Final Geotechnical Interpretive Report

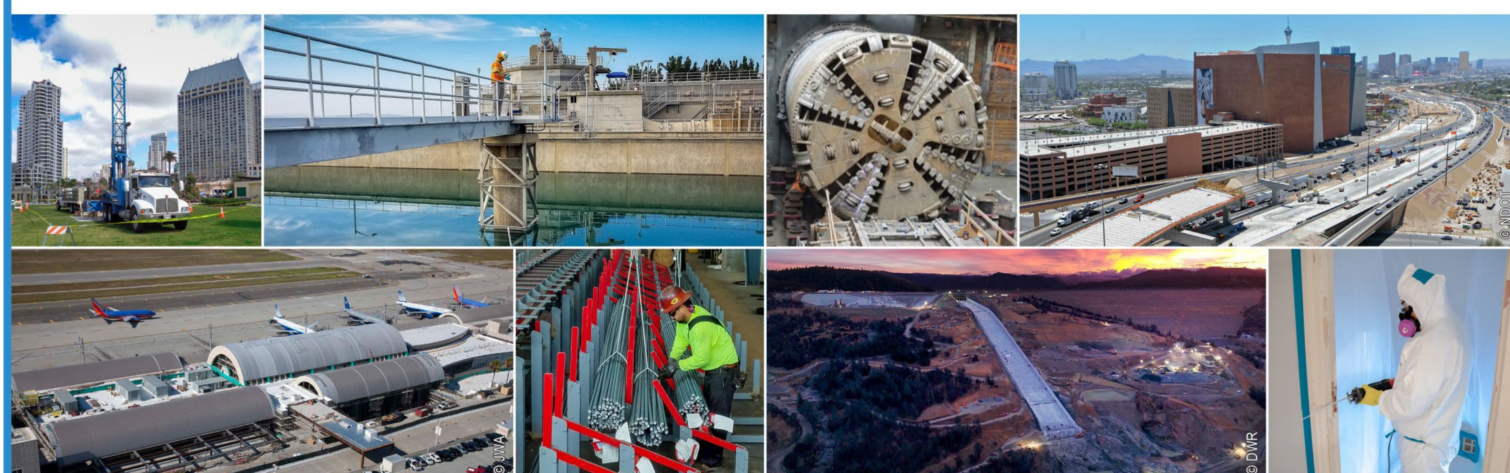
Mercury – Buildings 9 & 10 Design
Nevada National Security Site (NNSS)

Nye County, Nevada

Burns & McDonnell

8201 Norman Center Drive, Suite 500 | Minneapolis, Minnesota 55437

February 6, 2026 | Project No. 305320002



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1 INTRODUCTION

In accordance with your request, Ninyo & Moore has performed a geotechnical evaluation for the Buildings 9 & 10 project to be located at the Nevada National Security Site (NNSS) in Mercury, Nye County, Nevada. The location of the site is shown on Figure 1. The purpose of our evaluation was to assess the general geologic and geotechnical related considerations pertaining to the project site, and to provide conclusions and recommendations for design and construction of proposed improvements associated with the project. This report presents the findings, conclusions, and recommendations from our study.

2 SCOPE OF SERVICES

The scope of our services includes the following:

- Review of pertinent background data listed in the References section of this report. The data included aerial photographs and published geologic maps and literature.
- Coordination and mobilization for subsurface exploration with mark-out of existing utilities performed by NNSS personnel.
- Performance of a geologic reconnaissance to evaluate the possible presence of faults and other potential geologic hazards at the site.
- Drilling, logging, and sampling of 17 exploratory test borings to depths ranging from approximately 16 to 51 feet at the proposed project site. The purpose of the borings was to evaluate the subsurface soil profile at the site, and to obtain soil samples for laboratory testing.
- Performance of a refraction microtremor (ReMi) and multichannel analysis of surface wave (MASW) survey to evaluate seismic Site Class in general accordance with the referenced American Society of Civil Engineers Publication 7 (ASCE, 2010). The surveys were performed to characterize the average subsurface shear wave velocity to a depth of approximately 100 feet below existing ground surface.
- Performance of a field resistivity test (Wenner four-pin method) at the project site. Soil resistivity was measured at approximate “a” spacings ranging from 2.5 to 50 feet. Resistivity readings were taken along two survey lines oriented roughly perpendicular to each other at the tested location.
- Performance of laboratory tests on selected soil samples obtained from the exploratory borings to evaluate in-place moisture content and dry density, gradation, Atterberg limits, maximum dry density and optimum moisture content, chloride content, pH, reduction-oxidation potential, sodium content, sulfate content, sulfide content, sodium sulfate content and solubility (total salts).
- Compilation and analysis of the accumulated data.
- Preparation of this report presenting our findings, conclusions, and recommendations regarding this project.

3 PROJECT DESCRIPTION

It is our understanding that the project will include design and construction of two new single-story, above-grade buildings (Buildings 9&10) on a site that is approximately 3.5 acres in size. The dimensions and anticipated loading of the structures are not known at the time of this report. Between 10 feet of cut and 5 feet of fill is anticipated for grading of the subject site. We understand that shallow spread footings are being considered for support of the buildings. The buildings will include concrete slab-on-grade floors. Exterior concrete slabs or mats may be provided to support equipment associated with the buildings. Light poles and similar pole structures may be supported by drilled shaft foundations. The project also includes on-site asphalt and concrete pavements for parking areas, driveways, and loading areas. A retaining wall up to 10 feet high is anticipated to be constructed along the north and east perimeters of the site, near Building 9. Below-grade vault structures such as manholes are also assumed to be a part of the project. We understand that the project will be designed and constructed in accordance with the 2015 International Building Code (IBC).

4 GENERAL SITE CONDITIONS

Based on historical aerial photos of the project site, we understand that site was previously developed with improvements including a K-span structure, several concrete trailer/storage mats, several high-mast light poles, and additional concrete flatwork (walkways). These former improvements have all been demolished and removed, and the site was graded to a relatively flat surface in 2019 including as much as approximately 4 vertical feet of man-made filled ground. The man-made fill should be considered uncontrolled fill and unsuitable in its present condition to support improvements. The term uncontrolled fill refers to man-made filled ground placed without documentation of engineering control including density tests of compacted fill.

Since 2019, the site remains undeveloped but new roadways have been constructed around the full perimeter of the site. The topography is flat, and is generally sloped down from northeast to southwest at a grade of approximately six percent. Indications of underground utilities including water, power, sewer, and communications lines were observed at the site.

5 GEOLOGY

Based on our field observations, subsurface exploration, and review of referenced geologic and soils data, the project site is underlain by relatively shallow fill material, which in turn is underlain by Quaternary alluvium consisting of unconsolidated sand and gravel. Ninyo & Moore’s findings regarding the geologic setting, potential geologic hazards, ground motions, and liquefaction potential are provided in the following sections.

5.1 Geologic Setting

The project site is located in Mercury Valley, which lies in the southwestern portion of the Great Basin within the Basin and Range physiographic province. Mercury Valley is a naturally formed structural basin as a result of block faulting, a fundamental characteristic of the Basin and Range physiographic province. Bordering the alluvium-filled valley are relatively steep mountains including Mercury Ridge, North Ridge, and South Ridge to the east; Red Mountain to the northwest; and the Specter Range to the west. Based on our review of the referenced geologic map of the Mercury quadrangle (Barnes, 1982), the site is underlain by Quaternary alluvium consisting of unconsolidated sand and gravel.

5.2 Potential Geologic Hazards

Ninyo & Moore's geotechnical study included an evaluation of the possible presence of geologic hazards in the project area. This evaluation included visual observation of the site for indications of adverse geologic features and review of published geologic and soils maps and literature. The specific hazards included in our evaluation included fault rupture, landslides, collapsible soils, flooding, inundation, scour, and subsidence. With the exception of surficial flooding and scour potential, which is discussed further in Section 8.1.7, the evaluated geologic hazards are not anticipated to impact development. The distance from the site to the nearest fault of a given seismic activity level are provided in the following table.

Table 1 – Nearest Faults

Fault	Seismic Activity Level *	Distance From Project Site (miles)
Rock Valley Fault Zone	Latest Quaternary Active (less than 15,000 years ago)	5.1
Mercury Ridge Faults	Undifferentiated Quaternary (less than 1,600,000 years ago)	4.3
Crossgrain Valley Faults	Middle and Late Quaternary Active (less than 750,000 years ago)	1.8

Note: *Adopted from the referenced Quaternary fault and fold database (USGS, 2025).

5.3 Ground Motions

Ninyo & Moore performed a ReMi and MASW survey to obtain the shear wave velocity profile to a nominal depth of approximately 100 feet at the subject site to evaluate the seismic Site Class in general accordance with the referenced American Society of Civil Engineers Publication 7 (ASCE, 2010). The approximate location of the ReMi and MASW surveys are shown on Figure 2, and additional information regarding the surveys are provided in Appendix D. The upper portion of the shear-wave velocity profile is generally based on the MASW results where this technique provides better resolution, with the lower portion of the profile generally based on the ReMi method. The results of the ReMi and MASW surveys indicate a calculated average shear wave velocity of 1,769 feet per second to 100-foot depth. Based on the ReMi and MASW surveys, seismic Site Class C is appropriate for design of this project.

Using the referenced online seismic hazard tool (ASCE, 2010), estimated maximum considered earthquake spectral response accelerations for short (0.2 second) and long (1.0 second) periods were obtained for the subject site, which is located at approximately 36.66034 degrees north latitude and 115.99704 degrees west longitude. The parameters in the following table are characteristic of the site for design purposes.

Table 2 – Seismic Design Criteria

Site Coefficients and Spectral Response Acceleration Parameters	Values
Risk Category	II
Site Class	C
Site Coefficient, F_a	1.143
Site Coefficient, F_v	1.590
Mapped Spectral Response Acceleration at 0.2-second Period, S_s	0.643 g
Mapped Spectral Response Acceleration at 1.0-second Period, S_1	0.210 g
Spectral Response Acceleration at 0.2-second Period Adjusted for Site Class, S_{MS}	0.735 g
Spectral Response Acceleration at 1.0-second Period Adjusted for Site Class, S_{M1}	0.334 g
Design Spectral Response Acceleration at 0.2-second Period, S_{DS}	0.490 g
Design Spectral Response Acceleration at 1.0-second Period, S_{D1}	0.223 g
Mapped Peak Ground Acceleration, PGA	0.258 g
Site-Adjusted Peak Ground Acceleration, PGA_M	0.295 g
Seismic Design Category	D

5.4 Liquefaction Potential

Liquefaction is a phenomenon in which loose, saturated soils lose shear strength under short-term (dynamic) loading conditions. Ground shaking of sufficient duration results in the loss of grain-to-grain contact in potentially liquefiable soils due to a rapid increase in pore water pressure, causing the soil to behave as a fluid for a short period of time. To be potentially liquefiable, a soil is typically cohesionless with a grain-size distribution generally consisting of sand or non-plastic silt. It is generally loose to medium dense and is near or below groundwater level.

Liquefaction is generally known to occur within 50 feet of the ground surface. No groundwater was encountered in the borings performed to depths of approximately 51 feet. Based on a screening analysis considering no saturated soils within the upper 50 feet of ground surface, the potential for liquefaction at the project site is considered to be low.

6 FIELD EXPLORATION AND LABORATORY TESTING

Ninyo & Moore's subsurface exploration at the project site was performed between September 22 and October 22, 2025. The exploration included drilling, logging, and sampling of seventeen small-diameter exploratory borings. The borings were advanced to depths ranging from approximately 16 to 51 feet with a truck-mounted CME-85 drill rig utilizing 8-inch diameter hollow-stem augers. The purpose of the borings was to evaluate general subsurface conditions at the project site, and to collect bulk and relatively undisturbed soil samples for laboratory testing. Locations of the borings performed at the project site are shown on Figure 2.

Field resistivity testing was performed by Ninyo & Moore personnel at the project site. Resistivity of the subsurface soils were measured to nominal depths of 2.5, 5, 10, 20, and 50 feet below the existing ground surface at the subject site. Resistance readings were taken along two survey lines oriented roughly perpendicular to each other. The approximate location of the field resistivity test is shown on Figure 2. The test results and a description of the equipment and testing procedures utilized are presented in Appendix G.

Laboratory tests were performed on representative soil samples collected from the borings to evaluate in-place moisture content and dry density, gradation, Atterberg limits, maximum dry density and optimum moisture content, R-value, chloride content, pH, reduction-oxidation potential, sodium content, sulfate content, sulfide content, sodium sulfate content, and solubility (total salts). Results of in-place moisture content and dry density tests are provided on the logs in Appendix A. The other soil laboratory test results and descriptions of the testing procedures utilized are presented in Appendix B. Chemical test results are presented in Appendix C.

6.1 Subsurface Soils Encountered

Generalized descriptions of the subsurface soils (fill and native soil) encountered in the borings are provided in the following sections.

6.1.1 Fill

The ground surface throughout the subject site has been previously graded providing a layer of fill ranging from approximately 2 feet to 4 feet thick based on the borings. The fill consisted primarily of medium dense to dense, poorly graded gravel with silt and silty sand with gravel. Existing fill should be considered uncontrolled fill and unsuitable in its present condition for the support of the proposed improvements.

6.1.2 Native Soil

Native soil was encountered beneath the fill and extended to the maximum depth of our exploratory borings (up to approximately 51 feet). The encountered native soil consisted primarily of coarse-grained soil including clayey gravel with sand, clayey sand with gravel, poorly-graded sand with clay and gravel, poorly-graded gravel with clay and sand, poorly-graded sand with silt and gravel, well-graded sand with silt and gravel, poorly-graded gravel with silt and sand, and silty gravel with sand.

Significant layers of rock-like, moderately hard to hard, moderately to strongly cemented soil (caliche) were encountered in the borings at depths of 4 feet or deeper. Additional layers of rock-like caliche may also be encountered at shallow depths at locations between or beyond the boring locations. Special excavation techniques including heavy-duty ripper, heavy-duty hoe-ram, heavy-duty trencher or similar equipment should be anticipated where caliche is encountered during excavation.

Caliche is a naturally occurring cemented soil with rock-like characteristics. The following describes typical properties of caliche encountered in southern Nevada.

- Generally, occurs in layers a few inches to several feet thick.
- Layers typically vary significantly in thickness, degree of cementation, and hardness over relatively short distances.
- Varies in composition from primarily fine-grained material to primarily coarse-grained material.
- Moderately hard, moderately cemented caliche can generally be gouged with a knife with difficulty and broken with a few hammer blows.
- Hard and very hard, strongly cemented caliche is difficult to scratch with a knife and breaks with difficulty with repeated hammer blows.
- Impedes earthwork operations, including grading and utility line trenching. Rock excavation methods are generally needed.

The following table describes the approximate depth, thickness, hardness and degree of cementation of caliche layers encountered in the borings.

Table 3 – Caliche Layers Encountered			
Boring	**Approximate Depth to Top of Layer (feet)***	**Approximate Thickness of Layer (feet)**	**Hardness and Degree of Cementation****
B-9-1	9.0	1.0	Moderately hard, moderately cemented
	47.5	1.0	Hard, strongly cemented
B-9-2	46.0	4.4	Hard, strongly cemented
B-9-3	29.0	2.0	Moderately hard, moderately cemented
B-9-5	43.0	1.0	Moderately hard, moderately cemented
	46.5	2.5	Hard, strongly cemented
B-9-7	4.5	1.0	Moderately hard, moderately cemented
	28.0	2.4	Hard, strongly cemented
B-9-8	4.0	1.0	Hard, strongly cemented
	23.0	3.0	Hard, strongly cemented
B-9-9	11.0	2.0	Hard, strongly cemented
	25.0	2.0	Hard, strongly cemented
B-9-11	24.0	2.0	Hard, strongly cemented
B-10-1	42.5	4.5	Hard, strongly cemented
B-10-2	16.0	2.0	Moderately hard, moderately cemented
	25.5	1.0	Hard, strongly cemented
	33.0	2.5	Hard, strongly cemented
B-10-4	30.0	1.0	Hard, strongly cemented
	44.0	4.0	Hard, strongly cemented
B-10-5	34.0	2.0	Moderately hard, moderately cemented
	46.0	2.0	Hard, strongly cemented

Notes:
* Depth measured from ground surface adjacent to boring.
**Additional relatively thin cemented caliche lenses are indicated on the boring logs in Appendix A.

6.1.3 Laboratory Tests

Laboratory tests were performed on selected samples obtained from the exploratory borings. Results of in-place moisture content and dry density tests are presented on the boring logs in Appendix A. Other soil laboratory test results are presented in Appendix B. Chemical test results are presented in Appendix C. Results of laboratory tests are summarized in the following table.

Table 4 – Summary of Laboratory Test Results		
Test Type	**Test Results**	**Remarks**
Gradation Percent Gravel Percent Sand Percent Silt and Clay	 23 to 47 36 to 56 9 to 33	Predominantly coarse-grained soil
Atterberg Limits Liquid Limit Plastic Limit Plasticity Index	 Non-Plastic to 45 Non-Plastic to 27 Non-Plastic to 22	Generally, low plasticity
Compaction Characteristics Optimum Moisture Content Maximum Dry Density	 5.0 to 7.2 percent 141.0 to 145.5 pcf	Based on standard effort
Resistivity (Saturated Minimum)	2,300 to 4,000 Ohm-cm	Does not meet threshold where chloride and sulfate content should necessarily be evaluated
Chloride Content	0.0010 to 0.0031 percent	Below threshold where soil is considered corrosive to buried steel pipe Corrosion protection of reinforcement class C0 for reinforced concrete cast against and permanently in contact with ground
pH	8.77 to 9.08	Non-factor to corrosion of buried steel pipe (alkaline)
Reduction-Oxidation Potential	123 to 248 mV	--
Sodium Sulfate Content	0.0024 to 0.013 percent	Below threshold where soil may be susceptible to chemical heave
Sodium Content	0.010 to 0.019 percent	--
Sulfide Content	<0.50 mg/Kg	--
Sulfate Content	0.0016 to 0.0087 percent	Sulfate exposure class S0 to concrete cast against and permanently in contact with ground Below threshold where soil is considered corrosive to buried steel pipe
Total Salts (Solubility)	0.038 to 0.065 percent	Low solubility

6.2 Groundwater

Groundwater was not encountered in our exploratory borings, which were advanced to depths of approximately 51 feet. Seasonal fluctuations in groundwater levels may occur. These fluctuations may be due to variations in ground surface topography, subsurface geologic conditions, rainfall, irrigation, and other factors. Evaluation of factors associated with groundwater fluctuations and surface water flow was beyond the scope of this study.

7 FINDINGS AND CONCLUSIONS

Based on findings of this evaluation, it is Ninyo & Moore's opinion that there are no known geotechnical or geologic conditions that would necessarily preclude development of the proposed project. Findings and conclusions regarding geotechnical aspects of the proposed project include the following:

- The subsurface consists of primarily coarse-grained sand and gravel with varying amounts of silt and/or clay.
- A layer of existing fill up to approximately 4 feet thick was encountered at the site consisting of locally borrowed soil. Deeper areas of fill may be encountered at the project site beyond and between the boring locations. The existing fill should be considered undocumented fill and unsuitable in its present condition to support improvements. The existing fill should be over-excavated down to native soil within improvement areas.
- Excavated on-site soils, including the existing undocumented fill, are anticipated to be suitable for reuse as structural fill provided they are processed to remove oversized particles greater than 6 inches nominal size.
- Findings of our study indicate that the existing fill is underlain generally by medium dense to very dense granular soils which should provide adequate support for the proposed improvements. Proposed foundations for the building and other improvements may be founded on undisturbed native soil or on adequately placed and compacted structural fill.
- An allowable bearing pressure of 3,000 psf to 5,000 psf is appropriate for spread footings and mat foundations pending foundation width and embedment depth.
- Significant layers of rock-like, moderately hard to hard, moderately to strongly cemented caliche were encountered in our exploratory borings at depths as shallow as 4 feet. Additional layers of rock-like caliche may also be encountered at shallow depths at locations between or beyond the boring locations. Special excavation techniques including heavy-duty ripper, heavy-duty hoe-ram, heavy-duty trencher or similar equipment should be anticipated where caliche is encountered during excavation.
- Surface flooding and associated soil erosion are significant design considerations for this project. The project site is subject to occasional heavy rainfall and flash flooding. Erosion and scouring of soils can occur where flows are concentrated. Periodic maintenance of drainage improvements is anticipated to be required.
- Based on laboratory chemical test results, the on-site soils exhibit sulfate exposure class S0. However, based on salt-laden soils being common in arid climates, we recommend concrete in contact with soil include Type II moderate-sulfate-resistant cement plus fly ash or Type V severe-sulfate-resistant cement and have a maximum water-to-cementitious material ratio of 0.45.
- Based on the results of geophysical surveys to measure the shear wave velocity profile to 100-foot depth, the seismic Site Class is C and the Seismic Design Category is D.

- The potential for geologic hazards including surface fault rupture to impact the site is considered low.
- No groundwater was encountered in the borings. Groundwater is not anticipated to impact development.

8 RECOMMENDATIONS

The following recommendations are intended for incorporation into design and construction of the proposed project improvements.

8.1 Earthwork

The following sections provide recommendations for earthwork, including site grading, caliche considerations, structural fill, imported soil, and temporary excavations.

8.1.1 Site Grading

Undocumented fill, up to approximately 4 feet thick, was encountered in our exploratory borings. Deeper undocumented fill may be encountered in areas between and beyond our exploratory borings. The full depth of undocumented fill should be over-excavated from proposed improvement areas including below spread footings, mat/slab foundations, slab-on-grade floors, exterior concrete flatwork, pavement areas, and retaining walls. Over-excavations should extend 5 feet or more beyond the exterior edges of spread footings, including those supporting retaining walls, mat/slab foundations and concrete slab-on-grade floors, and 2 feet or more beyond planned exterior concrete flatwork and pavement areas. Excavated soils may be processed and stockpiled for later use as structural fill or backfill if they comply with the recommendations provided in this report. The geotechnical consultant should observe areas to receive fill at the time of grading to assess the suitability of the exposed material and to evaluate if removals down to more competent soils are needed, particularly in areas where relatively deeper undocumented fill is encountered.

After over-excavation of uncontrolled fill, the exposed native soils should be scarified to approximately 8 inches, moisture-conditioned to approximately optimum moisture content, and compacted to 95 percent or more relative compaction, as evaluated by American Society for Testing and Materials (ASTM) Standard D 698.

Some shrinkage should be anticipated when on-site soils are excavated, processed, and compacted. For planning purposes, an estimated shrinkage factor of approximately 10 percent may be used for on-site soils.

8.1.2 Structural Fill (On-Site Soil)

The findings of our study indicate that the on-site soils, including undocumented fill, encountered in our borings are generally suitable for re-use as structural fill. Periodic sampling and testing of soil to be utilized as structural fill for this project should be performed during earthwork operations to evaluate whether the excavated soil meets the following criteria.

Structural fill consisting of borrowed on-site soil should not contain significant amounts of organic matter, debris, other deleterious matter, or rocks or hard chunks larger than approximately 6 inches nominal size.

Soils used as structural fill should be moisture-conditioned to approximately optimum moisture content and placed and compacted in uniform horizontal lifts to a relative compaction of 95 percent or more as evaluated by ASTM D 698. The optimal lift thickness of fill will depend on the type of soil and compaction equipment used, but should generally not exceed approximately 8 inches in loose thickness.

Earthwork operations should be observed and compaction of structural fill materials should be tested by the project's geotechnical consultant. Typically, one field test should be performed per lift for each approximately 5,000 square feet of fill placement in structural areas. Additional field tests may also be performed at the discretion of the geotechnical consultant.

8.1.3 Import Soil

Import soil should be predominantly coarse-grained and similar to the native soils meeting the following criteria:

- Be free of organic matter, debris and other deleterious materials
- Be free of oversize particles greater than 6 inches nominal size
- Have 30 percent or less passing the No. 200 sieve
- Have a plasticity index of 15 or less
- Have a low solubility of 2.0 percent or less
- Have a sulfate content compatible with the native soil (less than 0.1 percent)

We further recommend that proposed imported soil be evaluated by the project's geotechnical consultant at the borrow source for its suitability prior to importation to the project site. Imported soil should be moisture-conditioned and placed and compacted in accordance with the recommendations set forth in the previous section.

8.1.4 Retaining Wall Backfill

Backfill for site retaining walls may consist of structural fill or import soil as described in the previous sections. Alternatively, if a top-down approach is considered for retaining walls, the in-situ soil is suitable to remain in place.

8.1.5 Fill Design Parameters

The following table presents design parameters that should be utilized for the various fill types that may be involved in site improvements.

Table 5 – Fill Design Parameters

Fill Type	Effective Unit Weight (pcf)	Internal Friction Angle (degrees)
Structural Fill (Reworked On-site soil)	135	36
Retaining Wall Backfill (Reworked On-site Soil)	135	36
In-situ Native Soil	135	40
Import Soil	135	36

8.1.6 Temporary Excavations

Based on the results of our subsurface explorations and in accordance with the referenced Occupational Safety and Health Administration regulations (OSHA, 2025), Type C soil is appropriate for the project site. Accordingly, slope configurations should be consistent with Type C soil with slopes no steeper than 1½:1 (horizontal to vertical) for temporary excavations having depths of 20 feet or less.

Temporary slope surfaces should be kept moist to retard raveling and sloughing. Water should not be allowed to flow over the top of excavations in an uncontrolled manner. Stockpiled material and/or equipment should be kept back from the top of excavations a distance equivalent to the depth of the excavation or more. Workers should be protected from falling debris, sloughing, and raveling. Temporary excavations should be observed by the project's geotechnical consultant so that appropriate additional recommendations may be provided based on the actual field conditions. Temporary excavations are time sensitive and failures are possible.

8.1.7 Surficial Flooding and Erosion

Although average annual rainfall for the project area is generally low, heavy rains are known to occur periodically. These rainfall events, which are often accompanied by flash flooding, typically occur during the summer "monsoon" season, but may also take place at other times of the year. Potential surface flooding and associated erosion/scour are significant design considerations for the subject project. Erosion control methods, such as use of riprap, gabions, soil-cement, or similar armoring should be considered for protection of drainage improvements.

8.2 Structure Foundations

The following sections provide recommendations for spread footings planned for support of the structure.

8.2.1 Spread Footings

Parameters for the design of spread footings are summarized in the following table. Footings should be designed and reinforced in accordance with the project structural engineer's recommendations.

Table 6 – Spread Footing Design Parameters

Parameter	Values
Recommended Bearing Stratum	Medium dense to very dense native granular soils or adequately placed and compacted structural fill
Minimum Footing Width	12 inches
Minimum Footing Embedment Depth	12 inches
Allowable Bearing Pressure *	3,000 psf (5,000 psf maximum)
Allowable Passive Resistance **	350 psf/ft
Coefficient of Sliding Friction **	0.45
Total Settlement	1 inch or less
Differential Settlement	½ inch or less

Notes:

* Includes a factor of safety of 3.0 or more. May be increased by 1,000 psf for each additional foot of embedment and by 500 psf for each additional foot of width up to a maximum value of 5,000 psf. A one-third increase may be added for short-duration loads including wind or seismic loads provided by reducing the factor of safety for transient and infrequent loads.

** Includes a factor of safety of 1.5. Allowable passive resistance and coefficient of sliding friction may be used in combination without reduction.

8.2.2 Mat/Slab Foundations

We understand that mat/slab foundations may be used to support equipment. Mat/slab foundations should bear on at least 6 inches of compacted Type II Aggregate Base. Type II Aggregate Base should be compacted to 98 percent or more relative compaction as evaluated by ASTM D 698. Mat/slab foundations at least 6 feet wide may be designed using an allowable bearing pressure of 5,000 psf. No minimum soil embedment depth is recommended for mat/slab foundations. The allowable bearing pressure, which was developed considering a factor of safety of 3.0, may be increased by one-third when considering loads of short duration, such as wind or seismic forces, provided by reducing the factor of safety for short duration and infrequent loads.

Settlement of mat/slab foundations is anticipated to be less than 1 inch. The recommended vertical modulus of subgrade reaction, k_{v1}, for use in flexible design of mat/slab foundations is 375 pounds per cubic inch (pci) applicable for a 1-foot-square loaded area. For actual foundation sizes, the subgrade modulus should be reduced using the following formula:

$$k_v = k_{v1}\left(\frac{B+1}{2B}\right)^2 \qquad \text{Equation 1}$$

Where,

k_v = vertical modulus of subgrade reaction for actual foundation width

k_{v1} = vertical modulus of subgrade reaction for 1-foot-square loaded area = 375 pci

B = foundation width in feet

For point loads on a structural mat/slab, the vertical modulus of subgrade reaction need not be reduced using the formula above for the entire width of the mat/slab but rather some equivalent width which is related to the flexural stiffness of the mat/slab relative to the underlying soil subgrade stiffness and may be estimated using the following formula:

$$B' = 14 \times t < B \qquad \text{Equation 2}$$

Where,

B' = equivalent foundation width in feet to be used in Equation 1 for B

t = thickness of slab in feet

8.2.3 Drilled Shaft Foundations

It is our understanding that drilled shaft foundations are being considered for support of light poles or similar pole structures. We understand that drilled shaft foundations for the project will be designed using the Ensoft computer program LPILE. It is our opinion, based on the generally consistent soil types and layering of the site stratigraphy, that five soil profiles (near the corners and center of the site) will be sufficient to provide parameters for design of drilled shaft foundations in each respective area. The design soil parameters for the soil profiles provided by five representative borings for use with the LPILE program are presented in Appendix E. The soil parameters provided in Appendix E are based on encountered subsurface conditions and laboratory test results.

