00	0.00	0.00
48.35	0.83	0.28	2.91	0.00	0.00	0.00
48.40	0.83	0.28	2.91	0.00	0.00	0.00
48.45	0.83	0.28	2.91	0.00	0.00	0.00
48.50	0.83	0.28	2.91	0.00	0.00	0.00
48.55	0.83	0.28	2.91	0.00	0.00	0.00
48.60	0.82	0.28	2.91	0.00	0.00	0.00
48.65	0.82	0.28	2.91	0.00	0.00	0.00
48.70	0.82	0.28	2.91	0.00	0.00	0.00
48.75	0.82	0.28	2.91	0.00	0.00	0.00
48.80	0.82	0.28	2.91	0.00	0.00	0.00
48.85	0.82	0.28	2.92	0.00	0.00	0.00
48.90	0.82	0.28	2.92	0.00	0.00	0.00
48.95	0.82	0.28	2.92	0.00	0.00	0.00
49.00	0.82	0.28	2.92	0.00	0.00	0.00
49.05	0.82	0.28	2.92	0.00	0.00	0.00
49.10	0.82	0.28	2.92	0.00	0.00	0.00
49.15	0.82	0.28	2.92	0.00	0.00	0.00
49.20	0.82	0.28	2.92	0.00	0.00	0.00
49.25	0.82	0.28	2.92	0.00	0.00	0.00
49.30	0.82	0.28	2.93	0.00	0.00	0.00
49.35	0.82	0.28	2.93	0.00	0.00	0.00
49.40	0.82	0.28	2.93	0.00	0.00	0.00
49.45	0.82	0.28	2.93	0.00	0.00	0.00
49.50	0.82	0.28	2.93	0.00	0.00	0.00
49.55	0.82	0.28	2.93	0.00	0.00	0.00
49.60	0.82	0.28	2.93	0.00	0.00	0.00
49.65	0.82	0.28	2.93	0.00	0.00	0.00
49.70	0.82	0.28	2.93	0.00	0.00	0.00
49.75	0.82	0.28	2.93	0.00	0.00	0.00
49.80	0.82	0.28	2.94	0.00	0.00	0.00
49.85	0.82	0.28	2.94	0.00	0.00	0.00
49.90	0.82	0.28	2.94	0.00	0.00	0.00
49.95	0.82	0.28	2.94	0.00	0.00	0.00
50.00	0.82	0.28	2.94	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

1 atm (atmosphere) = 1 tsf (ton/ft2)

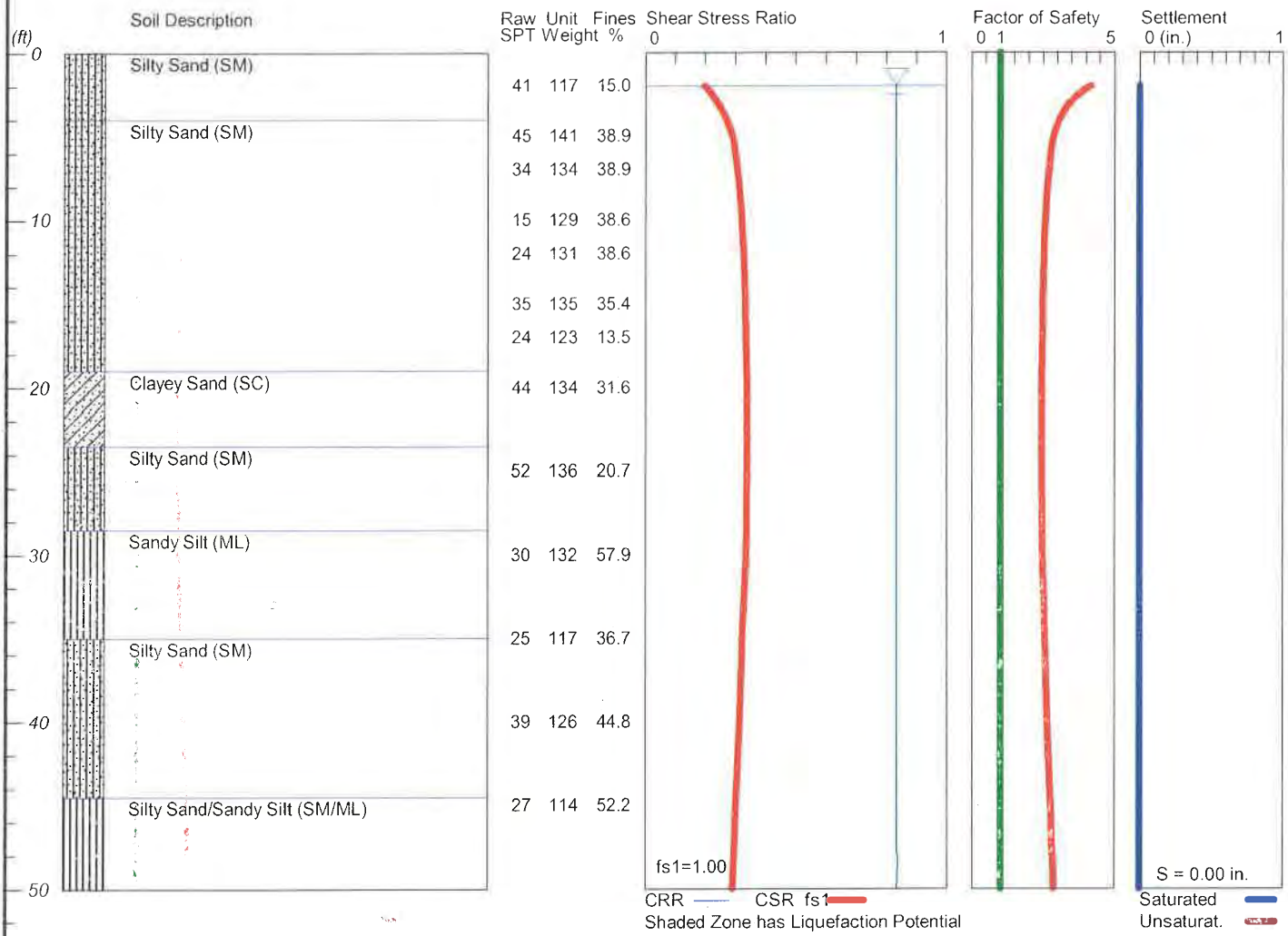
CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B3 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

Krazan

012-22165

Plate A-1

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 10/10/2022 2:20:56 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B3\01222165 B3 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B3
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B3
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	41.00	117.00	15.00
5.00	45.00	141.00	38.90
7.00	34.00	134.00	38.90
10.00	15.00	129.00	38.60
12.00	24.00	131.00	38.60
15.00	35.00	135.00	35.40
17.00	24.00	123.00	13.50
20.00	44.00	134.00	31.60
25.00	52.00	136.00	20.70
30.00	30.00	132.00	57.90
35.00	25.00	117.00	36.70
40.00	39.00	126.00	44.80
45.00	27.00	114.00	52.20

Output Results:
Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.00 in.
Differential Settlement=0.000 to 0.000 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.83	0.20	4.18	0.00	0.00	0.00
2.05	0.83	0.20	4.13	0.00	0.00	0.00
2.10	0.83	0.20	4.08	0.00	0.00	0.00
2.15	0.83	0.21	4.03	0.00	0.00	0.00
2.20	0.83	0.21	3.98	0.00	0.00	0.00
2.25	0.83	0.21	3.94	0.00	0.00	0.00
2.30	0.83	0.21	3.89	0.00	0.00	0.00
2.35	0.83	0.22	3.85	0.00	0.00	0.00
2.40	0.83	0.22	3.81	0.00	0.00	0.00
2.45	0.83	0.22	3.78	0.00	0.00	0.00
2.50	0.83	0.22	3.74	0.00	0.00	0.00
2.55	0.83	0.22	3.71	0.00	0.00	0.00
2.60	0.83	0.23	3.67	0.00	0.00	0.00
2.65	0.83	0.23	3.64	0.00	0.00	0.00
2.70	0.83	0.23	3.61	0.00	0.00	0.00
2.75	0.83	0.23	3.58	0.00	0.00	0.00
2.80	0.83	0.23	3.55	0.00	0.00	0.00
2.85	0.83	0.24	3.52	0.00	0.00	0.00
2.90	0.83	0.24	3.50	0.00	0.00	0.00
2.95	0.83	0.24	3.47	0.00	0.00	0.00
3.00	0.83	0.24	3.45	0.00	0.00	0.00
3.05	0.83	0.24	3.42	0.00	0.00	0.00
3.10	0.83	0.24	3.40	0.00	0.00	0.00
3.15	0.83	0.25	3.38	0.00	0.00	0.00
3.20	0.83	0.25	3.36	0.00	0.00	0.00
3.25	0.83	0.25	3.33	0.00	0.00	0.00
3.30	0.83	0.25	3.31	0.00	0.00	0.00
3.35	0.83	0.25	3.29	0.00	0.00	0.00
3.40	0.83	0.25	3.27	0.00	0.00	0.00
3.45	0.83	0.26	3.26	0.00	0.00	0.00
3.50	0.83	0.26	3.24	0.00	0.00	0.00
3.55	0.83	0.26	3.22	0.00	0.00	0.00
3.60	0.83	0.26	3.20	0.00	0.00	0.00
3.65	0.83	0.26	3.19	0.00	0.00	0.00
3.70	0.83	0.26	3.17	0.00	0.00	0.00
3.75	0.83	0.26	3.15	0.00	0.00	0.00
3.80	0.83	0.26	3.14	0.00	0.00	0.00
3.85	0.83	0.27	3.12	0.00	0.00	0.00
3.90	0.83	0.27	3.11	0.00	0.00	0.00
3.95	0.83	0.27	3.10	0.00	0.00	0.00
4.00	0.83	0.27	3.08	0.00	0.00	0.00
4.05	0.83	0.27	3.07	0.00	0.00	0.00
4.10	0.83	0.27	3.05	0.00	0.00	0.00
4.15	0.83	0.27	3.04	0.00	0.00	0.00
4.20	0.83	0.27	3.03	0.00	0.00	0.00
4.25	0.83	0.28	3.02	0.00	0.00	0.00
4.30	0.83	0.28	3.01	0.00	0.00	0.00
4.35	0.83	0.28	2.99	0.00	0.00	0.00
4.40	0.83	0.28	2.98	0.00	0.00	0.00
4.45	0.83	0.28	2.97	0.00	0.00	0.00
4.50	0.83	0.28	2.96	0.00	0.00	0.00
4.55	0.83	0.28	2.95	0.00	0.00	0.00
4.60	0.83	0.28	2.94	0.00	0.00	0.00
4.65	0.83	0.28	2.93	0.00	0.00	0.00
4.70	0.83	0.28	2.92	0.00	0.00	0.00
4.75	0.83	0.29	2.91	0.00	0.00	0.00
4.80	0.83	0.29	2.90	0.00	0.00	0.00
4.85	0.83	0.29	2.89	0.00	0.00	0.00
4.90	0.83	0.29	2.88	0.00	0.00	0.00
4.95	0.83	0.29	2.87	0.00	0.00	0.00
5.00	0.83	0.29	2.86	0.00	0.00	0.00
5.05	0.83	0.29	2.86	0.00	0.00	0.00
5.10	0.83	0.29	2.85	0.00	0.00	0.00
5.15	0.83	0.29	2.85	0.00	0.00	0.00
5.20	0.83	0.29	2.84	0.00	0.00	0.00
5.25	0.83	0.29	2.84	0.00	0.00	0.00
5.30	0.83	0.29	2.83	0.00	0.00	0.00
5.35	0.83	0.29	2.83	0.00	0.00	0.00
5.40	0.83	0.29	2.82	0.00	0.00	0.00
5.45	0.83	0.29	2.82	0.00	0.00	0.00

5.50	0.83	0.30	2.81	0.00	0.00	0.00
5.55	0.83	0.30	2.81	0.00	0.00	0.00
5.60	0.83	0.30	2.80	0.00	0.00	0.00
5.65	0.83	0.30	2.80	0.00	0.00	0.00
5.70	0.83	0.30	2.79	0.00	0.00	0.00
5.75	0.83	0.30	2.79	0.00	0.00	0.00
5.80	0.83	0.30	2.79	0.00	0.00	0.00
5.85	0.83	0.30	2.78	0.00	0.00	0.00
5.90	0.83	0.30	2.78	0.00	0.00	0.00
5.95	0.83	0.30	2.77	0.00	0.00	0.00
6.00	0.83	0.30	2.77	0.00	0.00	0.00
6.05	0.83	0.30	2.77	0.00	0.00	0.00
6.10	0.83	0.30	2.76	0.00	0.00	0.00
6.15	0.83	0.30	2.76	0.00	0.00	0.00
6.20	0.83	0.30	2.76	0.00	0.00	0.00
6.25	0.83	0.30	2.75	0.00	0.00	0.00
6.30	0.83	0.30	2.75	0.00	0.00	0.00
6.35	0.83	0.30	2.75	0.00	0.00	0.00
6.40	0.83	0.30	2.74	0.00	0.00	0.00
6.45	0.83	0.30	2.74	0.00	0.00	0.00
6.50	0.83	0.30	2.74	0.00	0.00	0.00
6.55	0.83	0.30	2.73	0.00	0.00	0.00
6.60	0.83	0.30	2.73	0.00	0.00	0.00
6.65	0.83	0.30	2.73	0.00	0.00	0.00
6.70	0.83	0.30	2.73	0.00	0.00	0.00
6.75	0.83	0.31	2.72	0.00	0.00	0.00
6.80	0.83	0.31	2.72	0.00	0.00	0.00
6.85	0.83	0.31	2.72	0.00	0.00	0.00
6.90	0.83	0.31	2.71	0.00	0.00	0.00
6.95	0.83	0.31	2.71	0.00	0.00	0.00
7.00	0.83	0.31	2.71	0.00	0.00	0.00
7.05	0.83	0.31	2.71	0.00	0.00	0.00
7.10	0.83	0.31	2.70	0.00	0.00	0.00
7.15	0.83	0.31	2.70	0.00	0.00	0.00
7.20	0.83	0.31	2.70	0.00	0.00	0.00
7.25	0.83	0.31	2.69	0.00	0.00	0.00
7.30	0.83	0.31	2.69	0.00	0.00	0.00
7.35	0.83	0.31	2.69	0.00	0.00	0.00
7.40	0.83	0.31	2.69	0.00	0.00	0.00
7.45	0.83	0.31	2.68	0.00	0.00	0.00
7.50	0.83	0.31	2.68	0.00	0.00	0.00
7.55	0.83	0.31	2.68	0.00	0.00	0.00
7.60	0.83	0.31	2.67	0.00	0.00	0.00
7.65	0.83	0.31	2.67	0.00	0.00	0.00
7.70	0.83	0.31	2.67	0.00	0.00	0.00
7.75	0.83	0.31	2.67	0.00	0.00	0.00
7.80	0.83	0.31	2.66	0.00	0.00	0.00
7.85	0.83	0.31	2.66	0.00	0.00	0.00
7.90	0.83	0.31	2.66	0.00	0.00	0.00
7.95	0.83	0.31	2.66	0.00	0.00	0.00
8.00	0.83	0.31	2.66	0.00	0.00	0.00
8.05	0.83	0.31	2.65	0.00	0.00	0.00
8.10	0.83	0.31	2.65	0.00	0.00	0.00
8.15	0.83	0.31	2.65	0.00	0.00	0.00
8.20	0.83	0.31	2.65	0.00	0.00	0.00
8.25	0.83	0.31	2.64	0.00	0.00	0.00
8.30	0.83	0.31	2.64	0.00	0.00	0.00
8.35	0.83	0.31	2.64	0.00	0.00	0.00
8.40	0.83	0.31	2.64	0.00	0.00	0.00
8.45	0.83	0.32	2.64	0.00	0.00	0.00
8.50	0.83	0.32	2.63	0.00	0.00	0.00
8.55	0.83	0.32	2.63	0.00	0.00	0.00
8.60	0.83	0.32	2.63	0.00	0.00	0.00
8.65	0.83	0.32	2.63	0.00	0.00	0.00
8.70	0.83	0.32	2.63	0.00	0.00	0.00
8.75	0.83	0.32	2.62	0.00	0.00	0.00
8.80	0.83	0.32	2.62	0.00	0.00	0.00
8.85	0.83	0.32	2.62	0.00	0.00	0.00
8.90	0.83	0.32	2.62	0.00	0.00	0.00
8.95	0.83	0.32	2.62	0.00	0.00	0.00
9.00	0.83	0.32	2.62	0.00	0.00	0.00

9.05	0.83	0.32	2.61	0.00	0.00	0.00
9.10	0.83	0.32	2.61	0.00	0.00	0.00
9.15	0.83	0.32	2.61	0.00	0.00	0.00
9.20	0.83	0.32	2.61	0.00	0.00	0.00
9.25	0.83	0.32	2.61	0.00	0.00	0.00
9.30	0.83	0.32	2.61	0.00	0.00	0.00
9.35	0.83	0.32	2.60	0.00	0.00	0.00
9.40	0.83	0.32	2.60	0.00	0.00	0.00
9.45	0.83	0.32	2.60	0.00	0.00	0.00
9.50	0.83	0.32	2.60	0.00	0.00	0.00
9.55	0.83	0.32	2.60	0.00	0.00	0.00
9.60	0.83	0.32	2.60	0.00	0.00	0.00
9.65	0.83	0.32	2.60	0.00	0.00	0.00
9.70	0.83	0.32	2.59	0.00	0.00	0.00
9.75	0.83	0.32	2.59	0.00	0.00	0.00
9.80	0.83	0.32	2.59	0.00	0.00	0.00
9.85	0.83	0.32	2.59	0.00	0.00	0.00
9.90	0.83	0.32	2.59	0.00	0.00	0.00
9.95	0.83	0.32	2.59	0.00	0.00	0.00
10.00	0.83	0.32	2.59	0.00	0.00	0.00
10.05	0.83	0.32	2.58	0.00	0.00	0.00
10.10	0.83	0.32	2.58	0.00	0.00	0.00
10.15	0.83	0.32	2.58	0.00	0.00	0.00
10.20	0.83	0.32	2.58	0.00	0.00	0.00
10.25	0.83	0.32	2.58	0.00	0.00	0.00
10.30	0.83	0.32	2.58	0.00	0.00	0.00
10.35	0.83	0.32	2.57	0.00	0.00	0.00
10.40	0.83	0.32	2.57	0.00	0.00	0.00
10.45	0.83	0.32	2.57	0.00	0.00	0.00
10.50	0.83	0.32	2.57	0.00	0.00	0.00
10.55	0.83	0.32	2.57	0.00	0.00	0.00
10.60	0.83	0.32	2.57	0.00	0.00	0.00
10.65	0.83	0.32	2.57	0.00	0.00	0.00
10.70	0.83	0.32	2.56	0.00	0.00	0.00
10.75	0.83	0.32	2.56	0.00	0.00	0.00
10.80	0.83	0.32	2.56	0.00	0.00	0.00
10.85	0.83	0.32	2.56	0.00	0.00	0.00
10.90	0.83	0.32	2.56	0.00	0.00	0.00
10.95	0.83	0.32	2.56	0.00	0.00	0.00
11.00	0.83	0.32	2.56	0.00	0.00	0.00
11.05	0.83	0.33	2.55	0.00	0.00	0.00
11.10	0.83	0.33	2.55	0.00	0.00	0.00
11.15	0.83	0.33	2.55	0.00	0.00	0.00
11.20	0.83	0.33	2.55	0.00	0.00	0.00
11.25	0.83	0.33	2.55	0.00	0.00	0.00
11.30	0.83	0.33	2.55	0.00	0.00	0.00
11.35	0.83	0.33	2.55	0.00	0.00	0.00
11.40	0.83	0.33	2.55	0.00	0.00	0.00
11.45	0.83	0.33	2.54	0.00	0.00	0.00
11.50	0.83	0.33	2.54	0.00	0.00	0.00
11.55	0.83	0.33	2.54	0.00	0.00	0.00
11.60	0.83	0.33	2.54	0.00	0.00	0.00
11.65	0.83	0.33	2.54	0.00	0.00	0.00
11.70	0.83	0.33	2.54	0.00	0.00	0.00
11.75	0.83	0.33	2.54	0.00	0.00	0.00
11.80	0.83	0.33	2.54	0.00	0.00	0.00
11.85	0.83	0.33	2.54	0.00	0.00	0.00
11.90	0.83	0.33	2.53	0.00	0.00	0.00
11.95	0.83	0.33	2.53	0.00	0.00	0.00
12.00	0.83	0.33	2.53	0.00	0.00	0.00
12.05	0.83	0.33	2.53	0.00	0.00	0.00
12.10	0.83	0.33	2.53	0.00	0.00	0.00
12.15	0.83	0.33	2.53	0.00	0.00	0.00
12.20	0.83	0.33	2.53	0.00	0.00	0.00
12.25	0.83	0.33	2.53	0.00	0.00	0.00
12.30	0.83	0.33	2.53	0.00	0.00	0.00
12.35	0.83	0.33	2.53	0.00	0.00	0.00
12.40	0.83	0.33	2.53	0.00	0.00	0.00
12.45	0.83	0.33	2.52	0.00	0.00	0.00
12.50	0.83	0.33	2.52	0.00	0.00	0.00
12.55	0.83	0.33	2.52	0.00	0.00	0.00

12.60	0.83	0.33	2.52	0.00	0.00	0.00
12.65	0.83	0.33	2.52	0.00	0.00	0.00
12.70	0.83	0.33	2.52	0.00	0.00	0.00
12.75	0.83	0.33	2.52	0.00	0.00	0.00
12.80	0.83	0.33	2.52	0.00	0.00	0.00
12.85	0.83	0.33	2.52	0.00	0.00	0.00
12.90	0.83	0.33	2.52	0.00	0.00	0.00
12.95	0.83	0.33	2.52	0.00	0.00	0.00
13.00	0.83	0.33	2.52	0.00	0.00	0.00
13.05	0.83	0.33	2.51	0.00	0.00	0.00
13.10	0.83	0.33	2.51	0.00	0.00	0.00
13.15	0.83	0.33	2.51	0.00	0.00	0.00
13.20	0.83	0.33	2.51	0.00	0.00	0.00
13.25	0.83	0.33	2.51	0.00	0.00	0.00
13.30	0.83	0.33	2.51	0.00	0.00	0.00
13.35	0.83	0.33	2.51	0.00	0.00	0.00
13.40	0.83	0.33	2.51	0.00	0.00	0.00
13.45	0.83	0.33	2.51	0.00	0.00	0.00
13.50	0.83	0.33	2.51	0.00	0.00	0.00
13.55	0.83	0.33	2.51	0.00	0.00	0.00
13.60	0.83	0.33	2.51	0.00	0.00	0.00
13.65	0.83	0.33	2.51	0.00	0.00	0.00
13.70	0.83	0.33	2.51	0.00	0.00	0.00
13.75	0.83	0.33	2.51	0.00	0.00	0.00
13.80	0.83	0.33	2.50	0.00	0.00	0.00
13.85	0.83	0.33	2.50	0.00	0.00	0.00
13.90	0.83	0.33	2.50	0.00	0.00	0.00
13.95	0.83	0.33	2.50	0.00	0.00	0.00
14.00	0.83	0.33	2.50	0.00	0.00	0.00
14.05	0.83	0.33	2.50	0.00	0.00	0.00
14.10	0.83	0.33	2.50	0.00	0.00	0.00
14.15	0.83	0.33	2.50	0.00	0.00	0.00
14.20	0.83	0.33	2.50	0.00	0.00	0.00
14.25	0.83	0.33	2.50	0.00	0.00	0.00
14.30	0.83	0.33	2.50	0.00	0.00	0.00
14.35	0.83	0.33	2.50	0.00	0.00	0.00
14.40	0.83	0.33	2.50	0.00	0.00	0.00
14.45	0.83	0.33	2.50	0.00	0.00	0.00
14.50	0.83	0.33	2.50	0.00	0.00	0.00
14.55	0.83	0.33	2.50	0.00	0.00	0.00
14.60	0.83	0.33	2.50	0.00	0.00	0.00
14.65	0.83	0.33	2.49	0.00	0.00	0.00
14.70	0.83	0.33	2.49	0.00	0.00	0.00
14.75	0.83	0.33	2.49	0.00	0.00	0.00
14.80	0.83	0.33	2.49	0.00	0.00	0.00
14.85	0.83	0.33	2.49	0.00	0.00	0.00
14.90	0.83	0.33	2.49	0.00	0.00	0.00
14.95	0.83	0.33	2.49	0.00	0.00	0.00
15.00	0.83	0.33	2.49	0.00	0.00	0.00
15.05	0.83	0.33	2.49	0.00	0.00	0.00
15.10	0.83	0.33	2.49	0.00	0.00	0.00
15.15	0.83	0.33	2.49	0.00	0.00	0.00
15.20	0.83	0.33	2.49	0.00	0.00	0.00
15.25	0.83	0.33	2.49	0.00	0.00	0.00
15.30	0.83	0.33	2.49	0.00	0.00	0.00
15.35	0.83	0.33	2.49	0.00	0.00	0.00
15.40	0.83	0.33	2.49	0.00	0.00	0.00
15.45	0.83	0.33	2.49	0.00	0.00	0.00
15.50	0.83	0.33	2.49	0.00	0.00	0.00
15.55	0.83	0.33	2.49	0.00	0.00	0.00
15.60	0.83	0.33	2.49	0.00	0.00	0.00
15.65	0.83	0.33	2.49	0.00	0.00	0.00
15.70	0.83	0.33	2.49	0.00	0.00	0.00
15.75	0.83	0.33	2.49	0.00	0.00	0.00
15.80	0.83	0.33	2.49	0.00	0.00	0.00
15.85	0.83	0.33	2.49	0.00	0.00	0.00
15.90	0.83	0.33	2.49	0.00	0.00	0.00
15.95	0.83	0.33	2.49	0.00	0.00	0.00
16.00	0.83	0.33	2.49	0.00	0.00	0.00
16.05	0.83	0.33	2.49	0.00	0.00	0.00
16.10	0.83	0.33	2.49	0.00	0.00	0.00

16.15	0.83	0.33	2.49	0.00	0.00	0.00
16.20	0.83	0.33	2.49	0.00	0.00	0.00
16.25	0.83	0.33	2.48	0.00	0.00	0.00
16.30	0.83	0.33	2.48	0.00	0.00	0.00
16.35	0.83	0.33	2.48	0.00	0.00	0.00
16.40	0.83	0.33	2.48	0.00	0.00	0.00
16.45	0.83	0.33	2.48	0.00	0.00	0.00
16.50	0.83	0.33	2.48	0.00	0.00	0.00
16.55	0.83	0.33	2.48	0.00	0.00	0.00
16.60	0.83	0.33	2.48	0.00	0.00	0.00
16.65	0.83	0.33	2.48	0.00	0.00	0.00
16.70	0.83	0.33	2.48	0.00	0.00	0.00
16.75	0.83	0.33	2.48	0.00	0.00	0.00
16.80	0.83	0.33	2.48	0.00	0.00	0.00
16.85	0.83	0.33	2.48	0.00	0.00	0.00
16.90	0.83	0.33	2.48	0.00	0.00	0.00
16.95	0.83	0.33	2.48	0.00	0.00	0.00
17.00	0.83	0.33	2.48	0.00	0.00	0.00
17.05	0.83	0.33	2.48	0.00	0.00	0.00
17.10	0.83	0.33	2.48	0.00	0.00	0.00
17.15	0.83	0.33	2.48	0.00	0.00	0.00
17.20	0.83	0.34	2.48	0.00	0.00	0.00
17.25	0.83	0.34	2.48	0.00	0.00	0.00
17.30	0.83	0.34	2.48	0.00	0.00	0.00
17.35	0.83	0.34	2.48	0.00	0.00	0.00
17.40	0.83	0.34	2.48	0.00	0.00	0.00
17.45	0.83	0.34	2.48	0.00	0.00	0.00
17.50	0.83	0.34	2.48	0.00	0.00	0.00
17.55	0.83	0.34	2.48	0.00	0.00	0.00
17.60	0.83	0.34	2.47	0.00	0.00	0.00
17.65	0.83	0.34	2.47	0.00	0.00	0.00
17.70	0.83	0.34	2.47	0.00	0.00	0.00
17.75	0.83	0.34	2.47	0.00	0.00	0.00
17.80	0.83	0.34	2.47	0.00	0.00	0.00
17.85	0.83	0.34	2.47	0.00	0.00	0.00
17.90	0.83	0.34	2.47	0.00	0.00	0.00
17.95	0.83	0.34	2.47	0.00	0.00	0.00
18.00	0.83	0.34	2.47	0.00	0.00	0.00
18.05	0.83	0.34	2.47	0.00	0.00	0.00
18.10	0.83	0.34	2.47	0.00	0.00	0.00
18.15	0.83	0.34	2.47	0.00	0.00	0.00
18.20	0.83	0.34	2.47	0.00	0.00	0.00
18.25	0.83	0.34	2.47	0.00	0.00	0.00
18.30	0.83	0.34	2.47	0.00	0.00	0.00
18.35	0.83	0.34	2.47	0.00	0.00	0.00
18.40	0.83	0.34	2.47	0.00	0.00	0.00
18.45	0.83	0.34	2.46	0.00	0.00	0.00
18.50	0.83	0.34	2.46	0.00	0.00	0.00
18.55	0.83	0.34	2.46	0.00	0.00	0.00
18.60	0.83	0.34	2.46	0.00	0.00	0.00
18.65	0.83	0.34	2.46	0.00	0.00	0.00
18.70	0.83	0.34	2.46	0.00	0.00	0.00
18.75	0.83	0.34	2.46	0.00	0.00	0.00
18.80	0.83	0.34	2.46	0.00	0.00	0.00
18.85	0.83	0.34	2.46	0.00	0.00	0.00
18.90	0.83	0.34	2.46	0.00	0.00	0.00
18.95	0.83	0.34	2.46	0.00	0.00	0.00
19.00	0.83	0.34	2.46	0.00	0.00	0.00
19.05	0.83	0.34	2.46	0.00	0.00	0.00
19.10	0.83	0.34	2.46	0.00	0.00	0.00
19.15	0.83	0.34	2.46	0.00	0.00	0.00
19.20	0.83	0.34	2.46	0.00	0.00	0.00
19.25	0.83	0.34	2.46	0.00	0.00	0.00
19.30	0.83	0.34	2.46	0.00	0.00	0.00
19.35	0.83	0.34	2.46	0.00	0.00	0.00
19.40	0.83	0.34	2.46	0.00	0.00	0.00
19.45	0.83	0.34	2.45	0.00	0.00	0.00
19.50	0.83	0.34	2.45	0.00	0.00	0.00
19.55	0.83	0.34	2.45	0.00	0.00	0.00
19.60	0.83	0.34	2.45	0.00	0.00	0.00
19.65	0.83	0.34	2.45	0.00	0.00	0.00

19.70	0.83	0.34	2.45	0.00	0.00	0.00
19.75	0.83	0.34	2.45	0.00	0.00	0.00
19.80	0.83	0.34	2.45	0.00	0.00	0.00
19.85	0.83	0.34	2.45	0.00	0.00	0.00
19.90	0.83	0.34	2.45	0.00	0.00	0.00
19.95	0.83	0.34	2.45	0.00	0.00	0.00
20.00	0.83	0.34	2.45	0.00	0.00	0.00
20.05	0.83	0.34	2.45	0.00	0.00	0.00
20.10	0.83	0.34	2.45	0.00	0.00	0.00
20.15	0.83	0.34	2.45	0.00	0.00	0.00
20.20	0.83	0.34	2.45	0.00	0.00	0.00
20.25	0.83	0.34	2.45	0.00	0.00	0.00
20.30	0.83	0.34	2.45	0.00	0.00	0.00
20.35	0.83	0.34	2.45	0.00	0.00	0.00
20.40	0.83	0.34	2.45	0.00	0.00	0.00
20.45	0.83	0.34	2.45	0.00	0.00	0.00
20.50	0.83	0.34	2.45	0.00	0.00	0.00
20.55	0.83	0.34	2.45	0.00	0.00	0.00
20.60	0.83	0.34	2.45	0.00	0.00	0.00
20.65	0.83	0.34	2.45	0.00	0.00	0.00
20.70	0.83	0.34	2.45	0.00	0.00	0.00
20.75	0.83	0.34	2.45	0.00	0.00	0.00
20.80	0.83	0.34	2.45	0.00	0.00	0.00
20.85	0.83	0.34	2.45	0.00	0.00	0.00
20.90	0.83	0.34	2.45	0.00	0.00	0.00
20.95	0.83	0.34	2.45	0.00	0.00	0.00
21.00	0.83	0.34	2.45	0.00	0.00	0.00
21.05	0.83	0.34	2.45	0.00	0.00	0.00
21.10	0.83	0.34	2.45	0.00	0.00	0.00
21.15	0.83	0.34	2.45	0.00	0.00	0.00
21.20	0.83	0.34	2.45	0.00	0.00	0.00
21.25	0.83	0.34	2.45	0.00	0.00	0.00
21.30	0.83	0.34	2.45	0.00	0.00	0.00
21.35	0.83	0.34	2.45	0.00	0.00	0.00
21.40	0.83	0.34	2.45	0.00	0.00	0.00
21.45	0.83	0.34	2.45	0.00	0.00	0.00
21.50	0.83	0.34	2.45	0.00	0.00	0.00
21.55	0.83	0.34	2.45	0.00	0.00	0.00
21.60	0.83	0.34	2.45	0.00	0.00	0.00
21.65	0.83	0.34	2.45	0.00	0.00	0.00
21.70	0.83	0.34	2.45	0.00	0.00	0.00
21.75	0.83	0.34	2.45	0.00	0.00	0.00
21.80	0.83	0.34	2.45	0.00	0.00	0.00
21.85	0.83	0.34	2.45	0.00	0.00	0.00
21.90	0.83	0.34	2.45	0.00	0.00	0.00
21.95	0.83	0.34	2.45	0.00	0.00	0.00
22.00	0.83	0.34	2.45	0.00	0.00	0.00
22.05	0.83	0.34	2.45	0.00	0.00	0.00
22.10	0.83	0.34	2.45	0.00	0.00	0.00
22.15	0.83	0.34	2.45	0.00	0.00	0.00
22.20	0.83	0.34	2.45	0.00	0.00	0.00
22.25	0.83	0.34	2.45	0.00	0.00	0.00
22.30	0.83	0.34	2.45	0.00	0.00	0.00
22.35	0.83	0.34	2.45	0.00	0.00	0.00
22.40	0.83	0.34	2.45	0.00	0.00	0.00
22.45	0.83	0.34	2.45	0.00	0.00	0.00
22.50	0.83	0.34	2.45	0.00	0.00	0.00
22.55	0.83	0.34	2.45	0.00	0.00	0.00
22.60	0.83	0.34	2.45	0.00	0.00	0.00
22.65	0.83	0.34	2.45	0.00	0.00	0.00
22.70	0.83	0.34	2.45	0.00	0.00	0.00
22.75	0.83	0.34	2.45	0.00	0.00	0.00
22.80	0.83	0.34	2.45	0.00	0.00	0.00
22.85	0.83	0.34	2.45	0.00	0.00	0.00
22.90	0.83	0.34	2.45	0.00	0.00	0.00
22.95	0.83	0.34	2.45	0.00	0.00	0.00
23.00	0.83	0.34	2.45	0.00	0.00	0.00
23.05	0.83	0.34	2.45	0.00	0.00	0.00
23.10	0.83	0.34	2.45	0.00	0.00	0.00
23.15	0.83	0.34	2.45	0.00	0.00	0.00
23.20	0.83	0.34	2.45	0.00	0.00	0.00

23.25	0.83	0.34	2.45	0.00	0.00	0.00
23.30	0.83	0.34	2.45	0.00	0.00	0.00
23.35	0.83	0.34	2.45	0.00	0.00	0.00
23.40	0.83	0.34	2.45	0.00	0.00	0.00
23.45	0.83	0.34	2.45	0.00	0.00	0.00
23.50	0.83	0.34	2.45	0.00	0.00	0.00
23.55	0.83	0.34	2.45	0.00	0.00	0.00
23.60	0.83	0.34	2.45	0.00	0.00	0.00
23.65	0.83	0.34	2.45	0.00	0.00	0.00
23.70	0.83	0.34	2.45	0.00	0.00	0.00
23.75	0.83	0.34	2.45	0.00	0.00	0.00
23.80	0.83	0.34	2.45	0.00	0.00	0.00
23.85	0.83	0.34	2.45	0.00	0.00	0.00
23.90	0.83	0.34	2.45	0.00	0.00	0.00
23.95	0.83	0.34	2.45	0.00	0.00	0.00
24.00	0.83	0.34	2.45	0.00	0.00	0.00
24.05	0.83	0.34	2.45	0.00	0.00	0.00
24.10	0.83	0.34	2.45	0.00	0.00	0.00
24.15	0.83	0.34	2.45	0.00	0.00	0.00
24.20	0.83	0.34	2.45	0.00	0.00	0.00
24.25	0.83	0.34	2.45	0.00	0.00	0.00
24.30	0.83	0.34	2.45	0.00	0.00	0.00
24.35	0.83	0.34	2.45	0.00	0.00	0.00
24.40	0.83	0.34	2.45	0.00	0.00	0.00
24.45	0.83	0.34	2.45	0.00	0.00	0.00
24.50	0.83	0.34	2.45	0.00	0.00	0.00
24.55	0.83	0.34	2.45	0.00	0.00	0.00
24.60	0.83	0.34	2.45	0.00	0.00	0.00
24.65	0.83	0.34	2.45	0.00	0.00	0.00
24.70	0.83	0.34	2.45	0.00	0.00	0.00
24.75	0.83	0.34	2.45	0.00	0.00	0.00
24.80	0.83	0.34	2.45	0.00	0.00	0.00
24.85	0.83	0.34	2.46	0.00	0.00	0.00
24.90	0.83	0.34	2.46	0.00	0.00	0.00
24.95	0.83	0.34	2.46	0.00	0.00	0.00
25.00	0.83	0.34	2.46	0.00	0.00	0.00
25.05	0.83	0.34	2.46	0.00	0.00	0.00
25.10	0.83	0.34	2.46	0.00	0.00	0.00
25.15	0.83	0.34	2.46	0.00	0.00	0.00
25.20	0.83	0.34	2.46	0.00	0.00	0.00
25.25	0.83	0.34	2.46	0.00	0.00	0.00
25.30	0.83	0.34	2.46	0.00	0.00	0.00
25.35	0.83	0.34	2.46	0.00	0.00	0.00
25.40	0.83	0.34	2.46	0.00	0.00	0.00
25.45	0.83	0.34	2.46	0.00	0.00	0.00
25.50	0.83	0.34	2.46	0.00	0.00	0.00
25.55	0.83	0.34	2.46	0.00	0.00	0.00
25.60	0.83	0.34	2.46	0.00	0.00	0.00
25.65	0.83	0.34	2.46	0.00	0.00	0.00
25.70	0.83	0.34	2.46	0.00	0.00	0.00
25.75	0.83	0.34	2.46	0.00	0.00	0.00
25.80	0.83	0.34	2.46	0.00	0.00	0.00
25.85	0.83	0.34	2.46	0.00	0.00	0.00
25.90	0.83	0.34	2.46	0.00	0.00	0.00
25.95	0.83	0.34	2.46	0.00	0.00	0.00
26.00	0.83	0.34	2.46	0.00	0.00	0.00
26.05	0.83	0.34	2.46	0.00	0.00	0.00
26.10	0.83	0.34	2.46	0.00	0.00	0.00
26.15	0.83	0.34	2.46	0.00	0.00	0.00
26.20	0.83	0.34	2.46	0.00	0.00	0.00
26.25	0.83	0.34	2.46	0.00	0.00	0.00
26.30	0.83	0.34	2.46	0.00	0.00	0.00
26.35	0.83	0.34	2.46	0.00	0.00	0.00
26.40	0.83	0.34	2.46	0.00	0.00	0.00
26.45	0.83	0.34	2.46	0.00	0.00	0.00
26.50	0.83	0.34	2.46	0.00	0.00	0.00
26.55	0.83	0.34	2.46	0.00	0.00	0.00
26.60	0.83	0.34	2.46	0.00	0.00	0.00
26.65	0.83	0.34	2.46	0.00	0.00	0.00
26.70	0.83	0.34	2.46	0.00	0.00	0.00
26.75	0.83	0.34	2.46	0.00	0.00	0.00

26.80	0.83	0.34	2.46	0.00	0.00	0.00
26.85	0.83	0.34	2.46	0.00	0.00	0.00
26.90	0.83	0.34	2.46	0.00	0.00	0.00
26.95	0.83	0.34	2.46	0.00	0.00	0.00
27.00	0.83	0.34	2.46	0.00	0.00	0.00
27.05	0.83	0.34	2.46	0.00	0.00	0.00
27.10	0.83	0.34	2.46	0.00	0.00	0.00
27.15	0.83	0.34	2.46	0.00	0.00	0.00
27.20	0.83	0.34	2.46	0.00	0.00	0.00
27.25	0.83	0.34	2.46	0.00	0.00	0.00
27.30	0.83	0.34	2.46	0.00	0.00	0.00
27.35	0.83	0.34	2.46	0.00	0.00	0.00
27.40	0.83	0.34	2.46	0.00	0.00	0.00
27.45	0.83	0.34	2.46	0.00	0.00	0.00
27.50	0.83	0.34	2.46	0.00	0.00	0.00
27.55	0.83	0.34	2.46	0.00	0.00	0.00
27.60	0.83	0.34	2.47	0.00	0.00	0.00
27.65	0.83	0.34	2.47	0.00	0.00	0.00
27.70	0.83	0.34	2.47	0.00	0.00	0.00
27.75	0.83	0.34	2.47	0.00	0.00	0.00
27.80	0.83	0.34	2.47	0.00	0.00	0.00
27.85	0.83	0.34	2.47	0.00	0.00	0.00
27.90	0.83	0.34	2.47	0.00	0.00	0.00
27.95	0.83	0.34	2.47	0.00	0.00	0.00
28.00	0.83	0.34	2.47	0.00	0.00	0.00
28.05	0.83	0.34	2.47	0.00	0.00	0.00
28.10	0.83	0.34	2.47	0.00	0.00	0.00
28.15	0.83	0.34	2.47	0.00	0.00	0.00
28.20	0.83	0.34	2.47	0.00	0.00	0.00
28.25	0.83	0.34	2.47	0.00	0.00	0.00
28.30	0.83	0.34	2.47	0.00	0.00	0.00
28.35	0.83	0.34	2.47	0.00	0.00	0.00
28.40	0.83	0.34	2.47	0.00	0.00	0.00
28.45	0.83	0.34	2.47	0.00	0.00	0.00
28.50	0.83	0.34	2.47	0.00	0.00	0.00
28.55	0.83	0.34	2.47	0.00	0.00	0.00
28.60	0.83	0.34	2.47	0.00	0.00	0.00
28.65	0.83	0.34	2.47	0.00	0.00	0.00
28.70	0.83	0.34	2.47	0.00	0.00	0.00
28.75	0.83	0.34	2.47	0.00	0.00	0.00
28.80	0.83	0.34	2.47	0.00	0.00	0.00
28.85	0.83	0.34	2.47	0.00	0.00	0.00
28.90	0.83	0.34	2.47	0.00	0.00	0.00
28.95	0.83	0.34	2.47	0.00	0.00	0.00
29.00	0.83	0.34	2.47	0.00	0.00	0.00
29.05	0.83	0.34	2.47	0.00	0.00	0.00
29.10	0.83	0.34	2.47	0.00	0.00	0.00
29.15	0.83	0.34	2.47	0.00	0.00	0.00
29.20	0.83	0.34	2.47	0.00	0.00	0.00
29.25	0.83	0.34	2.47	0.00	0.00	0.00
29.30	0.83	0.34	2.47	0.00	0.00	0.00
29.35	0.83	0.34	2.47	0.00	0.00	0.00
29.40	0.83	0.34	2.47	0.00	0.00	0.00
29.45	0.83	0.34	2.47	0.00	0.00	0.00
29.50	0.83	0.34	2.47	0.00	0.00	0.00
29.55	0.83	0.34	2.47	0.00	0.00	0.00
29.60	0.83	0.34	2.47	0.00	0.00	0.00
29.65	0.83	0.34	2.47	0.00	0.00	0.00
29.70	0.83	0.34	2.47	0.00	0.00	0.00
29.75	0.83	0.34	2.47	0.00	0.00	0.00
29.80	0.83	0.34	2.47	0.00	0.00	0.00
29.85	0.83	0.34	2.47	0.00	0.00	0.00
29.90	0.83	0.34	2.47	0.00	0.00	0.00
29.95	0.83	0.34	2.47	0.00	0.00	0.00
30.00	0.83	0.34	2.48	0.00	0.00	0.00
30.05	0.83	0.34	2.48	0.00	0.00	0.00
30.10	0.83	0.34	2.48	0.00	0.00	0.00
30.15	0.83	0.34	2.48	0.00	0.00	0.00
30.20	0.83	0.34	2.48	0.00	0.00	0.00
30.25	0.83	0.33	2.48	0.00	0.00	0.00
30.30	0.83	0.33	2.48	0.00	0.00	0.00

30.35	0.83	0.33	2.48	0.00	0.00	0.00
30.40	0.83	0.33	2.48	0.00	0.00	0.00
30.45	0.83	0.33	2.48	0.00	0.00	0.00
30.50	0.83	0.33	2.48	0.00	0.00	0.00
30.55	0.83	0.33	2.49	0.00	0.00	0.00
30.60	0.83	0.33	2.49	0.00	0.00	0.00
30.65	0.83	0.33	2.49	0.00	0.00	0.00
30.70	0.83	0.33	2.49	0.00	0.00	0.00
30.75	0.83	0.33	2.49	0.00	0.00	0.00
30.80	0.83	0.33	2.49	0.00	0.00	0.00
30.85	0.83	0.33	2.49	0.00	0.00	0.00
30.90	0.83	0.33	2.49	0.00	0.00	0.00
30.95	0.83	0.33	2.49	0.00	0.00	0.00
31.00	0.83	0.33	2.49	0.00	0.00	0.00
31.05	0.83	0.33	2.49	0.00	0.00	0.00
31.10	0.83	0.33	2.50	0.00	0.00	0.00
31.15	0.83	0.33	2.50	0.00	0.00	0.00
31.20	0.83	0.33	2.50	0.00	0.00	0.00
31.25	0.83	0.33	2.50	0.00	0.00	0.00
31.30	0.83	0.33	2.50	0.00	0.00	0.00
31.35	0.83	0.33	2.50	0.00	0.00	0.00
31.40	0.83	0.33	2.50	0.00	0.00	0.00
31.45	0.83	0.33	2.50	0.00	0.00	0.00
31.50	0.83	0.33	2.50	0.00	0.00	0.00
31.55	0.83	0.33	2.50	0.00	0.00	0.00
31.60	0.83	0.33	2.50	0.00	0.00	0.00
31.65	0.83	0.33	2.51	0.00	0.00	0.00
31.70	0.83	0.33	2.51	0.00	0.00	0.00
31.75	0.83	0.33	2.51	0.00	0.00	0.00
31.80	0.83	0.33	2.51	0.00	0.00	0.00
31.85	0.83	0.33	2.51	0.00	0.00	0.00
31.90	0.83	0.33	2.51	0.00	0.00	0.00
31.95	0.83	0.33	2.51	0.00	0.00	0.00
32.00	0.83	0.33	2.51	0.00	0.00	0.00
32.05	0.83	0.33	2.51	0.00	0.00	0.00
32.10	0.83	0.33	2.51	0.00	0.00	0.00
32.15	0.83	0.33	2.52	0.00	0.00	0.00
32.20	0.83	0.33	2.52	0.00	0.00	0.00
32.25	0.83	0.33	2.52	0.00	0.00	0.00
32.30	0.83	0.33	2.52	0.00	0.00	0.00
32.35	0.83	0.33	2.52	0.00	0.00	0.00
32.40	0.83	0.33	2.52	0.00	0.00	0.00
32.45	0.83	0.33	2.52	0.00	0.00	0.00
32.50	0.83	0.33	2.52	0.00	0.00	0.00
32.55	0.83	0.33	2.52	0.00	0.00	0.00
32.60	0.83	0.33	2.52	0.00	0.00	0.00
32.65	0.83	0.33	2.52	0.00	0.00	0.00
32.70	0.83	0.33	2.53	0.00	0.00	0.00
32.75	0.83	0.33	2.53	0.00	0.00	0.00
32.80	0.83	0.33	2.53	0.00	0.00	0.00
32.85	0.83	0.33	2.53	0.00	0.00	0.00
32.90	0.83	0.33	2.53	0.00	0.00	0.00
32.95	0.83	0.33	2.53	0.00	0.00	0.00
33.00	0.83	0.33	2.53	0.00	0.00	0.00
33.05	0.83	0.33	2.53	0.00	0.00	0.00
33.10	0.83	0.33	2.53	0.00	0.00	0.00
33.15	0.83	0.33	2.53	0.00	0.00	0.00
33.20	0.83	0.33	2.54	0.00	0.00	0.00
33.25	0.83	0.33	2.54	0.00	0.00	0.00
33.30	0.83	0.33	2.54	0.00	0.00	0.00
33.35	0.83	0.33	2.54	0.00	0.00	0.00
33.40	0.83	0.33	2.54	0.00	0.00	0.00
33.45	0.83	0.33	2.54	0.00	0.00	0.00
33.50	0.83	0.33	2.54	0.00	0.00	0.00
33.55	0.83	0.33	2.54	0.00	0.00	0.00
33.60	0.83	0.33	2.54	0.00	0.00	0.00
33.65	0.83	0.33	2.54	0.00	0.00	0.00
33.70	0.83	0.33	2.55	0.00	0.00	0.00
33.75	0.83	0.33	2.55	0.00	0.00	0.00
33.80	0.83	0.33	2.55	0.00	0.00	0.00
33.85	0.83	0.33	2.55	0.00	0.00	0.00

33.90	0.83	0.33	2.55	0.00	0.00	0.00
33.95	0.83	0.33	2.55	0.00	0.00	0.00
34.00	0.83	0.33	2.55	0.00	0.00	0.00
34.05	0.83	0.33	2.55	0.00	0.00	0.00
34.10	0.83	0.33	2.55	0.00	0.00	0.00
34.15	0.83	0.33	2.55	0.00	0.00	0.00
34.20	0.83	0.33	2.56	0.00	0.00	0.00
34.25	0.83	0.32	2.56	0.00	0.00	0.00
34.30	0.83	0.32	2.56	0.00	0.00	0.00
34.35	0.83	0.32	2.56	0.00	0.00	0.00
34.40	0.83	0.32	2.56	0.00	0.00	0.00
34.45	0.83	0.32	2.56	0.00	0.00	0.00
34.50	0.83	0.32	2.56	0.00	0.00	0.00
34.55	0.83	0.32	2.56	0.00	0.00	0.00
34.60	0.83	0.32	2.56	0.00	0.00	0.00
34.65	0.83	0.32	2.56	0.00	0.00	0.00
34.70	0.83	0.32	2.57	0.00	0.00	0.00
34.75	0.83	0.32	2.57	0.00	0.00	0.00
34.80	0.83	0.32	2.57	0.00	0.00	0.00
34.85	0.83	0.32	2.57	0.00	0.00	0.00
34.90	0.83	0.32	2.57	0.00	0.00	0.00
34.95	0.83	0.32	2.57	0.00	0.00	0.00
35.00	0.83	0.32	2.57	0.00	0.00	0.00
35.05	0.83	0.32	2.57	0.00	0.00	0.00
35.10	0.83	0.32	2.57	0.00	0.00	0.00
35.15	0.83	0.32	2.57	0.00	0.00	0.00
35.20	0.83	0.32	2.57	0.00	0.00	0.00
35.25	0.83	0.32	2.58	0.00	0.00	0.00
35.30	0.83	0.32	2.58	0.00	0.00	0.00
35.35	0.83	0.32	2.58	0.00	0.00	0.00
35.40	0.83	0.32	2.58	0.00	0.00	0.00
35.45	0.83	0.32	2.58	0.00	0.00	0.00
35.50	0.83	0.32	2.58	0.00	0.00	0.00
35.55	0.83	0.32	2.58	0.00	0.00	0.00
35.60	0.83	0.32	2.58	0.00	0.00	0.00
35.65	0.83	0.32	2.58	0.00	0.00	0.00
35.70	0.83	0.32	2.58	0.00	0.00	0.00
35.75	0.83	0.32	2.58	0.00	0.00	0.00
35.80	0.83	0.32	2.58	0.00	0.00	0.00
35.85	0.83	0.32	2.58	0.00	0.00	0.00
35.90	0.83	0.32	2.58	0.00	0.00	0.00
35.95	0.83	0.32	2.59	0.00	0.00	0.00
36.00	0.83	0.32	2.59	0.00	0.00	0.00
36.05	0.83	0.32	2.59	0.00	0.00	0.00
36.10	0.83	0.32	2.59	0.00	0.00	0.00
36.15	0.83	0.32	2.59	0.00	0.00	0.00
36.20	0.83	0.32	2.59	0.00	0.00	0.00
36.25	0.83	0.32	2.59	0.00	0.00	0.00
36.30	0.83	0.32	2.59	0.00	0.00	0.00
36.35	0.83	0.32	2.59	0.00	0.00	0.00
36.40	0.83	0.32	2.59	0.00	0.00	0.00
36.45	0.83	0.32	2.59	0.00	0.00	0.00
36.50	0.83	0.32	2.59	0.00	0.00	0.00
36.55	0.83	0.32	2.59	0.00	0.00	0.00
36.60	0.83	0.32	2.59	0.00	0.00	0.00
36.65	0.83	0.32	2.60	0.00	0.00	0.00
36.70	0.83	0.32	2.60	0.00	0.00	0.00
36.75	0.83	0.32	2.60	0.00	0.00	0.00
36.80	0.83	0.32	2.60	0.00	0.00	0.00
36.85	0.83	0.32	2.60	0.00	0.00	0.00
36.90	0.83	0.32	2.60	0.00	0.00	0.00
36.95	0.83	0.32	2.60	0.00	0.00	0.00
37.00	0.83	0.32	2.60	0.00	0.00	0.00
37.05	0.83	0.32	2.60	0.00	0.00	0.00
37.10	0.83	0.32	2.60	0.00	0.00	0.00
37.15	0.83	0.32	2.60	0.00	0.00	0.00
37.20	0.83	0.32	2.60	0.00	0.00	0.00
37.25	0.83	0.32	2.60	0.00	0.00	0.00
37.30	0.83	0.32	2.61	0.00	0.00	0.00
37.35	0.83	0.32	2.61	0.00	0.00	0.00
37.40	0.83	0.32	2.61	0.00	0.00	0.00

37.45	0.83	0.32	2.61	0.00	0.00	0.00
37.50	0.83	0.32	2.61	0.00	0.00	0.00
37.55	0.83	0.32	2.61	0.00	0.00	0.00
37.60	0.83	0.32	2.61	0.00	0.00	0.00
37.65	0.83	0.32	2.61	0.00	0.00	0.00
37.70	0.83	0.32	2.61	0.00	0.00	0.00
37.75	0.83	0.32	2.61	0.00	0.00	0.00
37.80	0.83	0.32	2.61	0.00	0.00	0.00
37.85	0.83	0.32	2.61	0.00	0.00	0.00
37.90	0.83	0.32	2.61	0.00	0.00	0.00
37.95	0.83	0.32	2.62	0.00	0.00	0.00
38.00	0.83	0.32	2.62	0.00	0.00	0.00
38.05	0.83	0.32	2.62	0.00	0.00	0.00
38.10	0.83	0.32	2.62	0.00	0.00	0.00
38.15	0.83	0.32	2.62	0.00	0.00	0.00
38.20	0.83	0.32	2.62	0.00	0.00	0.00
38.25	0.83	0.32	2.62	0.00	0.00	0.00
38.30	0.83	0.32	2.62	0.00	0.00	0.00
38.35	0.83	0.32	2.62	0.00	0.00	0.00
38.40	0.83	0.32	2.62	0.00	0.00	0.00
38.45	0.83	0.32	2.62	0.00	0.00	0.00
38.50	0.83	0.32	2.62	0.00	0.00	0.00
38.55	0.83	0.32	2.62	0.00	0.00	0.00
38.60	0.83	0.32	2.63	0.00	0.00	0.00
38.65	0.83	0.32	2.63	0.00	0.00	0.00
38.70	0.83	0.32	2.63	0.00	0.00	0.00
38.75	0.83	0.32	2.63	0.00	0.00	0.00
38.80	0.83	0.32	2.63	0.00	0.00	0.00
38.85	0.83	0.32	2.63	0.00	0.00	0.00
38.90	0.83	0.32	2.63	0.00	0.00	0.00
38.95	0.83	0.32	2.63	0.00	0.00	0.00
39.00	0.83	0.32	2.63	0.00	0.00	0.00
39.05	0.83	0.32	2.63	0.00	0.00	0.00
39.10	0.83	0.32	2.63	0.00	0.00	0.00
39.15	0.83	0.32	2.63	0.00	0.00	0.00
39.20	0.83	0.32	2.64	0.00	0.00	0.00
39.25	0.83	0.32	2.64	0.00	0.00	0.00
39.30	0.83	0.31	2.64	0.00	0.00	0.00
39.35	0.83	0.31	2.64	0.00	0.00	0.00
39.40	0.83	0.31	2.64	0.00	0.00	0.00
39.45	0.83	0.31	2.64	0.00	0.00	0.00
39.50	0.83	0.31	2.64	0.00	0.00	0.00
39.55	0.83	0.31	2.64	0.00	0.00	0.00
39.60	0.83	0.31	2.64	0.00	0.00	0.00
39.65	0.83	0.31	2.64	0.00	0.00	0.00
39.70	0.83	0.31	2.64	0.00	0.00	0.00
39.75	0.83	0.31	2.64	0.00	0.00	0.00
39.80	0.83	0.31	2.65	0.00	0.00	0.00
39.85	0.83	0.31	2.65	0.00	0.00	0.00
39.90	0.83	0.31	2.65	0.00	0.00	0.00
39.95	0.83	0.31	2.65	0.00	0.00	0.00
40.00	0.83	0.31	2.65	0.00	0.00	0.00
40.05	0.83	0.31	2.65	0.00	0.00	0.00
40.10	0.83	0.31	2.65	0.00	0.00	0.00
40.15	0.83	0.31	2.65	0.00	0.00	0.00
40.20	0.83	0.31	2.65	0.00	0.00	0.00
40.25	0.83	0.31	2.65	0.00	0.00	0.00
40.30	0.83	0.31	2.66	0.00	0.00	0.00
40.35	0.83	0.31	2.66	0.00	0.00	0.00
40.40	0.83	0.31	2.66	0.00	0.00	0.00
40.45	0.83	0.31	2.66	0.00	0.00	0.00
40.50	0.83	0.31	2.66	0.00	0.00	0.00
40.55	0.83	0.31	2.66	0.00	0.00	0.00
40.60	0.83	0.31	2.66	0.00	0.00	0.00
40.65	0.83	0.31	2.66	0.00	0.00	0.00
40.70	0.83	0.31	2.66	0.00	0.00	0.00
40.75	0.83	0.31	2.67	0.00	0.00	0.00
40.80	0.83	0.31	2.67	0.00	0.00	0.00
40.85	0.83	0.31	2.67	0.00	0.00	0.00
40.90	0.83	0.31	2.67	0.00	0.00	0.00
40.95	0.83	0.31	2.67	0.00	0.00	0.00

41.00	0.83	0.31	2.67	0.00	0.00	0.00
41.05	0.83	0.31	2.67	0.00	0.00	0.00
41.10	0.83	0.31	2.67	0.00	0.00	0.00
41.15	0.83	0.31	2.67	0.00	0.00	0.00
41.20	0.83	0.31	2.67	0.00	0.00	0.00
41.25	0.83	0.31	2.68	0.00	0.00	0.00
41.30	0.83	0.31	2.68	0.00	0.00	0.00
41.35	0.83	0.31	2.68	0.00	0.00	0.00
41.40	0.83	0.31	2.68	0.00	0.00	0.00
41.45	0.83	0.31	2.68	0.00	0.00	0.00
41.50	0.83	0.31	2.68	0.00	0.00	0.00
41.55	0.83	0.31	2.68	0.00	0.00	0.00
41.60	0.83	0.31	2.68	0.00	0.00	0.00
41.65	0.83	0.31	2.68	0.00	0.00	0.00
41.70	0.83	0.31	2.69	0.00	0.00	0.00
41.75	0.83	0.31	2.69	0.00	0.00	0.00
41.80	0.83	0.31	2.69	0.00	0.00	0.00
41.85	0.83	0.31	2.69	0.00	0.00	0.00
41.90	0.83	0.31	2.69	0.00	0.00	0.00
41.95	0.83	0.31	2.69	0.00	0.00	0.00
42.00	0.83	0.31	2.69	0.00	0.00	0.00
42.05	0.83	0.31	2.69	0.00	0.00	0.00
42.10	0.83	0.31	2.69	0.00	0.00	0.00
42.15	0.83	0.31	2.70	0.00	0.00	0.00
42.20	0.83	0.31	2.70	0.00	0.00	0.00
42.25	0.83	0.31	2.70	0.00	0.00	0.00
42.30	0.83	0.31	2.70	0.00	0.00	0.00
42.35	0.83	0.31	2.70	0.00	0.00	0.00
42.40	0.83	0.31	2.70	0.00	0.00	0.00
42.45	0.83	0.31	2.70	0.00	0.00	0.00
42.50	0.83	0.31	2.70	0.00	0.00	0.00
42.55	0.83	0.31	2.71	0.00	0.00	0.00
42.60	0.83	0.31	2.71	0.00	0.00	0.00
42.65	0.83	0.31	2.71	0.00	0.00	0.00
42.70	0.83	0.31	2.71	0.00	0.00	0.00
42.75	0.83	0.31	2.71	0.00	0.00	0.00
42.80	0.83	0.31	2.71	0.00	0.00	0.00
42.85	0.83	0.31	2.71	0.00	0.00	0.00
42.90	0.83	0.31	2.71	0.00	0.00	0.00
42.95	0.83	0.31	2.71	0.00	0.00	0.00
43.00	0.83	0.31	2.72	0.00	0.00	0.00
43.05	0.83	0.31	2.72	0.00	0.00	0.00
43.10	0.83	0.31	2.72	0.00	0.00	0.00
43.15	0.83	0.31	2.72	0.00	0.00	0.00
43.20	0.83	0.31	2.72	0.00	0.00	0.00
43.25	0.83	0.31	2.72	0.00	0.00	0.00
43.30	0.83	0.31	2.72	0.00	0.00	0.00
43.35	0.83	0.31	2.72	0.00	0.00	0.00
43.40	0.83	0.30	2.72	0.00	0.00	0.00
43.45	0.83	0.30	2.73	0.00	0.00	0.00
43.50	0.83	0.30	2.73	0.00	0.00	0.00
43.55	0.83	0.30	2.73	0.00	0.00	0.00
43.60	0.83	0.30	2.73	0.00	0.00	0.00
43.65	0.83	0.30	2.73	0.00	0.00	0.00
43.70	0.83	0.30	2.73	0.00	0.00	0.00
43.75	0.83	0.30	2.73	0.00	0.00	0.00
43.80	0.83	0.30	2.73	0.00	0.00	0.00
43.85	0.83	0.30	2.74	0.00	0.00	0.00
43.90	0.83	0.30	2.74	0.00	0.00	0.00
43.95	0.83	0.30	2.74	0.00	0.00	0.00
44.00	0.83	0.30	2.74	0.00	0.00	0.00
44.05	0.83	0.30	2.74	0.00	0.00	0.00
44.10	0.83	0.30	2.74	0.00	0.00	0.00
44.15	0.83	0.30	2.74	0.00	0.00	0.00
44.20	0.83	0.30	2.74	0.00	0.00	0.00
44.25	0.83	0.30	2.74	0.00	0.00	0.00
44.30	0.83	0.30	2.75	0.00	0.00	0.00
44.35	0.83	0.30	2.75	0.00	0.00	0.00
44.40	0.83	0.30	2.75	0.00	0.00	0.00
44.45	0.83	0.30	2.75	0.00	0.00	0.00
44.50	0.83	0.30	2.75	0.00	0.00	0.00

44.55	0.83	0.30	2.75	0.00	0.00	0.00
44.60	0.83	0.30	2.75	0.00	0.00	0.00
44.65	0.83	0.30	2.75	0.00	0.00	0.00
44.70	0.83	0.30	2.76	0.00	0.00	0.00
44.75	0.83	0.30	2.76	0.00	0.00	0.00
44.80	0.83	0.30	2.76	0.00	0.00	0.00
44.85	0.83	0.30	2.76	0.00	0.00	0.00
44.90	0.83	0.30	2.76	0.00	0.00	0.00
44.95	0.83	0.30	2.76	0.00	0.00	0.00
45.00	0.83	0.30	2.76	0.00	0.00	0.00
45.05	0.83	0.30	2.76	0.00	0.00	0.00
45.10	0.83	0.30	2.76	0.00	0.00	0.00
45.15	0.83	0.30	2.77	0.00	0.00	0.00
45.20	0.83	0.30	2.77	0.00	0.00	0.00
45.25	0.83	0.30	2.77	0.00	0.00	0.00
45.30	0.83	0.30	2.77	0.00	0.00	0.00
45.35	0.83	0.30	2.77	0.00	0.00	0.00
45.40	0.83	0.30	2.77	0.00	0.00	0.00
45.45	0.83	0.30	2.77	0.00	0.00	0.00
45.50	0.83	0.30	2.77	0.00	0.00	0.00
45.55	0.83	0.30	2.77	0.00	0.00	0.00
45.60	0.83	0.30	2.77	0.00	0.00	0.00
45.65	0.83	0.30	2.78	0.00	0.00	0.00
45.70	0.83	0.30	2.78	0.00	0.00	0.00
45.75	0.83	0.30	2.78	0.00	0.00	0.00
45.80	0.83	0.30	2.78	0.00	0.00	0.00
45.85	0.83	0.30	2.78	0.00	0.00	0.00
45.90	0.83	0.30	2.78	0.00	0.00	0.00
45.95	0.83	0.30	2.78	0.00	0.00	0.00
46.00	0.83	0.30	2.78	0.00	0.00	0.00
46.05	0.83	0.30	2.78	0.00	0.00	0.00
46.10	0.83	0.30	2.78	0.00	0.00	0.00
46.15	0.83	0.30	2.79	0.00	0.00	0.00
46.20	0.83	0.30	2.79	0.00	0.00	0.00
46.25	0.83	0.30	2.79	0.00	0.00	0.00
46.30	0.83	0.30	2.79	0.00	0.00	0.00
46.35	0.83	0.30	2.79	0.00	0.00	0.00
46.40	0.83	0.30	2.79	0.00	0.00	0.00
46.45	0.83	0.30	2.79	0.00	0.00	0.00
46.50	0.83	0.30	2.79	0.00	0.00	0.00
46.55	0.83	0.30	2.79	0.00	0.00	0.00
46.60	0.83	0.30	2.79	0.00	0.00	0.00
46.65	0.83	0.30	2.80	0.00	0.00	0.00
46.70	0.83	0.30	2.80	0.00	0.00	0.00
46.75	0.83	0.30	2.80	0.00	0.00	0.00
46.80	0.83	0.30	2.80	0.00	0.00	0.00
46.85	0.83	0.30	2.80	0.00	0.00	0.00
46.90	0.83	0.30	2.80	0.00	0.00	0.00
46.95	0.83	0.30	2.80	0.00	0.00	0.00
47.00	0.83	0.30	2.80	0.00	0.00	0.00
47.05	0.83	0.30	2.80	0.00	0.00	0.00
47.10	0.83	0.30	2.81	0.00	0.00	0.00
47.15	0.83	0.30	2.81	0.00	0.00	0.00
47.20	0.83	0.30	2.81	0.00	0.00	0.00
47.25	0.83	0.30	2.81	0.00	0.00	0.00
47.30	0.83	0.30	2.81	0.00	0.00	0.00
47.35	0.83	0.30	2.81	0.00	0.00	0.00
47.40	0.83	0.30	2.81	0.00	0.00	0.00
47.45	0.83	0.30	2.81	0.00	0.00	0.00
47.50	0.83	0.30	2.81	0.00	0.00	0.00
47.55	0.83	0.30	2.81	0.00	0.00	0.00
47.60	0.83	0.30	2.82	0.00	0.00	0.00
47.65	0.83	0.29	2.82	0.00	0.00	0.00
47.70	0.83	0.29	2.82	0.00	0.00	0.00
47.75	0.83	0.29	2.82	0.00	0.00	0.00
47.80	0.83	0.29	2.82	0.00	0.00	0.00
47.85	0.83	0.29	2.82	0.00	0.00	0.00
47.90	0.83	0.29	2.82	0.00	0.00	0.00
47.95	0.83	0.29	2.82	0.00	0.00	0.00
48.00	0.84	0.29	2.84	0.00	0.00	0.00
48.05	0.84	0.29	2.84	0.00	0.00	0.00

48.10	0.84	0.29	2.84	0.00	0.00	0.00
48.15	0.84	0.29	2.84	0.00	0.00	0.00
48.20	0.84	0.29	2.84	0.00	0.00	0.00
48.25	0.84	0.29	2.85	0.00	0.00	0.00
48.30	0.84	0.29	2.85	0.00	0.00	0.00
48.35	0.84	0.29	2.85	0.00	0.00	0.00
48.40	0.84	0.29	2.85	0.00	0.00	0.00
48.45	0.83	0.29	2.85	0.00	0.00	0.00
48.50	0.83	0.29	2.85	0.00	0.00	0.00
48.55	0.83	0.29	2.85	0.00	0.00	0.00
48.60	0.83	0.29	2.85	0.00	0.00	0.00
48.65	0.83	0.29	2.85	0.00	0.00	0.00
48.70	0.83	0.29	2.85	0.00	0.00	0.00
48.75	0.83	0.29	2.85	0.00	0.00	0.00
48.80	0.83	0.29	2.85	0.00	0.00	0.00
48.85	0.83	0.29	2.85	0.00	0.00	0.00
48.90	0.83	0.29	2.86	0.00	0.00	0.00
48.95	0.83	0.29	2.86	0.00	0.00	0.00
49.00	0.83	0.29	2.86	0.00	0.00	0.00
49.05	0.83	0.29	2.86	0.00	0.00	0.00
49.10	0.83	0.29	2.86	0.00	0.00	0.00
49.15	0.83	0.29	2.86	0.00	0.00	0.00
49.20	0.83	0.29	2.86	0.00	0.00	0.00
49.25	0.83	0.29	2.86	0.00	0.00	0.00
49.30	0.83	0.29	2.86	0.00	0.00	0.00
49.35	0.83	0.29	2.86	0.00	0.00	0.00
49.40	0.83	0.29	2.86	0.00	0.00	0.00
49.45	0.83	0.29	2.86	0.00	0.00	0.00
49.50	0.83	0.29	2.86	0.00	0.00	0.00
49.55	0.83	0.29	2.87	0.00	0.00	0.00
49.60	0.83	0.29	2.87	0.00	0.00	0.00
49.65	0.83	0.29	2.87	0.00	0.00	0.00
49.70	0.83	0.29	2.87	0.00	0.00	0.00
49.75	0.83	0.29	2.87	0.00	0.00	0.00
49.80	0.83	0.29	2.87	0.00	0.00	0.00
49.85	0.83	0.29	2.87	0.00	0.00	0.00
49.90	0.83	0.29	2.87	0.00	0.00	0.00
49.95	0.83	0.29	2.87	0.00	0.00	0.00
50.00	0.83	0.29	2.87	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

1 atm (atmosphere) = 1 tsf (ton/ft2)

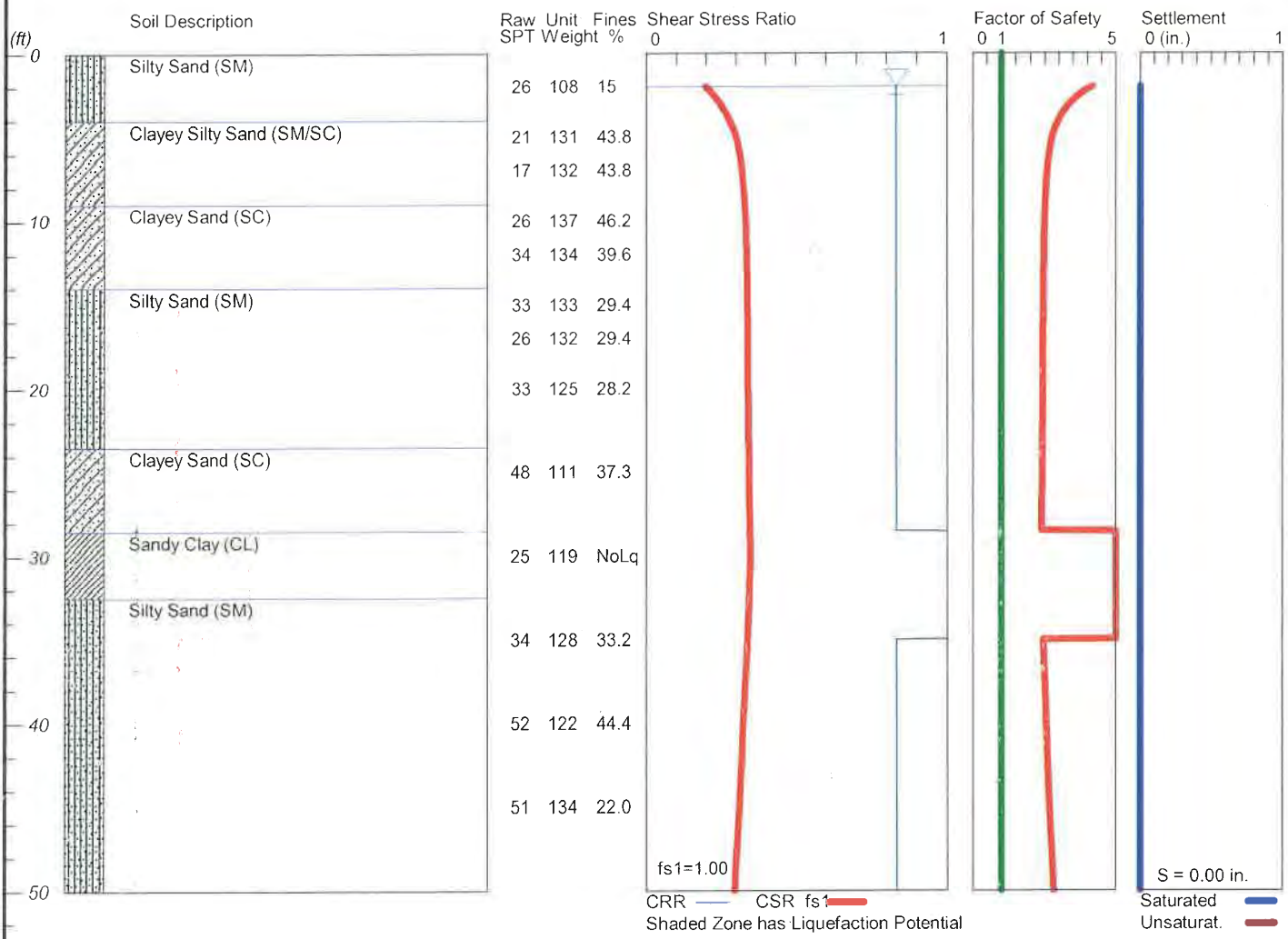
CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B4 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

Krazan

012-22165

Plate A-1

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 10/7/2022 2:31:11 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B4\01222165 B4 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B4
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B4
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	26.00	108.00	15.00
5.00	21.00	131.00	43.80
7.00	17.00	132.00	43.80
10.00	26.00	137.00	46.20
12.00	34.00	134.00	39.60
15.00	33.00	133.00	29.40
17.00	26.00	132.00	29.40
20.00	33.00	125.00	28.20
25.00	48.00	111.00	37.30
30.00	25.00	119.00	NoLiq
35.00	34.00	128.00	33.20
40.00	52.00	122.00	44.40
45.00	51.00	134.00	22.00

Output Results:
Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.00 in.
Differential Settlement=0.000 to 0.000 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.83	0.20	4.18	0.00	0.00	0.00
2.05	0.83	0.20	4.12	0.00	0.00	0.00
2.10	0.83	0.20	4.07	0.00	0.00	0.00
2.15	0.83	0.21	4.02	0.00	0.00	0.00
2.20	0.83	0.21	3.96	0.00	0.00	0.00
2.25	0.83	0.21	3.92	0.00	0.00	0.00
2.30	0.83	0.21	3.87	0.00	0.00	0.00
2.35	0.83	0.22	3.83	0.00	0.00	0.00
2.40	0.83	0.22	3.78	0.00	0.00	0.00
2.45	0.83	0.22	3.74	0.00	0.00	0.00
2.50	0.83	0.22	3.70	0.00	0.00	0.00
2.55	0.83	0.23	3.67	0.00	0.00	0.00
2.60	0.83	0.23	3.63	0.00	0.00	0.00
2.65	0.83	0.23	3.60	0.00	0.00	0.00
2.70	0.83	0.23	3.56	0.00	0.00	0.00
2.75	0.83	0.24	3.53	0.00	0.00	0.00
2.80	0.83	0.24	3.50	0.00	0.00	0.00
2.85	0.83	0.24	3.47	0.00	0.00	0.00
2.90	0.83	0.24	3.44	0.00	0.00	0.00
2.95	0.83	0.24	3.41	0.00	0.00	0.00
3.00	0.83	0.25	3.38	0.00	0.00	0.00
3.05	0.83	0.25	3.36	0.00	0.00	0.00
3.10	0.83	0.25	3.33	0.00	0.00	0.00
3.15	0.83	0.25	3.31	0.00	0.00	0.00
3.20	0.83	0.25	3.29	0.00	0.00	0.00
3.25	0.83	0.25	3.26	0.00	0.00	0.00
3.30	0.83	0.26	3.24	0.00	0.00	0.00
3.35	0.83	0.26	3.22	0.00	0.00	0.00
3.40	0.83	0.26	3.20	0.00	0.00	0.00
3.45	0.83	0.26	3.18	0.00	0.00	0.00
3.50	0.83	0.26	3.16	0.00	0.00	0.00
3.55	0.83	0.26	3.14	0.00	0.00	0.00
3.60	0.83	0.27	3.12	0.00	0.00	0.00
3.65	0.83	0.27	3.10	0.00	0.00	0.00
3.70	0.83	0.27	3.08	0.00	0.00	0.00
3.75	0.83	0.27	3.07	0.00	0.00	0.00
3.80	0.83	0.27	3.05	0.00	0.00	0.00
3.85	0.83	0.27	3.03	0.00	0.00	0.00
3.90	0.83	0.28	3.02	0.00	0.00	0.00
3.95	0.83	0.28	3.00	0.00	0.00	0.00
4.00	0.83	0.28	2.99	0.00	0.00	0.00
4.05	0.83	0.28	2.97	0.00	0.00	0.00
4.10	0.83	0.28	2.96	0.00	0.00	0.00
4.15	0.83	0.28	2.95	0.00	0.00	0.00
4.20	0.83	0.28	2.93	0.00	0.00	0.00
4.25	0.83	0.28	2.92	0.00	0.00	0.00
4.30	0.83	0.29	2.91	0.00	0.00	0.00
4.35	0.83	0.29	2.89	0.00	0.00	0.00
4.40	0.83	0.29	2.88	0.00	0.00	0.00
4.45	0.83	0.29	2.87	0.00	0.00	0.00
4.50	0.83	0.29	2.86	0.00	0.00	0.00
4.55	0.83	0.29	2.85	0.00	0.00	0.00
4.60	0.83	0.29	2.83	0.00	0.00	0.00
4.65	0.83	0.29	2.82	0.00	0.00	0.00
4.70	0.83	0.30	2.81	0.00	0.00	0.00
4.75	0.83	0.30	2.80	0.00	0.00	0.00
4.80	0.83	0.30	2.79	0.00	0.00	0.00
4.85	0.83	0.30	2.78	0.00	0.00	0.00
4.90	0.83	0.30	2.77	0.00	0.00	0.00
4.95	0.83	0.30	2.76	0.00	0.00	0.00
5.00	0.83	0.30	2.75	0.00	0.00	0.00
5.05	0.83	0.30	2.75	0.00	0.00	0.00
5.10	0.83	0.30	2.74	0.00	0.00	0.00
5.15	0.83	0.30	2.73	0.00	0.00	0.00
5.20	0.83	0.30	2.73	0.00	0.00	0.00
5.25	0.83	0.31	2.72	0.00	0.00	0.00
5.30	0.83	0.31	2.72	0.00	0.00	0.00
5.35	0.83	0.31	2.71	0.00	0.00	0.00
5.40	0.83	0.31	2.71	0.00	0.00	0.00
5.45	0.83	0.31	2.70	0.00	0.00	0.00

5.50	0.83	0.31	2.70	0.00	0.00	0.00
5.55	0.83	0.31	2.69	0.00	0.00	0.00
5.60	0.83	0.31	2.69	0.00	0.00	0.00
5.65	0.83	0.31	2.68	0.00	0.00	0.00
5.70	0.83	0.31	2.68	0.00	0.00	0.00
5.75	0.83	0.31	2.67	0.00	0.00	0.00
5.80	0.83	0.31	2.67	0.00	0.00	0.00
5.85	0.83	0.31	2.66	0.00	0.00	0.00
5.90	0.83	0.31	2.66	0.00	0.00	0.00
5.95	0.83	0.31	2.66	0.00	0.00	0.00
6.00	0.83	0.31	2.65	0.00	0.00	0.00
6.05	0.83	0.31	2.65	0.00	0.00	0.00
6.10	0.83	0.31	2.64	0.00	0.00	0.00
6.15	0.83	0.31	2.64	0.00	0.00	0.00
6.20	0.83	0.32	2.64	0.00	0.00	0.00
6.25	0.83	0.32	2.63	0.00	0.00	0.00
6.30	0.83	0.32	2.63	0.00	0.00	0.00
6.35	0.83	0.32	2.63	0.00	0.00	0.00
6.40	0.83	0.32	2.62	0.00	0.00	0.00
6.45	0.83	0.32	2.62	0.00	0.00	0.00
6.50	0.83	0.32	2.62	0.00	0.00	0.00
6.55	0.83	0.32	2.61	0.00	0.00	0.00
6.60	0.83	0.32	2.61	0.00	0.00	0.00
6.65	0.83	0.32	2.61	0.00	0.00	0.00
6.70	0.83	0.32	2.60	0.00	0.00	0.00
6.75	0.83	0.32	2.60	0.00	0.00	0.00
6.80	0.83	0.32	2.60	0.00	0.00	0.00
6.85	0.83	0.32	2.59	0.00	0.00	0.00
6.90	0.83	0.32	2.59	0.00	0.00	0.00
6.95	0.83	0.32	2.59	0.00	0.00	0.00
7.00	0.83	0.32	2.59	0.00	0.00	0.00
7.05	0.83	0.32	2.58	0.00	0.00	0.00
7.10	0.83	0.32	2.58	0.00	0.00	0.00
7.15	0.83	0.32	2.58	0.00	0.00	0.00
7.20	0.83	0.32	2.58	0.00	0.00	0.00
7.25	0.83	0.32	2.57	0.00	0.00	0.00
7.30	0.83	0.32	2.57	0.00	0.00	0.00
7.35	0.83	0.32	2.57	0.00	0.00	0.00
7.40	0.83	0.32	2.57	0.00	0.00	0.00
7.45	0.83	0.32	2.56	0.00	0.00	0.00
7.50	0.83	0.32	2.56	0.00	0.00	0.00
7.55	0.83	0.32	2.56	0.00	0.00	0.00
7.60	0.83	0.32	2.56	0.00	0.00	0.00
7.65	0.83	0.33	2.56	0.00	0.00	0.00
7.70	0.83	0.33	2.55	0.00	0.00	0.00
7.75	0.83	0.33	2.55	0.00	0.00	0.00
7.80	0.83	0.33	2.55	0.00	0.00	0.00
7.85	0.83	0.33	2.55	0.00	0.00	0.00
7.90	0.83	0.33	2.55	0.00	0.00	0.00
7.95	0.83	0.33	2.54	0.00	0.00	0.00
8.00	0.83	0.33	2.54	0.00	0.00	0.00
8.05	0.83	0.33	2.54	0.00	0.00	0.00
8.10	0.83	0.33	2.54	0.00	0.00	0.00
8.15	0.83	0.33	2.54	0.00	0.00	0.00
8.20	0.83	0.33	2.53	0.00	0.00	0.00
8.25	0.83	0.33	2.53	0.00	0.00	0.00
8.30	0.83	0.33	2.53	0.00	0.00	0.00
8.35	0.83	0.33	2.53	0.00	0.00	0.00
8.40	0.83	0.33	2.53	0.00	0.00	0.00
8.45	0.83	0.33	2.53	0.00	0.00	0.00
8.50	0.83	0.33	2.52	0.00	0.00	0.00
8.55	0.83	0.33	2.52	0.00	0.00	0.00
8.60	0.83	0.33	2.52	0.00	0.00	0.00
8.65	0.83	0.33	2.52	0.00	0.00	0.00
8.70	0.83	0.33	2.52	0.00	0.00	0.00
8.75	0.83	0.33	2.52	0.00	0.00	0.00
8.80	0.83	0.33	2.52	0.00	0.00	0.00
8.85	0.83	0.33	2.51	0.00	0.00	0.00
8.90	0.83	0.33	2.51	0.00	0.00	0.00
8.95	0.83	0.33	2.51	0.00	0.00	0.00
9.00	0.83	0.33	2.51	0.00	0.00	0.00

9.05	0.83	0.33	2.51	0.00	0.00	0.00
9.10	0.83	0.33	2.51	0.00	0.00	0.00
9.15	0.83	0.33	2.51	0.00	0.00	0.00
9.20	0.83	0.33	2.50	0.00	0.00	0.00
9.25	0.83	0.33	2.50	0.00	0.00	0.00
9.30	0.83	0.33	2.50	0.00	0.00	0.00
9.35	0.83	0.33	2.50	0.00	0.00	0.00
9.40	0.83	0.33	2.50	0.00	0.00	0.00
9.45	0.83	0.33	2.50	0.00	0.00	0.00
9.50	0.83	0.33	2.50	0.00	0.00	0.00
9.55	0.83	0.33	2.50	0.00	0.00	0.00
9.60	0.83	0.33	2.49	0.00	0.00	0.00
9.65	0.83	0.33	2.49	0.00	0.00	0.00
9.70	0.83	0.33	2.49	0.00	0.00	0.00
9.75	0.83	0.33	2.49	0.00	0.00	0.00
9.80	0.83	0.33	2.49	0.00	0.00	0.00
9.85	0.83	0.33	2.49	0.00	0.00	0.00
9.90	0.83	0.33	2.49	0.00	0.00	0.00
9.95	0.83	0.33	2.49	0.00	0.00	0.00
10.00	0.83	0.33	2.49	0.00	0.00	0.00
10.05	0.83	0.33	2.49	0.00	0.00	0.00
10.10	0.83	0.33	2.48	0.00	0.00	0.00
10.15	0.83	0.33	2.48	0.00	0.00	0.00
10.20	0.83	0.33	2.48	0.00	0.00	0.00
10.25	0.83	0.33	2.48	0.00	0.00	0.00
10.30	0.83	0.33	2.48	0.00	0.00	0.00
10.35	0.83	0.33	2.48	0.00	0.00	0.00
10.40	0.83	0.33	2.48	0.00	0.00	0.00
10.45	0.83	0.33	2.48	0.00	0.00	0.00
10.50	0.83	0.33	2.48	0.00	0.00	0.00
10.55	0.83	0.34	2.48	0.00	0.00	0.00
10.60	0.83	0.34	2.48	0.00	0.00	0.00
10.65	0.83	0.34	2.48	0.00	0.00	0.00
10.70	0.83	0.34	2.48	0.00	0.00	0.00
10.75	0.83	0.34	2.48	0.00	0.00	0.00
10.80	0.83	0.34	2.48	0.00	0.00	0.00
10.85	0.83	0.34	2.48	0.00	0.00	0.00
10.90	0.83	0.34	2.48	0.00	0.00	0.00
10.95	0.83	0.34	2.48	0.00	0.00	0.00
11.00	0.83	0.34	2.48	0.00	0.00	0.00
11.05	0.83	0.34	2.47	0.00	0.00	0.00
11.10	0.83	0.34	2.47	0.00	0.00	0.00
11.15	0.83	0.34	2.47	0.00	0.00	0.00
11.20	0.83	0.34	2.47	0.00	0.00	0.00
11.25	0.83	0.34	2.47	0.00	0.00	0.00
11.30	0.83	0.34	2.47	0.00	0.00	0.00
11.35	0.83	0.34	2.47	0.00	0.00	0.00
11.40	0.83	0.34	2.47	0.00	0.00	0.00
11.45	0.83	0.34	2.47	0.00	0.00	0.00
11.50	0.83	0.34	2.47	0.00	0.00	0.00
11.55	0.83	0.34	2.47	0.00	0.00	0.00
11.60	0.83	0.34	2.47	0.00	0.00	0.00
11.65	0.83	0.34	2.47	0.00	0.00	0.00
11.70	0.83	0.34	2.47	0.00	0.00	0.00
11.75	0.83	0.34	2.47	0.00	0.00	0.00
11.80	0.83	0.34	2.47	0.00	0.00	0.00
11.85	0.83	0.34	2.47	0.00	0.00	0.00
11.90	0.83	0.34	2.47	0.00	0.00	0.00
11.95	0.83	0.34	2.47	0.00	0.00	0.00
12.00	0.83	0.34	2.47	0.00	0.00	0.00
12.05	0.83	0.34	2.47	0.00	0.00	0.00
12.10	0.83	0.34	2.47	0.00	0.00	0.00
12.15	0.83	0.34	2.47	0.00	0.00	0.00
12.20	0.83	0.34	2.47	0.00	0.00	0.00
12.25	0.83	0.34	2.46	0.00	0.00	0.00
12.30	0.83	0.34	2.46	0.00	0.00	0.00
12.35	0.83	0.34	2.46	0.00	0.00	0.00
12.40	0.83	0.34	2.46	0.00	0.00	0.00
12.45	0.83	0.34	2.46	0.00	0.00	0.00
12.50	0.83	0.34	2.46	0.00	0.00	0.00
12.55	0.83	0.34	2.46	0.00	0.00	0.00

12.60	0.83	0.34	2.46	0.00	0.00	0.00
12.65	0.83	0.34	2.46	0.00	0.00	0.00
12.70	0.83	0.34	2.46	0.00	0.00	0.00
12.75	0.83	0.34	2.46	0.00	0.00	0.00
12.80	0.83	0.34	2.46	0.00	0.00	0.00
12.85	0.83	0.34	2.46	0.00	0.00	0.00
12.90	0.83	0.34	2.46	0.00	0.00	0.00
12.95	0.83	0.34	2.46	0.00	0.00	0.00
13.00	0.83	0.34	2.46	0.00	0.00	0.00
13.05	0.83	0.34	2.46	0.00	0.00	0.00
13.10	0.83	0.34	2.46	0.00	0.00	0.00
13.15	0.83	0.34	2.46	0.00	0.00	0.00
13.20	0.83	0.34	2.46	0.00	0.00	0.00
13.25	0.83	0.34	2.46	0.00	0.00	0.00
13.30	0.83	0.34	2.46	0.00	0.00	0.00
13.35	0.83	0.34	2.46	0.00	0.00	0.00
13.40	0.83	0.34	2.46	0.00	0.00	0.00
13.45	0.83	0.34	2.45	0.00	0.00	0.00
13.50	0.83	0.34	2.45	0.00	0.00	0.00
13.55	0.83	0.34	2.45	0.00	0.00	0.00
13.60	0.83	0.34	2.45	0.00	0.00	0.00
13.65	0.83	0.34	2.45	0.00	0.00	0.00
13.70	0.83	0.34	2.45	0.00	0.00	0.00
13.75	0.83	0.34	2.45	0.00	0.00	0.00
13.80	0.83	0.34	2.45	0.00	0.00	0.00
13.85	0.83	0.34	2.45	0.00	0.00	0.00
13.90	0.83	0.34	2.45	0.00	0.00	0.00
13.95	0.83	0.34	2.45	0.00	0.00	0.00
14.00	0.83	0.34	2.45	0.00	0.00	0.00
14.05	0.83	0.34	2.45	0.00	0.00	0.00
14.10	0.83	0.34	2.45	0.00	0.00	0.00
14.15	0.83	0.34	2.45	0.00	0.00	0.00
14.20	0.83	0.34	2.45	0.00	0.00	0.00
14.25	0.83	0.34	2.45	0.00	0.00	0.00
14.30	0.83	0.34	2.45	0.00	0.00	0.00
14.35	0.83	0.34	2.45	0.00	0.00	0.00
14.40	0.83	0.34	2.45	0.00	0.00	0.00
14.45	0.83	0.34	2.45	0.00	0.00	0.00
14.50	0.83	0.34	2.45	0.00	0.00	0.00
14.55	0.83	0.34	2.45	0.00	0.00	0.00
14.60	0.83	0.34	2.45	0.00	0.00	0.00
14.65	0.83	0.34	2.45	0.00	0.00	0.00
14.70	0.83	0.34	2.45	0.00	0.00	0.00
14.75	0.83	0.34	2.45	0.00	0.00	0.00
14.80	0.83	0.34	2.45	0.00	0.00	0.00
14.85	0.83	0.34	2.45	0.00	0.00	0.00
14.90	0.83	0.34	2.45	0.00	0.00	0.00
14.95	0.83	0.34	2.45	0.00	0.00	0.00
15.00	0.83	0.34	2.45	0.00	0.00	0.00
15.05	0.83	0.34	2.45	0.00	0.00	0.00
15.10	0.83	0.34	2.45	0.00	0.00	0.00
15.15	0.83	0.34	2.45	0.00	0.00	0.00
15.20	0.83	0.34	2.45	0.00	0.00	0.00
15.25	0.83	0.34	2.45	0.00	0.00	0.00
15.30	0.83	0.34	2.44	0.00	0.00	0.00
15.35	0.83	0.34	2.44	0.00	0.00	0.00
15.40	0.83	0.34	2.44	0.00	0.00	0.00
15.45	0.83	0.34	2.44	0.00	0.00	0.00
15.50	0.83	0.34	2.44	0.00	0.00	0.00
15.55	0.83	0.34	2.44	0.00	0.00	0.00
15.60	0.83	0.34	2.44	0.00	0.00	0.00
15.65	0.83	0.34	2.44	0.00	0.00	0.00
15.70	0.83	0.34	2.44	0.00	0.00	0.00
15.75	0.83	0.34	2.44	0.00	0.00	0.00
15.80	0.83	0.34	2.44	0.00	0.00	0.00
15.85	0.83	0.34	2.44	0.00	0.00	0.00
15.90	0.83	0.34	2.44	0.00	0.00	0.00
15.95	0.83	0.34	2.44	0.00	0.00	0.00
16.00	0.83	0.34	2.44	0.00	0.00	0.00
16.05	0.83	0.34	2.44	0.00	0.00	0.00
16.10	0.83	0.34	2.44	0.00	0.00	0.00

16.15	0.83	0.34	2.44	0.00	0.00	0.00
16.20	0.83	0.34	2.44	0.00	0.00	0.00
16.25	0.83	0.34	2.44	0.00	0.00	0.00
16.30	0.83	0.34	2.44	0.00	0.00	0.00
16.35	0.83	0.34	2.44	0.00	0.00	0.00
16.40	0.83	0.34	2.44	0.00	0.00	0.00
16.45	0.83	0.34	2.44	0.00	0.00	0.00
16.50	0.83	0.34	2.44	0.00	0.00	0.00
16.55	0.83	0.34	2.44	0.00	0.00	0.00
16.60	0.83	0.34	2.44	0.00	0.00	0.00
16.65	0.83	0.34	2.44	0.00	0.00	0.00
16.70	0.83	0.34	2.44	0.00	0.00	0.00
16.75	0.83	0.34	2.44	0.00	0.00	0.00
16.80	0.83	0.34	2.44	0.00	0.00	0.00
16.85	0.83	0.34	2.44	0.00	0.00	0.00
16.90	0.83	0.34	2.44	0.00	0.00	0.00
16.95	0.83	0.34	2.44	0.00	0.00	0.00
17.00	0.83	0.34	2.44	0.00	0.00	0.00
17.05	0.83	0.34	2.44	0.00	0.00	0.00
17.10	0.83	0.34	2.44	0.00	0.00	0.00
17.15	0.83	0.34	2.44	0.00	0.00	0.00
17.20	0.83	0.34	2.44	0.00	0.00	0.00
17.25	0.83	0.34	2.44	0.00	0.00	0.00
17.30	0.83	0.34	2.44	0.00	0.00	0.00
17.35	0.83	0.34	2.44	0.00	0.00	0.00
17.40	0.83	0.34	2.44	0.00	0.00	0.00
17.45	0.83	0.34	2.44	0.00	0.00	0.00
17.50	0.83	0.34	2.44	0.00	0.00	0.00
17.55	0.83	0.34	2.44	0.00	0.00	0.00
17.60	0.83	0.34	2.44	0.00	0.00	0.00
17.65	0.83	0.34	2.44	0.00	0.00	0.00
17.70	0.83	0.34	2.44	0.00	0.00	0.00
17.75	0.83	0.34	2.44	0.00	0.00	0.00
17.80	0.83	0.34	2.44	0.00	0.00	0.00
17.85	0.83	0.34	2.44	0.00	0.00	0.00
17.90	0.83	0.34	2.44	0.00	0.00	0.00
17.95	0.83	0.34	2.44	0.00	0.00	0.00
18.00	0.83	0.34	2.44	0.00	0.00	0.00
18.05	0.83	0.34	2.44	0.00	0.00	0.00
18.10	0.83	0.34	2.44	0.00	0.00	0.00
18.15	0.83	0.34	2.44	0.00	0.00	0.00
18.20	0.83	0.34	2.44	0.00	0.00	0.00
18.25	0.83	0.34	2.44	0.00	0.00	0.00
18.30	0.83	0.34	2.44	0.00	0.00	0.00
18.35	0.83	0.34	2.43	0.00	0.00	0.00
18.40	0.83	0.34	2.43	0.00	0.00	0.00
18.45	0.83	0.34	2.43	0.00	0.00	0.00
18.50	0.83	0.34	2.43	0.00	0.00	0.00
18.55	0.83	0.34	2.43	0.00	0.00	0.00
18.60	0.83	0.34	2.43	0.00	0.00	0.00
18.65	0.83	0.34	2.43	0.00	0.00	0.00
18.70	0.83	0.34	2.43	0.00	0.00	0.00
18.75	0.83	0.34	2.43	0.00	0.00	0.00
18.80	0.83	0.34	2.43	0.00	0.00	0.00
18.85	0.83	0.34	2.43	0.00	0.00	0.00
18.90	0.83	0.34	2.43	0.00	0.00	0.00
18.95	0.83	0.34	2.43	0.00	0.00	0.00
19.00	0.83	0.34	2.43	0.00	0.00	0.00
19.05	0.83	0.34	2.43	0.00	0.00	0.00
19.10	0.83	0.34	2.43	0.00	0.00	0.00
19.15	0.83	0.34	2.43	0.00	0.00	0.00
19.20	0.83	0.34	2.43	0.00	0.00	0.00
19.25	0.83	0.34	2.43	0.00	0.00	0.00
19.30	0.83	0.34	2.43	0.00	0.00	0.00
19.35	0.83	0.34	2.43	0.00	0.00	0.00
19.40	0.83	0.34	2.43	0.00	0.00	0.00
19.45	0.83	0.34	2.43	0.00	0.00	0.00
19.50	0.83	0.34	2.43	0.00	0.00	0.00
19.55	0.83	0.34	2.43	0.00	0.00	0.00
19.60	0.83	0.34	2.43	0.00	0.00	0.00
19.65	0.83	0.34	2.43	0.00	0.00	0.00

19.70	0.83	0.34	2.43	0.00	0.00	0.00
19.75	0.83	0.34	2.43	0.00	0.00	0.00
19.80	0.83	0.34	2.43	0.00	0.00	0.00
19.85	0.83	0.34	2.43	0.00	0.00	0.00
19.90	0.83	0.34	2.43	0.00	0.00	0.00
19.95	0.83	0.34	2.43	0.00	0.00	0.00
20.00	0.83	0.34	2.43	0.00	0.00	0.00
20.05	0.83	0.34	2.43	0.00	0.00	0.00
20.10	0.83	0.34	2.43	0.00	0.00	0.00
20.15	0.83	0.34	2.43	0.00	0.00	0.00
20.20	0.83	0.34	2.43	0.00	0.00	0.00
20.25	0.83	0.34	2.43	0.00	0.00	0.00
20.30	0.83	0.34	2.43	0.00	0.00	0.00
20.35	0.83	0.34	2.43	0.00	0.00	0.00
20.40	0.83	0.34	2.43	0.00	0.00	0.00
20.45	0.83	0.34	2.43	0.00	0.00	0.00
20.50	0.83	0.34	2.43	0.00	0.00	0.00
20.55	0.83	0.34	2.43	0.00	0.00	0.00
20.60	0.83	0.34	2.43	0.00	0.00	0.00
20.65	0.83	0.34	2.43	0.00	0.00	0.00
20.70	0.83	0.34	2.43	0.00	0.00	0.00
20.75	0.83	0.34	2.43	0.00	0.00	0.00
20.80	0.83	0.34	2.43	0.00	0.00	0.00
20.85	0.83	0.34	2.43	0.00	0.00	0.00
20.90	0.83	0.34	2.43	0.00	0.00	0.00
20.95	0.83	0.34	2.43	0.00	0.00	0.00
21.00	0.83	0.34	2.43	0.00	0.00	0.00
21.05	0.83	0.34	2.43	0.00	0.00	0.00
21.10	0.83	0.34	2.43	0.00	0.00	0.00
21.15	0.83	0.34	2.43	0.00	0.00	0.00
21.20	0.83	0.34	2.43	0.00	0.00	0.00
21.25	0.83	0.34	2.43	0.00	0.00	0.00
21.30	0.83	0.34	2.43	0.00	0.00	0.00
21.35	0.83	0.34	2.43	0.00	0.00	0.00
21.40	0.83	0.34	2.43	0.00	0.00	0.00
21.45	0.83	0.34	2.43	0.00	0.00	0.00
21.50	0.83	0.34	2.42	0.00	0.00	0.00
21.55	0.83	0.34	2.42	0.00	0.00	0.00
21.60	0.83	0.34	2.42	0.00	0.00	0.00
21.65	0.83	0.34	2.42	0.00	0.00	0.00
21.70	0.83	0.34	2.42	0.00	0.00	0.00
21.75	0.83	0.34	2.42	0.00	0.00	0.00
21.80	0.83	0.34	2.42	0.00	0.00	0.00
21.85	0.83	0.34	2.42	0.00	0.00	0.00
21.90	0.83	0.34	2.42	0.00	0.00	0.00
21.95	0.83	0.34	2.42	0.00	0.00	0.00
22.00	0.83	0.34	2.42	0.00	0.00	0.00
22.05	0.83	0.34	2.42	0.00	0.00	0.00
22.10	0.83	0.34	2.42	0.00	0.00	0.00
22.15	0.83	0.34	2.42	0.00	0.00	0.00
22.20	0.83	0.34	2.42	0.00	0.00	0.00
22.25	0.83	0.34	2.42	0.00	0.00	0.00
22.30	0.83	0.34	2.42	0.00	0.00	0.00
22.35	0.83	0.34	2.42	0.00	0.00	0.00
22.40	0.83	0.34	2.42	0.00	0.00	0.00
22.45	0.83	0.34	2.42	0.00	0.00	0.00
22.50	0.83	0.34	2.42	0.00	0.00	0.00
22.55	0.83	0.34	2.42	0.00	0.00	0.00
22.60	0.83	0.34	2.42	0.00	0.00	0.00
22.65	0.83	0.34	2.42	0.00	0.00	0.00
22.70	0.83	0.34	2.42	0.00	0.00	0.00
22.75	0.83	0.34	2.42	0.00	0.00	0.00
22.80	0.83	0.34	2.42	0.00	0.00	0.00
22.85	0.83	0.34	2.42	0.00	0.00	0.00
22.90	0.83	0.34	2.42	0.00	0.00	0.00
22.95	0.83	0.34	2.42	0.00	0.00	0.00
23.00	0.83	0.34	2.42	0.00	0.00	0.00
23.05	0.83	0.34	2.42	0.00	0.00	0.00
23.10	0.83	0.34	2.42	0.00	0.00	0.00
23.15	0.83	0.34	2.42	0.00	0.00	0.00
23.20	0.83	0.34	2.42	0.00	0.00	0.00

23.25	0.83	0.34	2.42	0.00	0.00	0.00
23.30	0.83	0.34	2.42	0.00	0.00	0.00
23.35	0.83	0.34	2.42	0.00	0.00	0.00
23.40	0.83	0.34	2.42	0.00	0.00	0.00
23.45	0.83	0.34	2.42	0.00	0.00	0.00
23.50	0.83	0.34	2.42	0.00	0.00	0.00
23.55	0.83	0.34	2.42	0.00	0.00	0.00
23.60	0.83	0.34	2.42	0.00	0.00	0.00
23.65	0.83	0.34	2.42	0.00	0.00	0.00
23.70	0.83	0.34	2.42	0.00	0.00	0.00
23.75	0.83	0.34	2.42	0.00	0.00	0.00
23.80	0.83	0.34	2.42	0.00	0.00	0.00
23.85	0.83	0.34	2.42	0.00	0.00	0.00
23.90	0.83	0.34	2.42	0.00	0.00	0.00
23.95	0.83	0.34	2.42	0.00	0.00	0.00
24.00	0.83	0.34	2.42	0.00	0.00	0.00
24.05	0.83	0.34	2.42	0.00	0.00	0.00
24.10	0.83	0.34	2.42	0.00	0.00	0.00
24.15	0.83	0.34	2.42	0.00	0.00	0.00
24.20	0.83	0.34	2.42	0.00	0.00	0.00
24.25	0.83	0.34	2.42	0.00	0.00	0.00
24.30	0.83	0.34	2.42	0.00	0.00	0.00
24.35	0.83	0.34	2.42	0.00	0.00	0.00
24.40	0.83	0.34	2.41	0.00	0.00	0.00
24.45	0.83	0.34	2.41	0.00	0.00	0.00
24.50	0.83	0.34	2.41	0.00	0.00	0.00
24.55	0.83	0.34	2.41	0.00	0.00	0.00
24.60	0.83	0.34	2.41	0.00	0.00	0.00
24.65	0.83	0.34	2.41	0.00	0.00	0.00
24.70	0.83	0.34	2.41	0.00	0.00	0.00
24.75	0.83	0.34	2.41	0.00	0.00	0.00
24.80	0.83	0.34	2.41	0.00	0.00	0.00
24.85	0.83	0.34	2.41	0.00	0.00	0.00
24.90	0.83	0.34	2.41	0.00	0.00	0.00
24.95	0.83	0.34	2.41	0.00	0.00	0.00
25.00	0.83	0.34	2.41	0.00	0.00	0.00
25.05	0.83	0.34	2.41	0.00	0.00	0.00
25.10	0.83	0.34	2.41	0.00	0.00	0.00
25.15	0.83	0.34	2.41	0.00	0.00	0.00
25.20	0.83	0.34	2.41	0.00	0.00	0.00
25.25	0.83	0.34	2.41	0.00	0.00	0.00
25.30	0.83	0.34	2.41	0.00	0.00	0.00
25.35	0.83	0.34	2.41	0.00	0.00	0.00
25.40	0.83	0.34	2.41	0.00	0.00	0.00
25.45	0.83	0.34	2.41	0.00	0.00	0.00
25.50	0.83	0.34	2.41	0.00	0.00	0.00
25.55	0.83	0.34	2.41	0.00	0.00	0.00
25.60	0.83	0.34	2.41	0.00	0.00	0.00
25.65	0.83	0.35	2.41	0.00	0.00	0.00
25.70	0.83	0.35	2.41	0.00	0.00	0.00
25.75	0.83	0.35	2.41	0.00	0.00	0.00
25.80	0.83	0.35	2.41	0.00	0.00	0.00
25.85	0.83	0.35	2.41	0.00	0.00	0.00
25.90	0.83	0.35	2.40	0.00	0.00	0.00
25.95	0.83	0.35	2.40	0.00	0.00	0.00
26.00	0.83	0.35	2.40	0.00	0.00	0.00
26.05	0.83	0.35	2.40	0.00	0.00	0.00
26.10	0.83	0.35	2.40	0.00	0.00	0.00
26.15	0.83	0.35	2.40	0.00	0.00	0.00
26.20	0.83	0.35	2.40	0.00	0.00	0.00
26.25	0.83	0.35	2.40	0.00	0.00	0.00
26.30	0.83	0.35	2.40	0.00	0.00	0.00
26.35	0.83	0.35	2.40	0.00	0.00	0.00
26.40	0.83	0.35	2.40	0.00	0.00	0.00
26.45	0.83	0.35	2.40	0.00	0.00	0.00
26.50	0.83	0.35	2.40	0.00	0.00	0.00
26.55	0.83	0.35	2.40	0.00	0.00	0.00
26.60	0.83	0.35	2.40	0.00	0.00	0.00
26.65	0.83	0.35	2.40	0.00	0.00	0.00
26.70	0.83	0.35	2.40	0.00	0.00	0.00
26.75	0.83	0.35	2.40	0.00	0.00	0.00

26.80	0.83	0.35	2.40	0.00	0.00	0.00
26.85	0.83	0.35	2.40	0.00	0.00	0.00
26.90	0.83	0.35	2.40	0.00	0.00	0.00
26.95	0.83	0.35	2.40	0.00	0.00	0.00
27.00	0.83	0.35	2.39	0.00	0.00	0.00
27.05	0.83	0.35	2.39	0.00	0.00	0.00
27.10	0.83	0.35	2.39	0.00	0.00	0.00
27.15	0.83	0.35	2.39	0.00	0.00	0.00
27.20	0.83	0.35	2.39	0.00	0.00	0.00
27.25	0.83	0.35	2.39	0.00	0.00	0.00
27.30	0.83	0.35	2.39	0.00	0.00	0.00
27.35	0.83	0.35	2.39	0.00	0.00	0.00
27.40	0.83	0.35	2.39	0.00	0.00	0.00
27.45	0.83	0.35	2.39	0.00	0.00	0.00
27.50	0.83	0.35	2.39	0.00	0.00	0.00
27.55	0.83	0.35	2.39	0.00	0.00	0.00
27.60	0.83	0.35	2.39	0.00	0.00	0.00
27.65	0.83	0.35	2.39	0.00	0.00	0.00
27.70	0.83	0.35	2.39	0.00	0.00	0.00
27.75	0.83	0.35	2.39	0.00	0.00	0.00
27.80	0.83	0.35	2.39	0.00	0.00	0.00
27.85	0.83	0.35	2.39	0.00	0.00	0.00
27.90	0.83	0.35	2.39	0.00	0.00	0.00
27.95	0.83	0.35	2.39	0.00	0.00	0.00
28.00	0.83	0.35	2.39	0.00	0.00	0.00
28.05	0.83	0.35	2.39	0.00	0.00	0.00
28.10	0.83	0.35	2.39	0.00	0.00	0.00
28.15	0.83	0.35	2.39	0.00	0.00	0.00
28.20	0.83	0.35	2.38	0.00	0.00	0.00
28.25	0.83	0.35	2.38	0.00	0.00	0.00
28.30	0.83	0.35	2.38	0.00	0.00	0.00
28.35	0.83	0.35	2.38	0.00	0.00	0.00
28.40	0.83	0.35	2.38	0.00	0.00	0.00
28.45	0.83	0.35	2.38	0.00	0.00	0.00
28.50	0.83	0.35	2.38	0.00	0.00	0.00
28.55	2.00	0.35	5.00	0.00	0.00	0.00
28.60	2.00	0.35	5.00	0.00	0.00	0.00
28.65	2.00	0.35	5.00	0.00	0.00	0.00
28.70	2.00	0.35	5.00	0.00	0.00	0.00
28.75	2.00	0.35	5.00	0.00	0.00	0.00
28.80	2.00	0.35	5.00	0.00	0.00	0.00
28.85	2.00	0.35	5.00	0.00	0.00	0.00
28.90	2.00	0.35	5.00	0.00	0.00	0.00
28.95	2.00	0.35	5.00	0.00	0.00	0.00
29.00	2.00	0.35	5.00	0.00	0.00	0.00
29.05	2.00	0.35	5.00	0.00	0.00	0.00
29.10	2.00	0.35	5.00	0.00	0.00	0.00
29.15	2.00	0.35	5.00	0.00	0.00	0.00
29.20	2.00	0.35	5.00	0.00	0.00	0.00
29.25	2.00	0.35	5.00	0.00	0.00	0.00
29.30	2.00	0.35	5.00	0.00	0.00	0.00
29.35	2.00	0.35	5.00	0.00	0.00	0.00
29.40	2.00	0.35	5.00	0.00	0.00	0.00
29.45	2.00	0.35	5.00	0.00	0.00	0.00
29.50	2.00	0.35	5.00	0.00	0.00	0.00
29.55	2.00	0.35	5.00	0.00	0.00	0.00
29.60	2.00	0.35	5.00	0.00	0.00	0.00
29.65	2.00	0.35	5.00	0.00	0.00	0.00
29.70	2.00	0.35	5.00	0.00	0.00	0.00
29.75	2.00	0.35	5.00	0.00	0.00	0.00
29.80	2.00	0.35	5.00	0.00	0.00	0.00
29.85	2.00	0.35	5.00	0.00	0.00	0.00
29.90	2.00	0.35	5.00	0.00	0.00	0.00
29.95	2.00	0.35	5.00	0.00	0.00	0.00
30.00	2.00	0.35	5.00	0.00	0.00	0.00
30.05	2.00	0.35	5.00	0.00	0.00	0.00
30.10	2.00	0.35	5.00	0.00	0.00	0.00
30.15	2.00	0.35	5.00	0.00	0.00	0.00
30.20	2.00	0.35	5.00	0.00	0.00	0.00
30.25	2.00	0.35	5.00	0.00	0.00	0.00
30.30	2.00	0.35	5.00	0.00	0.00	0.00

30.35	2.00	0.35	5.00	0.00	0.00	0.00
30.40	2.00	0.35	5.00	0.00	0.00	0.00
30.45	2.00	0.35	5.00	0.00	0.00	0.00
30.50	2.00	0.35	5.00	0.00	0.00	0.00
30.55	2.00	0.35	5.00	0.00	0.00	0.00
30.60	2.00	0.35	5.00	0.00	0.00	0.00
30.65	2.00	0.35	5.00	0.00	0.00	0.00
30.70	2.00	0.35	5.00	0.00	0.00	0.00
30.75	2.00	0.35	5.00	0.00	0.00	0.00
30.80	2.00	0.35	5.00	0.00	0.00	0.00
30.85	2.00	0.35	5.00	0.00	0.00	0.00
30.90	2.00	0.35	5.00	0.00	0.00	0.00
30.95	2.00	0.35	5.00	0.00	0.00	0.00
31.00	2.00	0.35	5.00	0.00	0.00	0.00
31.05	2.00	0.35	5.00	0.00	0.00	0.00
31.10	2.00	0.35	5.00	0.00	0.00	0.00
31.15	2.00	0.35	5.00	0.00	0.00	0.00
31.20	2.00	0.35	5.00	0.00	0.00	0.00
31.25	2.00	0.35	5.00	0.00	0.00	0.00
31.30	2.00	0.35	5.00	0.00	0.00	0.00
31.35	2.00	0.35	5.00	0.00	0.00	0.00
31.40	2.00	0.35	5.00	0.00	0.00	0.00
31.45	2.00	0.35	5.00	0.00	0.00	0.00
31.50	2.00	0.35	5.00	0.00	0.00	0.00
31.55	2.00	0.35	5.00	0.00	0.00	0.00
31.60	2.00	0.35	5.00	0.00	0.00	0.00
31.65	2.00	0.35	5.00	0.00	0.00	0.00
31.70	2.00	0.35	5.00	0.00	0.00	0.00
31.75	2.00	0.35	5.00	0.00	0.00	0.00
31.80	2.00	0.35	5.00	0.00	0.00	0.00
31.85	2.00	0.35	5.00	0.00	0.00	0.00
31.90	2.00	0.35	5.00	0.00	0.00	0.00
31.95	2.00	0.35	5.00	0.00	0.00	0.00
32.00	2.00	0.35	5.00	0.00	0.00	0.00
32.05	2.00	0.35	5.00	0.00	0.00	0.00
32.10	2.00	0.35	5.00	0.00	0.00	0.00
32.15	2.00	0.35	5.00	0.00	0.00	0.00
32.20	2.00	0.35	5.00	0.00	0.00	0.00
32.25	2.00	0.35	5.00	0.00	0.00	0.00
32.30	2.00	0.35	5.00	0.00	0.00	0.00
32.35	2.00	0.35	5.00	0.00	0.00	0.00
32.40	2.00	0.35	5.00	0.00	0.00	0.00
32.45	2.00	0.35	5.00	0.00	0.00	0.00
32.50	2.00	0.35	5.00	0.00	0.00	0.00
32.55	2.00	0.35	5.00	0.00	0.00	0.00
32.60	2.00	0.34	5.00	0.00	0.00	0.00
32.65	2.00	0.34	5.00	0.00	0.00	0.00
32.70	2.00	0.34	5.00	0.00	0.00	0.00
32.75	2.00	0.34	5.00	0.00	0.00	0.00
32.80	2.00	0.34	5.00	0.00	0.00	0.00
32.85	2.00	0.34	5.00	0.00	0.00	0.00
32.90	2.00	0.34	5.00	0.00	0.00	0.00
32.95	2.00	0.34	5.00	0.00	0.00	0.00
33.00	2.00	0.34	5.00	0.00	0.00	0.00
33.05	2.00	0.34	5.00	0.00	0.00	0.00
33.10	2.00	0.34	5.00	0.00	0.00	0.00
33.15	2.00	0.34	5.00	0.00	0.00	0.00
33.20	2.00	0.34	5.00	0.00	0.00	0.00
33.25	2.00	0.34	5.00	0.00	0.00	0.00
33.30	2.00	0.34	5.00	0.00	0.00	0.00
33.35	2.00	0.34	5.00	0.00	0.00	0.00
33.40	2.00	0.34	5.00	0.00	0.00	0.00
33.45	2.00	0.34	5.00	0.00	0.00	0.00
33.50	2.00	0.34	5.00	0.00	0.00	0.00
33.55	2.00	0.34	5.00	0.00	0.00	0.00
33.60	2.00	0.34	5.00	0.00	0.00	0.00
33.65	2.00	0.34	5.00	0.00	0.00	0.00
33.70	2.00	0.34	5.00	0.00	0.00	0.00
33.75	2.00	0.34	5.00	0.00	0.00	0.00
33.80	2.00	0.34	5.00	0.00	0.00	0.00
33.85	2.00	0.34	5.00	0.00	0.00	0.00

33.90	2.00	0.34	5.00	0.00	0.00	0.00
33.95	2.00	0.34	5.00	0.00	0.00	0.00
34.00	2.00	0.34	5.00	0.00	0.00	0.00
34.05	2.00	0.34	5.00	0.00	0.00	0.00
34.10	2.00	0.34	5.00	0.00	0.00	0.00
34.15	2.00	0.34	5.00	0.00	0.00	0.00
34.20	2.00	0.34	5.00	0.00	0.00	0.00
34.25	2.00	0.34	5.00	0.00	0.00	0.00
34.30	2.00	0.34	5.00	0.00	0.00	0.00
34.35	2.00	0.34	5.00	0.00	0.00	0.00
34.40	2.00	0.34	5.00	0.00	0.00	0.00
34.45	2.00	0.34	5.00	0.00	0.00	0.00
34.50	2.00	0.34	5.00	0.00	0.00	0.00
34.55	2.00	0.34	5.00	0.00	0.00	0.00
34.60	2.00	0.34	5.00	0.00	0.00	0.00
34.65	2.00	0.34	5.00	0.00	0.00	0.00
34.70	2.00	0.34	5.00	0.00	0.00	0.00
34.75	2.00	0.34	5.00	0.00	0.00	0.00
34.80	2.00	0.34	5.00	0.00	0.00	0.00
34.85	2.00	0.34	5.00	0.00	0.00	0.00
34.90	2.00	0.34	5.00	0.00	0.00	0.00
34.95	2.00	0.34	5.00	0.00	0.00	0.00
35.00	2.00	0.34	5.00	0.00	0.00	0.00
35.05	0.83	0.34	2.45	0.00	0.00	0.00
35.10	0.83	0.34	2.45	0.00	0.00	0.00
35.15	0.83	0.34	2.45	0.00	0.00	0.00
35.20	0.83	0.34	2.45	0.00	0.00	0.00
35.25	0.83	0.34	2.45	0.00	0.00	0.00
35.30	0.83	0.34	2.45	0.00	0.00	0.00
35.35	0.83	0.34	2.45	0.00	0.00	0.00
35.40	0.83	0.34	2.45	0.00	0.00	0.00
35.45	0.83	0.34	2.46	0.00	0.00	0.00
35.50	0.83	0.34	2.46	0.00	0.00	0.00
35.55	0.83	0.34	2.46	0.00	0.00	0.00
35.60	0.83	0.34	2.46	0.00	0.00	0.00
35.65	0.83	0.34	2.46	0.00	0.00	0.00
35.70	0.83	0.34	2.46	0.00	0.00	0.00
35.75	0.83	0.34	2.46	0.00	0.00	0.00
35.80	0.83	0.34	2.46	0.00	0.00	0.00
35.85	0.83	0.34	2.46	0.00	0.00	0.00
35.90	0.83	0.34	2.46	0.00	0.00	0.00
35.95	0.83	0.34	2.47	0.00	0.00	0.00
36.00	0.83	0.34	2.47	0.00	0.00	0.00
36.05	0.83	0.34	2.47	0.00	0.00	0.00
36.10	0.83	0.34	2.47	0.00	0.00	0.00
36.15	0.83	0.34	2.47	0.00	0.00	0.00
36.20	0.83	0.34	2.47	0.00	0.00	0.00
36.25	0.83	0.34	2.47	0.00	0.00	0.00
36.30	0.83	0.34	2.47	0.00	0.00	0.00
36.35	0.83	0.34	2.47	0.00	0.00	0.00
36.40	0.83	0.34	2.48	0.00	0.00	0.00
36.45	0.83	0.34	2.48	0.00	0.00	0.00
36.50	0.83	0.34	2.48	0.00	0.00	0.00
36.55	0.83	0.34	2.48	0.00	0.00	0.00
36.60	0.83	0.33	2.48	0.00	0.00	0.00
36.65	0.83	0.33	2.48	0.00	0.00	0.00
36.70	0.83	0.33	2.48	0.00	0.00	0.00
36.75	0.83	0.33	2.48	0.00	0.00	0.00
36.80	0.83	0.33	2.48	0.00	0.00	0.00
36.85	0.83	0.33	2.49	0.00	0.00	0.00
36.90	0.83	0.33	2.49	0.00	0.00	0.00
36.95	0.83	0.33	2.49	0.00	0.00	0.00
37.00	0.83	0.33	2.49	0.00	0.00	0.00
37.05	0.83	0.33	2.49	0.00	0.00	0.00
37.10	0.83	0.33	2.49	0.00	0.00	0.00
37.15	0.83	0.33	2.49	0.00	0.00	0.00
37.20	0.83	0.33	2.49	0.00	0.00	0.00
37.25	0.83	0.33	2.49	0.00	0.00	0.00
37.30	0.83	0.33	2.50	0.00	0.00	0.00
37.35	0.83	0.33	2.50	0.00	0.00	0.00
37.40	0.83	0.33	2.50	0.00	0.00	0.00

37.45	0.83	0.33	2.50	0.00	0.00	0.00
37.50	0.83	0.33	2.50	0.00	0.00	0.00
37.55	0.83	0.33	2.50	0.00	0.00	0.00
37.60	0.83	0.33	2.50	0.00	0.00	0.00
37.65	0.83	0.33	2.50	0.00	0.00	0.00
37.70	0.83	0.33	2.50	0.00	0.00	0.00
37.75	0.83	0.33	2.51	0.00	0.00	0.00
37.80	0.83	0.33	2.51	0.00	0.00	0.00
37.85	0.83	0.33	2.51	0.00	0.00	0.00
37.90	0.83	0.33	2.51	0.00	0.00	0.00
37.95	0.83	0.33	2.51	0.00	0.00	0.00
38.00	0.83	0.33	2.51	0.00	0.00	0.00
38.05	0.83	0.33	2.51	0.00	0.00	0.00
38.10	0.83	0.33	2.51	0.00	0.00	0.00
38.15	0.83	0.33	2.51	0.00	0.00	0.00
38.20	0.83	0.33	2.52	0.00	0.00	0.00
38.25	0.83	0.33	2.52	0.00	0.00	0.00
38.30	0.83	0.33	2.52	0.00	0.00	0.00
38.35	0.83	0.33	2.52	0.00	0.00	0.00
38.40	0.83	0.33	2.52	0.00	0.00	0.00
38.45	0.83	0.33	2.52	0.00	0.00	0.00
38.50	0.83	0.33	2.52	0.00	0.00	0.00
38.55	0.83	0.33	2.52	0.00	0.00	0.00
38.60	0.83	0.33	2.52	0.00	0.00	0.00
38.65	0.83	0.33	2.53	0.00	0.00	0.00
38.70	0.83	0.33	2.53	0.00	0.00	0.00
38.75	0.83	0.33	2.53	0.00	0.00	0.00
38.80	0.83	0.33	2.53	0.00	0.00	0.00
38.85	0.83	0.33	2.53	0.00	0.00	0.00
38.90	0.83	0.33	2.53	0.00	0.00	0.00
38.95	0.83	0.33	2.53	0.00	0.00	0.00
39.00	0.83	0.33	2.53	0.00	0.00	0.00
39.05	0.83	0.33	2.53	0.00	0.00	0.00
39.10	0.83	0.33	2.54	0.00	0.00	0.00
39.15	0.83	0.33	2.54	0.00	0.00	0.00
39.20	0.83	0.33	2.54	0.00	0.00	0.00
39.25	0.83	0.33	2.54	0.00	0.00	0.00
39.30	0.83	0.33	2.54	0.00	0.00	0.00
39.35	0.83	0.33	2.54	0.00	0.00	0.00
39.40	0.83	0.33	2.54	0.00	0.00	0.00
39.45	0.83	0.33	2.54	0.00	0.00	0.00
39.50	0.83	0.33	2.54	0.00	0.00	0.00
39.55	0.83	0.33	2.55	0.00	0.00	0.00
39.60	0.83	0.33	2.55	0.00	0.00	0.00
39.65	0.83	0.33	2.55	0.00	0.00	0.00
39.70	0.83	0.33	2.55	0.00	0.00	0.00
39.75	0.83	0.33	2.55	0.00	0.00	0.00
39.80	0.83	0.33	2.55	0.00	0.00	0.00
39.85	0.83	0.33	2.55	0.00	0.00	0.00
39.90	0.83	0.33	2.55	0.00	0.00	0.00
39.95	0.83	0.33	2.56	0.00	0.00	0.00
40.00	0.83	0.32	2.56	0.00	0.00	0.00
40.05	0.83	0.32	2.56	0.00	0.00	0.00
40.10	0.83	0.32	2.56	0.00	0.00	0.00
40.15	0.83	0.32	2.56	0.00	0.00	0.00
40.20	0.83	0.32	2.56	0.00	0.00	0.00
40.25	0.83	0.32	2.56	0.00	0.00	0.00
40.30	0.83	0.32	2.56	0.00	0.00	0.00
40.35	0.83	0.32	2.56	0.00	0.00	0.00
40.40	0.83	0.32	2.56	0.00	0.00	0.00
40.45	0.83	0.32	2.57	0.00	0.00	0.00
40.50	0.83	0.32	2.57	0.00	0.00	0.00
40.55	0.83	0.32	2.57	0.00	0.00	0.00
40.60	0.83	0.32	2.57	0.00	0.00	0.00
40.65	0.83	0.32	2.57	0.00	0.00	0.00
40.70	0.83	0.32	2.57	0.00	0.00	0.00
40.75	0.83	0.32	2.57	0.00	0.00	0.00
40.80	0.83	0.32	2.57	0.00	0.00	0.00
40.85	0.83	0.32	2.57	0.00	0.00	0.00
40.90	0.83	0.32	2.58	0.00	0.00	0.00
40.95	0.83	0.32	2.58	0.00	0.00	0.00

