APPENDIX K

GEOTECHNICAL INVESTIGATION REPORT

GEOTECHNICAL INVESTIGATION TO SUPPORT THE REMEDIAL ACTION PLAN

FORMER KAST PROPERTY
CARSON, CALIFORNIA

Prepared for

Shell Oil Products US
20945 S. Wilmington Avenue
Carson, California 90810

October 14, 2015

AECOM Project No. 60422689

Prepared by

AECOM

999 Town and Country Road
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October 14, 2015

Mr. Douglas Weimer
Sr. Principle Program Manager
Shell Oil Products US
20945 S. Wilmington Avenue
Carson, California 90810

Subject: **Geotechnical Investigation to Support Remedial Action Plan for Former Kast Property Carson, California 90810**

Dear Mr. Weimer,

AECOM is pleased to present the results of our geotechnical investigation to support Implementation of the Remedial Action Plan for Former Kast Property, located in Carson, CA 90810.

Presented herein are the results of our subsurface explorations and laboratory testing, interpretation of the geologic and geotechnical conditions encountered, and recommendations for proposed remedial excavations. Based on the results of our geotechnical investigation, the proposed improvements are feasible from a geotechnical standpoint, provided the recommendations in this report are implemented in design and construction.

We appreciate the opportunity to be of service on this project. Please do not hesitate to contact the undersigned if you have any questions, comments or require additional information.

Sincerely,

AECOM

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APPENDICES

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ABBREVIATIONS

ASTM	American Society for Testing and Materials
bgs	below ground surface
Cal/OSHA	California Occupational Safety and Health Administration
Cal-Water	California Water Service Company
CLSM	Controlled Low-Strength Material
D	Trench depth
deg	degrees
FS	Factor of Safety
ft	feet
H	Horizontal
ksf	kips per square foot
LACDPW	Los Angeles County Department of Public Works
MSL	Mean sea level
NA	Not Applicable
pcf	pounds per cubic foot
psf	pounds per square foot
RAP	Remedial Action Plan
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SVE	Soil vapor extraction
SPT	Standard Penetration Test
UU	Unconsolidated Undrained
V	Vertical

SECTION 1 SITE DESCRIPTION

The Former Kast Property (Site) is located in the City of Carson in the area inclusive of Marbella Avenue on the west, Panama Avenue on the east, E. 244th Street on the north and E. 249th Street to the south and includes the residential properties to the "outside" of these streets (Figures 1 and 2).

The Former Kast Property was a petroleum storage facility from the mid-1920s to the mid-1960s and was redeveloped as the Carousel Community residential housing tract by others in the late 1960s, after a change of ownership. The Former Kast Property contained three large oil storage reservoirs and their attendant berms, which occupied the major portions of the Kast Property. The bottoms and side slopes of the reservoirs were lined with approximately 4-inch-thick concrete slabs.

The site is impacted with petroleum hydrocarbons. The Revised Remedial Action Plan (Revised RAP) was prepared to address remedial actions for impacted soils and other media. Based upon the results summarized in the Revised RAP (URS and Geosyntec, 2014), excavation of soils at impacted residential properties is a component of the remedy. An SVE/bioventing system is proposed to be installed and will consist of a system of extraction wells, below-ground conveyance piping, above-ground manifold and treatment compound, vapor treatment system, and various system controls and instrumentation.

The Site is being investigated and remediated under the regulatory oversight of the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) as directed in Cleanup and Abatement Order No. R4-2011-0046, as amended July 10, 2015.

SECTION 2 PURPOSE AND SCOPE OF WORK

The purpose of this geotechnical investigation is to assess the geotechnical properties of the soils at the project Site and to provide geotechnical recommendations for the remedial excavations. The proposed excavation plan, as presented in the RWQCB-approved Revised RAP (URS and Geosyntec, 2014), includes the following recommendations:

- Excavation of shallow soils at approximately 208 properties. Excavation will be conducted to a depth of 5 feet below ground surface (bgs), to remove impacted soils from front, back and side yards.
- Excavation of deeper soils to depths between 5 and approximately 10 feet bgs at approximately 85 properties. This excavation will be conducted where feasible from geotechnical and construction standpoints, and will be conducted to remove impacted soils from front yards and back yards only; side yards will not be excavated deeper than 5 feet bgs.

The geotechnical recommendations included in this report present the findings and conclusions of the geotechnical investigation by AECOM. The scope of work included the following:

- Review of available geotechnical information;
- Conducting subsurface exploration to observe the on-site soils and obtain samples for laboratory testing;
- Performed laboratory testing on bulk and undisturbed samples collected during our subsurface exploration;
- Interpretation of the geologic and geotechnical conditions encountered;
- Conducting engineering evaluations and analyses to develop remedial excavation recommendations; and
- Preparation of this report presenting our findings, conclusions, and recommendations.

SECTION 3 FIELD EXPLORATION AND LABORATORY TESTING

3.1 DRILLING

AECOM conducted geotechnical field exploration for the Former Kast Property between July 28 and August 26, 2015. The exploration program included drilling 40 borings to 20 feet bgs and 33 borings to 10 feet bgs using the hollow-stem auger drilling method. The boring locations are shown on Figure 2. Table A-1, Appendix A presents a summary of our field exploration program. As part of the pilot testing program, AECOM conducted geotechnical field exploration at the site between March 13 and March 21, 2012. These borings are shown on Figure 2. A summary of this field exploration program is presented in Table A-2, Appendix A.

3.2 LOGGING

An AECOM field representative visually classified the soil samples and cuttings in accordance with the Caltrans *Soil and Rock Logging, Classification and Presentation Manual* (Caltrans, 2010) and maintained a detailed record of subsurface materials encountered in the exploratory borings. The boring logs are included in Appendix A. Groundwater was not encountered in any of the borings to the maximum depth drilled.

3.3 SAMPLING AND FIELD TESTING

When subsurface conditions permitted, California samplers and standard penetration test (SPT) samplers were advanced in alternating order at approximately 2.5-foot vertical intervals in the upper 10 feet and at approximately 5-foot vertical intervals for the rest of the boring. Relatively intact samples were obtained using the California sampler (2.42-inch inside diameter). The SPTs were performed in accordance with ASTM International (ASTM) D1586 guidelines. Both SPT and California samplers were driven 18 inches into the subsurface soils using a 140-pound automatic hammer with successive 30-inch drops. The number of blows required to drive the samplers into the subsurface soils were recorded at 6-inch intervals. The total number of blows required to drive the sampler for the last 12 inches was recorded on the boring records. Sampling methods are discussed in further detail in Appendix A.

3.4 BOREHOLE ABANDONMENT

The boreholes were backfilled with high-solids cement/bentonite grout from the bottom to 10 feet bgs and hydrated bentonite from 10 feet to approximately 1 foot bgs. The upper foot of the boreholes was backfilled with topsoil.

3.5 LABORATORY TESTING

Selected soil samples were tested at the AECOM geotechnical laboratory in Santa Ana, California. The laboratory testing included measurement of water content, unit weight, particle-size distribution, liquid

limit and plastic limit, shear strength by direct shear, and unconsolidated undrained triaxial testing. Further descriptions of the laboratory testing and the test results are presented in Appendix B.

SECTION 4 GEOLOGY AND SUBSURFACE CONDITIONS

4.1 REGIONAL GEOLOGY

The site is situated within the Los Angeles Basin in southwestern Los Angeles County. The Los Angeles Basin is located at the transition between the northern portion of the Peninsular Ranges geomorphic province and the southern portion of the Transverse Ranges geomorphic province. The project site is considered to be within the Peninsular Ranges geomorphic province by Yerkes et al. (1965). The Peninsular Ranges is one of the largest geomorphic provinces in western North America, encompassing the Los Angeles Basin and extending southward to the tip of Baja California in Mexico. The Peninsular Ranges are characterized by northwest-southeast trending hills and valleys separated by similarly trending faults.

The Los Angeles Basin is northwest-trending, coastal lowland plain measuring about 50 miles long and 20 miles wide. The basin is bounded on the north by the Santa Monica Mountains and Elysian, Repetto and Puente Hills, on the east and southeast by the Santa Ana Mountains and San Joaquin Hills, and on the south and west by the Pacific Ocean. The Los Angeles Basin has been subdivided into four structural blocks based on contrasting or partly contrasting rocks separated by major zones of faulting or flexure in the basement rocks (Yerkes et al., 1965). These structural blocks are designated the southwestern, northwestern, central, and northeastern blocks. The site is located within the northern portion of the southwestern structural block, which extends from Santa Monica at the northwest to Long Beach at the southeast. Most active faults in the Peninsular Ranges geomorphic province are northwest trending strike-slip faults exhibiting right-lateral offset.

The gently southerly and westerly inclined surface of the Los Angeles Basin is interrupted locally by a northwest-trending alignment of low hills and mesas that extend from the Newport Beach area on the south to Beverly Hills on the north. These hills are the surface expression of movement along the Newport-Inglewood fault zone. The nearest of the hills to the site is the Dominguez Hills, located approximately 5 miles to the north. This alignment of hills forms a physiographic divide between the Downey and Tustin Plains northeast of the hills, and the Torrance and Long Beach Plains on the southwest. An erosional gap through the Dominguez Hills created by ancestral rivers of the Los Angeles Basin is located about a mile east of the site. This gap, through which the Los Angeles River flows today, is called the Dominguez Gap.

4.2 LOCAL GEOLOGY

Geologic units underlying the site consist of marine and non-marine sediments. The Pliocene-age Pico Formation is thought to occur about 1,400 feet beneath the site (DWR, 1961). The lower and middle portions of the Pico Formation are comprised of interbedded claystone, siltstone and sandstone of marine origin. The upper part of the Pico Formation consists of semi-consolidated sand, silt and clay of moderately deep to deep marine origin.

The early to middle Pleistocene San Pedro Formation conformably overlies the Pico Formation. The top of the San Pedro Formation is approximately 300 below the site. This formation represents a transition from deposition in deep to moderately deep marine environments to shallow marine environments and consists of silt, sand and gravel.

The Pleistocene-age Lakewood Formation unconformably overlies the San Pedro Formation and is encountered near the surface to about 300 feet beneath the site. Regionally, the Lakewood Formation consists of continental, shallow marine, and estuarine/lagoonal deposits consisting of unconsolidated gravel, sand, and silt with some clay. However, beneath the site the Lakewood Formation generally appears to have been deposited in shallow marine, coastal estuarine, and lagoonal/marsh environments. The upper portion of the Lakewood Formation beneath the site includes the Bellflower aquitard, which consists of relatively fine-grained lagoonal and estuarine deposits consisting largely of clay and silt with interbeds of silty sand and sand. Holocene-age (recent) deposits blanket the site to a depth of approximately 90 feet bgs. These sediments are thought to have been deposited by streams as channel and sheetflow deposits, overbank mud, and lagoonal and estuarine deposits and are dominantly fine-grained units consisting primarily of clay with some silt and clay with interbedded silty sand and sand (Geosyntec, 2014).

4.3 SUBSURFACE CONDITIONS

The alluvial deposits within the project limits are overlain with artificial fill associated with the construction of the former reservoirs and residential housing development.

Subsurface soils within the site from the ground surface to a depth of approximately 20 feet generally consist of interbedded and intermixed, laterally discontinuous clay, clayey/silty sand and sand strata. The on-site soils under the footprint of the former reservoirs consist of approximately 7 to 10 feet of fill material overlying the concrete slabs of the former reservoirs, where present. The thickness of the concrete slab ranges from 4 inches to 12 inches. Outside of the former reservoir footprints, the fill/alluvium contact was not determined.

4.4 GROUNDWATER AND SURFACE WATER

The Seismic Hazard Zone for the Torrance 7.5-minute quadrangle map (CGS, 1999) does not include historic high groundwater data at the site location. AECOM has monitored groundwater levels since 2009. Based on this data, the highest groundwater level was recorded in the Second Quarter 2015 report (AECOM, 2015), at about 51 feet bgs.

The site is relatively flat with ground elevation ranging from 34 feet to 48 feet MSL. Generally, the site drains in a northwesterly direction and discharges into a subsurface reinforced concrete box culvert located along the western side of the Former Kast Property.

SECTION 5 GEOTECHNICAL ANALYSES

The analyses and calculations necessary to support our recommendations are presented in Appendix C and include: open pit stability analyses, trench stability analyses, bearing capacity and heave stability.

5.1 GENERALIZED SOIL PROFILE AND SOIL PARAMETERS

The engineering parameters presented in Table 1 are based on the current field investigation findings, the review of the previous field investigations data at the site, published empirical correlations, and our professional experience with similar soils in the project area. The effective friction angle of on-site soils was estimated based on direct shear testing and SPT blow count values using Terzaghi, Peck, and Mesri's (1996) correlation and Peck, Hansen, and Thornburn's (1974) correlation. Available data from unconsolidated undrained triaxial tests, SPT blow count values using Stroud's (1989) correlation, and pocket penetrometer measurements were used to evaluate the undrained shear strength of clay layers. The soil type distribution over project site is shown on Figure 2 – Geotechnical Map.

Table 1. General Soil Profile

Soil Type	Unit Weight (pcf)	Shear Strength	Strength Parameters Used in Analyses	
			Friction Angle (deg)	Cohesion (psf)
Sandy Soils	120	Peak	36	345
		Ultimate	36	130
Clayey Soils	120	Peak	32	500
		Ultimate	34	215
		Undrained	0	2000

5.2 STABILITY ANALYSES

Global stability analyses were performed for temporary conditions, the results of which are summarized in Table 2. The soil parameters used in the slope stability analyses are presented in Table 1. The calculations were completed using the computer program SLOPE/W (Geo-Slope International Ltd., 2013), which calculates the factor of safety against slope stability using two-dimensional limit equilibrium analysis. Additionally, the width of the trench that would result in a minimum factor of safety of 1.3 was evaluated. The calculations are included in Appendix C.

Table 2. Global Stability Analyses

Location	Excavation Depth (ft)	Description	Soil Strength	Factor of Safety (FS)	
				Static-Temporary (Calculated)	Required Minimum for Static-Temporary
Side Yard and Front/Back Yards	5	1H:1V descending slope from bottom of footing	36º and 345 psf 34º and 215 psf 0º and 2,000 psf	2.2 1.6 6.9	1.3
Front/Back Yards	10	4 ft vertical + ¾H:1V from bottom of foundation	36º and 345 psf 34º and 215 psf 0º and 2,000 psf	1.7 1.2 7.0	1.2
Front/Back Yards	10	4-foot wide slot trench with house surcharge	36º and 345 psf 34º and 215 psf 0º and 2,000 psf	2.0 1.5 6.4	1.3
Pools	5	1H:1V from setback	36º and 345 psf 34º and 215 psf 0º and 2,000 psf	4.9 3.5 19.0	1.3
Pools	10	See Figure 3.4	36º and 345 psf 34º and 215 psf 0º and 2,000 psf	2.3 1.6 9.8	1.3
Pools	10	Slot trench See Figure 3.4	36º and 345 psf 34º and 215 psf 0º and 2,000 psf	3.1 2.0 15.3	1.3

5.3 BEARING CAPACITY

These calculations were performed to estimate bearing capacity of existing house foundation for three cases:

- When foundation is located at the top of a 1H:1V temporary slope.
- When slot trenches are perpendicular to the existing foundation. In this approach, the bearing capacity of the foundation was conservatively ignored for a length equal to the slot trench width. The bearing capacity was estimated using Terzaghi and Vesic methods using the soil parameters presented in Table 1 and the total allowable bearing was calculated by dividing the bearing capacity by a factor of safety of 3. To account for the presence of slot trenches, the allowable bearing is taken as ⅔ of the total allowable bearing capacity.
- When foundation is located at the top of 3/4H:1V + 4 ft vertical slope

The results of bearing resistance analyses are presented in Table 3.

Table 3. Bearing Capacity Analyses

Location	Description	Total Allowable Bearing (ksf)	2/3 Allowable Bearing (ksf)	Applied Bearing Pressure(1) (ksf)
Side Yards	1H:1V descending slope from bottom of footing	2.1	NA	1.1
Front and Back Yards	4 ft vertical + ¾H:1V from bottom of foundation	1.4	NA	1.1
Front and Back Yards	4 ft wide slot trench with house surcharge	8.0	5.4	1.1

Note:
(1) The bearing pressure is based on a 2-story house with the roof and floors bearing on the exterior walls using conservative dead loads

5.4 BOTTOM HEAVE

Bottom heaving in an excavation can be caused by the downward pressure created by the weight of the adjoining soil. This pressure can cause a bulge in the bottom of the trench. The factor of safety against heave failure was calculated based on Caltrans Trenching and Shoring Manual (Caltrans 2011) recommendations; details are included in Appendix C. The factor of safety against bottom heave is more than 1.5, indicating that the bottom heave failure is unlikely.

5.5 LATERAL EARTH PRESSURE

The on-site soil can be described as Soil Type A according to Cal/OSHA, Construction Safety Order Section 1541.1, Appendix A.

Cal/OSHA recommendations for timber or aluminum hydraulic shoring consider the effective lateral pressures for trench depth, D (feet):

Soil Type A: Active Pressure = 25D + 72 psf (2 feet surcharge)
Soil Type B: Active Pressure = 45D + 72 psf (2 feet surcharge)

SECTION 6 CONCLUSIONS AND RECOMMENDATIONS

6.1 COUNTY OF LOS ANGELES BUILDING CODE SECTION 111 STATEMENT

Based on the results of our geotechnical investigation, and provided that the recommendations included in this report are followed, it is our professional opinion that the proposed improvements within the Site would not be subject to nor engender geotechnical and geologic hazards from landslides, settlement, or slippage. Further, it is also our professional opinion that the proposed construction would not adversely affect the geologic stability of the properties beyond the project site, provided that the recommendations included in this report are followed.

6.2 SITE PREPARATION AND GRADING

6.2.1 General

The subject site should be precise graded in accordance with the Los Angeles County Department of Public Works grading guidelines and the recommendations outlined in the following sections of this report.

6.2.2 Excavation Characteristics

The soil materials underlying the site can be excavated with conventional grading equipment such as dozers, loaders, excavators, and backhoes.

6.2.3 Demolition and Clearing

The concrete slabs of former reservoirs will be encountered at select locations within 7 to 10 feet bgs. In accordance with the Revised RAP, the reservoir base will be removed where it is exposed to the extent practicable and where it can be removed safely. The use of a vibratory breaker attachment, or stinger, to break and remove the concrete slab may be necessary. During this operation, excavation shoring to avoid soil caving or fissure development may be necessary. This will be determined during construction, based on the field conditions. Cavities and excavations created upon removal of subsurface obstructions to be demolished, such as existing buried utilities, should be cleared of loose soil, and then backfilled with properly compacted fill.

6.3 IMPACTED SOIL REMOVAL

The recommendations for impacted soil removal were developed based on the on-site soil types encountered and the location of proposed excavations relative to existing structures (i.e. houses, pools and screen/retaining walls). Observations should be conducted throughout the excavation process by an AECOM representative. Any unanticipated conditions should be brought to the attention of AECOM Resident Engineer and Geotechnical Engineer for corrective measures. Unanticipated conditions may

include, but are not limited to, water seepage, localized loose soils, presence of significant concrete rubble, and structural movement.

The contractor should monitor the structures during remedial excavation. If signs of distress are recorded, including soil caving, development of fissures, subsidence, bulging or heaving at the bottom of the excavation, the Resident Engineer and Geotechnical Engineer should be notified promptly. The contractor should take immediate action to stop the development of distress. Settlement monitoring should be continuous during excavation and backfill. If 0.25 inch of vertical movement of the house foundation is measured, the contractor must take appropriate action to prevent any additional foundation settlement. An appropriate shoring system should be available and installed if signs of instability are present during the excavation or backfill soil placement.

A Cal/OSHA-certified competent person should verify the safety of conditions for field personnel, determine the classification of soil and determine the excavation maximum allowable slope. No person shall enter excavations deeper than 5 feet without appropriate shoring or sloping of excavations with access and egress points provided.

6.3.1 Excavation between Adjacent Properties – Side Yards

The planned excavation to a maximum depth of 5 feet bgs can be performed between adjacent properties along the entire length of the house, provided that a 1H:1V slope is maintained from the bottom of house foundation to the bottom of the excavation and potential settlement is monitored. Figure 3.1 includes side yard remedial excavation details.

The stability of the proposed remedial excavation and adjacent house was analyzed as follows:

- Bearing Capacity was calculated considering the influence of the 1H:1V descending slope from the bottom of the house foundation, using the Vesic method.
- Slope Stability; the 1H:1V slope with house surcharge was modeled using the soil properties presented in Table 1.

The results of these analyses are included in Appendix C. The proposed excavations between adjacent properties are unlikely to expose the concrete reservoir base slab. Therefore, concrete breaking equipment may not be required for the excavation between adjacent properties. Backfill recommendations are included in Section 6.3.5.

6.3.2 Front/Backyard Excavation

According to the RAP, there are 208 properties proposed for 5-foot excavation and 85 properties proposed for 5- to 10-foot deep remedial excavation. The front/backyard remedial excavation details are shown on Figures 3.2 and 3.3.

5-Foot Excavation

The remedial excavation recommendations for 5-foot deep excavations adjacent to houses are the same as recommendations presented in Section 6.3.1. The detail is shown on Figure 3.2, Section C-C'.

10-Foot Excavation

The remedial excavation recommendations for 10-foot deep excavations adjacent to houses will consist of an open pit or slot trenching/open pit combination. Further details regarding 10-foot remedial excavation options are presented below.

The concrete reservoir base slab will be exposed in some locations where 10-foot deep excavation is proposed. In accordance with the Revised RAP, the reservoir base will be removed as discussed in Section 6.2.3.

Option 1. Open pit excavation

The impacted soil can be removed using an open pit excavation as presented in Table 4, provided that the following measures are taken:

- Considering that the excavation is temporary, a factor of safety of 1.2 to 1.3 was considered to be adequate.
- The open pit remedial excavation in the vicinity of the houses will consist of a 1H:1V slope to a maximum depth of 4 feet below the bottom of the foundation, followed by a 5-foot vertical excavation, as shown in Figure 3.2, Option 1. The vertical portion of the open pit must be excavated and backfilled within the same day. The minimum width of this zone is 5 feet, measured from the side of the pit adjacent to house foundation.
- Controlled Low-Strength Material (CLSM) should be used as backfill material as specified in Section 6.3.5.
- If 0.25 inch or more of vertical movement of the house foundation is measured, the contractor must take appropriate action to prevent any additional foundation settlement and the remedial excavation will continue using Option 2. If signs of distress are recorded, including foundation, stucco or drywall cracks, soil caving or development of fissures, subsidence, bulging or heaving at the bottom of the excavation, the Resident Engineer and Geotechnical Engineer should be notified promptly. The contractor should cease the excavation until the on-site conditions are evaluated.

Based on the results of slope stability analyses, the backcut slopes in combination with vertical sidewalls are feasible for on-site soil. These recommendations are summarized in Table 4 and shown on Section D-D', Option 1 on Figure 3.2. The remedial excavations should be backfilled as recommended in Section 6.3.5.

Table 4. Front/Backyard 10-Foot Excavation - Option 1

Soil Type	Excavation Depth (feet)	Horizontal Setback Distance from Foundation to Bottom of Excavation (feet)	Vertical Sidewall Height (ft) and Backcut Slope
Clays and Clayey/Silty Sands(1)	10	5	5 ft vertical + 1H:1V(2)

Notes:
(1) Clays and Clayey/Silty Sands correspond to CAL/OSHA Soil Type A. All tested on-site soils corresponds to Soil Type A.
(2) The vertical portion of the excavation must be backfilled by the end of the day.

Option 2. Slot Trenching/Open Pit Combination

If 0.25 inch or more of vertical movement of the house foundation is measured, the contractor must take appropriate action to prevent any additional foundation settlement and the remedial excavation will continue using a slot trenching/open pit combination. This option is illustrated on Section D-D', Option 2 on Figure 3.2 and on Figure 3.3 and summarized in Table 5.

In the immediate vicinity of the house foundations, the impacted soils will be removed using a series of parallel unsupported trenches with the long direction perpendicular to the foundation. The maximum width of the slot trench is 4.5 feet. The minimum distance between open trenches is equal to 9 feet. If consecutive trenches are named A,B,C,A,B,C…only trenches with the same designated letter can be opened at the same time, as indicated on Section E-E' on Figure 3.3.

When two walls join to form an interior right angle, a minimum setback from each wall of 10 feet should be maintained (refer to the plan on Figure 3.3). The resultant 10-foot by 10-foot corner zone can be excavated to a maximum depth of 5 feet, with maximum trench width equal to 5 feet. Excavation to a depth of 10 feet is not approved within this interior corner zone.

Table 5. Front/Backyard 10-Foot Slot Trench – Option 2

Trench Depth (feet)	Maximum Trench Width (feet)	Minimum Distance between Open Trenches (feet)	Maximum Number of Open Trenches
10	4.5	9	3

In addition to the slot trenching, the impacted soil can be removed using an open pit excavation when the setback distance from any house foundation is equal to the depth of the excavation. Considering that the excavation is temporary, a factor of safety of 1.2 to 1.3 was considered to be adequate. The remedial excavations should be backfilled as recommended in Section 6.3.5.

Based on the results of slope stability analyses, the backcut slopes in combination with vertical sidewalls are feasible for on-site soil. These recommendations are summarized in Table 6.

Table 6. Front/Backyard 10-Foot Open Pit – Option 2

Soil Type	Excavation Depth (feet)	Setback Distance from Foundation to Bottom of Excavation (feet)	Vertical Sidewall Height (ft) and Backcut Slope
Clays and Clayey/Silty Sands(1)	10	10	4 ft vertical + ¾H:1V

Note:
(1) Clays and Clayey/Silty Sands correspond to CAL/OSHA Soil Type A. All tested on-site soils corresponds to Soil Type A.

The stability of the proposed remedial excavation and adjacent house foundation was analyzed as follows:

- Bearing Capacity was calculated considering the proposed excavation, using the Vesic method.
- Trench Stability was evaluated considering the house surcharge.
- Global Stability; the proposed excavation with house surcharge was modeled using the soil properties presented in Table 1.

The results of these analyses are included in Appendix C.

6.3.3 Excavation – Pool on Adjacent Lot

Remedial excavation in the vicinity of pools will consist of a combination of slot trenches and open pit excavation as summarized in Table 7. The global stability of the remedial excavation and adjacent pool is included in Appendix C. The remedial excavation details are shown on Figure 3.4.

Table 7. Remedial Excavation - Adjacent to Pools

Remedial Excavation Depth (feet)	Remedial Excavation Description	Setback Distance from pool (feet)	Maximum Trench Width (feet)	Minimum Distance between Open Trenches (feet)	Maximum Number of Open Trenches
5	1H:1V from setback	Equal to pool deck width, but not less than 3 feet from outer pool side wall	5	10	3
10	Slot Trench and Pit Excavation (See Figure 3.4, Section B)				

The trenches should be excavated in full and backfilled completely before moving to the adjacent trench. Backfill recommendations are included in Section 6.3.5. All portions of excavations within 15 feet of the pool should be backfilled within 24 hours.

6.3.4 Excavation – Along Screen/Retaining Walls

Screen/retaining walls along the perimeter of the Former Kast Property will be protected in place. The maximum depth of the proposed remedial excavation along the project perimeter is 5 feet. The remedial excavation recommendations to remove the impacted soils located in the zone of influence of the screen/retaining walls are identical to excavation recommendations presented in Section 6.3.1. The remedial excavation details are shown on Figure 3.4.

6.3.5 Remedial Excavation Backfill

For excavations between properties up to 5 feet in depth and open pit excavations up to 10 feet in depth, the backfill material consists of imported soil from the base of excavation to 1 foot bgs and topsoil for the upper 1 foot. The backfill material shall be free of deleterious organic matter (e.g., vegetation) and cobbles larger than 3 inches in diameter, and shall be approved by the Geotechnical Engineer. Backfill material should be moisture conditioned and placed in maximum 8-inch loose lifts. The bottom of the excavation should be scarified, moisture conditioned and the backfill material should be compacted to at least 90 percent relative compaction in accordance with ASTM D1557. The upper 1 foot of soil backfill within landscaped areas would be topsoil that is suitable for vegetation growth and should be compacted to not more than 85 percent relative compaction in accordance with ASTM D1557. A sheepsfoot wheel attached to the backhoe or other mechanical means are recommended to be used for compaction of the imported backfill material. Field personnel can enter the temporary excavation only after a competent person has observed the trench and verified the safety of conditions for entry.

For trench/pit excavations up to 10 feet in depth, the lower part will be backfilled with 2-sack slurry (also referred to as flowable fill or Controlled Low-Strength Material [CLSM]). CLSM will be designed to have permeability comparable to that of native soil to promote air/vapor transport during SVE/bioventing operations. The upper part of trench backfill will consist of import soil backfill material. The backfill material can be placed and compacted after the CLSM has hardened. The hardening time is typically approximately 6-8 hours, however, more time should be allowed if sufficient hardening was not achieved. The backfill material shall be free of deleterious organic matter (e.g., vegetation) and cobbles larger than 3 inches in diameter, and shall be approved by the Geotechnical Engineer. Backfill material should be moisture conditioned and placed in maximum 8-inch loose lifts when standard heavy compactors are uses and 4-inch loose lifts for lightweight compactors. If CLSM is not used in the lower part of the pit excavation, the bottom of the pit should be scarified and moisture conditioned. The backfill material should be compacted to at least 90 percent relative compaction in accordance with ASTM D1557. The upper 1 foot of soil backfill within landscaped areas would be topsoil suitable for vegetation growth and should be compacted to not more than 85 percent relative compaction. A sheepsfoot wheel attached to the excavator arm or other mechanical means are recommended for use to compact the imported backfill material.

Clean soil used for the backfill of the excavations should be imported from an offsite source. The soil will be tested prior to its placement by AECOM to determine its competence as a suitable backfill material. Geotechnical testing will include gradation, plasticity index, shear strength, maximum density, optimum water content, permeability, and corrosivity tests.

6.3.6 Utilities and City Sidewalks/Driveway Approaches Setback

Utilities present at the project site and the setback distances required from a geotechnical perspective are summarized below.

Water Mains. Water service is provided by California Water Service Company (Cal-Water). The main lines are located on residential properties approximately 3.5 feet from the inner edge of the sidewalk, at an approximate depth of 3 to 4 feet. Water mains are of asbestos-cement (transite) pipe construction with joints at 13-foot intervals. According to Cal-Water, the water line cannot be exposed in excavation. From a geotechnical standpoint, the minimum setback distances are:

- For temporary excavation trenches perpendicular on the pipeline, the minimum horizontal distance from the edge of the pipe to the excavation open face is 1.5 feet.
- For temporary excavation pit/trench running parallel to the pipeline, the minimum horizontal distance from edge of the pipe to the excavation open face is 2 feet. The length of the excavation pit/trench running parallel to the water line should be 12 feet maximum.
- The vertical clearance should be 1.5 feet minimum provided that no construction traffic will surcharge the water line during the remedial excavation.
- Light compaction equipment should be used above water line
- If construction equipment will operate over the water lines, they should be protected by placement of steel or HDPE plates to distribute the load of such equipment during operation.

Electrical Power. Electrical power is provided by Southern California Edison (SCE) by overhead lines connected to each house via roof lines. The minimum setback from the power pole and guy wires will follow the recommendations set forth by SCE. Based on the discussions with SCE, excavation from the face of a power pole or guy wire may proceed at a 1H:1V slope.

Other Utilities. Sewer, gas and communications main lines are located beneath the City streets or sidewalks and will not be affected by the planned excavation work. The laterals to the houses will be capped, removed and replaced. There is no setback requirement for these utility lines. However, if any main utility lines are located within proposed remedial excavations, they will be protected in place; the minimum setback distances recommended for water mains are applicable.

City Sidewalks/Driveway Approaches Setback. The proposed remedial excavation at each designated residence will be extended to the back of city sidewalk/driveway approaches. Due to the proximity of the

excavations, it should be noted that cracking of concrete may occur; therefore contractor shall provide a means necessary to protect sidewalks/driveways during excavation activities.

6.3.7 Shoring Requirements/Recommendations

Foundation support is one of the major risk mitigation measures required during excavation, in order to maximize impacted soil removal around houses. If it is assessed that shoring is required, a shoring specialist engineering firm will prepare shoring design specifications for review and approval by the City of Carson and LACDPW.

Standard trench shoring will be available onsite for use in trenches that are deeper than 5 feet if personnel need to enter the trench, or in the event that a situation arises where it is necessary for unstable soil conditions.

SECTION 7 NOTES TO DESIGNER

7.1 REVIEW OF PLANS AND SPECIFICATIONS

Final project plans and specifications will be reviewed by the Geotechnical Engineer-of-Record prior to construction to confirm that the full intent of the recommendations presented in this report have been applied to the design and that the recommendations presented are applicable to the final scope of the project.

SECTION 8 LIMITATIONS

This report has been prepared for Shell Oil Products US use only, and is not to be distributed to third parties.

AECOM has observed only a small portion of the pertinent subsurface conditions. The recommendations made in this report are based on the assumption that soil and geologic conditions do not deviate appreciably from those observed in the subsurface explorations. The project quality control should provide observation and testing during excavation, fill placement, and other forms of geotechnically significant types of construction to evaluate whether the site conditions are as anticipated, and to provide revised recommendations, if necessary. If variations or undesirable geotechnical conditions are encountered during construction, the geotechnical-engineer-of-record should be consulted for further recommendations.

Geotechnical engineering and the geologic sciences are characterized by uncertainty. Professional judgments presented herein are based partly on our understanding of the proposed construction, and partly on our general experience. Our engineering work and judgments rendered meet current professional standards; we do not guarantee the performance of the project in any respect.