8.2.3.1 Drilled Shaft Ultimate and Allowable Capacities

The computer program SHAFT (Ensoft, 2023) was used to evaluate ultimate and allowable values of capacity provided by end bearing and skin friction. The results of our drilled shaft analyses are provided in Appendix D. It should be noted that internal reaction loads were not evaluated with respect to structural capacity of construction materials. Drilled shafts should be designed in accordance with the recommendations of a qualified structure engineer. Drilled shafts should be spaced at least three diameters apart, center to center, for the capacities provided to be applicable without reduction for group interaction.

8.2.3.2 Drilled Shaft Construction Considerations

The bottom and sidewalls of each drilled shaft excavation should be evaluated in the field during construction by the geotechnical consultant. If the encountered geotechnical conditions are significantly different than those used in design of the drilled shaft, our office should be notified and additional foundation recommendations, if warranted, will be provided upon request. The contractor should make provisions to provide for the integrity of the excavation and to make sure that the excavations are cleaned and straight, and that sloughed, loose, or disturbed soil is removed from the bottom of excavations prior to placement of concrete.

Concrete should be placed in the drilled excavation as soon as practicable after drilling and evaluation by the geotechnical consultant. When possible, reinforcing steel and shaft concrete should be placed the same day the shaft excavation is drilled. Concrete should have an ultimate strength not less than that specified and should be workable and plastic so that it may be placed without segregation. Concrete should be cast-in-place against undisturbed earth in the borehole in such a manner to provide for the exclusion of appreciable amounts of foreign matter in the concrete. The shafts should be adequately reinforced for lateral and uplift loads, as recommended by the project structural engineer.

8.3 Concrete Slab-On-Grade Floors

Concrete slab-on-grade floors should be designed by the project's structural engineer based on anticipated loading conditions. Ninyo & Moore recommends that conventional concrete slab-on-grade floors for this project be founded on 4 inches of Type II Aggregate Base overlying 8 inches of scarified and recompacted subgrade or newly placed structural fill. Aggregate base underlying concrete slab-on-grade floors should be compacted to 98 percent or more of the laboratory maximum dry density as determined by ASTM D 698.

Floor slabs should be 5 inches or more in thickness and reinforced with No. 3 steel reinforcing bars placed at 24 inches on-center both ways. Reinforcement of the slab should be placed at mid-height. We recommend that "chairs" be utilized to aid in the placement of the reinforcement. Increased slab thickness and reinforcement may be recommended by the structural engineer. As a means to reduce shrinkage cracks, we recommend that conventional slab-on-grade floors be provided with control joints in accordance with the recommendations of a qualified structural engineer. Recommendations regarding concrete utilized in construction of floor slabs are provided in a subsequent section of this report.

Ninyo & Moore recommends that a moisture barrier be provided by a membrane placed beneath concrete slab-on-grade floors, particularly in areas where moisture-sensitive flooring is to be used. The membrane should be at least 15 mils in thickness. The membrane should overlie the compacted aggregate base material.

8.4 Lateral Earth Pressures

Retaining walls that are not restrained from movement at the top and having level, granular backfill, as well as retaining walls constructed using a top-down approach in native soils, may be designed using "active" lateral earth pressures as indicated on Figure 3. Buried structures (manholes, vaults) may be designed using an "at rest" lateral earth pressure as indicated on Figure 4. The locations of the resultant forces due to these lateral earth pressures are also provided on Figure 3 and Figure 4. These values assume compaction within about 5 feet of the retaining wall will be accomplished with relatively light compaction equipment. These values assume that retaining walls will have a height of 10 feet or less.

Retaining walls should also be designed to resist “active” and “at-rest” surcharge pressures as shown on Figure 3 and Figure 4. The value for “q” represents the pressure induced by adjacent surcharge loads including slabs, footings or vehicular traffic.

The Seismic Design Category is D, and seismic lateral earth pressure should be included in the design of retaining walls in addition to the “active” earth pressure. Dynamic or seismic earth pressure is included in Figure 3.

It is our opinion, based on the generally non-plastic granular soils prevalent near the surface at the site, that drained conditions will control with regards to the design of retaining walls. These soils derive their shear strength primarily from friction, with negligible cohesion, and are not susceptible to the development of excess pore water pressures under anticipated loading conditions. As such, the use of undrained shear strength parameters is not applicable, and design using drained strength parameters is appropriate for both internal and global stability evaluations. However, measures should still be taken so that hydrostatic pressure does not build up behind retaining walls. Drainage measures, as indicated on Figure 5, should include open-graded gravel wrapped in geofabric and perforated drain pipe or weepholes lined with polyvinyl chloride (PVC) pipe. Drain pipes should outlet away from retaining walls. Retaining walls should be damp-proofed in accordance with the recommendations of a qualified civil engineer or architect.

8.5 Exterior Concrete Flatwork

Exterior concrete flatwork, such as walkways and larger slabs, should be founded on 4 inches of Type II Aggregate Base overlying 8 inches of scarified and recompacted subgrade or newly placed structural fill. Type II Aggregate Base should be compacted to 95 percent or more relative compaction as evaluated by ASTM D 698.

Concrete flatwork should be 4 inches thick. To reduce the potential for shrinkage cracks, the flatwork should be constructed with control joints spaced approximately 5 feet apart for walkways and approximately 10 feet on-center each way for larger slabs. Crack control joint spacing should be in accordance with recommendations of a qualified structural engineer. Reduced joint spacing may be recommended by the structural engineer.

Exterior concrete flatwork, curbs, and gutters should be constructed in accordance with the recommendations of the project’s civil or structural engineer and governing agency requirements. Recommendations regarding concrete utilized in construction of proposed improvements are provided in Section 8.7.

8.6 Pavement

Recommendations regarding design of on-site asphalt and concrete pavement sections are provided in the following subsections.

8.6.1 Traffic

Approximate anticipated traffic for the various pavement areas is summarized in the following table.

Table 7 – Pavements and Anticipated Traffic

Pavement Type	Traffic / Area	Equivalent Passes *
Light-duty asphalt	Privately-owned-vehicles (POVs)	3,000
Heavy-duty asphalt	Semi-trucks, fire trucks, armored vehicles	100,000

Note: *Based on 20-year design life.

8.6.2 Asphalt Pavement Sections

To form a basis for design of asphalt pavements, we have assumed the following:

- 20-year design life
- A reliability of 80 percent
- A standard deviation of 0.45
- An initial serviceability index of 4.2 and a terminal serviceability index of 2.5
- A subgrade resilient modulus of 18,800 per square inch (psi) for design R-value of 60 (based on soil classification)

Using these values, structural numbers associated with the proposed pavement areas were calculated using design procedures in accordance with the AASHTO method of designing flexible pavement (AASHTO, 1993) requirements. The following table presents recommended pavement sections placed over a zone of adequately placed and compacted structural fill or undisturbed medium dense to very dense native soil for on-site asphalt pavement areas.

Table 8 – Recommended Pavement Section Thickness						
Pavement Type	**Design R-value***	**Approximate ESALs**	**Asphalt Concrete Thickness (Inches)**	**Aggregate Base Thickness (Inches)**	**Structural Number Provided**	**Structural Number Required**
Light-duty asphalt	60	3,000	2.5	4	1.36	0.72
Heavy-duty asphalt	60	100,000	3	4	1.53	1.52

Notes: * Based on soil classification tests provided in Appendix B.

8.6.3 Portland Cement Concrete Pavement Section

Ninyo & Moore recommends that Portland cement concrete pavement be utilized in truck delivery, trash dumpster, and other heavy traffic areas. Our experience indicates that garbage truck traffic and other heavy traffic can significantly shorten the useful life of asphalt concrete pavement. We recommend that, in dumpster approach and other heavy traffic areas, 500 pounds per square inch (psi) flexural strength Portland cement concrete, 6 inches thick, be placed over 4 inches of compacted Type II Aggregate Base. The aggregate base and concrete should be placed over a zone of adequately compacted structural fill, or over undisturbed medium dense to very dense native soil. We also recommend that a qualified structural engineer be consulted for appropriate reinforcement of concrete pavement.

8.6.4 Pavement Considerations

If the assumed traffic or design ESAL values are not considered appropriate, this office should be notified. Type II Aggregate Base should conform to Section 704.03.04 of the referenced Uniform Standard Specifications (RTC, 2025). Type II Aggregate Base materials should be placed and compacted to 98 percent or more relative compaction as evaluated by ASTM D 698.

We recommend that mix designs be made for asphalt and Portland cement concrete by an engineering company specializing in this type of work. In addition, paving operations should be observed and tested by a qualified testing laboratory.

Adequate surface drainage should be provided to reduce the potential for ponding and infiltration of water into the pavement and subgrade materials. Surface runoff from surrounding areas should be intercepted, collected, and not permitted to flow onto the pavement or infiltrate the aggregate base and subgrade. We recommend that perimeter swales, curbs and gutters, or combination of these drainage devices be provided to reduce the adverse effects of surface water runoff.

8.7 Concrete Durability and Corrosion Considerations

The corrosion potential of on-site soils to concrete, reinforcing steel in concrete, and buried steel pipes was evaluated in the laboratory using representative samples obtained from the exploratory boring. Specific laboratory testing was performed to assess the effects of sulfate on concrete and chloride on steel. Results of these tests are presented in Appendix C. Recommendations regarding concrete to be utilized in construction of proposed improvements are provided in the following sections.

8.7.1 Concrete

Chemical test results indicate that on-site soils exhibit sulfate exposure class S0 as defined in the referenced building code requirements for structural concrete (ACI, 2014). However, based on salt-laden soils being common in arid climates, we recommend that concrete in contact with soil including for spread footings, mat/slab foundations, and drilled shafts meet the following criteria:

- Contain Type II moderate-sulfate-resistant cement plus fly ash or Type V severe-sulfate-resistant cement; and
- Have a maximum water-to-cementitious material ratio of 0.45.

Chemical test results indicate that the on-site soils exhibit corrosion protection of reinforcement class C0 as defined in the referenced building code requirements for structural concrete (ACI, 2014). A minimum of 3 inches of concrete cover over reinforcing steel is recommended for reinforced concrete cast against and permanently in contact with ground per the referenced building code requirements for structural concrete (ACI, 2014).

8.7.2 Buried Steel

Corrosivity test results including saturated electrical resistivity, pH, chloride and sulfate content generally do not meet the threshold where the soil is considered corrosive to buried steel pipe. However, we recommend a corrosion engineer evaluate the corrosivity test results presented in this report and design or select corrosion protection measures, if any, for buried metal pipes. The use of plastic pipe where permitted by applicable building code should be considered.

8.8 Surface Drainage and Moisture Infiltration Reduction

Infiltration of water into subsurface soils can lead to soil movement and associated distress, and chemically and physically related deterioration of concrete structures. To reduce the potential for infiltration of moisture into subsurface soils at the site, we recommend the following:

- Positive drainage should be established and maintained away from the proposed building. Positive drainage may be established by providing a surface gradient of 2 percent away from the building for a distance of 10 feet measured perpendicular from building perimeter, or to a drainage swale intended to convey surface water away from the site.

- Adequate surface drainage should be provided to channel surface water away from on-site structures and to a suitable outlet such as a storm drain or the street. Adequate surface drainage may be enhanced by utilization of graded swales, area drains, and other drainage devices. Surface run-off should not be allowed to pond near structures.

- Building roof drains should have downspouts tightlined to an appropriate outlet, such as a storm drain or the street. If tightlining of the downspouts is not practicable, they should discharge 5 feet or more away from the building or onto concrete flatwork or asphalt that slopes away from the building. Downspouts should not be allowed to discharge onto the ground surface adjacent to building foundations.

8.9 Observation and Testing

A qualified geotechnical consultant should perform appropriate observation and testing services during grading and construction operations. These services should include evaluation of subgrade conditions where soil removals are performed, and performance of observation and testing services during placement and compaction of structural fill and backfill soils. The geotechnical consultant should also perform observation, testing, and inspection services during placement of concrete, mortar, grout, and steel reinforcement

8.10 Plan Review

The recommendations presented in this report are based on preliminary design information for the proposed project, as provided by Burns & McDonnell personnel, and on the findings of our geotechnical evaluation. When finished, project plans and specifications should be reviewed by the geotechnical consultant prior to submitting the plans and specifications for bid. Additional field exploration and laboratory testing may be needed upon review of the project design plans.

8.11 Pre-Construction Meeting

We recommend that a pre-construction meeting be held. The owner or the owner’s representative, designer, contractor, and geotechnical consultant should be in attendance to discuss the plans and the project.

9 LIMITATIONS

The field evaluation, laboratory testing, and geotechnical analyses presented in this geotechnical report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be encountered during construction. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation will be performed upon request. Please also note that our evaluation was limited to assessment of the geotechnical aspects of the project, and did not include evaluation of structural issues, environmental concerns, or the presence of hazardous materials.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

This report is intended for design purposes only and may not provide sufficient data to prepare an accurate bid by some contractors. It is suggested that the bidders and their geotechnical consultant perform an independent evaluation of the subsurface conditions in the project areas. The independent evaluations may include, but not be limited to, review of other geotechnical reports prepared for the adjacent areas, site reconnaissance, and additional exploration and laboratory testing.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. If geotechnical conditions different from those described in this report are encountered, our office should be notified and additional recommendations, if warranted, will be provided upon request. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

10 REFERENCES

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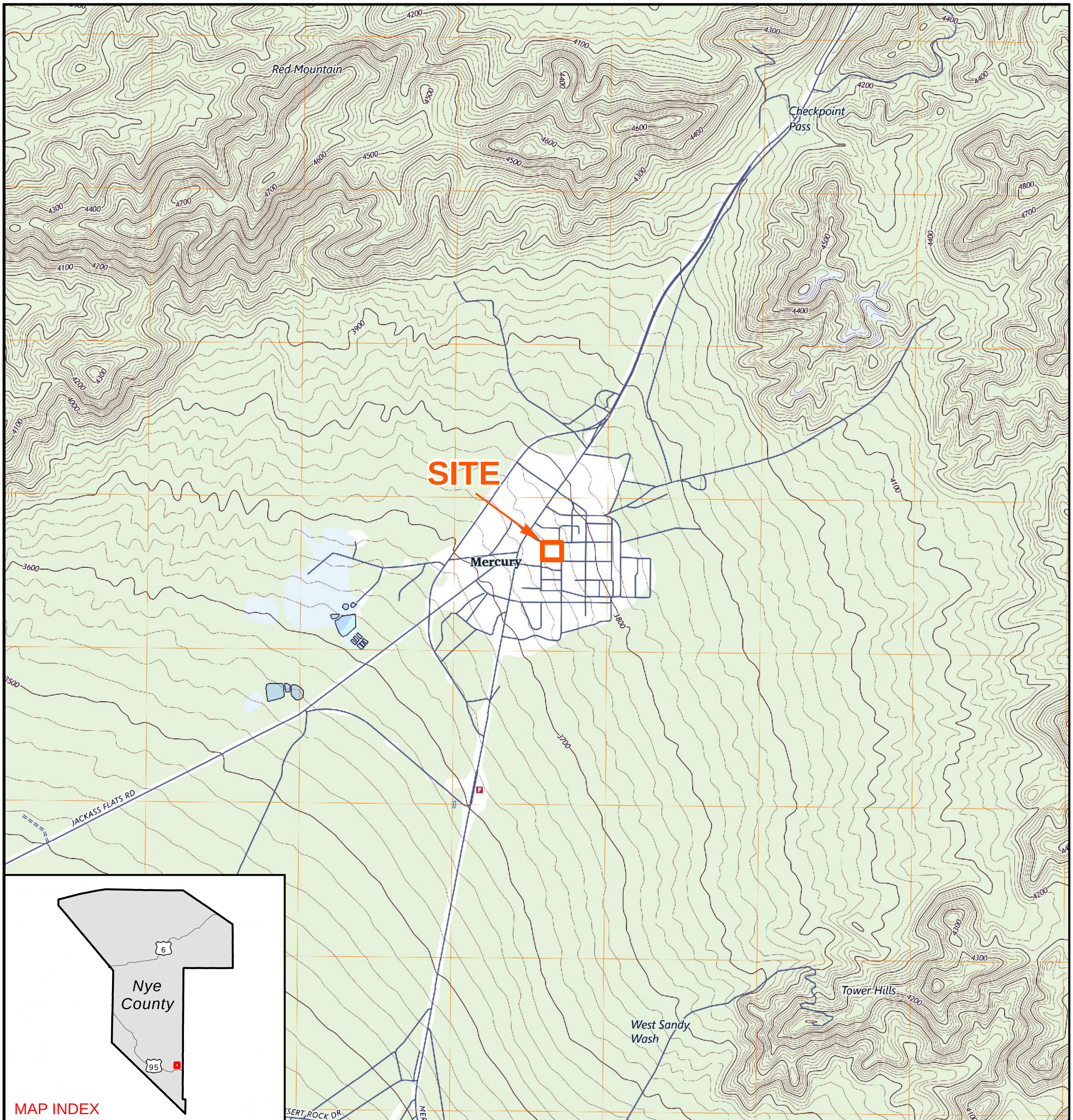
FIGURES



NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: USGS, 2025

N

FEET

0 2,000 4,000

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FIGURE 1

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A SOCOTEC COMPANY

SITE LOCATION

MERCURY - BUILDINGS 9 & 10 DESIGN NEVADA NATIONAL SECURITY SITE (NNSS) NYE COUNTY, NEVADA

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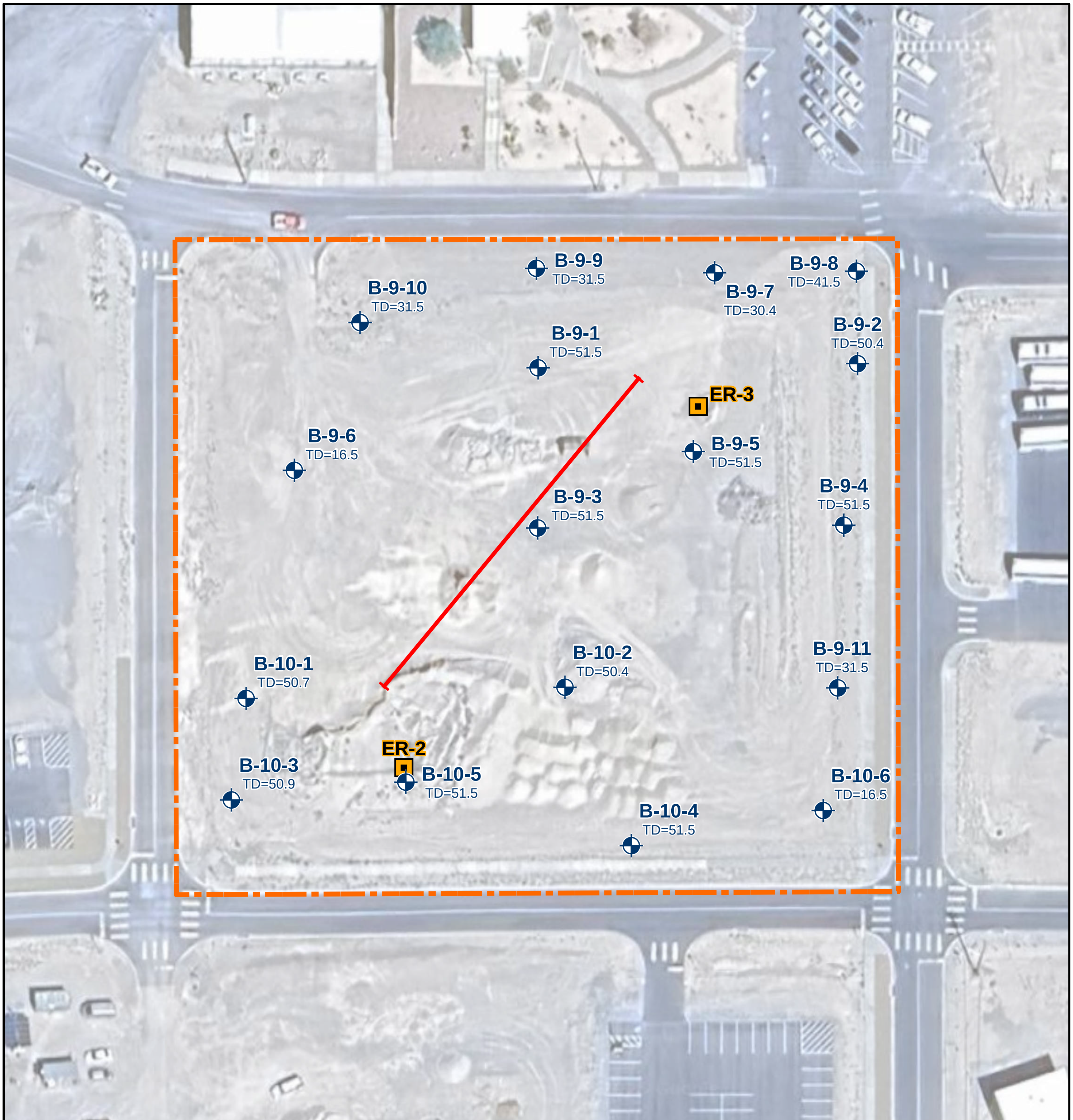

LEGEND

B-10-6 TD=16.5	BORING TD=TOTAL DEPTH IN FEET		ReMi SURVEY
ER-3	RESISTIVITY TEST		FUTURE BUILDING #9 AND 10 SITE

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: GOOGLE, 2025

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FEET
0 80 160

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FIGURE 2

Ninyo & Moore
A SOCOTEC COMPANY

BORING LOCATIONS

MERCURY - BUILDINGS 9 & 10 DESIGN NEVADA NATIONAL SECURITY SITE (NNSS) NYE COUNTY, NEVADA

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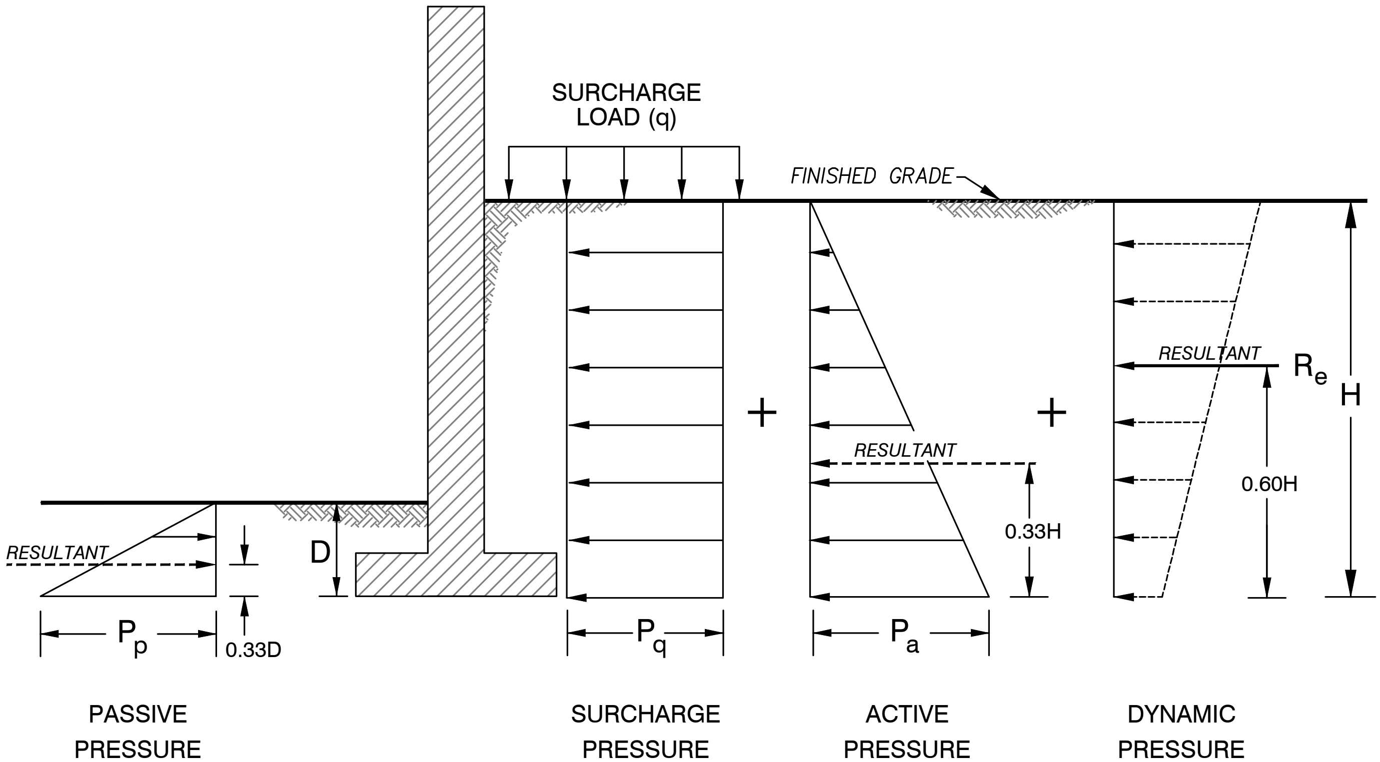

NOTES:

1. ASSUMES NO HYDROSTATIC PRESSURE BUILD-UP BEHIND THE RETAINING WALL
2. ASSUMES GRANULAR BACKFILL OR IN-SITU DESIGN PARAMETERS IN ACCORDANCE WITH SECTION 8.1.5
3. ASSUMES BACKFILL SLOPING NO STEEPER THAN 4(H):1(V)
4. DRAINS AS RECOMMENDED IN THE RETAINING WALL DRAINAGE DETAIL (FIGURE 5) SHOULD BE INSTALLED BEHIND THE RETAINING WALL
5. DYNAMIC LATERAL EARTH PRESSURE RESULTANT IS BASED ON THE RECOMMENDATIONS OF SEED AND WHITMAN (1970)
6. THERE IS NO REQUIRED ANGLE OF EXCAVATION BEHIND THE WALL DUE TO IN-SITU SOILS PROVIDING LOWER ACTIVE EQUIVALENT FLUID PRESSURE THAN BACKFILL SOILS
7. H AND D ARE IN FEET

RECOMMENDED GEOTECHNICAL DESIGN PARAMETERS

Lateral Earth Pressure	Equivalent Fluid Pressure	
	Granular Backfill	In-situ
P_p	500 **D** psf	550 **D** psf
P_q	0.26 **q** psf	0.22 **q** psf
P_a	35 **H** psf	29 **H** psf
Resultant	Force Per Unit Width of Wall	
R_e	10 $\mathbf{H}^2$ lbs/ft	10 $\mathbf{H}^2$ lbs/ft

NOT TO SCALE

FIGURE 3

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LATERAL EARTH PRESSURES FOR YIELDING RETAINING WALLS

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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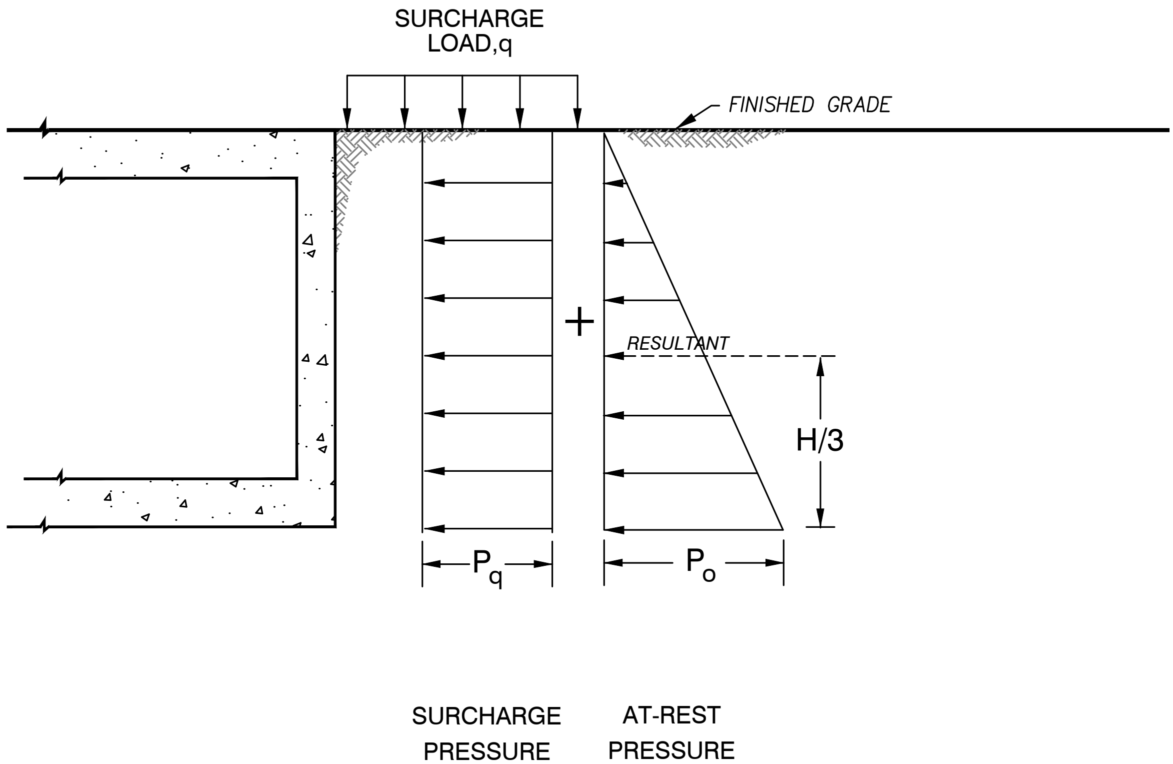