41.00	0.83	0.32	2.58	0.00	0.00	0.00
41.05	0.83	0.32	2.58	0.00	0.00	0.00
41.10	0.83	0.32	2.58	0.00	0.00	0.00
41.15	0.83	0.32	2.58	0.00	0.00	0.00
41.20	0.83	0.32	2.58	0.00	0.00	0.00
41.25	0.83	0.32	2.58	0.00	0.00	0.00
41.30	0.83	0.32	2.58	0.00	0.00	0.00
41.35	0.83	0.32	2.59	0.00	0.00	0.00
41.40	0.83	0.32	2.59	0.00	0.00	0.00
41.45	0.83	0.32	2.59	0.00	0.00	0.00
41.50	0.83	0.32	2.59	0.00	0.00	0.00
41.55	0.83	0.32	2.59	0.00	0.00	0.00
41.60	0.83	0.32	2.59	0.00	0.00	0.00
41.65	0.83	0.32	2.59	0.00	0.00	0.00
41.70	0.83	0.32	2.59	0.00	0.00	0.00
41.75	0.83	0.32	2.59	0.00	0.00	0.00
41.80	0.83	0.32	2.59	0.00	0.00	0.00
41.85	0.83	0.32	2.60	0.00	0.00	0.00
41.90	0.83	0.32	2.60	0.00	0.00	0.00
41.95	0.83	0.32	2.60	0.00	0.00	0.00
42.00	0.83	0.32	2.60	0.00	0.00	0.00
42.05	0.83	0.32	2.60	0.00	0.00	0.00
42.10	0.83	0.32	2.60	0.00	0.00	0.00
42.15	0.83	0.32	2.60	0.00	0.00	0.00
42.20	0.83	0.32	2.60	0.00	0.00	0.00
42.25	0.83	0.32	2.60	0.00	0.00	0.00
42.30	0.83	0.32	2.61	0.00	0.00	0.00
42.35	0.83	0.32	2.61	0.00	0.00	0.00
42.40	0.83	0.32	2.61	0.00	0.00	0.00
42.45	0.83	0.32	2.61	0.00	0.00	0.00
42.50	0.83	0.32	2.61	0.00	0.00	0.00
42.55	0.83	0.32	2.61	0.00	0.00	0.00
42.60	0.83	0.32	2.61	0.00	0.00	0.00
42.65	0.83	0.32	2.61	0.00	0.00	0.00
42.70	0.83	0.32	2.61	0.00	0.00	0.00
42.75	0.83	0.32	2.62	0.00	0.00	0.00
42.80	0.83	0.32	2.62	0.00	0.00	0.00
42.85	0.83	0.32	2.62	0.00	0.00	0.00
42.90	0.83	0.32	2.62	0.00	0.00	0.00
42.95	0.83	0.32	2.62	0.00	0.00	0.00
43.00	0.83	0.32	2.62	0.00	0.00	0.00
43.05	0.83	0.32	2.62	0.00	0.00	0.00
43.10	0.83	0.32	2.62	0.00	0.00	0.00
43.15	0.83	0.32	2.62	0.00	0.00	0.00
43.20	0.83	0.32	2.63	0.00	0.00	0.00
43.25	0.83	0.32	2.63	0.00	0.00	0.00
43.30	0.83	0.32	2.63	0.00	0.00	0.00
43.35	0.83	0.32	2.63	0.00	0.00	0.00
43.40	0.83	0.32	2.63	0.00	0.00	0.00
43.45	0.83	0.32	2.63	0.00	0.00	0.00
43.50	0.83	0.32	2.63	0.00	0.00	0.00
43.55	0.83	0.32	2.63	0.00	0.00	0.00
43.60	0.83	0.32	2.63	0.00	0.00	0.00
43.65	0.83	0.32	2.64	0.00	0.00	0.00
43.70	0.83	0.32	2.64	0.00	0.00	0.00
43.75	0.83	0.31	2.64	0.00	0.00	0.00
43.80	0.83	0.31	2.64	0.00	0.00	0.00
43.85	0.83	0.31	2.64	0.00	0.00	0.00
43.90	0.83	0.31	2.64	0.00	0.00	0.00
43.95	0.83	0.31	2.64	0.00	0.00	0.00
44.00	0.83	0.31	2.64	0.00	0.00	0.00
44.05	0.83	0.31	2.64	0.00	0.00	0.00
44.10	0.83	0.31	2.65	0.00	0.00	0.00
44.15	0.83	0.31	2.65	0.00	0.00	0.00
44.20	0.83	0.31	2.65	0.00	0.00	0.00
44.25	0.83	0.31	2.65	0.00	0.00	0.00
44.30	0.83	0.31	2.65	0.00	0.00	0.00
44.35	0.83	0.31	2.65	0.00	0.00	0.00
44.40	0.83	0.31	2.65	0.00	0.00	0.00
44.45	0.83	0.31	2.65	0.00	0.00	0.00
44.50	0.83	0.31	2.66	0.00	0.00	0.00

44.55	0.83	0.31	2.66	0.00	0.00	0.00
44.60	0.83	0.31	2.66	0.00	0.00	0.00
44.65	0.83	0.31	2.66	0.00	0.00	0.00
44.70	0.83	0.31	2.66	0.00	0.00	0.00
44.75	0.83	0.31	2.66	0.00	0.00	0.00
44.80	0.83	0.31	2.66	0.00	0.00	0.00
44.85	0.83	0.31	2.66	0.00	0.00	0.00
44.90	0.83	0.31	2.66	0.00	0.00	0.00
44.95	0.83	0.31	2.67	0.00	0.00	0.00
45.00	0.83	0.31	2.67	0.00	0.00	0.00
45.05	0.83	0.31	2.67	0.00	0.00	0.00
45.10	0.83	0.31	2.67	0.00	0.00	0.00
45.15	0.83	0.31	2.67	0.00	0.00	0.00
45.20	0.83	0.31	2.67	0.00	0.00	0.00
45.25	0.83	0.31	2.67	0.00	0.00	0.00
45.30	0.83	0.31	2.68	0.00	0.00	0.00
45.35	0.83	0.31	2.68	0.00	0.00	0.00
45.40	0.83	0.31	2.68	0.00	0.00	0.00
45.45	0.83	0.31	2.68	0.00	0.00	0.00
45.50	0.83	0.31	2.68	0.00	0.00	0.00
45.55	0.83	0.31	2.68	0.00	0.00	0.00
45.60	0.83	0.31	2.68	0.00	0.00	0.00
45.65	0.83	0.31	2.69	0.00	0.00	0.00
45.70	0.83	0.31	2.69	0.00	0.00	0.00
45.75	0.83	0.31	2.69	0.00	0.00	0.00
45.80	0.83	0.31	2.69	0.00	0.00	0.00
45.85	0.83	0.31	2.69	0.00	0.00	0.00
45.90	0.83	0.31	2.69	0.00	0.00	0.00
45.95	0.83	0.31	2.69	0.00	0.00	0.00
46.00	0.83	0.31	2.70	0.00	0.00	0.00
46.05	0.83	0.31	2.70	0.00	0.00	0.00
46.10	0.83	0.31	2.70	0.00	0.00	0.00
46.15	0.83	0.31	2.70	0.00	0.00	0.00
46.20	0.83	0.31	2.70	0.00	0.00	0.00
46.25	0.83	0.31	2.70	0.00	0.00	0.00
46.30	0.83	0.31	2.70	0.00	0.00	0.00
46.35	0.83	0.31	2.71	0.00	0.00	0.00
46.40	0.83	0.31	2.71	0.00	0.00	0.00
46.45	0.83	0.31	2.71	0.00	0.00	0.00
46.50	0.83	0.31	2.71	0.00	0.00	0.00
46.55	0.83	0.31	2.71	0.00	0.00	0.00
46.60	0.83	0.31	2.71	0.00	0.00	0.00
46.65	0.83	0.31	2.72	0.00	0.00	0.00
46.70	0.83	0.31	2.72	0.00	0.00	0.00
46.75	0.83	0.31	2.72	0.00	0.00	0.00
46.80	0.83	0.31	2.72	0.00	0.00	0.00
46.85	0.83	0.31	2.72	0.00	0.00	0.00
46.90	0.83	0.31	2.72	0.00	0.00	0.00
46.95	0.83	0.30	2.72	0.00	0.00	0.00
47.00	0.83	0.30	2.73	0.00	0.00	0.00
47.05	0.83	0.30	2.73	0.00	0.00	0.00
47.10	0.83	0.30	2.73	0.00	0.00	0.00
47.15	0.83	0.30	2.73	0.00	0.00	0.00
47.20	0.83	0.30	2.73	0.00	0.00	0.00
47.25	0.83	0.30	2.73	0.00	0.00	0.00
47.30	0.83	0.30	2.73	0.00	0.00	0.00
47.35	0.83	0.30	2.74	0.00	0.00	0.00
47.40	0.83	0.30	2.74	0.00	0.00	0.00
47.45	0.83	0.30	2.74	0.00	0.00	0.00
47.50	0.83	0.30	2.74	0.00	0.00	0.00
47.55	0.83	0.30	2.74	0.00	0.00	0.00
47.60	0.83	0.30	2.74	0.00	0.00	0.00
47.65	0.83	0.30	2.75	0.00	0.00	0.00
47.70	0.83	0.30	2.75	0.00	0.00	0.00
47.75	0.83	0.30	2.75	0.00	0.00	0.00
47.80	0.83	0.30	2.75	0.00	0.00	0.00
47.85	0.83	0.30	2.75	0.00	0.00	0.00
47.90	0.83	0.30	2.75	0.00	0.00	0.00
47.95	0.83	0.30	2.75	0.00	0.00	0.00
48.00	0.83	0.30	2.76	0.00	0.00	0.00
48.05	0.83	0.30	2.76	0.00	0.00	0.00

48.10	0.83	0.30	2.76	0.00	0.00	0.00
48.15	0.83	0.30	2.76	0.00	0.00	0.00
48.20	0.83	0.30	2.76	0.00	0.00	0.00
48.25	0.83	0.30	2.76	0.00	0.00	0.00
48.30	0.83	0.30	2.77	0.00	0.00	0.00
48.35	0.83	0.30	2.77	0.00	0.00	0.00
48.40	0.83	0.30	2.77	0.00	0.00	0.00
48.45	0.83	0.30	2.77	0.00	0.00	0.00
48.50	0.83	0.30	2.77	0.00	0.00	0.00
48.55	0.83	0.30	2.77	0.00	0.00	0.00
48.60	0.83	0.30	2.77	0.00	0.00	0.00
48.65	0.83	0.30	2.78	0.00	0.00	0.00
48.70	0.83	0.30	2.78	0.00	0.00	0.00
48.75	0.83	0.30	2.78	0.00	0.00	0.00
48.80	0.83	0.30	2.78	0.00	0.00	0.00
48.85	0.83	0.30	2.78	0.00	0.00	0.00
48.90	0.83	0.30	2.78	0.00	0.00	0.00
48.95	0.83	0.30	2.79	0.00	0.00	0.00
49.00	0.83	0.30	2.79	0.00	0.00	0.00
49.05	0.83	0.30	2.79	0.00	0.00	0.00
49.10	0.83	0.30	2.79	0.00	0.00	0.00
49.15	0.83	0.30	2.79	0.00	0.00	0.00
49.20	0.83	0.30	2.79	0.00	0.00	0.00
49.25	0.83	0.30	2.79	0.00	0.00	0.00
49.30	0.83	0.30	2.80	0.00	0.00	0.00
49.35	0.83	0.30	2.80	0.00	0.00	0.00
49.40	0.83	0.30	2.80	0.00	0.00	0.00
49.45	0.83	0.30	2.80	0.00	0.00	0.00
49.50	0.83	0.30	2.80	0.00	0.00	0.00
49.55	0.83	0.30	2.80	0.00	0.00	0.00
49.60	0.83	0.30	2.81	0.00	0.00	0.00
49.65	0.83	0.30	2.81	0.00	0.00	0.00
49.70	0.83	0.30	2.81	0.00	0.00	0.00
49.75	0.83	0.30	2.81	0.00	0.00	0.00
49.80	0.83	0.30	2.81	0.00	0.00	0.00
49.85	0.83	0.30	2.81	0.00	0.00	0.00
49.90	0.83	0.30	2.81	0.00	0.00	0.00
49.95	0.83	0.29	2.82	0.00	0.00	0.00
50.00	0.83	0.29	2.82	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

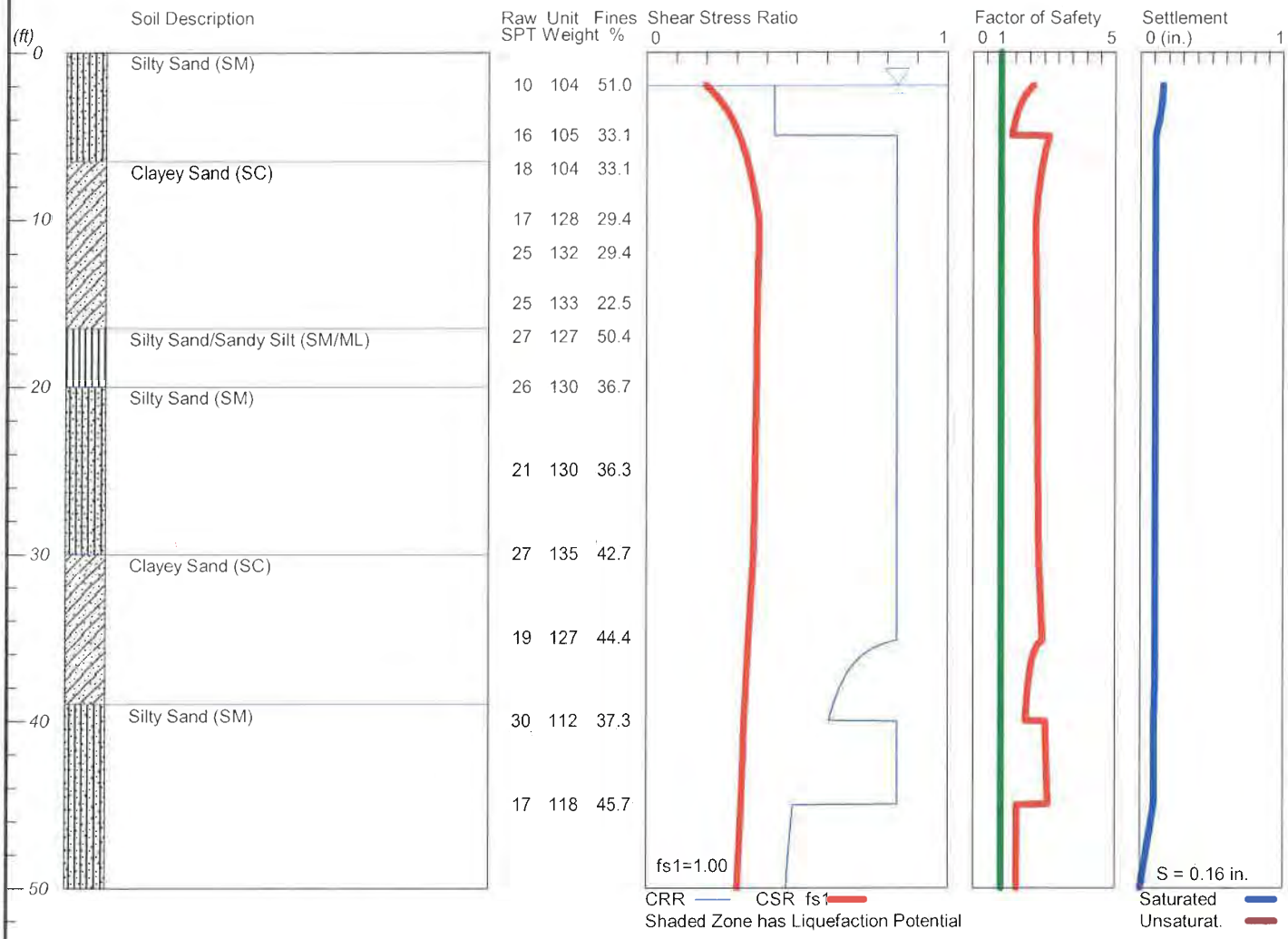
1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B5 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

Krazan

012-22165

Plate A-1

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 10/10/2022 2:52:51 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B5\01222165 B5 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B5
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B5
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	10.00	104.00	51.00
5.00	16.00	105.00	33.10
7.00	18.00	104.00	33.10
10.00	17.00	128.00	29.40
12.00	25.00	132.00	29.40
15.00	25.00	133.00	22.50
17.00	27.00	127.00	50.40
20.00	26.00	130.00	36.70
25.00	21.00	130.00	36.30
30.00	27.00	135.00	42.70
35.00	19.00	127.00	44.40
40.00	30.00	112.00	37.30
45.00	17.00	118.00	45.70

Output Results:
Settlement of Saturated Sands=0.16 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.16 in.
Differential Settlement=0.078 to 0.102 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.42	0.20	2.13	0.16	0.00	0.16
2.05	0.42	0.20	2.10	0.16	0.00	0.16
2.10	0.42	0.20	2.07	0.16	0.00	0.16
2.15	0.42	0.21	2.04	0.16	0.00	0.16
2.20	0.42	0.21	2.02	0.16	0.00	0.16
2.25	0.42	0.21	1.99	0.16	0.00	0.16
2.30	0.42	0.22	1.97	0.16	0.00	0.16
2.35	0.42	0.22	1.94	0.16	0.00	0.16
2.40	0.42	0.22	1.92	0.15	0.00	0.15
2.45	0.42	0.22	1.90	0.15	0.00	0.15
2.50	0.42	0.23	1.88	0.15	0.00	0.15
2.55	0.42	0.23	1.86	0.15	0.00	0.15
2.60	0.42	0.23	1.84	0.15	0.00	0.15
2.65	0.42	0.23	1.82	0.15	0.00	0.15
2.70	0.42	0.23	1.80	0.15	0.00	0.15
2.75	0.42	0.24	1.79	0.15	0.00	0.15
2.80	0.42	0.24	1.77	0.15	0.00	0.15
2.85	0.42	0.24	1.75	0.15	0.00	0.15
2.90	0.42	0.24	1.74	0.15	0.00	0.15
2.95	0.42	0.25	1.72	0.15	0.00	0.15
3.00	0.42	0.25	1.71	0.15	0.00	0.15
3.05	0.42	0.25	1.70	0.15	0.00	0.15
3.10	0.42	0.25	1.68	0.15	0.00	0.15
3.15	0.42	0.25	1.67	0.15	0.00	0.15
3.20	0.42	0.26	1.66	0.15	0.00	0.15
3.25	0.42	0.26	1.65	0.15	0.00	0.15
3.30	0.42	0.26	1.63	0.15	0.00	0.15
3.35	0.42	0.26	1.62	0.14	0.00	0.14
3.40	0.42	0.26	1.61	0.14	0.00	0.14
3.45	0.42	0.26	1.60	0.14	0.00	0.14
3.50	0.42	0.27	1.59	0.14	0.00	0.14
3.55	0.42	0.27	1.58	0.14	0.00	0.14
3.60	0.42	0.27	1.57	0.14	0.00	0.14
3.65	0.42	0.27	1.56	0.14	0.00	0.14
3.70	0.42	0.27	1.55	0.14	0.00	0.14
3.75	0.42	0.27	1.54	0.14	0.00	0.14
3.80	0.42	0.28	1.53	0.14	0.00	0.14
3.85	0.42	0.28	1.52	0.13	0.00	0.13
3.90	0.42	0.28	1.52	0.13	0.00	0.13
3.95	0.42	0.28	1.51	0.13	0.00	0.13
4.00	0.42	0.28	1.50	0.13	0.00	0.13
4.05	0.42	0.28	1.49	0.13	0.00	0.13
4.10	0.42	0.29	1.48	0.13	0.00	0.13
4.15	0.42	0.29	1.48	0.13	0.00	0.13
4.20	0.42	0.29	1.47	0.13	0.00	0.13
4.25	0.42	0.29	1.46	0.13	0.00	0.13
4.30	0.42	0.29	1.46	0.12	0.00	0.12
4.35	0.42	0.29	1.45	0.12	0.00	0.12
4.40	0.42	0.29	1.44	0.12	0.00	0.12
4.45	0.42	0.29	1.44	0.12	0.00	0.12
4.50	0.42	0.30	1.43	0.12	0.00	0.12
4.55	0.42	0.30	1.42	0.12	0.00	0.12
4.60	0.42	0.30	1.42	0.12	0.00	0.12
4.65	0.42	0.30	1.41	0.12	0.00	0.12
4.70	0.42	0.30	1.41	0.11	0.00	0.11
4.75	0.42	0.30	1.40	0.11	0.00	0.11
4.80	0.42	0.30	1.40	0.11	0.00	0.11
4.85	0.42	0.30	1.39	0.11	0.00	0.11
4.90	0.42	0.31	1.39	0.11	0.00	0.11
4.95	0.42	0.31	1.38	0.11	0.00	0.11
5.00	0.83	0.31	2.70	0.11	0.00	0.11
5.05	0.83	0.31	2.69	0.11	0.00	0.11
5.10	0.83	0.31	2.68	0.11	0.00	0.11
5.15	0.83	0.31	2.67	0.11	0.00	0.11
5.20	0.83	0.31	2.66	0.11	0.00	0.11
5.25	0.83	0.31	2.65	0.11	0.00	0.11
5.30	0.83	0.31	2.64	0.11	0.00	0.11
5.35	0.83	0.32	2.63	0.11	0.00	0.11
5.40	0.83	0.32	2.62	0.11	0.00	0.11
5.45	0.83	0.32	2.62	0.11	0.00	0.11

5.50	0.83	0.32	2.61	0.11	0.00	0.11
5.55	0.83	0.32	2.60	0.11	0.00	0.11
5.60	0.83	0.32	2.59	0.11	0.00	0.11
5.65	0.83	0.32	2.59	0.11	0.00	0.11
5.70	0.83	0.32	2.58	0.11	0.00	0.11
5.75	0.83	0.32	2.57	0.11	0.00	0.11
5.80	0.83	0.32	2.56	0.11	0.00	0.11
5.85	0.83	0.32	2.56	0.11	0.00	0.11
5.90	0.83	0.33	2.55	0.11	0.00	0.11
5.95	0.83	0.33	2.54	0.11	0.00	0.11
6.00	0.83	0.33	2.54	0.11	0.00	0.11
6.05	0.83	0.33	2.53	0.11	0.00	0.11
6.10	0.83	0.33	2.52	0.11	0.00	0.11
6.15	0.83	0.33	2.52	0.11	0.00	0.11
6.20	0.83	0.33	2.51	0.11	0.00	0.11
6.25	0.83	0.33	2.50	0.11	0.00	0.11
6.30	0.83	0.33	2.50	0.11	0.00	0.11
6.35	0.83	0.33	2.49	0.11	0.00	0.11
6.40	0.83	0.33	2.49	0.11	0.00	0.11
6.45	0.83	0.33	2.48	0.11	0.00	0.11
6.50	0.83	0.34	2.48	0.11	0.00	0.11
6.55	0.83	0.34	2.47	0.11	0.00	0.11
6.60	0.83	0.34	2.46	0.11	0.00	0.11
6.65	0.83	0.34	2.46	0.11	0.00	0.11
6.70	0.83	0.34	2.45	0.11	0.00	0.11
6.75	0.83	0.34	2.45	0.11	0.00	0.11
6.80	0.83	0.34	2.44	0.11	0.00	0.11
6.85	0.83	0.34	2.44	0.11	0.00	0.11
6.90	0.83	0.34	2.43	0.11	0.00	0.11
6.95	0.83	0.34	2.43	0.11	0.00	0.11
7.00	0.83	0.34	2.42	0.11	0.00	0.11
7.05	0.83	0.34	2.42	0.11	0.00	0.11
7.10	0.83	0.34	2.41	0.11	0.00	0.11
7.15	0.83	0.34	2.41	0.11	0.00	0.11
7.20	0.83	0.35	2.40	0.11	0.00	0.11
7.25	0.83	0.35	2.40	0.11	0.00	0.11
7.30	0.83	0.35	2.40	0.11	0.00	0.11
7.35	0.83	0.35	2.39	0.11	0.00	0.11
7.40	0.83	0.35	2.39	0.11	0.00	0.11
7.45	0.83	0.35	2.38	0.11	0.00	0.11
7.50	0.83	0.35	2.38	0.11	0.00	0.11
7.55	0.83	0.35	2.37	0.11	0.00	0.11
7.60	0.83	0.35	2.37	0.11	0.00	0.11
7.65	0.83	0.35	2.36	0.11	0.00	0.11
7.70	0.83	0.35	2.36	0.11	0.00	0.11
7.75	0.83	0.35	2.36	0.11	0.00	0.11
7.80	0.83	0.35	2.35	0.11	0.00	0.11
7.85	0.83	0.35	2.35	0.11	0.00	0.11
7.90	0.83	0.35	2.35	0.11	0.00	0.11
7.95	0.83	0.35	2.34	0.11	0.00	0.11
8.00	0.83	0.36	2.34	0.11	0.00	0.11
8.05	0.83	0.36	2.33	0.11	0.00	0.11
8.10	0.83	0.36	2.33	0.11	0.00	0.11
8.15	0.83	0.36	2.33	0.11	0.00	0.11
8.20	0.83	0.36	2.32	0.11	0.00	0.11
8.25	0.83	0.36	2.32	0.11	0.00	0.11
8.30	0.83	0.36	2.32	0.11	0.00	0.11
8.35	0.83	0.36	2.31	0.11	0.00	0.11
8.40	0.83	0.36	2.31	0.11	0.00	0.11
8.45	0.83	0.36	2.31	0.11	0.00	0.11
8.50	0.83	0.36	2.30	0.11	0.00	0.11
8.55	0.83	0.36	2.30	0.11	0.00	0.11
8.60	0.83	0.36	2.30	0.11	0.00	0.11
8.65	0.83	0.36	2.29	0.11	0.00	0.11
8.70	0.83	0.36	2.29	0.11	0.00	0.11
8.75	0.83	0.36	2.29	0.11	0.00	0.11
8.80	0.83	0.36	2.28	0.11	0.00	0.11
8.85	0.83	0.36	2.28	0.11	0.00	0.11
8.90	0.83	0.36	2.28	0.11	0.00	0.11
8.95	0.83	0.37	2.27	0.11	0.00	0.11
9.00	0.83	0.37	2.27	0.11	0.00	0.11

9.05	0.83	0.37	2.27	0.11	0.00	0.11
9.10	0.83	0.37	2.27	0.11	0.00	0.11
9.15	0.83	0.37	2.26	0.11	0.00	0.11
9.20	0.83	0.37	2.26	0.11	0.00	0.11
9.25	0.83	0.37	2.26	0.11	0.00	0.11
9.30	0.83	0.37	2.26	0.11	0.00	0.11
9.35	0.83	0.37	2.25	0.11	0.00	0.11
9.40	0.83	0.37	2.25	0.11	0.00	0.11
9.45	0.83	0.37	2.25	0.11	0.00	0.11
9.50	0.83	0.37	2.24	0.11	0.00	0.11
9.55	0.83	0.37	2.24	0.11	0.00	0.11
9.60	0.83	0.37	2.24	0.11	0.00	0.11
9.65	0.83	0.37	2.24	0.11	0.00	0.11
9.70	0.83	0.37	2.23	0.11	0.00	0.11
9.75	0.83	0.37	2.23	0.11	0.00	0.11
9.80	0.83	0.37	2.23	0.11	0.00	0.11
9.85	0.83	0.37	2.23	0.11	0.00	0.11
9.90	0.83	0.37	2.22	0.11	0.00	0.11
9.95	0.83	0.37	2.22	0.11	0.00	0.11
10.00	0.83	0.37	2.22	0.11	0.00	0.11
10.05	0.83	0.37	2.22	0.11	0.00	0.11
10.10	0.83	0.37	2.22	0.11	0.00	0.11
10.15	0.83	0.37	2.22	0.11	0.00	0.11
10.20	0.83	0.37	2.22	0.11	0.00	0.11
10.25	0.83	0.37	2.22	0.11	0.00	0.11
10.30	0.83	0.37	2.22	0.11	0.00	0.11
10.35	0.83	0.37	2.22	0.11	0.00	0.11
10.40	0.83	0.37	2.22	0.11	0.00	0.11
10.45	0.83	0.37	2.22	0.11	0.00	0.11
10.50	0.83	0.37	2.22	0.11	0.00	0.11
10.55	0.83	0.37	2.22	0.11	0.00	0.11
10.60	0.83	0.37	2.22	0.11	0.00	0.11
10.65	0.83	0.37	2.22	0.11	0.00	0.11
10.70	0.83	0.37	2.22	0.11	0.00	0.11
10.75	0.83	0.37	2.22	0.11	0.00	0.11
10.80	0.83	0.37	2.22	0.11	0.00	0.11
10.85	0.83	0.37	2.22	0.11	0.00	0.11
10.90	0.83	0.37	2.22	0.11	0.00	0.11
10.95	0.83	0.37	2.22	0.11	0.00	0.11
11.00	0.83	0.37	2.22	0.11	0.00	0.11
11.05	0.83	0.37	2.22	0.11	0.00	0.11
11.10	0.83	0.37	2.22	0.11	0.00	0.11
11.15	0.83	0.37	2.22	0.11	0.00	0.11
11.20	0.83	0.37	2.22	0.11	0.00	0.11
11.25	0.83	0.37	2.22	0.11	0.00	0.11
11.30	0.83	0.37	2.22	0.11	0.00	0.11
11.35	0.83	0.37	2.22	0.11	0.00	0.11
11.40	0.83	0.37	2.22	0.11	0.00	0.11
11.45	0.83	0.37	2.22	0.11	0.00	0.11
11.50	0.83	0.37	2.22	0.11	0.00	0.11
11.55	0.83	0.37	2.22	0.11	0.00	0.11
11.60	0.83	0.37	2.22	0.11	0.00	0.11
11.65	0.83	0.37	2.22	0.11	0.00	0.11
11.70	0.83	0.37	2.22	0.11	0.00	0.11
11.75	0.83	0.37	2.22	0.11	0.00	0.11
11.80	0.83	0.37	2.22	0.11	0.00	0.11
11.85	0.83	0.37	2.22	0.11	0.00	0.11
11.90	0.83	0.37	2.22	0.11	0.00	0.11
11.95	0.83	0.37	2.22	0.11	0.00	0.11
12.00	0.83	0.37	2.22	0.11	0.00	0.11
12.05	0.83	0.37	2.22	0.11	0.00	0.11
12.10	0.83	0.37	2.22	0.11	0.00	0.11
12.15	0.83	0.37	2.23	0.11	0.00	0.11
12.20	0.83	0.37	2.23	0.11	0.00	0.11
12.25	0.83	0.37	2.23	0.11	0.00	0.11
12.30	0.83	0.37	2.23	0.11	0.00	0.11
12.35	0.83	0.37	2.23	0.11	0.00	0.11
12.40	0.83	0.37	2.23	0.11	0.00	0.11
12.45	0.83	0.37	2.23	0.11	0.00	0.11
12.50	0.83	0.37	2.23	0.11	0.00	0.11
12.55	0.83	0.37	2.23	0.11	0.00	0.11

12.60	0.83	0.37	2.23	0.11	0.00	0.11
12.65	0.83	0.37	2.23	0.11	0.00	0.11
12.70	0.83	0.37	2.23	0.11	0.00	0.11
12.75	0.83	0.37	2.23	0.11	0.00	0.11
12.80	0.83	0.37	2.23	0.11	0.00	0.11
12.85	0.83	0.37	2.23	0.11	0.00	0.11
12.90	0.83	0.37	2.23	0.11	0.00	0.11
12.95	0.83	0.37	2.23	0.11	0.00	0.11
13.00	0.83	0.37	2.23	0.11	0.00	0.11
13.05	0.83	0.37	2.23	0.11	0.00	0.11
13.10	0.83	0.37	2.23	0.11	0.00	0.11
13.15	0.83	0.37	2.23	0.11	0.00	0.11
13.20	0.83	0.37	2.23	0.11	0.00	0.11
13.25	0.83	0.37	2.23	0.11	0.00	0.11
13.30	0.83	0.37	2.23	0.11	0.00	0.11
13.35	0.83	0.37	2.24	0.11	0.00	0.11
13.40	0.83	0.37	2.24	0.11	0.00	0.11
13.45	0.83	0.37	2.24	0.11	0.00	0.11
13.50	0.83	0.37	2.24	0.11	0.00	0.11
13.55	0.83	0.37	2.24	0.11	0.00	0.11
13.60	0.83	0.37	2.24	0.11	0.00	0.11
13.65	0.83	0.37	2.24	0.11	0.00	0.11
13.70	0.83	0.37	2.24	0.11	0.00	0.11
13.75	0.83	0.37	2.24	0.11	0.00	0.11
13.80	0.83	0.37	2.24	0.11	0.00	0.11
13.85	0.83	0.37	2.24	0.11	0.00	0.11
13.90	0.83	0.37	2.24	0.11	0.00	0.11
13.95	0.83	0.37	2.24	0.11	0.00	0.11
14.00	0.83	0.37	2.24	0.11	0.00	0.11
14.05	0.83	0.37	2.24	0.11	0.00	0.11
14.10	0.83	0.37	2.24	0.11	0.00	0.11
14.15	0.83	0.37	2.24	0.11	0.00	0.11
14.20	0.83	0.37	2.24	0.11	0.00	0.11
14.25	0.83	0.37	2.24	0.11	0.00	0.11
14.30	0.83	0.37	2.24	0.11	0.00	0.11
14.35	0.83	0.37	2.24	0.11	0.00	0.11
14.40	0.83	0.37	2.24	0.11	0.00	0.11
14.45	0.83	0.37	2.24	0.11	0.00	0.11
14.50	0.83	0.37	2.24	0.11	0.00	0.11
14.55	0.83	0.37	2.24	0.11	0.00	0.11
14.60	0.83	0.37	2.25	0.11	0.00	0.11
14.65	0.83	0.37	2.25	0.11	0.00	0.11
14.70	0.83	0.37	2.25	0.11	0.00	0.11
14.75	0.83	0.37	2.25	0.11	0.00	0.11
14.80	0.83	0.37	2.25	0.11	0.00	0.11
14.85	0.83	0.37	2.25	0.11	0.00	0.11
14.90	0.83	0.37	2.25	0.11	0.00	0.11
14.95	0.83	0.37	2.25	0.11	0.00	0.11
15.00	0.83	0.37	2.25	0.11	0.00	0.11
15.05	0.83	0.37	2.25	0.11	0.00	0.11
15.10	0.83	0.37	2.25	0.11	0.00	0.11
15.15	0.83	0.37	2.25	0.11	0.00	0.11
15.20	0.83	0.37	2.25	0.11	0.00	0.11
15.25	0.83	0.37	2.25	0.11	0.00	0.11
15.30	0.83	0.37	2.25	0.11	0.00	0.11
15.35	0.83	0.37	2.25	0.11	0.00	0.11
15.40	0.83	0.37	2.25	0.11	0.00	0.11
15.45	0.83	0.37	2.25	0.11	0.00	0.11
15.50	0.83	0.37	2.25	0.11	0.00	0.11
15.55	0.83	0.37	2.25	0.11	0.00	0.11
15.60	0.83	0.37	2.25	0.11	0.00	0.11
15.65	0.83	0.37	2.25	0.11	0.00	0.11
15.70	0.83	0.37	2.25	0.11	0.00	0.11
15.75	0.83	0.37	2.25	0.11	0.00	0.11
15.80	0.83	0.37	2.25	0.11	0.00	0.11
15.85	0.83	0.37	2.26	0.11	0.00	0.11
15.90	0.83	0.37	2.26	0.11	0.00	0.11
15.95	0.83	0.37	2.26	0.11	0.00	0.11
16.00	0.83	0.37	2.26	0.11	0.00	0.11
16.05	0.83	0.37	2.26	0.11	0.00	0.11
16.10	0.83	0.37	2.26	0.11	0.00	0.11

16.15	0.83	0.37	2.26	0.11	0.00	0.11
16.20	0.83	0.37	2.26	0.11	0.00	0.11
16.25	0.83	0.37	2.26	0.11	0.00	0.11
16.30	0.83	0.37	2.26	0.11	0.00	0.11
16.35	0.83	0.37	2.26	0.11	0.00	0.11
16.40	0.83	0.37	2.26	0.11	0.00	0.11
16.45	0.83	0.37	2.26	0.11	0.00	0.11
16.50	0.83	0.37	2.26	0.11	0.00	0.11
16.55	0.83	0.37	2.26	0.11	0.00	0.11
16.60	0.83	0.37	2.26	0.11	0.00	0.11
16.65	0.83	0.37	2.26	0.11	0.00	0.11
16.70	0.83	0.37	2.26	0.11	0.00	0.11
16.75	0.83	0.37	2.26	0.11	0.00	0.11
16.80	0.83	0.37	2.26	0.11	0.00	0.11
16.85	0.83	0.37	2.26	0.11	0.00	0.11
16.90	0.83	0.37	2.26	0.11	0.00	0.11
16.95	0.83	0.37	2.26	0.11	0.00	0.11
17.00	0.83	0.37	2.26	0.11	0.00	0.11
17.05	0.83	0.37	2.26	0.11	0.00	0.11
17.10	0.83	0.37	2.26	0.11	0.00	0.11
17.15	0.83	0.37	2.26	0.11	0.00	0.11
17.20	0.83	0.37	2.27	0.11	0.00	0.11
17.25	0.83	0.37	2.27	0.11	0.00	0.11
17.30	0.83	0.37	2.27	0.11	0.00	0.11
17.35	0.83	0.37	2.27	0.11	0.00	0.11
17.40	0.83	0.37	2.27	0.11	0.00	0.11
17.45	0.83	0.37	2.27	0.11	0.00	0.11
17.50	0.83	0.37	2.27	0.11	0.00	0.11
17.55	0.83	0.37	2.27	0.11	0.00	0.11
17.60	0.83	0.37	2.27	0.11	0.00	0.11
17.65	0.83	0.37	2.27	0.11	0.00	0.11
17.70	0.83	0.37	2.27	0.11	0.00	0.11
17.75	0.83	0.37	2.27	0.11	0.00	0.11
17.80	0.83	0.37	2.27	0.11	0.00	0.11
17.85	0.83	0.37	2.27	0.11	0.00	0.11
17.90	0.83	0.37	2.27	0.11	0.00	0.11
17.95	0.83	0.37	2.27	0.11	0.00	0.11
18.00	0.83	0.37	2.27	0.11	0.00	0.11
18.05	0.83	0.37	2.27	0.11	0.00	0.11
18.10	0.83	0.37	2.27	0.11	0.00	0.11
18.15	0.83	0.37	2.27	0.11	0.00	0.11
18.20	0.83	0.37	2.27	0.11	0.00	0.11
18.25	0.83	0.37	2.27	0.11	0.00	0.11
18.30	0.83	0.37	2.27	0.11	0.00	0.11
18.35	0.83	0.37	2.27	0.11	0.00	0.11
18.40	0.83	0.37	2.27	0.11	0.00	0.11
18.45	0.83	0.37	2.27	0.11	0.00	0.11
18.50	0.83	0.37	2.27	0.11	0.00	0.11
18.55	0.83	0.37	2.27	0.11	0.00	0.11
18.60	0.83	0.37	2.27	0.11	0.00	0.11
18.65	0.83	0.37	2.27	0.11	0.00	0.11
18.70	0.83	0.37	2.27	0.11	0.00	0.11
18.75	0.83	0.37	2.27	0.11	0.00	0.11
18.80	0.83	0.37	2.27	0.11	0.00	0.11
18.85	0.83	0.37	2.27	0.11	0.00	0.11
18.90	0.83	0.37	2.27	0.11	0.00	0.11
18.95	0.83	0.37	2.27	0.11	0.00	0.11
19.00	0.83	0.37	2.27	0.11	0.00	0.11
19.05	0.83	0.37	2.27	0.11	0.00	0.11
19.10	0.83	0.37	2.27	0.11	0.00	0.11
19.15	0.83	0.37	2.27	0.11	0.00	0.11
19.20	0.83	0.37	2.27	0.11	0.00	0.11
19.25	0.83	0.37	2.27	0.11	0.00	0.11
19.30	0.83	0.37	2.27	0.11	0.00	0.11
19.35	0.83	0.37	2.27	0.11	0.00	0.11
19.40	0.83	0.37	2.27	0.11	0.00	0.11
19.45	0.83	0.37	2.27	0.11	0.00	0.11
19.50	0.83	0.37	2.27	0.11	0.00	0.11
19.55	0.83	0.37	2.27	0.11	0.00	0.11
19.60	0.83	0.37	2.27	0.11	0.00	0.11
19.65	0.83	0.37	2.27	0.11	0.00	0.11

19.70	0.83	0.37	2.27	0.11	0.00	0.11
19.75	0.83	0.37	2.27	0.11	0.00	0.11
19.80	0.83	0.37	2.27	0.11	0.00	0.11
19.85	0.83	0.37	2.27	0.11	0.00	0.11
19.90	0.83	0.37	2.27	0.11	0.00	0.11
19.95	0.83	0.37	2.27	0.11	0.00	0.11
20.00	0.83	0.37	2.27	0.11	0.00	0.11
20.05	0.83	0.37	2.27	0.11	0.00	0.11
20.10	0.83	0.37	2.27	0.11	0.00	0.11
20.15	0.83	0.37	2.27	0.11	0.00	0.11
20.20	0.83	0.37	2.27	0.11	0.00	0.11
20.25	0.83	0.37	2.27	0.11	0.00	0.11
20.30	0.83	0.37	2.27	0.11	0.00	0.11
20.35	0.83	0.37	2.27	0.11	0.00	0.11
20.40	0.83	0.37	2.27	0.11	0.00	0.11
20.45	0.83	0.37	2.27	0.11	0.00	0.11
20.50	0.83	0.37	2.27	0.11	0.00	0.11
20.55	0.83	0.37	2.27	0.11	0.00	0.11
20.60	0.83	0.37	2.27	0.11	0.00	0.11
20.65	0.83	0.37	2.27	0.11	0.00	0.11
20.70	0.83	0.37	2.28	0.11	0.00	0.11
20.75	0.83	0.37	2.28	0.11	0.00	0.11
20.80	0.83	0.37	2.28	0.11	0.00	0.11
20.85	0.83	0.36	2.28	0.11	0.00	0.11
20.90	0.83	0.36	2.28	0.11	0.00	0.11
20.95	0.83	0.36	2.28	0.11	0.00	0.11
21.00	0.83	0.36	2.28	0.11	0.00	0.11
21.05	0.83	0.36	2.28	0.11	0.00	0.11
21.10	0.83	0.36	2.28	0.11	0.00	0.11
21.15	0.83	0.36	2.28	0.11	0.00	0.11
21.20	0.83	0.36	2.28	0.11	0.00	0.11
21.25	0.83	0.36	2.28	0.11	0.00	0.11
21.30	0.83	0.36	2.28	0.11	0.00	0.11
21.35	0.83	0.36	2.28	0.11	0.00	0.11
21.40	0.83	0.36	2.28	0.11	0.00	0.11
21.45	0.83	0.36	2.28	0.11	0.00	0.11
21.50	0.83	0.36	2.28	0.11	0.00	0.11
21.55	0.83	0.36	2.28	0.11	0.00	0.11
21.60	0.83	0.36	2.28	0.11	0.00	0.11
21.65	0.83	0.36	2.28	0.11	0.00	0.11
21.70	0.83	0.36	2.28	0.11	0.00	0.11
21.75	0.83	0.36	2.28	0.11	0.00	0.11
21.80	0.83	0.36	2.28	0.11	0.00	0.11
21.85	0.83	0.36	2.28	0.11	0.00	0.11
21.90	0.83	0.36	2.28	0.11	0.00	0.11
21.95	0.83	0.36	2.28	0.11	0.00	0.11
22.00	0.83	0.36	2.28	0.11	0.00	0.11
22.05	0.83	0.36	2.28	0.11	0.00	0.11
22.10	0.83	0.36	2.28	0.11	0.00	0.11
22.15	0.83	0.36	2.28	0.11	0.00	0.11
22.20	0.83	0.36	2.28	0.11	0.00	0.11
22.25	0.83	0.36	2.28	0.11	0.00	0.11
22.30	0.83	0.36	2.28	0.11	0.00	0.11
22.35	0.83	0.36	2.28	0.11	0.00	0.11
22.40	0.83	0.36	2.28	0.11	0.00	0.11
22.45	0.83	0.36	2.28	0.11	0.00	0.11
22.50	0.83	0.36	2.29	0.11	0.00	0.11
22.55	0.83	0.36	2.29	0.11	0.00	0.11
22.60	0.83	0.36	2.29	0.11	0.00	0.11
22.65	0.83	0.36	2.29	0.11	0.00	0.11
22.70	0.83	0.36	2.29	0.11	0.00	0.11
22.75	0.83	0.36	2.29	0.11	0.00	0.11
22.80	0.83	0.36	2.29	0.11	0.00	0.11
22.85	0.83	0.36	2.29	0.11	0.00	0.11
22.90	0.83	0.36	2.29	0.11	0.00	0.11
22.95	0.83	0.36	2.29	0.11	0.00	0.11
23.00	0.83	0.36	2.29	0.11	0.00	0.11
23.05	0.83	0.36	2.29	0.11	0.00	0.11
23.10	0.83	0.36	2.29	0.11	0.00	0.11
23.15	0.83	0.36	2.29	0.11	0.00	0.11
23.20	0.83	0.36	2.29	0.11	0.00	0.11

23.25	0.83	0.36	2.29	0.11	0.00	0.11
23.30	0.83	0.36	2.29	0.11	0.00	0.11
23.35	0.83	0.36	2.29	0.11	0.00	0.11
23.40	0.83	0.36	2.29	0.11	0.00	0.11
23.45	0.83	0.36	2.29	0.11	0.00	0.11
23.50	0.83	0.36	2.29	0.11	0.00	0.11
23.55	0.83	0.36	2.29	0.11	0.00	0.11
23.60	0.83	0.36	2.29	0.11	0.00	0.11
23.65	0.83	0.36	2.29	0.11	0.00	0.11
23.70	0.83	0.36	2.29	0.11	0.00	0.11
23.75	0.83	0.36	2.29	0.11	0.00	0.11
23.80	0.83	0.36	2.29	0.11	0.00	0.11
23.85	0.83	0.36	2.29	0.11	0.00	0.11
23.90	0.83	0.36	2.29	0.11	0.00	0.11
23.95	0.83	0.36	2.29	0.11	0.00	0.11
24.00	0.83	0.36	2.29	0.11	0.00	0.11
24.05	0.83	0.36	2.29	0.11	0.00	0.11
24.10	0.83	0.36	2.29	0.11	0.00	0.11
24.15	0.83	0.36	2.29	0.11	0.00	0.11
24.20	0.83	0.36	2.29	0.11	0.00	0.11
24.25	0.83	0.36	2.30	0.11	0.00	0.11
24.30	0.83	0.36	2.30	0.11	0.00	0.11
24.35	0.83	0.36	2.30	0.11	0.00	0.11
24.40	0.83	0.36	2.30	0.11	0.00	0.11
24.45	0.83	0.36	2.30	0.11	0.00	0.11
24.50	0.83	0.36	2.30	0.11	0.00	0.11
24.55	0.83	0.36	2.30	0.11	0.00	0.11
24.60	0.83	0.36	2.30	0.11	0.00	0.11
24.65	0.83	0.36	2.30	0.11	0.00	0.11
24.70	0.83	0.36	2.30	0.11	0.00	0.11
24.75	0.83	0.36	2.30	0.11	0.00	0.11
24.80	0.83	0.36	2.30	0.11	0.00	0.11
24.85	0.83	0.36	2.30	0.11	0.00	0.11
24.90	0.83	0.36	2.30	0.11	0.00	0.11
24.95	0.83	0.36	2.30	0.11	0.00	0.11
25.00	0.83	0.36	2.30	0.11	0.00	0.11
25.05	0.83	0.36	2.30	0.11	0.00	0.11
25.10	0.83	0.36	2.30	0.11	0.00	0.11
25.15	0.83	0.36	2.30	0.11	0.00	0.11
25.20	0.83	0.36	2.30	0.11	0.00	0.11
25.25	0.83	0.36	2.30	0.11	0.00	0.11
25.30	0.83	0.36	2.30	0.11	0.00	0.11
25.35	0.83	0.36	2.30	0.11	0.00	0.11
25.40	0.83	0.36	2.30	0.11	0.00	0.11
25.45	0.83	0.36	2.30	0.11	0.00	0.11
25.50	0.83	0.36	2.30	0.11	0.00	0.11
25.55	0.83	0.36	2.30	0.11	0.00	0.11
25.60	0.83	0.36	2.30	0.11	0.00	0.11
25.65	0.83	0.36	2.30	0.11	0.00	0.11
25.70	0.83	0.36	2.30	0.11	0.00	0.11
25.75	0.83	0.36	2.30	0.11	0.00	0.11
25.80	0.83	0.36	2.30	0.11	0.00	0.11
25.85	0.83	0.36	2.30	0.11	0.00	0.11
25.90	0.83	0.36	2.30	0.11	0.00	0.11
25.95	0.83	0.36	2.30	0.11	0.00	0.11
26.00	0.83	0.36	2.31	0.11	0.00	0.11
26.05	0.83	0.36	2.31	0.11	0.00	0.11
26.10	0.83	0.36	2.31	0.11	0.00	0.11
26.15	0.83	0.36	2.31	0.11	0.00	0.11
26.20	0.83	0.36	2.31	0.11	0.00	0.11
26.25	0.83	0.36	2.31	0.11	0.00	0.11
26.30	0.83	0.36	2.31	0.11	0.00	0.11
26.35	0.83	0.36	2.31	0.11	0.00	0.11
26.40	0.83	0.36	2.31	0.11	0.00	0.11
26.45	0.83	0.36	2.31	0.11	0.00	0.11
26.50	0.83	0.36	2.31	0.11	0.00	0.11
26.55	0.83	0.36	2.31	0.11	0.00	0.11
26.60	0.83	0.36	2.31	0.11	0.00	0.11
26.65	0.83	0.36	2.31	0.11	0.00	0.11
26.70	0.83	0.36	2.31	0.11	0.00	0.11
26.75	0.83	0.36	2.31	0.11	0.00	0.11

26.80	0.83	0.36	2.31	0.11	0.00	0.11
26.85	0.83	0.36	2.31	0.11	0.00	0.11
26.90	0.83	0.36	2.31	0.11	0.00	0.11
26.95	0.83	0.36	2.31	0.11	0.00	0.11
27.00	0.83	0.36	2.31	0.11	0.00	0.11
27.05	0.83	0.36	2.31	0.11	0.00	0.11
27.10	0.83	0.36	2.31	0.11	0.00	0.11
27.15	0.83	0.36	2.31	0.11	0.00	0.11
27.20	0.83	0.36	2.31	0.11	0.00	0.11
27.25	0.83	0.36	2.31	0.11	0.00	0.11
27.30	0.83	0.36	2.31	0.11	0.00	0.11
27.35	0.83	0.36	2.31	0.11	0.00	0.11
27.40	0.83	0.36	2.31	0.11	0.00	0.11
27.45	0.83	0.36	2.31	0.11	0.00	0.11
27.50	0.83	0.36	2.31	0.11	0.00	0.11
27.55	0.83	0.36	2.31	0.11	0.00	0.11
27.60	0.83	0.36	2.31	0.11	0.00	0.11
27.65	0.83	0.36	2.31	0.11	0.00	0.11
27.70	0.83	0.36	2.31	0.11	0.00	0.11
27.75	0.83	0.36	2.32	0.11	0.00	0.11
27.80	0.83	0.36	2.32	0.11	0.00	0.11
27.85	0.83	0.36	2.32	0.11	0.00	0.11
27.90	0.83	0.36	2.32	0.11	0.00	0.11
27.95	0.83	0.36	2.32	0.11	0.00	0.11
28.00	0.83	0.36	2.32	0.11	0.00	0.11
28.05	0.83	0.36	2.32	0.11	0.00	0.11
28.10	0.83	0.36	2.32	0.11	0.00	0.11
28.15	0.83	0.36	2.32	0.11	0.00	0.11
28.20	0.83	0.36	2.32	0.11	0.00	0.11
28.25	0.83	0.36	2.32	0.11	0.00	0.11
28.30	0.83	0.36	2.32	0.11	0.00	0.11
28.35	0.83	0.36	2.32	0.11	0.00	0.11
28.40	0.83	0.36	2.32	0.11	0.00	0.11
28.45	0.83	0.36	2.32	0.11	0.00	0.11
28.50	0.83	0.36	2.32	0.11	0.00	0.11
28.55	0.83	0.36	2.32	0.11	0.00	0.11
28.60	0.83	0.36	2.32	0.11	0.00	0.11
28.65	0.83	0.36	2.32	0.11	0.00	0.11
28.70	0.83	0.36	2.32	0.11	0.00	0.11
28.75	0.83	0.36	2.32	0.11	0.00	0.11
28.80	0.83	0.36	2.32	0.11	0.00	0.11
28.85	0.83	0.36	2.32	0.11	0.00	0.11
28.90	0.83	0.36	2.32	0.11	0.00	0.11
28.95	0.83	0.36	2.32	0.11	0.00	0.11
29.00	0.83	0.36	2.32	0.11	0.00	0.11
29.05	0.83	0.36	2.32	0.11	0.00	0.11
29.10	0.83	0.36	2.32	0.11	0.00	0.11
29.15	0.83	0.36	2.32	0.11	0.00	0.11
29.20	0.83	0.36	2.32	0.11	0.00	0.11
29.25	0.83	0.36	2.32	0.11	0.00	0.11
29.30	0.83	0.36	2.32	0.11	0.00	0.11
29.35	0.83	0.36	2.32	0.11	0.00	0.11
29.40	0.83	0.36	2.32	0.11	0.00	0.11
29.45	0.83	0.36	2.32	0.11	0.00	0.11
29.50	0.83	0.36	2.33	0.11	0.00	0.11
29.55	0.83	0.36	2.33	0.11	0.00	0.11
29.60	0.83	0.36	2.33	0.11	0.00	0.11
29.65	0.83	0.36	2.33	0.11	0.00	0.11
29.70	0.83	0.36	2.33	0.11	0.00	0.11
29.75	0.83	0.36	2.33	0.11	0.00	0.11
29.80	0.83	0.36	2.33	0.11	0.00	0.11
29.85	0.83	0.36	2.33	0.11	0.00	0.11
29.90	0.83	0.36	2.33	0.11	0.00	0.11
29.95	0.83	0.36	2.33	0.11	0.00	0.11
30.00	0.83	0.36	2.33	0.11	0.00	0.11
30.05	0.83	0.36	2.33	0.11	0.00	0.11
30.10	0.83	0.36	2.33	0.11	0.00	0.11
30.15	0.83	0.36	2.33	0.11	0.00	0.11
30.20	0.83	0.36	2.33	0.11	0.00	0.11
30.25	0.83	0.36	2.33	0.11	0.00	0.11
30.30	0.83	0.36	2.34	0.11	0.00	0.11

30.35	0.83	0.36	2.34	0.11	0.00	0.11
30.40	0.83	0.36	2.34	0.11	0.00	0.11
30.45	0.83	0.36	2.34	0.11	0.00	0.11
30.50	0.83	0.35	2.34	0.11	0.00	0.11
30.55	0.83	0.35	2.34	0.11	0.00	0.11
30.60	0.83	0.35	2.34	0.11	0.00	0.11
30.65	0.83	0.35	2.34	0.11	0.00	0.11
30.70	0.83	0.35	2.34	0.11	0.00	0.11
30.75	0.83	0.35	2.35	0.11	0.00	0.11
30.80	0.83	0.35	2.35	0.11	0.00	0.11
30.85	0.83	0.35	2.35	0.11	0.00	0.11
30.90	0.83	0.35	2.35	0.11	0.00	0.11
30.95	0.83	0.35	2.35	0.11	0.00	0.11
31.00	0.83	0.35	2.35	0.11	0.00	0.11
31.05	0.83	0.35	2.35	0.11	0.00	0.11
31.10	0.83	0.35	2.35	0.11	0.00	0.11
31.15	0.83	0.35	2.36	0.11	0.00	0.11
31.20	0.83	0.35	2.36	0.11	0.00	0.11
31.25	0.83	0.35	2.36	0.11	0.00	0.11
31.30	0.83	0.35	2.36	0.11	0.00	0.11
31.35	0.83	0.35	2.36	0.11	0.00	0.11
31.40	0.83	0.35	2.36	0.11	0.00	0.11
31.45	0.83	0.35	2.36	0.11	0.00	0.11
31.50	0.83	0.35	2.36	0.11	0.00	0.11
31.55	0.83	0.35	2.36	0.11	0.00	0.11
31.60	0.83	0.35	2.37	0.11	0.00	0.11
31.65	0.83	0.35	2.37	0.11	0.00	0.11
31.70	0.83	0.35	2.37	0.11	0.00	0.11
31.75	0.83	0.35	2.37	0.11	0.00	0.11
31.80	0.83	0.35	2.37	0.11	0.00	0.11
31.85	0.83	0.35	2.37	0.11	0.00	0.11
31.90	0.83	0.35	2.37	0.11	0.00	0.11
31.95	0.83	0.35	2.37	0.11	0.00	0.11
32.00	0.83	0.35	2.38	0.11	0.00	0.11
32.05	0.83	0.35	2.38	0.11	0.00	0.11
32.10	0.83	0.35	2.38	0.11	0.00	0.11
32.15	0.83	0.35	2.38	0.11	0.00	0.11
32.20	0.83	0.35	2.38	0.11	0.00	0.11
32.25	0.83	0.35	2.38	0.11	0.00	0.11
32.30	0.83	0.35	2.38	0.11	0.00	0.11
32.35	0.83	0.35	2.38	0.11	0.00	0.11
32.40	0.83	0.35	2.38	0.11	0.00	0.11
32.45	0.83	0.35	2.39	0.11	0.00	0.11
32.50	0.83	0.35	2.39	0.11	0.00	0.11
32.55	0.83	0.35	2.39	0.11	0.00	0.11
32.60	0.83	0.35	2.39	0.11	0.00	0.11
32.65	0.83	0.35	2.39	0.11	0.00	0.11
32.70	0.83	0.35	2.39	0.11	0.00	0.11
32.75	0.83	0.35	2.39	0.11	0.00	0.11
32.80	0.83	0.35	2.39	0.11	0.00	0.11
32.85	0.83	0.35	2.40	0.11	0.00	0.11
32.90	0.83	0.35	2.40	0.11	0.00	0.11
32.95	0.83	0.35	2.40	0.11	0.00	0.11
33.00	0.83	0.35	2.40	0.11	0.00	0.11
33.05	0.83	0.35	2.40	0.11	0.00	0.11
33.10	0.83	0.35	2.40	0.11	0.00	0.11
33.15	0.83	0.35	2.40	0.11	0.00	0.11
33.20	0.83	0.35	2.40	0.11	0.00	0.11
33.25	0.83	0.35	2.41	0.11	0.00	0.11
33.30	0.83	0.35	2.41	0.11	0.00	0.11
33.35	0.83	0.35	2.41	0.11	0.00	0.11
33.40	0.83	0.34	2.41	0.11	0.00	0.11
33.45	0.83	0.34	2.41	0.11	0.00	0.11
33.50	0.83	0.34	2.41	0.11	0.00	0.11
33.55	0.83	0.34	2.41	0.11	0.00	0.11
33.60	0.83	0.34	2.41	0.11	0.00	0.11
33.65	0.83	0.34	2.41	0.11	0.00	0.11
33.70	0.83	0.34	2.42	0.11	0.00	0.11
33.75	0.83	0.34	2.42	0.11	0.00	0.11
33.80	0.83	0.34	2.42	0.11	0.00	0.11
33.85	0.83	0.34	2.42	0.11	0.00	0.11

33.90	0.83	0.34	2.42	0.11	0.00	0.11
33.95	0.83	0.34	2.42	0.11	0.00	0.11
34.00	0.83	0.34	2.42	0.11	0.00	0.11
34.05	0.83	0.34	2.42	0.11	0.00	0.11
34.10	0.83	0.34	2.43	0.11	0.00	0.11
34.15	0.83	0.34	2.43	0.11	0.00	0.11
34.20	0.83	0.34	2.43	0.11	0.00	0.11
34.25	0.83	0.34	2.43	0.11	0.00	0.11
34.30	0.83	0.34	2.43	0.11	0.00	0.11
34.35	0.83	0.34	2.43	0.11	0.00	0.11
34.40	0.83	0.34	2.43	0.11	0.00	0.11
34.45	0.83	0.34	2.43	0.11	0.00	0.11
34.50	0.83	0.34	2.44	0.11	0.00	0.11
34.55	0.83	0.34	2.44	0.11	0.00	0.11
34.60	0.83	0.34	2.44	0.11	0.00	0.11
34.65	0.83	0.34	2.44	0.11	0.00	0.11
34.70	0.83	0.34	2.44	0.11	0.00	0.11
34.75	0.83	0.34	2.44	0.11	0.00	0.11
34.80	0.83	0.34	2.44	0.11	0.00	0.11
34.85	0.83	0.34	2.44	0.11	0.00	0.11
34.90	0.83	0.34	2.45	0.11	0.00	0.11
34.95	0.83	0.34	2.45	0.11	0.00	0.11
35.00	0.83	0.34	2.45	0.11	0.00	0.11
35.05	0.83	0.34	2.45	0.11	0.00	0.11
35.10	0.83	0.34	2.45	0.11	0.00	0.11
35.15	0.83	0.34	2.45	0.11	0.00	0.11
35.20	0.83	0.34	2.45	0.11	0.00	0.11
35.25	0.82	0.34	2.43	0.11	0.00	0.11
35.30	0.81	0.34	2.39	0.11	0.00	0.11
35.35	0.80	0.34	2.37	0.11	0.00	0.11
35.40	0.79	0.34	2.34	0.11	0.00	0.11
35.45	0.78	0.34	2.32	0.11	0.00	0.11
35.50	0.78	0.34	2.30	0.11	0.00	0.11
35.55	0.77	0.34	2.28	0.11	0.00	0.11
35.60	0.76	0.34	2.26	0.11	0.00	0.11
35.65	0.76	0.34	2.24	0.11	0.00	0.11
35.70	0.75	0.34	2.23	0.11	0.00	0.11
35.75	0.75	0.34	2.21	0.11	0.00	0.11
35.80	0.74	0.34	2.20	0.11	0.00	0.11
35.85	0.74	0.34	2.19	0.11	0.00	0.11
35.90	0.73	0.34	2.18	0.11	0.00	0.11
35.95	0.73	0.34	2.16	0.11	0.00	0.11
36.00	0.72	0.34	2.15	0.11	0.00	0.11
36.05	0.72	0.34	2.14	0.11	0.00	0.11
36.10	0.72	0.34	2.13	0.11	0.00	0.11
36.15	0.71	0.34	2.13	0.11	0.00	0.11
36.20	0.71	0.34	2.12	0.11	0.00	0.11
36.25	0.71	0.34	2.11	0.11	0.00	0.11
36.30	0.70	0.34	2.10	0.11	0.00	0.11
36.35	0.70	0.34	2.09	0.11	0.00	0.11
36.40	0.70	0.34	2.09	0.11	0.00	0.11
36.45	0.70	0.34	2.08	0.11	0.00	0.11
36.50	0.69	0.34	2.07	0.11	0.00	0.11
36.55	0.69	0.33	2.07	0.11	0.00	0.11
36.60	0.69	0.33	2.06	0.11	0.00	0.11
36.65	0.69	0.33	2.05	0.11	0.00	0.11
36.70	0.68	0.33	2.05	0.11	0.00	0.11
36.75	0.68	0.33	2.04	0.11	0.00	0.11
36.80	0.68	0.33	2.04	0.11	0.00	0.11
36.85	0.68	0.33	2.03	0.11	0.00	0.11
36.90	0.68	0.33	2.03	0.11	0.00	0.11
36.95	0.67	0.33	2.02	0.11	0.00	0.11
37.00	0.67	0.33	2.02	0.11	0.00	0.11
37.05	0.67	0.33	2.01	0.11	0.00	0.11
37.10	0.67	0.33	2.01	0.11	0.00	0.11
37.15	0.67	0.33	2.00	0.11	0.00	0.11
37.20	0.67	0.33	2.00	0.11	0.00	0.11
37.25	0.66	0.33	1.99	0.11	0.00	0.11
37.30	0.66	0.33	1.99	0.11	0.00	0.11
37.35	0.66	0.33	1.99	0.11	0.00	0.11
37.40	0.66	0.33	1.98	0.11	0.00	0.11

37.45	0.66	0.33	1.98	0.11	0.00	0.11
37.50	0.66	0.33	1.98	0.11	0.00	0.11
37.55	0.65	0.33	1.97	0.11	0.00	0.11
37.60	0.65	0.33	1.97	0.11	0.00	0.11
37.65	0.65	0.33	1.97	0.10	0.00	0.10
37.70	0.65	0.33	1.96	0.10	0.00	0.10
37.75	0.65	0.33	1.96	0.10	0.00	0.10
37.80	0.65	0.33	1.96	0.10	0.00	0.10
37.85	0.65	0.33	1.95	0.10	0.00	0.10
37.90	0.65	0.33	1.95	0.10	0.00	0.10
37.95	0.64	0.33	1.95	0.10	0.00	0.10
38.00	0.64	0.33	1.94	0.10	0.00	0.10
38.05	0.64	0.33	1.94	0.10	0.00	0.10
38.10	0.64	0.33	1.94	0.10	0.00	0.10
38.15	0.64	0.33	1.94	0.10	0.00	0.10
38.20	0.64	0.33	1.93	0.10	0.00	0.10
38.25	0.64	0.33	1.93	0.10	0.00	0.10
38.30	0.64	0.33	1.93	0.10	0.00	0.10
38.35	0.63	0.33	1.93	0.10	0.00	0.10
38.40	0.63	0.33	1.92	0.10	0.00	0.10
38.45	0.63	0.33	1.92	0.10	0.00	0.10
38.50	0.63	0.33	1.92	0.10	0.00	0.10
38.55	0.63	0.33	1.92	0.10	0.00	0.10
38.60	0.63	0.33	1.91	0.10	0.00	0.10
38.65	0.63	0.33	1.91	0.10	0.00	0.10
38.70	0.63	0.33	1.91	0.10	0.00	0.10
38.75	0.63	0.33	1.91	0.10	0.00	0.10
38.80	0.63	0.33	1.90	0.10	0.00	0.10
38.85	0.62	0.33	1.90	0.10	0.00	0.10
38.90	0.62	0.33	1.90	0.10	0.00	0.10
38.95	0.62	0.33	1.90	0.10	0.00	0.10
39.00	0.62	0.33	1.90	0.10	0.00	0.10
39.05	0.62	0.33	1.89	0.10	0.00	0.10
39.10	0.62	0.33	1.89	0.10	0.00	0.10
39.15	0.62	0.33	1.89	0.10	0.00	0.10
39.20	0.62	0.33	1.89	0.10	0.00	0.10
39.25	0.62	0.33	1.89	0.10	0.00	0.10
39.30	0.62	0.33	1.89	0.10	0.00	0.10
39.35	0.62	0.33	1.88	0.10	0.00	0.10
39.40	0.61	0.33	1.88	0.10	0.00	0.10
39.45	0.61	0.33	1.88	0.10	0.00	0.10
39.50	0.61	0.33	1.88	0.10	0.00	0.10
39.55	0.61	0.33	1.88	0.10	0.00	0.10
39.60	0.61	0.33	1.87	0.10	0.00	0.10
39.65	0.61	0.33	1.87	0.10	0.00	0.10
39.70	0.61	0.33	1.87	0.10	0.00	0.10
39.75	0.61	0.33	1.87	0.10	0.00	0.10
39.80	0.61	0.33	1.87	0.10	0.00	0.10
39.85	0.61	0.33	1.87	0.10	0.00	0.10
39.90	0.61	0.33	1.86	0.10	0.00	0.10
39.95	0.61	0.33	1.86	0.10	0.00	0.10
40.00	0.60	0.32	1.86	0.10	0.00	0.10
40.05	0.83	0.32	2.56	0.10	0.00	0.10
40.10	0.83	0.32	2.56	0.10	0.00	0.10
40.15	0.83	0.32	2.56	0.10	0.00	0.10
40.20	0.83	0.32	2.56	0.10	0.00	0.10
40.25	0.83	0.32	2.56	0.10	0.00	0.10
40.30	0.83	0.32	2.56	0.10	0.00	0.10
40.35	0.83	0.32	2.56	0.10	0.00	0.10
40.40	0.83	0.32	2.56	0.10	0.00	0.10
40.45	0.83	0.32	2.56	0.10	0.00	0.10
40.50	0.83	0.32	2.56	0.10	0.00	0.10
40.55	0.83	0.32	2.57	0.10	0.00	0.10
40.60	0.83	0.32	2.57	0.10	0.00	0.10
40.65	0.83	0.32	2.57	0.10	0.00	0.10
40.70	0.83	0.32	2.57	0.10	0.00	0.10
40.75	0.83	0.32	2.57	0.10	0.00	0.10
40.80	0.83	0.32	2.57	0.10	0.00	0.10
40.85	0.83	0.32	2.57	0.10	0.00	0.10
40.90	0.83	0.32	2.57	0.10	0.00	0.10
40.95	0.83	0.32	2.57	0.10	0.00	0.10

41.00	0.83	0.32	2.57	0.10	0.00	0.10
41.05	0.83	0.32	2.57	0.10	0.00	0.10
41.10	0.83	0.32	2.57	0.10	0.00	0.10
41.15	0.83	0.32	2.58	0.10	0.00	0.10
41.20	0.83	0.32	2.58	0.10	0.00	0.10
41.25	0.83	0.32	2.58	0.10	0.00	0.10
41.30	0.83	0.32	2.58	0.10	0.00	0.10
41.35	0.83	0.32	2.58	0.10	0.00	0.10
41.40	0.83	0.32	2.58	0.10	0.00	0.10
41.45	0.83	0.32	2.58	0.10	0.00	0.10
41.50	0.83	0.32	2.58	0.10	0.00	0.10
41.55	0.83	0.32	2.58	0.10	0.00	0.10
41.60	0.83	0.32	2.58	0.10	0.00	0.10
41.65	0.83	0.32	2.58	0.10	0.00	0.10
41.70	0.83	0.32	2.58	0.10	0.00	0.10
41.75	0.83	0.32	2.59	0.10	0.00	0.10
41.80	0.83	0.32	2.59	0.10	0.00	0.10
41.85	0.83	0.32	2.59	0.10	0.00	0.10
41.90	0.83	0.32	2.59	0.10	0.00	0.10
41.95	0.83	0.32	2.59	0.10	0.00	0.10
42.00	0.83	0.32	2.59	0.10	0.00	0.10
42.05	0.83	0.32	2.59	0.10	0.00	0.10
42.10	0.83	0.32	2.59	0.10	0.00	0.10
42.15	0.83	0.32	2.59	0.10	0.00	0.10
42.20	0.83	0.32	2.59	0.10	0.00	0.10
42.25	0.83	0.32	2.59	0.10	0.00	0.10
42.30	0.83	0.32	2.60	0.10	0.00	0.10
42.35	0.83	0.32	2.60	0.10	0.00	0.10
42.40	0.83	0.32	2.60	0.10	0.00	0.10
42.45	0.83	0.32	2.60	0.10	0.00	0.10
42.50	0.83	0.32	2.60	0.10	0.00	0.10
42.55	0.83	0.32	2.60	0.10	0.00	0.10
42.60	0.83	0.32	2.60	0.10	0.00	0.10
42.65	0.83	0.32	2.60	0.10	0.00	0.10
42.70	0.83	0.32	2.60	0.10	0.00	0.10
42.75	0.83	0.32	2.60	0.10	0.00	0.10
42.80	0.83	0.32	2.60	0.10	0.00	0.10
42.85	0.83	0.32	2.60	0.10	0.00	0.10
42.90	0.83	0.32	2.61	0.10	0.00	0.10
42.95	0.83	0.32	2.61	0.10	0.00	0.10
43.00	0.83	0.32	2.61	0.10	0.00	0.10
43.05	0.83	0.32	2.61	0.10	0.00	0.10
43.10	0.83	0.32	2.61	0.10	0.00	0.10
43.15	0.83	0.32	2.61	0.10	0.00	0.10
43.20	0.83	0.32	2.61	0.10	0.00	0.10
43.25	0.83	0.32	2.61	0.10	0.00	0.10
43.30	0.83	0.32	2.61	0.10	0.00	0.10
43.35	0.83	0.32	2.61	0.10	0.00	0.10
43.40	0.83	0.32	2.61	0.10	0.00	0.10
43.45	0.83	0.32	2.62	0.10	0.00	0.10
43.50	0.83	0.32	2.62	0.10	0.00	0.10
43.55	0.83	0.32	2.62	0.10	0.00	0.10
43.60	0.83	0.32	2.62	0.10	0.00	0.10
43.65	0.83	0.32	2.62	0.10	0.00	0.10
43.70	0.83	0.32	2.62	0.10	0.00	0.10
43.75	0.83	0.32	2.62	0.10	0.00	0.10
43.80	0.83	0.32	2.62	0.10	0.00	0.10
43.85	0.83	0.32	2.62	0.10	0.00	0.10
43.90	0.83	0.32	2.62	0.10	0.00	0.10
43.95	0.83	0.32	2.62	0.10	0.00	0.10
44.00	0.83	0.32	2.63	0.10	0.00	0.10
44.05	0.83	0.32	2.63	0.10	0.00	0.10
44.10	0.83	0.32	2.63	0.10	0.00	0.10
44.15	0.83	0.32	2.63	0.10	0.00	0.10
44.20	0.83	0.32	2.63	0.10	0.00	0.10
44.25	0.83	0.32	2.63	0.10	0.00	0.10
44.30	0.83	0.32	2.63	0.10	0.00	0.10
44.35	0.83	0.32	2.63	0.10	0.00	0.10
44.40	0.83	0.32	2.63	0.10	0.00	0.10
44.45	0.83	0.32	2.63	0.10	0.00	0.10
44.50	0.83	0.32	2.64	0.10	0.00	0.10

44.55	0.83	0.32	2.64	0.10	0.00	0.10
44.60	0.83	0.32	2.64	0.10	0.00	0.10
44.65	0.83	0.31	2.64	0.10	0.00	0.10
44.70	0.83	0.31	2.64	0.10	0.00	0.10
44.75	0.83	0.31	2.64	0.10	0.00	0.10
44.80	0.83	0.31	2.64	0.10	0.00	0.10
44.85	0.83	0.31	2.64	0.10	0.00	0.10
44.90	0.83	0.31	2.64	0.10	0.00	0.10
44.95	0.83	0.31	2.64	0.10	0.00	0.10
45.00	0.83	0.31	2.64	0.10	0.00	0.10
45.05	0.49	0.31	1.55	0.10	0.00	0.10
45.10	0.49	0.31	1.55	0.10	0.00	0.10
45.15	0.49	0.31	1.55	0.09	0.00	0.09
45.20	0.48	0.31	1.55	0.09	0.00	0.09
45.25	0.48	0.31	1.55	0.09	0.00	0.09
45.30	0.48	0.31	1.55	0.09	0.00	0.09
45.35	0.48	0.31	1.55	0.09	0.00	0.09
45.40	0.48	0.31	1.55	0.09	0.00	0.09
45.45	0.48	0.31	1.54	0.09	0.00	0.09
45.50	0.48	0.31	1.54	0.09	0.00	0.09
45.55	0.48	0.31	1.54	0.09	0.00	0.09
45.60	0.48	0.31	1.54	0.09	0.00	0.09
45.65	0.48	0.31	1.54	0.08	0.00	0.08
45.70	0.48	0.31	1.54	0.08	0.00	0.08
45.75	0.48	0.31	1.54	0.08	0.00	0.08
45.80	0.48	0.31	1.54	0.08	0.00	0.08
45.85	0.48	0.31	1.54	0.08	0.00	0.08
45.90	0.48	0.31	1.54	0.08	0.00	0.08
45.95	0.48	0.31	1.54	0.08	0.00	0.08
46.00	0.48	0.31	1.54	0.08	0.00	0.08
46.05	0.48	0.31	1.54	0.08	0.00	0.08
46.10	0.48	0.31	1.54	0.08	0.00	0.08
46.15	0.48	0.31	1.54	0.08	0.00	0.08
46.20	0.48	0.31	1.54	0.07	0.00	0.07
46.25	0.48	0.31	1.54	0.07	0.00	0.07
46.30	0.48	0.31	1.54	0.07	0.00	0.07
46.35	0.48	0.31	1.54	0.07	0.00	0.07
46.40	0.48	0.31	1.54	0.07	0.00	0.07
46.45	0.48	0.31	1.54	0.07	0.00	0.07
46.50	0.48	0.31	1.54	0.07	0.00	0.07
46.55	0.48	0.31	1.54	0.07	0.00	0.07
46.60	0.48	0.31	1.54	0.07	0.00	0.07
46.65	0.48	0.31	1.54	0.07	0.00	0.07
46.70	0.48	0.31	1.54	0.06	0.00	0.06
46.75	0.48	0.31	1.54	0.06	0.00	0.06
46.80	0.48	0.31	1.54	0.06	0.00	0.06
46.85	0.48	0.31	1.54	0.06	0.00	0.06
46.90	0.48	0.31	1.54	0.06	0.00	0.06
46.95	0.48	0.31	1.54	0.06	0.00	0.06
47.00	0.48	0.31	1.54	0.06	0.00	0.06
47.05	0.48	0.31	1.54	0.06	0.00	0.06
47.10	0.48	0.31	1.54	0.06	0.00	0.06
47.15	0.48	0.31	1.54	0.06	0.00	0.06
47.20	0.47	0.31	1.54	0.06	0.00	0.06
47.25	0.47	0.31	1.54	0.05	0.00	0.05
47.30	0.47	0.31	1.54	0.05	0.00	0.05
47.35	0.47	0.31	1.54	0.05	0.00	0.05
47.40	0.47	0.31	1.54	0.05	0.00	0.05
47.45	0.47	0.31	1.54	0.05	0.00	0.05
47.50	0.47	0.31	1.54	0.05	0.00	0.05
47.55	0.47	0.31	1.54	0.05	0.00	0.05
47.60	0.47	0.31	1.54	0.05	0.00	0.05
47.65	0.47	0.31	1.54	0.05	0.00	0.05
47.70	0.47	0.31	1.54	0.05	0.00	0.05
47.75	0.47	0.31	1.54	0.04	0.00	0.04
47.80	0.47	0.31	1.54	0.04	0.00	0.04
47.85	0.47	0.31	1.54	0.04	0.00	0.04
47.90	0.47	0.31	1.54	0.04	0.00	0.04
47.95	0.47	0.31	1.54	0.04	0.00	0.04
48.00	0.47	0.31	1.54	0.04	0.00	0.04
48.05	0.47	0.31	1.54	0.04	0.00	0.04

48.10	0.47	0.31	1.54	0.04	0.00	0.04
48.15	0.47	0.31	1.54	0.04	0.00	0.04
48.20	0.47	0.31	1.54	0.04	0.00	0.04
48.25	0.47	0.31	1.54	0.03	0.00	0.03
48.30	0.47	0.31	1.54	0.03	0.00	0.03
48.35	0.47	0.31	1.54	0.03	0.00	0.03
48.40	0.47	0.31	1.54	0.03	0.00	0.03
48.45	0.47	0.30	1.54	0.03	0.00	0.03
48.50	0.47	0.30	1.54	0.03	0.00	0.03
48.55	0.47	0.30	1.54	0.03	0.00	0.03
48.60	0.47	0.30	1.54	0.03	0.00	0.03
48.65	0.47	0.30	1.54	0.03	0.00	0.03
48.70	0.47	0.30	1.54	0.03	0.00	0.03
48.75	0.47	0.30	1.54	0.02	0.00	0.02
48.80	0.47	0.30	1.54	0.02	0.00	0.02
48.85	0.47	0.30	1.54	0.02	0.00	0.02
48.90	0.47	0.30	1.54	0.02	0.00	0.02
48.95	0.47	0.30	1.54	0.02	0.00	0.02
49.00	0.47	0.30	1.54	0.02	0.00	0.02
49.05	0.47	0.30	1.54	0.02	0.00	0.02
49.10	0.47	0.30	1.54	0.02	0.00	0.02
49.15	0.47	0.30	1.54	0.02	0.00	0.02
49.20	0.47	0.30	1.54	0.02	0.00	0.02
49.25	0.47	0.30	1.54	0.01	0.00	0.01
49.30	0.47	0.30	1.54	0.01	0.00	0.01
49.35	0.47	0.30	1.54	0.01	0.00	0.01
49.40	0.47	0.30	1.54	0.01	0.00	0.01
49.45	0.46	0.30	1.54	0.01	0.00	0.01
49.50	0.46	0.30	1.54	0.01	0.00	0.01
49.55	0.46	0.30	1.54	0.01	0.00	0.01
49.60	0.46	0.30	1.54	0.01	0.00	0.01
49.65	0.46	0.30	1.54	0.01	0.00	0.01
49.70	0.46	0.30	1.54	0.01	0.00	0.01
49.75	0.46	0.30	1.54	0.00	0.00	0.00
49.80	0.46	0.30	1.54	0.00	0.00	0.00
49.85	0.46	0.30	1.54	0.00	0.00	0.00
49.90	0.46	0.30	1.54	0.00	0.00	0.00
49.95	0.46	0.30	1.54	0.00	0.00	0.00
50.00	0.46	0.30	1.54	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

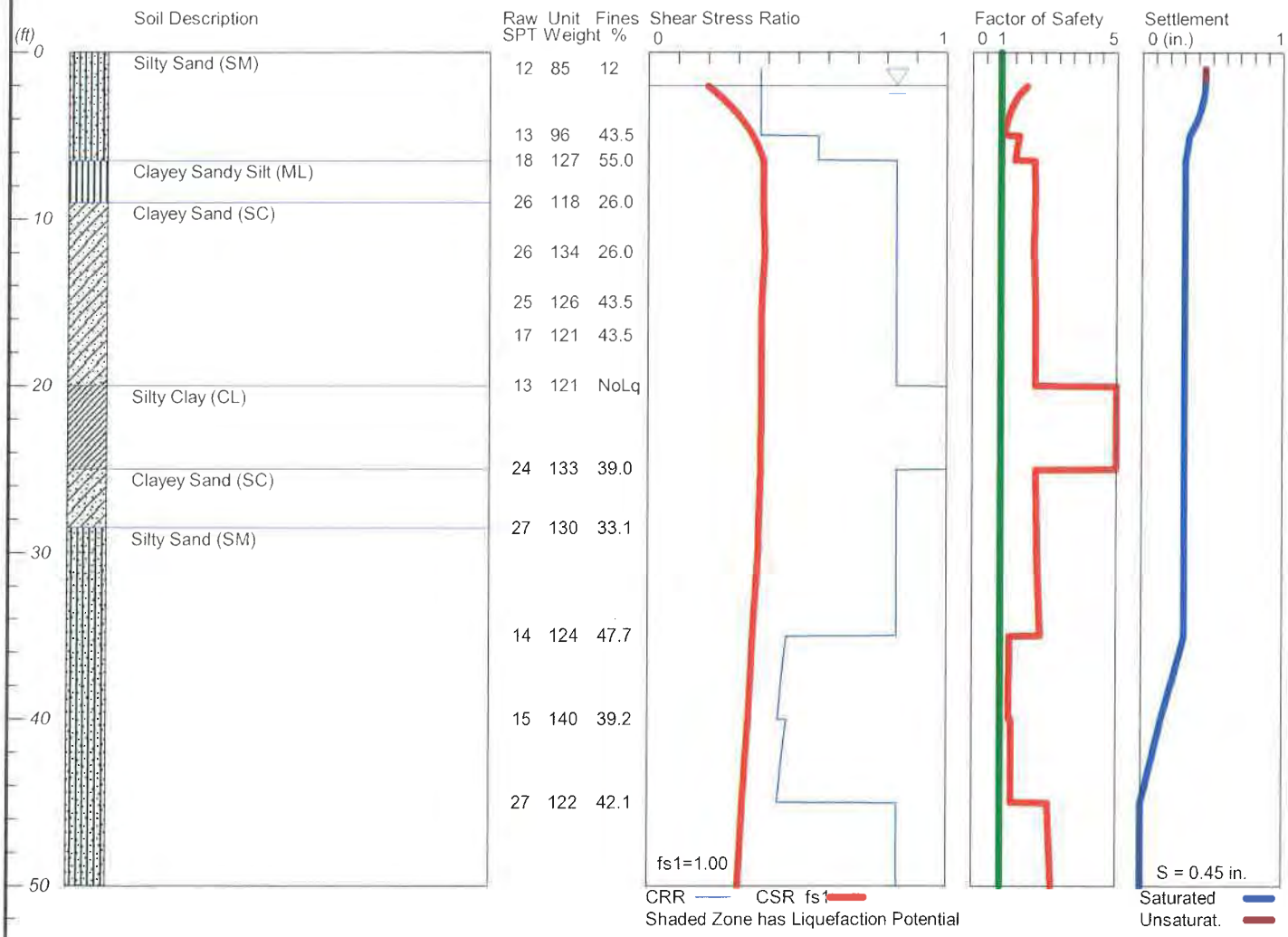
1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B6 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

Krazan

012-22165

Plate A-1

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 10/10/2022 3:01:28 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B6\01222165 B6 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B6
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B6
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 2.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
1.00	12.00	85.00	12.00
5.00	13.00	96.00	43.50
6.50	18.00	127.00	55.00
9.00	26.00	118.00	26.00
12.00	26.00	134.00	26.00
15.00	25.00	126.00	43.50
17.00	17.00	121.00	43.50
20.00	13.00	121.00	NoLiq
25.00	24.00	133.00	39.00
28.50	27.00	130.00	33.10
35.00	14.00	124.00	47.70
40.00	15.00	140.00	39.20
45.00	27.00	122.00	42.10

Output Results:
Settlement of Saturated Sands=0.44 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.45 in.
Differential Settlement=0.223 to 0.294 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

1.00	0.37	0.20	5.00	0.44	0.00	0.45
1.05	0.37	0.20	5.00	0.44	0.00	0.45
1.10	0.37	0.20	5.00	0.44	0.00	0.45
1.15	0.37	0.20	5.00	0.44	0.00	0.45
1.20	0.37	0.20	5.00	0.44	0.00	0.45
1.25	0.37	0.20	5.00	0.44	0.00	0.45
1.30	0.37	0.20	5.00	0.44	0.00	0.45
1.35	0.37	0.20	5.00	0.44	0.00	0.45
1.40	0.37	0.20	5.00	0.44	0.00	0.45
1.45	0.37	0.20	5.00	0.44	0.00	0.45
1.50	0.37	0.20	5.00	0.44	0.00	0.45
1.55	0.37	0.20	5.00	0.44	0.00	0.45
1.60	0.37	0.20	5.00	0.44	0.00	0.45
1.65	0.37	0.20	5.00	0.44	0.00	0.45
1.70	0.37	0.20	5.00	0.44	0.00	0.45
1.75	0.37	0.20	5.00	0.44	0.00	0.44
1.80	0.37	0.20	5.00	0.44	0.00	0.44
1.85	0.37	0.20	5.00	0.44	0.00	0.44
1.90	0.37	0.20	5.00	0.44	0.00	0.44
1.95	0.37	0.20	5.00	0.44	0.00	0.44
2.00	0.37	0.20	5.00	0.44	0.00	0.44
2.05	0.37	0.20	1.89	0.44	0.00	0.44
2.10	0.37	0.20	1.85	0.44	0.00	0.44
2.15	0.37	0.21	1.82	0.44	0.00	0.44
2.20	0.37	0.21	1.79	0.44	0.00	0.44
2.25	0.37	0.21	1.76	0.44	0.00	0.44
2.30	0.37	0.22	1.74	0.44	0.00	0.44
2.35	0.37	0.22	1.71	0.44	0.00	0.44
2.40	0.37	0.22	1.69	0.44	0.00	0.44
2.45	0.37	0.23	1.66	0.44	0.00	0.44
2.50	0.37	0.23	1.64	0.44	0.00	0.44
2.55	0.37	0.23	1.62	0.44	0.00	0.44
2.60	0.37	0.23	1.60	0.44	0.00	0.44
2.65	0.37	0.24	1.58	0.44	0.00	0.44
2.70	0.37	0.24	1.56	0.44	0.00	0.44
2.75	0.37	0.24	1.54	0.43	0.00	0.43
2.80	0.37	0.25	1.52	0.43	0.00	0.43
2.85	0.37	0.25	1.50	0.43	0.00	0.43
2.90	0.37	0.25	1.48	0.43	0.00	0.43
2.95	0.37	0.26	1.47	0.43	0.00	0.43
3.00	0.37	0.26	1.45	0.43	0.00	0.43
3.05	0.37	0.26	1.44	0.43	0.00	0.43
3.10	0.37	0.26	1.42	0.43	0.00	0.43
3.15	0.37	0.27	1.41	0.42	0.00	0.42
3.20	0.37	0.27	1.39	0.42	0.00	0.42
3.25	0.37	0.27	1.38	0.42	0.00	0.42
3.30	0.37	0.27	1.37	0.42	0.00	0.42
3.35	0.37	0.28	1.35	0.42	0.00	0.42
3.40	0.37	0.28	1.34	0.42	0.00	0.42
3.45	0.37	0.28	1.33	0.41	0.00	0.41
3.50	0.37	0.28	1.32	0.41	0.00	0.41
3.55	0.37	0.29	1.31	0.41	0.00	0.41
3.60	0.37	0.29	1.30	0.41	0.00	0.41
3.65	0.37	0.29	1.28	0.41	0.00	0.41
3.70	0.37	0.29	1.27	0.40	0.00	0.40
3.75	0.37	0.30	1.26	0.40	0.00	0.40
3.80	0.37	0.30	1.25	0.40	0.00	0.40
3.85	0.37	0.30	1.24	0.40	0.00	0.40
3.90	0.37	0.30	1.24	0.40	0.00	0.40
3.95	0.37	0.31	1.23	0.39	0.00	0.39
4.00	0.37	0.31	1.22	0.39	0.00	0.39
4.05	0.37	0.31	1.21	0.39	0.00	0.39
4.10	0.37	0.31	1.20	0.39	0.00	0.39
4.15	0.37	0.31	1.19	0.38	0.00	0.38
4.20	0.37	0.32	1.18	0.38	0.00	0.38
4.25	0.37	0.32	1.18	0.38	0.00	0.38
4.30	0.37	0.32	1.17	0.38	0.00	0.38
4.35	0.37	0.32	1.16	0.37	0.00	0.37
4.40	0.37	0.32	1.15	0.37	0.00	0.37
4.45	0.37	0.33	1.15	0.37	0.00	0.37

4.50	0.37	0.33	1.14	0.37	0.00	0.37
4.55	0.37	0.33	1.13	0.36	0.00	0.36
4.60	0.37	0.33	1.13	0.36	0.00	0.36
4.65	0.37	0.33	1.12	0.36	0.00	0.36
4.70	0.37	0.34	1.11	0.35	0.00	0.35
4.75	0.37	0.34	1.11	0.35	0.00	0.35
4.80	0.37	0.34	1.10	0.35	0.00	0.35
4.85	0.37	0.34	1.09	0.34	0.00	0.34
4.90	0.37	0.34	1.09	0.34	0.00	0.34
4.95	0.37	0.35	1.08	0.34	0.00	0.34
5.00	0.57	0.35	1.63	0.33	0.00	0.33
5.05	0.57	0.35	1.62	0.33	0.00	0.33
5.10	0.57	0.35	1.61	0.33	0.00	0.33
5.15	0.57	0.35	1.61	0.33	0.00	0.33
5.20	0.57	0.35	1.60	0.33	0.00	0.33
5.25	0.57	0.35	1.60	0.33	0.00	0.33
5.30	0.57	0.36	1.59	0.33	0.00	0.33
5.35	0.57	0.36	1.58	0.33	0.00	0.33
5.40	0.57	0.36	1.58	0.33	0.00	0.33
5.45	0.57	0.36	1.57	0.33	0.00	0.33
5.50	0.57	0.36	1.57	0.32	0.00	0.32
5.55	0.57	0.36	1.56	0.32	0.00	0.32
5.60	0.57	0.36	1.56	0.32	0.00	0.32
5.65	0.57	0.37	1.55	0.32	0.00	0.32
5.70	0.57	0.37	1.55	0.32	0.00	0.32
5.75	0.57	0.37	1.54	0.32	0.00	0.32
5.80	0.57	0.37	1.54	0.32	0.00	0.32
5.85	0.57	0.37	1.53	0.32	0.00	0.32
5.90	0.57	0.37	1.53	0.32	0.00	0.32
5.95	0.57	0.37	1.52	0.32	0.00	0.32
6.00	0.57	0.37	1.52	0.32	0.00	0.32
6.05	0.57	0.37	1.51	0.31	0.00	0.31
6.10	0.57	0.38	1.51	0.31	0.00	0.31
6.15	0.57	0.38	1.50	0.31	0.00	0.31
6.20	0.57	0.38	1.50	0.31	0.00	0.31
6.25	0.57	0.38	1.50	0.31	0.00	0.31
6.30	0.57	0.38	1.49	0.31	0.00	0.31
6.35	0.57	0.38	1.49	0.31	0.00	0.31
6.40	0.57	0.38	1.48	0.31	0.00	0.31
6.45	0.57	0.38	1.48	0.31	0.00	0.31
6.50	0.83	0.38	2.16	0.31	0.00	0.31
6.55	0.83	0.38	2.16	0.31	0.00	0.31
6.60	0.83	0.38	2.16	0.31	0.00	0.31
6.65	0.83	0.38	2.16	0.31	0.00	0.31
6.70	0.83	0.38	2.16	0.31	0.00	0.31
6.75	0.83	0.38	2.16	0.31	0.00	0.31
6.80	0.83	0.38	2.16	0.31	0.00	0.31
6.85	0.83	0.38	2.16	0.31	0.00	0.31
6.90	0.83	0.38	2.17	0.31	0.00	0.31
6.95	0.83	0.38	2.17	0.31	0.00	0.31
7.00	0.83	0.38	2.17	0.31	0.00	0.31
7.05	0.83	0.38	2.17	0.31	0.00	0.31
7.10	0.83	0.38	2.17	0.31	0.00	0.31
7.15	0.83	0.38	2.17	0.31	0.00	0.31
7.20	0.83	0.38	2.17	0.31	0.00	0.31
7.25	0.83	0.38	2.17	0.31	0.00	0.31
7.30	0.83	0.38	2.17	0.31	0.00	0.31
7.35	0.83	0.38	2.17	0.31	0.00	0.31
7.40	0.83	0.38	2.17	0.31	0.00	0.31
7.45	0.83	0.38	2.17	0.31	0.00	0.31
7.50	0.83	0.38	2.17	0.31	0.00	0.31
7.55	0.83	0.38	2.17	0.31	0.00	0.31
7.60	0.83	0.38	2.17	0.31	0.00	0.31
7.65	0.83	0.38	2.17	0.31	0.00	0.31
7.70	0.83	0.38	2.17	0.31	0.00	0.31
7.75	0.83	0.38	2.17	0.31	0.00	0.31
7.80	0.83	0.38	2.17	0.31	0.00	0.31
7.85	0.83	0.38	2.17	0.31	0.00	0.31
7.90	0.83	0.38	2.17	0.31	0.00	0.31
7.95	0.83	0.38	2.17	0.31	0.00	0.31
8.00	0.83	0.38	2.17	0.31	0.00	0.31

8.05	0.83	0.38	2.17	0.31	0.00	0.31
8.10	0.83	0.38	2.17	0.31	0.00	0.31
8.15	0.83	0.38	2.17	0.31	0.00	0.31
8.20	0.83	0.38	2.17	0.31	0.00	0.31
8.25	0.83	0.38	2.17	0.31	0.00	0.31
8.30	0.83	0.38	2.17	0.31	0.00	0.31
8.35	0.83	0.38	2.17	0.31	0.00	0.31
8.40	0.83	0.38	2.17	0.31	0.00	0.31
8.45	0.83	0.38	2.17	0.31	0.00	0.31
8.50	0.83	0.38	2.17	0.31	0.00	0.31
8.55	0.83	0.38	2.17	0.31	0.00	0.31
8.60	0.83	0.38	2.17	0.31	0.00	0.31
8.65	0.83	0.38	2.17	0.31	0.00	0.31
8.70	0.83	0.38	2.17	0.31	0.00	0.31
8.75	0.83	0.38	2.17	0.31	0.00	0.31
8.80	0.83	0.38	2.17	0.31	0.00	0.31
8.85	0.83	0.38	2.17	0.31	0.00	0.31
8.90	0.83	0.38	2.17	0.31	0.00	0.31
8.95	0.83	0.38	2.17	0.31	0.00	0.31
9.00	0.83	0.38	2.17	0.31	0.00	0.31
9.05	0.83	0.38	2.17	0.31	0.00	0.31
9.10	0.83	0.38	2.17	0.31	0.00	0.31
9.15	0.83	0.38	2.17	0.31	0.00	0.31
9.20	0.83	0.38	2.17	0.31	0.00	0.31
9.25	0.83	0.38	2.17	0.31	0.00	0.31
9.30	0.83	0.38	2.17	0.31	0.00	0.31
9.35	0.83	0.38	2.17	0.31	0.00	0.31
9.40	0.83	0.38	2.17	0.31	0.00	0.31
9.45	0.83	0.38	2.16	0.31	0.00	0.31
9.50	0.83	0.38	2.16	0.31	0.00	0.31
9.55	0.83	0.38	2.16	0.31	0.00	0.31
9.60	0.83	0.38	2.16	0.31	0.00	0.31
9.65	0.83	0.38	2.16	0.31	0.00	0.31
9.70	0.83	0.38	2.16	0.31	0.00	0.31
9.75	0.83	0.38	2.16	0.31	0.00	0.31
9.80	0.83	0.38	2.16	0.31	0.00	0.31
9.85	0.83	0.38	2.16	0.31	0.00	0.31
9.90	0.83	0.38	2.16	0.31	0.00	0.31
9.95	0.83	0.38	2.16	0.31	0.00	0.31
10.00	0.83	0.39	2.16	0.31	0.00	0.31
10.05	0.83	0.39	2.16	0.31	0.00	0.31
10.10	0.83	0.39	2.16	0.31	0.00	0.31
10.15	0.83	0.39	2.16	0.31	0.00	0.31
10.20	0.83	0.39	2.15	0.31	0.00	0.31
10.25	0.83	0.39	2.15	0.31	0.00	0.31
10.30	0.83	0.39	2.15	0.31	0.00	0.31
10.35	0.83	0.39	2.15	0.31	0.00	0.31
10.40	0.83	0.39	2.15	0.31	0.00	0.31
10.45	0.83	0.39	2.15	0.31	0.00	0.31
10.50	0.83	0.39	2.15	0.31	0.00	0.31
10.55	0.83	0.39	2.15	0.31	0.00	0.31
10.60	0.83	0.39	2.15	0.31	0.00	0.31
10.65	0.83	0.39	2.15	0.31	0.00	0.31
10.70	0.83	0.39	2.15	0.31	0.00	0.31
10.75	0.83	0.39	2.15	0.31	0.00	0.31
10.80	0.83	0.39	2.15	0.31	0.00	0.31
10.85	0.83	0.39	2.15	0.31	0.00	0.31
10.90	0.83	0.39	2.15	0.31	0.00	0.31
10.95	0.83	0.39	2.15	0.31	0.00	0.31
11.00	0.83	0.39	2.15	0.31	0.00	0.31
11.05	0.83	0.39	2.15	0.31	0.00	0.31
11.10	0.83	0.39	2.15	0.31	0.00	0.31
11.15	0.83	0.39	2.15	0.31	0.00	0.31
11.20	0.83	0.39	2.15	0.31	0.00	0.31
11.25	0.83	0.39	2.14	0.31	0.00	0.31
11.30	0.83	0.39	2.14	0.31	0.00	0.31
11.35	0.83	0.39	2.14	0.31	0.00	0.31
11.40	0.83	0.39	2.14	0.31	0.00	0.31
11.45	0.83	0.39	2.14	0.31	0.00	0.31
11.50	0.83	0.39	2.14	0.31	0.00	0.31
11.55	0.83	0.39	2.14	0.31	0.00	0.31

11.60	0.83	0.39	2.14	0.31	0.00	0.31
11.65	0.83	0.39	2.14	0.31	0.00	0.31
11.70	0.83	0.39	2.14	0.31	0.00	0.31
11.75	0.83	0.39	2.14	0.31	0.00	0.31
11.80	0.83	0.39	2.14	0.31	0.00	0.31
11.85	0.83	0.39	2.14	0.31	0.00	0.31
11.90	0.83	0.39	2.14	0.31	0.00	0.31
11.95	0.83	0.39	2.14	0.31	0.00	0.31
12.00	0.83	0.39	2.14	0.31	0.00	0.31
12.05	0.83	0.39	2.14	0.31	0.00	0.31
12.10	0.83	0.39	2.14	0.31	0.00	0.31
12.15	0.83	0.39	2.14	0.31	0.00	0.31
12.20	0.83	0.39	2.14	0.31	0.00	0.31
12.25	0.83	0.39	2.14	0.31	0.00	0.31
12.30	0.83	0.39	2.15	0.31	0.00	0.31
12.35	0.83	0.39	2.15	0.31	0.00	0.31
12.40	0.83	0.39	2.15	0.31	0.00	0.31
12.45	0.83	0.39	2.15	0.31	0.00	0.31
12.50	0.83	0.39	2.15	0.31	0.00	0.31
12.55	0.83	0.39	2.15	0.31	0.00	0.31
12.60	0.83	0.39	2.15	0.31	0.00	0.31
12.65	0.83	0.39	2.15	0.31	0.00	0.31
12.70	0.83	0.39	2.15	0.31	0.00	0.31
12.75	0.83	0.39	2.15	0.31	0.00	0.31
12.80	0.83	0.39	2.16	0.31	0.00	0.31
12.85	0.83	0.39	2.16	0.31	0.00	0.31
12.90	0.83	0.39	2.16	0.31	0.00	0.31
12.95	0.83	0.38	2.16	0.31	0.00	0.31
13.00	0.83	0.38	2.16	0.31	0.00	0.31
13.05	0.83	0.38	2.16	0.31	0.00	0.31
13.10	0.83	0.38	2.16	0.31	0.00	0.31
13.15	0.83	0.38	2.16	0.31	0.00	0.31
13.20	0.83	0.38	2.16	0.31	0.00	0.31
13.25	0.83	0.38	2.16	0.31	0.00	0.31
13.30	0.83	0.38	2.16	0.31	0.00	0.31
13.35	0.83	0.38	2.17	0.31	0.00	0.31
13.40	0.83	0.38	2.17	0.31	0.00	0.31
13.45	0.83	0.38	2.17	0.31	0.00	0.31
13.50	0.83	0.38	2.17	0.31	0.00	0.31
13.55	0.83	0.38	2.17	0.31	0.00	0.31
13.60	0.83	0.38	2.17	0.31	0.00	0.31
13.65	0.83	0.38	2.17	0.31	0.00	0.31
13.70	0.83	0.38	2.17	0.31	0.00	0.31
13.75	0.83	0.38	2.17	0.31	0.00	0.31
13.80	0.83	0.38	2.17	0.31	0.00	0.31
13.85	0.83	0.38	2.17	0.31	0.00	0.31
13.90	0.83	0.38	2.17	0.31	0.00	0.31
13.95	0.83	0.38	2.18	0.31	0.00	0.31
14.00	0.83	0.38	2.18	0.31	0.00	0.31
14.05	0.83	0.38	2.18	0.31	0.00	0.31
14.10	0.83	0.38	2.18	0.31	0.00	0.31
14.15	0.83	0.38	2.18	0.31	0.00	0.31
14.20	0.83	0.38	2.18	0.31	0.00	0.31
14.25	0.83	0.38	2.18	0.31	0.00	0.31
14.30	0.83	0.38	2.18	0.31	0.00	0.31
14.35	0.83	0.38	2.18	0.31	0.00	0.31
14.40	0.83	0.38	2.18	0.31	0.00	0.31
14.45	0.83	0.38	2.18	0.31	0.00	0.31
14.50	0.83	0.38	2.18	0.31	0.00	0.31
14.55	0.83	0.38	2.18	0.31	0.00	0.31
14.60	0.83	0.38	2.19	0.31	0.00	0.31
14.65	0.83	0.38	2.19	0.31	0.00	0.31
14.70	0.83	0.38	2.19	0.31	0.00	0.31
14.75	0.83	0.38	2.19	0.31	0.00	0.31
14.80	0.83	0.38	2.19	0.31	0.00	0.31
14.85	0.83	0.38	2.19	0.31	0.00	0.31
14.90	0.83	0.38	2.19	0.31	0.00	0.31
14.95	0.83	0.38	2.19	0.31	0.00	0.31
15.00	0.83	0.38	2.19	0.31	0.00	0.31
15.05	0.83	0.38	2.19	0.31	0.00	0.31
15.10	0.83	0.38	2.19	0.31	0.00	0.31

15.15	0.83	0.38	2.19	0.31	0.00	0.31
15.20	0.83	0.38	2.19	0.31	0.00	0.31
15.25	0.83	0.38	2.19	0.31	0.00	0.31
15.30	0.83	0.38	2.19	0.31	0.00	0.31
15.35	0.83	0.38	2.19	0.31	0.00	0.31
15.40	0.83	0.38	2.19	0.31	0.00	0.31
15.45	0.83	0.38	2.19	0.31	0.00	0.31
15.50	0.83	0.38	2.19	0.31	0.00	0.31
15.55	0.83	0.38	2.19	0.31	0.00	0.31
15.60	0.83	0.38	2.19	0.31	0.00	0.31
15.65	0.83	0.38	2.19	0.31	0.00	0.31
15.70	0.83	0.38	2.19	0.31	0.00	0.31
15.75	0.83	0.38	2.19	0.31	0.00	0.31
15.80	0.83	0.38	2.19	0.31	0.00	0.31
15.85	0.83	0.38	2.20	0.31	0.00	0.31
15.90	0.83	0.38	2.20	0.31	0.00	0.31
15.95	0.83	0.38	2.20	0.31	0.00	0.31
16.00	0.83	0.38	2.20	0.31	0.00	0.31
16.05	0.83	0.38	2.20	0.31	0.00	0.31
16.10	0.83	0.38	2.20	0.31	0.00	0.31
16.15	0.83	0.38	2.20	0.31	0.00	0.31
16.20	0.83	0.38	2.20	0.31	0.00	0.31
16.25	0.83	0.38	2.20	0.31	0.00	0.31
16.30	0.83	0.38	2.20	0.31	0.00	0.31
16.35	0.83	0.38	2.20	0.31	0.00	0.31
16.40	0.83	0.38	2.20	0.31	0.00	0.31
16.45	0.83	0.38	2.20	0.31	0.00	0.31
16.50	0.83	0.38	2.20	0.31	0.00	0.31
16.55	0.83	0.38	2.20	0.31	0.00	0.31
16.60	0.83	0.38	2.20	0.31	0.00	0.31
16.65	0.83	0.38	2.20	0.31	0.00	0.31
16.70	0.83	0.38	2.20	0.31	0.00	0.31
16.75	0.83	0.38	2.20	0.31	0.00	0.31
16.80	0.83	0.38	2.20	0.31	0.00	0.31
16.85	0.83	0.38	2.20	0.31	0.00	0.31
16.90	0.83	0.38	2.20	0.31	0.00	0.31
16.95	0.83	0.38	2.20	0.31	0.00	0.31
17.00	0.83	0.38	2.20	0.31	0.00	0.31
17.05	0.83	0.38	2.20	0.31	0.00	0.31
17.10	0.83	0.38	2.20	0.31	0.00	0.31
17.15	0.83	0.38	2.20	0.31	0.00	0.31
17.20	0.83	0.38	2.20	0.31	0.00	0.31
17.25	0.83	0.38	2.20	0.31	0.00	0.31
17.30	0.83	0.38	2.20	0.31	0.00	0.31
17.35	0.83	0.38	2.20	0.31	0.00	0.31
17.40	0.83	0.38	2.20	0.31	0.00	0.31
17.45	0.83	0.38	2.20	0.31	0.00	0.31
17.50	0.83	0.38	2.20	0.31	0.00	0.31
17.55	0.83	0.38	2.20	0.31	0.00	0.31
17.60	0.83	0.38	2.20	0.31	0.00	0.31
17.65	0.83	0.38	2.20	0.31	0.00	0.31
17.70	0.83	0.38	2.20	0.31	0.00	0.31
17.75	0.83	0.38	2.20	0.31	0.00	0.31
17.80	0.83	0.38	2.20	0.31	0.00	0.31
17.85	0.83	0.38	2.20	0.31	0.00	0.31
17.90	0.83	0.38	2.20	0.31	0.00	0.31
17.95	0.83	0.38	2.20	0.31	0.00	0.31
18.00	0.83	0.38	2.20	0.31	0.00	0.31
18.05	0.83	0.38	2.20	0.31	0.00	0.31
18.10	0.83	0.38	2.20	0.31	0.00	0.31
18.15	0.83	0.38	2.20	0.31	0.00	0.31
18.20	0.83	0.38	2.20	0.31	0.00	0.31
18.25	0.83	0.38	2.20	0.31	0.00	0.31
18.30	0.83	0.38	2.20	0.31	0.00	0.31
18.35	0.83	0.38	2.20	0.31	0.00	0.31
18.40	0.83	0.38	2.20	0.31	0.00	0.31
18.45	0.83	0.38	2.20	0.31	0.00	0.31
18.50	0.83	0.38	2.20	0.31	0.00	0.31
18.55	0.83	0.38	2.20	0.31	0.00	0.31
18.60	0.83	0.38	2.20	0.31	0.00	0.31
18.65	0.83	0.38	2.20	0.31	0.00	0.31

18.70	0.83	0.38	2.20	0.31	0.00	0.31
18.75	0.83	0.38	2.20	0.31	0.00	0.31
18.80	0.83	0.38	2.20	0.31	0.00	0.31
18.85	0.83	0.38	2.20	0.31	0.00	0.31
18.90	0.83	0.38	2.20	0.31	0.00	0.31
18.95	0.83	0.38	2.20	0.31	0.00	0.31
19.00	0.83	0.38	2.20	0.31	0.00	0.31
19.05	0.83	0.38	2.20	0.31	0.00	0.31
19.10	0.83	0.38	2.20	0.31	0.00	0.31
19.15	0.83	0.38	2.20	0.31	0.00	0.31
19.20	0.83	0.38	2.20	0.31	0.00	0.31
19.25	0.83	0.38	2.20	0.31	0.00	0.31
19.30	0.83	0.38	2.20	0.31	0.00	0.31
19.35	0.83	0.38	2.20	0.31	0.00	0.31
19.40	0.83	0.38	2.20	0.31	0.00	0.31
19.45	0.83	0.38	2.20	0.31	0.00	0.31
19.50	0.83	0.38	2.20	0.31	0.00	0.31
19.55	0.83	0.38	2.20	0.31	0.00	0.31
19.60	0.83	0.38	2.20	0.31	0.00	0.31
19.65	0.83	0.38	2.20	0.31	0.00	0.31
19.70	0.83	0.38	2.20	0.31	0.00	0.31
19.75	0.83	0.38	2.20	0.31	0.00	0.31
19.80	0.83	0.38	2.20	0.31	0.00	0.31
19.85	0.83	0.38	2.20	0.31	0.00	0.31
19.90	0.83	0.38	2.20	0.31	0.00	0.31
19.95	0.83	0.38	2.20	0.31	0.00	0.31
20.00	0.83	0.38	2.20	0.31	0.00	0.31
20.05	2.00	0.38	5.00	0.31	0.00	0.31
20.10	2.00	0.38	5.00	0.31	0.00	0.31
20.15	2.00	0.38	5.00	0.31	0.00	0.31
20.20	2.00	0.38	5.00	0.31	0.00	0.31
20.25	2.00	0.38	5.00	0.31	0.00	0.31
20.30	2.00	0.38	5.00	0.31	0.00	0.31
20.35	2.00	0.38	5.00	0.31	0.00	0.31
20.40	2.00	0.38	5.00	0.31	0.00	0.31
20.45	2.00	0.38	5.00	0.31	0.00	0.31
20.50	2.00	0.38	5.00	0.31	0.00	0.31
20.55	2.00	0.38	5.00	0.31	0.00	0.31
20.60	2.00	0.38	5.00	0.31	0.00	0.31
20.65	2.00	0.38	5.00	0.31	0.00	0.31
20.70	2.00	0.38	5.00	0.31	0.00	0.31
20.75	2.00	0.38	5.00	0.31	0.00	0.31
20.80	2.00	0.38	5.00	0.31	0.00	0.31
20.85	2.00	0.38	5.00	0.31	0.00	0.31
20.90	2.00	0.38	5.00	0.31	0.00	0.31
20.95	2.00	0.38	5.00	0.31	0.00	0.31
21.00	2.00	0.38	5.00	0.31	0.00	0.31
21.05	2.00	0.38	5.00	0.31	0.00	0.31
21.10	2.00	0.38	5.00	0.31	0.00	0.31
21.15	2.00	0.38	5.00	0.31	0.00	0.31
21.20	2.00	0.38	5.00	0.31	0.00	0.31
21.25	2.00	0.38	5.00	0.31	0.00	0.31
21.30	2.00	0.38	5.00	0.31	0.00	0.31
21.35	2.00	0.38	5.00	0.31	0.00	0.31
21.40	2.00	0.38	5.00	0.31	0.00	0.31
21.45	2.00	0.38	5.00	0.31	0.00	0.31
21.50	2.00	0.38	5.00	0.31	0.00	0.31
21.55	2.00	0.38	5.00	0.31	0.00	0.31
21.60	2.00	0.38	5.00	0.31	0.00	0.31
21.65	2.00	0.38	5.00	0.31	0.00	0.31
21.70	2.00	0.38	5.00	0.31	0.00	0.31
21.75	2.00	0.38	5.00	0.31	0.00	0.31
21.80	2.00	0.38	5.00	0.31	0.00	0.31
21.85	2.00	0.38	5.00	0.31	0.00	0.31
21.90	2.00	0.38	5.00	0.31	0.00	0.31
21.95	2.00	0.38	5.00	0.31	0.00	0.31
22.00	2.00	0.38	5.00	0.31	0.00	0.31
22.05	2.00	0.38	5.00	0.31	0.00	0.31
22.10	2.00	0.38	5.00	0.31	0.00	0.31
22.15	2.00	0.38	5.00	0.31	0.00	0.31
22.20	2.00	0.38	5.00	0.31	0.00	0.31

22.25	2.00	0.38	5.00	0.31	0.00	0.31
22.30	2.00	0.38	5.00	0.31	0.00	0.31
22.35	2.00	0.38	5.00	0.31	0.00	0.31
22.40	2.00	0.38	5.00	0.31	0.00	0.31
22.45	2.00	0.38	5.00	0.31	0.00	0.31
22.50	2.00	0.38	5.00	0.31	0.00	0.31
22.55	2.00	0.38	5.00	0.31	0.00	0.31
22.60	2.00	0.38	5.00	0.31	0.00	0.31
22.65	2.00	0.38	5.00	0.31	0.00	0.31
22.70	2.00	0.38	5.00	0.31	0.00	0.31
22.75	2.00	0.38	5.00	0.31	0.00	0.31
22.80	2.00	0.38	5.00	0.31	0.00	0.31
22.85	2.00	0.38	5.00	0.31	0.00	0.31
22.90	2.00	0.38	5.00	0.31	0.00	0.31
22.95	2.00	0.38	5.00	0.31	0.00	0.31
23.00	2.00	0.38	5.00	0.31	0.00	0.31
23.05	2.00	0.38	5.00	0.31	0.00	0.31
23.10	2.00	0.38	5.00	0.31	0.00	0.31
23.15	2.00	0.38	5.00	0.31	0.00	0.31
23.20	2.00	0.38	5.00	0.31	0.00	0.31
23.25	2.00	0.38	5.00	0.31	0.00	0.31
23.30	2.00	0.38	5.00	0.31	0.00	0.31
23.35	2.00	0.38	5.00	0.31	0.00	0.31
23.40	2.00	0.38	5.00	0.31	0.00	0.31
23.45	2.00	0.38	5.00	0.31	0.00	0.31
23.50	2.00	0.38	5.00	0.31	0.00	0.31
23.55	2.00	0.38	5.00	0.31	0.00	0.31
23.60	2.00	0.38	5.00	0.31	0.00	0.31
23.65	2.00	0.38	5.00	0.31	0.00	0.31
23.70	2.00	0.38	5.00	0.31	0.00	0.31
23.75	2.00	0.38	5.00	0.31	0.00	0.31
23.80	2.00	0.38	5.00	0.31	0.00	0.31
23.85	2.00	0.38	5.00	0.31	0.00	0.31
23.90	2.00	0.38	5.00	0.31	0.00	0.31
23.95	2.00	0.38	5.00	0.31	0.00	0.31
24.00	2.00	0.38	5.00	0.31	0.00	0.31
24.05	2.00	0.38	5.00	0.31	0.00	0.31
24.10	2.00	0.38	5.00	0.31	0.00	0.31
24.15	2.00	0.38	5.00	0.31	0.00	0.31
24.20	2.00	0.38	5.00	0.31	0.00	0.31
24.25	2.00	0.38	5.00	0.31	0.00	0.31
24.30	2.00	0.38	5.00	0.31	0.00	0.31
24.35	2.00	0.38	5.00	0.31	0.00	0.31
24.40	2.00	0.38	5.00	0.31	0.00	0.31
24.45	2.00	0.38	5.00	0.31	0.00	0.31
24.50	2.00	0.38	5.00	0.31	0.00	0.31
24.55	2.00	0.38	5.00	0.31	0.00	0.31
24.60	2.00	0.38	5.00	0.31	0.00	0.31
24.65	2.00	0.38	5.00	0.31	0.00	0.31
24.70	2.00	0.38	5.00	0.31	0.00	0.31
24.75	2.00	0.38	5.00	0.31	0.00	0.31
24.80	2.00	0.38	5.00	0.31	0.00	0.31
24.85	2.00	0.38	5.00	0.31	0.00	0.31
24.90	2.00	0.38	5.00	0.31	0.00	0.31
24.95	2.00	0.38	5.00	0.31	0.00	0.31
25.00	2.00	0.38	5.00	0.31	0.00	0.31
25.05	0.83	0.38	2.21	0.31	0.00	0.31
25.10	0.83	0.38	2.21	0.31	0.00	0.31
25.15	0.83	0.38	2.21	0.31	0.00	0.31
25.20	0.83	0.38	2.21	0.31	0.00	0.31
25.25	0.83	0.38	2.21	0.31	0.00	0.31
25.30	0.83	0.38	2.21	0.31	0.00	0.31
25.35	0.83	0.38	2.21	0.31	0.00	0.31
25.40	0.83	0.38	2.21	0.31	0.00	0.31
25.45	0.83	0.38	2.21	0.31	0.00	0.31
25.50	0.83	0.38	2.21	0.31	0.00	0.31
25.55	0.83	0.38	2.22	0.31	0.00	0.31
25.60	0.83	0.37	2.22	0.31	0.00	0.31
25.65	0.83	0.37	2.22	0.31	0.00	0.31
25.70	0.83	0.37	2.22	0.31	0.00	0.31
25.75	0.83	0.37	2.22	0.31	0.00	0.31

25.80	0.83	0.37	2.22	0.31	0.00	0.31
25.85	0.83	0.37	2.22	0.31	0.00	0.31
25.90	0.83	0.37	2.22	0.31	0.00	0.31
25.95	0.83	0.37	2.22	0.31	0.00	0.31
26.00	0.83	0.37	2.22	0.31	0.00	0.31
26.05	0.83	0.37	2.22	0.31	0.00	0.31
26.10	0.83	0.37	2.22	0.31	0.00	0.31
26.15	0.83	0.37	2.22	0.31	0.00	0.31
26.20	0.83	0.37	2.22	0.31	0.00	0.31
26.25	0.83	0.37	2.22	0.31	0.00	0.31
26.30	0.83	0.37	2.22	0.31	0.00	0.31
26.35	0.83	0.37	2.22	0.31	0.00	0.31
26.40	0.83	0.37	2.22	0.31	0.00	0.31
26.45	0.83	0.37	2.23	0.31	0.00	0.31
26.50	0.83	0.37	2.23	0.31	0.00	0.31
26.55	0.83	0.37	2.23	0.31	0.00	0.31
26.60	0.83	0.37	2.23	0.31	0.00	0.31
26.65	0.83	0.37	2.23	0.31	0.00	0.31
26.70	0.83	0.37	2.23	0.31	0.00	0.31
26.75	0.83	0.37	2.23	0.31	0.00	0.31
26.80	0.83	0.37	2.23	0.31	0.00	0.31
26.85	0.83	0.37	2.23	0.31	0.00	0.31
26.90	0.83	0.37	2.23	0.31	0.00	0.31
26.95	0.83	0.37	2.23	0.31	0.00	0.31
27.00	0.83	0.37	2.23	0.31	0.00	0.31
27.05	0.83	0.37	2.23	0.31	0.00	0.31
27.10	0.83	0.37	2.23	0.31	0.00	0.31
27.15	0.83	0.37	2.23	0.31	0.00	0.31
27.20	0.83	0.37	2.23	0.31	0.00	0.31
27.25	0.83	0.37	2.23	0.31	0.00	0.31
27.30	0.83	0.37	2.23	0.31	0.00	0.31
27.35	0.83	0.37	2.24	0.31	0.00	0.31
27.40	0.83	0.37	2.24	0.31	0.00	0.31
27.45	0.83	0.37	2.24	0.31	0.00	0.31
27.50	0.83	0.37	2.24	0.31	0.00	0.31
27.55	0.83	0.37	2.24	0.31	0.00	0.31
27.60	0.83	0.37	2.24	0.31	0.00	0.31
27.65	0.83	0.37	2.24	0.31	0.00	0.31
27.70	0.83	0.37	2.24	0.31	0.00	0.31
27.75	0.83	0.37	2.24	0.31	0.00	0.31
27.80	0.83	0.37	2.24	0.31	0.00	0.31
27.85	0.83	0.37	2.24	0.31	0.00	0.31
27.90	0.83	0.37	2.24	0.31	0.00	0.31
27.95	0.83	0.37	2.24	0.31	0.00	0.31
28.00	0.83	0.37	2.24	0.31	0.00	0.31
28.05	0.83	0.37	2.24	0.31	0.00	0.31
28.10	0.83	0.37	2.24	0.31	0.00	0.31
28.15	0.83	0.37	2.24	0.31	0.00	0.31
28.20	0.83	0.37	2.24	0.31	0.00	0.31
28.25	0.83	0.37	2.24	0.31	0.00	0.31
28.30	0.83	0.37	2.25	0.31	0.00	0.31
28.35	0.83	0.37	2.25	0.31	0.00	0.31
28.40	0.83	0.37	2.25	0.31	0.00	0.31
28.45	0.83	0.37	2.25	0.31	0.00	0.31
28.50	0.83	0.37	2.25	0.31	0.00	0.31
28.55	0.83	0.37	2.25	0.31	0.00	0.31
28.60	0.83	0.37	2.25	0.31	0.00	0.31
28.65	0.83	0.37	2.25	0.31	0.00	0.31
28.70	0.83	0.37	2.25	0.31	0.00	0.31
28.75	0.83	0.37	2.25	0.31	0.00	0.31
28.80	0.83	0.37	2.25	0.31	0.00	0.31
28.85	0.83	0.37	2.25	0.31	0.00	0.31
28.90	0.83	0.37	2.25	0.31	0.00	0.31
28.95	0.83	0.37	2.25	0.31	0.00	0.31
29.00	0.83	0.37	2.25	0.31	0.00	0.31
29.05	0.83	0.37	2.25	0.31	0.00	0.31
29.10	0.83	0.37	2.25	0.31	0.00	0.31
29.15	0.83	0.37	2.25	0.31	0.00	0.31
29.20	0.83	0.37	2.25	0.31	0.00	0.31
29.25	0.83	0.37	2.25	0.31	0.00	0.31
29.30	0.83	0.37	2.25	0.31	0.00	0.31

29.35	0.83	0.37	2.25	0.31	0.00	0.31
29.40	0.83	0.37	2.25	0.31	0.00	0.31
29.45	0.83	0.37	2.26	0.31	0.00	0.31
29.50	0.83	0.37	2.26	0.31	0.00	0.31
29.55	0.83	0.37	2.26	0.31	0.00	0.31
29.60	0.83	0.37	2.26	0.31	0.00	0.31
29.65	0.83	0.37	2.26	0.31	0.00	0.31
29.70	0.83	0.37	2.26	0.31	0.00	0.31
29.75	0.83	0.37	2.26	0.31	0.00	0.31
29.80	0.83	0.37	2.26	0.31	0.00	0.31
29.85	0.83	0.37	2.26	0.31	0.00	0.31
29.90	0.83	0.37	2.26	0.31	0.00	0.31
29.95	0.83	0.37	2.26	0.31	0.00	0.31
30.00	0.83	0.37	2.26	0.31	0.00	0.31
30.05	0.83	0.37	2.26	0.31	0.00	0.31
30.10	0.83	0.37	2.26	0.31	0.00	0.31
30.15	0.83	0.37	2.26	0.31	0.00	0.31
30.20	0.83	0.37	2.26	0.31	0.00	0.31
30.25	0.83	0.37	2.27	0.31	0.00	0.31
30.30	0.83	0.37	2.27	0.31	0.00	0.31
30.35	0.83	0.37	2.27	0.31	0.00	0.31
30.40	0.83	0.37	2.27	0.31	0.00	0.31
30.45	0.83	0.37	2.27	0.31	0.00	0.31
30.50	0.83	0.37	2.27	0.31	0.00	0.31
30.55	0.83	0.37	2.27	0.31	0.00	0.31
30.60	0.83	0.37	2.27	0.31	0.00	0.31
30.65	0.83	0.37	2.27	0.31	0.00	0.31
30.70	0.83	0.36	2.28	0.31	0.00	0.31
30.75	0.83	0.36	2.28	0.31	0.00	0.31
30.80	0.83	0.36	2.28	0.31	0.00	0.31
30.85	0.83	0.36	2.28	0.31	0.00	0.31
30.90	0.83	0.36	2.28	0.31	0.00	0.31
30.95	0.83	0.36	2.28	0.31	0.00	0.31
31.00	0.83	0.36	2.28	0.31	0.00	0.31
31.05	0.83	0.36	2.28	0.31	0.00	0.31
31.10	0.83	0.36	2.28	0.31	0.00	0.31
31.15	0.83	0.36	2.29	0.31	0.00	0.31
31.20	0.83	0.36	2.29	0.31	0.00	0.31
31.25	0.83	0.36	2.29	0.31	0.00	0.31
31.30	0.83	0.36	2.29	0.31	0.00	0.31
31.35	0.83	0.36	2.29	0.31	0.00	0.31
31.40	0.83	0.36	2.29	0.31	0.00	0.31
31.45	0.83	0.36	2.29	0.31	0.00	0.31
31.50	0.83	0.36	2.29	0.31	0.00	0.31
31.55	0.83	0.36	2.30	0.31	0.00	0.31
31.60	0.83	0.36	2.30	0.31	0.00	0.31
31.65	0.83	0.36	2.30	0.31	0.00	0.31
31.70	0.83	0.36	2.30	0.31	0.00	0.31
31.75	0.83	0.36	2.30	0.31	0.00	0.31
31.80	0.83	0.36	2.30	0.31	0.00	0.31
31.85	0.83	0.36	2.30	0.31	0.00	0.31
31.90	0.83	0.36	2.30	0.31	0.00	0.31
31.95	0.83	0.36	2.30	0.31	0.00	0.31
32.00	0.83	0.36	2.31	0.31	0.00	0.31
32.05	0.83	0.36	2.31	0.31	0.00	0.31
32.10	0.83	0.36	2.31	0.31	0.00	0.31
32.15	0.83	0.36	2.31	0.31	0.00	0.31
32.20	0.83	0.36	2.31	0.31	0.00	0.31
32.25	0.83	0.36	2.31	0.31	0.00	0.31
32.30	0.83	0.36	2.31	0.31	0.00	0.31
32.35	0.83	0.36	2.31	0.31	0.00	0.31
32.40	0.83	0.36	2.31	0.31	0.00	0.31
32.45	0.83	0.36	2.32	0.31	0.00	0.31
32.50	0.83	0.36	2.32	0.31	0.00	0.31
32.55	0.83	0.36	2.32	0.31	0.00	0.31
32.60	0.83	0.36	2.32	0.31	0.00	0.31
32.65	0.83	0.36	2.32	0.31	0.00	0.31
32.70	0.83	0.36	2.32	0.31	0.00	0.31
32.75	0.83	0.36	2.32	0.31	0.00	0.31
32.80	0.83	0.36	2.32	0.31	0.00	0.31
32.85	0.83	0.36	2.32	0.31	0.00	0.31