SECTION 9 REFERENCES

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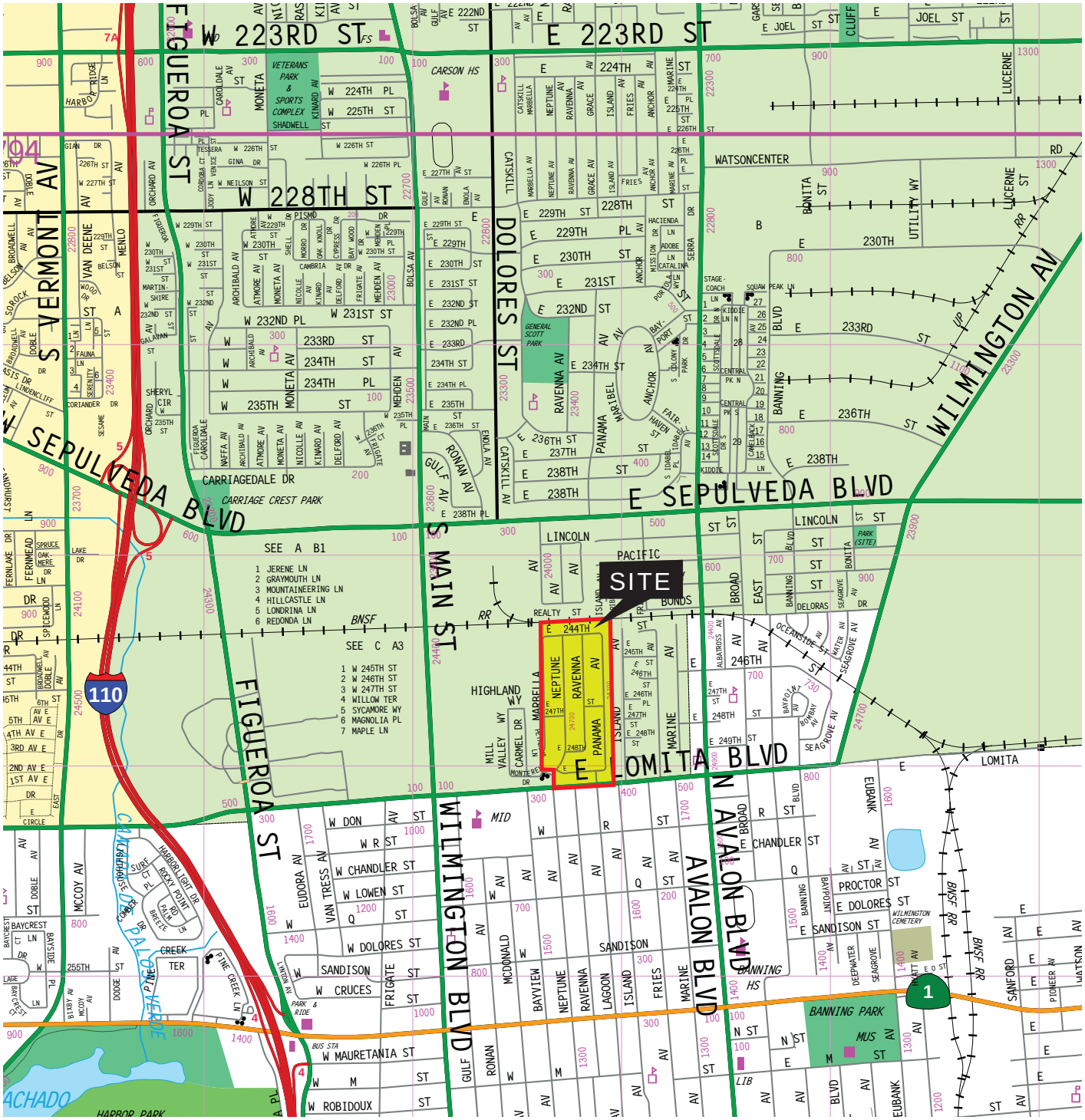

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SCALE IN FEET

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SITE VICINITY MAP

Project No.: 60422689	Date: October 2015	Project: Former KAST Property	Figure 1

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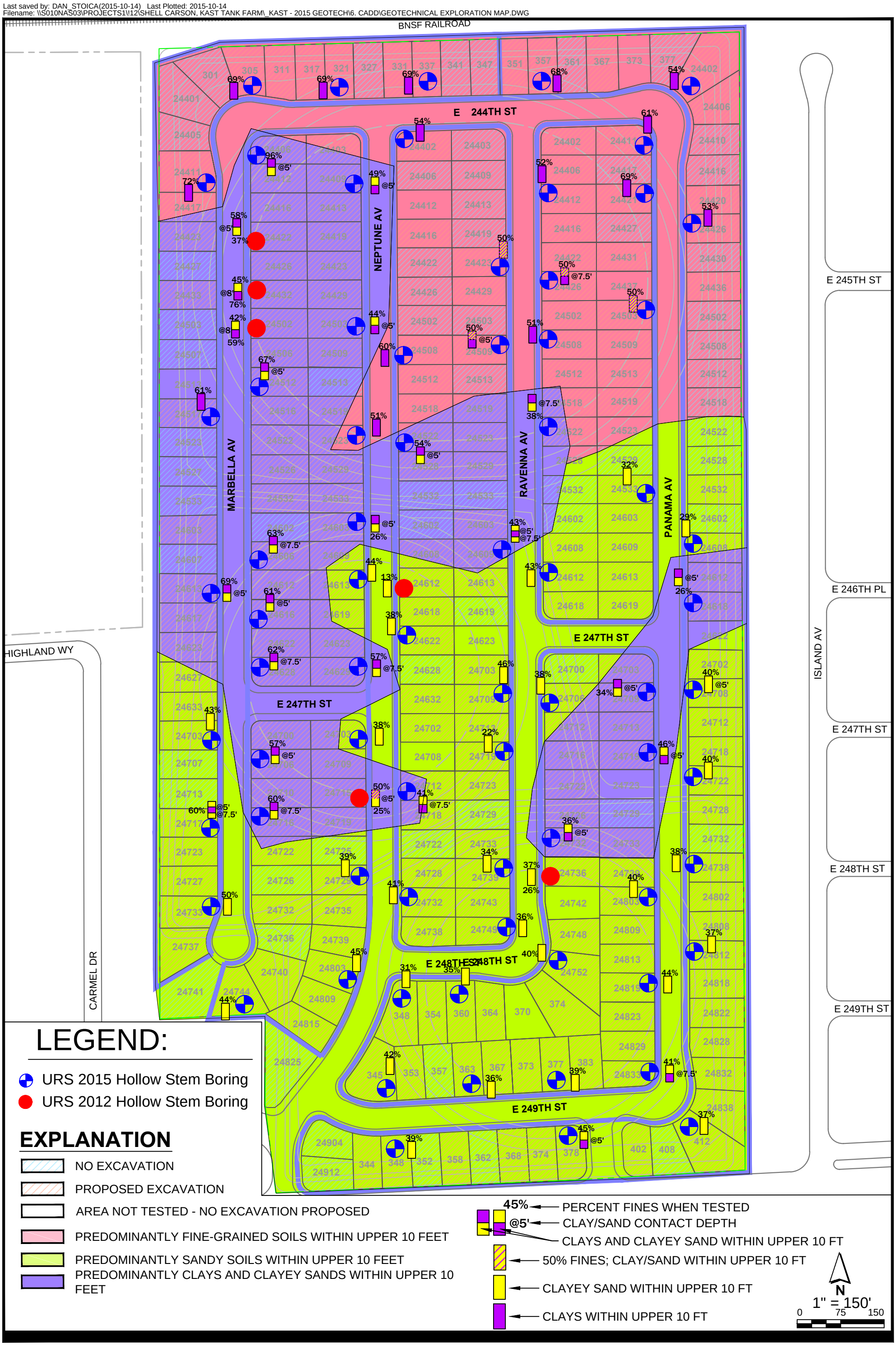

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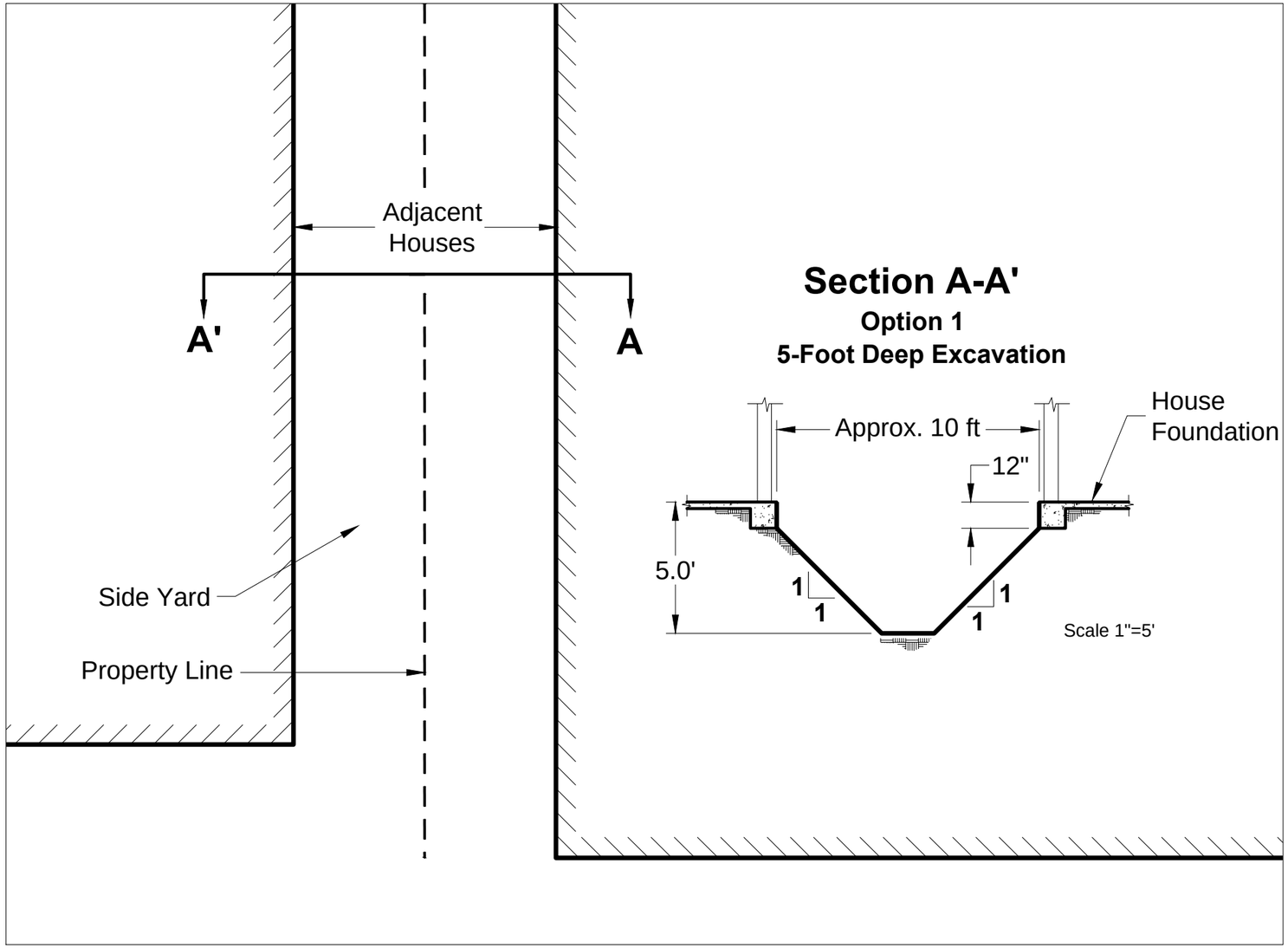
GEOTECHNICAL MAP

AECOM

FIGURE 2



Note
1. Slopes indicated are maximum allowed.
2. Continuous monitoring of building settlement is required. Refer to Section 6.3

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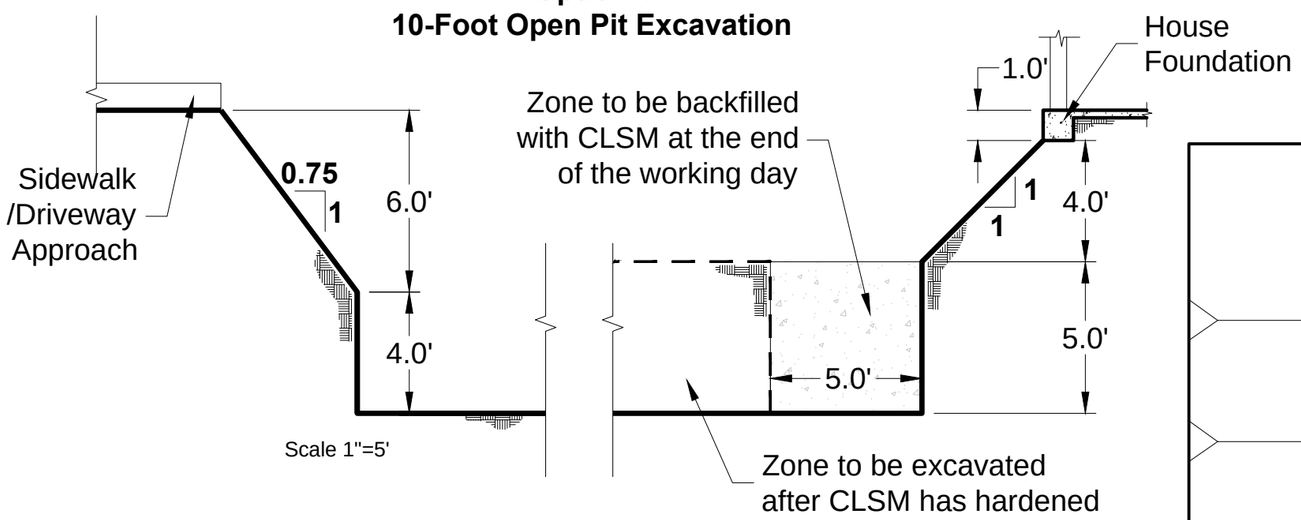
SIDE YARD EXCAVATION

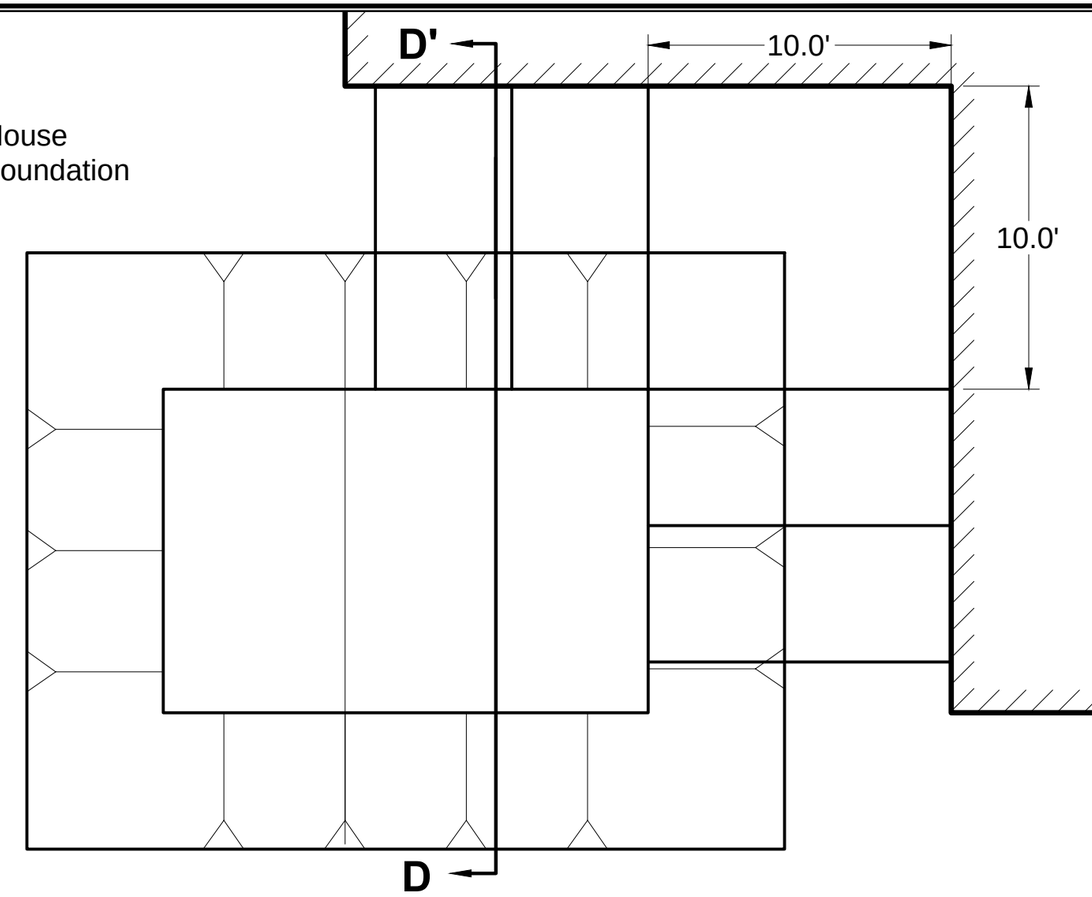
AECOM

FIGURE 3.1

Section D-D'

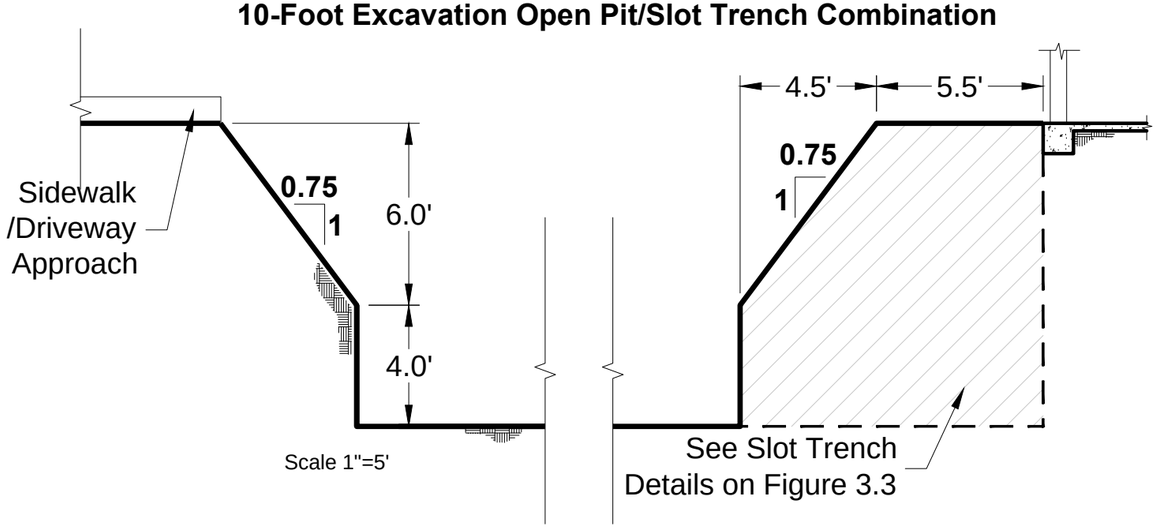
Option 1
10-Foot Open Pit Excavation

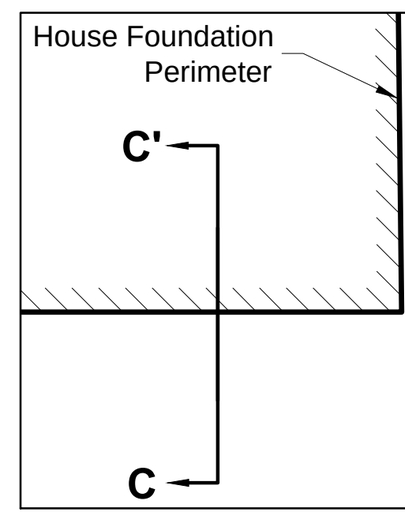




Section D-D'

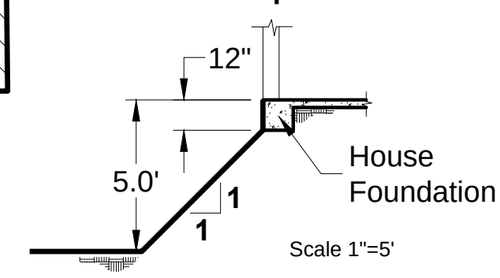
Option 2
10-Foot Excavation Open Pit/Slot Trench Combination





Section C-C'

5-Foot Deep Excavation



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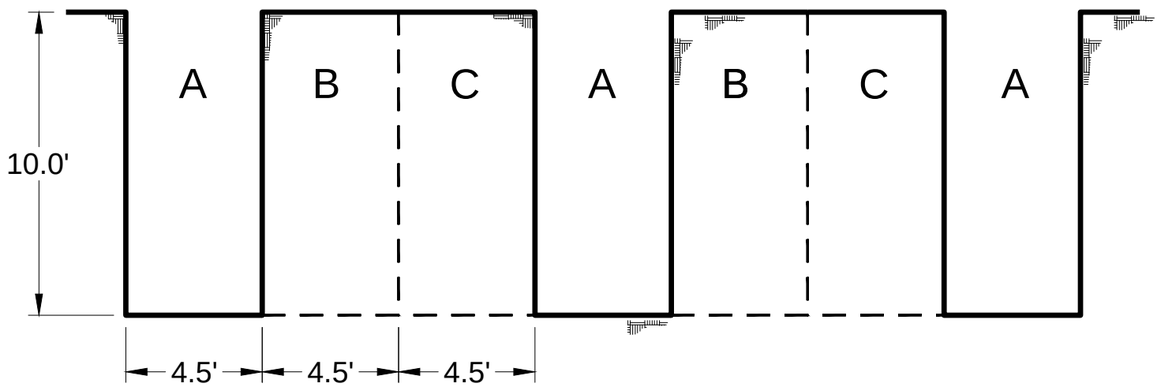
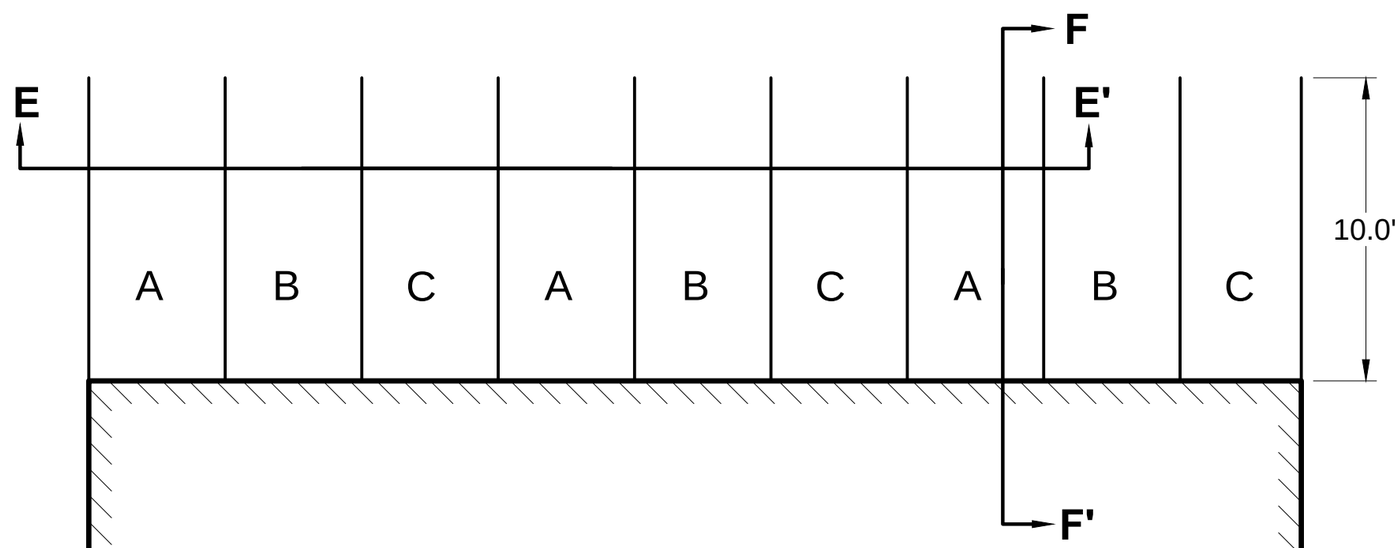
FRONT/BACKYARD EXCAVATIONS - OPEN PIT AND SLOT TRENCH/OPEN PIT COMBINATION

AECOM

FIGURE 3.2

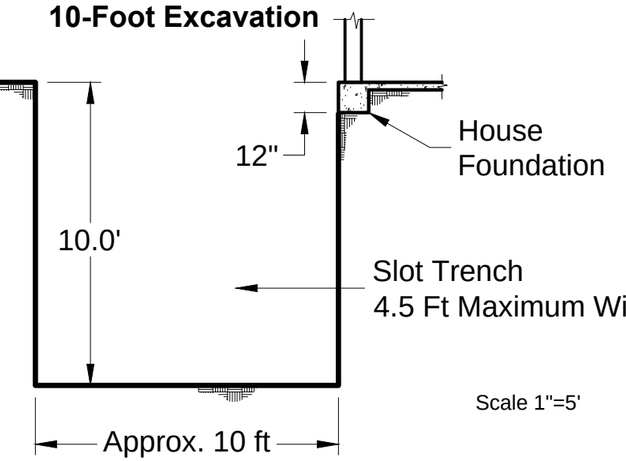
Section E-E'





Section F-F'

Slot Trenching
10-Foot Excavation



Scale 1"=5'

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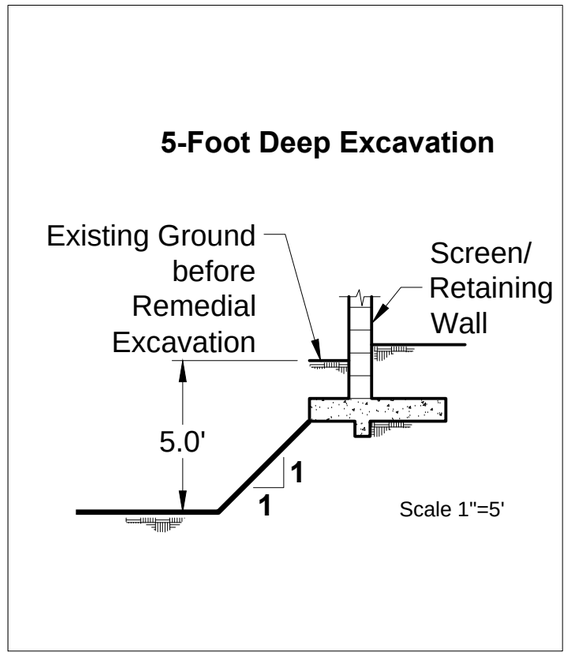
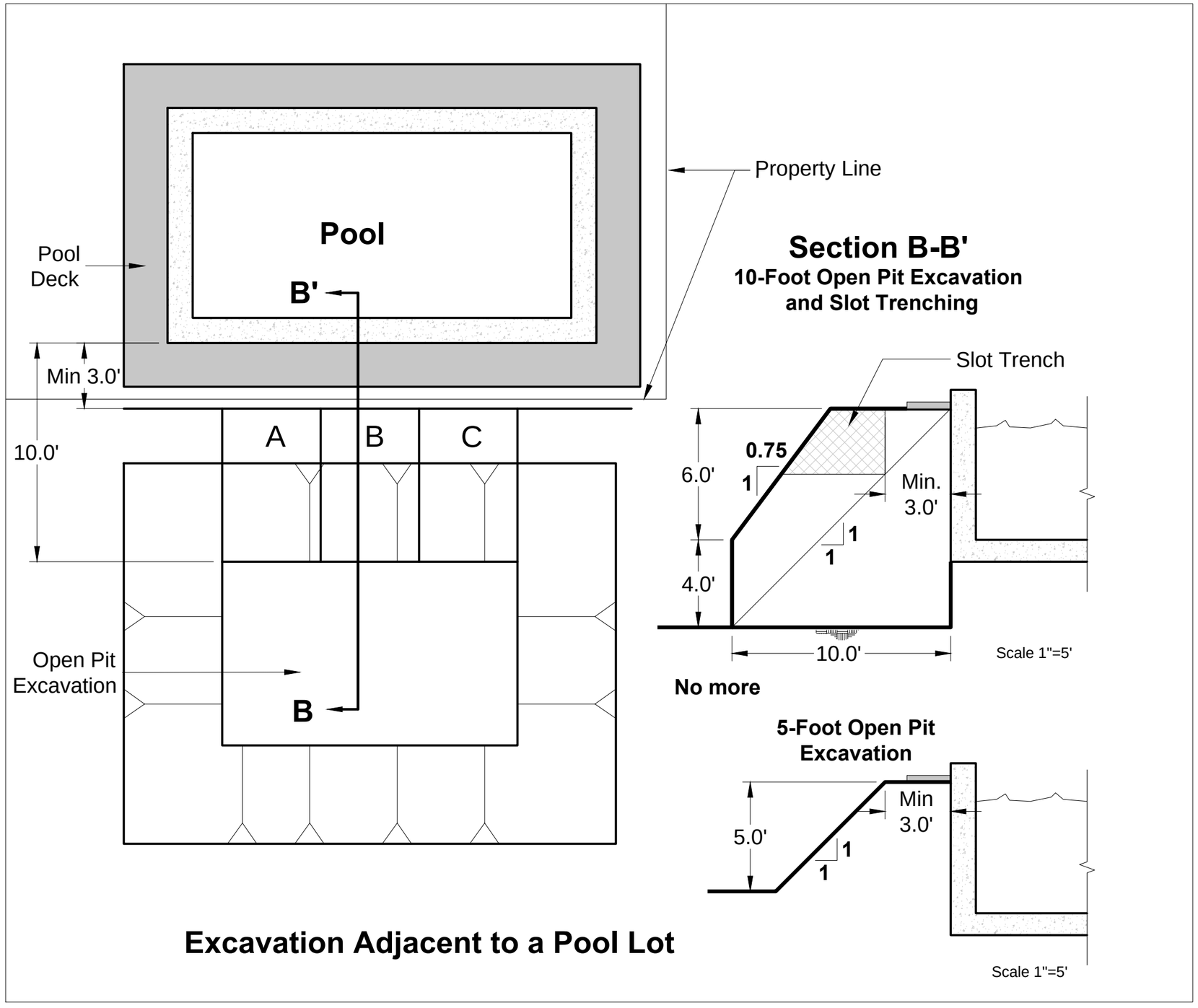
FRONT/BACKYARD EXCAVATIONS - SLOT TRENCHING

AECOM

FIGURE 3.3





Excavation Adjacent to a Pool Lot

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EXCAVATIONS ADJACENT TO POOLS AND SCREEN/RETAINING WALLS

AECOM

FIGURE 3.4

APPENDIX-A

Field Exploration

Geotechnical field exploration was performed between July 28 and August 25, 2015, under the supervision of an AECOM representative. A site reconnaissance was performed by an AECOM representative prior to the field exploration to identify and stake the locations of the exploratory borings. AECOM notified Underground Service Alert so that they could coordinate with various utility companies to locate existing underground lines in the vicinity of the planned exploration.

Subsurface exploration included the drilling and sampling of 73 borings. The borings were drilled by Gregg Drilling of Signal Hill, California to a maximum depth of approximately 21.5 feet below ground surface (bgs) using track-mounted hollow- stem auger drill rig. The approximate boring locations are shown on Figure 2 in the main text.

The boring name, depth and elevation are presented in Table A-1. The boring logs with a key explaining the descriptions and symbols used are presented in this appendix.

Table A-1 Summary of Exploration Location and Elevation

Boring No.	Surface Elevation (ft)	Maximum Boring Depth (ft)	Boring No.	Surface Elevation (ft)	Maximum Boring Depth (ft)
244305G	35.6	11.5	N24712G	43.0	21.5
244321G	36.0	11.5	N24729G	43.1	11.5
244337G	36.8	11.5	N24732G	43.9	21.5
244357G	37.5	11.5	N24803G	44.4	11.5
248348G	44.4	21.5	P24402G	38.5	11.5
248360G	44.6	21.5	P24411G	38.7	21.5
249345G	45.3	11.5	P24421G	38.7	21.5
249348G	46.1	11.5	P24426G	39.1	11.5
249363G	46.8	21.5	P24503G	39.7	21.5
249377G	47.5	21.5	P24533G	42.9	11.5
249378G	47.6	11.5	P24608G	43.4	11.5
249412G	47.8	11.5	P24618G	43.9	11.5
M24406G	35.2	21.5	P24708G	44.9	11.5
M24411G	34.4	11.5	P24709G	44.4	21.5
M24512G	35.5	21.5	P24719G	44.9	11.5
M24517G	35.2	11.5	P24722G	45.2	11.5
M24606G	36.8	21.5	P24738G	46.0	11.5
M24613G	36.0	11.5	P24803G	46.3	21.5
M24616G	37.4	21.5	P24812G	46.7	11.5
M24628G	37.6	21.5	P24819G	46.4	15.0
M24703G	38.0	11.5	P24833G	47.0	11.5
M24706G	39.1	21.5	R24412G	37.8	21.5
M24716G	40.0	21.5	R24423G	38.3	11.4
M24717G	40.0	11.5	R24426G	39.0	21.5
M24733G	41.4	11.5	R24508G	40.3	21.5
M24744G	43.8	11.5	R24509G	40.2	21.5
N24402G	36.7	21.5	R24522G	41.1	21.5
N24409G	36.6	21.5	R24609G	42.1	11.5
N24503G	38.8	21.5	R24612G	42.4	11.5

N24508G	39.7	21.5	R24706G	43.2	11.5
N24522G	40.7	21.5	R24709G	43.1	21.5
N24523G	40.3	21.5	R24719G	43.1	21.5
N24603G	41.1	21.5	R24732G	44.1	11.5
N24613G	41.7	21.5	R24739G	44.0	21.5
N24622G	42.1	21.5	R24749G	44.3	21.5
N24629G	42.0	11.5	R24752G	45.9	21.5
N24703G	42.4	8.5	-	-	-

Additionally, AECOM conducted geotechnical field investigation for the pilot remedial excavation between March 13 and March 21, 2012.

Subsurface exploration included the drilling and sampling of 6 borings. The borings were drilled by Gregg Drilling of Signal Hill, California to a maximum depth of approximately 25.5 feet below ground surface (bgs) using track-mounted hollow- stem auger drill rig. The approximate boring locations are shown on Figure 2 in the main text.

The boring name, depth and elevation are presented in Table A-2. The boring logs with a key explaining the descriptions and symbols used are presented in this appendix.

Table A-2 Summary of Previous Exploration Location and Elevation

Boring No.	Surface Elevation (ft)	Maximum Boring Depth (ft)
M24422G1	35	25.5
M24432G1	35	25.5
M24502G1	35	25.5
N24612G1	42	25.5
N24715G1	44	25.5
R24736G1	45	25.5

An AECOM geotechnical representative maintained the field boring record and visually classified the soils according to the Caltrans Soil and Rock Logging, Classification and Presentation Manual (Caltrans, 2010). When subsurface conditions permitted, relatively intact samples were recovered with a California soil sampler (2.42-inch inner diameter) and disturbed samples were obtained using a Standard Penetration Test (SPT) sampler. The SPT and California samplers were driven 18 inches into the subsurface soils, or until refusal, using a 140-pound hammer with successive 30-inch drops. The number of blows required to drive the sampler were recorded at 6-inch intervals. SPT sampling was performed in accordance with ASTM D1589 procedures. The total number of blows required to drive the sampler the last 12 inches of the drive is recorded on the boring log.

Geotechnical samples obtained in the field were carefully sealed and packaged to reduce moisture loss and disturbance and were transported to our laboratory for further testing. After completion of drilling and sampling operations, the boring was backfilled as specified in Section 3.4 of the main text.

The blow count for the final 12 inches of sampler penetration is commonly referred to as the "N-value". The N60 value refers to the blow counts corrected for the hammer efficiency. This value generally reflects the resistance to penetration of the soil at the sample depth. The degree of relative density of granular soils and the degree of consistency of cohesive soils is described on the boring record according to the conventional correlations presented below:

Table A-3 Criteria for Determining Relative Density/ Stiffness of Soils

Granular Soils		Cohesive Soils	
SPT Blow Count Description	**SPT Blow Count Description**	**SPT Blow Count Description**	**SPT Blow Count Description**
$N_{60} \leq 4$	Very Loose	PP < 0.25	Very Soft
$5 \leq N_{60} \leq 10$	Loose	0.25 ≤ PP < 0.5	Soft
$11 \leq N_{60} \leq 30$	Medium Dense	0.5 ≤ PP < 1	Medium Stiff
$31 \leq N_{60} \leq 50$	Dense	1 ≤ PP < 2	Stiff
$50 < N_{60}$	Very Dense	2 ≤ PP < 4	Very Stiff
		4 ≤ PP	Hard

Note: PP = pocket penetrometer

The relative density and consistency descriptions on the attached boring logs are based on blow counts recorded in the field adjusted for hammer energy. These numbers are considered useful in providing an estimate of the relative density or consistency of soils. The relative density and consistency descriptions on the log may deviate from the correlation for a number of reasons, including reliance on other test results or the engineer's judgment based on manual manipulation of the sample.