NOTES:

1. ASSUMES NO HYDROSTATIC PRESSURE BUILD-UP BEHIND THE RETAINING WALL
2. H IS IN FEET
3. ASSUMES BACKFILL IS GRANULAR MATERIAL

RECOMMENDED GEOTECHNICAL DESIGN PARAMETERS

Lateral Earth Pressure	Equivalent Fluid Pressure (lb/ft^2/ft)[1]
P_o	56**H**
P_q	0.41**q**

NOT TO SCALE

FIGURE 4

LATERAL EARTH PRESSURES FOR BURIED STRUCTURES

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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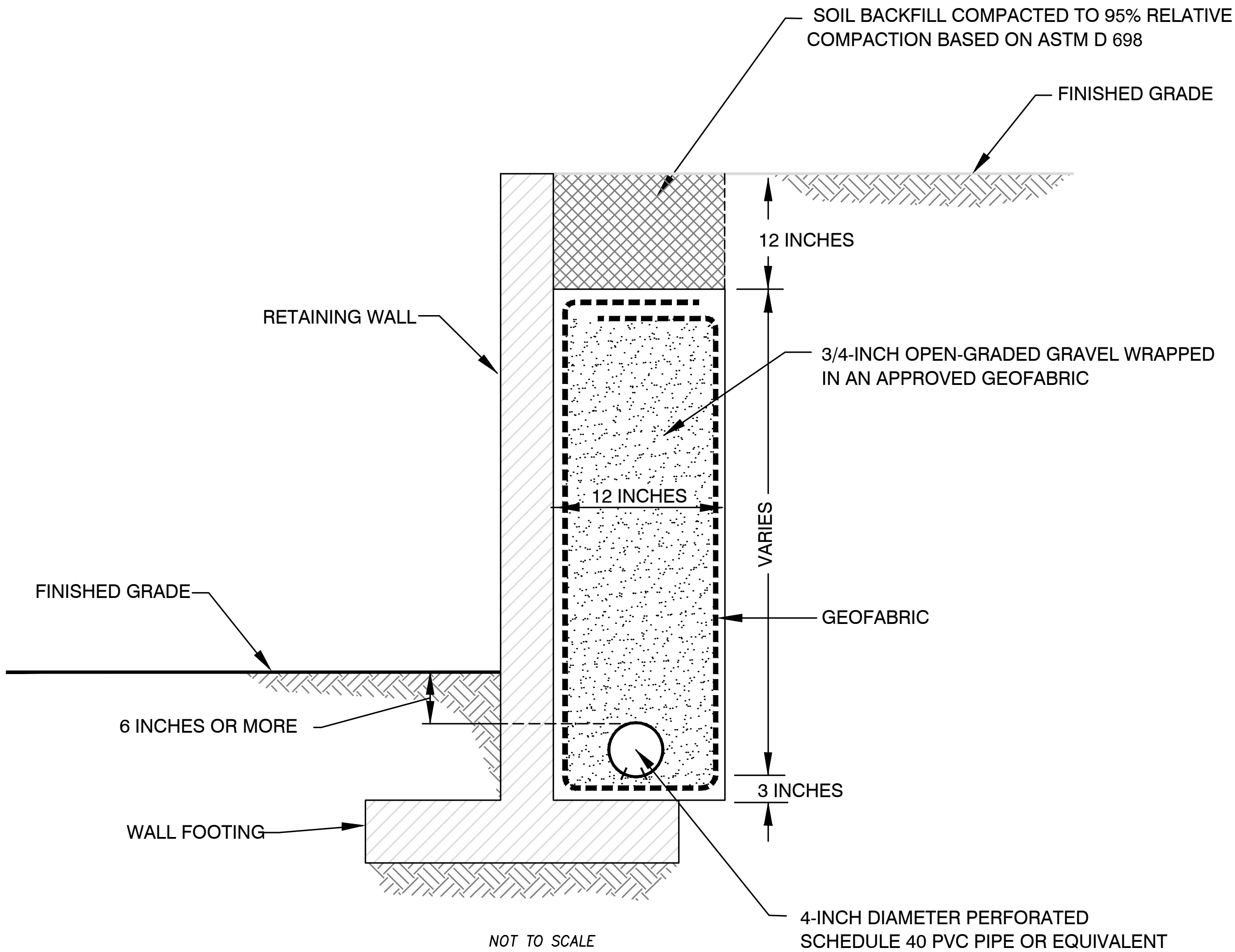

RETAINING WALL DD D-RW.DWG

NOTES: AS AN ALTERNATIVE, AN APPROVED GEOCOMPOSITE DRAIN SYSTEM MAY BE USED.

AS AN ALTERNATIVE TO USE OF 4" DIAMETER PVC BACKDRAINAGE PIPES, WEEP HOLES CAN BE CORED THROUGH THE WALL AND LINED WITH PVC PIPE. WEEP HOLES SHOULD BE 3" DIAMETER AND PLACED APPROXIMATELY 3" ABOVE THE LOWEST ADJACENT FINISHED GRADE AT APPROXIMATELY 10' ON-CENTER.

FIGURE 5

RETAINING WALL DRAINAGE DETAIL

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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Geotechnical & Environmental Sciences Consultants

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APPENDIX A

Exploratory Boring Logs

APPENDIX A

EXPLORATORY BORING LOGS

Field Procedure for the Collection of Disturbed Samples
Disturbed soil samples were obtained in the field using the following methods.

Bulk Samples
Bulk samples of representative earth materials were obtained from the exploratory borings. The samples were bagged and transported to the laboratory for testing.

The Standard Penetration Test (SPT) Sampler
Disturbed drive samples of earth materials were obtained by means of a Standard Penetration Test sampler. The sampler is composed of a split barrel with an external diameter of 2 inches and an unlined internal diameter of 1⅜ inches. The sampler was driven into the ground with a 140-pound hammer free-falling from a height of 30 inches in general accordance with ASTM D 1586 and the blow counts were recorded. Soil samples were observed and removed from the sampler, bagged, sealed, and transported to the laboratory for testing.

Field Procedure for the Collection of Relatively Undisturbed Samples
Relatively undisturbed soil samples were obtained in the field using a sampler, with an external diameter of 3.0 inches lined with 1-inch long, thin brass rings with inside diameters of 2.4 inches. The sample barrel was driven into the ground with the weight of a hammer attached to the drill rig in general accordance with ASTM D 3550. The driving weight was permitted to fall freely. The approximate length of the fall, the weight of the hammer, and the number of blows during driving are presented on the boring logs as an index to the relative resistance of the materials sampled. The samples were removed from the sample barrel in the brass rings, sealed, and transported to the laboratory for testing.

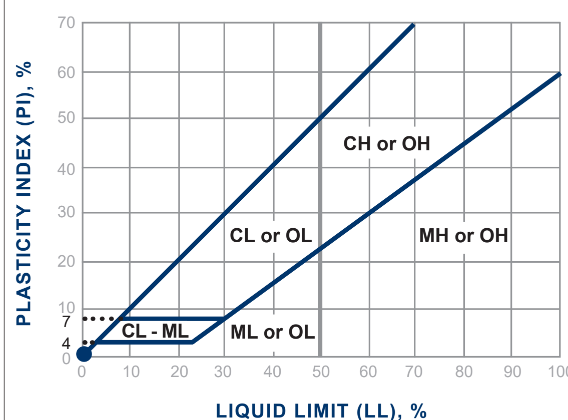
Soil Classification Chart Per ASTM D 2488

Primary Divisions			Secondary Divisions: Group Symbol	Secondary Divisions: Group Name
COARSE-GRAINED SOILS more than 50% retained on No. 200 sieve	**GRAVEL** more than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVEL less than 5% fines	GW	well-graded GRAVEL
			GP	poorly graded GRAVEL
		GRAVEL with DUAL CLASSIFICATIONS 5% to 12% fines	GW-GM	well-graded GRAVEL with silt
			GP-GM	poorly graded GRAVEL with silt
			GW-GC	well-graded GRAVEL with clay
			GP-GC	poorly graded GRAVEL with
		GRAVEL with FINES more than 12% fines	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND 50% or more of coarse fraction passes No. 4 sieve	CLEAN SAND less than 5% fines	SW	well-graded SAND
			SP	poorly graded SAND
		SAND with DUAL CLASSIFICATIONS 5% to 12% fines	SW-SM	well-graded SAND with silt
			SP-SM	poorly graded SAND with silt
			SW-SC	well-graded SAND with clay
			SP-SC	poorly graded SAND with clay
		SAND with FINES more than 12% fines	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 sieve	**SILT and CLAY** liquid limit less than 50%	INORGANIC	CL	lean CLAY
			ML	SILT
			CL-ML	silty CLAY
		ORGANIC	OL (PI > 4)	organic CLAY
			OL (PI < 4)	organic SILT
	SILT and CLAY liquid limit 50% or more	INORGANIC	CH	fat CLAY
			MH	elastic SILT
		ORGANIC	OH (plots on or above "A"-line)	organic CLAY
			OH (plots below "A"-line)	organic SILT
	Highly Organic Soils		PT	Peat

Grain Size

Description		Sieve Size	Grain Size	Approximate Size
Boulders		> 12"	> 12"	Larger than basketball-sized
Cobbles		3 - 12"	3 - 12"	Fist-sized to basketball-sized
Gravel	Coarse	3/4 - 3"	3/4 - 3"	Thumb-sized to fist-sized
	Fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	Coarse	#10 - #4	0.079 - 0.19"	Rock-salt-sized to pea-sized
	Medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock-salt-sized
	Fine	#200 - #40	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	< 0.0029"	Flour-sized and smaller

Plasticity Chart



Apparent Density - Coarse-Grained Soil

Apparent Density	Spooling Cable or Cathead: SPT (blows/foot)	Spooling Cable or Cathead: Modified Split Barrel (blows/foot)	Automatic Trip Hammer: SPT (blows/foot)	Automatic Trip Hammer: Modified Split Barrel (blows/foot)
Very Loose	≤ 4	≤ 8	≤ 3	≤ 5
Loose	5 - 10	9 - 21	4 - 7	6 - 14
Medium Dense	11 - 30	22 - 63	8 - 20	15 - 42
Dense	31 - 50	64 - 105	21 - 33	43 - 70
Very Dense	> 50	> 105	> 33	> 70

Consistency - Fine-Grained Soil

Consistency	Spooling Cable or Cathead: SPT (blows/foot)	Spooling Cable or Cathead: Modified Split Barrel (blows/foot)	Automatic Trip Hammer: SPT (blows/foot)	Automatic Trip Hammer: Modified Split Barrel (blows/foot)
Very Soft	< 2	< 3	< 1	< 2
Soft	2 - 4	3 - 5	1 - 3	2 - 3
Firm	5 - 8	6 - 10	4 - 5	4 - 6
Stiff	9 - 15	11 - 20	6 - 10	7 - 13
Very Stiff	16 - 30	21 - 39	11 - 20	14 - 26
Hard	> 30	> 39	> 20	> 26

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USCS METHOD OF SOIL CLASSIFICATION

BORING LOG EXPLANATION SHEET

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	
0								Bulk sample.
								Modified split-barrel drive sampler.
								No recovery with modified split-barrel drive sampler.
								Sample retained by others.
								Standard Penetration Test (SPT).
5								No recovery with a SPT.
			XX/XX					Shelby tube sample. Distance pushed in inches/length of sample recovered in inches.
								No recovery with Shelby tube sampler.
								Continuous Push Sample.
								Seepage.
10								Groundwater encountered during drilling.
								Groundwater measured after drilling.
							SM	MAJOR MATERIAL TYPE (SOIL): Solid line denotes unit change.
							CL	Dashed line denotes material change.
15								Attitudes: Strike/Dip b: Bedding c: Contact j: Joint f: Fracture F: Fault cs: Clay Seam s: Shear bss: Basal Slide Surface sf: Shear Fracture sz: Shear Zone sbs: Shear Bedding Surface
								The total depth line is a solid line that is drawn at the bottom of the boring.
20								

DATE DRILLED	9/22/2025	BORING NO.	B-9-1
GROUND ELEVATION	3,768' ± (MSL)	SHEET	1 OF 3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	JP	LOGGED BY	JP
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0						GM	FILL: Light brown, dry, medium dense, silty GRAVEL with sand.
		7/6" 9/6" 10/6"				GP-GC	NATIVE SOIL: Light brown, dry, medium dense, poorly graded GRAVEL with clay and sand.
5		8/6" 8/6" 8/6"					
		30/6" 35/6" 35/6"	3.5				Very dense, moist; Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
10		10/6" 35/6" 50/5"	3.5	125.3			
							Light brownish gray, moist, moderately hard, moderately cemented CALICHE.
						GC	Light brown, moist, dense, clayey GRAVEL with sand; Porous, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
		13/6" 15/6" 16/6"					
15		20/6" 32/6" 50/5"	5.6	116.1			Very dense.
20							

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MERCURY - BUILDINGS 9&10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA
305320002 | 2/2026

DATE DRILLED 9/22/2025 BORING NO. B-9-1

GROUND ELEVATION 3,768' ± (MSL) SHEET 2 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY JP LOGGED BY JP REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20			14/6" 14/6" 24/6"				GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; Porous, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25			24/6" 38/6" 49/6"	4.7	124.8			
30			27/6" 26/6" 21/6"				GP-GC	Light brown, moist, very dense, poorly graded GRAVEL with clay and sand; Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
35			50/5"				GC	Light brown, moist, very dense, clayey GRAVEL with sand; Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
40								

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40			50/5"				GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; Porous, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
45			50/5"					
								Grayish brown, moist, hard, strongly cemented CALICHE.
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; Porous, scattered layers of moderately hard, moderately cemented CALICHE several inches thick.
50			25/6" 32/6" 30/6"	5.3				
								Total Depth = 51.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 9/22/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
55								
60								

DATE DRILLED 9/22/2025 BORING NO. B-9-1

GROUND ELEVATION 3,768' ± (MSL) SHEET 3 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY JP LOGGED BY JP REVIEWED BY MCS

DATE DRILLED 10/16/2025 BORING NO. B-9-2

GROUND ELEVATION 3,776' ± (MSL) SHEET 1 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
			15/6" 30/6" 35/6"	4.6			SM	NATIVE SOIL: Light brown, moist, very dense, silty SAND with gravel.
5			25/6" 40/6" 50/5"	5.1	117.1			Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
			10/6" 21/6" 20/6"				GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous.
10			30/6" 50/5"	5.2	116.4			Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
			32/6" 33/6" 38/6"					
15			27/6" 35/6" 30/6"					
20								

FIGURE A - 4

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MERCURY - BUILDINGS 9&10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA
305320002 | 2/2026

DATE DRILLED 10/16/2025 BORING NO. B-9-2

GROUND ELEVATION 3,776' ± (MSL) SHEET 2 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20			19/6" 50/4"	4.5	120.3		GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25			18/6" 27/6" 35/6"					
30			20/6" 50/4"	5.8	110.2			
35			22/6" 24/6" 40/6"					
40								

DATE DRILLED	10/16/2025	BORING NO.	B-9-2
GROUND ELEVATION	3,776' ± (MSL)	SHEET 3 OF 3	
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY KNS	REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40		■	20/6" 50/4"	7.4	109.3		GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
45		■	14/6" 17/6" 19/6"					
								Light grayish brown, moist, hard, strongly cemented CALICHE.
50		■	50/5"					
								Total Depth = 50.4 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/16/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
55								
60								

DATE DRILLED	9/24/2025	BORING NO.	B-9-3
GROUND ELEVATION	3,771' ± (MSL)	SHEET	1 OF 3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY	KNS
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, dense, poorly graded GRAVEL with silt and sand.
								Very dense.
		Driven	16/6" 26/6" 38/6"					
							SM	NATIVE SOIL: Light brown, dry, very dense, silty SAND with gravel.
5		Driven	15/6" 24/6" 39/6"	2.4	118.4			Dense; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
		Driven	11/6" 7/6" 8/6"	8.6			SC	Light brown, moist, medium dense, clayey SAND with gravel; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
10		Driven	5/6" 14/6" 20/6"					
		Driven	8/6" 12/6" 18/6"					Dense.
15		Driven	16/6" 50/5"	5.1	113.3			Very dense.
20								

FIGURE A - 7

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MERCURY - BUILDINGS 9&10 DESIGN
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DATE DRILLED	9/24/2025	BORING NO.	B-9-3
GROUND ELEVATION	3,771' ± (MSL)	SHEET	2 OF 3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY	KNS
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20		X	24/6" 40/6" 50/2"				SC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey SAND with gravel; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25		X	29/6" 50/4"	4.4	115.5			
								Light brown, moist, moderately hard, moderately cemented CALICHE.
30		X	50/5"					
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
35		X	24/6" 27/6" 30/6"	4.5				
40								

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MERCURY - BUILDINGS 9&10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA
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DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED 9/24/2025 BORING NO. B-9-3 GROUND ELEVATION 3,771' ± (MSL) SHEET 3 OF 3 METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30" SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS **DESCRIPTION/INTERPRETATION**
40		■	27/6" 50/3"					NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
45		■	20/6" 25/6" 31/6"					Less cementation.
50		■	28/6" 34/6" 38/6"	7.7				
								Total Depth = 51.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 9/24/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
55								
60								

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.

DATE DRILLED 10/16/2025 BORING NO. B-9-4

GROUND ELEVATION 3,776' ± (MSL) SHEET 1 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DESCRIPTION/INTERPRETATION

DEPTH (feet)	Bulk	Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0						GP-GM	FILL: Light brown, dry, dense, poorly graded GRAVEL with silt and sand.
						SM	Light brown, moist, dense, silty SAND with gravel.
		X	23/6" 22/6" 21/6"	3.3	121.8		
						GM	NATIVE SOIL: Light brown, moist, dense, silty GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
5		X	12/6" 12/6" 14/6"				
		X	27/6" 19/6" 31/6"	13.2	121.2		
10							Very dense.
		X	29/6" 23/6" 24/6"				
		X	19/6" 39/6" 50/3"	11.9	103.6		
15						GC	Light brown, moist, dense, clayey GRAVEL with sand; porous.
		X	28/6" 16/6" 16/6"				
20							

FIGURE A - 10

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MERCURY - BUILDINGS 9&10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA
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DATE DRILLED	10/16/2025	BORING NO.	B-9-4	
GROUND ELEVATION	3,776' ± (MSL)	SHEET	2	OF 3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig			
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"	
SAMPLED BY	KNS	LOGGED BY	KNS	REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20		■	32/6" 50/5"	3.2	123.2		GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25		■	17/6" 26/6" 37/6"					
30		■	50/5"					
35		■	25/6" 33/6" 50/6"	6.1				Porous.
40								

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MERCURY - BUILDINGS 9&10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA
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DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40		■	50/4"				GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
45		◣	30/6" 38/6" 38/6"	5.9				Porous.
50		◣	37/6" 21/6" 18/6"					
								Total Depth = 51.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/16/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
55								
60								

DATE DRILLED 10/16/2025 BORING NO. B-9-4

GROUND ELEVATION 3,776' ± (MSL) SHEET 3 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DATE DRILLED	9/24/2025	BORING NO.	B-9-5
GROUND ELEVATION	3,772' ± (MSL)	SHEET	1 OF 3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	JP	LOGGED BY	JP
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, dense, poorly graded GRAVEL with silt and sand.
			10/6" 23/6" 25/6"				GP-GM	NATIVE SOIL: Light brown, dry, very dense, poorly graded GRAVEL with silt and sand.
5			20/6" 28/6" 29/6"	3.4	126.2			Dense, moist; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
			16/6" 19/6" 16/6"					Very dense.
10			10/6" 25/6" 35/6"				GC	Light brown, moist, dense, clayey GRAVEL with sand; porous, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
			18/6" 16/6" 15/6"					
15			27/6" 35/6" 37/6"	4.2	129.2		GP-GC	Light brown, moist, very dense, poorly graded GRAVEL with clay and sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
20								

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MERCURY - BUILDINGS 9&10 DESIGN
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DATE DRILLED	9/24/2025	BORING NO.	B-9-5		
GROUND ELEVATION	3,772' ± (MSL)	SHEET	2	OF	3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig				
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"		
SAMPLED BY	JP	LOGGED BY	JP	REVIEWED BY	MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20		■	27/6" 15/6" 30/6"				GP-GC	NATIVE SOIL (Continued): Light brown, moist, very dense, poorly graded GRAVEL with clay and sand; porous, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25		■	50/5"				GC	Brown, moist, very dense, clayey GRAVEL with sand.
30		■	15/6" 11/6" 15/6"	8.4				Dense; porous, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
35		■	50/5"					Very dense.
40								

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED 9/24/2025 BORING NO. B-9-5 GROUND ELEVATION 3,772' ± (MSL) SHEET 3 OF 3 METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30" SAMPLED BY JP LOGGED BY JP REVIEWED BY MCS **DESCRIPTION/INTERPRETATION**
40			16/6" 25/6" 49/6"	12.9			SM	NATIVE SOIL (Continued): Light grayish brown, moist, very dense, silty SAND with gravel; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
								Light grayish brown, moist, moderately hard, moderately cemented CALICHE.
							GC	Light grayish brown, moist, very dense, clayey GRAVEL with sand.
45			30/6" 38/6" 44/6"					
								Light grayish brown, moist, hard, strongly cemented CALICHE.
							GC	Light brown, moist, dense, clayey GRAVEL with sand.
50			23/6" 31/6" 26/6"					
								Total Depth = 51.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 9/24/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
55								
60								

DATE DRILLED	9/24/2025	BORING NO.	B-9-6
GROUND ELEVATION	3,768' ± (MSL)	SHEET 1 OF 1	
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY JP	LOGGED BY JP	REVIEWED BY	MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
		Driven	8/6" 8/6" 7/6"					
							GM	NATIVE SOIL: Light brown, dry, medium dense, silty GRAVEL with sand.
5		Driven	9/6" 8/6" 10/6"					
		Driven	21/6" 19/6" 16/6"					Very dense; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
10		Driven	50/5"				GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous, scattered layers of moderately hard, moderately cemented CALICHE several inches thick.
							SC	Light brown, moist, very dense, clayey SAND with gravel; porous, scattered layers of moderately hard, moderately cemented CALICHE several inches thick.
		Driven	24/6" 26/6" 49/6"	4.1	125.2			
15		Driven	36/6" 31/6" 34/6"					Dense.
								Total Depth = 16.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 9/24/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
20								

DATE DRILLED	10/15/2025	BORING NO.	B-9-7
GROUND ELEVATION	3,768' ± (MSL)	SHEET 1 OF 2	
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY KNS	REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
			10/6" 37/6" 50/5"	3.0	126.3		GM	NATIVE SOIL: Light brown, dry, very dense, silty GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
5			50/1"					Light brown, dry, moderately hard, moderately cemented CALICHE.
							GM	Light brown, dry, very dense, silty GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
			27/6" 30/6" 38/6"	7.5	116.6		SC	Light brown, moist, dense, clayey SAND with gravel.
10			12/6" 12/6" 16/6"				GC	Light brown, moist, dense, clayey GRAVEL with sand; porous.
			20/6" 30/6" 50/5"	7.9	121.9			Very dense; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
15			20/6" 30/6" 31/6"					
20								

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MERCURY - BUILDINGS 9&10 DESIGN
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DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20		■	38/6" 50/4"	5.4	117.4		GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25		◩	50/5"					
								Light brown, moist, hard, strongly cemented CALICHE.
30		■	50/5"					
								Total Depth = 30.4 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/15/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
35								
40								

DATE DRILLED 10/15/2025 BORING NO. B-9-7

GROUND ELEVATION 3,768' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DATE DRILLED	10/15/2025	BORING NO. B-9-8
GROUND ELEVATION	3,772' ± (MSL)	SHEET 1 OF 3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig	
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP 30"
SAMPLED BY KNS	LOGGED BY KNS	REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
							GP-GM	NATIVE SOIL: Light brown, dry, very dense, poorly graded GRAVEL with silt and sand.
			13/6" 28/6" 50/2"					
								Light brown, dry, hard, strongly cemented CALICHE.
5							GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous.
			18/6" 21/6" 50/6"	5.3	123.9			
			18/6" 21/6" 17/6"					
10			28/6" 50/5"	7.6	121.0			Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
			26/6" 32/6" 26/6"					
15			33/6" 50/3"	2.9	113.3			
20								

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20			28/6" 38/6" 44/6"					NATIVE SOIL (Continued): Light brown, moist, very dense, silty GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
								Light brown, moist, hard, strongly cemented CALICHE.
25			50/3"	5.8	114.3			
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous.
30			37/6" 41/6" 49/6"					
35			35/6" 42/6" 48/6"					
40								

DATE DRILLED 10/15/2025 BORING NO. B-9-8

GROUND ELEVATION 3,772' ± (MSL) SHEET 2 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40		■	14/6" 20/6" 22/6"	7.3				NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand.
								Total Depth = 41.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/15/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
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DATE DRILLED 10/15/2025 BORING NO. B-9-8

GROUND ELEVATION 3,772' ± (MSL) SHEET 3 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DATE DRILLED	10/16/2025	BORING NO.	B-9-9
GROUND ELEVATION	3,767' ± (MSL)	SHEET	1 OF 2
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY	KNS
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
							GM	NATIVE SOIL: Light brown, dry, very dense, silty GRAVEL with sand.
			11/6" 19/6" 31/6"					
5			25/6" 50/5"	6.2	125.3			Moist; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
			21/6" 21/6" 20/6"					
10			22/6" 50/4"	5.9	111.5			
								Light brown, moist, hard, strongly cemented CALICHE.
			50/2"					
							GM	Light brown, moist, very dense, silty GRAVEL with sand.
15			31/6" 50/5"					
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DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20		■	21/6" 37/6" 41/6"	4.5			SM	NATIVE SOIL (Continued): Light brown, moist, very dense, silty SAND with gravel; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25		■	50/3"					Light brown, moist, hard, strongly cemented CALICHE.
							GM	Light brown, moist, very dense, silty GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
30		■	30/6" 40/6" 31/6"					
								Total Depth = 31.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/16/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
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DATE DRILLED 10/16/2025 BORING NO. B-9-9

GROUND ELEVATION 3,767' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

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DATE DRILLED 9/23/2025 BORING NO. B-9-10

GROUND ELEVATION 3,767' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY JP LOGGED BY JP REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
		Driven	6/6" 8/6" 9/6"					
							GM	NATIVE SOIL: Light brown, moist, dense, silty GRAVEL with sand.
5		Driven	12/6" 20/6" 32/6"	8.0	116.9			
		Driven	20/6" 15/6" 16/6"					Dense; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
10		Driven	18/6" 26/6" 49/6"					Very dense.
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
		Driven	33/6" 27/6" 25/6"	14.2				
15		Driven	12/6" 38/6" 43/6"	5.7	123.8			
							GP-GM	Brown, moist, very dense, poorly graded GRAVEL with silt and sand, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
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DATE DRILLED	9/23/2025	BORING NO.	B-9-10
GROUND ELEVATION	3,767' ± (MSL)	SHEET 2 OF 2	
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	JP	LOGGED BY JP	REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20		X	17/6" 17/6" 18/6"				GP-GM	NATIVE SOIL (Continued): Brown, moist, very dense, poorly graded GRAVEL with silt and sand, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25		X	33/6" 42/6" 50/5"	4.8	122.3		GM	Brown, moist, very dense, silty GRAVEL with sand.
							GP-GC	Light grayish brown, moist, very dense, poorly graded GRAVEL with clay and sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
30		X	24/6" 36/6" 26/6"					
								Total Depth = 31.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 9/23/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
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DATE DRILLED	10/20/2025	BORING NO.	B-9-11
GROUND ELEVATION	3,776' ± (MSL)	SHEET	1 OF 2
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY	KNS
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
							GM	NATIVE SOIL: Light brown, dry, very dense, silty GRAVEL with sand.
			18/6" 19/6" 20/6"					
5			11/6" 24/6" 34/6"	5.1	126.5			Moist, dense.
			13/6" 21/6" 20/6"				GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous.
10			12/6" 20/6" 35/6"					Dense.
			12/6" 16/6" 17/6"	14.4			SC	Light brown, moist, very dense, clayey SAND with gravel; porous, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
15			23/6" 50/5"	5.6	111.5			Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
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DATE DRILLED	10/20/2025	BORING NO.	B-9-11
GROUND ELEVATION	3,776' ± (MSL)	SHEET	2 OF 2
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY	KNS
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20		■	22/6" 24/6" 38/6"				GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand.
								Light brown, moist, hard, strongly cemented CALICHE.
25		■	50/2"					
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous.
30		■	24/6" 26/6" 43/6"	6.8				
								Total Depth = 31.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/20/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
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DATE DRILLED	10/21/2025	BORING NO.	B-10-1
GROUND ELEVATION	3,766' ± (MSL)	SHEET	1 OF 3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY	KNS
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
			8/6" 12/6" 20/6"	2.2			SP-SM	NATIVE SOIL: Light brown, dry, dense, poorly graded SAND with silt and gravel. Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
5			20/6" 31/6" 50/5"	2.7	126.4			Very dense.
			16/6" 16/6" 19/6"					Light brown, dry, silty GRAVEL with sand.
10			20/6" 34/6" 50/5"	3.0	128.1			
			10/6" 17/6" 21/6"				GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous.
15			28/6" 50/5"	6.6	110.4			Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
20								