32.90	0.83	0.36	2.33	0.31	0.00	0.31
32.95	0.83	0.36	2.33	0.31	0.00	0.31
33.00	0.83	0.36	2.33	0.31	0.00	0.31
33.05	0.83	0.36	2.33	0.31	0.00	0.31
33.10	0.83	0.36	2.33	0.31	0.00	0.31
33.15	0.83	0.36	2.33	0.31	0.00	0.31
33.20	0.83	0.36	2.33	0.31	0.00	0.31
33.25	0.83	0.36	2.33	0.31	0.00	0.31
33.30	0.83	0.36	2.34	0.31	0.00	0.31
33.35	0.83	0.36	2.34	0.31	0.00	0.31
33.40	0.83	0.36	2.34	0.31	0.00	0.31
33.45	0.83	0.36	2.34	0.31	0.00	0.31
33.50	0.83	0.36	2.34	0.31	0.00	0.31
33.55	0.83	0.35	2.34	0.31	0.00	0.31
33.60	0.83	0.35	2.34	0.31	0.00	0.31
33.65	0.83	0.35	2.34	0.31	0.00	0.31
33.70	0.83	0.35	2.34	0.31	0.00	0.31
33.75	0.83	0.35	2.35	0.31	0.00	0.31
33.80	0.83	0.35	2.35	0.31	0.00	0.31
33.85	0.83	0.35	2.35	0.31	0.00	0.31
33.90	0.83	0.35	2.35	0.31	0.00	0.31
33.95	0.83	0.35	2.35	0.31	0.00	0.31
34.00	0.83	0.35	2.35	0.31	0.00	0.31
34.05	0.83	0.35	2.35	0.31	0.00	0.31
34.10	0.83	0.35	2.35	0.31	0.00	0.31
34.15	0.83	0.35	2.35	0.31	0.00	0.31
34.20	0.83	0.35	2.36	0.31	0.00	0.31
34.25	0.83	0.35	2.36	0.31	0.00	0.31
34.30	0.83	0.35	2.36	0.31	0.00	0.31
34.35	0.83	0.35	2.36	0.31	0.00	0.31
34.40	0.83	0.35	2.36	0.31	0.00	0.31
34.45	0.83	0.35	2.36	0.31	0.00	0.31
34.50	0.83	0.35	2.36	0.31	0.00	0.31
34.55	0.83	0.35	2.36	0.31	0.00	0.31
34.60	0.83	0.35	2.37	0.31	0.00	0.31
34.65	0.83	0.35	2.37	0.31	0.00	0.31
34.70	0.83	0.35	2.37	0.31	0.00	0.31
34.75	0.83	0.35	2.37	0.31	0.00	0.31
34.80	0.83	0.35	2.37	0.31	0.00	0.31
34.85	0.83	0.35	2.37	0.31	0.00	0.31
34.90	0.83	0.35	2.37	0.31	0.00	0.31
34.95	0.83	0.35	2.37	0.31	0.00	0.31
35.00	0.83	0.35	2.37	0.31	0.00	0.31
35.05	0.46	0.35	1.32	0.31	0.00	0.31
35.10	0.46	0.35	1.32	0.30	0.00	0.30
35.15	0.46	0.35	1.32	0.30	0.00	0.30
35.20	0.46	0.35	1.32	0.30	0.00	0.30
35.25	0.46	0.35	1.32	0.30	0.00	0.30
35.30	0.46	0.35	1.32	0.30	0.00	0.30
35.35	0.46	0.35	1.32	0.30	0.00	0.30
35.40	0.46	0.35	1.32	0.29	0.00	0.29
35.45	0.46	0.35	1.32	0.29	0.00	0.29
35.50	0.46	0.35	1.32	0.29	0.00	0.29
35.55	0.46	0.35	1.32	0.29	0.00	0.29
35.60	0.46	0.35	1.32	0.29	0.00	0.29
35.65	0.46	0.35	1.31	0.29	0.00	0.29
35.70	0.46	0.35	1.31	0.29	0.00	0.29
35.75	0.46	0.35	1.31	0.28	0.00	0.28
35.80	0.46	0.35	1.31	0.28	0.00	0.28
35.85	0.46	0.35	1.31	0.28	0.00	0.28
35.90	0.46	0.35	1.31	0.28	0.00	0.28
35.95	0.46	0.35	1.31	0.28	0.00	0.28
36.00	0.46	0.35	1.31	0.28	0.00	0.28
36.05	0.45	0.35	1.31	0.27	0.00	0.27
36.10	0.45	0.35	1.31	0.27	0.00	0.27
36.15	0.45	0.35	1.31	0.27	0.00	0.27
36.20	0.45	0.35	1.31	0.27	0.00	0.27
36.25	0.45	0.35	1.31	0.27	0.00	0.27
36.30	0.45	0.35	1.31	0.27	0.00	0.27
36.35	0.45	0.35	1.31	0.26	0.00	0.26
36.40	0.45	0.35	1.31	0.26	0.00	0.26

36.45	0.45	0.35	1.31	0.26	0.00	0.26
36.50	0.45	0.35	1.31	0.26	0.00	0.26
36.55	0.45	0.35	1.31	0.26	0.00	0.26
36.60	0.45	0.34	1.31	0.26	0.00	0.26
36.65	0.45	0.34	1.31	0.26	0.00	0.26
36.70	0.45	0.34	1.31	0.25	0.00	0.25
36.75	0.45	0.34	1.31	0.25	0.00	0.25
36.80	0.45	0.34	1.31	0.25	0.00	0.25
36.85	0.45	0.34	1.31	0.25	0.00	0.25
36.90	0.45	0.34	1.31	0.25	0.00	0.25
36.95	0.45	0.34	1.31	0.25	0.00	0.25
37.00	0.45	0.34	1.31	0.24	0.00	0.24
37.05	0.45	0.34	1.31	0.24	0.00	0.24
37.10	0.45	0.34	1.31	0.24	0.00	0.24
37.15	0.45	0.34	1.31	0.24	0.00	0.24
37.20	0.45	0.34	1.31	0.24	0.00	0.24
37.25	0.45	0.34	1.31	0.24	0.00	0.24
37.30	0.45	0.34	1.30	0.23	0.00	0.23
37.35	0.45	0.34	1.30	0.23	0.00	0.23
37.40	0.45	0.34	1.30	0.23	0.00	0.23
37.45	0.45	0.34	1.30	0.23	0.00	0.23
37.50	0.45	0.34	1.30	0.23	0.00	0.23
37.55	0.45	0.34	1.30	0.23	0.00	0.23
37.60	0.45	0.34	1.30	0.22	0.00	0.22
37.65	0.45	0.34	1.30	0.22	0.00	0.22
37.70	0.45	0.34	1.30	0.22	0.00	0.22
37.75	0.44	0.34	1.30	0.22	0.00	0.22
37.80	0.44	0.34	1.30	0.22	0.00	0.22
37.85	0.44	0.34	1.30	0.22	0.00	0.22
37.90	0.44	0.34	1.30	0.21	0.00	0.21
37.95	0.44	0.34	1.30	0.21	0.00	0.21
38.00	0.44	0.34	1.30	0.21	0.00	0.21
38.05	0.44	0.34	1.30	0.21	0.00	0.21
38.10	0.44	0.34	1.30	0.21	0.00	0.21
38.15	0.44	0.34	1.30	0.21	0.00	0.21
38.20	0.44	0.34	1.30	0.20	0.00	0.20
38.25	0.44	0.34	1.30	0.20	0.00	0.20
38.30	0.44	0.34	1.30	0.20	0.00	0.20
38.35	0.44	0.34	1.30	0.20	0.00	0.20
38.40	0.44	0.34	1.30	0.20	0.00	0.20
38.45	0.44	0.34	1.30	0.20	0.00	0.20
38.50	0.44	0.34	1.30	0.19	0.00	0.19
38.55	0.44	0.34	1.30	0.19	0.00	0.19
38.60	0.44	0.34	1.30	0.19	0.00	0.19
38.65	0.44	0.34	1.30	0.19	0.00	0.19
38.70	0.44	0.34	1.30	0.19	0.00	0.19
38.75	0.44	0.34	1.30	0.19	0.00	0.19
38.80	0.44	0.34	1.30	0.18	0.00	0.18
38.85	0.44	0.34	1.30	0.18	0.00	0.18
38.90	0.44	0.34	1.30	0.18	0.00	0.18
38.95	0.44	0.34	1.30	0.18	0.00	0.18
39.00	0.44	0.34	1.30	0.18	0.00	0.18
39.05	0.44	0.34	1.30	0.18	0.00	0.18
39.10	0.44	0.34	1.30	0.17	0.00	0.17
39.15	0.44	0.34	1.30	0.17	0.00	0.17
39.20	0.44	0.34	1.30	0.17	0.00	0.17
39.25	0.44	0.34	1.30	0.17	0.00	0.17
39.30	0.44	0.34	1.30	0.17	0.00	0.17
39.35	0.44	0.34	1.30	0.17	0.00	0.17
39.40	0.44	0.34	1.30	0.16	0.00	0.16
39.45	0.44	0.34	1.30	0.16	0.00	0.16
39.50	0.44	0.34	1.30	0.16	0.00	0.16
39.55	0.44	0.34	1.30	0.16	0.00	0.16
39.60	0.44	0.34	1.30	0.16	0.00	0.16
39.65	0.43	0.34	1.30	0.16	0.00	0.16
39.70	0.43	0.34	1.30	0.15	0.00	0.15
39.75	0.43	0.34	1.30	0.15	0.00	0.15
39.80	0.43	0.34	1.29	0.15	0.00	0.15
39.85	0.43	0.34	1.29	0.15	0.00	0.15
39.90	0.43	0.33	1.29	0.15	0.00	0.15
39.95	0.43	0.33	1.29	0.15	0.00	0.15

40.00	0.43	0.33	1.29	0.14	0.00	0.14
40.05	0.46	0.33	1.38	0.14	0.00	0.14
40.10	0.46	0.33	1.38	0.14	0.00	0.14
40.15	0.46	0.33	1.38	0.14	0.00	0.14
40.20	0.46	0.33	1.38	0.14	0.00	0.14
40.25	0.46	0.33	1.38	0.14	0.00	0.14
40.30	0.46	0.33	1.38	0.14	0.00	0.14
40.35	0.46	0.33	1.38	0.13	0.00	0.13
40.40	0.46	0.33	1.38	0.13	0.00	0.13
40.45	0.46	0.33	1.38	0.13	0.00	0.13
40.50	0.46	0.33	1.38	0.13	0.00	0.13
40.55	0.46	0.33	1.38	0.13	0.00	0.13
40.60	0.46	0.33	1.38	0.13	0.00	0.13
40.65	0.46	0.33	1.38	0.13	0.00	0.13
40.70	0.46	0.33	1.38	0.12	0.00	0.12
40.75	0.46	0.33	1.38	0.12	0.00	0.12
40.80	0.46	0.33	1.38	0.12	0.00	0.12
40.85	0.46	0.33	1.38	0.12	0.00	0.12
40.90	0.46	0.33	1.38	0.12	0.00	0.12
40.95	0.46	0.33	1.38	0.12	0.00	0.12
41.00	0.46	0.33	1.38	0.12	0.00	0.12
41.05	0.45	0.33	1.38	0.11	0.00	0.11
41.10	0.45	0.33	1.38	0.11	0.00	0.11
41.15	0.45	0.33	1.38	0.11	0.00	0.11
41.20	0.45	0.33	1.38	0.11	0.00	0.11
41.25	0.45	0.33	1.38	0.11	0.00	0.11
41.30	0.45	0.33	1.38	0.11	0.00	0.11
41.35	0.45	0.33	1.38	0.11	0.00	0.11
41.40	0.45	0.33	1.38	0.10	0.00	0.10
41.45	0.45	0.33	1.37	0.10	0.00	0.10
41.50	0.45	0.33	1.37	0.10	0.00	0.10
41.55	0.45	0.33	1.37	0.10	0.00	0.10
41.60	0.45	0.33	1.37	0.10	0.00	0.10
41.65	0.45	0.33	1.37	0.10	0.00	0.10
41.70	0.45	0.33	1.37	0.10	0.00	0.10
41.75	0.45	0.33	1.37	0.10	0.00	0.10
41.80	0.45	0.33	1.37	0.09	0.00	0.09
41.85	0.45	0.33	1.37	0.09	0.00	0.09
41.90	0.45	0.33	1.37	0.09	0.00	0.09
41.95	0.45	0.33	1.37	0.09	0.00	0.09
42.00	0.45	0.33	1.37	0.09	0.00	0.09
42.05	0.45	0.33	1.37	0.09	0.00	0.09
42.10	0.45	0.33	1.37	0.09	0.00	0.09
42.15	0.45	0.33	1.37	0.08	0.00	0.08
42.20	0.45	0.33	1.37	0.08	0.00	0.08
42.25	0.45	0.33	1.37	0.08	0.00	0.08
42.30	0.45	0.33	1.37	0.08	0.00	0.08
42.35	0.45	0.33	1.37	0.08	0.00	0.08
42.40	0.45	0.32	1.37	0.08	0.00	0.08
42.45	0.45	0.32	1.37	0.08	0.00	0.08
42.50	0.45	0.32	1.37	0.07	0.00	0.07
42.55	0.45	0.32	1.37	0.07	0.00	0.07
42.60	0.44	0.32	1.37	0.07	0.00	0.07
42.65	0.44	0.32	1.37	0.07	0.00	0.07
42.70	0.44	0.32	1.37	0.07	0.00	0.07
42.75	0.44	0.32	1.37	0.07	0.00	0.07
42.80	0.44	0.32	1.37	0.07	0.00	0.07
42.85	0.44	0.32	1.37	0.06	0.00	0.06
42.90	0.44	0.32	1.37	0.06	0.00	0.06
42.95	0.44	0.32	1.37	0.06	0.00	0.06
43.00	0.44	0.32	1.37	0.06	0.00	0.06
43.05	0.44	0.32	1.37	0.06	0.00	0.06
43.10	0.44	0.32	1.37	0.06	0.00	0.06
43.15	0.44	0.32	1.37	0.06	0.00	0.06
43.20	0.44	0.32	1.37	0.05	0.00	0.05
43.25	0.44	0.32	1.37	0.05	0.00	0.05
43.30	0.44	0.32	1.37	0.05	0.00	0.05
43.35	0.44	0.32	1.37	0.05	0.00	0.05
43.40	0.44	0.32	1.37	0.05	0.00	0.05
43.45	0.44	0.32	1.37	0.05	0.00	0.05
43.50	0.44	0.32	1.37	0.05	0.00	0.05

43.55	0.44	0.32	1.37	0.04	0.00	0.04
43.60	0.44	0.32	1.37	0.04	0.00	0.04
43.65	0.44	0.32	1.37	0.04	0.00	0.04
43.70	0.44	0.32	1.37	0.04	0.00	0.04
43.75	0.44	0.32	1.37	0.04	0.00	0.04
43.80	0.44	0.32	1.37	0.04	0.00	0.04
43.85	0.44	0.32	1.37	0.04	0.00	0.04
43.90	0.44	0.32	1.37	0.03	0.00	0.03
43.95	0.44	0.32	1.37	0.03	0.00	0.03
44.00	0.44	0.32	1.37	0.03	0.00	0.03
44.05	0.44	0.32	1.37	0.03	0.00	0.03
44.10	0.44	0.32	1.37	0.03	0.00	0.03
44.15	0.44	0.32	1.37	0.03	0.00	0.03
44.20	0.44	0.32	1.37	0.02	0.00	0.02
44.25	0.44	0.32	1.37	0.02	0.00	0.02
44.30	0.43	0.32	1.37	0.02	0.00	0.02
44.35	0.43	0.32	1.37	0.02	0.00	0.02
44.40	0.43	0.32	1.37	0.02	0.00	0.02
44.45	0.43	0.32	1.37	0.02	0.00	0.02
44.50	0.43	0.32	1.37	0.02	0.00	0.02
44.55	0.43	0.32	1.37	0.01	0.00	0.01
44.60	0.43	0.32	1.37	0.01	0.00	0.01
44.65	0.43	0.32	1.37	0.01	0.00	0.01
44.70	0.43	0.32	1.37	0.01	0.00	0.01
44.75	0.43	0.32	1.37	0.01	0.00	0.01
44.80	0.43	0.32	1.37	0.01	0.00	0.01
44.85	0.43	0.32	1.37	0.01	0.00	0.01
44.90	0.43	0.32	1.37	0.00	0.00	0.00
44.95	0.43	0.32	1.37	0.00	0.00	0.00
45.00	0.43	0.31	1.37	0.00	0.00	0.00
45.05	0.83	0.31	2.64	0.00	0.00	0.00
45.10	0.83	0.31	2.64	0.00	0.00	0.00
45.15	0.83	0.31	2.64	0.00	0.00	0.00
45.20	0.83	0.31	2.64	0.00	0.00	0.00
45.25	0.83	0.31	2.64	0.00	0.00	0.00
45.30	0.83	0.31	2.65	0.00	0.00	0.00
45.35	0.83	0.31	2.65	0.00	0.00	0.00
45.40	0.83	0.31	2.65	0.00	0.00	0.00
45.45	0.83	0.31	2.65	0.00	0.00	0.00
45.50	0.83	0.31	2.65	0.00	0.00	0.00
45.55	0.83	0.31	2.65	0.00	0.00	0.00
45.60	0.83	0.31	2.65	0.00	0.00	0.00
45.65	0.83	0.31	2.65	0.00	0.00	0.00
45.70	0.83	0.31	2.66	0.00	0.00	0.00
45.75	0.83	0.31	2.66	0.00	0.00	0.00
45.80	0.83	0.31	2.66	0.00	0.00	0.00
45.85	0.83	0.31	2.66	0.00	0.00	0.00
45.90	0.83	0.31	2.66	0.00	0.00	0.00
45.95	0.83	0.31	2.66	0.00	0.00	0.00
46.00	0.83	0.31	2.66	0.00	0.00	0.00
46.05	0.83	0.31	2.66	0.00	0.00	0.00
46.10	0.83	0.31	2.67	0.00	0.00	0.00
46.15	0.83	0.31	2.67	0.00	0.00	0.00
46.20	0.83	0.31	2.67	0.00	0.00	0.00
46.25	0.83	0.31	2.67	0.00	0.00	0.00
46.30	0.83	0.31	2.67	0.00	0.00	0.00
46.35	0.83	0.31	2.67	0.00	0.00	0.00
46.40	0.83	0.31	2.67	0.00	0.00	0.00
46.45	0.83	0.31	2.67	0.00	0.00	0.00
46.50	0.83	0.31	2.68	0.00	0.00	0.00
46.55	0.83	0.31	2.68	0.00	0.00	0.00
46.60	0.83	0.31	2.68	0.00	0.00	0.00
46.65	0.83	0.31	2.68	0.00	0.00	0.00
46.70	0.83	0.31	2.68	0.00	0.00	0.00
46.75	0.83	0.31	2.68	0.00	0.00	0.00
46.80	0.83	0.31	2.68	0.00	0.00	0.00
46.85	0.83	0.31	2.68	0.00	0.00	0.00
46.90	0.83	0.31	2.69	0.00	0.00	0.00
46.95	0.83	0.31	2.69	0.00	0.00	0.00
47.00	0.83	0.31	2.69	0.00	0.00	0.00
47.05	0.83	0.31	2.69	0.00	0.00	0.00

47.10	0.83	0.31	2.69	0.00	0.00	0.00
47.15	0.83	0.31	2.69	0.00	0.00	0.00
47.20	0.83	0.31	2.69	0.00	0.00	0.00
47.25	0.83	0.31	2.69	0.00	0.00	0.00
47.30	0.83	0.31	2.70	0.00	0.00	0.00
47.35	0.83	0.31	2.70	0.00	0.00	0.00
47.40	0.83	0.31	2.70	0.00	0.00	0.00
47.45	0.83	0.31	2.70	0.00	0.00	0.00
47.50	0.83	0.31	2.70	0.00	0.00	0.00
47.55	0.83	0.31	2.70	0.00	0.00	0.00
47.60	0.83	0.31	2.70	0.00	0.00	0.00
47.65	0.83	0.31	2.70	0.00	0.00	0.00
47.70	0.83	0.31	2.71	0.00	0.00	0.00
47.75	0.83	0.31	2.71	0.00	0.00	0.00
47.80	0.83	0.31	2.71	0.00	0.00	0.00
47.85	0.83	0.31	2.71	0.00	0.00	0.00
47.90	0.83	0.31	2.71	0.00	0.00	0.00
47.95	0.83	0.31	2.71	0.00	0.00	0.00
48.00	0.83	0.31	2.71	0.00	0.00	0.00
48.05	0.83	0.31	2.71	0.00	0.00	0.00
48.10	0.83	0.31	2.72	0.00	0.00	0.00
48.15	0.83	0.31	2.72	0.00	0.00	0.00
48.20	0.83	0.31	2.72	0.00	0.00	0.00
48.25	0.83	0.31	2.72	0.00	0.00	0.00
48.30	0.83	0.31	2.72	0.00	0.00	0.00
48.35	0.83	0.31	2.72	0.00	0.00	0.00
48.40	0.83	0.30	2.72	0.00	0.00	0.00
48.45	0.83	0.30	2.73	0.00	0.00	0.00
48.50	0.83	0.30	2.73	0.00	0.00	0.00
48.55	0.83	0.30	2.73	0.00	0.00	0.00
48.60	0.83	0.30	2.73	0.00	0.00	0.00
48.65	0.83	0.30	2.73	0.00	0.00	0.00
48.70	0.83	0.30	2.73	0.00	0.00	0.00
48.75	0.83	0.30	2.73	0.00	0.00	0.00
48.80	0.83	0.30	2.73	0.00	0.00	0.00
48.85	0.83	0.30	2.74	0.00	0.00	0.00
48.90	0.83	0.30	2.74	0.00	0.00	0.00
48.95	0.83	0.30	2.74	0.00	0.00	0.00
49.00	0.83	0.30	2.74	0.00	0.00	0.00
49.05	0.83	0.30	2.74	0.00	0.00	0.00
49.10	0.83	0.30	2.74	0.00	0.00	0.00
49.15	0.83	0.30	2.74	0.00	0.00	0.00
49.20	0.83	0.30	2.74	0.00	0.00	0.00
49.25	0.83	0.30	2.75	0.00	0.00	0.00
49.30	0.83	0.30	2.75	0.00	0.00	0.00
49.35	0.83	0.30	2.75	0.00	0.00	0.00
49.40	0.83	0.30	2.75	0.00	0.00	0.00
49.45	0.83	0.30	2.75	0.00	0.00	0.00
49.50	0.83	0.30	2.75	0.00	0.00	0.00
49.55	0.83	0.30	2.75	0.00	0.00	0.00
49.60	0.83	0.30	2.76	0.00	0.00	0.00
49.65	0.83	0.30	2.76	0.00	0.00	0.00
49.70	0.83	0.30	2.76	0.00	0.00	0.00
49.75	0.83	0.30	2.76	0.00	0.00	0.00
49.80	0.83	0.30	2.76	0.00	0.00	0.00
49.85	0.83	0.30	2.76	0.00	0.00	0.00
49.90	0.83	0.30	2.76	0.00	0.00	0.00
49.95	0.83	0.30	2.76	0.00	0.00	0.00
50.00	0.83	0.30	2.77	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

1 atm (atmosphere) = 1 tsf (ton/ft2)

CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands

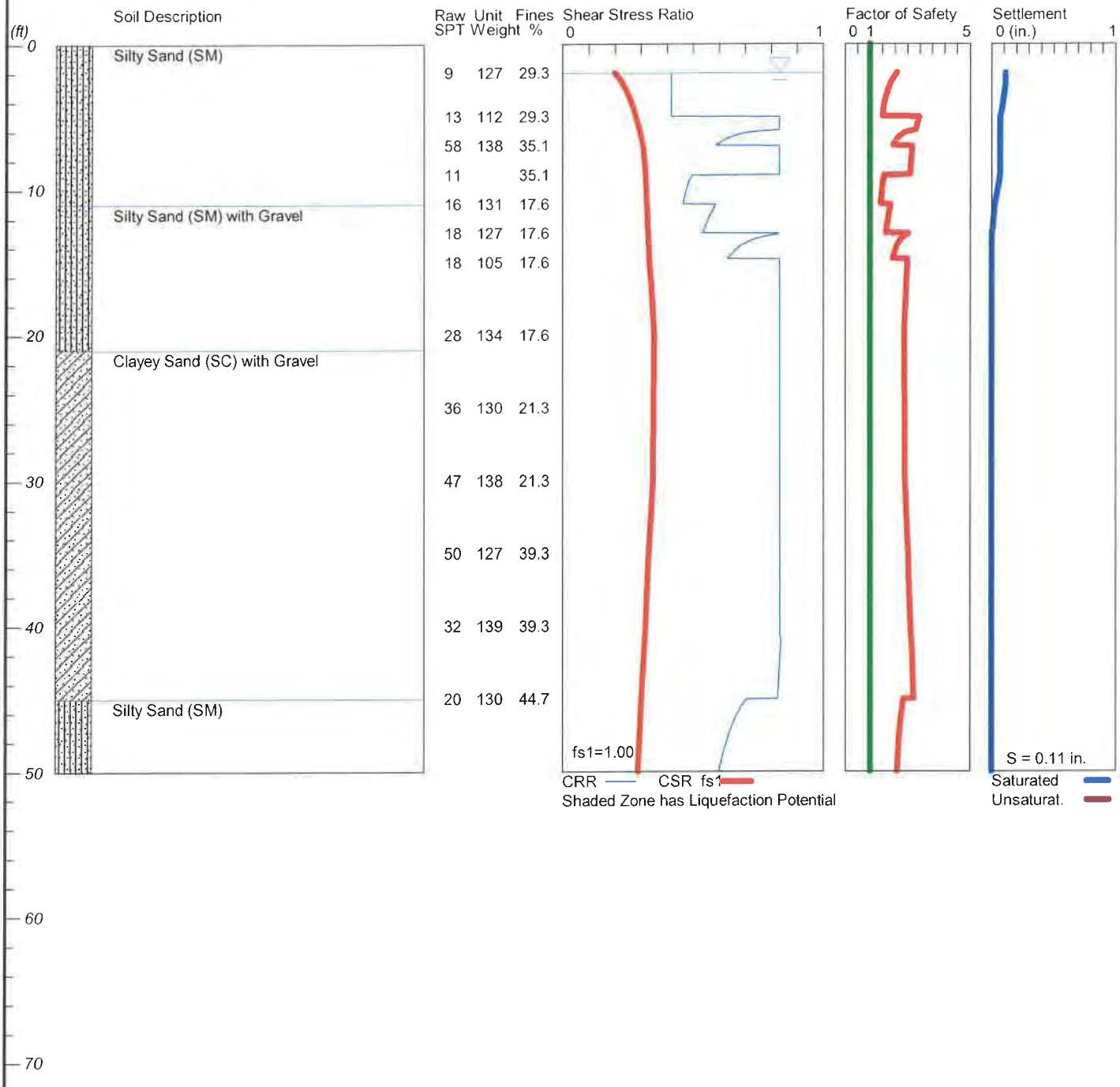
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B13 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 8/8/2023 12:06:47 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B13\B13 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B13
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 9.50 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B13
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 9.50 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.4
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	9.00	127.00	29.30
5.00	13.00	112.00	29.30
7.00	58.00	138.00	35.10
9.00	11.00	138.00	35.10
11.00	16.00	131.00	17.60
13.00	18.00	127.00	17.60
15.00	18.00	105.00	17.60
20.00	28.00	134.00	17.60
25.00	36.00	130.00	21.30
30.00	47.00	138.00	21.30
35.00	50.00	127.00	39.30
40.00	32.00	139.00	39.30
45.00	20.00	130.00	44.70

Output Results:
Settlement of Saturated Sands=0.11 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.11 in.
Differential Settlement=0.056 to 0.073 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.41	0.20	2.08	0.11	0.00	0.11
2.05	0.41	0.20	2.06	0.11	0.00	0.11
2.10	0.41	0.20	2.04	0.11	0.00	0.11
2.15	0.41	0.21	2.01	0.11	0.00	0.11
2.20	0.41	0.21	1.99	0.11	0.00	0.11
2.25	0.41	0.21	1.97	0.11	0.00	0.11
2.30	0.41	0.21	1.95	0.11	0.00	0.11
2.35	0.41	0.21	1.93	0.11	0.00	0.11
2.40	0.41	0.22	1.92	0.11	0.00	0.11
2.45	0.41	0.22	1.90	0.11	0.00	0.11
2.50	0.41	0.22	1.88	0.11	0.00	0.11
2.55	0.41	0.22	1.87	0.11	0.00	0.11
2.60	0.41	0.22	1.85	0.11	0.00	0.11
2.65	0.41	0.23	1.84	0.11	0.00	0.11
2.70	0.41	0.23	1.82	0.11	0.00	0.11
2.75	0.41	0.23	1.81	0.11	0.00	0.11
2.80	0.41	0.23	1.79	0.11	0.00	0.11
2.85	0.41	0.23	1.78	0.11	0.00	0.11
2.90	0.41	0.23	1.77	0.11	0.00	0.11
2.95	0.41	0.24	1.76	0.11	0.00	0.11
3.00	0.41	0.24	1.75	0.11	0.00	0.11
3.05	0.41	0.24	1.74	0.11	0.00	0.11
3.10	0.41	0.24	1.73	0.10	0.00	0.10
3.15	0.41	0.24	1.71	0.10	0.00	0.10
3.20	0.41	0.24	1.70	0.10	0.00	0.10
3.25	0.41	0.24	1.70	0.10	0.00	0.10
3.30	0.41	0.25	1.69	0.10	0.00	0.10
3.35	0.41	0.25	1.68	0.10	0.00	0.10
3.40	0.41	0.25	1.67	0.10	0.00	0.10
3.45	0.41	0.25	1.66	0.10	0.00	0.10
3.50	0.41	0.25	1.65	0.10	0.00	0.10
3.55	0.41	0.25	1.64	0.10	0.00	0.10
3.60	0.41	0.25	1.63	0.10	0.00	0.10
3.65	0.41	0.25	1.63	0.10	0.00	0.10
3.70	0.41	0.26	1.62	0.10	0.00	0.10
3.75	0.41	0.26	1.61	0.09	0.00	0.09
3.80	0.41	0.26	1.61	0.09	0.00	0.09
3.85	0.41	0.26	1.60	0.09	0.00	0.09
3.90	0.41	0.26	1.59	0.09	0.00	0.09
3.95	0.41	0.26	1.59	0.09	0.00	0.09
4.00	0.41	0.26	1.58	0.09	0.00	0.09
4.05	0.41	0.26	1.57	0.09	0.00	0.09
4.10	0.41	0.26	1.57	0.09	0.00	0.09
4.15	0.41	0.27	1.56	0.09	0.00	0.09
4.20	0.41	0.27	1.56	0.09	0.00	0.09
4.25	0.41	0.27	1.55	0.08	0.00	0.08
4.30	0.41	0.27	1.54	0.08	0.00	0.08
4.35	0.41	0.27	1.54	0.08	0.00	0.08
4.40	0.41	0.27	1.53	0.08	0.00	0.08
4.45	0.41	0.27	1.53	0.08	0.00	0.08
4.50	0.41	0.27	1.52	0.08	0.00	0.08
4.55	0.41	0.27	1.52	0.08	0.00	0.08
4.60	0.41	0.27	1.51	0.08	0.00	0.08
4.65	0.41	0.27	1.51	0.08	0.00	0.08
4.70	0.41	0.27	1.51	0.07	0.00	0.07
4.75	0.41	0.28	1.50	0.07	0.00	0.07
4.80	0.41	0.28	1.50	0.07	0.00	0.07
4.85	0.41	0.28	1.49	0.07	0.00	0.07
4.90	0.41	0.28	1.49	0.07	0.00	0.07
4.95	0.41	0.28	1.48	0.07	0.00	0.07
5.00	0.83	0.28	2.97	0.07	0.00	0.07
5.05	0.83	0.28	2.96	0.07	0.00	0.07
5.10	0.83	0.28	2.95	0.07	0.00	0.07
5.15	0.83	0.28	2.94	0.07	0.00	0.07
5.20	0.83	0.28	2.93	0.07	0.00	0.07
5.25	0.83	0.28	2.93	0.07	0.00	0.07
5.30	0.83	0.28	2.92	0.07	0.00	0.07
5.35	0.83	0.29	2.91	0.07	0.00	0.07
5.40	0.83	0.29	2.90	0.07	0.00	0.07
5.45	0.83	0.29	2.89	0.07	0.00	0.07

5.50	0.83	0.29	2.88	0.07	0.00	0.07
5.55	0.83	0.29	2.88	0.07	0.00	0.07
5.60	0.83	0.29	2.87	0.07	0.00	0.07
5.65	0.83	0.29	2.86	0.07	0.00	0.07
5.70	0.83	0.29	2.85	0.07	0.00	0.07
5.75	0.83	0.29	2.85	0.07	0.00	0.07
5.80	0.83	0.29	2.84	0.07	0.00	0.07
5.85	0.83	0.29	2.83	0.07	0.00	0.07
5.90	0.83	0.29	2.82	0.07	0.00	0.07
5.95	0.78	0.29	2.65	0.07	0.00	0.07
6.00	0.75	0.30	2.53	0.07	0.00	0.07
6.05	0.72	0.30	2.44	0.07	0.00	0.07
6.10	0.70	0.30	2.37	0.07	0.00	0.07
6.15	0.69	0.30	2.32	0.07	0.00	0.07
6.20	0.68	0.30	2.27	0.07	0.00	0.07
6.25	0.67	0.30	2.23	0.07	0.00	0.07
6.30	0.66	0.30	2.20	0.07	0.00	0.07
6.35	0.65	0.30	2.16	0.07	0.00	0.07
6.40	0.64	0.30	2.13	0.07	0.00	0.07
6.45	0.64	0.30	2.11	0.07	0.00	0.07
6.50	0.63	0.30	2.08	0.07	0.00	0.07
6.55	0.62	0.30	2.06	0.07	0.00	0.07
6.60	0.62	0.30	2.04	0.07	0.00	0.07
6.65	0.61	0.30	2.02	0.07	0.00	0.07
6.70	0.61	0.30	2.00	0.07	0.00	0.07
6.75	0.60	0.31	1.98	0.07	0.00	0.07
6.80	0.60	0.31	1.96	0.07	0.00	0.07
6.85	0.60	0.31	1.95	0.07	0.00	0.07
6.90	0.59	0.31	1.93	0.07	0.00	0.07
6.95	0.59	0.31	1.91	0.07	0.00	0.07
7.00	0.83	0.31	2.69	0.07	0.00	0.07
7.05	0.83	0.31	2.69	0.07	0.00	0.07
7.10	0.83	0.31	2.69	0.07	0.00	0.07
7.15	0.83	0.31	2.69	0.07	0.00	0.07
7.20	0.83	0.31	2.68	0.07	0.00	0.07
7.25	0.83	0.31	2.68	0.07	0.00	0.07
7.30	0.83	0.31	2.68	0.07	0.00	0.07
7.35	0.83	0.31	2.68	0.07	0.00	0.07
7.40	0.83	0.31	2.67	0.07	0.00	0.07
7.45	0.83	0.31	2.67	0.07	0.00	0.07
7.50	0.83	0.31	2.67	0.07	0.00	0.07
7.55	0.83	0.31	2.67	0.07	0.00	0.07
7.60	0.83	0.31	2.67	0.07	0.00	0.07
7.65	0.83	0.31	2.66	0.07	0.00	0.07
7.70	0.83	0.31	2.66	0.07	0.00	0.07
7.75	0.83	0.31	2.66	0.07	0.00	0.07
7.80	0.83	0.31	2.66	0.07	0.00	0.07
7.85	0.83	0.31	2.65	0.07	0.00	0.07
7.90	0.83	0.31	2.65	0.07	0.00	0.07
7.95	0.83	0.31	2.65	0.07	0.00	0.07
8.00	0.83	0.31	2.65	0.07	0.00	0.07
8.05	0.83	0.31	2.65	0.07	0.00	0.07
8.10	0.83	0.31	2.65	0.07	0.00	0.07
8.15	0.83	0.31	2.64	0.07	0.00	0.07
8.20	0.83	0.31	2.64	0.07	0.00	0.07
8.25	0.83	0.31	2.64	0.07	0.00	0.07
8.30	0.83	0.31	2.64	0.07	0.00	0.07
8.35	0.83	0.32	2.64	0.07	0.00	0.07
8.40	0.83	0.32	2.63	0.07	0.00	0.07
8.45	0.83	0.32	2.63	0.07	0.00	0.07
8.50	0.83	0.32	2.63	0.07	0.00	0.07
8.55	0.83	0.32	2.63	0.07	0.00	0.07
8.60	0.83	0.32	2.63	0.07	0.00	0.07
8.65	0.83	0.32	2.63	0.07	0.00	0.07
8.70	0.83	0.32	2.62	0.07	0.00	0.07
8.75	0.83	0.32	2.62	0.07	0.00	0.07
8.80	0.83	0.32	2.62	0.07	0.00	0.07
8.85	0.83	0.32	2.62	0.07	0.00	0.07
8.90	0.83	0.32	2.62	0.07	0.00	0.07
8.95	0.83	0.32	2.62	0.07	0.00	0.07
9.00	0.50	0.32	1.57	0.07	0.00	0.07

9.05	0.50	0.32	1.56	0.07	0.00	0.07
9.10	0.49	0.32	1.55	0.07	0.00	0.07
9.15	0.49	0.32	1.55	0.06	0.00	0.06
9.20	0.49	0.32	1.54	0.06	0.00	0.06
9.25	0.49	0.32	1.54	0.06	0.00	0.06
9.30	0.49	0.32	1.53	0.06	0.00	0.06
9.35	0.49	0.32	1.52	0.06	0.00	0.06
9.40	0.48	0.32	1.52	0.06	0.00	0.06
9.45	0.48	0.32	1.51	0.06	0.00	0.06
9.50	0.48	0.32	1.51	0.06	0.00	0.06
9.55	0.48	0.32	1.50	0.06	0.00	0.06
9.60	0.48	0.32	1.50	0.06	0.00	0.06
9.65	0.48	0.32	1.50	0.05	0.00	0.05
9.70	0.48	0.32	1.49	0.05	0.00	0.05
9.75	0.48	0.32	1.49	0.05	0.00	0.05
9.80	0.48	0.32	1.49	0.05	0.00	0.05
9.85	0.48	0.32	1.49	0.05	0.00	0.05
9.90	0.47	0.32	1.48	0.05	0.00	0.05
9.95	0.47	0.32	1.48	0.05	0.00	0.05
10.00	0.47	0.32	1.48	0.05	0.00	0.05
10.05	0.47	0.32	1.47	0.05	0.00	0.05
10.10	0.47	0.32	1.47	0.04	0.00	0.04
10.15	0.47	0.32	1.47	0.04	0.00	0.04
10.20	0.47	0.32	1.47	0.04	0.00	0.04
10.25	0.47	0.32	1.46	0.04	0.00	0.04
10.30	0.47	0.32	1.46	0.04	0.00	0.04
10.35	0.47	0.32	1.46	0.04	0.00	0.04
10.40	0.47	0.32	1.45	0.04	0.00	0.04
10.45	0.47	0.32	1.45	0.04	0.00	0.04
10.50	0.47	0.32	1.45	0.04	0.00	0.04
10.55	0.47	0.32	1.45	0.03	0.00	0.03
10.60	0.46	0.32	1.44	0.03	0.00	0.03
10.65	0.46	0.32	1.44	0.03	0.00	0.03
10.70	0.46	0.32	1.44	0.03	0.00	0.03
10.75	0.46	0.32	1.44	0.03	0.00	0.03
10.80	0.46	0.32	1.43	0.03	0.00	0.03
10.85	0.46	0.32	1.43	0.03	0.00	0.03
10.90	0.46	0.32	1.43	0.03	0.00	0.03
10.95	0.46	0.32	1.43	0.02	0.00	0.02
11.00	0.59	0.32	1.82	0.02	0.00	0.02
11.05	0.59	0.32	1.81	0.02	0.00	0.02
11.10	0.58	0.32	1.80	0.02	0.00	0.02
11.15	0.58	0.32	1.80	0.02	0.00	0.02
11.20	0.58	0.32	1.79	0.02	0.00	0.02
11.25	0.58	0.32	1.79	0.02	0.00	0.02
11.30	0.58	0.32	1.78	0.02	0.00	0.02
11.35	0.58	0.32	1.78	0.02	0.00	0.02
11.40	0.57	0.32	1.77	0.02	0.00	0.02
11.45	0.57	0.32	1.77	0.02	0.00	0.02
11.50	0.57	0.32	1.76	0.02	0.00	0.02
11.55	0.57	0.32	1.76	0.02	0.00	0.02
11.60	0.57	0.32	1.75	0.02	0.00	0.02
11.65	0.57	0.32	1.75	0.02	0.00	0.02
11.70	0.57	0.33	1.74	0.02	0.00	0.02
11.75	0.56	0.33	1.74	0.02	0.00	0.02
11.80	0.56	0.33	1.73	0.02	0.00	0.02
11.85	0.56	0.33	1.73	0.02	0.00	0.02
11.90	0.56	0.33	1.72	0.02	0.00	0.02
11.95	0.56	0.33	1.72	0.01	0.00	0.01
12.00	0.56	0.33	1.71	0.01	0.00	0.01
12.05	0.56	0.33	1.71	0.01	0.00	0.01
12.10	0.56	0.33	1.70	0.01	0.00	0.01
12.15	0.55	0.33	1.70	0.01	0.00	0.01
12.20	0.55	0.33	1.70	0.01	0.00	0.01
12.25	0.55	0.33	1.69	0.01	0.00	0.01
12.30	0.55	0.33	1.69	0.01	0.00	0.01
12.35	0.55	0.33	1.68	0.01	0.00	0.01
12.40	0.55	0.33	1.68	0.01	0.00	0.01
12.45	0.55	0.33	1.68	0.01	0.00	0.01
12.50	0.55	0.33	1.67	0.01	0.00	0.01
12.55	0.55	0.33	1.67	0.01	0.00	0.01

12.60	0.54	0.33	1.66	0.01	0.00	0.01
12.65	0.54	0.33	1.66	0.01	0.00	0.01
12.70	0.54	0.33	1.66	0.01	0.00	0.01
12.75	0.54	0.33	1.65	0.00	0.00	0.00
12.80	0.54	0.33	1.65	0.00	0.00	0.00
12.85	0.54	0.33	1.64	0.00	0.00	0.00
12.90	0.54	0.33	1.64	0.00	0.00	0.00
12.95	0.54	0.33	1.64	0.00	0.00	0.00
13.00	0.83	0.33	2.53	0.00	0.00	0.00
13.05	0.82	0.33	2.51	0.00	0.00	0.00
13.10	0.81	0.33	2.45	0.00	0.00	0.00
13.15	0.79	0.33	2.40	0.00	0.00	0.00
13.20	0.78	0.33	2.36	0.00	0.00	0.00
13.25	0.76	0.33	2.32	0.00	0.00	0.00
13.30	0.75	0.33	2.29	0.00	0.00	0.00
13.35	0.74	0.33	2.26	0.00	0.00	0.00
13.40	0.73	0.33	2.23	0.00	0.00	0.00
13.45	0.73	0.33	2.21	0.00	0.00	0.00
13.50	0.72	0.33	2.19	0.00	0.00	0.00
13.55	0.71	0.33	2.17	0.00	0.00	0.00
13.60	0.71	0.33	2.15	0.00	0.00	0.00
13.65	0.70	0.33	2.13	0.00	0.00	0.00
13.70	0.70	0.33	2.11	0.00	0.00	0.00
13.75	0.69	0.33	2.10	0.00	0.00	0.00
13.80	0.69	0.33	2.09	0.00	0.00	0.00
13.85	0.68	0.33	2.07	0.00	0.00	0.00
13.90	0.68	0.33	2.06	0.00	0.00	0.00
13.95	0.68	0.33	2.05	0.00	0.00	0.00
14.00	0.67	0.33	2.04	0.00	0.00	0.00
14.05	0.67	0.33	2.03	0.00	0.00	0.00
14.10	0.67	0.33	2.01	0.00	0.00	0.00
14.15	0.66	0.33	2.00	0.00	0.00	0.00
14.20	0.66	0.33	2.00	0.00	0.00	0.00
14.25	0.66	0.33	1.99	0.00	0.00	0.00
14.30	0.65	0.33	1.98	0.00	0.00	0.00
14.35	0.65	0.33	1.97	0.00	0.00	0.00
14.40	0.65	0.33	1.96	0.00	0.00	0.00
14.45	0.65	0.33	1.95	0.00	0.00	0.00
14.50	0.64	0.33	1.94	0.00	0.00	0.00
14.55	0.64	0.33	1.94	0.00	0.00	0.00
14.60	0.64	0.33	1.93	0.00	0.00	0.00
14.65	0.64	0.33	1.92	0.00	0.00	0.00
14.70	0.64	0.33	1.92	0.00	0.00	0.00
14.75	0.63	0.33	1.91	0.00	0.00	0.00
14.80	0.83	0.33	2.50	0.00	0.00	0.00
14.85	0.83	0.33	2.50	0.00	0.00	0.00
14.90	0.83	0.33	2.50	0.00	0.00	0.00
14.95	0.83	0.33	2.50	0.00	0.00	0.00
15.00	0.83	0.33	2.50	0.00	0.00	0.00
15.05	0.83	0.33	2.50	0.00	0.00	0.00
15.10	0.83	0.33	2.49	0.00	0.00	0.00
15.15	0.83	0.33	2.49	0.00	0.00	0.00
15.20	0.83	0.33	2.49	0.00	0.00	0.00
15.25	0.83	0.33	2.49	0.00	0.00	0.00
15.30	0.83	0.33	2.49	0.00	0.00	0.00
15.35	0.83	0.33	2.49	0.00	0.00	0.00
15.40	0.83	0.33	2.48	0.00	0.00	0.00
15.45	0.83	0.33	2.48	0.00	0.00	0.00
15.50	0.83	0.33	2.48	0.00	0.00	0.00
15.55	0.83	0.34	2.48	0.00	0.00	0.00
15.60	0.83	0.34	2.48	0.00	0.00	0.00
15.65	0.83	0.34	2.48	0.00	0.00	0.00
15.70	0.83	0.34	2.47	0.00	0.00	0.00
15.75	0.83	0.34	2.47	0.00	0.00	0.00
15.80	0.83	0.34	2.47	0.00	0.00	0.00
15.85	0.83	0.34	2.47	0.00	0.00	0.00
15.90	0.83	0.34	2.47	0.00	0.00	0.00
15.95	0.83	0.34	2.47	0.00	0.00	0.00
16.00	0.83	0.34	2.47	0.00	0.00	0.00
16.05	0.83	0.34	2.46	0.00	0.00	0.00
16.10	0.83	0.34	2.46	0.00	0.00	0.00

16.15	0.83	0.34	2.46	0.00	0.00	0.00
16.20	0.83	0.34	2.46	0.00	0.00	0.00
16.25	0.83	0.34	2.46	0.00	0.00	0.00
16.30	0.83	0.34	2.46	0.00	0.00	0.00
16.35	0.83	0.34	2.45	0.00	0.00	0.00
16.40	0.83	0.34	2.45	0.00	0.00	0.00
16.45	0.83	0.34	2.45	0.00	0.00	0.00
16.50	0.83	0.34	2.45	0.00	0.00	0.00
16.55	0.83	0.34	2.45	0.00	0.00	0.00
16.60	0.83	0.34	2.45	0.00	0.00	0.00
16.65	0.83	0.34	2.45	0.00	0.00	0.00
16.70	0.83	0.34	2.44	0.00	0.00	0.00
16.75	0.83	0.34	2.44	0.00	0.00	0.00
16.80	0.83	0.34	2.44	0.00	0.00	0.00
16.85	0.83	0.34	2.44	0.00	0.00	0.00
16.90	0.83	0.34	2.44	0.00	0.00	0.00
16.95	0.83	0.34	2.44	0.00	0.00	0.00
17.00	0.83	0.34	2.44	0.00	0.00	0.00
17.05	0.83	0.34	2.43	0.00	0.00	0.00
17.10	0.83	0.34	2.43	0.00	0.00	0.00
17.15	0.83	0.34	2.43	0.00	0.00	0.00
17.20	0.83	0.34	2.43	0.00	0.00	0.00
17.25	0.83	0.34	2.43	0.00	0.00	0.00
17.30	0.83	0.34	2.43	0.00	0.00	0.00
17.35	0.83	0.34	2.43	0.00	0.00	0.00
17.40	0.83	0.34	2.43	0.00	0.00	0.00
17.45	0.83	0.34	2.42	0.00	0.00	0.00
17.50	0.83	0.34	2.42	0.00	0.00	0.00
17.55	0.83	0.34	2.42	0.00	0.00	0.00
17.60	0.83	0.34	2.42	0.00	0.00	0.00
17.65	0.83	0.34	2.42	0.00	0.00	0.00
17.70	0.83	0.34	2.42	0.00	0.00	0.00
17.75	0.83	0.34	2.42	0.00	0.00	0.00
17.80	0.83	0.34	2.42	0.00	0.00	0.00
17.85	0.83	0.34	2.41	0.00	0.00	0.00
17.90	0.83	0.34	2.41	0.00	0.00	0.00
17.95	0.83	0.34	2.41	0.00	0.00	0.00
18.00	0.83	0.34	2.41	0.00	0.00	0.00
18.05	0.83	0.34	2.41	0.00	0.00	0.00
18.10	0.83	0.35	2.41	0.00	0.00	0.00
18.15	0.83	0.35	2.41	0.00	0.00	0.00
18.20	0.83	0.35	2.41	0.00	0.00	0.00
18.25	0.83	0.35	2.40	0.00	0.00	0.00
18.30	0.83	0.35	2.40	0.00	0.00	0.00
18.35	0.83	0.35	2.40	0.00	0.00	0.00
18.40	0.83	0.35	2.40	0.00	0.00	0.00
18.45	0.83	0.35	2.40	0.00	0.00	0.00
18.50	0.83	0.35	2.40	0.00	0.00	0.00
18.55	0.83	0.35	2.40	0.00	0.00	0.00
18.60	0.83	0.35	2.40	0.00	0.00	0.00
18.65	0.83	0.35	2.39	0.00	0.00	0.00
18.70	0.83	0.35	2.39	0.00	0.00	0.00
18.75	0.83	0.35	2.39	0.00	0.00	0.00
18.80	0.83	0.35	2.39	0.00	0.00	0.00
18.85	0.83	0.35	2.39	0.00	0.00	0.00
18.90	0.83	0.35	2.39	0.00	0.00	0.00
18.95	0.83	0.35	2.39	0.00	0.00	0.00
19.00	0.83	0.35	2.39	0.00	0.00	0.00
19.05	0.83	0.35	2.39	0.00	0.00	0.00
19.10	0.83	0.35	2.38	0.00	0.00	0.00
19.15	0.83	0.35	2.38	0.00	0.00	0.00
19.20	0.83	0.35	2.38	0.00	0.00	0.00
19.25	0.83	0.35	2.38	0.00	0.00	0.00
19.30	0.83	0.35	2.38	0.00	0.00	0.00
19.35	0.83	0.35	2.38	0.00	0.00	0.00
19.40	0.83	0.35	2.38	0.00	0.00	0.00
19.45	0.83	0.35	2.38	0.00	0.00	0.00
19.50	0.83	0.35	2.38	0.00	0.00	0.00
19.55	0.83	0.35	2.38	0.00	0.00	0.00
19.60	0.83	0.35	2.37	0.00	0.00	0.00
19.65	0.83	0.35	2.37	0.00	0.00	0.00

19.70	0.83	0.35	2.37	0.00	0.00	0.00
19.75	0.83	0.35	2.37	0.00	0.00	0.00
19.80	0.83	0.35	2.37	0.00	0.00	0.00
19.85	0.83	0.35	2.37	0.00	0.00	0.00
19.90	0.83	0.35	2.37	0.00	0.00	0.00
19.95	0.83	0.35	2.37	0.00	0.00	0.00
20.00	0.83	0.35	2.37	0.00	0.00	0.00
20.05	0.83	0.35	2.37	0.00	0.00	0.00
20.10	0.83	0.35	2.37	0.00	0.00	0.00
20.15	0.83	0.35	2.37	0.00	0.00	0.00
20.20	0.83	0.35	2.37	0.00	0.00	0.00
20.25	0.83	0.35	2.37	0.00	0.00	0.00
20.30	0.83	0.35	2.37	0.00	0.00	0.00
20.35	0.83	0.35	2.37	0.00	0.00	0.00
20.40	0.83	0.35	2.37	0.00	0.00	0.00
20.45	0.83	0.35	2.37	0.00	0.00	0.00
20.50	0.83	0.35	2.37	0.00	0.00	0.00
20.55	0.83	0.35	2.37	0.00	0.00	0.00
20.60	0.83	0.35	2.37	0.00	0.00	0.00
20.65	0.83	0.35	2.37	0.00	0.00	0.00
20.70	0.83	0.35	2.37	0.00	0.00	0.00
20.75	0.83	0.35	2.37	0.00	0.00	0.00
20.80	0.83	0.35	2.37	0.00	0.00	0.00
20.85	0.83	0.35	2.37	0.00	0.00	0.00
20.90	0.83	0.35	2.37	0.00	0.00	0.00
20.95	0.83	0.35	2.37	0.00	0.00	0.00
21.00	0.83	0.35	2.37	0.00	0.00	0.00
21.05	0.83	0.35	2.37	0.00	0.00	0.00
21.10	0.83	0.35	2.37	0.00	0.00	0.00
21.15	0.83	0.35	2.37	0.00	0.00	0.00
21.20	0.83	0.35	2.37	0.00	0.00	0.00
21.25	0.83	0.35	2.37	0.00	0.00	0.00
21.30	0.83	0.35	2.37	0.00	0.00	0.00
21.35	0.83	0.35	2.37	0.00	0.00	0.00
21.40	0.83	0.35	2.37	0.00	0.00	0.00
21.45	0.83	0.35	2.37	0.00	0.00	0.00
21.50	0.83	0.35	2.37	0.00	0.00	0.00
21.55	0.83	0.35	2.37	0.00	0.00	0.00
21.60	0.83	0.35	2.37	0.00	0.00	0.00
21.65	0.83	0.35	2.37	0.00	0.00	0.00
21.70	0.83	0.35	2.37	0.00	0.00	0.00
21.75	0.83	0.35	2.37	0.00	0.00	0.00
21.80	0.83	0.35	2.37	0.00	0.00	0.00
21.85	0.83	0.35	2.37	0.00	0.00	0.00
21.90	0.83	0.35	2.37	0.00	0.00	0.00
21.95	0.83	0.35	2.37	0.00	0.00	0.00
22.00	0.83	0.35	2.37	0.00	0.00	0.00
22.05	0.83	0.35	2.37	0.00	0.00	0.00
22.10	0.83	0.35	2.37	0.00	0.00	0.00
22.15	0.83	0.35	2.37	0.00	0.00	0.00
22.20	0.83	0.35	2.37	0.00	0.00	0.00
22.25	0.83	0.35	2.37	0.00	0.00	0.00
22.30	0.83	0.35	2.37	0.00	0.00	0.00
22.35	0.83	0.35	2.38	0.00	0.00	0.00
22.40	0.83	0.35	2.38	0.00	0.00	0.00
22.45	0.83	0.35	2.38	0.00	0.00	0.00
22.50	0.83	0.35	2.38	0.00	0.00	0.00
22.55	0.83	0.35	2.38	0.00	0.00	0.00
22.60	0.83	0.35	2.38	0.00	0.00	0.00
22.65	0.83	0.35	2.38	0.00	0.00	0.00
22.70	0.83	0.35	2.38	0.00	0.00	0.00
22.75	0.83	0.35	2.38	0.00	0.00	0.00
22.80	0.83	0.35	2.38	0.00	0.00	0.00
22.85	0.83	0.35	2.38	0.00	0.00	0.00
22.90	0.83	0.35	2.38	0.00	0.00	0.00
22.95	0.83	0.35	2.38	0.00	0.00	0.00
23.00	0.83	0.35	2.38	0.00	0.00	0.00
23.05	0.83	0.35	2.38	0.00	0.00	0.00
23.10	0.83	0.35	2.38	0.00	0.00	0.00
23.15	0.83	0.35	2.38	0.00	0.00	0.00
23.20	0.83	0.35	2.38	0.00	0.00	0.00

23.25	0.83	0.35	2.38	0.00	0.00	0.00
23.30	0.83	0.35	2.38	0.00	0.00	0.00
23.35	0.83	0.35	2.38	0.00	0.00	0.00
23.40	0.83	0.35	2.38	0.00	0.00	0.00
23.45	0.83	0.35	2.38	0.00	0.00	0.00
23.50	0.83	0.35	2.38	0.00	0.00	0.00
23.55	0.83	0.35	2.38	0.00	0.00	0.00
23.60	0.83	0.35	2.38	0.00	0.00	0.00
23.65	0.83	0.35	2.38	0.00	0.00	0.00
23.70	0.83	0.35	2.38	0.00	0.00	0.00
23.75	0.83	0.35	2.38	0.00	0.00	0.00
23.80	0.83	0.35	2.38	0.00	0.00	0.00
23.85	0.83	0.35	2.38	0.00	0.00	0.00
23.90	0.83	0.35	2.38	0.00	0.00	0.00
23.95	0.83	0.35	2.38	0.00	0.00	0.00
24.00	0.83	0.35	2.38	0.00	0.00	0.00
24.05	0.83	0.35	2.38	0.00	0.00	0.00
24.10	0.83	0.35	2.38	0.00	0.00	0.00
24.15	0.83	0.35	2.38	0.00	0.00	0.00
24.20	0.83	0.35	2.38	0.00	0.00	0.00
24.25	0.83	0.35	2.38	0.00	0.00	0.00
24.30	0.83	0.35	2.38	0.00	0.00	0.00
24.35	0.83	0.35	2.38	0.00	0.00	0.00
24.40	0.83	0.35	2.38	0.00	0.00	0.00
24.45	0.83	0.35	2.38	0.00	0.00	0.00
24.50	0.83	0.35	2.39	0.00	0.00	0.00
24.55	0.83	0.35	2.39	0.00	0.00	0.00
24.60	0.83	0.35	2.39	0.00	0.00	0.00
24.65	0.83	0.35	2.39	0.00	0.00	0.00
24.70	0.83	0.35	2.39	0.00	0.00	0.00
24.75	0.83	0.35	2.39	0.00	0.00	0.00
24.80	0.83	0.35	2.39	0.00	0.00	0.00
24.85	0.83	0.35	2.39	0.00	0.00	0.00
24.90	0.83	0.35	2.39	0.00	0.00	0.00
24.95	0.83	0.35	2.39	0.00	0.00	0.00
25.00	0.83	0.35	2.39	0.00	0.00	0.00
25.05	0.83	0.35	2.39	0.00	0.00	0.00
25.10	0.83	0.35	2.39	0.00	0.00	0.00
25.15	0.83	0.35	2.39	0.00	0.00	0.00
25.20	0.83	0.35	2.39	0.00	0.00	0.00
25.25	0.83	0.35	2.39	0.00	0.00	0.00
25.30	0.83	0.35	2.39	0.00	0.00	0.00
25.35	0.83	0.35	2.39	0.00	0.00	0.00
25.40	0.83	0.35	2.39	0.00	0.00	0.00
25.45	0.83	0.35	2.39	0.00	0.00	0.00
25.50	0.83	0.35	2.39	0.00	0.00	0.00
25.55	0.83	0.35	2.39	0.00	0.00	0.00
25.60	0.83	0.35	2.39	0.00	0.00	0.00
25.65	0.83	0.35	2.39	0.00	0.00	0.00
25.70	0.83	0.35	2.39	0.00	0.00	0.00
25.75	0.83	0.35	2.39	0.00	0.00	0.00
25.80	0.83	0.35	2.39	0.00	0.00	0.00
25.85	0.83	0.35	2.39	0.00	0.00	0.00
25.90	0.83	0.35	2.39	0.00	0.00	0.00
25.95	0.83	0.35	2.39	0.00	0.00	0.00
26.00	0.83	0.35	2.39	0.00	0.00	0.00
26.05	0.83	0.35	2.39	0.00	0.00	0.00
26.10	0.83	0.35	2.39	0.00	0.00	0.00
26.15	0.83	0.35	2.39	0.00	0.00	0.00
26.20	0.83	0.35	2.39	0.00	0.00	0.00
26.25	0.83	0.35	2.39	0.00	0.00	0.00
26.30	0.83	0.35	2.39	0.00	0.00	0.00
26.35	0.83	0.35	2.39	0.00	0.00	0.00
26.40	0.83	0.35	2.39	0.00	0.00	0.00
26.45	0.83	0.35	2.39	0.00	0.00	0.00
26.50	0.83	0.35	2.39	0.00	0.00	0.00
26.55	0.83	0.35	2.39	0.00	0.00	0.00
26.60	0.83	0.35	2.39	0.00	0.00	0.00
26.65	0.83	0.35	2.39	0.00	0.00	0.00
26.70	0.83	0.35	2.39	0.00	0.00	0.00
26.75	0.83	0.35	2.39	0.00	0.00	0.00

26.80	0.83	0.35	2.39	0.00	0.00	0.00
26.85	0.83	0.35	2.39	0.00	0.00	0.00
26.90	0.83	0.35	2.39	0.00	0.00	0.00
26.95	0.83	0.35	2.39	0.00	0.00	0.00
27.00	0.83	0.35	2.39	0.00	0.00	0.00
27.05	0.83	0.35	2.39	0.00	0.00	0.00
27.10	0.83	0.35	2.39	0.00	0.00	0.00
27.15	0.83	0.35	2.39	0.00	0.00	0.00
27.20	0.83	0.35	2.39	0.00	0.00	0.00
27.25	0.83	0.35	2.39	0.00	0.00	0.00
27.30	0.83	0.35	2.39	0.00	0.00	0.00
27.35	0.83	0.35	2.39	0.00	0.00	0.00
27.40	0.83	0.35	2.39	0.00	0.00	0.00
27.45	0.83	0.35	2.39	0.00	0.00	0.00
27.50	0.83	0.35	2.39	0.00	0.00	0.00
27.55	0.83	0.35	2.39	0.00	0.00	0.00
27.60	0.83	0.35	2.39	0.00	0.00	0.00
27.65	0.83	0.35	2.39	0.00	0.00	0.00
27.70	0.83	0.35	2.39	0.00	0.00	0.00
27.75	0.83	0.35	2.39	0.00	0.00	0.00
27.80	0.83	0.35	2.39	0.00	0.00	0.00
27.85	0.83	0.35	2.40	0.00	0.00	0.00
27.90	0.83	0.35	2.40	0.00	0.00	0.00
27.95	0.83	0.35	2.40	0.00	0.00	0.00
28.00	0.83	0.35	2.40	0.00	0.00	0.00
28.05	0.83	0.35	2.40	0.00	0.00	0.00
28.10	0.83	0.35	2.40	0.00	0.00	0.00
28.15	0.83	0.35	2.40	0.00	0.00	0.00
28.20	0.83	0.35	2.40	0.00	0.00	0.00
28.25	0.83	0.35	2.40	0.00	0.00	0.00
28.30	0.83	0.35	2.40	0.00	0.00	0.00
28.35	0.83	0.35	2.40	0.00	0.00	0.00
28.40	0.83	0.35	2.40	0.00	0.00	0.00
28.45	0.83	0.35	2.40	0.00	0.00	0.00
28.50	0.83	0.35	2.40	0.00	0.00	0.00
28.55	0.83	0.35	2.40	0.00	0.00	0.00
28.60	0.83	0.35	2.40	0.00	0.00	0.00
28.65	0.83	0.35	2.40	0.00	0.00	0.00
28.70	0.83	0.35	2.40	0.00	0.00	0.00
28.75	0.83	0.35	2.40	0.00	0.00	0.00
28.80	0.83	0.35	2.40	0.00	0.00	0.00
28.85	0.83	0.35	2.40	0.00	0.00	0.00
28.90	0.83	0.35	2.40	0.00	0.00	0.00
28.95	0.83	0.35	2.40	0.00	0.00	0.00
29.00	0.83	0.35	2.40	0.00	0.00	0.00
29.05	0.83	0.35	2.40	0.00	0.00	0.00
29.10	0.83	0.35	2.40	0.00	0.00	0.00
29.15	0.83	0.35	2.40	0.00	0.00	0.00
29.20	0.83	0.35	2.40	0.00	0.00	0.00
29.25	0.83	0.35	2.40	0.00	0.00	0.00
29.30	0.83	0.35	2.40	0.00	0.00	0.00
29.35	0.83	0.35	2.40	0.00	0.00	0.00
29.40	0.83	0.35	2.40	0.00	0.00	0.00
29.45	0.83	0.35	2.40	0.00	0.00	0.00
29.50	0.83	0.35	2.40	0.00	0.00	0.00
29.55	0.83	0.35	2.40	0.00	0.00	0.00
29.60	0.83	0.35	2.40	0.00	0.00	0.00
29.65	0.83	0.35	2.40	0.00	0.00	0.00
29.70	0.83	0.35	2.40	0.00	0.00	0.00
29.75	0.83	0.35	2.40	0.00	0.00	0.00
29.80	0.83	0.35	2.40	0.00	0.00	0.00
29.85	0.83	0.35	2.40	0.00	0.00	0.00
29.90	0.83	0.35	2.40	0.00	0.00	0.00
29.95	0.83	0.35	2.40	0.00	0.00	0.00
30.00	0.83	0.35	2.40	0.00	0.00	0.00
30.05	0.83	0.35	2.40	0.00	0.00	0.00
30.10	0.83	0.35	2.40	0.00	0.00	0.00
30.15	0.83	0.35	2.41	0.00	0.00	0.00
30.20	0.83	0.35	2.41	0.00	0.00	0.00
30.25	0.83	0.34	2.41	0.00	0.00	0.00
30.30	0.83	0.34	2.41	0.00	0.00	0.00

30.35	0.83	0.34	2.41	0.00	0.00	0.00
30.40	0.83	0.34	2.41	0.00	0.00	0.00
30.45	0.83	0.34	2.41	0.00	0.00	0.00
30.50	0.83	0.34	2.41	0.00	0.00	0.00
30.55	0.83	0.34	2.41	0.00	0.00	0.00
30.60	0.83	0.34	2.42	0.00	0.00	0.00
30.65	0.83	0.34	2.42	0.00	0.00	0.00
30.70	0.83	0.34	2.42	0.00	0.00	0.00
30.75	0.83	0.34	2.42	0.00	0.00	0.00
30.80	0.83	0.34	2.42	0.00	0.00	0.00
30.85	0.83	0.34	2.42	0.00	0.00	0.00
30.90	0.83	0.34	2.42	0.00	0.00	0.00
30.95	0.83	0.34	2.42	0.00	0.00	0.00
31.00	0.83	0.34	2.43	0.00	0.00	0.00
31.05	0.83	0.34	2.43	0.00	0.00	0.00
31.10	0.83	0.34	2.43	0.00	0.00	0.00
31.15	0.83	0.34	2.43	0.00	0.00	0.00
31.20	0.83	0.34	2.43	0.00	0.00	0.00
31.25	0.83	0.34	2.43	0.00	0.00	0.00
31.30	0.83	0.34	2.43	0.00	0.00	0.00
31.35	0.83	0.34	2.43	0.00	0.00	0.00
31.40	0.83	0.34	2.43	0.00	0.00	0.00
31.45	0.83	0.34	2.44	0.00	0.00	0.00
31.50	0.83	0.34	2.44	0.00	0.00	0.00
31.55	0.83	0.34	2.44	0.00	0.00	0.00
31.60	0.83	0.34	2.44	0.00	0.00	0.00
31.65	0.83	0.34	2.44	0.00	0.00	0.00
31.70	0.83	0.34	2.44	0.00	0.00	0.00
31.75	0.83	0.34	2.44	0.00	0.00	0.00
31.80	0.83	0.34	2.44	0.00	0.00	0.00
31.85	0.83	0.34	2.45	0.00	0.00	0.00
31.90	0.83	0.34	2.45	0.00	0.00	0.00
31.95	0.83	0.34	2.45	0.00	0.00	0.00
32.00	0.83	0.34	2.45	0.00	0.00	0.00
32.05	0.83	0.34	2.45	0.00	0.00	0.00
32.10	0.83	0.34	2.45	0.00	0.00	0.00
32.15	0.83	0.34	2.45	0.00	0.00	0.00
32.20	0.83	0.34	2.45	0.00	0.00	0.00
32.25	0.83	0.34	2.45	0.00	0.00	0.00
32.30	0.83	0.34	2.46	0.00	0.00	0.00
32.35	0.83	0.34	2.46	0.00	0.00	0.00
32.40	0.83	0.34	2.46	0.00	0.00	0.00
32.45	0.83	0.34	2.46	0.00	0.00	0.00
32.50	0.83	0.34	2.46	0.00	0.00	0.00
32.55	0.83	0.34	2.46	0.00	0.00	0.00
32.60	0.83	0.34	2.46	0.00	0.00	0.00
32.65	0.83	0.34	2.46	0.00	0.00	0.00
32.70	0.83	0.34	2.47	0.00	0.00	0.00
32.75	0.83	0.34	2.47	0.00	0.00	0.00
32.80	0.83	0.34	2.47	0.00	0.00	0.00
32.85	0.83	0.34	2.47	0.00	0.00	0.00
32.90	0.83	0.34	2.47	0.00	0.00	0.00
32.95	0.83	0.34	2.47	0.00	0.00	0.00
33.00	0.83	0.34	2.47	0.00	0.00	0.00
33.05	0.83	0.34	2.47	0.00	0.00	0.00
33.10	0.83	0.34	2.47	0.00	0.00	0.00
33.15	0.83	0.34	2.48	0.00	0.00	0.00
33.20	0.83	0.34	2.48	0.00	0.00	0.00
33.25	0.83	0.34	2.48	0.00	0.00	0.00
33.30	0.83	0.34	2.48	0.00	0.00	0.00
33.35	0.83	0.33	2.48	0.00	0.00	0.00
33.40	0.83	0.33	2.48	0.00	0.00	0.00
33.45	0.83	0.33	2.48	0.00	0.00	0.00
33.50	0.83	0.33	2.48	0.00	0.00	0.00
33.55	0.83	0.33	2.49	0.00	0.00	0.00
33.60	0.83	0.33	2.49	0.00	0.00	0.00
33.65	0.83	0.33	2.49	0.00	0.00	0.00
33.70	0.83	0.33	2.49	0.00	0.00	0.00
33.75	0.83	0.33	2.49	0.00	0.00	0.00
33.80	0.83	0.33	2.49	0.00	0.00	0.00
33.85	0.83	0.33	2.49	0.00	0.00	0.00

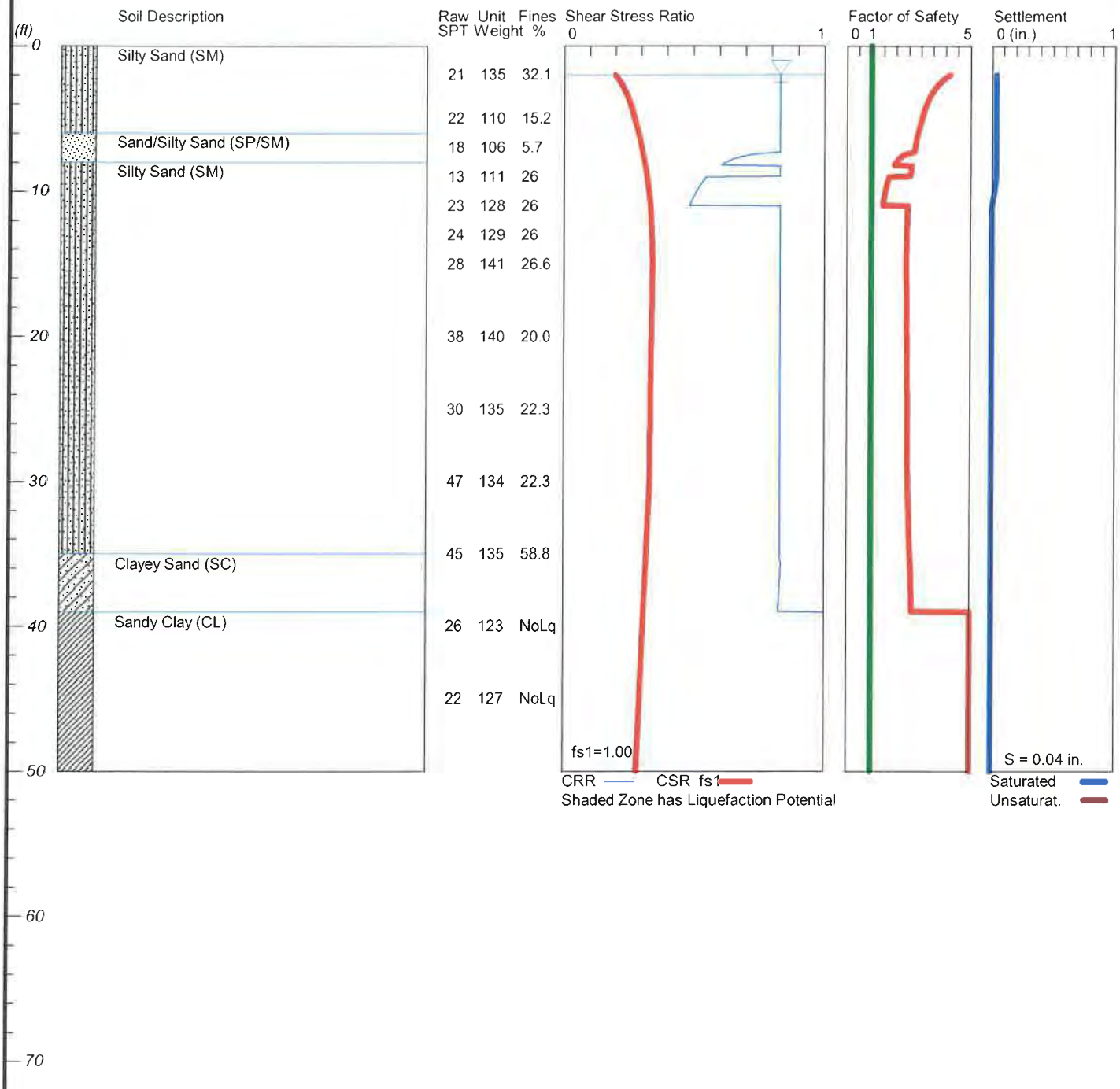
33.90	0.83	0.33	2.49	0.00	0.00	0.00
33.95	0.83	0.33	2.49	0.00	0.00	0.00
34.00	0.83	0.33	2.50	0.00	0.00	0.00
34.05	0.83	0.33	2.50	0.00	0.00	0.00
34.10	0.83	0.33	2.50	0.00	0.00	0.00
34.15	0.83	0.33	2.50	0.00	0.00	0.00
34.20	0.83	0.33	2.50	0.00	0.00	0.00
34.25	0.83	0.33	2.50	0.00	0.00	0.00
34.30	0.83	0.33	2.50	0.00	0.00	0.00
34.35	0.83	0.33	2.50	0.00	0.00	0.00
34.40	0.83	0.33	2.51	0.00	0.00	0.00
34.45	0.83	0.33	2.51	0.00	0.00	0.00
34.50	0.83	0.33	2.51	0.00	0.00	0.00
34.55	0.83	0.33	2.51	0.00	0.00	0.00
34.60	0.83	0.33	2.51	0.00	0.00	0.00
34.65	0.83	0.33	2.51	0.00	0.00	0.00
34.70	0.83	0.33	2.51	0.00	0.00	0.00
34.75	0.83	0.33	2.51	0.00	0.00	0.00
34.80	0.83	0.33	2.52	0.00	0.00	0.00
34.85	0.83	0.33	2.52	0.00	0.00	0.00
34.90	0.83	0.33	2.52	0.00	0.00	0.00
34.95	0.83	0.33	2.52	0.00	0.00	0.00
35.00	0.83	0.33	2.52	0.00	0.00	0.00
35.05	0.83	0.33	2.52	0.00	0.00	0.00
35.10	0.83	0.33	2.52	0.00	0.00	0.00
35.15	0.83	0.33	2.52	0.00	0.00	0.00
35.20	0.83	0.33	2.52	0.00	0.00	0.00
35.25	0.83	0.33	2.53	0.00	0.00	0.00
35.30	0.83	0.33	2.53	0.00	0.00	0.00
35.35	0.83	0.33	2.53	0.00	0.00	0.00
35.40	0.83	0.33	2.53	0.00	0.00	0.00
35.45	0.83	0.33	2.53	0.00	0.00	0.00
35.50	0.83	0.33	2.53	0.00	0.00	0.00
35.55	0.83	0.33	2.53	0.00	0.00	0.00
35.60	0.83	0.33	2.53	0.00	0.00	0.00
35.65	0.83	0.33	2.53	0.00	0.00	0.00
35.70	0.83	0.33	2.53	0.00	0.00	0.00
35.75	0.83	0.33	2.54	0.00	0.00	0.00
35.80	0.83	0.33	2.54	0.00	0.00	0.00
35.85	0.83	0.33	2.54	0.00	0.00	0.00
35.90	0.83	0.33	2.54	0.00	0.00	0.00
35.95	0.83	0.33	2.54	0.00	0.00	0.00
36.00	0.83	0.33	2.54	0.00	0.00	0.00
36.05	0.83	0.33	2.54	0.00	0.00	0.00
36.10	0.83	0.33	2.54	0.00	0.00	0.00
36.15	0.83	0.33	2.54	0.00	0.00	0.00
36.20	0.83	0.33	2.54	0.00	0.00	0.00
36.25	0.83	0.33	2.54	0.00	0.00	0.00
36.30	0.83	0.33	2.55	0.00	0.00	0.00
36.35	0.83	0.33	2.55	0.00	0.00	0.00
36.40	0.83	0.33	2.55	0.00	0.00	0.00
36.45	0.83	0.33	2.55	0.00	0.00	0.00
36.50	0.83	0.33	2.55	0.00	0.00	0.00
36.55	0.83	0.33	2.55	0.00	0.00	0.00
36.60	0.83	0.33	2.55	0.00	0.00	0.00
36.65	0.83	0.33	2.55	0.00	0.00	0.00
36.70	0.83	0.33	2.55	0.00	0.00	0.00
36.75	0.83	0.33	2.55	0.00	0.00	0.00
36.80	0.83	0.33	2.56	0.00	0.00	0.00
36.85	0.83	0.32	2.56	0.00	0.00	0.00
36.90	0.83	0.32	2.56	0.00	0.00	0.00
36.95	0.83	0.32	2.56	0.00	0.00	0.00
37.00	0.83	0.32	2.56	0.00	0.00	0.00
37.05	0.83	0.32	2.56	0.00	0.00	0.00
37.10	0.83	0.32	2.56	0.00	0.00	0.00
37.15	0.83	0.32	2.56	0.00	0.00	0.00
37.20	0.83	0.32	2.56	0.00	0.00	0.00
37.25	0.83	0.32	2.57	0.00	0.00	0.00
37.30	0.83	0.32	2.57	0.00	0.00	0.00
37.35	0.83	0.32	2.57	0.00	0.00	0.00
37.40	0.83	0.32	2.57	0.00	0.00	0.00

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B14 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 8/7/2023 2:15:00 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B14\B14 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B14
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 13.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B14
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 13.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.4
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	21.00	135.00	32.10
5.00	22.00	110.00	15.20
7.00	18.00	106.00	5.70
9.00	13.00	111.00	26.00
11.00	23.00	128.00	26.00
13.00	24.00	129.00	26.00
15.00	28.00	141.00	26.60
20.00	38.00	140.00	20.00
25.00	30.00	135.00	22.30
30.00	47.00	134.00	22.30
35.00	45.00	135.00	58.80
40.00	26.00	123.00	NoLiq
45.00	22.00	127.00	NoLiq

Output Results:
Settlement of Saturated Sands=0.04 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.04 in.
Differential Settlement=0.018 to 0.024 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.83	0.20	4.18	0.04	0.00	0.04
2.05	0.83	0.20	4.14	0.04	0.00	0.04
2.10	0.83	0.20	4.09	0.04	0.00	0.04
2.15	0.83	0.21	4.05	0.04	0.00	0.04
2.20	0.83	0.21	4.01	0.04	0.00	0.04
2.25	0.83	0.21	3.97	0.04	0.00	0.04
2.30	0.83	0.21	3.93	0.04	0.00	0.04
2.35	0.83	0.21	3.90	0.04	0.00	0.04
2.40	0.83	0.21	3.86	0.04	0.00	0.04
2.45	0.83	0.22	3.83	0.04	0.00	0.04
2.50	0.83	0.22	3.80	0.04	0.00	0.04
2.55	0.83	0.22	3.77	0.04	0.00	0.04
2.60	0.83	0.22	3.74	0.04	0.00	0.04
2.65	0.83	0.22	3.71	0.04	0.00	0.04
2.70	0.83	0.23	3.69	0.04	0.00	0.04
2.75	0.83	0.23	3.66	0.04	0.00	0.04
2.80	0.83	0.23	3.64	0.04	0.00	0.04
2.85	0.83	0.23	3.61	0.04	0.00	0.04
2.90	0.83	0.23	3.59	0.04	0.00	0.04
2.95	0.83	0.23	3.57	0.04	0.00	0.04
3.00	0.83	0.23	3.55	0.04	0.00	0.04
3.05	0.83	0.24	3.53	0.04	0.00	0.04
3.10	0.83	0.24	3.51	0.04	0.00	0.04
3.15	0.83	0.24	3.49	0.04	0.00	0.04
3.20	0.83	0.24	3.47	0.04	0.00	0.04
3.25	0.83	0.24	3.45	0.04	0.00	0.04
3.30	0.83	0.24	3.43	0.04	0.00	0.04
3.35	0.83	0.24	3.41	0.04	0.00	0.04
3.40	0.83	0.24	3.40	0.04	0.00	0.04
3.45	0.83	0.25	3.38	0.04	0.00	0.04
3.50	0.83	0.25	3.37	0.04	0.00	0.04
3.55	0.83	0.25	3.35	0.04	0.00	0.04
3.60	0.83	0.25	3.34	0.04	0.00	0.04
3.65	0.83	0.25	3.32	0.04	0.00	0.04
3.70	0.83	0.25	3.31	0.04	0.00	0.04
3.75	0.83	0.25	3.29	0.04	0.00	0.04
3.80	0.83	0.25	3.28	0.04	0.00	0.04
3.85	0.83	0.25	3.27	0.04	0.00	0.04
3.90	0.83	0.26	3.26	0.04	0.00	0.04
3.95	0.83	0.26	3.24	0.04	0.00	0.04
4.00	0.83	0.26	3.23	0.04	0.00	0.04
4.05	0.83	0.26	3.22	0.04	0.00	0.04
4.10	0.83	0.26	3.21	0.04	0.00	0.04
4.15	0.83	0.26	3.20	0.04	0.00	0.04
4.20	0.83	0.26	3.19	0.04	0.00	0.04
4.25	0.83	0.26	3.18	0.04	0.00	0.04
4.30	0.83	0.26	3.17	0.04	0.00	0.04
4.35	0.83	0.26	3.16	0.04	0.00	0.04
4.40	0.83	0.26	3.15	0.04	0.00	0.04
4.45	0.83	0.26	3.14	0.04	0.00	0.04
4.50	0.83	0.27	3.13	0.04	0.00	0.04
4.55	0.83	0.27	3.12	0.04	0.00	0.04
4.60	0.83	0.27	3.11	0.04	0.00	0.04
4.65	0.83	0.27	3.10	0.04	0.00	0.04
4.70	0.83	0.27	3.09	0.04	0.00	0.04
4.75	0.83	0.27	3.08	0.04	0.00	0.04
4.80	0.83	0.27	3.07	0.04	0.00	0.04
4.85	0.83	0.27	3.07	0.04	0.00	0.04
4.90	0.83	0.27	3.06	0.04	0.00	0.04
4.95	0.83	0.27	3.05	0.04	0.00	0.04
5.00	0.83	0.27	3.04	0.04	0.00	0.04
5.05	0.83	0.27	3.03	0.04	0.00	0.04
5.10	0.83	0.27	3.03	0.04	0.00	0.04
5.15	0.83	0.28	3.02	0.04	0.00	0.04
5.20	0.83	0.28	3.01	0.04	0.00	0.04
5.25	0.83	0.28	3.00	0.04	0.00	0.04
5.30	0.83	0.28	2.99	0.04	0.00	0.04
5.35	0.83	0.28	2.98	0.04	0.00	0.04
5.40	0.83	0.28	2.97	0.04	0.00	0.04
5.45	0.83	0.28	2.96	0.04	0.00	0.04

5.50	0.83	0.28	2.96	0.04	0.00	0.04
5.55	0.83	0.28	2.95	0.04	0.00	0.04
5.60	0.83	0.28	2.94	0.04	0.00	0.04
5.65	0.83	0.28	2.93	0.04	0.00	0.04
5.70	0.83	0.28	2.92	0.04	0.00	0.04
5.75	0.83	0.28	2.92	0.04	0.00	0.04
5.80	0.83	0.29	2.91	0.04	0.00	0.04
5.85	0.83	0.29	2.90	0.04	0.00	0.04
5.90	0.83	0.29	2.89	0.04	0.00	0.04
5.95	0.83	0.29	2.89	0.04	0.00	0.04
6.00	0.83	0.29	2.88	0.04	0.00	0.04
6.05	0.83	0.29	2.87	0.04	0.00	0.04
6.10	0.83	0.29	2.87	0.04	0.00	0.04
6.15	0.83	0.29	2.86	0.04	0.00	0.04
6.20	0.83	0.29	2.85	0.04	0.00	0.04
6.25	0.83	0.29	2.85	0.04	0.00	0.04
6.30	0.83	0.29	2.84	0.04	0.00	0.04
6.35	0.83	0.29	2.83	0.04	0.00	0.04
6.40	0.83	0.29	2.83	0.04	0.00	0.04
6.45	0.83	0.29	2.82	0.04	0.00	0.04
6.50	0.83	0.30	2.81	0.04	0.00	0.04
6.55	0.83	0.30	2.81	0.04	0.00	0.04
6.60	0.83	0.30	2.80	0.04	0.00	0.04
6.65	0.83	0.30	2.80	0.04	0.00	0.04
6.70	0.83	0.30	2.79	0.04	0.00	0.04
6.75	0.83	0.30	2.78	0.04	0.00	0.04
6.80	0.83	0.30	2.78	0.04	0.00	0.04
6.85	0.83	0.30	2.77	0.04	0.00	0.04
6.90	0.83	0.30	2.77	0.04	0.00	0.04
6.95	0.83	0.30	2.76	0.04	0.00	0.04
7.00	0.83	0.30	2.76	0.04	0.00	0.04
7.05	0.83	0.30	2.75	0.04	0.00	0.04
7.10	0.83	0.30	2.75	0.04	0.00	0.04
7.15	0.83	0.30	2.74	0.04	0.00	0.04
7.20	0.83	0.30	2.73	0.04	0.00	0.04
7.25	0.83	0.30	2.73	0.04	0.00	0.04
7.30	0.83	0.30	2.72	0.04	0.00	0.04
7.35	0.79	0.31	2.60	0.04	0.00	0.04
7.40	0.76	0.31	2.47	0.04	0.00	0.04
7.45	0.73	0.31	2.38	0.04	0.00	0.04
7.50	0.71	0.31	2.32	0.04	0.00	0.04
7.55	0.70	0.31	2.26	0.04	0.00	0.04
7.60	0.68	0.31	2.22	0.04	0.00	0.04
7.65	0.67	0.31	2.18	0.04	0.00	0.04
7.70	0.66	0.31	2.15	0.04	0.00	0.04
7.75	0.66	0.31	2.11	0.04	0.00	0.04
7.80	0.65	0.31	2.09	0.04	0.00	0.04
7.85	0.64	0.31	2.06	0.04	0.00	0.04
7.90	0.64	0.31	2.04	0.04	0.00	0.04
7.95	0.63	0.31	2.02	0.04	0.00	0.04
8.00	0.62	0.31	2.00	0.04	0.00	0.04
8.05	0.62	0.31	1.98	0.04	0.00	0.04
8.10	0.61	0.31	1.96	0.04	0.00	0.04
8.15	0.61	0.31	1.94	0.04	0.00	0.04
8.20	0.61	0.31	1.92	0.04	0.00	0.04
8.25	0.83	0.32	2.63	0.04	0.00	0.04
8.30	0.83	0.32	2.63	0.04	0.00	0.04
8.35	0.83	0.32	2.63	0.04	0.00	0.04
8.40	0.83	0.32	2.62	0.04	0.00	0.04
8.45	0.83	0.32	2.62	0.04	0.00	0.04
8.50	0.83	0.32	2.61	0.04	0.00	0.04
8.55	0.83	0.32	2.61	0.04	0.00	0.04
8.60	0.83	0.32	2.60	0.04	0.00	0.04
8.65	0.83	0.32	2.60	0.04	0.00	0.04
8.70	0.83	0.32	2.60	0.04	0.00	0.04
8.75	0.83	0.32	2.59	0.04	0.00	0.04
8.80	0.83	0.32	2.59	0.04	0.00	0.04
8.85	0.83	0.32	2.59	0.04	0.00	0.04
8.90	0.83	0.32	2.58	0.04	0.00	0.04
8.95	0.83	0.32	2.58	0.04	0.00	0.04
9.00	0.55	0.32	1.70	0.04	0.00	0.04

9.05	0.55	0.32	1.69	0.04	0.00	0.04
9.10	0.54	0.32	1.68	0.03	0.00	0.03
9.15	0.54	0.32	1.68	0.03	0.00	0.03
9.20	0.54	0.32	1.67	0.03	0.00	0.03
9.25	0.54	0.32	1.66	0.03	0.00	0.03
9.30	0.54	0.33	1.65	0.03	0.00	0.03
9.35	0.53	0.33	1.64	0.03	0.00	0.03
9.40	0.53	0.33	1.64	0.03	0.00	0.03
9.45	0.53	0.33	1.63	0.03	0.00	0.03
9.50	0.53	0.33	1.62	0.03	0.00	0.03
9.55	0.53	0.33	1.61	0.03	0.00	0.03
9.60	0.53	0.33	1.61	0.03	0.00	0.03
9.65	0.52	0.33	1.60	0.03	0.00	0.03
9.70	0.52	0.33	1.59	0.03	0.00	0.03
9.75	0.52	0.33	1.58	0.03	0.00	0.03
9.80	0.52	0.33	1.58	0.02	0.00	0.02
9.85	0.52	0.33	1.57	0.02	0.00	0.02
9.90	0.52	0.33	1.56	0.02	0.00	0.02
9.95	0.51	0.33	1.56	0.02	0.00	0.02
10.00	0.51	0.33	1.55	0.02	0.00	0.02
10.05	0.51	0.33	1.54	0.02	0.00	0.02
10.10	0.51	0.33	1.54	0.02	0.00	0.02
10.15	0.51	0.33	1.53	0.02	0.00	0.02
10.20	0.51	0.33	1.53	0.02	0.00	0.02
10.25	0.50	0.33	1.52	0.02	0.00	0.02
10.30	0.50	0.33	1.51	0.02	0.00	0.02
10.35	0.50	0.33	1.51	0.01	0.00	0.01
10.40	0.50	0.33	1.50	0.01	0.00	0.01
10.45	0.50	0.33	1.50	0.01	0.00	0.01
10.50	0.50	0.33	1.49	0.01	0.00	0.01
10.55	0.50	0.33	1.49	0.01	0.00	0.01
10.60	0.49	0.33	1.48	0.01	0.00	0.01
10.65	0.49	0.33	1.47	0.01	0.00	0.01
10.70	0.49	0.33	1.47	0.01	0.00	0.01
10.75	0.49	0.34	1.46	0.01	0.00	0.01
10.80	0.49	0.34	1.46	0.00	0.00	0.00
10.85	0.49	0.34	1.45	0.00	0.00	0.00
10.90	0.49	0.34	1.45	0.00	0.00	0.00
10.95	0.49	0.34	1.44	0.00	0.00	0.00
11.00	0.83	0.34	2.47	0.00	0.00	0.00
11.05	0.83	0.34	2.47	0.00	0.00	0.00
11.10	0.83	0.34	2.46	0.00	0.00	0.00
11.15	0.83	0.34	2.46	0.00	0.00	0.00
11.20	0.83	0.34	2.46	0.00	0.00	0.00
11.25	0.83	0.34	2.46	0.00	0.00	0.00
11.30	0.83	0.34	2.46	0.00	0.00	0.00
11.35	0.83	0.34	2.46	0.00	0.00	0.00
11.40	0.83	0.34	2.46	0.00	0.00	0.00
11.45	0.83	0.34	2.46	0.00	0.00	0.00
11.50	0.83	0.34	2.46	0.00	0.00	0.00
11.55	0.83	0.34	2.46	0.00	0.00	0.00
11.60	0.83	0.34	2.46	0.00	0.00	0.00
11.65	0.83	0.34	2.45	0.00	0.00	0.00
11.70	0.83	0.34	2.45	0.00	0.00	0.00
11.75	0.83	0.34	2.45	0.00	0.00	0.00
11.80	0.83	0.34	2.45	0.00	0.00	0.00
11.85	0.83	0.34	2.45	0.00	0.00	0.00
11.90	0.83	0.34	2.45	0.00	0.00	0.00
11.95	0.83	0.34	2.45	0.00	0.00	0.00
12.00	0.83	0.34	2.45	0.00	0.00	0.00
12.05	0.83	0.34	2.45	0.00	0.00	0.00
12.10	0.83	0.34	2.45	0.00	0.00	0.00
12.15	0.83	0.34	2.45	0.00	0.00	0.00
12.20	0.83	0.34	2.45	0.00	0.00	0.00
12.25	0.83	0.34	2.44	0.00	0.00	0.00
12.30	0.83	0.34	2.44	0.00	0.00	0.00
12.35	0.83	0.34	2.44	0.00	0.00	0.00
12.40	0.83	0.34	2.44	0.00	0.00	0.00
12.45	0.83	0.34	2.44	0.00	0.00	0.00
12.50	0.83	0.34	2.44	0.00	0.00	0.00
12.55	0.83	0.34	2.44	0.00	0.00	0.00

12.60	0.83	0.34	2.44	0.00	0.00	0.00
12.65	0.83	0.34	2.44	0.00	0.00	0.00
12.70	0.83	0.34	2.44	0.00	0.00	0.00
12.75	0.83	0.34	2.44	0.00	0.00	0.00
12.80	0.83	0.34	2.44	0.00	0.00	0.00
12.85	0.83	0.34	2.44	0.00	0.00	0.00
12.90	0.83	0.34	2.44	0.00	0.00	0.00
12.95	0.83	0.34	2.43	0.00	0.00	0.00
13.00	0.83	0.34	2.43	0.00	0.00	0.00
13.05	0.83	0.34	2.43	0.00	0.00	0.00
13.10	0.83	0.34	2.43	0.00	0.00	0.00
13.15	0.83	0.34	2.43	0.00	0.00	0.00
13.20	0.83	0.34	2.43	0.00	0.00	0.00
13.25	0.83	0.34	2.43	0.00	0.00	0.00
13.30	0.83	0.34	2.43	0.00	0.00	0.00
13.35	0.83	0.34	2.43	0.00	0.00	0.00
13.40	0.83	0.34	2.43	0.00	0.00	0.00
13.45	0.83	0.34	2.43	0.00	0.00	0.00
13.50	0.83	0.34	2.43	0.00	0.00	0.00
13.55	0.83	0.34	2.43	0.00	0.00	0.00
13.60	0.83	0.34	2.43	0.00	0.00	0.00
13.65	0.83	0.34	2.43	0.00	0.00	0.00
13.70	0.83	0.34	2.43	0.00	0.00	0.00
13.75	0.83	0.34	2.43	0.00	0.00	0.00
13.80	0.83	0.34	2.43	0.00	0.00	0.00
13.85	0.83	0.34	2.42	0.00	0.00	0.00
13.90	0.83	0.34	2.42	0.00	0.00	0.00
13.95	0.83	0.34	2.42	0.00	0.00	0.00
14.00	0.83	0.34	2.42	0.00	0.00	0.00
14.05	0.83	0.34	2.42	0.00	0.00	0.00
14.10	0.83	0.34	2.42	0.00	0.00	0.00
14.15	0.83	0.34	2.42	0.00	0.00	0.00
14.20	0.83	0.34	2.42	0.00	0.00	0.00
14.25	0.83	0.34	2.42	0.00	0.00	0.00
14.30	0.83	0.34	2.42	0.00	0.00	0.00
14.35	0.83	0.34	2.42	0.00	0.00	0.00
14.40	0.83	0.34	2.42	0.00	0.00	0.00
14.45	0.83	0.34	2.42	0.00	0.00	0.00
14.50	0.83	0.34	2.42	0.00	0.00	0.00
14.55	0.83	0.34	2.42	0.00	0.00	0.00
14.60	0.83	0.34	2.42	0.00	0.00	0.00
14.65	0.83	0.34	2.42	0.00	0.00	0.00
14.70	0.83	0.34	2.42	0.00	0.00	0.00
14.75	0.83	0.34	2.42	0.00	0.00	0.00
14.80	0.83	0.34	2.42	0.00	0.00	0.00
14.85	0.83	0.34	2.42	0.00	0.00	0.00
14.90	0.83	0.34	2.42	0.00	0.00	0.00
14.95	0.83	0.34	2.42	0.00	0.00	0.00
15.00	0.83	0.34	2.42	0.00	0.00	0.00
15.05	0.83	0.34	2.42	0.00	0.00	0.00
15.10	0.83	0.34	2.42	0.00	0.00	0.00
15.15	0.83	0.34	2.42	0.00	0.00	0.00
15.20	0.83	0.34	2.42	0.00	0.00	0.00
15.25	0.83	0.34	2.42	0.00	0.00	0.00
15.30	0.83	0.34	2.42	0.00	0.00	0.00
15.35	0.83	0.34	2.42	0.00	0.00	0.00
15.40	0.83	0.34	2.42	0.00	0.00	0.00
15.45	0.83	0.34	2.42	0.00	0.00	0.00
15.50	0.83	0.34	2.42	0.00	0.00	0.00
15.55	0.83	0.34	2.42	0.00	0.00	0.00
15.60	0.83	0.34	2.42	0.00	0.00	0.00
15.65	0.83	0.34	2.42	0.00	0.00	0.00
15.70	0.83	0.34	2.42	0.00	0.00	0.00
15.75	0.83	0.34	2.42	0.00	0.00	0.00
15.80	0.83	0.34	2.42	0.00	0.00	0.00
15.85	0.83	0.34	2.42	0.00	0.00	0.00
15.90	0.83	0.34	2.42	0.00	0.00	0.00
15.95	0.83	0.34	2.42	0.00	0.00	0.00
16.00	0.83	0.34	2.42	0.00	0.00	0.00
16.05	0.83	0.34	2.42	0.00	0.00	0.00
16.10	0.83	0.34	2.42	0.00	0.00	0.00

16.15	0.83	0.34	2.42	0.00	0.00	0.00
16.20	0.83	0.34	2.42	0.00	0.00	0.00
16.25	0.83	0.34	2.42	0.00	0.00	0.00
16.30	0.83	0.34	2.42	0.00	0.00	0.00
16.35	0.83	0.34	2.42	0.00	0.00	0.00
16.40	0.83	0.34	2.42	0.00	0.00	0.00
16.45	0.83	0.34	2.42	0.00	0.00	0.00
16.50	0.83	0.34	2.42	0.00	0.00	0.00
16.55	0.83	0.34	2.42	0.00	0.00	0.00
16.60	0.83	0.34	2.42	0.00	0.00	0.00
16.65	0.83	0.34	2.42	0.00	0.00	0.00
16.70	0.83	0.34	2.42	0.00	0.00	0.00
16.75	0.83	0.34	2.42	0.00	0.00	0.00
16.80	0.83	0.34	2.42	0.00	0.00	0.00
16.85	0.83	0.34	2.42	0.00	0.00	0.00
16.90	0.83	0.34	2.42	0.00	0.00	0.00
16.95	0.83	0.34	2.43	0.00	0.00	0.00
17.00	0.83	0.34	2.43	0.00	0.00	0.00
17.05	0.83	0.34	2.43	0.00	0.00	0.00
17.10	0.83	0.34	2.43	0.00	0.00	0.00
17.15	0.83	0.34	2.43	0.00	0.00	0.00
17.20	0.83	0.34	2.43	0.00	0.00	0.00
17.25	0.83	0.34	2.43	0.00	0.00	0.00
17.30	0.83	0.34	2.43	0.00	0.00	0.00
17.35	0.83	0.34	2.43	0.00	0.00	0.00
17.40	0.83	0.34	2.43	0.00	0.00	0.00
17.45	0.83	0.34	2.43	0.00	0.00	0.00
17.50	0.83	0.34	2.43	0.00	0.00	0.00
17.55	0.83	0.34	2.43	0.00	0.00	0.00
17.60	0.83	0.34	2.43	0.00	0.00	0.00
17.65	0.83	0.34	2.43	0.00	0.00	0.00
17.70	0.83	0.34	2.43	0.00	0.00	0.00
17.75	0.83	0.34	2.43	0.00	0.00	0.00
17.80	0.83	0.34	2.43	0.00	0.00	0.00
17.85	0.83	0.34	2.43	0.00	0.00	0.00
17.90	0.83	0.34	2.43	0.00	0.00	0.00
17.95	0.83	0.34	2.43	0.00	0.00	0.00
18.00	0.83	0.34	2.43	0.00	0.00	0.00
18.05	0.83	0.34	2.43	0.00	0.00	0.00
18.10	0.83	0.34	2.43	0.00	0.00	0.00
18.15	0.83	0.34	2.43	0.00	0.00	0.00
18.20	0.83	0.34	2.43	0.00	0.00	0.00
18.25	0.83	0.34	2.43	0.00	0.00	0.00
18.30	0.83	0.34	2.43	0.00	0.00	0.00
18.35	0.83	0.34	2.43	0.00	0.00	0.00
18.40	0.83	0.34	2.43	0.00	0.00	0.00
18.45	0.83	0.34	2.43	0.00	0.00	0.00
18.50	0.83	0.34	2.43	0.00	0.00	0.00
18.55	0.83	0.34	2.43	0.00	0.00	0.00
18.60	0.83	0.34	2.43	0.00	0.00	0.00
18.65	0.83	0.34	2.43	0.00	0.00	0.00
18.70	0.83	0.34	2.43	0.00	0.00	0.00
18.75	0.83	0.34	2.43	0.00	0.00	0.00
18.80	0.83	0.34	2.44	0.00	0.00	0.00
18.85	0.83	0.34	2.44	0.00	0.00	0.00
18.90	0.83	0.34	2.44	0.00	0.00	0.00
18.95	0.83	0.34	2.44	0.00	0.00	0.00
19.00	0.83	0.34	2.44	0.00	0.00	0.00
19.05	0.83	0.34	2.44	0.00	0.00	0.00
19.10	0.83	0.34	2.44	0.00	0.00	0.00
19.15	0.83	0.34	2.44	0.00	0.00	0.00
19.20	0.83	0.34	2.44	0.00	0.00	0.00
19.25	0.83	0.34	2.44	0.00	0.00	0.00
19.30	0.83	0.34	2.44	0.00	0.00	0.00
19.35	0.83	0.34	2.44	0.00	0.00	0.00
19.40	0.83	0.34	2.44	0.00	0.00	0.00
19.45	0.83	0.34	2.44	0.00	0.00	0.00
19.50	0.83	0.34	2.44	0.00	0.00	0.00
19.55	0.83	0.34	2.44	0.00	0.00	0.00
19.60	0.83	0.34	2.44	0.00	0.00	0.00
19.65	0.83	0.34	2.44	0.00	0.00	0.00

19.70	0.83	0.34	2.44	0.00	0.00	0.00
19.75	0.83	0.34	2.44	0.00	0.00	0.00
19.80	0.83	0.34	2.44	0.00	0.00	0.00
19.85	0.83	0.34	2.44	0.00	0.00	0.00
19.90	0.83	0.34	2.44	0.00	0.00	0.00
19.95	0.83	0.34	2.44	0.00	0.00	0.00
20.00	0.83	0.34	2.44	0.00	0.00	0.00
20.05	0.83	0.34	2.44	0.00	0.00	0.00
20.10	0.83	0.34	2.44	0.00	0.00	0.00
20.15	0.83	0.34	2.44	0.00	0.00	0.00
20.20	0.83	0.34	2.44	0.00	0.00	0.00
20.25	0.83	0.34	2.44	0.00	0.00	0.00
20.30	0.83	0.34	2.44	0.00	0.00	0.00
20.35	0.83	0.34	2.44	0.00	0.00	0.00
20.40	0.83	0.34	2.44	0.00	0.00	0.00
20.45	0.83	0.34	2.44	0.00	0.00	0.00
20.50	0.83	0.34	2.44	0.00	0.00	0.00
20.55	0.83	0.34	2.44	0.00	0.00	0.00
20.60	0.83	0.34	2.44	0.00	0.00	0.00
20.65	0.83	0.34	2.44	0.00	0.00	0.00
20.70	0.83	0.34	2.45	0.00	0.00	0.00
20.75	0.83	0.34	2.45	0.00	0.00	0.00
20.80	0.83	0.34	2.45	0.00	0.00	0.00
20.85	0.83	0.34	2.45	0.00	0.00	0.00
20.90	0.83	0.34	2.45	0.00	0.00	0.00
20.95	0.83	0.34	2.45	0.00	0.00	0.00
21.00	0.83	0.34	2.45	0.00	0.00	0.00
21.05	0.83	0.34	2.45	0.00	0.00	0.00
21.10	0.83	0.34	2.45	0.00	0.00	0.00
21.15	0.83	0.34	2.45	0.00	0.00	0.00
21.20	0.83	0.34	2.45	0.00	0.00	0.00
21.25	0.83	0.34	2.45	0.00	0.00	0.00
21.30	0.83	0.34	2.45	0.00	0.00	0.00
21.35	0.83	0.34	2.45	0.00	0.00	0.00
21.40	0.83	0.34	2.45	0.00	0.00	0.00
21.45	0.83	0.34	2.45	0.00	0.00	0.00
21.50	0.83	0.34	2.45	0.00	0.00	0.00
21.55	0.83	0.34	2.45	0.00	0.00	0.00
21.60	0.83	0.34	2.45	0.00	0.00	0.00
21.65	0.83	0.34	2.45	0.00	0.00	0.00
21.70	0.83	0.34	2.45	0.00	0.00	0.00
21.75	0.83	0.34	2.45	0.00	0.00	0.00
21.80	0.83	0.34	2.45	0.00	0.00	0.00
21.85	0.83	0.34	2.45	0.00	0.00	0.00
21.90	0.83	0.34	2.45	0.00	0.00	0.00
21.95	0.83	0.34	2.45	0.00	0.00	0.00
22.00	0.83	0.34	2.45	0.00	0.00	0.00
22.05	0.83	0.34	2.45	0.00	0.00	0.00
22.10	0.83	0.34	2.45	0.00	0.00	0.00
22.15	0.83	0.34	2.45	0.00	0.00	0.00
22.20	0.83	0.34	2.45	0.00	0.00	0.00
22.25	0.83	0.34	2.45	0.00	0.00	0.00
22.30	0.83	0.34	2.45	0.00	0.00	0.00
22.35	0.83	0.34	2.45	0.00	0.00	0.00
22.40	0.83	0.34	2.45	0.00	0.00	0.00
22.45	0.83	0.34	2.45	0.00	0.00	0.00
22.50	0.83	0.34	2.45	0.00	0.00	0.00
22.55	0.83	0.34	2.45	0.00	0.00	0.00
22.60	0.83	0.34	2.45	0.00	0.00	0.00
22.65	0.83	0.34	2.45	0.00	0.00	0.00
22.70	0.83	0.34	2.46	0.00	0.00	0.00
22.75	0.83	0.34	2.46	0.00	0.00	0.00
22.80	0.83	0.34	2.46	0.00	0.00	0.00
22.85	0.83	0.34	2.46	0.00	0.00	0.00
22.90	0.83	0.34	2.46	0.00	0.00	0.00
22.95	0.83	0.34	2.46	0.00	0.00	0.00
23.00	0.83	0.34	2.46	0.00	0.00	0.00
23.05	0.83	0.34	2.46	0.00	0.00	0.00
23.10	0.83	0.34	2.46	0.00	0.00	0.00
23.15	0.83	0.34	2.46	0.00	0.00	0.00
23.20	0.83	0.34	2.46	0.00	0.00	0.00

23.25	0.83	0.34	2.46	0.00	0.00	0.00
23.30	0.83	0.34	2.46	0.00	0.00	0.00
23.35	0.83	0.34	2.46	0.00	0.00	0.00
23.40	0.83	0.34	2.46	0.00	0.00	0.00
23.45	0.83	0.34	2.46	0.00	0.00	0.00
23.50	0.83	0.34	2.46	0.00	0.00	0.00
23.55	0.83	0.34	2.46	0.00	0.00	0.00
23.60	0.83	0.34	2.46	0.00	0.00	0.00
23.65	0.83	0.34	2.46	0.00	0.00	0.00
23.70	0.83	0.34	2.46	0.00	0.00	0.00
23.75	0.83	0.34	2.46	0.00	0.00	0.00
23.80	0.83	0.34	2.46	0.00	0.00	0.00
23.85	0.83	0.34	2.46	0.00	0.00	0.00
23.90	0.83	0.34	2.46	0.00	0.00	0.00
23.95	0.83	0.34	2.46	0.00	0.00	0.00
24.00	0.83	0.34	2.46	0.00	0.00	0.00
24.05	0.83	0.34	2.46	0.00	0.00	0.00
24.10	0.83	0.34	2.46	0.00	0.00	0.00
24.15	0.83	0.34	2.46	0.00	0.00	0.00
24.20	0.83	0.34	2.46	0.00	0.00	0.00
24.25	0.83	0.34	2.46	0.00	0.00	0.00
24.30	0.83	0.34	2.46	0.00	0.00	0.00
24.35	0.83	0.34	2.46	0.00	0.00	0.00
24.40	0.83	0.34	2.46	0.00	0.00	0.00
24.45	0.83	0.34	2.46	0.00	0.00	0.00
24.50	0.83	0.34	2.46	0.00	0.00	0.00
24.55	0.83	0.34	2.46	0.00	0.00	0.00
24.60	0.83	0.34	2.47	0.00	0.00	0.00
24.65	0.83	0.34	2.47	0.00	0.00	0.00
24.70	0.83	0.34	2.47	0.00	0.00	0.00
24.75	0.83	0.34	2.47	0.00	0.00	0.00
24.80	0.83	0.34	2.47	0.00	0.00	0.00
24.85	0.83	0.34	2.47	0.00	0.00	0.00
24.90	0.83	0.34	2.47	0.00	0.00	0.00
24.95	0.83	0.34	2.47	0.00	0.00	0.00
25.00	0.83	0.34	2.47	0.00	0.00	0.00
25.05	0.83	0.34	2.47	0.00	0.00	0.00
25.10	0.83	0.34	2.47	0.00	0.00	0.00
25.15	0.83	0.34	2.47	0.00	0.00	0.00
25.20	0.83	0.34	2.47	0.00	0.00	0.00
25.25	0.83	0.34	2.47	0.00	0.00	0.00
25.30	0.83	0.34	2.47	0.00	0.00	0.00
25.35	0.83	0.34	2.47	0.00	0.00	0.00
25.40	0.83	0.34	2.47	0.00	0.00	0.00
25.45	0.83	0.34	2.47	0.00	0.00	0.00
25.50	0.83	0.34	2.47	0.00	0.00	0.00
25.55	0.83	0.34	2.47	0.00	0.00	0.00
25.60	0.83	0.34	2.47	0.00	0.00	0.00
25.65	0.83	0.34	2.47	0.00	0.00	0.00
25.70	0.83	0.34	2.47	0.00	0.00	0.00
25.75	0.83	0.34	2.47	0.00	0.00	0.00
25.80	0.83	0.34	2.47	0.00	0.00	0.00
25.85	0.83	0.34	2.47	0.00	0.00	0.00
25.90	0.83	0.34	2.47	0.00	0.00	0.00
25.95	0.83	0.34	2.47	0.00	0.00	0.00
26.00	0.83	0.34	2.47	0.00	0.00	0.00
26.05	0.83	0.34	2.47	0.00	0.00	0.00
26.10	0.83	0.34	2.47	0.00	0.00	0.00
26.15	0.83	0.34	2.47	0.00	0.00	0.00
26.20	0.83	0.34	2.47	0.00	0.00	0.00
26.25	0.83	0.34	2.47	0.00	0.00	0.00
26.30	0.83	0.34	2.47	0.00	0.00	0.00
26.35	0.83	0.34	2.47	0.00	0.00	0.00
26.40	0.83	0.34	2.47	0.00	0.00	0.00
26.45	0.83	0.34	2.47	0.00	0.00	0.00
26.50	0.83	0.34	2.47	0.00	0.00	0.00
26.55	0.83	0.34	2.47	0.00	0.00	0.00
26.60	0.83	0.34	2.47	0.00	0.00	0.00
26.65	0.83	0.34	2.47	0.00	0.00	0.00
26.70	0.83	0.34	2.47	0.00	0.00	0.00
26.75	0.83	0.34	2.47	0.00	0.00	0.00

26.80	0.83	0.34	2.47	0.00	0.00	0.00
26.85	0.83	0.34	2.47	0.00	0.00	0.00
26.90	0.83	0.34	2.47	0.00	0.00	0.00
26.95	0.83	0.34	2.47	0.00	0.00	0.00
27.00	0.83	0.34	2.47	0.00	0.00	0.00
27.05	0.83	0.34	2.47	0.00	0.00	0.00
27.10	0.83	0.34	2.47	0.00	0.00	0.00
27.15	0.83	0.34	2.47	0.00	0.00	0.00
27.20	0.83	0.34	2.47	0.00	0.00	0.00
27.25	0.83	0.34	2.47	0.00	0.00	0.00
27.30	0.83	0.34	2.47	0.00	0.00	0.00
27.35	0.83	0.34	2.47	0.00	0.00	0.00
27.40	0.83	0.34	2.47	0.00	0.00	0.00
27.45	0.83	0.34	2.47	0.00	0.00	0.00
27.50	0.83	0.34	2.47	0.00	0.00	0.00
27.55	0.83	0.34	2.47	0.00	0.00	0.00
27.60	0.83	0.34	2.47	0.00	0.00	0.00
27.65	0.83	0.34	2.47	0.00	0.00	0.00
27.70	0.83	0.34	2.47	0.00	0.00	0.00
27.75	0.83	0.34	2.48	0.00	0.00	0.00
27.80	0.83	0.34	2.48	0.00	0.00	0.00
27.85	0.83	0.34	2.48	0.00	0.00	0.00
27.90	0.83	0.34	2.48	0.00	0.00	0.00
27.95	0.83	0.34	2.48	0.00	0.00	0.00
28.00	0.83	0.34	2.48	0.00	0.00	0.00
28.05	0.83	0.34	2.48	0.00	0.00	0.00
28.10	0.83	0.34	2.48	0.00	0.00	0.00
28.15	0.83	0.34	2.48	0.00	0.00	0.00
28.20	0.83	0.34	2.48	0.00	0.00	0.00
28.25	0.83	0.34	2.48	0.00	0.00	0.00
28.30	0.83	0.34	2.48	0.00	0.00	0.00
28.35	0.83	0.34	2.48	0.00	0.00	0.00
28.40	0.83	0.34	2.48	0.00	0.00	0.00
28.45	0.83	0.34	2.48	0.00	0.00	0.00
28.50	0.83	0.34	2.48	0.00	0.00	0.00
28.55	0.83	0.34	2.48	0.00	0.00	0.00
28.60	0.83	0.34	2.48	0.00	0.00	0.00
28.65	0.83	0.34	2.48	0.00	0.00	0.00
28.70	0.83	0.34	2.48	0.00	0.00	0.00
28.75	0.83	0.34	2.48	0.00	0.00	0.00
28.80	0.83	0.34	2.48	0.00	0.00	0.00
28.85	0.83	0.34	2.48	0.00	0.00	0.00
28.90	0.83	0.34	2.48	0.00	0.00	0.00
28.95	0.83	0.34	2.48	0.00	0.00	0.00
29.00	0.83	0.34	2.48	0.00	0.00	0.00
29.05	0.83	0.34	2.48	0.00	0.00	0.00
29.10	0.83	0.34	2.48	0.00	0.00	0.00
29.15	0.83	0.34	2.48	0.00	0.00	0.00
29.20	0.83	0.33	2.48	0.00	0.00	0.00
29.25	0.83	0.33	2.48	0.00	0.00	0.00
29.30	0.83	0.33	2.48	0.00	0.00	0.00
29.35	0.83	0.33	2.48	0.00	0.00	0.00
29.40	0.83	0.33	2.48	0.00	0.00	0.00
29.45	0.83	0.33	2.48	0.00	0.00	0.00
29.50	0.83	0.33	2.48	0.00	0.00	0.00
29.55	0.83	0.33	2.48	0.00	0.00	0.00
29.60	0.83	0.33	2.48	0.00	0.00	0.00
29.65	0.83	0.33	2.48	0.00	0.00	0.00
29.70	0.83	0.33	2.48	0.00	0.00	0.00
29.75	0.83	0.33	2.48	0.00	0.00	0.00
29.80	0.83	0.33	2.48	0.00	0.00	0.00
29.85	0.83	0.33	2.48	0.00	0.00	0.00
29.90	0.83	0.33	2.48	0.00	0.00	0.00
29.95	0.83	0.33	2.48	0.00	0.00	0.00
30.00	0.83	0.33	2.48	0.00	0.00	0.00
30.05	0.83	0.33	2.48	0.00	0.00	0.00
30.10	0.83	0.33	2.49	0.00	0.00	0.00
30.15	0.83	0.33	2.49	0.00	0.00	0.00
30.20	0.83	0.33	2.49	0.00	0.00	0.00
30.25	0.83	0.33	2.49	0.00	0.00	0.00
30.30	0.83	0.33	2.49	0.00	0.00	0.00

30.35	0.83	0.33	2.49	0.00	0.00	0.00
30.40	0.83	0.33	2.49	0.00	0.00	0.00
30.45	0.83	0.33	2.49	0.00	0.00	0.00
30.50	0.83	0.33	2.49	0.00	0.00	0.00
30.55	0.83	0.33	2.49	0.00	0.00	0.00
30.60	0.83	0.33	2.49	0.00	0.00	0.00
30.65	0.83	0.33	2.50	0.00	0.00	0.00
30.70	0.83	0.33	2.50	0.00	0.00	0.00
30.75	0.83	0.33	2.50	0.00	0.00	0.00
30.80	0.83	0.33	2.50	0.00	0.00	0.00
30.85	0.83	0.33	2.50	0.00	0.00	0.00
30.90	0.83	0.33	2.50	0.00	0.00	0.00
30.95	0.83	0.33	2.50	0.00	0.00	0.00
31.00	0.83	0.33	2.50	0.00	0.00	0.00
31.05	0.83	0.33	2.50	0.00	0.00	0.00
31.10	0.83	0.33	2.50	0.00	0.00	0.00
31.15	0.83	0.33	2.50	0.00	0.00	0.00
31.20	0.83	0.33	2.51	0.00	0.00	0.00
31.25	0.83	0.33	2.51	0.00	0.00	0.00
31.30	0.83	0.33	2.51	0.00	0.00	0.00
31.35	0.83	0.33	2.51	0.00	0.00	0.00
31.40	0.83	0.33	2.51	0.00	0.00	0.00
31.45	0.83	0.33	2.51	0.00	0.00	0.00
31.50	0.83	0.33	2.51	0.00	0.00	0.00
31.55	0.83	0.33	2.51	0.00	0.00	0.00
31.60	0.83	0.33	2.51	0.00	0.00	0.00
31.65	0.83	0.33	2.51	0.00	0.00	0.00
31.70	0.83	0.33	2.52	0.00	0.00	0.00
31.75	0.83	0.33	2.52	0.00	0.00	0.00
31.80	0.83	0.33	2.52	0.00	0.00	0.00
31.85	0.83	0.33	2.52	0.00	0.00	0.00
31.90	0.83	0.33	2.52	0.00	0.00	0.00
31.95	0.83	0.33	2.52	0.00	0.00	0.00
32.00	0.83	0.33	2.52	0.00	0.00	0.00
32.05	0.83	0.33	2.52	0.00	0.00	0.00
32.10	0.83	0.33	2.52	0.00	0.00	0.00
32.15	0.83	0.33	2.52	0.00	0.00	0.00
32.20	0.83	0.33	2.53	0.00	0.00	0.00
32.25	0.83	0.33	2.53	0.00	0.00	0.00
32.30	0.83	0.33	2.53	0.00	0.00	0.00
32.35	0.83	0.33	2.53	0.00	0.00	0.00
32.40	0.83	0.33	2.53	0.00	0.00	0.00
32.45	0.83	0.33	2.53	0.00	0.00	0.00
32.50	0.83	0.33	2.53	0.00	0.00	0.00
32.55	0.83	0.33	2.53	0.00	0.00	0.00
32.60	0.83	0.33	2.53	0.00	0.00	0.00
32.65	0.83	0.33	2.53	0.00	0.00	0.00
32.70	0.83	0.33	2.54	0.00	0.00	0.00
32.75	0.83	0.33	2.54	0.00	0.00	0.00
32.80	0.83	0.33	2.54	0.00	0.00	0.00
32.85	0.83	0.33	2.54	0.00	0.00	0.00
32.90	0.83	0.33	2.54	0.00	0.00	0.00
32.95	0.83	0.33	2.54	0.00	0.00	0.00
33.00	0.83	0.33	2.54	0.00	0.00	0.00
33.05	0.83	0.33	2.54	0.00	0.00	0.00
33.10	0.83	0.33	2.54	0.00	0.00	0.00
33.15	0.83	0.33	2.54	0.00	0.00	0.00
33.20	0.83	0.33	2.55	0.00	0.00	0.00
33.25	0.83	0.33	2.55	0.00	0.00	0.00
33.30	0.83	0.33	2.55	0.00	0.00	0.00
33.35	0.83	0.33	2.55	0.00	0.00	0.00
33.40	0.83	0.33	2.55	0.00	0.00	0.00
33.45	0.83	0.33	2.55	0.00	0.00	0.00
33.50	0.83	0.33	2.55	0.00	0.00	0.00
33.55	0.83	0.33	2.55	0.00	0.00	0.00
33.60	0.83	0.33	2.55	0.00	0.00	0.00
33.65	0.83	0.33	2.55	0.00	0.00	0.00
33.70	0.83	0.33	2.56	0.00	0.00	0.00
33.75	0.83	0.32	2.56	0.00	0.00	0.00
33.80	0.83	0.32	2.56	0.00	0.00	0.00
33.85	0.83	0.32	2.56	0.00	0.00	0.00

33.90	0.83	0.32	2.56	0.00	0.00	0.00
33.95	0.83	0.32	2.56	0.00	0.00	0.00
34.00	0.83	0.32	2.56	0.00	0.00	0.00
34.05	0.83	0.32	2.56	0.00	0.00	0.00
34.10	0.83	0.32	2.56	0.00	0.00	0.00
34.15	0.83	0.32	2.57	0.00	0.00	0.00
34.20	0.83	0.32	2.57	0.00	0.00	0.00
34.25	0.83	0.32	2.57	0.00	0.00	0.00
34.30	0.83	0.32	2.57	0.00	0.00	0.00
34.35	0.83	0.32	2.57	0.00	0.00	0.00
34.40	0.83	0.32	2.57	0.00	0.00	0.00
34.45	0.83	0.32	2.57	0.00	0.00	0.00
34.50	0.83	0.32	2.57	0.00	0.00	0.00
34.55	0.83	0.32	2.57	0.00	0.00	0.00
34.60	0.83	0.32	2.57	0.00	0.00	0.00
34.65	0.83	0.32	2.58	0.00	0.00	0.00
34.70	0.83	0.32	2.58	0.00	0.00	0.00
34.75	0.83	0.32	2.58	0.00	0.00	0.00
34.80	0.83	0.32	2.58	0.00	0.00	0.00
34.85	0.83	0.32	2.58	0.00	0.00	0.00
34.90	0.83	0.32	2.58	0.00	0.00	0.00
34.95	0.83	0.32	2.58	0.00	0.00	0.00
35.00	0.83	0.32	2.58	0.00	0.00	0.00
35.05	0.83	0.32	2.58	0.00	0.00	0.00
35.10	0.83	0.32	2.59	0.00	0.00	0.00
35.15	0.83	0.32	2.59	0.00	0.00	0.00
35.20	0.83	0.32	2.59	0.00	0.00	0.00
35.25	0.83	0.32	2.59	0.00	0.00	0.00
35.30	0.83	0.32	2.59	0.00	0.00	0.00
35.35	0.83	0.32	2.59	0.00	0.00	0.00
35.40	0.83	0.32	2.59	0.00	0.00	0.00
35.45	0.83	0.32	2.59	0.00	0.00	0.00
35.50	0.84	0.32	2.61	0.00	0.00	0.00
35.55	0.84	0.32	2.61	0.00	0.00	0.00
35.60	0.84	0.32	2.61	0.00	0.00	0.00
35.65	0.84	0.32	2.61	0.00	0.00	0.00
35.70	0.84	0.32	2.61	0.00	0.00	0.00
35.75	0.84	0.32	2.61	0.00	0.00	0.00
35.80	0.83	0.32	2.61	0.00	0.00	0.00
35.85	0.83	0.32	2.61	0.00	0.00	0.00
35.90	0.83	0.32	2.62	0.00	0.00	0.00
35.95	0.83	0.32	2.62	0.00	0.00	0.00
36.00	0.83	0.32	2.62	0.00	0.00	0.00
36.05	0.83	0.32	2.62	0.00	0.00	0.00
36.10	0.83	0.32	2.62	0.00	0.00	0.00
36.15	0.83	0.32	2.62	0.00	0.00	0.00
36.20	0.83	0.32	2.62	0.00	0.00	0.00
36.25	0.83	0.32	2.62	0.00	0.00	0.00
36.30	0.83	0.32	2.62	0.00	0.00	0.00
36.35	0.83	0.32	2.62	0.00	0.00	0.00
36.40	0.83	0.32	2.62	0.00	0.00	0.00
36.45	0.83	0.32	2.62	0.00	0.00	0.00
36.50	0.83	0.32	2.62	0.00	0.00	0.00
36.55	0.83	0.32	2.62	0.00	0.00	0.00
36.60	0.83	0.32	2.62	0.00	0.00	0.00
36.65	0.83	0.32	2.62	0.00	0.00	0.00
36.70	0.83	0.32	2.63	0.00	0.00	0.00
36.75	0.83	0.32	2.63	0.00	0.00	0.00
36.80	0.83	0.32	2.63	0.00	0.00	0.00
36.85	0.83	0.32	2.63	0.00	0.00	0.00
36.90	0.83	0.32	2.63	0.00	0.00	0.00
36.95	0.83	0.32	2.63	0.00	0.00	0.00
37.00	0.83	0.32	2.63	0.00	0.00	0.00
37.05	0.83	0.32	2.63	0.00	0.00	0.00
37.10	0.83	0.32	2.63	0.00	0.00	0.00
37.15	0.83	0.32	2.63	0.00	0.00	0.00
37.20	0.83	0.32	2.63	0.00	0.00	0.00
37.25	0.83	0.32	2.63	0.00	0.00	0.00
37.30	0.83	0.32	2.63	0.00	0.00	0.00
37.35	0.83	0.32	2.63	0.00	0.00	0.00
37.40	0.83	0.32	2.64	0.00	0.00	0.00

37.45	0.83	0.31	2.64	0.00	0.00	0.00
37.50	0.83	0.31	2.64	0.00	0.00	0.00
37.55	0.83	0.31	2.64	0.00	0.00	0.00
37.60	0.83	0.31	2.64	0.00	0.00	0.00
37.65	0.83	0.31	2.64	0.00	0.00	0.00
37.70	0.83	0.31	2.64	0.00	0.00	0.00
37.75	0.83	0.31	2.64	0.00	0.00	0.00
37.80	0.83	0.31	2.64	0.00	0.00	0.00
37.85	0.83	0.31	2.64	0.00	0.00	0.00
37.90	0.83	0.31	2.64	0.00	0.00	0.00
37.95	0.83	0.31	2.64	0.00	0.00	0.00
38.00	0.83	0.31	2.64	0.00	0.00	0.00
38.05	0.83	0.31	2.64	0.00	0.00	0.00
38.10	0.83	0.31	2.64	0.00	0.00	0.00
38.15	0.83	0.31	2.65	0.00	0.00	0.00
38.20	0.83	0.31	2.65	0.00	0.00	0.00
38.25	0.83	0.31	2.65	0.00	0.00	0.00
38.30	0.83	0.31	2.65	0.00	0.00	0.00
38.35	0.83	0.31	2.65	0.00	0.00	0.00
38.40	0.83	0.31	2.65	0.00	0.00	0.00
38.45	0.83	0.31	2.65	0.00	0.00	0.00
38.50	0.83	0.31	2.65	0.00	0.00	0.00
38.55	0.83	0.31	2.65	0.00	0.00	0.00
38.60	0.83	0.31	2.65	0.00	0.00	0.00
38.65	0.83	0.31	2.65	0.00	0.00	0.00
38.70	0.83	0.31	2.65	0.00	0.00	0.00
38.75	0.83	0.31	2.65	0.00	0.00	0.00
38.80	0.83	0.31	2.65	0.00	0.00	0.00
38.85	0.83	0.31	2.66	0.00	0.00	0.00
38.90	0.83	0.31	2.66	0.00	0.00	0.00
38.95	0.83	0.31	2.66	0.00	0.00	0.00
39.00	0.83	0.31	2.66	0.00	0.00	0.00
39.05	2.00	0.31	5.00	0.00	0.00	0.00
39.10	2.00	0.31	5.00	0.00	0.00	0.00
39.15	2.00	0.31	5.00	0.00	0.00	0.00
39.20	2.00	0.31	5.00	0.00	0.00	0.00
39.25	2.00	0.31	5.00	0.00	0.00	0.00
39.30	2.00	0.31	5.00	0.00	0.00	0.00
39.35	2.00	0.31	5.00	0.00	0.00	0.00
39.40	2.00	0.31	5.00	0.00	0.00	0.00
39.45	2.00	0.31	5.00	0.00	0.00	0.00
39.50	2.00	0.31	5.00	0.00	0.00	0.00
39.55	2.00	0.31	5.00	0.00	0.00	0.00
39.60	2.00	0.31	5.00	0.00	0.00	0.00
39.65	2.00	0.31	5.00	0.00	0.00	0.00
39.70	2.00	0.31	5.00	0.00	0.00	0.00
39.75	2.00	0.31	5.00	0.00	0.00	0.00
39.80	2.00	0.31	5.00	0.00	0.00	0.00
39.85	2.00	0.31	5.00	0.00	0.00	0.00
39.90	2.00	0.31	5.00	0.00	0.00	0.00
39.95	2.00	0.31	5.00	0.00	0.00	0.00
40.00	2.00	0.31	5.00	0.00	0.00	0.00
40.05	2.00	0.31	5.00	0.00	0.00	0.00
40.10	2.00	0.31	5.00	0.00	0.00	0.00
40.15	2.00	0.31	5.00	0.00	0.00	0.00
40.20	2.00	0.31	5.00	0.00	0.00	0.00
40.25	2.00	0.31	5.00	0.00	0.00	0.00
40.30	2.00	0.31	5.00	0.00	0.00	0.00
40.35	2.00	0.31	5.00	0.00	0.00	0.00
40.40	2.00	0.31	5.00	0.00	0.00	0.00
40.45	2.00	0.31	5.00	0.00	0.00	0.00
40.50	2.00	0.31	5.00	0.00	0.00	0.00
40.55	2.00	0.31	5.00	0.00	0.00	0.00
40.60	2.00	0.31	5.00	0.00	0.00	0.00
40.65	2.00	0.31	5.00	0.00	0.00	0.00
40.70	2.00	0.31	5.00	0.00	0.00	0.00
40.75	2.00	0.31	5.00	0.00	0.00	0.00
40.80	2.00	0.31	5.00	0.00	0.00	0.00
40.85	2.00	0.31	5.00	0.00	0.00	0.00
40.90	2.00	0.31	5.00	0.00	0.00	0.00
40.95	2.00	0.31	5.00	0.00	0.00	0.00