The blow counts obtained from non-standard penetration tests using a California Soil Sampler may be converted to approximate SPT blow count, N, by the relationship between SPT values and hammer ratios, i.e., Rs = f(inner/outer diameter of sampler, weight of hammer, and height of drop). For engineering analyses, the blow count, N, obtained from a California soil sampler was converted to a SPT blow count by multiplying by 0.70 for clays and 0.55 for sands to account for sampler size. SPT Hammer Energy for the drill rig was 70%.

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Key to Log of Boring

Sheet

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
1	2	3	4	5	6	7	8	9	10

COLUMN DESCRIPTIONS

1 **Elevation:** Elevation in feet referenced to mean sea level (MSL) or site datum.

2 **Depth:** Depth in feet below the ground surface.

3 **Sample Type:** Type of soil sample collected at depth interval shown; sampler symbols are explained below.

4 **Sample Number:** Sample identification number. Unnumbered sample indicates no sample recovery.

5 **Blows per foot:** Number of blows required to advance driven sampler 12 inches beyond first 6-inch interval, or distance noted, using a 140-lb hammer with a 30-inch drop.

6 **Graphic Log:** Graphic depiction of subsurface material encountered; typical symbols are explained below.

7 **Material Description:** Description of material encountered; may include relative density/consistency, moisture, color, particle size; texture, weathering, and strength of formation material.

8 **Water Content:** Water content of soil sample measured in laboratory, expressed as percentage of dry weight of specimen.

9 **Dry Unit Weight:** Dry unit weight of soil sample measured in laboratory, in pounds per cubic foot.

10 **Remarks and Other Tests:** Comments and observations regarding drilling or sampling made by driller or field personnel.

PA	Sieve Analysis
DS	Direct Shear
LL	Liquid Limit
PI	Plasticity Index
CR	Corrosivitiy
EI	Expansion Index
C	Consolidation
UU	Undrained Unconsolidation Triaxial
PP	Pocket Penetrometer

TYPICAL MATERIAL GRAPHIC SYMBOLS

- Concrete
- SILTY SAND (SM)
- SILTY CLAY (CL-ML)
- CLAYEY SAND (SC)
- SILT (ML)
- Poorly-graded SAND (SP)
- Poorly graded SAND with SILT (SP-SM)
- SILTY, CLAYEY SAND (SC-SM)
- WELL GRADED SAND (SW)
- WELL GRADED SAND with CLAY (SW-SC)
- FAT CLAY (CH)
- SANDY CLAY and LEAN CLAY(CL)

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Modified California Sampler
- Split Spoon Sampler

OTHER GRAPHIC SYMBOLS

___ Contact between strata

_ _ Inferred or gradational contact between strata

GENERAL NOTES

1. Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive; actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of laboratory tests.

2. Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

Current Geotechnical Field Exploration

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring 244305G

Sheet 1 of 1

Date(s) Drilled	**08-18-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**35.6 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**305 244th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); olive brown (2.5Y 4/4); moist; some fine SAND.			
			S01	10			12		
			B02				12		
	5		S03	22		-very stiff.	15		DS; PP=3.25 tsf
			S04	19		SILT (ML); very stiff; olive (5Y 5/6); moist.	32		
	10		S05	31		-hard; trace fine SAND.	25	100	PP>4.5 tsf
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.1 ppm FID: 0.00 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.8%			
	15								
	20								
	25								
	30								

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring 244321G

Sheet 1 of 1

Date(s) Drilled	**08-17-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**36.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**321 244th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); olive brown (2.5Y 4/4); moist; some fine to medium SAND.			
			S01	22			26		
			B02				10		
	5		S03	33		Silty CLAY (CL-ML); hard; light yellowish brown (2.5Y 6/4); moist.	15	100	UU; PP>4.5 tsf
			S04	21		SILT (ML); olive (5Y 5/4); moist.	12		
	10		S05	35		-hard.	28	96	PP=4.0 tsf
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 0.00 ppm LEL: 0% CH4: 00.0% CO2: 00.3% O2: 21.0%			
	15								
	20								
	25								
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 244321G

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring 244337G

Sheet 1 of 1

Date(s) Drilled	**08-17-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**36.8 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**337 244th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Lean CLAY (CL); dark brown (10YR 3/3); moist; few fine SAND.			
			S01	20		-hard.	16	113	UU; PP=4.25 tsf
			B02				13		LL=43, PI=29; PA=69%<#200 sieve
	5		S03	17		-brown (10YR 4/3).	18		
			S04	26		SILT(ML); hard; olive (5Y 5/3); moist.	23	92	PP>4.5 tsf
	10		S05	34		-trace fine SAND.	26		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 0.0 ppm LEL: 0% CH4: 00.0% CO2: 1.0% O2: 20.8%			
	15								
	20								
	25								
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 244337G

AECOM

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring 244357G** Sheet 1 of 1

Date(s) Drilled	**08-04-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**37.5 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**357 244th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); light olive brown (2.5Y 5/4); moist; some fine SAND.			
			S01	26			12		
			B02				9		
	5		S03	41		-hard.	11	122	LL=37, PI=23; PA=68%<#200 sieve; PP>4.5 tsf
			S04	19		-very stiff; greenish gray (5Y 5/1).	23		
	10		S05	46		Clayey SAND (SC); light olive brown (2.5Y 5/6); moist; fine SAND.	13	109	DS
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 6.0 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.0%			
	15								
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring 248348G

Date(s) Drilled	**07-29-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**44.4 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**348 E. 248th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); light olive brown (2.5Y 5/4); moist; fine SAND; trace fine GRAVEL.			
			S01	29		-medium dense.	6		
			B02				5		
	5		S03	40		-olive gray (5Y 4/2).	7	115	DS
			S04	30			14		LL=29, PI=15 PA: 31%<#200 sieve
	10		S05	39		-very dark grey (5Y 3/1).	16	113	
	15		S06	27		-olive grey (5Y 4/2).	17		
	20		S07	86/11"		Sandy CLAY (CL); dark greenish gray (10GY 4/1); moist; some fine SAND. ClayeySAND (SC); dark yellowish brown (10YR 3/6); moist; fine SAND.	23	101	PP=2.0-2.5 tsf black stain on sample sleeve at 20.5 ft.
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 137.9 ppm FID: 1,157 ppm LEL: 49% CH4: 2.3% CO2: 0.7% O2: 19.1%			
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring 248360G

Sheet 1 of 1

Date(s) Drilled	**07-29-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**44.6 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**360 E. 248th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark olive brown (2.5Y 3/3); moist; fine SAND.			
			S01	22			9	120	
			B02			-olive grey (5Y 4/2).	9		
	5		S03	8		-loose.	12		
			S04	13			17	112	LL=26, PI=13 SA: 35%<#200 sieve DS
	10					Concrete slab, approximately 12 inches thick.	8		Hard drilling at 10ft. PP=1.0 tsf Black staining in sample.
			S05	14		Sandy CLAY (CL); stiff; black (5Y 2.5/1); moist; some fine SAND.			
	15		S06	82		-pale olive (5Y 6/4).	11	101	
	20		S07	38		-very stiff; olive (5Y 5/4).	22		
						Clayey SAND (SC); dense; pale olive (5Y 6/4); moist; fine SAND; some fines.	15		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 52.7 ppm FID: 3,068 ppm LEL: 13% CH4: 0.6% CO2: 0.0% O2: 20.0%			
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 248360G

AECOM

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring 249345G** Sheet 1 of 1

Date(s) Drilled	**07-28-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**45.3 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**345 E. 249th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark brown (7.5YR 3/3); moist; fine to medium SAND.			
			S01	53			9	125	DS
			B02				8		
	5		S03	20		-medium dense.	10		LL=18, PI=4 PA=42%<#200 sieve
			S04	33			9	112	
	10		S05	35		Lean CLAY (CL); hard; yellowish brown (10YR 5/6); moist.	12		
						Boring terminated at 11.5 ft bgs. Downhole Readings: PID: 3.5 ppm FID: 79.4 ppm LEL: 1.0% CH4: 0.0% O2: 20.2% CO2: 0.4%			
	15								
	20								
	25								
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 249345G

AECOM

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring 249348G** Sheet 1 of 1

Date(s) Drilled	**07-28-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**46.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**348 E. 249th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); medium dense; dark brown (7.5YR 3/3); moist; mostly fine to medium SAND.			
			S01	23			11		
			B02				7		
	5		S03	36		Silty SAND (SC); dark brown (7.5YR 3/3); moist; mostly fine to medium SAND.	8	119	LL=15, PI=1; PA=39%<#200 sieve; DS
			S04	17		Clayey SAND (SC); medium dense; dark brown (7.5YR 3/3); moist; mostly fine to medium SAND.	10		
	10		S05	31		Lean CLAY (CL); yellowish brown (10YR 5/6).	13	112	
						Boring terminated at 11.5 ft bgs. Downhole Readings: PID: 2.5 ppm FID: 180.1 ppm LEL: 3% CH4: 00.1% O2: 19.4% CO2: 00.4%			
	15								
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring 249363G

Sheet 1 of 1

Date(s) Drilled	**07-28-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**46.8 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**363 E. 249th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); moist; dark brown (7.5YR 3/3), fine to medium SAND.			
			S01	21			10	114	Bentonite chips in sample.
			B02				11		
	5		S03	5		-loose.	11		Bentonite chips in sample.
			S04	14			16	110	LL=24, PI=10 PA=36%<#200 sieve UU
	10		S05	15		Sandy CLAY (CL); stiff; moist; very dark brown (10YR 2/2); fine to medium SAND.	14		
						Concrete slab; approximately 12 inches thick.			hard drilling at 12.5ft.
						Lean CLAY (CL); moist; very dark brown (10YR 2/2); trace fine SAND.			
	15		S06	40			13	110	
	20		S07	18		-very stiff.	25		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 366.6 ppm FID: >2536 ppm LEL: over range CH4: 8.7% O2: 19.7% CO2: 0.0%			
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 249363G

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring 249377G

Sheet 1 of 1

Date(s) Drilled	**07-28-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**47.5 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**377 E. 249th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); moist; dark brown (7.5 YR 3/3); fine to medium SAND.			
			S01 B02	29		-medium dense.	9 7		
	5		S03	28			10	125	
			S04	24			11		
	10		S05	28		Silty, Clayey SAND (SC-SM); moist; dark brown (7.5YR 3/3); mostly fine SAND.	12	121	LL=19, PI=5; PA=39%<#200 sieve; DS
						Concrete slab; approximately 12 inches thick.			Hard drilling from 12.5 to 13.5 ft.
						Silty SAND (SM); loose; mottled olive gray (5Y 5/2) and dark brown (7.5YR 3/3); moist; fine to coarse SAND.			
	15		S06	10			10		
	20		S07	35		Sandy CLAY (CL); dark brown (7.5YR 3/3); fine to medium SAND.	19	103	
						Boring terminated at 21.5 ft bgs.			
						Downhole Readings: PID: 50.1 ppm FID: >2,536 ppm LEL: over range CH4: 16.6% O2: 16.1% CO2: 3.8%			
	25								
	30								

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring 249378G

Date(s) Drilled	**07-29-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**47.6 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**378 E. 249th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark brown (7.5YR 3/2); moist; fine SAND.			
			S01	50			8	120	UU
			B02			Silty SAND (SM); dark brown (7.5YR 3/2); moist; fine SAND.	6		LL=15, PI=2; PA=45%<#200 sieve
	5		S03	16		-medium dense; dark olive brown (5Y 3/2).	9		
			S04	50		-olive gray (5Y 4/2).	12	119	
	10		S05	35		Sandy CLAY (CL); hard; dark olive brown (2.5Y 3/3).	15		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 60.6 ppm FID: 762 ppm LEL: 0% CH4: 00.0% O2: 20.7% CO2: 00.0%			
	15								
	20								
	25								
	30								

AECOM

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring 249412G** Sheet 1 of 1

Date(s) Drilled	**07-30-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**47.8 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**412 E. 249th Street, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Silty, clayey SAND (SC-SM); olive brown (2.5Y 4/3); moist; fine SAND.			
			S01	23		-medium dense.	11		
			B02				10		LL=20, PI=6; PA=42%<#200 sieve
	5		S03	42		Sandy CLAY (CL); hard; olive brown (2.5Y 4/3); moist; some fine SAND.	12	119	PP>4.5 tsf
			S04	22		Clayey SAND (SC); medium dense; brown (7.5YR 4/3); moist; fine SAND.	12		
	10		S05	42		-dark yellowish brown (10YR 3/4).	15	116	DS
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 0.0 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.2%			
	15								
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24406G

Date(s) Drilled	**08-18-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**35.2 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24406 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Lean CLAY (CL); dark olive brown (2.5Y 3/3); dry.			
			S01	30		-hard.	9		DS; PP>4.5 tsf
			B02				9		CR; EI
	5		S03	20		-very stiff; olive brown (2.5Y 4/4).	11		LL=36, PI=22; PA=96%<#200 sieve
			S04	39		-Silty SAND (SM); dense; olive yellow; (2.5Y 6/6); dry; fine to medium SAND.	8	107	DS
	10		S05	19		-medium dense; moist.	15		Hard drilling from 11 to 13 ft
	15		S06	60		-dense; light olive brown (2.5Y 3/4); some fines.	20	105	
	20		S07	49			12		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 0.1 ppm FID: 0.00 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.9%			
	30								

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring M24411G** Sheet 1 of 1

Date(s) Drilled	**08-18-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**34.4 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24411 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Lean CLAY (CL); very dark grayish brown (2.5Y 3/3); dry; few fine SAND.			
			S01 B02	20		-very stiff.	11 11		LL=39, PI=25; PA=72%<#200 sieve; CR; EI
	5		S03	37		-hard; dark olive brown (2.5Y 3/2)			LL=42, PI=25; PA=77%<#200 sieve; DS; PP>4.5 tsf
			S04	20		Sandy SILT (ML); very stiff; light olive brown (2.5Y 5/6); moist; some fine to medium SAND.	15		
	10		S05	27		hard; some fine SAND.	27	97	PP>4.5 tsf
						Boring terminated at 11.5 ft bgs. Downhole Readings: PID: 0.1 ppm FID: 0.00 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.8%			
	15								
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24512G

Sheet 1 of 1

Date(s) Drilled	**08-19-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**35.5 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24512 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); brown (10YR 4/3); moist; some fine to medium SAND.			
			S01	21			10		
			B02				9		LL=38, PI=24; PA=67%<#200 sieve
	5		S03	41		-Clayey SAND (SC); very dark grayish brown (2.5Y 3/2); moist.	11	119	UU; PP>4.5 tsf
			S04	19		-medium dense; dark olive gray (5Y 3/3).	18		
	10		S05	34		Sandy CLAY (CL); hard; olive (5Y 5/4); moist; some fine SAND.	30	94	PP>4.5 tsf
	15		S06	35		Silty SAND (SM); dense; olive (5Y 4/3); moist; fine to medium SAND.	10		
	20		S07	62		Poorly-graded SAND (SP); dense; pale yellow (5Y 7/3); moist; fine to medium SAND.	12	102	
						Boring terminated at 21.5 ft bgs.			
						Downhole Readings: PID: 279.4 ppm FID: 305.9 ppm LEL: 7% CH4: 00.5% CO2: 1.1% O2: 19.6%			
	25								
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 M24512G

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24517G

Sheet 1 of 1

Date(s) Drilled	**08-21-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**35.2 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24517 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); light olive brown (2.5Y 5/4); moist; some fine to medium SAND.			
			S01	13			10		
			B02				9		LL=35, PI=22; PA=61%<#200 sieve
	5		S03	14		-dark brown (10YR 3/3); few fine SAND.	15	112	UU
			S04	17			16		
	10		S05	28		SILT (ML); hard; yellowish brown (10YR 5/6); moist; some fine SAND.	24	102	PP=4.0 tsf
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 2.1 ppm FID: 10.2 ppm LEL: 0% CH4: 00.0% CO2: 00.1% O2: 20.6%			
	15								
	20								
	25								
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 M24517G

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24606G

Date(s) Drilled	**08-19-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**36.8 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24606 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); black (5Y 2.5/1); moist; some fine SAND.			
			S01	12			9		
			B02				9		Black staining in sample. LL=37, PI=23; PA=63%<#200 sieve UU; PP=4.0 tsf
	5		S03	25		-hard; olive (5Y 4/4).	11	106	
			S04	16		Silty SAND (SM); medium dense; olive (5Y 5/6); moist; fine to medium SAND.	8		
	10		S05	39		-greenish gray (5G 3/1).	26	94	
	15		S06	37		Silty SAND (SM); dense; bluish gray (10B 6/1); moist; fine SAND.	6		
	20		S07	81			7	93	
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 31.1 ppm FID: 56.6 ppm LEL: 38% CH4: 3.6% CO2: 4.1% O2: 15.0%			
	30								

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Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring M24613G** Sheet 1 of 1

Date(s) Drilled	**08-19-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**36.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24613 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Lean CLAY (CL); dark yellowish brown (10YR 4/4); moist; few fine SAND.			
			S01	31		-hard.	16	105	UU; PP>4.5 tsf
			B02				12		LL=48, PI=32; PA=70%<#200 sieve
	5		S03	18		-very stiff.	16		
			S04	42		Clayey Sand (SC); dense; dark greenish gray (5G 4/1); moist.	19	105	
	10		S05	22		-medium dense.	21		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 10.9 ppm FID: 73.6 ppm LEL: 0% CH4: 00.0% CO2: 00.3% O2: 20.2%			
	15								
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24616G

Sheet 1 of 1

Date(s) Drilled	**08-19-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**37.4 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24616 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Lean Clay (CL); black (5Y 2.5/1); moist; few fine SAND.			
			S01	16			14		Black staining in sample.
			B02				14		LL=39, PI=25; PA=61%<#200 sieve
	5		S03	26		Clayey SAND (SC); medium dense; black (5Y 2.5/2); moist; fine to medium SAND.	10	111	DS
			S04	21			17		
	10		S05	36			19	104	Black staining on sampler and in sample.
	15		S06	28		Silty SAND (SM); medium dense; very dark gray (5Y 3/1); moist; fine SAND.	10		
	20		S07	52			9	104	
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 461.5 ppm FID: >85,000 ppm LEL: 100% CH4: 36.9% CO2: 20.0% O2: 8.4%			
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 M24616G

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Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring M24628G** Sheet 1 of 1

Date(s) Drilled	**08-20-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**37.6 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24628 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); dark brown (7.5YR 3/2); moist; some fine SAND; trace fine to coarse GRAVEL.			
			S01	55		-hard.	6	119	UU; PP>4.5 tsf
			B02				9		LL=36, PI=22; PA=62%<#200 sieve
	5		S03	9		-light olive brown (2.5Y 5/4).	30		
			S04	42		Silty SAND (SM); dense; dark greenish gray (10Y 4/1); moist; fine SAND.	20	104	DS
	10		S05	34		-dark greenish gray (5GY 4/1)	24		
	15		S06	78/11"		Poorly-graded SAND (SP); very dense; greenish gray (10Y 6/1); moist; fine to medium SAND.	5	95	
	20		S07	38		SIlty SAND (SM); dense; greenish gray (5GY 5/1); moist; fine SAND.	9		
						Boring terminated at 21.5 ft bgs. Downhole Readings: PID: 10.1 ppm FID: 964.5 ppm LEL: 12% CH4: 00.6% CO2: 1.1% O2: 19.5%			
	25								
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 M24628G

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24703G

Date(s) Drilled	**08-20-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**38.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24703 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); yellowish brown (10YR 5/6); moist; fine to medium SAND.			
			S01	15		-medium dense.	10		
			B02				9		LL=33, PI=18; PA=43%<#200 sieve
	5		S03	15			13	103	DS
			S04	19		Silty SAND (SM); medium dense; light yellowish brown (2.5Y 6/4); moist; fine SAND.	23		
	10		S05	35			11	102	
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 0.00 ppm LEL: 0% CH4: 00.0% CO2: 1.1% O2: 19.6%			
	15								
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24706G

Date(s) Drilled	**08-20-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**39.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24706 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); very dark brown (7.5YR 2.5/3); moist; some fine to medium SAND.			
			S01	40		-hard.	11	118	PP>4.5 tsf
			B02				10		LL=35, PI=22; PA=57%<#200 sieve
	5		S03	12		Poorly-graded SAND (SP); medium dense; light olive brown (7.5YR 6/4); fine to medium SAND.	5		Shell in sample.
			S04	38		Silty SAND (SM); greenish gray (10GY 6/1); moist; fine SAND.	13	98	DS
	10		S05	31		-dense.	17		
	15		S06	67		-dark greenish gray (10GY 4/1).	23	102	
	20		S07	58		Poorly-graded SAND (SP); very dense; bluish gray (SB 6/1); fine to medium SAND.	11		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 245.9 ppm FID: 55,839 ppm LEL: 100% CH4: 5.6% CO2: 6.5% O2: 11.6%			
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24716G

Date(s) Drilled	**08-20-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**40.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24716 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); stiff; very dark gray (5Y 3/1); moist; some fine SAND.			
			S01	13			18		
			B02				11		LL=36, PI=22; PA=60%<#200 sieve
	5		S03	27		-hard; dark gray (5Y 4/1); some fine to medium SAND.	13	116	UU; PP>4.5 tsf
			S04	30		SILT (ML); very stiff; greenish gray (10GY 5/1); moist; few fine SAND.	24		
	10		S05	66		Silty SAND (SM); very dense; greenish gray (5GY 5/1); moist; fine SAND.	9	106	DS
	15		S06	34		-dense.	16		
	20		S07	90		Poorly-graded SAND (SP); very dense; light greenish gray (10Y 8/1); moist; fine to medium SAND.	7	95	
	25					Boring terminated at 21.5 ft bgs. Downhole Readings: PID: 249.6 ppm FID: 58,647 ppm LEL: 100% CH4: 10.9% CO2: 12.9% O2: 5.6%			
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24717G

Date(s) Drilled	**08-21-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**40.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24717 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Lean CLAY (CL); very stiff; olive gray (5Y 4/2); moist; few fine SAND.			
			S01	20			15		
			B02				17		LL=28, PI=15; PA=60%<#200 sieve
	5		S03	24		Well-graded SAND (SW); strong brown (7.5YR 5/6); moist; fine to coarse SAND.	9	105	DS
			S04	18		SILT (ML); very stiff; greenish gray (5GY 5/1); moist; few fine SAND.	26		
	10		S05	36		Silty SAND (SM); yellowish brown (10YR 5/8); moist; fine SAND.	10	98	
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 30.1 ppm FID: 10.2 ppm LEL: 0% CH4: 00.0% CO2: 1.1% O2: 20.2%			
	15								
	20								
	25								
	30								

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24733G

Date(s) Drilled	**08-24-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**41.4 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24733 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark olive brown (2.5Y 3/3); moist; fine to medium SAND.			
			S01	27			15	113	
			B02				15		LL=29, PI=16; PA=50%<#200 sieve
	5		S03	42		-dark yellowish brown (10YR 4/6).	14	117	UU; PP>4.5 tsf
			S04	41		-yellow red (5YR 4/6); moist; fine to coarse SAND.	9	118	
	10		S05	21		-medium dense; yellowish brown (10YR 5/6); fine to medium SAND.	17		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 2.8 ppm LEL: 0% CH4: 00.0% CO2: 00.2% O2: 20.7%			
	15								
	20								
	25								
	30								

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring M24744G

Sheet 1 of 1

Date(s) Drilled	**08-24-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**43.8 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24744 Marbella Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); medium dense; dark yellowish brown (10YR 4/4); moist; fine to medium SAND.			
			S01	13			6		
			B02				8		LL=26, PI=14; PA=44%<#200 sieve
	5		S03	14			10	109	DS; PP>4.5 tsf
			S04	20		-fine SAND.	13		
	10		S05	35		-strong brown (7.5YR 4/6).	9	111	
						SILT (ML); dark greenish gray (10GY 4/1); moist; trace fine SAND.			
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 1.0 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.6%			
	15								
	20								
	25								
	30								

AECOM

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring N24402G** Sheet 1 of 1

Date(s) Drilled	**08-17-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**36.7 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24402 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); stiff; dark yellowish brown (10YR 4/4); moist; some fine to medium SAND.			
			S01	14			13		
			B02				10		LL=31, PI=19; PA=54%<#200 sieve
	5		S03	14		-very dark gray (5Y 3/1); fine SAND.	17	113	UU
						Concrete slab; approximately 5 inches thick.			Hard drilling
			S04	REF		Lean CLAY (CL); very dark gray (5Y 3/1); moist; few fine SAND.			Little recovery
						Concrete slab; approximately 6 inches thick.			Hard drilling
						Lean CLAY (CL); dark greenish gray (10GY 4/1); moist; few fine SAND.			
	10		S05	37			13		
	15		S06	34		Silty SAND (SM); dense; light olive brown (2.5Y 5/6); moist; fine to medium SAND.	3		
	20		S07	89/11"		-light olive brown (2.5Y 6/4); fine SAND.	4	97	
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 0.3 ppm FID: 38.4 ppm LEL: --- CH4: 00.0% CO2: 00.0% O2: 20.7%			
	30								

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring N24409G** Sheet 1 of 1

Date(s) Drilled	**08-17-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**36.6 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24409 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark brown (10YR 3/3); moist; fine to medium SAND.			
			S01	23			13	115	PP=3.0 tsf
			B02				9		LL=29, PI=16; PA=49%<#200 sieve
	5		S03	19		-Sandy CLAY (CL); very stiff; very dark gray (5Y 3/1); moist; fine SAND.	16		
			S04	15/8"			12	115	PP=2.5 tsf
						Concrete slab; approximately 8 inches thick.			Hard drilling
						SILT (ML); stiff; dark greenish gray (10Y 4/1); moist; few fine SAND.			
	10		S05	15			27		
	15		S06	30		-olive (5Y 5/4).	18	99	
	20		S07	46		Silty SAND (SM); dense; pale olive (5Y 6/4); moist; fine to medium SAND.	7		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 0.0 ppm FID: 199.9 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 21.1%			
	30								

AECOM

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring N24503G** Sheet 1 of 1

Date(s) Drilled	**08-14-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**38.8 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24503 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); olive brown (2.5Y 4/3); moist; fine to medium SAND.			
			S01	61			6	114	
			B02				7		LL=30, PI=17; PA=44%<#200 sieve
	5		S03	36		Sandy CLAY (CL); hard; olive brown (2.5Y 4/4); moist; some fine to medium SAND.	9		
			S04	23		-dark olive gray (5Y 3/2).	16	115	DS
	10		S05	57/7"		-hard.	16		
						Concrete slab; approximately 12 inches thick			Sample refusal at 11 feet
						Lean CLAY (CL); hard; dark greenish gray (10GY 4/1); moist; few fine SAND.			
	15		S06	29			23	102	PP>4.5 tsf
	20		S07	34		Poorly-graded SAND with SILT (SP-SM); dense; pale yellow (2.5Y 7/4); moist; fine SAND.	5		
						Boring terminated at 21.5 ft bgs. Downhole Readings: PID: 127.6 ppm FID: 4,436 ppm LEL: 16% CH4: 1.0% CO2: 00.5% O2: 16.8%			
	25								
	30								

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring N24508G** Sheet 1 of 1

Date(s) Drilled	**08-14-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**39.7 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24508 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); stiff; olive brown (2.5Y 4/3); moist; some fine SAND.			
			S01	14			14		
			B02				11		LL=37, PI=23; PA=60%<#200 sieve
	5		S03	15		Lean CLAY (CL); very dark gray (5Y 3/1); moist; few fine SAND.	14	115	UU; PP=1.75 tsf
			S04	14		-dark olive gray (5Y 3/2).	18		
	10		S05	26			16	110	PP=3.0 tsf
						Concrete slab; approximately 8 inches thick.			Hard drilling
						Lean CLAY (CL); hard; greenish gray (10GY 5/1); moist; few fine SAND.			
	15		S06	31			23		
	20		S07	55		Poorly-graded SAND (SP); pale yellow (2.5Y 7/4); moist; fine SAND.	11	102	
						SILT (ML); greenish gray (5BG 5/1); moist.			
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 71.4 ppm FID: 896.5 ppm LEL: 11% CH4: 00.5% CO2: 00.1% O2: 19.9%			
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring N24522G

Sheet 1 of 1

Date(s) Drilled	**08-13-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**40.7 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24522 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); medium dense; olive brown (2.5Y 4/3); moist; fine SAND.			Cobbles and boulders in upper 2 feet
			S01	17			9		
			B02				8		
	5		S03	34		Sandy CLAY (CL); hard; dark olive gray (5Y 3/2); moist; some fine SAND.	13	116	UU; PP=4.0 tsf
			S04	14		-stiff; fine to medium SAND.	14		Shells in sample; LL=33, PI=18; PA=54%<#200 sieve
	10		S05	25			15	112	PP=4.0 tsf
						Concrete slab; approximately 8 inches thick.			
						SILT (ML); hard; greenish gray (10GY 5/1); moist.			
	15		S06	37			25		
	20		S07	92/11"		Poorly-graded SAND (SP); pale yellow (5Y 7/3); moist; fine SAND.	3	93	
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 10.1 ppm FID: 186.4 ppm LEL: 6% CH4: 00.4% CO2: 00.8% O2: 19.6%			
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring N24523G

Date(s) Drilled	**08-13-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**40.3 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24523 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); olive brown (2.5Y 4/4); dry; some fine SAND.			
			S01	33			11	113	UU; PP>4.5 tsf
			B02				9		LL=31, PI=18; PA=51%<#200 sieve
	5		S03	12		stiff; brown (10YR 4/3); moist.	17		
			S04	16		-very dark gray (2.5Y 3/1)	15	116	PP=4.0 tsf
	10		S05	15		-stiff; dark grayish brown (2.5Y 4/2); little fine SAND.	17		
	15		S06	43		SILT (ML); greenish gray (5G 5/1); moist.	30	93	Black staining on sampler and sample; PP=4.0 tsf
	20		S07	39		Poorly-graded SAND with SILT (SP-SM); dense; light olive brown (2.5Y 5/6); moist; fine SAND.	4		
						Boring terminated at 21.5 ft bgs. Downhole Readings: PID: 481.6 ppm FID: --- LEL: 100% CH4: 15.8% CO2: 20.2% O2: 11.5%			
	25								
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring N24603G

Date(s) Drilled	**08-18-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**41.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24603 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); light olive brown (2.5Y 5/4); moist; some fine to medium SAND.			
			S01	65			11	121	PP>4.5 tsf
			B02				11		
	5		S03	31		Clayey SAND (SC); dense; light yellowish brown (2.5Y 6/4); moist; fine to medium SAND.	8		LL=25, PI=8; PA=26%<#200 sieve
			S04	24		Silty SAND (SM); light olive brown (2.5Y 5/6).	10	104	DS
	10		S05	23		Poorly-graded SAND; medium dense; olive yellow (2.5Y 6/6); moist; fine to medium SAND.	7		
	15		S06	38		Silty CLAY (CL-ML); dark greenish gray (10GY 4/1); moist.	27	96	PP>4.5 tsf
	20		S07	43		Poorly-graded SAND (SP); dense; pale olive (5Y 6/3); moist; fine SAND.	6		
	25					Boring terminated at 21.5 ft bgs. Downhole Readings: PID: 0.1 ppm FID: 0.9 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.9%			
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring N24613G

Date(s) Drilled	**08-13-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**36.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24613 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); medium dense; black (5Y 2.5/2); moist; fine SAND.			
			S01 B02	15			15		LL=30, PI=16; PA=44%<#200 sieve
	5		S03	31			12	120	PP>4.5 tsf
						Concrete slab; approximately 10 inches thick.			
			S04	26		Poorly-graded SAND (SP); medium dense; olive gray (5Y 4/2); moist; fine to medium SAND.			
	10		S05	32			7	95	DS
	15		S06	54		SILT (ML); dark greenish gray (5GY 4/1); moist; few fine SAND.			
	20		S07	78		Poorly-graded SAND (SP); light greenish gray (10Y 7/1); fine SAND.	11	104	
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 314.6 ppm FID: --- LEL: 100% CH4: 8.9% CO2: 64.2% O2: 3.5%			
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring N24622G

Date(s) Drilled	**08-14-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**42.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24622 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); olive brown (2.5Y 4/3); moist; fine SAND.			
			S01	50			11	125	DS
			B02				9		
	5		S03	11		-medium dense; dark gray (5Y 4/1).	14		LL=27, PI=14; PA=38%<#200 sieve
						Concrete slab; approximately 12 inches thick.			Hard drilling
						Poorly-graded SAND with SILT (SP-SM); medium dense; light yellowish brown (2.5Y 6/3); moist; fine to medium SAND.			
	10		S04	30			5		Sampler broke
	15								
			S05	66		SILT (ML); hard; greenish gray (10GY 5/1); moist.	26	99	PP>4.5 tsf
	20		S06	51		Poorly-graded SAND with SILT (SP-SM); very dense; light greenish gray (10Y 7/1); moist; fine SAND.	6		
						Boring terminated at 21.5 ft bgs.			
						Downhole Readings: PID: 36.2 ppm FID: 46.9 ppm LEL: 0% CH4: 0.00% CO2: 1.9% O2: 19.1%			
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring N24629G

Date(s) Drilled	**08-12-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**42.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24629 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); brown (10YR 4/3); moist; some fine SAND.			
			S01	48		-hard.	8	118	UU; PP>4.5 tsf
			B02				8		
	5		S03	9		-stiff; dark grayish brown (2.5Y 4/2); moist; some fine to medium SAND.	12		LL=33, PI=17; PA=57%<#200 sieve
			S04	37		Lean CLAY (CL); meidum stiff; black (2.5Y 2.5/1); moist.	14	113	PP=0.75 tsf
						Poorly-graded SAND (SP); greenish gray (10Y 6/1); moist; fine SAND.			
						Concrete slab; approximately 5 inches thick.			
	10		S05	37		Poorly-graded SAND with CLAY (SP-SC); dense; greenish gray (10Y 6/1); moist; fine to medium SAND.			Shells in sample.
						Boring terminated at 11.5 ft bgs. See field notes for explanation.			
	15					Downhole Readings: PID: 12.4 ppm FID: 2923 ppm LEL: 100% CH4: 8.6% CO2: 10.3% O2: 5.7%			
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring N24703G

Date(s) Drilled	**08-12-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**8.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**42.4 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24703 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); medium dense; olive gray (5Y 4/2); moist; fine to medium SAND.			
			S01	15			17		Shells in sample
			B02				11		
	5		S03	28		-dark greenish gray (5BG 4/1); fine SAND.	13	117	DS
			S04	10/6"		-very dark gray (5Y 3/1).	13		LL=21, PI=8; PA=38%<#200 sieve
						Boring terminated at 8.5 ft bgs. See field notes for explanation.			Refusal at 8.5 feet
	10					Downhole Readings: PID: 630 ppm FID: 3550 ppm LEL: 100% CH4: 9.0% CO2: 2.1% O2: 1.1%			
	15								
	20								
	25								
	30								

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring N24712G** Sheet 1 of 1

Date(s) Drilled	**08-12-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**43.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24712 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 4/1); moist; fine SAND.			
			S01 B02	13		-medium dense.	8 7		LL=25, PI=12; PA=41%<#200 sieve
	5		S03	30		Sandy CLAY (CL); hard; dark gray (5Y 4/1); moist; some fine SAND.	12	122	UU; PP>4.5 tsf
			S04	10/2"			9		Little recovery Refusal at 8 feet
						Concrete slab; approximately 8 inches thick.			
						Clayey SAND (SC); black (5Y 2.5/2); moist; fine to medium SAND.			
	10		S05	25			11	111	Black staining in sample
	15		S06	26		SILT (ML); very stiff; olive (5Y 6/3); moist; few fine SAND.	16		Black staining on sampler
	20		S07	89		Silty SAND (SM); pale olive (5Y 6/3); moist; fine SAND.	3	97	
						Boring terminated at 21.5 ft bgs. Downhole Readings: PID: 561.4 ppm FID: 3,318 ppm LEL: 100% CH4: 15.4% CO2: 5.5% O2: 13.2%			
	25								
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 N24712G