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20			21/6" 32/6" 50/6"				GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25			30/6" 50/5"	5.1	110.4			
30			36/6" 50/4"					
35			41/6" 50/2"	4.1	113.6			
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DATE DRILLED 10/21/2025 BORING NO. B-10-1

GROUND ELEVATION 3,766' ± (MSL) SHEET 2 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40			35/6" 50/4"				GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand.
								Light brown, moist, hard, strongly cemented CALICHE.
45			50/2"					
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
50			37/6" 50/2"					
								Total Depth = 50.7 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/21/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
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DATE DRILLED 10/21/2025 BORING NO. B-10-1

GROUND ELEVATION 3,766' ± (MSL) SHEET 3 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DATE DRILLED 9/24/2025 BORING NO. B-10-2

GROUND ELEVATION 3,766' ± (MSL) SHEET 1 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0					GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
	Driven	13/6" 15/6" 20/6"				Very dense.
					GM	NATIVE SOIL: Light brown, dry, dense, silty GRAVEL with sand.
5	Driven	15/6" 20/6" 40/6"	3.2	124.1		
	Driven	10/6" 8/6" 8/6"			GC	Light brown, moist, medium dense, clayey GRAVEL with sand; porous.
10	Driven	7/6" 10/6" 13/6"				
	Driven	16/6" 12/6" 14/6"	5.9		GP-GM	Light brown, moist, dense, poorly graded GRAVEL with silt and sand.
15	Driven	6/6" 50/5"				
						Light brown, moist, moderately hard, moderately cemented CALICHE.
					GC	Light brown, moist, very dense, clayey GRAVEL with sand.
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DATE DRILLED	9/24/2025	BORING NO.	B-10-2
GROUND ELEVATION	3,766' ± (MSL)	SHEET	2 OF 3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY	KNS
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20		▼	13/6" 15/6" 20/6"				SC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey SAND with gravel; porous.
25		■	20/6" 50/3"	4.7	113.2			Light grayish brown, moist, hard, strongly cemented CALICHE.
							SP-SM	Light brown, moist, very dense, poorly graded SAND with silt and gravel.
30		▼	15/6" 16/6" 19/6"	5.0				
								Light grayish brown, moist, hard, strongly cemented CALICHE.
35		■	50/3"					
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
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MERCURY - BUILDINGS 9&10 DESIGN
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DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40			17/6" 38/6" 50/2"					NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
45			27/6" 50/5"					
50			50/5"					Total Depth = 50.4 feet. Groundwater not encountered while drilling. Backfilled with grout on 9/24/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
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DATE DRILLED 9/24/2025 BORING NO. B-10-2

GROUND ELEVATION 3,766' ± (MSL) SHEET 3 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DATE DRILLED	10/22/2025	BORING NO.	B-10-3
GROUND ELEVATION	3,766' ± (MSL)	SHEET 1 OF 3	
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY KNS	LOGGED BY KNS	REVIEWED BY	MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
			39/6" 46/6" 44/6"				GM	NATIVE SOIL: Light brown, dry, very dense, silty GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
5			6/6" 10/6" 9/6"					Medium dense.
			15/6" 50/5"	8.2	114.1			Moist, very dense.
10			12/6" 16/6" 22/6"					
			19/6" 41/6" 46/6"				GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous.
15			12/6" 14/6" 17/6"					Dense.
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DATE DRILLED	10/22/2025	BORING NO.	B-10-3
GROUND ELEVATION	3,766' ± (MSL)	SHEET 2 OF 3	
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY KNS	LOGGED BY KNS	REVIEWED BY	MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20		■	34/6" 50/5"	3.7	107.9		GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; porous, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25		◢	23/6" 42/6" 44/6"					
30		■	46/6" 50/2"	4.7	112.8			
35		◢	22/6" 28/6" 27/6"					
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FIGURE A - 35

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DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40		■	26/6" 50/3"				GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; porous, scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
45		◣	17/6" 17/6" 22/6"	3.2				
50		■	21/6" 50/5"	5.2	109.1			
								Total Depth = 50.9 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/22/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
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DATE DRILLED 10/22/2025 BORING NO. B-10-3

GROUND ELEVATION 3,766' ± (MSL) SHEET 3 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DATE DRILLED 10/21/2025 BORING NO. B-10-4

GROUND ELEVATION 3,766' ± (MSL) SHEET 1 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0				1.1			GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
			12/6" 14/6" 10/6"				GM	NATIVE SOIL: Light brown, dry, medium dense, silty GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
5			19/6" 36/6" 27/6"					Very dense.
			11/6" 16/6" 34/6"	8.5	110.3			Dense.
10			16/6" 16/6" 17/6"				GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous.
			48/6" 50/2"					Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
15			28/6" 26/6" 30/6"	4.1			SW-SM	Light brown, moist, very dense, well-graded SAND with silt and gravel.
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DATE DRILLED	10/21/2025	BORING NO.	B-10-4
GROUND ELEVATION	3,766' ± (MSL)	SHEET	2 OF 3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY	KNS
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20		■	50/4"	4.9	106.3		GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25		■	24/6" 24/6" 31/6"					
30		■	50/2"					Light grayish brown, moist, hard, strongly cemented CALICHE.
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
35		■	27/6" 32/6" 30/6"	4.1				
40								

DATE DRILLED	10/21/2025	BORING NO.	B-10-4
GROUND ELEVATION	3,766' ± (MSL)	SHEET 3 OF 3	
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY KNS	REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40		■	31/6" 36/6" 49/6"				GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
								Light grayish brown, moist, hard, strongly cemented CALICHE.
45		■	50/5"					
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
50		■	23/6" 42/6" 35/6"	9.0				
								Total Depth = 51.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/21/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
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DATE DRILLED 10/20/2025 BORING NO. B-10-5

GROUND ELEVATION 3,769' ± (MSL) SHEET 1 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0						GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
		14/6" 7/6" 4/6"				GM	NATIVE SOIL: Light brown, dry, medium dense, silty GRAVEL with sand.
5		18/6" 42/6" 45/6"	5.6	116.7			Moist, very dense; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
		14/6" 16/6" 24/6"				GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous.
10		38/6" 50/1"	8.0	106.0			Scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
		13/6" 17/6" 19/6"					
15		22/6" 50/4"	5.8	115.9			
20							

FIGURE A - 40

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MERCURY - BUILDINGS 9&10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA
305320002 | 2/2026

DATE DRILLED	10/20/2025	BORING NO.	B-10-5
GROUND ELEVATION	3,769' ± (MSL)	SHEET	2 OF 3
METHOD OF DRILLING	CME-85 Hollow Stem Auger Drill Rig		
DRIVE WEIGHT	140 lbs. (Auto Trip)	DROP	30"
SAMPLED BY	KNS	LOGGED BY	KNS
REVIEWED BY	MCS		

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
20			12/6" 15/6" 19/6"				SC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey SAND with gravel; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
25			21/6" 32/6" 36/6"	3.9	127.4		GC	Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches.
30			34/6" 50/5"	5.4				
								Light brown, moist, moderately hard, moderately cemented CALICHE.
35			50/3"					
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches.
40								

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40			50/4"				GC	NATIVE SOIL (Continued): Light brown, moist, very dense, clayey GRAVEL with sand; scattered layers of moderately hard, moderately cemented CALICHE a few inches.
45			27/6" 50/5"					
								Light grayish brown, moist, hard, strongly cemented CALICHE.
							GC	Light brown, moist, very dense, clayey GRAVEL with sand; porous.
50			36/6" 44/6" 33/6"					
								Total Depth = 51.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/20/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
55								
60								

DATE DRILLED 10/20/2025 BORING NO. B-10-5

GROUND ELEVATION 3,769' ± (MSL) SHEET 3 OF 3

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							GP-GM	FILL: Light brown, dry, medium dense, poorly graded GRAVEL with silt and sand.
							GM	NATIVE SOIL: Light brown, dry, dense, silty GRAVEL with sand.
			23/6" 30/6" 36/6"					
5							GC	Light brown, moist, dense, clayey GRAVEL with sand; porous.
			10/6" 10/6" 15/6"					
			26/6" 37/6" 43/6"					Very dense; scattered layers of moderately hard, moderately cemented CALICHE a few inches thick.
10			10/6" 19/6" 24/6"					
			14/6" 33/6" 50/2"					
15			35/6" 33/6" 40/6"	8.4	112.9			
								Total Depth = 16.5 feet. Groundwater not encountered while drilling. Backfilled with grout on 10/20/2025. Notes: Groundwater may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
20								

DATE DRILLED 10/20/2025 BORING NO. B-10-6

GROUND ELEVATION 3,775' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING CME-85 Hollow Stem Auger Drill Rig

DRIVE WEIGHT 140 lbs. (Auto Trip) DROP 30"

SAMPLED BY KNS LOGGED BY KNS REVIEWED BY MCS

APPENDIX B

Laboratory Testing

APPENDIX B

LABORATORY TESTING

Classification

Soils were visually and texturally classified in accordance with the Unified Soil Classification System (USCS) in general accordance with ASTM D 2488. Soil classifications are indicated on the logs of the exploratory borings in Appendix A.

In Place Moisture and Density

The moisture content and dry density of samples obtained from the exploratory borings were evaluated in general accordance with ASTM D 2216 and D 2937. The test results are presented on the logs of the exploratory borings in Appendix A.

Gradation Analysis

Gradation analysis tests were performed on selected representative soil samples in general accordance with ASTM D 422. These test results were utilized in evaluating the soil classifications in accordance with the USCS. The grain size distribution curves are shown on Figure B-1 through Figure B-14.

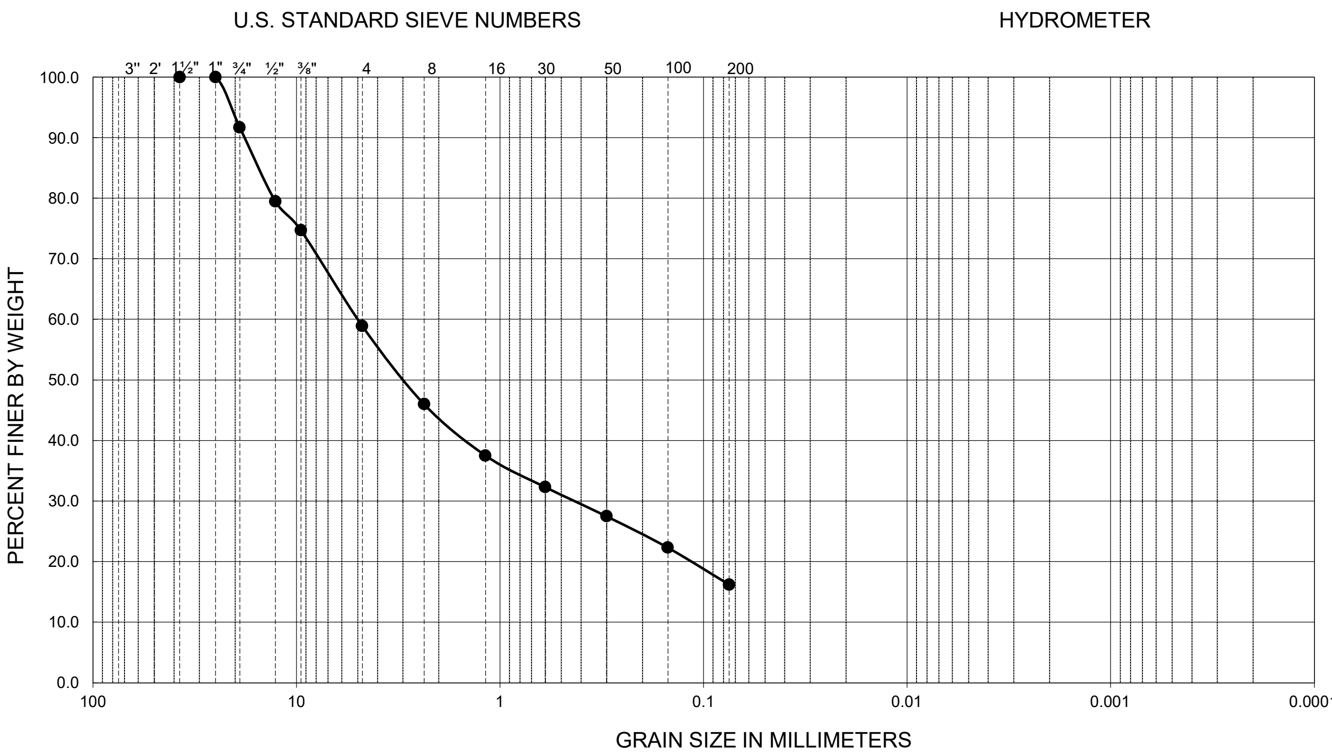
Atterberg Limits

Tests were performed on selected representative soil samples to evaluate the liquid limit, plastic limit, and plasticity index in general accordance with ASTM D 4318. These test results were utilized to evaluate the soil classification in accordance with the USCS. The test results and classifications are shown on Figure B-15 and Figure B-16.

Proctor Density Tests

The maximum dry density and optimum moisture content of selected representative soil samples were evaluated using the standard Proctor method in general accordance with ASTM D 698. The results of these tests are summarized on Figures B-17 through B-19.

GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-9-2	2.5-4.0	NP	NP	NP	--	0.43	4.98	--	--	16.2	SM

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Silty SAND with gravel
41.1	42.7	16.2	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

"NP" INDICATES NON-PLASTIC

FIGURE B-1

GRADATION TEST RESULTS

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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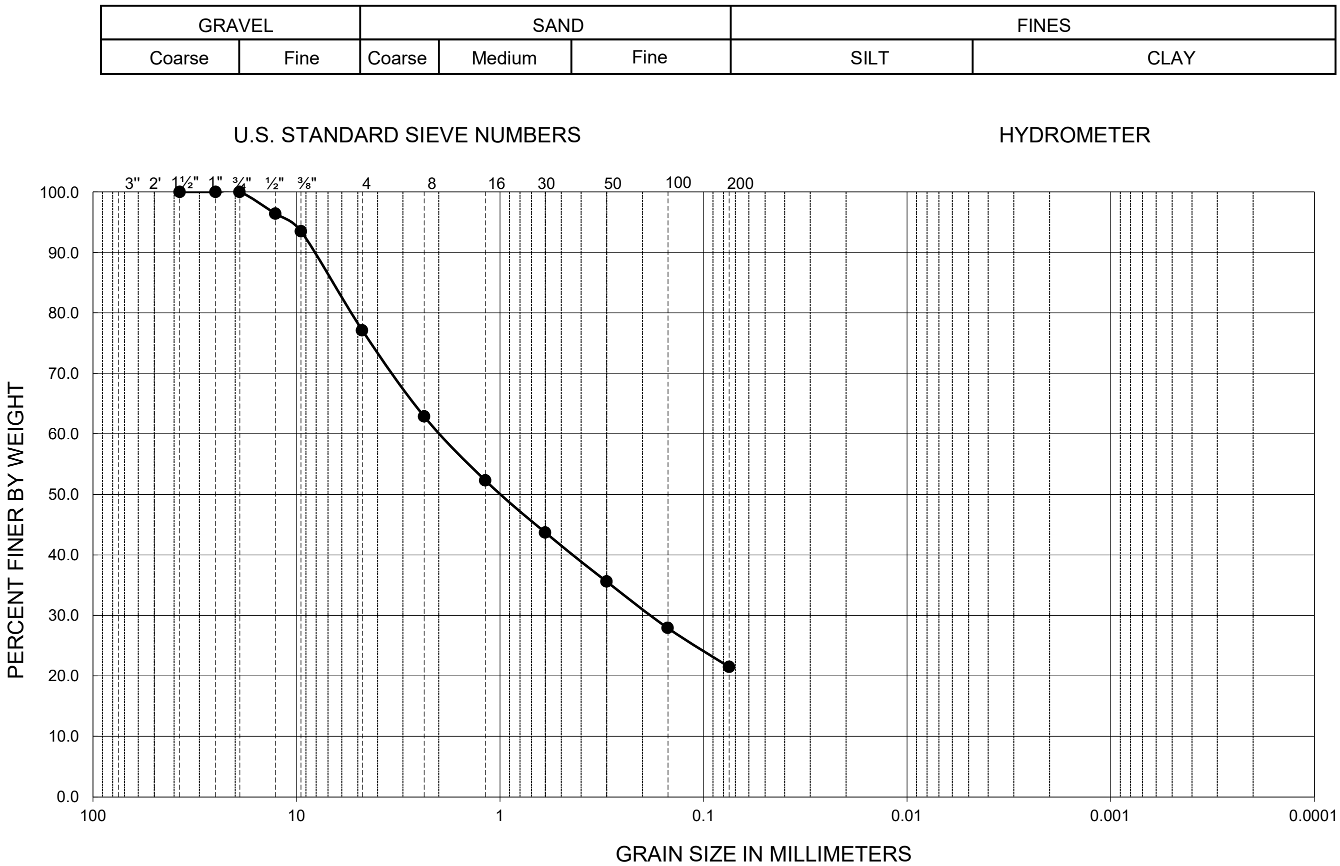

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-9-3	7.5-9.0	45	23	22	--	0.18	1.95	--	--	21.5	SC

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Clayey SAND with gravel
22.9	55.6	21.5	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

FIGURE B-2

GRADATION TEST RESULTS

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MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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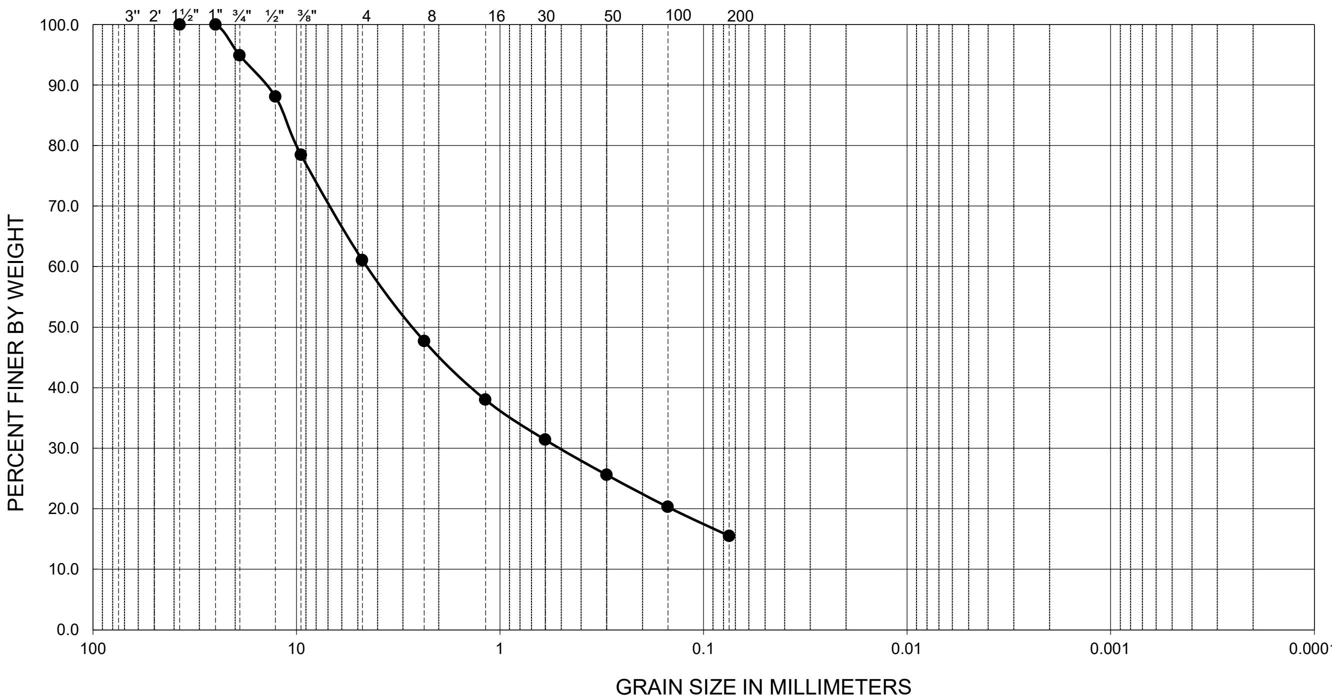
GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-9-4	2.5-4.0	NP	NP	NP	--	0.51	4.48	--	--	15.5	SM

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Silty SAND with gravel
38.9	45.6	15.5	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

"NP" INDICATES NON-PLASTIC

FIGURE B-3

GRADATION TEST RESULTS

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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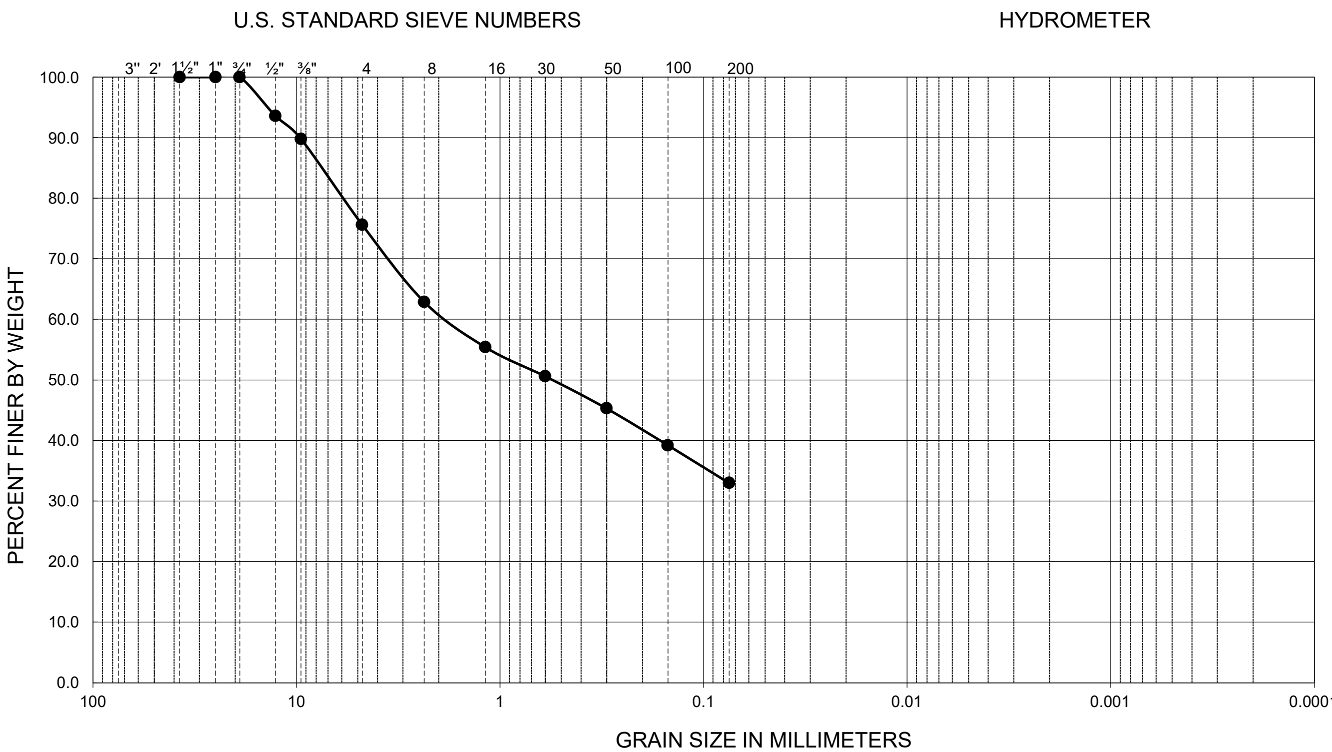
GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-9-5	40.0-41.5	43	27	16	--	--	1.81	--	--	33.0	SM

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Silty SAND with gravel
24.4	42.6	33.0	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

FIGURE B-4

GRADATION TEST RESULTS

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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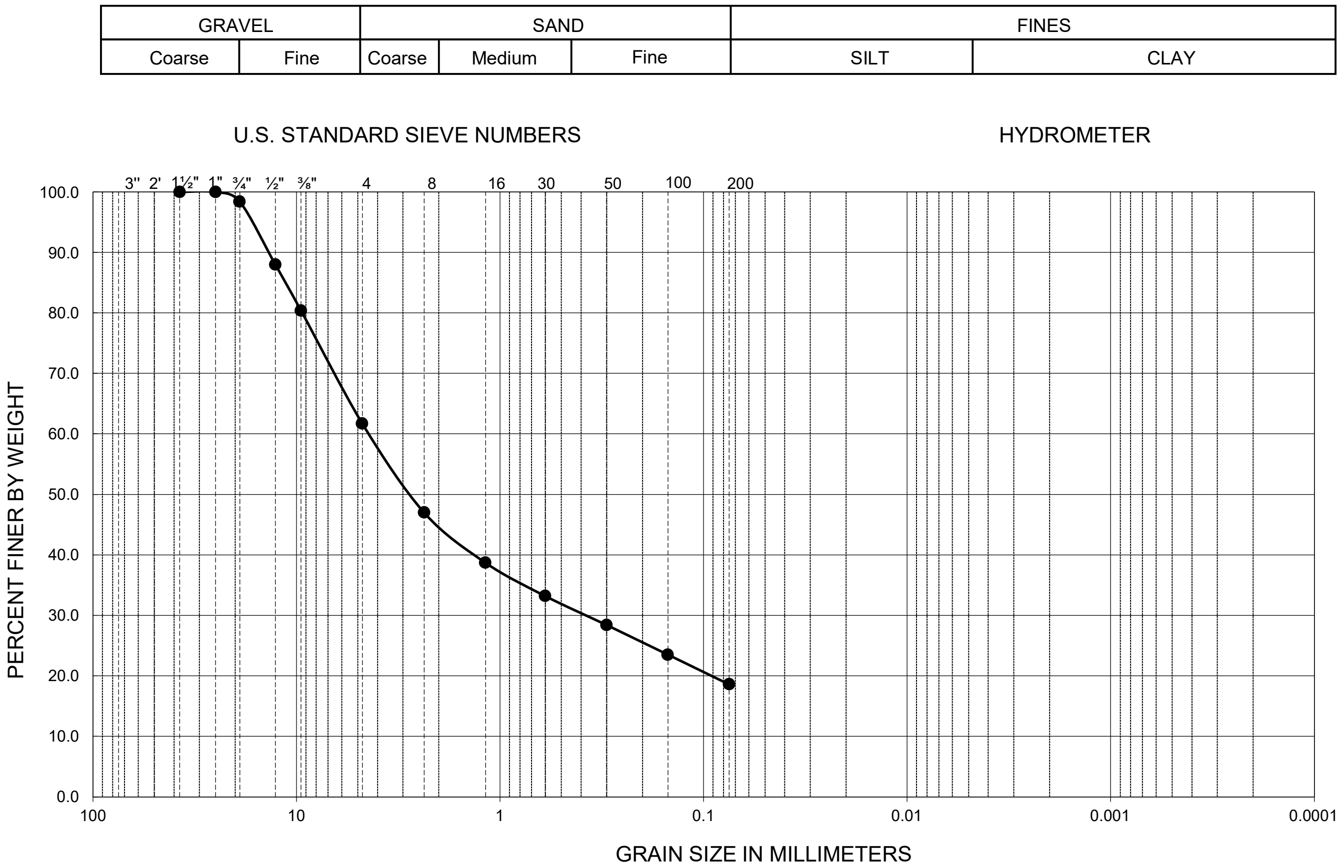

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-9-6	12.5-14.0	37	20	17	--	0.38	4.38	--	--	18.6	SC

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Clayey SAND with gravel
38.3	43.1	18.6	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