41.00	2.00	0.31	5.00	0.00	0.00	0.00
41.05	2.00	0.31	5.00	0.00	0.00	0.00
41.10	2.00	0.31	5.00	0.00	0.00	0.00
41.15	2.00	0.31	5.00	0.00	0.00	0.00
41.20	2.00	0.31	5.00	0.00	0.00	0.00
41.25	2.00	0.31	5.00	0.00	0.00	0.00
41.30	2.00	0.30	5.00	0.00	0.00	0.00
41.35	2.00	0.30	5.00	0.00	0.00	0.00
41.40	2.00	0.30	5.00	0.00	0.00	0.00
41.45	2.00	0.30	5.00	0.00	0.00	0.00
41.50	2.00	0.30	5.00	0.00	0.00	0.00
41.55	2.00	0.30	5.00	0.00	0.00	0.00
41.60	2.00	0.30	5.00	0.00	0.00	0.00
41.65	2.00	0.30	5.00	0.00	0.00	0.00
41.70	2.00	0.30	5.00	0.00	0.00	0.00
41.75	2.00	0.30	5.00	0.00	0.00	0.00
41.80	2.00	0.30	5.00	0.00	0.00	0.00
41.85	2.00	0.30	5.00	0.00	0.00	0.00
41.90	2.00	0.30	5.00	0.00	0.00	0.00
41.95	2.00	0.30	5.00	0.00	0.00	0.00
42.00	2.00	0.30	5.00	0.00	0.00	0.00
42.05	2.00	0.30	5.00	0.00	0.00	0.00
42.10	2.00	0.30	5.00	0.00	0.00	0.00
42.15	2.00	0.30	5.00	0.00	0.00	0.00
42.20	2.00	0.30	5.00	0.00	0.00	0.00
42.25	2.00	0.30	5.00	0.00	0.00	0.00
42.30	2.00	0.30	5.00	0.00	0.00	0.00
42.35	2.00	0.30	5.00	0.00	0.00	0.00
42.40	2.00	0.30	5.00	0.00	0.00	0.00
42.45	2.00	0.30	5.00	0.00	0.00	0.00
42.50	2.00	0.30	5.00	0.00	0.00	0.00
42.55	2.00	0.30	5.00	0.00	0.00	0.00
42.60	2.00	0.30	5.00	0.00	0.00	0.00
42.65	2.00	0.30	5.00	0.00	0.00	0.00
42.70	2.00	0.30	5.00	0.00	0.00	0.00
42.75	2.00	0.30	5.00	0.00	0.00	0.00
42.80	2.00	0.30	5.00	0.00	0.00	0.00
42.85	2.00	0.30	5.00	0.00	0.00	0.00
42.90	2.00	0.30	5.00	0.00	0.00	0.00
42.95	2.00	0.30	5.00	0.00	0.00	0.00
43.00	2.00	0.30	5.00	0.00	0.00	0.00
43.05	2.00	0.30	5.00	0.00	0.00	0.00
43.10	2.00	0.30	5.00	0.00	0.00	0.00
43.15	2.00	0.30	5.00	0.00	0.00	0.00
43.20	2.00	0.30	5.00	0.00	0.00	0.00
43.25	2.00	0.30	5.00	0.00	0.00	0.00
43.30	2.00	0.30	5.00	0.00	0.00	0.00
43.35	2.00	0.30	5.00	0.00	0.00	0.00
43.40	2.00	0.30	5.00	0.00	0.00	0.00
43.45	2.00	0.30	5.00	0.00	0.00	0.00
43.50	2.00	0.30	5.00	0.00	0.00	0.00
43.55	2.00	0.30	5.00	0.00	0.00	0.00
43.60	2.00	0.30	5.00	0.00	0.00	0.00
43.65	2.00	0.30	5.00	0.00	0.00	0.00
43.70	2.00	0.30	5.00	0.00	0.00	0.00
43.75	2.00	0.30	5.00	0.00	0.00	0.00
43.80	2.00	0.30	5.00	0.00	0.00	0.00
43.85	2.00	0.30	5.00	0.00	0.00	0.00
43.90	2.00	0.30	5.00	0.00	0.00	0.00
43.95	2.00	0.30	5.00	0.00	0.00	0.00
44.00	2.00	0.30	5.00	0.00	0.00	0.00
44.05	2.00	0.30	5.00	0.00	0.00	0.00
44.10	2.00	0.30	5.00	0.00	0.00	0.00
44.15	2.00	0.30	5.00	0.00	0.00	0.00
44.20	2.00	0.30	5.00	0.00	0.00	0.00
44.25	2.00	0.30	5.00	0.00	0.00	0.00
44.30	2.00	0.30	5.00	0.00	0.00	0.00
44.35	2.00	0.30	5.00	0.00	0.00	0.00
44.40	2.00	0.30	5.00	0.00	0.00	0.00
44.45	2.00	0.30	5.00	0.00	0.00	0.00
44.50	2.00	0.30	5.00	0.00	0.00	0.00

44.55	2.00	0.30	5.00	0.00	0.00	0.00
44.60	2.00	0.30	5.00	0.00	0.00	0.00
44.65	2.00	0.30	5.00	0.00	0.00	0.00
44.70	2.00	0.30	5.00	0.00	0.00	0.00
44.75	2.00	0.30	5.00	0.00	0.00	0.00
44.80	2.00	0.30	5.00	0.00	0.00	0.00
44.85	2.00	0.30	5.00	0.00	0.00	0.00
44.90	2.00	0.30	5.00	0.00	0.00	0.00
44.95	2.00	0.30	5.00	0.00	0.00	0.00
45.00	2.00	0.30	5.00	0.00	0.00	0.00
45.05	2.00	0.30	5.00	0.00	0.00	0.00
45.10	2.00	0.30	5.00	0.00	0.00	0.00
45.15	2.00	0.30	5.00	0.00	0.00	0.00
45.20	2.00	0.30	5.00	0.00	0.00	0.00
45.25	2.00	0.30	5.00	0.00	0.00	0.00
45.30	2.00	0.30	5.00	0.00	0.00	0.00
45.35	2.00	0.30	5.00	0.00	0.00	0.00
45.40	2.00	0.30	5.00	0.00	0.00	0.00
45.45	2.00	0.30	5.00	0.00	0.00	0.00
45.50	2.00	0.30	5.00	0.00	0.00	0.00
45.55	2.00	0.29	5.00	0.00	0.00	0.00
45.60	2.00	0.29	5.00	0.00	0.00	0.00
45.65	2.00	0.29	5.00	0.00	0.00	0.00
45.70	2.00	0.29	5.00	0.00	0.00	0.00
45.75	2.00	0.29	5.00	0.00	0.00	0.00
45.80	2.00	0.29	5.00	0.00	0.00	0.00
45.85	2.00	0.29	5.00	0.00	0.00	0.00
45.90	2.00	0.29	5.00	0.00	0.00	0.00
45.95	2.00	0.29	5.00	0.00	0.00	0.00
46.00	2.00	0.29	5.00	0.00	0.00	0.00
46.05	2.00	0.29	5.00	0.00	0.00	0.00
46.10	2.00	0.29	5.00	0.00	0.00	0.00
46.15	2.00	0.29	5.00	0.00	0.00	0.00
46.20	2.00	0.29	5.00	0.00	0.00	0.00
46.25	2.00	0.29	5.00	0.00	0.00	0.00
46.30	2.00	0.29	5.00	0.00	0.00	0.00
46.35	2.00	0.29	5.00	0.00	0.00	0.00
46.40	2.00	0.29	5.00	0.00	0.00	0.00
46.45	2.00	0.29	5.00	0.00	0.00	0.00
46.50	2.00	0.29	5.00	0.00	0.00	0.00
46.55	2.00	0.29	5.00	0.00	0.00	0.00
46.60	2.00	0.29	5.00	0.00	0.00	0.00
46.65	2.00	0.29	5.00	0.00	0.00	0.00
46.70	2.00	0.29	5.00	0.00	0.00	0.00
46.75	2.00	0.29	5.00	0.00	0.00	0.00
46.80	2.00	0.29	5.00	0.00	0.00	0.00
46.85	2.00	0.29	5.00	0.00	0.00	0.00
46.90	2.00	0.29	5.00	0.00	0.00	0.00
46.95	2.00	0.29	5.00	0.00	0.00	0.00
47.00	2.00	0.29	5.00	0.00	0.00	0.00
47.05	2.00	0.29	5.00	0.00	0.00	0.00
47.10	2.00	0.29	5.00	0.00	0.00	0.00
47.15	2.00	0.29	5.00	0.00	0.00	0.00
47.20	2.00	0.29	5.00	0.00	0.00	0.00
47.25	2.00	0.29	5.00	0.00	0.00	0.00
47.30	2.00	0.29	5.00	0.00	0.00	0.00
47.35	2.00	0.29	5.00	0.00	0.00	0.00
47.40	2.00	0.29	5.00	0.00	0.00	0.00
47.45	2.00	0.29	5.00	0.00	0.00	0.00
47.50	2.00	0.29	5.00	0.00	0.00	0.00
47.55	2.00	0.29	5.00	0.00	0.00	0.00
47.60	2.00	0.29	5.00	0.00	0.00	0.00
47.65	2.00	0.29	5.00	0.00	0.00	0.00
47.70	2.00	0.29	5.00	0.00	0.00	0.00
47.75	2.00	0.29	5.00	0.00	0.00	0.00
47.80	2.00	0.29	5.00	0.00	0.00	0.00
47.85	2.00	0.29	5.00	0.00	0.00	0.00
47.90	2.00	0.29	5.00	0.00	0.00	0.00
47.95	2.00	0.29	5.00	0.00	0.00	0.00
48.00	2.00	0.29	5.00	0.00	0.00	0.00
48.05	2.00	0.29	5.00	0.00	0.00	0.00

48.10	2.00	0.29	5.00	0.00	0.00	0.00
48.15	2.00	0.29	5.00	0.00	0.00	0.00
48.20	2.00	0.29	5.00	0.00	0.00	0.00
48.25	2.00	0.29	5.00	0.00	0.00	0.00
48.30	2.00	0.29	5.00	0.00	0.00	0.00
48.35	2.00	0.29	5.00	0.00	0.00	0.00
48.40	2.00	0.29	5.00	0.00	0.00	0.00
48.45	2.00	0.29	5.00	0.00	0.00	0.00
48.50	2.00	0.29	5.00	0.00	0.00	0.00
48.55	2.00	0.29	5.00	0.00	0.00	0.00
48.60	2.00	0.29	5.00	0.00	0.00	0.00
48.65	2.00	0.29	5.00	0.00	0.00	0.00
48.70	2.00	0.29	5.00	0.00	0.00	0.00
48.75	2.00	0.29	5.00	0.00	0.00	0.00
48.80	2.00	0.29	5.00	0.00	0.00	0.00
48.85	2.00	0.29	5.00	0.00	0.00	0.00
48.90	2.00	0.29	5.00	0.00	0.00	0.00
48.95	2.00	0.29	5.00	0.00	0.00	0.00
49.00	2.00	0.29	5.00	0.00	0.00	0.00
49.05	2.00	0.29	5.00	0.00	0.00	0.00
49.10	2.00	0.29	5.00	0.00	0.00	0.00
49.15	2.00	0.29	5.00	0.00	0.00	0.00
49.20	2.00	0.29	5.00	0.00	0.00	0.00
49.25	2.00	0.29	5.00	0.00	0.00	0.00
49.30	2.00	0.29	5.00	0.00	0.00	0.00
49.35	2.00	0.28	5.00	0.00	0.00	0.00
49.40	2.00	0.28	5.00	0.00	0.00	0.00
49.45	2.00	0.28	5.00	0.00	0.00	0.00
49.50	2.00	0.28	5.00	0.00	0.00	0.00
49.55	2.00	0.28	5.00	0.00	0.00	0.00
49.60	2.00	0.28	5.00	0.00	0.00	0.00
49.65	2.00	0.28	5.00	0.00	0.00	0.00
49.70	2.00	0.28	5.00	0.00	0.00	0.00
49.75	2.00	0.28	5.00	0.00	0.00	0.00
49.80	2.00	0.28	5.00	0.00	0.00	0.00
49.85	2.00	0.28	5.00	0.00	0.00	0.00
49.90	2.00	0.28	5.00	0.00	0.00	0.00
49.95	2.00	0.28	5.00	0.00	0.00	0.00
50.00	2.00	0.28	5.00	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

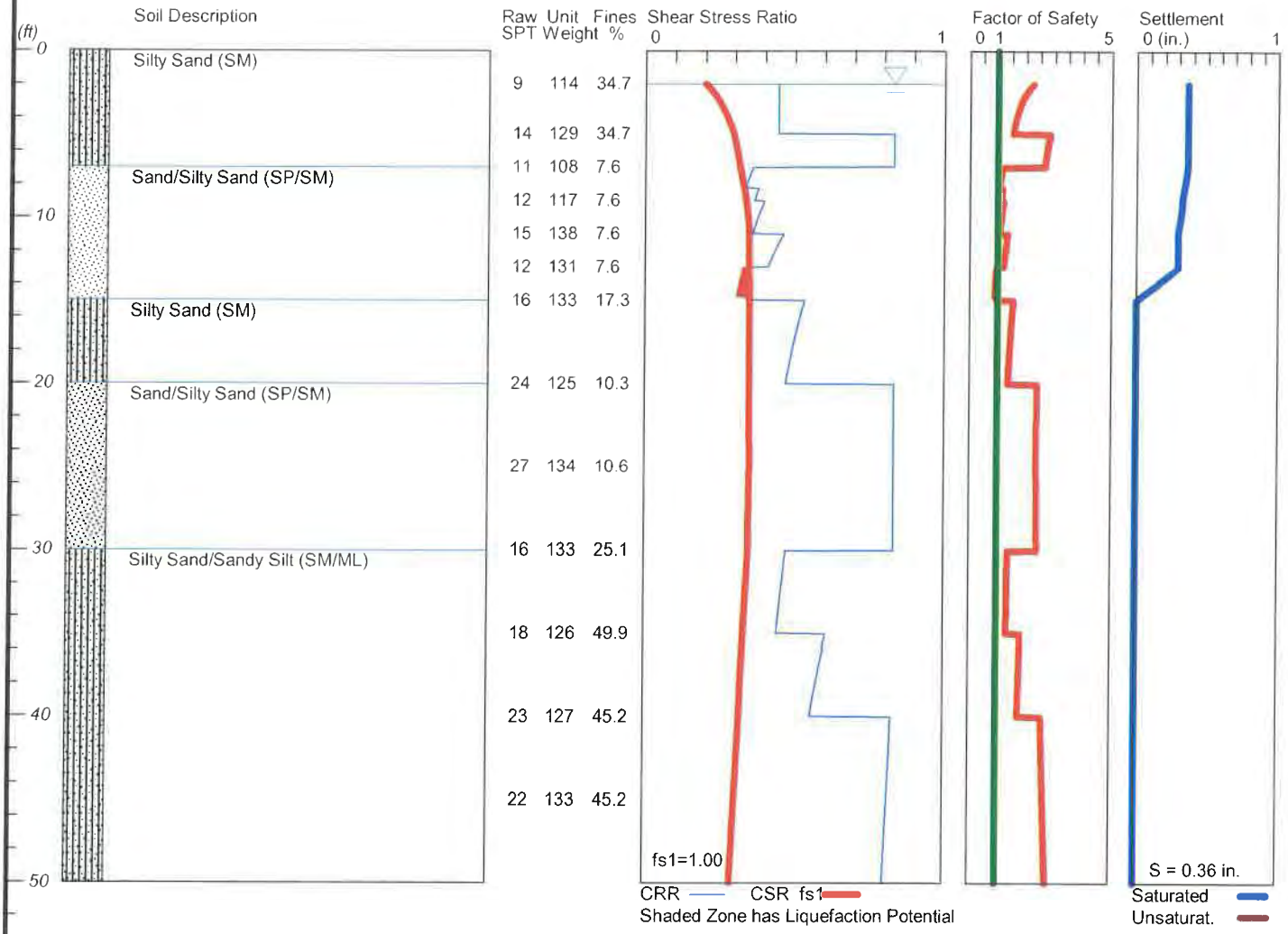
1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B15 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 8/10/2023 9:27:12 AM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B15\B15 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B15
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 15.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B15
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 15.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu, M-correction
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.4
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	9.00	114.00	34.70
5.00	14.00	129.00	34.70
7.00	11.00	108.00	7.60
9.00	12.00	117.00	7.60
11.00	15.00	138.00	7.60
13.00	12.00	131.00	7.60
15.00	16.00	133.00	17.30
20.00	24.00	125.00	10.30
25.00	27.00	134.00	10.60
30.00	16.00	133.00	25.10
35.00	18.00	126.00	49.90
40.00	23.00	127.00	45.20
45.00	22.00	133.00	45.20

Output Results:
Settlement of Saturated Sands=0.36 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.36 in.
Differential Settlement=0.178 to 0.235 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.44	0.20	2.23	0.36	0.00	0.36
2.05	0.44	0.20	2.21	0.36	0.00	0.36
2.10	0.44	0.20	2.18	0.36	0.00	0.36
2.15	0.44	0.21	2.15	0.36	0.00	0.36
2.20	0.44	0.21	2.12	0.36	0.00	0.36
2.25	0.44	0.21	2.10	0.36	0.00	0.36
2.30	0.44	0.21	2.08	0.36	0.00	0.36
2.35	0.44	0.22	2.05	0.36	0.00	0.36
2.40	0.44	0.22	2.03	0.36	0.00	0.36
2.45	0.44	0.22	2.01	0.36	0.00	0.36
2.50	0.44	0.22	1.99	0.36	0.00	0.36
2.55	0.44	0.22	1.97	0.36	0.00	0.36
2.60	0.44	0.23	1.96	0.36	0.00	0.36
2.65	0.44	0.23	1.94	0.36	0.00	0.36
2.70	0.44	0.23	1.92	0.36	0.00	0.36
2.75	0.44	0.23	1.90	0.36	0.00	0.36
2.80	0.44	0.23	1.89	0.36	0.00	0.36
2.85	0.44	0.24	1.87	0.36	0.00	0.36
2.90	0.44	0.24	1.86	0.36	0.00	0.36
2.95	0.44	0.24	1.84	0.36	0.00	0.36
3.00	0.44	0.24	1.83	0.36	0.00	0.36
3.05	0.44	0.24	1.82	0.36	0.00	0.36
3.10	0.44	0.25	1.81	0.36	0.00	0.36
3.15	0.44	0.25	1.79	0.36	0.00	0.36
3.20	0.44	0.25	1.78	0.36	0.00	0.36
3.25	0.44	0.25	1.77	0.36	0.00	0.36
3.30	0.44	0.25	1.76	0.36	0.00	0.36
3.35	0.44	0.25	1.75	0.36	0.00	0.36
3.40	0.44	0.26	1.74	0.36	0.00	0.36
3.45	0.44	0.26	1.73	0.36	0.00	0.36
3.50	0.44	0.26	1.72	0.36	0.00	0.36
3.55	0.44	0.26	1.71	0.36	0.00	0.36
3.60	0.44	0.26	1.70	0.36	0.00	0.36
3.65	0.44	0.26	1.69	0.36	0.00	0.36
3.70	0.44	0.26	1.68	0.36	0.00	0.36
3.75	0.44	0.27	1.67	0.36	0.00	0.36
3.80	0.44	0.27	1.66	0.36	0.00	0.36
3.85	0.44	0.27	1.65	0.36	0.00	0.36
3.90	0.44	0.27	1.65	0.36	0.00	0.36
3.95	0.44	0.27	1.64	0.36	0.00	0.36
4.00	0.44	0.27	1.63	0.36	0.00	0.36
4.05	0.44	0.27	1.62	0.36	0.00	0.36
4.10	0.44	0.27	1.62	0.36	0.00	0.36
4.15	0.44	0.28	1.61	0.36	0.00	0.36
4.20	0.44	0.28	1.60	0.36	0.00	0.36
4.25	0.44	0.28	1.60	0.36	0.00	0.36
4.30	0.44	0.28	1.59	0.36	0.00	0.36
4.35	0.44	0.28	1.58	0.36	0.00	0.36
4.40	0.44	0.28	1.58	0.36	0.00	0.36
4.45	0.44	0.28	1.57	0.36	0.00	0.36
4.50	0.44	0.28	1.56	0.36	0.00	0.36
4.55	0.44	0.28	1.56	0.36	0.00	0.36
4.60	0.44	0.29	1.55	0.36	0.00	0.36
4.65	0.44	0.29	1.55	0.36	0.00	0.36
4.70	0.44	0.29	1.54	0.36	0.00	0.36
4.75	0.44	0.29	1.54	0.36	0.00	0.36
4.80	0.44	0.29	1.53	0.36	0.00	0.36
4.85	0.44	0.29	1.53	0.36	0.00	0.36
4.90	0.44	0.29	1.52	0.36	0.00	0.36
4.95	0.44	0.29	1.52	0.36	0.00	0.36
5.00	0.83	0.29	2.83	0.36	0.00	0.36
5.05	0.83	0.29	2.82	0.36	0.00	0.36
5.10	0.83	0.30	2.81	0.36	0.00	0.36
5.15	0.83	0.30	2.81	0.36	0.00	0.36
5.20	0.83	0.30	2.80	0.36	0.00	0.36
5.25	0.83	0.30	2.80	0.36	0.00	0.36
5.30	0.83	0.30	2.79	0.36	0.00	0.36
5.35	0.83	0.30	2.78	0.36	0.00	0.36
5.40	0.83	0.30	2.78	0.36	0.00	0.36
5.45	0.83	0.30	2.77	0.36	0.00	0.36

5.50	0.83	0.30	2.77	0.36	0.00	0.36
5.55	0.83	0.30	2.76	0.36	0.00	0.36
5.60	0.83	0.30	2.75	0.36	0.00	0.36
5.65	0.83	0.30	2.75	0.36	0.00	0.36
5.70	0.83	0.30	2.74	0.36	0.00	0.36
5.75	0.83	0.30	2.74	0.36	0.00	0.36
5.80	0.83	0.30	2.73	0.36	0.00	0.36
5.85	0.83	0.30	2.73	0.36	0.00	0.36
5.90	0.83	0.30	2.72	0.36	0.00	0.36
5.95	0.83	0.31	2.72	0.36	0.00	0.36
6.00	0.83	0.31	2.71	0.36	0.00	0.36
6.05	0.83	0.31	2.71	0.36	0.00	0.36
6.10	0.83	0.31	2.71	0.36	0.00	0.36
6.15	0.83	0.31	2.70	0.36	0.00	0.36
6.20	0.83	0.31	2.70	0.36	0.00	0.36
6.25	0.83	0.31	2.69	0.36	0.00	0.36
6.30	0.83	0.31	2.69	0.36	0.00	0.36
6.35	0.83	0.31	2.68	0.36	0.00	0.36
6.40	0.83	0.31	2.68	0.36	0.00	0.36
6.45	0.83	0.31	2.68	0.36	0.00	0.36
6.50	0.83	0.31	2.67	0.36	0.00	0.36
6.55	0.83	0.31	2.67	0.36	0.00	0.36
6.60	0.83	0.31	2.66	0.36	0.00	0.36
6.65	0.83	0.31	2.66	0.36	0.00	0.36
6.70	0.83	0.31	2.66	0.36	0.00	0.36
6.75	0.83	0.31	2.65	0.36	0.00	0.36
6.80	0.83	0.31	2.65	0.36	0.00	0.36
6.85	0.83	0.31	2.65	0.36	0.00	0.36
6.90	0.83	0.31	2.64	0.36	0.00	0.36
6.95	0.83	0.31	2.64	0.36	0.00	0.36
7.00	0.36	0.31	1.14	0.36	0.00	0.36
7.05	0.36	0.32	1.14	0.35	0.00	0.35
7.10	0.36	0.32	1.13	0.35	0.00	0.35
7.15	0.36	0.32	1.12	0.35	0.00	0.35
7.20	0.35	0.32	1.12	0.35	0.00	0.35
7.25	0.35	0.32	1.11	0.35	0.00	0.35
7.30	0.35	0.32	1.11	0.35	0.00	0.35
7.35	0.35	0.32	1.10	0.35	0.00	0.35
7.40	0.35	0.32	1.10	0.35	0.00	0.35
7.45	0.35	0.32	1.09	0.35	0.00	0.35
7.50	0.35	0.32	1.08	0.35	0.00	0.35
7.55	0.35	0.32	1.08	0.35	0.00	0.35
7.60	0.35	0.32	1.07	0.35	0.00	0.35
7.65	0.35	0.32	1.07	0.34	0.00	0.34
7.70	0.34	0.32	1.06	0.34	0.00	0.34
7.75	0.34	0.32	1.06	0.34	0.00	0.34
7.80	0.34	0.32	1.05	0.34	0.00	0.34
7.85	0.34	0.32	1.05	0.34	0.00	0.34
7.90	0.34	0.33	1.05	0.34	0.00	0.34
7.95	0.34	0.33	1.04	0.34	0.00	0.34
8.00	0.34	0.33	1.04	0.34	0.00	0.34
8.05	0.34	0.33	1.03	0.34	0.00	0.34
8.10	0.34	0.33	1.03	0.33	0.00	0.33
8.15	0.34	0.33	1.02	0.33	0.00	0.33
8.20	0.33	0.33	1.02	0.33	0.00	0.33
8.25	0.38	0.33	1.15	0.33	0.00	0.33
8.30	0.38	0.33	1.15	0.33	0.00	0.33
8.35	0.38	0.33	1.14	0.33	0.00	0.33
8.40	0.38	0.33	1.14	0.33	0.00	0.33
8.45	0.37	0.33	1.13	0.33	0.00	0.33
8.50	0.37	0.33	1.13	0.33	0.00	0.33
8.55	0.37	0.33	1.12	0.33	0.00	0.33
8.60	0.37	0.33	1.12	0.33	0.00	0.33
8.65	0.37	0.33	1.11	0.32	0.00	0.32
8.70	0.37	0.33	1.11	0.32	0.00	0.32
8.75	0.37	0.33	1.10	0.32	0.00	0.32
8.80	0.37	0.33	1.10	0.32	0.00	0.32
8.85	0.37	0.33	1.09	0.32	0.00	0.32
8.90	0.36	0.34	1.09	0.32	0.00	0.32
8.95	0.36	0.34	1.08	0.32	0.00	0.32
9.00	0.40	0.34	1.19	0.32	0.00	0.32

9.05	0.40	0.34	1.18	0.32	0.00	0.32
9.10	0.40	0.34	1.18	0.32	0.00	0.32
9.15	0.39	0.34	1.17	0.32	0.00	0.32
9.20	0.39	0.34	1.17	0.32	0.00	0.32
9.25	0.39	0.34	1.16	0.32	0.00	0.32
9.30	0.39	0.34	1.16	0.32	0.00	0.32
9.35	0.39	0.34	1.15	0.32	0.00	0.32
9.40	0.39	0.34	1.15	0.32	0.00	0.32
9.45	0.39	0.34	1.14	0.32	0.00	0.32
9.50	0.39	0.34	1.14	0.32	0.00	0.32
9.55	0.39	0.34	1.14	0.32	0.00	0.32
9.60	0.38	0.34	1.13	0.31	0.00	0.31
9.65	0.38	0.34	1.13	0.31	0.00	0.31
9.70	0.38	0.34	1.12	0.31	0.00	0.31
9.75	0.38	0.34	1.12	0.31	0.00	0.31
9.80	0.38	0.34	1.12	0.31	0.00	0.31
9.85	0.38	0.34	1.11	0.31	0.00	0.31
9.90	0.38	0.34	1.11	0.31	0.00	0.31
9.95	0.38	0.34	1.10	0.31	0.00	0.31
10.00	0.38	0.34	1.10	0.31	0.00	0.31
10.05	0.37	0.34	1.10	0.31	0.00	0.31
10.10	0.37	0.34	1.09	0.31	0.00	0.31
10.15	0.37	0.34	1.09	0.31	0.00	0.31
10.20	0.37	0.34	1.08	0.30	0.00	0.30
10.25	0.37	0.34	1.08	0.30	0.00	0.30
10.30	0.37	0.34	1.08	0.30	0.00	0.30
10.35	0.37	0.34	1.07	0.30	0.00	0.30
10.40	0.37	0.34	1.07	0.30	0.00	0.30
10.45	0.37	0.34	1.07	0.30	0.00	0.30
10.50	0.37	0.34	1.06	0.30	0.00	0.30
10.55	0.37	0.34	1.06	0.30	0.00	0.30
10.60	0.36	0.34	1.06	0.30	0.00	0.30
10.65	0.36	0.35	1.05	0.30	0.00	0.30
10.70	0.36	0.35	1.05	0.29	0.00	0.29
10.75	0.36	0.35	1.05	0.29	0.00	0.29
10.80	0.36	0.35	1.04	0.29	0.00	0.29
10.85	0.36	0.35	1.04	0.29	0.00	0.29
10.90	0.36	0.35	1.04	0.29	0.00	0.29
10.95	0.36	0.35	1.03	0.29	0.00	0.29
11.00	0.46	0.35	1.33	0.29	0.00	0.29
11.05	0.46	0.35	1.33	0.29	0.00	0.29
11.10	0.46	0.35	1.32	0.29	0.00	0.29
11.15	0.46	0.35	1.32	0.29	0.00	0.29
11.20	0.46	0.35	1.31	0.29	0.00	0.29
11.25	0.45	0.35	1.31	0.29	0.00	0.29
11.30	0.45	0.35	1.31	0.29	0.00	0.29
11.35	0.45	0.35	1.30	0.29	0.00	0.29
11.40	0.45	0.35	1.30	0.29	0.00	0.29
11.45	0.45	0.35	1.29	0.29	0.00	0.29
11.50	0.45	0.35	1.29	0.29	0.00	0.29
11.55	0.45	0.35	1.28	0.29	0.00	0.29
11.60	0.44	0.35	1.28	0.29	0.00	0.29
11.65	0.44	0.35	1.28	0.29	0.00	0.29
11.70	0.44	0.35	1.27	0.29	0.00	0.29
11.75	0.44	0.35	1.27	0.29	0.00	0.29
11.80	0.44	0.35	1.26	0.29	0.00	0.29
11.85	0.44	0.35	1.26	0.29	0.00	0.29
11.90	0.44	0.35	1.26	0.29	0.00	0.29
11.95	0.43	0.35	1.25	0.29	0.00	0.29
12.00	0.43	0.35	1.25	0.29	0.00	0.29
12.05	0.43	0.35	1.24	0.29	0.00	0.29
12.10	0.43	0.35	1.24	0.29	0.00	0.29
12.15	0.43	0.35	1.24	0.29	0.00	0.29
12.20	0.43	0.35	1.23	0.29	0.00	0.29
12.25	0.43	0.35	1.23	0.29	0.00	0.29
12.30	0.43	0.35	1.23	0.29	0.00	0.29
12.35	0.42	0.35	1.22	0.29	0.00	0.29
12.40	0.42	0.35	1.22	0.29	0.00	0.29
12.45	0.42	0.35	1.22	0.29	0.00	0.29
12.50	0.42	0.35	1.21	0.29	0.00	0.29
12.55	0.42	0.35	1.21	0.29	0.00	0.29

12.60	0.42	0.35	1.21	0.29	0.00	0.29
12.65	0.42	0.35	1.20	0.29	0.00	0.29
12.70	0.42	0.35	1.20	0.29	0.00	0.29
12.75	0.41	0.35	1.20	0.29	0.00	0.29
12.80	0.41	0.35	1.19	0.29	0.00	0.29
12.85	0.41	0.35	1.19	0.29	0.00	0.29
12.90	0.41	0.35	1.19	0.29	0.00	0.29
12.95	0.41	0.35	1.18	0.29	0.00	0.29
13.00	0.32	0.35	0.94*	0.29	0.00	0.29
13.05	0.32	0.35	0.94*	0.28	0.00	0.28
13.10	0.32	0.35	0.93*	0.27	0.00	0.27
13.15	0.32	0.35	0.93*	0.27	0.00	0.27
13.20	0.32	0.35	0.93*	0.26	0.00	0.26
13.25	0.32	0.35	0.93*	0.25	0.00	0.25
13.30	0.32	0.35	0.93*	0.25	0.00	0.25
13.35	0.32	0.35	0.92*	0.24	0.00	0.24
13.40	0.32	0.35	0.92*	0.23	0.00	0.23
13.45	0.32	0.35	0.92*	0.23	0.00	0.23
13.50	0.32	0.35	0.92*	0.22	0.00	0.22
13.55	0.32	0.35	0.92*	0.21	0.00	0.21
13.60	0.32	0.35	0.91*	0.21	0.00	0.21
13.65	0.32	0.35	0.91*	0.20	0.00	0.20
13.70	0.32	0.35	0.91*	0.19	0.00	0.19
13.75	0.32	0.35	0.91*	0.18	0.00	0.18
13.80	0.31	0.35	0.91*	0.18	0.00	0.18
13.85	0.31	0.35	0.90*	0.17	0.00	0.17
13.90	0.31	0.35	0.90*	0.16	0.00	0.16
13.95	0.31	0.35	0.90*	0.15	0.00	0.15
14.00	0.31	0.35	0.90*	0.15	0.00	0.15
14.05	0.31	0.35	0.90*	0.14	0.00	0.14
14.10	0.31	0.35	0.90*	0.13	0.00	0.13
14.15	0.31	0.35	0.89*	0.12	0.00	0.12
14.20	0.31	0.35	0.89*	0.12	0.00	0.12
14.25	0.31	0.35	0.89*	0.11	0.00	0.11
14.30	0.31	0.35	0.89*	0.10	0.00	0.10
14.35	0.31	0.35	0.89*	0.09	0.00	0.09
14.40	0.31	0.35	0.89*	0.09	0.00	0.09
14.45	0.31	0.35	0.88*	0.08	0.00	0.08
14.50	0.31	0.35	0.88*	0.07	0.00	0.07
14.55	0.31	0.35	0.88*	0.06	0.00	0.06
14.60	0.31	0.35	0.88*	0.06	0.00	0.06
14.65	0.31	0.35	0.88*	0.05	0.00	0.05
14.70	0.30	0.35	0.88*	0.04	0.00	0.04
14.75	0.30	0.35	0.87*	0.03	0.00	0.03
14.80	0.34	0.35	0.97*	0.02	0.00	0.02
14.85	0.34	0.35	0.97*	0.02	0.00	0.02
14.90	0.34	0.35	0.97*	0.01	0.00	0.01
14.95	0.34	0.35	0.97*	0.01	0.00	0.01
15.00	0.53	0.35	1.53	0.00	0.00	0.00
15.05	0.53	0.35	1.53	0.00	0.00	0.00
15.10	0.53	0.35	1.53	0.00	0.00	0.00
15.15	0.53	0.35	1.53	0.00	0.00	0.00
15.20	0.53	0.35	1.52	0.00	0.00	0.00
15.25	0.53	0.35	1.52	0.00	0.00	0.00
15.30	0.53	0.35	1.52	0.00	0.00	0.00
15.35	0.53	0.35	1.52	0.00	0.00	0.00
15.40	0.53	0.35	1.51	0.00	0.00	0.00
15.45	0.53	0.35	1.51	0.00	0.00	0.00
15.50	0.53	0.35	1.51	0.00	0.00	0.00
15.55	0.52	0.35	1.51	0.00	0.00	0.00
15.60	0.52	0.35	1.50	0.00	0.00	0.00
15.65	0.52	0.35	1.50	0.00	0.00	0.00
15.70	0.52	0.35	1.50	0.00	0.00	0.00
15.75	0.52	0.35	1.50	0.00	0.00	0.00
15.80	0.52	0.35	1.50	0.00	0.00	0.00
15.85	0.52	0.35	1.49	0.00	0.00	0.00
15.90	0.52	0.35	1.49	0.00	0.00	0.00
15.95	0.52	0.35	1.49	0.00	0.00	0.00
16.00	0.52	0.35	1.49	0.00	0.00	0.00
16.05	0.52	0.35	1.48	0.00	0.00	0.00
16.10	0.52	0.35	1.48	0.00	0.00	0.00

16.15	0.52	0.35	1.48	0.00	0.00	0.00
16.20	0.51	0.35	1.48	0.00	0.00	0.00
16.25	0.51	0.35	1.48	0.00	0.00	0.00
16.30	0.51	0.35	1.47	0.00	0.00	0.00
16.35	0.51	0.35	1.47	0.00	0.00	0.00
16.40	0.51	0.35	1.47	0.00	0.00	0.00
16.45	0.51	0.35	1.47	0.00	0.00	0.00
16.50	0.51	0.35	1.47	0.00	0.00	0.00
16.55	0.51	0.35	1.46	0.00	0.00	0.00
16.60	0.51	0.35	1.46	0.00	0.00	0.00
16.65	0.51	0.35	1.46	0.00	0.00	0.00
16.70	0.51	0.35	1.46	0.00	0.00	0.00
16.75	0.51	0.35	1.46	0.00	0.00	0.00
16.80	0.51	0.35	1.45	0.00	0.00	0.00
16.85	0.51	0.35	1.45	0.00	0.00	0.00
16.90	0.51	0.35	1.45	0.00	0.00	0.00
16.95	0.50	0.35	1.45	0.00	0.00	0.00
17.00	0.50	0.35	1.45	0.00	0.00	0.00
17.05	0.50	0.35	1.45	0.00	0.00	0.00
17.10	0.50	0.35	1.44	0.00	0.00	0.00
17.15	0.50	0.35	1.44	0.00	0.00	0.00
17.20	0.50	0.35	1.44	0.00	0.00	0.00
17.25	0.50	0.35	1.44	0.00	0.00	0.00
17.30	0.50	0.35	1.44	0.00	0.00	0.00
17.35	0.50	0.35	1.43	0.00	0.00	0.00
17.40	0.50	0.35	1.43	0.00	0.00	0.00
17.45	0.50	0.35	1.43	0.00	0.00	0.00
17.50	0.50	0.35	1.43	0.00	0.00	0.00
17.55	0.50	0.35	1.43	0.00	0.00	0.00
17.60	0.50	0.35	1.43	0.00	0.00	0.00
17.65	0.50	0.35	1.42	0.00	0.00	0.00
17.70	0.50	0.35	1.42	0.00	0.00	0.00
17.75	0.49	0.35	1.42	0.00	0.00	0.00
17.80	0.49	0.35	1.42	0.00	0.00	0.00
17.85	0.49	0.35	1.42	0.00	0.00	0.00
17.90	0.49	0.35	1.42	0.00	0.00	0.00
17.95	0.49	0.35	1.41	0.00	0.00	0.00
18.00	0.49	0.35	1.41	0.00	0.00	0.00
18.05	0.49	0.35	1.41	0.00	0.00	0.00
18.10	0.49	0.35	1.41	0.00	0.00	0.00
18.15	0.49	0.35	1.41	0.00	0.00	0.00
18.20	0.49	0.35	1.41	0.00	0.00	0.00
18.25	0.49	0.35	1.40	0.00	0.00	0.00
18.30	0.49	0.35	1.40	0.00	0.00	0.00
18.35	0.49	0.35	1.40	0.00	0.00	0.00
18.40	0.49	0.35	1.40	0.00	0.00	0.00
18.45	0.49	0.35	1.40	0.00	0.00	0.00
18.50	0.49	0.35	1.40	0.00	0.00	0.00
18.55	0.49	0.35	1.39	0.00	0.00	0.00
18.60	0.48	0.35	1.39	0.00	0.00	0.00
18.65	0.48	0.35	1.39	0.00	0.00	0.00
18.70	0.48	0.35	1.39	0.00	0.00	0.00
18.75	0.48	0.35	1.39	0.00	0.00	0.00
18.80	0.48	0.35	1.39	0.00	0.00	0.00
18.85	0.48	0.35	1.39	0.00	0.00	0.00
18.90	0.48	0.35	1.38	0.00	0.00	0.00
18.95	0.48	0.35	1.38	0.00	0.00	0.00
19.00	0.48	0.35	1.38	0.00	0.00	0.00
19.05	0.48	0.35	1.38	0.00	0.00	0.00
19.10	0.48	0.35	1.38	0.00	0.00	0.00
19.15	0.48	0.35	1.38	0.00	0.00	0.00
19.20	0.48	0.35	1.37	0.00	0.00	0.00
19.25	0.48	0.35	1.37	0.00	0.00	0.00
19.30	0.48	0.35	1.37	0.00	0.00	0.00
19.35	0.48	0.35	1.37	0.00	0.00	0.00
19.40	0.48	0.35	1.37	0.00	0.00	0.00
19.45	0.48	0.35	1.37	0.00	0.00	0.00
19.50	0.48	0.35	1.37	0.00	0.00	0.00
19.55	0.47	0.35	1.36	0.00	0.00	0.00
19.60	0.47	0.35	1.36	0.00	0.00	0.00
19.65	0.47	0.35	1.36	0.00	0.00	0.00

19.70	0.47	0.35	1.36	0.00	0.00	0.00
19.75	0.47	0.35	1.36	0.00	0.00	0.00
19.80	0.47	0.35	1.36	0.00	0.00	0.00
19.85	0.47	0.35	1.36	0.00	0.00	0.00
19.90	0.47	0.35	1.36	0.00	0.00	0.00
19.95	0.47	0.35	1.35	0.00	0.00	0.00
20.00	0.47	0.35	1.35	0.00	0.00	0.00
20.05	0.83	0.35	2.39	0.00	0.00	0.00
20.10	0.83	0.35	2.39	0.00	0.00	0.00
20.15	0.83	0.35	2.39	0.00	0.00	0.00
20.20	0.83	0.35	2.39	0.00	0.00	0.00
20.25	0.83	0.35	2.39	0.00	0.00	0.00
20.30	0.83	0.35	2.39	0.00	0.00	0.00
20.35	0.83	0.35	2.39	0.00	0.00	0.00
20.40	0.83	0.35	2.39	0.00	0.00	0.00
20.45	0.83	0.35	2.39	0.00	0.00	0.00
20.50	0.83	0.35	2.39	0.00	0.00	0.00
20.55	0.83	0.35	2.39	0.00	0.00	0.00
20.60	0.83	0.35	2.39	0.00	0.00	0.00
20.65	0.83	0.35	2.39	0.00	0.00	0.00
20.70	0.83	0.35	2.39	0.00	0.00	0.00
20.75	0.83	0.35	2.39	0.00	0.00	0.00
20.80	0.83	0.35	2.39	0.00	0.00	0.00
20.85	0.83	0.35	2.39	0.00	0.00	0.00
20.90	0.83	0.35	2.39	0.00	0.00	0.00
20.95	0.83	0.35	2.39	0.00	0.00	0.00
21.00	0.83	0.35	2.39	0.00	0.00	0.00
21.05	0.83	0.35	2.39	0.00	0.00	0.00
21.10	0.83	0.35	2.39	0.00	0.00	0.00
21.15	0.83	0.35	2.39	0.00	0.00	0.00
21.20	0.83	0.35	2.39	0.00	0.00	0.00
21.25	0.83	0.35	2.39	0.00	0.00	0.00
21.30	0.83	0.35	2.39	0.00	0.00	0.00
21.35	0.83	0.35	2.38	0.00	0.00	0.00
21.40	0.83	0.35	2.38	0.00	0.00	0.00
21.45	0.83	0.35	2.38	0.00	0.00	0.00
21.50	0.83	0.35	2.38	0.00	0.00	0.00
21.55	0.83	0.35	2.38	0.00	0.00	0.00
21.60	0.83	0.35	2.38	0.00	0.00	0.00
21.65	0.83	0.35	2.38	0.00	0.00	0.00
21.70	0.83	0.35	2.38	0.00	0.00	0.00
21.75	0.83	0.35	2.38	0.00	0.00	0.00
21.80	0.83	0.35	2.38	0.00	0.00	0.00
21.85	0.83	0.35	2.38	0.00	0.00	0.00
21.90	0.83	0.35	2.38	0.00	0.00	0.00
21.95	0.83	0.35	2.38	0.00	0.00	0.00
22.00	0.83	0.35	2.38	0.00	0.00	0.00
22.05	0.83	0.35	2.38	0.00	0.00	0.00
22.10	0.83	0.35	2.38	0.00	0.00	0.00
22.15	0.83	0.35	2.38	0.00	0.00	0.00
22.20	0.83	0.35	2.38	0.00	0.00	0.00
22.25	0.83	0.35	2.38	0.00	0.00	0.00
22.30	0.83	0.35	2.38	0.00	0.00	0.00
22.35	0.83	0.35	2.38	0.00	0.00	0.00
22.40	0.83	0.35	2.38	0.00	0.00	0.00
22.45	0.83	0.35	2.38	0.00	0.00	0.00
22.50	0.83	0.35	2.38	0.00	0.00	0.00
22.55	0.83	0.35	2.38	0.00	0.00	0.00
22.60	0.83	0.35	2.38	0.00	0.00	0.00
22.65	0.83	0.35	2.38	0.00	0.00	0.00
22.70	0.83	0.35	2.38	0.00	0.00	0.00
22.75	0.83	0.35	2.38	0.00	0.00	0.00
22.80	0.83	0.35	2.38	0.00	0.00	0.00
22.85	0.83	0.35	2.38	0.00	0.00	0.00
22.90	0.83	0.35	2.38	0.00	0.00	0.00
22.95	0.83	0.35	2.38	0.00	0.00	0.00
23.00	0.83	0.35	2.38	0.00	0.00	0.00
23.05	0.83	0.35	2.38	0.00	0.00	0.00
23.10	0.83	0.35	2.38	0.00	0.00	0.00
23.15	0.83	0.35	2.38	0.00	0.00	0.00
23.20	0.83	0.35	2.38	0.00	0.00	0.00

23.25	0.83	0.35	2.38	0.00	0.00	0.00
23.30	0.83	0.35	2.38	0.00	0.00	0.00
23.35	0.83	0.35	2.38	0.00	0.00	0.00
23.40	0.83	0.35	2.38	0.00	0.00	0.00
23.45	0.83	0.35	2.38	0.00	0.00	0.00
23.50	0.83	0.35	2.38	0.00	0.00	0.00
23.55	0.83	0.35	2.38	0.00	0.00	0.00
23.60	0.83	0.35	2.38	0.00	0.00	0.00
23.65	0.83	0.35	2.38	0.00	0.00	0.00
23.70	0.83	0.35	2.38	0.00	0.00	0.00
23.75	0.83	0.35	2.38	0.00	0.00	0.00
23.80	0.83	0.35	2.38	0.00	0.00	0.00
23.85	0.83	0.35	2.38	0.00	0.00	0.00
23.90	0.83	0.35	2.38	0.00	0.00	0.00
23.95	0.83	0.35	2.38	0.00	0.00	0.00
24.00	0.83	0.35	2.38	0.00	0.00	0.00
24.05	0.83	0.35	2.38	0.00	0.00	0.00
24.10	0.83	0.35	2.38	0.00	0.00	0.00
24.15	0.83	0.35	2.38	0.00	0.00	0.00
24.20	0.83	0.35	2.38	0.00	0.00	0.00
24.25	0.83	0.35	2.38	0.00	0.00	0.00
24.30	0.83	0.35	2.38	0.00	0.00	0.00
24.35	0.83	0.35	2.38	0.00	0.00	0.00
24.40	0.83	0.35	2.38	0.00	0.00	0.00
24.45	0.83	0.35	2.38	0.00	0.00	0.00
24.50	0.83	0.35	2.38	0.00	0.00	0.00
24.55	0.83	0.35	2.38	0.00	0.00	0.00
24.60	0.83	0.35	2.38	0.00	0.00	0.00
24.65	0.83	0.35	2.38	0.00	0.00	0.00
24.70	0.83	0.35	2.38	0.00	0.00	0.00
24.75	0.83	0.35	2.38	0.00	0.00	0.00
24.80	0.83	0.35	2.38	0.00	0.00	0.00
24.85	0.83	0.35	2.38	0.00	0.00	0.00
24.90	0.83	0.35	2.38	0.00	0.00	0.00
24.95	0.83	0.35	2.38	0.00	0.00	0.00
25.00	0.83	0.35	2.38	0.00	0.00	0.00
25.05	0.83	0.35	2.38	0.00	0.00	0.00
25.10	0.83	0.35	2.38	0.00	0.00	0.00
25.15	0.83	0.35	2.38	0.00	0.00	0.00
25.20	0.83	0.35	2.38	0.00	0.00	0.00
25.25	0.83	0.35	2.38	0.00	0.00	0.00
25.30	0.83	0.35	2.38	0.00	0.00	0.00
25.35	0.83	0.35	2.38	0.00	0.00	0.00
25.40	0.83	0.35	2.38	0.00	0.00	0.00
25.45	0.83	0.35	2.38	0.00	0.00	0.00
25.50	0.83	0.35	2.38	0.00	0.00	0.00
25.55	0.83	0.35	2.38	0.00	0.00	0.00
25.60	0.83	0.35	2.38	0.00	0.00	0.00
25.65	0.83	0.35	2.38	0.00	0.00	0.00
25.70	0.83	0.35	2.38	0.00	0.00	0.00
25.75	0.83	0.35	2.38	0.00	0.00	0.00
25.80	0.83	0.35	2.38	0.00	0.00	0.00
25.85	0.83	0.35	2.38	0.00	0.00	0.00
25.90	0.83	0.35	2.38	0.00	0.00	0.00
25.95	0.83	0.35	2.38	0.00	0.00	0.00
26.00	0.83	0.35	2.38	0.00	0.00	0.00
26.05	0.83	0.35	2.38	0.00	0.00	0.00
26.10	0.83	0.35	2.38	0.00	0.00	0.00
26.15	0.83	0.35	2.38	0.00	0.00	0.00
26.20	0.83	0.35	2.38	0.00	0.00	0.00
26.25	0.83	0.35	2.38	0.00	0.00	0.00
26.30	0.83	0.35	2.38	0.00	0.00	0.00
26.35	0.83	0.35	2.39	0.00	0.00	0.00
26.40	0.83	0.35	2.39	0.00	0.00	0.00
26.45	0.83	0.35	2.39	0.00	0.00	0.00
26.50	0.83	0.35	2.39	0.00	0.00	0.00
26.55	0.83	0.35	2.39	0.00	0.00	0.00
26.60	0.83	0.35	2.39	0.00	0.00	0.00
26.65	0.83	0.35	2.39	0.00	0.00	0.00
26.70	0.83	0.35	2.39	0.00	0.00	0.00
26.75	0.83	0.35	2.39	0.00	0.00	0.00

26.80	0.83	0.35	2.39	0.00	0.00	0.00
26.85	0.83	0.35	2.39	0.00	0.00	0.00
26.90	0.83	0.35	2.39	0.00	0.00	0.00
26.95	0.83	0.35	2.39	0.00	0.00	0.00
27.00	0.83	0.35	2.39	0.00	0.00	0.00
27.05	0.83	0.35	2.39	0.00	0.00	0.00
27.10	0.83	0.35	2.39	0.00	0.00	0.00
27.15	0.83	0.35	2.39	0.00	0.00	0.00
27.20	0.83	0.35	2.39	0.00	0.00	0.00
27.25	0.83	0.35	2.39	0.00	0.00	0.00
27.30	0.83	0.35	2.39	0.00	0.00	0.00
27.35	0.83	0.35	2.39	0.00	0.00	0.00
27.40	0.83	0.35	2.39	0.00	0.00	0.00
27.45	0.83	0.35	2.39	0.00	0.00	0.00
27.50	0.83	0.35	2.39	0.00	0.00	0.00
27.55	0.83	0.35	2.39	0.00	0.00	0.00
27.60	0.83	0.35	2.39	0.00	0.00	0.00
27.65	0.83	0.35	2.39	0.00	0.00	0.00
27.70	0.83	0.35	2.39	0.00	0.00	0.00
27.75	0.83	0.35	2.39	0.00	0.00	0.00
27.80	0.83	0.35	2.39	0.00	0.00	0.00
27.85	0.83	0.35	2.39	0.00	0.00	0.00
27.90	0.83	0.35	2.39	0.00	0.00	0.00
27.95	0.83	0.35	2.39	0.00	0.00	0.00
28.00	0.83	0.35	2.39	0.00	0.00	0.00
28.05	0.83	0.35	2.39	0.00	0.00	0.00
28.10	0.83	0.35	2.39	0.00	0.00	0.00
28.15	0.83	0.35	2.39	0.00	0.00	0.00
28.20	0.83	0.35	2.39	0.00	0.00	0.00
28.25	0.83	0.35	2.40	0.00	0.00	0.00
28.30	0.83	0.35	2.40	0.00	0.00	0.00
28.35	0.83	0.35	2.40	0.00	0.00	0.00
28.40	0.83	0.35	2.40	0.00	0.00	0.00
28.45	0.83	0.35	2.40	0.00	0.00	0.00
28.50	0.83	0.35	2.40	0.00	0.00	0.00
28.55	0.83	0.35	2.40	0.00	0.00	0.00
28.60	0.83	0.35	2.40	0.00	0.00	0.00
28.65	0.83	0.35	2.40	0.00	0.00	0.00
28.70	0.83	0.35	2.40	0.00	0.00	0.00
28.75	0.83	0.35	2.40	0.00	0.00	0.00
28.80	0.83	0.35	2.40	0.00	0.00	0.00
28.85	0.83	0.35	2.40	0.00	0.00	0.00
28.90	0.83	0.35	2.40	0.00	0.00	0.00
28.95	0.83	0.35	2.40	0.00	0.00	0.00
29.00	0.83	0.35	2.40	0.00	0.00	0.00
29.05	0.83	0.35	2.40	0.00	0.00	0.00
29.10	0.83	0.35	2.40	0.00	0.00	0.00
29.15	0.83	0.35	2.40	0.00	0.00	0.00
29.20	0.83	0.35	2.40	0.00	0.00	0.00
29.25	0.83	0.35	2.40	0.00	0.00	0.00
29.30	0.83	0.35	2.40	0.00	0.00	0.00
29.35	0.83	0.35	2.40	0.00	0.00	0.00
29.40	0.83	0.35	2.40	0.00	0.00	0.00
29.45	0.83	0.35	2.40	0.00	0.00	0.00
29.50	0.83	0.35	2.40	0.00	0.00	0.00
29.55	0.83	0.35	2.40	0.00	0.00	0.00
29.60	0.83	0.35	2.40	0.00	0.00	0.00
29.65	0.83	0.35	2.40	0.00	0.00	0.00
29.70	0.83	0.35	2.40	0.00	0.00	0.00
29.75	0.83	0.35	2.40	0.00	0.00	0.00
29.80	0.83	0.35	2.40	0.00	0.00	0.00
29.85	0.83	0.35	2.40	0.00	0.00	0.00
29.90	0.83	0.35	2.40	0.00	0.00	0.00
29.95	0.83	0.35	2.40	0.00	0.00	0.00
30.00	0.83	0.35	2.40	0.00	0.00	0.00
30.05	0.47	0.35	1.37	0.00	0.00	0.00
30.10	0.47	0.35	1.37	0.00	0.00	0.00
30.15	0.47	0.34	1.37	0.00	0.00	0.00
30.20	0.47	0.34	1.37	0.00	0.00	0.00
30.25	0.47	0.34	1.37	0.00	0.00	0.00
30.30	0.47	0.34	1.37	0.00	0.00	0.00

30.35	0.47	0.34	1.37	0.00	0.00	0.00
30.40	0.47	0.34	1.37	0.00	0.00	0.00
30.45	0.47	0.34	1.37	0.00	0.00	0.00
30.50	0.47	0.34	1.37	0.00	0.00	0.00
30.55	0.47	0.34	1.37	0.00	0.00	0.00
30.60	0.47	0.34	1.36	0.00	0.00	0.00
30.65	0.47	0.34	1.36	0.00	0.00	0.00
30.70	0.47	0.34	1.36	0.00	0.00	0.00
30.75	0.47	0.34	1.36	0.00	0.00	0.00
30.80	0.47	0.34	1.36	0.00	0.00	0.00
30.85	0.47	0.34	1.36	0.00	0.00	0.00
30.90	0.47	0.34	1.36	0.00	0.00	0.00
30.95	0.47	0.34	1.36	0.00	0.00	0.00
31.00	0.47	0.34	1.36	0.00	0.00	0.00
31.05	0.47	0.34	1.36	0.00	0.00	0.00
31.10	0.47	0.34	1.36	0.00	0.00	0.00
31.15	0.47	0.34	1.36	0.00	0.00	0.00
31.20	0.47	0.34	1.36	0.00	0.00	0.00
31.25	0.46	0.34	1.36	0.00	0.00	0.00
31.30	0.46	0.34	1.36	0.00	0.00	0.00
31.35	0.46	0.34	1.36	0.00	0.00	0.00
31.40	0.46	0.34	1.36	0.00	0.00	0.00
31.45	0.46	0.34	1.36	0.00	0.00	0.00
31.50	0.46	0.34	1.36	0.00	0.00	0.00
31.55	0.46	0.34	1.36	0.00	0.00	0.00
31.60	0.46	0.34	1.36	0.00	0.00	0.00
31.65	0.46	0.34	1.36	0.00	0.00	0.00
31.70	0.46	0.34	1.36	0.00	0.00	0.00
31.75	0.46	0.34	1.36	0.00	0.00	0.00
31.80	0.46	0.34	1.36	0.00	0.00	0.00
31.85	0.46	0.34	1.36	0.00	0.00	0.00
31.90	0.46	0.34	1.36	0.00	0.00	0.00
31.95	0.46	0.34	1.36	0.00	0.00	0.00
32.00	0.46	0.34	1.35	0.00	0.00	0.00
32.05	0.46	0.34	1.35	0.00	0.00	0.00
32.10	0.46	0.34	1.35	0.00	0.00	0.00
32.15	0.46	0.34	1.35	0.00	0.00	0.00
32.20	0.46	0.34	1.35	0.00	0.00	0.00
32.25	0.46	0.34	1.35	0.00	0.00	0.00
32.30	0.46	0.34	1.35	0.00	0.00	0.00
32.35	0.46	0.34	1.35	0.00	0.00	0.00
32.40	0.46	0.34	1.35	0.00	0.00	0.00
32.45	0.46	0.34	1.35	0.00	0.00	0.00
32.50	0.46	0.34	1.35	0.00	0.00	0.00
32.55	0.46	0.34	1.35	0.00	0.00	0.00
32.60	0.46	0.34	1.35	0.00	0.00	0.00
32.65	0.46	0.34	1.35	0.00	0.00	0.00
32.70	0.46	0.34	1.35	0.00	0.00	0.00
32.75	0.46	0.34	1.35	0.00	0.00	0.00
32.80	0.46	0.34	1.35	0.00	0.00	0.00
32.85	0.46	0.34	1.35	0.00	0.00	0.00
32.90	0.45	0.34	1.35	0.00	0.00	0.00
32.95	0.45	0.34	1.35	0.00	0.00	0.00
33.00	0.45	0.34	1.35	0.00	0.00	0.00
33.05	0.45	0.34	1.35	0.00	0.00	0.00
33.10	0.45	0.34	1.35	0.00	0.00	0.00
33.15	0.45	0.34	1.35	0.00	0.00	0.00
33.20	0.45	0.34	1.35	0.00	0.00	0.00
33.25	0.45	0.34	1.35	0.00	0.00	0.00
33.30	0.45	0.34	1.35	0.00	0.00	0.00
33.35	0.45	0.34	1.35	0.00	0.00	0.00
33.40	0.45	0.34	1.35	0.00	0.00	0.00
33.45	0.45	0.34	1.35	0.00	0.00	0.00
33.50	0.45	0.34	1.35	0.00	0.00	0.00
33.55	0.45	0.34	1.35	0.00	0.00	0.00
33.60	0.45	0.33	1.35	0.00	0.00	0.00
33.65	0.45	0.33	1.35	0.00	0.00	0.00
33.70	0.45	0.33	1.35	0.00	0.00	0.00
33.75	0.45	0.33	1.35	0.00	0.00	0.00
33.80	0.45	0.33	1.34	0.00	0.00	0.00
33.85	0.45	0.33	1.34	0.00	0.00	0.00

33.90	0.45	0.33	1.34	0.00	0.00	0.00
33.95	0.45	0.33	1.34	0.00	0.00	0.00
34.00	0.45	0.33	1.34	0.00	0.00	0.00
34.05	0.45	0.33	1.34	0.00	0.00	0.00
34.10	0.45	0.33	1.34	0.00	0.00	0.00
34.15	0.45	0.33	1.34	0.00	0.00	0.00
34.20	0.45	0.33	1.34	0.00	0.00	0.00
34.25	0.45	0.33	1.34	0.00	0.00	0.00
34.30	0.45	0.33	1.34	0.00	0.00	0.00
34.35	0.45	0.33	1.34	0.00	0.00	0.00
34.40	0.45	0.33	1.34	0.00	0.00	0.00
34.45	0.45	0.33	1.34	0.00	0.00	0.00
34.50	0.45	0.33	1.34	0.00	0.00	0.00
34.55	0.45	0.33	1.34	0.00	0.00	0.00
34.60	0.45	0.33	1.34	0.00	0.00	0.00
34.65	0.45	0.33	1.34	0.00	0.00	0.00
34.70	0.44	0.33	1.34	0.00	0.00	0.00
34.75	0.44	0.33	1.34	0.00	0.00	0.00
34.80	0.44	0.33	1.34	0.00	0.00	0.00
34.85	0.44	0.33	1.34	0.00	0.00	0.00
34.90	0.44	0.33	1.34	0.00	0.00	0.00
34.95	0.44	0.33	1.34	0.00	0.00	0.00
35.00	0.44	0.33	1.34	0.00	0.00	0.00
35.05	0.61	0.33	1.83	0.00	0.00	0.00
35.10	0.61	0.33	1.83	0.00	0.00	0.00
35.15	0.60	0.33	1.83	0.00	0.00	0.00
35.20	0.60	0.33	1.83	0.00	0.00	0.00
35.25	0.60	0.33	1.83	0.00	0.00	0.00
35.30	0.60	0.33	1.83	0.00	0.00	0.00
35.35	0.60	0.33	1.83	0.00	0.00	0.00
35.40	0.60	0.33	1.82	0.00	0.00	0.00
35.45	0.60	0.33	1.82	0.00	0.00	0.00
35.50	0.60	0.33	1.82	0.00	0.00	0.00
35.55	0.60	0.33	1.82	0.00	0.00	0.00
35.60	0.60	0.33	1.82	0.00	0.00	0.00
35.65	0.60	0.33	1.82	0.00	0.00	0.00
35.70	0.60	0.33	1.82	0.00	0.00	0.00
35.75	0.60	0.33	1.82	0.00	0.00	0.00
35.80	0.60	0.33	1.82	0.00	0.00	0.00
35.85	0.60	0.33	1.82	0.00	0.00	0.00
35.90	0.60	0.33	1.81	0.00	0.00	0.00
35.95	0.60	0.33	1.81	0.00	0.00	0.00
36.00	0.60	0.33	1.82	0.00	0.00	0.00
36.05	0.60	0.33	1.82	0.00	0.00	0.00
36.10	0.60	0.33	1.82	0.00	0.00	0.00
36.15	0.60	0.33	1.82	0.00	0.00	0.00
36.20	0.60	0.33	1.82	0.00	0.00	0.00
36.25	0.60	0.33	1.82	0.00	0.00	0.00
36.30	0.59	0.33	1.82	0.00	0.00	0.00
36.35	0.59	0.33	1.82	0.00	0.00	0.00
36.40	0.59	0.33	1.81	0.00	0.00	0.00
36.45	0.59	0.33	1.81	0.00	0.00	0.00
36.50	0.59	0.33	1.81	0.00	0.00	0.00
36.55	0.59	0.33	1.81	0.00	0.00	0.00
36.60	0.59	0.33	1.81	0.00	0.00	0.00
36.65	0.59	0.33	1.81	0.00	0.00	0.00
36.70	0.59	0.33	1.81	0.00	0.00	0.00
36.75	0.59	0.33	1.81	0.00	0.00	0.00
36.80	0.59	0.33	1.80	0.00	0.00	0.00
36.85	0.59	0.33	1.80	0.00	0.00	0.00
36.90	0.59	0.33	1.80	0.00	0.00	0.00
36.95	0.59	0.33	1.80	0.00	0.00	0.00
37.00	0.59	0.33	1.80	0.00	0.00	0.00
37.05	0.59	0.33	1.80	0.00	0.00	0.00
37.10	0.59	0.33	1.80	0.00	0.00	0.00
37.15	0.58	0.33	1.80	0.00	0.00	0.00
37.20	0.58	0.33	1.80	0.00	0.00	0.00
37.25	0.58	0.33	1.79	0.00	0.00	0.00
37.30	0.58	0.33	1.79	0.00	0.00	0.00
37.35	0.58	0.32	1.79	0.00	0.00	0.00
37.40	0.58	0.32	1.79	0.00	0.00	0.00

37.45	0.58	0.32	1.79	0.00	0.00	0.00
37.50	0.58	0.32	1.79	0.00	0.00	0.00
37.55	0.58	0.32	1.79	0.00	0.00	0.00
37.60	0.58	0.32	1.79	0.00	0.00	0.00
37.65	0.58	0.32	1.79	0.00	0.00	0.00
37.70	0.58	0.32	1.79	0.00	0.00	0.00
37.75	0.58	0.32	1.78	0.00	0.00	0.00
37.80	0.58	0.32	1.78	0.00	0.00	0.00
37.85	0.58	0.32	1.78	0.00	0.00	0.00
37.90	0.58	0.32	1.78	0.00	0.00	0.00
37.95	0.58	0.32	1.78	0.00	0.00	0.00
38.00	0.58	0.32	1.78	0.00	0.00	0.00
38.05	0.57	0.32	1.78	0.00	0.00	0.00
38.10	0.57	0.32	1.78	0.00	0.00	0.00
38.15	0.57	0.32	1.78	0.00	0.00	0.00
38.20	0.57	0.32	1.78	0.00	0.00	0.00
38.25	0.57	0.32	1.78	0.00	0.00	0.00
38.30	0.57	0.32	1.77	0.00	0.00	0.00
38.35	0.57	0.32	1.77	0.00	0.00	0.00
38.40	0.57	0.32	1.77	0.00	0.00	0.00
38.45	0.57	0.32	1.77	0.00	0.00	0.00
38.50	0.57	0.32	1.77	0.00	0.00	0.00
38.55	0.57	0.32	1.77	0.00	0.00	0.00
38.60	0.57	0.32	1.77	0.00	0.00	0.00
38.65	0.57	0.32	1.77	0.00	0.00	0.00
38.70	0.57	0.32	1.77	0.00	0.00	0.00
38.75	0.57	0.32	1.77	0.00	0.00	0.00
38.80	0.57	0.32	1.77	0.00	0.00	0.00
38.85	0.57	0.32	1.76	0.00	0.00	0.00
38.90	0.57	0.32	1.76	0.00	0.00	0.00
38.95	0.57	0.32	1.76	0.00	0.00	0.00
39.00	0.57	0.32	1.76	0.00	0.00	0.00
39.05	0.56	0.32	1.76	0.00	0.00	0.00
39.10	0.56	0.32	1.76	0.00	0.00	0.00
39.15	0.56	0.32	1.76	0.00	0.00	0.00
39.20	0.56	0.32	1.76	0.00	0.00	0.00
39.25	0.56	0.32	1.76	0.00	0.00	0.00
39.30	0.56	0.32	1.76	0.00	0.00	0.00
39.35	0.56	0.32	1.76	0.00	0.00	0.00
39.40	0.56	0.32	1.76	0.00	0.00	0.00
39.45	0.56	0.32	1.75	0.00	0.00	0.00
39.50	0.56	0.32	1.75	0.00	0.00	0.00
39.55	0.56	0.32	1.75	0.00	0.00	0.00
39.60	0.56	0.32	1.75	0.00	0.00	0.00
39.65	0.56	0.32	1.75	0.00	0.00	0.00
39.70	0.56	0.32	1.75	0.00	0.00	0.00
39.75	0.56	0.32	1.75	0.00	0.00	0.00
39.80	0.56	0.32	1.75	0.00	0.00	0.00
39.85	0.56	0.32	1.75	0.00	0.00	0.00
39.90	0.56	0.32	1.75	0.00	0.00	0.00
39.95	0.56	0.32	1.75	0.00	0.00	0.00
40.00	0.56	0.32	1.75	0.00	0.00	0.00
40.05	0.83	0.32	2.60	0.00	0.00	0.00
40.10	0.83	0.32	2.60	0.00	0.00	0.00
40.15	0.83	0.32	2.60	0.00	0.00	0.00
40.20	0.83	0.32	2.60	0.00	0.00	0.00
40.25	0.82	0.32	2.60	0.00	0.00	0.00
40.30	0.82	0.32	2.60	0.00	0.00	0.00
40.35	0.82	0.32	2.60	0.00	0.00	0.00
40.40	0.82	0.32	2.60	0.00	0.00	0.00
40.45	0.82	0.32	2.60	0.00	0.00	0.00
40.50	0.82	0.32	2.60	0.00	0.00	0.00
40.55	0.82	0.32	2.60	0.00	0.00	0.00
40.60	0.82	0.32	2.60	0.00	0.00	0.00
40.65	0.82	0.32	2.61	0.00	0.00	0.00
40.70	0.82	0.32	2.61	0.00	0.00	0.00
40.75	0.82	0.32	2.61	0.00	0.00	0.00
40.80	0.82	0.32	2.61	0.00	0.00	0.00
40.85	0.82	0.32	2.61	0.00	0.00	0.00
40.90	0.82	0.32	2.61	0.00	0.00	0.00
40.95	0.82	0.32	2.61	0.00	0.00	0.00

41.00	0.82	0.32	2.61	0.00	0.00	0.00
41.05	0.82	0.32	2.61	0.00	0.00	0.00
41.10	0.82	0.32	2.61	0.00	0.00	0.00
41.15	0.82	0.31	2.61	0.00	0.00	0.00
41.20	0.82	0.31	2.61	0.00	0.00	0.00
41.25	0.82	0.31	2.61	0.00	0.00	0.00
41.30	0.82	0.31	2.61	0.00	0.00	0.00
41.35	0.82	0.31	2.62	0.00	0.00	0.00
41.40	0.82	0.31	2.62	0.00	0.00	0.00
41.45	0.82	0.31	2.62	0.00	0.00	0.00
41.50	0.82	0.31	2.62	0.00	0.00	0.00
41.55	0.82	0.31	2.62	0.00	0.00	0.00
41.60	0.82	0.31	2.62	0.00	0.00	0.00
41.65	0.82	0.31	2.62	0.00	0.00	0.00
41.70	0.82	0.31	2.62	0.00	0.00	0.00
41.75	0.82	0.31	2.62	0.00	0.00	0.00
41.80	0.82	0.31	2.62	0.00	0.00	0.00
41.85	0.82	0.31	2.62	0.00	0.00	0.00
41.90	0.82	0.31	2.62	0.00	0.00	0.00
41.95	0.82	0.31	2.62	0.00	0.00	0.00
42.00	0.82	0.31	2.62	0.00	0.00	0.00
42.05	0.82	0.31	2.63	0.00	0.00	0.00
42.10	0.82	0.31	2.63	0.00	0.00	0.00
42.15	0.82	0.31	2.63	0.00	0.00	0.00
42.20	0.82	0.31	2.63	0.00	0.00	0.00
42.25	0.82	0.31	2.63	0.00	0.00	0.00
42.30	0.82	0.31	2.63	0.00	0.00	0.00
42.35	0.82	0.31	2.63	0.00	0.00	0.00
42.40	0.82	0.31	2.63	0.00	0.00	0.00
42.45	0.82	0.31	2.63	0.00	0.00	0.00
42.50	0.82	0.31	2.63	0.00	0.00	0.00
42.55	0.82	0.31	2.63	0.00	0.00	0.00
42.60	0.82	0.31	2.63	0.00	0.00	0.00
42.65	0.82	0.31	2.63	0.00	0.00	0.00
42.70	0.82	0.31	2.64	0.00	0.00	0.00
42.75	0.82	0.31	2.64	0.00	0.00	0.00
42.80	0.82	0.31	2.64	0.00	0.00	0.00
42.85	0.82	0.31	2.64	0.00	0.00	0.00
42.90	0.82	0.31	2.64	0.00	0.00	0.00
42.95	0.82	0.31	2.64	0.00	0.00	0.00
43.00	0.82	0.31	2.64	0.00	0.00	0.00
43.05	0.82	0.31	2.64	0.00	0.00	0.00
43.10	0.82	0.31	2.64	0.00	0.00	0.00
43.15	0.82	0.31	2.64	0.00	0.00	0.00
43.20	0.82	0.31	2.64	0.00	0.00	0.00
43.25	0.82	0.31	2.64	0.00	0.00	0.00
43.30	0.82	0.31	2.64	0.00	0.00	0.00
43.35	0.82	0.31	2.65	0.00	0.00	0.00
43.40	0.82	0.31	2.65	0.00	0.00	0.00
43.45	0.82	0.31	2.65	0.00	0.00	0.00
43.50	0.82	0.31	2.65	0.00	0.00	0.00
43.55	0.82	0.31	2.65	0.00	0.00	0.00
43.60	0.82	0.31	2.65	0.00	0.00	0.00
43.65	0.82	0.31	2.65	0.00	0.00	0.00
43.70	0.82	0.31	2.65	0.00	0.00	0.00
43.75	0.82	0.31	2.65	0.00	0.00	0.00
43.80	0.82	0.31	2.65	0.00	0.00	0.00
43.85	0.82	0.31	2.65	0.00	0.00	0.00
43.90	0.82	0.31	2.65	0.00	0.00	0.00
43.95	0.82	0.31	2.65	0.00	0.00	0.00
44.00	0.82	0.31	2.66	0.00	0.00	0.00
44.05	0.82	0.31	2.66	0.00	0.00	0.00
44.10	0.82	0.31	2.66	0.00	0.00	0.00
44.15	0.82	0.31	2.66	0.00	0.00	0.00
44.20	0.81	0.31	2.66	0.00	0.00	0.00
44.25	0.81	0.31	2.66	0.00	0.00	0.00
44.30	0.81	0.31	2.66	0.00	0.00	0.00
44.35	0.81	0.31	2.66	0.00	0.00	0.00
44.40	0.81	0.31	2.66	0.00	0.00	0.00
44.45	0.81	0.31	2.66	0.00	0.00	0.00
44.50	0.81	0.31	2.66	0.00	0.00	0.00

44.55	0.81	0.31	2.66	0.00	0.00	0.00
44.60	0.81	0.31	2.67	0.00	0.00	0.00
44.65	0.81	0.31	2.67	0.00	0.00	0.00
44.70	0.81	0.31	2.67	0.00	0.00	0.00
44.75	0.81	0.30	2.67	0.00	0.00	0.00
44.80	0.81	0.30	2.67	0.00	0.00	0.00
44.85	0.81	0.30	2.67	0.00	0.00	0.00
44.90	0.81	0.30	2.67	0.00	0.00	0.00
44.95	0.81	0.30	2.67	0.00	0.00	0.00
45.00	0.81	0.30	2.67	0.00	0.00	0.00
45.05	0.81	0.30	2.67	0.00	0.00	0.00
45.10	0.81	0.30	2.67	0.00	0.00	0.00
45.15	0.81	0.30	2.67	0.00	0.00	0.00
45.20	0.81	0.30	2.68	0.00	0.00	0.00
45.25	0.81	0.30	2.68	0.00	0.00	0.00
45.30	0.81	0.30	2.68	0.00	0.00	0.00
45.35	0.81	0.30	2.68	0.00	0.00	0.00
45.40	0.81	0.30	2.68	0.00	0.00	0.00
45.45	0.81	0.30	2.68	0.00	0.00	0.00
45.50	0.81	0.30	2.68	0.00	0.00	0.00
45.55	0.81	0.30	2.68	0.00	0.00	0.00
45.60	0.81	0.30	2.68	0.00	0.00	0.00
45.65	0.81	0.30	2.68	0.00	0.00	0.00
45.70	0.81	0.30	2.68	0.00	0.00	0.00
45.75	0.81	0.30	2.69	0.00	0.00	0.00
45.80	0.81	0.30	2.69	0.00	0.00	0.00
45.85	0.81	0.30	2.69	0.00	0.00	0.00
45.90	0.81	0.30	2.69	0.00	0.00	0.00
45.95	0.81	0.30	2.69	0.00	0.00	0.00
46.00	0.81	0.30	2.69	0.00	0.00	0.00
46.05	0.81	0.30	2.69	0.00	0.00	0.00
46.10	0.81	0.30	2.69	0.00	0.00	0.00
46.15	0.81	0.30	2.69	0.00	0.00	0.00
46.20	0.81	0.30	2.69	0.00	0.00	0.00
46.25	0.81	0.30	2.69	0.00	0.00	0.00
46.30	0.81	0.30	2.70	0.00	0.00	0.00
46.35	0.81	0.30	2.70	0.00	0.00	0.00
46.40	0.81	0.30	2.70	0.00	0.00	0.00
46.45	0.81	0.30	2.70	0.00	0.00	0.00
46.50	0.81	0.30	2.70	0.00	0.00	0.00
46.55	0.81	0.30	2.70	0.00	0.00	0.00
46.60	0.81	0.30	2.70	0.00	0.00	0.00
46.65	0.81	0.30	2.70	0.00	0.00	0.00
46.70	0.81	0.30	2.70	0.00	0.00	0.00
46.75	0.81	0.30	2.70	0.00	0.00	0.00
46.80	0.81	0.30	2.71	0.00	0.00	0.00
46.85	0.81	0.30	2.71	0.00	0.00	0.00
46.90	0.81	0.30	2.71	0.00	0.00	0.00
46.95	0.81	0.30	2.71	0.00	0.00	0.00
47.00	0.81	0.30	2.71	0.00	0.00	0.00
47.05	0.81	0.30	2.71	0.00	0.00	0.00
47.10	0.81	0.30	2.71	0.00	0.00	0.00
47.15	0.81	0.30	2.71	0.00	0.00	0.00
47.20	0.81	0.30	2.71	0.00	0.00	0.00
47.25	0.81	0.30	2.71	0.00	0.00	0.00
47.30	0.81	0.30	2.71	0.00	0.00	0.00
47.35	0.81	0.30	2.72	0.00	0.00	0.00
47.40	0.81	0.30	2.72	0.00	0.00	0.00
47.45	0.81	0.30	2.72	0.00	0.00	0.00
47.50	0.81	0.30	2.72	0.00	0.00	0.00
47.55	0.81	0.30	2.72	0.00	0.00	0.00
47.60	0.81	0.30	2.72	0.00	0.00	0.00
47.65	0.81	0.30	2.72	0.00	0.00	0.00
47.70	0.81	0.30	2.72	0.00	0.00	0.00
47.75	0.81	0.30	2.72	0.00	0.00	0.00
47.80	0.81	0.30	2.72	0.00	0.00	0.00
47.85	0.81	0.30	2.73	0.00	0.00	0.00
47.90	0.81	0.30	2.73	0.00	0.00	0.00
47.95	0.81	0.30	2.73	0.00	0.00	0.00
48.00	0.80	0.30	2.73	0.00	0.00	0.00
48.05	0.80	0.29	2.73	0.00	0.00	0.00

48.10	0.80	0.29	2.73	0.00	0.00	0.00
48.15	0.80	0.29	2.73	0.00	0.00	0.00
48.20	0.80	0.29	2.73	0.00	0.00	0.00
48.25	0.80	0.29	2.73	0.00	0.00	0.00
48.30	0.80	0.29	2.73	0.00	0.00	0.00
48.35	0.80	0.29	2.73	0.00	0.00	0.00
48.40	0.80	0.29	2.74	0.00	0.00	0.00
48.45	0.80	0.29	2.74	0.00	0.00	0.00
48.50	0.80	0.29	2.74	0.00	0.00	0.00
48.55	0.80	0.29	2.74	0.00	0.00	0.00
48.60	0.80	0.29	2.74	0.00	0.00	0.00
48.65	0.80	0.29	2.74	0.00	0.00	0.00
48.70	0.80	0.29	2.74	0.00	0.00	0.00
48.75	0.80	0.29	2.74	0.00	0.00	0.00
48.80	0.80	0.29	2.74	0.00	0.00	0.00
48.85	0.80	0.29	2.74	0.00	0.00	0.00
48.90	0.80	0.29	2.75	0.00	0.00	0.00
48.95	0.80	0.29	2.75	0.00	0.00	0.00
49.00	0.80	0.29	2.75	0.00	0.00	0.00
49.05	0.80	0.29	2.75	0.00	0.00	0.00
49.10	0.80	0.29	2.75	0.00	0.00	0.00
49.15	0.80	0.29	2.75	0.00	0.00	0.00
49.20	0.80	0.29	2.75	0.00	0.00	0.00
49.25	0.80	0.29	2.75	0.00	0.00	0.00
49.30	0.80	0.29	2.75	0.00	0.00	0.00
49.35	0.80	0.29	2.75	0.00	0.00	0.00
49.40	0.80	0.29	2.76	0.00	0.00	0.00
49.45	0.80	0.29	2.76	0.00	0.00	0.00
49.50	0.80	0.29	2.76	0.00	0.00	0.00
49.55	0.80	0.29	2.76	0.00	0.00	0.00
49.60	0.80	0.29	2.76	0.00	0.00	0.00
49.65	0.80	0.29	2.76	0.00	0.00	0.00
49.70	0.80	0.29	2.76	0.00	0.00	0.00
49.75	0.80	0.29	2.76	0.00	0.00	0.00
49.80	0.80	0.29	2.76	0.00	0.00	0.00
49.85	0.80	0.29	2.76	0.00	0.00	0.00
49.90	0.80	0.29	2.77	0.00	0.00	0.00
49.95	0.80	0.29	2.77	0.00	0.00	0.00
50.00	0.80	0.29	2.77	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

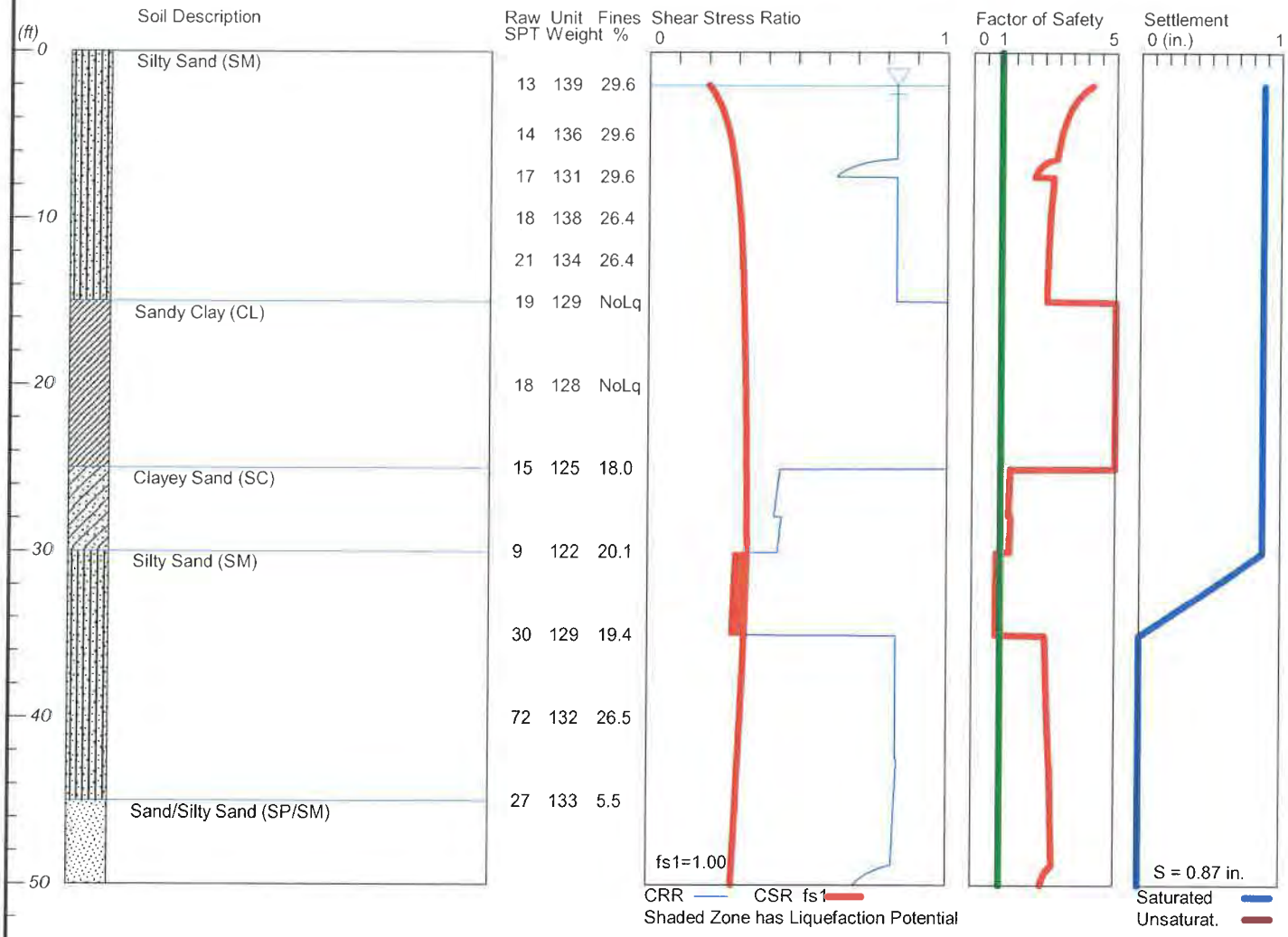
1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B17 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

Krazan

012-22165

Plate A-1

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 8/9/2023 11:19:46 AM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B17\B17 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B17
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 6.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B17
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 6.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu, M-correction
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.4
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	13.00	139.00	29.60
5.00	14.00	136.00	29.60
7.50	17.00	131.00	29.60
10.00	18.00	138.00	26.40
12.50	21.00	134.00	26.40
15.00	19.00	129.00	NoLiq
20.00	18.00	128.00	NoLiq
25.00	15.00	125.00	18.00
30.00	9.00	122.00	20.10
35.00	30.00	129.00	19.40
40.00	72.00	132.00	26.50
45.00	27.00	133.00	5.50

Output Results:
Settlement of Saturated Sands=0.87 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.87 in.
Differential Settlement=0.437 to 0.576 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.83	0.20	4.18	0.87	0.00	0.87
2.05	0.83	0.20	4.14	0.87	0.00	0.87
2.10	0.83	0.20	4.09	0.87	0.00	0.87
2.15	0.83	0.20	4.05	0.87	0.00	0.87
2.20	0.83	0.21	4.01	0.87	0.00	0.87
2.25	0.83	0.21	3.98	0.87	0.00	0.87
2.30	0.83	0.21	3.94	0.87	0.00	0.87
2.35	0.83	0.21	3.91	0.87	0.00	0.87
2.40	0.83	0.21	3.87	0.87	0.00	0.87
2.45	0.83	0.22	3.84	0.87	0.00	0.87
2.50	0.83	0.22	3.81	0.87	0.00	0.87
2.55	0.83	0.22	3.78	0.87	0.00	0.87
2.60	0.83	0.22	3.75	0.87	0.00	0.87
2.65	0.83	0.22	3.73	0.87	0.00	0.87
2.70	0.83	0.22	3.70	0.87	0.00	0.87
2.75	0.83	0.23	3.68	0.87	0.00	0.87
2.80	0.83	0.23	3.65	0.87	0.00	0.87
2.85	0.83	0.23	3.63	0.87	0.00	0.87
2.90	0.83	0.23	3.61	0.87	0.00	0.87
2.95	0.83	0.23	3.59	0.87	0.00	0.87
3.00	0.83	0.23	3.56	0.87	0.00	0.87
3.05	0.83	0.23	3.54	0.87	0.00	0.87
3.10	0.83	0.24	3.53	0.87	0.00	0.87
3.15	0.83	0.24	3.51	0.87	0.00	0.87
3.20	0.83	0.24	3.49	0.87	0.00	0.87
3.25	0.83	0.24	3.47	0.87	0.00	0.87
3.30	0.83	0.24	3.45	0.87	0.00	0.87
3.35	0.83	0.24	3.44	0.87	0.00	0.87
3.40	0.83	0.24	3.42	0.87	0.00	0.87
3.45	0.83	0.24	3.40	0.87	0.00	0.87
3.50	0.83	0.25	3.39	0.87	0.00	0.87
3.55	0.83	0.25	3.37	0.87	0.00	0.87
3.60	0.83	0.25	3.36	0.87	0.00	0.87
3.65	0.83	0.25	3.35	0.87	0.00	0.87
3.70	0.83	0.25	3.33	0.87	0.00	0.87
3.75	0.83	0.25	3.32	0.87	0.00	0.87
3.80	0.83	0.25	3.31	0.87	0.00	0.87
3.85	0.83	0.25	3.29	0.87	0.00	0.87
3.90	0.83	0.25	3.28	0.87	0.00	0.87
3.95	0.83	0.25	3.27	0.87	0.00	0.87
4.00	0.83	0.25	3.26	0.87	0.00	0.87
4.05	0.83	0.26	3.25	0.87	0.00	0.87
4.10	0.83	0.26	3.24	0.87	0.00	0.87
4.15	0.83	0.26	3.23	0.87	0.00	0.87
4.20	0.83	0.26	3.22	0.87	0.00	0.87
4.25	0.83	0.26	3.21	0.87	0.00	0.87
4.30	0.83	0.26	3.20	0.87	0.00	0.87
4.35	0.83	0.26	3.19	0.87	0.00	0.87
4.40	0.83	0.26	3.18	0.87	0.00	0.87
4.45	0.83	0.26	3.17	0.87	0.00	0.87
4.50	0.83	0.26	3.16	0.87	0.00	0.87
4.55	0.83	0.26	3.15	0.87	0.00	0.87
4.60	0.83	0.26	3.14	0.87	0.00	0.87
4.65	0.83	0.27	3.13	0.87	0.00	0.87
4.70	0.83	0.27	3.12	0.87	0.00	0.87
4.75	0.83	0.27	3.12	0.87	0.00	0.87
4.80	0.83	0.27	3.11	0.87	0.00	0.87
4.85	0.83	0.27	3.10	0.87	0.00	0.87
4.90	0.83	0.27	3.09	0.87	0.00	0.87
4.95	0.83	0.27	3.08	0.87	0.00	0.87
5.00	0.83	0.27	3.08	0.87	0.00	0.87
5.05	0.83	0.27	3.07	0.87	0.00	0.87
5.10	0.83	0.27	3.06	0.87	0.00	0.87
5.15	0.83	0.27	3.06	0.87	0.00	0.87
5.20	0.83	0.27	3.05	0.87	0.00	0.87
5.25	0.83	0.27	3.04	0.87	0.00	0.87
5.30	0.83	0.27	3.04	0.87	0.00	0.87
5.35	0.83	0.27	3.03	0.87	0.00	0.87
5.40	0.83	0.27	3.02	0.87	0.00	0.87
5.45	0.83	0.28	3.02	0.87	0.00	0.87
5.50	0.83	0.28	3.01	0.87	0.00	0.87

5.55	0.83	0.28	3.00	0.87	0.00	0.87
5.60	0.83	0.28	3.00	0.87	0.00	0.87
5.65	0.83	0.28	2.99	0.87	0.00	0.87
5.70	0.83	0.28	2.99	0.87	0.00	0.87
5.75	0.83	0.28	2.98	0.87	0.00	0.87
5.80	0.83	0.28	2.98	0.87	0.00	0.87
5.85	0.83	0.28	2.97	0.87	0.00	0.87
5.90	0.83	0.28	2.96	0.87	0.00	0.87
5.95	0.83	0.28	2.96	0.87	0.00	0.87
6.00	0.83	0.28	2.95	0.87	0.00	0.87
6.05	0.83	0.28	2.95	0.87	0.00	0.87
6.10	0.83	0.28	2.94	0.87	0.00	0.87
6.15	0.83	0.28	2.94	0.87	0.00	0.87
6.20	0.83	0.28	2.93	0.87	0.00	0.87
6.25	0.83	0.28	2.93	0.87	0.00	0.87
6.30	0.83	0.28	2.92	0.87	0.00	0.87
6.35	0.83	0.28	2.92	0.87	0.00	0.87
6.40	0.82	0.28	2.87	0.87	0.00	0.87
6.45	0.79	0.29	2.76	0.87	0.00	0.87
6.50	0.76	0.29	2.68	0.87	0.00	0.87
6.55	0.75	0.29	2.61	0.87	0.00	0.87
6.60	0.73	0.29	2.56	0.87	0.00	0.87
6.65	0.72	0.29	2.51	0.87	0.00	0.87
6.70	0.71	0.29	2.47	0.87	0.00	0.87
6.75	0.70	0.29	2.43	0.87	0.00	0.87
6.80	0.69	0.29	2.40	0.87	0.00	0.87
6.85	0.68	0.29	2.37	0.87	0.00	0.87
6.90	0.68	0.29	2.35	0.87	0.00	0.87
6.95	0.67	0.29	2.32	0.87	0.00	0.87
7.00	0.67	0.29	2.30	0.87	0.00	0.87
7.05	0.66	0.29	2.28	0.87	0.00	0.87
7.10	0.66	0.29	2.26	0.87	0.00	0.87
7.15	0.65	0.29	2.24	0.87	0.00	0.87
7.20	0.65	0.29	2.22	0.87	0.00	0.87
7.25	0.64	0.29	2.21	0.87	0.00	0.87
7.30	0.64	0.29	2.19	0.87	0.00	0.87
7.35	0.64	0.29	2.18	0.87	0.00	0.87
7.40	0.63	0.29	2.16	0.87	0.00	0.87
7.45	0.63	0.29	2.15	0.87	0.00	0.87
7.50	0.83	0.29	2.83	0.87	0.00	0.87
7.55	0.83	0.29	2.83	0.87	0.00	0.87
7.60	0.83	0.29	2.83	0.87	0.00	0.87
7.65	0.83	0.29	2.82	0.87	0.00	0.87
7.70	0.83	0.29	2.82	0.87	0.00	0.87
7.75	0.83	0.30	2.81	0.87	0.00	0.87
7.80	0.83	0.30	2.81	0.87	0.00	0.87
7.85	0.83	0.30	2.81	0.87	0.00	0.87
7.90	0.83	0.30	2.81	0.87	0.00	0.87
7.95	0.83	0.30	2.80	0.87	0.00	0.87
8.00	0.83	0.30	2.80	0.87	0.00	0.87
8.05	0.83	0.30	2.80	0.87	0.00	0.87
8.10	0.83	0.30	2.79	0.87	0.00	0.87
8.15	0.83	0.30	2.79	0.87	0.00	0.87
8.20	0.83	0.30	2.79	0.87	0.00	0.87
8.25	0.83	0.30	2.78	0.87	0.00	0.87
8.30	0.83	0.30	2.78	0.87	0.00	0.87
8.35	0.83	0.30	2.78	0.87	0.00	0.87
8.40	0.83	0.30	2.78	0.87	0.00	0.87
8.45	0.83	0.30	2.77	0.87	0.00	0.87
8.50	0.83	0.30	2.77	0.87	0.00	0.87
8.55	0.83	0.30	2.77	0.87	0.00	0.87
8.60	0.83	0.30	2.76	0.87	0.00	0.87
8.65	0.83	0.30	2.76	0.87	0.00	0.87
8.70	0.83	0.30	2.76	0.87	0.00	0.87
8.75	0.83	0.30	2.76	0.87	0.00	0.87
8.80	0.83	0.30	2.75	0.87	0.00	0.87
8.85	0.83	0.30	2.75	0.87	0.00	0.87
8.90	0.83	0.30	2.75	0.87	0.00	0.87
8.95	0.83	0.30	2.75	0.87	0.00	0.87
9.00	0.83	0.30	2.74	0.87	0.00	0.87
9.05	0.83	0.30	2.74	0.87	0.00	0.87

9.10	0.83	0.30	2.74	0.87	0.00	0.87
9.15	0.83	0.30	2.74	0.87	0.00	0.87
9.20	0.83	0.30	2.73	0.87	0.00	0.87
9.25	0.83	0.30	2.73	0.87	0.00	0.87
9.30	0.83	0.30	2.73	0.87	0.00	0.87
9.35	0.83	0.30	2.73	0.87	0.00	0.87
9.40	0.83	0.30	2.73	0.87	0.00	0.87
9.45	0.83	0.31	2.72	0.87	0.00	0.87
9.50	0.83	0.31	2.72	0.87	0.00	0.87
9.55	0.83	0.31	2.72	0.87	0.00	0.87
9.60	0.83	0.31	2.72	0.87	0.00	0.87
9.65	0.83	0.31	2.71	0.87	0.00	0.87
9.70	0.83	0.31	2.71	0.87	0.00	0.87
9.75	0.83	0.31	2.71	0.87	0.00	0.87
9.80	0.83	0.31	2.71	0.87	0.00	0.87
9.85	0.83	0.31	2.71	0.87	0.00	0.87
9.90	0.83	0.31	2.70	0.87	0.00	0.87
9.95	0.83	0.31	2.70	0.87	0.00	0.87
10.00	0.83	0.31	2.70	0.87	0.00	0.87
10.05	0.83	0.31	2.70	0.87	0.00	0.87
10.10	0.83	0.31	2.70	0.87	0.00	0.87
10.15	0.83	0.31	2.70	0.87	0.00	0.87
10.20	0.83	0.31	2.69	0.87	0.00	0.87
10.25	0.83	0.31	2.69	0.87	0.00	0.87
10.30	0.83	0.31	2.69	0.87	0.00	0.87
10.35	0.83	0.31	2.69	0.87	0.00	0.87
10.40	0.83	0.31	2.69	0.87	0.00	0.87
10.45	0.83	0.31	2.69	0.87	0.00	0.87
10.50	0.83	0.31	2.69	0.87	0.00	0.87
10.55	0.83	0.31	2.68	0.87	0.00	0.87
10.60	0.83	0.31	2.68	0.87	0.00	0.87
10.65	0.83	0.31	2.68	0.87	0.00	0.87
10.70	0.83	0.31	2.68	0.87	0.00	0.87
10.75	0.83	0.31	2.68	0.87	0.00	0.87
10.80	0.83	0.31	2.68	0.87	0.00	0.87
10.85	0.83	0.31	2.68	0.87	0.00	0.87
10.90	0.83	0.31	2.68	0.87	0.00	0.87
10.95	0.83	0.31	2.67	0.87	0.00	0.87
11.00	0.83	0.31	2.67	0.87	0.00	0.87
11.05	0.83	0.31	2.67	0.87	0.00	0.87
11.10	0.83	0.31	2.67	0.87	0.00	0.87
11.15	0.83	0.31	2.67	0.87	0.00	0.87
11.20	0.83	0.31	2.67	0.87	0.00	0.87
11.25	0.83	0.31	2.67	0.87	0.00	0.87
11.30	0.83	0.31	2.67	0.87	0.00	0.87
11.35	0.83	0.31	2.67	0.87	0.00	0.87
11.40	0.83	0.31	2.66	0.87	0.00	0.87
11.45	0.83	0.31	2.66	0.87	0.00	0.87
11.50	0.83	0.31	2.66	0.87	0.00	0.87
11.55	0.83	0.31	2.66	0.87	0.00	0.87
11.60	0.83	0.31	2.66	0.87	0.00	0.87
11.65	0.83	0.31	2.66	0.87	0.00	0.87
11.70	0.83	0.31	2.66	0.87	0.00	0.87
11.75	0.83	0.31	2.66	0.87	0.00	0.87
11.80	0.83	0.31	2.66	0.87	0.00	0.87
11.85	0.83	0.31	2.65	0.87	0.00	0.87
11.90	0.83	0.31	2.65	0.87	0.00	0.87
11.95	0.83	0.31	2.65	0.87	0.00	0.87
12.00	0.83	0.31	2.65	0.87	0.00	0.87
12.05	0.83	0.31	2.65	0.87	0.00	0.87
12.10	0.83	0.31	2.65	0.87	0.00	0.87
12.15	0.83	0.31	2.65	0.87	0.00	0.87
12.20	0.83	0.31	2.65	0.87	0.00	0.87
12.25	0.83	0.31	2.65	0.87	0.00	0.87
12.30	0.83	0.31	2.65	0.87	0.00	0.87
12.35	0.83	0.31	2.65	0.87	0.00	0.87
12.40	0.83	0.31	2.64	0.87	0.00	0.87
12.45	0.83	0.31	2.64	0.87	0.00	0.87
12.50	0.83	0.31	2.64	0.87	0.00	0.87
12.55	0.83	0.31	2.64	0.87	0.00	0.87
12.60	0.83	0.31	2.64	0.87	0.00	0.87

12.65	0.83	0.31	2.64	0.87	0.00	0.87
12.70	0.83	0.31	2.64	0.87	0.00	0.87
12.75	0.83	0.31	2.64	0.87	0.00	0.87
12.80	0.83	0.32	2.64	0.87	0.00	0.87
12.85	0.83	0.32	2.64	0.87	0.00	0.87
12.90	0.83	0.32	2.63	0.87	0.00	0.87
12.95	0.83	0.32	2.63	0.87	0.00	0.87
13.00	0.83	0.32	2.63	0.87	0.00	0.87
13.05	0.83	0.32	2.63	0.87	0.00	0.87
13.10	0.83	0.32	2.63	0.87	0.00	0.87
13.15	0.83	0.32	2.63	0.87	0.00	0.87
13.20	0.83	0.32	2.63	0.87	0.00	0.87
13.25	0.83	0.32	2.63	0.87	0.00	0.87
13.30	0.83	0.32	2.63	0.87	0.00	0.87
13.35	0.83	0.32	2.63	0.87	0.00	0.87
13.40	0.83	0.32	2.63	0.87	0.00	0.87
13.45	0.83	0.32	2.62	0.87	0.00	0.87
13.50	0.83	0.32	2.62	0.87	0.00	0.87
13.55	0.83	0.32	2.62	0.87	0.00	0.87
13.60	0.83	0.32	2.62	0.87	0.00	0.87
13.65	0.83	0.32	2.62	0.87	0.00	0.87
13.70	0.83	0.32	2.62	0.87	0.00	0.87
13.75	0.83	0.32	2.62	0.87	0.00	0.87
13.80	0.83	0.32	2.62	0.87	0.00	0.87
13.85	0.83	0.32	2.62	0.87	0.00	0.87
13.90	0.83	0.32	2.62	0.87	0.00	0.87
13.95	0.83	0.32	2.62	0.87	0.00	0.87
14.00	0.83	0.32	2.61	0.87	0.00	0.87
14.05	0.83	0.32	2.61	0.87	0.00	0.87
14.10	0.83	0.32	2.61	0.87	0.00	0.87
14.15	0.83	0.32	2.61	0.87	0.00	0.87
14.20	0.83	0.32	2.61	0.87	0.00	0.87
14.25	0.83	0.32	2.61	0.87	0.00	0.87
14.30	0.83	0.32	2.61	0.87	0.00	0.87
14.35	0.83	0.32	2.61	0.87	0.00	0.87
14.40	0.83	0.32	2.61	0.87	0.00	0.87
14.45	0.83	0.32	2.61	0.87	0.00	0.87
14.50	0.83	0.32	2.61	0.87	0.00	0.87
14.55	0.83	0.32	2.61	0.87	0.00	0.87
14.60	0.83	0.32	2.61	0.87	0.00	0.87
14.65	0.83	0.32	2.61	0.87	0.00	0.87
14.70	0.83	0.32	2.60	0.87	0.00	0.87
14.75	0.83	0.32	2.60	0.87	0.00	0.87
14.80	0.83	0.32	2.60	0.87	0.00	0.87
14.85	0.83	0.32	2.60	0.87	0.00	0.87
14.90	0.83	0.32	2.60	0.87	0.00	0.87
14.95	0.83	0.32	2.60	0.87	0.00	0.87
15.00	2.00	0.32	5.00	0.87	0.00	0.87
15.05	2.00	0.32	5.00	0.87	0.00	0.87
15.10	2.00	0.32	5.00	0.87	0.00	0.87
15.15	2.00	0.32	5.00	0.87	0.00	0.87
15.20	2.00	0.32	5.00	0.87	0.00	0.87
15.25	2.00	0.32	5.00	0.87	0.00	0.87
15.30	2.00	0.32	5.00	0.87	0.00	0.87
15.35	2.00	0.32	5.00	0.87	0.00	0.87
15.40	2.00	0.32	5.00	0.87	0.00	0.87
15.45	2.00	0.32	5.00	0.87	0.00	0.87
15.50	2.00	0.32	5.00	0.87	0.00	0.87
15.55	2.00	0.32	5.00	0.87	0.00	0.87
15.60	2.00	0.32	5.00	0.87	0.00	0.87
15.65	2.00	0.32	5.00	0.87	0.00	0.87
15.70	2.00	0.32	5.00	0.87	0.00	0.87
15.75	2.00	0.32	5.00	0.87	0.00	0.87
15.80	2.00	0.32	5.00	0.87	0.00	0.87
15.85	2.00	0.32	5.00	0.87	0.00	0.87
15.90	2.00	0.32	5.00	0.87	0.00	0.87
15.95	2.00	0.32	5.00	0.87	0.00	0.87
16.00	2.00	0.32	5.00	0.87	0.00	0.87
16.05	2.00	0.32	5.00	0.87	0.00	0.87
16.10	2.00	0.32	5.00	0.87	0.00	0.87
16.15	2.00	0.32	5.00	0.87	0.00	0.87

16.20	2.00	0.32	5.00	0.87	0.00	0.87
16.25	2.00	0.32	5.00	0.87	0.00	0.87
16.30	2.00	0.32	5.00	0.87	0.00	0.87
16.35	2.00	0.32	5.00	0.87	0.00	0.87
16.40	2.00	0.32	5.00	0.87	0.00	0.87
16.45	2.00	0.32	5.00	0.87	0.00	0.87
16.50	2.00	0.32	5.00	0.87	0.00	0.87
16.55	2.00	0.32	5.00	0.87	0.00	0.87
16.60	2.00	0.32	5.00	0.87	0.00	0.87
16.65	2.00	0.32	5.00	0.87	0.00	0.87
16.70	2.00	0.32	5.00	0.87	0.00	0.87
16.75	2.00	0.32	5.00	0.87	0.00	0.87
16.80	2.00	0.32	5.00	0.87	0.00	0.87
16.85	2.00	0.32	5.00	0.87	0.00	0.87
16.90	2.00	0.32	5.00	0.87	0.00	0.87
16.95	2.00	0.32	5.00	0.87	0.00	0.87
17.00	2.00	0.32	5.00	0.87	0.00	0.87
17.05	2.00	0.32	5.00	0.87	0.00	0.87
17.10	2.00	0.32	5.00	0.87	0.00	0.87
17.15	2.00	0.32	5.00	0.87	0.00	0.87
17.20	2.00	0.32	5.00	0.87	0.00	0.87
17.25	2.00	0.32	5.00	0.87	0.00	0.87
17.30	2.00	0.32	5.00	0.87	0.00	0.87
17.35	2.00	0.32	5.00	0.87	0.00	0.87
17.40	2.00	0.32	5.00	0.87	0.00	0.87
17.45	2.00	0.32	5.00	0.87	0.00	0.87
17.50	2.00	0.32	5.00	0.87	0.00	0.87
17.55	2.00	0.32	5.00	0.87	0.00	0.87
17.60	2.00	0.32	5.00	0.87	0.00	0.87
17.65	2.00	0.32	5.00	0.87	0.00	0.87
17.70	2.00	0.32	5.00	0.87	0.00	0.87
17.75	2.00	0.32	5.00	0.87	0.00	0.87
17.80	2.00	0.32	5.00	0.87	0.00	0.87
17.85	2.00	0.32	5.00	0.87	0.00	0.87
17.90	2.00	0.32	5.00	0.87	0.00	0.87
17.95	2.00	0.32	5.00	0.87	0.00	0.87
18.00	2.00	0.32	5.00	0.87	0.00	0.87
18.05	2.00	0.32	5.00	0.87	0.00	0.87
18.10	2.00	0.32	5.00	0.87	0.00	0.87
18.15	2.00	0.32	5.00	0.87	0.00	0.87
18.20	2.00	0.32	5.00	0.87	0.00	0.87
18.25	2.00	0.32	5.00	0.87	0.00	0.87
18.30	2.00	0.32	5.00	0.87	0.00	0.87
18.35	2.00	0.33	5.00	0.87	0.00	0.87
18.40	2.00	0.33	5.00	0.87	0.00	0.87
18.45	2.00	0.33	5.00	0.87	0.00	0.87
18.50	2.00	0.33	5.00	0.87	0.00	0.87
18.55	2.00	0.33	5.00	0.87	0.00	0.87
18.60	2.00	0.33	5.00	0.87	0.00	0.87
18.65	2.00	0.33	5.00	0.87	0.00	0.87
18.70	2.00	0.33	5.00	0.87	0.00	0.87
18.75	2.00	0.33	5.00	0.87	0.00	0.87
18.80	2.00	0.33	5.00	0.87	0.00	0.87
18.85	2.00	0.33	5.00	0.87	0.00	0.87
18.90	2.00	0.33	5.00	0.87	0.00	0.87
18.95	2.00	0.33	5.00	0.87	0.00	0.87
19.00	2.00	0.33	5.00	0.87	0.00	0.87
19.05	2.00	0.33	5.00	0.87	0.00	0.87
19.10	2.00	0.33	5.00	0.87	0.00	0.87
19.15	2.00	0.33	5.00	0.87	0.00	0.87
19.20	2.00	0.33	5.00	0.87	0.00	0.87
19.25	2.00	0.33	5.00	0.87	0.00	0.87
19.30	2.00	0.33	5.00	0.87	0.00	0.87
19.35	2.00	0.33	5.00	0.87	0.00	0.87
19.40	2.00	0.33	5.00	0.87	0.00	0.87
19.45	2.00	0.33	5.00	0.87	0.00	0.87
19.50	2.00	0.33	5.00	0.87	0.00	0.87
19.55	2.00	0.33	5.00	0.87	0.00	0.87
19.60	2.00	0.33	5.00	0.87	0.00	0.87
19.65	2.00	0.33	5.00	0.87	0.00	0.87
19.70	2.00	0.33	5.00	0.87	0.00	0.87

19.75	2.00	0.33	5.00	0.87	0.00	0.87
19.80	2.00	0.33	5.00	0.87	0.00	0.87
19.85	2.00	0.33	5.00	0.87	0.00	0.87
19.90	2.00	0.33	5.00	0.87	0.00	0.87
19.95	2.00	0.33	5.00	0.87	0.00	0.87
20.00	2.00	0.33	5.00	0.87	0.00	0.87
20.05	2.00	0.33	5.00	0.87	0.00	0.87
20.10	2.00	0.33	5.00	0.87	0.00	0.87
20.15	2.00	0.33	5.00	0.87	0.00	0.87
20.20	2.00	0.33	5.00	0.87	0.00	0.87
20.25	2.00	0.33	5.00	0.87	0.00	0.87
20.30	2.00	0.33	5.00	0.87	0.00	0.87
20.35	2.00	0.33	5.00	0.87	0.00	0.87
20.40	2.00	0.33	5.00	0.87	0.00	0.87
20.45	2.00	0.33	5.00	0.87	0.00	0.87
20.50	2.00	0.33	5.00	0.87	0.00	0.87
20.55	2.00	0.33	5.00	0.87	0.00	0.87
20.60	2.00	0.33	5.00	0.87	0.00	0.87
20.65	2.00	0.33	5.00	0.87	0.00	0.87
20.70	2.00	0.33	5.00	0.87	0.00	0.87
20.75	2.00	0.33	5.00	0.87	0.00	0.87
20.80	2.00	0.33	5.00	0.87	0.00	0.87
20.85	2.00	0.33	5.00	0.87	0.00	0.87
20.90	2.00	0.33	5.00	0.87	0.00	0.87
20.95	2.00	0.33	5.00	0.87	0.00	0.87
21.00	2.00	0.33	5.00	0.87	0.00	0.87
21.05	2.00	0.33	5.00	0.87	0.00	0.87
21.10	2.00	0.33	5.00	0.87	0.00	0.87
21.15	2.00	0.33	5.00	0.87	0.00	0.87
21.20	2.00	0.33	5.00	0.87	0.00	0.87
21.25	2.00	0.33	5.00	0.87	0.00	0.87
21.30	2.00	0.33	5.00	0.87	0.00	0.87
21.35	2.00	0.33	5.00	0.87	0.00	0.87
21.40	2.00	0.33	5.00	0.87	0.00	0.87
21.45	2.00	0.33	5.00	0.87	0.00	0.87
21.50	2.00	0.33	5.00	0.87	0.00	0.87
21.55	2.00	0.33	5.00	0.87	0.00	0.87
21.60	2.00	0.33	5.00	0.87	0.00	0.87
21.65	2.00	0.33	5.00	0.87	0.00	0.87
21.70	2.00	0.33	5.00	0.87	0.00	0.87
21.75	2.00	0.33	5.00	0.87	0.00	0.87
21.80	2.00	0.33	5.00	0.87	0.00	0.87
21.85	2.00	0.33	5.00	0.87	0.00	0.87
21.90	2.00	0.33	5.00	0.87	0.00	0.87
21.95	2.00	0.33	5.00	0.87	0.00	0.87
22.00	2.00	0.33	5.00	0.87	0.00	0.87
22.05	2.00	0.33	5.00	0.87	0.00	0.87
22.10	2.00	0.33	5.00	0.87	0.00	0.87
22.15	2.00	0.33	5.00	0.87	0.00	0.87
22.20	2.00	0.33	5.00	0.87	0.00	0.87
22.25	2.00	0.33	5.00	0.87	0.00	0.87
22.30	2.00	0.33	5.00	0.87	0.00	0.87
22.35	2.00	0.33	5.00	0.87	0.00	0.87
22.40	2.00	0.33	5.00	0.87	0.00	0.87
22.45	2.00	0.33	5.00	0.87	0.00	0.87
22.50	2.00	0.33	5.00	0.87	0.00	0.87
22.55	2.00	0.33	5.00	0.87	0.00	0.87
22.60	2.00	0.33	5.00	0.87	0.00	0.87
22.65	2.00	0.33	5.00	0.87	0.00	0.87
22.70	2.00	0.33	5.00	0.87	0.00	0.87
22.75	2.00	0.33	5.00	0.87	0.00	0.87
22.80	2.00	0.33	5.00	0.87	0.00	0.87
22.85	2.00	0.33	5.00	0.87	0.00	0.87
22.90	2.00	0.33	5.00	0.87	0.00	0.87
22.95	2.00	0.33	5.00	0.87	0.00	0.87
23.00	2.00	0.33	5.00	0.87	0.00	0.87
23.05	2.00	0.33	5.00	0.87	0.00	0.87
23.10	2.00	0.33	5.00	0.87	0.00	0.87
23.15	2.00	0.33	5.00	0.87	0.00	0.87
23.20	2.00	0.33	5.00	0.87	0.00	0.87
23.25	2.00	0.33	5.00	0.87	0.00	0.87

23.30	2.00	0.33	5.00	0.87	0.00	0.87
23.35	2.00	0.33	5.00	0.87	0.00	0.87
23.40	2.00	0.33	5.00	0.87	0.00	0.87
23.45	2.00	0.33	5.00	0.87	0.00	0.87
23.50	2.00	0.33	5.00	0.87	0.00	0.87
23.55	2.00	0.33	5.00	0.87	0.00	0.87
23.60	2.00	0.33	5.00	0.87	0.00	0.87
23.65	2.00	0.33	5.00	0.87	0.00	0.87
23.70	2.00	0.33	5.00	0.87	0.00	0.87
23.75	2.00	0.33	5.00	0.87	0.00	0.87
23.80	2.00	0.33	5.00	0.87	0.00	0.87
23.85	2.00	0.33	5.00	0.87	0.00	0.87
23.90	2.00	0.33	5.00	0.87	0.00	0.87
23.95	2.00	0.33	5.00	0.87	0.00	0.87
24.00	2.00	0.33	5.00	0.87	0.00	0.87
24.05	2.00	0.33	5.00	0.87	0.00	0.87
24.10	2.00	0.33	5.00	0.87	0.00	0.87
24.15	2.00	0.33	5.00	0.87	0.00	0.87
24.20	2.00	0.33	5.00	0.87	0.00	0.87
24.25	2.00	0.33	5.00	0.87	0.00	0.87
24.30	2.00	0.33	5.00	0.87	0.00	0.87
24.35	2.00	0.33	5.00	0.87	0.00	0.87
24.40	2.00	0.33	5.00	0.87	0.00	0.87
24.45	2.00	0.33	5.00	0.87	0.00	0.87
24.50	2.00	0.33	5.00	0.87	0.00	0.87
24.55	2.00	0.33	5.00	0.87	0.00	0.87
24.60	2.00	0.33	5.00	0.87	0.00	0.87
24.65	2.00	0.33	5.00	0.87	0.00	0.87
24.70	2.00	0.33	5.00	0.87	0.00	0.87
24.75	2.00	0.33	5.00	0.87	0.00	0.87
24.80	2.00	0.33	5.00	0.87	0.00	0.87
24.85	2.00	0.33	5.00	0.87	0.00	0.87
24.90	2.00	0.33	5.00	0.87	0.00	0.87
24.95	2.00	0.33	5.00	0.87	0.00	0.87
25.00	2.00	0.33	5.00	0.87	0.00	0.87
25.05	0.44	0.33	1.34	0.87	0.00	0.87
25.10	0.44	0.33	1.34	0.87	0.00	0.87
25.15	0.44	0.33	1.34	0.87	0.00	0.87
25.20	0.44	0.33	1.33	0.87	0.00	0.87
25.25	0.44	0.33	1.33	0.87	0.00	0.87
25.30	0.44	0.33	1.33	0.87	0.00	0.87
25.35	0.44	0.33	1.33	0.87	0.00	0.87
25.40	0.44	0.33	1.33	0.87	0.00	0.87
25.45	0.44	0.33	1.33	0.87	0.00	0.87
25.50	0.44	0.33	1.33	0.87	0.00	0.87
25.55	0.44	0.33	1.33	0.87	0.00	0.87
25.60	0.44	0.33	1.32	0.87	0.00	0.87
25.65	0.44	0.33	1.32	0.87	0.00	0.87
25.70	0.44	0.33	1.32	0.87	0.00	0.87
25.75	0.44	0.33	1.32	0.87	0.00	0.87
25.80	0.44	0.33	1.32	0.87	0.00	0.87
25.85	0.44	0.33	1.32	0.87	0.00	0.87
25.90	0.44	0.33	1.32	0.87	0.00	0.87
25.95	0.44	0.33	1.32	0.87	0.00	0.87
26.00	0.44	0.33	1.32	0.87	0.00	0.87
26.05	0.44	0.33	1.31	0.87	0.00	0.87
26.10	0.43	0.33	1.31	0.87	0.00	0.87
26.15	0.43	0.33	1.31	0.87	0.00	0.87
26.20	0.43	0.33	1.31	0.87	0.00	0.87
26.25	0.43	0.33	1.31	0.87	0.00	0.87
26.30	0.43	0.33	1.31	0.87	0.00	0.87
26.35	0.43	0.33	1.31	0.87	0.00	0.87
26.40	0.43	0.33	1.31	0.87	0.00	0.87
26.45	0.43	0.33	1.30	0.87	0.00	0.87
26.50	0.43	0.33	1.30	0.87	0.00	0.87
26.55	0.43	0.33	1.30	0.87	0.00	0.87
26.60	0.43	0.33	1.30	0.87	0.00	0.87
26.65	0.43	0.33	1.30	0.87	0.00	0.87
26.70	0.43	0.33	1.30	0.87	0.00	0.87
26.75	0.43	0.33	1.30	0.87	0.00	0.87
26.80	0.43	0.33	1.30	0.87	0.00	0.87

26.85	0.43	0.33	1.30	0.87	0.00	0.87
26.90	0.43	0.33	1.30	0.87	0.00	0.87
26.95	0.43	0.33	1.29	0.87	0.00	0.87
27.00	0.43	0.33	1.29	0.87	0.00	0.87
27.05	0.43	0.33	1.29	0.87	0.00	0.87
27.10	0.43	0.33	1.29	0.87	0.00	0.87
27.15	0.43	0.33	1.29	0.87	0.00	0.87
27.20	0.43	0.33	1.29	0.87	0.00	0.87
27.25	0.43	0.33	1.29	0.87	0.00	0.87
27.30	0.43	0.33	1.29	0.87	0.00	0.87
27.35	0.43	0.33	1.29	0.87	0.00	0.87
27.40	0.43	0.33	1.28	0.87	0.00	0.87
27.45	0.43	0.33	1.28	0.87	0.00	0.87
27.50	0.43	0.33	1.28	0.87	0.00	0.87
27.55	0.43	0.33	1.28	0.87	0.00	0.87
27.60	0.42	0.33	1.28	0.87	0.00	0.87
27.65	0.42	0.33	1.28	0.87	0.00	0.87
27.70	0.42	0.33	1.28	0.87	0.00	0.87
27.75	0.42	0.33	1.28	0.87	0.00	0.87
27.80	0.42	0.33	1.28	0.87	0.00	0.87
27.85	0.42	0.33	1.28	0.87	0.00	0.87
27.90	0.45	0.33	1.35	0.87	0.00	0.87
27.95	0.45	0.33	1.35	0.87	0.00	0.87
28.00	0.45	0.33	1.35	0.87	0.00	0.87
28.05	0.45	0.33	1.35	0.87	0.00	0.87
28.10	0.45	0.33	1.34	0.87	0.00	0.87
28.15	0.45	0.33	1.34	0.87	0.00	0.87
28.20	0.45	0.33	1.34	0.87	0.00	0.87
28.25	0.45	0.33	1.34	0.87	0.00	0.87
28.30	0.45	0.33	1.34	0.87	0.00	0.87
28.35	0.44	0.33	1.34	0.87	0.00	0.87
28.40	0.44	0.33	1.34	0.87	0.00	0.87
28.45	0.44	0.33	1.34	0.87	0.00	0.87
28.50	0.44	0.33	1.34	0.87	0.00	0.87
28.55	0.44	0.33	1.34	0.87	0.00	0.87
28.60	0.44	0.33	1.33	0.87	0.00	0.87
28.65	0.44	0.33	1.33	0.87	0.00	0.87
28.70	0.44	0.33	1.33	0.87	0.00	0.87
28.75	0.44	0.33	1.33	0.87	0.00	0.87
28.80	0.44	0.33	1.33	0.87	0.00	0.87
28.85	0.44	0.33	1.33	0.87	0.00	0.87
28.90	0.44	0.33	1.33	0.87	0.00	0.87
28.95	0.44	0.33	1.33	0.87	0.00	0.87
29.00	0.44	0.33	1.33	0.87	0.00	0.87
29.05	0.44	0.33	1.32	0.87	0.00	0.87
29.10	0.44	0.33	1.32	0.87	0.00	0.87
29.15	0.44	0.33	1.32	0.87	0.00	0.87
29.20	0.44	0.33	1.32	0.87	0.00	0.87
29.25	0.44	0.33	1.32	0.87	0.00	0.87
29.30	0.44	0.33	1.32	0.87	0.00	0.87
29.35	0.44	0.33	1.32	0.87	0.00	0.87
29.40	0.44	0.33	1.32	0.87	0.00	0.87
29.45	0.44	0.33	1.32	0.87	0.00	0.87
29.50	0.44	0.33	1.32	0.87	0.00	0.87
29.55	0.44	0.33	1.31	0.87	0.00	0.87
29.60	0.44	0.33	1.31	0.87	0.00	0.87
29.65	0.44	0.33	1.31	0.87	0.00	0.87
29.70	0.44	0.33	1.31	0.87	0.00	0.87
29.75	0.44	0.33	1.31	0.87	0.00	0.87
29.80	0.44	0.33	1.31	0.87	0.00	0.87
29.85	0.44	0.33	1.31	0.87	0.00	0.87
29.90	0.43	0.33	1.31	0.87	0.00	0.87
29.95	0.43	0.33	1.31	0.87	0.00	0.87
30.00	0.43	0.33	1.31	0.87	0.00	0.87
30.05	0.29	0.33	0.86*	0.87	0.00	0.87
30.10	0.29	0.33	0.86*	0.86	0.00	0.86
30.15	0.29	0.33	0.86*	0.86	0.00	0.86
30.20	0.28	0.33	0.86*	0.85	0.00	0.85
30.25	0.28	0.33	0.86*	0.84	0.00	0.84
30.30	0.28	0.33	0.86*	0.83	0.00	0.83
30.35	0.28	0.33	0.86*	0.82	0.00	0.82

30.40	0.28	0.33	0.86*	0.81	0.00	0.81
30.45	0.28	0.33	0.86*	0.81	0.00	0.81
30.50	0.28	0.33	0.86*	0.80	0.00	0.80
30.55	0.28	0.33	0.86*	0.79	0.00	0.79
30.60	0.28	0.33	0.86*	0.78	0.00	0.78
30.65	0.28	0.33	0.86*	0.77	0.00	0.77
30.70	0.28	0.33	0.86*	0.76	0.00	0.76
30.75	0.28	0.33	0.86*	0.75	0.00	0.75
30.80	0.28	0.33	0.86*	0.75	0.00	0.75
30.85	0.28	0.33	0.86*	0.74	0.00	0.74
30.90	0.28	0.33	0.86*	0.73	0.00	0.73
30.95	0.28	0.33	0.86*	0.72	0.00	0.72
31.00	0.28	0.33	0.86*	0.71	0.00	0.71
31.05	0.28	0.33	0.85*	0.70	0.00	0.70
31.10	0.28	0.33	0.85*	0.69	0.00	0.69
31.15	0.28	0.33	0.85*	0.69	0.00	0.69
31.20	0.28	0.33	0.85*	0.68	0.00	0.68
31.25	0.28	0.33	0.85*	0.67	0.00	0.67
31.30	0.28	0.33	0.85*	0.66	0.00	0.66
31.35	0.28	0.33	0.85*	0.65	0.00	0.65
31.40	0.28	0.33	0.85*	0.64	0.00	0.64
31.45	0.28	0.33	0.85*	0.63	0.00	0.63
31.50	0.28	0.33	0.85*	0.62	0.00	0.62
31.55	0.28	0.33	0.85*	0.62	0.00	0.62
31.60	0.28	0.33	0.85*	0.61	0.00	0.61
31.65	0.28	0.33	0.85*	0.60	0.00	0.60
31.70	0.28	0.33	0.85*	0.59	0.00	0.59
31.75	0.28	0.33	0.85*	0.58	0.00	0.58
31.80	0.28	0.33	0.85*	0.57	0.00	0.57
31.85	0.28	0.33	0.85*	0.56	0.00	0.56
31.90	0.28	0.33	0.85*	0.56	0.00	0.56
31.95	0.28	0.33	0.85*	0.55	0.00	0.55
32.00	0.28	0.33	0.85*	0.54	0.00	0.54
32.05	0.28	0.33	0.85*	0.53	0.00	0.53
32.10	0.28	0.33	0.85*	0.52	0.00	0.52
32.15	0.28	0.33	0.85*	0.51	0.00	0.51
32.20	0.28	0.33	0.85*	0.50	0.00	0.50
32.25	0.28	0.33	0.85*	0.49	0.00	0.49
32.30	0.28	0.33	0.85*	0.49	0.00	0.49
32.35	0.28	0.33	0.85*	0.48	0.00	0.48
32.40	0.28	0.33	0.85*	0.47	0.00	0.47
32.45	0.28	0.33	0.85*	0.46	0.00	0.46
32.50	0.28	0.33	0.85*	0.45	0.00	0.45
32.55	0.28	0.33	0.85*	0.44	0.00	0.44
32.60	0.28	0.33	0.85*	0.43	0.00	0.43
32.65	0.28	0.33	0.85*	0.42	0.00	0.42
32.70	0.28	0.33	0.85*	0.42	0.00	0.42
32.75	0.28	0.33	0.85*	0.41	0.00	0.41
32.80	0.28	0.33	0.85*	0.40	0.00	0.40
32.85	0.28	0.33	0.85*	0.39	0.00	0.39
32.90	0.28	0.33	0.85*	0.38	0.00	0.38
32.95	0.28	0.33	0.85*	0.37	0.00	0.37
33.00	0.28	0.33	0.85*	0.36	0.00	0.36
33.05	0.28	0.33	0.85*	0.35	0.00	0.35
33.10	0.28	0.33	0.85*	0.35	0.00	0.35
33.15	0.28	0.33	0.85*	0.34	0.00	0.34
33.20	0.28	0.33	0.85*	0.33	0.00	0.33
33.25	0.28	0.33	0.85*	0.32	0.00	0.32
33.30	0.28	0.33	0.85*	0.31	0.00	0.31
33.35	0.28	0.33	0.85*	0.30	0.00	0.30
33.40	0.28	0.33	0.85*	0.29	0.00	0.29
33.45	0.28	0.33	0.85*	0.28	0.00	0.28
33.50	0.28	0.33	0.85*	0.28	0.00	0.28
33.55	0.28	0.33	0.85*	0.27	0.00	0.27
33.60	0.28	0.33	0.85*	0.26	0.00	0.26
33.65	0.28	0.33	0.85*	0.25	0.00	0.25
33.70	0.28	0.33	0.85*	0.24	0.00	0.24
33.75	0.28	0.33	0.85*	0.23	0.00	0.23
33.80	0.28	0.33	0.85*	0.22	0.00	0.22
33.85	0.28	0.33	0.85*	0.21	0.00	0.21
33.90	0.28	0.33	0.85*	0.20	0.00	0.20