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring N24729G

Sheet 1 of 1

Date(s) Drilled	**08-12-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**43.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24729 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 4/6); moist; fine SAND.			
			S01	37		-dense.	12	121	PP>4.5 tsf
			B02				11		
	5		S03	26			13		LL=26, PI=13; PA=38%<#200 sieve
			S04	44		-fine to medium SAND.	12	116	DS; PP>4.5 tsf
	10		S05	18		-light olive brown (2.5Y 5/6); fine SAND.	8		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.3 ppm FID: 0.0 ppm LEL: 0% CH4: 0.00% CO2: 00.2% O2: 20.4%			
	15								
	20								
	25								
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring N24732G

Date(s) Drilled	**08-11-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**43.9 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24732 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 4/4); moist; fine SAND.			
			S01	23		-medium dense.	11		
			B02				10		LL=17, PI=4; PA=44%<#200 sieve
	5		S03	35		-dark yellowish brown (10YR 4/6).	14	117	DS
			S04	24		-olive gray (5Y 4/2); fine to medium SAND.	15		
	10		S05	33		-light greenish gray (10Y 7/1).	8	111	Shells in sample
	15		S06	33		SILT (ML); hard; dark greenish gray (5GY 4/1); moist; few fine SAND.	22		
	20		S07	66		-greenish gray (5GY 5/1).	16	103	PP=2.0 tsf
						Boring terminated at 21.5 ft bgs.			
						Downhole Readings: PID: 3.0 ppm FID: 34.6 ppm LEL: 14% CH4: 1.0% CO2: 2.1% O2: 18.0%			
	25								
	30								

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring N24803G** Sheet 1 of 1

Date(s) Drilled	**08-11-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**44.4 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24803 Neptune Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 3/4); moist; some fine SAND.			
			S01	38			11	125	UU
			B02				10		LL=18, PI=6; PA=45%<#200 sieve
	5		S03	18		-medium dense.	12		
			S04	50			14	121	
	10		S05	18		-brown (7.5YR 4/4).	19		Shells in shoe
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.3 ppm FID: 5.1 ppm LEL: 0% CH4: 00.0% CO2: 00.6% O2: 20.3%			
	15								
	20								
	25								
	30								

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24402G

Date(s) Drilled	**08-05-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**38.5 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24402 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); dark yellowish brown (10YR 4/4); moist; some fine SAND.			
			S01	25		-hard.	13	105	PP>4.5 tsf
			B02				7		LL=29, PI=16; PA=54%<#200 sieve
	5		S03	18		-very stiff.			
			S04	32		-hard.	16	110	PP>4.5 tsf
	10		S05	29		Clayey SAND (SC); medium dense; light olive brown (2.5Y 5/6); moist; fine SAND.	7		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 4.7 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.5%			
	15								
	20								
	25								
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24411G

Sheet 1 of 1

Date(s) Drilled	**08-05-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**38.7 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24411 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); olive brown (2.5Y 4/3); moist; some fine SAND.			
			S01	12		-stiff.	10		
			B02				9		
	5		S03	18		-very stiff.	15	117	PP=3.0 tsf
			S04	21		Silty CLAY with SAND (CL-ML); very stiff; light yellowish brown (2.5Y 6/4); moist; fine SAND.	16		LL=25, PI=6; PA=61%<#200 sieve
	10		S05	41		Silty SAND (SM); light yellowish brown (2.5Y 6/4); moist; fine SAND.	7	101	DS
	15		S06	29		Lean CLAY (CL); very stiff; olive (5Y 5/4); moist; trace fine SAND.	26		
	20		S07	88		Silty SAND (SM); light greenish gray (10Y 8/1); moist; fine to medium SAND.	5	95	
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 0.0 ppm FID: 0.00 ppm LEL: 0% CH4: 00.0% CO2: 00.2% O2: 20.1%			
	30								

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Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring P24421G** Sheet 1 of 1

Date(s) Drilled	**08-05-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**38.7 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24421 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Fat CLAY (CH); hard; dark olive brown (2.5Y 3/3); moist; little fine SAND.			
			S01	42			12	119	PP>4.5 tsf
			B02				4		LL=51, PI=36; PA=65%<#200 sieve
	5		S03	16		Lean CLAY (CL); dark grayish brown (10YR 4/2).	14		
			S04	40		Sandy SILT (ML); dark greenish gray (10Y 4/1); moist; some fine to medium SAND.	18	108	DS
	10		S05	16		-very stiff; olive brown (2.5Y 4/4); trace fine GRAVEL.	11		
	15		S06	39		-dark greenish gray (10Y 4/1).	32	92	
	20		S07	44			26		S07 from 20 to 21 feet, S08 from 21 to 21.5 feet
			S08			Poorly-graded SAND with SILT (SP-SM); dense; light greenish gray (10Y 8/1); moist; fine to coarse SAND.	7		
						Boring terminated at 21.5 ft bgs.			
						Downhole Readings: PID: 11.6 ppm FID: 38.7 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.4%			
	25								
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24426G

Date(s) Drilled	**08-05-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**39.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24426 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); hard; dark olive brown (2.5Y 3/3); moist; some fine SAND.			
			S01	37			10		
			B02				10		
	5		S03	49		-hard; dark olive gray (5Y 3/2).	15	114	LL=34, PI=18; PA=53%<#200 sieve; PP>4.5 tsf
			S04	19		-very stiff.	13		
	10		S05	33		Silty SAND (SM); light olive brown (2.5Y 5/6); moist; fine to coarse SAND; trace fine GRAVEL.	5	110	DS
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 0.0 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.6%			
	15								
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24503G

Date(s) Drilled	**08-06-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**39.7 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24503 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark brown (10YR 3/3); moist; fine SAND.			
			S01	19			17	113	
			B02				13		LL=30, PI=17; PA=50%<#200 sieve
	5		S03	13		-medium dense; dark olive gray (5Y 3/2).	16		
			S04	16			18	112	
	10		S05	13			20		
	15		S06	72		Silty SAND (SM); greenish gray (10GY 5/1); moist; fine SAND.	11	91	Shells in sample; DS
	20		S07	91		Poorly-graded SAND with SILT (SP-SM); very dense; greenish gray (10GY 6/1); moist; fine SAND.	5		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 3.9 ppm FID: 10.6 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.4%			
	30								

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24533G

Date(s) Drilled	**08-06-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**42.9 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24533 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark grayish brown (10YR 4/2); moist; fine to coarse SAND.			
			S01	15		-medium dense.	8		
			B02				7		LL=25, PI=10; PA=32%<#200 sieve
	5		S03	43		-dark yellowish brown (10YR 4/4).	14	118	DS
			S04	10		Well-graded SAND (SW); loose; brown (7.5YR 5/4); moist; fine to coarse SAND.	7		
	10		S05	38			4	101	Shells in sample
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 0.0 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.3%			
	15								
	20								
	25								
	30								

AECOM

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring P24608G** Sheet 1 of 1

Date(s) Drilled	**08-06-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**43.4 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24608 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); greenish black (10GY 2.5/1); moist; fine SAND.			
			S01	8			16	110	LL=26, PI=12; PA=29%<#200 sieve
			B02				12		
	5		S03	6		-loose.	16		
			S04	22		- black (5Y 2.5/1).	11	114	UU
	10		S05	15		Well-graded SAND with CLAY (SW-SC); medium dense; yellowish red (5YR 4/6); moist; fine to coarse SAND; trace fine GRAVEL.	8		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 1.4 ppm FID: 5.6 ppm LEL: 0% CH4: 00.0% CO2: 00.7% O2: 20.1%			
	15								
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24618G

Date(s) Drilled	**08-06-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**43.9 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24618 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); stiff; dark gray (2.5Y 4/1); moist; some fine SAND.			
			S01	11			13		
			B02				12		
	5		S03	13		Clayey SAND (SC); dark greenish gray (5GY 3/1); moist; fine SAND; trace coarse GRAVEL.	15	114	UU
			S04	20		Silty SAND with GRAVEL (SM); medium dense; very dark grayish brown (2.5Y 3/2); fine to coarse SAND; little fine to coarse GRAVEL.	10		LL=17, PI=3; PA=26%<#200 sieve
	10		S05	32		Clayey SAND (SC); hard; dark greenish gray (5GY 3/1); moist; fine SAND.	14	114	
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 5.2 ppm FID: 51.1 ppm LEL: 0% CH4: 00.0% CO2: 0.1% O2: 20.1%			
	15								
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24708G

Date(s) Drilled	**08-07-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**44.9 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24708 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); medium dense; olive brown (2.5Y 4/3); moist; fine to coarse SAND.			
			S01	23			10	117	DS
			B02				9		LL=29, PI=15; PA=40%<#200 sieve
	5		S03	15		-dark olive gray (5Y 3/2); moist; fine SAND.	13		
			S04	32		-dense; very dark gray (5Y 3/1).	12	113	
	10		S05	14		Sandy CLAY (CL); brown (7.5YR 4/4); moist; some fine to medium SAND.	16		S05 from 10 to 11 feet, S06 from 11 to 11.5 feet
			S06				14		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 20.4 ppm FID: 429.8 ppm LEL: 0% CH4: 00.0% CO2: 00.2% O2: 20.1%			
	15								
	20								
	25								
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24709G

Sheet 1 of 1

Date(s) Drilled	**08-07-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**44.4 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24709 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); medium stiff; brown (7.5YR 4/3); moist; some fine SAND.			
			S01	7			13		
			B02				12		
	5		S03	15		Clayey SAND (SC); olive gray (5Y 4/2); moist; fine SAND.	12	118	UU
			S04	24		Silty, clayey SAND (SC-SM); medium dense; olive gray (5Y 4/2); moist; fine to coarse SAND.	12		LL=19, PI=5; PA=34%<#200 sieve
	10		S05	29		Clayey SAND (SC); yellowish brown (10YR 3/8); fine SAND.	15	111	
	15		S06	10		Well-graded SAND (SW); loose; strong brown (7.5YR 5/6); moist; fine to coarse SAND; trace fine to coarse GRAVEL.	5		Shells in sample
									Shells in soil cuttings
	20		S07	37		-pale yellow (2.5Y 7/4). SILT (ML); hard; dark greenish gray (5GY 4/1); moist.	14	99	PP>4.5 tsf
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 0.0 ppm FID: 1.9 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.5%			
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24719G

Sheet 1 of 1

Date(s) Drilled	**08-07-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**44.9 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24719 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 4/1); moist; fine to coarse SAND.			
			S01	33			9	119	
			B02				9		LL=29, PI=12; PA=46%<#200 sieve
	5		S03	19		Sandy CLAY (CL); very stiff; brown (10YR 4/3); moist; some fine SAND.	10		
			S04	38		-hard; very dark gray (5Y 3/1).	11	122	UU; PP>4.5 tsf
	10		S05	23		-very stiff; dark yellowish brown (10YR 4/6).	12		
						Boring terminated at 11.5 ft bgs. Downhole Readings: PID: 0.9 ppm FID: 33.7 ppm LEL: 0% CH4: 00.0% CO2: 00.1% O2: 20.0%			
	15								
	20								
	25								
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 P24719G

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24722G

Sheet 1 of 1

Date(s) Drilled	**08-10-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**45.2 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24722 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 3/4); moist; fine SAND.			
			S01	57			9	116	
			B02				6		
	5		S03	22		-medium dense; dark yellowish brown (10YR 4/6).	9		LL=15, PI=1; PA=40%<#200 sieve
			S04	40			11	118	DS
	10		S05	28		Sandy CLAY (CL); strong brown (7.5YR 4/6); moist; some fine SAND.	14		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.7 ppm FID: 0.0 ppm LEL: 0% CH4: 00.0% CO2: 00.1% O2: 20.5%			
	15								
	20								
	25								
	30								

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24738G

Sheet 1 of 1

Date(s) Drilled	**08-10-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**46.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24738 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Silty SAND (SM); dark olive gray (5Y 3/2); moist; fine to coarse SAND; trace fine GRAVEL.			
			S01	8		-loose.	15		
			B02				13		LL=15, PI=NP; PA=38%<#200 sieve
	5		S03	28		Clayey SAND (SC); olive brown (2.5Y 4/4); moist.	13	108	UU
			S04	19		-medium dense; light olive brown.	14		
	10		S05	30			15	99	Bentonite chips in sample.
						Boring terminated at 11.5 ft bgs.			
	15					Downhole Readings: PID: 0.5 ppm FID: 0.0 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.5%			
	20								
	25								
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 P24738G

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24803G

Sheet 1 of 1

Date(s) Drilled	**08-10-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**46.3 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24803 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 4/4); moist; fine SAND.			
			S01	9			12	125	DS
			B02				11		
	5		S03	20		-medium dense.	13		LL=16, PI=1; PA=40%<#200 sieve
			S04	32			14	118	
	10		S05	22			15		
	15		S06	23		Well-graded SAND with SILT (SP-SM); light greenish gray (10GY 7/1); moist; fine to coarse SAND; trace fine GRAVEL.	6	101	Shells in sample
	20		S07	28		Silty SAND (SM); medium dense; greenish gray (10Y 3/1); moist; fine SAND.	28		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 0.4 ppm FID: 0.0 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.5%			
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24812G

Sheet 1 of 1

Date(s) Drilled	**08-10-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**46.7 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24812 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); brown (10YR 4/3); moist; fine SAND.			
			S01	10		-loose.	10		
			B02				10		
	5		S03	7		-dark yellowish brown (10YR 4/4).	15	112	UU
			S04	18		Silty, clayey SAND (SC-SM); medium dense; dark yellowish brown (10YR 4/3); moist; fine SAND.	16		LL=19, PI=4; PA=37%<#200 sieve
	10		S05	39		Clayey SAND (SC); dark yellowish brown (10YR 4/3); moist; fine SAND.	16	115	
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.4 ppm FID: 0.0 ppm LEL: 0% CH4: 00.0% CO2: 00.1% O2: 20.2%			
	15								
	20								
	25								
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24819G

Date(s) Drilled	**08-11-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**15.0 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**46.4 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24819 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); olive brown (2.5Y 4/3); moist; fine to medium SAND.			
			S01	28			13	121	UU
			B02				9		LL=24, PI=11; PA=44%<#200 sieve Cobbles
	5		S03	13		-medium dense; dark olive gray (5Y 3/2).			
			S04	31		-fine SAND.	10	125	
	10		S05	10		-loose; very dark gray (5Y 3/1).			
						Concete slab, approximately 12 inches thick.			Hard drilling
						Lean CLAY (CL); very dark gray (5Y 3/1); moist; few fine SAND.			
	15					Boring terminated at 15 ft bgs. See field notes for explanation. Downhole Readings: PID: 696.4 ppm FID: 3,317ppm LEL: 100% CH4: 3.0% CO2: 0.02% O2: 19.0%			
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring P24833G

Sheet 1 of 1

Date(s) Drilled	**08-11-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch claw**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**47.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24833 Panama Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10 YR 4/4); moist; fine to medium SAND.			
			S01	17		-medium dense.	11		LL=26, PI=13; PA=42%<#200 sieve
			B02				8		
	5		S03	56		-olive brown (2.5Y 4/4); fine SAND.	8	126	UU
			S04	25		Lean CLAY (CL); very stiff; dark gray (5Y 4/1); moist; few fine SAND.	14		
	10		S05	36		-hard.	15	115	PP>4.5 tsf
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 3.1 ppm FID: 46.6ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.5%			
	15								
	20								
	25								
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 P24833G

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24412G

Date(s) Drilled	**08-04-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**37.8 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24412 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); very dark gray (2.5Y 3/1); moist; few fine SAND.			
			S01	24		Sandy CLAY (CL); very stiff; dark gray (2.5Y 3/1); moist; some fine to coarse SAND; few GRAVEL.	15	116	UU; PP=4.0 tsf
			B02				10		
	5		S03	5		-medium stiff.	20		LL=30, PI=16; PA=52%<#200 sieve
			S04	19		-very stiff.	17	110	PP=4.0 tsf
	10					Concrete slab; approximately 12 inches thick			Hard drilling
			S05	20		Lean CLAY (CL); very stiff; dark greenish gray (5GY 4/1); moist; trace coarse SAND.	29		
	15		S06	38		SILT (ML); hard; dark greenish gray (10GY 3/1); moist.	18	102	PP>4.5 tsf
	20		S07	44		Poorly-graded SAND with SILT (SP-SM); dense; olive yellow (2.5Y 6/6); moist; fine SAND.	4		
						Boring terminated at 21.5 ft bgs. Downhole Readings: PID: 0.0 ppm FID: 10.1 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.7%			
	25								
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24423G

Sheet 1 of 1

Date(s) Drilled	**08-04-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.4 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**38.3 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24423 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); olive gray (5Y 4/2); moist; some fine SAND.			
			S01	14		-stiff.	14		
			B02				8		
	5		S03	22		-very stiff; dark olive gray (5Y 3/2); some fine to coarse SAND.	15	116	PA=50%<#200 sieve; UU; PP=4.0 tsf
			S04	20		-olive gray (5y 4/2)			LL=26, PI=13
	10		S05	29/10"		-hard; dark olive gray (5Y 3/2).	13	117	PP>4.5 tsf
						Boring terminated at 11.4 ft bgs.			Concrete slab at 11.4 feet
						Downhole Readings: PID: 1.8 ppm FID: 20.1 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.4%			
	15								
	20								
	25								
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24426G

Date(s) Drilled	**08-04-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**39.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24426 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); very dark gray (2.5Y 3/4); moist; some fine to coarse SAND.			
			S01	22		-very stiff.	14	110	PP>4.5 tsf
			B02				10		LL=32, PI=18; PA=50%<#200 sieve
	5		S03	9		-stiff.	19		
			S04	22		-very stiff; dark olive gray (5Y 3/2).	12	121	UU; PP=4.0 tsf
	10		S05	15		-stiff.	18		
									Rig chatter
	15		S06	35		-hard; dark greenish gray (5GY 3/1).	31	91	PP>4.5 tsf
	20		S07	35		Sandy SILT (ML); hard; greenish gray (10GY 6/1): moist; some fine SAND.	10		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 10.1 ppm FID: 27.6 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.1%			
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24508G

Sheet 1 of 1

Date(s) Drilled	**08-03-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**40.3 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24508 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); medium stiff; olive brown (2.5Y 4/4); moist; some fine SAND.			
			S01	7			11		
			B02				11		LL=27, PI=14; PA=51%<#200 sieve
	5		S03	18		Lean CLAY (CL); very stiff; dark olive gray (5Y 4/2); moist; trace fine SAND.	15	114	UU; PP=3.0 tsf
			S04	18			14		
	10		S05	30			13	115	PP=4.0 tsf
						Concrete slab; approximately 10 inches thick			Hard drilling
						Lean CLAY (CL); hard; olive gray (5Y 4/2); moist; trace fine SAND.			
	15		S06	45			25		
	20		S07	73		Poorly-graded SAND with CLAY (SP-SC); pale yellow (2.5Y 8/4); moist; fine SAND.	4	95	
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 296.4 ppm FID: 4,472 ppm LEL: 61% CH4: 3.0% CO2: 00.4% O2: 15.0%			
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24509G

Sheet 1 of 1

Date(s) Drilled	**08-03-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**40.2 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24509 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); yellowish brown (10YR 5/4); moist.			
			S01	40			9	123	UU
			B02				8		LL=26, PI=13; PA=49%<#200 sieve
	5		S03	10		Sandy CLAY (CL); stiff; dark olive gray (5Y 3/2); moist; few fine SAND.	17		
			S04	28		-very stiff; very dark gray (5Y 3/3).	16	110	PP=3.5 tsf
	10		S05	19			17		
						Concrete slab; approximately 6 inches thick.			Hard drilling at 13 feet
						Lean CLAY (CL); hard; olive gray (5Y 4/2); moist; few fine SAND.			
	15		S06	59			16	110	PP>4.5 tsf
	20		S07	66		Poorly-graded SAND with CLAY (SP-SC); very dense; pale yellow (2.5Y 8/4); moist; fine SAND.	4		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 20.2 ppm FID: 97.6 ppm LEL: 1% CH4: 00.1% CO2: 00.0% O2: 20.0%			
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 R24509G

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24522G

Sheet 1 of 1

Date(s) Drilled	**08-03-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**41.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24522 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Sandy CLAY (CL); dark yellowish brown (10YR 4/4); moist; fine SAND.			
			S01	16		-very stiff; dark olive gray (5Y 3/2).	10		
			B02				10		
	5		S03	19		-dark greenish gray (5GY 3/1).	14	112	
			S04	19		Clayey SAND (SC); medium dense; very stiff; dark greenish gray (5GY 3/1); moist; fine SAND.	11		Shells in sample; LL=24, PI=11; PA=38%<#200 sieve
	10		S05	17		Lean CLAY (CL); greenish gray (5GY 3/1); moist; few fine SAND.	13	114	UU
						Concrete slab; approximately 8 inches thick			Hard drilling at 12.5 feet
						SILT (ML); hard; greenish gray (10GY 6/1); moist; few fine SAND.			
	15		S06	33			17		
	20		S07	92/11"		Clayey SAND (SC); pale yellow (2.5Y 8/4); moist; mostly fine SAND.	17	93	
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 10.2 ppm FID: 61.4 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.3%			
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 R24522G

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24609G

Date(s) Drilled	**08-03-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**42.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24609 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 4/4); moist; fine SAND.			
			S01	31			11	120	DS
			B02				10		LL=X21, PI=7; PA=43%<#200 sieve
	5		S03	21		Sandy CLAY (CL); very stiff; dark yellowish brown (10YR 3/4); moist; some fine SAND.	12		
			S04	35		Clayey SAND (SC); dark yellowish brown (10YR 4/6); moist; fine SAND.	15	113	
	10		S05	15		Poorly-graded SAND with CLAY (SP-SC); medium dense; light olive brown (2.5Y 5/6); moist; fine to medium SAND.			
						Boring terminated at 11.5 ft bgs.			
	15					Downhole Readings: PID: 0.0 ppm FID: 2.3 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.4%			
	20								
	25								
	30								

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Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring R24612G** Sheet 1 of 1

Date(s) Drilled	**08-03-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**42.4 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24612 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 4/6); moist; fine SAND.			
			S01	25		-medium dense.	7		
			B02				6		LL=31 PI=8; PA=43%<#200 sieve
	5		S03	50/3"		-strong brown (7.5YR 4/6); fine to medium SAND.	10	110	Little recovery; DS
			S04	18		-dark yellowish brown (10YR 4/6).	9		
	10		S05	17			9	100	
						Poorly-graded SAND (SP); very pale brown (10YR 7/4); moist; fine to medium SAND.			Shells in sample
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 5.1 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 19.0%			
	15								
	20								
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24706G

Sheet 1 of 1

Date(s) Drilled	**07-31-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**43.2 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24706 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 4/6); moist; fine SAND.			
			S01	31		-trace fine GRAVEL.	6	106	
			B02				6		
	5		S03	16		medium dense; reddish brown (5YR 4/4); moist; some fine SAND.	11		LL=23, PI=11; PA=38%<#200 sieve
			S04	30			14	118	UU
	10		S05	17			12		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 0.0 ppm FID: 8.1 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.1%			
	15								
	20								
	25								
	30								

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24709G

Date(s) Drilled	**07-31-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**43.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24709 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 4/6); fine SAND.			
			S01	22		-medium dense.	9		
			B02				8		LL=18, PI=4; PA=46%<#200 sieve
	5		S03	28			12	117	DS
			S04	23		-brown (7.5YR 4/4)	13		
	10		S05	33			12	114	
	15		S06	20		Lean CLAY (CL); very stiff; dark greenish gray (5G 4/1); moist; little fine SAND.	24		
	20		S07	51		Poorly-graded SAND with CLAY (SP-SC); greenish gray (10GY 4/1); fine SAND.	7	92	
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 0.0 ppm FID: 10.2 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 19.7%			
	30								

AECOM

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24719G

Sheet 1 of 1

Date(s) Drilled	**07-31-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**43.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24719 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark yellowish brown (10YR 4/4); moist; fine SAND.			
			S01	60			7	123	
			B02				5		
	5		S03	26		-medium dense.	11		
			S04	47		-dark reddish brown (5YR 3/4).	12	113	DS
	10		S05	15		-dark brown (2.5YR 3/4).	11		LL=31, PI=17; PA=22%<#200 sieve
									Shells in cuttings.
	15		S06	47		Lean CLAY (CL); hard; dark bluish gray (5B 4/1); moist; few fine SAND.	18	105	PP>4.5 tsf
	20		S07	50		Poorly-graded SAND with CLAY (SP-SC); very dense; greenish gray (10GY 4/1); fine SAND.	4		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 0.0 ppm FID: 0.0 ppm LEL: 0% CH4: 00.0% CO2: 00.0% O2: 20.7%			
	30								

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24732G

Sheet 1 of 1

Date(s) Drilled	**07-30-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**11.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**44.1 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips**	Location	**24732 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); olive gray (5Y 4/2); moist; fine SAND.			
			S01	55			10	116	DS
			B02				8		LL=25, PI=12; PA=36%<#200 sieve
	5		S03	25		Sandy CLAY (CL); very stiff; olive brown (2.5Y 4/4); moist; some fine to coarse SAND.	13		
			S04	35		-hard.	13	113	PP>4.5 tsf
	10		S05	19		Clayey SAND (SC); medium dense; dark olive brown (2.5Y 3/3); moist; fine SAND.	10		
						Boring terminated at 11.5 ft bgs.			
						Downhole Readings: PID: 4.5 ppm FID: 6.3 ppm LEL: 1% CH4: 0.01% CO2: 0.00% O2: 20.5%			
	15								
	20								
	25								
	30								

AECOM

Project: Former Kast Property **Project Location: Carson, CA** **Project Number: 60422689**	**Log of Boring R24739G** Sheet 1 of 1

Date(s) Drilled	**07-30-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**44.0 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24739 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); medium dense; very dark brown (10YR 2/2); moist; some fine SAND.			
			S01	30			6		Black staining on sample
			B02				6		
	5		S03	48		-black (2.5Y 2.5/1).	7	112	Black staining on sampler
			S04	42		-dense.	11		LL=28, PI=15; PA=34%<#200 sieve
	10		S05	49		Sandy CLAY (CL); hard; black (2.5Y 2.5/1); moist; some fine SAND.	10	117	Black staining on sample; UU; PP>4.5 tsf
	15		S06	32		SILT (ML); hard; dark brown (10YR 3/3); moist; little fine SAND.	12		
	20		S07	50		Sandy CLAY (CL) with thin interbeds of clayey SAND (SC); pale olive (5Y 6/4); moist.	12	106	Black staining on sampler
						Boring terminated at 21.5 ft bgs. Downhole Readings: PID: 140.7 ppm FID: 546.8 ppm LEL: 30% CH4: 1.4% CO2: 00.0% O2: 20.0%			
	25								
	30								

Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24749G

Sheet 1 of 1

Date(s) Drilled	**07-30-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**45.9 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24749 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); dark olive gray (5Y 3/2); moist; fine to coarse SAND.			
			S01	21			11	112	UU
			B02				9		LL=23, PI=10; PA=36%<#200 sieve
	5		S03	11		-medium stiff; some fine SAND.	12		
			S04	12			16	112	
	10		S05	30		Sandy CLAY (CL); hard, dark olive gray (5Y 3/2); moist; some fine SAND.	16		Broken concrete in sample
	15		S06	53		-dark greenish gray (10Y 4/1); trace GRAVEL.	15	106	PP>4.5 tsf
	20		S07	38		Clayey SAND (SC); dense; pale olive (5Y 6/4); moist; fine SAND.	4		
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 10.1 ppm FID: 102.6 ppm LEL: 00.0% CH4: 00.0% CO2: 00.0% O2: 20.1%			
	30								

Report: GEO_10_SNA; File: KAST BORINGS_2015.GPJ; 10/2/2015 R24749G

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Project: Former Kast Property
Project Location: Carson, CA
Project Number: 60422689

Log of Boring R24752G

Date(s) Drilled	**07-29-15**	Logged By	**A. Lemmon**	Checked By	**D. Stoica**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8-inch bullet tooth**	Total Depth of Borehole	**21.5 feet**
Drill Rig Type	**LAR Rig D19**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**45.9 feet**
Water Level Depth (Feet)	**Not Encountered**	Sampling Method(s)	**CAL, SPT, BULK**	Hammer Data	**Autohammer, 140 lb/30" drop [70%]**
Borehole Backfill	**Bentonite chips/grout bottom 10 ft**	Location	**24752 Ravenna Avenue, Carson, CA (front yard)**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows per foot	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0					Clayey SAND (SC); loose; dark olive brown (2.5Y 3/3); moist; fine SAND.			
			S01	8			17		S01 in 2 baggies
			B02				15		LL=24, PI=10; PA=40%<#200 sieve
	5		S03	36		-dark olive gray (5Y 3/2).	11	119	UU
			S04	23		-medium dense.	11		
	10		S05	30			15	113	
						Concrete slab, approximately 5 inches thick			Easy drilling through concrete slab
						Sandy CLAY (CL); hard; pale olive (5Y 6/3); moist; some fine SAND.			
	15		S06	30			14		Concrete slough on top 6 inches of sampler
	20		S07	66		-dark bluish gray (10B 4/1).	23	92	PP>4.5 tsf
						Boring terminated at 21.5 ft bgs.			
	25					Downhole Readings: PID: 39.0 ppm FID: >3853 ppm LEL: over range CH4: 5.9% CO2: 4.0% O2: 15.6%			
	30								

Previous Geotechnical Field Exploration

Project: Former Kast Property
Project Location: 24422 Marbella Ave, Carson, CA
Project Number: 49194377

Log of M24422G1

Sheet 1 of 1

Date(s) Drilled	**3/13/12**	Logged By	**S. Bajza/P. Naranjo**	Checked By	**Amhad Ghazinoor**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8"**	Total Depth of Borehole	**25.5 feet**
Drill Rig Type	**MARL 5T "Rhino"**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**35 feet MSL**
Groundwater Level(s)	**Not Encountered**	Sampling Method(s)	**Bulk, California Modified Split Spoon**	Hammer Data	**Automatic hammer 140lbs / 30-inch drop**
Borehole Backfill	**Hydrated Bentonite Chips**	Location	**Front Yard**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows/Foot	OVA Headspace (ppm)	OVA Background (ppm)	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
35	0							Dark reddish brown to very dark gray, Lean CLAY (CL), moist, interlayer of very dark gray, SILT (ML), fine sand			Hand augered triangulated holes to 6.7 ft bgs. Geotech and environmental samples collected.
			G-1								
			S-1	8	--	--		Becomes soft PI, PA, DS	16.3	110	M24422G4 (11:00)
30	5		S-2	21	--	--		Dark reddish brown, Clayey SAND (SC), wet, medium dense, odor, staining present, sheen present PA, DS	14.4	108	M24422G5.5 (11:10)
								Concrete Slab, approximately 6 inches thick			
			S-3	27	--	--		Olive, Fat CLAY (CH), moist, very stiff PA, DS	20.3	107	M24422G8 (11:20)
25	10										
			S-4	66	--	--		Olive, lean CLAY (CL), moist, hard	22.5	105	M24422G12.5 (11:35)
20	15		S-5	61	--	--		Olive brown, SAND with Silt (SP-SM), moist, dense	13.1	112	M24422G15.5 (11:45)
15	20		S-6	43	--	--		Becomes medium dense	18.8	116	M24422G20.5 (11:55)
								Olive brown, SAND (SP), moist, very dense			
10	25		S-7	79	--	--			7.2	101	M24422G24.5 (12:05)
								Completed boring to 25.5 feet bgs. Downhole Readings: PID = 11.8 ppm FID = 197 ppm CH_4 = 0.0% CO_2 = 0.1% O_2 = 20.9% LEL = 0% H_2S = 0 ppm			
5	30										

AECOM

Project: Former Kast Property
Project Location: 24432 Marbella Ave, Carson, CA
Project Number: 49194377

Log of M24432G1

Sheet 1 of 1

Date(s) Drilled	**3/21/12**	Logged By	**S. Bajza / P/ Naranjo**	Checked By	**Amhad Ghazinoor**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8"**	Total Depth of Borehole	**25.5 feet**
Drill Rig Type	**MARL 5T "Rhino"**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**35 feet MSL**
Groundwater Level(s)	**Not Encountered**	Sampling Method(s)	**Bulk, California Modified Split Spoon**	Hammer Data	**Automatic hammer 140lbs / 30-inch drop**
Borehole Backfill	**Hydrated Bentonite**	Location	**Front Yard**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows/Foot	OVA Headspace (ppm)	OVA Background (ppm)	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
35	0							Dark brown (10YR 3/2), Clayey SAND (SC), moist, fill			Hand augered to 7 ft bgs. Geotech and environmental samples collected.
			S-1	5	4.4	0.0		Becomes very loose, wet	16.4	113	M24432G1@3 (12:31)
30	5		S-2	3	19.8	0.0		Trace staining, pockets of black material, odor PA, DS	27.6	95	M24432G1@5 (12:39)
								Concrete slab, approximately 6 inches thick			
			S-3	12	102	0.0		Dark brown (10Y 3/2), Sandy CLAY (CL), moist, stiff, staining and odor, alluvium PA, DS No staining or odor observed at 8.75 ft	20.2	109	M24432G1@8 (12:47)
25	10		S-4	24	5.4	0.0		Becomes very stiff PI, PA	16.9	113	M24432G1@10 (12:55)
			S-5	25	4.4	0.0			25.7	100	M24432G1@12 (13:03)
20	15		S-6	29	2.5	0.0		PA	23.6	101	M24432G1@15 (13:10)
15	20		S-7	42	14	0.0		Olive gray (5Y 4/2), Silty SAND (SM), moist, medium dense	14.3	99	M24432G1@20 (13:20)
10	25		S-8	44	11.8	0.0			4.9	98	M24432G1@24 (13:34)
5	30							Completed boring to 25.5 feet bgs. Downhole Readings: PID = 0.4 ppm FID = 17.1 ppm CH_4 = 0.0% CO_2 = 0.0% O_2 = 21.4% LEL = 0% H_2S = 0 ppm			

AECOM

Project: Former Kast Property
Project Location: 24502 Marbella Ave, Carson, CA
Project Number: 49194377