FIGURE B-5

GRADATION TEST RESULTS

MERCURY - BUILDINGS 9 & 10 DESIGN
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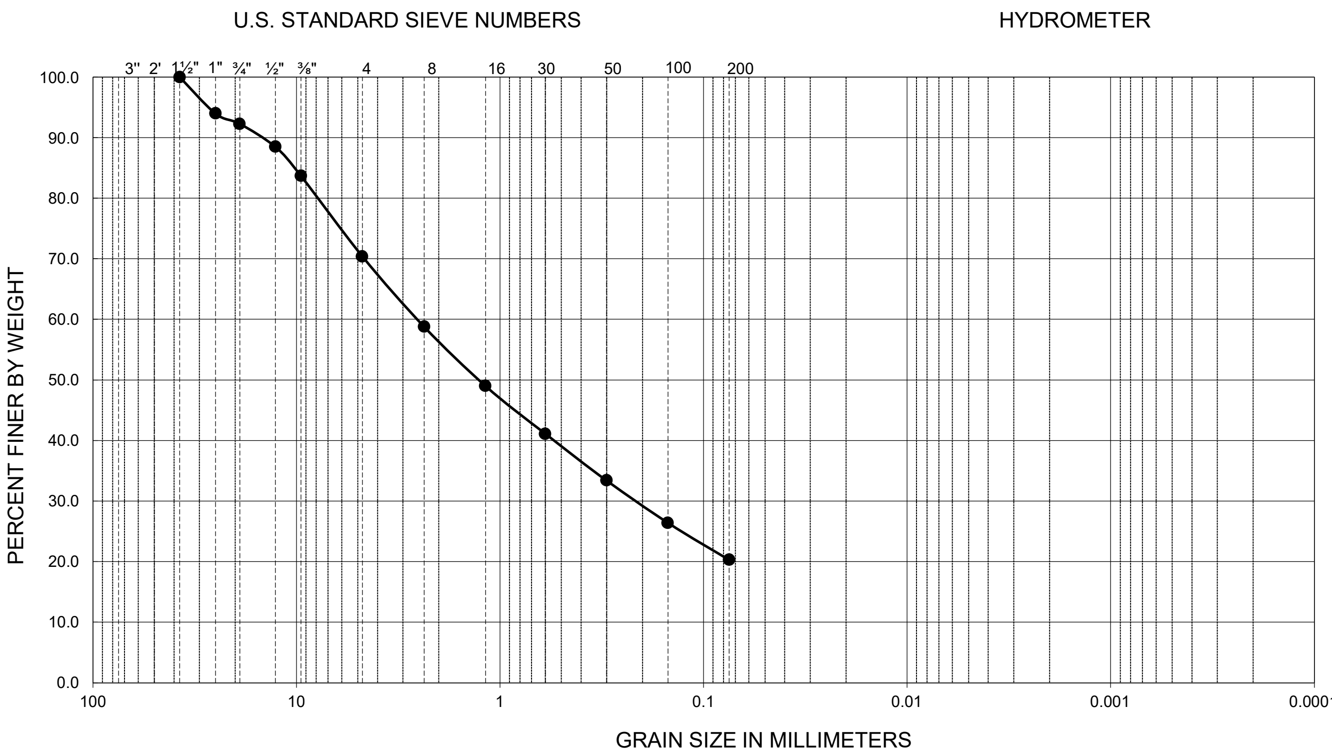
GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-9-7	7.5-9.0	40	19	21	--	0.21	2.54	--	--	20.3	SC

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Clayey SAND with gravel
29.6	50.1	20.3	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

FIGURE B-6

GRADATION TEST RESULTS

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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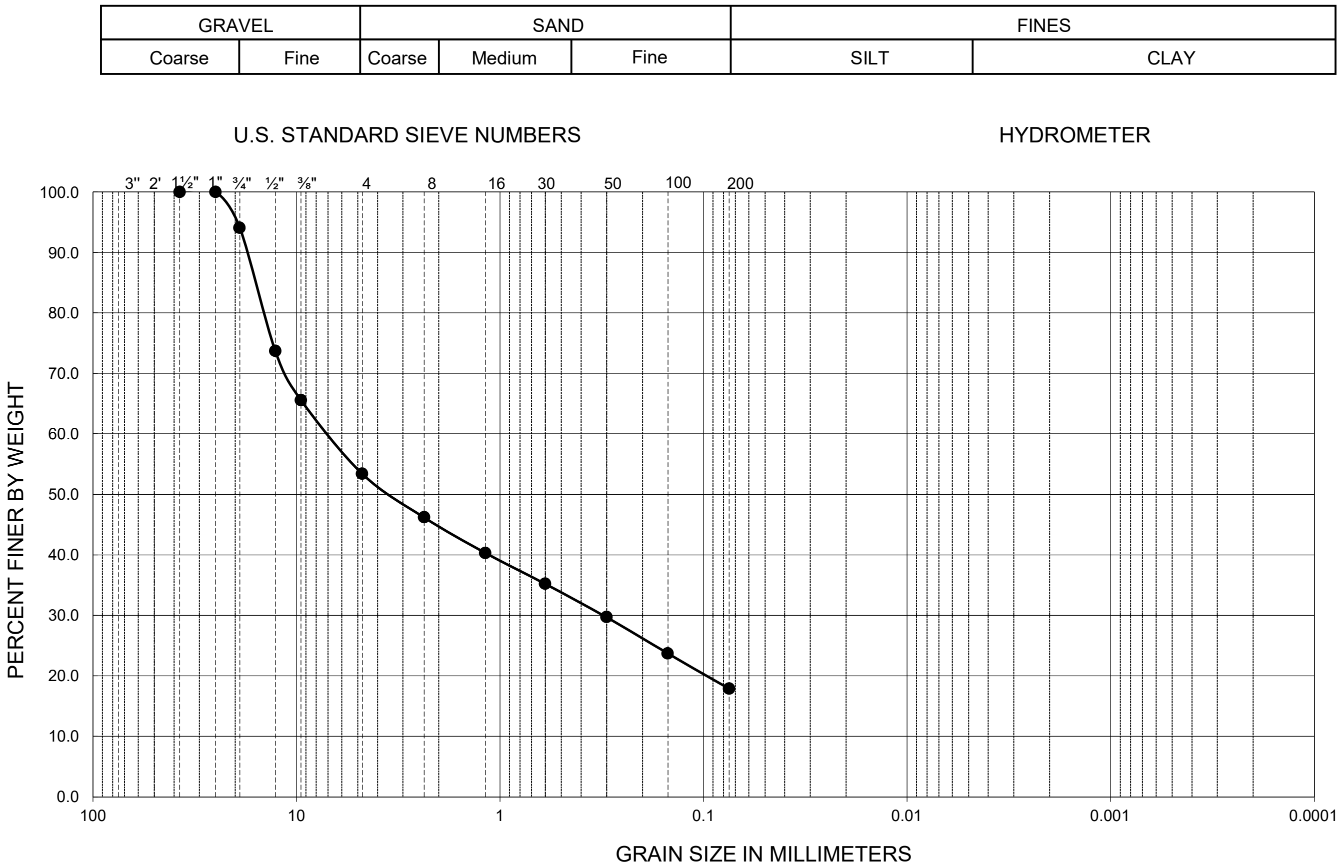

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-9-8	5.0-6.5	42	23	19	--	0.31	6.91	--	--	17.9	GC

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Clayey GRAVEL with sand
46.6	35.5	17.9	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

FIGURE B-7

GRADATION TEST RESULTS

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MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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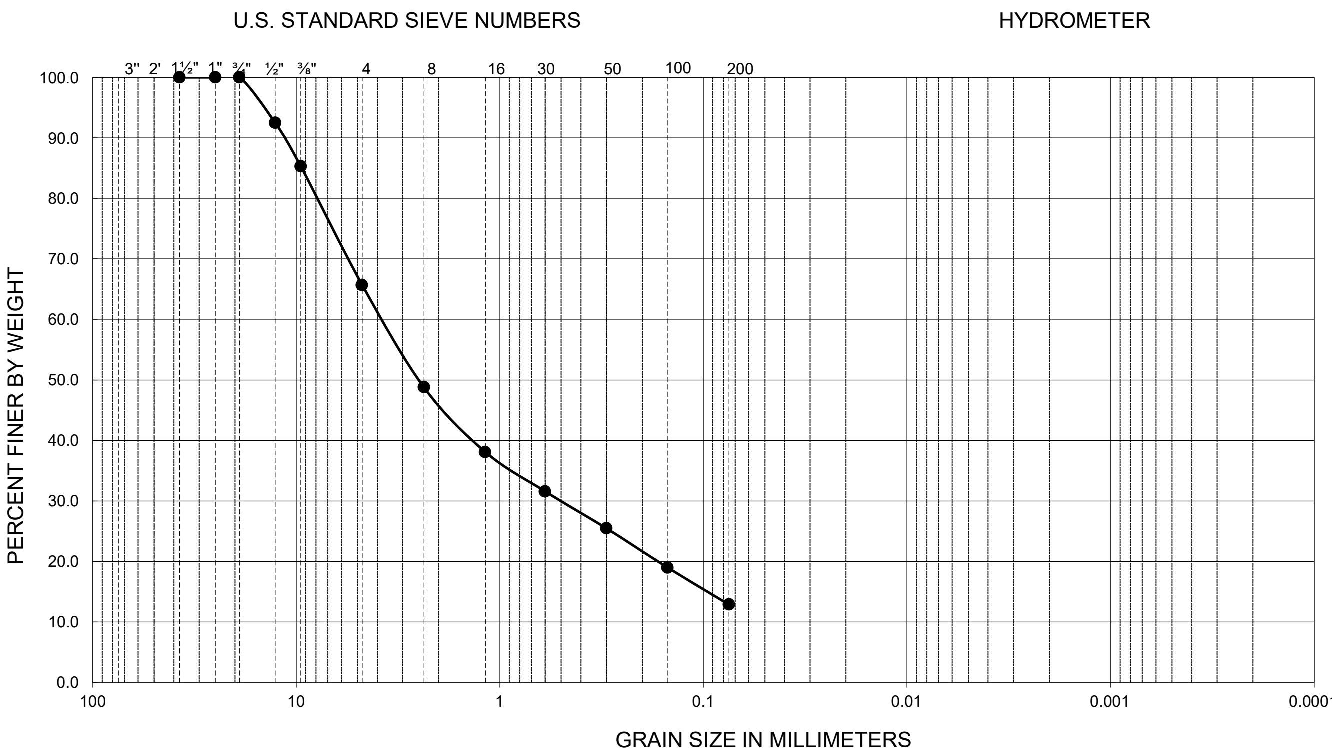
GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-9-9	20.0-21.5	NP	NP	NP	--	0.50	3.75	--	--	12.9	SM

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Silty SAND with gravel
34.3	52.8	12.9	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

"NP" INDICATES NON-PLASTIC

FIGURE B-8

GRADATION TEST RESULTS

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MERCURY - BUILDINGS 9 & 10 DESIGN
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GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-9-11	12.5-14.0	44	24	20	--	0.08	1.50	--	--	29.3	SC

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Clayey SAND with gravel
24.6	46.1	29.3	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

FIGURE B-9

GRADATION TEST RESULTS

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MERCURY - BUILDINGS 9 & 10 DESIGN
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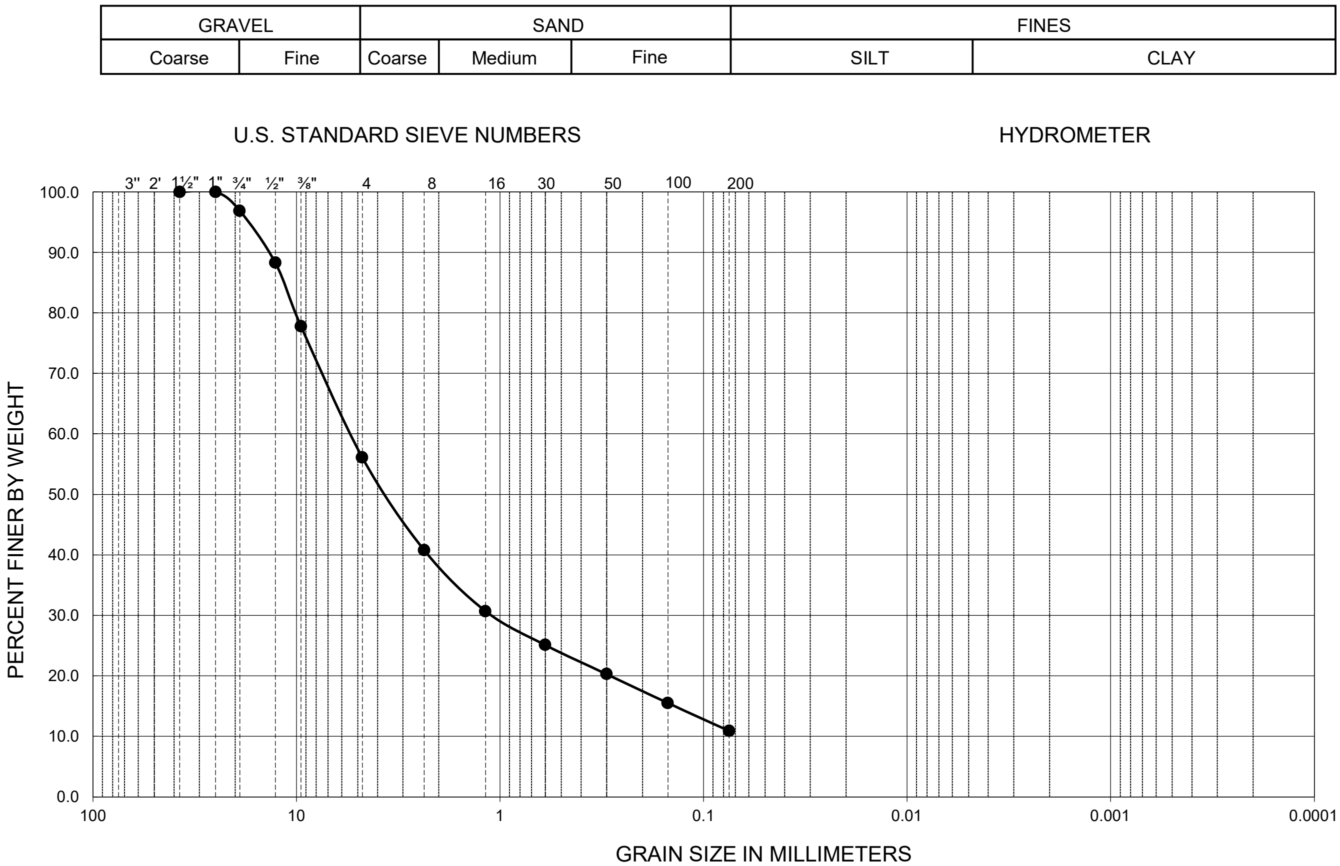

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-10-1	2.5-4.0	NP	NP	NP	--	1.08	5.38	--	--	10.9	SP-SM

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Poorly graded SAND with silt and gravel
43.9	45.2	10.9	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

"NP" INDICATES NON-PLASTIC

FIGURE B-10

GRADATION TEST RESULTS

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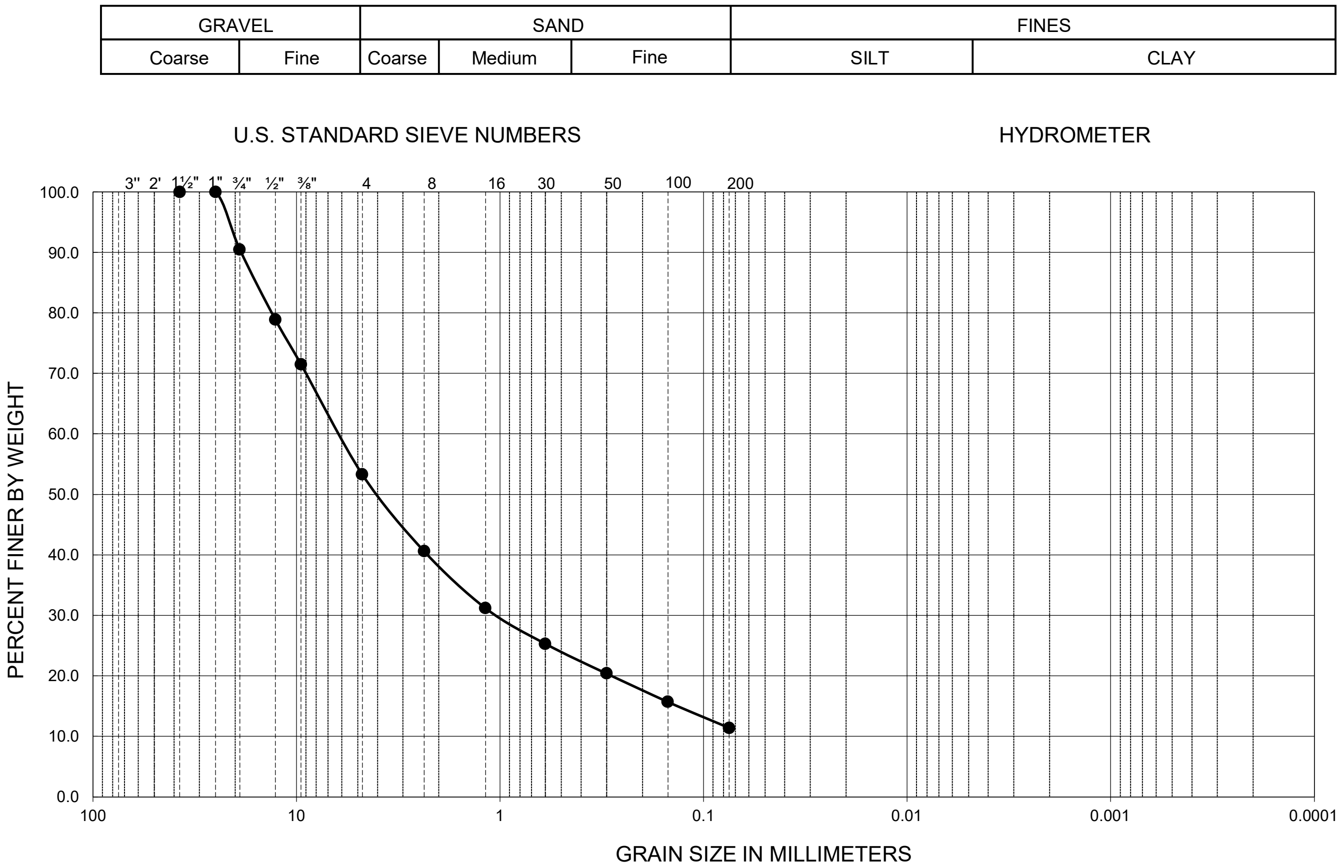

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-10-2	12.5-14.0	NP	NP	NP	--	1.03	6.13	--	--	11.4	GP-GM

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Poorly graded GRAVEL with silt and sand
46.7	41.9	11.4	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

"NP" INDICATES NON-PLASTIC

FIGURE B-11

GRADATION TEST RESULTS

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MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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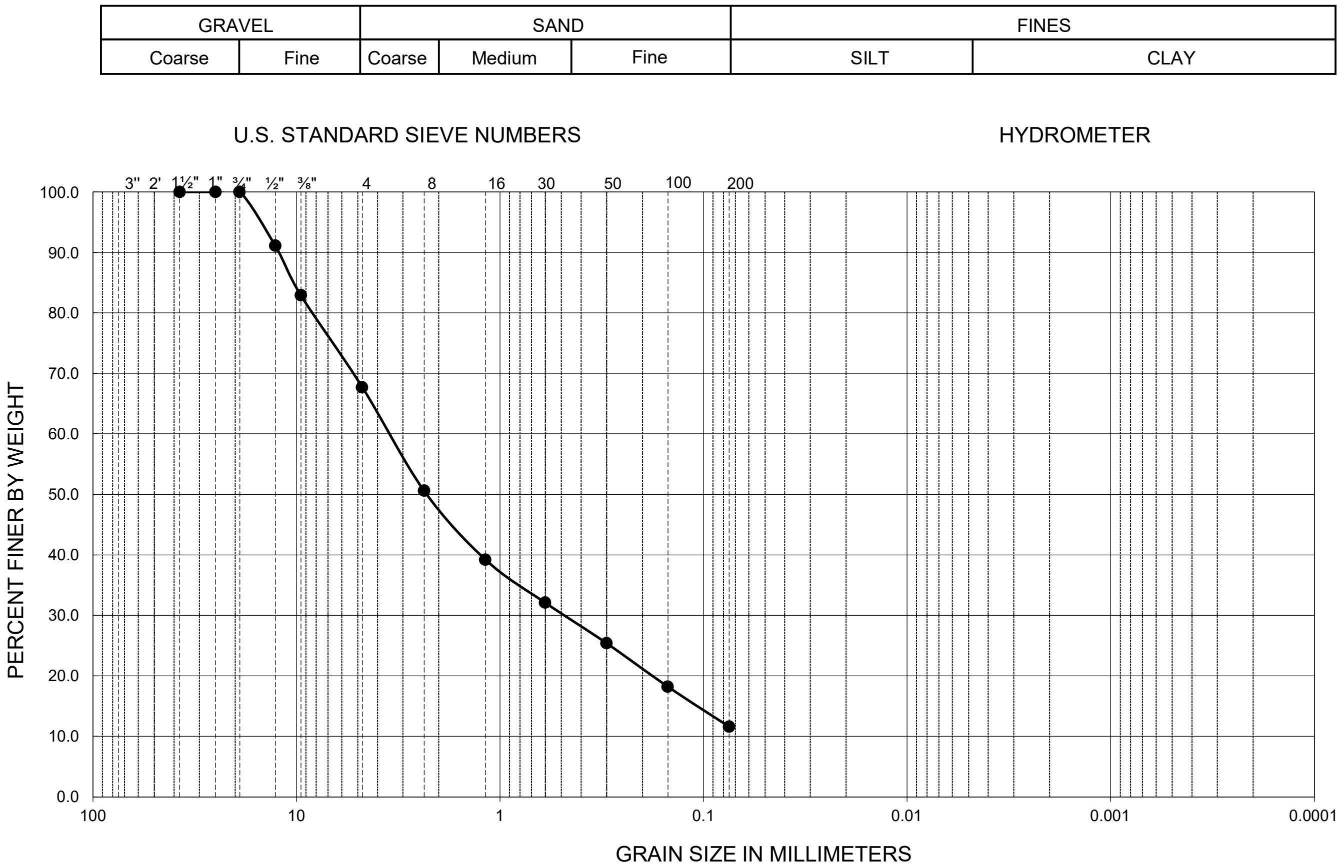

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-10-2	30.0-31.5	NP	NP	NP	--	0.48	3.47	--	--	11.6	SP-SM

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Poorly graded SAND with silt and gravel
32.3	56.1	11.6	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

"NP" INDICATES NON-PLASTIC

FIGURE B-12

GRADATION TEST RESULTS

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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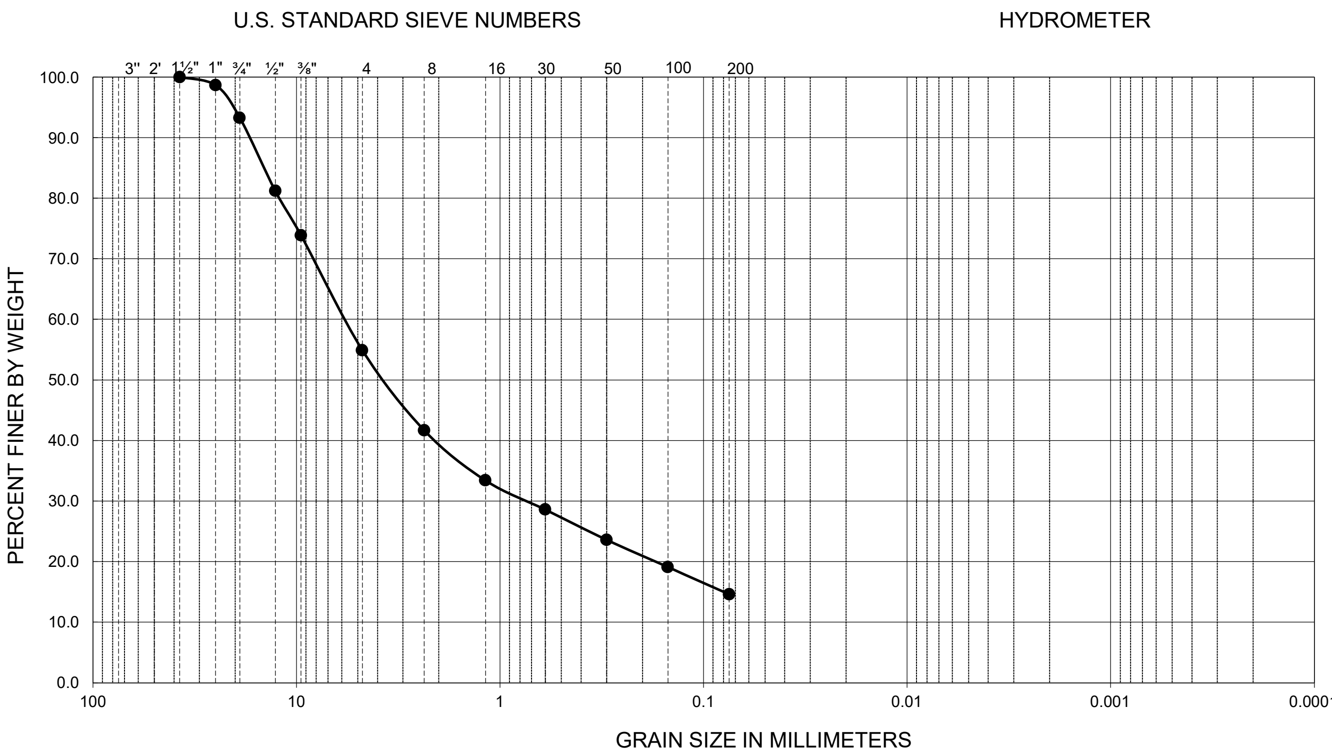
305320002 SA B-10-2 @ 30.0-31.5

GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-10-4	1.0-5.0	NP	NP	NP	--	0.73	5.72	--	--	14.6	GM

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Silty GRAVEL with sand
45.1	40.3	14.6	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

"NP" INDICATES NON-PLASTIC

FIGURE B-13

GRADATION TEST RESULTS

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MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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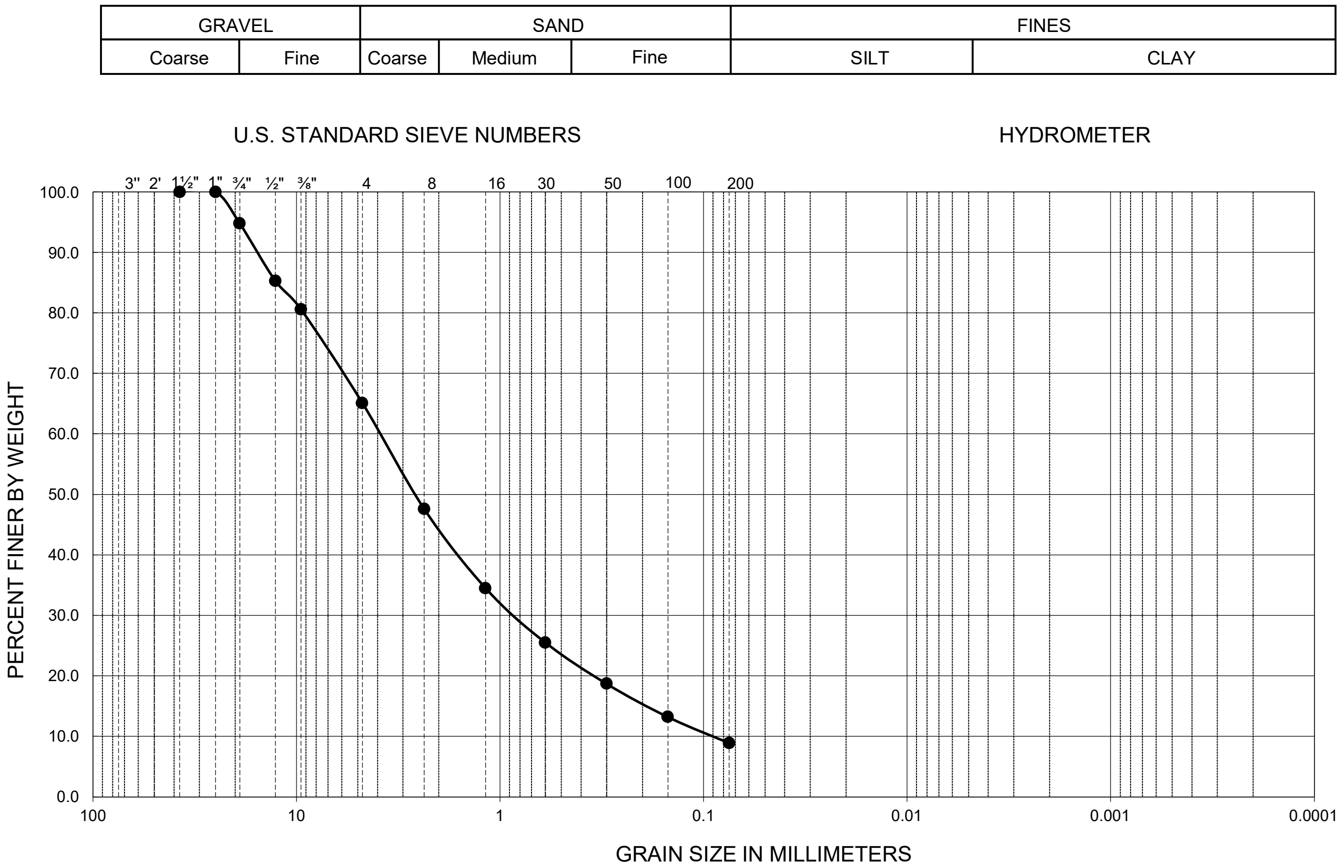