33.95	0.28	0.33	0.85*	0.20	0.00	0.20
34.00	0.28	0.33	0.85*	0.19	0.00	0.19
34.05	0.28	0.33	0.85*	0.18	0.00	0.18
34.10	0.28	0.33	0.85*	0.17	0.00	0.17
34.15	0.28	0.33	0.85*	0.16	0.00	0.16
34.20	0.28	0.32	0.85*	0.15	0.00	0.15
34.25	0.28	0.32	0.85*	0.14	0.00	0.14
34.30	0.28	0.32	0.85*	0.13	0.00	0.13
34.35	0.27	0.32	0.85*	0.12	0.00	0.12
34.40	0.27	0.32	0.85*	0.12	0.00	0.12
34.45	0.27	0.32	0.85*	0.11	0.00	0.11
34.50	0.27	0.32	0.85*	0.10	0.00	0.10
34.55	0.27	0.32	0.85*	0.09	0.00	0.09
34.60	0.27	0.32	0.85*	0.08	0.00	0.08
34.65	0.27	0.32	0.85*	0.07	0.00	0.07
34.70	0.27	0.32	0.85*	0.06	0.00	0.06
34.75	0.27	0.32	0.85*	0.05	0.00	0.05
34.80	0.27	0.32	0.85*	0.04	0.00	0.04
34.85	0.27	0.32	0.85*	0.04	0.00	0.04
34.90	0.27	0.32	0.85*	0.03	0.00	0.03
34.95	0.27	0.32	0.85*	0.02	0.00	0.02
35.00	0.27	0.32	0.85*	0.01	0.00	0.01
35.05	0.83	0.32	2.57	0.00	0.00	0.00
35.10	0.83	0.32	2.57	0.00	0.00	0.00
35.15	0.83	0.32	2.57	0.00	0.00	0.00
35.20	0.83	0.32	2.57	0.00	0.00	0.00
35.25	0.83	0.32	2.57	0.00	0.00	0.00
35.30	0.83	0.32	2.57	0.00	0.00	0.00
35.35	0.83	0.32	2.58	0.00	0.00	0.00
35.40	0.83	0.32	2.58	0.00	0.00	0.00
35.45	0.83	0.32	2.58	0.00	0.00	0.00
35.50	0.83	0.32	2.58	0.00	0.00	0.00
35.55	0.83	0.32	2.58	0.00	0.00	0.00
35.60	0.83	0.32	2.58	0.00	0.00	0.00
35.65	0.83	0.32	2.58	0.00	0.00	0.00
35.70	0.83	0.32	2.58	0.00	0.00	0.00
35.75	0.83	0.32	2.58	0.00	0.00	0.00
35.80	0.83	0.32	2.58	0.00	0.00	0.00
35.85	0.83	0.32	2.59	0.00	0.00	0.00
35.90	0.83	0.32	2.59	0.00	0.00	0.00
35.95	0.83	0.32	2.59	0.00	0.00	0.00
36.00	0.83	0.32	2.59	0.00	0.00	0.00
36.05	0.83	0.32	2.59	0.00	0.00	0.00
36.10	0.83	0.32	2.59	0.00	0.00	0.00
36.15	0.83	0.32	2.59	0.00	0.00	0.00
36.20	0.83	0.32	2.59	0.00	0.00	0.00
36.25	0.83	0.32	2.59	0.00	0.00	0.00
36.30	0.83	0.32	2.59	0.00	0.00	0.00
36.35	0.83	0.32	2.60	0.00	0.00	0.00
36.40	0.83	0.32	2.60	0.00	0.00	0.00
36.45	0.83	0.32	2.60	0.00	0.00	0.00
36.50	0.83	0.32	2.60	0.00	0.00	0.00
36.55	0.83	0.32	2.60	0.00	0.00	0.00
36.60	0.83	0.32	2.60	0.00	0.00	0.00
36.65	0.83	0.32	2.60	0.00	0.00	0.00
36.70	0.83	0.32	2.60	0.00	0.00	0.00
36.75	0.83	0.32	2.60	0.00	0.00	0.00
36.80	0.83	0.32	2.60	0.00	0.00	0.00
36.85	0.83	0.32	2.61	0.00	0.00	0.00
36.90	0.83	0.32	2.61	0.00	0.00	0.00
36.95	0.83	0.32	2.61	0.00	0.00	0.00
37.00	0.83	0.32	2.61	0.00	0.00	0.00
37.05	0.83	0.32	2.61	0.00	0.00	0.00
37.10	0.83	0.32	2.61	0.00	0.00	0.00
37.15	0.83	0.32	2.61	0.00	0.00	0.00
37.20	0.83	0.32	2.61	0.00	0.00	0.00
37.25	0.83	0.32	2.61	0.00	0.00	0.00
37.30	0.83	0.32	2.61	0.00	0.00	0.00
37.35	0.83	0.32	2.62	0.00	0.00	0.00
37.40	0.83	0.32	2.62	0.00	0.00	0.00
37.45	0.83	0.32	2.62	0.00	0.00	0.00

37.50	0.83	0.32	2.62	0.00	0.00	0.00
37.55	0.83	0.32	2.62	0.00	0.00	0.00
37.60	0.83	0.32	2.62	0.00	0.00	0.00
37.65	0.83	0.32	2.62	0.00	0.00	0.00
37.70	0.83	0.32	2.62	0.00	0.00	0.00
37.75	0.83	0.32	2.62	0.00	0.00	0.00
37.80	0.83	0.32	2.62	0.00	0.00	0.00
37.85	0.83	0.32	2.63	0.00	0.00	0.00
37.90	0.83	0.32	2.63	0.00	0.00	0.00
37.95	0.83	0.32	2.63	0.00	0.00	0.00
38.00	0.83	0.32	2.63	0.00	0.00	0.00
38.05	0.83	0.32	2.63	0.00	0.00	0.00
38.10	0.83	0.32	2.63	0.00	0.00	0.00
38.15	0.83	0.32	2.63	0.00	0.00	0.00
38.20	0.83	0.32	2.63	0.00	0.00	0.00
38.25	0.83	0.32	2.63	0.00	0.00	0.00
38.30	0.83	0.32	2.64	0.00	0.00	0.00
38.35	0.83	0.32	2.64	0.00	0.00	0.00
38.40	0.83	0.31	2.64	0.00	0.00	0.00
38.45	0.83	0.31	2.64	0.00	0.00	0.00
38.50	0.83	0.31	2.64	0.00	0.00	0.00
38.55	0.83	0.31	2.64	0.00	0.00	0.00
38.60	0.83	0.31	2.64	0.00	0.00	0.00
38.65	0.83	0.31	2.64	0.00	0.00	0.00
38.70	0.83	0.31	2.64	0.00	0.00	0.00
38.75	0.83	0.31	2.64	0.00	0.00	0.00
38.80	0.83	0.31	2.65	0.00	0.00	0.00
38.85	0.83	0.31	2.65	0.00	0.00	0.00
38.90	0.83	0.31	2.65	0.00	0.00	0.00
38.95	0.83	0.31	2.65	0.00	0.00	0.00
39.00	0.83	0.31	2.65	0.00	0.00	0.00
39.05	0.83	0.31	2.65	0.00	0.00	0.00
39.10	0.83	0.31	2.65	0.00	0.00	0.00
39.15	0.83	0.31	2.65	0.00	0.00	0.00
39.20	0.83	0.31	2.65	0.00	0.00	0.00
39.25	0.83	0.31	2.66	0.00	0.00	0.00
39.30	0.83	0.31	2.66	0.00	0.00	0.00
39.35	0.83	0.31	2.66	0.00	0.00	0.00
39.40	0.83	0.31	2.66	0.00	0.00	0.00
39.45	0.83	0.31	2.66	0.00	0.00	0.00
39.50	0.83	0.31	2.66	0.00	0.00	0.00
39.55	0.83	0.31	2.66	0.00	0.00	0.00
39.60	0.83	0.31	2.66	0.00	0.00	0.00
39.65	0.83	0.31	2.66	0.00	0.00	0.00
39.70	0.83	0.31	2.67	0.00	0.00	0.00
39.75	0.83	0.31	2.67	0.00	0.00	0.00
39.80	0.83	0.31	2.67	0.00	0.00	0.00
39.85	0.83	0.31	2.67	0.00	0.00	0.00
39.90	0.83	0.31	2.67	0.00	0.00	0.00
39.95	0.83	0.31	2.67	0.00	0.00	0.00
40.00	0.83	0.31	2.67	0.00	0.00	0.00
40.05	0.83	0.31	2.67	0.00	0.00	0.00
40.10	0.83	0.31	2.67	0.00	0.00	0.00
40.15	0.83	0.31	2.68	0.00	0.00	0.00
40.20	0.83	0.31	2.68	0.00	0.00	0.00
40.25	0.83	0.31	2.68	0.00	0.00	0.00
40.30	0.83	0.31	2.68	0.00	0.00	0.00
40.35	0.83	0.31	2.68	0.00	0.00	0.00
40.40	0.83	0.31	2.68	0.00	0.00	0.00
40.45	0.83	0.31	2.68	0.00	0.00	0.00
40.50	0.83	0.31	2.68	0.00	0.00	0.00
40.55	0.83	0.31	2.69	0.00	0.00	0.00
40.60	0.83	0.31	2.69	0.00	0.00	0.00
40.65	0.83	0.31	2.69	0.00	0.00	0.00
40.70	0.83	0.31	2.69	0.00	0.00	0.00
40.75	0.83	0.31	2.69	0.00	0.00	0.00
40.80	0.83	0.31	2.69	0.00	0.00	0.00
40.85	0.83	0.31	2.69	0.00	0.00	0.00
40.90	0.83	0.31	2.69	0.00	0.00	0.00
40.95	0.83	0.31	2.69	0.00	0.00	0.00
41.00	0.83	0.31	2.70	0.00	0.00	0.00

41.05	0.83	0.31	2.70	0.00	0.00	0.00
41.10	0.83	0.31	2.70	0.00	0.00	0.00
41.15	0.83	0.31	2.70	0.00	0.00	0.00
41.20	0.83	0.31	2.70	0.00	0.00	0.00
41.25	0.83	0.31	2.70	0.00	0.00	0.00
41.30	0.83	0.31	2.70	0.00	0.00	0.00
41.35	0.83	0.31	2.70	0.00	0.00	0.00
41.40	0.83	0.31	2.71	0.00	0.00	0.00
41.45	0.83	0.31	2.71	0.00	0.00	0.00
41.50	0.83	0.31	2.71	0.00	0.00	0.00
41.55	0.83	0.31	2.71	0.00	0.00	0.00
41.60	0.83	0.31	2.71	0.00	0.00	0.00
41.65	0.83	0.31	2.71	0.00	0.00	0.00
41.70	0.83	0.31	2.71	0.00	0.00	0.00
41.75	0.83	0.31	2.71	0.00	0.00	0.00
41.80	0.83	0.31	2.72	0.00	0.00	0.00
41.85	0.83	0.31	2.72	0.00	0.00	0.00
41.90	0.83	0.31	2.72	0.00	0.00	0.00
41.95	0.83	0.31	2.72	0.00	0.00	0.00
42.00	0.83	0.31	2.72	0.00	0.00	0.00
42.05	0.83	0.31	2.72	0.00	0.00	0.00
42.10	0.83	0.31	2.72	0.00	0.00	0.00
42.15	0.83	0.30	2.72	0.00	0.00	0.00
42.20	0.83	0.30	2.73	0.00	0.00	0.00
42.25	0.83	0.30	2.73	0.00	0.00	0.00
42.30	0.83	0.30	2.73	0.00	0.00	0.00
42.35	0.83	0.30	2.73	0.00	0.00	0.00
42.40	0.83	0.30	2.73	0.00	0.00	0.00
42.45	0.84	0.30	2.75	0.00	0.00	0.00
42.50	0.84	0.30	2.75	0.00	0.00	0.00
42.55	0.84	0.30	2.75	0.00	0.00	0.00
42.60	0.84	0.30	2.75	0.00	0.00	0.00
42.65	0.84	0.30	2.75	0.00	0.00	0.00
42.70	0.84	0.30	2.75	0.00	0.00	0.00
42.75	0.84	0.30	2.75	0.00	0.00	0.00
42.80	0.83	0.30	2.75	0.00	0.00	0.00
42.85	0.83	0.30	2.75	0.00	0.00	0.00
42.90	0.83	0.30	2.76	0.00	0.00	0.00
42.95	0.83	0.30	2.76	0.00	0.00	0.00
43.00	0.83	0.30	2.76	0.00	0.00	0.00
43.05	0.83	0.30	2.76	0.00	0.00	0.00
43.10	0.83	0.30	2.76	0.00	0.00	0.00
43.15	0.83	0.30	2.76	0.00	0.00	0.00
43.20	0.83	0.30	2.76	0.00	0.00	0.00
43.25	0.83	0.30	2.76	0.00	0.00	0.00
43.30	0.83	0.30	2.76	0.00	0.00	0.00
43.35	0.83	0.30	2.76	0.00	0.00	0.00
43.40	0.83	0.30	2.76	0.00	0.00	0.00
43.45	0.83	0.30	2.76	0.00	0.00	0.00
43.50	0.83	0.30	2.77	0.00	0.00	0.00
43.55	0.83	0.30	2.77	0.00	0.00	0.00
43.60	0.83	0.30	2.77	0.00	0.00	0.00
43.65	0.83	0.30	2.77	0.00	0.00	0.00
43.70	0.83	0.30	2.77	0.00	0.00	0.00
43.75	0.83	0.30	2.77	0.00	0.00	0.00
43.80	0.83	0.30	2.77	0.00	0.00	0.00
43.85	0.83	0.30	2.77	0.00	0.00	0.00
43.90	0.83	0.30	2.77	0.00	0.00	0.00
43.95	0.83	0.30	2.77	0.00	0.00	0.00
44.00	0.83	0.30	2.77	0.00	0.00	0.00
44.05	0.83	0.30	2.77	0.00	0.00	0.00
44.10	0.83	0.30	2.77	0.00	0.00	0.00
44.15	0.83	0.30	2.78	0.00	0.00	0.00
44.20	0.83	0.30	2.78	0.00	0.00	0.00
44.25	0.83	0.30	2.78	0.00	0.00	0.00
44.30	0.83	0.30	2.78	0.00	0.00	0.00
44.35	0.83	0.30	2.78	0.00	0.00	0.00
44.40	0.83	0.30	2.78	0.00	0.00	0.00
44.45	0.83	0.30	2.78	0.00	0.00	0.00
44.50	0.83	0.30	2.78	0.00	0.00	0.00
44.55	0.83	0.30	2.78	0.00	0.00	0.00

44.60	0.83	0.30	2.78	0.00	0.00	0.00
44.65	0.83	0.30	2.78	0.00	0.00	0.00
44.70	0.83	0.30	2.78	0.00	0.00	0.00
44.75	0.83	0.30	2.79	0.00	0.00	0.00
44.80	0.83	0.30	2.79	0.00	0.00	0.00
44.85	0.83	0.30	2.79	0.00	0.00	0.00
44.90	0.83	0.30	2.79	0.00	0.00	0.00
44.95	0.83	0.30	2.79	0.00	0.00	0.00
45.00	0.83	0.30	2.79	0.00	0.00	0.00
45.05	0.83	0.30	2.79	0.00	0.00	0.00
45.10	0.83	0.30	2.79	0.00	0.00	0.00
45.15	0.83	0.30	2.79	0.00	0.00	0.00
45.20	0.83	0.30	2.79	0.00	0.00	0.00
45.25	0.83	0.30	2.79	0.00	0.00	0.00
45.30	0.83	0.30	2.79	0.00	0.00	0.00
45.35	0.83	0.30	2.80	0.00	0.00	0.00
45.40	0.83	0.30	2.80	0.00	0.00	0.00
45.45	0.83	0.30	2.80	0.00	0.00	0.00
45.50	0.83	0.30	2.80	0.00	0.00	0.00
45.55	0.83	0.30	2.80	0.00	0.00	0.00
45.60	0.83	0.30	2.80	0.00	0.00	0.00
45.65	0.83	0.30	2.80	0.00	0.00	0.00
45.70	0.83	0.30	2.80	0.00	0.00	0.00
45.75	0.83	0.29	2.80	0.00	0.00	0.00
45.80	0.83	0.29	2.80	0.00	0.00	0.00
45.85	0.83	0.29	2.80	0.00	0.00	0.00
45.90	0.83	0.29	2.81	0.00	0.00	0.00
45.95	0.83	0.29	2.81	0.00	0.00	0.00
46.00	0.83	0.29	2.81	0.00	0.00	0.00
46.05	0.83	0.29	2.81	0.00	0.00	0.00
46.10	0.83	0.29	2.81	0.00	0.00	0.00
46.15	0.83	0.29	2.81	0.00	0.00	0.00
46.20	0.83	0.29	2.81	0.00	0.00	0.00
46.25	0.83	0.29	2.81	0.00	0.00	0.00
46.30	0.83	0.29	2.81	0.00	0.00	0.00
46.35	0.82	0.29	2.81	0.00	0.00	0.00
46.40	0.82	0.29	2.81	0.00	0.00	0.00
46.45	0.82	0.29	2.82	0.00	0.00	0.00
46.50	0.82	0.29	2.82	0.00	0.00	0.00
46.55	0.82	0.29	2.82	0.00	0.00	0.00
46.60	0.82	0.29	2.82	0.00	0.00	0.00
46.65	0.82	0.29	2.82	0.00	0.00	0.00
46.70	0.82	0.29	2.82	0.00	0.00	0.00
46.75	0.82	0.29	2.82	0.00	0.00	0.00
46.80	0.82	0.29	2.82	0.00	0.00	0.00
46.85	0.82	0.29	2.82	0.00	0.00	0.00
46.90	0.82	0.29	2.82	0.00	0.00	0.00
46.95	0.82	0.29	2.82	0.00	0.00	0.00
47.00	0.82	0.29	2.83	0.00	0.00	0.00
47.05	0.82	0.29	2.83	0.00	0.00	0.00
47.10	0.82	0.29	2.83	0.00	0.00	0.00
47.15	0.82	0.29	2.83	0.00	0.00	0.00
47.20	0.82	0.29	2.83	0.00	0.00	0.00
47.25	0.82	0.29	2.83	0.00	0.00	0.00
47.30	0.82	0.29	2.83	0.00	0.00	0.00
47.35	0.82	0.29	2.83	0.00	0.00	0.00
47.40	0.82	0.29	2.83	0.00	0.00	0.00
47.45	0.82	0.29	2.83	0.00	0.00	0.00
47.50	0.82	0.29	2.83	0.00	0.00	0.00
47.55	0.82	0.29	2.84	0.00	0.00	0.00
47.60	0.82	0.29	2.84	0.00	0.00	0.00
47.65	0.82	0.29	2.84	0.00	0.00	0.00
47.70	0.82	0.29	2.84	0.00	0.00	0.00
47.75	0.82	0.29	2.84	0.00	0.00	0.00
47.80	0.82	0.29	2.84	0.00	0.00	0.00
47.85	0.82	0.29	2.84	0.00	0.00	0.00
47.90	0.82	0.29	2.84	0.00	0.00	0.00
47.95	0.82	0.29	2.84	0.00	0.00	0.00
48.00	0.82	0.29	2.84	0.00	0.00	0.00
48.05	0.82	0.29	2.84	0.00	0.00	0.00
48.10	0.82	0.29	2.85	0.00	0.00	0.00

48.15	0.82	0.29	2.85	0.00	0.00	0.00
48.20	0.82	0.29	2.85	0.00	0.00	0.00
48.25	0.82	0.29	2.85	0.00	0.00	0.00
48.30	0.82	0.29	2.85	0.00	0.00	0.00
48.35	0.82	0.29	2.85	0.00	0.00	0.00
48.40	0.82	0.29	2.85	0.00	0.00	0.00
48.45	0.82	0.29	2.85	0.00	0.00	0.00
48.50	0.82	0.29	2.85	0.00	0.00	0.00
48.55	0.82	0.29	2.85	0.00	0.00	0.00
48.60	0.82	0.29	2.85	0.00	0.00	0.00
48.65	0.82	0.29	2.86	0.00	0.00	0.00
48.70	0.82	0.29	2.86	0.00	0.00	0.00
48.75	0.82	0.29	2.86	0.00	0.00	0.00
48.80	0.82	0.29	2.86	0.00	0.00	0.00
48.85	0.81	0.29	2.82	0.00	0.00	0.00
48.90	0.80	0.29	2.79	0.00	0.00	0.00
48.95	0.79	0.29	2.76	0.00	0.00	0.00
49.00	0.78	0.29	2.74	0.00	0.00	0.00
49.05	0.77	0.29	2.71	0.00	0.00	0.00
49.10	0.77	0.29	2.69	0.00	0.00	0.00
49.15	0.76	0.29	2.67	0.00	0.00	0.00
49.20	0.76	0.29	2.65	0.00	0.00	0.00
49.25	0.75	0.28	2.63	0.00	0.00	0.00
49.30	0.74	0.28	2.61	0.00	0.00	0.00
49.35	0.74	0.28	2.60	0.00	0.00	0.00
49.40	0.73	0.28	2.58	0.00	0.00	0.00
49.45	0.73	0.28	2.57	0.00	0.00	0.00
49.50	0.73	0.28	2.56	0.00	0.00	0.00
49.55	0.72	0.28	2.54	0.00	0.00	0.00
49.60	0.72	0.28	2.53	0.00	0.00	0.00
49.65	0.71	0.28	2.52	0.00	0.00	0.00
49.70	0.71	0.28	2.51	0.00	0.00	0.00
49.75	0.71	0.28	2.50	0.00	0.00	0.00
49.80	0.70	0.28	2.49	0.00	0.00	0.00
49.85	0.70	0.28	2.48	0.00	0.00	0.00
49.90	0.70	0.28	2.47	0.00	0.00	0.00
49.95	0.70	0.28	2.46	0.00	0.00	0.00
50.00	0.69	0.28	2.45	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

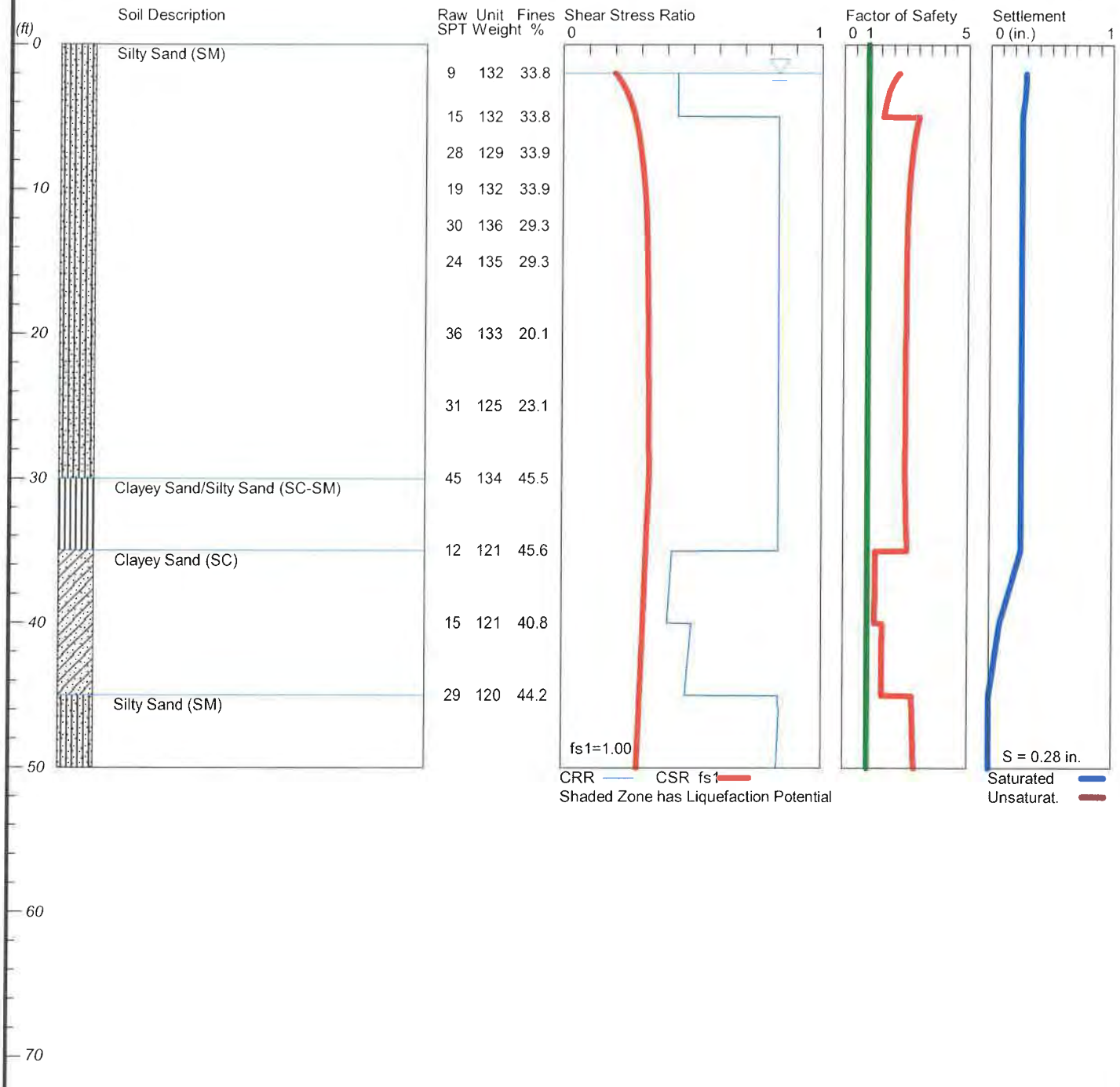
1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B18 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 8/9/2023 10:27:44 AM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B18\B18 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B18
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 3.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B18
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 3.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.4
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	9.00	132.00	33.80
5.00	15.00	132.00	33.80
7.50	28.00	129.00	33.90
10.00	19.00	132.00	33.90
12.50	30.00	136.00	29.30
15.00	24.00	135.00	29.30
20.00	36.00	133.00	20.10
25.00	31.00	125.00	23.10
30.00	45.00	134.00	45.50
35.00	12.00	121.00	45.60
40.00	15.00	121.00	40.80
45.00	29.00	120.00	44.20

Output Results:
Settlement of Saturated Sands=0.28 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.28 in.
Differential Settlement=0.142 to 0.188 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.44	0.20	2.21	0.28	0.00	0.28
2.05	0.44	0.20	2.18	0.28	0.00	0.28
2.10	0.44	0.20	2.16	0.28	0.00	0.28
2.15	0.44	0.21	2.14	0.28	0.00	0.28
2.20	0.44	0.21	2.11	0.28	0.00	0.28
2.25	0.44	0.21	2.09	0.28	0.00	0.28
2.30	0.44	0.21	2.07	0.28	0.00	0.28
2.35	0.44	0.21	2.05	0.28	0.00	0.28
2.40	0.44	0.22	2.04	0.28	0.00	0.28
2.45	0.44	0.22	2.02	0.28	0.00	0.28
2.50	0.44	0.22	2.00	0.28	0.00	0.28
2.55	0.44	0.22	1.99	0.28	0.00	0.28
2.60	0.44	0.22	1.97	0.28	0.00	0.28
2.65	0.44	0.22	1.96	0.28	0.00	0.28
2.70	0.44	0.23	1.94	0.28	0.00	0.28
2.75	0.44	0.23	1.93	0.28	0.00	0.28
2.80	0.44	0.23	1.91	0.28	0.00	0.28
2.85	0.44	0.23	1.90	0.28	0.00	0.28
2.90	0.44	0.23	1.89	0.28	0.00	0.28
2.95	0.44	0.23	1.88	0.28	0.00	0.28
3.00	0.44	0.24	1.86	0.28	0.00	0.28
3.05	0.44	0.24	1.85	0.28	0.00	0.28
3.10	0.44	0.24	1.84	0.28	0.00	0.28
3.15	0.44	0.24	1.83	0.28	0.00	0.28
3.20	0.44	0.24	1.82	0.28	0.00	0.28
3.25	0.44	0.24	1.81	0.28	0.00	0.28
3.30	0.44	0.24	1.80	0.28	0.00	0.28
3.35	0.44	0.24	1.79	0.28	0.00	0.28
3.40	0.44	0.25	1.78	0.28	0.00	0.28
3.45	0.44	0.25	1.78	0.28	0.00	0.28
3.50	0.44	0.25	1.77	0.28	0.00	0.28
3.55	0.44	0.25	1.76	0.28	0.00	0.28
3.60	0.44	0.25	1.75	0.28	0.00	0.28
3.65	0.44	0.25	1.74	0.28	0.00	0.28
3.70	0.44	0.25	1.74	0.28	0.00	0.28
3.75	0.44	0.25	1.73	0.28	0.00	0.28
3.80	0.44	0.25	1.72	0.28	0.00	0.28
3.85	0.44	0.26	1.71	0.28	0.00	0.28
3.90	0.44	0.26	1.71	0.27	0.00	0.27
3.95	0.44	0.26	1.70	0.27	0.00	0.27
4.00	0.44	0.26	1.69	0.27	0.00	0.27
4.05	0.44	0.26	1.69	0.27	0.00	0.27
4.10	0.44	0.26	1.68	0.27	0.00	0.27
4.15	0.44	0.26	1.68	0.27	0.00	0.27
4.20	0.44	0.26	1.67	0.27	0.00	0.27
4.25	0.44	0.26	1.66	0.27	0.00	0.27
4.30	0.44	0.26	1.66	0.27	0.00	0.27
4.35	0.44	0.27	1.65	0.27	0.00	0.27
4.40	0.44	0.27	1.65	0.27	0.00	0.27
4.45	0.44	0.27	1.64	0.27	0.00	0.27
4.50	0.44	0.27	1.64	0.27	0.00	0.27
4.55	0.44	0.27	1.63	0.27	0.00	0.27
4.60	0.44	0.27	1.63	0.26	0.00	0.26
4.65	0.44	0.27	1.62	0.26	0.00	0.26
4.70	0.44	0.27	1.62	0.26	0.00	0.26
4.75	0.44	0.27	1.61	0.26	0.00	0.26
4.80	0.44	0.27	1.61	0.26	0.00	0.26
4.85	0.44	0.27	1.61	0.26	0.00	0.26
4.90	0.44	0.27	1.60	0.26	0.00	0.26
4.95	0.44	0.27	1.60	0.26	0.00	0.26
5.00	0.83	0.28	3.02	0.26	0.00	0.26
5.05	0.83	0.28	3.01	0.26	0.00	0.26
5.10	0.83	0.28	3.00	0.26	0.00	0.26
5.15	0.83	0.28	3.00	0.26	0.00	0.26
5.20	0.83	0.28	2.99	0.26	0.00	0.26
5.25	0.83	0.28	2.98	0.26	0.00	0.26
5.30	0.83	0.28	2.97	0.26	0.00	0.26
5.35	0.83	0.28	2.97	0.26	0.00	0.26
5.40	0.83	0.28	2.96	0.26	0.00	0.26
5.45	0.83	0.28	2.95	0.26	0.00	0.26
5.50	0.83	0.28	2.95	0.26	0.00	0.26

5.55	0.83	0.28	2.94	0.26	0.00	0.26
5.60	0.83	0.28	2.94	0.26	0.00	0.26
5.65	0.83	0.28	2.93	0.26	0.00	0.26
5.70	0.83	0.28	2.92	0.26	0.00	0.26
5.75	0.83	0.28	2.92	0.26	0.00	0.26
5.80	0.83	0.29	2.91	0.26	0.00	0.26
5.85	0.83	0.29	2.91	0.26	0.00	0.26
5.90	0.83	0.29	2.90	0.26	0.00	0.26
5.95	0.83	0.29	2.90	0.26	0.00	0.26
6.00	0.83	0.29	2.89	0.26	0.00	0.26
6.05	0.83	0.29	2.89	0.26	0.00	0.26
6.10	0.83	0.29	2.88	0.26	0.00	0.26
6.15	0.83	0.29	2.88	0.26	0.00	0.26
6.20	0.83	0.29	2.87	0.26	0.00	0.26
6.25	0.83	0.29	2.87	0.26	0.00	0.26
6.30	0.83	0.29	2.86	0.26	0.00	0.26
6.35	0.83	0.29	2.86	0.26	0.00	0.26
6.40	0.83	0.29	2.85	0.26	0.00	0.26
6.45	0.83	0.29	2.85	0.26	0.00	0.26
6.50	0.83	0.29	2.84	0.26	0.00	0.26
6.55	0.83	0.29	2.84	0.26	0.00	0.26
6.60	0.83	0.29	2.83	0.26	0.00	0.26
6.65	0.83	0.29	2.83	0.26	0.00	0.26
6.70	0.83	0.29	2.83	0.26	0.00	0.26
6.75	0.83	0.29	2.82	0.26	0.00	0.26
6.80	0.83	0.29	2.82	0.26	0.00	0.26
6.85	0.83	0.30	2.81	0.26	0.00	0.26
6.90	0.83	0.30	2.81	0.26	0.00	0.26
6.95	0.83	0.30	2.81	0.26	0.00	0.26
7.00	0.83	0.30	2.80	0.26	0.00	0.26
7.05	0.83	0.30	2.80	0.26	0.00	0.26
7.10	0.83	0.30	2.80	0.26	0.00	0.26
7.15	0.83	0.30	2.79	0.26	0.00	0.26
7.20	0.83	0.30	2.79	0.26	0.00	0.26
7.25	0.83	0.30	2.78	0.26	0.00	0.26
7.30	0.83	0.30	2.78	0.26	0.00	0.26
7.35	0.83	0.30	2.78	0.26	0.00	0.26
7.40	0.83	0.30	2.77	0.26	0.00	0.26
7.45	0.83	0.30	2.77	0.26	0.00	0.26
7.50	0.83	0.30	2.77	0.26	0.00	0.26
7.55	0.83	0.30	2.76	0.26	0.00	0.26
7.60	0.83	0.30	2.76	0.26	0.00	0.26
7.65	0.83	0.30	2.76	0.26	0.00	0.26
7.70	0.83	0.30	2.75	0.26	0.00	0.26
7.75	0.83	0.30	2.75	0.26	0.00	0.26
7.80	0.83	0.30	2.75	0.26	0.00	0.26
7.85	0.83	0.30	2.75	0.26	0.00	0.26
7.90	0.83	0.30	2.74	0.26	0.00	0.26
7.95	0.83	0.30	2.74	0.26	0.00	0.26
8.00	0.83	0.30	2.74	0.26	0.00	0.26
8.05	0.83	0.30	2.73	0.26	0.00	0.26
8.10	0.83	0.30	2.73	0.26	0.00	0.26
8.15	0.83	0.30	2.73	0.26	0.00	0.26
8.20	0.83	0.30	2.72	0.26	0.00	0.26
8.25	0.83	0.31	2.72	0.26	0.00	0.26
8.30	0.83	0.31	2.72	0.26	0.00	0.26
8.35	0.83	0.31	2.72	0.26	0.00	0.26
8.40	0.83	0.31	2.71	0.26	0.00	0.26
8.45	0.83	0.31	2.71	0.26	0.00	0.26
8.50	0.83	0.31	2.71	0.26	0.00	0.26
8.55	0.83	0.31	2.71	0.26	0.00	0.26
8.60	0.83	0.31	2.70	0.26	0.00	0.26
8.65	0.83	0.31	2.70	0.26	0.00	0.26
8.70	0.83	0.31	2.70	0.26	0.00	0.26
8.75	0.83	0.31	2.69	0.26	0.00	0.26
8.80	0.83	0.31	2.69	0.26	0.00	0.26
8.85	0.83	0.31	2.69	0.26	0.00	0.26
8.90	0.83	0.31	2.69	0.26	0.00	0.26
8.95	0.83	0.31	2.69	0.26	0.00	0.26
9.00	0.83	0.31	2.68	0.26	0.00	0.26
9.05	0.83	0.31	2.68	0.26	0.00	0.26

9.10	0.83	0.31	2.68	0.26	0.00	0.26
9.15	0.83	0.31	2.68	0.26	0.00	0.26
9.20	0.83	0.31	2.67	0.26	0.00	0.26
9.25	0.83	0.31	2.67	0.26	0.00	0.26
9.30	0.83	0.31	2.67	0.26	0.00	0.26
9.35	0.83	0.31	2.67	0.26	0.00	0.26
9.40	0.83	0.31	2.66	0.26	0.00	0.26
9.45	0.83	0.31	2.66	0.26	0.00	0.26
9.50	0.83	0.31	2.66	0.26	0.00	0.26
9.55	0.83	0.31	2.66	0.26	0.00	0.26
9.60	0.83	0.31	2.66	0.26	0.00	0.26
9.65	0.83	0.31	2.65	0.26	0.00	0.26
9.70	0.83	0.31	2.65	0.26	0.00	0.26
9.75	0.83	0.31	2.65	0.26	0.00	0.26
9.80	0.83	0.31	2.65	0.26	0.00	0.26
9.85	0.83	0.31	2.65	0.26	0.00	0.26
9.90	0.83	0.31	2.64	0.26	0.00	0.26
9.95	0.83	0.31	2.64	0.26	0.00	0.26
10.00	0.83	0.31	2.64	0.26	0.00	0.26
10.05	0.83	0.31	2.64	0.26	0.00	0.26
10.10	0.83	0.31	2.64	0.26	0.00	0.26
10.15	0.83	0.32	2.64	0.26	0.00	0.26
10.20	0.83	0.32	2.63	0.26	0.00	0.26
10.25	0.83	0.32	2.63	0.26	0.00	0.26
10.30	0.83	0.32	2.63	0.26	0.00	0.26
10.35	0.83	0.32	2.63	0.26	0.00	0.26
10.40	0.83	0.32	2.63	0.26	0.00	0.26
10.45	0.83	0.32	2.63	0.26	0.00	0.26
10.50	0.83	0.32	2.63	0.26	0.00	0.26
10.55	0.83	0.32	2.62	0.26	0.00	0.26
10.60	0.83	0.32	2.62	0.26	0.00	0.26
10.65	0.83	0.32	2.62	0.26	0.00	0.26
10.70	0.83	0.32	2.62	0.26	0.00	0.26
10.75	0.83	0.32	2.62	0.26	0.00	0.26
10.80	0.83	0.32	2.62	0.26	0.00	0.26
10.85	0.83	0.32	2.62	0.26	0.00	0.26
10.90	0.83	0.32	2.61	0.26	0.00	0.26
10.95	0.83	0.32	2.61	0.26	0.00	0.26
11.00	0.83	0.32	2.61	0.26	0.00	0.26
11.05	0.83	0.32	2.61	0.26	0.00	0.26
11.10	0.83	0.32	2.61	0.26	0.00	0.26
11.15	0.83	0.32	2.61	0.26	0.00	0.26
11.20	0.83	0.32	2.61	0.26	0.00	0.26
11.25	0.83	0.32	2.60	0.26	0.00	0.26
11.30	0.83	0.32	2.60	0.26	0.00	0.26
11.35	0.83	0.32	2.60	0.26	0.00	0.26
11.40	0.83	0.32	2.60	0.26	0.00	0.26
11.45	0.83	0.32	2.60	0.26	0.00	0.26
11.50	0.83	0.32	2.60	0.26	0.00	0.26
11.55	0.83	0.32	2.60	0.26	0.00	0.26
11.60	0.83	0.32	2.60	0.26	0.00	0.26
11.65	0.83	0.32	2.60	0.26	0.00	0.26
11.70	0.83	0.32	2.59	0.26	0.00	0.26
11.75	0.83	0.32	2.59	0.26	0.00	0.26
11.80	0.83	0.32	2.59	0.26	0.00	0.26
11.85	0.83	0.32	2.59	0.26	0.00	0.26
11.90	0.83	0.32	2.59	0.26	0.00	0.26
11.95	0.83	0.32	2.59	0.26	0.00	0.26
12.00	0.83	0.32	2.59	0.26	0.00	0.26
12.05	0.83	0.32	2.59	0.26	0.00	0.26
12.10	0.83	0.32	2.59	0.26	0.00	0.26
12.15	0.83	0.32	2.58	0.26	0.00	0.26
12.20	0.83	0.32	2.58	0.26	0.00	0.26
12.25	0.83	0.32	2.58	0.26	0.00	0.26
12.30	0.83	0.32	2.58	0.26	0.00	0.26
12.35	0.83	0.32	2.58	0.26	0.00	0.26
12.40	0.83	0.32	2.58	0.26	0.00	0.26
12.45	0.83	0.32	2.58	0.26	0.00	0.26
12.50	0.83	0.32	2.58	0.26	0.00	0.26
12.55	0.83	0.32	2.58	0.26	0.00	0.26
12.60	0.83	0.32	2.58	0.26	0.00	0.26

12.65	0.83	0.32	2.58	0.26	0.00	0.26
12.70	0.83	0.32	2.57	0.26	0.00	0.26
12.75	0.83	0.32	2.57	0.26	0.00	0.26
12.80	0.83	0.32	2.57	0.26	0.00	0.26
12.85	0.83	0.32	2.57	0.26	0.00	0.26
12.90	0.83	0.32	2.57	0.26	0.00	0.26
12.95	0.83	0.32	2.57	0.26	0.00	0.26
13.00	0.83	0.32	2.57	0.26	0.00	0.26
13.05	0.83	0.32	2.57	0.26	0.00	0.26
13.10	0.83	0.32	2.57	0.26	0.00	0.26
13.15	0.83	0.32	2.57	0.26	0.00	0.26
13.20	0.83	0.32	2.57	0.26	0.00	0.26
13.25	0.83	0.32	2.57	0.26	0.00	0.26
13.30	0.83	0.32	2.57	0.26	0.00	0.26
13.35	0.83	0.32	2.57	0.26	0.00	0.26
13.40	0.83	0.32	2.57	0.26	0.00	0.26
13.45	0.83	0.32	2.56	0.26	0.00	0.26
13.50	0.83	0.32	2.56	0.26	0.00	0.26
13.55	0.83	0.32	2.56	0.26	0.00	0.26
13.60	0.83	0.32	2.56	0.26	0.00	0.26
13.65	0.83	0.32	2.56	0.26	0.00	0.26
13.70	0.83	0.32	2.56	0.26	0.00	0.26
13.75	0.83	0.32	2.56	0.26	0.00	0.26
13.80	0.83	0.32	2.56	0.26	0.00	0.26
13.85	0.83	0.32	2.56	0.26	0.00	0.26
13.90	0.83	0.32	2.56	0.26	0.00	0.26
13.95	0.83	0.32	2.56	0.26	0.00	0.26
14.00	0.83	0.32	2.56	0.26	0.00	0.26
14.05	0.83	0.32	2.56	0.26	0.00	0.26
14.10	0.83	0.32	2.56	0.26	0.00	0.26
14.15	0.83	0.32	2.56	0.26	0.00	0.26
14.20	0.83	0.32	2.56	0.26	0.00	0.26
14.25	0.83	0.33	2.56	0.26	0.00	0.26
14.30	0.83	0.33	2.56	0.26	0.00	0.26
14.35	0.83	0.33	2.55	0.26	0.00	0.26
14.40	0.83	0.33	2.55	0.26	0.00	0.26
14.45	0.83	0.33	2.55	0.26	0.00	0.26
14.50	0.83	0.33	2.55	0.26	0.00	0.26
14.55	0.83	0.33	2.55	0.26	0.00	0.26
14.60	0.83	0.33	2.55	0.26	0.00	0.26
14.65	0.83	0.33	2.55	0.26	0.00	0.26
14.70	0.83	0.33	2.55	0.26	0.00	0.26
14.75	0.83	0.33	2.55	0.26	0.00	0.26
14.80	0.83	0.33	2.55	0.26	0.00	0.26
14.85	0.83	0.33	2.55	0.26	0.00	0.26
14.90	0.83	0.33	2.55	0.26	0.00	0.26
14.95	0.83	0.33	2.55	0.26	0.00	0.26
15.00	0.83	0.33	2.55	0.26	0.00	0.26
15.05	0.83	0.33	2.55	0.26	0.00	0.26
15.10	0.83	0.33	2.55	0.26	0.00	0.26
15.15	0.83	0.33	2.55	0.26	0.00	0.26
15.20	0.83	0.33	2.55	0.26	0.00	0.26
15.25	0.83	0.33	2.55	0.26	0.00	0.26
15.30	0.83	0.33	2.55	0.26	0.00	0.26
15.35	0.83	0.33	2.55	0.26	0.00	0.26
15.40	0.83	0.33	2.55	0.26	0.00	0.26
15.45	0.83	0.33	2.54	0.26	0.00	0.26
15.50	0.83	0.33	2.54	0.26	0.00	0.26
15.55	0.83	0.33	2.54	0.26	0.00	0.26
15.60	0.83	0.33	2.54	0.26	0.00	0.26
15.65	0.83	0.33	2.54	0.26	0.00	0.26
15.70	0.83	0.33	2.54	0.26	0.00	0.26
15.75	0.83	0.33	2.54	0.26	0.00	0.26
15.80	0.83	0.33	2.54	0.26	0.00	0.26
15.85	0.83	0.33	2.54	0.26	0.00	0.26
15.90	0.83	0.33	2.54	0.26	0.00	0.26
15.95	0.83	0.33	2.54	0.26	0.00	0.26
16.00	0.83	0.33	2.54	0.26	0.00	0.26
16.05	0.83	0.33	2.54	0.26	0.00	0.26
16.10	0.83	0.33	2.54	0.26	0.00	0.26
16.15	0.83	0.33	2.54	0.26	0.00	0.26

16.20	0.83	0.33	2.54	0.26	0.00	0.26
16.25	0.83	0.33	2.54	0.26	0.00	0.26
16.30	0.83	0.33	2.54	0.26	0.00	0.26
16.35	0.83	0.33	2.54	0.26	0.00	0.26
16.40	0.83	0.33	2.54	0.26	0.00	0.26
16.45	0.83	0.33	2.54	0.26	0.00	0.26
16.50	0.83	0.33	2.54	0.26	0.00	0.26
16.55	0.83	0.33	2.54	0.26	0.00	0.26
16.60	0.83	0.33	2.54	0.26	0.00	0.26
16.65	0.83	0.33	2.54	0.26	0.00	0.26
16.70	0.83	0.33	2.54	0.26	0.00	0.26
16.75	0.83	0.33	2.54	0.26	0.00	0.26
16.80	0.83	0.33	2.53	0.26	0.00	0.26
16.85	0.83	0.33	2.53	0.26	0.00	0.26
16.90	0.83	0.33	2.53	0.26	0.00	0.26
16.95	0.83	0.33	2.53	0.26	0.00	0.26
17.00	0.83	0.33	2.53	0.26	0.00	0.26
17.05	0.83	0.33	2.53	0.26	0.00	0.26
17.10	0.83	0.33	2.53	0.26	0.00	0.26
17.15	0.83	0.33	2.53	0.26	0.00	0.26
17.20	0.83	0.33	2.53	0.26	0.00	0.26
17.25	0.83	0.33	2.53	0.26	0.00	0.26
17.30	0.83	0.33	2.53	0.26	0.00	0.26
17.35	0.83	0.33	2.53	0.26	0.00	0.26
17.40	0.83	0.33	2.53	0.26	0.00	0.26
17.45	0.83	0.33	2.53	0.26	0.00	0.26
17.50	0.83	0.33	2.53	0.26	0.00	0.26
17.55	0.83	0.33	2.53	0.26	0.00	0.26
17.60	0.83	0.33	2.53	0.26	0.00	0.26
17.65	0.83	0.33	2.53	0.26	0.00	0.26
17.70	0.83	0.33	2.53	0.26	0.00	0.26
17.75	0.83	0.33	2.53	0.26	0.00	0.26
17.80	0.83	0.33	2.53	0.26	0.00	0.26
17.85	0.83	0.33	2.53	0.26	0.00	0.26
17.90	0.83	0.33	2.53	0.26	0.00	0.26
17.95	0.83	0.33	2.53	0.26	0.00	0.26
18.00	0.83	0.33	2.53	0.26	0.00	0.26
18.05	0.83	0.33	2.53	0.26	0.00	0.26
18.10	0.83	0.33	2.53	0.26	0.00	0.26
18.15	0.83	0.33	2.53	0.26	0.00	0.26
18.20	0.83	0.33	2.53	0.26	0.00	0.26
18.25	0.83	0.33	2.53	0.26	0.00	0.26
18.30	0.83	0.33	2.53	0.26	0.00	0.26
18.35	0.83	0.33	2.53	0.26	0.00	0.26
18.40	0.83	0.33	2.53	0.26	0.00	0.26
18.45	0.83	0.33	2.53	0.26	0.00	0.26
18.50	0.83	0.33	2.53	0.26	0.00	0.26
18.55	0.83	0.33	2.53	0.26	0.00	0.26
18.60	0.83	0.33	2.53	0.26	0.00	0.26
18.65	0.83	0.33	2.53	0.26	0.00	0.26
18.70	0.83	0.33	2.53	0.26	0.00	0.26
18.75	0.83	0.33	2.53	0.26	0.00	0.26
18.80	0.83	0.33	2.52	0.26	0.00	0.26
18.85	0.83	0.33	2.52	0.26	0.00	0.26
18.90	0.83	0.33	2.52	0.26	0.00	0.26
18.95	0.83	0.33	2.52	0.26	0.00	0.26
19.00	0.83	0.33	2.52	0.26	0.00	0.26
19.05	0.83	0.33	2.52	0.26	0.00	0.26
19.10	0.83	0.33	2.52	0.26	0.00	0.26
19.15	0.83	0.33	2.52	0.26	0.00	0.26
19.20	0.83	0.33	2.52	0.26	0.00	0.26
19.25	0.83	0.33	2.52	0.26	0.00	0.26
19.30	0.83	0.33	2.52	0.26	0.00	0.26
19.35	0.83	0.33	2.52	0.26	0.00	0.26
19.40	0.83	0.33	2.52	0.26	0.00	0.26
19.45	0.83	0.33	2.52	0.26	0.00	0.26
19.50	0.83	0.33	2.52	0.26	0.00	0.26
19.55	0.83	0.33	2.52	0.26	0.00	0.26
19.60	0.83	0.33	2.52	0.26	0.00	0.26
19.65	0.83	0.33	2.52	0.26	0.00	0.26
19.70	0.83	0.33	2.52	0.26	0.00	0.26

19.75	0.83	0.33	2.52	0.26	0.00	0.26
19.80	0.83	0.33	2.52	0.26	0.00	0.26
19.85	0.83	0.33	2.52	0.26	0.00	0.26
19.90	0.83	0.33	2.52	0.26	0.00	0.26
19.95	0.83	0.33	2.52	0.26	0.00	0.26
20.00	0.83	0.33	2.52	0.26	0.00	0.26
20.05	0.83	0.33	2.52	0.26	0.00	0.26
20.10	0.83	0.33	2.52	0.26	0.00	0.26
20.15	0.83	0.33	2.52	0.26	0.00	0.26
20.20	0.83	0.33	2.52	0.26	0.00	0.26
20.25	0.83	0.33	2.52	0.26	0.00	0.26
20.30	0.83	0.33	2.52	0.26	0.00	0.26
20.35	0.83	0.33	2.52	0.26	0.00	0.26
20.40	0.83	0.33	2.52	0.26	0.00	0.26
20.45	0.83	0.33	2.52	0.26	0.00	0.26
20.50	0.83	0.33	2.52	0.26	0.00	0.26
20.55	0.83	0.33	2.52	0.26	0.00	0.26
20.60	0.83	0.33	2.52	0.26	0.00	0.26
20.65	0.83	0.33	2.52	0.26	0.00	0.26
20.70	0.83	0.33	2.52	0.26	0.00	0.26
20.75	0.83	0.33	2.52	0.26	0.00	0.26
20.80	0.83	0.33	2.52	0.26	0.00	0.26
20.85	0.83	0.33	2.52	0.26	0.00	0.26
20.90	0.83	0.33	2.52	0.26	0.00	0.26
20.95	0.83	0.33	2.52	0.26	0.00	0.26
21.00	0.83	0.33	2.52	0.26	0.00	0.26
21.05	0.83	0.33	2.52	0.26	0.00	0.26
21.10	0.83	0.33	2.52	0.26	0.00	0.26
21.15	0.83	0.33	2.52	0.26	0.00	0.26
21.20	0.83	0.33	2.52	0.26	0.00	0.26
21.25	0.83	0.33	2.52	0.26	0.00	0.26
21.30	0.83	0.33	2.52	0.26	0.00	0.26
21.35	0.83	0.33	2.52	0.26	0.00	0.26
21.40	0.83	0.33	2.52	0.26	0.00	0.26
21.45	0.83	0.33	2.52	0.26	0.00	0.26
21.50	0.83	0.33	2.52	0.26	0.00	0.26
21.55	0.83	0.33	2.52	0.26	0.00	0.26
21.60	0.83	0.33	2.52	0.26	0.00	0.26
21.65	0.83	0.33	2.52	0.26	0.00	0.26
21.70	0.83	0.33	2.52	0.26	0.00	0.26
21.75	0.83	0.33	2.52	0.26	0.00	0.26
21.80	0.83	0.33	2.52	0.26	0.00	0.26
21.85	0.83	0.33	2.52	0.26	0.00	0.26
21.90	0.83	0.33	2.52	0.26	0.00	0.26
21.95	0.83	0.33	2.52	0.26	0.00	0.26
22.00	0.83	0.33	2.51	0.26	0.00	0.26
22.05	0.83	0.33	2.51	0.26	0.00	0.26
22.10	0.83	0.33	2.51	0.26	0.00	0.26
22.15	0.83	0.33	2.51	0.26	0.00	0.26
22.20	0.83	0.33	2.51	0.26	0.00	0.26
22.25	0.83	0.33	2.51	0.26	0.00	0.26
22.30	0.83	0.33	2.51	0.26	0.00	0.26
22.35	0.83	0.33	2.51	0.26	0.00	0.26
22.40	0.83	0.33	2.51	0.26	0.00	0.26
22.45	0.83	0.33	2.51	0.26	0.00	0.26
22.50	0.83	0.33	2.51	0.26	0.00	0.26
22.55	0.83	0.33	2.51	0.26	0.00	0.26
22.60	0.83	0.33	2.51	0.26	0.00	0.26
22.65	0.83	0.33	2.51	0.26	0.00	0.26
22.70	0.83	0.33	2.51	0.26	0.00	0.26
22.75	0.83	0.33	2.51	0.26	0.00	0.26
22.80	0.83	0.33	2.51	0.26	0.00	0.26
22.85	0.83	0.33	2.51	0.26	0.00	0.26
22.90	0.83	0.33	2.51	0.26	0.00	0.26
22.95	0.83	0.33	2.51	0.26	0.00	0.26
23.00	0.83	0.33	2.51	0.26	0.00	0.26
23.05	0.83	0.33	2.51	0.26	0.00	0.26
23.10	0.83	0.33	2.51	0.26	0.00	0.26
23.15	0.83	0.33	2.51	0.26	0.00	0.26
23.20	0.83	0.33	2.51	0.26	0.00	0.26
23.25	0.83	0.33	2.51	0.26	0.00	0.26

23.30	0.83	0.33	2.51	0.26	0.00	0.26
23.35	0.83	0.33	2.51	0.26	0.00	0.26
23.40	0.83	0.33	2.51	0.26	0.00	0.26
23.45	0.83	0.33	2.51	0.26	0.00	0.26
23.50	0.83	0.33	2.51	0.26	0.00	0.26
23.55	0.83	0.33	2.51	0.26	0.00	0.26
23.60	0.83	0.33	2.51	0.26	0.00	0.26
23.65	0.83	0.33	2.51	0.26	0.00	0.26
23.70	0.83	0.33	2.51	0.26	0.00	0.26
23.75	0.83	0.33	2.51	0.26	0.00	0.26
23.80	0.83	0.33	2.51	0.26	0.00	0.26
23.85	0.83	0.33	2.51	0.26	0.00	0.26
23.90	0.83	0.33	2.51	0.26	0.00	0.26
23.95	0.83	0.33	2.51	0.26	0.00	0.26
24.00	0.83	0.33	2.51	0.26	0.00	0.26
24.05	0.83	0.33	2.51	0.26	0.00	0.26
24.10	0.83	0.33	2.51	0.26	0.00	0.26
24.15	0.83	0.33	2.51	0.26	0.00	0.26
24.20	0.83	0.33	2.51	0.26	0.00	0.26
24.25	0.83	0.33	2.51	0.26	0.00	0.26
24.30	0.83	0.33	2.51	0.26	0.00	0.26
24.35	0.83	0.33	2.51	0.26	0.00	0.26
24.40	0.83	0.33	2.51	0.26	0.00	0.26
24.45	0.83	0.33	2.51	0.26	0.00	0.26
24.50	0.83	0.33	2.51	0.26	0.00	0.26
24.55	0.83	0.33	2.51	0.26	0.00	0.26
24.60	0.83	0.33	2.51	0.26	0.00	0.26
24.65	0.83	0.33	2.51	0.26	0.00	0.26
24.70	0.83	0.33	2.51	0.26	0.00	0.26
24.75	0.83	0.33	2.51	0.26	0.00	0.26
24.80	0.83	0.33	2.51	0.26	0.00	0.26
24.85	0.83	0.33	2.51	0.26	0.00	0.26
24.90	0.83	0.33	2.51	0.26	0.00	0.26
24.95	0.83	0.33	2.51	0.26	0.00	0.26
25.00	0.83	0.33	2.51	0.26	0.00	0.26
25.05	0.83	0.33	2.51	0.26	0.00	0.26
25.10	0.83	0.33	2.51	0.26	0.00	0.26
25.15	0.83	0.33	2.51	0.26	0.00	0.26
25.20	0.83	0.33	2.51	0.26	0.00	0.26
25.25	0.83	0.33	2.51	0.26	0.00	0.26
25.30	0.83	0.33	2.51	0.26	0.00	0.26
25.35	0.83	0.33	2.51	0.26	0.00	0.26
25.40	0.83	0.33	2.51	0.26	0.00	0.26
25.45	0.83	0.33	2.51	0.26	0.00	0.26
25.50	0.83	0.33	2.51	0.26	0.00	0.26
25.55	0.83	0.33	2.51	0.26	0.00	0.26
25.60	0.83	0.33	2.51	0.26	0.00	0.26
25.65	0.83	0.33	2.51	0.26	0.00	0.26
25.70	0.83	0.33	2.51	0.26	0.00	0.26
25.75	0.83	0.33	2.51	0.26	0.00	0.26
25.80	0.83	0.33	2.51	0.26	0.00	0.26
25.85	0.83	0.33	2.51	0.26	0.00	0.26
25.90	0.83	0.33	2.51	0.26	0.00	0.26
25.95	0.83	0.33	2.51	0.26	0.00	0.26
26.00	0.83	0.33	2.51	0.26	0.00	0.26
26.05	0.83	0.33	2.51	0.26	0.00	0.26
26.10	0.83	0.33	2.51	0.26	0.00	0.26
26.15	0.83	0.33	2.51	0.26	0.00	0.26
26.20	0.83	0.33	2.51	0.26	0.00	0.26
26.25	0.83	0.33	2.51	0.26	0.00	0.26
26.30	0.83	0.33	2.51	0.26	0.00	0.26
26.35	0.83	0.33	2.51	0.26	0.00	0.26
26.40	0.83	0.33	2.51	0.26	0.00	0.26
26.45	0.83	0.33	2.50	0.26	0.00	0.26
26.50	0.83	0.33	2.50	0.26	0.00	0.26
26.55	0.83	0.33	2.50	0.26	0.00	0.26
26.60	0.83	0.33	2.50	0.26	0.00	0.26
26.65	0.83	0.33	2.50	0.26	0.00	0.26
26.70	0.83	0.33	2.50	0.26	0.00	0.26
26.75	0.83	0.33	2.50	0.26	0.00	0.26
26.80	0.83	0.33	2.50	0.26	0.00	0.26

26.85	0.83	0.33	2.50	0.26	0.00	0.26
26.90	0.83	0.33	2.50	0.26	0.00	0.26
26.95	0.83	0.33	2.50	0.26	0.00	0.26
27.00	0.83	0.33	2.50	0.26	0.00	0.26
27.05	0.83	0.33	2.50	0.26	0.00	0.26
27.10	0.83	0.33	2.50	0.26	0.00	0.26
27.15	0.83	0.33	2.50	0.26	0.00	0.26
27.20	0.83	0.33	2.50	0.26	0.00	0.26
27.25	0.83	0.33	2.50	0.26	0.00	0.26
27.30	0.83	0.33	2.50	0.26	0.00	0.26
27.35	0.83	0.33	2.50	0.26	0.00	0.26
27.40	0.83	0.33	2.50	0.26	0.00	0.26
27.45	0.83	0.33	2.50	0.26	0.00	0.26
27.50	0.83	0.33	2.50	0.26	0.00	0.26
27.55	0.83	0.33	2.50	0.26	0.00	0.26
27.60	0.83	0.33	2.50	0.26	0.00	0.26
27.65	0.83	0.33	2.50	0.26	0.00	0.26
27.70	0.83	0.33	2.50	0.26	0.00	0.26
27.75	0.83	0.33	2.50	0.26	0.00	0.26
27.80	0.83	0.33	2.50	0.26	0.00	0.26
27.85	0.83	0.33	2.50	0.26	0.00	0.26
27.90	0.83	0.33	2.50	0.26	0.00	0.26
27.95	0.83	0.33	2.50	0.26	0.00	0.26
28.00	0.83	0.33	2.50	0.26	0.00	0.26
28.05	0.83	0.33	2.50	0.26	0.00	0.26
28.10	0.83	0.33	2.50	0.26	0.00	0.26
28.15	0.83	0.33	2.50	0.26	0.00	0.26
28.20	0.83	0.33	2.50	0.26	0.00	0.26
28.25	0.83	0.33	2.50	0.26	0.00	0.26
28.30	0.83	0.33	2.50	0.26	0.00	0.26
28.35	0.83	0.33	2.50	0.26	0.00	0.26
28.40	0.83	0.33	2.50	0.26	0.00	0.26
28.45	0.83	0.33	2.50	0.26	0.00	0.26
28.50	0.83	0.33	2.50	0.26	0.00	0.26
28.55	0.83	0.33	2.50	0.26	0.00	0.26
28.60	0.83	0.33	2.50	0.26	0.00	0.26
28.65	0.83	0.33	2.50	0.26	0.00	0.26
28.70	0.83	0.33	2.50	0.26	0.00	0.26
28.75	0.83	0.33	2.50	0.26	0.00	0.26
28.80	0.83	0.33	2.50	0.26	0.00	0.26
28.85	0.83	0.33	2.50	0.26	0.00	0.26
28.90	0.83	0.33	2.50	0.26	0.00	0.26
28.95	0.83	0.33	2.50	0.26	0.00	0.26
29.00	0.83	0.33	2.50	0.26	0.00	0.26
29.05	0.83	0.33	2.50	0.26	0.00	0.26
29.10	0.83	0.33	2.50	0.26	0.00	0.26
29.15	0.83	0.33	2.50	0.26	0.00	0.26
29.20	0.83	0.33	2.50	0.26	0.00	0.26
29.25	0.83	0.33	2.50	0.26	0.00	0.26
29.30	0.83	0.33	2.50	0.26	0.00	0.26
29.35	0.83	0.33	2.50	0.26	0.00	0.26
29.40	0.83	0.33	2.50	0.26	0.00	0.26
29.45	0.83	0.33	2.50	0.26	0.00	0.26
29.50	0.83	0.33	2.50	0.26	0.00	0.26
29.55	0.83	0.33	2.50	0.26	0.00	0.26
29.60	0.83	0.33	2.50	0.26	0.00	0.26
29.65	0.83	0.33	2.50	0.26	0.00	0.26
29.70	0.83	0.33	2.50	0.26	0.00	0.26
29.75	0.83	0.33	2.50	0.26	0.00	0.26
29.80	0.83	0.33	2.50	0.26	0.00	0.26
29.85	0.83	0.33	2.50	0.26	0.00	0.26
29.90	0.83	0.33	2.50	0.26	0.00	0.26
29.95	0.83	0.33	2.50	0.26	0.00	0.26
30.00	0.83	0.33	2.50	0.26	0.00	0.26
30.05	0.83	0.33	2.50	0.26	0.00	0.26
30.10	0.83	0.33	2.50	0.26	0.00	0.26
30.15	0.83	0.33	2.50	0.26	0.00	0.26
30.20	0.83	0.33	2.50	0.26	0.00	0.26
30.25	0.83	0.33	2.50	0.26	0.00	0.26
30.30	0.83	0.33	2.50	0.26	0.00	0.26
30.35	0.83	0.33	2.50	0.26	0.00	0.26

30.40	0.83	0.33	2.50	0.26	0.00	0.26
30.45	0.83	0.33	2.50	0.26	0.00	0.26
30.50	0.83	0.33	2.50	0.26	0.00	0.26
30.55	0.83	0.33	2.51	0.26	0.00	0.26
30.60	0.83	0.33	2.51	0.26	0.00	0.26
30.65	0.83	0.33	2.51	0.26	0.00	0.26
30.70	0.83	0.33	2.51	0.26	0.00	0.26
30.75	0.83	0.33	2.51	0.26	0.00	0.26
30.80	0.83	0.33	2.51	0.26	0.00	0.26
30.85	0.83	0.33	2.51	0.26	0.00	0.26
30.90	0.83	0.33	2.51	0.26	0.00	0.26
30.95	0.83	0.33	2.51	0.26	0.00	0.26
31.00	0.83	0.33	2.51	0.26	0.00	0.26
31.05	0.83	0.33	2.51	0.26	0.00	0.26
31.10	0.83	0.33	2.52	0.26	0.00	0.26
31.15	0.83	0.33	2.52	0.26	0.00	0.26
31.20	0.83	0.33	2.52	0.26	0.00	0.26
31.25	0.83	0.33	2.52	0.26	0.00	0.26
31.30	0.83	0.33	2.52	0.26	0.00	0.26
31.35	0.83	0.33	2.52	0.26	0.00	0.26
31.40	0.83	0.33	2.52	0.26	0.00	0.26
31.45	0.83	0.33	2.52	0.26	0.00	0.26
31.50	0.83	0.33	2.52	0.26	0.00	0.26
31.55	0.83	0.33	2.52	0.26	0.00	0.26
31.60	0.83	0.33	2.53	0.26	0.00	0.26
31.65	0.83	0.33	2.53	0.26	0.00	0.26
31.70	0.83	0.33	2.53	0.26	0.00	0.26
31.75	0.83	0.33	2.53	0.26	0.00	0.26
31.80	0.83	0.33	2.53	0.26	0.00	0.26
31.85	0.83	0.33	2.53	0.26	0.00	0.26
31.90	0.83	0.33	2.53	0.26	0.00	0.26
31.95	0.83	0.33	2.53	0.26	0.00	0.26
32.00	0.83	0.33	2.53	0.26	0.00	0.26
32.05	0.83	0.33	2.53	0.26	0.00	0.26
32.10	0.83	0.33	2.54	0.26	0.00	0.26
32.15	0.83	0.33	2.54	0.26	0.00	0.26
32.20	0.83	0.33	2.54	0.26	0.00	0.26
32.25	0.83	0.33	2.54	0.26	0.00	0.26
32.30	0.83	0.33	2.54	0.26	0.00	0.26
32.35	0.83	0.33	2.54	0.26	0.00	0.26
32.40	0.83	0.33	2.54	0.26	0.00	0.26
32.45	0.83	0.33	2.54	0.26	0.00	0.26
32.50	0.83	0.33	2.54	0.26	0.00	0.26
32.55	0.83	0.33	2.54	0.26	0.00	0.26
32.60	0.83	0.33	2.54	0.26	0.00	0.26
32.65	0.83	0.33	2.55	0.26	0.00	0.26
32.70	0.83	0.33	2.55	0.26	0.00	0.26
32.75	0.83	0.33	2.55	0.26	0.00	0.26
32.80	0.83	0.33	2.55	0.26	0.00	0.26
32.85	0.83	0.33	2.55	0.26	0.00	0.26
32.90	0.83	0.33	2.55	0.26	0.00	0.26
32.95	0.83	0.33	2.55	0.26	0.00	0.26
33.00	0.83	0.33	2.55	0.26	0.00	0.26
33.05	0.83	0.33	2.55	0.26	0.00	0.26
33.10	0.83	0.33	2.55	0.26	0.00	0.26
33.15	0.83	0.33	2.56	0.26	0.00	0.26
33.20	0.83	0.32	2.56	0.26	0.00	0.26
33.25	0.83	0.32	2.56	0.26	0.00	0.26
33.30	0.83	0.32	2.56	0.26	0.00	0.26
33.35	0.83	0.32	2.56	0.26	0.00	0.26
33.40	0.83	0.32	2.56	0.26	0.00	0.26
33.45	0.83	0.32	2.56	0.26	0.00	0.26
33.50	0.83	0.32	2.56	0.26	0.00	0.26
33.55	0.83	0.32	2.56	0.26	0.00	0.26
33.60	0.83	0.32	2.56	0.26	0.00	0.26
33.65	0.83	0.32	2.57	0.26	0.00	0.26
33.70	0.83	0.32	2.57	0.26	0.00	0.26
33.75	0.83	0.32	2.57	0.26	0.00	0.26
33.80	0.83	0.32	2.57	0.26	0.00	0.26
33.85	0.83	0.32	2.57	0.26	0.00	0.26
33.90	0.83	0.32	2.57	0.26	0.00	0.26

33.95	0.83	0.32	2.57	0.26	0.00	0.26
34.00	0.83	0.32	2.57	0.26	0.00	0.26
34.05	0.83	0.32	2.57	0.26	0.00	0.26
34.10	0.83	0.32	2.58	0.26	0.00	0.26
34.15	0.83	0.32	2.58	0.26	0.00	0.26
34.20	0.83	0.32	2.58	0.26	0.00	0.26
34.25	0.83	0.32	2.58	0.26	0.00	0.26
34.30	0.83	0.32	2.58	0.26	0.00	0.26
34.35	0.83	0.32	2.58	0.26	0.00	0.26
34.40	0.83	0.32	2.58	0.26	0.00	0.26
34.45	0.83	0.32	2.58	0.26	0.00	0.26
34.50	0.83	0.32	2.58	0.26	0.00	0.26
34.55	0.83	0.32	2.58	0.26	0.00	0.26
34.60	0.83	0.32	2.59	0.26	0.00	0.26
34.65	0.83	0.32	2.59	0.26	0.00	0.26
34.70	0.83	0.32	2.59	0.26	0.00	0.26
34.75	0.83	0.32	2.59	0.26	0.00	0.26
34.80	0.83	0.32	2.59	0.26	0.00	0.26
34.85	0.83	0.32	2.59	0.26	0.00	0.26
34.90	0.83	0.32	2.59	0.26	0.00	0.26
34.95	0.83	0.32	2.59	0.26	0.00	0.26
35.00	0.83	0.32	2.59	0.26	0.00	0.26
35.05	0.42	0.32	1.32	0.26	0.00	0.26
35.10	0.42	0.32	1.32	0.26	0.00	0.26
35.15	0.42	0.32	1.32	0.25	0.00	0.25
35.20	0.42	0.32	1.32	0.25	0.00	0.25
35.25	0.42	0.32	1.32	0.25	0.00	0.25
35.30	0.42	0.32	1.31	0.25	0.00	0.25
35.35	0.42	0.32	1.31	0.25	0.00	0.25
35.40	0.42	0.32	1.31	0.25	0.00	0.25
35.45	0.42	0.32	1.31	0.24	0.00	0.24
35.50	0.42	0.32	1.31	0.24	0.00	0.24
35.55	0.42	0.32	1.31	0.24	0.00	0.24
35.60	0.42	0.32	1.31	0.24	0.00	0.24
35.65	0.42	0.32	1.31	0.24	0.00	0.24
35.70	0.42	0.32	1.31	0.24	0.00	0.24
35.75	0.42	0.32	1.31	0.23	0.00	0.23
35.80	0.42	0.32	1.31	0.23	0.00	0.23
35.85	0.42	0.32	1.31	0.23	0.00	0.23
35.90	0.42	0.32	1.31	0.23	0.00	0.23
35.95	0.42	0.32	1.31	0.23	0.00	0.23
36.00	0.42	0.32	1.31	0.23	0.00	0.23
36.05	0.42	0.32	1.31	0.22	0.00	0.22
36.10	0.42	0.32	1.31	0.22	0.00	0.22
36.15	0.42	0.32	1.31	0.22	0.00	0.22
36.20	0.42	0.32	1.31	0.22	0.00	0.22
36.25	0.42	0.32	1.31	0.22	0.00	0.22
36.30	0.42	0.32	1.31	0.22	0.00	0.22
36.35	0.42	0.32	1.31	0.21	0.00	0.21
36.40	0.42	0.32	1.31	0.21	0.00	0.21
36.45	0.42	0.32	1.31	0.21	0.00	0.21
36.50	0.42	0.32	1.31	0.21	0.00	0.21
36.55	0.42	0.32	1.31	0.21	0.00	0.21
36.60	0.42	0.32	1.31	0.21	0.00	0.21
36.65	0.42	0.32	1.31	0.20	0.00	0.20
36.70	0.41	0.32	1.31	0.20	0.00	0.20
36.75	0.41	0.32	1.31	0.20	0.00	0.20
36.80	0.41	0.32	1.31	0.20	0.00	0.20
36.85	0.41	0.32	1.31	0.20	0.00	0.20
36.90	0.41	0.32	1.31	0.19	0.00	0.19
36.95	0.41	0.32	1.31	0.19	0.00	0.19
37.00	0.41	0.32	1.31	0.19	0.00	0.19
37.05	0.41	0.32	1.31	0.19	0.00	0.19
37.10	0.41	0.32	1.31	0.19	0.00	0.19
37.15	0.41	0.32	1.31	0.19	0.00	0.19
37.20	0.41	0.32	1.31	0.18	0.00	0.18
37.25	0.41	0.32	1.31	0.18	0.00	0.18
37.30	0.41	0.32	1.31	0.18	0.00	0.18
37.35	0.41	0.32	1.31	0.18	0.00	0.18
37.40	0.41	0.32	1.31	0.18	0.00	0.18
37.45	0.41	0.32	1.31	0.18	0.00	0.18

37.50	0.41	0.32	1.31	0.17	0.00	0.17
37.55	0.41	0.32	1.31	0.17	0.00	0.17
37.60	0.41	0.32	1.31	0.17	0.00	0.17
37.65	0.41	0.32	1.31	0.17	0.00	0.17
37.70	0.41	0.31	1.31	0.17	0.00	0.17
37.75	0.41	0.31	1.31	0.17	0.00	0.17
37.80	0.41	0.31	1.31	0.16	0.00	0.16
37.85	0.41	0.31	1.31	0.16	0.00	0.16
37.90	0.41	0.31	1.31	0.16	0.00	0.16
37.95	0.41	0.31	1.31	0.16	0.00	0.16
38.00	0.41	0.31	1.31	0.16	0.00	0.16
38.05	0.41	0.31	1.31	0.16	0.00	0.16
38.10	0.41	0.31	1.31	0.15	0.00	0.15
38.15	0.41	0.31	1.31	0.15	0.00	0.15
38.20	0.41	0.31	1.30	0.15	0.00	0.15
38.25	0.41	0.31	1.30	0.15	0.00	0.15
38.30	0.41	0.31	1.30	0.15	0.00	0.15
38.35	0.41	0.31	1.30	0.15	0.00	0.15
38.40	0.41	0.31	1.30	0.14	0.00	0.14
38.45	0.41	0.31	1.30	0.14	0.00	0.14
38.50	0.41	0.31	1.30	0.14	0.00	0.14
38.55	0.41	0.31	1.30	0.14	0.00	0.14
38.60	0.41	0.31	1.30	0.14	0.00	0.14
38.65	0.41	0.31	1.30	0.13	0.00	0.13
38.70	0.41	0.31	1.30	0.13	0.00	0.13
38.75	0.41	0.31	1.30	0.13	0.00	0.13
38.80	0.41	0.31	1.30	0.13	0.00	0.13
38.85	0.41	0.31	1.30	0.13	0.00	0.13
38.90	0.41	0.31	1.30	0.13	0.00	0.13
38.95	0.41	0.31	1.30	0.12	0.00	0.12
39.00	0.41	0.31	1.30	0.12	0.00	0.12
39.05	0.41	0.31	1.30	0.12	0.00	0.12
39.10	0.41	0.31	1.30	0.12	0.00	0.12
39.15	0.41	0.31	1.30	0.12	0.00	0.12
39.20	0.41	0.31	1.30	0.12	0.00	0.12
39.25	0.41	0.31	1.30	0.11	0.00	0.11
39.30	0.41	0.31	1.30	0.11	0.00	0.11
39.35	0.41	0.31	1.30	0.11	0.00	0.11
39.40	0.41	0.31	1.30	0.11	0.00	0.11
39.45	0.41	0.31	1.30	0.11	0.00	0.11
39.50	0.41	0.31	1.30	0.11	0.00	0.11
39.55	0.41	0.31	1.30	0.10	0.00	0.10
39.60	0.40	0.31	1.30	0.10	0.00	0.10
39.65	0.40	0.31	1.30	0.10	0.00	0.10
39.70	0.40	0.31	1.30	0.10	0.00	0.10
39.75	0.40	0.31	1.30	0.10	0.00	0.10
39.80	0.40	0.31	1.30	0.09	0.00	0.09
39.85	0.40	0.31	1.30	0.09	0.00	0.09
39.90	0.40	0.31	1.30	0.09	0.00	0.09
39.95	0.40	0.31	1.30	0.09	0.00	0.09
40.00	0.40	0.31	1.30	0.09	0.00	0.09
40.05	0.50	0.31	1.60	0.09	0.00	0.09
40.10	0.50	0.31	1.60	0.09	0.00	0.09
40.15	0.50	0.31	1.60	0.08	0.00	0.08
40.20	0.50	0.31	1.60	0.08	0.00	0.08
40.25	0.50	0.31	1.60	0.08	0.00	0.08
40.30	0.50	0.31	1.60	0.08	0.00	0.08
40.35	0.50	0.31	1.60	0.08	0.00	0.08
40.40	0.50	0.31	1.60	0.08	0.00	0.08
40.45	0.49	0.31	1.60	0.08	0.00	0.08
40.50	0.49	0.31	1.60	0.08	0.00	0.08
40.55	0.49	0.31	1.60	0.08	0.00	0.08
40.60	0.49	0.31	1.60	0.08	0.00	0.08
40.65	0.49	0.31	1.60	0.08	0.00	0.08
40.70	0.49	0.31	1.60	0.08	0.00	0.08
40.75	0.49	0.31	1.60	0.07	0.00	0.07
40.80	0.49	0.31	1.60	0.07	0.00	0.07
40.85	0.49	0.31	1.60	0.07	0.00	0.07
40.90	0.49	0.31	1.60	0.07	0.00	0.07
40.95	0.49	0.31	1.60	0.07	0.00	0.07
41.00	0.49	0.31	1.60	0.07	0.00	0.07

41.05	0.49	0.31	1.60	0.07	0.00	0.07
41.10	0.49	0.31	1.60	0.07	0.00	0.07
41.15	0.49	0.31	1.60	0.07	0.00	0.07
41.20	0.49	0.31	1.60	0.07	0.00	0.07
41.25	0.49	0.31	1.60	0.07	0.00	0.07
41.30	0.49	0.31	1.60	0.07	0.00	0.07
41.35	0.49	0.31	1.60	0.06	0.00	0.06
41.40	0.49	0.31	1.60	0.06	0.00	0.06
41.45	0.49	0.31	1.60	0.06	0.00	0.06
41.50	0.49	0.31	1.59	0.06	0.00	0.06
41.55	0.49	0.31	1.59	0.06	0.00	0.06
41.60	0.49	0.31	1.59	0.06	0.00	0.06
41.65	0.49	0.31	1.59	0.06	0.00	0.06
41.70	0.49	0.31	1.59	0.06	0.00	0.06
41.75	0.49	0.31	1.59	0.06	0.00	0.06
41.80	0.49	0.31	1.59	0.06	0.00	0.06
41.85	0.49	0.31	1.59	0.06	0.00	0.06
41.90	0.49	0.31	1.59	0.05	0.00	0.05
41.95	0.49	0.31	1.59	0.05	0.00	0.05
42.00	0.49	0.31	1.59	0.05	0.00	0.05
42.05	0.49	0.31	1.59	0.05	0.00	0.05
42.10	0.49	0.31	1.59	0.05	0.00	0.05
42.15	0.49	0.31	1.59	0.05	0.00	0.05
42.20	0.49	0.31	1.59	0.05	0.00	0.05
42.25	0.49	0.31	1.59	0.05	0.00	0.05
42.30	0.49	0.30	1.59	0.05	0.00	0.05
42.35	0.48	0.30	1.59	0.05	0.00	0.05
42.40	0.48	0.30	1.59	0.05	0.00	0.05
42.45	0.48	0.30	1.59	0.05	0.00	0.05
42.50	0.48	0.30	1.59	0.04	0.00	0.04
42.55	0.48	0.30	1.59	0.04	0.00	0.04
42.60	0.48	0.30	1.59	0.04	0.00	0.04
42.65	0.48	0.30	1.59	0.04	0.00	0.04
42.70	0.48	0.30	1.59	0.04	0.00	0.04
42.75	0.48	0.30	1.59	0.04	0.00	0.04
42.80	0.48	0.30	1.59	0.04	0.00	0.04
42.85	0.48	0.30	1.59	0.04	0.00	0.04
42.90	0.48	0.30	1.59	0.04	0.00	0.04
42.95	0.48	0.30	1.59	0.04	0.00	0.04
43.00	0.48	0.30	1.59	0.04	0.00	0.04
43.05	0.48	0.30	1.59	0.04	0.00	0.04
43.10	0.48	0.30	1.59	0.03	0.00	0.03
43.15	0.48	0.30	1.59	0.03	0.00	0.03
43.20	0.48	0.30	1.59	0.03	0.00	0.03
43.25	0.48	0.30	1.59	0.03	0.00	0.03
43.30	0.48	0.30	1.59	0.03	0.00	0.03
43.35	0.48	0.30	1.59	0.03	0.00	0.03
43.40	0.48	0.30	1.59	0.03	0.00	0.03
43.45	0.48	0.30	1.59	0.03	0.00	0.03
43.50	0.48	0.30	1.59	0.03	0.00	0.03
43.55	0.48	0.30	1.59	0.03	0.00	0.03
43.60	0.48	0.30	1.59	0.03	0.00	0.03
43.65	0.48	0.30	1.59	0.02	0.00	0.02
43.70	0.48	0.30	1.59	0.02	0.00	0.02
43.75	0.48	0.30	1.58	0.02	0.00	0.02
43.80	0.48	0.30	1.58	0.02	0.00	0.02
43.85	0.48	0.30	1.58	0.02	0.00	0.02
43.90	0.48	0.30	1.58	0.02	0.00	0.02
43.95	0.48	0.30	1.58	0.02	0.00	0.02
44.00	0.48	0.30	1.58	0.02	0.00	0.02
44.05	0.48	0.30	1.58	0.02	0.00	0.02
44.10	0.48	0.30	1.58	0.02	0.00	0.02
44.15	0.48	0.30	1.58	0.02	0.00	0.02
44.20	0.48	0.30	1.58	0.02	0.00	0.02
44.25	0.48	0.30	1.58	0.01	0.00	0.01
44.30	0.48	0.30	1.58	0.01	0.00	0.01
44.35	0.48	0.30	1.58	0.01	0.00	0.01
44.40	0.48	0.30	1.58	0.01	0.00	0.01
44.45	0.47	0.30	1.58	0.01	0.00	0.01
44.50	0.47	0.30	1.58	0.01	0.00	0.01
44.55	0.47	0.30	1.58	0.01	0.00	0.01

44.60	0.47	0.30	1.58	0.01	0.00	0.01
44.65	0.47	0.30	1.58	0.01	0.00	0.01
44.70	0.47	0.30	1.58	0.01	0.00	0.01
44.75	0.47	0.30	1.58	0.01	0.00	0.01
44.80	0.47	0.30	1.58	0.00	0.00	0.00
44.85	0.47	0.30	1.58	0.00	0.00	0.00
44.90	0.47	0.30	1.58	0.00	0.00	0.00
44.95	0.47	0.30	1.58	0.00	0.00	0.00
45.00	0.47	0.30	1.58	0.00	0.00	0.00
45.05	0.83	0.30	2.78	0.00	0.00	0.00
45.10	0.83	0.30	2.78	0.00	0.00	0.00
45.15	0.83	0.30	2.78	0.00	0.00	0.00
45.20	0.83	0.30	2.79	0.00	0.00	0.00
45.25	0.83	0.30	2.79	0.00	0.00	0.00
45.30	0.83	0.30	2.79	0.00	0.00	0.00
45.35	0.83	0.30	2.79	0.00	0.00	0.00
45.40	0.83	0.30	2.79	0.00	0.00	0.00
45.45	0.83	0.30	2.79	0.00	0.00	0.00
45.50	0.83	0.30	2.79	0.00	0.00	0.00
45.55	0.83	0.30	2.79	0.00	0.00	0.00
45.60	0.83	0.30	2.79	0.00	0.00	0.00
45.65	0.83	0.30	2.80	0.00	0.00	0.00
45.70	0.83	0.30	2.80	0.00	0.00	0.00
45.75	0.83	0.30	2.80	0.00	0.00	0.00
45.80	0.84	0.30	2.82	0.00	0.00	0.00
45.85	0.84	0.30	2.82	0.00	0.00	0.00
45.90	0.84	0.30	2.82	0.00	0.00	0.00
45.95	0.84	0.30	2.82	0.00	0.00	0.00
46.00	0.84	0.30	2.82	0.00	0.00	0.00
46.05	0.84	0.30	2.82	0.00	0.00	0.00
46.10	0.84	0.30	2.82	0.00	0.00	0.00
46.15	0.84	0.30	2.82	0.00	0.00	0.00
46.20	0.83	0.30	2.82	0.00	0.00	0.00
46.25	0.83	0.30	2.82	0.00	0.00	0.00
46.30	0.83	0.30	2.82	0.00	0.00	0.00
46.35	0.83	0.30	2.82	0.00	0.00	0.00
46.40	0.83	0.30	2.82	0.00	0.00	0.00
46.45	0.83	0.30	2.83	0.00	0.00	0.00
46.50	0.83	0.30	2.83	0.00	0.00	0.00
46.55	0.83	0.30	2.83	0.00	0.00	0.00
46.60	0.83	0.29	2.83	0.00	0.00	0.00
46.65	0.83	0.29	2.83	0.00	0.00	0.00
46.70	0.83	0.29	2.83	0.00	0.00	0.00
46.75	0.83	0.29	2.83	0.00	0.00	0.00
46.80	0.83	0.29	2.83	0.00	0.00	0.00
46.85	0.83	0.29	2.83	0.00	0.00	0.00
46.90	0.83	0.29	2.83	0.00	0.00	0.00
46.95	0.83	0.29	2.83	0.00	0.00	0.00
47.00	0.83	0.29	2.83	0.00	0.00	0.00
47.05	0.83	0.29	2.83	0.00	0.00	0.00
47.10	0.83	0.29	2.84	0.00	0.00	0.00
47.15	0.83	0.29	2.84	0.00	0.00	0.00
47.20	0.83	0.29	2.84	0.00	0.00	0.00
47.25	0.83	0.29	2.84	0.00	0.00	0.00
47.30	0.83	0.29	2.84	0.00	0.00	0.00
47.35	0.83	0.29	2.84	0.00	0.00	0.00
47.40	0.83	0.29	2.84	0.00	0.00	0.00
47.45	0.83	0.29	2.84	0.00	0.00	0.00
47.50	0.83	0.29	2.84	0.00	0.00	0.00
47.55	0.83	0.29	2.84	0.00	0.00	0.00
47.60	0.83	0.29	2.84	0.00	0.00	0.00
47.65	0.83	0.29	2.84	0.00	0.00	0.00
47.70	0.83	0.29	2.84	0.00	0.00	0.00
47.75	0.83	0.29	2.85	0.00	0.00	0.00
47.80	0.83	0.29	2.85	0.00	0.00	0.00
47.85	0.83	0.29	2.85	0.00	0.00	0.00
47.90	0.83	0.29	2.85	0.00	0.00	0.00
47.95	0.83	0.29	2.85	0.00	0.00	0.00
48.00	0.83	0.29	2.85	0.00	0.00	0.00
48.05	0.83	0.29	2.85	0.00	0.00	0.00
48.10	0.83	0.29	2.85	0.00	0.00	0.00

48.15	0.83	0.29	2.85	0.00	0.00	0.00
48.20	0.83	0.29	2.85	0.00	0.00	0.00
48.25	0.83	0.29	2.85	0.00	0.00	0.00
48.30	0.83	0.29	2.85	0.00	0.00	0.00
48.35	0.83	0.29	2.85	0.00	0.00	0.00
48.40	0.83	0.29	2.86	0.00	0.00	0.00
48.45	0.83	0.29	2.86	0.00	0.00	0.00
48.50	0.83	0.29	2.86	0.00	0.00	0.00
48.55	0.83	0.29	2.86	0.00	0.00	0.00
48.60	0.83	0.29	2.86	0.00	0.00	0.00
48.65	0.83	0.29	2.86	0.00	0.00	0.00
48.70	0.83	0.29	2.86	0.00	0.00	0.00
48.75	0.83	0.29	2.86	0.00	0.00	0.00
48.80	0.83	0.29	2.86	0.00	0.00	0.00
48.85	0.83	0.29	2.86	0.00	0.00	0.00
48.90	0.83	0.29	2.86	0.00	0.00	0.00
48.95	0.83	0.29	2.86	0.00	0.00	0.00
49.00	0.83	0.29	2.87	0.00	0.00	0.00
49.05	0.83	0.29	2.87	0.00	0.00	0.00
49.10	0.83	0.29	2.87	0.00	0.00	0.00
49.15	0.83	0.29	2.87	0.00	0.00	0.00
49.20	0.83	0.29	2.87	0.00	0.00	0.00
49.25	0.83	0.29	2.87	0.00	0.00	0.00
49.30	0.83	0.29	2.87	0.00	0.00	0.00
49.35	0.83	0.29	2.87	0.00	0.00	0.00
49.40	0.83	0.29	2.87	0.00	0.00	0.00
49.45	0.83	0.29	2.87	0.00	0.00	0.00
49.50	0.83	0.29	2.87	0.00	0.00	0.00
49.55	0.83	0.29	2.87	0.00	0.00	0.00
49.60	0.83	0.29	2.88	0.00	0.00	0.00
49.65	0.83	0.29	2.88	0.00	0.00	0.00
49.70	0.83	0.29	2.88	0.00	0.00	0.00
49.75	0.83	0.29	2.88	0.00	0.00	0.00
49.80	0.83	0.29	2.88	0.00	0.00	0.00
49.85	0.83	0.29	2.88	0.00	0.00	0.00
49.90	0.83	0.29	2.88	0.00	0.00	0.00
49.95	0.83	0.29	2.88	0.00	0.00	0.00
50.00	0.83	0.29	2.88	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

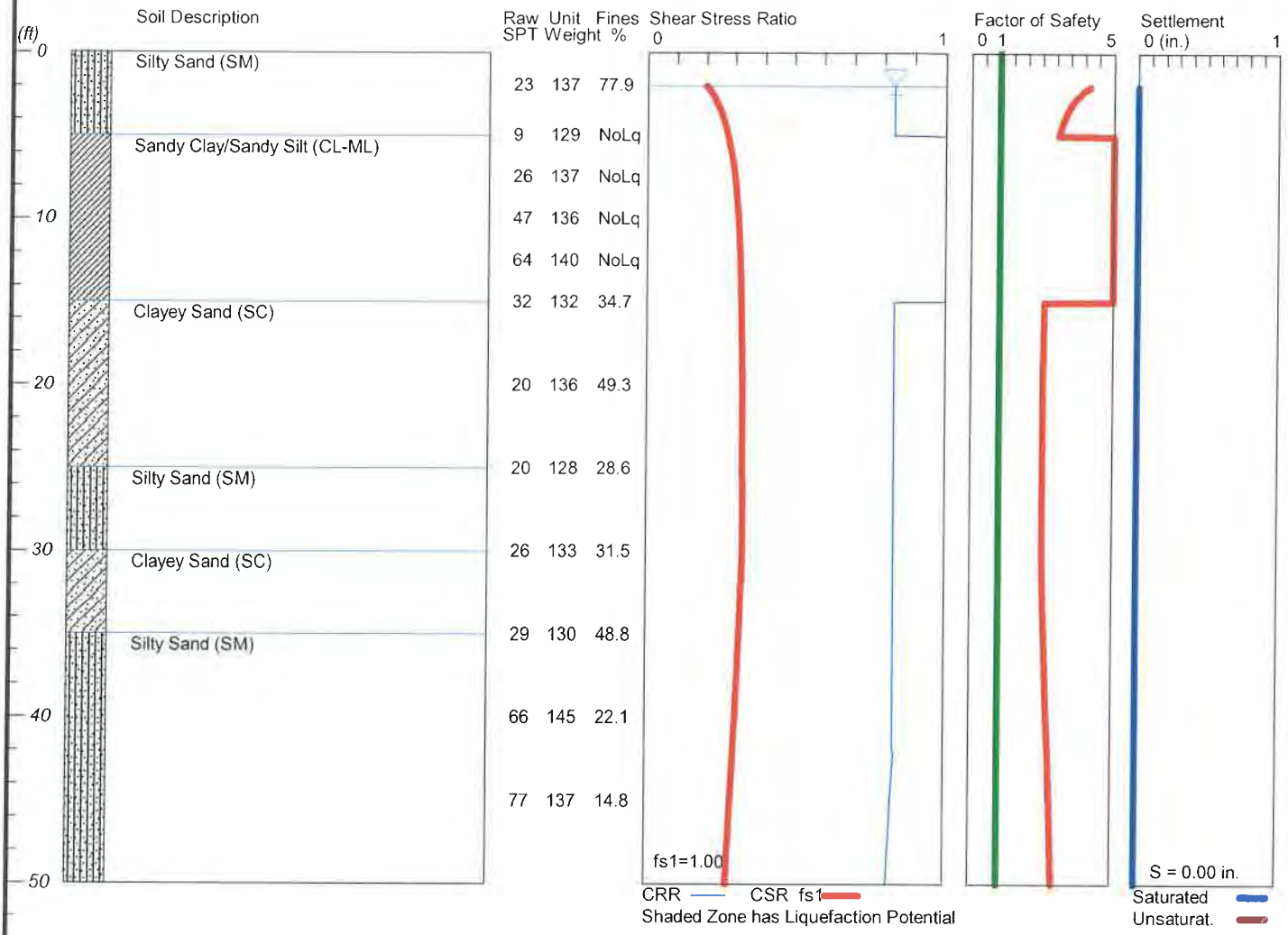
1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B19 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

Krazan

012-22165

Plate A-1

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 8/9/2023 10:21:14 AM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B19\B19 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B19
Depth of Hole= 50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 4.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B19
Depth of Hole=50.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 4.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.4
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	23.00	137.00	77.90
5.00	9.00	129.00	NoLiq
7.50	26.00	137.00	NoLiq
10.00	47.00	136.00	NoLiq
12.50	64.00	140.00	NoLiq
15.00	32.00	132.00	34.70
20.00	20.00	136.00	49.30
25.00	20.00	128.00	28.60
30.00	26.00	133.00	31.50
35.00	29.00	130.00	48.80
40.00	66.00	145.00	22.10
45.00	77.00	137.00	14.80

Output Results:
Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.00 in.
Differential Settlement=0.000 to 0.000 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.

2.00	0.83	0.20	4.18	0.00	0.00	0.00
2.05	0.83	0.20	4.14	0.00	0.00	0.00
2.10	0.83	0.20	4.09	0.00	0.00	0.00
2.15	0.83	0.21	4.05	0.00	0.00	0.00
2.20	0.83	0.21	4.01	0.00	0.00	0.00
2.25	0.83	0.21	3.97	0.00	0.00	0.00
2.30	0.83	0.21	3.94	0.00	0.00	0.00
2.35	0.83	0.21	3.90	0.00	0.00	0.00
2.40	0.83	0.21	3.87	0.00	0.00	0.00
2.45	0.83	0.22	3.84	0.00	0.00	0.00
2.50	0.83	0.22	3.81	0.00	0.00	0.00
2.55	0.83	0.22	3.78	0.00	0.00	0.00
2.60	0.83	0.22	3.75	0.00	0.00	0.00
2.65	0.83	0.22	3.72	0.00	0.00	0.00
2.70	0.83	0.22	3.69	0.00	0.00	0.00
2.75	0.83	0.23	3.67	0.00	0.00	0.00
2.80	0.83	0.23	3.64	0.00	0.00	0.00
2.85	0.83	0.23	3.62	0.00	0.00	0.00
2.90	0.83	0.23	3.60	0.00	0.00	0.00
2.95	0.83	0.23	3.58	0.00	0.00	0.00
3.00	0.83	0.23	3.56	0.00	0.00	0.00
3.05	0.83	0.23	3.54	0.00	0.00	0.00
3.10	0.83	0.24	3.52	0.00	0.00	0.00
3.15	0.83	0.24	3.50	0.00	0.00	0.00
3.20	0.83	0.24	3.48	0.00	0.00	0.00
3.25	0.83	0.24	3.46	0.00	0.00	0.00
3.30	0.83	0.24	3.44	0.00	0.00	0.00
3.35	0.83	0.24	3.43	0.00	0.00	0.00
3.40	0.83	0.24	3.41	0.00	0.00	0.00
3.45	0.83	0.24	3.39	0.00	0.00	0.00
3.50	0.83	0.25	3.38	0.00	0.00	0.00
3.55	0.83	0.25	3.36	0.00	0.00	0.00
3.60	0.83	0.25	3.35	0.00	0.00	0.00
3.65	0.83	0.25	3.33	0.00	0.00	0.00
3.70	0.83	0.25	3.32	0.00	0.00	0.00
3.75	0.83	0.25	3.31	0.00	0.00	0.00
3.80	0.83	0.25	3.29	0.00	0.00	0.00
3.85	0.83	0.25	3.28	0.00	0.00	0.00
3.90	0.83	0.25	3.27	0.00	0.00	0.00
3.95	0.83	0.26	3.26	0.00	0.00	0.00
4.00	0.83	0.26	3.25	0.00	0.00	0.00
4.05	0.83	0.26	3.23	0.00	0.00	0.00
4.10	0.83	0.26	3.22	0.00	0.00	0.00
4.15	0.83	0.26	3.21	0.00	0.00	0.00
4.20	0.83	0.26	3.20	0.00	0.00	0.00
4.25	0.83	0.26	3.19	0.00	0.00	0.00
4.30	0.83	0.26	3.18	0.00	0.00	0.00
4.35	0.83	0.26	3.17	0.00	0.00	0.00
4.40	0.83	0.26	3.16	0.00	0.00	0.00
4.45	0.83	0.26	3.15	0.00	0.00	0.00
4.50	0.83	0.26	3.14	0.00	0.00	0.00
4.55	0.83	0.27	3.13	0.00	0.00	0.00
4.60	0.83	0.27	3.12	0.00	0.00	0.00
4.65	0.83	0.27	3.12	0.00	0.00	0.00
4.70	0.83	0.27	3.11	0.00	0.00	0.00
4.75	0.83	0.27	3.10	0.00	0.00	0.00
4.80	0.83	0.27	3.09	0.00	0.00	0.00
4.85	0.83	0.27	3.08	0.00	0.00	0.00
4.90	0.83	0.27	3.08	0.00	0.00	0.00
4.95	0.83	0.27	3.07	0.00	0.00	0.00
5.00	2.00	0.27	5.00	0.00	0.00	0.00
5.05	2.00	0.27	5.00	0.00	0.00	0.00
5.10	2.00	0.27	5.00	0.00	0.00	0.00
5.15	2.00	0.27	5.00	0.00	0.00	0.00
5.20	2.00	0.27	5.00	0.00	0.00	0.00
5.25	2.00	0.27	5.00	0.00	0.00	0.00
5.30	2.00	0.28	5.00	0.00	0.00	0.00
5.35	2.00	0.28	5.00	0.00	0.00	0.00
5.40	2.00	0.28	5.00	0.00	0.00	0.00
5.45	2.00	0.28	5.00	0.00	0.00	0.00
5.50	2.00	0.28	5.00	0.00	0.00	0.00

5.55	2.00	0.28	5.00	0.00	0.00	0.00
5.60	2.00	0.28	5.00	0.00	0.00	0.00
5.65	2.00	0.28	5.00	0.00	0.00	0.00
5.70	2.00	0.28	5.00	0.00	0.00	0.00
5.75	2.00	0.28	5.00	0.00	0.00	0.00
5.80	2.00	0.28	5.00	0.00	0.00	0.00
5.85	2.00	0.28	5.00	0.00	0.00	0.00
5.90	2.00	0.28	5.00	0.00	0.00	0.00
5.95	2.00	0.28	5.00	0.00	0.00	0.00
6.00	2.00	0.28	5.00	0.00	0.00	0.00
6.05	2.00	0.28	5.00	0.00	0.00	0.00
6.10	2.00	0.28	5.00	0.00	0.00	0.00
6.15	2.00	0.29	5.00	0.00	0.00	0.00
6.20	2.00	0.29	5.00	0.00	0.00	0.00
6.25	2.00	0.29	5.00	0.00	0.00	0.00
6.30	2.00	0.29	5.00	0.00	0.00	0.00
6.35	2.00	0.29	5.00	0.00	0.00	0.00
6.40	2.00	0.29	5.00	0.00	0.00	0.00
6.45	2.00	0.29	5.00	0.00	0.00	0.00
6.50	2.00	0.29	5.00	0.00	0.00	0.00
6.55	2.00	0.29	5.00	0.00	0.00	0.00
6.60	2.00	0.29	5.00	0.00	0.00	0.00
6.65	2.00	0.29	5.00	0.00	0.00	0.00
6.70	2.00	0.29	5.00	0.00	0.00	0.00
6.75	2.00	0.29	5.00	0.00	0.00	0.00
6.80	2.00	0.29	5.00	0.00	0.00	0.00
6.85	2.00	0.29	5.00	0.00	0.00	0.00
6.90	2.00	0.29	5.00	0.00	0.00	0.00
6.95	2.00	0.29	5.00	0.00	0.00	0.00
7.00	2.00	0.29	5.00	0.00	0.00	0.00
7.05	2.00	0.29	5.00	0.00	0.00	0.00
7.10	2.00	0.29	5.00	0.00	0.00	0.00
7.15	2.00	0.29	5.00	0.00	0.00	0.00
7.20	2.00	0.30	5.00	0.00	0.00	0.00
7.25	2.00	0.30	5.00	0.00	0.00	0.00
7.30	2.00	0.30	5.00	0.00	0.00	0.00
7.35	2.00	0.30	5.00	0.00	0.00	0.00
7.40	2.00	0.30	5.00	0.00	0.00	0.00
7.45	2.00	0.30	5.00	0.00	0.00	0.00
7.50	2.00	0.30	5.00	0.00	0.00	0.00
7.55	2.00	0.30	5.00	0.00	0.00	0.00
7.60	2.00	0.30	5.00	0.00	0.00	0.00
7.65	2.00	0.30	5.00	0.00	0.00	0.00
7.70	2.00	0.30	5.00	0.00	0.00	0.00
7.75	2.00	0.30	5.00	0.00	0.00	0.00
7.80	2.00	0.30	5.00	0.00	0.00	0.00
7.85	2.00	0.30	5.00	0.00	0.00	0.00
7.90	2.00	0.30	5.00	0.00	0.00	0.00
7.95	2.00	0.30	5.00	0.00	0.00	0.00
8.00	2.00	0.30	5.00	0.00	0.00	0.00
8.05	2.00	0.30	5.00	0.00	0.00	0.00
8.10	2.00	0.30	5.00	0.00	0.00	0.00
8.15	2.00	0.30	5.00	0.00	0.00	0.00
8.20	2.00	0.30	5.00	0.00	0.00	0.00
8.25	2.00	0.30	5.00	0.00	0.00	0.00
8.30	2.00	0.30	5.00	0.00	0.00	0.00
8.35	2.00	0.30	5.00	0.00	0.00	0.00
8.40	2.00	0.30	5.00	0.00	0.00	0.00
8.45	2.00	0.30	5.00	0.00	0.00	0.00
8.50	2.00	0.30	5.00	0.00	0.00	0.00
8.55	2.00	0.30	5.00	0.00	0.00	0.00
8.60	2.00	0.30	5.00	0.00	0.00	0.00
8.65	2.00	0.30	5.00	0.00	0.00	0.00
8.70	2.00	0.30	5.00	0.00	0.00	0.00
8.75	2.00	0.30	5.00	0.00	0.00	0.00
8.80	2.00	0.30	5.00	0.00	0.00	0.00
8.85	2.00	0.30	5.00	0.00	0.00	0.00
8.90	2.00	0.30	5.00	0.00	0.00	0.00
8.95	2.00	0.31	5.00	0.00	0.00	0.00
9.00	2.00	0.31	5.00	0.00	0.00	0.00
9.05	2.00	0.31	5.00	0.00	0.00	0.00

9.10	2.00	0.31	5.00	0.00	0.00	0.00
9.15	2.00	0.31	5.00	0.00	0.00	0.00
9.20	2.00	0.31	5.00	0.00	0.00	0.00
9.25	2.00	0.31	5.00	0.00	0.00	0.00
9.30	2.00	0.31	5.00	0.00	0.00	0.00
9.35	2.00	0.31	5.00	0.00	0.00	0.00
9.40	2.00	0.31	5.00	0.00	0.00	0.00
9.45	2.00	0.31	5.00	0.00	0.00	0.00
9.50	2.00	0.31	5.00	0.00	0.00	0.00
9.55	2.00	0.31	5.00	0.00	0.00	0.00
9.60	2.00	0.31	5.00	0.00	0.00	0.00
9.65	2.00	0.31	5.00	0.00	0.00	0.00
9.70	2.00	0.31	5.00	0.00	0.00	0.00
9.75	2.00	0.31	5.00	0.00	0.00	0.00
9.80	2.00	0.31	5.00	0.00	0.00	0.00
9.85	2.00	0.31	5.00	0.00	0.00	0.00
9.90	2.00	0.31	5.00	0.00	0.00	0.00
9.95	2.00	0.31	5.00	0.00	0.00	0.00
10.00	2.00	0.31	5.00	0.00	0.00	0.00
10.05	2.00	0.31	5.00	0.00	0.00	0.00
10.10	2.00	0.31	5.00	0.00	0.00	0.00
10.15	2.00	0.31	5.00	0.00	0.00	0.00
10.20	2.00	0.31	5.00	0.00	0.00	0.00
10.25	2.00	0.31	5.00	0.00	0.00	0.00
10.30	2.00	0.31	5.00	0.00	0.00	0.00
10.35	2.00	0.31	5.00	0.00	0.00	0.00
10.40	2.00	0.31	5.00	0.00	0.00	0.00
10.45	2.00	0.31	5.00	0.00	0.00	0.00
10.50	2.00	0.31	5.00	0.00	0.00	0.00
10.55	2.00	0.31	5.00	0.00	0.00	0.00
10.60	2.00	0.31	5.00	0.00	0.00	0.00
10.65	2.00	0.31	5.00	0.00	0.00	0.00
10.70	2.00	0.31	5.00	0.00	0.00	0.00
10.75	2.00	0.31	5.00	0.00	0.00	0.00
10.80	2.00	0.31	5.00	0.00	0.00	0.00
10.85	2.00	0.31	5.00	0.00	0.00	0.00
10.90	2.00	0.31	5.00	0.00	0.00	0.00
10.95	2.00	0.31	5.00	0.00	0.00	0.00
11.00	2.00	0.31	5.00	0.00	0.00	0.00
11.05	2.00	0.31	5.00	0.00	0.00	0.00
11.10	2.00	0.31	5.00	0.00	0.00	0.00
11.15	2.00	0.31	5.00	0.00	0.00	0.00
11.20	2.00	0.31	5.00	0.00	0.00	0.00
11.25	2.00	0.31	5.00	0.00	0.00	0.00
11.30	2.00	0.31	5.00	0.00	0.00	0.00
11.35	2.00	0.31	5.00	0.00	0.00	0.00
11.40	2.00	0.31	5.00	0.00	0.00	0.00
11.45	2.00	0.31	5.00	0.00	0.00	0.00
11.50	2.00	0.31	5.00	0.00	0.00	0.00
11.55	2.00	0.31	5.00	0.00	0.00	0.00
11.60	2.00	0.31	5.00	0.00	0.00	0.00
11.65	2.00	0.31	5.00	0.00	0.00	0.00
11.70	2.00	0.31	5.00	0.00	0.00	0.00
11.75	2.00	0.31	5.00	0.00	0.00	0.00
11.80	2.00	0.31	5.00	0.00	0.00	0.00
11.85	2.00	0.31	5.00	0.00	0.00	0.00
11.90	2.00	0.31	5.00	0.00	0.00	0.00
11.95	2.00	0.32	5.00	0.00	0.00	0.00
12.00	2.00	0.32	5.00	0.00	0.00	0.00
12.05	2.00	0.32	5.00	0.00	0.00	0.00
12.10	2.00	0.32	5.00	0.00	0.00	0.00
12.15	2.00	0.32	5.00	0.00	0.00	0.00
12.20	2.00	0.32	5.00	0.00	0.00	0.00
12.25	2.00	0.32	5.00	0.00	0.00	0.00
12.30	2.00	0.32	5.00	0.00	0.00	0.00
12.35	2.00	0.32	5.00	0.00	0.00	0.00
12.40	2.00	0.32	5.00	0.00	0.00	0.00
12.45	2.00	0.32	5.00	0.00	0.00	0.00
12.50	2.00	0.32	5.00	0.00	0.00	0.00
12.55	2.00	0.32	5.00	0.00	0.00	0.00
12.60	2.00	0.32	5.00	0.00	0.00	0.00

12.65	2.00	0.32	5.00	0.00	0.00	0.00
12.70	2.00	0.32	5.00	0.00	0.00	0.00
12.75	2.00	0.32	5.00	0.00	0.00	0.00
12.80	2.00	0.32	5.00	0.00	0.00	0.00
12.85	2.00	0.32	5.00	0.00	0.00	0.00
12.90	2.00	0.32	5.00	0.00	0.00	0.00
12.95	2.00	0.32	5.00	0.00	0.00	0.00
13.00	2.00	0.32	5.00	0.00	0.00	0.00
13.05	2.00	0.32	5.00	0.00	0.00	0.00
13.10	2.00	0.32	5.00	0.00	0.00	0.00
13.15	2.00	0.32	5.00	0.00	0.00	0.00
13.20	2.00	0.32	5.00	0.00	0.00	0.00
13.25	2.00	0.32	5.00	0.00	0.00	0.00
13.30	2.00	0.32	5.00	0.00	0.00	0.00
13.35	2.00	0.32	5.00	0.00	0.00	0.00
13.40	2.00	0.32	5.00	0.00	0.00	0.00
13.45	2.00	0.32	5.00	0.00	0.00	0.00
13.50	2.00	0.32	5.00	0.00	0.00	0.00
13.55	2.00	0.32	5.00	0.00	0.00	0.00
13.60	2.00	0.32	5.00	0.00	0.00	0.00
13.65	2.00	0.32	5.00	0.00	0.00	0.00
13.70	2.00	0.32	5.00	0.00	0.00	0.00
13.75	2.00	0.32	5.00	0.00	0.00	0.00
13.80	2.00	0.32	5.00	0.00	0.00	0.00
13.85	2.00	0.32	5.00	0.00	0.00	0.00
13.90	2.00	0.32	5.00	0.00	0.00	0.00
13.95	2.00	0.32	5.00	0.00	0.00	0.00
14.00	2.00	0.32	5.00	0.00	0.00	0.00
14.05	2.00	0.32	5.00	0.00	0.00	0.00
14.10	2.00	0.32	5.00	0.00	0.00	0.00
14.15	2.00	0.32	5.00	0.00	0.00	0.00
14.20	2.00	0.32	5.00	0.00	0.00	0.00
14.25	2.00	0.32	5.00	0.00	0.00	0.00
14.30	2.00	0.32	5.00	0.00	0.00	0.00
14.35	2.00	0.32	5.00	0.00	0.00	0.00
14.40	2.00	0.32	5.00	0.00	0.00	0.00
14.45	2.00	0.32	5.00	0.00	0.00	0.00
14.50	2.00	0.32	5.00	0.00	0.00	0.00
14.55	2.00	0.32	5.00	0.00	0.00	0.00
14.60	2.00	0.32	5.00	0.00	0.00	0.00
14.65	2.00	0.32	5.00	0.00	0.00	0.00
14.70	2.00	0.32	5.00	0.00	0.00	0.00
14.75	2.00	0.32	5.00	0.00	0.00	0.00
14.80	2.00	0.32	5.00	0.00	0.00	0.00
14.85	2.00	0.32	5.00	0.00	0.00	0.00
14.90	2.00	0.32	5.00	0.00	0.00	0.00
14.95	2.00	0.32	5.00	0.00	0.00	0.00
15.00	0.83	0.32	2.60	0.00	0.00	0.00
15.05	0.83	0.32	2.60	0.00	0.00	0.00
15.10	0.83	0.32	2.60	0.00	0.00	0.00
15.15	0.83	0.32	2.60	0.00	0.00	0.00
15.20	0.83	0.32	2.60	0.00	0.00	0.00
15.25	0.83	0.32	2.59	0.00	0.00	0.00
15.30	0.83	0.32	2.59	0.00	0.00	0.00
15.35	0.83	0.32	2.59	0.00	0.00	0.00
15.40	0.83	0.32	2.59	0.00	0.00	0.00
15.45	0.83	0.32	2.59	0.00	0.00	0.00
15.50	0.83	0.32	2.59	0.00	0.00	0.00
15.55	0.83	0.32	2.59	0.00	0.00	0.00
15.60	0.83	0.32	2.59	0.00	0.00	0.00
15.65	0.83	0.32	2.59	0.00	0.00	0.00
15.70	0.83	0.32	2.59	0.00	0.00	0.00
15.75	0.83	0.32	2.59	0.00	0.00	0.00
15.80	0.83	0.32	2.59	0.00	0.00	0.00
15.85	0.83	0.32	2.59	0.00	0.00	0.00
15.90	0.83	0.32	2.59	0.00	0.00	0.00
15.95	0.83	0.32	2.59	0.00	0.00	0.00
16.00	0.83	0.32	2.58	0.00	0.00	0.00
16.05	0.83	0.32	2.58	0.00	0.00	0.00
16.10	0.83	0.32	2.58	0.00	0.00	0.00
16.15	0.83	0.32	2.58	0.00	0.00	0.00

16.20	0.83	0.32	2.58	0.00	0.00	0.00
16.25	0.83	0.32	2.58	0.00	0.00	0.00
16.30	0.83	0.32	2.58	0.00	0.00	0.00
16.35	0.83	0.32	2.58	0.00	0.00	0.00
16.40	0.83	0.32	2.58	0.00	0.00	0.00
16.45	0.83	0.32	2.58	0.00	0.00	0.00
16.50	0.83	0.32	2.58	0.00	0.00	0.00
16.55	0.83	0.32	2.58	0.00	0.00	0.00
16.60	0.83	0.32	2.58	0.00	0.00	0.00
16.65	0.83	0.32	2.58	0.00	0.00	0.00
16.70	0.83	0.32	2.58	0.00	0.00	0.00
16.75	0.83	0.32	2.58	0.00	0.00	0.00
16.80	0.83	0.32	2.58	0.00	0.00	0.00
16.85	0.83	0.32	2.58	0.00	0.00	0.00
16.90	0.83	0.32	2.57	0.00	0.00	0.00
16.95	0.83	0.32	2.57	0.00	0.00	0.00
17.00	0.83	0.32	2.57	0.00	0.00	0.00
17.05	0.83	0.32	2.57	0.00	0.00	0.00
17.10	0.83	0.32	2.57	0.00	0.00	0.00
17.15	0.83	0.32	2.57	0.00	0.00	0.00
17.20	0.83	0.32	2.57	0.00	0.00	0.00
17.25	0.83	0.32	2.57	0.00	0.00	0.00
17.30	0.83	0.32	2.57	0.00	0.00	0.00
17.35	0.83	0.32	2.57	0.00	0.00	0.00
17.40	0.83	0.32	2.57	0.00	0.00	0.00
17.45	0.83	0.32	2.57	0.00	0.00	0.00
17.50	0.83	0.32	2.57	0.00	0.00	0.00
17.55	0.83	0.32	2.57	0.00	0.00	0.00
17.60	0.83	0.32	2.57	0.00	0.00	0.00
17.65	0.83	0.32	2.57	0.00	0.00	0.00
17.70	0.83	0.32	2.57	0.00	0.00	0.00
17.75	0.83	0.32	2.57	0.00	0.00	0.00
17.80	0.83	0.32	2.57	0.00	0.00	0.00
17.85	0.83	0.32	2.57	0.00	0.00	0.00
17.90	0.83	0.32	2.57	0.00	0.00	0.00
17.95	0.83	0.32	2.56	0.00	0.00	0.00
18.00	0.83	0.32	2.56	0.00	0.00	0.00
18.05	0.83	0.32	2.56	0.00	0.00	0.00
18.10	0.83	0.32	2.56	0.00	0.00	0.00
18.15	0.83	0.32	2.56	0.00	0.00	0.00
18.20	0.83	0.32	2.56	0.00	0.00	0.00
18.25	0.83	0.32	2.56	0.00	0.00	0.00
18.30	0.83	0.32	2.56	0.00	0.00	0.00
18.35	0.83	0.32	2.56	0.00	0.00	0.00
18.40	0.83	0.32	2.56	0.00	0.00	0.00
18.45	0.83	0.32	2.56	0.00	0.00	0.00
18.50	0.83	0.32	2.56	0.00	0.00	0.00
18.55	0.83	0.32	2.56	0.00	0.00	0.00
18.60	0.83	0.32	2.56	0.00	0.00	0.00
18.65	0.83	0.32	2.56	0.00	0.00	0.00
18.70	0.83	0.32	2.56	0.00	0.00	0.00
18.75	0.83	0.32	2.56	0.00	0.00	0.00
18.80	0.83	0.32	2.56	0.00	0.00	0.00
18.85	0.83	0.32	2.56	0.00	0.00	0.00
18.90	0.83	0.32	2.56	0.00	0.00	0.00
18.95	0.83	0.32	2.56	0.00	0.00	0.00
19.00	0.83	0.32	2.56	0.00	0.00	0.00
19.05	0.83	0.32	2.56	0.00	0.00	0.00
19.10	0.83	0.33	2.56	0.00	0.00	0.00
19.15	0.83	0.33	2.56	0.00	0.00	0.00
19.20	0.83	0.33	2.56	0.00	0.00	0.00
19.25	0.83	0.33	2.55	0.00	0.00	0.00
19.30	0.83	0.33	2.55	0.00	0.00	0.00
19.35	0.83	0.33	2.55	0.00	0.00	0.00
19.40	0.83	0.33	2.55	0.00	0.00	0.00
19.45	0.83	0.33	2.55	0.00	0.00	0.00
19.50	0.83	0.33	2.55	0.00	0.00	0.00
19.55	0.83	0.33	2.55	0.00	0.00	0.00
19.60	0.83	0.33	2.55	0.00	0.00	0.00
19.65	0.83	0.33	2.55	0.00	0.00	0.00
19.70	0.83	0.33	2.55	0.00	0.00	0.00

19.75	0.83	0.33	2.55	0.00	0.00	0.00
19.80	0.83	0.33	2.55	0.00	0.00	0.00
19.85	0.83	0.33	2.55	0.00	0.00	0.00
19.90	0.83	0.33	2.55	0.00	0.00	0.00
19.95	0.83	0.33	2.55	0.00	0.00	0.00
20.00	0.83	0.33	2.55	0.00	0.00	0.00
20.05	0.83	0.33	2.55	0.00	0.00	0.00
20.10	0.83	0.33	2.55	0.00	0.00	0.00
20.15	0.83	0.33	2.55	0.00	0.00	0.00
20.20	0.83	0.33	2.55	0.00	0.00	0.00
20.25	0.83	0.33	2.55	0.00	0.00	0.00
20.30	0.83	0.33	2.55	0.00	0.00	0.00
20.35	0.83	0.33	2.55	0.00	0.00	0.00
20.40	0.83	0.33	2.55	0.00	0.00	0.00
20.45	0.83	0.33	2.55	0.00	0.00	0.00
20.50	0.83	0.33	2.55	0.00	0.00	0.00
20.55	0.83	0.33	2.55	0.00	0.00	0.00
20.60	0.83	0.33	2.55	0.00	0.00	0.00
20.65	0.83	0.33	2.55	0.00	0.00	0.00
20.70	0.83	0.33	2.55	0.00	0.00	0.00
20.75	0.83	0.33	2.55	0.00	0.00	0.00
20.80	0.83	0.33	2.55	0.00	0.00	0.00
20.85	0.83	0.33	2.55	0.00	0.00	0.00
20.90	0.83	0.33	2.55	0.00	0.00	0.00
20.95	0.83	0.33	2.55	0.00	0.00	0.00
21.00	0.83	0.33	2.55	0.00	0.00	0.00
21.05	0.83	0.33	2.55	0.00	0.00	0.00
21.10	0.83	0.33	2.55	0.00	0.00	0.00
21.15	0.83	0.33	2.55	0.00	0.00	0.00
21.20	0.83	0.33	2.55	0.00	0.00	0.00
21.25	0.83	0.33	2.55	0.00	0.00	0.00
21.30	0.83	0.33	2.55	0.00	0.00	0.00
21.35	0.83	0.33	2.55	0.00	0.00	0.00
21.40	0.83	0.33	2.55	0.00	0.00	0.00
21.45	0.83	0.33	2.55	0.00	0.00	0.00
21.50	0.83	0.33	2.55	0.00	0.00	0.00
21.55	0.83	0.33	2.55	0.00	0.00	0.00
21.60	0.83	0.33	2.55	0.00	0.00	0.00
21.65	0.83	0.33	2.55	0.00	0.00	0.00
21.70	0.83	0.33	2.55	0.00	0.00	0.00
21.75	0.83	0.33	2.55	0.00	0.00	0.00
21.80	0.83	0.33	2.55	0.00	0.00	0.00
21.85	0.83	0.33	2.55	0.00	0.00	0.00
21.90	0.83	0.33	2.55	0.00	0.00	0.00
21.95	0.83	0.33	2.55	0.00	0.00	0.00
22.00	0.83	0.33	2.55	0.00	0.00	0.00
22.05	0.83	0.33	2.55	0.00	0.00	0.00
22.10	0.83	0.33	2.55	0.00	0.00	0.00
22.15	0.83	0.33	2.55	0.00	0.00	0.00
22.20	0.83	0.33	2.54	0.00	0.00	0.00
22.25	0.83	0.33	2.54	0.00	0.00	0.00
22.30	0.83	0.33	2.54	0.00	0.00	0.00
22.35	0.83	0.33	2.54	0.00	0.00	0.00
22.40	0.83	0.33	2.54	0.00	0.00	0.00
22.45	0.83	0.33	2.54	0.00	0.00	0.00
22.50	0.83	0.33	2.54	0.00	0.00	0.00
22.55	0.83	0.33	2.54	0.00	0.00	0.00
22.60	0.83	0.33	2.54	0.00	0.00	0.00
22.65	0.83	0.33	2.54	0.00	0.00	0.00
22.70	0.83	0.33	2.54	0.00	0.00	0.00
22.75	0.83	0.33	2.54	0.00	0.00	0.00
22.80	0.83	0.33	2.54	0.00	0.00	0.00
22.85	0.83	0.33	2.54	0.00	0.00	0.00
22.90	0.83	0.33	2.54	0.00	0.00	0.00
22.95	0.83	0.33	2.54	0.00	0.00	0.00
23.00	0.83	0.33	2.54	0.00	0.00	0.00
23.05	0.83	0.33	2.54	0.00	0.00	0.00
23.10	0.83	0.33	2.54	0.00	0.00	0.00
23.15	0.83	0.33	2.54	0.00	0.00	0.00
23.20	0.83	0.33	2.54	0.00	0.00	0.00
23.25	0.83	0.33	2.54	0.00	0.00	0.00

23.30	0.83	0.33	2.54	0.00	0.00	0.00
23.35	0.83	0.33	2.54	0.00	0.00	0.00
23.40	0.83	0.33	2.54	0.00	0.00	0.00
23.45	0.83	0.33	2.54	0.00	0.00	0.00
23.50	0.83	0.33	2.54	0.00	0.00	0.00
23.55	0.83	0.33	2.54	0.00	0.00	0.00
23.60	0.83	0.33	2.54	0.00	0.00	0.00
23.65	0.83	0.33	2.54	0.00	0.00	0.00
23.70	0.83	0.33	2.54	0.00	0.00	0.00
23.75	0.83	0.33	2.54	0.00	0.00	0.00
23.80	0.83	0.33	2.54	0.00	0.00	0.00
23.85	0.83	0.33	2.54	0.00	0.00	0.00
23.90	0.83	0.33	2.54	0.00	0.00	0.00
23.95	0.83	0.33	2.54	0.00	0.00	0.00
24.00	0.83	0.33	2.54	0.00	0.00	0.00
24.05	0.83	0.33	2.54	0.00	0.00	0.00
24.10	0.83	0.33	2.54	0.00	0.00	0.00
24.15	0.83	0.33	2.54	0.00	0.00	0.00
24.20	0.83	0.33	2.54	0.00	0.00	0.00
24.25	0.83	0.33	2.54	0.00	0.00	0.00
24.30	0.83	0.33	2.54	0.00	0.00	0.00
24.35	0.83	0.33	2.54	0.00	0.00	0.00
24.40	0.83	0.33	2.54	0.00	0.00	0.00
24.45	0.83	0.33	2.54	0.00	0.00	0.00
24.50	0.83	0.33	2.54	0.00	0.00	0.00
24.55	0.83	0.33	2.54	0.00	0.00	0.00
24.60	0.83	0.33	2.54	0.00	0.00	0.00
24.65	0.83	0.33	2.54	0.00	0.00	0.00
24.70	0.83	0.33	2.54	0.00	0.00	0.00
24.75	0.83	0.33	2.54	0.00	0.00	0.00
24.80	0.83	0.33	2.54	0.00	0.00	0.00
24.85	0.83	0.33	2.54	0.00	0.00	0.00
24.90	0.83	0.33	2.54	0.00	0.00	0.00
24.95	0.83	0.33	2.54	0.00	0.00	0.00
25.00	0.83	0.33	2.54	0.00	0.00	0.00
25.05	0.83	0.33	2.54	0.00	0.00	0.00
25.10	0.83	0.33	2.54	0.00	0.00	0.00
25.15	0.83	0.33	2.54	0.00	0.00	0.00
25.20	0.83	0.33	2.54	0.00	0.00	0.00
25.25	0.83	0.33	2.54	0.00	0.00	0.00
25.30	0.83	0.33	2.54	0.00	0.00	0.00
25.35	0.83	0.33	2.54	0.00	0.00	0.00
25.40	0.83	0.33	2.54	0.00	0.00	0.00
25.45	0.83	0.33	2.54	0.00	0.00	0.00
25.50	0.83	0.33	2.54	0.00	0.00	0.00
25.55	0.83	0.33	2.54	0.00	0.00	0.00
25.60	0.83	0.33	2.54	0.00	0.00	0.00
25.65	0.83	0.33	2.54	0.00	0.00	0.00
25.70	0.83	0.33	2.54	0.00	0.00	0.00
25.75	0.83	0.33	2.54	0.00	0.00	0.00
25.80	0.83	0.33	2.54	0.00	0.00	0.00
25.85	0.83	0.33	2.54	0.00	0.00	0.00
25.90	0.83	0.33	2.54	0.00	0.00	0.00
25.95	0.83	0.33	2.54	0.00	0.00	0.00
26.00	0.83	0.33	2.54	0.00	0.00	0.00
26.05	0.83	0.33	2.54	0.00	0.00	0.00
26.10	0.83	0.33	2.54	0.00	0.00	0.00
26.15	0.83	0.33	2.54	0.00	0.00	0.00
26.20	0.83	0.33	2.54	0.00	0.00	0.00
26.25	0.83	0.33	2.54	0.00	0.00	0.00
26.30	0.83	0.33	2.54	0.00	0.00	0.00
26.35	0.83	0.33	2.54	0.00	0.00	0.00
26.40	0.83	0.33	2.54	0.00	0.00	0.00
26.45	0.83	0.33	2.54	0.00	0.00	0.00
26.50	0.83	0.33	2.54	0.00	0.00	0.00
26.55	0.83	0.33	2.54	0.00	0.00	0.00
26.60	0.83	0.33	2.54	0.00	0.00	0.00
26.65	0.83	0.33	2.54	0.00	0.00	0.00
26.70	0.83	0.33	2.54	0.00	0.00	0.00
26.75	0.83	0.33	2.54	0.00	0.00	0.00
26.80	0.83	0.33	2.54	0.00	0.00	0.00