Log of M24502G1

Sheet 1 of 1

Date(s) Drilled	**3/21/12**	Logged By	**S. Bajza / P/ Naranjo**	Checked By	**Amhad Ghazinoor**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8"**	Total Depth of Borehole	**25.5 feet**
Drill Rig Type	**MARL 5T "Rhino"**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**35 feet MSL**
Groundwater Level(s)	**Not Encountered**	Sampling Method(s)	**Bulk, California Modified Split Spoon**	Hammer Data	**Automatic hammer 140lbs / 30-inch drop**
Borehole Backfill	**Hydrated Bentonite**	Location	**Front Yard**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows/Foot	OVA Headspace (ppm)	OVA Background (ppm)	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
35	0							Dark brown (7.5YR 3/2), Clayey SAND (SC), moist, fill			Hand augered to 7 ft bgs. Geotech and environmental samples collected.
			S-1	9	223	0.0		Odor PA Becomes loose	17.9	110	M24502G1@3 (09:15)
30	5		S-2	21	640	0.0		Becomes olive gray (5Y 4/2), medium dense, staining and odor	16.3	114	M24502G1@5 (09:23)
								Concrete slab, approximately 4 inches thick			
			S-3	17	3.0	0.0		Dark olive gray (5Y 3/2), Sandy CLAY (CL), moist, very stiff, trace fine to coarse gravel, alluvium	23.9	104	M24502G1@8 (09:30)
25	10		S-4	31	11.5	0.1		Becomes hard PA, DS	19.8	95	M24502G1@10 (09:40)
			S-5	48	4.7	0.0		Olive (5Y 4/3), Silty SAND (SM), moist, dense PA	13.2	102	M24502G1@12 (09:45)
20	15		S-6	64	3.6	0.0		Becomes light olive brown (2.5Y 5/6)	8.7	101	M24502G1@15 (09:50)
15	20		S-7	63	8.4	0.0			13.7	97	M24502G1@20 (10:00)
10	25		S-8	66	9.2	0.0		Becomes grayish brown (2.5Y 5/2)	5.8	96	M24502G1@24 (10:10)
								Completed boring to 25.5 feet bgs. Downhole Readings: PID = 1.3 ppm FID = 2,280 ppm CH_4 = 0.0% CO_2 = 0.0% O_2 = 19.4% LEL = 3% H_2S = 0 ppm			
5	30										

AECOM

Project: Former Kast Property
Project Location: 24612 Neptune Ave, Carson, CA
Project Number: 49194377

Log of N24612G1

Sheet 1 of 1

Date(s) Drilled	**3/14/12**	Logged By	**S. Owens/P. Naranjo**	Checked By	**Amhad Ghazinoor**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8"**	Total Depth of Borehole	**25.5 feet**
Drill Rig Type	**MARL 5T "Rhino"**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**42 feet MSL**
Groundwater Level(s)	**Not Encountered**	Sampling Method(s)	**Bulk, California Modified Split Spoon**	Hammer Data	**Automatic hammer 140lbs / 30-inch drop**
Borehole Backfill	**Hydrated Bentonite Chips**	Location	**Front Yard**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows/Foot	OVA Headspace (ppm)	OVA Background (ppm)	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0							Very dark brown (7.5YR 2.5/2), Silty SAND (SM), moist, fill			Hand augered to 7 ft bgs. Geotech and environmental samples collected.
40			G-1								
					4.1	0.0		Dark olive (5Y 2.5/2), Sandy CLAY (CL), moist, very stiff, fill	13.2	118	N24612G1@3 (10:35)
			S-1	22				Odor present, black unidentified material at 4.5 feet			
	5				855.6	0.0			14.7	114	N24612G1@5 (11:00)
			S-2	27							
35								Concrete Slab, approximately 6 inches thick			
								Dark olive, Sandy CLAY (CL), moist, very stiff, fill			
			S-3	14/6"					12.1	118	
								Concrete Slab, approximately 6 inches thick			
			S-4	12	604.9			Very dark brown (10YR 2/2), Silty SAND (SM), loose, moist, alluvium DS, PA, PI	8.5	115	N24612G1@9.5
	10										
30					11.1	0.0					
			S-5	92					5.7	106	N24612G1@12 (11:25)
								Becomes light yellowish brown (2.5Y 6/4), very dense			
	15				6.6	0.0		Becomes light olive brown (2.5Y 5/3), medium dense	5.8	91	N24612G1@15 (11:35)
			S-6	48							
25											
								Grayish brown (2.5Y 5/2), lean CLAY (CL), hard, moist			
	20				9.5	0.0			16.6	101	N24612G1@20 (11:45)
			S-7	67							
20											
								Light yellowish brown (2.5Y 6/3), Silty SAND (SM), dense, moist			
					13.4	0.0			6.7	94	N24612G1@24 (11:50)
	25		S-8	59							
15								Completed boring to 25.5 feet bgs. Downhole Readings: PID = 55.6 ppm FID = 835.7 ppm CH_4 = 0.3% CO_2 = 0.2% O_2 = 20.8% LEL = 0% H_2S = 0 ppm			
	30										

AECOM

Project: Former Kast Property
Project Location: 24715 Neptune Ave, Carson, CA
Project Number: 49194377

Log of N24715G1

Sheet 1 of 1

Date(s) Drilled	**3/16/12**	Logged By	**C. Landaverde/S. Owens/P. Naranjo**	Checked By	**Amhad Ghazinoor**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8"**	Total Depth of Borehole	**25.5 feet**
Drill Rig Type	**MARL 5T "Rhino"**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**44 feet MSL**
Groundwater Level(s)	**Not Encountered**	Sampling Method(s)	**Bulk, California Modified Split Spoon**	Hammer Data	**Automatic hammer 140lbs / 30-inch drop**
Borehole Backfill	**Hydrated Bentonite**	Location	**Backyard**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows/Foot	OVA Headspace (ppm)	OVA Background (ppm)	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
	0							Dark brown (7.5YR 3/3), Sandy CLAY (CL), moist, fill			Hand augered to 7 ft bgs. Geotech and environmental samples collected.
40			S-1	19	0.2	0.0		Becomes olive brown (2.5Y 4/3), very stiff, odor PI, PA	17	109	N24715G1@3.5 (09:30)
	5		S-2	30	288.8	0.0		Black (2.5Y 2.5/1), Clayey SAND (SC), moist, medium dense, fill, staining and odor PA, DS	12.7	118	N24715G1@5 (09:40)
35			S-3	39	243	0.0		PI, PA	10.2	120	N24715G1@8.5 (09:45)
	10		S-4	25	697.2	0.0		Concrete Slab, approximately 6 inches thick Olive brown (2.5Y 4/3), Silty SAND (SM), moist, medium dense, alluvium PA	6.6	115	N24715G1@10 (10:00)
30			S-5	68	990.5	0.0		Olive gray (5Y 4/2), Sandy CLAY (CL), moist, hard, black veins, odor	16.3	103	N24715G1@12.5 (10:05)
	15		S-6	71	586	0.0		Very dark gray (5Y 3/1) to black (5Y 2.5/1), Silty SAND (SM), moist, dense, oil on outside of sample sleeves PA, PI	10.1	105	N24715G1@16 (10:20)
25											
	20		S-7	76	1234	0.0		Olive brown (2.5Y 4/4), SAND with SILT (SP-SM), moist, very dense, odor PA	5.4	98	N24715G1@20.5 (10:35)
20											
	25		S-8	67	1267	0.0		Becomes dense	5.4	99	N24715G1@24.5 (10:45)
								Completed boring to 25.5 feet bgs. Downhole Readings: PID = 390.1 ppm FID = 4,450 ppm CH_4 = 12.1% CO_2 = 2.5% O_2 = 18.6% LEL = 5% H_2S = 0 ppm			
15											
	30										

AECOM

Project: Former Kast Property
Project Location: 24736 Ravenna Ave, Carson, CA
Project Number: 49194377

Log of R24736G1

Sheet 1 of 1

Date(s) Drilled	**3/15/12**	Logged By	**C. Landaverde / S. Owens/P. Naranjo**	Checked By	**Amhad Ghazinoor**
Drilling Method	**Hollow Stem Auger**	Drill Bit Size/Type	**8"**	Total Depth of Borehole	**25.5 feet**
Drill Rig Type	**MARL 5T "Rhino"**	Drilling Contractor	**Gregg Drilling**	Approximate Surface Elevation	**45 feet MSL**
Groundwater Level(s)	**Not Encountered**	Sampling Method(s)	**Bulk, California Modified Split Spoon**	Hammer Data	**Automatic hammer 140lbs / 30-inch drop**
Borehole Backfill	**Hydrated Bentonite Chips**	Location	**Front Yard**		

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows/Foot	OVA Headspace (ppm)	OVA Background (ppm)	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	REMARKS AND OTHER TESTS
45	0							Very dark brown (7.5YR 2.5/2), Clayey SAND (SC), moist, fill			Hand augered to 7 ft bgs. Geotech and environmental samples collected.
			G-1								
			S-1	20	472.6	0.0		Medium dense, staining and odor PI, PA, DS	12.9	111	R24736G1@3 (09:25)
40	5		S-2	44	132.6	0.0		Becomes dark olive gray (5Y 3/2), odor	8.9	126	R24736G1@5.5 (09:30)
			S-3	21	108.1	0.0		DS	16.5	112	R24736G1@8.5 (09:35)
35	10		S-4	10/2"	108.8	0.0		Becomes black (5Y 2.5/2), staining and odor			R24736G1@10.5 (09:45)
								Concrete Slab			
			S-5	36	1326	0.0		Dark olive gray (5Y 3/2), SAND (SP-SM), moist, medium dense, alluvium PA	6.2	98	R24736G1@12 (10:00)
30	15		S-6	49	1976	0.0		Very dark gray (5Y 3/1) to black (5Y 2.5/1), SILT with Sand (ML), moist, hard, oil on outside of sample sleeves PI, PA	17.4	103	R24736G1@15.5 (10:10)
25	20		S-7	61	2058	0.0		Olive (5Y 4/3), SAND (SP), moist, dense PA	4.6	94	R24736G1@20 (11:15)
20	25		S-8	58	1941	0.0		PA	5.9	96	R24736G1@24 (11:25)
								Completed boring to 25.5 feet bgs. Downhole Readings: PID = 110.1 ppm FID = 830.8 ppm CH_4 = 0.9% CO_2 = 0.8% O_2 = 20.3% LEL = 0% H_2S = 0 ppm			
15	30										

Figure A-1

AECOM

Samples obtained from the boring were carefully sealed and packaged in the field to reduce moisture loss and disturbance. The samples were subsequently delivered to our laboratory where they were further examined and classified. Selected samples were tested to evaluate soil classification, moisture content, unit weight, plasticity index (PI), grain size analysis, and shear strength of the soils.

Soil Classification (ASTM D2488)

Soil identification and classification was performed on all soil samples obtained from the borings. The soil identification is based on visual examination and manual tests. A summary of the results is shown in Table B-1, Summary of Soil Laboratory Data and also presented on the boring records in Appendix A.

Moisture Content and In-situ Density Tests (ASTM D2216 and D7263)

The moisture content and in-situ density tests were performed in accordance with ASTM Test Methods D2216 and D7263, respectively. The results of these tests are presented on the Boring Records in Appendix A. A summary of the results is shown in Table B-1, Summary of Soil Laboratory Data.

Atterberg Limits Tests (ASTM D4318)

Atterberg Limits test was performed to aid in classification and to evaluate the plasticity characteristics of fine-grained materials. Tests were performed in accordance with ASTM Test Method D4318. Results of these tests are presented on the Boring Records in Appendix A and Table B-1, Summary of Soil Laboratory Data.

Particle Size Analysis (ASTM D6913 and D422)

Tests were performed to determine the particle size distribution of selected soil samples. These tests were performed in accordance with ASTM Test Method D6913. When particle size analysis was performed on soil particles finer than the No. 200 sieve, hydrometer analysis was performed in accordance with ASTM Test Method D422. Test results are presented on the following Table B-1, Summary of Soil Laboratory Data, and on the Particle Size Distribution Curve plots presented within this Appendix.

Direct Shear Tests (ASTM D3080)

Consolidated-drained (saturated) direct shear tests were performed on selected undisturbed samples to evaluate shear strength parameters of the on-site soils. The direct shear tests were performed in accordance with ASTM Test Method D3080. Results of these tests are shown in Table B-1, Summary of Soil Laboratory Data and the Direct Shear test plots are presented within this Appendix.

Unconsolidated-Undrained Triaxial Compression (UU) (ASTM D2850)

Unconsolidated-undrained triaxial compression (UU) tests were performed on selected undisturbed samples to evaluate shear strength parameters of the on-site soils. The UU tests were performed in accordance with ASTM Test Method D2850. Results of these tests are shown in Table B-1, Summary of Soil Laboratory Data, and the UU test plots presented within this Appendix.

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
244305G	1	2.5	CL	12.3															
244305G	2	2.5~5	CL	12.4			42	28	0.9	35.0	64.1						54	done	
244305G	3	5.0	CL	15.0	126.1	109.6					51.8	1, 2, 4	31	0.39					done
244305G	4	7.5	ML	31.5															
244305G	5	10.0	CL-ML	25.4	124.8	99.5													
244321G	1	2.5	CL	25.5															
244321G	2	2.5~5	CL	9.5			43	29	0.1	31.4	68.5								
244321G	3	5.0	CL-ML	15.0	114.5	99.6									576	14212			
244321G	4	7.5	CL	11.7															
244321G	5	10.0	ML	27.6	122.0	95.7													
244337G	1	2.5	CL	16.4	131.9	113.3									331	6951			
244337G	2	2.5~5	CL	12.7			39	24	0.1	30.6	69.3								
244337G	3	5.0	CL	17.8															
244337G	4	7.5	CL	22.7	112.9	92.1													
244337G	5	10.0	ML	26.2															
244357G	1	2.5	CL	11.5															
244357G	2	2.5~5	CL	8.5															
244357G	3	5	CL	11.0	135.1	121.8	37	23	0.0	32.4	67.6								
244357G	4	7.5	CL	23.2															
244357G	5	10	SC	13.0	123.2	109.1						1, 2, 4	31	0.151					

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
248348G	1	2.5	SC	5.8															
248348G	2	2.5~5	SC	4.9															
248348G	3	5.0	SC	7.1	122.8	114.6						1, 2, 4	32	0.447					
248348G	4	7.5	SC	14.1			30	16	0.0	69.5	30.5								
248348G	5	10.0	SC	16.3	132.1	113.6													
248348G	6	15.0	SC	16.7															
248348G	7	20.0	CL	22.9	123.6	100.5													
248360G	1	2.5	SC	9.4	131.1	119.9													
248360G	2	2.5~5	SC	9.3															
248360G	3	5.0	CL	11.5															
248360G	4	7.5	SC	16.5	131.0	112.4	26	13	0.2	64.6	35.2	1, 2, 4	35	0.129					
248360G	5	10.0	CL	8.1															
248360G	6	15.0	CL	10.8	111.9	101.0													
248360G	7a	20.0	CL	22.2															
248360G	7b	20.0	SC	15.0															
249345G	1	2.5	SC-SM	8.7	136.2	125.3						0.5, 1, 2	45	0.283					
249345G	2	2.5~5	SC-SM	8.3			18	4	0.1	58.0	41.9								
249345G	3	5.0	SC	10.1															
249345G	4	7.5	SC	8.9	122.3	112.3													
249345G	5	10.0	CL	11.6															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
249348G	1	2.5	SC	10.8															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
249348G	2	2.5~5	SC	6.5															
249348G	3	5.0	SM	7.8	128.6	119.3	15	1	8.9	52.0	39.1	1, 2, 4	44	0.016					
249348G	4	7.5	SC	9.8															
249348G	5	10.0	CL	12.7	126.6	112.3													
249363G	1	2.5	SC	10.2	125.2	113.6													
249363G	2	2.5~5	SC	10.7															
249363G	3	5.0	SC	11.2															
249363G	4, 1	7.5	SC	16.0	127.2	109.7	23	9	0.0	64.3	35.7								
249363G	4, 2	7.5	SC	13.4	127.7	112.6									950	4774			
249363G	5	10.0	CL	14.1															
249363G	6	15.0	CL	13.4	124.8	110.1													
249363G	7	20.0	CL	24.7															
249377G	1	2.5	SC	8.9															
249377G	2	2.5~5	SC	7.4															
249377G	3	5.0	SC	9.9	137.5	125.1													
249377G	4	7.5	SC	10.7															
249377G	5	10.0	SC-SM	11.9	135.4	120.9	19	5	0.0	61.2	38.8	1, 2, 4	38	0.127					
249377G	6	15.0	SM	10.4															
249377G	7	20.0	CL	19.1	122.7	103.0													
249378G	1	2.5	SC	7.5	128.9	119.9									1152	12589			

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
249378G	2	2.5~5	SM	6.3			15	2	0.0	55.1	44.9								
249378G	3	5.0	CL	8.5															
249378G	4	7.5	CL	12.2	133.8	119.3													
249378G	5	10.0	CL	14.8															
249412G	1	2.5	SC	10.7															
249412G	2	2.5~5	SC-SM	9.5			20	6	0.0	57.6	42.4								
249412G	3	5.0	CL	12.4	134.1	119.3													
249412G	4	7.5	SC	11.8															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
249412G	5	10.0	SC	14.6	132.7	115.8						1, 2, 4	37	0.471					
M24406G	1	2.5	CL	8.7	122.0	112.3					67.6	0.5, 1, 2	34	0.071	x	x			done
M24406G	2	2.5~5	CL	9.3													73	done	
M24406G	3	5.0	CL	10.9			36	22	0.0	38.2	61.8								
M24406G	4	7.5	SM	8.0	115.0	106.5						1, 2, 4	37	0.073					
M24406G	5	10.0	SM	15.2															
M24406G	6	15.0	SM	19.9	125.7	104.8													
M24406G	7	20.0	SM	12.3															
M24411G	1	2.5	CL	11.1															
M24411G	2	2.5~5	CL	11.4			39	25	0.0	28.1	71.9						71	done	
M24411G	3	5.0	CL	13.7	128.9	113.3	42	25	0.0	23.5	76.5	1, 2, 4	31	0.617					done
M24411G	4	7.5	ML	15.0															
M24411G	5	10.0	ML	27.4	122.9	96.5													
M24512G	1	2.5	SC	9.8															
M24512G	2	2.5~5	CL	8.9			38	24	0.4	32.7	66.9								
M24512G	3	5.0	SC	11.3	132.0	118.6									662	21127			
M24512G	4	7.5	SC	18.0															
M24512G	5	10.0	CL	29.9	122.5	94.3													
M24512G	6	15.0	SM	10.0															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
M24512G	7	20.0	SM	11.7	113.8	101.9													
M24517G	1	2.5	SC	9.8															
M24517G	2	2.5~5	CL	9.4			35	22	2.7	36.3	61.0								
M24517G	3	5.0	CL	14.5	128.5	112.2									648	7180			
M24517G	4	7.5	CL	16.0															
M24517G	5	10.0	SC	23.8	126.1	101.9													
M24606G	1	2.5	SM	8.9															
M24606G	2	2.5~5	CL	9.0			37	23	1.0	36.1	62.9								
M24606G	3	5.0	SC	10.6	116.7	105.5									576	4305			
M24606G	4	7.5	SP-SM	7.9															
M24606G	5	10.0	CL	25.7	118.1	93.9													
M24606G	6	15.0	SP-SM	5.5															
M24606G	7	20.0	SM	7.2	99.7	93.0													
M24613G	1	2.5	SC	16.0	122.2	105.3									302	12076			
M24613G	2	2.5~5	CL	12.1			49	33	0.0	30.6	69.4								
M24613G	3	5.0	SC	16.3															
M24613G	4	7.5	SC	19.1	124.7	104.7													
M24613G	5	10.0	SC	21.1															
M24616G	1	2.5	SC	14.3															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
M24616G	2	2.5~5	CL	14.4			39	25	0.7	38.2	61.1								
M24616G	3	5.0	SM	9.8	121.9	111.0						1, 2, 4	39	0.263					
M24616G	4	7.5	SC	16.8															
M24616G	5	10.0	SC	19.0	124.0	104.3													
M24616G	6	15.0	SP-SM	10.2															
M24616G	7	20.0	SM	8.6	112.7	103.8													
M24628G	1	2.5	SC	6.0	125.7	118.6									317	9797			
M24628G	2	2.5~5	CL	9.0			36	22	2.1	36.0	61.9								
M24628G	3	5.0	CL	29.9															
M24628G	4	7.5	SM	19.8	124.6	104.0						1, 2, 4	34	0.184					
M24628G	5	10.0	SM	24.0															
M24628G	6	15.0	SM	4.8	99.6	95.1													
M24628G	7	20.0	SP-SM	9.2															
M24703G	1	2.5	SC	9.7															
M24703G	2	2.5~5	SC	9.4			33	18	3.2	54.3	42.5								
M24703G	3	5.0	SM	12.9	116.3	103.1						1, 2, 4	35	0.19					
M24703G	4	7.5	SC	22.5															
M24703G	5	10.0	SM	10.6	113.2	102.3													
M24706G	1	2.5	SC	11.4	131.8	118.4													
M24706G	2	2.5~5	CL	10.1			35	22	0.1	43.3	56.6								

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
M24706G	3	5.0	SP-SM	5.0															
M24706G	4	7.5	SM	13.0	111.2	98.4						1, 2, 4	38	0.131					
M24706G	5	10.0	SM	17.4															
M24706G	6	15.0	SM	23.3	125.3	101.6													
M24706G	7	20.0	SP-SM	10.7															
M24716G	1	2.5	SC	17.7															
M24716G	2	2.5~5	CL	11.3			36	22	0.1	40.4	59.5								
M24716G	3	5.0	SC	13.2	130.9	115.7									648	4017			
M24716G	4	7.5	SC	23.6															
M24716G	5	10.0	SM	8.8	114.9	105.7						1, 2, 4	36	0.975					
M24716G	6	15.0	SC	15.7															
M24716G	7	20.0	SM	6.9	101.7	95.1													
M24717G	1	2.5	SC	15.2															
M24717G	2	2.5~5	CL	16.7			28	15	0.2	39.9	59.9								
M24717G	3	5.0	SM	9.1	114.9	105.3						1, 2, 4	31	0.387					
M24717G	4	7.5	CL	26.0															
M24717G	5	10.0	SM	10.2	107.7	97.8													
M24733G	1	2.5	SC	15.3	129.9	112.7													
M24733G	2	2.5~5	SC	14.6			29	16	0.2	49.9	49.9								
M24733G	3, 1	5.0	SC	13.6	132.7	116.8													

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
M24733G	3, 2	5.0	SC	12.1	131.9	117.7									662	8699			
M24733G	4	7.5	SC	8.7	127.8	117.6													
M24733G	5	10.0	SC	16.8															
M24744G	1	2.5	SC	5.5															
M24744G	2	2.5~5	SC	7.7			26	14	2.6	53.3	44.1								
M24744G	3	5.0	SC	10.4	120.1	108.8						1, 2, 4	34	0.077					
M24744G	4	7.5	SC	13.1															
M24744G	5	10.0	SC	8.9	120.9	111.0													
N24402G	1	2.5	CL	12.5															
N24402G	2	2.5~5	CL	10.3			31	19	0.1	45.9	54.0								
N24402G	3	5.0	CL	17.3	132.2	112.8									662	5360			
N24402G	4	7.5	CL	10.7															
N24402G	5	10.0	CL	12.8															
N24402G	6	15.0	SM	3.2															
N24402G	7	20.0	SM	3.8	100.2	96.6													
N24409G	1	2.5	CL	12.5	128.9	114.6													
N24409G	2	2.5~5	SC	8.6			29	16	0.6	50.4	49.0								
N24409G	3	5.0	CL	15.6															
N24409G	4	7.5	CL	12.2	129.0	115.0									965	4080			
N24409G	5	10.0	ML	27.0															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
N24409G	6	15.0	ML	18.2	117.4	99.3													
N24409G	7	20.0	SM	6.6															
N24503G	1	2.5	SC	6.4	121.1	113.7													
N24503G	2	2.5~5	SC	7.1			30	17	0.3	55.3	44.4								
N24503G	3	5.0	CL	8.9															
N24503G	4	7.5	CL	15.7	133.2	115.1						1, 2, 4	34	0.442					
N24503G	5	10.0	CL	16.2															
N24503G	6	15.0	SC	23.2	125.4	101.8													
N24503G	7	20.0	SP-SM	4.7															
N24508G	1	2.5	SC	13.5															
N24508G	2	2.5~5	SC	10.8			37	23	0.2	39.9	59.9								
N24508G	3	5.0	CL	14.0	131.3	115.1									662	2050			
N24508G	4	7.5	CL	17.8															
N24508G	5	10.0	SC	16.4	128.1	110.0													
N24508G	6	15.0	CL	22.7															
N24508G	7	20.0	SM	10.8	113.4	102.3													
N24522G	1	2.5	SC	9.1															
N24522G	2	2.5~5	SC	8.3															
N24522G	3	5.0	SC	13.2	130.9	115.6									648	6378			
N24522G	4	7.5	CL	13.6			33	18	0.5	45.4	54.1								

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
N24522G	5	10.0	SC	15.3	129.4	112.2													
N24522G	6	15.0	CL	24.7															
N24522G	7	20.0	SP-SM	3.3	95.7	92.6													
N24523G	1	2.5	SC	11.2	125.7	113.0									317	12934			
N24523G	2	2.5~5	CL	9.1			31	18	0.0	49.2	50.8								
N24523G	3	5.0	CL	17.1															
N24523G	4	7.5	SC	15.0	132.8	115.5													
N24523G	5	10.0	CL	17.2															
N24523G	6	15.0	CL	30.4	120.6	92.5													
N24523G	7	20.0	SP-SM	3.9															
N24603G	1	2.5	CL	10.5	133.1	120.5													
N24603G	2	2.5~5	CL	10.7															
N24603G	3	5.0	SC	8.2			25	8	0.0	74.1	25.9								
N24603G	4	7.5	SM	9.9	113.9	103.6						1, 2, 4	37	0.199					
N24603G	5	10.0	SP	6.7															
N24603G	6	15.0	CL-ML	26.9	122.0	96.1													
N24603G	7	20.0	SP	6.0															
N24613G	1	2.5	CL	x															
N24613G	2	2.5~5	SC	14.5			30	16	2.5	53.7	43.8								
N24613G	3	5.0	SC	11.7	133.4	119.5													

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
N24613G	4	7.5	SP	x															
N24613G	5	10.0	SP-SM	7.4	101.7	94.7						1, 2, 4	39	0					
N24613G	6	15.0	ML	x															
N24613G	7	20.0	SC	10.5	114.9	104.0													
N24622G	1	2.5	SC	10.5	138.5	125.3						0.5, 1, 2	40	0.003					
N24622G	2	2.5~5	SC	9.4															
N24622G	3	5.0	SC	14.4			27	14	0.0	62.5	37.5								
N24622G	4	10.0	SP-SM	5.1															
N24622G	5	16.5	SC	26.0	124.3	98.7													
N24622G	6	20.0	SP-SM	6.2															
N24629G	1	2.5	SC	8.2	128.1	118.4									317	12242			
N24629G	2	2.5~5	SC	7.9															
N24629G	3	5.0	CL	11.6			33	17	1.8	41.2	57.0								
N24629G	4	7.5	SC	14.4	129.5	113.2													
N24629G	5	10.0	SP-SM	4.8															
N24703G	1	2.5	SC	17.1															
N24703G	2	2.5~5	SC	11.1															
N24703G	3	5.0	CL	13.2	132.9	117.4						1, 2, 4	34	0.562					
N24703G	4	7.5	SC	13.2			21	8	4.8	60.2	38.0								

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
N24712G	1	2.5	SC	8.4															
N24712G	2	2.5~5	SC	7.2			25	12	1.2	58.3	40.5								
N24712G	3	5.0	SC	11.6	135.7	121.6									677	7538			
N24712G	4	7.5	CL	9.3															
N24712G	5	10.0	SC	10.9	123.3	111.1													
N24712G	6	15.0	CL	16.3															
N24712G	7	20.0	SM	2.5	99.6	97.2													
N24729G	1	2.5	SC	11.7	135.7	121.4													
N24729G	2	2.5~5	SC	10.6															
N24729G	3	5.0	CL	13.0			26	13	0.0	61.6	38.4								
N24729G	4	7.5	SC	12.2	129.8	115.7						1, 2, 4	39	0.304					
N24729G	5	10.0	SC	8.3															
N24732G	1	2.5	SC	11.1															
N24732G	2	2.5~5	SC-SM	10.1			17	4	0.1	56.3	43.6								
N24732G	3	5.0	SC	14.4	134.2	117.3						1, 2, 4	35	0.145					
N24732G	4	7.5	SC	14.6															
N24732G	5	10.0	SC	8.4	120.2	110.9													
N24732G	6	15.0	SM	22.1															
N24732G	7	20.0	SM	15.6	118.9	102.9													
N24803G	1	2.5	SC	11.1	138.4	124.5									346	4265			

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
N24803G	2	2.5~5	SC-SM	10.3			18	5	0.3	54.5	45.2								
N24803G	3	5.0	SC	12.2															
N24803G	4	7.5	SC	13.5	137.0	120.7													
N24803G	5	10.0	SC	19.0															
P24402G	1	2.5	CL	9.1	114.8	105.2									x	x			
P24402G	2	2.5~5	CL	7.1			29	16	0.5	45.8	53.7								
P24402G	3	5	CL	13.3															
P24402G	4, 1	7.5	CL	16.4	127.9	109.9													
P24402G	4, 2	7.5	CL	15.9	124.9	107.8									936	5558			
P24402G	5	10	SP-SC	6.7															
P24411G	1	2.5	CL	10.2															
P24411G	2	2.5~5	CL	8.7															
P24411G	3	5	CL	15.4	134.6	116.6													
P24411G	4	7.5	CL-ML	16.1			25	6	0.8	38.4	60.8								
P24411G	5	10	SM	6.7	107.5	100.7						1, 2, 4	35	0.088					
P24411G	6	15	CL	26.3															
P24411G	7	20	SM	5.1	99.3	94.5													
P24421G	1	2.5	SC	12.4	133.6	118.9													
P24421G	2	2.5~5	CH	3.8			51	36	1.0	33.8	65.2								
P24421G	3	5	CL	14.2															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
P24421G	4	7.5	SM	17.9	126.9	107.6						1, 2, 4	32	0.268					
P24421G	5	10	SC	11.3															
P24421G	6	15	CL	32.2	121.5	91.9													
P24421G	7	20	CL	26.1															
P24421G	8	21	SP-SM	6.7															
P24426G	1	2.5	CL	9.5															
P24426G	2	2.5~5	CL	9.6															
P24426G	3	5	CL	15.4	131.2	113.7	34	18	0.0	46.9	53.1								
P24426G	4	7.5	CL	12.7															
P24426G	5	10	SM	4.6	115.0	109.9						1, 2, 4	34	0.173					
P24503G	1	2.5	SC	17.4	132.2	112.6													
P24503G	2	2.5~5	SC	12.5			30	17	0.4	49.9	49.7								
P24503G	3	5	CL	16.0															
P24503G	4	7.5	CL	18.0	131.8	111.7													
P24503G	5	10	CL	20.4															
P24503G	6	15	SM	11.0	100.9	90.9						1, 2, 4	37	0.024					
P24503G	7	20	SP-SM	5.4															
P24533G	1	2.5	CL	8.3															
P24533G	2	2.5~5	SC	7.4			25	10	9.4	58.4	32.2								
P24533G	3	5	SC	13.9	134.7	118.4						1, 2, 4	35	0.132					

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
P24533G	4	7.5	SP	6.5															
P24533G	5	10	SM	4.4	105.2	100.8													
P24608G	1	2.5	SC	16.2	127.7	109.9	26	12	4.8	66.0	29.2								
P24608G	2	2.5~5	CL	11.9															
P24608G	3	5	CL	16.1															
P24608G	4	7.5	SC	11.4	127.1	114.0									950	4787			
P24608G	5	10	SP-SC	7.8															
P24618G	1	2.5	CL	12.6															
P24618G	2	2.5~5	CL	11.9															
P24618G	3	5	SC	14.7	130.6	113.9									648	4000			
P24618G	4	7.5	SM	9.8			17	3	24.2	49.9	25.9								
P24618G	5	10	SC	13.6	129.0	113.6													
P24708G	1	2.5	SC	9.6	128.4	117.2						0.5, 1, 2	36	0.409					
P24708G	2	2.5~5	SC	9.0			29	15	0.6	59.5	39.9								
P24708G	3	5	CL	12.7															
P24708G	4	7.5	SC	12.4	126.8	112.8													
P24708G	5	10	CL	15.5															
P24708G	6	11	CL	13.8															
P24709G	1	2.5	CL	12.5															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
P24709G	2	2.5~5	CL	11.7															
P24709G	3	5	SC	12.3	132.4	117.9									662	2979			
P24709G	4	7.5	SC-SM	12.4			19	5	1.2	64.4	34.4								
P24709G	5	10	SC	15.0	128.2	111.4													
P24709G	6	15	SP	4.7															
P24709G	7	20	SC	14.1	113.0	99.1													
P24719G	1	2.5	SC	9.0	129.2	118.6													
P24719G	2	2.5~5	SC	9.1			29	12	3.3	50.6	46.1								
P24719G	3	5	CL	9.5															
P24719G	4	7.5	CL	11.0	135.4	122.1									1022	6579			
P24719G	5	10	CL	11.8															
P24722G	1	2.5	SC	9.0	126.3	115.8													
P24722G	2	2.5~5	SC	6.2															
P24722G	3	5.0	SM	8.9			15	1	0.0	60.0	40.0								
P24722G	4	7.5	SC	10.9	130.8	117.9						1, 2, 4	36	0.078					
P24722G	5	10.0	SC	14.0															
P24738G	1	2.5	SC	14.6															
P24738G	2	2.5~5	SM	12.8			15	NP	0.2	61.4	38.4								
P24738G	3	5.0	SC	12.8	131.4	116.6									605	11901			
P24738G	4	7.5	CL	14.1															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
P24738G	5	10.0	SC	15.0	113.8	99.0													
P24803G	1	2.5	SC	12.0	139.5	124.6						0.5, 1, 2	38	0.024					
P24803G	2	2.5~5	SC	10.9															
P24803G	3	5.0	SM	12.7			16	1	0.0	60.3	39.7								
P24803G	4	7.5	SC	14.0	134.4	117.9													
P24803G	5	10.0	SC	14.6															
P24803G	6	15.0	SP-SM	5.6	106.4	100.8													
P24803G	7	20.0	SM	28.2															
P24812G	1	2.5	SC	10.0															
P24812G	2	2.5~5	SC	9.5															
P24812G	3, 1	5.0	SC	14.9	128.1	111.5													
P24812G	3, 2	5.0	SC	15.7	133.6	115.5									1325	5559			
P24812G	4	7.5	SC-SM	16.2			19	4	0.0	62.9	37.1								
P24812G	5	10.0	SC	15.7	133.7	115.5													
P24819G	1	2.5	SC	13.4	137.1	120.9						0.5, 1, 2	42	0.063					
P24819G	2	2.5~5	SC	9.1			24	11	0.5	55.8	43.7								
P24819G	3	5.0	SC	11.0															
P24819G	4	7.5	SC	9.9	137.3	125.0													
P24819G	5	10.0	SC	14.2															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
P24833G	1	2.5	SC	10.7			26	13	0.0	58.7	41.3								
P24833G	2	2.5~5	SC	8.2															
P24833G	3, 1	5.0	SC	8.0	136.0	126.0													
P24833G	3, 2	5.0	SC	10.8	135.9	122.6									677	11092			
P24833G	4	7.5	SC	14.3															
P24833G	5	10.0	SC	15.2	132.4	114.9													
R24412G	1	2.5	SC	15.2	133.3	115.7									317	5503			
R24412G	2	2.5~5	CL	10.1															
R24412G	3	5	CL	20.3			30	16	8.7	38.9	52.4								
R24412G	4	7.5	CL	16.5	133.0	114.1													
R24412G	5	11	CL	29.2															
R24412G	6	15	SM	18.1	120.1	101.7													
R24412G	7	20	SP-SM	4.0															
R24423G	1	2.5	CL	13.9															
R24423G	2	2.5~5	SC	8.0															
R24423G	3	5	SC	15.1	133.7	116.1			1.4	49.0	49.6				662	6177			
R24423G	4	7.5	CL	x			26	13											
R24423G	5	10	SC	13.3	132.8	117.2													
R24423G	5	10.0	SP-SM	4.8															
R24426G	1	2.5	CL	13.8	125.1	110.0													