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D_{10}	D_{30}	D_{60}	C_u	C_c	Passing No. 200 (%)	USCS
●	B-10-4	15.0-16.5	NP	NP	NP	0.09	0.84	3.87	43.3	2.0	8.9	SW-SM

Material Percent by Weight			Soil Type
Gravel	Sand	Fines	Well-graded SAND with silt and gravel
34.9	56.2	8.9	

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422

"NP" INDICATES NON-PLASTIC

FIGURE B-14

GRADATION TEST RESULTS

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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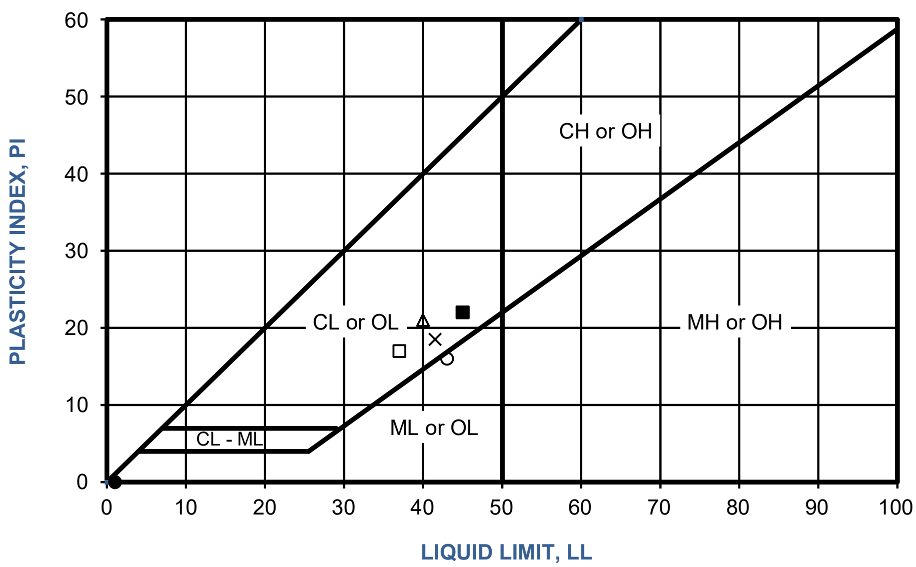
SYMBOL	LOCATION	DEPTH (ft)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	USCS CLASSIFICATION (Fraction Finer Than No. 40 Sieve)	USCS
	B-9-2	2.5-4.0	NP	NP	NP	ML	SM
■	B-9-3	7.5-9.0	45	23	22	CL	SC
	B-9-4	2.5-4.0	NP	NP	NP	ML	SM
○	B-9-5	40.0-41.5	43	27	16	ML	SM
□	B-9-6	12.5-14.0	37	20	17	CL	SC
Δ	B-9-7	7.5-9.0	40	19	21	CL	SC
X	B-9-8	5.0-6.5	42	23	19	CL	GC
	B-9-9	20.0-21.5	NP	NP	NP	ML	SM

NP - INDICATES NON-PLASTIC



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

FIGURE B-15

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ATTERBERG LIMITS TEST RESULTS

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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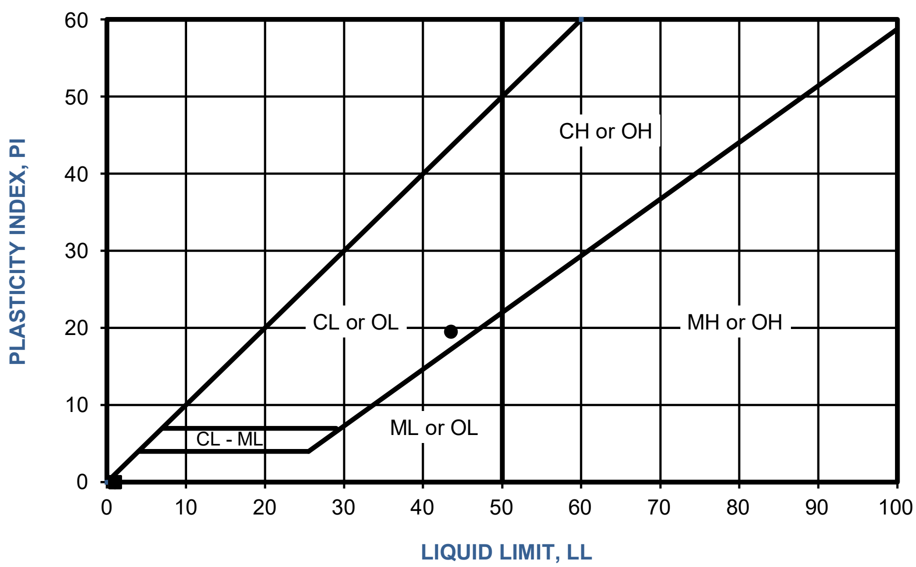
305320002 AL B-9-2 B-9-9

SYMBOL	LOCATION	DEPTH (ft)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	USCS CLASSIFICATION (Fraction Finer Than No. 40 Sieve)	USCS
●	B-9-11	12.5-14.0	44	24	20	CL	SC
	B-10-1	2.4-4.0	NP	NP	NP	ML	SP-SM
	B-10-1	5.0-6.5	NP	NP	NP	ML	SW-SM
	B-10-2	12.5-14.0	NP	NP	NP	ML	GP-GM
	B-10-2	30.0-31.5	NP	NP	NP	ML	SP-SM
	B-10-4	1.0-5.0	NP	NP	NP	ML	GM
	B-10-4	15.0-16.5	NP	NP	NP	ML	SW-SM

NP - INDICATES NON-PLASTIC



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

FIGURE B-16

Ninyo & Moore
A SOCOTEC COMPANY

ATTERBERG LIMITS TEST RESULTS

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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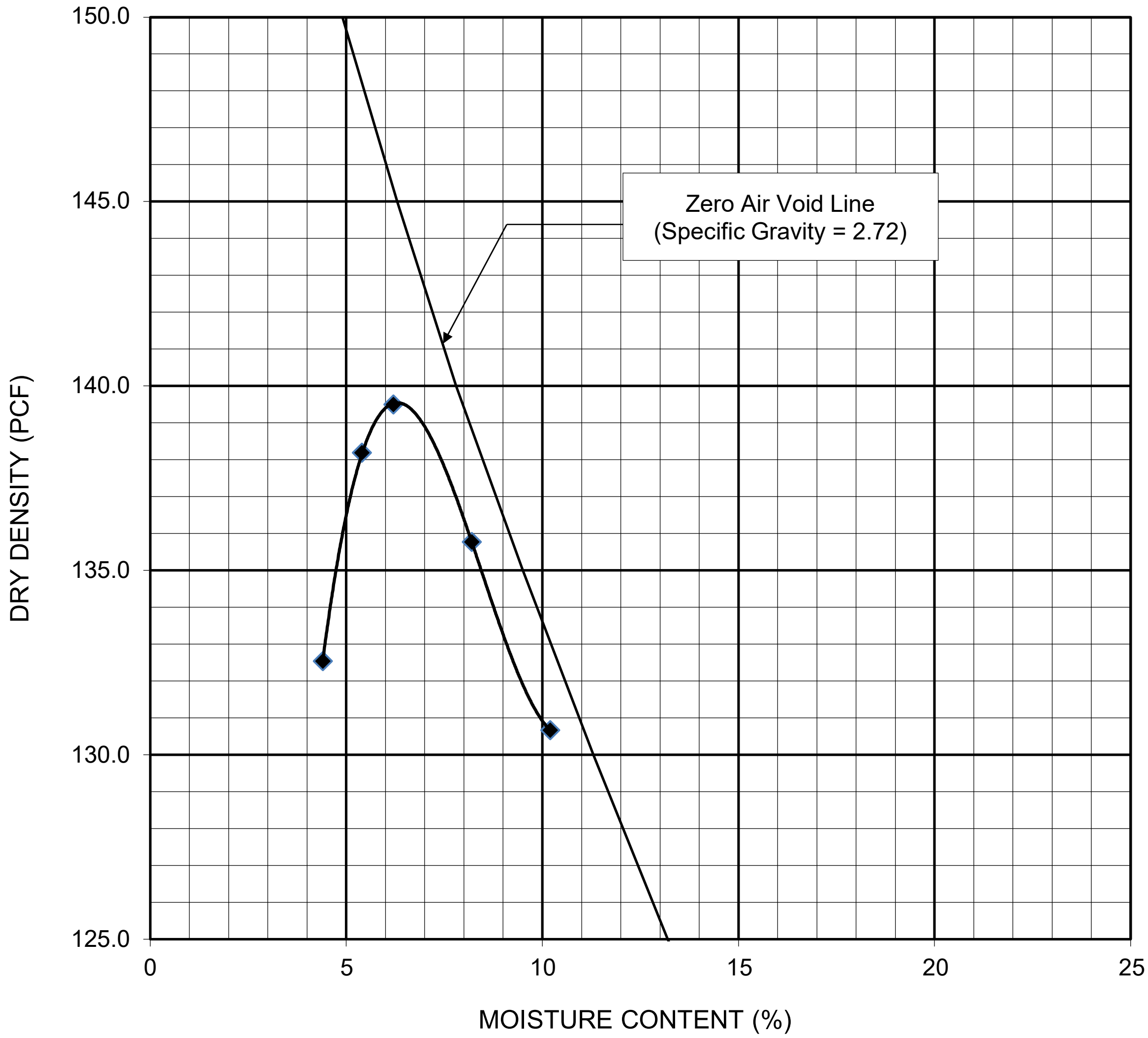

Sample Location	Depth (ft)	Soil Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
B-9-1	1.0-5.0	GP-GM	139.5	6.2
Dry Density and Moisture Content Values Corrected for Oversize (ASTM D 4718-87)			145.5	5.0

PERFORMED IN GENERAL ACCORDANCE WITH ☐ ASTM D 1557 ☑ ASTM D 698 METHOD ☑ A ☐ B ☐ C

FIGURE B-17

PROCTOR DENSITY TEST RESULTS

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NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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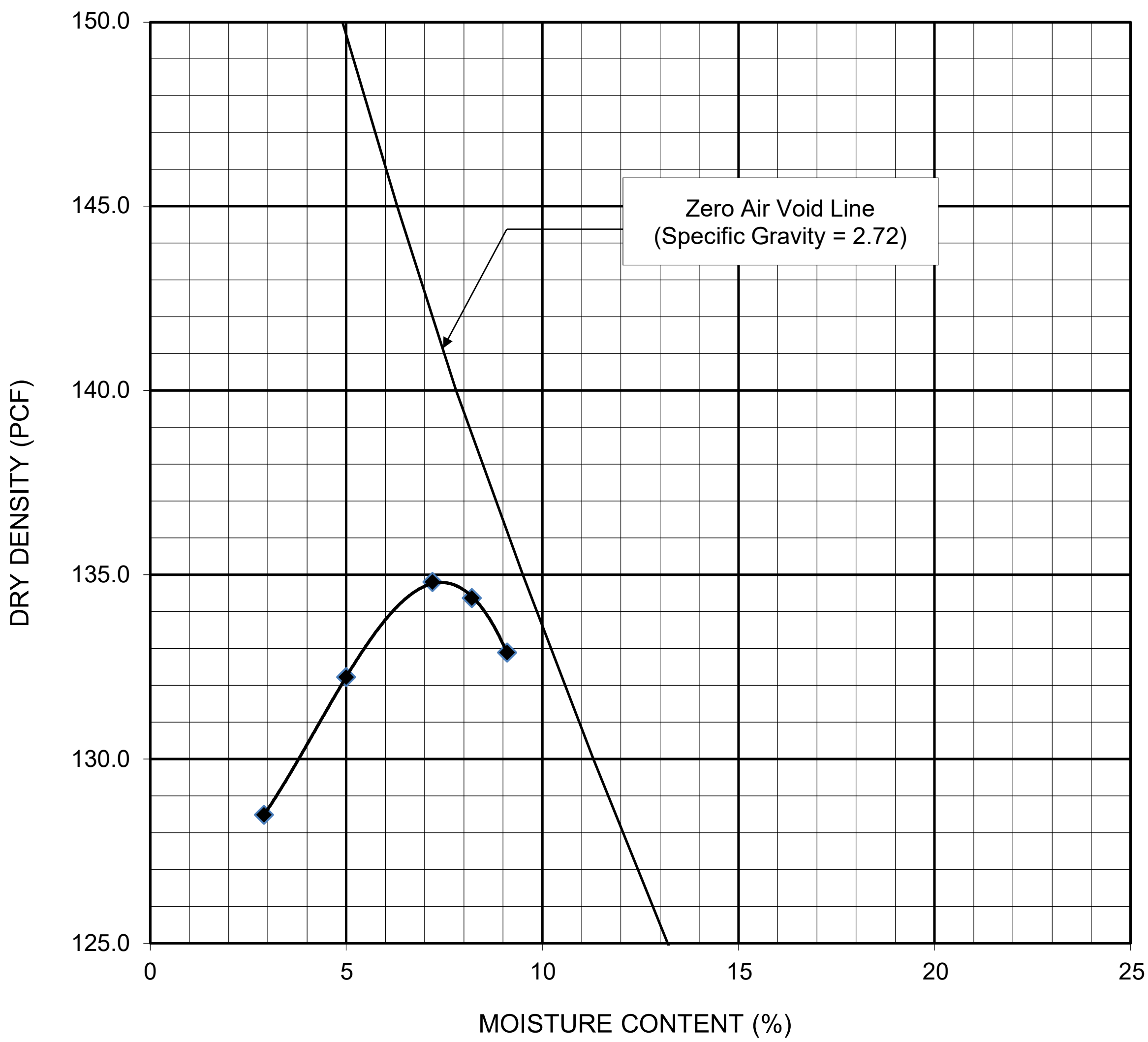

Sample Location	Depth (ft)	Soil Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
B-9-2	1.0-5.0	GP-GM	134.8	7.2
Dry Density and Moisture Content Values Corrected for Oversize (ASTM D 4718-87)			141.0	6.0

PERFORMED IN GENERAL ACCORDANCE WITH ☐ ASTM D 1557 ☑ ASTM D 698 METHOD ☑ A ☐ B ☐ C

FIGURE B-18

PROCTOR DENSITY TEST RESULTS

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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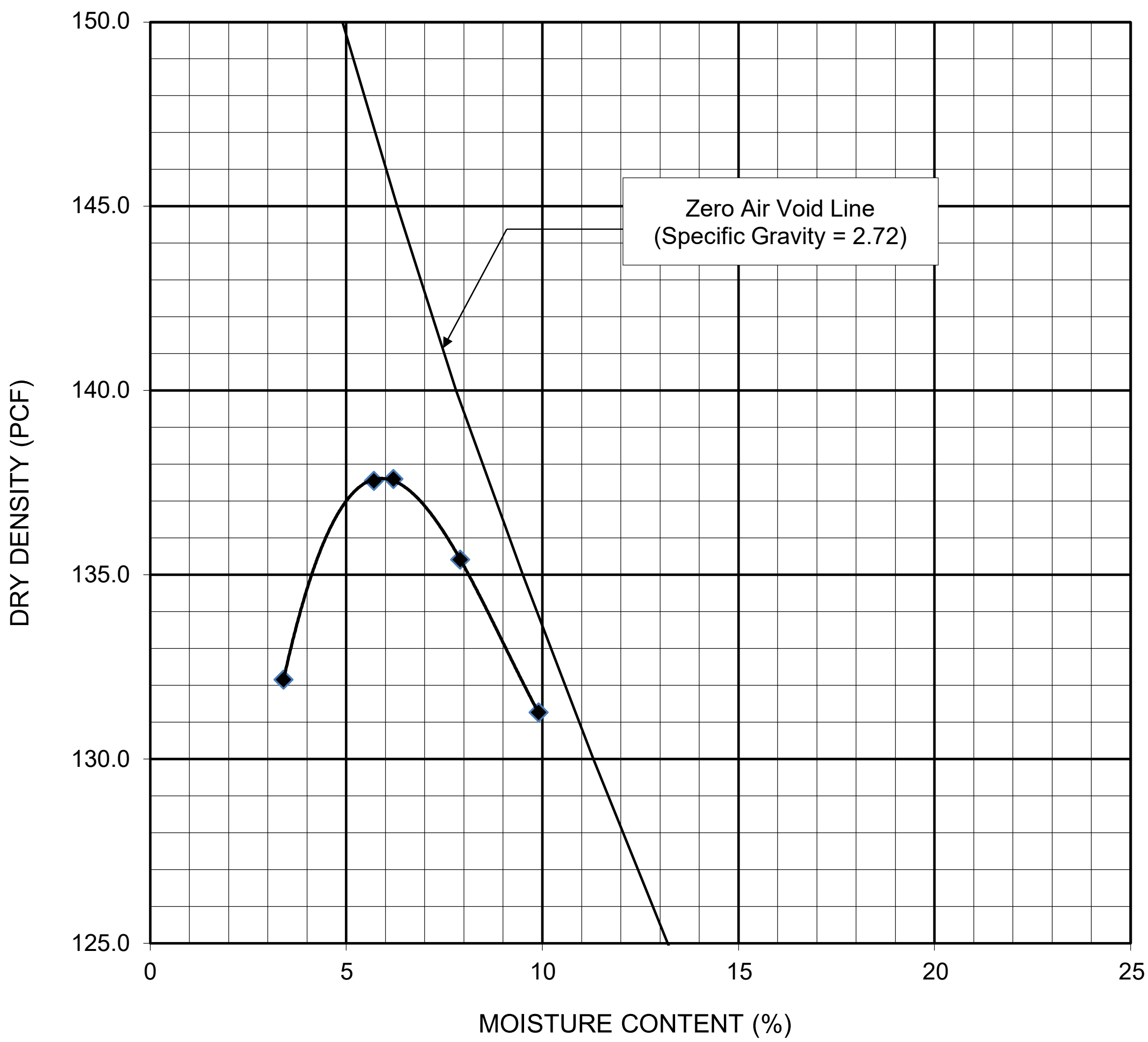

Sample Location	Depth (ft)	Soil Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
B-10-3	1.0-5.0	GP-GM	137.6	6.2
Dry Density and Moisture Content Values Corrected for Oversize (ASTM D 4718-87)			144.0	5.0

PERFORMED IN GENERAL ACCORDANCE WITH ☐ ASTM D 1557 ☑ ASTM D 698 METHOD ☑ A ☐ B ☐ C

FIGURE B-19

PROCTOR DENSITY TEST RESULTS

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

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NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

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APPENDIX C

Chemical Test Results

APPENDIX C

CHEMICAL TEST RESULTS

The results of chemical tests performed are provided in this appendix.

Veritas Laboratories
Truth in Quality, Truth in Service
6245 Harrison Drive, Suite 4, Las Vegas, NV 89120

(702) 321-8315 Phone
(702) 597-2098 Fax
Email: veritaslabs@msn.com

CLIENT COMPANY NAME: Ninyo and Moore
CLIENT PROJECT NAME: **Mercury Bldgs 9+10**
CLIENT PROJECT NUMBER: 305320002
VERITAS LAB ORDER ID: V25K272

ANALYTICAL RESULTS

CLIENT SAMPLE ID: **B-9-6 @ 5'-6.5'** DATE/TIME SAMPLED: 10/14/25 0:00
VERITAS SAMPLE ID: V25K272-01 DATE/TIME RECEIVED: 11/21/25 15:30

Matrix: Soil

Analysis: Soil Solubility/Corrosion Parameters

PARAMETER	RESULT	UNITS	METHOD	DATE ANALYZED
pH	**8.98**	pH Units	EPA 9045 D	11/25/25
Redox Potential (ORP)	**123**	mV	SM 2580B	11/25/25
Resistivity, Saturated (Minimum)	**4000**	Ohm-cm	AASHTO T-288	11/24/25
Soluble Sodium	**0.013**	%	SM 3500-Na B	11/24/25
Soluble Sulfate	**0.0019**	%	ASTM D516	11/24/25
Soluble Sulfide	**<0.50**	mg/Kg	SM 4500-S2-D	11/25/25
Total Soluble Sodium Sulfate	**0.0027**	%	Calculation	11/24/25
Soluble Chloride	**0.0010**	%	SM 4500-Cl E	11/24/25
Total Soluble Salts (Solubility)	**0.038**	%	SM 2540C	11/24/25

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CLIENT COMPANY NAME: Ninyo and Moore
CLIENT PROJECT NAME: **Mercury Bldgs 9+10**
CLIENT PROJECT NUMBER: 305320002
VERITAS LAB ORDER ID: V25K272

ANALYTICAL RESULTS

CLIENT SAMPLE ID: **B-10-1 @ 5'-8'** DATE/TIME SAMPLED: 10/14/25 0:00
VERITAS SAMPLE ID: V25K272-02 DATE/TIME RECEIVED: 11/21/25 15:30

Matrix: Soil

Analysis: Soil Solubility/Corrosion Parameters

PARAMETER	RESULT	UNITS	METHOD	DATE ANALYZED
pH	**9.08**	pH Units	EPA 9045 D	11/25/25
Redox Potential (ORP)	**238**	mV	SM 2580B	11/25/25
Resistivity, Saturated (Minimum)	**2300**	Ohm-cm	AASHTO T-288	11/24/25
Soluble Sodium	**0.019**	%	SM 3500-Na B	11/24/25
Soluble Sulfate	**0.0016**	%	ASTM D516	11/24/25
Soluble Sulfide	**<0.50**	mg/Kg	SM 4500-S2-D	11/25/25
Total Soluble Sodium Sulfate	**0.0024**	%	Calculation	11/24/25
Soluble Chloride	**0.0014**	%	SM 4500-Cl E	11/24/25
Total Soluble Salts (Solubility)	**0.065**	%	SM 2540C	11/24/25

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(702) 321-8315 Phone
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Email: veritaslabs@msn.com

CLIENT COMPANY NAME:	Ninyo and Moore
CLIENT PROJECT NAME:	**Mercury Bldgs 9+10**
CLIENT PROJECT NUMBER:	305320002
VERITAS LAB ORDER ID:	V25K272

ANALYTICAL RESULTS

CLIENT SAMPLE ID:	**B-10-4 @ 1'-5'**	DATE/TIME SAMPLED:	10/14/25 0:00
VERITAS SAMPLE ID:	V25K272-03	DATE/TIME RECEIVED:	11/21/25 15:30

Matrix: Soil

Analysis: Soil Solubility/Corrosion Parameters

PARAMETER	RESULT	UNITS	METHOD	DATE ANALYZED
pH	**8.77**	pH Units	EPA 9045 D	11/25/25
Redox Potential (ORP)	**248**	mV	SM 2580B	11/25/25
Resistivity, Saturated (Minimum)	**2600**	Ohm-cm	AASHTO T-288	11/24/25
Soluble Sodium	**0.010**	%	SM 3500-Na B	11/24/25
Soluble Sulfate	**0.0087**	%	ASTM D516	11/24/25
Soluble Sulfide	**<0.50**	mg/Kg	SM 4500-S2-D	11/25/25
Total Soluble Sodium Sulfate	**0.013**	%	Calculation	11/24/25
Soluble Chloride	**0.0031**	%	SM 4500-Cl E	11/24/25
Total Soluble Salts (Solubility)	**0.038**	%	SM 2540C	11/24/25

APPENDIX D

SHAFT Analysis Results

APPENDIX D

SHAFT ANALYSIS RESULTS

The computer program SHAFT (Ensoft, 2023) was used to evaluate the axial capacities of drilled shafts. The results of our drilled shaft axial capacity analyses are provided in this appendix. The axial compressive and uplift capacities based on the weakest soil profile provided by boring B-9-6 are summarized in Tables D-1 and D-2, respectively.

Table D-1 – Allowable Axial Compressive Capacity of Drilled Shafts (B-9-6)

Shaft Length (feet)	Allowable Axial Compressive Capacity*			
	Shaft Diameter			
	24-Inch	30-Inch	36-Inch	48-Inch
5	20 kip	33 kip	45 kip	72 kip
10	62 kip	80 kip	98 kip	138 kip
15	105 kip	134 kip	163 kip	224 kip

Note:
* Allowable compressive capacities are based on both skin friction and end bearing with a factor of safety of 3.0. Reference Figure D-1.

Table D-2 – Allowable Axial Uplift Capacity of Drilled Shafts (B-9-6)

Shaft Length (feet)	Allowable Axial Uplift Capacity*			
	Shaft Diameter			
	24-Inch	30-Inch	36-Inch	48-Inch
5	8 kip	11 kip	14 kip	21 kip
10	25 kip	33 kip	41 kip	60 kip
15	55 kip	71 kip	88 kip	125 kip

Note:
* Allowable uplift capacities are based on skin friction with a factor of safety of 3.0 and include the weight of concrete in the shaft. Reference Figure D-2.

The ultimate capacities provided by end bearing only and skin friction only, for five representative borings throughout the site, are summarized in Tables D-3 through D-7 for the soil profile provided by the corresponding boring.

Table D-3 – Ultimate End Bearing and Ultimate Skin Friction of Drilled Shafts (B-9-2)

Shaft Length (feet)	Ultimate End Bearing*				Ultimate Skin Friction**
	Shaft Diameter				
	24-Inch	30-Inch	36-Inch	48-Inch	
5	22.7 ksf	18.5 ksf	16.9 ksf	14.8 ksf	0.9 ksf
10	39.4 ksf	33.0 ksf	28.6 ksf	23.2 ksf	1.2 ksf
15	54.4 ksf	44.8 ksf	38.5 ksf	30.7 ksf	1.8 ksf

Notes:
* Since soil within two shaft diameters below the bottom of the drilled shaft influences the ultimate end bearing pressure, ultimate end bearing pressure may be influenced by shaft diameter if the soil below the bottom of the drilled shaft is layered. Reference Figure D-3.
** Represents the average skin friction for the corresponding shaft length. Reference Figure D-4.

Table D-4 – Ultimate End Bearing and Ultimate Skin Friction of Drilled Shafts (B-9-3)

Shaft Length (feet)	Ultimate End Bearing*				Ultimate Skin Friction**
	Shaft Diameter				
	24-Inch	30-Inch	36-Inch	48-Inch	
5	17.7 ksf	11.6 ksf	8.5 ksf	5.9 ksf	1.0 ksf
10	22.3 ksf	24.2 ksf	23.8 ksf	21.2 ksf	1.1 ksf
15	54.4 ksf	44.8 ksf	38.5 ksf	30.7 ksf	1.3 ksf

Notes:
* Since soil within two shaft diameters below the bottom of the drilled shaft influences the ultimate end bearing pressure, ultimate end bearing pressure may be influenced by shaft diameter if the soil below the bottom of the drilled shaft is layered. Reference Figure D-5.
** Represents the average skin friction for the corresponding shaft length. Reference Figure D-6.

Table D-5 – Ultimate End Bearing and Ultimate Skin Friction of Drilled Shafts (B-9-10)

Shaft Length (feet)	Ultimate End Bearing*				Ultimate Skin Friction**
	Shaft Diameter				
	24-Inch	30-Inch	36-Inch	48-Inch	
5	15.2 ksf	13.0 ksf	11.5 ksf	9.7 ksf	0.6 ksf
10	30.2 ksf	28.2 ksf	26.0 ksf	22.1 ksf	0.8 ksf
15	54.4 ksf	44.8 ksf	38.5 ksf	30.7 ksf	1.2 ksf

Notes:
* Since soil within two shaft diameters below the bottom of the drilled shaft influences the ultimate end bearing pressure, ultimate end bearing pressure may be influenced by shaft diameter if the soil below the bottom of the drilled shaft is layered. Reference Figure D-7.
** Represents the average skin friction for the corresponding shaft length. Reference Figure D-8.