26.85	0.83	0.33	2.54	0.00	0.00	0.00
26.90	0.83	0.33	2.54	0.00	0.00	0.00
26.95	0.83	0.33	2.54	0.00	0.00	0.00
27.00	0.83	0.33	2.54	0.00	0.00	0.00
27.05	0.83	0.33	2.54	0.00	0.00	0.00
27.10	0.83	0.33	2.54	0.00	0.00	0.00
27.15	0.83	0.33	2.54	0.00	0.00	0.00
27.20	0.83	0.33	2.54	0.00	0.00	0.00
27.25	0.83	0.33	2.54	0.00	0.00	0.00
27.30	0.83	0.33	2.54	0.00	0.00	0.00
27.35	0.83	0.33	2.54	0.00	0.00	0.00
27.40	0.83	0.33	2.54	0.00	0.00	0.00
27.45	0.83	0.33	2.54	0.00	0.00	0.00
27.50	0.83	0.33	2.54	0.00	0.00	0.00
27.55	0.83	0.33	2.54	0.00	0.00	0.00
27.60	0.83	0.33	2.54	0.00	0.00	0.00
27.65	0.83	0.33	2.53	0.00	0.00	0.00
27.70	0.83	0.33	2.53	0.00	0.00	0.00
27.75	0.83	0.33	2.53	0.00	0.00	0.00
27.80	0.83	0.33	2.53	0.00	0.00	0.00
27.85	0.83	0.33	2.53	0.00	0.00	0.00
27.90	0.83	0.33	2.53	0.00	0.00	0.00
27.95	0.83	0.33	2.53	0.00	0.00	0.00
28.00	0.83	0.33	2.53	0.00	0.00	0.00
28.05	0.83	0.33	2.53	0.00	0.00	0.00
28.10	0.83	0.33	2.53	0.00	0.00	0.00
28.15	0.83	0.33	2.53	0.00	0.00	0.00
28.20	0.83	0.33	2.53	0.00	0.00	0.00
28.25	0.83	0.33	2.53	0.00	0.00	0.00
28.30	0.83	0.33	2.53	0.00	0.00	0.00
28.35	0.83	0.33	2.53	0.00	0.00	0.00
28.40	0.83	0.33	2.53	0.00	0.00	0.00
28.45	0.83	0.33	2.53	0.00	0.00	0.00
28.50	0.83	0.33	2.53	0.00	0.00	0.00
28.55	0.83	0.33	2.53	0.00	0.00	0.00
28.60	0.83	0.33	2.53	0.00	0.00	0.00
28.65	0.83	0.33	2.53	0.00	0.00	0.00
28.70	0.83	0.33	2.53	0.00	0.00	0.00
28.75	0.83	0.33	2.53	0.00	0.00	0.00
28.80	0.83	0.33	2.53	0.00	0.00	0.00
28.85	0.83	0.33	2.53	0.00	0.00	0.00
28.90	0.83	0.33	2.53	0.00	0.00	0.00
28.95	0.83	0.33	2.53	0.00	0.00	0.00
29.00	0.83	0.33	2.53	0.00	0.00	0.00
29.05	0.83	0.33	2.53	0.00	0.00	0.00
29.10	0.83	0.33	2.53	0.00	0.00	0.00
29.15	0.83	0.33	2.53	0.00	0.00	0.00
29.20	0.83	0.33	2.53	0.00	0.00	0.00
29.25	0.83	0.33	2.53	0.00	0.00	0.00
29.30	0.83	0.33	2.53	0.00	0.00	0.00
29.35	0.83	0.33	2.53	0.00	0.00	0.00
29.40	0.83	0.33	2.53	0.00	0.00	0.00
29.45	0.83	0.33	2.53	0.00	0.00	0.00
29.50	0.83	0.33	2.53	0.00	0.00	0.00
29.55	0.83	0.33	2.53	0.00	0.00	0.00
29.60	0.83	0.33	2.53	0.00	0.00	0.00
29.65	0.83	0.33	2.53	0.00	0.00	0.00
29.70	0.83	0.33	2.53	0.00	0.00	0.00
29.75	0.83	0.33	2.53	0.00	0.00	0.00
29.80	0.83	0.33	2.53	0.00	0.00	0.00
29.85	0.83	0.33	2.53	0.00	0.00	0.00
29.90	0.83	0.33	2.53	0.00	0.00	0.00
29.95	0.83	0.33	2.53	0.00	0.00	0.00
30.00	0.83	0.33	2.53	0.00	0.00	0.00
30.05	0.83	0.33	2.53	0.00	0.00	0.00
30.10	0.83	0.33	2.53	0.00	0.00	0.00
30.15	0.83	0.33	2.53	0.00	0.00	0.00
30.20	0.83	0.33	2.53	0.00	0.00	0.00
30.25	0.83	0.33	2.54	0.00	0.00	0.00
30.30	0.83	0.33	2.54	0.00	0.00	0.00
30.35	0.83	0.33	2.54	0.00	0.00	0.00

30.40	0.83	0.33	2.54	0.00	0.00	0.00
30.45	0.83	0.33	2.54	0.00	0.00	0.00
30.50	0.83	0.33	2.54	0.00	0.00	0.00
30.55	0.83	0.33	2.54	0.00	0.00	0.00
30.60	0.83	0.33	2.54	0.00	0.00	0.00
30.65	0.83	0.33	2.54	0.00	0.00	0.00
30.70	0.83	0.33	2.54	0.00	0.00	0.00
30.75	0.83	0.33	2.54	0.00	0.00	0.00
30.80	0.83	0.33	2.54	0.00	0.00	0.00
30.85	0.83	0.33	2.55	0.00	0.00	0.00
30.90	0.83	0.33	2.55	0.00	0.00	0.00
30.95	0.83	0.33	2.55	0.00	0.00	0.00
31.00	0.83	0.33	2.55	0.00	0.00	0.00
31.05	0.83	0.33	2.55	0.00	0.00	0.00
31.10	0.83	0.33	2.55	0.00	0.00	0.00
31.15	0.83	0.33	2.55	0.00	0.00	0.00
31.20	0.83	0.33	2.55	0.00	0.00	0.00
31.25	0.83	0.33	2.55	0.00	0.00	0.00
31.30	0.83	0.33	2.55	0.00	0.00	0.00
31.35	0.83	0.33	2.55	0.00	0.00	0.00
31.40	0.83	0.33	2.56	0.00	0.00	0.00
31.45	0.83	0.32	2.56	0.00	0.00	0.00
31.50	0.83	0.32	2.56	0.00	0.00	0.00
31.55	0.83	0.32	2.56	0.00	0.00	0.00
31.60	0.83	0.32	2.56	0.00	0.00	0.00
31.65	0.83	0.32	2.56	0.00	0.00	0.00
31.70	0.83	0.32	2.56	0.00	0.00	0.00
31.75	0.83	0.32	2.56	0.00	0.00	0.00
31.80	0.83	0.32	2.56	0.00	0.00	0.00
31.85	0.83	0.32	2.56	0.00	0.00	0.00
31.90	0.83	0.32	2.56	0.00	0.00	0.00
31.95	0.83	0.32	2.57	0.00	0.00	0.00
32.00	0.83	0.32	2.57	0.00	0.00	0.00
32.05	0.83	0.32	2.57	0.00	0.00	0.00
32.10	0.83	0.32	2.57	0.00	0.00	0.00
32.15	0.83	0.32	2.57	0.00	0.00	0.00
32.20	0.83	0.32	2.57	0.00	0.00	0.00
32.25	0.83	0.32	2.57	0.00	0.00	0.00
32.30	0.83	0.32	2.57	0.00	0.00	0.00
32.35	0.83	0.32	2.57	0.00	0.00	0.00
32.40	0.83	0.32	2.57	0.00	0.00	0.00
32.45	0.83	0.32	2.57	0.00	0.00	0.00
32.50	0.83	0.32	2.58	0.00	0.00	0.00
32.55	0.83	0.32	2.58	0.00	0.00	0.00
32.60	0.83	0.32	2.58	0.00	0.00	0.00
32.65	0.83	0.32	2.58	0.00	0.00	0.00
32.70	0.83	0.32	2.58	0.00	0.00	0.00
32.75	0.83	0.32	2.58	0.00	0.00	0.00
32.80	0.83	0.32	2.58	0.00	0.00	0.00
32.85	0.83	0.32	2.58	0.00	0.00	0.00
32.90	0.83	0.32	2.58	0.00	0.00	0.00
32.95	0.83	0.32	2.58	0.00	0.00	0.00
33.00	0.83	0.32	2.58	0.00	0.00	0.00
33.05	0.83	0.32	2.59	0.00	0.00	0.00
33.10	0.83	0.32	2.59	0.00	0.00	0.00
33.15	0.83	0.32	2.59	0.00	0.00	0.00
33.20	0.83	0.32	2.59	0.00	0.00	0.00
33.25	0.83	0.32	2.59	0.00	0.00	0.00
33.30	0.83	0.32	2.59	0.00	0.00	0.00
33.35	0.83	0.32	2.59	0.00	0.00	0.00
33.40	0.83	0.32	2.59	0.00	0.00	0.00
33.45	0.83	0.32	2.59	0.00	0.00	0.00
33.50	0.83	0.32	2.59	0.00	0.00	0.00
33.55	0.83	0.32	2.60	0.00	0.00	0.00
33.60	0.83	0.32	2.60	0.00	0.00	0.00
33.65	0.83	0.32	2.60	0.00	0.00	0.00
33.70	0.83	0.32	2.60	0.00	0.00	0.00
33.75	0.83	0.32	2.60	0.00	0.00	0.00
33.80	0.83	0.32	2.60	0.00	0.00	0.00
33.85	0.83	0.32	2.60	0.00	0.00	0.00
33.90	0.83	0.32	2.60	0.00	0.00	0.00

33.95	0.83	0.32	2.60	0.00	0.00	0.00
34.00	0.83	0.32	2.60	0.00	0.00	0.00
34.05	0.83	0.32	2.61	0.00	0.00	0.00
34.10	0.83	0.32	2.61	0.00	0.00	0.00
34.15	0.83	0.32	2.61	0.00	0.00	0.00
34.20	0.83	0.32	2.61	0.00	0.00	0.00
34.25	0.83	0.32	2.61	0.00	0.00	0.00
34.30	0.83	0.32	2.61	0.00	0.00	0.00
34.35	0.83	0.32	2.61	0.00	0.00	0.00
34.40	0.83	0.32	2.61	0.00	0.00	0.00
34.45	0.83	0.32	2.61	0.00	0.00	0.00
34.50	0.83	0.32	2.61	0.00	0.00	0.00
34.55	0.83	0.32	2.61	0.00	0.00	0.00
34.60	0.83	0.32	2.62	0.00	0.00	0.00
34.65	0.83	0.32	2.62	0.00	0.00	0.00
34.70	0.83	0.32	2.62	0.00	0.00	0.00
34.75	0.83	0.32	2.62	0.00	0.00	0.00
34.80	0.83	0.32	2.62	0.00	0.00	0.00
34.85	0.83	0.32	2.62	0.00	0.00	0.00
34.90	0.83	0.32	2.62	0.00	0.00	0.00
34.95	0.83	0.32	2.62	0.00	0.00	0.00
35.00	0.83	0.32	2.62	0.00	0.00	0.00
35.05	0.83	0.32	2.62	0.00	0.00	0.00
35.10	0.83	0.32	2.63	0.00	0.00	0.00
35.15	0.83	0.32	2.63	0.00	0.00	0.00
35.20	0.83	0.32	2.63	0.00	0.00	0.00
35.25	0.83	0.32	2.63	0.00	0.00	0.00
35.30	0.83	0.32	2.63	0.00	0.00	0.00
35.35	0.83	0.32	2.63	0.00	0.00	0.00
35.40	0.83	0.32	2.63	0.00	0.00	0.00
35.45	0.83	0.32	2.63	0.00	0.00	0.00
35.50	0.83	0.32	2.63	0.00	0.00	0.00
35.55	0.83	0.32	2.63	0.00	0.00	0.00
35.60	0.83	0.32	2.64	0.00	0.00	0.00
35.65	0.83	0.32	2.64	0.00	0.00	0.00
35.70	0.83	0.31	2.64	0.00	0.00	0.00
35.75	0.83	0.31	2.64	0.00	0.00	0.00
35.80	0.83	0.31	2.64	0.00	0.00	0.00
35.85	0.83	0.31	2.64	0.00	0.00	0.00
35.90	0.83	0.31	2.64	0.00	0.00	0.00
35.95	0.83	0.31	2.64	0.00	0.00	0.00
36.00	0.83	0.31	2.64	0.00	0.00	0.00
36.05	0.83	0.31	2.64	0.00	0.00	0.00
36.10	0.83	0.31	2.65	0.00	0.00	0.00
36.15	0.83	0.31	2.65	0.00	0.00	0.00
36.20	0.83	0.31	2.65	0.00	0.00	0.00
36.25	0.83	0.31	2.65	0.00	0.00	0.00
36.30	0.83	0.31	2.65	0.00	0.00	0.00
36.35	0.83	0.31	2.65	0.00	0.00	0.00
36.40	0.83	0.31	2.65	0.00	0.00	0.00
36.45	0.83	0.31	2.65	0.00	0.00	0.00
36.50	0.83	0.31	2.65	0.00	0.00	0.00
36.55	0.83	0.31	2.65	0.00	0.00	0.00
36.60	0.83	0.31	2.65	0.00	0.00	0.00
36.65	0.83	0.31	2.66	0.00	0.00	0.00
36.70	0.83	0.31	2.66	0.00	0.00	0.00
36.75	0.83	0.31	2.66	0.00	0.00	0.00
36.80	0.83	0.31	2.66	0.00	0.00	0.00
36.85	0.83	0.31	2.66	0.00	0.00	0.00
36.90	0.83	0.31	2.66	0.00	0.00	0.00
36.95	0.83	0.31	2.66	0.00	0.00	0.00
37.00	0.83	0.31	2.66	0.00	0.00	0.00
37.05	0.83	0.31	2.66	0.00	0.00	0.00
37.10	0.83	0.31	2.66	0.00	0.00	0.00
37.15	0.83	0.31	2.67	0.00	0.00	0.00
37.20	0.83	0.31	2.67	0.00	0.00	0.00
37.25	0.83	0.31	2.67	0.00	0.00	0.00
37.30	0.83	0.31	2.67	0.00	0.00	0.00
37.35	0.83	0.31	2.67	0.00	0.00	0.00
37.40	0.83	0.31	2.67	0.00	0.00	0.00
37.45	0.83	0.31	2.67	0.00	0.00	0.00

37.50	0.83	0.31	2.67	0.00	0.00	0.00
37.55	0.83	0.31	2.67	0.00	0.00	0.00
37.60	0.83	0.31	2.67	0.00	0.00	0.00
37.65	0.83	0.31	2.68	0.00	0.00	0.00
37.70	0.83	0.31	2.68	0.00	0.00	0.00
37.75	0.83	0.31	2.68	0.00	0.00	0.00
37.80	0.83	0.31	2.68	0.00	0.00	0.00
37.85	0.83	0.31	2.68	0.00	0.00	0.00
37.90	0.83	0.31	2.68	0.00	0.00	0.00
37.95	0.83	0.31	2.68	0.00	0.00	0.00
38.00	0.83	0.31	2.68	0.00	0.00	0.00
38.05	0.83	0.31	2.68	0.00	0.00	0.00
38.10	0.83	0.31	2.69	0.00	0.00	0.00
38.15	0.83	0.31	2.69	0.00	0.00	0.00
38.20	0.83	0.31	2.69	0.00	0.00	0.00
38.25	0.83	0.31	2.69	0.00	0.00	0.00
38.30	0.83	0.31	2.69	0.00	0.00	0.00
38.35	0.83	0.31	2.69	0.00	0.00	0.00
38.40	0.83	0.31	2.69	0.00	0.00	0.00
38.45	0.83	0.31	2.69	0.00	0.00	0.00
38.50	0.83	0.31	2.69	0.00	0.00	0.00
38.55	0.83	0.31	2.69	0.00	0.00	0.00
38.60	0.83	0.31	2.70	0.00	0.00	0.00
38.65	0.83	0.31	2.70	0.00	0.00	0.00
38.70	0.83	0.31	2.70	0.00	0.00	0.00
38.75	0.83	0.31	2.70	0.00	0.00	0.00
38.80	0.83	0.31	2.70	0.00	0.00	0.00
38.85	0.83	0.31	2.70	0.00	0.00	0.00
38.90	0.83	0.31	2.70	0.00	0.00	0.00
38.95	0.83	0.31	2.70	0.00	0.00	0.00
39.00	0.83	0.31	2.70	0.00	0.00	0.00
39.05	0.83	0.31	2.71	0.00	0.00	0.00
39.10	0.83	0.31	2.71	0.00	0.00	0.00
39.15	0.83	0.31	2.71	0.00	0.00	0.00
39.20	0.83	0.31	2.71	0.00	0.00	0.00
39.25	0.83	0.31	2.71	0.00	0.00	0.00
39.30	0.83	0.31	2.71	0.00	0.00	0.00
39.35	0.83	0.31	2.71	0.00	0.00	0.00
39.40	0.83	0.31	2.71	0.00	0.00	0.00
39.45	0.83	0.31	2.71	0.00	0.00	0.00
39.50	0.83	0.31	2.71	0.00	0.00	0.00
39.55	0.83	0.31	2.72	0.00	0.00	0.00
39.60	0.83	0.31	2.72	0.00	0.00	0.00
39.65	0.83	0.31	2.72	0.00	0.00	0.00
39.70	0.83	0.31	2.72	0.00	0.00	0.00
39.75	0.83	0.31	2.72	0.00	0.00	0.00
39.80	0.83	0.31	2.72	0.00	0.00	0.00
39.85	0.83	0.31	2.72	0.00	0.00	0.00
39.90	0.83	0.31	2.72	0.00	0.00	0.00
39.95	0.83	0.30	2.72	0.00	0.00	0.00
40.00	0.83	0.30	2.73	0.00	0.00	0.00
40.05	0.83	0.30	2.73	0.00	0.00	0.00
40.10	0.83	0.30	2.73	0.00	0.00	0.00
40.15	0.83	0.30	2.73	0.00	0.00	0.00
40.20	0.83	0.30	2.73	0.00	0.00	0.00
40.25	0.83	0.30	2.73	0.00	0.00	0.00
40.30	0.83	0.30	2.73	0.00	0.00	0.00
40.35	0.83	0.30	2.74	0.00	0.00	0.00
40.40	0.83	0.30	2.74	0.00	0.00	0.00
40.45	0.83	0.30	2.74	0.00	0.00	0.00
40.50	0.83	0.30	2.74	0.00	0.00	0.00
40.55	0.83	0.30	2.74	0.00	0.00	0.00
40.60	0.83	0.30	2.74	0.00	0.00	0.00
40.65	0.83	0.30	2.74	0.00	0.00	0.00
40.70	0.83	0.30	2.75	0.00	0.00	0.00
40.75	0.83	0.30	2.75	0.00	0.00	0.00
40.80	0.83	0.30	2.75	0.00	0.00	0.00
40.85	0.83	0.30	2.75	0.00	0.00	0.00
40.90	0.83	0.30	2.75	0.00	0.00	0.00
40.95	0.83	0.30	2.75	0.00	0.00	0.00
41.00	0.83	0.30	2.75	0.00	0.00	0.00

41.05	0.83	0.30	2.76	0.00	0.00	0.00
41.10	0.83	0.30	2.76	0.00	0.00	0.00
41.15	0.83	0.30	2.76	0.00	0.00	0.00
41.20	0.83	0.30	2.76	0.00	0.00	0.00
41.25	0.83	0.30	2.76	0.00	0.00	0.00
41.30	0.83	0.30	2.76	0.00	0.00	0.00
41.35	0.83	0.30	2.76	0.00	0.00	0.00
41.40	0.83	0.30	2.77	0.00	0.00	0.00
41.45	0.83	0.30	2.77	0.00	0.00	0.00
41.50	0.83	0.30	2.77	0.00	0.00	0.00
41.55	0.83	0.30	2.77	0.00	0.00	0.00
41.60	0.83	0.30	2.77	0.00	0.00	0.00
41.65	0.83	0.30	2.77	0.00	0.00	0.00
41.70	0.83	0.30	2.77	0.00	0.00	0.00
41.75	0.83	0.30	2.78	0.00	0.00	0.00
41.80	0.83	0.30	2.78	0.00	0.00	0.00
41.85	0.83	0.30	2.78	0.00	0.00	0.00
41.90	0.83	0.30	2.78	0.00	0.00	0.00
41.95	0.83	0.30	2.78	0.00	0.00	0.00
42.00	0.84	0.30	2.80	0.00	0.00	0.00
42.05	0.84	0.30	2.80	0.00	0.00	0.00
42.10	0.84	0.30	2.80	0.00	0.00	0.00
42.15	0.84	0.30	2.80	0.00	0.00	0.00
42.20	0.84	0.30	2.80	0.00	0.00	0.00
42.25	0.84	0.30	2.80	0.00	0.00	0.00
42.30	0.83	0.30	2.80	0.00	0.00	0.00
42.35	0.83	0.30	2.81	0.00	0.00	0.00
42.40	0.83	0.30	2.81	0.00	0.00	0.00
42.45	0.83	0.30	2.81	0.00	0.00	0.00
42.50	0.83	0.30	2.81	0.00	0.00	0.00
42.55	0.83	0.30	2.81	0.00	0.00	0.00
42.60	0.83	0.30	2.81	0.00	0.00	0.00
42.65	0.83	0.30	2.81	0.00	0.00	0.00
42.70	0.83	0.30	2.81	0.00	0.00	0.00
42.75	0.83	0.30	2.81	0.00	0.00	0.00
42.80	0.83	0.30	2.81	0.00	0.00	0.00
42.85	0.83	0.30	2.81	0.00	0.00	0.00
42.90	0.83	0.30	2.82	0.00	0.00	0.00
42.95	0.83	0.30	2.82	0.00	0.00	0.00
43.00	0.83	0.30	2.82	0.00	0.00	0.00
43.05	0.83	0.30	2.82	0.00	0.00	0.00
43.10	0.83	0.30	2.82	0.00	0.00	0.00
43.15	0.83	0.30	2.82	0.00	0.00	0.00
43.20	0.83	0.29	2.82	0.00	0.00	0.00
43.25	0.83	0.29	2.82	0.00	0.00	0.00
43.30	0.83	0.29	2.82	0.00	0.00	0.00
43.35	0.83	0.29	2.82	0.00	0.00	0.00
43.40	0.83	0.29	2.82	0.00	0.00	0.00
43.45	0.83	0.29	2.83	0.00	0.00	0.00
43.50	0.83	0.29	2.83	0.00	0.00	0.00
43.55	0.83	0.29	2.83	0.00	0.00	0.00
43.60	0.83	0.29	2.83	0.00	0.00	0.00
43.65	0.83	0.29	2.83	0.00	0.00	0.00
43.70	0.83	0.29	2.83	0.00	0.00	0.00
43.75	0.83	0.29	2.83	0.00	0.00	0.00
43.80	0.83	0.29	2.83	0.00	0.00	0.00
43.85	0.83	0.29	2.83	0.00	0.00	0.00
43.90	0.83	0.29	2.83	0.00	0.00	0.00
43.95	0.83	0.29	2.83	0.00	0.00	0.00
44.00	0.83	0.29	2.84	0.00	0.00	0.00
44.05	0.83	0.29	2.84	0.00	0.00	0.00
44.10	0.83	0.29	2.84	0.00	0.00	0.00
44.15	0.83	0.29	2.84	0.00	0.00	0.00
44.20	0.83	0.29	2.84	0.00	0.00	0.00
44.25	0.83	0.29	2.84	0.00	0.00	0.00
44.30	0.83	0.29	2.84	0.00	0.00	0.00
44.35	0.83	0.29	2.84	0.00	0.00	0.00
44.40	0.83	0.29	2.84	0.00	0.00	0.00
44.45	0.83	0.29	2.84	0.00	0.00	0.00
44.50	0.83	0.29	2.85	0.00	0.00	0.00
44.55	0.83	0.29	2.85	0.00	0.00	0.00

44.60	0.83	0.29	2.85	0.00	0.00	0.00
44.65	0.83	0.29	2.85	0.00	0.00	0.00
44.70	0.83	0.29	2.85	0.00	0.00	0.00
44.75	0.83	0.29	2.85	0.00	0.00	0.00
44.80	0.83	0.29	2.85	0.00	0.00	0.00
44.85	0.83	0.29	2.85	0.00	0.00	0.00
44.90	0.83	0.29	2.85	0.00	0.00	0.00
44.95	0.83	0.29	2.85	0.00	0.00	0.00
45.00	0.83	0.29	2.85	0.00	0.00	0.00
45.05	0.83	0.29	2.86	0.00	0.00	0.00
45.10	0.83	0.29	2.86	0.00	0.00	0.00
45.15	0.83	0.29	2.86	0.00	0.00	0.00
45.20	0.83	0.29	2.86	0.00	0.00	0.00
45.25	0.83	0.29	2.86	0.00	0.00	0.00
45.30	0.82	0.29	2.86	0.00	0.00	0.00
45.35	0.82	0.29	2.86	0.00	0.00	0.00
45.40	0.82	0.29	2.86	0.00	0.00	0.00
45.45	0.82	0.29	2.86	0.00	0.00	0.00
45.50	0.82	0.29	2.86	0.00	0.00	0.00
45.55	0.82	0.29	2.86	0.00	0.00	0.00
45.60	0.82	0.29	2.86	0.00	0.00	0.00
45.65	0.82	0.29	2.87	0.00	0.00	0.00
45.70	0.82	0.29	2.87	0.00	0.00	0.00
45.75	0.82	0.29	2.87	0.00	0.00	0.00
45.80	0.82	0.29	2.87	0.00	0.00	0.00
45.85	0.82	0.29	2.87	0.00	0.00	0.00
45.90	0.82	0.29	2.87	0.00	0.00	0.00
45.95	0.82	0.29	2.87	0.00	0.00	0.00
46.00	0.82	0.29	2.87	0.00	0.00	0.00
46.05	0.82	0.29	2.87	0.00	0.00	0.00
46.10	0.82	0.29	2.87	0.00	0.00	0.00
46.15	0.82	0.29	2.87	0.00	0.00	0.00
46.20	0.82	0.29	2.88	0.00	0.00	0.00
46.25	0.82	0.29	2.88	0.00	0.00	0.00
46.30	0.82	0.29	2.88	0.00	0.00	0.00
46.35	0.82	0.29	2.88	0.00	0.00	0.00
46.40	0.82	0.29	2.88	0.00	0.00	0.00
46.45	0.82	0.29	2.88	0.00	0.00	0.00
46.50	0.82	0.29	2.88	0.00	0.00	0.00
46.55	0.82	0.28	2.88	0.00	0.00	0.00
46.60	0.82	0.28	2.88	0.00	0.00	0.00
46.65	0.82	0.28	2.88	0.00	0.00	0.00
46.70	0.82	0.28	2.88	0.00	0.00	0.00
46.75	0.82	0.28	2.89	0.00	0.00	0.00
46.80	0.82	0.28	2.89	0.00	0.00	0.00
46.85	0.82	0.28	2.89	0.00	0.00	0.00
46.90	0.82	0.28	2.89	0.00	0.00	0.00
46.95	0.82	0.28	2.89	0.00	0.00	0.00
47.00	0.82	0.28	2.89	0.00	0.00	0.00
47.05	0.82	0.28	2.89	0.00	0.00	0.00
47.10	0.82	0.28	2.89	0.00	0.00	0.00
47.15	0.82	0.28	2.89	0.00	0.00	0.00
47.20	0.82	0.28	2.89	0.00	0.00	0.00
47.25	0.82	0.28	2.89	0.00	0.00	0.00
47.30	0.82	0.28	2.90	0.00	0.00	0.00
47.35	0.82	0.28	2.90	0.00	0.00	0.00
47.40	0.82	0.28	2.90	0.00	0.00	0.00
47.45	0.82	0.28	2.90	0.00	0.00	0.00
47.50	0.82	0.28	2.90	0.00	0.00	0.00
47.55	0.82	0.28	2.90	0.00	0.00	0.00
47.60	0.82	0.28	2.90	0.00	0.00	0.00
47.65	0.82	0.28	2.90	0.00	0.00	0.00
47.70	0.82	0.28	2.90	0.00	0.00	0.00
47.75	0.82	0.28	2.90	0.00	0.00	0.00
47.80	0.82	0.28	2.90	0.00	0.00	0.00
47.85	0.82	0.28	2.91	0.00	0.00	0.00
47.90	0.82	0.28	2.91	0.00	0.00	0.00
47.95	0.82	0.28	2.91	0.00	0.00	0.00
48.00	0.82	0.28	2.91	0.00	0.00	0.00
48.05	0.82	0.28	2.91	0.00	0.00	0.00
48.10	0.82	0.28	2.91	0.00	0.00	0.00

48.15	0.82	0.28	2.91	0.00	0.00	0.00
48.20	0.82	0.28	2.91	0.00	0.00	0.00
48.25	0.82	0.28	2.91	0.00	0.00	0.00
48.30	0.82	0.28	2.91	0.00	0.00	0.00
48.35	0.82	0.28	2.91	0.00	0.00	0.00
48.40	0.82	0.28	2.92	0.00	0.00	0.00
48.45	0.82	0.28	2.92	0.00	0.00	0.00
48.50	0.82	0.28	2.92	0.00	0.00	0.00
48.55	0.82	0.28	2.92	0.00	0.00	0.00
48.60	0.82	0.28	2.92	0.00	0.00	0.00
48.65	0.82	0.28	2.92	0.00	0.00	0.00
48.70	0.82	0.28	2.92	0.00	0.00	0.00
48.75	0.81	0.28	2.92	0.00	0.00	0.00
48.80	0.81	0.28	2.92	0.00	0.00	0.00
48.85	0.81	0.28	2.92	0.00	0.00	0.00
48.90	0.81	0.28	2.92	0.00	0.00	0.00
48.95	0.81	0.28	2.93	0.00	0.00	0.00
49.00	0.81	0.28	2.93	0.00	0.00	0.00
49.05	0.81	0.28	2.93	0.00	0.00	0.00
49.10	0.81	0.28	2.93	0.00	0.00	0.00
49.15	0.81	0.28	2.93	0.00	0.00	0.00
49.20	0.81	0.28	2.93	0.00	0.00	0.00
49.25	0.81	0.28	2.93	0.00	0.00	0.00
49.30	0.81	0.28	2.93	0.00	0.00	0.00
49.35	0.81	0.28	2.93	0.00	0.00	0.00
49.40	0.81	0.28	2.93	0.00	0.00	0.00
49.45	0.81	0.28	2.94	0.00	0.00	0.00
49.50	0.81	0.28	2.94	0.00	0.00	0.00
49.55	0.81	0.28	2.94	0.00	0.00	0.00
49.60	0.81	0.28	2.94	0.00	0.00	0.00
49.65	0.81	0.28	2.94	0.00	0.00	0.00
49.70	0.81	0.28	2.94	0.00	0.00	0.00
49.75	0.81	0.28	2.94	0.00	0.00	0.00
49.80	0.81	0.28	2.94	0.00	0.00	0.00
49.85	0.81	0.28	2.94	0.00	0.00	0.00
49.90	0.81	0.28	2.94	0.00	0.00	0.00
49.95	0.81	0.28	2.95	0.00	0.00	0.00
50.00	0.81	0.28	2.95	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

1 atm (atmosphere) = 1 tsf (ton/ft2)

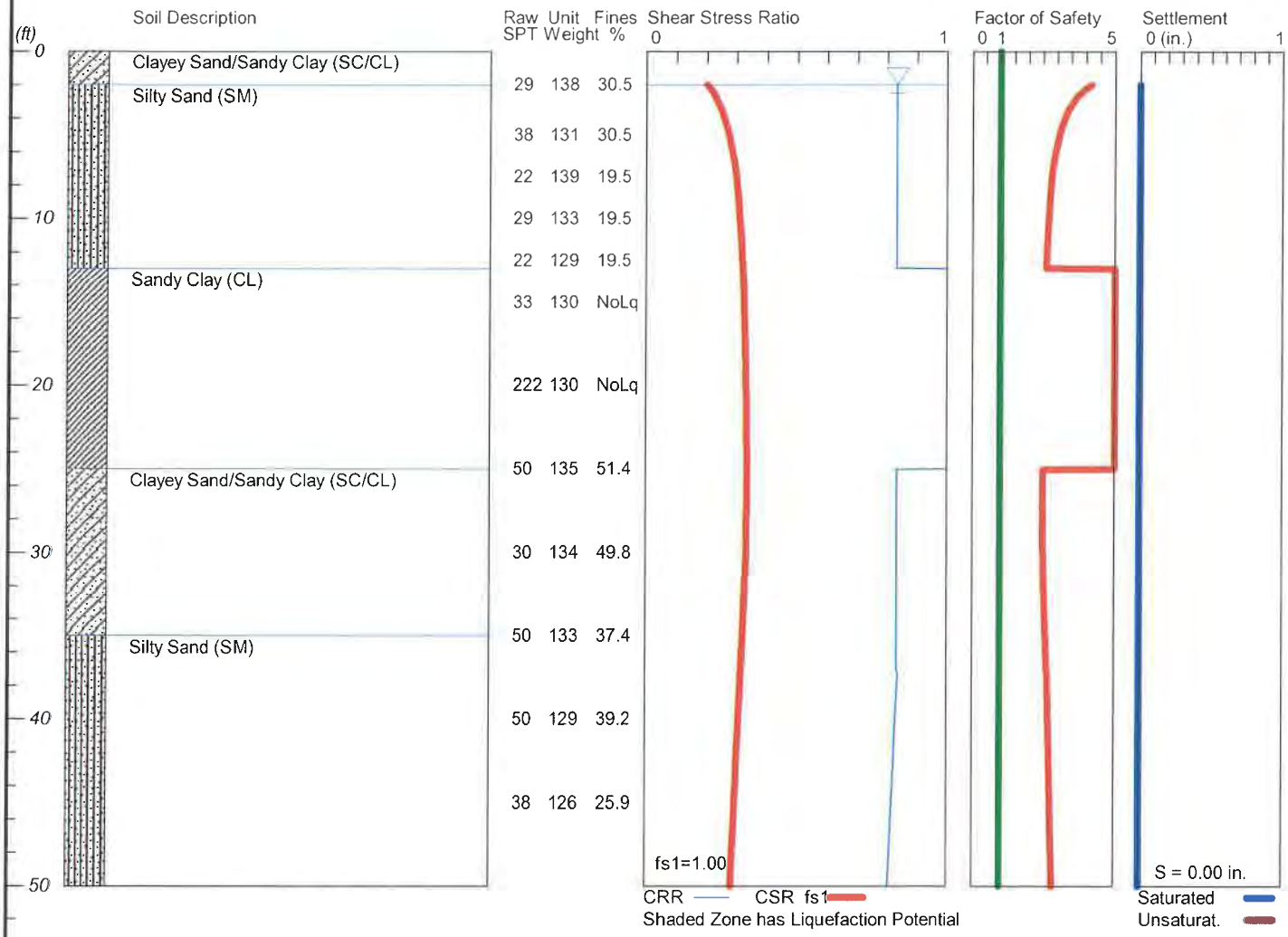
CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B20 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



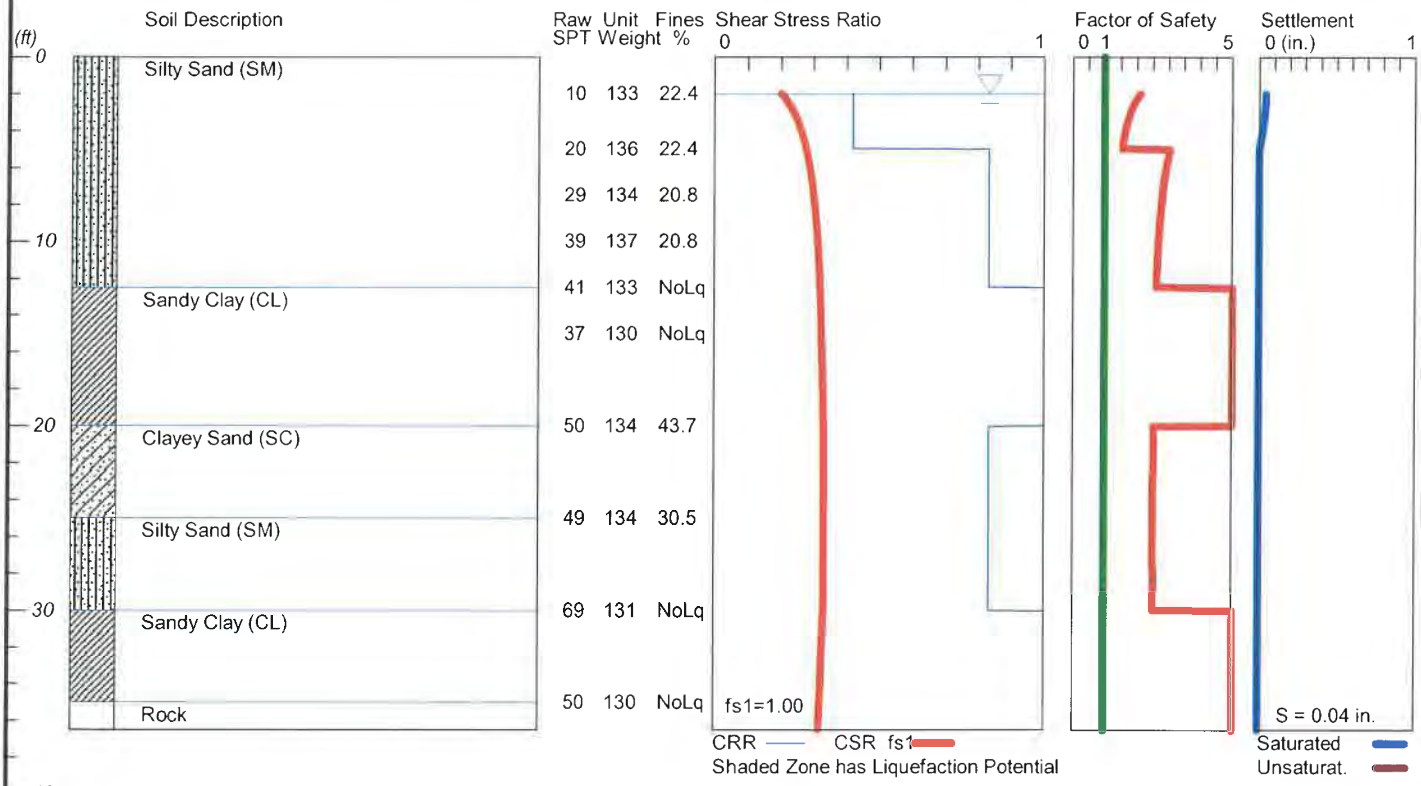
LiquefyPro CivilTech Software USA www.civiltech.com

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B21 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 8/9/2023 3:52:06 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B21\B21 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B21
Depth of Hole= 36.50 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 3.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B21
Depth of Hole=36.50 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 3.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.4
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	10.00	133.00	22.40
5.00	20.00	136.00	22.40
7.50	29.00	134.00	20.80
10.00	39.00	137.00	20.80
12.50	41.00	133.00	NoLiq
15.00	37.00	130.00	NoLiq
20.00	50.00	134.00	43.70
25.00	49.00	134.00	30.50
30.00	69.00	131.00	NoLiq
35.00	50.00	130.00	NoLiq

Output Results:
Settlement of Saturated Sands=0.04 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.04 in.
Differential Settlement=0.019 to 0.025 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
2.00	0.42	0.20	2.11	0.04	0.00	0.04
2.05	0.42	0.20	2.08	0.04	0.00	0.04

2.10	0.42	0.20	2.06	0.04	0.00	0.04
2.15	0.42	0.21	2.04	0.04	0.00	0.04
2.20	0.42	0.21	2.02	0.04	0.00	0.04
2.25	0.42	0.21	2.00	0.04	0.00	0.04
2.30	0.42	0.21	1.98	0.04	0.00	0.04
2.35	0.42	0.21	1.96	0.04	0.00	0.04
2.40	0.42	0.22	1.95	0.04	0.00	0.04
2.45	0.42	0.22	1.93	0.04	0.00	0.04
2.50	0.42	0.22	1.91	0.04	0.00	0.04
2.55	0.42	0.22	1.90	0.04	0.00	0.04
2.60	0.42	0.22	1.88	0.04	0.00	0.04
2.65	0.42	0.22	1.87	0.04	0.00	0.04
2.70	0.42	0.23	1.85	0.04	0.00	0.04
2.75	0.42	0.23	1.84	0.04	0.00	0.04
2.80	0.42	0.23	1.83	0.04	0.00	0.04
2.85	0.42	0.23	1.82	0.04	0.00	0.04
2.90	0.42	0.23	1.81	0.04	0.00	0.04
2.95	0.42	0.23	1.79	0.03	0.00	0.03
3.00	0.42	0.23	1.78	0.03	0.00	0.03
3.05	0.42	0.24	1.77	0.03	0.00	0.03
3.10	0.42	0.24	1.76	0.03	0.00	0.03
3.15	0.42	0.24	1.75	0.03	0.00	0.03
3.20	0.42	0.24	1.74	0.03	0.00	0.03
3.25	0.42	0.24	1.73	0.03	0.00	0.03
3.30	0.42	0.24	1.72	0.03	0.00	0.03
3.35	0.42	0.24	1.72	0.03	0.00	0.03
3.40	0.42	0.25	1.71	0.03	0.00	0.03
3.45	0.42	0.25	1.70	0.03	0.00	0.03
3.50	0.42	0.25	1.69	0.03	0.00	0.03
3.55	0.42	0.25	1.68	0.03	0.00	0.03
3.60	0.42	0.25	1.67	0.03	0.00	0.03
3.65	0.42	0.25	1.67	0.03	0.00	0.03
3.70	0.42	0.25	1.66	0.02	0.00	0.02
3.75	0.42	0.25	1.65	0.02	0.00	0.02
3.80	0.42	0.25	1.65	0.02	0.00	0.02
3.85	0.42	0.26	1.64	0.02	0.00	0.02
3.90	0.42	0.26	1.63	0.02	0.00	0.02
3.95	0.42	0.26	1.63	0.02	0.00	0.02
4.00	0.42	0.26	1.62	0.02	0.00	0.02
4.05	0.42	0.26	1.62	0.02	0.00	0.02
4.10	0.42	0.26	1.61	0.02	0.00	0.02
4.15	0.42	0.26	1.60	0.02	0.00	0.02
4.20	0.42	0.26	1.60	0.02	0.00	0.02
4.25	0.42	0.26	1.59	0.02	0.00	0.02
4.30	0.42	0.26	1.59	0.01	0.00	0.01
4.35	0.42	0.26	1.58	0.01	0.00	0.01
4.40	0.42	0.27	1.58	0.01	0.00	0.01
4.45	0.42	0.27	1.57	0.01	0.00	0.01
4.50	0.42	0.27	1.57	0.01	0.00	0.01
4.55	0.42	0.27	1.56	0.01	0.00	0.01
4.60	0.42	0.27	1.56	0.01	0.00	0.01
4.65	0.42	0.27	1.55	0.01	0.00	0.01
4.70	0.42	0.27	1.55	0.01	0.00	0.01
4.75	0.42	0.27	1.55	0.01	0.00	0.01
4.80	0.42	0.27	1.54	0.00	0.00	0.00
4.85	0.42	0.27	1.54	0.00	0.00	0.00
4.90	0.42	0.27	1.53	0.00	0.00	0.00
4.95	0.42	0.27	1.53	0.00	0.00	0.00
5.00	0.83	0.27	3.03	0.00	0.00	0.00
5.05	0.83	0.28	3.02	0.00	0.00	0.00
5.10	0.83	0.28	3.01	0.00	0.00	0.00
5.15	0.83	0.28	3.01	0.00	0.00	0.00
5.20	0.83	0.28	3.00	0.00	0.00	0.00
5.25	0.83	0.28	2.99	0.00	0.00	0.00
5.30	0.83	0.28	2.99	0.00	0.00	0.00
5.35	0.83	0.28	2.98	0.00	0.00	0.00
5.40	0.83	0.28	2.97	0.00	0.00	0.00
5.45	0.83	0.28	2.97	0.00	0.00	0.00
5.50	0.83	0.28	2.96	0.00	0.00	0.00
5.55	0.83	0.28	2.95	0.00	0.00	0.00
5.60	0.83	0.28	2.95	0.00	0.00	0.00

5.65	0.83	0.28	2.94	0.00	0.00	0.00
5.70	0.83	0.28	2.94	0.00	0.00	0.00
5.75	0.83	0.28	2.93	0.00	0.00	0.00
5.80	0.83	0.28	2.93	0.00	0.00	0.00
5.85	0.83	0.28	2.92	0.00	0.00	0.00
5.90	0.83	0.28	2.92	0.00	0.00	0.00
5.95	0.83	0.29	2.91	0.00	0.00	0.00
6.00	0.83	0.29	2.91	0.00	0.00	0.00
6.05	0.83	0.29	2.90	0.00	0.00	0.00
6.10	0.83	0.29	2.90	0.00	0.00	0.00
6.15	0.83	0.29	2.89	0.00	0.00	0.00
6.20	0.83	0.29	2.89	0.00	0.00	0.00
6.25	0.83	0.29	2.88	0.00	0.00	0.00
6.30	0.83	0.29	2.88	0.00	0.00	0.00
6.35	0.83	0.29	2.87	0.00	0.00	0.00
6.40	0.83	0.29	2.87	0.00	0.00	0.00
6.45	0.83	0.29	2.87	0.00	0.00	0.00
6.50	0.83	0.29	2.86	0.00	0.00	0.00
6.55	0.83	0.29	2.86	0.00	0.00	0.00
6.60	0.83	0.29	2.85	0.00	0.00	0.00
6.65	0.83	0.29	2.85	0.00	0.00	0.00
6.70	0.83	0.29	2.85	0.00	0.00	0.00
6.75	0.83	0.29	2.84	0.00	0.00	0.00
6.80	0.83	0.29	2.84	0.00	0.00	0.00
6.85	0.83	0.29	2.83	0.00	0.00	0.00
6.90	0.83	0.29	2.83	0.00	0.00	0.00
6.95	0.83	0.29	2.83	0.00	0.00	0.00
7.00	0.83	0.29	2.82	0.00	0.00	0.00
7.05	0.83	0.29	2.82	0.00	0.00	0.00
7.10	0.83	0.30	2.82	0.00	0.00	0.00
7.15	0.83	0.30	2.81	0.00	0.00	0.00
7.20	0.83	0.30	2.81	0.00	0.00	0.00
7.25	0.83	0.30	2.81	0.00	0.00	0.00
7.30	0.83	0.30	2.80	0.00	0.00	0.00
7.35	0.83	0.30	2.80	0.00	0.00	0.00
7.40	0.83	0.30	2.80	0.00	0.00	0.00
7.45	0.83	0.30	2.79	0.00	0.00	0.00
7.50	0.83	0.30	2.79	0.00	0.00	0.00
7.55	0.83	0.30	2.79	0.00	0.00	0.00
7.60	0.83	0.30	2.78	0.00	0.00	0.00
7.65	0.83	0.30	2.78	0.00	0.00	0.00
7.70	0.83	0.30	2.78	0.00	0.00	0.00
7.75	0.83	0.30	2.77	0.00	0.00	0.00
7.80	0.83	0.30	2.77	0.00	0.00	0.00
7.85	0.83	0.30	2.77	0.00	0.00	0.00
7.90	0.83	0.30	2.77	0.00	0.00	0.00
7.95	0.83	0.30	2.76	0.00	0.00	0.00
8.00	0.83	0.30	2.76	0.00	0.00	0.00
8.05	0.83	0.30	2.76	0.00	0.00	0.00
8.10	0.83	0.30	2.76	0.00	0.00	0.00
8.15	0.83	0.30	2.75	0.00	0.00	0.00
8.20	0.83	0.30	2.75	0.00	0.00	0.00
8.25	0.83	0.30	2.75	0.00	0.00	0.00
8.30	0.83	0.30	2.74	0.00	0.00	0.00
8.35	0.83	0.30	2.74	0.00	0.00	0.00
8.40	0.83	0.30	2.74	0.00	0.00	0.00
8.45	0.83	0.30	2.74	0.00	0.00	0.00
8.50	0.83	0.30	2.73	0.00	0.00	0.00
8.55	0.83	0.30	2.73	0.00	0.00	0.00
8.60	0.83	0.30	2.73	0.00	0.00	0.00
8.65	0.83	0.30	2.73	0.00	0.00	0.00
8.70	0.83	0.30	2.73	0.00	0.00	0.00
8.75	0.83	0.31	2.72	0.00	0.00	0.00
8.80	0.83	0.31	2.72	0.00	0.00	0.00
8.85	0.83	0.31	2.72	0.00	0.00	0.00
8.90	0.83	0.31	2.72	0.00	0.00	0.00
8.95	0.83	0.31	2.71	0.00	0.00	0.00
9.00	0.83	0.31	2.71	0.00	0.00	0.00
9.05	0.83	0.31	2.71	0.00	0.00	0.00
9.10	0.83	0.31	2.71	0.00	0.00	0.00
9.15	0.83	0.31	2.71	0.00	0.00	0.00

9.20	0.83	0.31	2.70	0.00	0.00	0.00
9.25	0.83	0.31	2.70	0.00	0.00	0.00
9.30	0.83	0.31	2.70	0.00	0.00	0.00
9.35	0.83	0.31	2.70	0.00	0.00	0.00
9.40	0.83	0.31	2.70	0.00	0.00	0.00
9.45	0.83	0.31	2.69	0.00	0.00	0.00
9.50	0.83	0.31	2.69	0.00	0.00	0.00
9.55	0.83	0.31	2.69	0.00	0.00	0.00
9.60	0.83	0.31	2.69	0.00	0.00	0.00
9.65	0.83	0.31	2.69	0.00	0.00	0.00
9.70	0.83	0.31	2.68	0.00	0.00	0.00
9.75	0.83	0.31	2.68	0.00	0.00	0.00
9.80	0.83	0.31	2.68	0.00	0.00	0.00
9.85	0.83	0.31	2.68	0.00	0.00	0.00
9.90	0.83	0.31	2.68	0.00	0.00	0.00
9.95	0.83	0.31	2.68	0.00	0.00	0.00
10.00	0.83	0.31	2.67	0.00	0.00	0.00
10.05	0.83	0.31	2.67	0.00	0.00	0.00
10.10	0.83	0.31	2.67	0.00	0.00	0.00
10.15	0.83	0.31	2.67	0.00	0.00	0.00
10.20	0.83	0.31	2.67	0.00	0.00	0.00
10.25	0.83	0.31	2.67	0.00	0.00	0.00
10.30	0.83	0.31	2.67	0.00	0.00	0.00
10.35	0.83	0.31	2.66	0.00	0.00	0.00
10.40	0.83	0.31	2.66	0.00	0.00	0.00
10.45	0.83	0.31	2.66	0.00	0.00	0.00
10.50	0.83	0.31	2.66	0.00	0.00	0.00
10.55	0.83	0.31	2.66	0.00	0.00	0.00
10.60	0.83	0.31	2.66	0.00	0.00	0.00
10.65	0.83	0.31	2.66	0.00	0.00	0.00
10.70	0.83	0.31	2.66	0.00	0.00	0.00
10.75	0.83	0.31	2.65	0.00	0.00	0.00
10.80	0.83	0.31	2.65	0.00	0.00	0.00
10.85	0.83	0.31	2.65	0.00	0.00	0.00
10.90	0.83	0.31	2.65	0.00	0.00	0.00
10.95	0.83	0.31	2.65	0.00	0.00	0.00
11.00	0.83	0.31	2.65	0.00	0.00	0.00
11.05	0.83	0.31	2.65	0.00	0.00	0.00
11.10	0.83	0.31	2.65	0.00	0.00	0.00
11.15	0.83	0.31	2.64	0.00	0.00	0.00
11.20	0.83	0.31	2.64	0.00	0.00	0.00
11.25	0.83	0.31	2.64	0.00	0.00	0.00
11.30	0.83	0.31	2.64	0.00	0.00	0.00
11.35	0.83	0.31	2.64	0.00	0.00	0.00
11.40	0.83	0.31	2.64	0.00	0.00	0.00
11.45	0.83	0.31	2.64	0.00	0.00	0.00
11.50	0.83	0.32	2.64	0.00	0.00	0.00
11.55	0.83	0.32	2.64	0.00	0.00	0.00
11.60	0.83	0.32	2.63	0.00	0.00	0.00
11.65	0.83	0.32	2.63	0.00	0.00	0.00
11.70	0.83	0.32	2.63	0.00	0.00	0.00
11.75	0.83	0.32	2.63	0.00	0.00	0.00
11.80	0.83	0.32	2.63	0.00	0.00	0.00
11.85	0.83	0.32	2.63	0.00	0.00	0.00
11.90	0.83	0.32	2.63	0.00	0.00	0.00
11.95	0.83	0.32	2.63	0.00	0.00	0.00
12.00	0.83	0.32	2.63	0.00	0.00	0.00
12.05	0.83	0.32	2.63	0.00	0.00	0.00
12.10	0.83	0.32	2.63	0.00	0.00	0.00
12.15	0.83	0.32	2.62	0.00	0.00	0.00
12.20	0.83	0.32	2.62	0.00	0.00	0.00
12.25	0.83	0.32	2.62	0.00	0.00	0.00
12.30	0.83	0.32	2.62	0.00	0.00	0.00
12.35	0.83	0.32	2.62	0.00	0.00	0.00
12.40	0.83	0.32	2.62	0.00	0.00	0.00
12.45	0.83	0.32	2.62	0.00	0.00	0.00
12.50	2.00	0.32	5.00	0.00	0.00	0.00
12.55	2.00	0.32	5.00	0.00	0.00	0.00
12.60	2.00	0.32	5.00	0.00	0.00	0.00
12.65	2.00	0.32	5.00	0.00	0.00	0.00
12.70	2.00	0.32	5.00	0.00	0.00	0.00

12.75	2.00	0.32	5.00	0.00	0.00	0.00
12.80	2.00	0.32	5.00	0.00	0.00	0.00
12.85	2.00	0.32	5.00	0.00	0.00	0.00
12.90	2.00	0.32	5.00	0.00	0.00	0.00
12.95	2.00	0.32	5.00	0.00	0.00	0.00
13.00	2.00	0.32	5.00	0.00	0.00	0.00
13.05	2.00	0.32	5.00	0.00	0.00	0.00
13.10	2.00	0.32	5.00	0.00	0.00	0.00
13.15	2.00	0.32	5.00	0.00	0.00	0.00
13.20	2.00	0.32	5.00	0.00	0.00	0.00
13.25	2.00	0.32	5.00	0.00	0.00	0.00
13.30	2.00	0.32	5.00	0.00	0.00	0.00
13.35	2.00	0.32	5.00	0.00	0.00	0.00
13.40	2.00	0.32	5.00	0.00	0.00	0.00
13.45	2.00	0.32	5.00	0.00	0.00	0.00
13.50	2.00	0.32	5.00	0.00	0.00	0.00
13.55	2.00	0.32	5.00	0.00	0.00	0.00
13.60	2.00	0.32	5.00	0.00	0.00	0.00
13.65	2.00	0.32	5.00	0.00	0.00	0.00
13.70	2.00	0.32	5.00	0.00	0.00	0.00
13.75	2.00	0.32	5.00	0.00	0.00	0.00
13.80	2.00	0.32	5.00	0.00	0.00	0.00
13.85	2.00	0.32	5.00	0.00	0.00	0.00
13.90	2.00	0.32	5.00	0.00	0.00	0.00
13.95	2.00	0.32	5.00	0.00	0.00	0.00
14.00	2.00	0.32	5.00	0.00	0.00	0.00
14.05	2.00	0.32	5.00	0.00	0.00	0.00
14.10	2.00	0.32	5.00	0.00	0.00	0.00
14.15	2.00	0.32	5.00	0.00	0.00	0.00
14.20	2.00	0.32	5.00	0.00	0.00	0.00
14.25	2.00	0.32	5.00	0.00	0.00	0.00
14.30	2.00	0.32	5.00	0.00	0.00	0.00
14.35	2.00	0.32	5.00	0.00	0.00	0.00
14.40	2.00	0.32	5.00	0.00	0.00	0.00
14.45	2.00	0.32	5.00	0.00	0.00	0.00
14.50	2.00	0.32	5.00	0.00	0.00	0.00
14.55	2.00	0.32	5.00	0.00	0.00	0.00
14.60	2.00	0.32	5.00	0.00	0.00	0.00
14.65	2.00	0.32	5.00	0.00	0.00	0.00
14.70	2.00	0.32	5.00	0.00	0.00	0.00
14.75	2.00	0.32	5.00	0.00	0.00	0.00
14.80	2.00	0.32	5.00	0.00	0.00	0.00
14.85	2.00	0.32	5.00	0.00	0.00	0.00
14.90	2.00	0.32	5.00	0.00	0.00	0.00
14.95	2.00	0.32	5.00	0.00	0.00	0.00
15.00	2.00	0.32	5.00	0.00	0.00	0.00
15.05	2.00	0.32	5.00	0.00	0.00	0.00
15.10	2.00	0.32	5.00	0.00	0.00	0.00
15.15	2.00	0.32	5.00	0.00	0.00	0.00
15.20	2.00	0.32	5.00	0.00	0.00	0.00
15.25	2.00	0.32	5.00	0.00	0.00	0.00
15.30	2.00	0.32	5.00	0.00	0.00	0.00
15.35	2.00	0.32	5.00	0.00	0.00	0.00
15.40	2.00	0.32	5.00	0.00	0.00	0.00
15.45	2.00	0.32	5.00	0.00	0.00	0.00
15.50	2.00	0.32	5.00	0.00	0.00	0.00
15.55	2.00	0.32	5.00	0.00	0.00	0.00
15.60	2.00	0.32	5.00	0.00	0.00	0.00
15.65	2.00	0.32	5.00	0.00	0.00	0.00
15.70	2.00	0.32	5.00	0.00	0.00	0.00
15.75	2.00	0.32	5.00	0.00	0.00	0.00
15.80	2.00	0.32	5.00	0.00	0.00	0.00
15.85	2.00	0.32	5.00	0.00	0.00	0.00
15.90	2.00	0.32	5.00	0.00	0.00	0.00
15.95	2.00	0.32	5.00	0.00	0.00	0.00
16.00	2.00	0.32	5.00	0.00	0.00	0.00
16.05	2.00	0.32	5.00	0.00	0.00	0.00
16.10	2.00	0.32	5.00	0.00	0.00	0.00
16.15	2.00	0.32	5.00	0.00	0.00	0.00
16.20	2.00	0.32	5.00	0.00	0.00	0.00
16.25	2.00	0.32	5.00	0.00	0.00	0.00

16.30	2.00	0.32	5.00	0.00	0.00	0.00
16.35	2.00	0.32	5.00	0.00	0.00	0.00
16.40	2.00	0.32	5.00	0.00	0.00	0.00
16.45	2.00	0.32	5.00	0.00	0.00	0.00
16.50	2.00	0.32	5.00	0.00	0.00	0.00
16.55	2.00	0.32	5.00	0.00	0.00	0.00
16.60	2.00	0.33	5.00	0.00	0.00	0.00
16.65	2.00	0.33	5.00	0.00	0.00	0.00
16.70	2.00	0.33	5.00	0.00	0.00	0.00
16.75	2.00	0.33	5.00	0.00	0.00	0.00
16.80	2.00	0.33	5.00	0.00	0.00	0.00
16.85	2.00	0.33	5.00	0.00	0.00	0.00
16.90	2.00	0.33	5.00	0.00	0.00	0.00
16.95	2.00	0.33	5.00	0.00	0.00	0.00
17.00	2.00	0.33	5.00	0.00	0.00	0.00
17.05	2.00	0.33	5.00	0.00	0.00	0.00
17.10	2.00	0.33	5.00	0.00	0.00	0.00
17.15	2.00	0.33	5.00	0.00	0.00	0.00
17.20	2.00	0.33	5.00	0.00	0.00	0.00
17.25	2.00	0.33	5.00	0.00	0.00	0.00
17.30	2.00	0.33	5.00	0.00	0.00	0.00
17.35	2.00	0.33	5.00	0.00	0.00	0.00
17.40	2.00	0.33	5.00	0.00	0.00	0.00
17.45	2.00	0.33	5.00	0.00	0.00	0.00
17.50	2.00	0.33	5.00	0.00	0.00	0.00
17.55	2.00	0.33	5.00	0.00	0.00	0.00
17.60	2.00	0.33	5.00	0.00	0.00	0.00
17.65	2.00	0.33	5.00	0.00	0.00	0.00
17.70	2.00	0.33	5.00	0.00	0.00	0.00
17.75	2.00	0.33	5.00	0.00	0.00	0.00
17.80	2.00	0.33	5.00	0.00	0.00	0.00
17.85	2.00	0.33	5.00	0.00	0.00	0.00
17.90	2.00	0.33	5.00	0.00	0.00	0.00
17.95	2.00	0.33	5.00	0.00	0.00	0.00
18.00	2.00	0.33	5.00	0.00	0.00	0.00
18.05	2.00	0.33	5.00	0.00	0.00	0.00
18.10	2.00	0.33	5.00	0.00	0.00	0.00
18.15	2.00	0.33	5.00	0.00	0.00	0.00
18.20	2.00	0.33	5.00	0.00	0.00	0.00
18.25	2.00	0.33	5.00	0.00	0.00	0.00
18.30	2.00	0.33	5.00	0.00	0.00	0.00
18.35	2.00	0.33	5.00	0.00	0.00	0.00
18.40	2.00	0.33	5.00	0.00	0.00	0.00
18.45	2.00	0.33	5.00	0.00	0.00	0.00
18.50	2.00	0.33	5.00	0.00	0.00	0.00
18.55	2.00	0.33	5.00	0.00	0.00	0.00
18.60	2.00	0.33	5.00	0.00	0.00	0.00
18.65	2.00	0.33	5.00	0.00	0.00	0.00
18.70	2.00	0.33	5.00	0.00	0.00	0.00
18.75	2.00	0.33	5.00	0.00	0.00	0.00
18.80	2.00	0.33	5.00	0.00	0.00	0.00
18.85	2.00	0.33	5.00	0.00	0.00	0.00
18.90	2.00	0.33	5.00	0.00	0.00	0.00
18.95	2.00	0.33	5.00	0.00	0.00	0.00
19.00	2.00	0.33	5.00	0.00	0.00	0.00
19.05	2.00	0.33	5.00	0.00	0.00	0.00
19.10	2.00	0.33	5.00	0.00	0.00	0.00
19.15	2.00	0.33	5.00	0.00	0.00	0.00
19.20	2.00	0.33	5.00	0.00	0.00	0.00
19.25	2.00	0.33	5.00	0.00	0.00	0.00
19.30	2.00	0.33	5.00	0.00	0.00	0.00
19.35	2.00	0.33	5.00	0.00	0.00	0.00
19.40	2.00	0.33	5.00	0.00	0.00	0.00
19.45	2.00	0.33	5.00	0.00	0.00	0.00
19.50	2.00	0.33	5.00	0.00	0.00	0.00
19.55	2.00	0.33	5.00	0.00	0.00	0.00
19.60	2.00	0.33	5.00	0.00	0.00	0.00
19.65	2.00	0.33	5.00	0.00	0.00	0.00
19.70	2.00	0.33	5.00	0.00	0.00	0.00
19.75	2.00	0.33	5.00	0.00	0.00	0.00
19.80	2.00	0.33	5.00	0.00	0.00	0.00

19.85	2.00	0.33	5.00	0.00	0.00	0.00
19.90	2.00	0.33	5.00	0.00	0.00	0.00
19.95	2.00	0.33	5.00	0.00	0.00	0.00
20.00	2.00	0.33	5.00	0.00	0.00	0.00
20.05	0.83	0.33	2.53	0.00	0.00	0.00
20.10	0.83	0.33	2.53	0.00	0.00	0.00
20.15	0.83	0.33	2.53	0.00	0.00	0.00
20.20	0.83	0.33	2.53	0.00	0.00	0.00
20.25	0.83	0.33	2.53	0.00	0.00	0.00
20.30	0.83	0.33	2.53	0.00	0.00	0.00
20.35	0.83	0.33	2.52	0.00	0.00	0.00
20.40	0.83	0.33	2.52	0.00	0.00	0.00
20.45	0.83	0.33	2.52	0.00	0.00	0.00
20.50	0.83	0.33	2.52	0.00	0.00	0.00
20.55	0.83	0.33	2.52	0.00	0.00	0.00
20.60	0.83	0.33	2.52	0.00	0.00	0.00
20.65	0.83	0.33	2.52	0.00	0.00	0.00
20.70	0.83	0.33	2.52	0.00	0.00	0.00
20.75	0.83	0.33	2.52	0.00	0.00	0.00
20.80	0.83	0.33	2.52	0.00	0.00	0.00
20.85	0.83	0.33	2.52	0.00	0.00	0.00
20.90	0.83	0.33	2.52	0.00	0.00	0.00
20.95	0.83	0.33	2.52	0.00	0.00	0.00
21.00	0.83	0.33	2.52	0.00	0.00	0.00
21.05	0.83	0.33	2.52	0.00	0.00	0.00
21.10	0.83	0.33	2.52	0.00	0.00	0.00
21.15	0.83	0.33	2.52	0.00	0.00	0.00
21.20	0.83	0.33	2.52	0.00	0.00	0.00
21.25	0.83	0.33	2.52	0.00	0.00	0.00
21.30	0.83	0.33	2.52	0.00	0.00	0.00
21.35	0.83	0.33	2.52	0.00	0.00	0.00
21.40	0.83	0.33	2.52	0.00	0.00	0.00
21.45	0.83	0.33	2.52	0.00	0.00	0.00
21.50	0.83	0.33	2.52	0.00	0.00	0.00
21.55	0.83	0.33	2.52	0.00	0.00	0.00
21.60	0.83	0.33	2.52	0.00	0.00	0.00
21.65	0.83	0.33	2.52	0.00	0.00	0.00
21.70	0.83	0.33	2.52	0.00	0.00	0.00
21.75	0.83	0.33	2.52	0.00	0.00	0.00
21.80	0.83	0.33	2.52	0.00	0.00	0.00
21.85	0.83	0.33	2.52	0.00	0.00	0.00
21.90	0.83	0.33	2.52	0.00	0.00	0.00
21.95	0.83	0.33	2.52	0.00	0.00	0.00
22.00	0.83	0.33	2.52	0.00	0.00	0.00
22.05	0.83	0.33	2.52	0.00	0.00	0.00
22.10	0.83	0.33	2.52	0.00	0.00	0.00
22.15	0.83	0.33	2.52	0.00	0.00	0.00
22.20	0.83	0.33	2.52	0.00	0.00	0.00
22.25	0.83	0.33	2.52	0.00	0.00	0.00
22.30	0.83	0.33	2.52	0.00	0.00	0.00
22.35	0.83	0.33	2.52	0.00	0.00	0.00
22.40	0.83	0.33	2.52	0.00	0.00	0.00
22.45	0.83	0.33	2.52	0.00	0.00	0.00
22.50	0.83	0.33	2.52	0.00	0.00	0.00
22.55	0.83	0.33	2.52	0.00	0.00	0.00
22.60	0.83	0.33	2.52	0.00	0.00	0.00
22.65	0.83	0.33	2.52	0.00	0.00	0.00
22.70	0.83	0.33	2.52	0.00	0.00	0.00
22.75	0.83	0.33	2.52	0.00	0.00	0.00
22.80	0.83	0.33	2.52	0.00	0.00	0.00
22.85	0.83	0.33	2.52	0.00	0.00	0.00
22.90	0.83	0.33	2.52	0.00	0.00	0.00
22.95	0.83	0.33	2.52	0.00	0.00	0.00
23.00	0.83	0.33	2.52	0.00	0.00	0.00
23.05	0.83	0.33	2.52	0.00	0.00	0.00
23.10	0.83	0.33	2.52	0.00	0.00	0.00
23.15	0.83	0.33	2.52	0.00	0.00	0.00
23.20	0.83	0.33	2.52	0.00	0.00	0.00
23.25	0.83	0.33	2.52	0.00	0.00	0.00
23.30	0.83	0.33	2.52	0.00	0.00	0.00
23.35	0.83	0.33	2.52	0.00	0.00	0.00

23.40	0.83	0.33	2.52	0.00	0.00	0.00
23.45	0.83	0.33	2.52	0.00	0.00	0.00
23.50	0.83	0.33	2.52	0.00	0.00	0.00
23.55	0.83	0.33	2.52	0.00	0.00	0.00
23.60	0.83	0.33	2.52	0.00	0.00	0.00
23.65	0.83	0.33	2.52	0.00	0.00	0.00
23.70	0.83	0.33	2.52	0.00	0.00	0.00
23.75	0.83	0.33	2.52	0.00	0.00	0.00
23.80	0.83	0.33	2.52	0.00	0.00	0.00
23.85	0.83	0.33	2.52	0.00	0.00	0.00
23.90	0.83	0.33	2.52	0.00	0.00	0.00
23.95	0.83	0.33	2.52	0.00	0.00	0.00
24.00	0.83	0.33	2.52	0.00	0.00	0.00
24.05	0.83	0.33	2.52	0.00	0.00	0.00
24.10	0.83	0.33	2.52	0.00	0.00	0.00
24.15	0.83	0.33	2.52	0.00	0.00	0.00
24.20	0.83	0.33	2.52	0.00	0.00	0.00
24.25	0.83	0.33	2.52	0.00	0.00	0.00
24.30	0.83	0.33	2.52	0.00	0.00	0.00
24.35	0.83	0.33	2.52	0.00	0.00	0.00
24.40	0.83	0.33	2.52	0.00	0.00	0.00
24.45	0.83	0.33	2.52	0.00	0.00	0.00
24.50	0.83	0.33	2.52	0.00	0.00	0.00
24.55	0.83	0.33	2.52	0.00	0.00	0.00
24.60	0.83	0.33	2.52	0.00	0.00	0.00
24.65	0.83	0.33	2.52	0.00	0.00	0.00
24.70	0.83	0.33	2.52	0.00	0.00	0.00
24.75	0.83	0.33	2.52	0.00	0.00	0.00
24.80	0.83	0.33	2.52	0.00	0.00	0.00
24.85	0.83	0.33	2.52	0.00	0.00	0.00
24.90	0.83	0.33	2.52	0.00	0.00	0.00
24.95	0.83	0.33	2.52	0.00	0.00	0.00
25.00	0.83	0.33	2.52	0.00	0.00	0.00
25.05	0.83	0.33	2.52	0.00	0.00	0.00
25.10	0.83	0.33	2.52	0.00	0.00	0.00
25.15	0.83	0.33	2.52	0.00	0.00	0.00
25.20	0.83	0.33	2.52	0.00	0.00	0.00
25.25	0.83	0.33	2.52	0.00	0.00	0.00
25.30	0.83	0.33	2.52	0.00	0.00	0.00
25.35	0.83	0.33	2.52	0.00	0.00	0.00
25.40	0.83	0.33	2.52	0.00	0.00	0.00
25.45	0.83	0.33	2.52	0.00	0.00	0.00
25.50	0.83	0.33	2.52	0.00	0.00	0.00
25.55	0.83	0.33	2.52	0.00	0.00	0.00
25.60	0.83	0.33	2.52	0.00	0.00	0.00
25.65	0.83	0.33	2.52	0.00	0.00	0.00
25.70	0.83	0.33	2.52	0.00	0.00	0.00
25.75	0.83	0.33	2.52	0.00	0.00	0.00
25.80	0.83	0.33	2.52	0.00	0.00	0.00
25.85	0.83	0.33	2.52	0.00	0.00	0.00
25.90	0.83	0.33	2.52	0.00	0.00	0.00
25.95	0.83	0.33	2.52	0.00	0.00	0.00
26.00	0.83	0.33	2.52	0.00	0.00	0.00
26.05	0.83	0.33	2.52	0.00	0.00	0.00
26.10	0.83	0.33	2.52	0.00	0.00	0.00
26.15	0.83	0.33	2.52	0.00	0.00	0.00
26.20	0.83	0.33	2.52	0.00	0.00	0.00
26.25	0.83	0.33	2.52	0.00	0.00	0.00
26.30	0.83	0.33	2.52	0.00	0.00	0.00
26.35	0.83	0.33	2.52	0.00	0.00	0.00
26.40	0.83	0.33	2.52	0.00	0.00	0.00
26.45	0.83	0.33	2.52	0.00	0.00	0.00
26.50	0.83	0.33	2.52	0.00	0.00	0.00
26.55	0.83	0.33	2.52	0.00	0.00	0.00
26.60	0.83	0.33	2.52	0.00	0.00	0.00
26.65	0.83	0.33	2.52	0.00	0.00	0.00
26.70	0.83	0.33	2.52	0.00	0.00	0.00
26.75	0.83	0.33	2.52	0.00	0.00	0.00
26.80	0.83	0.33	2.52	0.00	0.00	0.00
26.85	0.83	0.33	2.52	0.00	0.00	0.00
26.90	0.83	0.33	2.52	0.00	0.00	0.00

26.95	0.83	0.33	2.52	0.00	0.00	0.00
27.00	0.83	0.33	2.52	0.00	0.00	0.00
27.05	0.83	0.33	2.52	0.00	0.00	0.00
27.10	0.83	0.33	2.52	0.00	0.00	0.00
27.15	0.83	0.33	2.52	0.00	0.00	0.00
27.20	0.83	0.33	2.52	0.00	0.00	0.00
27.25	0.83	0.33	2.52	0.00	0.00	0.00
27.30	0.83	0.33	2.52	0.00	0.00	0.00
27.35	0.83	0.33	2.52	0.00	0.00	0.00
27.40	0.83	0.33	2.52	0.00	0.00	0.00
27.45	0.83	0.33	2.52	0.00	0.00	0.00
27.50	0.83	0.33	2.52	0.00	0.00	0.00
27.55	0.83	0.33	2.52	0.00	0.00	0.00
27.60	0.83	0.33	2.52	0.00	0.00	0.00
27.65	0.83	0.33	2.52	0.00	0.00	0.00
27.70	0.83	0.33	2.52	0.00	0.00	0.00
27.75	0.83	0.33	2.52	0.00	0.00	0.00
27.80	0.83	0.33	2.52	0.00	0.00	0.00
27.85	0.83	0.33	2.52	0.00	0.00	0.00
27.90	0.83	0.33	2.52	0.00	0.00	0.00
27.95	0.83	0.33	2.52	0.00	0.00	0.00
28.00	0.83	0.33	2.52	0.00	0.00	0.00
28.05	0.83	0.33	2.52	0.00	0.00	0.00
28.10	0.83	0.33	2.52	0.00	0.00	0.00
28.15	0.83	0.33	2.52	0.00	0.00	0.00
28.20	0.83	0.33	2.52	0.00	0.00	0.00
28.25	0.83	0.33	2.52	0.00	0.00	0.00
28.30	0.83	0.33	2.52	0.00	0.00	0.00
28.35	0.83	0.33	2.52	0.00	0.00	0.00
28.40	0.83	0.33	2.52	0.00	0.00	0.00
28.45	0.83	0.33	2.52	0.00	0.00	0.00
28.50	0.83	0.33	2.52	0.00	0.00	0.00
28.55	0.83	0.33	2.52	0.00	0.00	0.00
28.60	0.83	0.33	2.52	0.00	0.00	0.00
28.65	0.83	0.33	2.52	0.00	0.00	0.00
28.70	0.83	0.33	2.52	0.00	0.00	0.00
28.75	0.83	0.33	2.52	0.00	0.00	0.00
28.80	0.83	0.33	2.52	0.00	0.00	0.00
28.85	0.83	0.33	2.52	0.00	0.00	0.00
28.90	0.83	0.33	2.52	0.00	0.00	0.00
28.95	0.83	0.33	2.52	0.00	0.00	0.00
29.00	0.83	0.33	2.52	0.00	0.00	0.00
29.05	0.83	0.33	2.52	0.00	0.00	0.00
29.10	0.83	0.33	2.52	0.00	0.00	0.00
29.15	0.83	0.33	2.52	0.00	0.00	0.00
29.20	0.83	0.33	2.52	0.00	0.00	0.00
29.25	0.83	0.33	2.52	0.00	0.00	0.00
29.30	0.83	0.33	2.52	0.00	0.00	0.00
29.35	0.83	0.33	2.52	0.00	0.00	0.00
29.40	0.83	0.33	2.52	0.00	0.00	0.00
29.45	0.83	0.33	2.52	0.00	0.00	0.00
29.50	0.83	0.33	2.52	0.00	0.00	0.00
29.55	0.83	0.33	2.52	0.00	0.00	0.00
29.60	0.83	0.33	2.52	0.00	0.00	0.00
29.65	0.83	0.33	2.52	0.00	0.00	0.00
29.70	0.83	0.33	2.52	0.00	0.00	0.00
29.75	0.83	0.33	2.52	0.00	0.00	0.00
29.80	0.83	0.33	2.52	0.00	0.00	0.00
29.85	0.83	0.33	2.52	0.00	0.00	0.00
29.90	0.83	0.33	2.52	0.00	0.00	0.00
29.95	0.83	0.33	2.52	0.00	0.00	0.00
30.00	0.83	0.33	2.52	0.00	0.00	0.00
30.05	2.00	0.33	5.00	0.00	0.00	0.00
30.10	2.00	0.33	5.00	0.00	0.00	0.00
30.15	2.00	0.33	5.00	0.00	0.00	0.00
30.20	2.00	0.33	5.00	0.00	0.00	0.00
30.25	2.00	0.33	5.00	0.00	0.00	0.00
30.30	2.00	0.33	5.00	0.00	0.00	0.00
30.35	2.00	0.33	5.00	0.00	0.00	0.00
30.40	2.00	0.33	5.00	0.00	0.00	0.00
30.45	2.00	0.33	5.00	0.00	0.00	0.00

30.50	2.00	0.33	5.00	0.00	0.00	0.00
30.55	2.00	0.33	5.00	0.00	0.00	0.00
30.60	2.00	0.33	5.00	0.00	0.00	0.00
30.65	2.00	0.33	5.00	0.00	0.00	0.00
30.70	2.00	0.33	5.00	0.00	0.00	0.00
30.75	2.00	0.33	5.00	0.00	0.00	0.00
30.80	2.00	0.33	5.00	0.00	0.00	0.00
30.85	2.00	0.33	5.00	0.00	0.00	0.00
30.90	2.00	0.33	5.00	0.00	0.00	0.00
30.95	2.00	0.33	5.00	0.00	0.00	0.00
31.00	2.00	0.33	5.00	0.00	0.00	0.00
31.05	2.00	0.33	5.00	0.00	0.00	0.00
31.10	2.00	0.33	5.00	0.00	0.00	0.00
31.15	2.00	0.33	5.00	0.00	0.00	0.00
31.20	2.00	0.33	5.00	0.00	0.00	0.00
31.25	2.00	0.33	5.00	0.00	0.00	0.00
31.30	2.00	0.33	5.00	0.00	0.00	0.00
31.35	2.00	0.33	5.00	0.00	0.00	0.00
31.40	2.00	0.33	5.00	0.00	0.00	0.00
31.45	2.00	0.33	5.00	0.00	0.00	0.00
31.50	2.00	0.33	5.00	0.00	0.00	0.00
31.55	2.00	0.33	5.00	0.00	0.00	0.00
31.60	2.00	0.33	5.00	0.00	0.00	0.00
31.65	2.00	0.33	5.00	0.00	0.00	0.00
31.70	2.00	0.33	5.00	0.00	0.00	0.00
31.75	2.00	0.33	5.00	0.00	0.00	0.00
31.80	2.00	0.33	5.00	0.00	0.00	0.00
31.85	2.00	0.33	5.00	0.00	0.00	0.00
31.90	2.00	0.33	5.00	0.00	0.00	0.00
31.95	2.00	0.32	5.00	0.00	0.00	0.00
32.00	2.00	0.32	5.00	0.00	0.00	0.00
32.05	2.00	0.32	5.00	0.00	0.00	0.00
32.10	2.00	0.32	5.00	0.00	0.00	0.00
32.15	2.00	0.32	5.00	0.00	0.00	0.00
32.20	2.00	0.32	5.00	0.00	0.00	0.00
32.25	2.00	0.32	5.00	0.00	0.00	0.00
32.30	2.00	0.32	5.00	0.00	0.00	0.00
32.35	2.00	0.32	5.00	0.00	0.00	0.00
32.40	2.00	0.32	5.00	0.00	0.00	0.00
32.45	2.00	0.32	5.00	0.00	0.00	0.00
32.50	2.00	0.32	5.00	0.00	0.00	0.00
32.55	2.00	0.32	5.00	0.00	0.00	0.00
32.60	2.00	0.32	5.00	0.00	0.00	0.00
32.65	2.00	0.32	5.00	0.00	0.00	0.00
32.70	2.00	0.32	5.00	0.00	0.00	0.00
32.75	2.00	0.32	5.00	0.00	0.00	0.00
32.80	2.00	0.32	5.00	0.00	0.00	0.00
32.85	2.00	0.32	5.00	0.00	0.00	0.00
32.90	2.00	0.32	5.00	0.00	0.00	0.00
32.95	2.00	0.32	5.00	0.00	0.00	0.00
33.00	2.00	0.32	5.00	0.00	0.00	0.00
33.05	2.00	0.32	5.00	0.00	0.00	0.00
33.10	2.00	0.32	5.00	0.00	0.00	0.00
33.15	2.00	0.32	5.00	0.00	0.00	0.00
33.20	2.00	0.32	5.00	0.00	0.00	0.00
33.25	2.00	0.32	5.00	0.00	0.00	0.00
33.30	2.00	0.32	5.00	0.00	0.00	0.00
33.35	2.00	0.32	5.00	0.00	0.00	0.00
33.40	2.00	0.32	5.00	0.00	0.00	0.00
33.45	2.00	0.32	5.00	0.00	0.00	0.00
33.50	2.00	0.32	5.00	0.00	0.00	0.00
33.55	2.00	0.32	5.00	0.00	0.00	0.00
33.60	2.00	0.32	5.00	0.00	0.00	0.00
33.65	2.00	0.32	5.00	0.00	0.00	0.00
33.70	2.00	0.32	5.00	0.00	0.00	0.00
33.75	2.00	0.32	5.00	0.00	0.00	0.00
33.80	2.00	0.32	5.00	0.00	0.00	0.00
33.85	2.00	0.32	5.00	0.00	0.00	0.00
33.90	2.00	0.32	5.00	0.00	0.00	0.00
33.95	2.00	0.32	5.00	0.00	0.00	0.00
34.00	2.00	0.32	5.00	0.00	0.00	0.00

34.05	2.00	0.32	5.00	0.00	0.00	0.00
34.10	2.00	0.32	5.00	0.00	0.00	0.00
34.15	2.00	0.32	5.00	0.00	0.00	0.00
34.20	2.00	0.32	5.00	0.00	0.00	0.00
34.25	2.00	0.32	5.00	0.00	0.00	0.00
34.30	2.00	0.32	5.00	0.00	0.00	0.00
34.35	2.00	0.32	5.00	0.00	0.00	0.00
34.40	2.00	0.32	5.00	0.00	0.00	0.00
34.45	2.00	0.32	5.00	0.00	0.00	0.00
34.50	2.00	0.32	5.00	0.00	0.00	0.00
34.55	2.00	0.32	5.00	0.00	0.00	0.00
34.60	2.00	0.32	5.00	0.00	0.00	0.00
34.65	2.00	0.32	5.00	0.00	0.00	0.00
34.70	2.00	0.32	5.00	0.00	0.00	0.00
34.75	2.00	0.32	5.00	0.00	0.00	0.00
34.80	2.00	0.32	5.00	0.00	0.00	0.00
34.85	2.00	0.32	5.00	0.00	0.00	0.00
34.90	2.00	0.32	5.00	0.00	0.00	0.00
34.95	2.00	0.32	5.00	0.00	0.00	0.00
35.00	2.00	0.32	5.00	0.00	0.00	0.00
35.05	2.00	0.32	5.00	0.00	0.00	0.00
35.10	2.00	0.32	5.00	0.00	0.00	0.00
35.15	2.00	0.32	5.00	0.00	0.00	0.00
35.20	2.00	0.32	5.00	0.00	0.00	0.00
35.25	2.00	0.32	5.00	0.00	0.00	0.00
35.30	2.00	0.32	5.00	0.00	0.00	0.00
35.35	2.00	0.32	5.00	0.00	0.00	0.00
35.40	2.00	0.32	5.00	0.00	0.00	0.00
35.45	2.00	0.32	5.00	0.00	0.00	0.00
35.50	2.00	0.32	5.00	0.00	0.00	0.00
35.55	2.00	0.32	5.00	0.00	0.00	0.00
35.60	2.00	0.32	5.00	0.00	0.00	0.00
35.65	2.00	0.32	5.00	0.00	0.00	0.00
35.70	2.00	0.32	5.00	0.00	0.00	0.00
35.75	2.00	0.32	5.00	0.00	0.00	0.00
35.80	2.00	0.32	5.00	0.00	0.00	0.00
35.85	2.00	0.32	5.00	0.00	0.00	0.00
35.90	2.00	0.32	5.00	0.00	0.00	0.00
35.95	2.00	0.32	5.00	0.00	0.00	0.00
36.00	2.00	0.32	5.00	0.00	0.00	0.00
36.05	2.00	0.32	5.00	0.00	0.00	0.00
36.10	2.00	0.32	5.00	0.00	0.00	0.00
36.15	2.00	0.32	5.00	0.00	0.00	0.00
36.20	2.00	0.32	5.00	0.00	0.00	0.00
36.25	2.00	0.32	5.00	0.00	0.00	0.00
36.30	2.00	0.31	5.00	0.00	0.00	0.00
36.35	2.00	0.31	5.00	0.00	0.00	0.00
36.40	2.00	0.31	5.00	0.00	0.00	0.00
36.45	2.00	0.31	5.00	0.00	0.00	0.00
36.50	2.00	0.31	5.00	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

1 atm (atmosphere) = 1 tsf (ton/ft2)

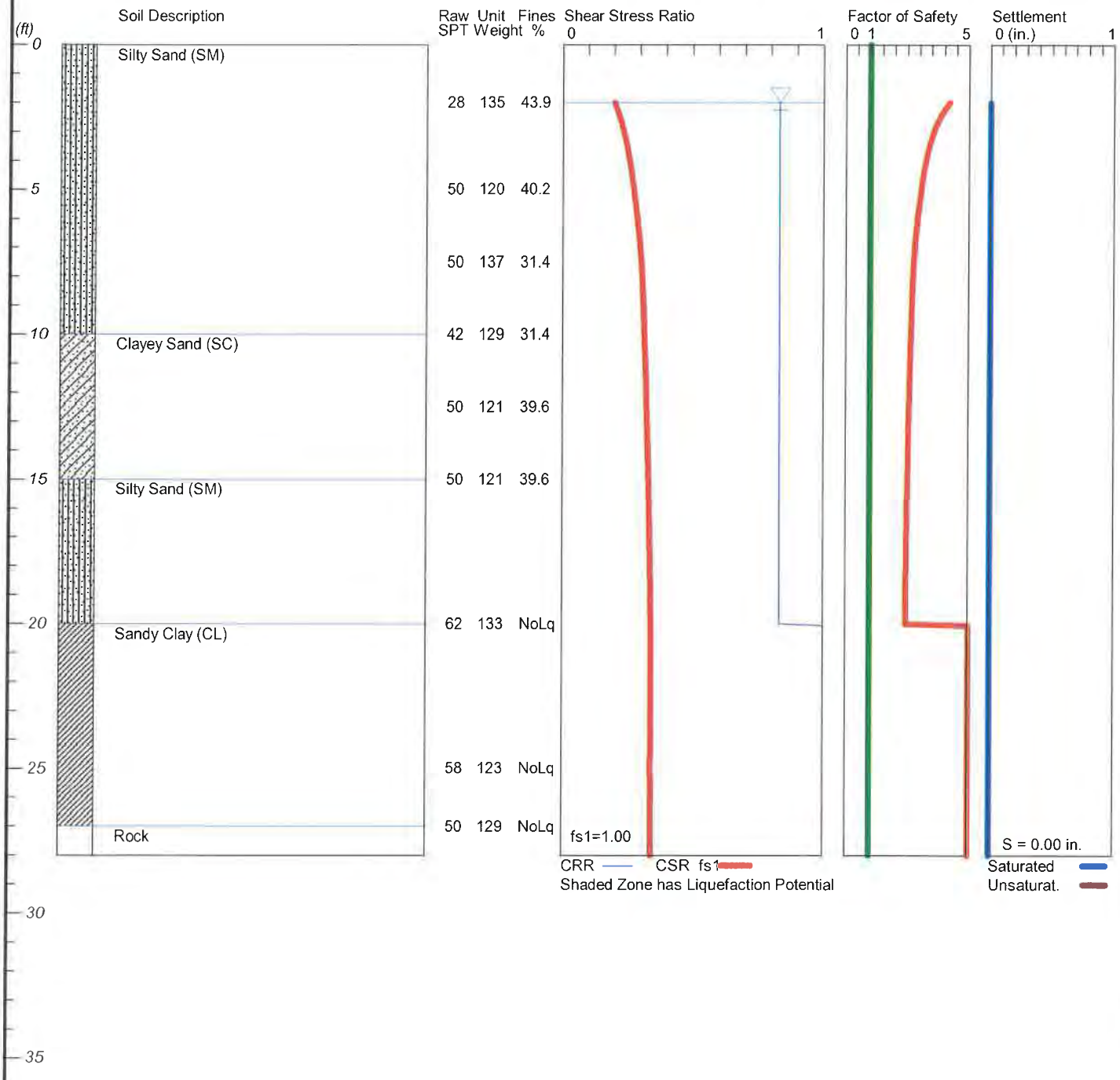
CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B22 Water Depth=2 ft

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

Krazan

012-22165

Plate A-1

****

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 8/9/2023 4:14:44 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B22\B22 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B22
Depth of Hole= 28.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 4.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B22
Depth of Hole=28.00 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 4.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.4
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	28.00	135.00	43.90
5.00	50.00	120.00	40.20
7.50	50.00	137.00	31.40
10.00	42.00	129.00	31.40
12.50	50.00	121.00	39.60
15.00	50.00	121.00	39.60
20.00	62.00	133.00	NoLiq
25.00	58.00	123.00	NoLiq
27.00	50.00	129.00	NoLiq

Output Results:
Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.00 in.
Differential Settlement=0.000 to 0.000 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
2.00	0.83	0.20	4.18	0.00	0.00	0.00
2.05	0.83	0.20	4.14	0.00	0.00	0.00
2.10	0.83	0.20	4.09	0.00	0.00	0.00

2.15	0.83	0.21	4.05	0.00	0.00	0.00
2.20	0.83	0.21	4.01	0.00	0.00	0.00
2.25	0.83	0.21	3.97	0.00	0.00	0.00
2.30	0.83	0.21	3.93	0.00	0.00	0.00
2.35	0.83	0.21	3.90	0.00	0.00	0.00
2.40	0.83	0.21	3.86	0.00	0.00	0.00
2.45	0.83	0.22	3.83	0.00	0.00	0.00
2.50	0.83	0.22	3.80	0.00	0.00	0.00
2.55	0.83	0.22	3.77	0.00	0.00	0.00
2.60	0.83	0.22	3.74	0.00	0.00	0.00
2.65	0.83	0.22	3.71	0.00	0.00	0.00
2.70	0.83	0.23	3.69	0.00	0.00	0.00
2.75	0.83	0.23	3.66	0.00	0.00	0.00
2.80	0.83	0.23	3.64	0.00	0.00	0.00
2.85	0.83	0.23	3.61	0.00	0.00	0.00
2.90	0.83	0.23	3.59	0.00	0.00	0.00
2.95	0.83	0.23	3.57	0.00	0.00	0.00
3.00	0.83	0.23	3.55	0.00	0.00	0.00
3.05	0.83	0.24	3.53	0.00	0.00	0.00
3.10	0.83	0.24	3.51	0.00	0.00	0.00
3.15	0.83	0.24	3.49	0.00	0.00	0.00
3.20	0.83	0.24	3.47	0.00	0.00	0.00
3.25	0.83	0.24	3.45	0.00	0.00	0.00
3.30	0.83	0.24	3.43	0.00	0.00	0.00
3.35	0.83	0.24	3.41	0.00	0.00	0.00
3.40	0.83	0.24	3.40	0.00	0.00	0.00
3.45	0.83	0.25	3.38	0.00	0.00	0.00
3.50	0.83	0.25	3.37	0.00	0.00	0.00
3.55	0.83	0.25	3.35	0.00	0.00	0.00
3.60	0.83	0.25	3.34	0.00	0.00	0.00
3.65	0.83	0.25	3.32	0.00	0.00	0.00
3.70	0.83	0.25	3.31	0.00	0.00	0.00
3.75	0.83	0.25	3.29	0.00	0.00	0.00
3.80	0.83	0.25	3.28	0.00	0.00	0.00
3.85	0.83	0.25	3.27	0.00	0.00	0.00
3.90	0.83	0.26	3.26	0.00	0.00	0.00
3.95	0.83	0.26	3.24	0.00	0.00	0.00
4.00	0.83	0.26	3.23	0.00	0.00	0.00
4.05	0.83	0.26	3.22	0.00	0.00	0.00
4.10	0.83	0.26	3.21	0.00	0.00	0.00
4.15	0.83	0.26	3.20	0.00	0.00	0.00
4.20	0.83	0.26	3.19	0.00	0.00	0.00
4.25	0.83	0.26	3.18	0.00	0.00	0.00
4.30	0.83	0.26	3.17	0.00	0.00	0.00
4.35	0.83	0.26	3.16	0.00	0.00	0.00
4.40	0.83	0.26	3.15	0.00	0.00	0.00
4.45	0.83	0.26	3.14	0.00	0.00	0.00
4.50	0.83	0.27	3.13	0.00	0.00	0.00
4.55	0.83	0.27	3.12	0.00	0.00	0.00
4.60	0.83	0.27	3.11	0.00	0.00	0.00
4.65	0.83	0.27	3.10	0.00	0.00	0.00
4.70	0.83	0.27	3.09	0.00	0.00	0.00
4.75	0.83	0.27	3.08	0.00	0.00	0.00
4.80	0.83	0.27	3.07	0.00	0.00	0.00
4.85	0.83	0.27	3.07	0.00	0.00	0.00
4.90	0.83	0.27	3.06	0.00	0.00	0.00
4.95	0.83	0.27	3.05	0.00	0.00	0.00
5.00	0.83	0.27	3.04	0.00	0.00	0.00
5.05	0.83	0.27	3.04	0.00	0.00	0.00
5.10	0.83	0.27	3.03	0.00	0.00	0.00
5.15	0.83	0.28	3.02	0.00	0.00	0.00
5.20	0.83	0.28	3.01	0.00	0.00	0.00
5.25	0.83	0.28	3.00	0.00	0.00	0.00
5.30	0.83	0.28	2.99	0.00	0.00	0.00
5.35	0.83	0.28	2.99	0.00	0.00	0.00
5.40	0.83	0.28	2.98	0.00	0.00	0.00
5.45	0.83	0.28	2.97	0.00	0.00	0.00
5.50	0.83	0.28	2.96	0.00	0.00	0.00
5.55	0.83	0.28	2.96	0.00	0.00	0.00
5.60	0.83	0.28	2.95	0.00	0.00	0.00
5.65	0.83	0.28	2.94	0.00	0.00	0.00

5.70	0.83	0.28	2.94	0.00	0.00	0.00
5.75	0.83	0.28	2.93	0.00	0.00	0.00
5.80	0.83	0.28	2.92	0.00	0.00	0.00
5.85	0.83	0.28	2.92	0.00	0.00	0.00
5.90	0.83	0.29	2.91	0.00	0.00	0.00
5.95	0.83	0.29	2.90	0.00	0.00	0.00
6.00	0.83	0.29	2.90	0.00	0.00	0.00
6.05	0.83	0.29	2.89	0.00	0.00	0.00
6.10	0.83	0.29	2.88	0.00	0.00	0.00
6.15	0.83	0.29	2.88	0.00	0.00	0.00
6.20	0.83	0.29	2.87	0.00	0.00	0.00
6.25	0.83	0.29	2.87	0.00	0.00	0.00
6.30	0.83	0.29	2.86	0.00	0.00	0.00
6.35	0.83	0.29	2.86	0.00	0.00	0.00
6.40	0.83	0.29	2.85	0.00	0.00	0.00
6.45	0.83	0.29	2.84	0.00	0.00	0.00
6.50	0.83	0.29	2.84	0.00	0.00	0.00
6.55	0.83	0.29	2.83	0.00	0.00	0.00
6.60	0.83	0.29	2.83	0.00	0.00	0.00
6.65	0.83	0.29	2.82	0.00	0.00	0.00
6.70	0.83	0.29	2.82	0.00	0.00	0.00
6.75	0.83	0.30	2.81	0.00	0.00	0.00
6.80	0.83	0.30	2.81	0.00	0.00	0.00
6.85	0.83	0.30	2.80	0.00	0.00	0.00
6.90	0.83	0.30	2.80	0.00	0.00	0.00
6.95	0.83	0.30	2.79	0.00	0.00	0.00
7.00	0.83	0.30	2.79	0.00	0.00	0.00
7.05	0.83	0.30	2.78	0.00	0.00	0.00
7.10	0.83	0.30	2.78	0.00	0.00	0.00
7.15	0.83	0.30	2.78	0.00	0.00	0.00
7.20	0.83	0.30	2.77	0.00	0.00	0.00
7.25	0.83	0.30	2.77	0.00	0.00	0.00
7.30	0.83	0.30	2.76	0.00	0.00	0.00
7.35	0.83	0.30	2.76	0.00	0.00	0.00
7.40	0.83	0.30	2.75	0.00	0.00	0.00
7.45	0.83	0.30	2.75	0.00	0.00	0.00
7.50	0.83	0.30	2.75	0.00	0.00	0.00
7.55	0.83	0.30	2.74	0.00	0.00	0.00
7.60	0.83	0.30	2.74	0.00	0.00	0.00
7.65	0.83	0.30	2.74	0.00	0.00	0.00
7.70	0.83	0.30	2.73	0.00	0.00	0.00
7.75	0.83	0.30	2.73	0.00	0.00	0.00
7.80	0.83	0.30	2.73	0.00	0.00	0.00
7.85	0.83	0.30	2.73	0.00	0.00	0.00
7.90	0.83	0.30	2.72	0.00	0.00	0.00
7.95	0.83	0.31	2.72	0.00	0.00	0.00
8.00	0.83	0.31	2.72	0.00	0.00	0.00
8.05	0.83	0.31	2.72	0.00	0.00	0.00
8.10	0.83	0.31	2.72	0.00	0.00	0.00
8.15	0.83	0.31	2.71	0.00	0.00	0.00
8.20	0.83	0.31	2.71	0.00	0.00	0.00
8.25	0.83	0.31	2.71	0.00	0.00	0.00
8.30	0.83	0.31	2.71	0.00	0.00	0.00
8.35	0.83	0.31	2.70	0.00	0.00	0.00
8.40	0.83	0.31	2.70	0.00	0.00	0.00
8.45	0.83	0.31	2.70	0.00	0.00	0.00
8.50	0.83	0.31	2.70	0.00	0.00	0.00
8.55	0.83	0.31	2.70	0.00	0.00	0.00
8.60	0.83	0.31	2.69	0.00	0.00	0.00
8.65	0.83	0.31	2.69	0.00	0.00	0.00
8.70	0.83	0.31	2.69	0.00	0.00	0.00
8.75	0.83	0.31	2.69	0.00	0.00	0.00
8.80	0.83	0.31	2.69	0.00	0.00	0.00
8.85	0.83	0.31	2.68	0.00	0.00	0.00
8.90	0.83	0.31	2.68	0.00	0.00	0.00
8.95	0.83	0.31	2.68	0.00	0.00	0.00
9.00	0.83	0.31	2.68	0.00	0.00	0.00
9.05	0.83	0.31	2.68	0.00	0.00	0.00
9.10	0.83	0.31	2.68	0.00	0.00	0.00
9.15	0.83	0.31	2.67	0.00	0.00	0.00
9.20	0.83	0.31	2.67	0.00	0.00	0.00

9.25	0.83	0.31	2.67	0.00	0.00	0.00
9.30	0.83	0.31	2.67	0.00	0.00	0.00
9.35	0.83	0.31	2.67	0.00	0.00	0.00
9.40	0.83	0.31	2.67	0.00	0.00	0.00
9.45	0.83	0.31	2.66	0.00	0.00	0.00
9.50	0.83	0.31	2.66	0.00	0.00	0.00
9.55	0.83	0.31	2.66	0.00	0.00	0.00
9.60	0.83	0.31	2.66	0.00	0.00	0.00
9.65	0.83	0.31	2.66	0.00	0.00	0.00
9.70	0.83	0.31	2.66	0.00	0.00	0.00
9.75	0.83	0.31	2.65	0.00	0.00	0.00
9.80	0.83	0.31	2.65	0.00	0.00	0.00
9.85	0.83	0.31	2.65	0.00	0.00	0.00
9.90	0.83	0.31	2.65	0.00	0.00	0.00
9.95	0.83	0.31	2.65	0.00	0.00	0.00
10.00	0.83	0.31	2.65	0.00	0.00	0.00
10.05	0.83	0.31	2.65	0.00	0.00	0.00
10.10	0.83	0.31	2.64	0.00	0.00	0.00
10.15	0.83	0.31	2.64	0.00	0.00	0.00
10.20	0.83	0.31	2.64	0.00	0.00	0.00
10.25	0.83	0.31	2.64	0.00	0.00	0.00
10.30	0.83	0.32	2.64	0.00	0.00	0.00
10.35	0.83	0.32	2.63	0.00	0.00	0.00
10.40	0.83	0.32	2.63	0.00	0.00	0.00
10.45	0.83	0.32	2.63	0.00	0.00	0.00
10.50	0.83	0.32	2.63	0.00	0.00	0.00
10.55	0.83	0.32	2.63	0.00	0.00	0.00
10.60	0.83	0.32	2.63	0.00	0.00	0.00
10.65	0.83	0.32	2.62	0.00	0.00	0.00
10.70	0.83	0.32	2.62	0.00	0.00	0.00
10.75	0.83	0.32	2.62	0.00	0.00	0.00
10.80	0.83	0.32	2.62	0.00	0.00	0.00
10.85	0.83	0.32	2.62	0.00	0.00	0.00
10.90	0.83	0.32	2.62	0.00	0.00	0.00
10.95	0.83	0.32	2.62	0.00	0.00	0.00
11.00	0.83	0.32	2.61	0.00	0.00	0.00
11.05	0.83	0.32	2.61	0.00	0.00	0.00
11.10	0.83	0.32	2.61	0.00	0.00	0.00
11.15	0.83	0.32	2.61	0.00	0.00	0.00
11.20	0.83	0.32	2.61	0.00	0.00	0.00
11.25	0.83	0.32	2.61	0.00	0.00	0.00
11.30	0.83	0.32	2.60	0.00	0.00	0.00
11.35	0.83	0.32	2.60	0.00	0.00	0.00
11.40	0.83	0.32	2.60	0.00	0.00	0.00
11.45	0.83	0.32	2.60	0.00	0.00	0.00
11.50	0.83	0.32	2.60	0.00	0.00	0.00
11.55	0.83	0.32	2.60	0.00	0.00	0.00
11.60	0.83	0.32	2.60	0.00	0.00	0.00
11.65	0.83	0.32	2.60	0.00	0.00	0.00
11.70	0.83	0.32	2.59	0.00	0.00	0.00
11.75	0.83	0.32	2.59	0.00	0.00	0.00
11.80	0.83	0.32	2.59	0.00	0.00	0.00
11.85	0.83	0.32	2.59	0.00	0.00	0.00
11.90	0.83	0.32	2.59	0.00	0.00	0.00
11.95	0.83	0.32	2.59	0.00	0.00	0.00
12.00	0.83	0.32	2.59	0.00	0.00	0.00
12.05	0.83	0.32	2.59	0.00	0.00	0.00
12.10	0.83	0.32	2.58	0.00	0.00	0.00
12.15	0.83	0.32	2.58	0.00	0.00	0.00
12.20	0.83	0.32	2.58	0.00	0.00	0.00
12.25	0.83	0.32	2.58	0.00	0.00	0.00
12.30	0.83	0.32	2.58	0.00	0.00	0.00
12.35	0.83	0.32	2.58	0.00	0.00	0.00
12.40	0.83	0.32	2.58	0.00	0.00	0.00
12.45	0.83	0.32	2.58	0.00	0.00	0.00
12.50	0.83	0.32	2.57	0.00	0.00	0.00
12.55	0.83	0.32	2.57	0.00	0.00	0.00
12.60	0.83	0.32	2.57	0.00	0.00	0.00
12.65	0.83	0.32	2.57	0.00	0.00	0.00
12.70	0.83	0.32	2.57	0.00	0.00	0.00
12.75	0.83	0.32	2.57	0.00	0.00	0.00

12.80	0.83	0.32	2.57	0.00	0.00	0.00
12.85	0.83	0.32	2.56	0.00	0.00	0.00
12.90	0.83	0.32	2.56	0.00	0.00	0.00
12.95	0.83	0.32	2.56	0.00	0.00	0.00
13.00	0.83	0.32	2.56	0.00	0.00	0.00
13.05	0.83	0.32	2.56	0.00	0.00	0.00
13.10	0.83	0.32	2.56	0.00	0.00	0.00
13.15	0.83	0.33	2.56	0.00	0.00	0.00
13.20	0.83	0.33	2.55	0.00	0.00	0.00
13.25	0.83	0.33	2.55	0.00	0.00	0.00
13.30	0.83	0.33	2.55	0.00	0.00	0.00
13.35	0.83	0.33	2.55	0.00	0.00	0.00
13.40	0.83	0.33	2.55	0.00	0.00	0.00
13.45	0.83	0.33	2.55	0.00	0.00	0.00
13.50	0.83	0.33	2.55	0.00	0.00	0.00
13.55	0.83	0.33	2.55	0.00	0.00	0.00
13.60	0.83	0.33	2.54	0.00	0.00	0.00
13.65	0.83	0.33	2.54	0.00	0.00	0.00
13.70	0.83	0.33	2.54	0.00	0.00	0.00
13.75	0.83	0.33	2.54	0.00	0.00	0.00
13.80	0.83	0.33	2.54	0.00	0.00	0.00
13.85	0.83	0.33	2.54	0.00	0.00	0.00
13.90	0.83	0.33	2.54	0.00	0.00	0.00
13.95	0.83	0.33	2.54	0.00	0.00	0.00
14.00	0.83	0.33	2.53	0.00	0.00	0.00
14.05	0.83	0.33	2.53	0.00	0.00	0.00
14.10	0.83	0.33	2.53	0.00	0.00	0.00
14.15	0.83	0.33	2.53	0.00	0.00	0.00
14.20	0.83	0.33	2.53	0.00	0.00	0.00
14.25	0.83	0.33	2.53	0.00	0.00	0.00
14.30	0.83	0.33	2.53	0.00	0.00	0.00
14.35	0.83	0.33	2.53	0.00	0.00	0.00
14.40	0.83	0.33	2.53	0.00	0.00	0.00
14.45	0.83	0.33	2.52	0.00	0.00	0.00
14.50	0.83	0.33	2.52	0.00	0.00	0.00
14.55	0.83	0.33	2.52	0.00	0.00	0.00
14.60	0.83	0.33	2.52	0.00	0.00	0.00
14.65	0.83	0.33	2.52	0.00	0.00	0.00
14.70	0.83	0.33	2.52	0.00	0.00	0.00
14.75	0.83	0.33	2.52	0.00	0.00	0.00
14.80	0.83	0.33	2.52	0.00	0.00	0.00
14.85	0.83	0.33	2.52	0.00	0.00	0.00
14.90	0.83	0.33	2.51	0.00	0.00	0.00
14.95	0.83	0.33	2.51	0.00	0.00	0.00
15.00	0.83	0.33	2.51	0.00	0.00	0.00
15.05	0.83	0.33	2.51	0.00	0.00	0.00
15.10	0.83	0.33	2.51	0.00	0.00	0.00
15.15	0.83	0.33	2.51	0.00	0.00	0.00
15.20	0.83	0.33	2.51	0.00	0.00	0.00
15.25	0.83	0.33	2.51	0.00	0.00	0.00
15.30	0.83	0.33	2.51	0.00	0.00	0.00
15.35	0.83	0.33	2.51	0.00	0.00	0.00
15.40	0.83	0.33	2.50	0.00	0.00	0.00
15.45	0.83	0.33	2.50	0.00	0.00	0.00
15.50	0.83	0.33	2.50	0.00	0.00	0.00
15.55	0.83	0.33	2.50	0.00	0.00	0.00
15.60	0.83	0.33	2.50	0.00	0.00	0.00
15.65	0.83	0.33	2.50	0.00	0.00	0.00
15.70	0.83	0.33	2.50	0.00	0.00	0.00
15.75	0.83	0.33	2.50	0.00	0.00	0.00
15.80	0.83	0.33	2.50	0.00	0.00	0.00
15.85	0.83	0.33	2.50	0.00	0.00	0.00
15.90	0.83	0.33	2.50	0.00	0.00	0.00
15.95	0.83	0.33	2.49	0.00	0.00	0.00
16.00	0.83	0.33	2.49	0.00	0.00	0.00
16.05	0.83	0.33	2.49	0.00	0.00	0.00
16.10	0.83	0.33	2.49	0.00	0.00	0.00
16.15	0.83	0.33	2.49	0.00	0.00	0.00
16.20	0.83	0.33	2.49	0.00	0.00	0.00
16.25	0.83	0.33	2.49	0.00	0.00	0.00
16.30	0.83	0.33	2.49	0.00	0.00	0.00

16.35	0.83	0.33	2.49	0.00	0.00	0.00
16.40	0.83	0.33	2.49	0.00	0.00	0.00
16.45	0.83	0.33	2.49	0.00	0.00	0.00
16.50	0.83	0.33	2.49	0.00	0.00	0.00
16.55	0.83	0.33	2.48	0.00	0.00	0.00
16.60	0.83	0.33	2.48	0.00	0.00	0.00
16.65	0.83	0.33	2.48	0.00	0.00	0.00
16.70	0.83	0.33	2.48	0.00	0.00	0.00
16.75	0.83	0.33	2.48	0.00	0.00	0.00
16.80	0.83	0.33	2.48	0.00	0.00	0.00
16.85	0.83	0.34	2.48	0.00	0.00	0.00
16.90	0.83	0.34	2.48	0.00	0.00	0.00
16.95	0.83	0.34	2.48	0.00	0.00	0.00
17.00	0.83	0.34	2.48	0.00	0.00	0.00
17.05	0.83	0.34	2.48	0.00	0.00	0.00
17.10	0.83	0.34	2.48	0.00	0.00	0.00
17.15	0.83	0.34	2.48	0.00	0.00	0.00
17.20	0.83	0.34	2.47	0.00	0.00	0.00
17.25	0.83	0.34	2.47	0.00	0.00	0.00
17.30	0.83	0.34	2.47	0.00	0.00	0.00
17.35	0.83	0.34	2.47	0.00	0.00	0.00
17.40	0.83	0.34	2.47	0.00	0.00	0.00
17.45	0.83	0.34	2.47	0.00	0.00	0.00
17.50	0.83	0.34	2.47	0.00	0.00	0.00
17.55	0.83	0.34	2.47	0.00	0.00	0.00
17.60	0.83	0.34	2.47	0.00	0.00	0.00
17.65	0.83	0.34	2.47	0.00	0.00	0.00
17.70	0.83	0.34	2.47	0.00	0.00	0.00
17.75	0.83	0.34	2.47	0.00	0.00	0.00
17.80	0.83	0.34	2.47	0.00	0.00	0.00
17.85	0.83	0.34	2.47	0.00	0.00	0.00
17.90	0.83	0.34	2.46	0.00	0.00	0.00
17.95	0.83	0.34	2.46	0.00	0.00	0.00
18.00	0.83	0.34	2.46	0.00	0.00	0.00
18.05	0.83	0.34	2.46	0.00	0.00	0.00
18.10	0.83	0.34	2.46	0.00	0.00	0.00
18.15	0.83	0.34	2.46	0.00	0.00	0.00
18.20	0.83	0.34	2.46	0.00	0.00	0.00
18.25	0.83	0.34	2.46	0.00	0.00	0.00
18.30	0.83	0.34	2.46	0.00	0.00	0.00
18.35	0.83	0.34	2.46	0.00	0.00	0.00
18.40	0.83	0.34	2.46	0.00	0.00	0.00
18.45	0.83	0.34	2.46	0.00	0.00	0.00
18.50	0.83	0.34	2.46	0.00	0.00	0.00
18.55	0.83	0.34	2.46	0.00	0.00	0.00
18.60	0.83	0.34	2.46	0.00	0.00	0.00
18.65	0.83	0.34	2.46	0.00	0.00	0.00
18.70	0.83	0.34	2.46	0.00	0.00	0.00
18.75	0.83	0.34	2.45	0.00	0.00	0.00
18.80	0.83	0.34	2.45	0.00	0.00	0.00
18.85	0.83	0.34	2.45	0.00	0.00	0.00
18.90	0.83	0.34	2.45	0.00	0.00	0.00
18.95	0.83	0.34	2.45	0.00	0.00	0.00
19.00	0.83	0.34	2.45	0.00	0.00	0.00
19.05	0.83	0.34	2.45	0.00	0.00	0.00
19.10	0.83	0.34	2.45	0.00	0.00	0.00
19.15	0.83	0.34	2.45	0.00	0.00	0.00
19.20	0.83	0.34	2.45	0.00	0.00	0.00
19.25	0.83	0.34	2.45	0.00	0.00	0.00
19.30	0.83	0.34	2.45	0.00	0.00	0.00
19.35	0.83	0.34	2.45	0.00	0.00	0.00
19.40	0.83	0.34	2.45	0.00	0.00	0.00
19.45	0.83	0.34	2.45	0.00	0.00	0.00
19.50	0.83	0.34	2.45	0.00	0.00	0.00
19.55	0.83	0.34	2.45	0.00	0.00	0.00
19.60	0.83	0.34	2.45	0.00	0.00	0.00
19.65	0.83	0.34	2.44	0.00	0.00	0.00
19.70	0.83	0.34	2.44	0.00	0.00	0.00
19.75	0.83	0.34	2.44	0.00	0.00	0.00
19.80	0.83	0.34	2.44	0.00	0.00	0.00
19.85	0.83	0.34	2.44	0.00	0.00	0.00

19.90	0.83	0.34	2.44	0.00	0.00	0.00
19.95	0.83	0.34	2.44	0.00	0.00	0.00
20.00	0.83	0.34	2.44	0.00	0.00	0.00
20.05	2.00	0.34	5.00	0.00	0.00	0.00
20.10	2.00	0.34	5.00	0.00	0.00	0.00
20.15	2.00	0.34	5.00	0.00	0.00	0.00
20.20	2.00	0.34	5.00	0.00	0.00	0.00
20.25	2.00	0.34	5.00	0.00	0.00	0.00
20.30	2.00	0.34	5.00	0.00	0.00	0.00
20.35	2.00	0.34	5.00	0.00	0.00	0.00
20.40	2.00	0.34	5.00	0.00	0.00	0.00
20.45	2.00	0.34	5.00	0.00	0.00	0.00
20.50	2.00	0.34	5.00	0.00	0.00	0.00
20.55	2.00	0.34	5.00	0.00	0.00	0.00
20.60	2.00	0.34	5.00	0.00	0.00	0.00
20.65	2.00	0.34	5.00	0.00	0.00	0.00
20.70	2.00	0.34	5.00	0.00	0.00	0.00
20.75	2.00	0.34	5.00	0.00	0.00	0.00
20.80	2.00	0.34	5.00	0.00	0.00	0.00
20.85	2.00	0.34	5.00	0.00	0.00	0.00
20.90	2.00	0.34	5.00	0.00	0.00	0.00
20.95	2.00	0.34	5.00	0.00	0.00	0.00
21.00	2.00	0.34	5.00	0.00	0.00	0.00
21.05	2.00	0.34	5.00	0.00	0.00	0.00
21.10	2.00	0.34	5.00	0.00	0.00	0.00
21.15	2.00	0.34	5.00	0.00	0.00	0.00
21.20	2.00	0.34	5.00	0.00	0.00	0.00
21.25	2.00	0.34	5.00	0.00	0.00	0.00
21.30	2.00	0.34	5.00	0.00	0.00	0.00
21.35	2.00	0.34	5.00	0.00	0.00	0.00
21.40	2.00	0.34	5.00	0.00	0.00	0.00
21.45	2.00	0.34	5.00	0.00	0.00	0.00
21.50	2.00	0.34	5.00	0.00	0.00	0.00
21.55	2.00	0.34	5.00	0.00	0.00	0.00
21.60	2.00	0.34	5.00	0.00	0.00	0.00
21.65	2.00	0.34	5.00	0.00	0.00	0.00
21.70	2.00	0.34	5.00	0.00	0.00	0.00
21.75	2.00	0.34	5.00	0.00	0.00	0.00
21.80	2.00	0.34	5.00	0.00	0.00	0.00
21.85	2.00	0.34	5.00	0.00	0.00	0.00
21.90	2.00	0.34	5.00	0.00	0.00	0.00
21.95	2.00	0.34	5.00	0.00	0.00	0.00
22.00	2.00	0.34	5.00	0.00	0.00	0.00
22.05	2.00	0.34	5.00	0.00	0.00	0.00
22.10	2.00	0.34	5.00	0.00	0.00	0.00
22.15	2.00	0.34	5.00	0.00	0.00	0.00
22.20	2.00	0.34	5.00	0.00	0.00	0.00
22.25	2.00	0.34	5.00	0.00	0.00	0.00
22.30	2.00	0.34	5.00	0.00	0.00	0.00
22.35	2.00	0.34	5.00	0.00	0.00	0.00
22.40	2.00	0.34	5.00	0.00	0.00	0.00
22.45	2.00	0.34	5.00	0.00	0.00	0.00
22.50	2.00	0.34	5.00	0.00	0.00	0.00
22.55	2.00	0.34	5.00	0.00	0.00	0.00
22.60	2.00	0.34	5.00	0.00	0.00	0.00
22.65	2.00	0.34	5.00	0.00	0.00	0.00
22.70	2.00	0.34	5.00	0.00	0.00	0.00
22.75	2.00	0.34	5.00	0.00	0.00	0.00
22.80	2.00	0.34	5.00	0.00	0.00	0.00
22.85	2.00	0.34	5.00	0.00	0.00	0.00
22.90	2.00	0.34	5.00	0.00	0.00	0.00
22.95	2.00	0.34	5.00	0.00	0.00	0.00
23.00	2.00	0.34	5.00	0.00	0.00	0.00
23.05	2.00	0.34	5.00	0.00	0.00	0.00
23.10	2.00	0.34	5.00	0.00	0.00	0.00
23.15	2.00	0.34	5.00	0.00	0.00	0.00
23.20	2.00	0.34	5.00	0.00	0.00	0.00
23.25	2.00	0.34	5.00	0.00	0.00	0.00
23.30	2.00	0.34	5.00	0.00	0.00	0.00
23.35	2.00	0.34	5.00	0.00	0.00	0.00
23.40	2.00	0.34	5.00	0.00	0.00	0.00

23.45	2.00	0.34	5.00	0.00	0.00	0.00
23.50	2.00	0.34	5.00	0.00	0.00	0.00
23.55	2.00	0.34	5.00	0.00	0.00	0.00
23.60	2.00	0.34	5.00	0.00	0.00	0.00
23.65	2.00	0.34	5.00	0.00	0.00	0.00
23.70	2.00	0.34	5.00	0.00	0.00	0.00
23.75	2.00	0.34	5.00	0.00	0.00	0.00
23.80	2.00	0.34	5.00	0.00	0.00	0.00
23.85	2.00	0.34	5.00	0.00	0.00	0.00
23.90	2.00	0.34	5.00	0.00	0.00	0.00
23.95	2.00	0.34	5.00	0.00	0.00	0.00
24.00	2.00	0.34	5.00	0.00	0.00	0.00
24.05	2.00	0.34	5.00	0.00	0.00	0.00
24.10	2.00	0.34	5.00	0.00	0.00	0.00
24.15	2.00	0.34	5.00	0.00	0.00	0.00
24.20	2.00	0.34	5.00	0.00	0.00	0.00
24.25	2.00	0.34	5.00	0.00	0.00	0.00
24.30	2.00	0.34	5.00	0.00	0.00	0.00
24.35	2.00	0.34	5.00	0.00	0.00	0.00
24.40	2.00	0.34	5.00	0.00	0.00	0.00
24.45	2.00	0.34	5.00	0.00	0.00	0.00
24.50	2.00	0.34	5.00	0.00	0.00	0.00
24.55	2.00	0.34	5.00	0.00	0.00	0.00
24.60	2.00	0.34	5.00	0.00	0.00	0.00
24.65	2.00	0.34	5.00	0.00	0.00	0.00
24.70	2.00	0.34	5.00	0.00	0.00	0.00
24.75	2.00	0.34	5.00	0.00	0.00	0.00
24.80	2.00	0.34	5.00	0.00	0.00	0.00
24.85	2.00	0.34	5.00	0.00	0.00	0.00
24.90	2.00	0.34	5.00	0.00	0.00	0.00
24.95	2.00	0.34	5.00	0.00	0.00	0.00
25.00	2.00	0.34	5.00	0.00	0.00	0.00
25.05	2.00	0.34	5.00	0.00	0.00	0.00
25.10	2.00	0.34	5.00	0.00	0.00	0.00
25.15	2.00	0.34	5.00	0.00	0.00	0.00
25.20	2.00	0.34	5.00	0.00	0.00	0.00
25.25	2.00	0.34	5.00	0.00	0.00	0.00
25.30	2.00	0.34	5.00	0.00	0.00	0.00
25.35	2.00	0.34	5.00	0.00	0.00	0.00
25.40	2.00	0.34	5.00	0.00	0.00	0.00
25.45	2.00	0.34	5.00	0.00	0.00	0.00
25.50	2.00	0.34	5.00	0.00	0.00	0.00
25.55	2.00	0.34	5.00	0.00	0.00	0.00
25.60	2.00	0.34	5.00	0.00	0.00	0.00
25.65	2.00	0.34	5.00	0.00	0.00	0.00
25.70	2.00	0.34	5.00	0.00	0.00	0.00
25.75	2.00	0.34	5.00	0.00	0.00	0.00
25.80	2.00	0.34	5.00	0.00	0.00	0.00
25.85	2.00	0.34	5.00	0.00	0.00	0.00
25.90	2.00	0.34	5.00	0.00	0.00	0.00
25.95	2.00	0.34	5.00	0.00	0.00	0.00
26.00	2.00	0.34	5.00	0.00	0.00	0.00
26.05	2.00	0.34	5.00	0.00	0.00	0.00
26.10	2.00	0.34	5.00	0.00	0.00	0.00
26.15	2.00	0.34	5.00	0.00	0.00	0.00
26.20	2.00	0.34	5.00	0.00	0.00	0.00
26.25	2.00	0.34	5.00	0.00	0.00	0.00
26.30	2.00	0.34	5.00	0.00	0.00	0.00
26.35	2.00	0.34	5.00	0.00	0.00	0.00
26.40	2.00	0.34	5.00	0.00	0.00	0.00
26.45	2.00	0.34	5.00	0.00	0.00	0.00
26.50	2.00	0.34	5.00	0.00	0.00	0.00
26.55	2.00	0.34	5.00	0.00	0.00	0.00
26.60	2.00	0.34	5.00	0.00	0.00	0.00
26.65	2.00	0.34	5.00	0.00	0.00	0.00
26.70	2.00	0.34	5.00	0.00	0.00	0.00
26.75	2.00	0.34	5.00	0.00	0.00	0.00
26.80	2.00	0.34	5.00	0.00	0.00	0.00
26.85	2.00	0.34	5.00	0.00	0.00	0.00
26.90	2.00	0.34	5.00	0.00	0.00	0.00
26.95	2.00	0.34	5.00	0.00	0.00	0.00

27.00	2.00	0.34	5.00	0.00	0.00	0.00
27.05	2.00	0.34	5.00	0.00	0.00	0.00
27.10	2.00	0.34	5.00	0.00	0.00	0.00
27.15	2.00	0.34	5.00	0.00	0.00	0.00
27.20	2.00	0.34	5.00	0.00	0.00	0.00
27.25	2.00	0.34	5.00	0.00	0.00	0.00
27.30	2.00	0.34	5.00	0.00	0.00	0.00
27.35	2.00	0.34	5.00	0.00	0.00	0.00
27.40	2.00	0.34	5.00	0.00	0.00	0.00
27.45	2.00	0.34	5.00	0.00	0.00	0.00
27.50	2.00	0.34	5.00	0.00	0.00	0.00
27.55	2.00	0.34	5.00	0.00	0.00	0.00
27.60	2.00	0.34	5.00	0.00	0.00	0.00
27.65	2.00	0.34	5.00	0.00	0.00	0.00
27.70	2.00	0.34	5.00	0.00	0.00	0.00
27.75	2.00	0.34	5.00	0.00	0.00	0.00
27.80	2.00	0.34	5.00	0.00	0.00	0.00
27.85	2.00	0.34	5.00	0.00	0.00	0.00
27.90	2.00	0.34	5.00	0.00	0.00	0.00
27.95	2.00	0.34	5.00	0.00	0.00	0.00
28.00	2.00	0.34	5.00	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

1 atm (atmosphere) = 1 tsf (ton/ft2)

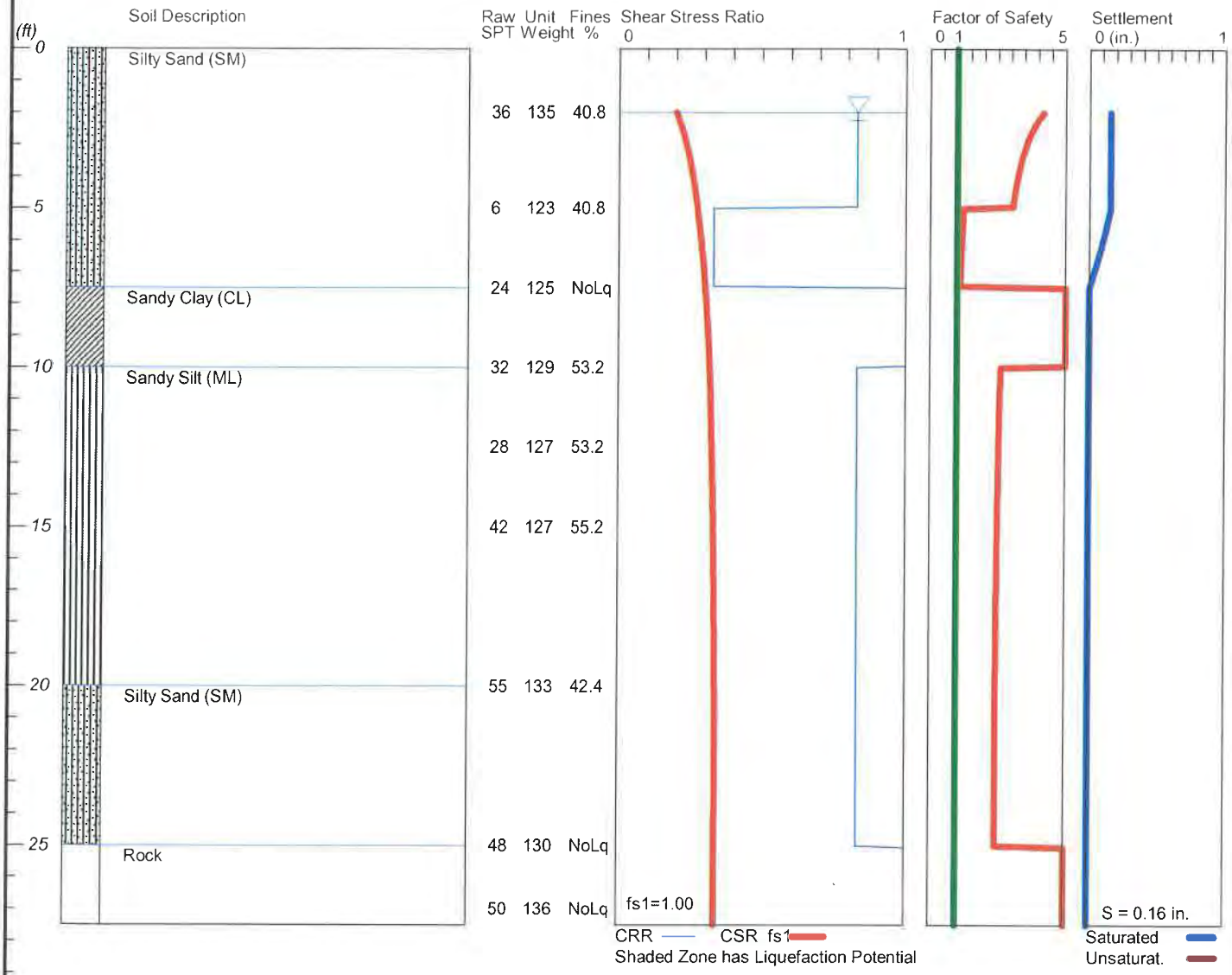
CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