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
R24426G	2	2.5~5	SC	9.6			32	18	0.8	49.3	49.9								
R24426G	3	5	CL	18.7															
R24426G	4	7.5	CL	12.4	135.7	120.8									1008	4200			
R24426G	5	10	CL	17.7															
R24426G	6	15	CL	31.0	119.8	91.4													
R24426G	7	20	SM	9.8															
R24508G	1	2.5	CL	11.1															
R24508G	2	2.5~5	CL	10.7			27	14	0.0	49.1	50.9								
R24508G	3	5.0	SC	15.4	132.0	114.4									662	2850			
R24508G	4	7.5	CL	14.1															
R24508G	5	10.0	SC	13.4	130.0	114.7													
R24508G	6	15.0	CL	24.6															
R24508G	7	20.0	SM	4.2	98.8	94.8													
R24509G	1	2.5	SC	9.1	133.8	122.7									331	7443			
R24509G	2	2.5~5	CL	7.7			26	13	2.4	46.7	50.9								
R24509G	3	5.0	CL	16.8															
R24509G	4	7.5	SC	16.2	127.4	109.7													
R24509G	5	10.0	CL	16.6															
R24509G	6	15.0	SC	16.3	127.9	110.0													
R24509G	7	20.0	SP-SM	3.5															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
R24522G	1	2.5	CL	10.1															
R24522G	2	2.5~5	SC	10.2															
R24522G	3	5.0	SC	14.2	128.3	112.4													
R24522G	4	7.5	SC	11.1			24	11	0.7	61.4	37.9								
R24522G	5	10.0	CL	12.7	128.8	114.3									1282	4444			
R24522G	6	15.0	SC	17.4															
R24522G	7	20.0	SC	17.9	109.0	92.5													
R24609G	1	2.5	SC	11.0	133.1	119.9						0.5, 1, 2	35	0.073					
R24609G	2	2.5~5	SC	10.2			21	7	0.2	57.3	42.5								
R24609G	3	5.0	CL	12.1															
R24609G	4	7.5	SC	14.6	128.9	112.5													
R24609G	5	10.0	SP-SC																
R24612G	1	2.5	SC	6.8															
R24612G	2	2.5~5	SC	5.8			21	8	0.4	57.1	42.5								
R24612G	3	5.0	SM	10.2	121.3	110.1						1, 2, 4	34	0.44					
R24612G	4	7.5	SC	8.9															
R24612G	5	10.0	SC	8.9	111.6	102.5													
R24706G	1	2.5	SC	6.3	113.0	106.3													
R24706G	2	2.5~5	SC	6.0															
R24706G	3	5.0	SC	11.3			23	11	0.2	61.5	38.3								

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
R24706G	4	7.5	CL	13.9	133.9	117.6						1, 2, 4	24	0.349					
R24706G	5	10.0	SC	12.4															
R24709G	1	2.5	CL	8.9															
R24709G	2	2.5~5	SC-SM	7.7			18	4	0.0	54.0	46.0								
R24709G	3	5.0	SC	12.1	130.6	116.6						1, 2, 4	38	0.138					
R24709G	4	7.5	CL	12.5															
R24709G	5	10.0	SC	12.3	128.3	114.2													
R24709G	6	15.0	CL	23.7															
R24709G	7	20.0	SM	6.7	97.8	91.7													
R24719G	1	2.5	SC	7.4	132.4	123.2													
R24719G	2	2.5~5	SC	4.5															
R24719G	3	5.0	SC	10.9															
R24719G	4	7.5	SC	12.2	126.9	113.1						1, 2, 4	35	0.19					
R24719G	5	10.0	SC	11.3			31	17	0.4	77.9	21.7								
R24719G	6	15.0	SC	17.9	123.2	104.5													
R24719G	7	20.0	SP-SM	4.1															
R24732G	1	2.5	SC	9.7	126.9	115.7						0.5, 1, 2	36	0.131					
R24732G	2	2.5~5	SC	7.5			25	12	1.1	62.6	36.3								
R24732G	3	5.0	CL	13.2															
R24732G	4	7.5	CL	13.2	128.3	113.4													

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
R24732G	5	10.0	SC	10.3															
R24739G	1	2.5	CL	6.4															
R24739G	2	2.5~5	CL	6.1															
R24739G	3	5.0	CL	7.1	120.3	112.3													
R24739G	4	7.5	SC	10.8			28	15	0.0	66.5	33.5								
R24739G	5	10.0	CL	10.0	128.3	116.7									1296	6417			
R24739G	6	15.0	CL	11.9															
R24739G	7	20.0	CL	11.5	117.9	105.8													
R24749G	1	2.5	CL	11.2	124.9	112.3									288	1988			
R24749G	2	2.5~5	SC	9.3			23	10	2.8	61.2	36.0								
R24749G	3	5.0	CL	12.3															
R24749G	4	7.5	CL	16.1	129.6	111.6													
R24749G	5	10.0	CL	15.4															
R24749G	6	15.0	CL	15.2	121.8	105.8													
R24749G	7a	20.0	SM	4.2															
R24752G	1a	2.5	CL	17.1															
R24752G	1b	2.5	CL	9.5															
R24752G	2	2.5~5	SC	14.6			24	10	0.0	60.0	40.0								
R24752G	3	5.0	CL	11.0	132.2	119.2									720	6347			
R24752G	4	7.5	CL	11.4															

Table B-1

Location				Initial Condition			Limits		Gradation			Direct Shear			UU Triaxial		EI	Chem	Con
Boring Number	Sample/ Specimen Number	Depth (ft)	USCS Group Symbol	Water Content (%)	Total Unit Weight (pcf)	Dry Unit Weight (pcf)	Liquid Limit	Plasticity Index	Gravel (%)	Sand (%)	Fines (%)	Normal Stress Sequence (ksf)	Peak Friction Angle (deg)	Strength Intercept (ksf)	Confining Stress (psf)	Peak Deviator Stress (psf)	Expansion Index	Corrosivity Suite	Consolidation
R24752G	5	10.0	CL	14.8	129.5	112.8													
R24752G	6	15.0	CL	14.4															
R24752G	7	20.0	CL	23.1	112.7	91.6													

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 244305G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S207			
Mass of Container & Wet Specimen, M1 (g)	713.67			
Mass of Container & Dry Specimen, M2 (g)	638.64			
Mass of Container, M3 (g)	139.31			
WATER CONTENT, wn (%)	**15.03**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	1136.39
Mass of Container, M5 (g)	271.47
Mass of Wet Specimen, M6 (g)	864.92
Specimen Diameter, D (in) or ( )	2.407
Specimen Length, L (in) or ( )	5.741
Specimen Area, A (in^2) or ( )	4.548
Specimen Volume, V (cm^3) or ( )	427.91
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	126.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	109.6
VOID RATIO	0.538
DEGREE OF SATURATION, S (%)	75.48

	MEASURED DIMENSIONS Length	Diameter
1	5.738	2.414
2	5.749	2.400
3	5.729	2.409
4	5.745	2.403
5	5.744	
6	**XXXXX**	
Average	5.741	2.407

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown sandy Clay (CL)

TESTED BY: LV DATE: CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 244305G S03 5FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 244305G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S2			
Mass of Container & Wet Specimen, M1 (g)	544.00			
Mass of Container & Dry Specimen, M2 (g)	454.11			
Mass of Container, M3 (g)	100.09			
WATER CONTENT, wn (%)	**25.39**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	882.24
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	882.24
Specimen Diameter, D (in) or ( )	2.419
Specimen Length, L (in) or ( )	5.862
Specimen Area, A (in^2) or ( )	4.597
Specimen Volume, V (cm^3) or ( )	441.58
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	124.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	99.5
VOID RATIO	0.694
DEGREE OF SATURATION, S (%)	98.85

	MEASURED DIMENSIONS Length	Diameter
1	5.853	2.418
2	5.858	2.419
3	5.865	2.413
4	5.862	2.422
5	5.871	2.423
6	**XXXXX**	2.421
Average	5.862	2.419

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light olive brown silty Clay (CL-ML)

TESTED BY: LV DATE: CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 244305G S05 10FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 244321G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS		1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED	X	2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S34			
Mass of Container & Wet Specimen, M1 (g)	488.05			
Mass of Container & Dry Specimen, M2 (g)	439.90			
Mass of Container, M3 (g)	117.96			
WATER CONTENT, wn (%)	**14.96**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	740.87
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	740.87
Specimen Diameter, D (in) or ( )	2.423
Specimen Length, L (in) or ( )	5.344
Specimen Area, A (in^2) or ( )	4.610
Specimen Volume, V (cm^3) or ( )	403.73
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	114.5
DRY UNIT WEIGHT, DUW (pcf) or ( )	99.6
VOID RATIO	0.692
DEGREE OF SATURATION, S (%)	58.33

	MEASURED DIMENSIONS Length	Diameter
1	5.334	2.446
2	5.346	2.427
3	5.350	2.419
4	5.357	2.402
5	5.332	2.424
6	**XXXXX**	2.419
Average	5.344	2.423

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Yellowish brown silty Clay (CL-ML)

TESTED BY: LV DATE: CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 244321G S03 5FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 244321G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT	X						3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S32			
Mass of Container & Wet Specimen, M1 (g)	586.53			
Mass of Container & Dry Specimen, M2 (g)	476.66			
Mass of Container, M3 (g)	78.30			
WATER CONTENT, wn (%)	**27.58**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	868.47
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	868.47
Specimen Diameter, D (in) or ( )	2.424
Specimen Length, L (in) or ( )	5.875
Specimen Area, A (in^2) or ( )	4.615
Specimen Volume, V (cm^3) or ( )	444.38
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	122.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	95.7
VOID RATIO	0.761
DEGREE OF SATURATION, S (%)	97.82

	MEASURED DIMENSIONS Length	Diameter
1	5.868	2.429
2	5.887	2.430
3	5.870	2.427
4	5.881	2.422
5	5.871	2.422
6	**XXXXX**	2.415
Average	5.875	2.424

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light olive brown Silt (ML)

TESTED BY: LV DATE: 8/26/2015 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast 244321G S05 10FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 244337G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)	X	4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S209			
Mass of Container & Wet Specimen, M1 (g)	624.93			
Mass of Container & Dry Specimen, M2 (g)	557.40			
Mass of Container, M3 (g)	146.56			
WATER CONTENT, wn (%)	**16.44**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	926.62
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	926.62
Specimen Diameter, D (in) or ( )	2.416
Specimen Length, L (in) or ( )	5.838
Specimen Area, A (in^2) or ( )	4.583
Specimen Volume, V (cm^3) or ( )	438.43
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	131.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.3
VOID RATIO	0.487
DEGREE OF SATURATION, S (%)	91.04

	MEASURED DIMENSIONS Length	Diameter
1	5.841	2.420
2	5.837	2.421
3	5.839	2.418
4	5.841	2.412
5	5.834	2.412
6	**XXXXX**	2.410
Average	5.838	2.416

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark yellowish brown Clay (CL)

TESTED BY: LV DATE: 8/26/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 244337G S01 2.5FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 244337G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS		1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED	X	2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S200			
Mass of Container & Wet Specimen, M1 (g)	730.20			
Mass of Container & Dry Specimen, M2 (g)	621.30			
Mass of Container, M3 (g)	140.67			
WATER CONTENT, wn (%)	**22.66**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	797.49
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	797.49
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.893
Specimen Area, A (in^2) or ( )	4.564
Specimen Volume, V (cm^3) or ( )	440.68
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	112.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	92.1
VOID RATIO	0.830
DEGREE OF SATURATION, S (%)	73.69

	MEASURED DIMENSIONS Length	Diameter
1	5.885	2.401
2	5.892	2.409
3	5.893	2.409
4	5.895	2.409
5	5.899	2.417
6	**XXXXX**	2.418
Average	5.893	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown sandy Clay (CL)

TESTED BY: LV DATE: 8/26/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 244337G S04 7.5FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 244357G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF	X	5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	B-6			
Mass of Container & Wet Specimen, M1 (g)	463.46			
Mass of Container & Dry Specimen, M2 (g)	437.42			
Mass of Container, M3 (g)	200.21			
WATER CONTENT, wn (%)	**10.98**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	974.99
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	974.99
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	6.016
Specimen Area, A (in^2) or ( )	4.570
Specimen Volume, V (cm^3) or ( )	450.55
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	135.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	121.8
VOID RATIO	0.384
DEGREE OF SATURATION, S (%)	77.21

	MEASURED DIMENSIONS Length	Diameter
1	6.029	2.412
2	6.023	2.412
3	6.011	2.420
4	6.004	2.409
5	6.015	2.414
6	**XXXXX**	2.406
Average	6.016	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown sandy Clay (CL)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 244357G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 244357G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED		1). NONE	
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S18			
Mass of Container & Wet Specimen, M1 (g)	417.54			
Mass of Container & Dry Specimen, M2 (g)	379.17			
Mass of Container, M3 (g)	83.53			
WATER CONTENT, wn (%)	**12.98**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	878.20
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	878.20
Specimen Diameter, D (in) or ( )	2.410
Specimen Length, L (in) or ( )	5.951
Specimen Area, A (in^2) or ( )	4.561
Specimen Volume, V (cm^3) or ( )	444.76
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	123.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	109.1
VOID RATIO	0.545
DEGREE OF SATURATION, S (%)	64.31

	MEASURED DIMENSIONS Length	Diameter
1	5.969	2.410
2	5.949	2.403
3	5.962	2.404
4	5.966	2.410
5	5.907	2.415
6	**XXXXX**	2.417
Average	5.951	2.410

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 244357G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 248348G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S218			
Mass of Container & Wet Specimen, M1 (g)	313.29			
Mass of Container & Dry Specimen, M2 (g)	301.83			
Mass of Container, M3 (g)	140.43			
WATER CONTENT, wn (%)	**7.10**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	881.90
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	881.90
Specimen Diameter, D (in) or ( )	2.399
Specimen Length, L (in) or ( )	6.055
Specimen Area, A (in^2) or ( )	4.520
Specimen Volume, V (cm^3) or ( )	448.47
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	122.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	114.6
VOID RATIO	0.471
DEGREE OF SATURATION, S (%)	40.74

	MEASURED DIMENSIONS Length	Diameter
1	6.111	2.401
2	6.087	2.399
3	6.050	2.399
4	5.981	2.394
5	6.044	2.399
6	**XXXXX**	2.402
Average	6.055	2.399

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast 248348G S03 5ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 248348G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S210			
Mass of Container & Wet Specimen, M1 (g)	433.35			
Mass of Container & Dry Specimen, M2 (g)	393.21			
Mass of Container, M3 (g)	147.20			
WATER CONTENT, wn (%)	**16.32**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Strong fuel odor

UNIT WEIGHT

Container No.	S201
Mass of Container and Wet Specimen, M4 (g)	937.61
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	937.61
Specimen Diameter, D (in) or ( )	2.404
Specimen Length, L (in) or ( )	5.957
Specimen Area, A (in^2) or ( )	4.539
Specimen Volume, V (cm^3) or ( )	443.07
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.6
VOID RATIO	0.484
DEGREE OF SATURATION, S (%)	91.00

	MEASURED DIMENSIONS Length	Diameter
1	5.966	2.408
2	5.949	2.398
3	5.951	2.405
4	5.950	2.410
5	5.968	2.403
6	**XXXXX**	2.400
Average	5.957	2.404

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mara

unit weight Kast 248348G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 248348G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET	X	3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S213			
Mass of Container & Wet Specimen, M1 (g)	486.93			
Mass of Container & Dry Specimen, M2 (g)	421.78			
Mass of Container, M3 (g)	137.53			
WATER CONTENT, wn (%)	**22.92**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Saturated with oil.

UNIT WEIGHT

Container No.	S201
Mass of Container and Wet Specimen, M4 (g)	890.10
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	890.10
Specimen Diameter, D (in) or ( )	2.391
Specimen Length, L (in) or ( )	6.111
Specimen Area, A (in^2) or ( )	4.491
Specimen Volume, V (cm^3) or ( )	449.75
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	123.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	100.5
VOID RATIO	0.677
DEGREE OF SATURATION, S (%)	91.42

	MEASURED DIMENSIONS Length	Diameter
1	6.123	2.414
2	6.105	2.397
3	6.116	2.384
4	6.103	2.393
5	6.107	2.381
6	**XXXXX**	2.379
Average	6.111	2.391

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark gray Clay (CL)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 248348G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 248360G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S208			
Mass of Container & Wet Specimen, M1 (g)	480.07			
Mass of Container & Dry Specimen, M2 (g)	451.44			
Mass of Container, M3 (g)	146.57			
WATER CONTENT, wn (%)	**9.39**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	923.18
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	923.18
Specimen Diameter, D (in) or ( )	2.405
Specimen Length, L (in) or ( )	5.905
Specimen Area, A (in^2) or ( )	4.543
Specimen Volume, V (cm^3) or ( )	439.57
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	131.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	119.9
VOID RATIO	0.406
DEGREE OF SATURATION, S (%)	62.40

	MEASURED DIMENSIONS Length	Diameter
1	5.913	2.407
2	5.848	2.405
3	5.931	2.410
4	5.895	2.399
5	5.937	2.396
6	**XXXXX**	2.413
Average	5.905	2.405

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 248360G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 248360G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	B49			
Mass of Container & Wet Specimen, M1 (g)	547.54			
Mass of Container & Dry Specimen, M2 (g)	498.36			
Mass of Container, M3 (g)	200.48			
WATER CONTENT, wn (%)	**16.51**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	B49
Mass of Container and Wet Specimen, M4 (g)	903.81
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	903.81
Specimen Diameter, D (in) or ( )	2.398
Specimen Length, L (in) or ( )	5.821
Specimen Area, A (in^2) or ( )	4.517
Specimen Volume, V (cm^3) or ( )	430.86
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	131.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.4
VOID RATIO	0.500
DEGREE OF SATURATION, S (%)	89.22

	MEASURED DIMENSIONS Length	Diameter
1	5.838	2.405
2	5.795	2.395
3	5.827	2.375
4	5.822	2.405
5	5.822	2.414
6	**XXXXX**	2.395
Average	5.821	2.398

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 248360G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 248360G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S205			
Mass of Container & Wet Specimen, M1 (g)	596.17			
Mass of Container & Dry Specimen, M2 (g)	551.61			
Mass of Container, M3 (g)	139.35			
WATER CONTENT, wn (%)	**10.81**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	798.81
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	798.81
Specimen Diameter, D (in) or ( )	2.399
Specimen Length, L (in) or ( )	6.016
Specimen Area, A (in^2) or ( )	4.521
Specimen Volume, V (cm^3) or ( )	445.71
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	111.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	101.0
VOID RATIO	0.669
DEGREE OF SATURATION, S (%)	43.60

	MEASURED DIMENSIONS Length	Diameter
1	5.986	2.406
2	6.043	2.406
3	5.980	2.397
4	6.028	2.397
5	6.041	2.385
6	**XXXXX**	2.405
Average	6.016	2.399

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Yellowish brown sandy Clay (CL)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast 248360G S06 15 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249345G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S41			
Mass of Container & Wet Specimen, M1 (g)	573.91			
Mass of Container & Dry Specimen, M2 (g)	534.47			
Mass of Container, M3 (g)	82.89			
WATER CONTENT, wn (%)	**8.73**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S41
Mass of Container and Wet Specimen, M4 (g)	964.77
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	964.77
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.923
Specimen Area, A (in^2) or ( )	4.556
Specimen Volume, V (cm^3) or ( )	442.24
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	136.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	125.3
VOID RATIO	0.346
DEGREE OF SATURATION, S (%)	68.20

	MEASURED DIMENSIONS Length	Diameter
1	5.928	2.410
2	5.929	2.408
3	5.926	2.406
4	5.919	2.410
5	5.915	2.407
6	**XXXXX**	2.410
Average	5.923	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown silty, clayey Sand (SC-SM)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 249345G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249345G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S15			
Mass of Container & Wet Specimen, M1 (g)	621.34			
Mass of Container & Dry Specimen, M2 (g)	577.09			
Mass of Container, M3 (g)	79.63			
WATER CONTENT, wn (%)	**8.90**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	924.02
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	924.02
Specimen Diameter, D (in) or ( )	2.403
Specimen Length, L (in) or ( )	6.348
Specimen Area, A (in^2) or ( )	4.533
Specimen Volume, V (cm^3) or ( )	471.56
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	122.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.3
VOID RATIO	0.501
DEGREE OF SATURATION, S (%)	47.99

	MEASURED DIMENSIONS Length	Diameter
1	6.152	2.410
2	6.410	2.407
3	6.470	2.389
4	6.450	2.409
5	6.257	2.405
6	**XXXXX**	2.395
Average	6.348	2.403

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 249345G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249348G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	B18			
Mass of Container & Wet Specimen, M1 (g)	444.50			
Mass of Container & Dry Specimen, M2 (g)	426.75			
Mass of Container, M3 (g)	200.17			
WATER CONTENT, wn (%)	**7.83**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	945.62
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	945.62
Specimen Diameter, D (in) or ( )	2.405
Specimen Length, L (in) or ( )	6.168
Specimen Area, A (in^2) or ( )	4.542
Specimen Volume, V (cm^3) or ( )	459.00
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	119.3
VOID RATIO	0.413
DEGREE OF SATURATION, S (%)	51.18

	MEASURED DIMENSIONS Length	Diameter
1	6.180	2.403
2	6.138	2.405
3	6.209	2.404
4	6.169	2.407
5	6.142	2.404
6	**XXXXX**	2.405
Average	6.168	2.405

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown silty Sand (SM)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 249348 S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249348G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S31			
Mass of Container & Wet Specimen, M1 (g)	415.46			
Mass of Container & Dry Specimen, M2 (g)	379.74			
Mass of Container, M3 (g)	98.22			
WATER CONTENT, wn (%)	**12.69**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S31
Mass of Container and Wet Specimen, M4 (g)	914.04
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	914.04
Specimen Diameter, D (in) or ( )	2.400
Specimen Length, L (in) or ( )	6.082
Specimen Area, A (in^2) or ( )	4.524
Specimen Volume, V (cm^3) or ( )	450.85
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	126.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.3
VOID RATIO	0.501
DEGREE OF SATURATION, S (%)	68.41

	MEASURED DIMENSIONS Length	Diameter
1	6.077	2.394
2	6.099	2.388
3	6.101	2.396
4	6.034	2.414
5	6.097	2.399
6	**XXXXX**	2.409
Average	6.082	2.400

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown Clay (CL)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 249348G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249363G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S27			
Mass of Container & Wet Specimen, M1 (g)	472.86			
Mass of Container & Dry Specimen, M2 (g)	436.56			
Mass of Container, M3 (g)	78.98			
WATER CONTENT, wn (%)	**10.15**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S27
Mass of Container and Wet Specimen, M4 (g)	907.92
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	907.92
Specimen Diameter, D (in) or ( )	2.397
Specimen Length, L (in) or ( )	6.123
Specimen Area, A (in^2) or ( )	4.511
Specimen Volume, V (cm^3) or ( )	452.66
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	125.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.6
VOID RATIO	0.484
DEGREE OF SATURATION, S (%)	56.66

	MEASURED DIMENSIONS Length	Diameter
1	6.104	2.397
2	6.168	2.403
3	6.148	2.394
4	6.059	2.395
5	6.136	2.393
6	**XXXXX**	2.398
Average	6.123	2.397

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 249363G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249363G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET	X	3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	B22			
Mass of Container & Wet Specimen, M1 (g)	446.08			
Mass of Container & Dry Specimen, M2 (g)	412.28			
Mass of Container, M3 (g)	200.63			
WATER CONTENT, wn (%)	**15.97**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

D
c

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	907.79
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	907.79
Specimen Diameter, D (in) or ( )	2.388
Specimen Length, L (in) or ( )	6.072
Specimen Area, A (in^2) or ( )	4.478
Specimen Volume, V (cm^3) or ( )	445.55
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	127.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	109.7
VOID RATIO	0.537
DEGREE OF SATURATION, S (%)	80.32

	MEASURED DIMENSIONS Length	Diameter
1	6.090	2.386
2	6.045	2.399
3	6.077	2.399
4	6.079	2.373
5	6.071	2.386
6	**XXXXX**	2.383
Average	6.072	2.388

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark grayish brown clayey Sand (SC)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 249363G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249363G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET	X	3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S38			
Mass of Container & Wet Specimen, M1 (g)	649.58			
Mass of Container & Dry Specimen, M2 (g)	587.58			
Mass of Container, M3 (g)	123.82			
WATER CONTENT, wn (%)	**13.37**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Saturated with oil

UNIT WEIGHT

Container No.	S38
Mass of Container and Wet Specimen, M4 (g)	909.50
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	909.50
Specimen Diameter, D (in) or ( )	2.405
Specimen Length, L (in) or ( )	6.111
Specimen Area, A (in^2) or ( )	4.542
Specimen Volume, V (cm^3) or ( )	454.86
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	124.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	110.1
VOID RATIO	0.531
DEGREE OF SATURATION, S (%)	68.00

	MEASURED DIMENSIONS Length	Diameter
1	6.090	2.416
2	6.108	2.411
3	6.104	2.406
4	6.151	2.397
5	6.102	2.401
6	**XXXXX**	2.398
Average	6.111	2.405

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown sandy Clay (CL)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mara

unit weight Kast 249363G S0615 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249377G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S21			
Mass of Container & Wet Specimen, M1 (g)	407.85			
Mass of Container & Dry Specimen, M2 (g)	380.64			
Mass of Container, M3 (g)	104.85			
WATER CONTENT, wn (%)	**9.87**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	977.06
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	977.06
Specimen Diameter, D (in) or ( )	2.405
Specimen Length, L (in) or ( )	5.960
Specimen Area, A (in^2) or ( )	4.541
Specimen Volume, V (cm^3) or ( )	443.49
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	137.5
DRY UNIT WEIGHT, DUW (pcf) or ( )	125.1
VOID RATIO	0.347
DEGREE OF SATURATION, S (%)	76.69

	MEASURED DIMENSIONS Length	Diameter
1	5.922	2.408
2	5.944	2.408
3	5.981	2.402
4	5.923	2.407
5	6.030	2.405
6	**XXXXX**	2.397
Average	5.960	2.405

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mara

unit weight Kast 249377G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249377G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	B12			
Mass of Container & Wet Specimen, M1 (g)	476.82			
Mass of Container & Dry Specimen, M2 (g)	447.32			
Mass of Container, M3 (g)	200.32			
WATER CONTENT, wn (%)	**11.94**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	961.94
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	961.94
Specimen Diameter, D (in) or ( )	2.389
Specimen Length, L (in) or ( )	6.040
Specimen Area, A (in^2) or ( )	4.482
Specimen Volume, V (cm^3) or ( )	443.64
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	135.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	120.9
VOID RATIO	0.394
DEGREE OF SATURATION, S (%)	81.86

	MEASURED DIMENSIONS Length	Diameter
1	6.058	2.393
2	6.025	2.391
3	6.030	2.388
4	6.044	2.390
5	6.045	2.391
6	**XXXXX**	2.380
Average	6.040	2.389

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown silty, clayey Sand (SC-SM)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mara

unit weight Kast 249377G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249377G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S44			
Mass of Container & Wet Specimen, M1 (g)	290.52			
Mass of Container & Dry Specimen, M2 (g)	262.65			
Mass of Container, M3 (g)	116.84			
WATER CONTENT, wn (%)	**19.11**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	878.11
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	878.11
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.984
Specimen Area, A (in^2) or ( )	4.557
Specimen Volume, V (cm^3) or ( )	446.86
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	122.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	103.0
VOID RATIO	0.637
DEGREE OF SATURATION, S (%)	81.06

	MEASURED DIMENSIONS Length	Diameter
1	5.974	2.403
2	6.006	2.414
3	5.982	2.414
4	5.957	2.410
5	5.999	2.405
6	**XXXXX**	2.407
Average	5.984	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clay (CL)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 249377G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249378G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S43			
Mass of Container & Wet Specimen, M1 (g)	316.62			
Mass of Container & Dry Specimen, M2 (g)	300.26			
Mass of Container, M3 (g)	81.02			
WATER CONTENT, wn (%)	**7.46**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	913.44
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	913.44
Specimen Diameter, D (in) or ( )	2.415
Specimen Length, L (in) or ( )	5.894
Specimen Area, A (in^2) or ( )	4.581
Specimen Volume, V (cm^3) or ( )	442.51
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	119.9
VOID RATIO	0.406
DEGREE OF SATURATION, S (%)	49.67

	MEASURED DIMENSIONS Length	Diameter
1	5.918	2.414
2	5.950	2.410
3	5.896	2.413
4	5.828	2.416
5	5.880	2.424
6	**XXXXX**	2.414
Average	5.894	2.415

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 249378G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249278G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE		3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE	X	4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S12			
Mass of Container & Wet Specimen, M1 (g)	337.72			
Mass of Container & Dry Specimen, M2 (g)	310.12			
Mass of Container, M3 (g)	83.59			
WATER CONTENT, wn (%)	**12.18**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S12
Mass of Container and Wet Specimen, M4 (g)	926.74
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	926.74
Specimen Diameter, D (in) or ( )	2.377
Specimen Length, L (in) or ( )	5.946
Specimen Area, A (in^2) or ( )	4.436
Specimen Volume, V (cm^3) or ( )	432.30
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	119.3
VOID RATIO	0.413
DEGREE OF SATURATION, S (%)	79.66

	MEASURED DIMENSIONS Length	Diameter
1	5.966	2.373
2	5.951	2.386
3	5.958	2.376
4	5.921	2.376
5	5.936	2.373
6	**XXXXX**	2.376
Average	5.946	2.377

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown sandy Clay (CL)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 249378G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249412G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S11			
Mass of Container & Wet Specimen, M1 (g)	453.41			
Mass of Container & Dry Specimen, M2 (g)	414.07			
Mass of Container, M3 (g)	95.71			
WATER CONTENT, wn (%)	**12.36**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	953.82
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	953.82
Specimen Diameter, D (in) or ( )	2.399
Specimen Length, L (in) or ( )	5.995
Specimen Area, A (in^2) or ( )	4.519
Specimen Volume, V (cm^3) or ( )	444.03
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	134.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	119.3
VOID RATIO	0.413
DEGREE OF SATURATION, S (%)	80.81

	MEASURED DIMENSIONS Length	Diameter
1	5.999	2.399
2	6.000	2.400
3	5.994	2.399
4	5.992	2.405
5	5.992	2.390
6	**XXXXX**	2.400
Average	5.995	2.399

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown sandy Clay (CL)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast 249412G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: 249412G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S47			
Mass of Container & Wet Specimen, M1 (g)	321.03			
Mass of Container & Dry Specimen, M2 (g)	290.67			
Mass of Container, M3 (g)	82.60			
WATER CONTENT, wn (%)	**14.59**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	943.73
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	943.73
Specimen Diameter, D (in) or ( )	2.402
Specimen Length, L (in) or ( )	5.977
Specimen Area, A (in^2) or ( )	4.530
Specimen Volume, V (cm^3) or ( )	443.71
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.8
VOID RATIO	0.456
DEGREE OF SATURATION, S (%)	86.48

	MEASURED DIMENSIONS Length	Diameter
1	5.977	2.405
2	5.983	2.403
3	5.976	2.407
4	5.978	2.398
5	5.971	2.399
6	**XXXXX**	2.398
Average	5.977	2.402

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/6/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast 249412G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24406G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE		1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS	X	2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S201			
Mass of Container & Wet Specimen, M1 (g)	467.35			
Mass of Container & Dry Specimen, M2 (g)	441.86			
Mass of Container, M3 (g)	147.63			
WATER CONTENT, wn (%)	**8.66**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	1146.07
Mass of Container, M5 (g)	273.28
Mass of Wet Specimen, M6 (g)	872.79
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.969
Specimen Area, A (in^2) or ( )	4.564
Specimen Volume, V (cm^3) or ( )	446.37
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	122.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.3
VOID RATIO	0.501
DEGREE OF SATURATION, S (%)	46.66

	MEASURED DIMENSIONS Length	Diameter
1	5.935	2.409
2	5.994	2.408
3	5.978	2.410
4	5.993	2.415
5	5.944	
6	**XXXXX**	
Average	5.969	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown sandy Clay with roots (CL)

TESTED BY: TJO DATE: 9/3/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast M24406G S01 2.5FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24406G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-44			
Mass of Container & Wet Specimen, M1 (g)	520.55			
Mass of Container & Dry Specimen, M2 (g)	490.78			
Mass of Container, M3 (g)	116.86			
WATER CONTENT, wn (%)	**7.96**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	801.49
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	801.49
Specimen Diameter, D (in) or ( )	2.408
Specimen Length, L (in) or ( )	5.829
Specimen Area, A (in^2) or ( )	4.553
Specimen Volume, V (cm^3) or ( )	434.93
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	115.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	106.6
VOID RATIO	0.582
DEGREE OF SATURATION, S (%)	36.95

	MEASURED DIMENSIONS Length	Diameter
1	5.826	2.403
2	5.833	2.405
3	5.828	2.402
4	5.827	2.411
5	5.830	2.412
6	**XXXXX**	2.414
Average	5.829	2.408

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Yellowish brown silty Sand (SM)

TESTED BY: TJO DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast M24406G S04 7.5FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24406G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	X
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-12			
Mass of Container & Wet Specimen, M1 (g)	584.86			
Mass of Container & Dry Specimen, M2 (g)	501.66			
Mass of Container, M3 (g)	83.58			
WATER CONTENT, wn (%)	**19.90**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	858.14
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	858.14
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.706
Specimen Area, A (in^2) or ( )	4.559
Specimen Volume, V (cm^3) or ( )	426.23
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	125.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	104.8
VOID RATIO	0.608
DEGREE OF SATURATION, S (%)	88.38

	MEASURED DIMENSIONS Length	Diameter
1	5.702	2.404
2	5.707	2.409
3	5.706	2.414
4	5.714	2.409
5	5.700	2.415
6	**XXXXX**	2.404
Average	5.706	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark yellowish brown silty Sand (SM)

TESTED BY: TJO DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24406G S06 15FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24411G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY	X	1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST		2). SPOTTED	X	1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	B10			
Mass of Container & Wet Specimen, M1 (g)	440.73			
Mass of Container & Dry Specimen, M2 (g)	411.40			
Mass of Container, M3 (g)	197.95			
WATER CONTENT, wn (%)	**13.74**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	1191.75
Mass of Container, M5 (g)	271.60
Mass of Wet Specimen, M6 (g)	920.15
Specimen Diameter, D (in) or ( )	2.402
Specimen Length, L (in) or ( )	6.002
Specimen Area, A (in^2) or ( )	4.530
Specimen Volume, V (cm^3) or ( )	445.55
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.3
VOID RATIO	0.487
DEGREE OF SATURATION, S (%)	76.17

	MEASURED DIMENSIONS Length	Diameter
1	6.002	2.409
2	6.003	2.408
3	6.002	2.405
4	6.001	2.388
5	6.001	2.397
6	**XXXXX**	2.403
Average	6.002	2.402

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown Clay with sand (CL)