Table D-6 – Ultimate End Bearing and Ultimate Skin Friction of Drilled Shafts (B-10-3)

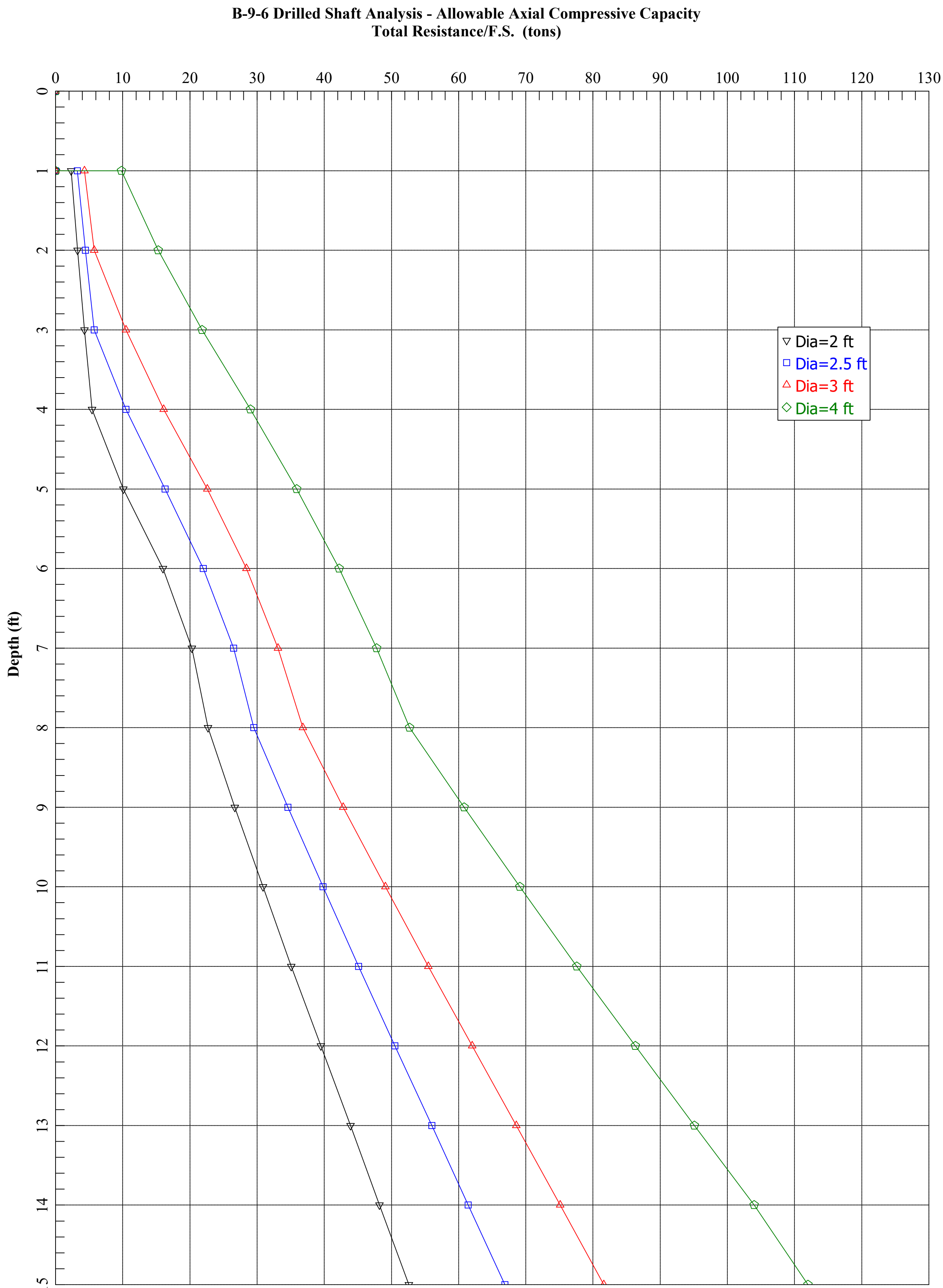
Shaft Length (feet)	Ultimate End Bearing* Shaft Diameter				Ultimate Skin Friction**
	24-Inch	30-Inch	36-Inch	48-Inch	
5	15.3 ksf	16.3 ksf	16.0 ksf	14.6 ksf	1.0 ksf
10	39.4 ksf	33.0 ksf	26.0 ksf	18.3 ksf	1.3 ksf
15	33.7 ksf	27.9 ksf	27.3 ksf	25.3 ksf	1.8 ksf

Notes:
* Since soil within two shaft diameters below the bottom of the drilled shaft influences the ultimate end bearing pressure, ultimate end bearing pressure may be influenced by shaft diameter if the soil below the bottom of the drilled shaft is layered. Reference Figure D-9.
** Represents the average skin friction for the corresponding shaft length. Reference Figure D-10.

Table D-7 – Ultimate End Bearing and Ultimate Skin Friction of Drilled Shafts (B-10-4)

Shaft Length (feet)	Ultimate End Bearing* Shaft Diameter				Ultimate Skin Friction**
	24-Inch	30-Inch	36-Inch	48-Inch	
5	24.4 ksf	20.9 ksf	18.6 ksf	15.7 ksf	0.7 ksf
10	39.4 ksf	33.0 ksf	28.6 ksf	23.2 ksf	1.0 ksf
15	54.4 ksf	44.8 ksf	38.5 ksf	30.7 ksf	1.6 ksf

Notes:
* Since soil within two shaft diameters below the bottom of the drilled shaft influences the ultimate end bearing pressure, ultimate end bearing pressure may be influenced by shaft diameter if the soil below the bottom of the drilled shaft is layered. Reference Figure D-11.
** Represents the average skin friction for the corresponding shaft length. Reference Figure D-12.



B-9-6 Drilled Shaft Analysis - Allowable Axial Compressive Capacity
Total Resistance/F.S. (tons)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
Depth (ft)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=4 ft

Figure D-1

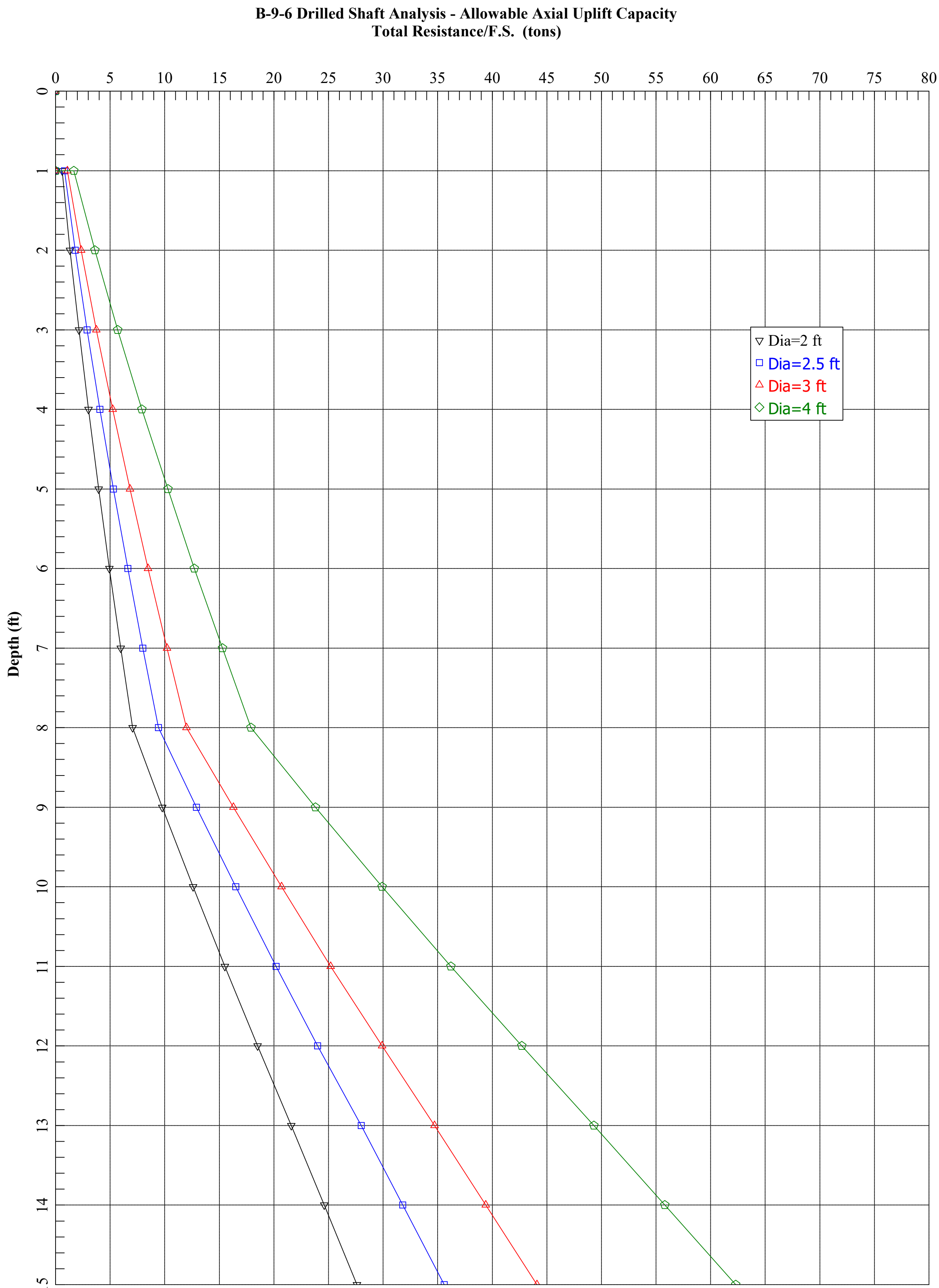

B-9-6 Drilled Shaft Analysis - Allowable Axial Uplift Capacity
Total Resistance/F.S. (tons)
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80
Depth (ft)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=4 ft

Figure D-2

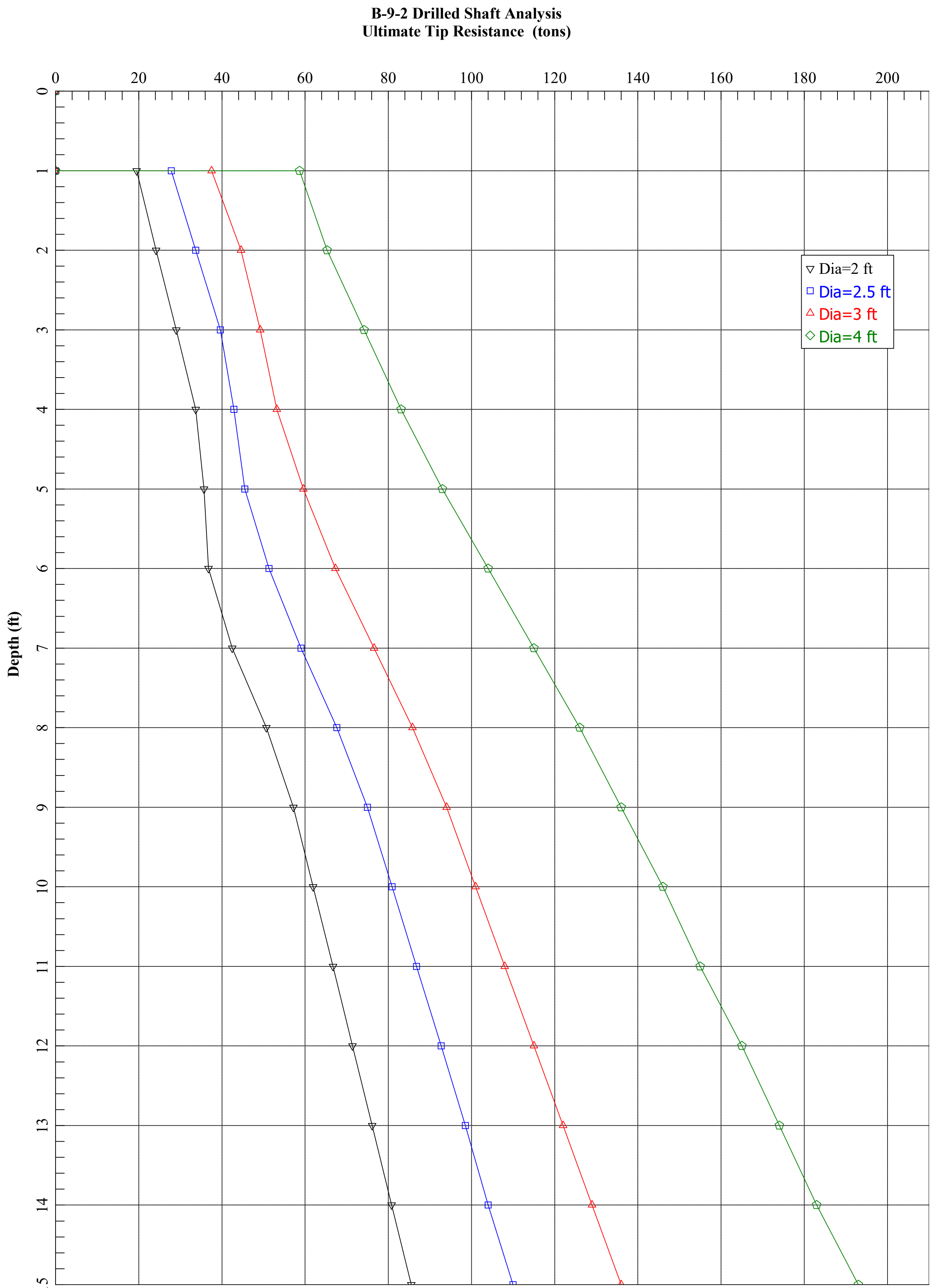

B-9-2 Drilled Shaft Analysis
Ultimate Tip Resistance (tons)
Depth (ft)
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=4 ft

Figure D-3

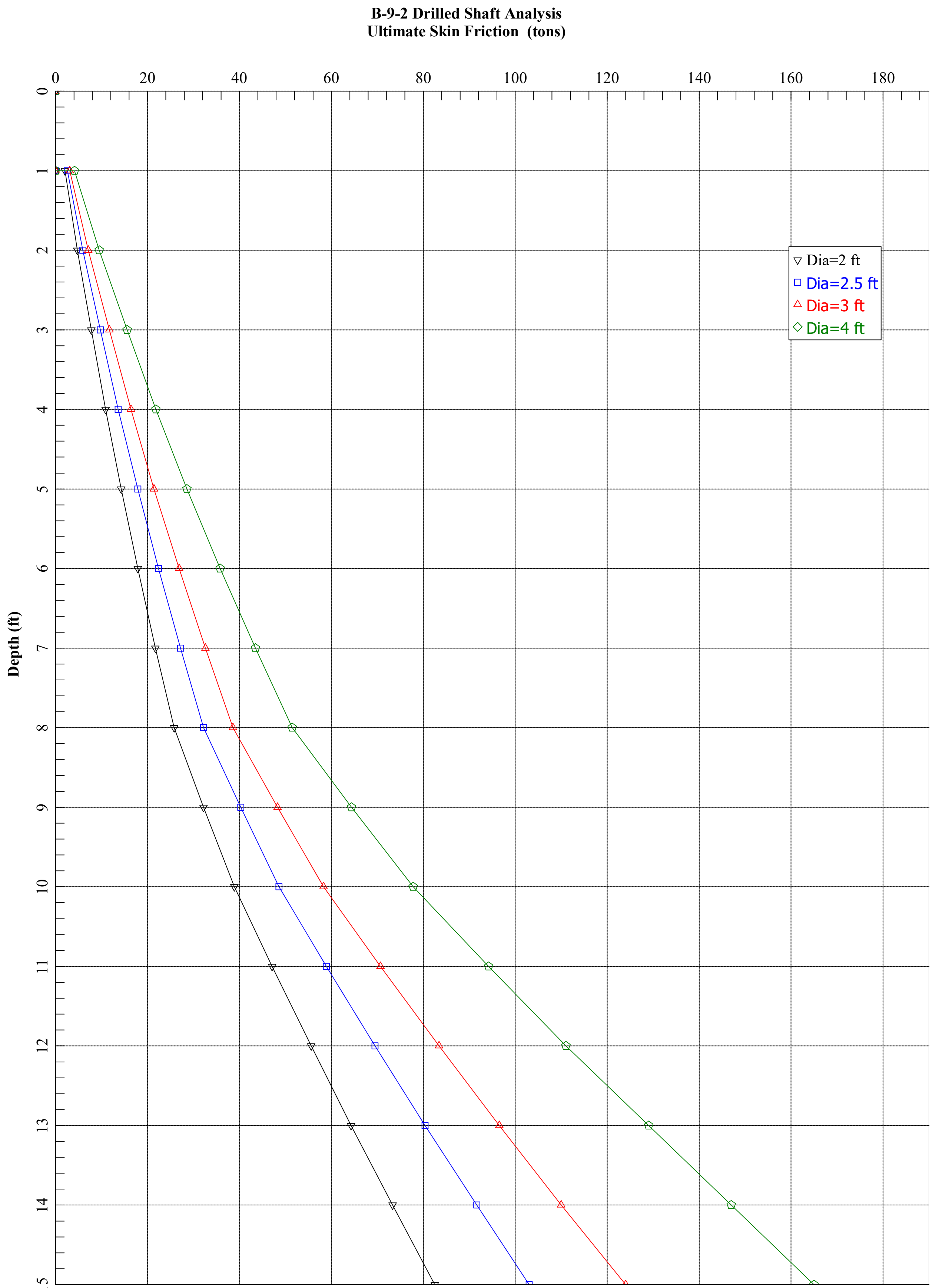

B-9-2 Drilled Shaft Analysis
Ultimate Skin Friction (tons)
Depth (ft)
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=4 ft

Figure D-4

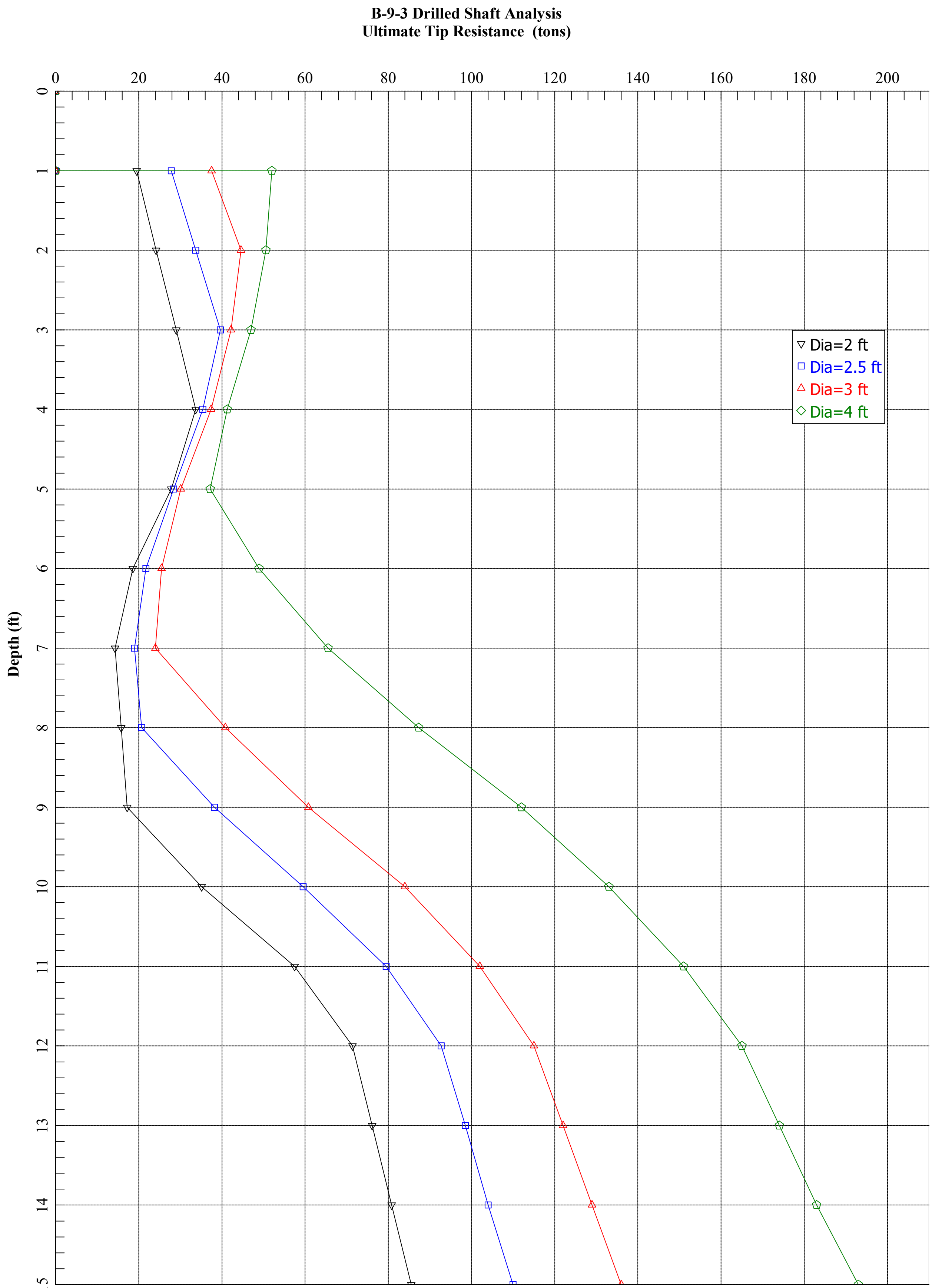

B-9-3 Drilled Shaft Analysis
Ultimate Tip Resistance (tons)
Depth (ft)
0
20
40
60
80
100
120
140
160
180
200
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=4 ft

Figure D-5

B-9-10 Drilled Shaft Analysis
Ultimate Tip Resistance (tons)