LIQUEFACTION ANALYSIS

Triangle Development

Hole No.=B23 *Water Depth=2 ft*

Magnitude=6.15
Acceleration=0.307g



LiquefyPro CivilTech Software USA www.civiltech.com

Krazan

012-22165

Plate A-1

LIQUEFACTION ANALYSIS SUMMARY
Copyright by CivilTech Software
www.civiltech.com

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to , 8/9/2023 5:10:05 PM

Input File Name: C:\Users\mweber\Documents\Krazan\Projects\012\22\165 Triangle Development\B23\B23 Liquefaction.liq
Title: Triangle Development
Subtitle: 012-22165

Surface Elev.=
Hole No.=B23
Depth of Hole= 27.50 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 3.00 ft
Max. Acceleration= 0.31 g
Earthquake Magnitude= 6.15

Input Data:
Surface Elev.=
Hole No.=B23
Depth of Hole=27.50 ft
Water Table during Earthquake= 2.00 ft
Water Table during In-Situ Testing= 3.00 ft
Max. Acceleration=0.31 g
Earthquake Magnitude=6.15
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.4
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: No
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	36.00	135.00	40.80
5.00	6.00	123.00	40.80
7.50	24.00	125.00	NoLiq
10.00	32.00	129.00	53.20
12.50	28.00	127.00	53.20
15.00	42.00	127.00	55.20
20.00	55.00	133.00	42.40
25.00	48.00	130.00	NoLiq
27.00	50.00	136.00	NoLiq

Output Results:
Settlement of Saturated Sands=0.16 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=0.16 in.
Differential Settlement=0.079 to 0.104 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
2.00	0.83	0.20	4.18	0.16	0.00	0.16
2.05	0.83	0.20	4.14	0.16	0.00	0.16
2.10	0.83	0.20	4.09	0.16	0.00	0.16

2.15	0.83	0.21	4.05	0.16	0.00	0.16
2.20	0.83	0.21	4.01	0.16	0.00	0.16
2.25	0.83	0.21	3.97	0.16	0.00	0.16
2.30	0.83	0.21	3.93	0.16	0.00	0.16
2.35	0.83	0.21	3.90	0.16	0.00	0.16
2.40	0.83	0.21	3.86	0.16	0.00	0.16
2.45	0.83	0.22	3.83	0.16	0.00	0.16
2.50	0.83	0.22	3.80	0.16	0.00	0.16
2.55	0.83	0.22	3.77	0.16	0.00	0.16
2.60	0.83	0.22	3.74	0.16	0.00	0.16
2.65	0.83	0.22	3.71	0.16	0.00	0.16
2.70	0.83	0.23	3.69	0.16	0.00	0.16
2.75	0.83	0.23	3.66	0.16	0.00	0.16
2.80	0.83	0.23	3.64	0.16	0.00	0.16
2.85	0.83	0.23	3.61	0.16	0.00	0.16
2.90	0.83	0.23	3.59	0.16	0.00	0.16
2.95	0.83	0.23	3.57	0.16	0.00	0.16
3.00	0.83	0.23	3.55	0.16	0.00	0.16
3.05	0.83	0.24	3.53	0.16	0.00	0.16
3.10	0.83	0.24	3.51	0.16	0.00	0.16
3.15	0.83	0.24	3.49	0.16	0.00	0.16
3.20	0.83	0.24	3.47	0.16	0.00	0.16
3.25	0.83	0.24	3.45	0.16	0.00	0.16
3.30	0.83	0.24	3.43	0.16	0.00	0.16
3.35	0.83	0.24	3.41	0.16	0.00	0.16
3.40	0.83	0.24	3.40	0.16	0.00	0.16
3.45	0.83	0.25	3.38	0.16	0.00	0.16
3.50	0.83	0.25	3.37	0.16	0.00	0.16
3.55	0.83	0.25	3.35	0.16	0.00	0.16
3.60	0.83	0.25	3.34	0.16	0.00	0.16
3.65	0.83	0.25	3.32	0.16	0.00	0.16
3.70	0.83	0.25	3.31	0.16	0.00	0.16
3.75	0.83	0.25	3.29	0.16	0.00	0.16
3.80	0.83	0.25	3.28	0.16	0.00	0.16
3.85	0.83	0.25	3.27	0.16	0.00	0.16
3.90	0.83	0.26	3.26	0.16	0.00	0.16
3.95	0.83	0.26	3.24	0.16	0.00	0.16
4.00	0.83	0.26	3.23	0.16	0.00	0.16
4.05	0.83	0.26	3.22	0.16	0.00	0.16
4.10	0.83	0.26	3.21	0.16	0.00	0.16
4.15	0.83	0.26	3.20	0.16	0.00	0.16
4.20	0.83	0.26	3.19	0.16	0.00	0.16
4.25	0.83	0.26	3.18	0.16	0.00	0.16
4.30	0.83	0.26	3.17	0.16	0.00	0.16
4.35	0.83	0.26	3.16	0.16	0.00	0.16
4.40	0.83	0.26	3.15	0.16	0.00	0.16
4.45	0.83	0.26	3.14	0.16	0.00	0.16
4.50	0.83	0.27	3.13	0.16	0.00	0.16
4.55	0.83	0.27	3.12	0.16	0.00	0.16
4.60	0.83	0.27	3.11	0.16	0.00	0.16
4.65	0.83	0.27	3.10	0.16	0.00	0.16
4.70	0.83	0.27	3.09	0.16	0.00	0.16
4.75	0.83	0.27	3.08	0.16	0.00	0.16
4.80	0.83	0.27	3.07	0.16	0.00	0.16
4.85	0.83	0.27	3.07	0.16	0.00	0.16
4.90	0.83	0.27	3.06	0.16	0.00	0.16
4.95	0.83	0.27	3.05	0.16	0.00	0.16
5.00	0.33	0.27	1.21	0.16	0.00	0.16
5.05	0.33	0.27	1.21	0.16	0.00	0.16
5.10	0.33	0.27	1.20	0.15	0.00	0.15
5.15	0.33	0.28	1.20	0.15	0.00	0.15
5.20	0.33	0.28	1.20	0.15	0.00	0.15
5.25	0.33	0.28	1.20	0.15	0.00	0.15
5.30	0.33	0.28	1.19	0.14	0.00	0.14
5.35	0.33	0.28	1.19	0.14	0.00	0.14
5.40	0.33	0.28	1.19	0.14	0.00	0.14
5.45	0.33	0.28	1.18	0.13	0.00	0.13
5.50	0.33	0.28	1.18	0.13	0.00	0.13
5.55	0.33	0.28	1.18	0.13	0.00	0.13
5.60	0.33	0.28	1.18	0.13	0.00	0.13
5.65	0.33	0.28	1.17	0.12	0.00	0.12

5.70	0.33	0.28	1.17	0.12	0.00	0.12
5.75	0.33	0.28	1.17	0.12	0.00	0.12
5.80	0.33	0.28	1.16	0.11	0.00	0.11
5.85	0.33	0.28	1.16	0.11	0.00	0.11
5.90	0.33	0.29	1.16	0.11	0.00	0.11
5.95	0.33	0.29	1.16	0.10	0.00	0.10
6.00	0.33	0.29	1.15	0.10	0.00	0.10
6.05	0.33	0.29	1.15	0.10	0.00	0.10
6.10	0.33	0.29	1.15	0.10	0.00	0.10
6.15	0.33	0.29	1.15	0.09	0.00	0.09
6.20	0.33	0.29	1.15	0.09	0.00	0.09
6.25	0.33	0.29	1.14	0.09	0.00	0.09
6.30	0.33	0.29	1.14	0.08	0.00	0.08
6.35	0.33	0.29	1.14	0.08	0.00	0.08
6.40	0.33	0.29	1.14	0.08	0.00	0.08
6.45	0.33	0.29	1.13	0.07	0.00	0.07
6.50	0.33	0.29	1.13	0.07	0.00	0.07
6.55	0.33	0.29	1.13	0.07	0.00	0.07
6.60	0.33	0.29	1.13	0.06	0.00	0.06
6.65	0.33	0.29	1.13	0.06	0.00	0.06
6.70	0.33	0.29	1.12	0.06	0.00	0.06
6.75	0.33	0.29	1.12	0.05	0.00	0.05
6.80	0.33	0.29	1.12	0.05	0.00	0.05
6.85	0.33	0.30	1.12	0.05	0.00	0.05
6.90	0.33	0.30	1.12	0.04	0.00	0.04
6.95	0.33	0.30	1.12	0.04	0.00	0.04
7.00	0.33	0.30	1.11	0.04	0.00	0.04
7.05	0.33	0.30	1.11	0.03	0.00	0.03
7.10	0.33	0.30	1.11	0.03	0.00	0.03
7.15	0.33	0.30	1.11	0.03	0.00	0.03
7.20	0.33	0.30	1.11	0.02	0.00	0.02
7.25	0.33	0.30	1.11	0.02	0.00	0.02
7.30	0.33	0.30	1.10	0.01	0.00	0.01
7.35	0.33	0.30	1.10	0.01	0.00	0.01
7.40	0.33	0.30	1.10	0.01	0.00	0.01
7.45	0.33	0.30	1.10	0.00	0.00	0.00
7.50	2.00	0.30	5.00	0.00	0.00	0.00
7.55	2.00	0.30	5.00	0.00	0.00	0.00
7.60	2.00	0.30	5.00	0.00	0.00	0.00
7.65	2.00	0.30	5.00	0.00	0.00	0.00
7.70	2.00	0.30	5.00	0.00	0.00	0.00
7.75	2.00	0.30	5.00	0.00	0.00	0.00
7.80	2.00	0.30	5.00	0.00	0.00	0.00
7.85	2.00	0.30	5.00	0.00	0.00	0.00
7.90	2.00	0.30	5.00	0.00	0.00	0.00
7.95	2.00	0.30	5.00	0.00	0.00	0.00
8.00	2.00	0.31	5.00	0.00	0.00	0.00
8.05	2.00	0.31	5.00	0.00	0.00	0.00
8.10	2.00	0.31	5.00	0.00	0.00	0.00
8.15	2.00	0.31	5.00	0.00	0.00	0.00
8.20	2.00	0.31	5.00	0.00	0.00	0.00
8.25	2.00	0.31	5.00	0.00	0.00	0.00
8.30	2.00	0.31	5.00	0.00	0.00	0.00
8.35	2.00	0.31	5.00	0.00	0.00	0.00
8.40	2.00	0.31	5.00	0.00	0.00	0.00
8.45	2.00	0.31	5.00	0.00	0.00	0.00
8.50	2.00	0.31	5.00	0.00	0.00	0.00
8.55	2.00	0.31	5.00	0.00	0.00	0.00
8.60	2.00	0.31	5.00	0.00	0.00	0.00
8.65	2.00	0.31	5.00	0.00	0.00	0.00
8.70	2.00	0.31	5.00	0.00	0.00	0.00
8.75	2.00	0.31	5.00	0.00	0.00	0.00
8.80	2.00	0.31	5.00	0.00	0.00	0.00
8.85	2.00	0.31	5.00	0.00	0.00	0.00
8.90	2.00	0.31	5.00	0.00	0.00	0.00
8.95	2.00	0.31	5.00	0.00	0.00	0.00
9.00	2.00	0.31	5.00	0.00	0.00	0.00
9.05	2.00	0.31	5.00	0.00	0.00	0.00
9.10	2.00	0.31	5.00	0.00	0.00	0.00
9.15	2.00	0.31	5.00	0.00	0.00	0.00
9.20	2.00	0.31	5.00	0.00	0.00	0.00

9.25	2.00	0.31	5.00	0.00	0.00	0.00
9.30	2.00	0.31	5.00	0.00	0.00	0.00
9.35	2.00	0.31	5.00	0.00	0.00	0.00
9.40	2.00	0.31	5.00	0.00	0.00	0.00
9.45	2.00	0.31	5.00	0.00	0.00	0.00
9.50	2.00	0.31	5.00	0.00	0.00	0.00
9.55	2.00	0.31	5.00	0.00	0.00	0.00
9.60	2.00	0.32	5.00	0.00	0.00	0.00
9.65	2.00	0.32	5.00	0.00	0.00	0.00
9.70	2.00	0.32	5.00	0.00	0.00	0.00
9.75	2.00	0.32	5.00	0.00	0.00	0.00
9.80	2.00	0.32	5.00	0.00	0.00	0.00
9.85	2.00	0.32	5.00	0.00	0.00	0.00
9.90	2.00	0.32	5.00	0.00	0.00	0.00
9.95	2.00	0.32	5.00	0.00	0.00	0.00
10.00	0.83	0.32	2.62	0.00	0.00	0.00
10.05	0.83	0.32	2.62	0.00	0.00	0.00
10.10	0.83	0.32	2.62	0.00	0.00	0.00
10.15	0.83	0.32	2.61	0.00	0.00	0.00
10.20	0.83	0.32	2.61	0.00	0.00	0.00
10.25	0.83	0.32	2.61	0.00	0.00	0.00
10.30	0.83	0.32	2.61	0.00	0.00	0.00
10.35	0.83	0.32	2.61	0.00	0.00	0.00
10.40	0.83	0.32	2.61	0.00	0.00	0.00
10.45	0.83	0.32	2.60	0.00	0.00	0.00
10.50	0.83	0.32	2.60	0.00	0.00	0.00
10.55	0.83	0.32	2.60	0.00	0.00	0.00
10.60	0.83	0.32	2.60	0.00	0.00	0.00
10.65	0.83	0.32	2.60	0.00	0.00	0.00
10.70	0.83	0.32	2.60	0.00	0.00	0.00
10.75	0.83	0.32	2.59	0.00	0.00	0.00
10.80	0.83	0.32	2.59	0.00	0.00	0.00
10.85	0.83	0.32	2.59	0.00	0.00	0.00
10.90	0.83	0.32	2.59	0.00	0.00	0.00
10.95	0.83	0.32	2.59	0.00	0.00	0.00
11.00	0.83	0.32	2.59	0.00	0.00	0.00
11.05	0.83	0.32	2.59	0.00	0.00	0.00
11.10	0.83	0.32	2.58	0.00	0.00	0.00
11.15	0.83	0.32	2.58	0.00	0.00	0.00
11.20	0.83	0.32	2.58	0.00	0.00	0.00
11.25	0.83	0.32	2.58	0.00	0.00	0.00
11.30	0.83	0.32	2.58	0.00	0.00	0.00
11.35	0.83	0.32	2.58	0.00	0.00	0.00
11.40	0.83	0.32	2.58	0.00	0.00	0.00
11.45	0.83	0.32	2.58	0.00	0.00	0.00
11.50	0.83	0.32	2.57	0.00	0.00	0.00
11.55	0.83	0.32	2.57	0.00	0.00	0.00
11.60	0.83	0.32	2.57	0.00	0.00	0.00
11.65	0.83	0.32	2.57	0.00	0.00	0.00
11.70	0.83	0.32	2.57	0.00	0.00	0.00
11.75	0.83	0.32	2.57	0.00	0.00	0.00
11.80	0.83	0.32	2.57	0.00	0.00	0.00
11.85	0.83	0.32	2.57	0.00	0.00	0.00
11.90	0.83	0.32	2.56	0.00	0.00	0.00
11.95	0.83	0.32	2.56	0.00	0.00	0.00
12.00	0.83	0.32	2.56	0.00	0.00	0.00
12.05	0.83	0.32	2.56	0.00	0.00	0.00
12.10	0.83	0.32	2.56	0.00	0.00	0.00
12.15	0.83	0.32	2.56	0.00	0.00	0.00
12.20	0.83	0.32	2.56	0.00	0.00	0.00
12.25	0.83	0.32	2.56	0.00	0.00	0.00
12.30	0.83	0.33	2.56	0.00	0.00	0.00
12.35	0.83	0.33	2.55	0.00	0.00	0.00
12.40	0.83	0.33	2.55	0.00	0.00	0.00
12.45	0.83	0.33	2.55	0.00	0.00	0.00
12.50	0.83	0.33	2.55	0.00	0.00	0.00
12.55	0.83	0.33	2.55	0.00	0.00	0.00
12.60	0.83	0.33	2.55	0.00	0.00	0.00
12.65	0.83	0.33	2.55	0.00	0.00	0.00
12.70	0.83	0.33	2.55	0.00	0.00	0.00
12.75	0.83	0.33	2.55	0.00	0.00	0.00

12.80	0.83	0.33	2.54	0.00	0.00	0.00
12.85	0.83	0.33	2.54	0.00	0.00	0.00
12.90	0.83	0.33	2.54	0.00	0.00	0.00
12.95	0.83	0.33	2.54	0.00	0.00	0.00
13.00	0.83	0.33	2.54	0.00	0.00	0.00
13.05	0.83	0.33	2.54	0.00	0.00	0.00
13.10	0.83	0.33	2.54	0.00	0.00	0.00
13.15	0.83	0.33	2.54	0.00	0.00	0.00
13.20	0.83	0.33	2.54	0.00	0.00	0.00
13.25	0.83	0.33	2.53	0.00	0.00	0.00
13.30	0.83	0.33	2.53	0.00	0.00	0.00
13.35	0.83	0.33	2.53	0.00	0.00	0.00
13.40	0.83	0.33	2.53	0.00	0.00	0.00
13.45	0.83	0.33	2.53	0.00	0.00	0.00
13.50	0.83	0.33	2.53	0.00	0.00	0.00
13.55	0.83	0.33	2.53	0.00	0.00	0.00
13.60	0.83	0.33	2.53	0.00	0.00	0.00
13.65	0.83	0.33	2.53	0.00	0.00	0.00
13.70	0.83	0.33	2.53	0.00	0.00	0.00
13.75	0.83	0.33	2.53	0.00	0.00	0.00
13.80	0.83	0.33	2.52	0.00	0.00	0.00
13.85	0.83	0.33	2.52	0.00	0.00	0.00
13.90	0.83	0.33	2.52	0.00	0.00	0.00
13.95	0.83	0.33	2.52	0.00	0.00	0.00
14.00	0.83	0.33	2.52	0.00	0.00	0.00
14.05	0.83	0.33	2.52	0.00	0.00	0.00
14.10	0.83	0.33	2.52	0.00	0.00	0.00
14.15	0.83	0.33	2.52	0.00	0.00	0.00
14.20	0.83	0.33	2.52	0.00	0.00	0.00
14.25	0.83	0.33	2.52	0.00	0.00	0.00
14.30	0.83	0.33	2.52	0.00	0.00	0.00
14.35	0.83	0.33	2.52	0.00	0.00	0.00
14.40	0.83	0.33	2.51	0.00	0.00	0.00
14.45	0.83	0.33	2.51	0.00	0.00	0.00
14.50	0.83	0.33	2.51	0.00	0.00	0.00
14.55	0.83	0.33	2.51	0.00	0.00	0.00
14.60	0.83	0.33	2.51	0.00	0.00	0.00
14.65	0.83	0.33	2.51	0.00	0.00	0.00
14.70	0.83	0.33	2.51	0.00	0.00	0.00
14.75	0.83	0.33	2.51	0.00	0.00	0.00
14.80	0.83	0.33	2.51	0.00	0.00	0.00
14.85	0.83	0.33	2.51	0.00	0.00	0.00
14.90	0.83	0.33	2.51	0.00	0.00	0.00
14.95	0.83	0.33	2.51	0.00	0.00	0.00
15.00	0.83	0.33	2.51	0.00	0.00	0.00
15.05	0.83	0.33	2.50	0.00	0.00	0.00
15.10	0.83	0.33	2.50	0.00	0.00	0.00
15.15	0.83	0.33	2.50	0.00	0.00	0.00
15.20	0.83	0.33	2.50	0.00	0.00	0.00
15.25	0.83	0.33	2.50	0.00	0.00	0.00
15.30	0.83	0.33	2.50	0.00	0.00	0.00
15.35	0.83	0.33	2.50	0.00	0.00	0.00
15.40	0.83	0.33	2.50	0.00	0.00	0.00
15.45	0.83	0.33	2.50	0.00	0.00	0.00
15.50	0.83	0.33	2.50	0.00	0.00	0.00
15.55	0.83	0.33	2.50	0.00	0.00	0.00
15.60	0.83	0.33	2.50	0.00	0.00	0.00
15.65	0.83	0.33	2.50	0.00	0.00	0.00
15.70	0.83	0.33	2.50	0.00	0.00	0.00
15.75	0.83	0.33	2.50	0.00	0.00	0.00
15.80	0.83	0.33	2.49	0.00	0.00	0.00
15.85	0.83	0.33	2.49	0.00	0.00	0.00
15.90	0.83	0.33	2.49	0.00	0.00	0.00
15.95	0.83	0.33	2.49	0.00	0.00	0.00
16.00	0.83	0.33	2.49	0.00	0.00	0.00
16.05	0.83	0.33	2.49	0.00	0.00	0.00
16.10	0.83	0.33	2.49	0.00	0.00	0.00
16.15	0.83	0.33	2.49	0.00	0.00	0.00
16.20	0.83	0.33	2.49	0.00	0.00	0.00
16.25	0.83	0.33	2.49	0.00	0.00	0.00
16.30	0.83	0.33	2.49	0.00	0.00	0.00

16.35	0.83	0.33	2.49	0.00	0.00	0.00
16.40	0.83	0.33	2.49	0.00	0.00	0.00
16.45	0.83	0.33	2.49	0.00	0.00	0.00
16.50	0.83	0.33	2.49	0.00	0.00	0.00
16.55	0.83	0.33	2.49	0.00	0.00	0.00
16.60	0.83	0.33	2.49	0.00	0.00	0.00
16.65	0.83	0.33	2.48	0.00	0.00	0.00
16.70	0.83	0.33	2.48	0.00	0.00	0.00
16.75	0.83	0.33	2.48	0.00	0.00	0.00
16.80	0.83	0.33	2.48	0.00	0.00	0.00
16.85	0.83	0.33	2.48	0.00	0.00	0.00
16.90	0.83	0.33	2.48	0.00	0.00	0.00
16.95	0.83	0.33	2.48	0.00	0.00	0.00
17.00	0.83	0.33	2.48	0.00	0.00	0.00
17.05	0.83	0.33	2.48	0.00	0.00	0.00
17.10	0.83	0.33	2.48	0.00	0.00	0.00
17.15	0.83	0.33	2.48	0.00	0.00	0.00
17.20	0.83	0.34	2.48	0.00	0.00	0.00
17.25	0.83	0.34	2.48	0.00	0.00	0.00
17.30	0.83	0.34	2.48	0.00	0.00	0.00
17.35	0.83	0.34	2.48	0.00	0.00	0.00
17.40	0.83	0.34	2.48	0.00	0.00	0.00
17.45	0.83	0.34	2.48	0.00	0.00	0.00
17.50	0.83	0.34	2.48	0.00	0.00	0.00
17.55	0.83	0.34	2.48	0.00	0.00	0.00
17.60	0.83	0.34	2.48	0.00	0.00	0.00
17.65	0.83	0.34	2.48	0.00	0.00	0.00
17.70	0.83	0.34	2.47	0.00	0.00	0.00
17.75	0.83	0.34	2.47	0.00	0.00	0.00
17.80	0.83	0.34	2.47	0.00	0.00	0.00
17.85	0.83	0.34	2.47	0.00	0.00	0.00
17.90	0.83	0.34	2.47	0.00	0.00	0.00
17.95	0.83	0.34	2.47	0.00	0.00	0.00
18.00	0.83	0.34	2.47	0.00	0.00	0.00
18.05	0.83	0.34	2.47	0.00	0.00	0.00
18.10	0.83	0.34	2.47	0.00	0.00	0.00
18.15	0.83	0.34	2.47	0.00	0.00	0.00
18.20	0.83	0.34	2.47	0.00	0.00	0.00
18.25	0.83	0.34	2.47	0.00	0.00	0.00
18.30	0.83	0.34	2.47	0.00	0.00	0.00
18.35	0.83	0.34	2.47	0.00	0.00	0.00
18.40	0.83	0.34	2.47	0.00	0.00	0.00
18.45	0.83	0.34	2.47	0.00	0.00	0.00
18.50	0.83	0.34	2.47	0.00	0.00	0.00
18.55	0.83	0.34	2.47	0.00	0.00	0.00
18.60	0.83	0.34	2.47	0.00	0.00	0.00
18.65	0.83	0.34	2.47	0.00	0.00	0.00
18.70	0.83	0.34	2.47	0.00	0.00	0.00
18.75	0.83	0.34	2.47	0.00	0.00	0.00
18.80	0.83	0.34	2.47	0.00	0.00	0.00
18.85	0.83	0.34	2.47	0.00	0.00	0.00
18.90	0.83	0.34	2.47	0.00	0.00	0.00
18.95	0.83	0.34	2.46	0.00	0.00	0.00
19.00	0.83	0.34	2.46	0.00	0.00	0.00
19.05	0.83	0.34	2.46	0.00	0.00	0.00
19.10	0.83	0.34	2.46	0.00	0.00	0.00
19.15	0.83	0.34	2.46	0.00	0.00	0.00
19.20	0.83	0.34	2.46	0.00	0.00	0.00
19.25	0.83	0.34	2.46	0.00	0.00	0.00
19.30	0.83	0.34	2.46	0.00	0.00	0.00
19.35	0.83	0.34	2.46	0.00	0.00	0.00
19.40	0.83	0.34	2.46	0.00	0.00	0.00
19.45	0.83	0.34	2.46	0.00	0.00	0.00
19.50	0.83	0.34	2.46	0.00	0.00	0.00
19.55	0.83	0.34	2.46	0.00	0.00	0.00
19.60	0.83	0.34	2.46	0.00	0.00	0.00
19.65	0.83	0.34	2.46	0.00	0.00	0.00
19.70	0.83	0.34	2.46	0.00	0.00	0.00
19.75	0.83	0.34	2.46	0.00	0.00	0.00
19.80	0.83	0.34	2.46	0.00	0.00	0.00
19.85	0.83	0.34	2.46	0.00	0.00	0.00

19.90	0.83	0.34	2.46	0.00	0.00	0.00
19.95	0.83	0.34	2.46	0.00	0.00	0.00
20.00	0.83	0.34	2.46	0.00	0.00	0.00
20.05	0.83	0.34	2.46	0.00	0.00	0.00
20.10	0.83	0.34	2.46	0.00	0.00	0.00
20.15	0.83	0.34	2.46	0.00	0.00	0.00
20.20	0.83	0.34	2.46	0.00	0.00	0.00
20.25	0.83	0.34	2.46	0.00	0.00	0.00
20.30	0.83	0.34	2.46	0.00	0.00	0.00
20.35	0.83	0.34	2.46	0.00	0.00	0.00
20.40	0.83	0.34	2.46	0.00	0.00	0.00
20.45	0.83	0.34	2.46	0.00	0.00	0.00
20.50	0.83	0.34	2.46	0.00	0.00	0.00
20.55	0.83	0.34	2.46	0.00	0.00	0.00
20.60	0.83	0.34	2.46	0.00	0.00	0.00
20.65	0.83	0.34	2.46	0.00	0.00	0.00
20.70	0.83	0.34	2.46	0.00	0.00	0.00
20.75	0.83	0.34	2.46	0.00	0.00	0.00
20.80	0.83	0.34	2.46	0.00	0.00	0.00
20.85	0.83	0.34	2.46	0.00	0.00	0.00
20.90	0.83	0.34	2.46	0.00	0.00	0.00
20.95	0.83	0.34	2.46	0.00	0.00	0.00
21.00	0.83	0.34	2.46	0.00	0.00	0.00
21.05	0.83	0.34	2.46	0.00	0.00	0.00
21.10	0.83	0.34	2.46	0.00	0.00	0.00
21.15	0.83	0.34	2.46	0.00	0.00	0.00
21.20	0.83	0.34	2.46	0.00	0.00	0.00
21.25	0.83	0.34	2.46	0.00	0.00	0.00
21.30	0.83	0.34	2.46	0.00	0.00	0.00
21.35	0.83	0.34	2.46	0.00	0.00	0.00
21.40	0.83	0.34	2.46	0.00	0.00	0.00
21.45	0.83	0.34	2.46	0.00	0.00	0.00
21.50	0.83	0.34	2.46	0.00	0.00	0.00
21.55	0.83	0.34	2.46	0.00	0.00	0.00
21.60	0.83	0.34	2.46	0.00	0.00	0.00
21.65	0.83	0.34	2.46	0.00	0.00	0.00
21.70	0.83	0.34	2.46	0.00	0.00	0.00
21.75	0.83	0.34	2.46	0.00	0.00	0.00
21.80	0.83	0.34	2.46	0.00	0.00	0.00
21.85	0.83	0.34	2.46	0.00	0.00	0.00
21.90	0.83	0.34	2.46	0.00	0.00	0.00
21.95	0.83	0.34	2.46	0.00	0.00	0.00
22.00	0.83	0.34	2.46	0.00	0.00	0.00
22.05	0.83	0.34	2.46	0.00	0.00	0.00
22.10	0.83	0.34	2.46	0.00	0.00	0.00
22.15	0.83	0.34	2.46	0.00	0.00	0.00
22.20	0.83	0.34	2.46	0.00	0.00	0.00
22.25	0.83	0.34	2.46	0.00	0.00	0.00
22.30	0.83	0.34	2.46	0.00	0.00	0.00
22.35	0.83	0.34	2.46	0.00	0.00	0.00
22.40	0.83	0.34	2.46	0.00	0.00	0.00
22.45	0.83	0.34	2.46	0.00	0.00	0.00
22.50	0.83	0.34	2.46	0.00	0.00	0.00
22.55	0.83	0.34	2.46	0.00	0.00	0.00
22.60	0.83	0.34	2.46	0.00	0.00	0.00
22.65	0.83	0.34	2.46	0.00	0.00	0.00
22.70	0.83	0.34	2.46	0.00	0.00	0.00
22.75	0.83	0.34	2.46	0.00	0.00	0.00
22.80	0.83	0.34	2.46	0.00	0.00	0.00
22.85	0.83	0.34	2.46	0.00	0.00	0.00
22.90	0.83	0.34	2.46	0.00	0.00	0.00
22.95	0.83	0.34	2.46	0.00	0.00	0.00
23.00	0.83	0.34	2.46	0.00	0.00	0.00
23.05	0.83	0.34	2.46	0.00	0.00	0.00
23.10	0.83	0.34	2.46	0.00	0.00	0.00
23.15	0.83	0.34	2.46	0.00	0.00	0.00
23.20	0.83	0.34	2.46	0.00	0.00	0.00
23.25	0.83	0.34	2.46	0.00	0.00	0.00
23.30	0.83	0.34	2.46	0.00	0.00	0.00
23.35	0.83	0.34	2.46	0.00	0.00	0.00
23.40	0.83	0.34	2.46	0.00	0.00	0.00

23.45	0.83	0.34	2.46	0.00	0.00	0.00
23.50	0.83	0.34	2.46	0.00	0.00	0.00
23.55	0.83	0.34	2.46	0.00	0.00	0.00
23.60	0.83	0.34	2.46	0.00	0.00	0.00
23.65	0.83	0.34	2.46	0.00	0.00	0.00
23.70	0.83	0.34	2.46	0.00	0.00	0.00
23.75	0.83	0.34	2.46	0.00	0.00	0.00
23.80	0.83	0.34	2.46	0.00	0.00	0.00
23.85	0.83	0.34	2.46	0.00	0.00	0.00
23.90	0.83	0.34	2.46	0.00	0.00	0.00
23.95	0.83	0.34	2.46	0.00	0.00	0.00
24.00	0.83	0.34	2.46	0.00	0.00	0.00
24.05	0.83	0.34	2.46	0.00	0.00	0.00
24.10	0.83	0.34	2.46	0.00	0.00	0.00
24.15	0.83	0.34	2.46	0.00	0.00	0.00
24.20	0.83	0.34	2.46	0.00	0.00	0.00
24.25	0.83	0.34	2.46	0.00	0.00	0.00
24.30	0.83	0.34	2.46	0.00	0.00	0.00
24.35	0.83	0.34	2.46	0.00	0.00	0.00
24.40	0.83	0.34	2.46	0.00	0.00	0.00
24.45	0.83	0.34	2.46	0.00	0.00	0.00
24.50	0.83	0.34	2.46	0.00	0.00	0.00
24.55	0.83	0.34	2.46	0.00	0.00	0.00
24.60	0.83	0.34	2.46	0.00	0.00	0.00
24.65	0.83	0.34	2.46	0.00	0.00	0.00
24.70	0.83	0.34	2.46	0.00	0.00	0.00
24.75	0.83	0.34	2.46	0.00	0.00	0.00
24.80	0.83	0.34	2.46	0.00	0.00	0.00
24.85	0.83	0.34	2.46	0.00	0.00	0.00
24.90	0.83	0.34	2.46	0.00	0.00	0.00
24.95	0.83	0.34	2.46	0.00	0.00	0.00
25.00	0.83	0.34	2.46	0.00	0.00	0.00
25.05	2.00	0.34	5.00	0.00	0.00	0.00
25.10	2.00	0.34	5.00	0.00	0.00	0.00
25.15	2.00	0.34	5.00	0.00	0.00	0.00
25.20	2.00	0.34	5.00	0.00	0.00	0.00
25.25	2.00	0.34	5.00	0.00	0.00	0.00
25.30	2.00	0.34	5.00	0.00	0.00	0.00
25.35	2.00	0.34	5.00	0.00	0.00	0.00
25.40	2.00	0.34	5.00	0.00	0.00	0.00
25.45	2.00	0.34	5.00	0.00	0.00	0.00
25.50	2.00	0.34	5.00	0.00	0.00	0.00
25.55	2.00	0.34	5.00	0.00	0.00	0.00
25.60	2.00	0.34	5.00	0.00	0.00	0.00
25.65	2.00	0.34	5.00	0.00	0.00	0.00
25.70	2.00	0.34	5.00	0.00	0.00	0.00
25.75	2.00	0.34	5.00	0.00	0.00	0.00
25.80	2.00	0.34	5.00	0.00	0.00	0.00
25.85	2.00	0.34	5.00	0.00	0.00	0.00
25.90	2.00	0.34	5.00	0.00	0.00	0.00
25.95	2.00	0.34	5.00	0.00	0.00	0.00
26.00	2.00	0.34	5.00	0.00	0.00	0.00
26.05	2.00	0.34	5.00	0.00	0.00	0.00
26.10	2.00	0.34	5.00	0.00	0.00	0.00
26.15	2.00	0.34	5.00	0.00	0.00	0.00
26.20	2.00	0.34	5.00	0.00	0.00	0.00
26.25	2.00	0.34	5.00	0.00	0.00	0.00
26.30	2.00	0.34	5.00	0.00	0.00	0.00
26.35	2.00	0.34	5.00	0.00	0.00	0.00
26.40	2.00	0.34	5.00	0.00	0.00	0.00
26.45	2.00	0.34	5.00	0.00	0.00	0.00
26.50	2.00	0.34	5.00	0.00	0.00	0.00
26.55	2.00	0.34	5.00	0.00	0.00	0.00
26.60	2.00	0.34	5.00	0.00	0.00	0.00
26.65	2.00	0.34	5.00	0.00	0.00	0.00
26.70	2.00	0.34	5.00	0.00	0.00	0.00
26.75	2.00	0.34	5.00	0.00	0.00	0.00
26.80	2.00	0.34	5.00	0.00	0.00	0.00
26.85	2.00	0.34	5.00	0.00	0.00	0.00
26.90	2.00	0.34	5.00	0.00	0.00	0.00
26.95	2.00	0.34	5.00	0.00	0.00	0.00

27.00	2.00	0.34	5.00	0.00	0.00	0.00
27.05	2.00	0.34	5.00	0.00	0.00	0.00
27.10	2.00	0.34	5.00	0.00	0.00	0.00
27.15	2.00	0.34	5.00	0.00	0.00	0.00
27.20	2.00	0.34	5.00	0.00	0.00	0.00
27.25	2.00	0.34	5.00	0.00	0.00	0.00
27.30	2.00	0.34	5.00	0.00	0.00	0.00
27.35	2.00	0.34	5.00	0.00	0.00	0.00
27.40	2.00	0.34	5.00	0.00	0.00	0.00
27.45	2.00	0.34	5.00	0.00	0.00	0.00
27.50	2.00	0.34	5.00	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

1 atm (atmosphere) = 1 tsf (ton/ft2)

CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

G.3 - 2024 Geotechnical Investigation

THIS PAGE INTENTIONALLY LEFT BLANK

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED TRIANGLE DEVELOPMENT
SHEPHERD AND TEMPERANCE AVENUES
CLOVIS, CALIFORNIA

PROJECT NO. 012-22233
JANUARY 31, 2024

Prepared for:

MS. GOLDIE LEWIS
WILSON HOMES
7550 N. PALM AVENUE, STE 102
FRESNO, CALIFORNIA 93711

Prepared by:

KRAZAN & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING DIVISION
215 WEST DAKOTA AVENUE
CLOVIS, CALIFORNIA 93612
(559) 348-2200

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

January 31, 2024 KA No. 012-22233

Ms. Goldie Lewis
Wilson Homes
7550 N. Palm Avenue, Ste 102
Fresno, California 93711

RE: Geotechnical Engineering Investigation
Proposed Triangle Development
Shepherd and Temperance Avenues
Clovis, California

Dear Ms. Lewis:

In accordance with your request, we have completed a Geotechnical Engineering Investigation for the above-referenced site. The results of our investigation are presented in the attached report.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

REGISTERED PROFESSIONAL ENGINEER
DAVID R. JAROSZ II
2698
GEOTECHNICAL
STATE OF CALIFORNIA

David R. Jarosz, II
Managing Engineer
RGE No. 2698 / RCE No. 60185

DRJ:ht

TABLE OF CONTENTS

INTRODUCTION 1

PURPOSE AND SCOPE 1

PROPOSED CONSTRUCTION 2

SITE LOCATION, SITE HISTORY AND SITE DESCRIPTION 2

GEOLOGIC SETTING 3

FIELD AND LABORATORY INVESTIGATIONS 4

SOIL PROFILE AND SUBSURFACE CONDITIONS 4

GROUNDWATER 5

CONCLUSIONS AND RECOMMENDATIONS 6

Administrative Summary 6
Groundwater Influence on Structures/Construction 8
Site Preparation 8
Groundwater and Surface Water Considerations 10
Engineered Fill 11
Drainage and Landscaping 12
Utility Trench Backfill 12
Foundations 13
Floor Slabs and Exterior Flatwork 14
Lateral Earth Pressures and Retaining Walls 14
R-Value Test Results and Pavement Design 15
Seismic Parameters – 2022 CBC 17
Soil Cement Reactivity 18
Compacted Material Acceptance 18
Testing and Inspection 19

LIMITATIONS 19

SITE PLAN 21

LOGS OF BORINGS (1 TO 24) ..... **Appendix A**

GENERAL EARTHWORK SPECIFICATIONS ..... **Appendix B**

GENERAL PAVEMENT SPECIFICATIONS ..... **Appendix C**

January 31, 2024 KA Project No. 012-22233

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED TRIANGLE DEVELOPMENT
SHEPHERD AND TEMPERANCE AVENUES
CLOVIS, CALIFORNIA

INTRODUCTION

This report presents the results of our Geotechnical Engineering Investigation for the proposed Triangle Development to be located north of Shepherd Avenue near Temperance Avenue in Clovis, California. Discussions regarding site conditions are presented herein, together with conclusions and recommendations pertaining to site preparation, Engineered Fill, utility trench backfill, drainage and landscaping, foundations, concrete floor slabs and exterior flatwork, retaining walls, soil cement reactivity and pavement design.

A site plan showing the approximate boring locations is presented following the text of this report. A description of the field investigation, boring logs and the boring log legend are presented in Appendix A. Appendix A contains a description of laboratory testing phase of this study; along with laboratory test results. Appendices B and C contain guides to earthwork and pavement specifications. When conflicts in the text of the report occur with the general specifications in the appendices, the recommendations in the text of the report have precedence.

PURPOSE AND SCOPE

This investigation was conducted to evaluate the soil and groundwater conditions at the site, to make geotechnical engineering recommendations for use in design of specific construction elements and to provide criteria for site preparation and Engineered Fill construction.

Our scope of services was outlined in our original proposal dated May 16, 2022 and updated October 28, 2022 (KA Proposal No. P367-22) and included the following:

- A site reconnaissance by a member of our engineering staff to evaluate the surface conditions at the project site.
- A field investigation consisting of drilling 24 borings to depths ranging from approximately 10 to 50 feet for evaluation of the subsurface conditions at the project site.
- Performing laboratory tests on representative soil samples obtained from the borings to evaluate the physical and index properties of the subsurface soils.

- Evaluation of the data obtained from the investigation and an engineering analysis to provide recommendations for use in the project design and preparation of construction specifications.

- Preparation of this report summarizing the results, conclusions, recommendations, and findings of our investigation.

PROPOSED CONSTRUCTION

We understand that design of the proposed development is currently underway; structural load information and other final details pertaining to the structures are unavailable. On a preliminary basis, it is understood that development will consist of single-family residential lots. In addition, a community center may be included in the development. It is understood the buildings will be single- or two-story wood-framed structures utilizing conventional shallow foundations and concrete slab-on-grade construction. Footing loads are anticipated to be light to moderate. On-site landscaping and roadways will be associated with the project.

In the event these structural or grading details are inconsistent with the final design criteria, the Soils Engineer should be notified so that we may update this writing as applicable.

SITE LOCATION, SITE HISTORY AND SITE DESCRIPTION

The site is irregular in shape and encompasses approximately 160.5 acres. The approximate center of the site is located 1,800 feet north of the intersection of Shepherd Avenue and Temperance Avenue in Clovis, California. The site is identified by Assessor's Parcel Numbers (APN) 557-031-23, 27, 35, 055, and 445. The site is surrounded by a drainage canal, vacant agricultural land, and a residential development to the west; vacant agricultural land, Shepherd Avenue, and a residential development to the south; vacant agricultural land, a rural residence, and Dry Creek Reservoir to the east and northeast.

Site history was obtained by reviewing historical aerial photographs taken in 1998, 2006, 2014 and 2019. Review of the 1998 aerial photograph indicates the project site predominately consisted mainly of agricultural land and rangeland. Approximately three rural residences were located in the southern and central portions of the site. Associated with the rural residential developments and agriculture use were several barns, sheds, fences, and trees. A creek channel known as Dry Creek was located running across the central area of the site and a triangular-shaped basin was located along the west side.

Review of the 2006 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 1998 aerial photograph.

Review of the 2014 and 2019 aerial photographs indicate that the project site conditions appeared to be relatively similar to that noted in the 2006 aerial photograph. A few of the barns appeared to have been removed and a landscape business was located in the northwest corner of Temperance and Shepherd Avenues.

Presently, the site conditions appear relatively similar to that noted in the previous aerial photographs. Approximately three rural residences and a landscape business with associated barns, sheds, and trees are located in the southern and central portions of the site. A triangular shaped basin is located on the west side of the property near the drainage canal. The remainder of the site is utilized as rangeland or pastureland. Buried utility lines are located within the site associated with the existing developments. The site is covered by a sparse to moderate weed growth and the surface soils have a loose consistency. The site is relatively level with no major changes in grade with approximately 10 feet of relief across the property.

GEOLOGIC SETTING

The San Joaquin Valley, which includes the Clovis area, is a topographic and structural basin that is bounded on the east by the Sierra Nevada and on the west by the Coast Ranges. The Sierra Nevada, a fault block dipping gently southwestward, is made up of igneous and metamorphic rocks of pre-Tertiary age that comprise the basement complex beneath the Valley. The Coast Ranges contain folded and faulted sedimentary rocks of Mesozoic and Cenozoic age, which are similar to those rocks that underlie the Valley at depth and nonconformably overlie the basement complex; gently dipping to nearly horizontal sedimentary rocks of Tertiary and Quaternary age overlie the older rocks. These younger rocks are mostly of continental origin and in the Clovis area, they were derived from the Sierra Nevada.

The San Joaquin River is the principal river in the area. Dry Creek is a seasonal tributary of the San Joaquin River and the original channel of the creek runs east to west across the central portion of the site. Alluvial fans formed by the San Joaquin River and Dry Creek are the largest geomorphic features in the Clovis area. The formation of the fans has resulted in rather flat regional topography.

The Coast Ranges evolved as a result of folding, faulting and accretion of diverse geologic terrains. They are composed chiefly of sedimentary and metamorphic rocks that are sharply deformed into complex structures. They are broken by numerous faults, the San Andreas Fault being the most notable structural feature.

Both the Sierra Nevada and Coast Range are geologically young mountain ranges and possess active and potentially active fault zones. Major active faults and fault zones occur at some distance to the east, west and south of the Clovis area. The Owens Valley Fault Zone bounds the eastern edge of the Sierra Nevada block and contains both active and potentially active faults.

Portions of the Ortigalita, Calaveras, Hayward and Rinconada Faults, which are to the west, are considered potentially active. The San Andreas Fault is possibly the best-known fault and is located approximately 60 to 70 miles to the west.

There are no active fault traces in the project vicinity. Accordingly, the project area is not within an Earth Quake Fault Zone (Special Studies Zone) and will not require a special site investigation by an Engineering Geologist.

Clovis residents could feel the effects of a large seismic event on one of the nearby active or potentially active fault zones. Clovis has experienced groundshaking from earthquakes in the historical past. According to the Five County Seismic Safety Element, groundshaking of VII intensity (Modified Mercali Scale) was felt in Clovis from the 1872 Owens Valley Earthquake. This is the largest known earthquake event affecting the Clovis area.

Secondary hazards from earthquakes include rupture, seiche, landslides, liquefaction and subsidence. Since there are no known active faults within the immediate area, ground rupture from surface faulting should not be a potential problem. Seiche, landslides, and liquefaction are not hazards in the area either. Lastly, deep subsidence problems may be low to moderate according to the conclusions of the Five County Seismic Safety Element. However, there are no known occurrences of structural or architectural damage due to deep subsidence in the Clovis area.

FIELD AND LABORATORY INVESTIGATIONS

Subsurface soil conditions were explored by drilling 24 borings to depths ranging from approximately 10 to 50 feet below existing site grade, using a truck-mounted drill rig. In addition, 5 bulk subgrade samples were obtained from the site for laboratory R-value testing. The approximate boring and bulk sample locations are shown on the site plan. During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency, obtain information regarding the engineering properties of the subsoils and to retain soil samples for laboratory testing. The soils encountered were continuously examined and visually classified in accordance with the Unified Soil Classification System. A more detailed description of the field investigation is presented in Appendix A.

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory-testing program was formulated with emphasis on the evaluation of natural moisture, density, gradation, shear strength, consolidation potential, plasticity, R-value and moisture-density relationships of the materials encountered. In addition, chemical tests were performed to evaluate the soil-cement reactivity. Details of the laboratory test program and the results of laboratory test are summarized in Appendix A. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

SOIL PROFILE AND SUBSURFACE CONDITIONS

Based on our findings, the subsurface conditions encountered appear typical of those found in the geologic region of the site. In general, the surface soils consisted of approximately 6 to 12 inches of very loose silty sand, sandy silt, sand, clayey sand, silty sand/clayey sand, clayey sand/sandy clay, silty sand/sand and silty sand/sandy silt. These soils are disturbed from prior discing or agriculture activities, have low strength characteristics, and are highly compressible when saturated.

Approximately 4 feet of fill material was encountered within Boring No. B15 located in the western portion of the site. The fill material predominately consisted of sandy silt. The thickness and extent of fill material was determined based on limited test borings and visual observation. Thicker fill may be

present at the site. Limited testing was performed on the fill soils during the time of our field and laboratory investigations. The limited testing indicates that the fill soils ranged from loosely placed to compacted.

Beneath the loose surface soils and fill material, approximately 2 to 3½ feet of loose to very dense silty sand, sandy silt, silty sand/sand, clayey sand, silty sand/sandy silt, clayey sand/sandy clay, silty sand/clayey sand, and sand were encountered. These soils contained varying amounts of clay and gravel. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance ranged from 6 blows per foot to greater than 50 blows per six inches. Dry densities ranged from 83 to 123 pounds per cubic foot (pcf). Representative soil samples consolidated approximately 1½ to 3½ percent under a 2 ksf load when saturated. Representative soil samples had an internal angle of friction of 25 to 36 degrees.

Below approximately 2 feet in some of the borings, very dense weakly cemented silty sand, sandy silt, clayey sand, and silty sand/clayey sand, locally referred to as hardpan, were encountered. The cemented nature of the subsoil hampered recovery of undisturbed soil samples. However, these cemented soils can be generally characterized as relatively strong, slightly compressible, and have a low permeability. Penetration resistance was generally greater than 50 blows per 6 inches. These soils had higher strength characteristics than the upper soils.

Below 2½ to 4½ feet, alternating layers of predominately loose to very dense silty sand, clayey sandy silt, silty sand/clayey sand, clayey sand, sand, silty sand/sand, silty sand/sandy silt, and clayey sand/sandy clay or hard sandy clay were encountered. These soils contained varying amounts of clay and gravel. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance ranged from 7 blows per foot to greater than 50 blows per 6 inches. Dry densities ranged from 90 to 131 pcf. Representative soil samples consolidated approximately 1½ to 3 percent under a 2 ksf load when saturated. These soils extended to the termination depth of our borings.

For additional information about the soils encountered, please refer to the boring logs in Appendix A.

GROUNDWATER

Test boring locations were checked for the presence of groundwater during and immediately following the drilling operations. Free groundwater was encountered at depths of 5½ to 21 feet in some of our borings during our subsurface investigation. Historic high groundwater has been as shallow as 2 feet within the project site vicinity.

Cemented silty sand, sandy silt, clayey sand, and silty sand/clayey sand, locally referred to as "hardpan," were encountered below 2 feet in several of the borings. This cementation retards the free percolation of the surface water into the soil stratum below the hardpan frequently resulting in a temporary perched water table condition at or near the ground surface.

It should be recognized that water table elevations may fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use and climatic conditions as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our field and laboratory investigations, along with previous geotechnical experience in the project area, the following is a summary of our evaluations, conclusions, and recommendations.

Administrative Summary

In brief, the subject site and soil conditions, with the exception of the loose surface soils, fill material, expansive nature of the clayey soils and existing residential and agricultural developments, appear to be conducive to the development of the project. The surface soils have a loose consistency. These soils are disturbed, have low strength characteristics and are highly compressible when saturated. Accordingly, it is recommended that the surface soils be recompacted. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation.

The on-site upper soils consist of silty sand, sandy silt, clayey sand, silty sand/sandy silt, and clayey sand. The clayey soils appeared to have a low to moderate swell potential. The estimated swell pressures of the clayey soils may cause minor movement affecting slabs and possible stucco or similar brittle exterior finishes. To reduce potential soil movement, it is recommended the upper 18 inches of soil within slab-on-grade and exterior flatwork areas consist of non-expansive Engineered Fill. Preliminary testing indicates the on-site soils will be suitable for reuse as non-expansive Engineered Fill, provided they are cleansed of excessive organics and debris. During construction, it is recommended that additional tests be performed on the on-site soils to verify their physical and index properties.

Up to 4 feet of fill material was encountered within Boring No. B15 located in the western portion of the site. The fill material predominately consisted of sandy silt. The thickness and extent of fill material was determined based on limited test borings and visual observation. Thicker fill may be present at the site. Verification of the extent of fill should be determined during site grading. It is recommended that fill soils that have not been properly compacted and certified be excavated and recompacted. Prior to backfilling, the bottom of the excavation should be observed by Krazan & Associates, Inc. to verify no additional removal is required.

The upper soils within the Dry Creek are very loose and highly compressible. Therefore, it is recommended that after stripping operations and fill removal, the upper 4 feet of native soil within the area of the Dry Creek be excavated, worked until uniform and free from large clods, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Excavation should extend to a minimum of 5 feet beyond the edge of the channel. The exposed subgrade soils should be proof-rolled under observation by Krazan & Associates, Inc. to verify stability prior to the placement of Engineered Fill. Soft or pliant soils should be excavated to firm native ground.

Trees are located within the project site and vicinity. Tree removal operations should include roots greater than 1 inch in diameter. The resulting excavations should be backfilled with Engineered Fill compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Approximately three rural residences with associated agricultural structures are located within the central and southern portions of the site. Associated with these developments are buried structures, such as utility lines, irrigation lines, drainage lines, septic systems and possible water wells. Demolition activities should include proper removal any buried structures. Water wells should be abandoned in accordance with county standards. The resulting excavations should be backfilled with Engineered Fill. It is suspected that demolition activities of the existing structures will disturb the upper soils. Following demolition activities, it is recommended that the disturbed soils be removed and/or recompacted. Any buried structures, including loosely backfilled excavations, encountered during construction should be properly removed and the resulting excavations backfilled with Engineered Fill. Disturbed areas caused by demolition activities should be recompacted.

Lenses of very dense, weakly cemented silty sand, sandy silt, clayey sand, and silty sand/clayey sand, locally referred to as hardpan, were encountered below 2 feet in some of the borings. Hardpan is an excellent foundation-bearing material because of its apparent rock-like properties caused by particle cementation. However, this same cementation also retards the free percolation of the surface water into the soil stratum below the hardpan, frequently resulting in a temporary perched water table condition at or near the ground surface. This perched water condition has a substantial affect on the strength characteristics of the surface soils. As a mitigation measure, very positive drainage should be established around the proposed structures.

Relatively clean sands were encountered at various locations throughout the site. The possibility exists that site grading operations could expose these soils in areas of proposed buildings, pavements, and/or retaining walls. The Contractor should note that these soils lack the cohesion necessary to stand vertically, even in shallow excavations such as footing trenches. If these conditions are encountered, it will be necessary to over-excavate the affected area(s) to a minimum of 2 feet below the proposed bearing surface. These areas may be backfilled using a mix of the silty sand and sand soils that contains at least 20 percent fines and meeting the requirements for Engineered Fill. This material may be obtained from elsewhere at the site, imported to the site from an approved off-site source, or manufactured through blending of the excavated clean sand with other suitable material containing a higher percentage of fines to result in material meeting the requirements for Engineered Fill.

Sandy and gravelly soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy and gravelly soils.

After completion of the recommended site preparation, the site should be suitable for shallow footing support. The proposed structure footings may be designed utilizing an allowable bearing pressure of 2,000 psf for dead-plus-live loads. Footings should have a minimum embedment of 12 inches.

Groundwater Influence on Structures/Construction

During our recent field investigation groundwater was encountered at depths of 5½ to 21 feet in some of borings drilled as part of this investigation. In addition, groundwater has historically been encountered at depths as shallow as 2 feet below existing site grade. If groundwater is encountered, our firm should be consulted prior to dewatering the site. Installation of a standpipe piezometer is suggested prior to construction should groundwater levels be a concern. Pools located within 500 feet of the existing reservoir should incorporate anchorage and subdrain systems due to the shallow water.

In addition to the groundwater level, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, "pump," or not respond to densification techniques. Typical remedial measures include: discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

Some structures in the Clovis area are founded on hardpan have experienced standing water for extended periods of time in crawl spaces below wooden floors or within sunken floor slab areas. The sources of the water were natural precipitation and landscape irrigation, and consequently, wood floor and sunken floor slab construction in hardpan soils are discouraged.

Site Preparation

General site clearing should include removal of vegetation; existing utilities; concrete structures including foundations; basement walls and floors; existing stockpiled soil; trees and associated root systems; rubble; rubbish; and any loose and/or saturated materials. Site stripping should extend to a minimum depth of 2 to 4 inches, or until all organics in excess of 3 percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for use as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.

Up to 4 feet of fill material was encountered within Boring No. B15 located in the western portion of the site. The fill material predominately consisted of sandy silt. The thickness and extent of fill material was determined based on limited test borings and visual observation. Thicker fill may be present at the site. Verification of the extent of fill should be determined during site grading. It is recommended that fill soils that have not been properly compacted and certified be excavated and recompacted. Prior to backfilling, the bottom of the excavation should be observed by Krazan & Associates, Inc. to verify no additional removal is required.

The site is presently occupied by approximately three rural residences with associated agricultural barns and sheds. Associated with these developments are buried structures, such as utility lines, irrigation lines, septic systems, and water wells. Demolition activities should include proper removal of any buried structures. Any buried structures, including loosely backfilled excavations, encountered during construction should be properly removed and the resulting excavations backfilled. Excavations,

depressions, or soft and pliant areas extending below planned finish subgrade level should be cleaned to firm undisturbed soil, and backfilled with Engineered Fill. In general, any septic tanks, debris pits, cesspools, or similar structures should be entirely removed. Concrete footings should be removed to an equivalent depth of at least 3 feet below proposed footing elevations or as recommended by the Soils Engineer. Water wells should be abandoned in accordance with county standards. Any other buried structures should be removed in accordance with the recommendations of the Soils Engineer. Resulting excavations should be backfilled with Engineered Fill.

Trees are located within the site. Tree removal operations should include roots greater than 1 inch in diameter. The resulting excavations should be backfilled with Engineered Fill compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

The upper soils within the Dry Creek are very loose and highly compressible. Therefore, it is recommended that after stripping operations and fill removal, the upper 4 feet of native soil within the area of the Dry Creek be excavated, worked until uniform and free from large clods, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Excavation should extend to a minimum of 5 feet beyond the edge of the channel. The exposed subgrade soils should be proof-rolled under observation by Krazan & Associates, Inc. to verify stability prior to the placement of Engineered Fill. Soft or pliant soils should be excavated to firm native ground.

Following stripping, fill removal, tree removal, demolition activities, and prior to fill placement, the exposed subgrade within proposed building areas should be excavated to a depth of at least 12 inches, worked until uniform and free from large clods, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Limits of recompaction should extend 5 feet beyond structural elements. Prior to backfilling, the bottom of the excavation should be proofrolled and observed by Krazan & Associates, Inc. to verify stability. Soft or pliant areas encountered should be excavated to firm native ground.

Following stripping, fill removal, tree removal, demolition activities, and prior to fill placement, the exposed subgrade within proposed exterior flatwork and pavement areas should be excavated/scarified to a depth of at least 12 inches, worked until uniform and free from large clods, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Limits of recompaction should extend a minimum of 2 feet beyond flatwork and pavements.

The on-site clayey soils appear to have a low to moderate swell potential. The estimated swell pressures of the clayey soils may cause minor movement affecting slabs and possible stucco or similar brittle exterior finishes. To reduce potential soil movement, it is recommended the upper 12 inches of soil within slab-on-grade and exterior flatwork areas consist of non-expansive Engineered Fill. Preliminary testing indicates the on-site soils that do not contain clay will be suitable for reuse as non-expansive Engineered Fill, provided they are cleansed of excessive organics and debris. During construction, it is recommended that additional tests be performed on the on-site soils to verify their physical and index properties.

Relatively clean sands were encountered at various locations throughout the site. The possibility exists that site grading operations could expose these soils in areas of proposed buildings, pavements, and/or retaining walls. The Contractor should note that these soils lack the cohesion necessary to stand vertically, even in shallow excavations such as footing trenches. If these conditions are encountered, it will be necessary to over-excavate the affected area(s) to a minimum of 12 inches below the proposed bearing surface. These areas may be backfilled using a mix of the silty sand and sand soils that contains at least 20 percent fines and meeting the requirements for Engineered Fill. This material may be obtained from elsewhere at the site, imported to the site from an approved off-site source, or manufactured through blending of the excavated clean sand with other suitable material containing a higher percentage of fines to result in material meeting the requirements for Engineered Fill.

The upper soils, during wet winter months, become very moist due to the absorptive characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils, which may require removal to grade a stable building foundation. Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase should be performed.

A representative of our firm should be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observation is an integral part of our service as acceptance of earthwork construction is dependent upon compaction of the material and the stability of the material. The Soils Engineer may reject any material that does not meet compaction and stability requirements. Further recommendations of this report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in this section and the Engineered Fill section.

Groundwater and Surface Water Considerations

Surface water runoff associated with the existing reservoir levee is the predominate concern for the planned development. During the recent period of high-water storage in the reservoir (second highest level in the last 18 years), the toe drain for the levee was not able to handle the high volume of water. This resulting in piping of soil on the FMFCD property near the property line which resulted in surface water collecting on the parcels planned for development. Within the eastern portion of the planned development located adjacent to the Big Dry Creek Reservoir levee, surface water has ponded on the site. Based on our observations in the field, this surface water is directly related to the water piping out of the soil immediately adjacent to the west side of the reservoir. The inadequacy of the toe drain has resulted in impacts to the subject property that will preclude development of a portion of the property and additional improvements to collect and drain water resulting from the reservoir onto this property. In order to intercept this water from the areas of planned construction, it is recommended interceptor trenches be installed at a distance of approximately 250 feet southwest of the property line adjacent to the levee and near the property line adjacent to the spillway.

The interceptor trench should be 2 feet wide and at least 10 feet deep. The trench sidewalls should be raked to reduce the effects of soil smearing, which may occur during construction and adversely affect soil permeability. A geotextile filter fabric should be installed along the trench walls. A Schedule 40

perforated pipe should be placed no higher than 6 inches above the bottom of the trench. The pipe should be at least 4 inches in diameter and of sufficient strength to resist applied soil pressure and external loads. The perforated drain pipe should be installed at a gradient of at least 1 percent and should discharge to a suitable project drainage system. A detail of the interceptor trench is shown in Figure 2.

The trench shall be backfilled with 9 feet of 1½-inch round river gravel or crushed rock. A permeable barrier, such as untreated construction paper, should be placed between the backfill gravel and native soils to prevent migration of fine materials into the gravel. Native backfill soils should then be backfilled over the paper. The backfill material should be placed in 6-inch lifts and compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Failure of the reservoir levee is outside of the scope of our evaluation.

Engineered Fill

The on-site upper soils consist of silty sand, silty sand/clayey sand, clayey sand/sandy clay, sandy silt, clayey sand, sand, silty sand/sand, and silty sand/sandy silt. The soils that do not contain clay will be suitable for reuse as non-expansive Engineered Fill, provided they are cleansed of excessive organics, debris and fragments greater than 4 inches in maximum dimension. Soils with an expansion index greater than 20 will not be suitable for reuse as non-expansive Engineered Fill and should not be used in the upper 12 inches of slab-on-grade and exterior flatwork areas. These soils may be used for General Engineered Fill within non-structural areas, paved areas, and within slab-on-grade and exterior flatwork areas below 12 inches from finished pad grade, provided they are cleansed of excessive organics and debris. Clayey soils should be moisture-conditioned to at least 2 percent above optimum moisture content during placement. During construction it is recommended that additional tests be performed on the on-site soils to verify their physical and index properties.

Relatively clean sands were encountered at various locations throughout the site. The possibility exists that site grading operations could expose these soils in areas of proposed buildings, pavements, and/or retaining walls. The Contractor should note that these soils lack the cohesion necessary to stand vertically, even in shallow excavations such as footing trenches. If these conditions are encountered, it will be necessary to over-excavate the affected area(s) to a minimum of 2 feet below the proposed bearing surface. These areas may be backfilled using a mix of the silty sand and sand soils that contains at least 20 percent fines and meeting the requirements for Engineered Fill. This material may be obtained from elsewhere at the site, imported to the site from an approved off-site source, or manufactured through blending of the excavated clean sand with other suitable material containing a higher percentage of fines to result in material meeting the requirements for Engineered Fill.

The preferred materials specified for Engineered Fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the Contractor, since he has complete control of the project site at that time.

Imported Fill should consist of a well-graded, slightly cohesive, fine silty sand or sandy silt, with relatively impervious characteristics when compacted. This material should be approved by the Soils Engineer prior to use and should typically possess the following characteristics:

Percent Passing No. 200 Sieve	20 to 50
Plasticity Index	10 maximum
UBC Standard 29-2 Expansion Index	20 maximum

Fill soils should be placed in lifts approximately 6 inches thick, moisture-conditioned as necessary, and compacted to achieve at least 90 percent of maximum density based on ASTM D1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

Drainage and Landscaping

The ground surface should slope away from building pad and pavement areas toward appropriate drop inlets or other surface drainage devices. In accordance with Section 1804 of the 2022 California Building Code, it is recommended that the ground surface adjacent to foundations be sloped a minimum of 5 percent for a minimum distance of 10 feet away from structures, or to an approved alternative means of drainage conveyance. Swales used for conveyance of drainage and located within 10 feet of foundations should be sloped a minimum of 2 percent. Impervious surfaces, such as pavement and exterior concrete flatwork, within 10 feet of building foundations should be sloped a minimum of 1 percent away from the structure. Drainage gradients should be maintained to carry all surface water to collection facilities and off-site. These grades should be maintained for the life of the project.

Slots or weep holes should be placed in drop inlets or other surface drainage devices in pavement areas to allow free drainage of adjoining base course materials. Cutoff walls should be installed at pavement edges adjacent to vehicular traffic areas; these walls should extend to a minimum depth of 12 inches below pavement subgrades to limit the amount of seepage water that can infiltrate the pavements. Where cutoff walls are undesirable, subgrade drains can be constructed to transport excess water away from planters to drainage interceptors. If cutoff walls can be successfully used at the site, construction of subgrade drains is considered unnecessary.

Utility Trench Backfill

Utility trenches should be excavated according to accepted engineering practice following OSHA (Occupational Safety and Health Administration) standards by a Contractor experienced in such work. The responsibility for the safety of open trenches should be borne by the Contractor. Traffic and vibration adjacent to trench walls should be reduced and cyclic wetting and drying of excavation side slopes should be avoided. Depending upon the location and depth of some utility trenches, groundwater flow into open excavations could be experienced, especially during or shortly following periods of precipitation.

Sandy and gravelly soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy and gravelly soils.

Utility trench backfill placed in or adjacent to buildings and exterior slabs should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. The utility trench backfill placed in pavement areas should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. Pipe bedding should be in accordance with pipe manufacturer's recommendations.

The Contractor is responsible for removing all water sensitive soils from the trench regardless of the backfill location and compaction requirements. The Contractor should use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction.

Foundations

The proposed structures may be supported on a shallow foundation system bearing on undisturbed native soils or Engineered Fill. Spread and continuous footings can be designed for the following maximum allowable soil bearing pressures:

Load	Allowable Loading
Dead Load Only	1,500 psf
Dead-Plus-Live Load	2,000 psf
Total Load, including wind or seismic loads	2,650 psf

The footings should have a minimum depth of 12 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. Footings should have a minimum width of 12 inches, regardless of load.

The footing excavations should not be allowed to dry out at any time prior to pouring concrete. It is recommended that all footings be reinforced by at least one No. 4 reinforcing bar in both top and bottom.

The total movement is not expected to exceed 1 inch. Differential movement should be less than 1 inch. Most of the settlement is expected to occur during construction as the loads are applied. However, additional post-construction settlement may occur if the foundation soils are flooded or saturated.

Resistance to lateral footing displacement can be computed using an allowable friction factor of 0.35 acting between the base of foundations and the supporting subgrade. Lateral resistance for footings can alternatively be developed using an allowable equivalent fluid passive pressure of 300 pounds per cubic foot acting against the appropriate vertical footing faces. The frictional and passive resistance of the soil may be combined without reduction in determining the total lateral resistance. A ⅓ increase in the above value may be used for short duration, wind, or seismic loads.

Floor Slabs and Exterior Flatwork

The 2022 California Residential Code (CRC) Section R506.2.3 specifies that "a 10-mil polyethylene or *approved* vapor retarder with joints lapped not less than 6 inches shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists." Prior to adoption of this code section, traditional construction practice in the Fresno/Clovis area was to place an additional layer of sand or rock dust (per American Concrete Institute) to act as a blotting layer between the vapor retarder and the underside of the concrete slab. This blotting layer acted not only to protect the vapor barrier from punctures or tears during construction, but also served to promote even curing of the concrete slab. In the semi-arid climate of the Fresno/Clovis area, placement of the vapor retarder directly beneath the concrete slab has been known to result in rapid curing of the upper slab surface, especially during periods of elevated temperatures and/or sustained wind, as compared to the lower slab surface. Uneven curing of the upper and lower slab surfaces can result in excessive slab cracking and/or slab curling.

Based on our conversations, it is our understanding that Wilson Homes has developed a standard design for residential interior concrete slab-on-grade floors. The design incorporates a 2-inch layer of sand as a capillary break over the compacted subgrade soil. The sand layer is overlain by a layer of 10-mil PVC vapor retarder membrane, which is overlain by a 2-inch layer of sand, and finally by a minimum 3½-inch thick concrete slab. This system has reportedly been utilized by Wilson Homes with success in the past and has resulted in adequate performance of interior flooring materials.

It is recommended that the concrete slabs be reinforced at a minimum with #3 bars at 18 inches on center to reduce crack separation and possible vertical offset at the cracks. Thicker floor slabs with increased concrete strength and reinforcement should be designed wherever heavy concentrated loads, heavy equipment, or machinery is anticipated.

After reviewing Wilson Homes' standard design for residential interior concrete slab-on-grade floors for use in the Fresno/Clovis area, it is our opinion that this design, while deviating from Section R506.2.3 of the 2022 CRC, is an acceptable equivalent alternative to the criteria specified in the 2022 CRC. Based on our recommendation, Krazan & Associates requests that the local building official, i.e., City of Clovis, allow this standard design to be utilized for the subject residential tract.

Because this standard design does potentially allow for excessive moisture to be contained in the upper sand or rock dust layer from either rainfall or excessive moistening prior to pouring the slab, Krazan & Associates recommends that the upper sand layer be inspected prior to concrete placement to confirm that no ponding or standing water is present.

Lateral Earth Pressures and Retaining Walls

Walls retaining horizontal backfill and capable of deflecting a minimum of 0.1 percent of its height at the top may be designed using an equivalent fluid active pressure of 40 pounds per square foot per foot of depth. Walls incapable of this deflection or are fully constrained walls against deflection may be designed for an equivalent fluid at-rest pressure of 60 pounds per square foot per foot of depth. Expansive soils should not be used for backfill against walls. The wedge of non-expansive backfill

material should extend from the bottom of each retaining wall outward and upward at a slope of 2:1 (horizontal to vertical) or flatter. The stated lateral earth pressures do not include the effects of hydrostatic water pressures generated by infiltrating surface water that may accumulate behind the retaining walls; or loads imposed by construction equipment, foundations, or roadways.

Retaining and/or below grade walls should be drained with either perforated pipe encased in free-draining gravel or a prefabricated drainage system. The gravel zone should have a minimum width of 12 inches and should extend upward to within 12 inches of the top of the wall. The upper 12 inches of backfill should consist of native soils, concrete, asphaltic concrete, or other suitable backfill to reduce surface drainage into the wall drain system. The aggregate should conform to Class 2 permeable materials graded in accordance with CalTrans Standard Specifications (2018). Prefabricated drainage systems, such as Miradrain®, Enkadrain®, or an equivalent substitute, are acceptable alternatives in lieu of gravel provided they are installed in accordance with the manufacturer's recommendations. If a prefabricated drainage system is proposed, our firm should review the system for final acceptance prior to installation.

Drainage pipes should be placed with perforations down and should discharge in a non-erosive manner away from foundations and other improvements. The pipes should be placed no higher than 6 inches above the heel of the wall, in the center line of the drainage blanket and should have a minimum diameter of four inches. Collector pipes may be either slotted or perforated. Slots should be no wider than ⅛ inch in diameter, while perforations should be no more than ¼ inch in diameter. If retaining walls are less than 6 feet in height, the perforated pipe may be omitted in lieu of weep holes on 4 feet maximum spacing. The weep holes should consist of 4-inch diameter holes (concrete walls) or unmortared head joints (masonry walls) and not be higher than 18 inches above the lowest adjacent grade. Two 8-inch square overlapping patches of geotextile fabric (conforming to CalTrans Standard Specifications for "edge drains") should be affixed to the rear wall opening of each weep hole to retard soil piping.

During grading and backfilling operations adjacent to any walls, heavy equipment should not be allowed to operate within a lateral distance of 5 feet from the wall, or within a lateral distance equal to the wall height, whichever is greater, to avoid developing excessive lateral pressures. Within this zone, only hand-operated equipment ("whackers," vibratory plates, or pneumatic compactors) should be used to compact the backfill soils.

R-Value Test Results and Pavement Design

Five subgrade soil samples were obtained from the project site for R-value testing at the locations shown on the attached site plan. The samples were tested in accordance with the State of California Materials Manual Test Designation 301. Results of the tests are as follows:

Sample	Depth	Description	R-Value at Equilibrium
1	12-24"	Silty Sand (SM)	59
2	12-24"	Silty Sand (SM)	57
3	12-24"	Silty Sand (SM)	58
4	12-24"	Sandy Silt (ML)	21
5	12-24"	Sandy Silt (ML)	27

The test results are moderate and indicate fair to good subgrade support characteristics under dynamic traffic loads. The following table shows the recommended pavement sections for various traffic indices based on an R-value of 57.

Traffic Index	Asphaltic Concrete	Class II Aggregate Base*	Compacted Subgrade**
4.0	2.0"	4.0"	12.0"
4.5	2.5"	4.0"	12.0"
5.0	2.5"	4.0"	12.0"
5.5	3.0"	4.0"	12.0"
6.0	3.0"	4.0"	12.0"
6.5	3.5"	4.0"	12.0"
7.0	4.0"	4.0"	12.0"
7.5	4.0"	4.0"	12.0"

**** 95% compaction based on ASTM Test Method D1557 or CAL 216***
***** 90% compaction based on ASTM Test Method D1557 or CAL 216***

The following table shows the recommended pavement sections for various traffic indices based on an R-value of 21.

Traffic Index	Asphaltic Concrete	Class II Aggregate Base*	Class III Aggregate Subbase*	Compacted Subgrade**
4.0"	2.0"	6.5"	--	12.0"
4.0"	2.0"	4.5"	2.0"	12.0"
4.5"	2.5"	6.5"	--	12.0"
4.5"	2.5"	4.0"	3.0"	12.0"
5.0"	2.5"	8.0"	--	12.0"
5.0"	2.5"	5.0"	3.5"	12.0"
5.5"	3.0"	8.0"	--	12.0"
5.5"	3.0"	5.0"	3.5"	12.0"
6.0"	3.0"	10.0"	--	12.0"
6.0"	3.0"	6.5"	4.0"	12.0"

6.5"	3.5"	10.5"	--	12.0"
6.5"	3.5"	6.0"	5.0"	12.0"
7.0"	4.0"	11.5"	--	12.0"
7.0"	4.0"	6.5"	5.5"	12.0"
7.5"	4.0"	13.0"	--	12.0"
7.5"	4.0"	7.5"	6.0"	12.0"

** 95% compaction based on ASTM Test Method D1557 or CAL 216*
*** 90% compaction based on ASTM Test Method D1557 or CAL 216*

If traffic indices are not available, an estimated (typical value) index of 4.5 may be used for light automobile traffic and an index of 7.0 may be used for light truck traffic.

The following recommendations are for light-duty and heavy-duty Portland Cement Concrete pavement sections.

PORTLAND CEMENT PAVEMENT
LIGHT DUTY

Traffic Index	Portland Cement Concrete***	Class II Aggregate Base*	Compacted Subgrade**
4.5	5.0"	4.0"	12.0"

HEAVY DUTY

Traffic Index	Portland Cement Concrete***	Class II Aggregate Base*	Compacted Subgrade**
7.0	7.0"	4.0"	12.0"

** 95% compaction based on ASTM Test Method D1557 or CAL 216*
*** 90% compaction based on ASTM Test Method D1557 or CAL 216*
****Minimum compressive strength of 3000 psi*

It is recommended that any uncertified fill material encountered within pavement areas be removed and/or recompacted. The fill material should be moisture-conditioned to near optimum moisture and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. As an alternative, the Owner may elect not to recompact the existing fill within paved areas. However, the Owner should be aware that the paved areas may settle which may require annual maintenance. At a minimum, it is recommended that the upper 12 inches of subgrade soil be moisture-conditioned to a minimum of 2 percent above optimum moisture content and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Seismic Parameters – 2022 California Building Code

The Site Class per Section 1613 of the 2022 California Building Code (2022 CBC) and ASCE 7-16, Chapter 20 is based upon the site soil conditions. It is our opinion that a Site Class D is most consistent with the subject site soil conditions. For seismic design of the structures based on the seismic provisions of the 2022 CBC, we recommend the following parameters:

Seismic Item	Value	CBC Reference
Site Class	D	Section 1613.2.2
Site Coefficient F_a	1.386	Table 1613.2.3 (1)
S_s	0.517	Section 1613.2.1
S_{MS}	0.717	Section 1613.2.3
S_{DS}	0.478	Section 1613.2.4
Site Coefficient F_v	2.182	Table 1613.2.3 (2)
S_1	0.209	Section 1613.2.1
S_{M1}	0.456	Section 1613.2.3
S_{D1}	0.304	Section 1613.2.4
T_S	0.636	Section 1613.2

* Based on Equivalent Lateral Force (ELF) Design Procedure being used.

Soil Cement Reactivity

Excessive sulfate in either the soil or native water may result in an adverse reaction between the cement in concrete (or stucco) and the soil. HUD/FHA and CBC have developed criteria for evaluation of sulfate levels and how they relate to cement reactivity with soil and/or water.

Soil samples were obtained from the site and tested in accordance with State of California Materials Manual Test Designation 417. The sulfate concentrations detected from these soil samples were less than 150 ppm (2.3 to 5.6 ppm) and are below the maximum allowable values established by HUD/FHA and CBC. Therefore, no special design requirements are necessary to compensate for sulfate reactivity with the cement. Representative soil samples had a chloride concentration of 15 to 18 ppm and a pH of 7.3 to 8.1.

Compacted Material Acceptance

Compaction specifications are not the only criteria for acceptance of the site grading or other such activities. However, the compaction test is the most universally recognized test method for assessing the performance of the Grading Contractor. The numerical test results from the compaction test cannot be used to predict the engineering performance of the compacted material. Therefore, the acceptance of compacted materials will also be dependent on the stability of that material. The Soils Engineer has the option of rejecting any compacted material regardless of the degree of compaction if that material is considered to be unstable or if future instability is suspected. A specific example of rejection of fill material passing the required percent compaction is a fill which has been compacted with an in-situ moisture content significantly less than optimum moisture. This type of dry fill (brittle fill) is susceptible to future settlement if it becomes saturated or flooded.

Testing and Inspection

A representative of Krazan & Associates, Inc. should be present at the site during the earthwork activities to confirm that actual subsurface conditions are consistent with the exploratory fieldwork. This activity is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction testing and stability of the material. This representative can also verify that the intent of these recommendations is incorporated into the project design and construction. Krazan & Associates, Inc. will not be responsible for grades or staking, since this is the responsibility of the Prime Contractor.

LIMITATIONS

Soils Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using the most appropriate and most current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Soils Engineering, physical changes in the site, either due to excavation or fill placement, new agency regulations, or possible changes in the proposed structure after the soils report is completed may require the soils report to be professionally reviewed. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that 2 years be considered a reasonable time for the usefulness of this report.

Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions do not vary significantly from those disclosed during our field investigation. If any variations or undesirable conditions are encountered during construction, the Soils Engineer should be notified so that supplemental recommendations may be made.

The conclusions of this report are based on the information provided regarding the proposed construction. If the proposed construction is relocated or redesigned, the conclusions in this report may not be valid. The Soils Engineer should be notified of any changes so the recommendations may be reviewed and re-evaluated.

This report is a Geotechnical Engineering Investigation with the purpose of evaluating the soil conditions in terms of foundation design. The scope of our services did not include any Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands. Any statements, or absence of statements, in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices and a degree of conservatism deemed proper for this project. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

If you have any questions or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

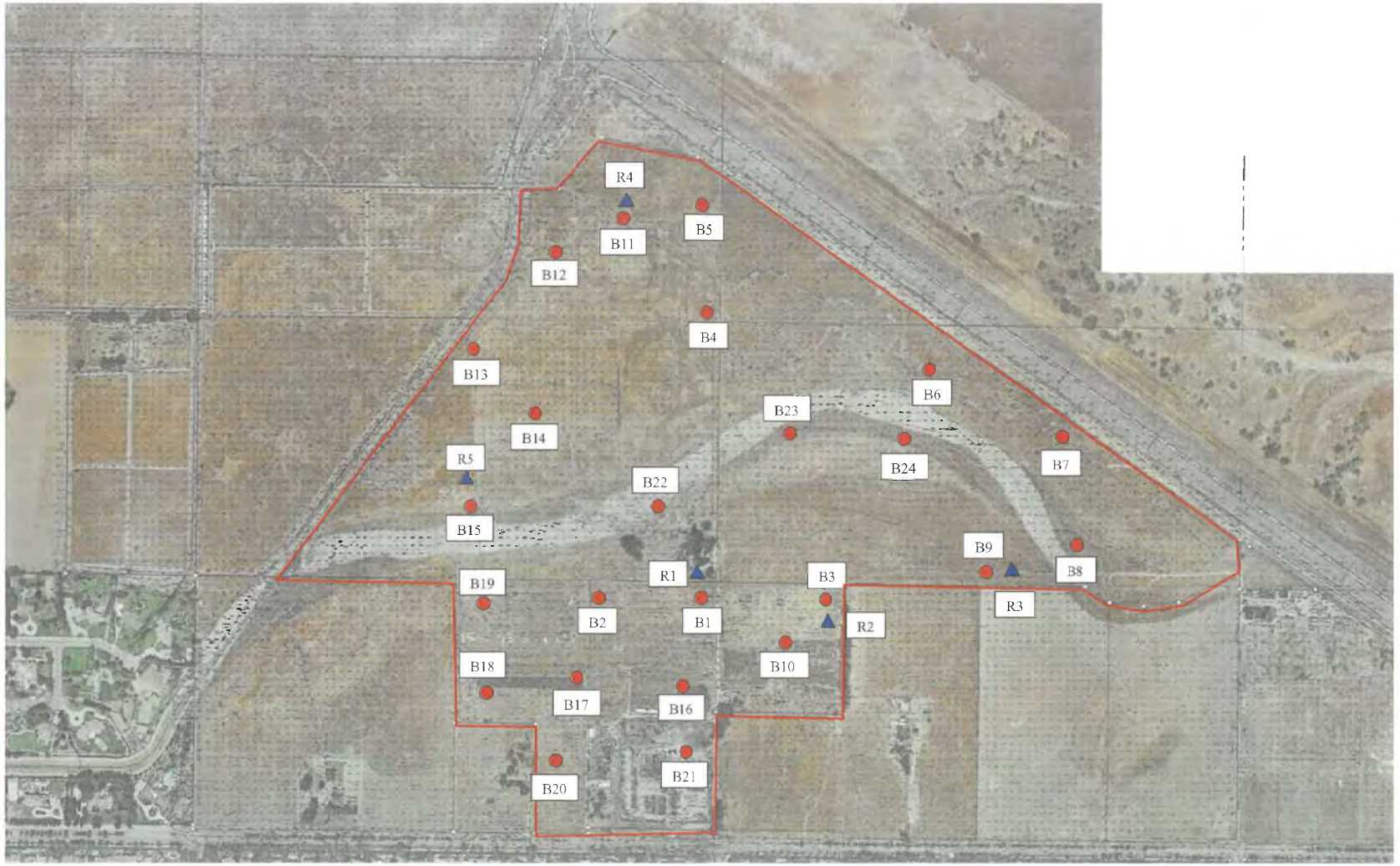
Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Wayne Andrade
Project Geologist

David R. Jarosz, II
Managing Engineer
RGE No. 2698/RCE No. 60185



WA/DRJ:ht



APPROXIMATE BORING LOCATION

APPROXIMATE R-VALUE LOCATION

SITE MAP	Scale: NTS	Date: December 2023	Krazan GEOTECHNICAL ENGINEERING
Proposed Triangle Development Shepherd and Temperance Avenues Clovis, California	Drawn by: WA	Approved by: DJ	
	Project No. 012-22233	Figure No. 1	

APPENDIX A

FIELD AND LABORATORY INVESTIGATIONS

Field Investigation

The field investigation consisted of a surface reconnaissance and a subsurface exploratory program. Twenty-four exploratory borings were advanced. The boring locations are shown on the site plan.

The soils encountered were logged in the field during the exploration and, with supplementary laboratory test data, are described in accordance with the Unified Soil Classification System.

Modified standard penetration tests and standard penetration tests were performed at selected depths. These tests represent the resistance to driving a 2½-inch and 1½-inch diameter split barrel sampler, respectively. The driving energy was provided by a hammer weighing 140 pounds falling 30 inches. Relatively undisturbed soil samples were obtained while performing this test. Bag samples of the disturbed soil were obtained from the auger cuttings. The modified standard penetration tests are identified in the sample type on the boring logs with a full shaded in block. The standard penetration tests are identified in the sample type on the boring logs with half of the block shaded. All samples were returned to our Clovis laboratory for evaluation.

Laboratory Investigation

The laboratory investigation was programmed to determine the physical and mechanical properties of the foundation soil underlying the site. Test results were used as criteria for determining the engineering suitability of the surface and subsurface materials encountered.

In situ moisture content, dry density, consolidation, direct shear and sieve analysis tests were determined for the undisturbed samples representative of the subsurface material. Atterberg limits and R-value tests were completed for select bag samples obtained from the auger cuttings. These tests, supplemented by visual observation, comprised the basis for our evaluation of the site material.

The logs of the exploratory borings and laboratory determinations are presented in this Appendix.

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

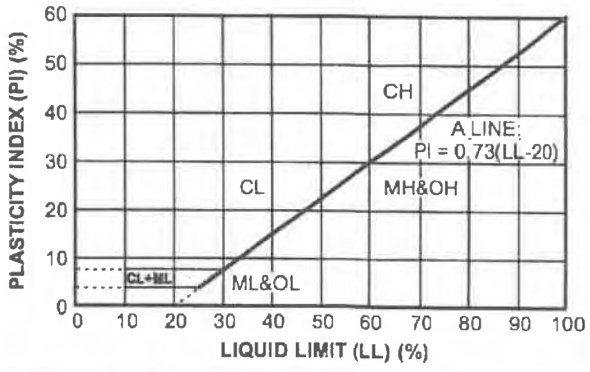
CONSISTENCY CLASSIFICATION

Description	Blows per Foot
Granular Soils	
Very Loose	< 5
Loose	5 – 15
Medium Dense	16 – 40
Dense	41 – 65
Very Dense	> 65
Cohesive Soils	
Very Soft	< 3
Soft	3 – 5
Firm	6 – 10
Stiff	11 – 20
Very Stiff	21 – 40
Hard	> 40

GRAIN SIZE CLASSIFICATION

Grain Type	*Standard Sieve Size*	*Grain Size in Millimeters*
Boulders	Above 12 inches	Above 305
Cobbles	12 to 13 inches	305 to 76.2
Gravel	3 inches to No. 4	76.2 to 4.76
Coarse-grained	3 to ¾ inches	76.2 to 19.1
Fine-grained	¾ inches to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
Coarse-grained	No. 4 to No. 10	4.76 to 2.00
Medium-grained	No. 10 to No. 40	2.00 to 0.42
Fine-grained	No. 40 to No. 200	0.42 to 0.074
Silt and Clay	Below No. 200	Below 0.074

PLASTICITY CHART



Log of Boring B1

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-1

Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained with trace CLAY; brown, damp, drills easily Loose below 12 inches				
2			113.8	4.0		13
4		Medium dense below 5 feet				
6			107.7	7.6		16
8						
10		***SANDY CLAY (CL)*** Hard, fine- to medium-grained; brown, moist, drills hard	119.0	15.8		50+
12						
14						
16		End of Borehole				
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Solid Flight

Drill Date: 7-17-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B2

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-2

Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		SUBSURFACE PROFILE	SAMPLE			
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained with trace CLAY; brown, damp, drills easily				
2		Loose below 12 inches Medium dense below 2 feet	105.4	2.1		21
4		Very dense and drills hard below 5 feet	111.4	3.9		50+
6						
8						
10		Medium dense and drills easily below 10 feet	119.4	9.0		17
12						
14		Fine-grained below 15 feet	112.4	7.9		17
16						
18						
20						

Penetration Test, blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Solid Flight

Drill Date: 7-17-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 20 Feet

Log of Boring B3

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-3

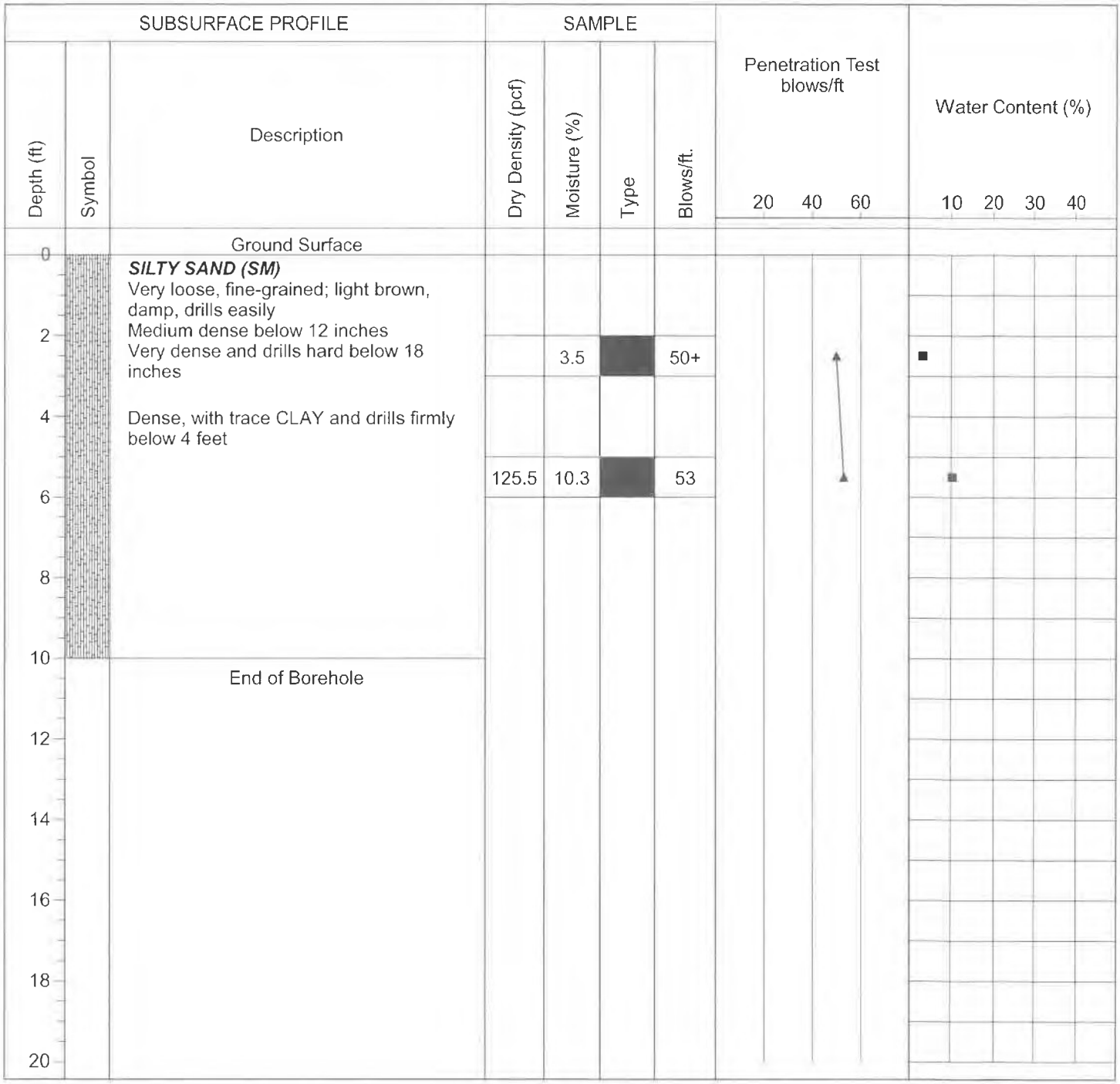
Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 7-17-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B4

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-4

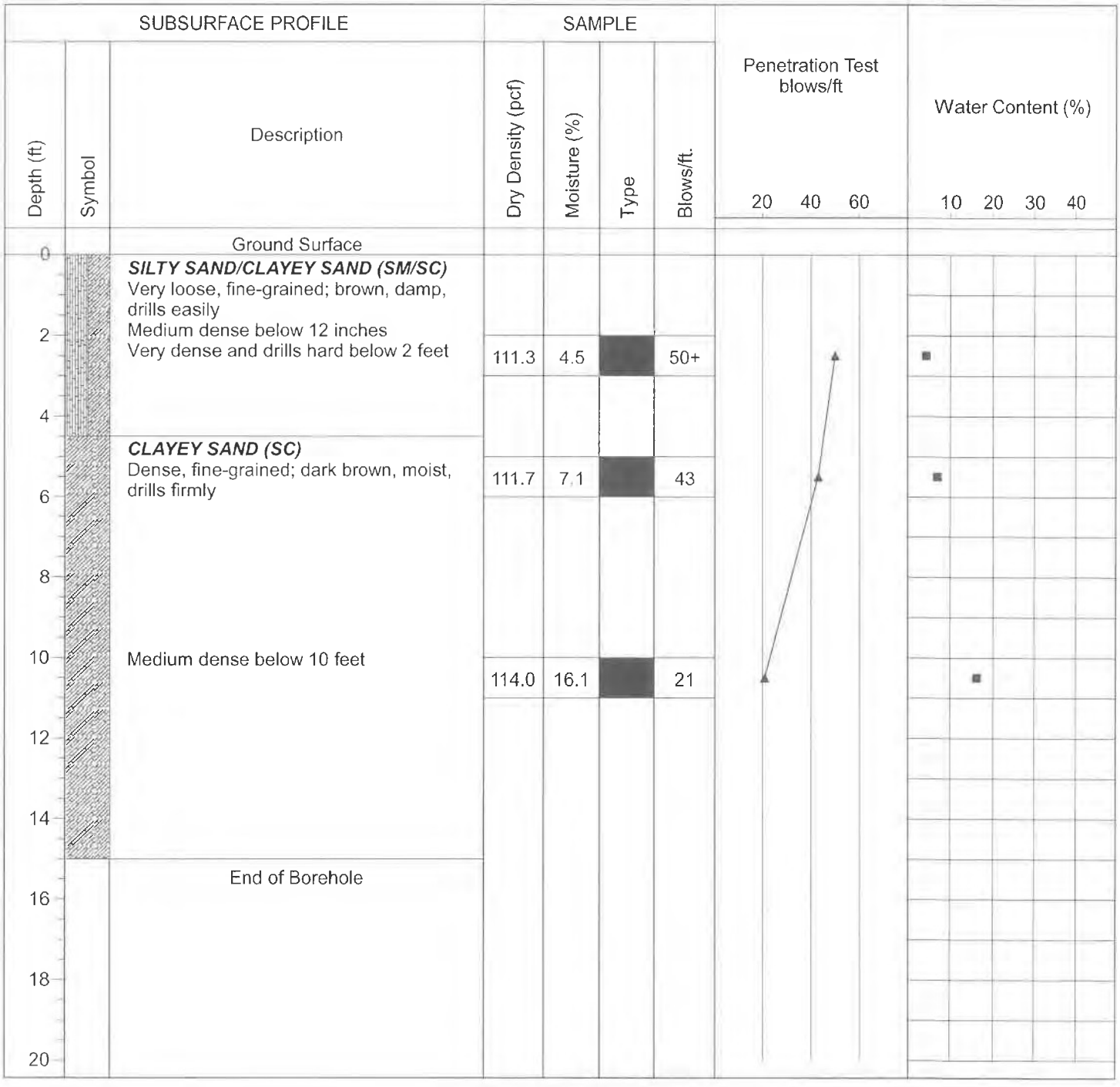
Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 7-17-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 15 Feet

Log of Boring B5

Project: Triangle Development

Project No: 012-22233

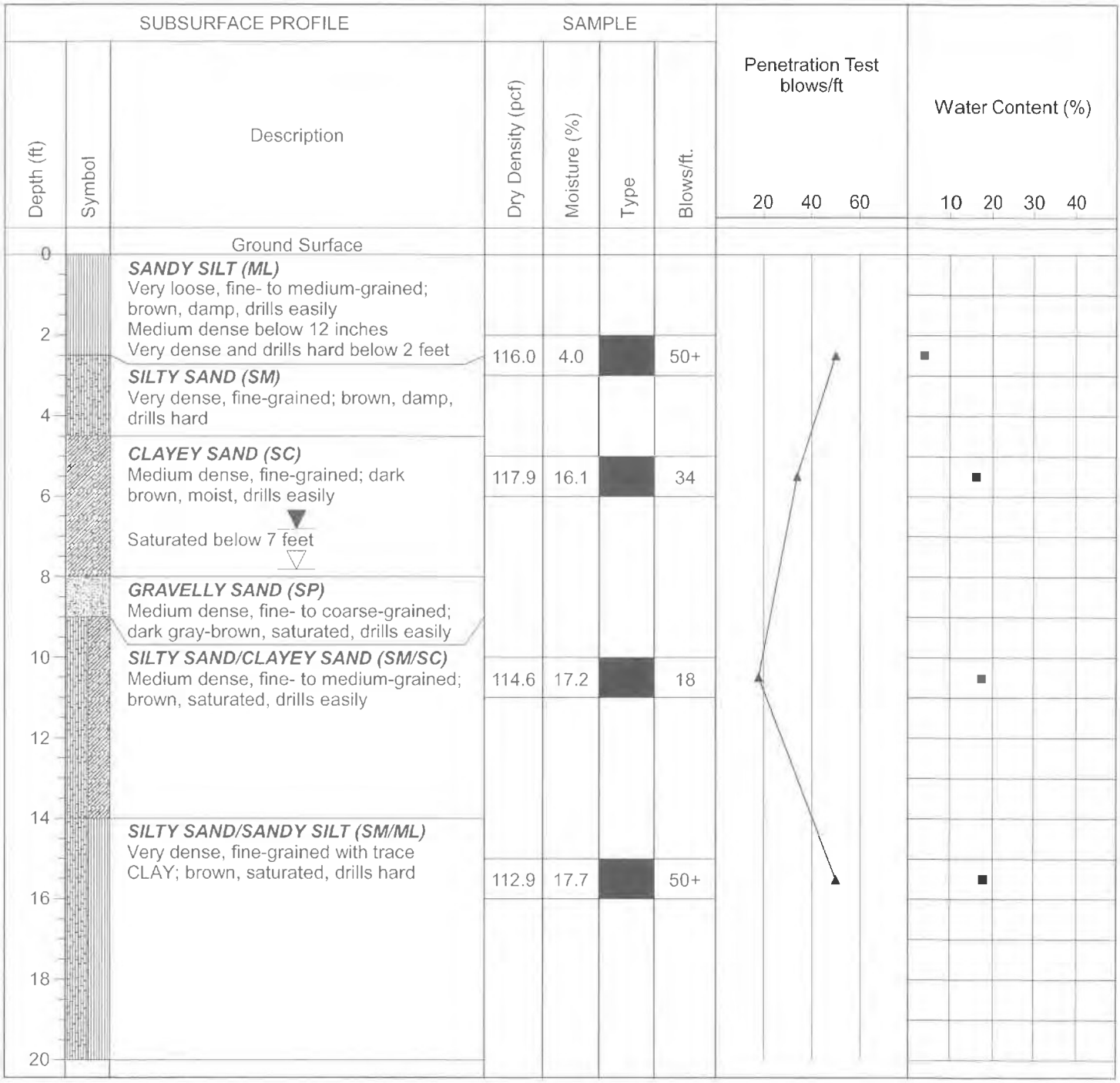
Client: Wilson Homes

Figure No.: A-5

Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water> **Initial:** 8 Feet **At Completion:** 7 Feet



Drill Method: Solid Flight

Drill Date: 7-17-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B6

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-6

Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
		SILTY SAND/SANDY SILT (SM/ML) Very loose, fine-grained; brown, moist, drills easily						
2		Loose below 12 inches Medium dense below 2 feet	100.6	7.2		38		
4								
6			119.0	10.8		32		
8								
10		End of Borehole						
12								
14								
16								
18								
20								

Drill Method: Solid Flight

Drill Rig: CME 45B

Driller: Brent Snyder

Krazan and Associates

Drill Date: 7-17-23

Hole Size: 4½ Inches

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B7

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-7

Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
		SILTY SAND/SANDY SILT (SM/ML) Very loose, fine-grained; brown, moist, drills easily						
2		Loose below 12 inches Dense below 2 feet	97.4	7.1		42		
4		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Medium dense, fine-grained; brown, moist, drills easily						
6			121.9	11.6		23		
8								
10		End of Borehole						
12								
14								
16								
18								
20								

Drill Method: Solid Flight

Drill Date: 7-17-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B8

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-8

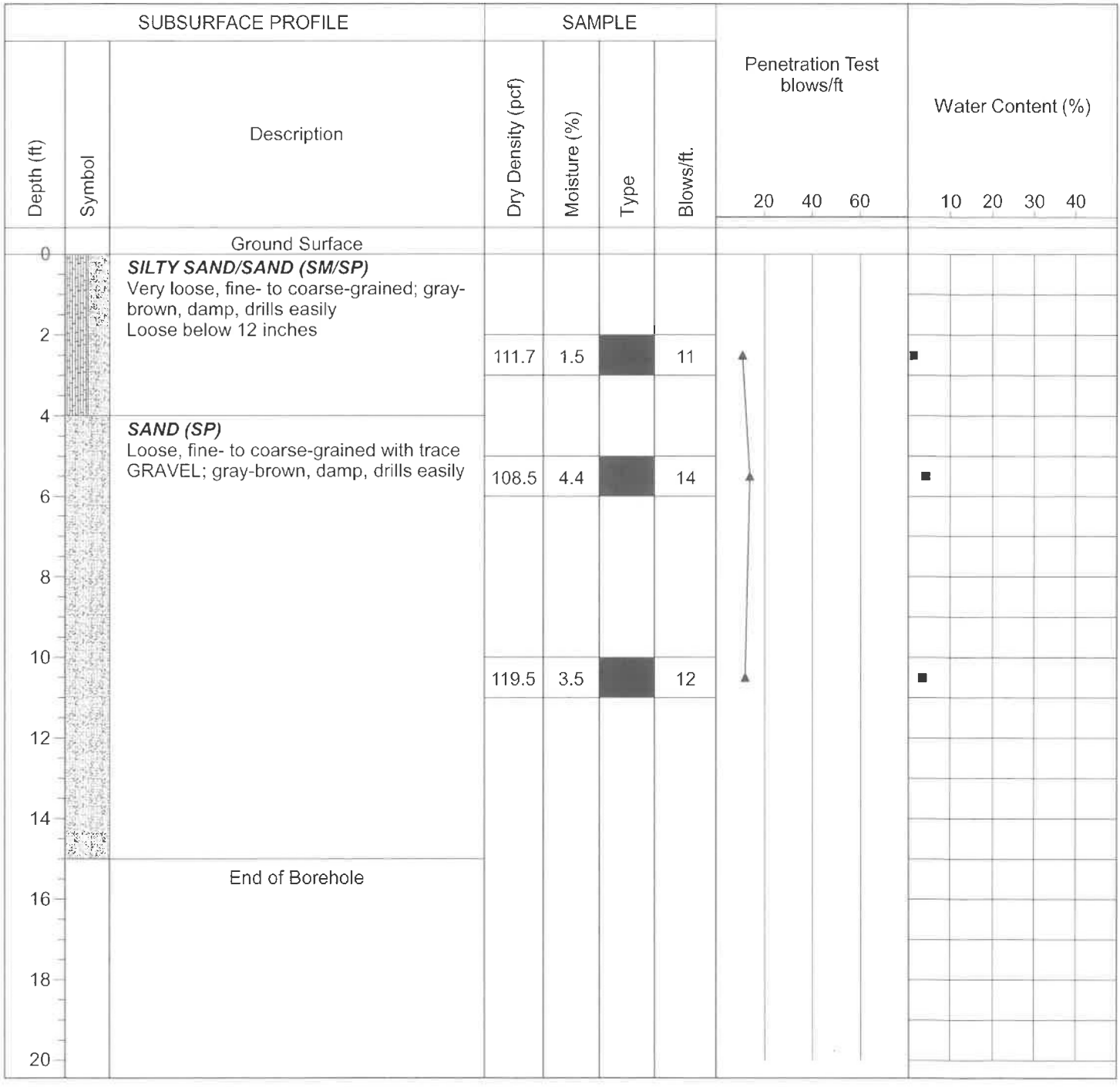
Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 7-17-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B9

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-9

Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
2		***SILTY SAND (SM)*** Very loose, fine-grained; light brown, damp, drills easily Loose below 12 inches Dense below 2 feet	117.0	4.2		42		■
4								
6		***SILTY SAND (SM)*** Very dense, fine-grained, moderately cemented; brown, moist, drills hard	109.9	6.9		50+		■
8								
10		End of Borehole						
12								
14								
16								
18								
20								

Drill Method: Solid Flight

Drill Date: 7-17-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B10

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-10

Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
0		***SILTY SAND (SM)*** Very loose, fine-grained; dark gray-black, damp, drills easily Loose below 12 inches						
2			122.4	5.4		38		■
4		Loose and brown below 4 feet						
6			114.6	5.5		15		■
10		End of Borehole						
12								
14								
16								
18								
20								

Drill Method: Solid Flight

Drill Date: 7-18-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B11

Project: Triangle Development

Project No: 012-22233

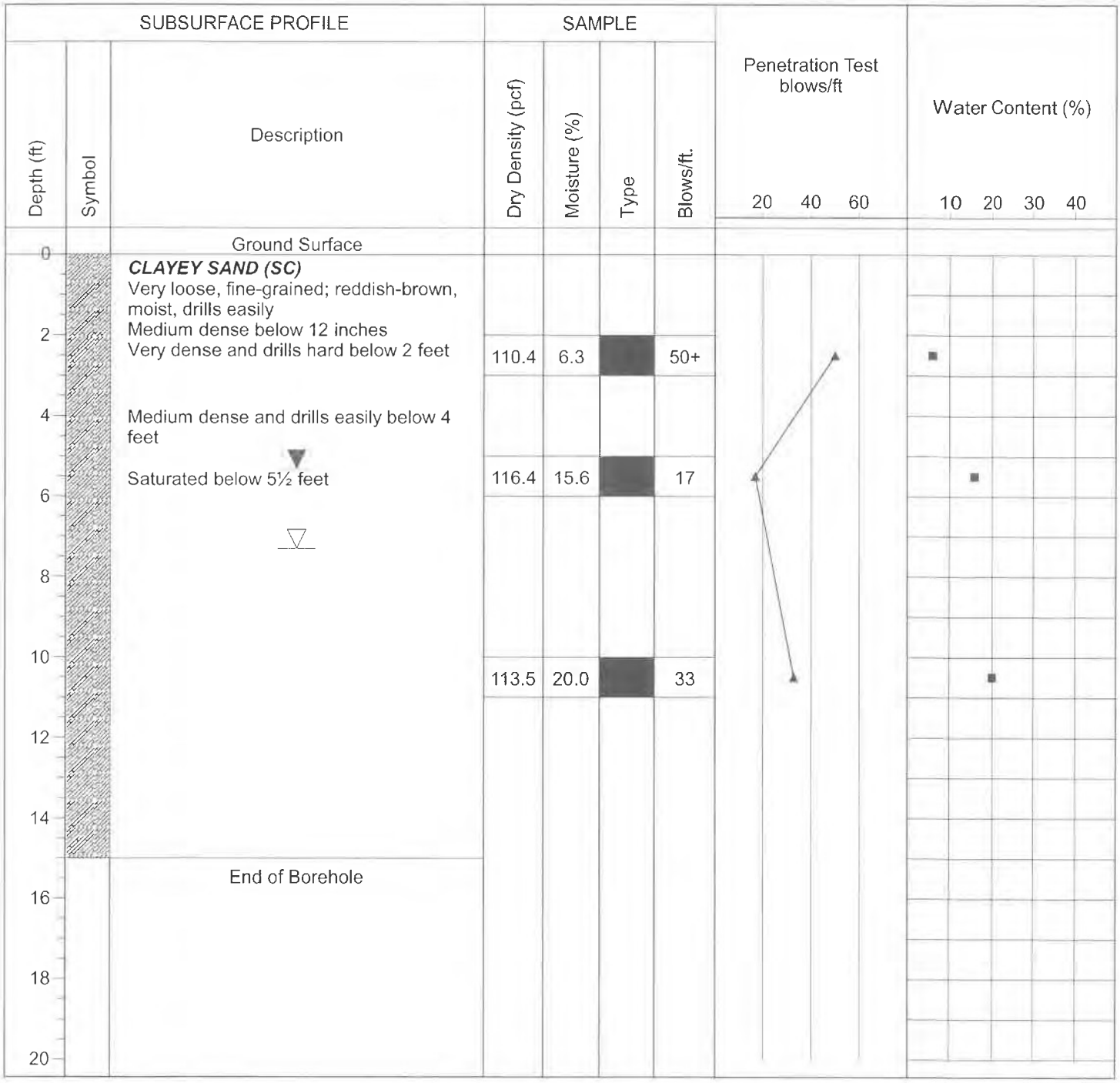
Client: Wilson Homes

Figure No.: A-11

Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water> **Initial:** 7½ Feet **At Completion:** 5½ Feet



Drill Method: Solid Flight

Drill Date: 7-18-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B12

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-12

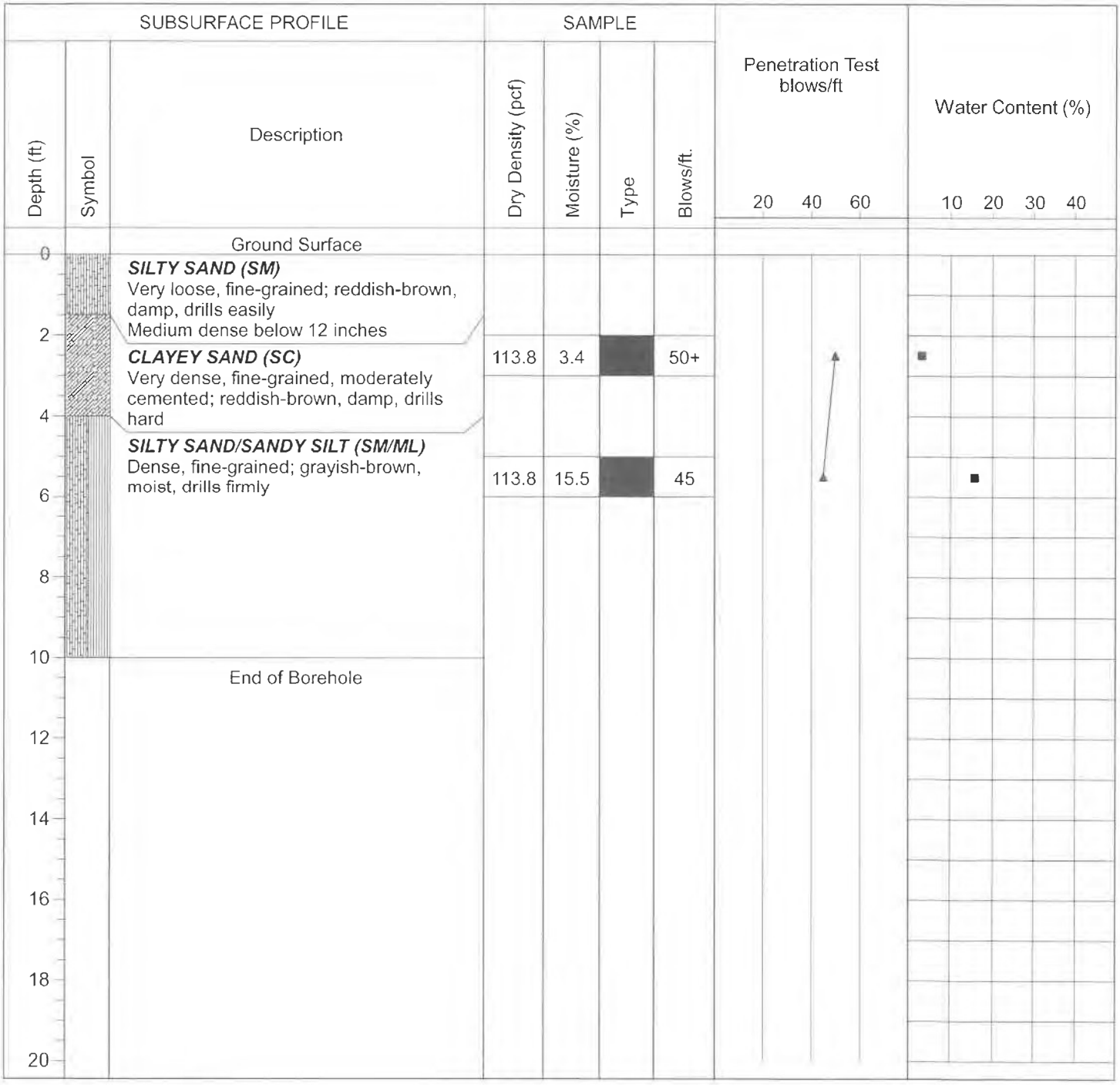
Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 7-18-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B13

Project: Triangle Development | **Project No:** 012-22233

Client: Wilson Homes | **Figure No.:** A-13

Location: East Shepherd Avenue, Clovis, California | **Logged By:** Michael Rupright

Depth to Water> | **Initial:** None | **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Very loose, fine-grained; brown, moist, drills easily Loose below 12 inches				
2			122.8	10.2		11
4		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, moist, drills easily				
6			122.0	13.2		19
10		End of Borehole				

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Solid Flight | **Drill Date:** 7-18-23

Drill Rig: CME 45B | **Hole Size:** 4½ Inches

Driller: Brent Snyder | **Elevation:** 10 Feet

Krazan and Associates

Log of Boring B14

Project: Triangle Development

Project No: 012-22233

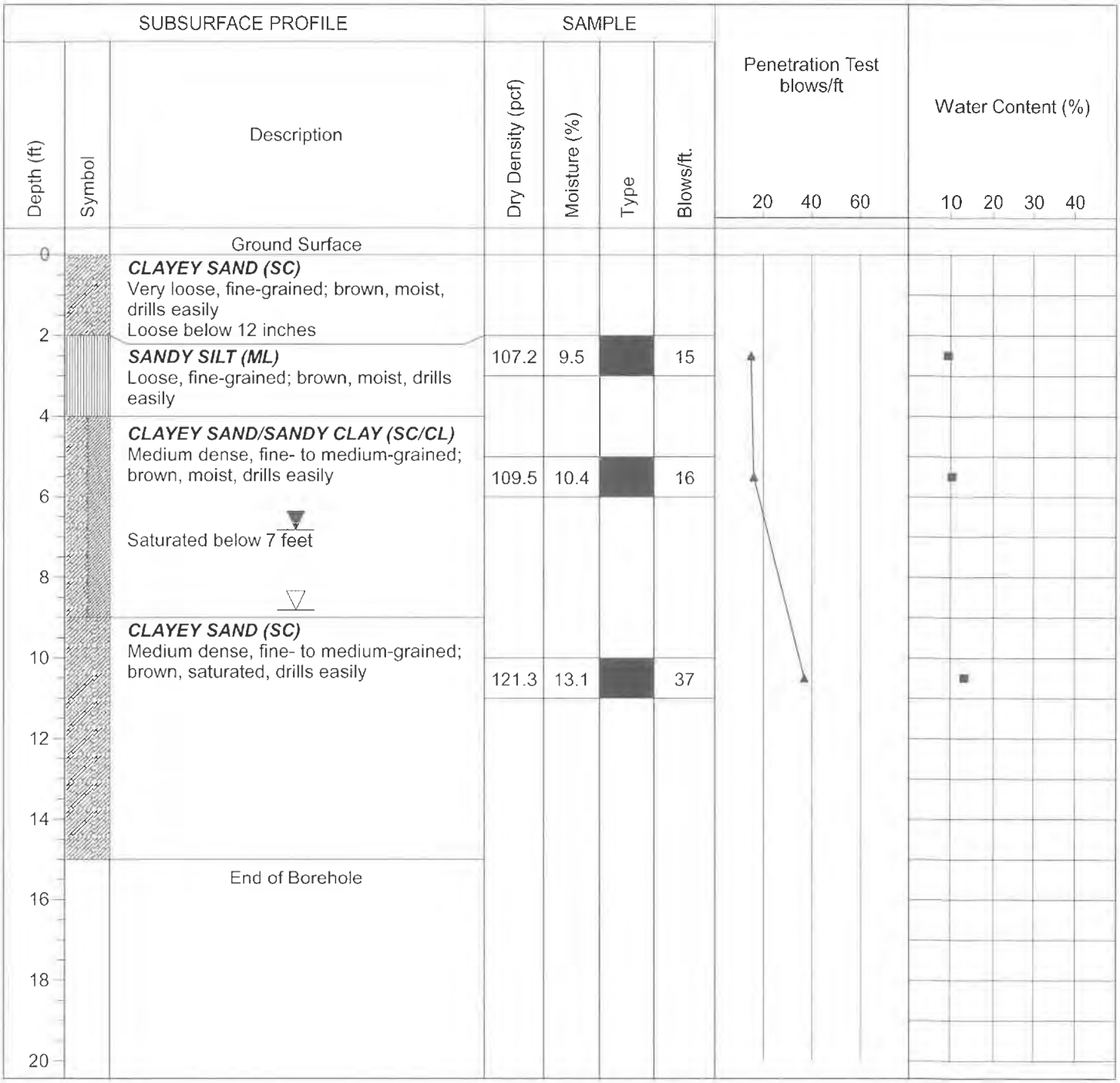
Client: Wilson Homes

Figure No.: A-14

Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water> **Initial:** 9 Feet **At Completion:** 7 Feet



Drill Method: Solid Flight

Drill Date: 7-18-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B15

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-15

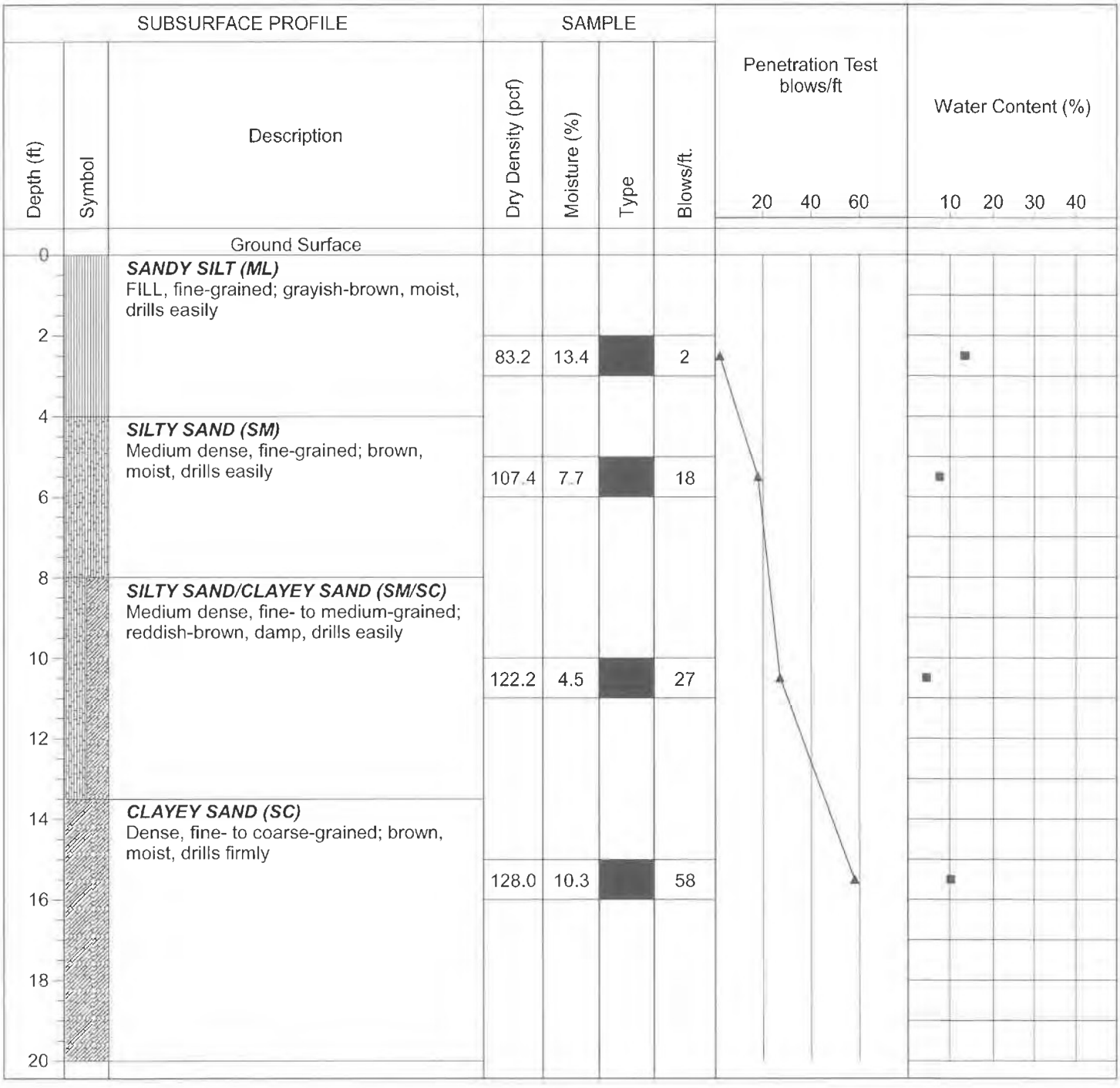
Location: East Shepherd Avenue, Clovis, California

Logged By: Michael Rupright

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 7-18-23

Drill Rig: CME 45B

Krazan and Associates

Hole Size: 4½ Inches

Driller: Brent Snyder

Elevation: 20 Feet

Sheet: 1 of 1

Log of Boring B16

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-16

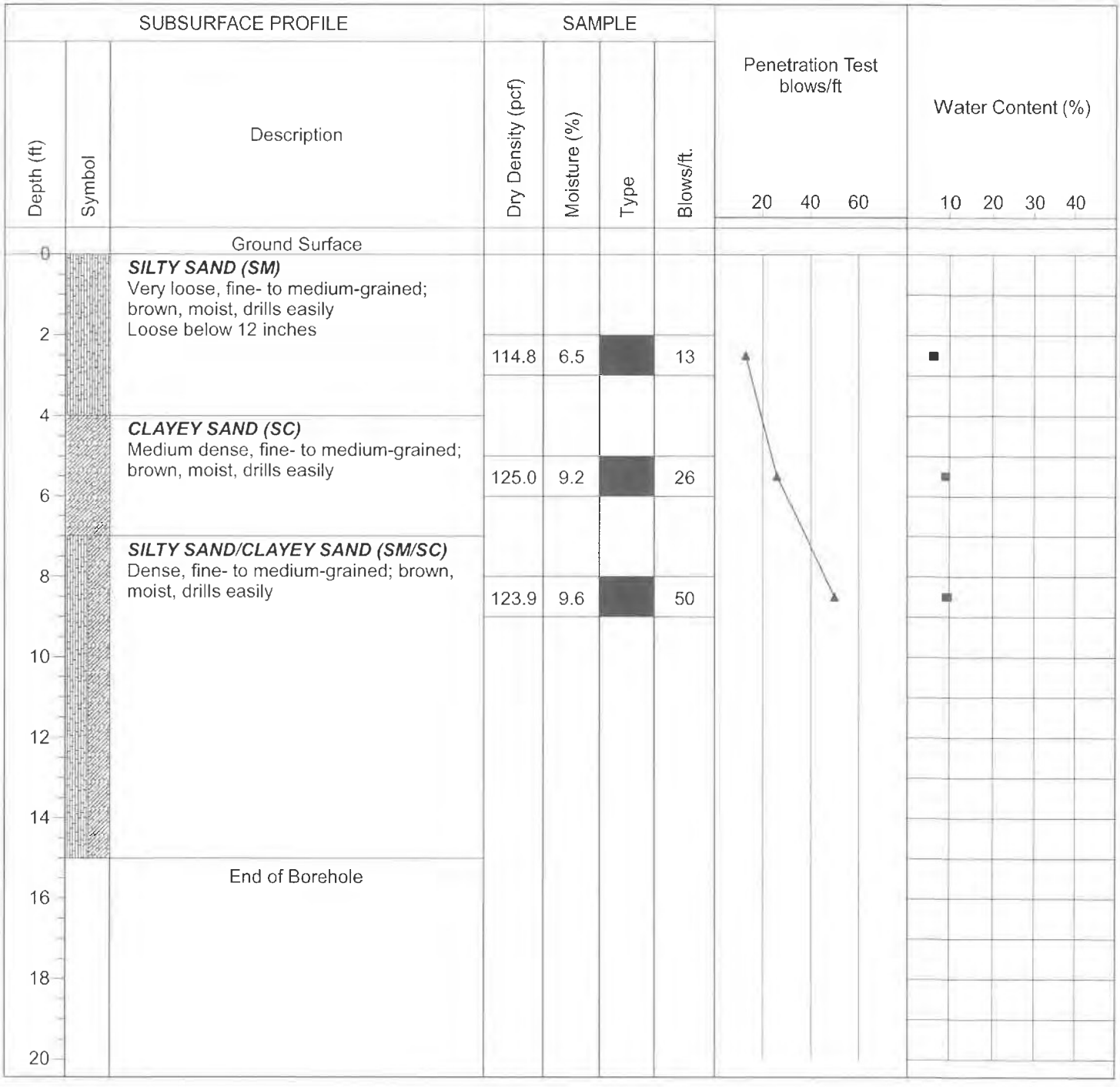
Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 7-20-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B17

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-17

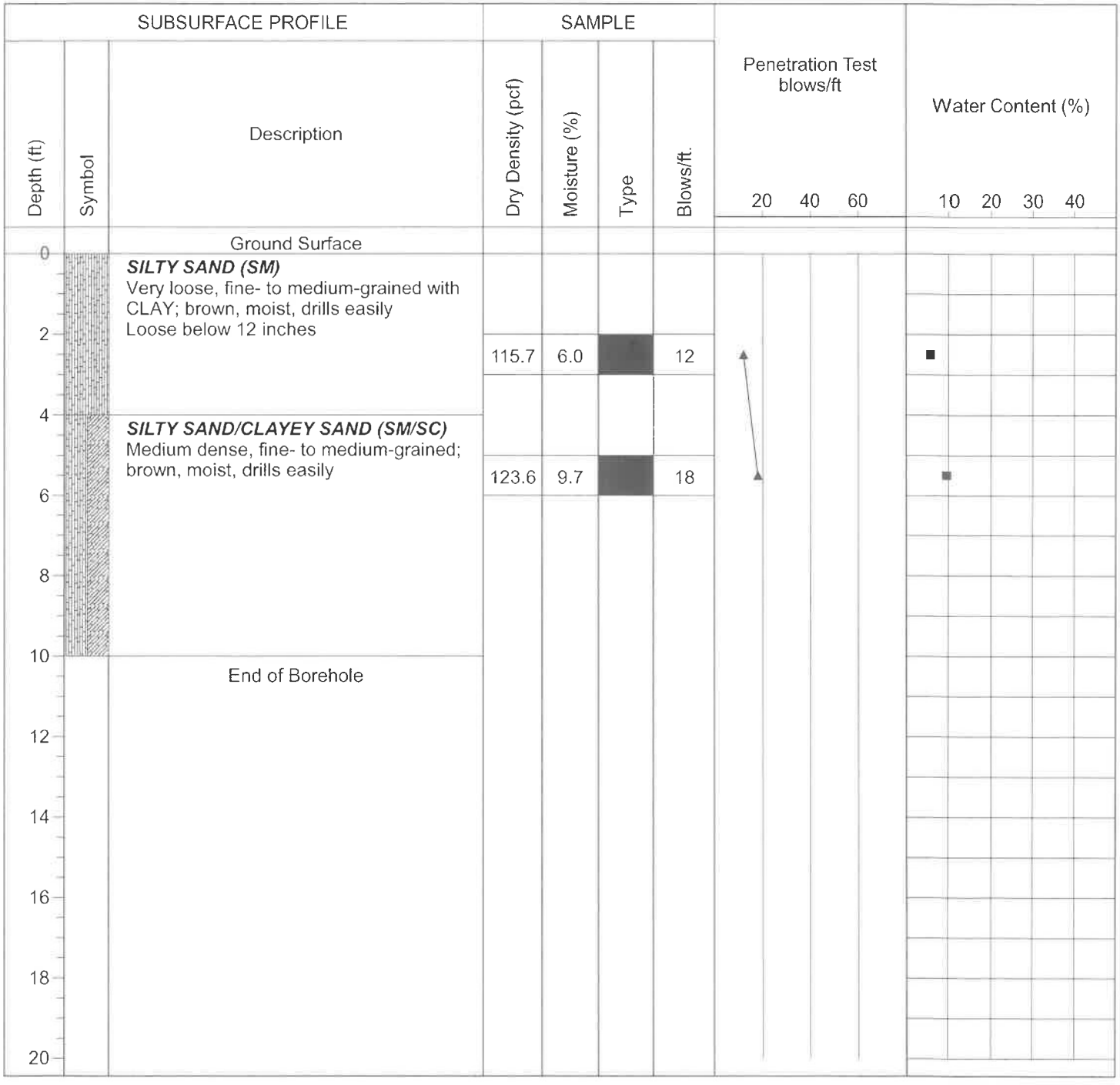
Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 7-20-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 10 Feet