TESTED BY: TJO DATE: 9/3/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast M24411G S03 5FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24411G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT	X						3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S29			
Mass of Container & Wet Specimen, M1 (g)	508.53			
Mass of Container & Dry Specimen, M2 (g)	426.36			
Mass of Container, M3 (g)	126.02			
WATER CONTENT, wn (%)	**27.36**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	833.89
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	833.89
Specimen Diameter, D (in) or ( )	2.406
Specimen Length, L (in) or ( )	5.684
Specimen Area, A (in^2) or ( )	4.547
Specimen Volume, V (cm^3) or ( )	423.56
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	122.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	96.5
VOID RATIO	0.747
DEGREE OF SATURATION, S (%)	98.94

	MEASURED DIMENSIONS Length	Diameter
1	5.680	2.403
2	5.686	2.406
3	5.681	2.409
4	5.682	2.404
5	5.692	2.406
6	**XXXXX**	2.409
Average	5.684	2.406

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive sandy Silt (ML)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24411G S05 10FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24512G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY	X	1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF	X	5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S220			
Mass of Container & Wet Specimen, M1 (g)	642.12			
Mass of Container & Dry Specimen, M2 (g)	591.25			
Mass of Container, M3 (g)	140.53			
WATER CONTENT, wn (%)	**11.29**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	945.88
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	945.88
Specimen Diameter, D (in) or ( )	2.405
Specimen Length, L (in) or ( )	6.008
Specimen Area, A (in^2) or ( )	4.544
Specimen Volume, V (cm^3) or ( )	447.40
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	118.6
VOID RATIO	0.421
DEGREE OF SATURATION, S (%)	72.34

	MEASURED DIMENSIONS Length	Diameter
1	6.014	2.407
2	6.006	2.403
3	6.008	2.404
4	6.007	2.407
5	6.007	2.406
6	**XXXXX**	2.405
Average	6.008	2.405

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Very dark brown clayey Sand (SC)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24512G S03 5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24512G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY	X	1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S221			
Mass of Container & Wet Specimen, M1 (g)	407.19			
Mass of Container & Dry Specimen, M2 (g)	345.78			
Mass of Container, M3 (g)	140.34			
WATER CONTENT, wn (%)	**29.89**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	880.79
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	880.79
Specimen Diameter, D (in) or ( )	2.408
Specimen Length, L (in) or ( )	6.017
Specimen Area, A (in^2) or ( )	4.553
Specimen Volume, V (cm^3) or ( )	448.88
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	122.5
DRY UNIT WEIGHT, DUW (pcf) or ( )	94.3
VOID RATIO	0.787
DEGREE OF SATURATION, S (%)	102.50

	MEASURED DIMENSIONS Length	Diameter
1	6.009	2.410
2	6.010	2.409
3	6.009	2.408
4	6.026	2.410
5	6.029	2.400
6	**XXXXX**	2.409
Average	6.017	2.408

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive gray Clay (CL)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24512G S05 10FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24512G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S24			
Mass of Container & Wet Specimen, M1 (g)	422.16			
Mass of Container & Dry Specimen, M2 (g)	386.47			
Mass of Container, M3 (g)	81.66			
WATER CONTENT, wn (%)	**11.71**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	827.22
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	827.22
Specimen Diameter, D (in) or ( )	2.414
Specimen Length, L (in) or ( )	6.052
Specimen Area, A (in^2) or ( )	4.576
Specimen Volume, V (cm^3) or ( )	453.86
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	113.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	101.9
VOID RATIO	0.655
DEGREE OF SATURATION, S (%)	48.28

	MEASURED DIMENSIONS Length	Diameter
1	6.054	2.415
2	6.034	2.416
3	6.066	2.417
4	6.069	2.415
5	6.038	2.409
6	**XXXXX**	2.411
Average	6.052	2.414

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive yellowish brown silty Sand (SM)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

AECOM

unit weight Kast M24512G S07 20FT.xls

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24517G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	SX32			
Mass of Container & Wet Specimen, M1 (g)	520.43			
Mass of Container & Dry Specimen, M2 (g)	467.98			
Mass of Container, M3 (g)	106.89			
WATER CONTENT, wn (%)	**14.53**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	918.30
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	918.30
Specimen Diameter, D (in) or ( )	2.405
Specimen Length, L (in) or ( )	5.993
Specimen Area, A (in^2) or ( )	4.541
Specimen Volume, V (cm^3) or ( )	445.92
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.5
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.2
VOID RATIO	0.502
DEGREE OF SATURATION, S (%)	78.09

	MEASURED DIMENSIONS Length	Diameter
1	5.995	2.402
2	5.995	2.401
3	5.989	2.399
4	5.994	2.413
5	5.990	2.412
6	**XXXXX**	2.400
Average	5.993	2.405

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown sandy Clay (CL)

TESTED BY: LV DATE: 9/10/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24517G S03 5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24517G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-6			
Mass of Container & Wet Specimen, M1 (g)	400.71			
Mass of Container & Dry Specimen, M2 (g)	339.06			
Mass of Container, M3 (g)	79.79			
WATER CONTENT, wn (%)	**23.78**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	834.20
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	834.20
Specimen Diameter, D (in) or ( )	2.410
Specimen Length, L (in) or ( )	5.526
Specimen Area, A (in^2) or ( )	4.563
Specimen Volume, V (cm^3) or ( )	413.23
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	126.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	101.9
VOID RATIO	0.655
DEGREE OF SATURATION, S (%)	98.09

	MEASURED DIMENSIONS Length	Diameter
1	5.515	2.418
2	5.503	2.414
3	5.544	2.413
4	5.546	2.407
5	5.524	2.405
6	**XXXXX**	2.405
Average	5.526	2.410

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light yellowish brown clayey Sand (SC)

TESTED BY: LV DATE: 9/10/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24517G S05 10FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24606G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-32			
Mass of Container & Wet Specimen, M1 (g)	312.91			
Mass of Container & Dry Specimen, M2 (g)	290.43			
Mass of Container, M3 (g)	78.26			
WATER CONTENT, wn (%)	**10.60**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	836.13
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	836.13
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.978
Specimen Area, A (in^2) or ( )	4.565
Specimen Volume, V (cm^3) or ( )	447.26
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	116.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	105.5
VOID RATIO	0.597
DEGREE OF SATURATION, S (%)	47.89

	MEASURED DIMENSIONS Length	Diameter
1	5.984	2.408
2	5.977	2.411
3	5.973	2.413
4	5.968	2.411
5	5.989	2.412
6	**XXXXX**	2.411
Average	5.978	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Stong brown clayey Sand (SC)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24606G S03 5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24606G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

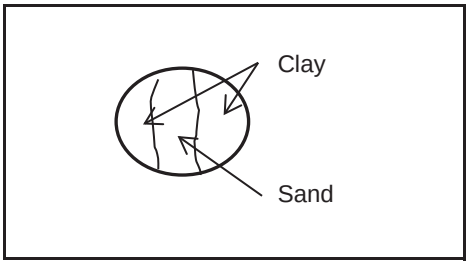
TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S14			
Mass of Container & Wet Specimen, M1 (g)	449.18			
Mass of Container & Dry Specimen, M2 (g)	382.25			
Mass of Container, M3 (g)	122.10			
WATER CONTENT, wn (%)	**25.73**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks



UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	846.11
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	846.11
Specimen Diameter, D (in) or ( )	2.406
Specimen Length, L (in) or ( )	6.003
Specimen Area, A (in^2) or ( )	4.547
Specimen Volume, V (cm^3) or ( )	447.24
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	118.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	93.9
VOID RATIO	0.794
DEGREE OF SATURATION, S (%)	87.45

	MEASURED DIMENSIONS Length	Diameter
1	6.019	2.406
2	5.989	2.406
3	6.017	2.407
4	5.989	2.407
5	6.000	2.408
6	**XXXXX**	2.402
Average	6.003	2.406

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray Clay with sand in the middle (CL)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24606G S05 10FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24606G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S9			
Mass of Container & Wet Specimen, M1 (g)	389.43			
Mass of Container & Dry Specimen, M2 (g)	369.30			
Mass of Container, M3 (g)	87.95			
WATER CONTENT, wn (%)	**7.15**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	711.69
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	711.69
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.968
Specimen Area, A (in^2) or ( )	4.557
Specimen Volume, V (cm^3) or ( )	445.72
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	99.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	93.0
VOID RATIO	0.812
DEGREE OF SATURATION, S (%)	23.79

	MEASURED DIMENSIONS Length	Diameter
1	5.967	2.410
2	5.990	2.410
3	5.959	2.411
4	5.973	2.409
5	5.953	2.399
6	**XXXXX**	2.414
Average	5.968	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray silty Sand (SM)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mara

unit weight Kast M24606G S07 20FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24613G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY	X	1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S206			
Mass of Container & Wet Specimen, M1 (g)	658.56			
Mass of Container & Dry Specimen, M2 (g)	586.86			
Mass of Container, M3 (g)	139.93			
WATER CONTENT, wn (%)	**16.04**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	818.84
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	818.84
Specimen Diameter, D (in) or ( )	2.397
Specimen Length, L (in) or ( )	5.657
Specimen Area, A (in^2) or ( )	4.511
Specimen Volume, V (cm^3) or ( )	418.16
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	122.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	105.3
VOID RATIO	0.600
DEGREE OF SATURATION, S (%)	72.19

	MEASURED DIMENSIONS Length	Diameter
1	5.663	2.397
2	5.660	2.405
3	5.663	2.397
4	5.647	2.397
5	5.653	2.393
6	**XXXXX**	2.390
Average	5.657	2.397

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light yellowish brown clayey Sand (SC)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24613G S01 2.5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24613G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S223			
Mass of Container & Wet Specimen, M1 (g)	457.69			
Mass of Container & Dry Specimen, M2 (g)	406.79			
Mass of Container, M3 (g)	140.60			
WATER CONTENT, wn (%)	**19.12**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	896.53
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	896.53
Specimen Diameter, D (in) or ( )	2.410
Specimen Length, L (in) or ( )	6.003
Specimen Area, A (in^2) or ( )	4.563
Specimen Volume, V (cm^3) or ( )	448.86
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	124.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	104.7
VOID RATIO	0.610
DEGREE OF SATURATION, S (%)	84.59

	MEASURED DIMENSIONS Length	Diameter
1	5.999	2.416
2	5.999	2.414
3	6.005	2.405
4	6.009	2.414
5	6.003	2.406
6	**XXXXX**	2.407
Average	6.003	2.410

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive brownish gray clayey Sand (SC)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24613G S04 7.5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24616G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S216			
Mass of Container & Wet Specimen, M1 (g)	483.08			
Mass of Container & Dry Specimen, M2 (g)	453.38			
Mass of Container, M3 (g)	148.64			
WATER CONTENT, wn (%)	**9.75**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Saturated with oil

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	870.89
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	870.89
Specimen Diameter, D (in) or ( )	2.403
Specimen Length, L (in) or ( )	6.005
Specimen Area, A (in^2) or ( )	4.534
Specimen Volume, V (cm^3) or ( )	446.16
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	121.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	111.0
VOID RATIO	0.518
DEGREE OF SATURATION, S (%)	50.80

	MEASURED DIMENSIONS Length	Diameter
1	6.002	2.406
2	6.010	2.402
3	6.008	2.410
4	6.005	2.396
5	6.000	2.403
6	**XXXXX**	2.399
Average	6.005	2.403

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Very dark gray silty Sand (SM)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24616G S03 5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24616G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S201			
Mass of Container & Wet Specimen, M1 (g)	551.80			
Mass of Container & Dry Specimen, M2 (g)	487.41			
Mass of Container, M3 (g)	147.66			
WATER CONTENT, wn (%)	**18.95**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Saturated with oil

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	862.01
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	862.01
Specimen Diameter, D (in) or ( )	2.410
Specimen Length, L (in) or ( )	5.805
Specimen Area, A (in^2) or ( )	4.560
Specimen Volume, V (cm^3) or ( )	433.77
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	124.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	104.3
VOID RATIO	0.616
DEGREE OF SATURATION, S (%)	83.06

	MEASURED DIMENSIONS Length	Diameter
1	5.800	2.412
2	5.807	2.411
3	5.811	2.410
4	5.806	2.405
5	5.802	2.413
6	**XXXXX**	2.406
Average	5.805	2.410

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive gray clayey Sand (SC)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24616G S05 10FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24616G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S210			
Mass of Container & Wet Specimen, M1 (g)	403.30			
Mass of Container & Dry Specimen, M2 (g)	383.09			
Mass of Container, M3 (g)	147.23			
WATER CONTENT, wn (%)	**8.57**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	805.26
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	805.26
Specimen Diameter, D (in) or ( )	2.406
Specimen Length, L (in) or ( )	5.989
Specimen Area, A (in^2) or ( )	4.548
Specimen Volume, V (cm^3) or ( )	446.36
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	112.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	103.8
VOID RATIO	0.624
DEGREE OF SATURATION, S (%)	37.09

	MEASURED DIMENSIONS Length	Diameter
1	5.995	2.405
2	5.995	2.410
3	5.989	2.396
4	5.988	2.407
5	5.980	2.411
6	**XXXXX**	2.409
Average	5.989	2.406

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Brownish gray silty Sand (SM)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24616G S07 20FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24628G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY	X	1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S88			
Mass of Container & Wet Specimen, M1 (g)	431.83			
Mass of Container & Dry Specimen, M2 (g)	413.85			
Mass of Container, M3 (g)	113.12			
WATER CONTENT, wn (%)	**5.98**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	868.13
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	868.13
Specimen Diameter, D (in) or ( )	2.398
Specimen Length, L (in) or ( )	5.825
Specimen Area, A (in^2) or ( )	4.516
Specimen Volume, V (cm^3) or ( )	431.14
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	125.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	118.6
VOID RATIO	0.421
DEGREE OF SATURATION, S (%)	38.34

	MEASURED DIMENSIONS Length	Diameter
1	5.824	2.395
2	5.820	2.406
3	5.825	2.396
4	5.840	2.392
5	5.818	2.402
6	**XXXXX**	2.397
Average	5.825	2.398

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 9/10/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24628G S01 2.5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24628G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-30			
Mass of Container & Wet Specimen, M1 (g)	695.38			
Mass of Container & Dry Specimen, M2 (g)	600.38			
Mass of Container, M3 (g)	120.39			
WATER CONTENT, wn (%)	**19.79**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	899.08
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	899.08
Specimen Diameter, D (in) or ( )	2.414
Specimen Length, L (in) or ( )	6.005
Specimen Area, A (in^2) or ( )	4.575
Specimen Volume, V (cm^3) or ( )	450.21
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	124.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	104.0
VOID RATIO	0.621
DEGREE OF SATURATION, S (%)	86.12

	MEASURED DIMENSIONS Length	Diameter
1	6.000	2.409
2	6.014	2.406
3	6.011	2.420
4	6.005	2.424
5	5.996	2.416
6	**XXXXX**	2.406
Average	6.005	2.414

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray silty Sand (SM)

TESTED BY: LV DATE: 9/10/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24628G S04 7.5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24628G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT	X	1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S16			
Mass of Container & Wet Specimen, M1 (g)	604.55			
Mass of Container & Dry Specimen, M2 (g)	581.64			
Mass of Container, M3 (g)	102.80			
WATER CONTENT, wn (%)	**4.78**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	716.73
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	716.73
Specimen Diameter, D (in) or ( )	2.410
Specimen Length, L (in) or ( )	6.007
Specimen Area, A (in^2) or ( )	4.563
Specimen Volume, V (cm^3) or ( )	449.19
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	99.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	95.1
VOID RATIO	0.773
DEGREE OF SATURATION, S (%)	16.71

	MEASURED DIMENSIONS Length	Diameter
1	6.017	2.412
2	6.007	2.412
3	6.000	2.412
4	6.007	2.414
5	6.006	2.406
6	**XXXXX**	2.406
Average	6.007	2.410

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray silty Sand (SM)

TESTED BY: LV DATE: 9/10/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24628G S06 15FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24703G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S218			
Mass of Container & Wet Specimen, M1 (g)	481.81			
Mass of Container & Dry Specimen, M2 (g)	442.88			
Mass of Container, M3 (g)	140.45			
WATER CONTENT, wn (%)	**12.87**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	776.85
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	776.85
Specimen Diameter, D (in) or ( )	2.403
Specimen Length, L (in) or ( )	5.610
Specimen Area, A (in^2) or ( )	4.533
Specimen Volume, V (cm^3) or ( )	416.78
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	116.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	103.1
VOID RATIO	0.635
DEGREE OF SATURATION, S (%)	54.74

	MEASURED DIMENSIONS Length	Diameter
1	5.607	2.414
2	5.609	2.396
3	5.620	2.397
4	5.627	2.410
5	5.589	2.401
6	**XXXXX**	2.397
Average	5.610	2.403

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light yellowish brown silty Sand (SM)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

AECOM

unit weight Kast M24703G S03 5FT.xls

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24703G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S222			
Mass of Container & Wet Specimen, M1 (g)	440.98			
Mass of Container & Dry Specimen, M2 (g)	412.09			
Mass of Container, M3 (g)	140.53			
WATER CONTENT, wn (%)	**10.64**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	810.73
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	810.73
Specimen Diameter, D (in) or ( )	2.407
Specimen Length, L (in) or ( )	5.996
Specimen Area, A (in^2) or ( )	4.550
Specimen Volume, V (cm^3) or ( )	447.02
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	113.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	102.3
VOID RATIO	0.647
DEGREE OF SATURATION, S (%)	44.39

	MEASURED DIMENSIONS Length	Diameter
1	5.996	2.409
2	5.991	2.405
3	5.995	2.400
4	6.000	2.409
5	5.997	2.410
6	**XXXXX**	2.408
Average	5.996	2.407

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light brown silty Sand (SM)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24703G S05 10FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24706G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S219			
Mass of Container & Wet Specimen, M1 (g)	649.44			
Mass of Container & Dry Specimen, M2 (g)	597.52			
Mass of Container, M3 (g)	140.68			
WATER CONTENT, wn (%)	**11.37**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	912.71
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	912.71
Specimen Diameter, D (in) or ( )	2.381
Specimen Length, L (in) or ( )	5.924
Specimen Area, A (in^2) or ( )	4.453
Specimen Volume, V (cm^3) or ( )	432.30
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	131.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	118.4
VOID RATIO	0.424
DEGREE OF SATURATION, S (%)	72.34

	MEASURED DIMENSIONS Length	Diameter
1	5.919	2.384
2	5.886	2.387
3	5.907	2.390
4	5.988	2.373
5	5.920	2.378
6	**XXXXX**	2.375
Average	5.924	2.381

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24706G S01 2.5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24706G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S214			
Mass of Container & Wet Specimen, M1 (g)	633.73			
Mass of Container & Dry Specimen, M2 (g)	576.71			
Mass of Container, M3 (g)	138.76			
WATER CONTENT, wn (%)	**13.02**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	788.97
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	788.97
Specimen Diameter, D (in) or ( )	2.402
Specimen Length, L (in) or ( )	5.963
Specimen Area, A (in^2) or ( )	4.531
Specimen Volume, V (cm^3) or ( )	442.76
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	111.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	98.4
VOID RATIO	0.713
DEGREE OF SATURATION, S (%)	49.34

	MEASURED DIMENSIONS Length	Diameter
1	5.973	2.401
2	5.965	2.397
3	5.960	2.417
4	5.947	2.405
5	5.968	2.397
6	**XXXXX**	2.395
Average	5.963	2.402

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light yellowish brown silty Sand (SM)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24706G S04 7.5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24706G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S215			
Mass of Container & Wet Specimen, M1 (g)	569.59			
Mass of Container & Dry Specimen, M2 (g)	487.91			
Mass of Container, M3 (g)	137.46			
WATER CONTENT, wn (%)	**23.31**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	866.12
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	866.12
Specimen Diameter, D (in) or ( )	2.398
Specimen Length, L (in) or ( )	5.833
Specimen Area, A (in^2) or ( )	4.516
Specimen Volume, V (cm^3) or ( )	431.73
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	125.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	101.6
VOID RATIO	0.659
DEGREE OF SATURATION, S (%)	95.53

	MEASURED DIMENSIONS Length	Diameter
1	5.835	2.394
2	5.825	2.393
3	5.841	2.395
4	5.821	2.403
5	5.845	2.402
6	**XXXXX**	2.401
Average	5.833	2.398

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive gray silty Sand (SM)

TESTED BY: LV DATE: 9/8/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24706G S06 15FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24716G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	C-3			
Mass of Container & Wet Specimen, M1 (g)	454.85			
Mass of Container & Dry Specimen, M2 (g)	410.32			
Mass of Container, M3 (g)	71.93			
WATER CONTENT, wn (%)	**13.16**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	885.31
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	885.31
Specimen Diameter, D (in) or ( )	2.394
Specimen Length, L (in) or ( )	5.723
Specimen Area, A (in^2) or ( )	4.502
Specimen Volume, V (cm^3) or ( )	422.19
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	130.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.7
VOID RATIO	0.457
DEGREE OF SATURATION, S (%)	77.74

	MEASURED DIMENSIONS Length	Diameter
1	5.727	2.398
2	5.725	2.394
3	5.722	2.385
4	5.721	2.392
5	5.719	2.397
6	**XXXXX**	2.399
Average	5.723	2.394

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive yellowish brown clayey Sand (SC)

TESTED BY: LV DATE: 9/9/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24716G S03 5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24716G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-18			
Mass of Container & Wet Specimen, M1 (g)	370.88			
Mass of Container & Dry Specimen, M2 (g)	347.77			
Mass of Container, M3 (g)	83.55			
WATER CONTENT, wn (%)	**8.75**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	794.88
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	794.88
Specimen Diameter, D (in) or ( )	2.405
Specimen Length, L (in) or ( )	5.801
Specimen Area, A (in^2) or ( )	4.543
Specimen Volume, V (cm^3) or ( )	431.90
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	114.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	105.7
VOID RATIO	0.595
DEGREE OF SATURATION, S (%)	39.66

	MEASURED DIMENSIONS Length	Diameter
1	5.795	2.410
2	5.812	2.402
3	5.823	2.407
4	5.782	2.401
5	5.793	2.408
6	**XXXXX**	2.403
Average	5.801	2.405

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive yellowish gray silty Sand (SM)

TESTED BY: LV DATE: 9/9/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

AECOM

unit weight Kast M24716G S05 10FT.xls

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24716G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-43			
Mass of Container & Wet Specimen, M1 (g)	455.08			
Mass of Container & Dry Specimen, M2 (g)	430.96			
Mass of Container, M3 (g)	81.02			
WATER CONTENT, wn (%)	**6.89**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	713.83
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	713.83
Specimen Diameter, D (in) or ( )	2.407
Specimen Length, L (in) or ( )	5.877
Specimen Area, A (in^2) or ( )	4.551
Specimen Volume, V (cm^3) or ( )	438.26
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	101.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	95.1
VOID RATIO	0.772
DEGREE OF SATURATION, S (%)	24.11

	MEASURED DIMENSIONS Length	Diameter
1	5.880	2.410
2	5.881	2.411
3	5.861	2.403
4	5.883	2.404
5	5.878	2.403
6	**XXXXX**	2.412
Average	5.877	2.407

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive yellowish gray silty Sand (SM)

TESTED BY: LV DATE: 9/9/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast M24716G S07 20FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24717G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	F110			
Mass of Container & Wet Specimen, M1 (g)	564.52			
Mass of Container & Dry Specimen, M2 (g)	526.40			
Mass of Container, M3 (g)	109.52			
WATER CONTENT, wn (%)	**9.14**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	816.12
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	816.12
Specimen Diameter, D (in) or ( )	2.402
Specimen Length, L (in) or ( )	5.972
Specimen Area, A (in^2) or ( )	4.530
Specimen Volume, V (cm^3) or ( )	443.28
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	114.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	105.3
VOID RATIO	0.601
DEGREE OF SATURATION, S (%)	41.11

	MEASURED DIMENSIONS Length	Diameter
1	5.977	2.400
2	5.996	2.402
3	5.977	2.393
4	5.959	2.411
5	5.951	2.402
6	**XXXXX**	2.401
Average	5.972	2.402

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown silty Sand (SM)

TESTED BY: LV DATE: 9/10/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24717G S03 5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24717G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M71			
Mass of Container & Wet Specimen, M1 (g)	624.73			
Mass of Container & Dry Specimen, M2 (g)	577.01			
Mass of Container, M3 (g)	109.29			
WATER CONTENT, wn (%)	**10.20**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	728.17
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	728.17
Specimen Diameter, D (in) or ( )	2.407
Specimen Length, L (in) or ( )	5.659
Specimen Area, A (in^2) or ( )	4.550
Specimen Volume, V (cm^3) or ( )	421.94
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	107.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	97.8
VOID RATIO	0.724
DEGREE OF SATURATION, S (%)	38.04

	MEASURED DIMENSIONS Length	Diameter
1	5.658	2.410
2	5.697	2.409
3	5.660	2.416
4	5.631	2.404
5	5.647	2.403
6	**XXXXX**	2.400
Average	5.659	2.407

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light yellowish brown silty Sand (SM)

TESTED BY: LV DATE: 9/10/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24717G S05 10FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24733G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-5			
Mass of Container & Wet Specimen, M1 (g)	491.47			
Mass of Container & Dry Specimen, M2 (g)	441.05			
Mass of Container, M3 (g)	112.25			
WATER CONTENT, wn (%)	**15.33**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	916.67
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	916.67
Specimen Diameter, D (in) or ( )	2.407
Specimen Length, L (in) or ( )	5.906
Specimen Area, A (in^2) or ( )	4.552
Specimen Volume, V (cm^3) or ( )	440.54
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	129.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.7
VOID RATIO	0.496
DEGREE OF SATURATION, S (%)	83.54

	MEASURED DIMENSIONS Length	Diameter
1	5.903	2.399
2	5.910	2.411
3	5.899	2.408
4	5.910	2.406
5	5.910	2.408
6	**XXXXX**	2.412
Average	5.906	2.407

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 9/9/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24733G S01 2.5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24733G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-2			
Mass of Container & Wet Specimen, M1 (g)	367.17			
Mass of Container & Dry Specimen, M2 (g)	335.11			
Mass of Container, M3 (g)	100.05			
WATER CONTENT, wn (%)	**13.64**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	888.66
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	888.66
Specimen Diameter, D (in) or ( )	2.413
Specimen Length, L (in) or ( )	5.580
Specimen Area, A (in^2) or ( )	4.573
Specimen Volume, V (cm^3) or ( )	418.17
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	116.8
VOID RATIO	0.443
DEGREE OF SATURATION, S (%)	83.11

	MEASURED DIMENSIONS Length	Diameter
1	5.576	2.412
2	5.591	2.411
3	5.573	2.417
4	5.581	2.413
5	5.580	2.416
6	**XXXXX**	2.409
Average	5.580	2.413

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 9/9/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24733G S03 5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24733G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-19			
Mass of Container & Wet Specimen, M1 (g)	412.69			
Mass of Container & Dry Specimen, M2 (g)	387.99			
Mass of Container, M3 (g)	102.54			
WATER CONTENT, wn (%)	**8.65**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	858.99
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	858.99
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.618
Specimen Area, A (in^2) or ( )	4.559
Specimen Volume, V (cm^3) or ( )	419.70
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	127.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	117.6
VOID RATIO	0.433
DEGREE OF SATURATION, S (%)	53.91

	MEASURED DIMENSIONS Length	Diameter
1	5.624	2.417
2	5.617	2.417
3	5.619	2.416
4	5.616	2.402
5	5.616	2.401
6	**XXXXX**	2.402
Average	5.618	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Reddish brown clayey Sand (SC)

TESTED BY: LV DATE: 9/10/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24733G S04 7.5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24744G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-25			
Mass of Container & Wet Specimen, M1 (g)	352.70			
Mass of Container & Dry Specimen, M2 (g)	328.87			
Mass of Container, M3 (g)	99.03			
WATER CONTENT, wn (%)	**10.37**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	834.22
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	834.22
Specimen Diameter, D (in) or ( )	2.405
Specimen Length, L (in) or ( )	5.825
Specimen Area, A (in^2) or ( )	4.544
Specimen Volume, V (cm^3) or ( )	433.73
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	120.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	108.8
VOID RATIO	0.549
DEGREE OF SATURATION, S (%)	50.96

	MEASURED DIMENSIONS Length	Diameter
1	5.826	2.400
2	5.825	2.401
3	5.828	2.402
4	5.822	2.411
5	5.823	2.409
6	**XXXXX**	2.409
Average	5.825	2.405

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 9/10/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24744G S03 5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: M24744G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M-9			
Mass of Container & Wet Specimen, M1 (g)	350.47			
Mass of Container & Dry Specimen, M2 (g)	329.20			
Mass of Container, M3 (g)	89.76			
WATER CONTENT, wn (%)	**8.88**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	847.70
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	847.70
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.851
Specimen Area, A (in^2) or ( )	4.565
Specimen Volume, V (cm^3) or ( )	437.68
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	120.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	111.0
VOID RATIO	0.518
DEGREE OF SATURATION, S (%)	46.31

	MEASURED DIMENSIONS Length	Diameter
1	5.850	2.407
2	5.836	2.409
3	5.862	2.414
4	5.859	2.409
5	5.848	2.412
6	**XXXXX**	2.414
Average	5.851	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 9/10/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast M24744G S05 10FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24402G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)	X	4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-16			
Mass of Container & Wet Specimen, M1 (g)	582.32			
Mass of Container & Dry Specimen, M2 (g)	511.72			
Mass of Container, M3 (g)	102.81			
WATER CONTENT, wn (%)	**17.27**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	910.65
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	910.65
Specimen Diameter, D (in) or ( )	2.410
Specimen Length, L (in) or ( )	5.751
Specimen Area, A (in^2) or ( )	4.562
Specimen Volume, V (cm^3) or ( )	429.93
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.8
VOID RATIO	0.495
DEGREE OF SATURATION, S (%)	94.21

	MEASURED DIMENSIONS Length	Diameter
1	5.757	2.402
2	5.758	2.406
3	5.739	2.405
4	5.744	2.413
5	5.759	2.417
6	**XXXXX**	2.417
Average	5.751	2.410

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray Clay (CL)

TESTED BY: GD DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

AECOM

unit weight Kast N24402G S03 5FT.xlsx

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24402G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S1			
Mass of Container & Wet Specimen, M1 (g)	389.08			
Mass of Container & Dry Specimen, M2 (g)	378.05			
Mass of Container, M3 (g)	85.23			
WATER CONTENT, wn (%)	**3.77**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	706.47
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	706.47
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.892
Specimen Area, A (in^2) or ( )	4.557
Specimen Volume, V (cm^3) or ( )	440.03
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	100.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	96.6
VOID RATIO	0.745
DEGREE OF SATURATION, S (%)	13.65

	MEASURED DIMENSIONS Length	Diameter
1	5.892	2.409
2	5.889	2.415
3	5.895	2.414
4	5.888	2.409
5	5.897	2.402
6	**XXXXX**	2.404
Average	5.892	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Pale olive silty Sand (SM)

TESTED BY: GD DATE: 8/26/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24402G S07 20FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24409G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S31			
Mass of Container & Wet Specimen, M1 (g)	527.67			
Mass of Container & Dry Specimen, M2 (g)	479.89			
Mass of Container, M3 (g)	98.23			
WATER CONTENT, wn (%)	**12.52**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	894.90
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	894.90
Specimen Diameter, D (in) or ( )	2.410
Specimen Length, L (in) or ( )	5.796
Specimen Area, A (in^2) or ( )	4.562
Specimen Volume, V (cm^3) or ( )	433.23
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	114.6
VOID RATIO	0.471
DEGREE OF SATURATION, S (%)	71.71

	MEASURED DIMENSIONS Length	Diameter
1	5.802	2.408
2	5.798	2.404
3	5.794	2.408
4	5.788	2.413
5	5.796	2.411
6	**XXXXX**	2.416
Average	5.796	2.410

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray Clay (CL)

TESTED BY: GD DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

AECOM

unit weight Kast N24409G S01 2.5FT.xlsx

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24409G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-46			
Mass of Container & Wet Specimen, M1 (g)	400.76			
Mass of Container & Dry Specimen, M2 (g)	369.46			
Mass of Container, M3 (g)	113.80			
WATER CONTENT, wn (%)	**12.24**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	828.07
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	828.07
Specimen Diameter, D (in) or ( )	2.410
Specimen Length, L (in) or ( )	5.359
Specimen Area, A (in^2) or ( )	4.561
Specimen Volume, V (cm^3) or ( )	400.56
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	129.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.0
VOID RATIO	0.466
DEGREE OF SATURATION, S (%)	70.98

	MEASURED DIMENSIONS Length	Diameter
1	5.361	2.407
2	5.362	2.407
3	5.351	2.406
4	5.361	2.412
5	5.361	2.411
6	**XXXXX**	2.416
Average	5.359	2.410

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark grayish brown sandy Clay (CL)

TESTED BY: GD DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast N24409G S04 7.5FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24409G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT	X						3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS		1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED	X	2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-41			
Mass of Container & Wet Specimen, M1 (g)	551.12			
Mass of Container & Dry Specimen, M2 (g)	479.07			
Mass of Container, M3 (g)	82.90			
WATER CONTENT, wn (%)	**18.19**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	468.13
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	468.13
Specimen Diameter, D (in) or ( )	2.413
Specimen Length, L (in) or ( )	3.322
Specimen Area, A (in^2) or ( )	4.574
Specimen Volume, V (cm^3) or ( )	249.01
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	117.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	99.3
VOID RATIO	0.697
DEGREE OF SATURATION, S (%)	70.41

	MEASURED DIMENSIONS Length	Diameter
1	3.324	2.414
2	3.339	2.407
3	3.298	2.412
4	3.320	2.411
5	3.329	2.416
6	**XXXXX**	2.420
Average	3.322	2.413

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive sandy Silt (ML)

TESTED BY: GD DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J O'Mean

AECOM

unit weight Kast N24409G S06 15FT.xlsx

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24503G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S24			
Mass of Container & Wet Specimen, M1 (g)	443.12			
Mass of Container & Dry Specimen, M2 (g)	421.24			
Mass of Container, M3 (g)	81.63			
WATER CONTENT, wn (%)	**6.44**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S24
Mass of Container and Wet Specimen, M4 (g)	809.97
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	809.97
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.583
Specimen Area, A (in^2) or ( )	4.565
Specimen Volume, V (cm^3) or ( )	417.62
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	121.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.7
VOID RATIO	0.482
DEGREE OF SATURATION, S (%)	36.10

	MEASURED DIMENSIONS Length	Diameter
1	5.578	2.409
2	5.579	2.402
3	5.566	2.405
4	5.578	2.411
5	5.613	2.419
6	**XXXXX**	2.419
Average	5.583	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light brown clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24503G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24503G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S6			
Mass of Container & Wet Specimen, M1 (g)	587.88			
Mass of Container & Dry Specimen, M2 (g)	518.83			
Mass of Container, M3 (g)	79.80			
WATER CONTENT, wn (%)	**15.73**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S6
Mass of Container and Wet Specimen, M4 (g)	949.09
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	949.09
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	5.941
Specimen Area, A (in^2) or ( )	4.569
Specimen Volume, V (cm^3) or ( )	444.75
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.1
VOID RATIO	0.464
DEGREE OF SATURATION, S (%)	91.47