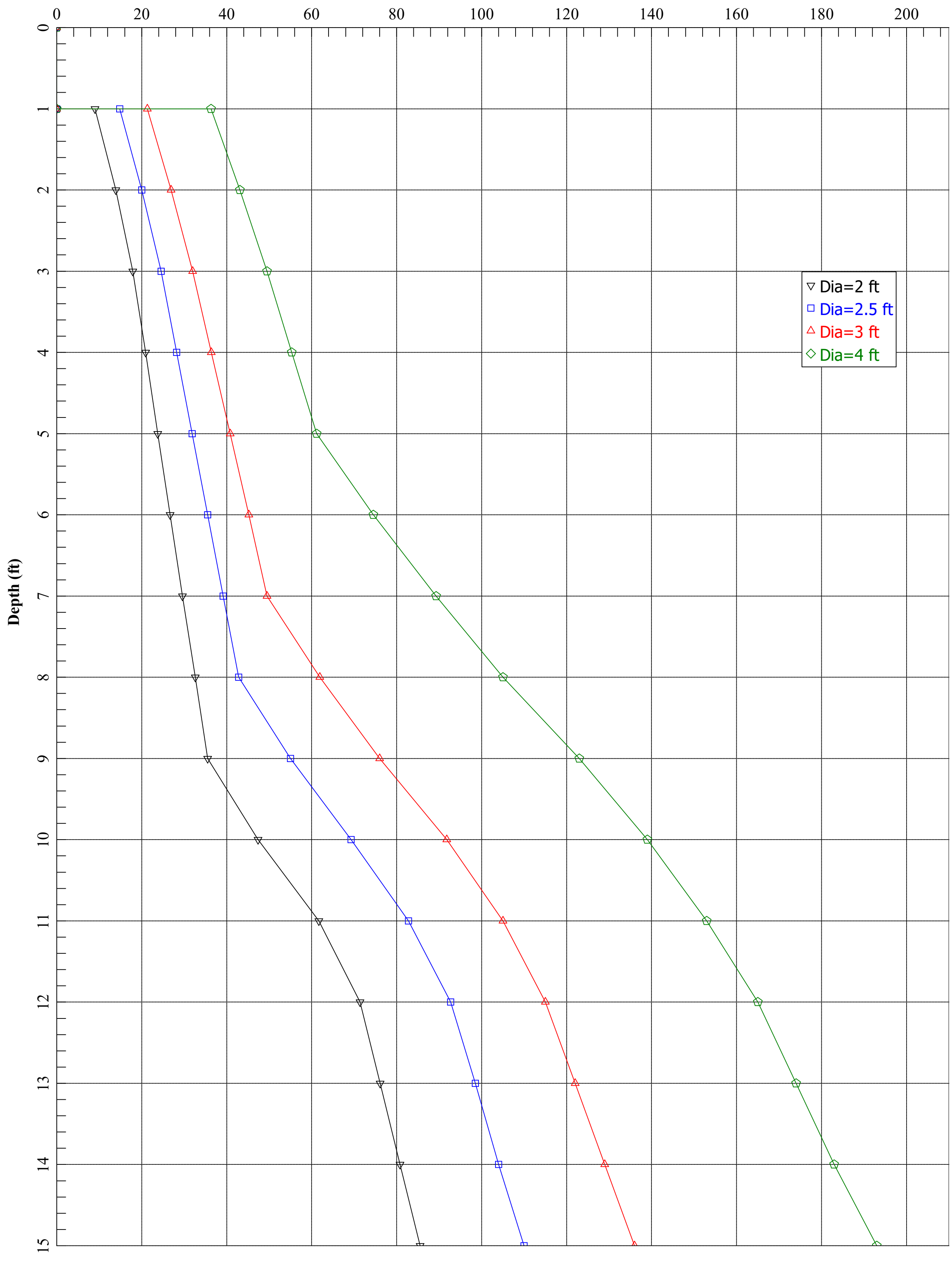


Figure D-6

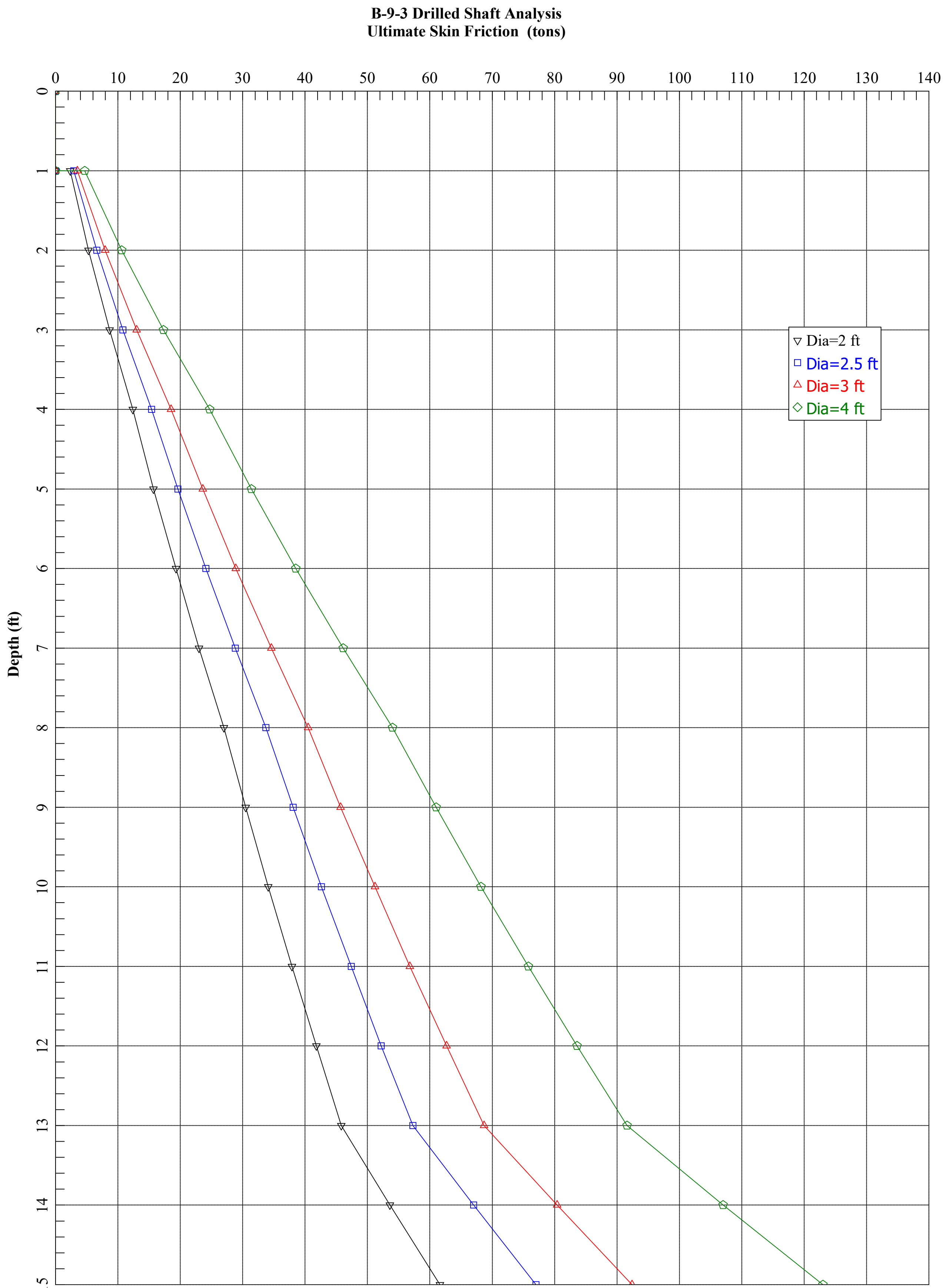
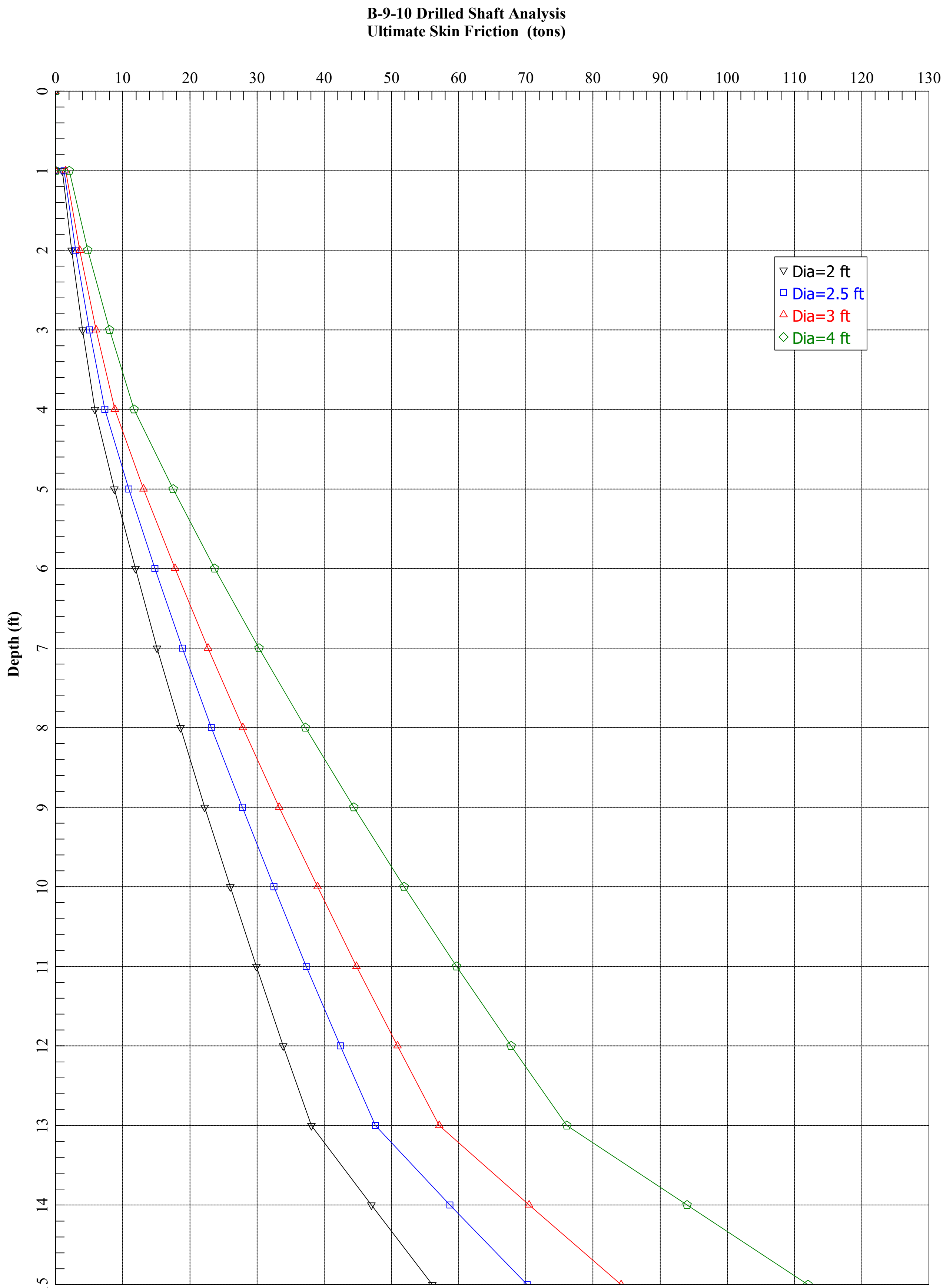
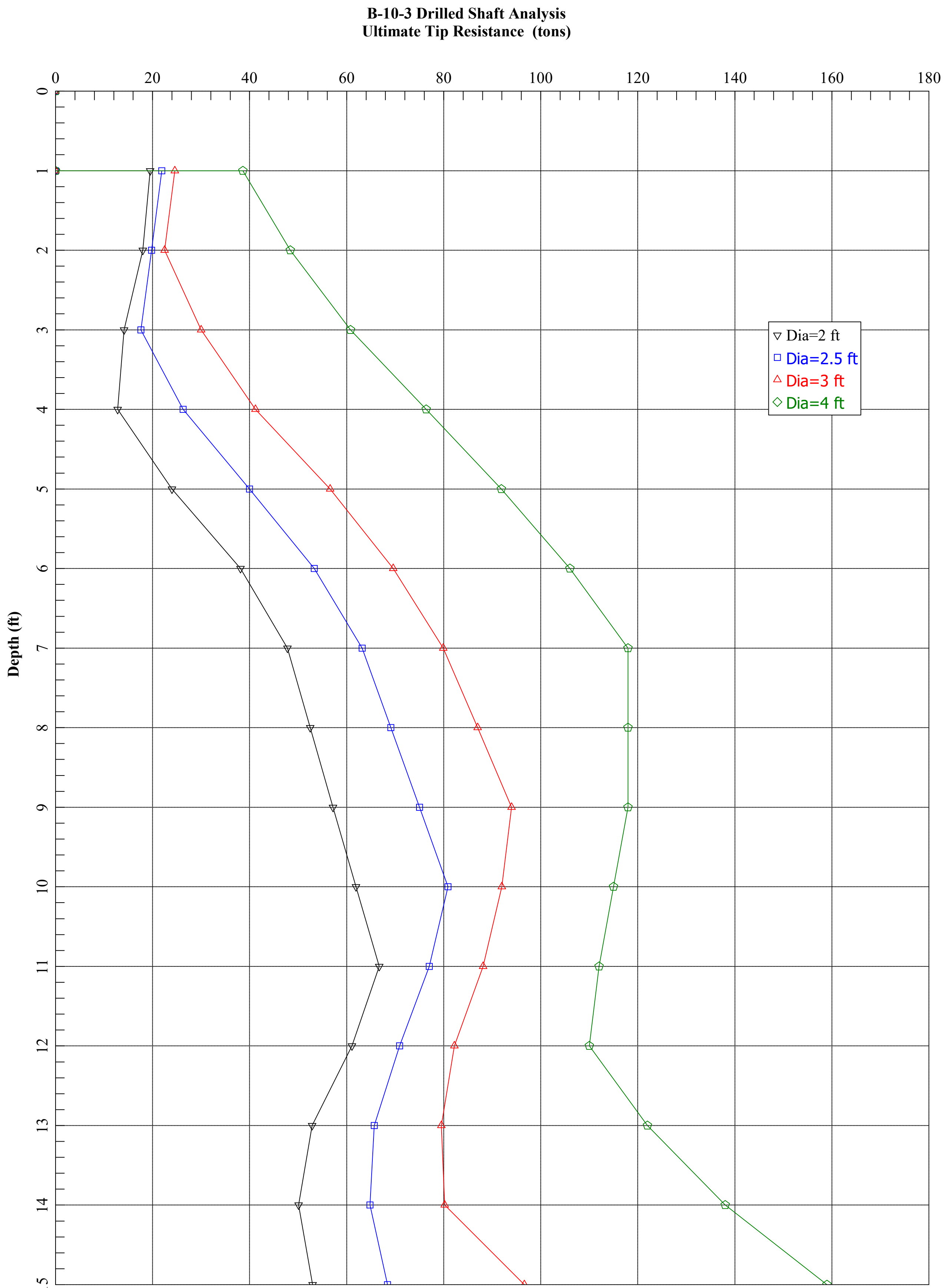

B-9-3 Drilled Shaft Analysis
Ultimate Skin Friction (tons)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
Depth (ft)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=4 ft

Figure D-7



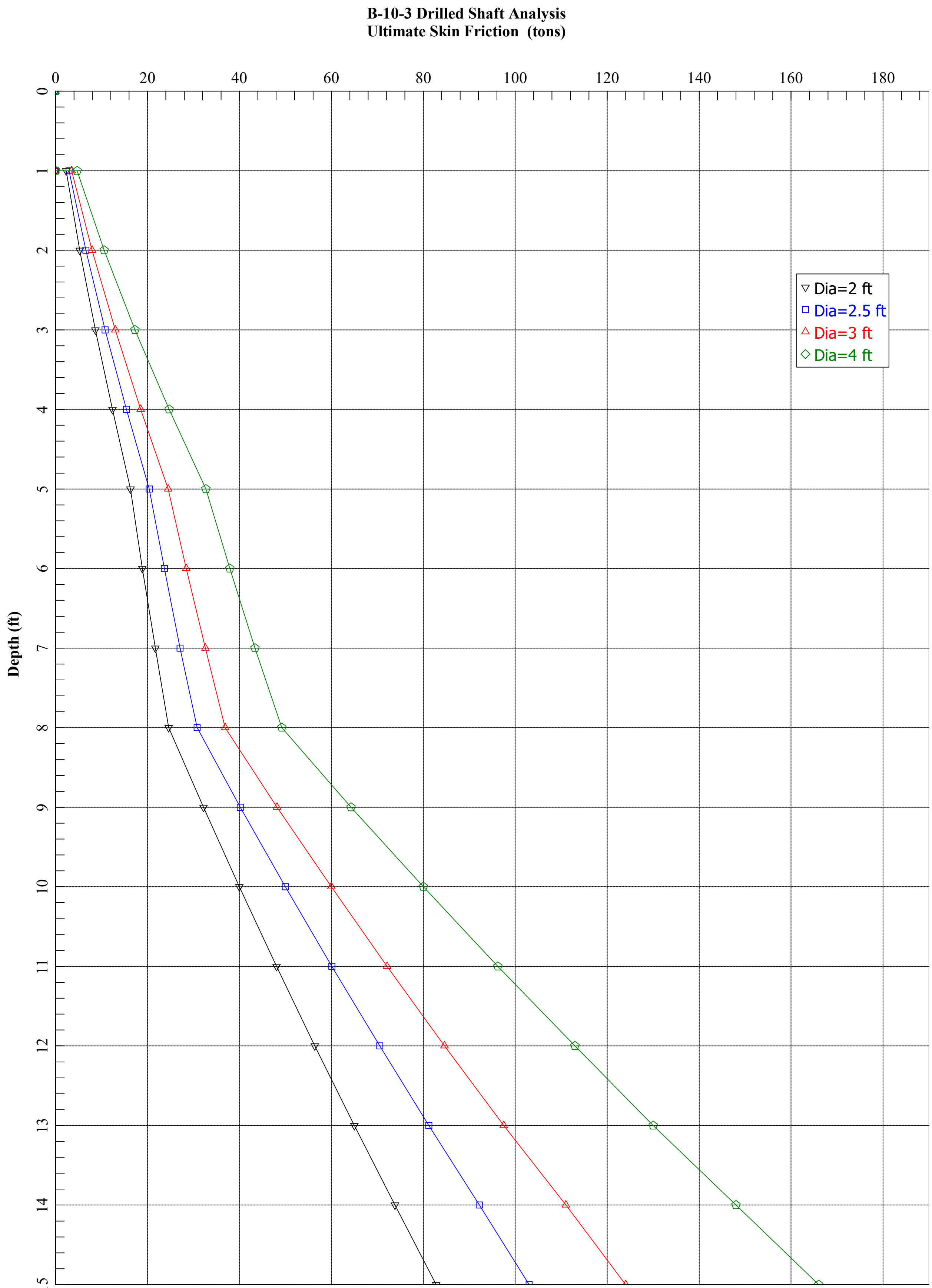
B-9-10 Drilled Shaft Analysis
Ultimate Skin Friction (tons)
Depth (ft)
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=4 ft

Figure D-8



B-10-3 Drilled Shaft Analysis
Ultimate Tip Resistance (tons)
Depth (ft)
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=4 ft

Figure D-9



B-10-3 Drilled Shaft Analysis
Ultimate Skin Friction (tons)
0
20
40
60
80
100
120
140
160
180
Depth (ft)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=4 ft

Figure D-10

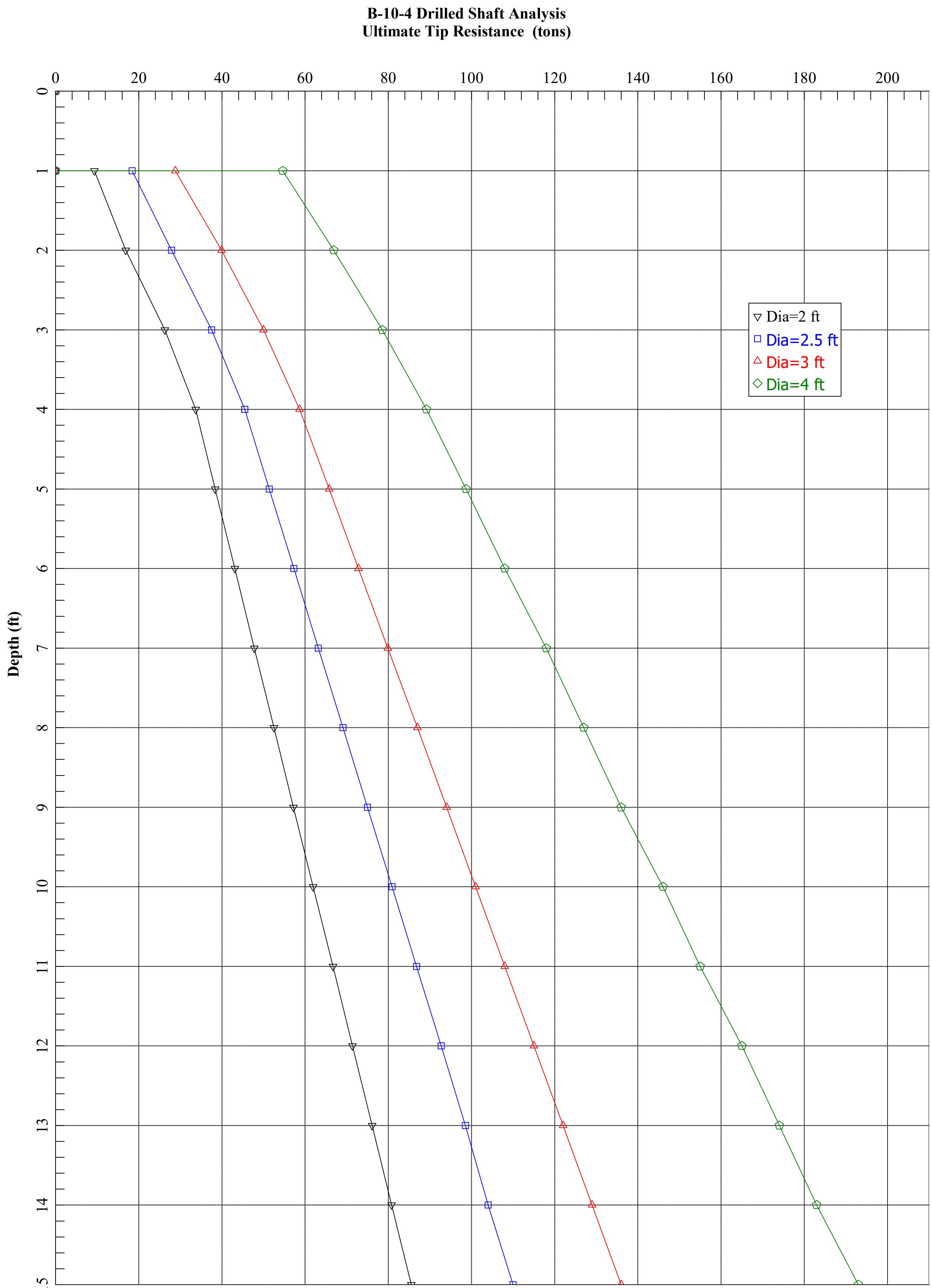

B-10-4 Drilled Shaft Analysis
Ultimate Tip Resistance (tons)
0
20
40
60
80
100
120
140
160
180
200
Depth (ft)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=4 ft

Figure D-11

B-10-4 Drilled Shaft Analysis
Ultimate Skin Friction (tons)

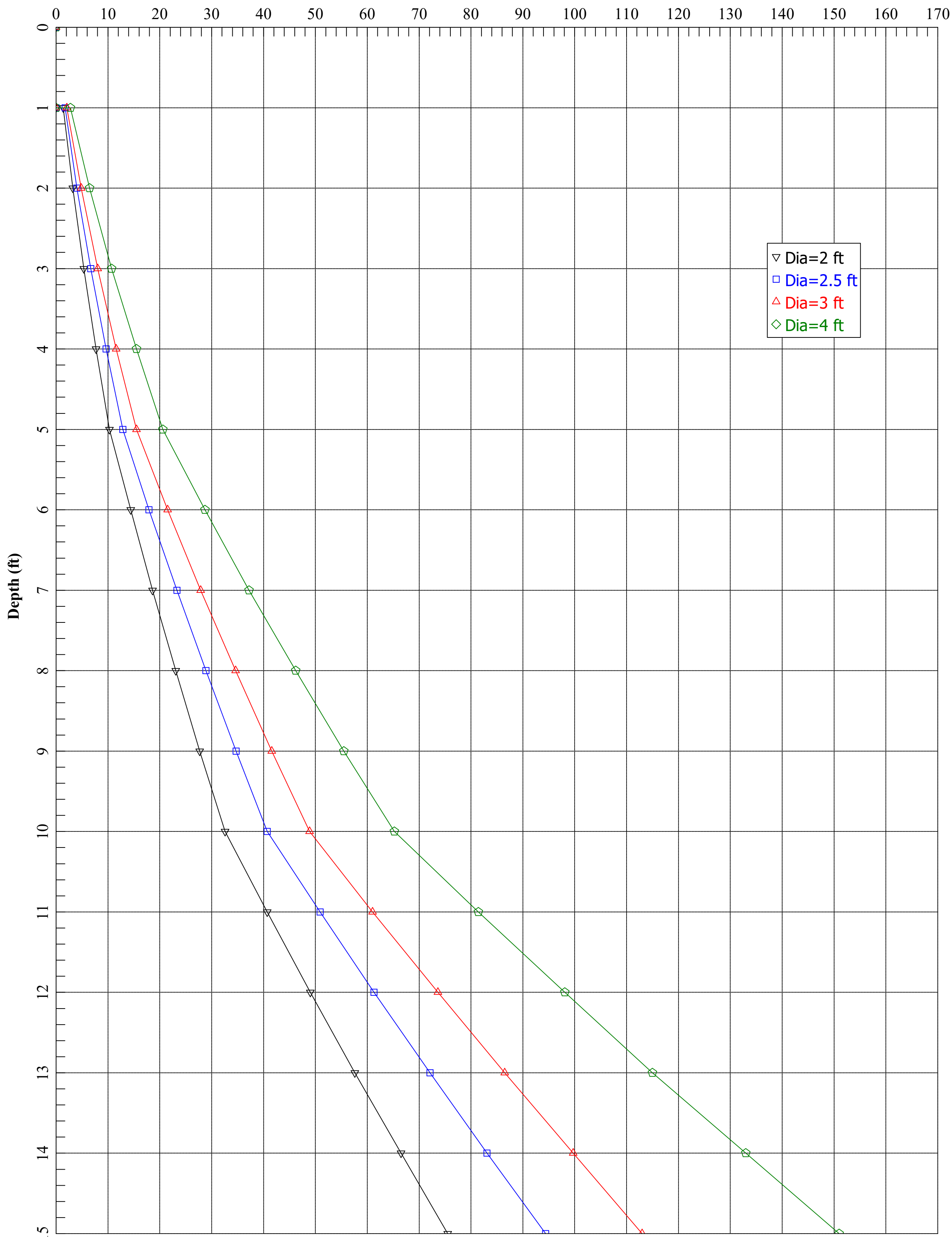


Figure D-12

APPENDIX E

LPILE Soil Design Parameters

APPENDIX E

LPILE SOIL DESIGN PARAMETERS

Recommended parameters for LPILE analyses for the soil profiles provided by the five representative borings are summarized in the following tables.

Boring B-9-2						
Soil Layer No.	Depth Below Grade		p-y Curve Type	Effective Unit Weight (pcf)	Friction Angle (deg)	Initial Modulus k (pci)
	Top of Layer (ft)	Bottom of Layer (ft)				
1	0.0	2.5	Sand (Reese)	110	33	0*
2	2.5	7.5	Sand (Reese)	125	41	0*
3	7.5	10.0	Sand (Reese)	125	39	0*
4	10.0	15.0	Sand (Reese)	125	41	0*
Note: *Zero refers to default value for k as selected by the LPILE program.						

Boring B-9-3						
Soil Layer No.	Depth Below Grade		p-y Curve Type	Effective Unit Weight (pcf)	Friction Angle (deg)	Initial Modulus k (pci)
	Top of Layer (ft)	Bottom of Layer (ft)				
1	0.0	4.0	Sand (Reese)	110	33	0*
2	4.0	7.5	Sand (Reese)	125	39	0*
3	7.5	12.5	Sand (Reese)	115	34	0*
4	12.5	15.0	Sand (Reese)	120	36	0*
Note: *Zero refers to default value for k as selected by the LPILE program.						

Boring B-9-10						
Soil Layer No.	Depth Below Grade		p-y Curve Type	Effective Unit Weight (pcf)	Friction Angle (deg)	Initial Modulus k (pci)
	Top of Layer (ft)	Bottom of Layer (ft)				
1	0.0	4.0	Sand (Reese)	110	33	0*
2	4.0	10.0	Sand (Reese)	125	38	0*
3	10.0	15.0	Sand (Reese)	125	41	0*
Note: *Zero refers to default value for k as selected by the LPILE program.						

Boring B-10-3						
Soil Layer No.	Depth Below Grade		p-y Curve Type	Effective Unit Weight (pcf)	Friction Angle (deg)	Initial Modulus k (pci)
	Top of Layer (ft)	Bottom of Layer (ft)				
1	0.0	2.5	Sand (Reese)	110	33	0*
2	2.5	5.0	Sand (Reese)	125	41	0*
3	5.0	7.5	Sand (Reese)	120	35	0*
4	7.5	15.0	Sand (Reese)	125	39	0*

Note: *Zero refers to default value for k as selected by the LPILE program.

Boring B-10-4						
Soil Layer No.	Depth Below Grade		p-y curve Type	Effective Unit Weight (pcf)	Friction Angle (deg)	Initial Modulus K (pci)
	Top of Layer (ft)	Bottom of Layer (ft)				
1	0.0	2.5	Sand (Reese)	110	33	0*
2	2.5	5.0	Sand (Reese)	115	34	0*
3	5.0	7.5	Sand (Reese)	125	41	0*
4	7.5	15.0	Sand (Reese)	125	38	0*

Note: * Zero refers to default value for k as selected by the LPILE program.

APPENDIX F

ReMi-MASW Survey Results

APPENDIX F

ReMi-MASW SURVEY RESULTS

Ninyo & Moore performed refraction microtremor (ReMi) and multichannel analysis of surface wave (MASW) surveys to obtain the shear wave velocity profile to a nominal depth of approximately 100 feet at the subject site to evaluate seismic Site Class in general accordance with ASCE 7-10.

Data was collected using a 24-Channel Geometrics Geode exploration seismograph coupled with 24 vertical component 4.5-Hertz geophones that were spaced approximately 10 feet apart in a linear array. The approximate length and orientation of the survey array is indicated on Figure 2.

The ReMi survey included collection of 30-second ambient noise (microtremors) records. Approximately 20 shear-wave velocity structure records were collected from the Rayleigh wavefield that is generated by nearby passive environmental features.

To supplement the passive data, active-source data were collected during the MASW survey. A 25-pound sledgehammer striking a 1-inch-thick metal plate was used as the energy source to generate an impulsive surface wave. Several shot locations were selected on the liner geophone alignment, as well as slightly beyond the extent of the geophones.

The one-dimensional shear wave velocity structure and average shear wave velocity were evaluated using Geometrics' software Pickwin v.7.1.0.1 and WaveEq v.6.1.0.5. The propagated velocities of the MASW data and the dispersion of frequencies obtained during the ReMi survey were used to model a shear-wave velocity chart, which is provided on Figure F-1. The upper portion of the shear-wave velocity chart shown on Figure 1 is generally based on the MASW results where this technique provides better resolution, with the lower portion of the chart generally based on the ReMi method.

The calculated average shear wave velocity to a depth of approximately 100 feet at the location of the geophone array was 1,769 feet per second. Based on the ReMi and MASW surveys, a seismic Site Class C is characteristic for design purposes for the project.

ReMi-MASW Survey (R-2)

Shear Wave Velocity v. Depth

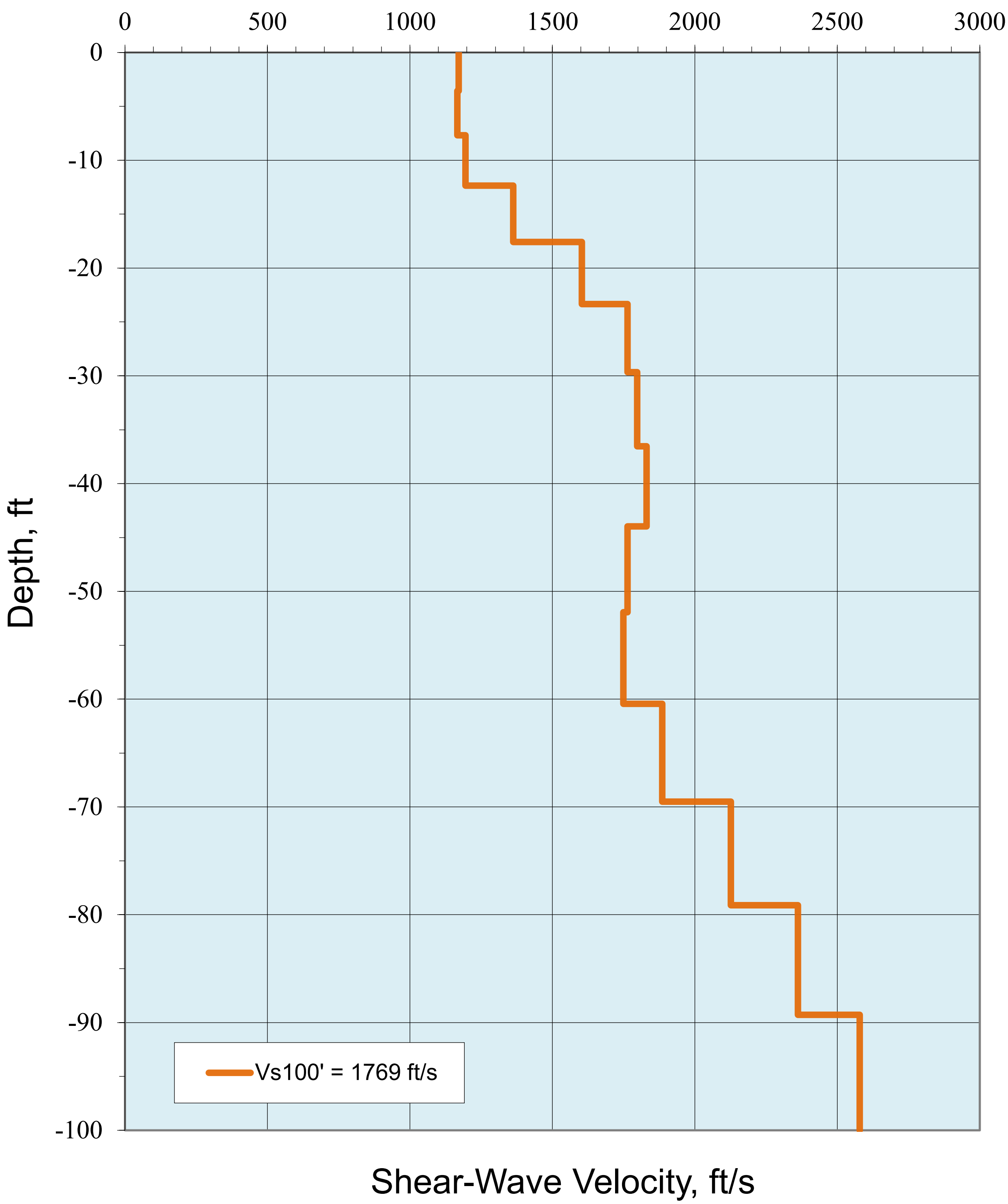


FIGURE F-1

ReMi-MASW SURVEY RESULTS

MERCURY - BUILDINGS 9 & 10 DESIGN
NEVADA NATIONAL SECURITY SITE, NYE COUNTY, NEVADA

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

305320002 | 2/2026

APPENDIX G

Field Resistivity Test Results

APPENDIX G

FIELD RESISTIVITY TEST RESULTS

Field resistivity tests were performed at the project site (ER-1 and ER-2). A MiniRes Soil Resistance Meter and Wenner 4-pin arrangement was utilized to obtain electrical resistivity measurements at current and potential electrode intervals ("A" spacings) of 2.5, 5, 10, 20, and 50 feet at the field test locations. Resistance values were recorded and used to calculate apparent resistivity in Ohm-centimeters (Ohm-cm). The approximate locations of the field resistivity tests are shown on Figure 2. The field resistivity tests were conducted by a geologist trained and experienced in resistivity surveys. The test results are presented on the following table:

Field Resistivity Test Results

Location	Spacing (feet)	Resistance (Ohms)		Apparent Resistivity (Ohm-cm)	
		North-South	East-West	North-South	East-West
ER-1	2.5	128.7	122.9	61,625	58,858
	5.0	82.9	77.5	79,329	74,168
	10	25.1	23.8	48,124	45,481
	20	7.5	7.2	28,648	27,614
	50	1.6	1.5	15,703	14,746

Field Resistivity Test Results

Location	Spacing (feet)	Resistance (Ohms)		Apparent Resistivity (Ohm-cm)	
		North-South	East-West	North-South	East-West
ER-2	2.5	118.2	123.9	56,588	59,312
	5.0	83.5	89.8	79,903	85,993
	10	33.3	36.5	63,712	69,802
	20	4.9	5.3	18,652	20,108
	50	1.0	1.0	9,192	9,862

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