Log of Boring B18

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-18

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water>

Initial: None

At Completion: None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches				
2			112.3	2.6		13
4		Medium dense below 5 feet				
6			128.7	2.6		19
8			128.0	7.0		27
10						
12						
14						
		End of Borehole				
16						
18						
20						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Solid Flight

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 7-20-23

Hole Size: 4½ Inches

Elevation: 15 Feet

Log of Boring B19

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-19

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water>

Initial: None

At Completion: None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, moist, drills easily Loose below 12 inches				
2			109.3	6.5		12
4		Medium dense below 5 feet				
6			109.4	7.2		17
8						
10		End of Borehole				
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Solid Flight

Drill Date: 7-20-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B20

Project: Triangle Development

Project No: 012-22233

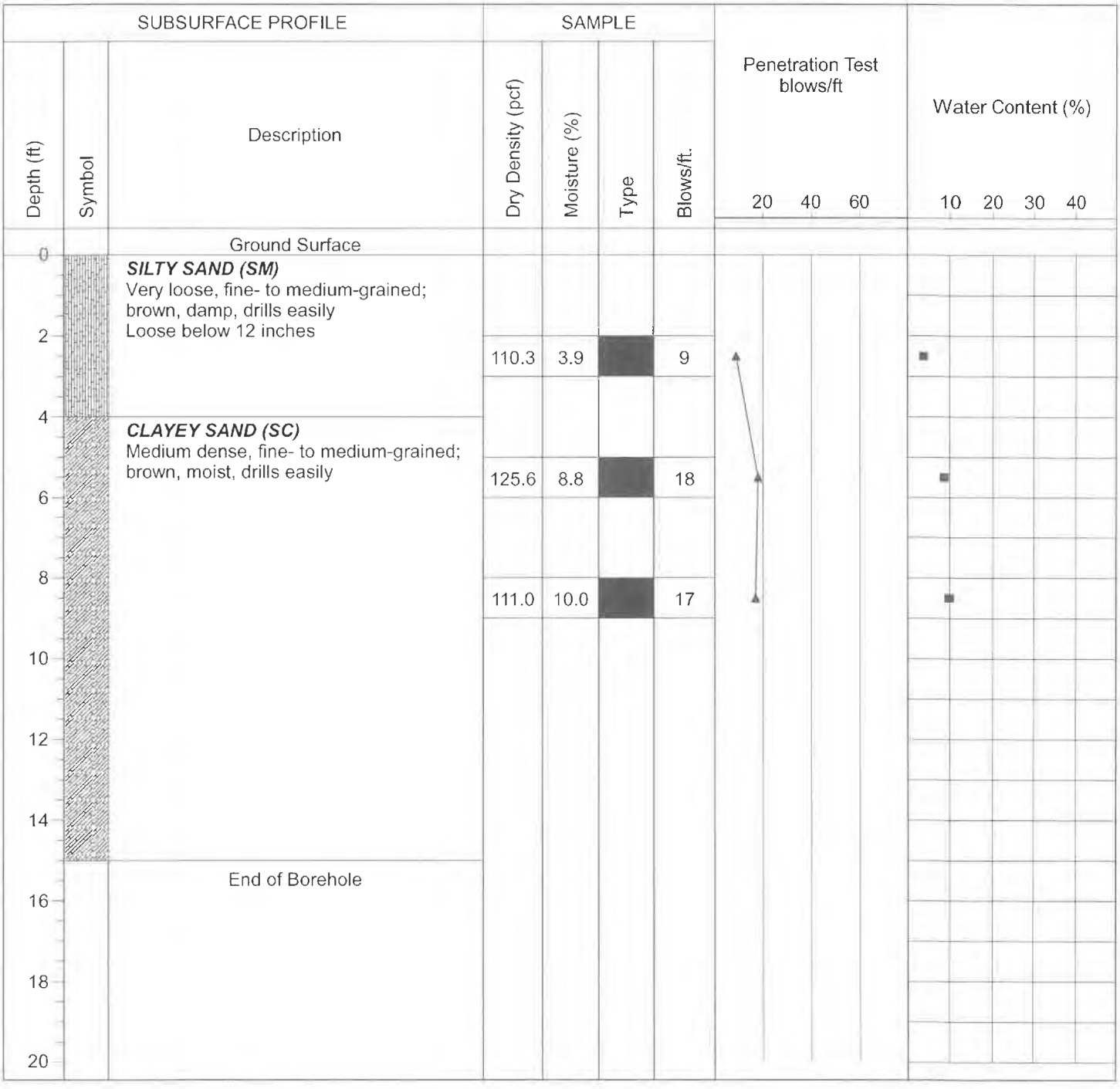
Client: Wilson Homes

Figure No.: A-20

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** None **At Completion:** None



Drill Method: Solid Flight

Drill Date: 7-20-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 15 Feet

Sheet: 1 of 1

Log of Boring B21

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-21

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** None **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches				
2			115.7	4.6		12
4		Medium dense with CLAY below 4 feet				
6			116.1	8.8		34
8						
10		End of Borehole				
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20, 40, 60

Water Content (%): 10, 20, 30, 40

Drill Method: Solid Flight

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 7-20-23

Hole Size: 4½ Inches

Elevation: 10 Feet

Log of Boring B22

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-22

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 22 Feet **At Completion:** 21 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0		Ground Surface						
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches						
2		***SILTY SAND/SAND (SM/SP)*** Loose, fine- to medium-grained with trace GRAVEL; brown, damp, drills easily	102.3	0.7		6		
4		***SAND (SP)*** Loose, fine- to medium-grained with trace GRAVEL; brown, damp, drills easily	103.1	2.2		8		
6								
8								
10		Medium dense below 10 feet	110.2	4.0		12		
12								
14		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to medium-grained; brown, moist, drills easily						
16			115.5	5.8		15		
18								
20								

Drill Method: Hollow Stem

Drill Date: 10-30-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 5½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B22

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-22

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 22 Feet **At Completion:** 21 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22		Loose and saturated below 21 feet	106.2	18.7		14
24						
26			113.4	14.6		9
28						
30		***SILTY SAND (SM)*** Medium dense, fine- to coarse-grained with trace GRAVEL; brown, saturated, drills easily	124.6	16.1		24
32						
34		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to medium-grained; brown, saturated, drills easily				
36			109.0	16.5		17
38						
40		***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; gray, saturated, drills easily				

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Date: 10-30-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 5½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B22

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-22

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 22 Feet **At Completion:** 21 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
42			94.6	26.3		17		
44		***CLAYEY SAND/SANDY CLAY (SC/CL)*** Medium dense, fine- to medium-grained; gray, saturated, drills easily						
46			89.6	44.5		18		
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Date: 10-30-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 5½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B23

Project: Triangle Development

Project No: 012-22233

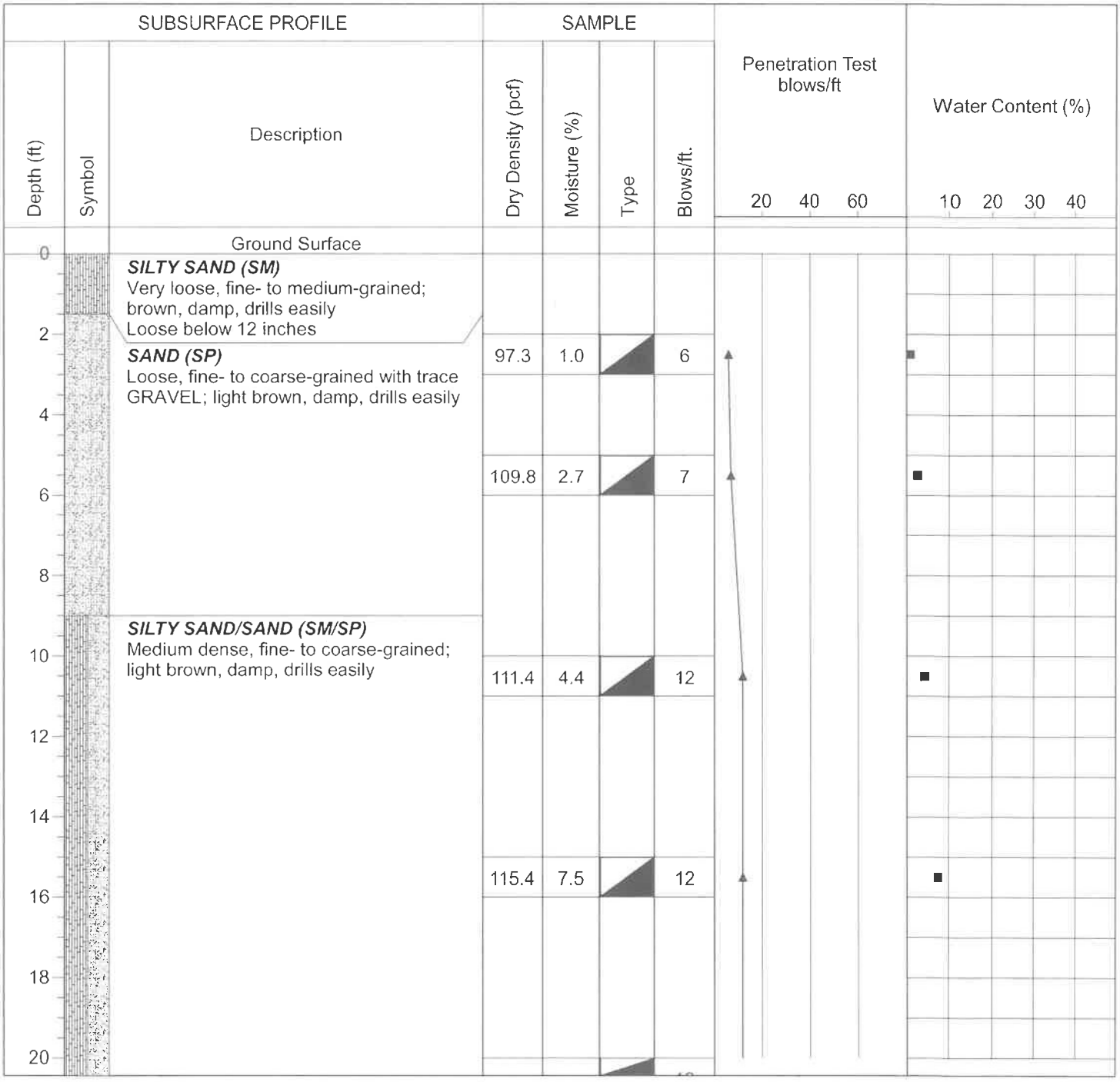
Client: Wilson Homes

Figure No.: A-23

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 23 Feet **At Completion:** 21 Feet



Drill Method: Hollow Stem

Drill Date: 10-30-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 5½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B23

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-23

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 23 Feet **At Completion:** 21 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
22		Saturated below 21 feet	103.3	21.5		12		
24								
26			115.7	14.5		14		
28								
30		***SAND (SP)*** Medium dense, fine- to coarse-grained; light brown, saturated, drills easily	131.6	23.5		12		
32								
34								
36		***CLAYEY SANDY SILT (ML)*** Medium dense, fine- to medium-grained; red-brown, saturated, drills easily	110.9	16.7		13		
38		***SANDY SILT (ML)*** Medium dense, fine- to medium-grained; red-brown, saturated, drills easily						
40								

Drill Method: Hollow Stem

Drill Date: 10-30-23

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 5½ Inches

Driller: Jim Watts

Elevation: 50 Feet

Log of Boring B23

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-23

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 23 Feet **At Completion:** 21 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
			83.5	36.6		11		■
42								
44								
			79.0	42.2		12		■
46								
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 10-30-23

Hole Size: 5½ Inches

Elevation: 50 Feet

Log of Boring B24

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-24

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 23 Feet **At Completion:** 21 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, damp, drills easily Loose below 12 inches				
2		***SAND (SP)*** Loose, fine- to coarse-grained with trace GRAVEL; light brown, damp, drills easily	94.1	1.0		7
4		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to medium-grained; light brown, damp, drills easily	121.0	3.0		11
8		***SAND (SP)*** Medium dense, fine- to medium-grained; light brown, damp, drills easily	110.5	4.6		12
14		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to coarse-grained with trace GRAVEL; brown, moist, drills easily	111.4	7.2		13
18		***SAND (SP)*** Medium dense, fine- to coarse-grained; light brown, moist, drills easily				
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 10-30-23

Hole Size: 5½ Inches

Elevation: 50 Feet

Log of Boring B24

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-24

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 23 Feet **At Completion:** 21 Feet

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
22		Saturated below 21 feet	112.8	13.5		13		
24		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to medium-grained; light brown, saturated, drills easily						
26			104.0	22.9		10		
28		***SAND (SP)*** Medium dense, fine- to medium-grained; light brown, saturated, drills easily						
30			106.5	18.8		12		
32								
34		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to medium-grained; light brown, saturated, drills easily						
36			115.0	14.4		21		
38								
40								

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

Drill Date: 10-30-23

Hole Size: 5½ Inches

Elevation: 50 Feet

Log of Boring B24

Project: Triangle Development

Project No: 012-22233

Client: Wilson Homes

Figure No.: A-24

Location: East Shepherd Avenue, Clovis, California

Logged By: Dave Adams

Depth to Water> **Initial:** 23 Feet **At Completion:** 21 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	Penetration Test blows/ft (20 40 60)	Water Content (%) (10 20 30 40)
42			112.5	15.0		20		
44		***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; red-brown, saturated, drills easily						
46			95.4	28.0		27		
48								
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Rig: CME 45C-4

Driller: Jim Watts

Krazan and Associates

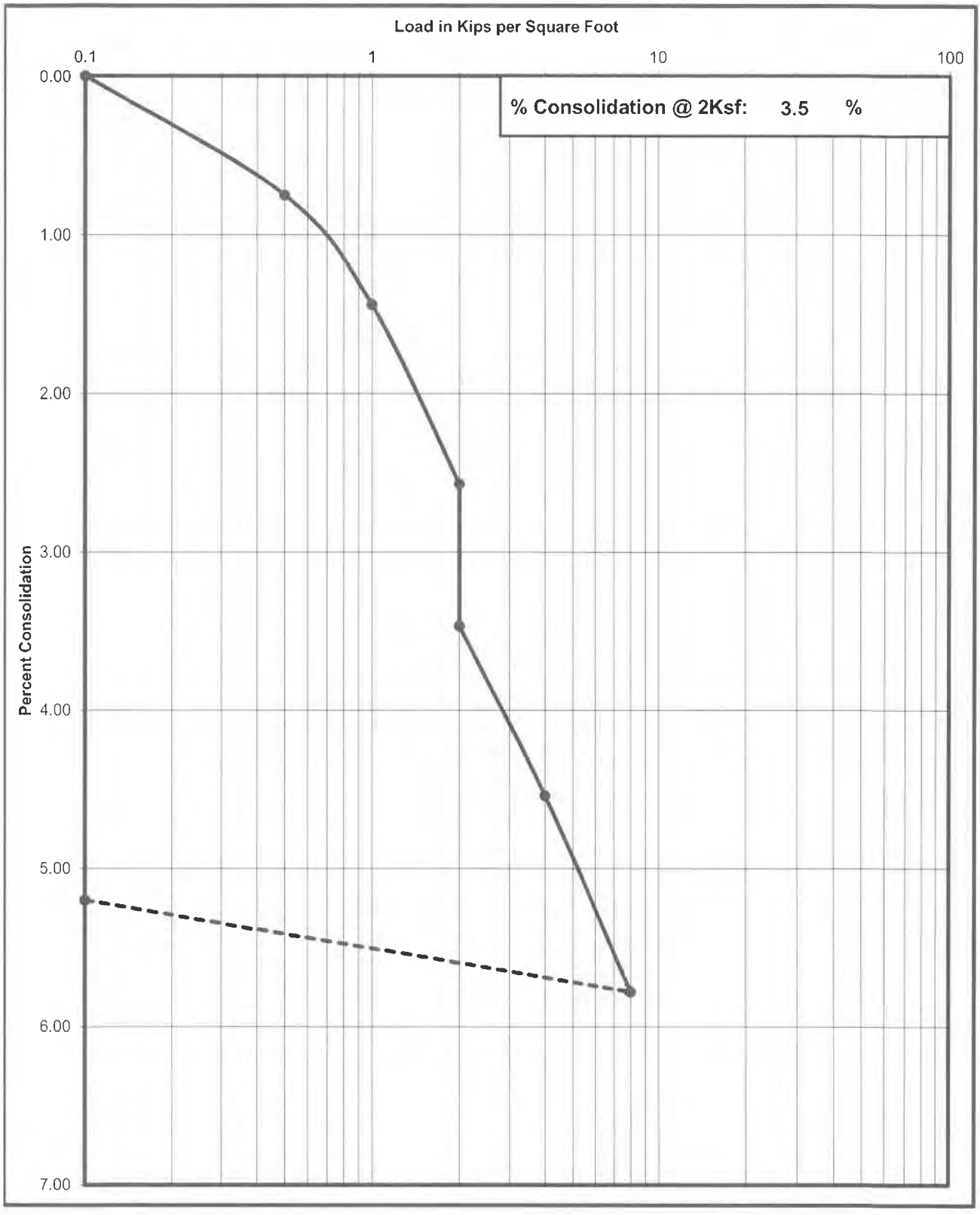
Drill Date: 10-30-23

Hole Size: 5½ Inches

Elevation: 50 Feet

Consolidation Test

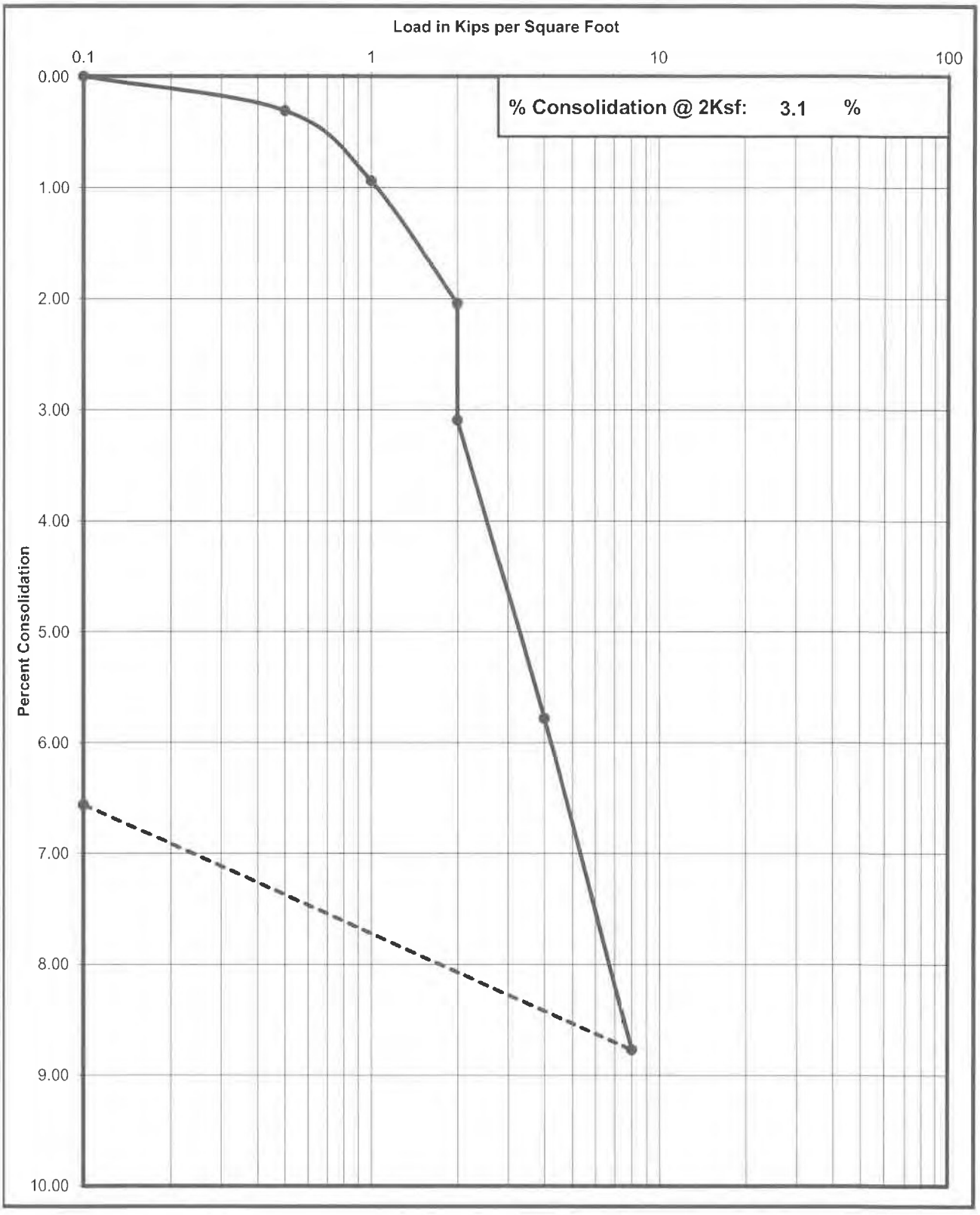
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B1 @ 2-3'	7/27/2023	SM



Krazan Testing Laboratory

Consolidation Test

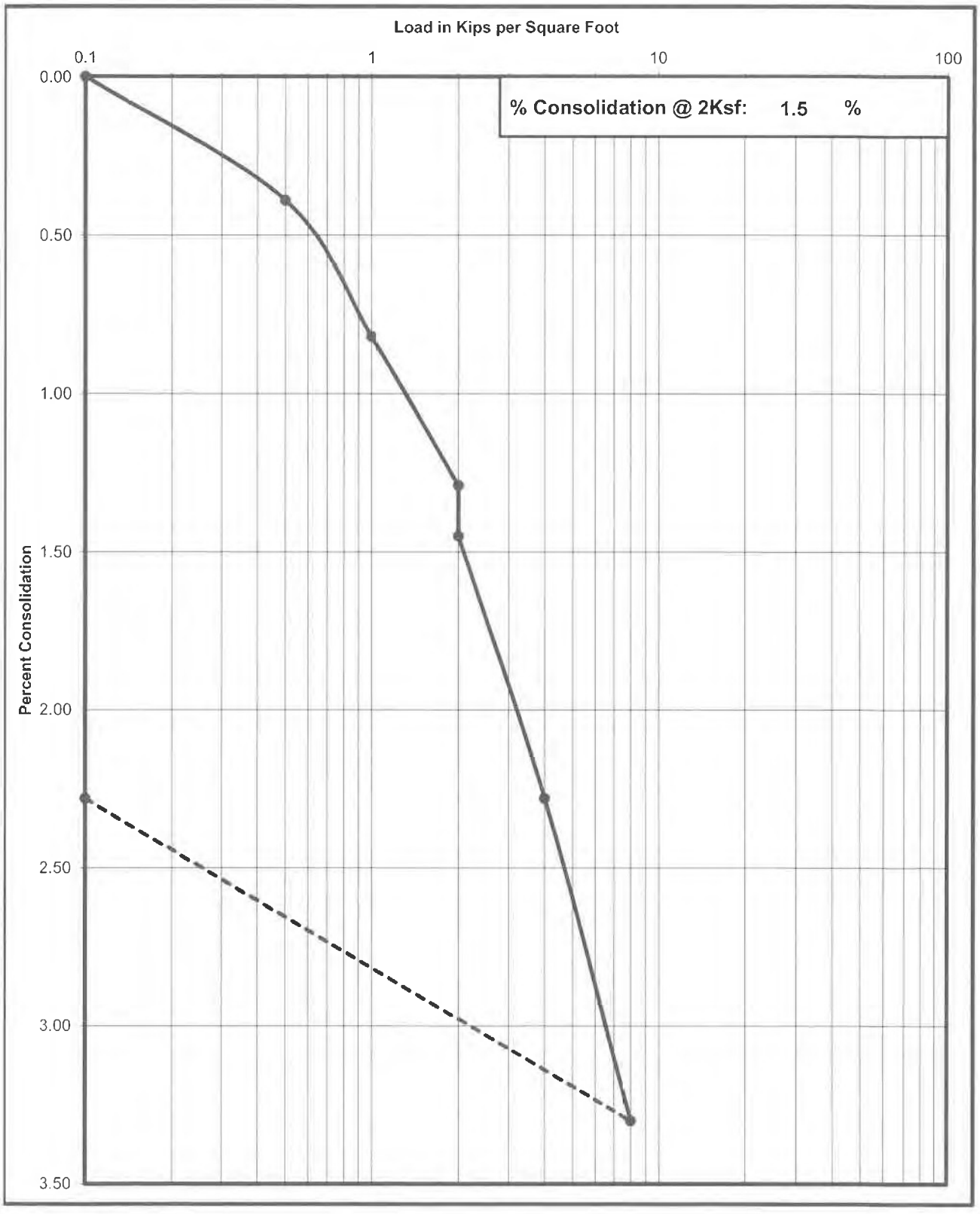
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B1 @ 5-6'	7/27/2023	SM



Krazan Testing Laboratory

Consolidation Test

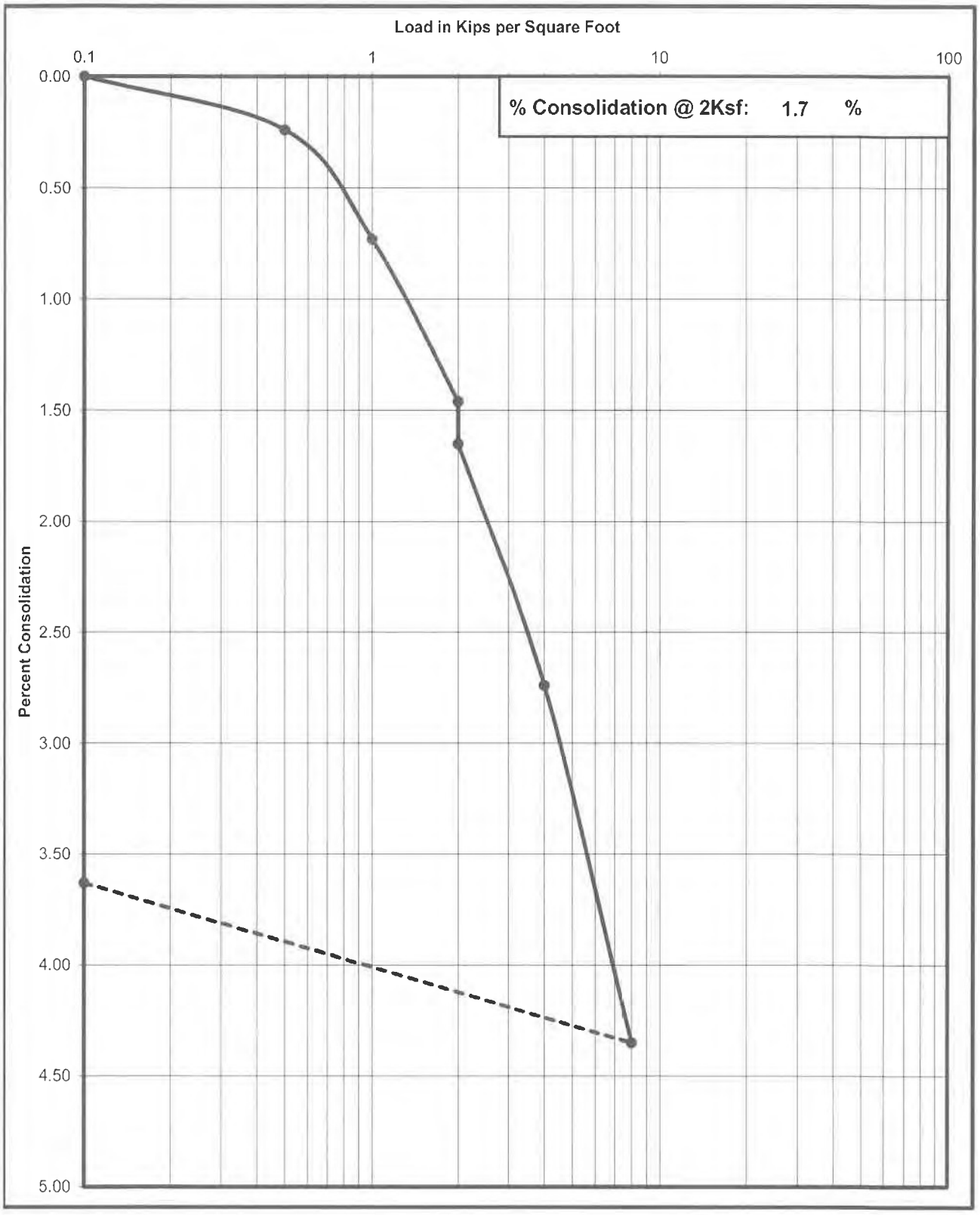
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B8 @ 2-3'	7/27/2023	SM/SP



Krazan Testing Laboratory

Consolidation Test

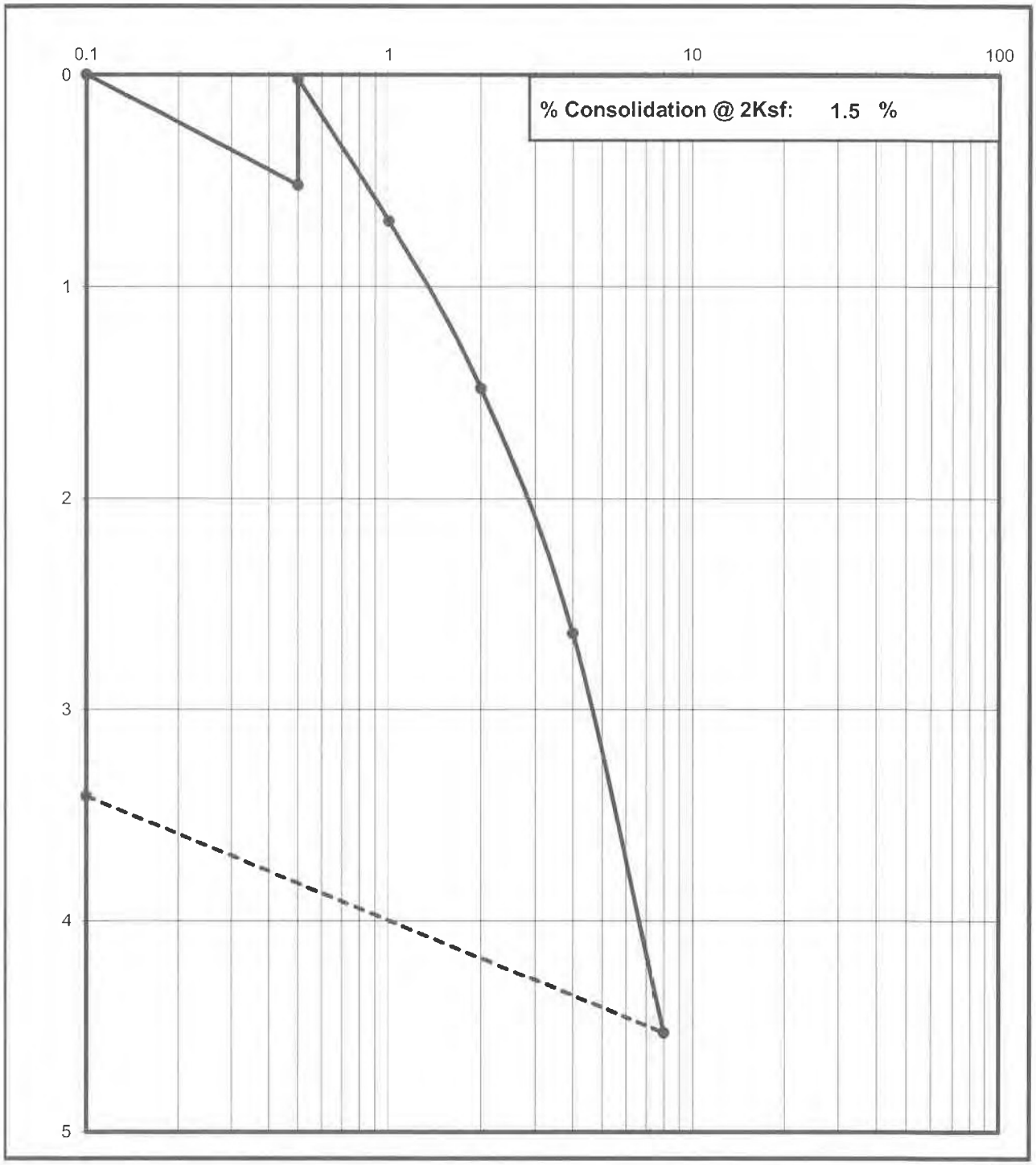
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B8 @ 5-6'	7/27/2023	SP



Krazan Testing Laboratory

Consolidation Test

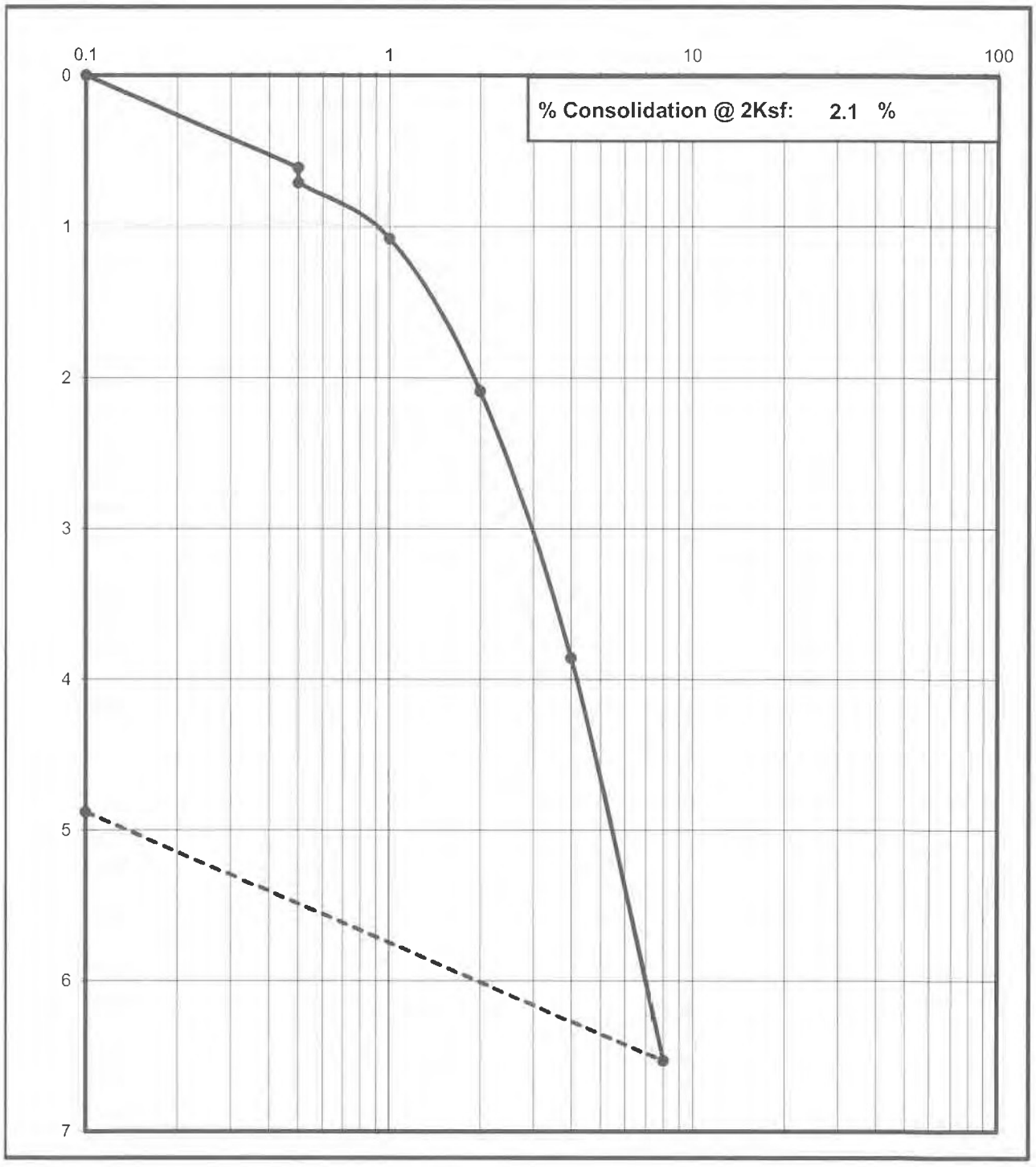
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B13 @ 2-3'	7/27/2023	SC/CL



Krazan Testing Laboratory

Consolidation Test

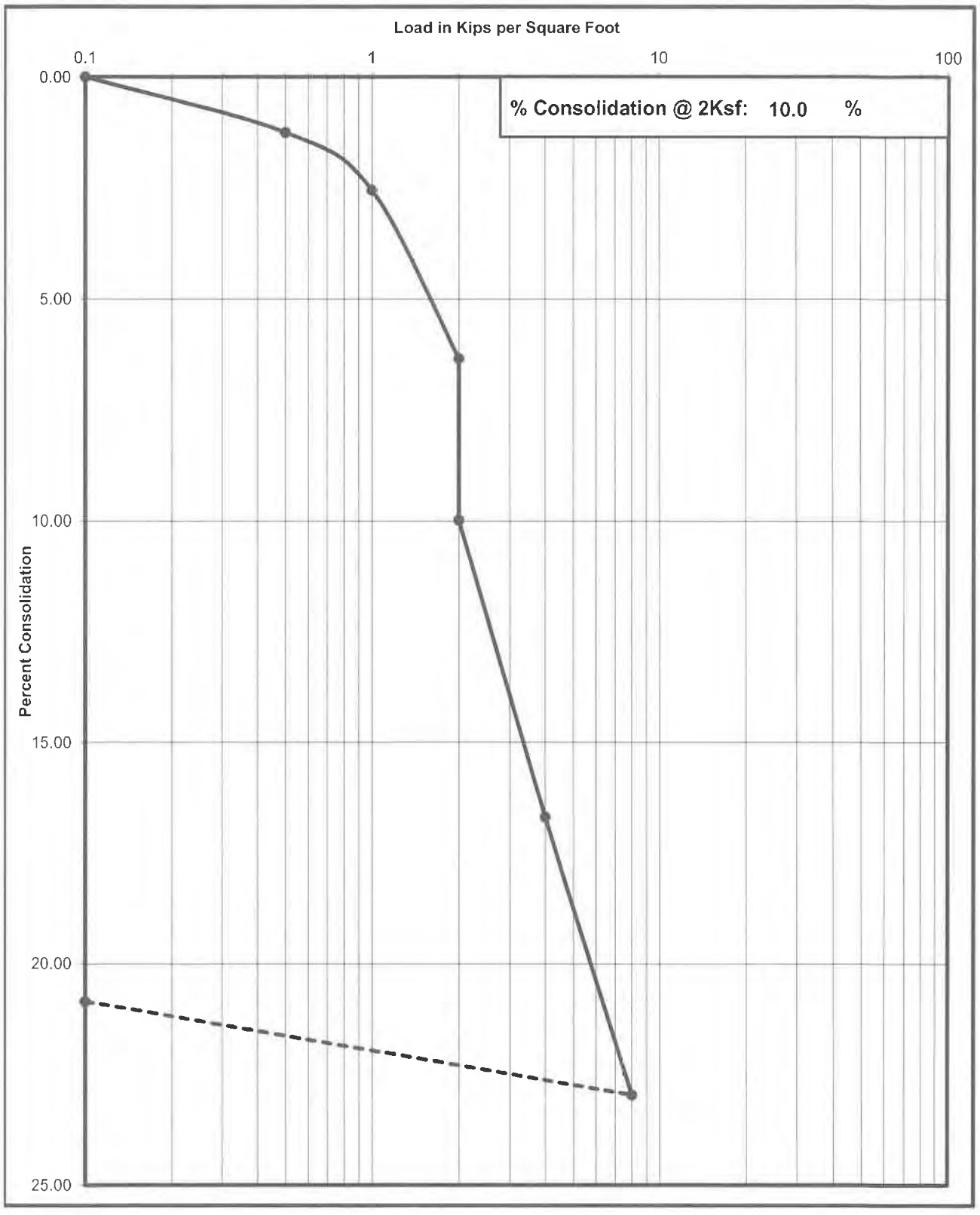
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B13 @ 5-6'	7/27/2023	SC



Krazan Testing Laboratory

Consolidation Test

Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B15 @ 2-3'	7/27/2023	ML



Krazan Testing Laboratory

Consolidation Test

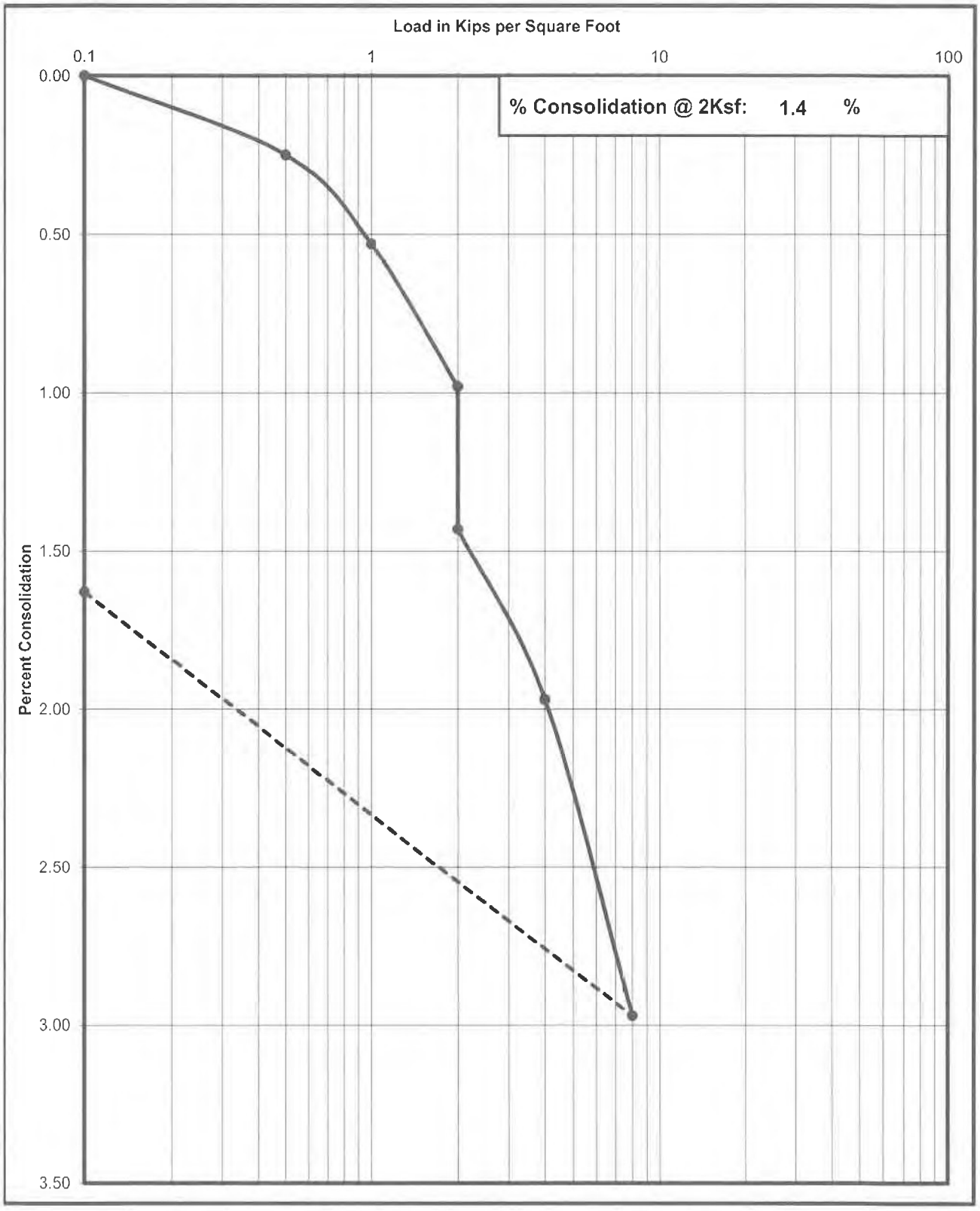
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B15 @ 5-6'	7/27/2023	SM



Krazan Testing Laboratory

Consolidation Test

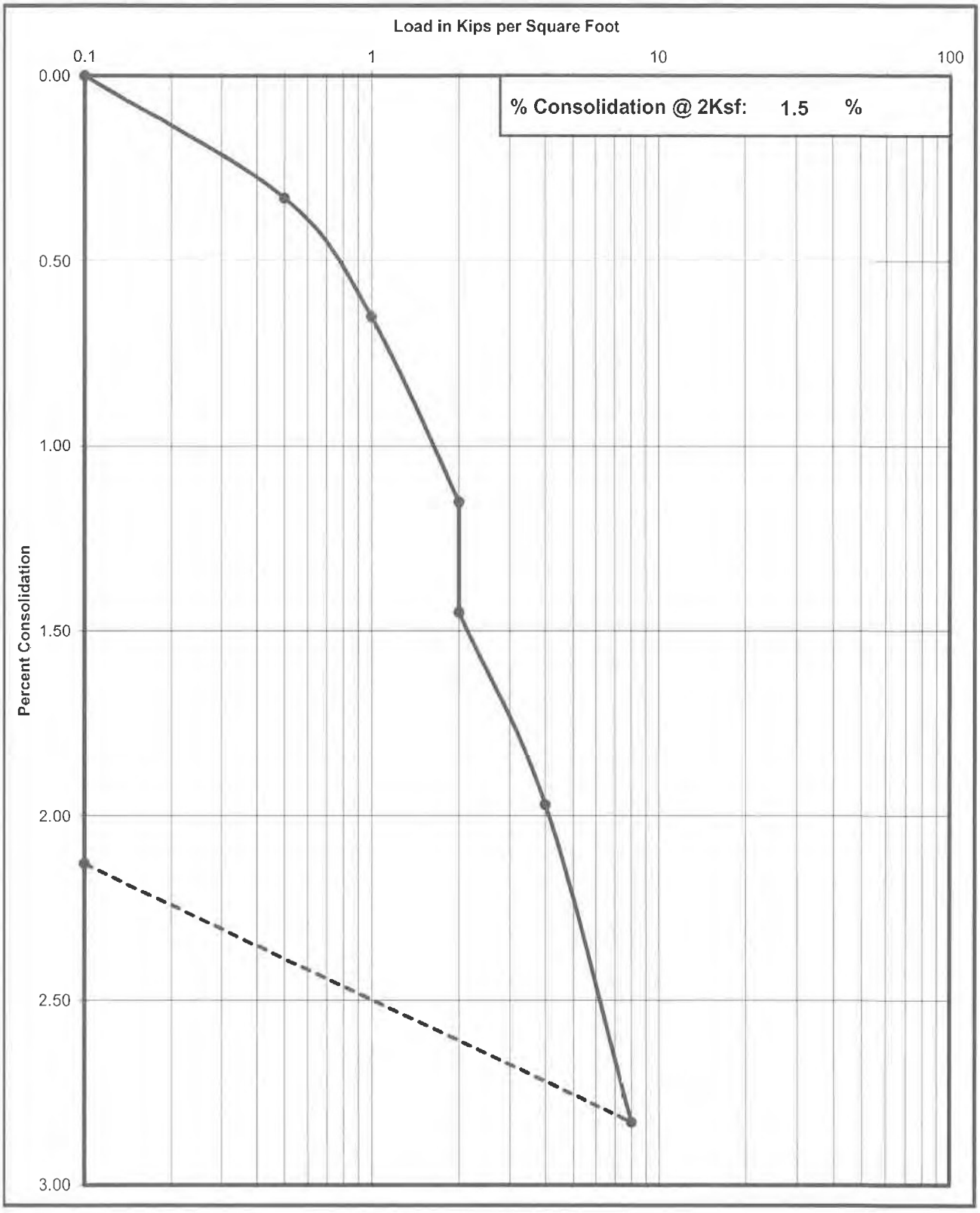
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B17 @ 2-3'	7/26/2023	SM w/ trace of clay



Krazan Testing Laboratory

Consolidation Test

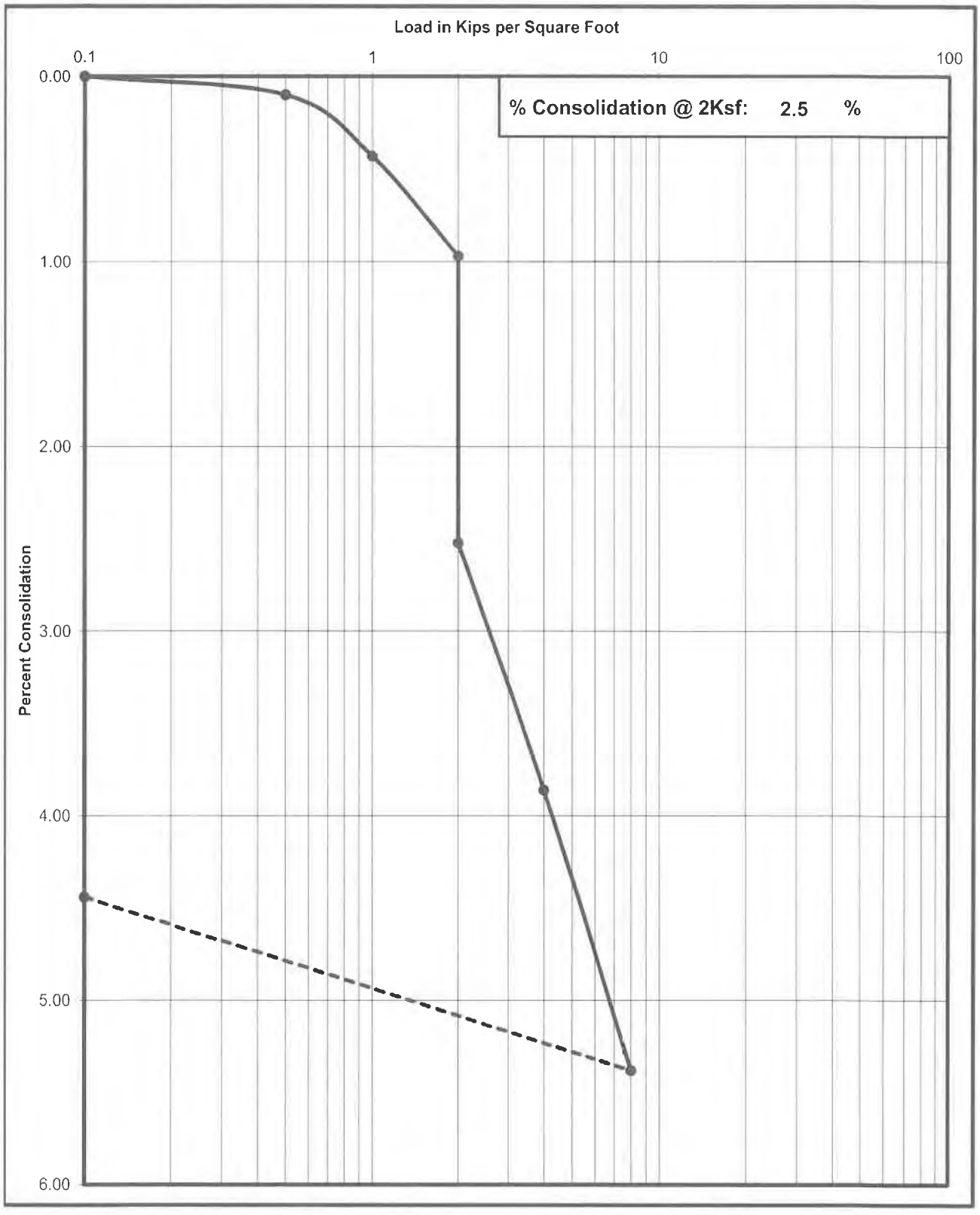
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B17 @ 5-6'	7/26/2023	SM/SC



Krazan Testing Laboratory

Consolidation Test

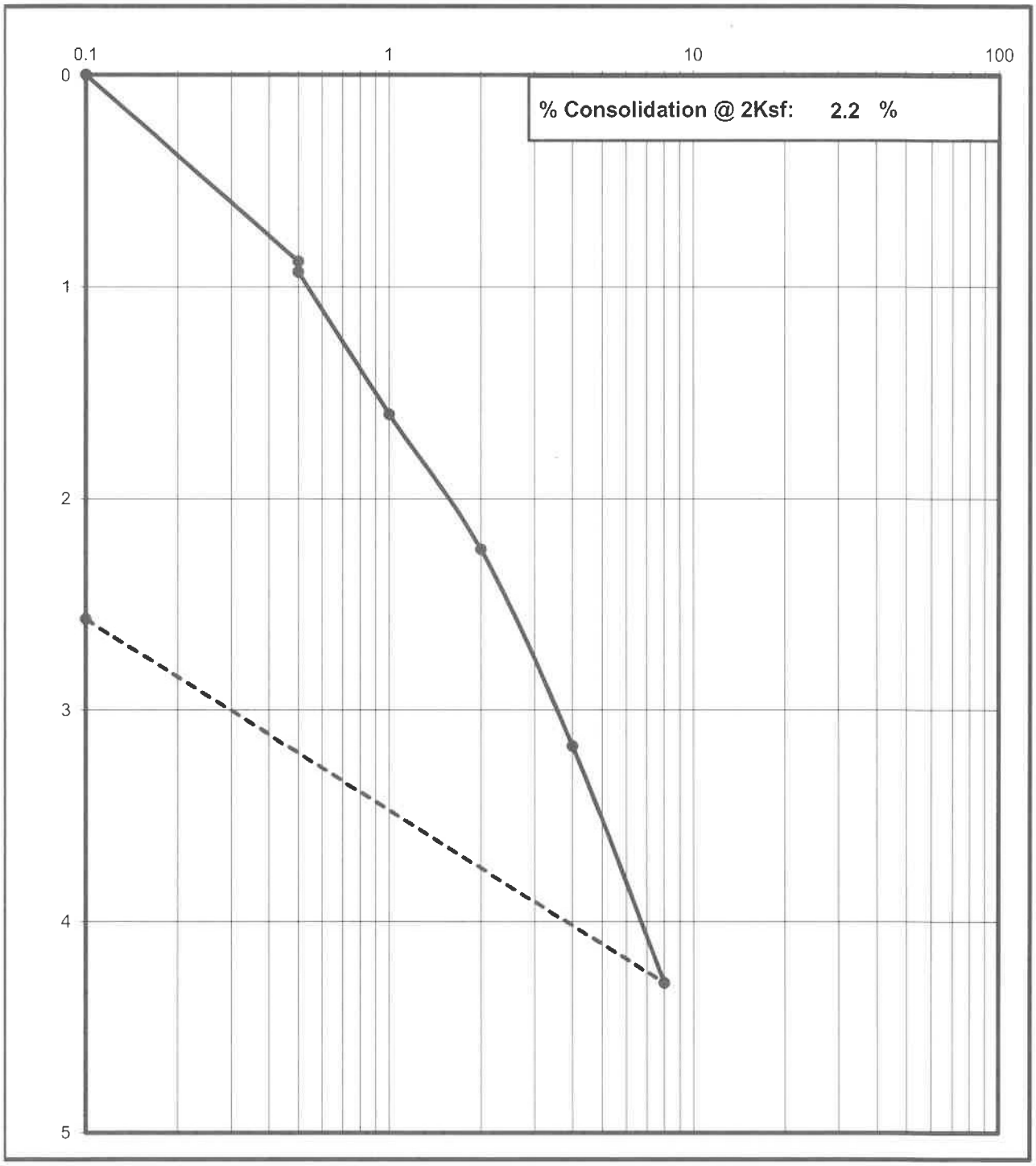
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B20 @ 2-3'	7/26/2023	SM



Krazan Testing Laboratory

Consolidation Test

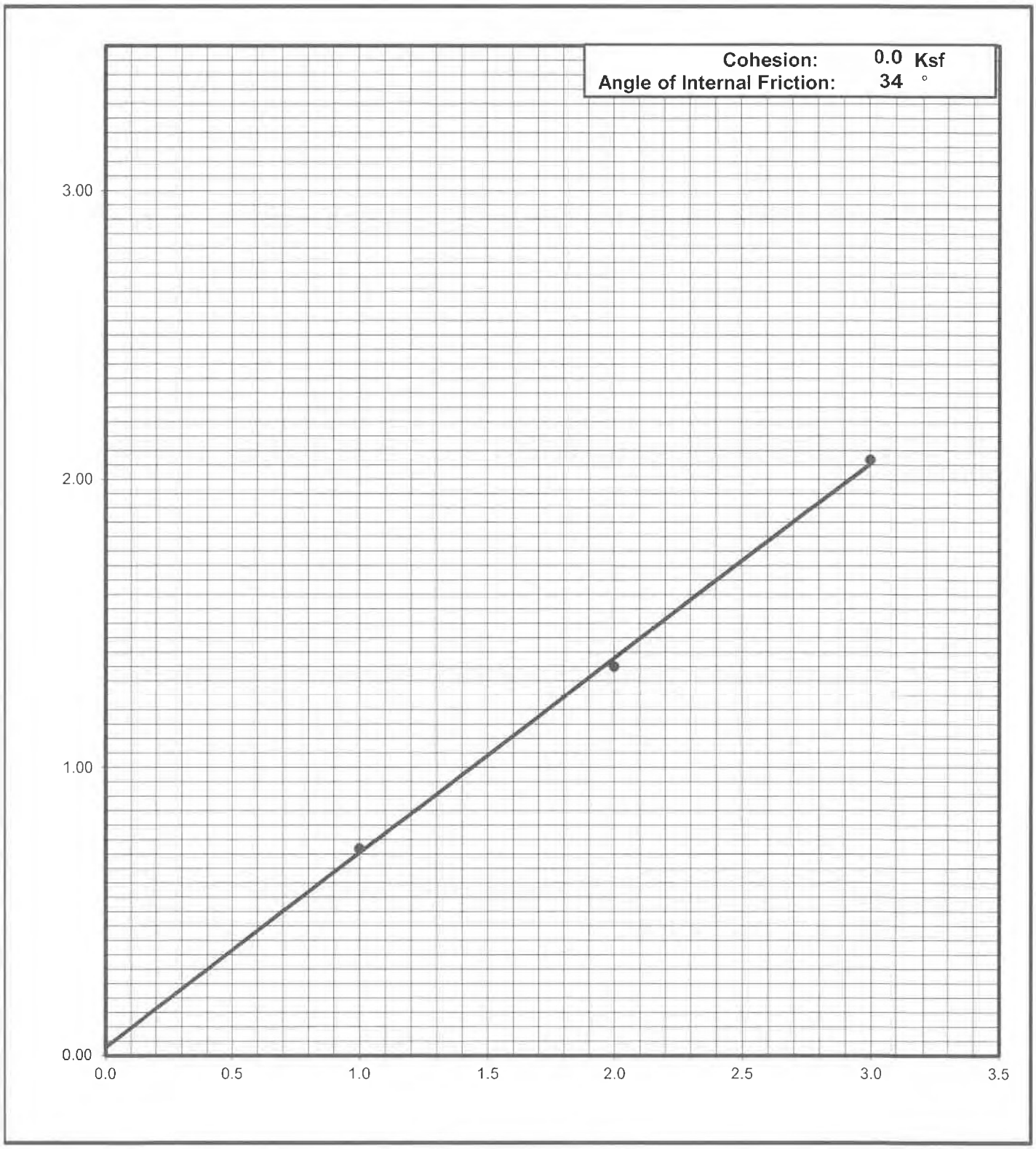
Project No	Boring No. & Depth	Date	Soil Classification
012-22233	B20 @ 5-6'	7/26/2023	SC



Krazan Testing Laboratory

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

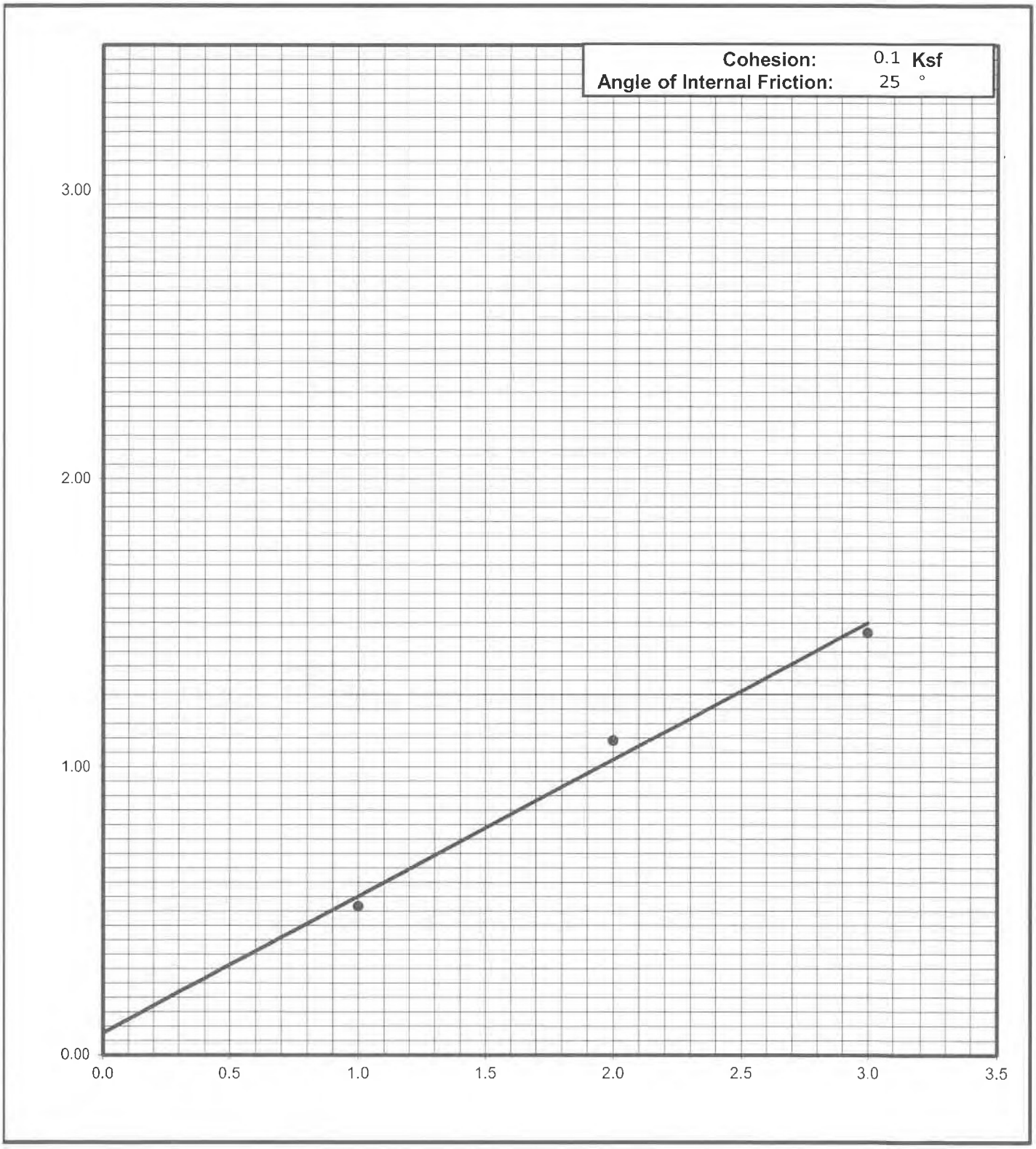
Project Number	Boring No. & Depth	Soil Type	Date
012-22233	B2 @ 2-3'	SM	7/27/2023



Krazan Testing Laboratory

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

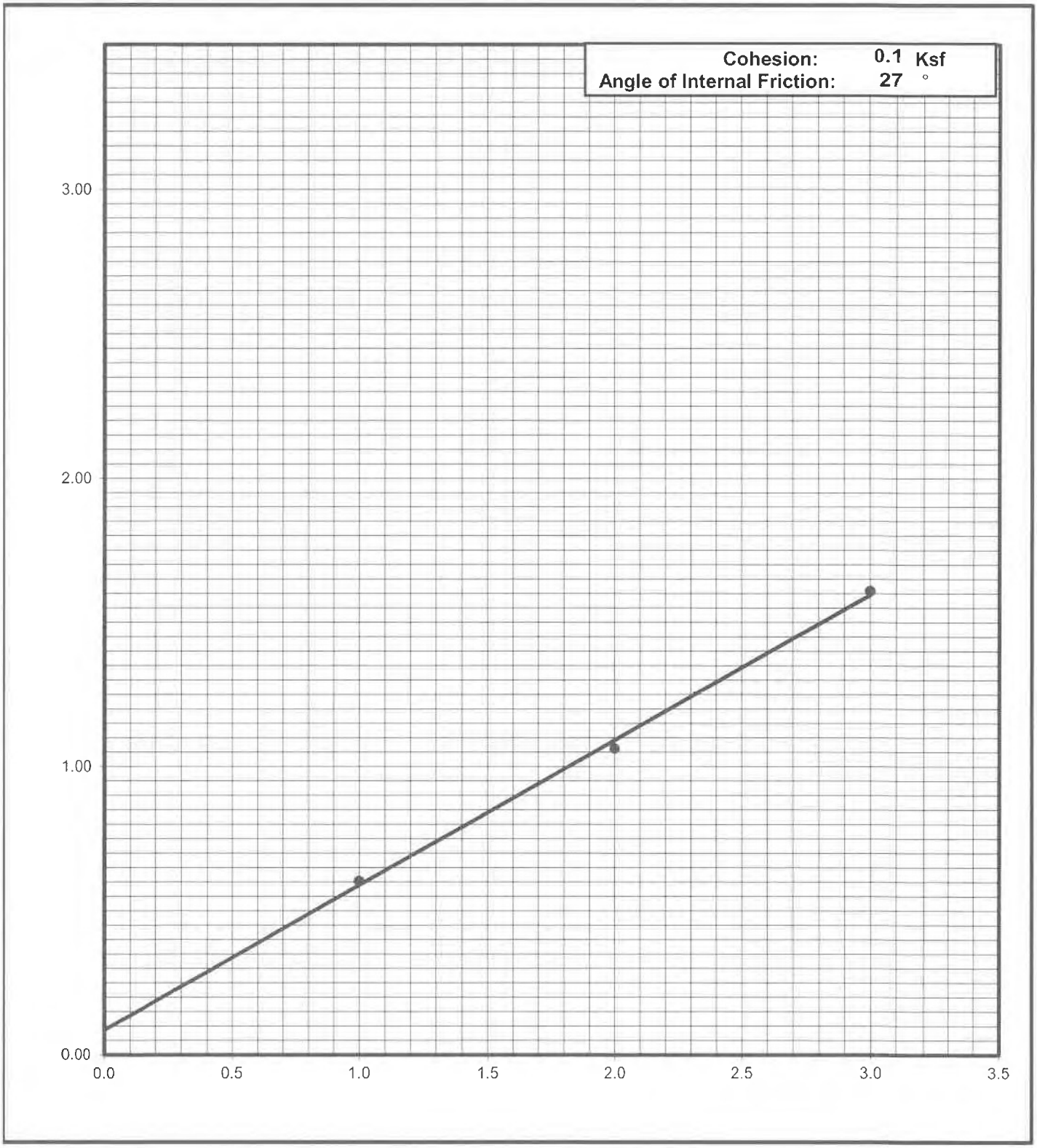
Project Number	Boring No. & Depth	Soil Type	Date
012-22233	B7 @ 2-3'	SM/ML	7/27/2023



Krazan Testing Laboratory

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

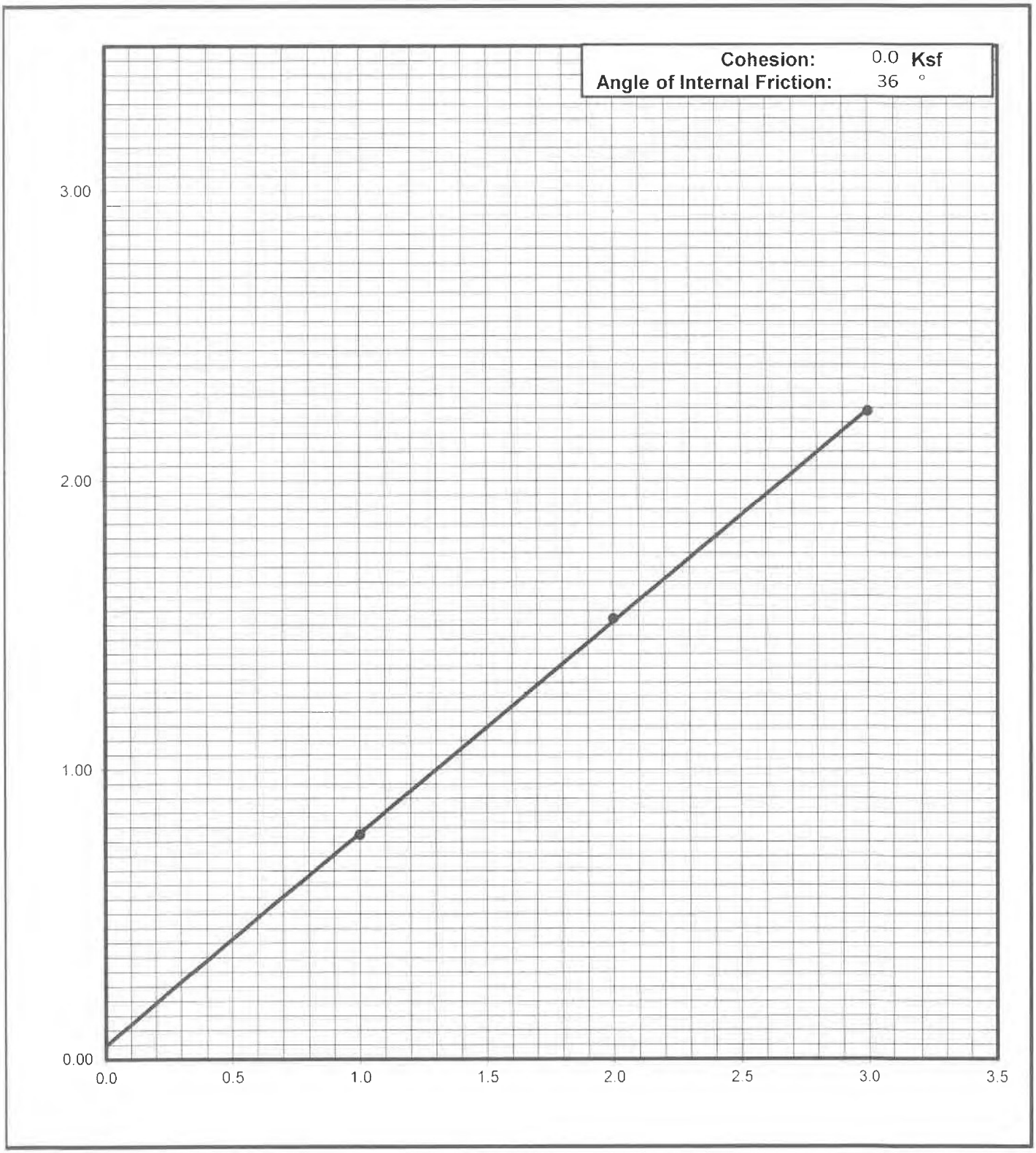
Project Number	Boring No. & Depth	Soil Type	Date
012-22233	B14 @ 2-3'	ML	7/27/2023



Krazan Testing Laboratory

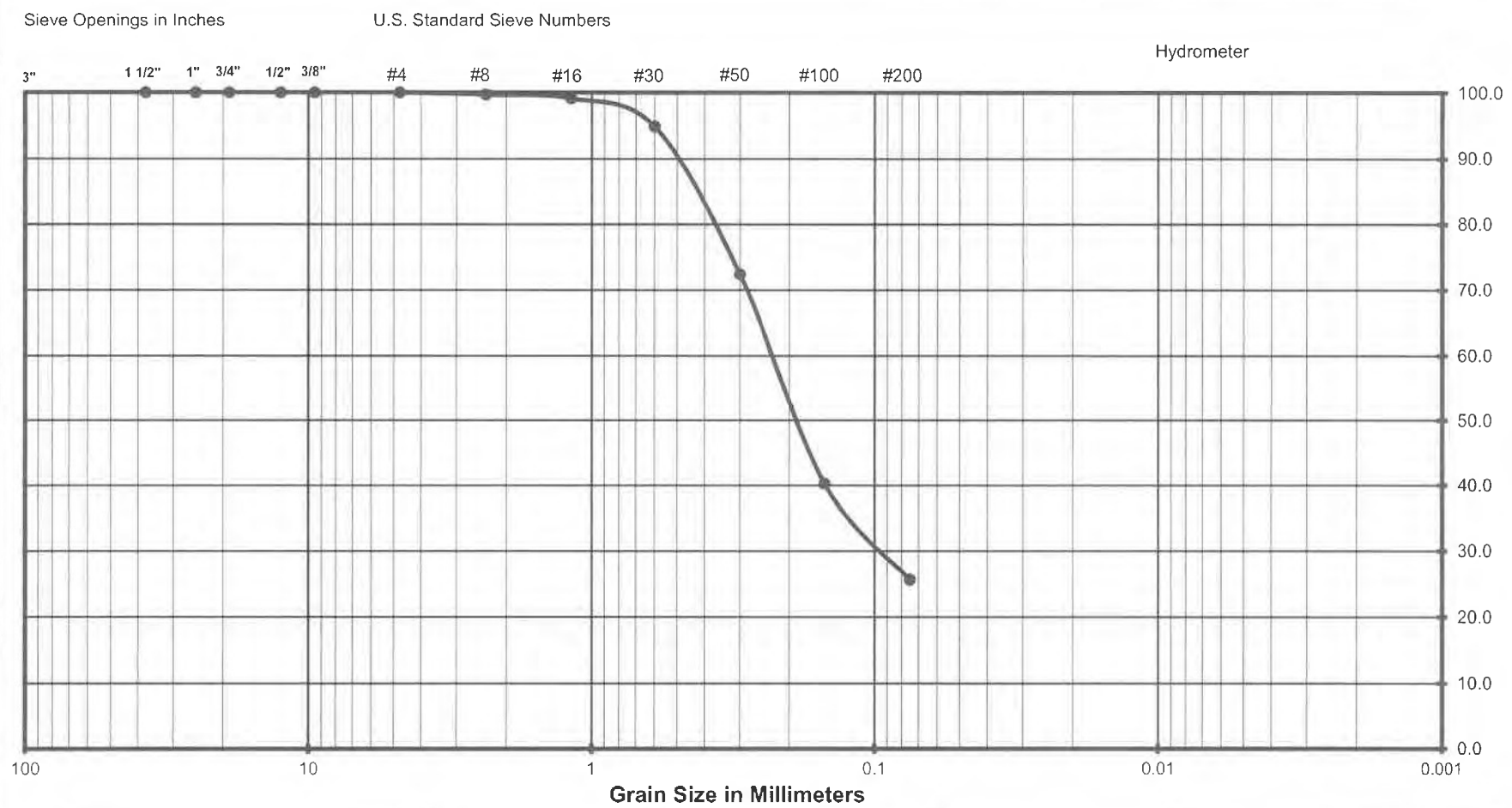
Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

Project Number	Boring No. & Depth	Soil Type	Date
012-22233	B19 @ 2-3'	SM	7/26/2023



Krazan Testing Laboratory

Grain Size Analysis

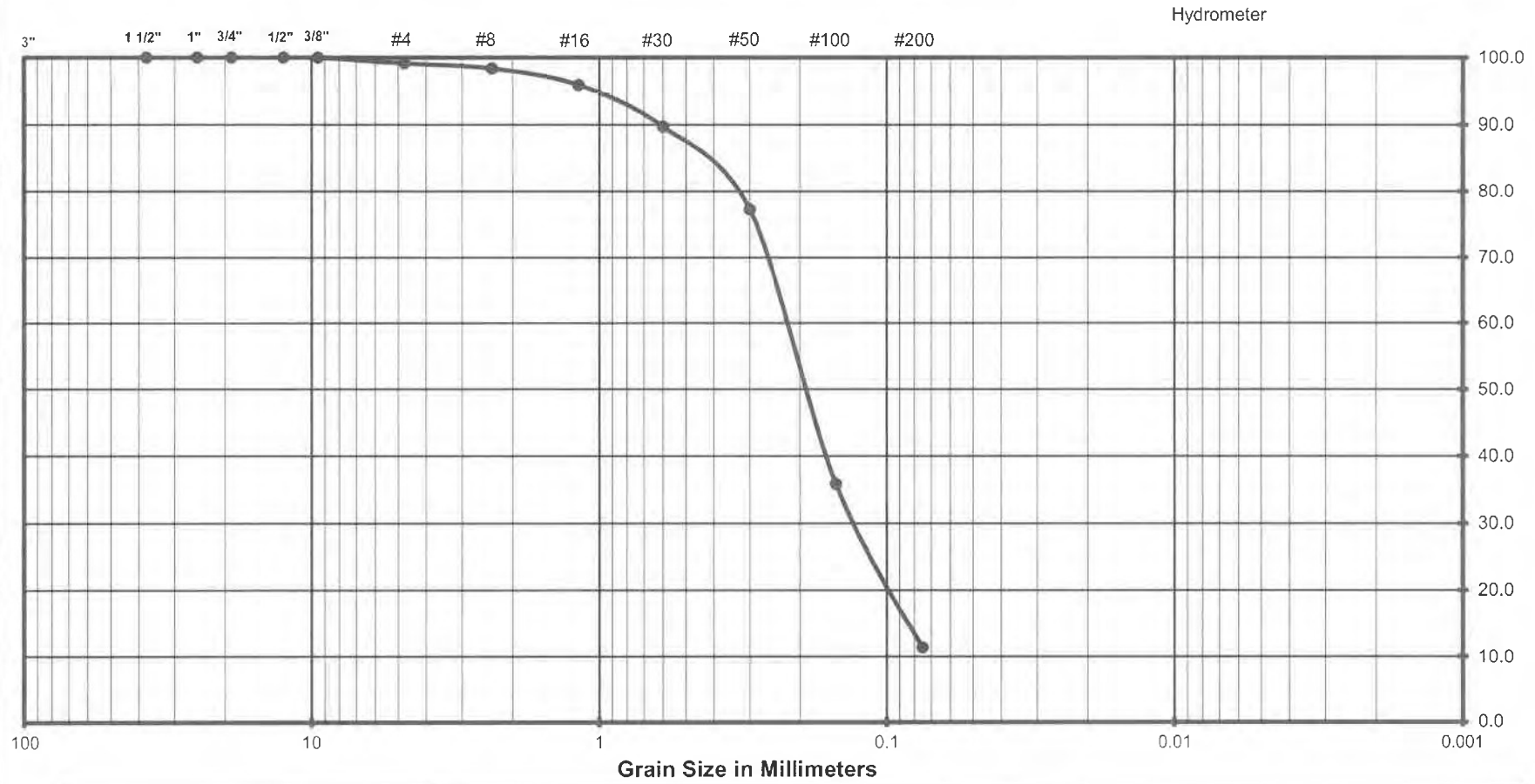


(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22233
Soil Classification	SM
Sample Number	B1 @ 2-3'

Krazan Testing Laboratory

Grain Size Analysis



(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22233
Soil Classification	SM/SP
Sample Number	B8 @ 2-3'

Krazan Testing Laboratory

Grain Size Analysis

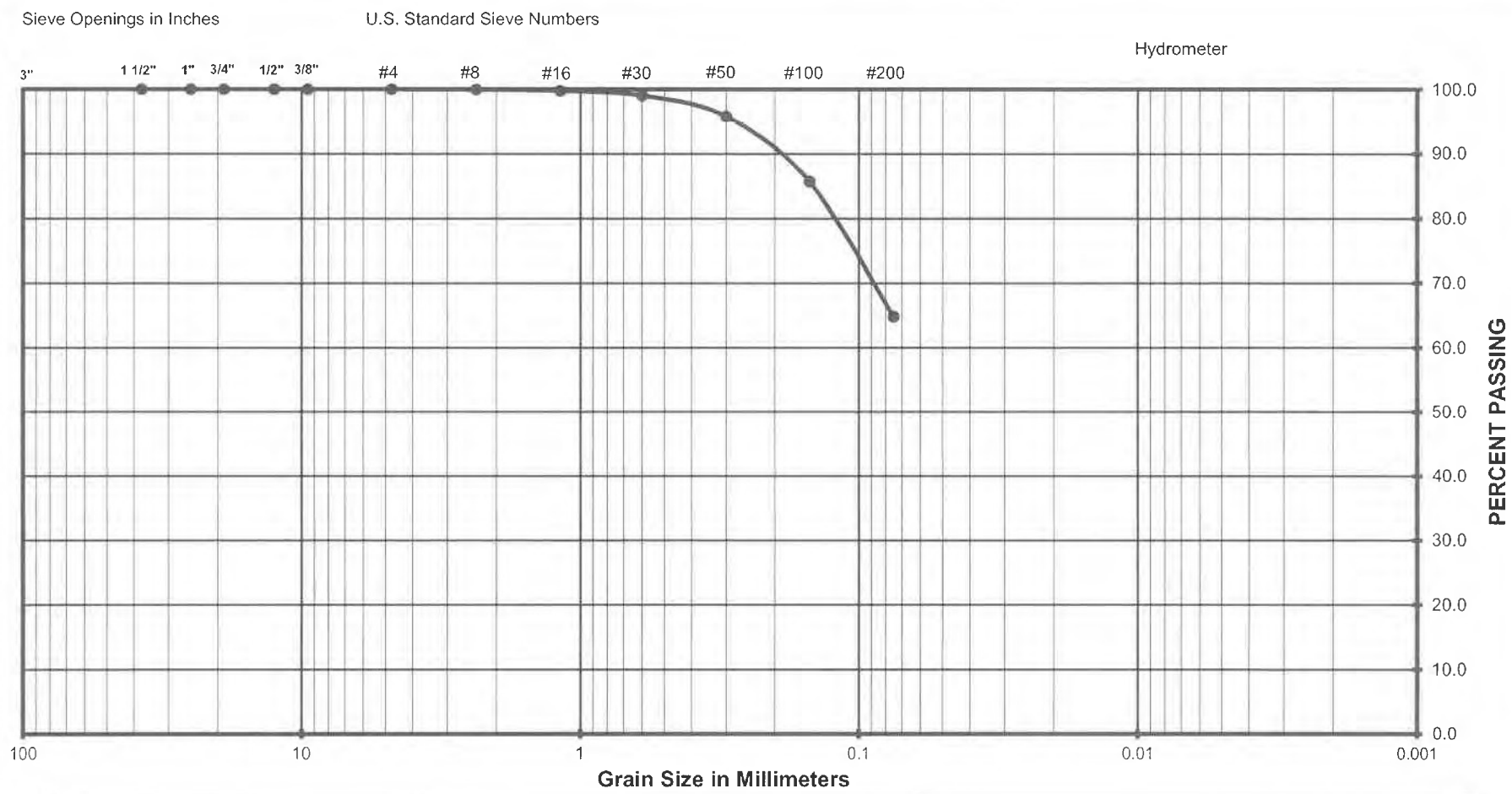


(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22233
Soil Classification	SC/CL
Sample Number	B13 @ 2-3'

Krazan Testing Laboratory

Grain Size Analysis

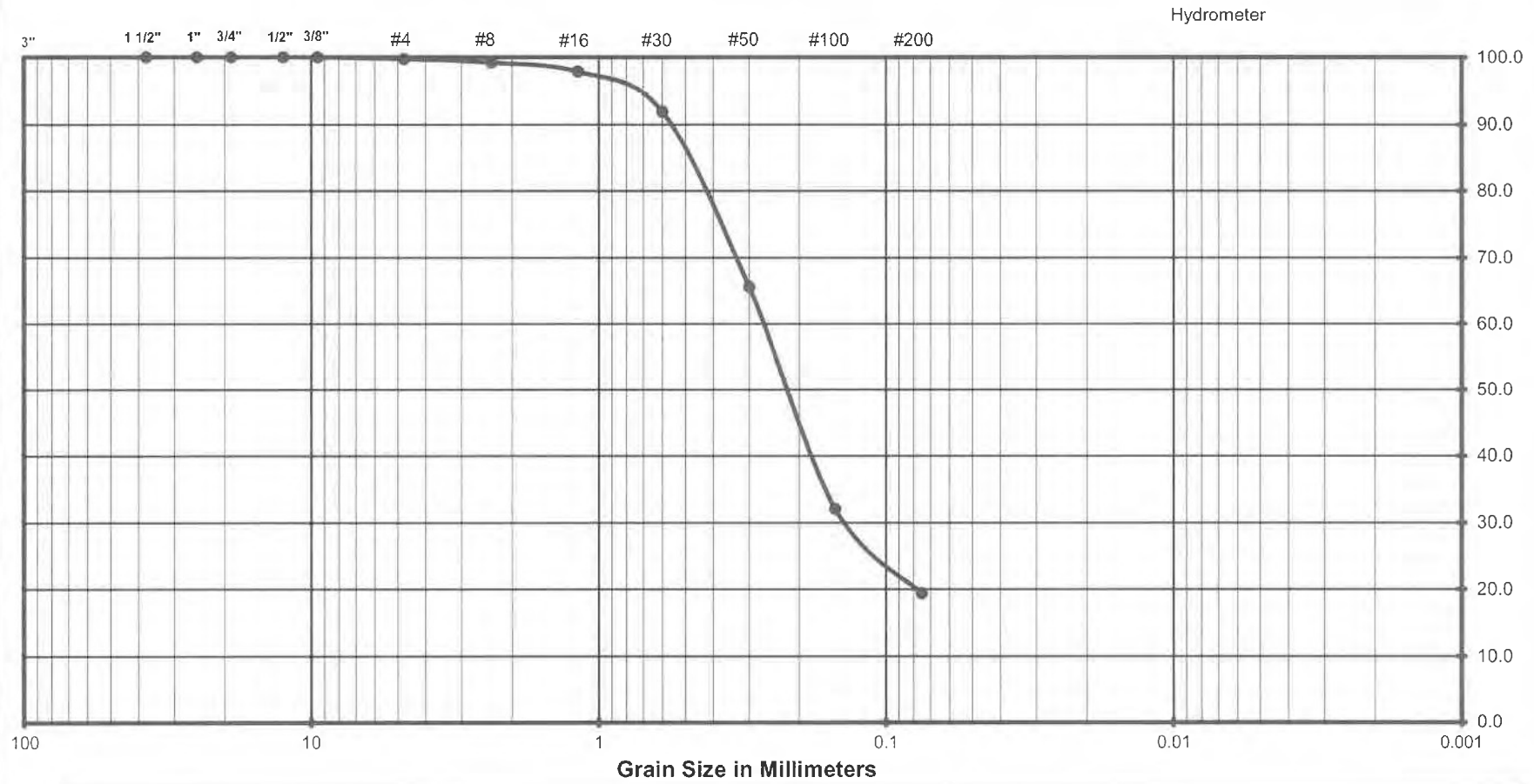


(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22233
Soil Classification	ML
Sample Number	B15 @ 2-3'

Krazan Testing Laboratory

Grain Size Analysis

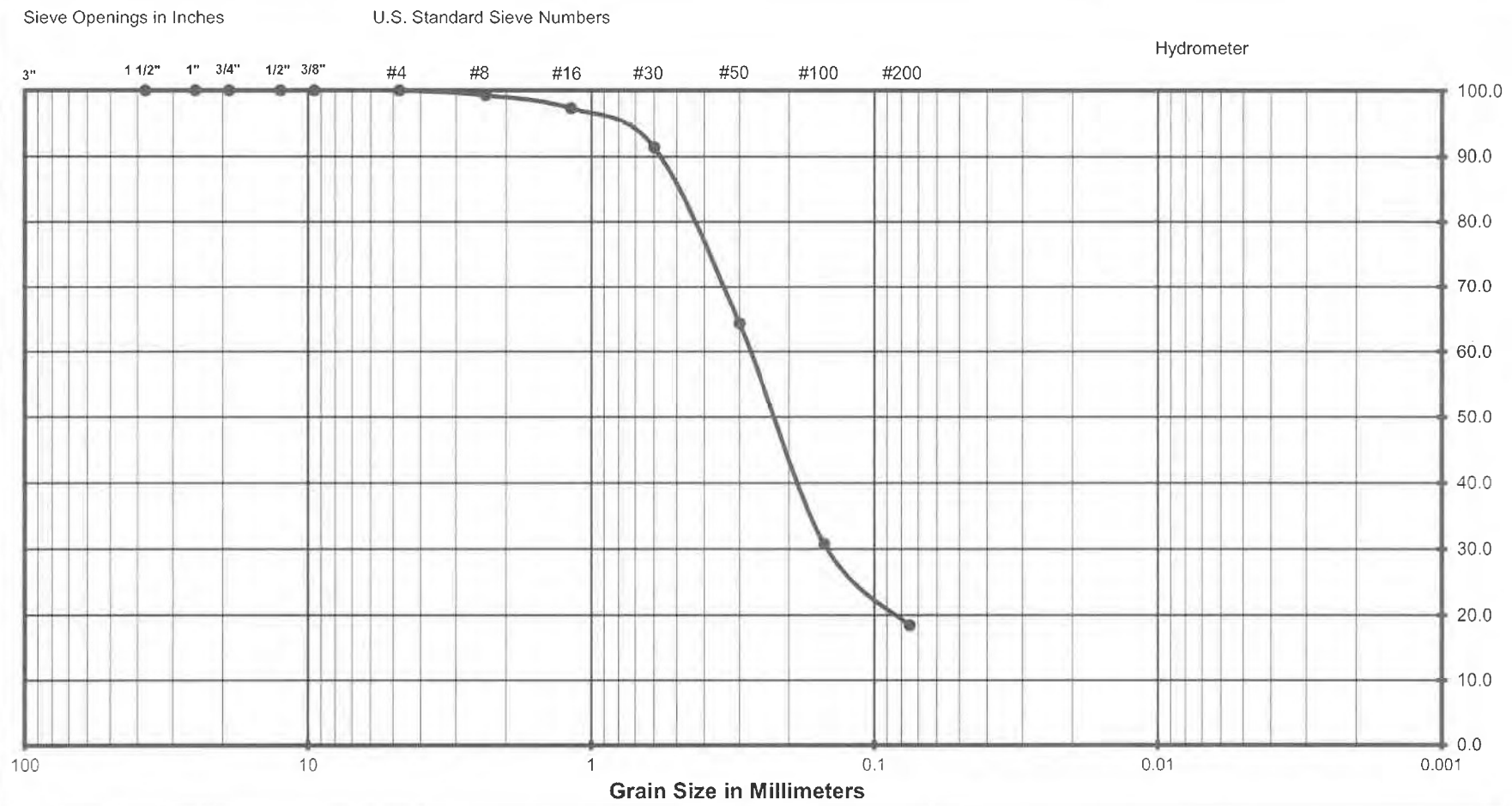


(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22233
Soil Classification	SM w/ trece of clay
Sample Number	B17 @ 2-3'

Krazan Testing Laboratory

Grain Size Analysis



(Unified Soils Classification)

Project Name	Triangle Development
Project Number	012-22233
Soil Classification	SM
Sample Number	B20 @ 2-3'

Krazan Testing Laboratory

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

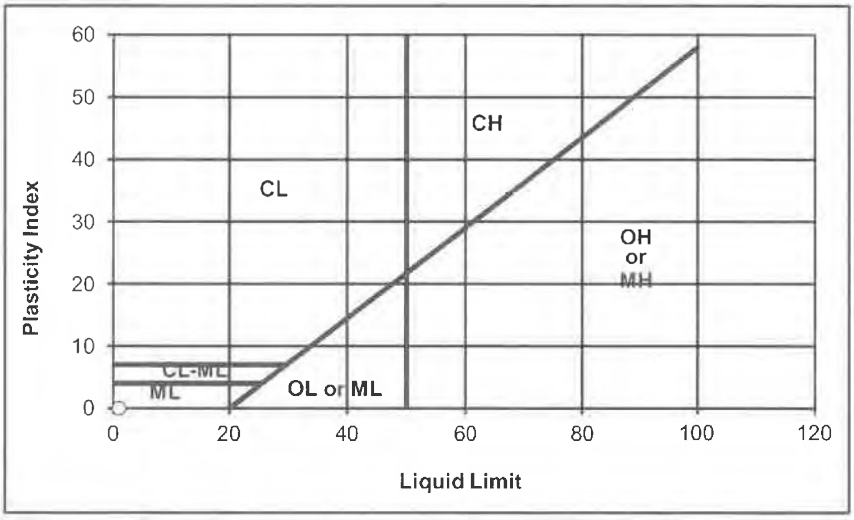
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 10/30/2023
Sampled By: DA
Sample Number: -
Sample Location: B22 @ 30-31'
Sample Description: SM

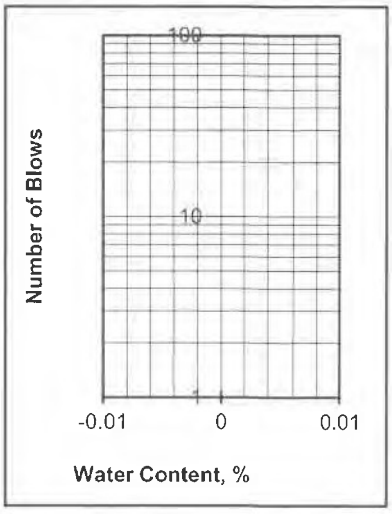
Date Tested: 11/7/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

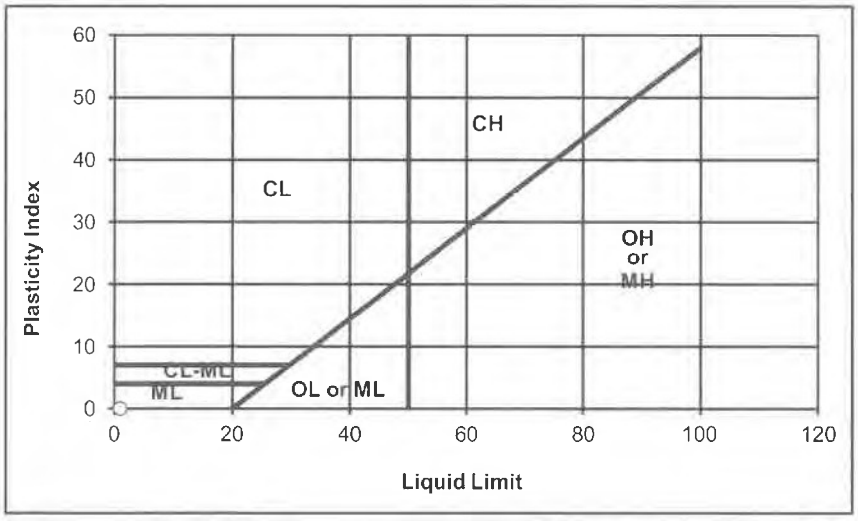
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 10/30/2023
Sampled By: DA
Sample Number: -
Sample Location: B22 @ 35-36'
Sample Description: SM/SP

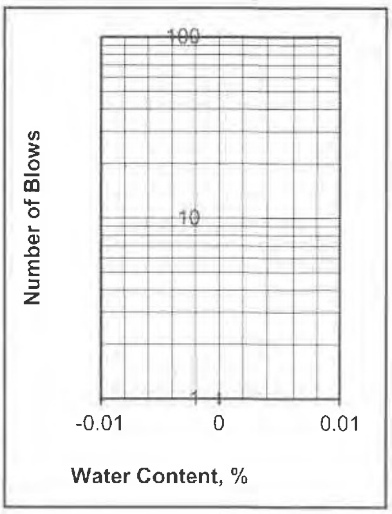
Date Tested: 11/7/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

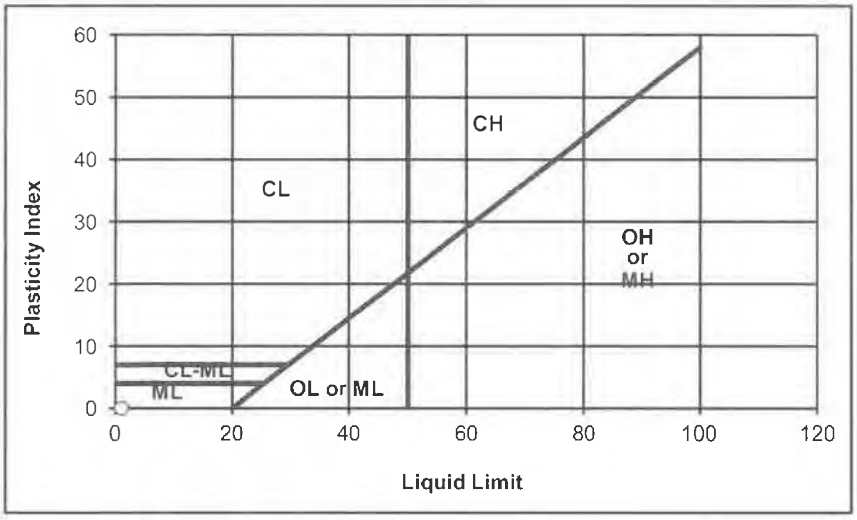
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 10/30/2023
Sampled By: DA
Sample Number: -
Sample Location: B22 @ 40-41'
Sample Description: SM

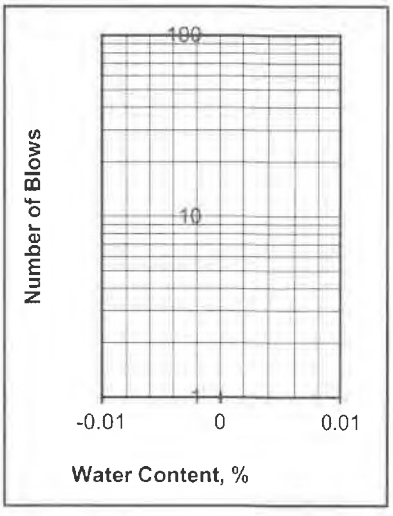
Date Tested: 11/7/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

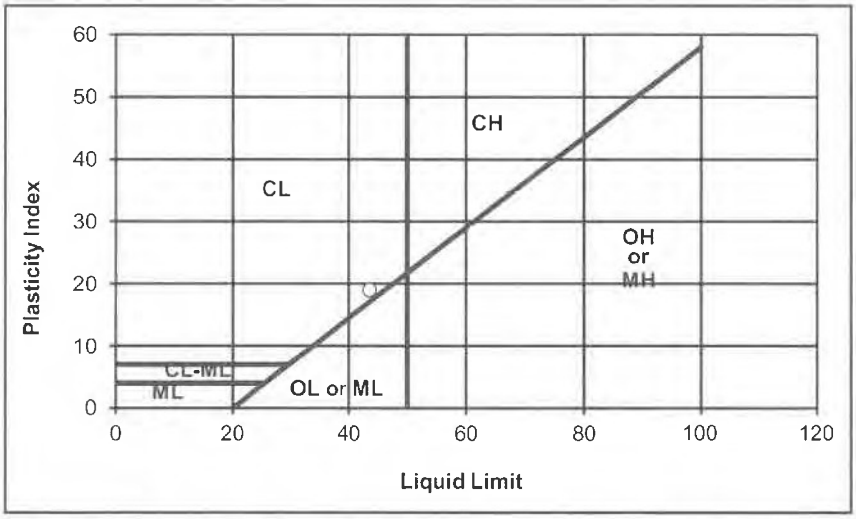
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 10/30/2023
Sampled By: DA
Sample Number: -
Sample Location: B22 @ 45-46'
Sample Description: SC/CL

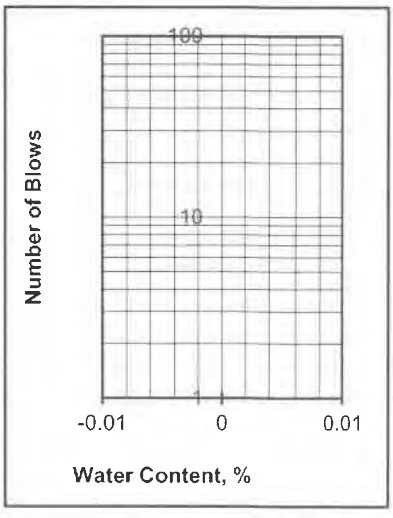
Date Tested: 11/7/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	35.87	33.34		43.35	32.99	
Weight of Dry Soil & Tare (g)	33.64	31.67		37.80	29.16	
Weight of Tare (g)	24.69	24.95		24.98	20.42	
Weight of water (g)	2.23	1.67		5.55	3.83	
Weight of Dry Soil (g)	8.95	6.72		12.82	8.74	
Water Content (% of dry wt.)	24.9%	24.9%		43.3%	43.8%	
Number of Blows				25	25	

Plastic Limit : 25 **Liquid Limit : 44**

Plasticity Index : 19
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

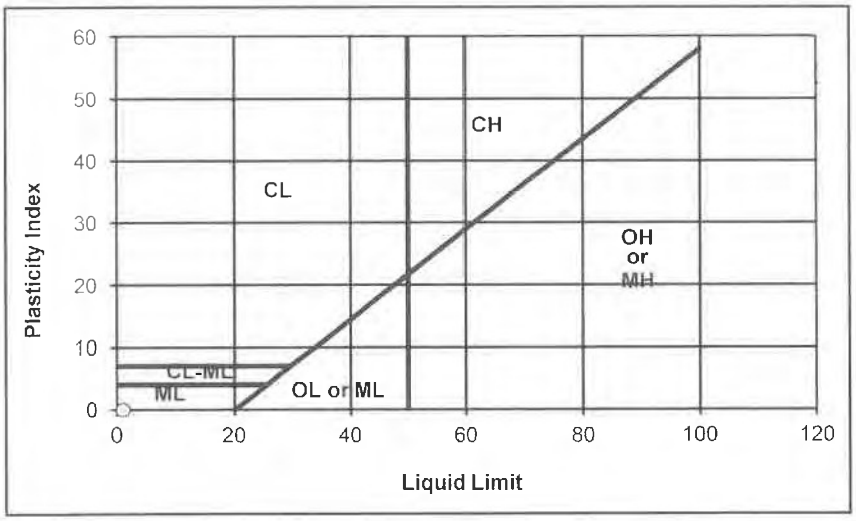
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 10/30/2023
Sampled By: DA
Sample Number: -
Sample Location: B23 @ 35-36'
Sample Description: SP

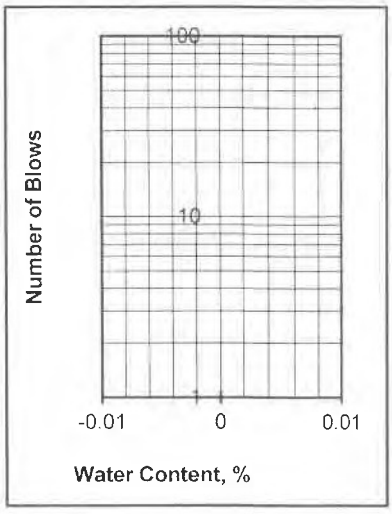
Date Tested: 11/7/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

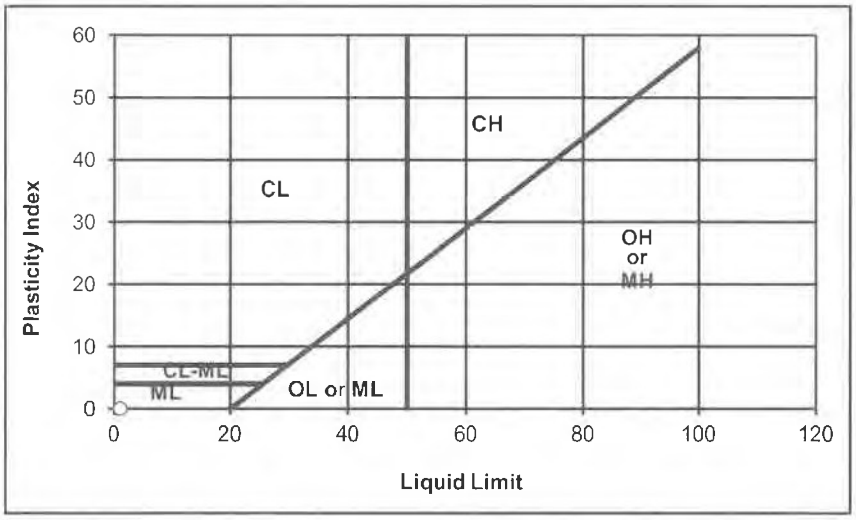
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 10/30/2023
Sampled By: DA
Sample Number: -
Sample Location: B23 @ 40-41'
Sample Description: ML

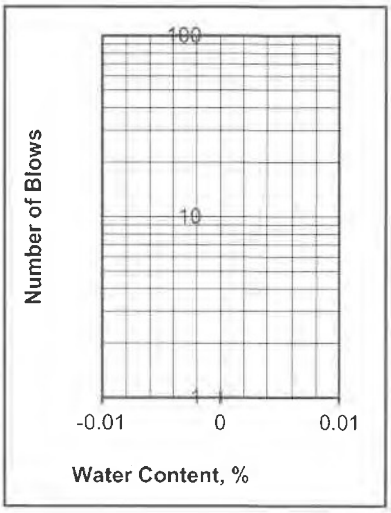
Date Tested: 11/7/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

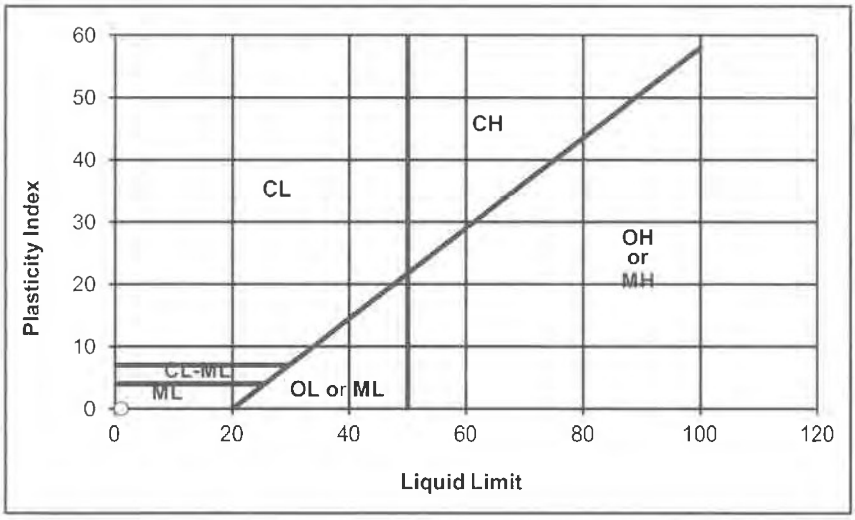
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 10/30/2023
Sampled By: DA
Sample Number: -
Sample Location: B23 @ 45-46'
Sample Description: ML

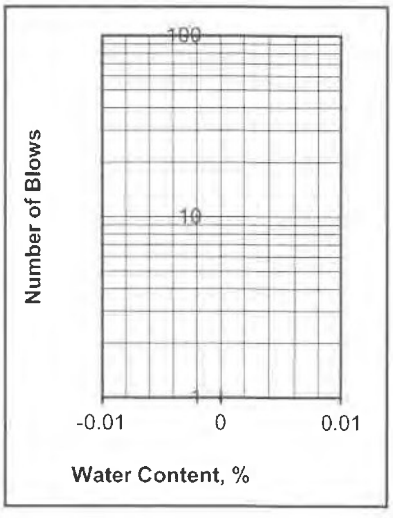
Date Tested: 11/7/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

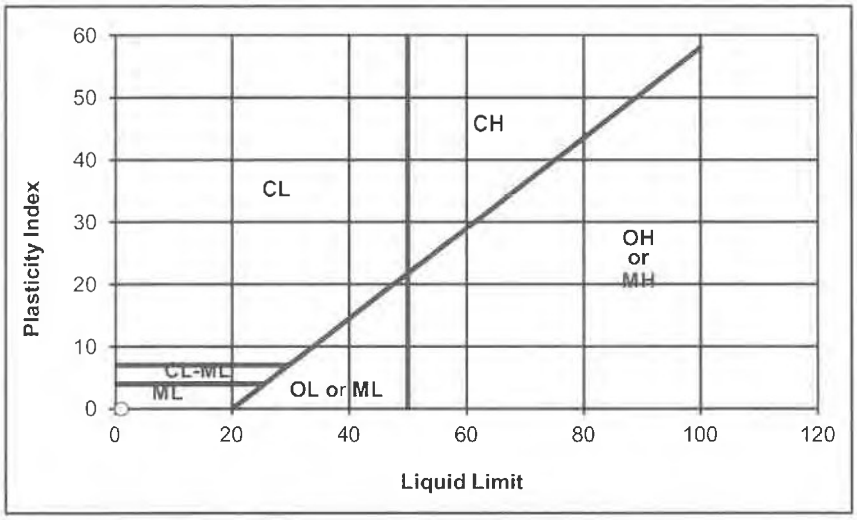
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 10/30/2023
Sampled By: DA
Sample Number: -
Sample Location: B24 @ 15-16'
Sample Description: SM/SP

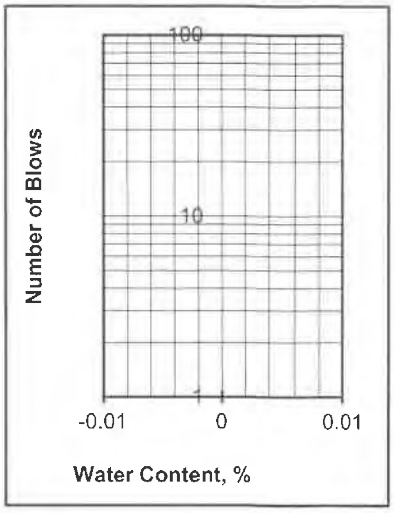
Date Tested: 11/7/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

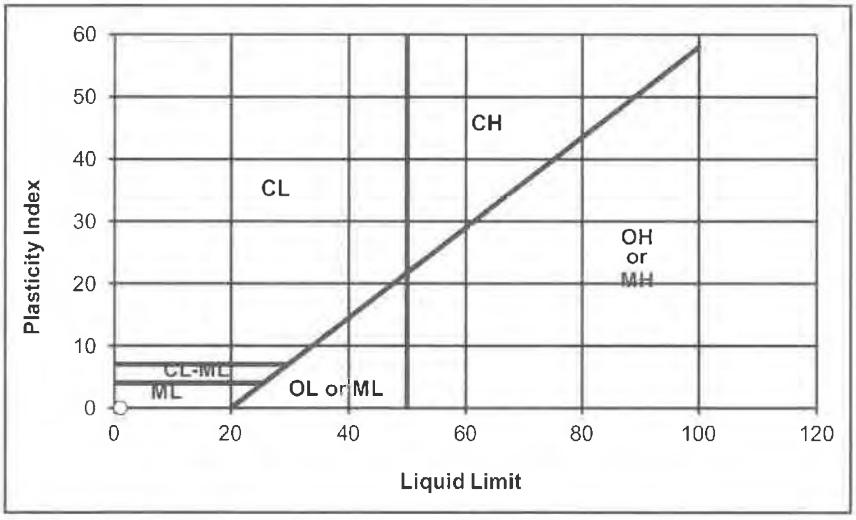
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 10/30/2023
Sampled By: DA
Sample Number: -
Sample Location: B24 @ 40-41'
Sample Description: SM/SP

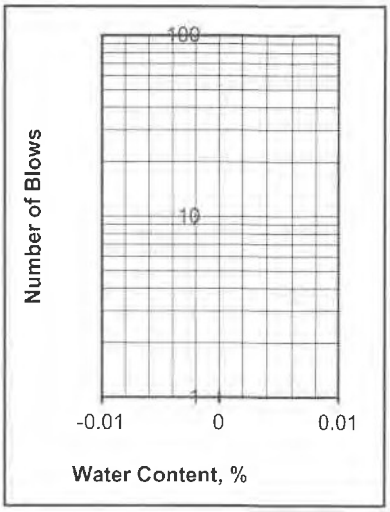
Date Tested: 11/7/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

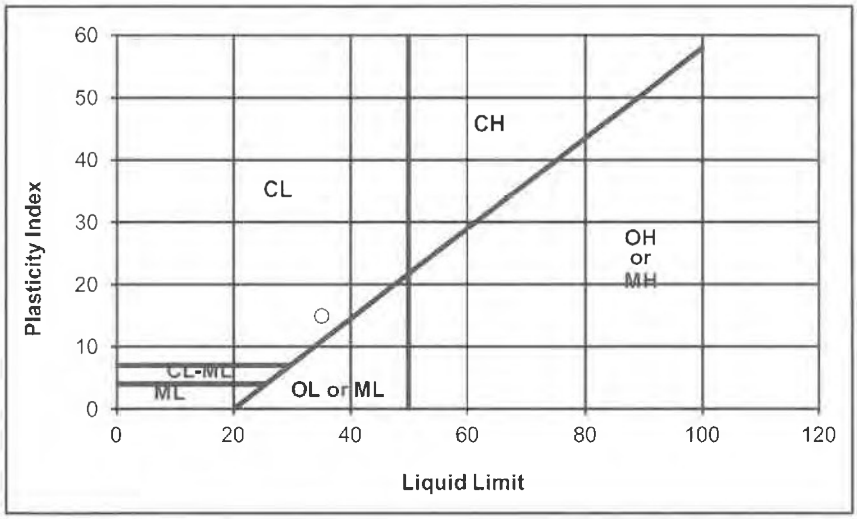
Project: **Triangle Development**
Project Number: **012-22233**
Date Sampled: 10/30/2023
Sampled By: DA
Sample Number: -
Sample Location: B24 @ 45-46'
Sample Description: SC

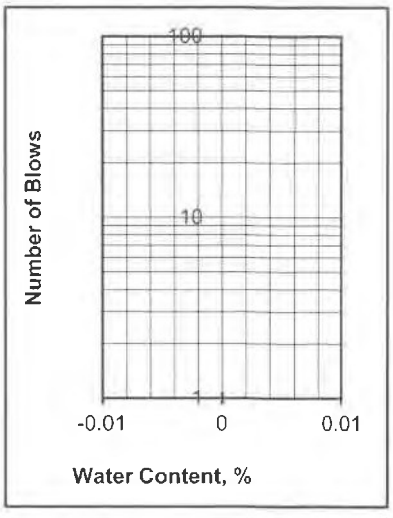
Date Tested: 11/7/2023
Tested By: JM
Verified By: JG

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	36.73	35.86		30.58	33.81	
Weight of Dry Soil & Tare (g)	34.78	34.01		27.85	28.53	
Weight of Tare (g)	24.86	24.73		20.15	13.30	
Weight of water (g)	1.95	1.85		2.73	5.28	
Weight of Dry Soil (g)	9.92	9.28		7.70	15.23	
Water Content (% of dry wt.)	19.7%	19.9%		35.5%	34.7%	
Number of Blows				25	25	

Plastic Limit : 20 **Liquid Limit : 35**

Plasticity Index : 15
Unified Soil Classification : CL **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

APPENDIX B

EARTHWORK SPECIFICATIONS

GENERAL

When the text of the report conflicts with the general specifications in this appendix, the recommendations in the report have precedence.

SCOPE OF WORK: These specifications and applicable plans pertain to and include all earthwork associated with the site rough grading, including but not limited to the furnishing of all labor, tools, and equipment necessary for site clearing and grubbing, stripping, preparation of foundation materials for receiving fill, excavation, processing, placement and compaction of fill and backfill materials to the lines and grades shown on the project grading plans, and disposal of excess materials.

PERFORMANCE: The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications. This work shall be inspected and tested by a representative of Krazan and Associates, Inc., hereinafter known as the Soils Engineer and/or Testing Agency. Attainment of design grades when achieved shall be certified to by the project Civil Engineer. Both the Soils Engineer and the Civil Engineer are the Owner's representatives. If the Contractor should fail to meet the technical or design requirements embodied in this document and on the applicable plans, he shall make the necessary readjustments until all work is deemed satisfactory as determined by both the Soils Engineer and the Civil Engineer. No deviation from these specifications shall be made except upon written approval of the Soils Engineer, Civil Engineer or project Architect.

No earthwork shall be performed without the physical presence or approval of the Soils Engineer. The Contractor shall notify the Soils Engineer at least 2 working days prior to the commencement of any aspect of the site earthwork.

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineers harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the soil negligence of the Owner or the Engineers.

TECHNICAL REQUIREMENTS: All compacted materials shall be densified to a density not less that 90 percent relative compaction based on ASTM Test Method D1557-78, UBC or CAL-216, as specified in the technical portion of the Soil Engineer's report. The location and frequency of field density tests shall be as determined by the Soils Engineer. The results of these tests and compliance with these specifications shall be the basis upon which satisfactory completion of work will be judged by the Soils Engineer.

SOILS AND FOUNDATION CONDITIONS: The Contractor is presumed to have visited the site and to have familiarized himself with existing site conditions and the contents of the data presented in the soil report.

The Contractor shall make his own interpretation of the data contained in said report, and the Contractor shall not be relieved of liability under the Contractor for any loss sustained as a result of any variance between conditions indicated by or deduced from said report and the actual conditions encountered during the progress of the work.

DUST CONTROL: The work includes dust control as required for the alleviation or prevention of any dust nuisance on or about the site or the borrow area, or off-site if caused by the Contractor's operation either during the performance of the earthwork or resulting from the conditions in which the Contractor leaves the site. The Contractor shall assume all liability, including court costs of codefendants, for all claims related to dust or windblown materials attributable to his work.

SITE PREPARATION

Site preparation shall consist of site clearing and grubbing and the preparations of foundation materials for receiving fill.

CLEARING AND GRUBBING: The Contractor shall accept the site in this present condition and shall demolish and/or remove from the area of designated project, earthwork all structures, both surface and subsurface, trees, brush, roots, debris, organic matter, and all other matter determined by the Soils Engineer to be deleterious. Such materials shall become the property of the Contractor and shall be removed from the site.

Tree root systems in proposed building areas should be removed to a minimum depth of 3 feet and to such an extent which would permit removal of all roots larger than 1 inch. Tree root removed in parking areas may be limited to the upper 1½ feet of the ground surface. Backfill or tree root excavation should not be permitted until all exposed surfaces have been inspected and the Soils Engineer is present for the proper control of backfill placement and compaction. Burning in areas which are to receive fill materials shall not be permitted.

SUBGRADE PREPARATION: Surfaces to receive Engineered Fill, building or slab loads shall be prepared as outlined above, scarified to a depth of 6 inches, moisture-conditioned as necessary, and compacted to 90 percent relative compaction.

Loose soil areas, areas of uncertified fill, and/or areas of disturbed soils shall be moisture-conditioned as necessary and recompacted to 90 percent relative compaction. All ruts, hummocks, or other uneven surface features shall be removed by surface grading prior to placement of any fill materials. All areas, which are to receive fill materials, shall be approved by the Soils Engineer prior to the placement of any of the fill material.

EXCAVATION: All excavation shall be accomplished to the tolerance normally defined by the Civil Engineer as shown on the project grading plans. All over excavation below the grades specified shall be backfilled at the Contractor's expense and shall be compacted in accordance with the applicable technical requirements.

FILL AND BACKFILL MATERIAL: No material shall be moved or compacted without the presence of the Soils Engineer. Material from the required site excavation may be utilized for construction site fills provided prior approval is given by the Soils Engineer. All materials utilized for constructing site fills shall be free from vegetation or other deleterious matter as determined by the Soils Engineer.

PLACEMENT, SPREADING AND COMPACTION: The placement and spreading of approved fill materials and the processing and compaction of approved fill and native materials shall be the responsibility of the Contractor. However, compaction of fill materials by flooding, ponding, or jetting shall not be permitted unless specifically approved by local code, as well as the Soils Engineer.

Both cut and fill shall be surface compacted to the satisfaction of the Soils Engineer prior to final acceptance.

SEASONAL LIMITS: No fill material shall be placed, spread, or rolled while it is frozen or thawing or during unfavorable wet weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until the Soils Engineer indicates that the moisture content and density of previously placed fill are as specified.

APPENDIX C

PAVEMENT SPECIFICATIONS

1. DEFINITIONS - The term "pavement" shall include asphaltic concrete surfacing, untreated aggregate base, and aggregate subbase. The term "subgrade" is that portion of the area on which surfacing, base, or subbase is to be placed.

The term "Standard Specifications": hereinafter referred to is the 2018 Standard Specifications of the State of California, Department of Transportation, and the "Materials Manual" is the Materials Manual of Testing and Control Procedures, State of California, Department of Public Works, Division of Highways. The term "relative compaction" refers to the field density expressed as a percentage of the maximum laboratory density as defined in the applicable tests outlined in the Materials Manual.

2. SCOPE OF WORK - This portion of the work shall include all labor, materials, tools, and equipment necessary for, and reasonably incidental to the completion of the pavement shown on the plans and as herein specified, except work specifically notes as "Work Not Included."

3. PREPARATION OF THE SUBGRADE - The Contractor shall prepare the surface of the various subgrades receiving subsequent pavement courses to the lines, grades, and dimensions given on the plans. The upper 12 inches of the soil subgrade beneath the pavement section shall be compacted to a minimum relative compaction of 90 percent. The finished subgrades shall be tested and approved by the Soils Engineer prior to the placement of additional pavement courses.

4. UNTREATED AGGREGATE BASE - The aggregate base material shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate base material shall conform to the requirements of Section 26 of the Standard Specifications for Class 2 material, 1½ inches maximum size. The aggregate base material shall be compacted to a minimum relative compaction of 95 percent. The aggregate base material shall be spread and compacted in accordance with Section 26 of the Standard Specifications. The aggregate base material shall be spread in layers not exceeding 6 inches and each layer of aggregate material course shall be tested and approved by the Soils Engineer prior to the placement of successive layers.

5. AGGREGATE SUBBASE - The aggregate subbase shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate subbase material shall conform to the requirements of Section 25 of the Standard Specifications for Class 2 material. The aggregate subbase material shall be compacted to a minimum relative compaction of 95 percent, and it shall be spread and compacted in accordance with Section 25 of the Standard Specifications. Each layer of aggregate subbase shall be tested and approved by the Soils Engineer prior to the placement of successive layers.

6. ASPHALTIC CONCRETE SURFACING - Asphaltic concrete surfacing shall consist of a mixture of mineral aggregate and paving grade asphalt, mixed at a central mixing plant and spread and compacted on a prepared base in conformity with the lines, grades and dimensions shown on the plans. The viscosity grade of the asphalt shall be PG 64-10. The mineral aggregate shall be Type B, ½ inch maximum size, medium grading and shall conform to the requirements set forth in Section 39. The drying, proportioning and mixing of the materials shall conform to Section 39.

The prime coat, spreading and compacting equipment and spreading and compacting mixture shall conform to the applicable chapters of Section 39, with the exception that no surface course shall be placed when the atmospheric temperature is below 50° F. The surfacing shall be rolled with a combination of steel wheel and pneumatic rollers, as described in Section 39-6. The surface course shall be placed with an approved self-propelled mechanical spreading and finishing machine.

7. FOG SEAL COAT - The fog seal (mixing type asphaltic emulsion) shall conform to and be applied in accordance with the requirements of Section 37.

Appendix G

Phase 1 and 2 ESA

February 3, 2023 Project No. 014-22171

Ms. Goldie Lewis
Wilson Homes
7550 North Palm Avenue, Suite 102
Fresno, California 93711
glewis@wilsondevelopment.com

RE: Phase I Environmental Site Assessment
Triangle Property
East Shepherd and North Temperance Avenues
(APN 557-031-023, 558-010-25, 557-031-35, 557-031-44S, 557-031-05S)
Fresno, California

Dear Ms. Lewis:

Krazan & Associates, Inc., (Krazan) completed a Phase I Environmental Site Assessment at the referenced site summarized in a report dated February 3, 2023. We appreciate the opportunity to serve your environmental due diligence needs.

During the course of this assessment, Krazan identified no evidence of controlled RECs (CRECs) or historical RECs (HRECs) in connection with the subject site as defined by ASTM E 1527-13. However, the following recognized environmental conditions (RECs), ASTM Non-Scope Issues, and Site Development Issues were identified:

REC

Evidence of an underground chemical storage tank (UST) was observed adjacent to the southeastern corner of a storage shed to the adjacent west of the Landscape Connection, Inc. commercial operation. One metal vent pipe was observed adjacent to a metallic pipe protruding from the ground with a hand pump fixed to the top. According to Mr. Richard Smith, owner, the UST was removed approximately 40 years ago. According to the SWEEPS UST and documents reviewed via the link to the SWRCB GeoTracker database (HIST UST), one 500-gallon unleaded gasoline UST was utilized at the subject site in association with the former poultry/turkey ranch. Both the SWEEPS UST and CA FID UST databases identify the UST's status as "active". No records of the UST removal, soil sample analysis, or a Closure Letter are on file with the Fresno County Environmental Health Services (FCEHS), and no additional information is included on the State Water Resources Control Board (SWRCB) database. Based on the presence of the former UST, the potential exists for petroleum hydrocarbon constituents to have impacted the subsurface in the event a past release occurred. The subsurface conditions in the area of the reported former UST are unknown; therefore, the lack of documentation pertaining to the removal of the gasoline UST represents a REC at the subject site.

Krazan recommends conducting a limited subsurface survey to assess the presence of a potential UST.

ASTM Non-scope Issues

- The structures located on the subject site were constructed prior to 1978; therefore, based on the date of construction, asbestos-containing materials (ACMs) or lead-based paint (LBP) may be present at the subject site. An asbestos and/or LBP survey and sampling of the on-site structures was not included within the scope of this assessment; therefore, it is unknown whether the on-site structures contain ACMs or LBP.

  Prior to the disturbance of any of the suspect ACMs or LBP at the subject site via renovation or demolition, a comprehensive asbestos and LBP survey is recommended.

- Big Dry Creek stream wash extends east to west across the northern portion of the subject site and is classified by the U. S. Fish & Wildlife Service (USFWS) National Wetlands Inventory as a temporary flooded, intermittent, riverine, streambed (R4SBA). Big Dry Creek is part of a riverine subsystem that contains flowing water only part of the year, is completely dewatered at low tide, has surface water that is present only for brief periods during the growing season, and a water table that usually lies well below the ground surface for most of the season. This riverine portion of wetlands is part of a greater Palustrine, freshwater wetland system to the northeast of the subject site. The ephemeral tributary, known as Big Dry Creek, was observed as holding water at the time of the site reconnaissance. Therefore, regulations pertaining to wetlands may impact future development at the subject site.

  Krazan recommends a qualified wetlands biologist survey the subject site.

- According to the USFWS, the subject site is in a known range extent for the California tiger salamander (Ambystoma californiense); a large, stocky salamander with yellow dots or stripes against a black body. The USFWS has classified the California tiger salamander (CTS) into three Distinct Population Segments (DPS). CTSs near the subject site are of the central California DPS and are listed as a "threatened species" for both state and federal statuses. The wetlands to the northeast of the subject site are a typical habitat of the CTS.

  Krazan recommends a qualified biologist survey the area potential for California tiger salamander habitat at or near the subject site.

Site Development Issues

- The subject site has been developed with a domestic water well, septic and leach field system, propane fuel tanks, and an irrigation well and pump.

  Prior to redevelopment activities, these systems should be properly removed in accordance with State and local guidelines.

- Numerous trash piles and various types of debris piles, including waste tires, glass bottles, scrap wood, metal piping, empty rusted drums, empty buckets, concrete irrigation pipes, wooden pallets, appliances, various pieces of farm equipment, and green waste/vegetation were observed in numerous areas of the subject site, specifically in the southern portion near the former poultry operations and across Landscape Connection, Inc.'s yard and vehicle maintenance/repair shed. Not all areas were able to be observed due to the excessive quantity of materials in the debris piles and/or access limitations during the site reconnaissance.

  During the removal of debris from across the subject site in preparation for grading and construction activities associated with the proposed residential development planned by Wilson Homes, should indications of potential hazardous materials or evidence of soil impacts be

observed, or if screening for constituents of potential concern (COCPs) is required per landfill requirements, Krazan should be contacted to determine whether surficial soils have been potentially impacted and whether sampling would be recommended. In addition, debris should be removed and transported off-site for proper disposal.

If you have any questions regarding the information presented in this report, please call me at (559) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Mark D. Edwards, PG 7714, HG 1072
Sr. Project Manager

MDE/mlt

THIS PAGE INTENTIONALLY LEFT BLANK