	MEASURED DIMENSIONS Length	Diameter
1	5.956	2.408
2	5.944	2.410
3	5.937	2.413
4	5.936	2.418
5	5.930	2.414
6	**XXXXX**	2.408
Average	5.941	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark blueish gray Clay with sand (CL)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast N24503G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24503G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S43			
Mass of Container & Wet Specimen, M1 (g)	404.64			
Mass of Container & Dry Specimen, M2 (g)	343.68			
Mass of Container, M3 (g)	81.01			
WATER CONTENT, wn (%)	**23.21**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S43
Mass of Container and Wet Specimen, M4 (g)	902.87
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	902.87
Specimen Diameter, D (in) or ( )	2.415
Specimen Length, L (in) or ( )	5.986
Specimen Area, A (in^2) or ( )	4.579
Specimen Volume, V (cm^3) or ( )	449.16
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	125.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	101.8
VOID RATIO	0.656
DEGREE OF SATURATION, S (%)	95.51

	MEASURED DIMENSIONS Length	Diameter
1	5.992	2.417
2	5.991	2.413
3	5.981	2.413
4	5.979	2.414
5	5.988	2.416
6	**XXXXX**	2.414
Average	5.986	2.415

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

AECOM

unit weight Kast N24503G S06 15 ft.xlsx

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24508G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S8			
Mass of Container & Wet Specimen, M1 (g)	589.93			
Mass of Container & Dry Specimen, M2 (g)	531.62			
Mass of Container, M3 (g)	115.20			
WATER CONTENT, wn (%)	**14.00**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S8
Mass of Container and Wet Specimen, M4 (g)	923.14
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	923.14
Specimen Diameter, D (in) or ( )	2.408
Specimen Length, L (in) or ( )	5.883
Specimen Area, A (in^2) or ( )	4.554
Specimen Volume, V (cm^3) or ( )	439.04
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	131.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.1
VOID RATIO	0.464
DEGREE OF SATURATION, S (%)	81.49

	MEASURED DIMENSIONS Length	Diameter
1	5.885	2.412
2	5.889	2.380
3	5.889	2.413
4	5.877	2.407
5	5.875	2.417
6	**XXXXX**	2.419
Average	5.883	2.408

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive brown sandy Clay (CL)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24508G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24508G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S34			
Mass of Container & Wet Specimen, M1 (g)	457.40			
Mass of Container & Dry Specimen, M2 (g)	409.51			
Mass of Container, M3 (g)	117.98			
WATER CONTENT, wn (%)	**16.43**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S34
Mass of Container and Wet Specimen, M4 (g)	922.19
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	922.19
Specimen Diameter, D (in) or ( )	2.417
Specimen Length, L (in) or ( )	5.978
Specimen Area, A (in^2) or ( )	4.589
Specimen Volume, V (cm^3) or ( )	449.61
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	110.0
VOID RATIO	0.532
DEGREE OF SATURATION, S (%)	83.38

	MEASURED DIMENSIONS Length	Diameter
1	5.972	2.406
2	5.982	2.402
3	5.987	2.416
4	5.975	2.427
5	5.975	2.428
6	**XXXXX**	2.425
Average	5.978	2.417

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive gray clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24508G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24508G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S7			
Mass of Container & Wet Specimen, M1 (g)	454.95			
Mass of Container & Dry Specimen, M2 (g)	418.30			
Mass of Container, M3 (g)	80.18			
WATER CONTENT, wn (%)	**10.84**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S7
Mass of Container and Wet Specimen, M4 (g)	829.24
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	829.24
Specimen Diameter, D (in) or ( )	2.419
Specimen Length, L (in) or ( )	6.061
Specimen Area, A (in^2) or ( )	4.596
Specimen Volume, V (cm^3) or ( )	456.48
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	113.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	102.3
VOID RATIO	0.647
DEGREE OF SATURATION, S (%)	45.20

	MEASURED DIMENSIONS Length	Diameter
1	6.088	2.423
2	6.078	2.430
3	6.047	2.412
4	6.065	2.429
5	6.028	2.409
6	**XXXXX**	2.411
Average	6.061	2.419

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray silty Sand (SM)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24508G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24522G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	N-5			
Mass of Container & Wet Specimen, M1 (g)	550.86			
Mass of Container & Dry Specimen, M2 (g)	498.71			
Mass of Container, M3 (g)	104.64			
WATER CONTENT, wn (%)	**13.23**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	891.81
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	891.81
Specimen Diameter, D (in) or ( )	2.408
Specimen Length, L (in) or ( )	5.699
Specimen Area, A (in^2) or ( )	4.555
Specimen Volume, V (cm^3) or ( )	425.38
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	130.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.6
VOID RATIO	0.458
DEGREE OF SATURATION, S (%)	77.96

	MEASURED DIMENSIONS Length	Diameter
1	5.713	2.410
2	5.692	2.417
3	5.689	2.412
4	5.702	2.406
5	5.700	2.402
6	**XXXXX**	2.402
Average	5.699	2.408

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive grayish brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24522G S03 5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24522G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	N114			
Mass of Container & Wet Specimen, M1 (g)	742.77			
Mass of Container & Dry Specimen, M2 (g)	659.18			
Mass of Container, M3 (g)	114.27			
WATER CONTENT, wn (%)	**15.34**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	919.16
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	919.16
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.938
Specimen Area, A (in^2) or ( )	4.559
Specimen Volume, V (cm^3) or ( )	443.60
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	129.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.2
VOID RATIO	0.502
DEGREE OF SATURATION, S (%)	82.46

	MEASURED DIMENSIONS Length	Diameter
1	5.926	2.405
2	5.955	2.406
3	5.934	2.410
4	5.927	2.409
5	5.950	2.410
6	**XXXXX**	2.415
Average	5.938	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24522G S05 10FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24522G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT	X	1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	N-34			
Mass of Container & Wet Specimen, M1 (g)	790.55			
Mass of Container & Dry Specimen, M2 (g)	768.66			
Mass of Container, M3 (g)	113.66			
WATER CONTENT, wn (%)	**3.34**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	686.29
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	686.29
Specimen Diameter, D (in) or ( )	2.404
Specimen Length, L (in) or ( )	6.019
Specimen Area, A (in^2) or ( )	4.540
Specimen Volume, V (cm^3) or ( )	447.81
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	95.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	92.6
VOID RATIO	0.821
DEGREE OF SATURATION, S (%)	11.00

	MEASURED DIMENSIONS Length	Diameter
1	6.035	2.401
2	6.036	2.404
3	5.985	2.405
4	6.017	2.403
5	6.021	2.406
6	**XXXXX**	2.407
Average	6.019	2.404

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light yellowish poorly graded Sand with silt (SP-SM)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24522G S07 20FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24523G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S109			
Mass of Container & Wet Specimen, M1 (g)	497.96			
Mass of Container & Dry Specimen, M2 (g)	457.34			
Mass of Container, M3 (g)	95.83			
WATER CONTENT, wn (%)	**11.24**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	895.12
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	895.12
Specimen Diameter, D (in) or ( )	2.395
Specimen Length, L (in) or ( )	6.022
Specimen Area, A (in^2) or ( )	4.504
Specimen Volume, V (cm^3) or ( )	444.48
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	125.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.0
VOID RATIO	0.491
DEGREE OF SATURATION, S (%)	61.74

	MEASURED DIMENSIONS Length	Diameter
1	6.036	2.385
2	6.027	2.389
3	6.004	2.390
4	6.011	2.401
5	6.030	2.398
6	**XXXXX**	2.406
Average	6.022	2.395

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24523G S01 2.5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24523G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M73			
Mass of Container & Wet Specimen, M1 (g)	701.52			
Mass of Container & Dry Specimen, M2 (g)	624.31			
Mass of Container, M3 (g)	108.69			
WATER CONTENT, wn (%)	**14.97**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	935.85
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	935.85
Specimen Diameter, D (in) or ( )	2.401
Specimen Length, L (in) or ( )	5.929
Specimen Area, A (in^2) or ( )	4.526
Specimen Volume, V (cm^3) or ( )	439.70
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.5
VOID RATIO	0.459
DEGREE OF SATURATION, S (%)	88.03

	MEASURED DIMENSIONS Length	Diameter
1	5.914	2.420
2	5.938	2.396
3	5.960	2.408
4	5.885	2.391
5	5.947	2.389
6	**XXXXX**	2.399
Average	5.929	2.401

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24523G S04 7.5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24523G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M67			
Mass of Container & Wet Specimen, M1 (g)	378.71			
Mass of Container & Dry Specimen, M2 (g)	316.20			
Mass of Container, M3 (g)	110.43			
WATER CONTENT, wn (%)	**30.38**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	870.01
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	870.01
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	6.031
Specimen Area, A (in^2) or ( )	4.559
Specimen Volume, V (cm^3) or ( )	450.51
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	120.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	92.5
VOID RATIO	0.823
DEGREE OF SATURATION, S (%)	99.68

	MEASURED DIMENSIONS Length	Diameter
1	6.048	2.414
2	6.031	2.411
3	6.036	2.411
4	6.024	2.400
5	6.015	2.409
6	**XXXXX**	2.410
Average	6.031	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray Clay (CL)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast N24523G S06 15FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24603G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-18			
Mass of Container & Wet Specimen, M1 (g)	666.15			
Mass of Container & Dry Specimen, M2 (g)	610.96			
Mass of Container, M3 (g)	83.55			
WATER CONTENT, wn (%)	**10.46**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	952.74
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	952.74
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.975
Specimen Area, A (in^2) or ( )	4.565
Specimen Volume, V (cm^3) or ( )	447.00
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	120.5
VOID RATIO	0.399
DEGREE OF SATURATION, S (%)	70.75

	MEASURED DIMENSIONS Length	Diameter
1	5.974	2.410
2	5.974	2.407
3	5.976	2.415
4	5.970	2.416
5	5.980	2.410
6	**XXXXX**	2.408
Average	5.975	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark yellowish brown sandy Clay (CL)

TESTED BY: GD DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24603G S01 2.5FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24603G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-8			
Mass of Container & Wet Specimen, M1 (g)	581.20			
Mass of Container & Dry Specimen, M2 (g)	539.09			
Mass of Container, M3 (g)	115.19			
WATER CONTENT, wn (%)	**9.93**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	703.77
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	703.77
Specimen Diameter, D (in) or ( )	2.394
Specimen Length, L (in) or ( )	5.231
Specimen Area, A (in^2) or ( )	4.499
Specimen Volume, V (cm^3) or ( )	385.72
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	113.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	103.6
VOID RATIO	0.627
DEGREE OF SATURATION, S (%)	42.79

	MEASURED DIMENSIONS Length	Diameter
1	5.234	2.383
2	5.233	2.389
3	5.229	2.388
4	5.234	2.407
5	5.227	2.391
6	**XXXXX**	2.403
Average	5.231	2.394

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Grayish brown silty Sand (SM)

TESTED BY: GD DATE: 8/26/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24603G S04 7.5FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24603G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	C-8			
Mass of Container & Wet Specimen, M1 (g)	558.56			
Mass of Container & Dry Specimen, M2 (g)	455.28			
Mass of Container, M3 (g)	71.58			
WATER CONTENT, wn (%)	**26.92**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	978.24
Mass of Container, M5 (g)	113.77
Mass of Wet Specimen, M6 (g)	864.47
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.913
Specimen Area, A (in^2) or ( )	4.565
Specimen Volume, V (cm^3) or ( )	442.29
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	122.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	96.1
VOID RATIO	0.753
DEGREE OF SATURATION, S (%)	96.48

	MEASURED DIMENSIONS Length	Diameter
1	5.911	2.404
2	5.922	2.407
3	5.903	2.410
4	5.918	2.413
5	5.909	2.415
6	**XXXXX**	2.416
Average	5.913	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive silty Clay (CL-ML)

TESTED BY: GD DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24603G S06 15FT.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24613G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S107			
Mass of Container & Wet Specimen, M1 (g)	488.49			
Mass of Container & Dry Specimen, M2 (g)	447.38			
Mass of Container, M3 (g)	94.94			
WATER CONTENT, wn (%)	**11.66**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	924.78
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	924.78
Specimen Diameter, D (in) or ( )	2.413
Specimen Length, L (in) or ( )	5.774
Specimen Area, A (in^2) or ( )	4.572
Specimen Volume, V (cm^3) or ( )	432.55
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	119.5
VOID RATIO	0.411
DEGREE OF SATURATION, S (%)	76.64

	MEASURED DIMENSIONS Length	Diameter
1	5.769	2.412
2	5.774	2.411
3	5.777	2.412
4	5.776	2.416
5	5.772	2.412
6	**XXXXX**	2.413
Average	5.774	2.413

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24613G S03 5FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24613G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE	X	2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT	X	1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS		1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED	X	3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S103			
Mass of Container & Wet Specimen, M1 (g)	427.05			
Mass of Container & Dry Specimen, M2 (g)	404.18			
Mass of Container, M3 (g)	95.55			
WATER CONTENT, wn (%)	**7.41**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	692.20
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	692.20
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	5.678
Specimen Area, A (in^2) or ( )	4.570
Specimen Volume, V (cm^3) or ( )	425.21
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	101.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	94.7
VOID RATIO	0.780
DEGREE OF SATURATION, S (%)	25.64

	MEASURED DIMENSIONS Length	Diameter
1	5.610	2.414
2	5.703	2.404
3	5.700	2.415
4	5.826	2.416
5	5.549	
6	**XXXXX**	
Average	5.678	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Brown poorly graded sand with silt (SP-SM)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24613G S05 10FT.xls

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24622G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	C7			
Mass of Container & Wet Specimen, M1 (g)	483.74			
Mass of Container & Dry Specimen, M2 (g)	444.50			
Mass of Container, M3 (g)	71.63			
WATER CONTENT, wn (%)	**10.52**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	C7
Mass of Container and Wet Specimen, M4 (g)	990.60
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	990.60
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	5.964
Specimen Area, A (in^2) or ( )	4.569
Specimen Volume, V (cm^3) or ( )	446.53
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	138.5
DRY UNIT WEIGHT, DUW (pcf) or ( )	125.3
VOID RATIO	0.345
DEGREE OF SATURATION, S (%)	82.32

	MEASURED DIMENSIONS Length	Diameter
1	5.970	2.407
2	5.966	2.408
3	5.958	2.409
4	5.965	2.414
5	5.963	2.416
6	**XXXXX**	2.417
Average	5.964	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24622G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24622G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 16.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S41			
Mass of Container & Wet Specimen, M1 (g)	394.57			
Mass of Container & Dry Specimen, M2 (g)	330.23			
Mass of Container, M3 (g)	82.92			
WATER CONTENT, wn (%)	**26.02**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S41
Mass of Container and Wet Specimen, M4 (g)	892.06
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	892.06
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	5.983
Specimen Area, A (in^2) or ( )	4.568
Specimen Volume, V (cm^3) or ( )	447.86
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	124.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	98.7
VOID RATIO	0.708
DEGREE OF SATURATION, S (%)	99.18

	MEASURED DIMENSIONS Length	Diameter
1	6.009	2.414
2	5.931	2.410
3	5.988	2.410
4	6.023	2.414
5	5.964	2.410
6	**XXXXX**	2.412
Average	5.983	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Gray clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24622G S05 16.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24629G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S122			
Mass of Container & Wet Specimen, M1 (g)	497.73			
Mass of Container & Dry Specimen, M2 (g)	467.32			
Mass of Container, M3 (g)	95.17			
WATER CONTENT, wn (%)	**8.17**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S122
Mass of Container and Wet Specimen, M4 (g)	896.81
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	896.81
Specimen Diameter, D (in) or ( )	2.414
Specimen Length, L (in) or ( )	5.827
Specimen Area, A (in^2) or ( )	4.575
Specimen Volume, V (cm^3) or ( )	436.88
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	118.4
VOID RATIO	0.424
DEGREE OF SATURATION, S (%)	52.08

	MEASURED DIMENSIONS Length	Diameter
1	5.842	2.413
2	5.832	2.413
3	5.833	2.415
4	5.817	2.411
5	5.813	2.413
6	**XXXXX**	2.416
Average	5.827	2.414

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light yellowish brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24629G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24629G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET	X	3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S115			
Mass of Container & Wet Specimen, M1 (g)	441.33			
Mass of Container & Dry Specimen, M2 (g)	397.65			
Mass of Container, M3 (g)	94.14			
WATER CONTENT, wn (%)	**14.39**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S115
Mass of Container and Wet Specimen, M4 (g)	815.32
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	815.32
Specimen Diameter, D (in) or ( )	2.414
Specimen Length, L (in) or ( )	5.240
Specimen Area, A (in^2) or ( )	4.575
Specimen Volume, V (cm^3) or ( )	392.84
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	129.5
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.2
VOID RATIO	0.489
DEGREE OF SATURATION, S (%)	79.48

	MEASURED DIMENSIONS Length	Diameter
1	5.232	2.413
2	5.230	2.420
3	5.244	2.426
4	5.256	2.383
5	5.238	2.414
6	**XXXXX**	2.425
Average	5.240	2.414

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Very dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24629G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24703G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S204			
Mass of Container & Wet Specimen, M1 (g)	482.76			
Mass of Container & Dry Specimen, M2 (g)	443.67			
Mass of Container, M3 (g)	148.11			
WATER CONTENT, wn (%)	**13.23**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S204
Mass of Container and Wet Specimen, M4 (g)	859.40
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	859.40
Specimen Diameter, D (in) or ( )	2.407
Specimen Length, L (in) or ( )	5.412
Specimen Area, A (in^2) or ( )	4.551
Specimen Volume, V (cm^3) or ( )	403.61
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	117.4
VOID RATIO	0.436
DEGREE OF SATURATION, S (%)	81.95

	MEASURED DIMENSIONS Length	Diameter
1	5.414	2.401
2	5.423	2.408
3	5.406	2.409
4	5.407	2.410
5	5.410	2.407
6	**XXXXX**	2.408
Average	5.412	2.407

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark greenish gray sandy Clay (CL)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24703G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24712G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S207			
Mass of Container & Wet Specimen, M1 (g)	534.53			
Mass of Container & Dry Specimen, M2 (g)	493.48			
Mass of Container, M3 (g)	139.33			
WATER CONTENT, wn (%)	**11.59**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S207
Mass of Container and Wet Specimen, M4 (g)	971.23
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	971.23
Specimen Diameter, D (in) or ( )	2.417
Specimen Length, L (in) or ( )	5.944
Specimen Area, A (in^2) or ( )	4.589
Specimen Volume, V (cm^3) or ( )	447.01
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	135.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	121.6
VOID RATIO	0.386
DEGREE OF SATURATION, S (%)	81.06

	MEASURED DIMENSIONS Length	Diameter
1	5.950	2.414
2	5.941	2.416
3	5.943	2.414
4	5.932	2.421
5	5.952	2.420
6	**XXXXX**	2.419
Average	5.944	2.417

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Brown clayey Sand (SC)

TESTED BY: LV DATE: 8/26/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24712G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24712G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S201			
Mass of Container & Wet Specimen, M1 (g)	517.91			
Mass of Container & Dry Specimen, M2 (g)	481.44			
Mass of Container, M3 (g)	147.63			
WATER CONTENT, wn (%)	**10.93**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S201
Mass of Container and Wet Specimen, M4 (g)	881.33
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	881.33
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.975
Specimen Area, A (in^2) or ( )	4.557
Specimen Volume, V (cm^3) or ( )	446.24
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	123.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	111.1
VOID RATIO	0.517
DEGREE OF SATURATION, S (%)	57.04

	MEASURED DIMENSIONS Length	Diameter
1	5.977	2.414
2	5.970	2.406
3	5.978	2.401
4	5.978	2.413
5	5.974	2.406
6	**XXXXX**	2.413
Average	5.975	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Very dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/26/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

AECOM

unit weight Kast N24712G S05 10 ft.xlsx

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24712G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT	X	1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S217			
Mass of Container & Wet Specimen, M1 (g)	450.07			
Mass of Container & Dry Specimen, M2 (g)	442.35			
Mass of Container, M3 (g)	137.95			
WATER CONTENT, wn (%)	**2.54**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S217
Mass of Container and Wet Specimen, M4 (g)	971.14
Mass of Container, M5 (g)	273.16
Mass of Wet Specimen, M6 (g)	697.98
Specimen Diameter, D (in) or ( )	2.410
Specimen Length, L (in) or ( )	5.851
Specimen Area, A (in^2) or ( )	4.560
Specimen Volume, V (cm^3) or ( )	437.26
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	99.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	97.2
VOID RATIO	0.734
DEGREE OF SATURATION, S (%)	9.33

	MEASURED DIMENSIONS Length	Diameter
1	5.702	2.410
2	5.743	2.407
3	5.894	2.412
4	5.995	
5	5.921	
6	**XXXXX**	
Average	5.851	2.410

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Brownish gray silty Sand (SM)

TESTED BY: LV DATE: 8/26/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24712G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24729G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S208			
Mass of Container & Wet Specimen, M1 (g)	550.04			
Mass of Container & Dry Specimen, M2 (g)	507.66			
Mass of Container, M3 (g)	146.61			
WATER CONTENT, wn (%)	**11.74**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S208
Mass of Container and Wet Specimen, M4 (g)	971.99
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	971.99
Specimen Diameter, D (in) or ( )	2.415
Specimen Length, L (in) or ( )	5.958
Specimen Area, A (in^2) or ( )	4.581
Specimen Volume, V (cm^3) or ( )	447.19
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	135.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	121.4
VOID RATIO	0.388
DEGREE OF SATURATION, S (%)	81.67

	MEASURED DIMENSIONS Length	Diameter
1	5.964	2.409
2	5.974	2.414
3	5.951	2.414
4	5.951	2.416
5	5.948	2.418
6	**XXXXX**	2.419
Average	5.958	2.415

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24729G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24729G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S205			
Mass of Container & Wet Specimen, M1 (g)	512.53			
Mass of Container & Dry Specimen, M2 (g)	471.82			
Mass of Container, M3 (g)	139.34			
WATER CONTENT, wn (%)	**12.24**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S205
Mass of Container and Wet Specimen, M4 (g)	926.86
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	926.86
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	5.952
Specimen Area, A (in^2) or ( )	4.568
Specimen Volume, V (cm^3) or ( )	445.53
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	129.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.7
VOID RATIO	0.457
DEGREE OF SATURATION, S (%)	72.37

	MEASURED DIMENSIONS Length	Diameter
1	5.958	2.412
2	5.953	2.410
3	5.948	2.413
4	5.950	2.413
5	5.950	2.412
6	**XXXXX**	2.410
Average	5.952	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24729G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24732G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S117			
Mass of Container & Wet Specimen, M1 (g)	458.07			
Mass of Container & Dry Specimen, M2 (g)	412.60			
Mass of Container, M3 (g)	96.46			
WATER CONTENT, wn (%)	**14.38**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S121
Mass of Container and Wet Specimen, M4 (g)	958.00
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	958.00
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.968
Specimen Area, A (in^2) or ( )	4.557
Specimen Volume, V (cm^3) or ( )	445.66
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	134.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	117.3
VOID RATIO	0.437
DEGREE OF SATURATION, S (%)	88.93

	MEASURED DIMENSIONS Length	Diameter
1	5.965	2.413
2	5.971	2.405
3	5.970	2.410
4	5.971	2.412
5	5.965	2.405
6	**XXXXX**	2.407
Average	5.968	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24732G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24732G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S121			
Mass of Container & Wet Specimen, M1 (g)	605.43			
Mass of Container & Dry Specimen, M2 (g)	565.99			
Mass of Container, M3 (g)	95.57			
WATER CONTENT, wn (%)	**8.38**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S121
Mass of Container and Wet Specimen, M4 (g)	826.77
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	826.77
Specimen Diameter, D (in) or ( )	2.402
Specimen Length, L (in) or ( )	5.784
Specimen Area, A (in^2) or ( )	4.533
Specimen Volume, V (cm^3) or ( )	429.59
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	120.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	110.9
VOID RATIO	0.520
DEGREE OF SATURATION, S (%)	43.54

	MEASURED DIMENSIONS Length	Diameter
1	5.779	2.394
2	5.786	2.403
3	5.824	2.409
4	5.774	2.394
5	5.755	2.405
6	**XXXXX**	2.409
Average	5.784	2.402

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Yellowish brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

AECOM

unit weight Kast N24732G S05 10 ft.xlsx

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24732G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S108			
Mass of Container & Wet Specimen, M1 (g)	450.18			
Mass of Container & Dry Specimen, M2 (g)	402.48			
Mass of Container, M3 (g)	95.93			
WATER CONTENT, wn (%)	**15.56**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S108
Mass of Container and Wet Specimen, M4 (g)	799.49
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	799.49
Specimen Diameter, D (in) or ( )	2.414
Specimen Length, L (in) or ( )	5.597
Specimen Area, A (in^2) or ( )	4.578
Specimen Volume, V (cm^3) or ( )	419.87
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	118.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	102.9
VOID RATIO	0.639
DEGREE OF SATURATION, S (%)	65.79

	MEASURED DIMENSIONS Length	Diameter
1	5.580	2.419
2	5.605	2.418
3	5.607	2.415
4	5.600	2.412
5	5.591	2.412
6	**XXXXX**	2.410
Average	5.597	2.414

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray silty Sand (SM)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24732G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24803G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S224			
Mass of Container & Wet Specimen, M1 (g)	476.90			
Mass of Container & Dry Specimen, M2 (g)	443.27			
Mass of Container, M3 (g)	140.75			
WATER CONTENT, wn (%)	**11.12**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S224
Mass of Container and Wet Specimen, M4 (g)	976.09
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	976.09
Specimen Diameter, D (in) or ( )	2.406
Specimen Length, L (in) or ( )	5.911
Specimen Area, A (in^2) or ( )	4.545
Specimen Volume, V (cm^3) or ( )	440.23
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	138.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	124.5
VOID RATIO	0.354
DEGREE OF SATURATION, S (%)	84.82

	MEASURED DIMENSIONS Length	Diameter
1	5.896	2.407
2	5.907	2.403
3	5.920	2.405
4	5.911	2.403
5	5.922	2.406
6	**XXXXX**	2.409
Average	5.911	2.406

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24803G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: N24803G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S203			
Mass of Container & Wet Specimen, M1 (g)	598.91			
Mass of Container & Dry Specimen, M2 (g)	545.42			
Mass of Container, M3 (g)	147.96			
WATER CONTENT, wn (%)	**13.46**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S203
Mass of Container and Wet Specimen, M4 (g)	945.93
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	945.93
Specimen Diameter, D (in) or ( )	2.414
Specimen Length, L (in) or ( )	5.748
Specimen Area, A (in^2) or ( )	4.576
Specimen Volume, V (cm^3) or ( )	430.99
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	137.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	120.7
VOID RATIO	0.396
DEGREE OF SATURATION, S (%)	91.65

	MEASURED DIMENSIONS Length	Diameter
1	5.756	2.414
2	5.754	2.414
3	5.743	2.413
4	5.748	2.413
5	5.739	2.413
6	**XXXXX**	2.415
Average	5.748	2.414

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast N24803G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24402G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY	X	1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S12			
Mass of Container & Wet Specimen, M1 (g)	782.26			
Mass of Container & Dry Specimen, M2 (g)	723.84			
Mass of Container, M3 (g)	83.57			
WATER CONTENT, wn (%)	**9.12**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

* Sample broke, No UU Test

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	631.33
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	631.33
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	4.585
Specimen Area, A (in^2) or ( )	4.568
Specimen Volume, V (cm^3) or ( )	343.25
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	114.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	105.2
VOID RATIO	0.602
DEGREE OF SATURATION, S (%)	40.93

	MEASURED DIMENSIONS Length	Diameter
1	4.611	2.412
2	4.579	2.413
3	4.595	2.412
4	4.564	2.410
5	4.577	
6	**XXXXX**	
Average	4.585	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24402G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24402G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-6			
Mass of Container & Wet Specimen, M1 (g)	412.51			
Mass of Container & Dry Specimen, M2 (g)	365.68			
Mass of Container, M3 (g)	79.82			
WATER CONTENT, wn (%)	**16.38**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	919.82
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	919.82
Specimen Diameter, D (in) or ( )	2.413
Specimen Length, L (in) or ( )	5.993
Specimen Area, A (in^2) or ( )	4.574
Specimen Volume, V (cm^3) or ( )	449.22
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	127.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	109.9
VOID RATIO	0.534
DEGREE OF SATURATION, S (%)	82.87

	MEASURED DIMENSIONS Length	Diameter
1	5.990	2.416
2	5.999	2.420
3	5.990	2.416
4	5.994	2.407
5	5.991	2.404
6	**XXXXX**	2.417
Average	5.993	2.413

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown sandy Clay (CL)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24402G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24411G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S206			
Mass of Container & Wet Specimen, M1 (g)	487.09			
Mass of Container & Dry Specimen, M2 (g)	440.72			
Mass of Container, M3 (g)	139.93			
WATER CONTENT, wn (%)	**15.42**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S206
Mass of Container and Wet Specimen, M4 (g)	950.92
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	950.92
Specimen Diameter, D (in) or ( )	2.389
Specimen Length, L (in) or ( )	6.005
Specimen Area, A (in^2) or ( )	4.483
Specimen Volume, V (cm^3) or ( )	441.13
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	134.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	116.6
VOID RATIO	0.446
DEGREE OF SATURATION, S (%)	93.40

	MEASURED DIMENSIONS Length	Diameter
1	5.988	2.388
2	6.025	2.398
3	5.972	2.386
4	6.011	2.375
5	6.031	2.392
6	**XXXXX**	2.395
Average	6.005	2.389

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown sandy Clay (CL)

TESTED BY: LV DATE: CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24411G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24411G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S214			
Mass of Container & Wet Specimen, M1 (g)	667.10			
Mass of Container & Dry Specimen, M2 (g)	633.79			
Mass of Container, M3 (g)	138.70			
WATER CONTENT, wn (%)	**6.73**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	772.14
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	772.14
Specimen Diameter, D (in) or ( )	2.401
Specimen Length, L (in) or ( )	6.046
Specimen Area, A (in^2) or ( )	4.527
Specimen Volume, V (cm^3) or ( )	448.49
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	107.5
DRY UNIT WEIGHT, DUW (pcf) or ( )	100.7
VOID RATIO	0.674
DEGREE OF SATURATION, S (%)	26.96

	MEASURED DIMENSIONS Length	Diameter
1	6.091	2.406
2	6.023	2.398
3	6.082	2.390
4	6.005	2.405
5	6.027	2.412
6	**XXXXX**	2.394
Average	6.046	2.401

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Yellowish brown silty Sand (SM)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24411G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24411G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT	X	1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S204			
Mass of Container & Wet Specimen, M1 (g)	503.35			
Mass of Container & Dry Specimen, M2 (g)	486.01			
Mass of Container, M3 (g)	148.10			
WATER CONTENT, wn (%)	**5.13**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	682.67
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	682.67
Specimen Diameter, D (in) or ( )	2.398
Specimen Length, L (in) or ( )	5.798
Specimen Area, A (in^2) or ( )	4.514
Specimen Volume, V (cm^3) or ( )	428.93
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	99.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	94.5
VOID RATIO	0.785
DEGREE OF SATURATION, S (%)	17.66

	MEASURED DIMENSIONS Length	Diameter
1	5.765	2.396
2	5.819	2.428
3	5.807	2.384
4	5.777	2.384
5	5.822	2.401
6	**XXXXX**	2.392
Average	5.798	2.398

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light yellowish brown silty Sand (SM)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24411G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24421G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S88			
Mass of Container & Wet Specimen, M1 (g)	583.32			
Mass of Container & Dry Specimen, M2 (g)	531.35			
Mass of Container, M3 (g)	113.07			
WATER CONTENT, wn (%)	**12.42**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	937.38
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	937.38
Specimen Diameter, D (in) or ( )	2.399
Specimen Length, L (in) or ( )	5.912
Specimen Area, A (in^2) or ( )	4.521
Specimen Volume, V (cm^3) or ( )	437.97
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	118.9
VOID RATIO	0.418
DEGREE OF SATURATION, S (%)	80.33

	MEASURED DIMENSIONS Length	Diameter
1	5.963	2.400
2	5.847	2.397
3	5.928	2.398
4	5.857	2.401
5	5.965	2.398
6	**XXXXX**	2.401
Average	5.912	2.399

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24421G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24421G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S-19			
Mass of Container & Wet Specimen, M1 (g)	449.85			
Mass of Container & Dry Specimen, M2 (g)	397.07			
Mass of Container, M3 (g)	102.54			
WATER CONTENT, wn (%)	**17.92**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	792.05
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	792.05
Specimen Diameter, D (in) or ( )	2.392
Specimen Length, L (in) or ( )	5.291
Specimen Area, A (in^2) or ( )	4.494
Specimen Volume, V (cm^3) or ( )	389.70
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	126.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	107.6
VOID RATIO	0.567
DEGREE OF SATURATION, S (%)	85.41

	MEASURED DIMENSIONS Length	Diameter
1	5.297	2.382
2	5.305	2.387
3	5.284	2.391
4	5.294	2.398
5	5.276	2.394
6	**XXXXX**	2.401
Average	5.291	2.392

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown silty Sand (SM)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24421G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24421G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S27			
Mass of Container & Wet Specimen, M1 (g)	320.22			
Mass of Container & Dry Specimen, M2 (g)	261.46			
Mass of Container, M3 (g)	78.99			
WATER CONTENT, wn (%)	**32.20**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	873.02
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	873.02
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.997
Specimen Area, A (in^2) or ( )	4.566
Specimen Volume, V (cm^3) or ( )	448.72
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	121.5
DRY UNIT WEIGHT, DUW (pcf) or ( )	91.9
VOID RATIO	0.835
DEGREE OF SATURATION, S (%)	104.17

	MEASURED DIMENSIONS Length	Diameter
1	6.005	2.410
2	5.985	2.415
3	5.997	2.410
4	6.002	2.416
5	5.996	2.415
6	**XXXXX**	2.401
Average	5.997	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown Clay (CL)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24421G S06 15 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24426G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF	X	5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	B26			
Mass of Container & Wet Specimen, M1 (g)	486.38			
Mass of Container & Dry Specimen, M2 (g)	448.17			
Mass of Container, M3 (g)	199.72			
WATER CONTENT, wn (%)	**15.38**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	930.40
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	930.40
Specimen Diameter, D (in) or ( )	2.399
Specimen Length, L (in) or ( )	5.976
Specimen Area, A (in^2) or ( )	4.520
Specimen Volume, V (cm^3) or ( )	442.67
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	131.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.7
VOID RATIO	0.482
DEGREE OF SATURATION, S (%)	86.12

	MEASURED DIMENSIONS Length	Diameter
1	5.996	2.407
2	5.977	2.404
3	5.983	2.402
4	5.947	2.400
5	5.978	2.389
6	**XXXXX**	2.392
Average	5.976	2.399

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown sandy Clay (CL)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

AECOM

unit weight Kast P24426G S03 5 Ft.xlsx

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24426G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S209			
Mass of Container & Wet Specimen, M1 (g)	572.73			
Mass of Container & Dry Specimen, M2 (g)	554.14			
Mass of Container, M3 (g)	146.58			
WATER CONTENT, wn (%)	**4.56**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	813.92
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	813.92
Specimen Diameter, D (in) or ( )	2.397
Specimen Length, L (in) or ( )	5.977
Specimen Area, A (in^2) or ( )	4.513
Specimen Volume, V (cm^3) or ( )	442.05
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	115.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	109.9
VOID RATIO	0.534
DEGREE OF SATURATION, S (%)	23.07

	MEASURED DIMENSIONS Length	Diameter
1	5.964	2.385
2	5.984	2.385
3	5.994	2.400
4	5.955	2.403
5	5.988	2.409
6	**XXXXX**	2.401
Average	5.977	2.397

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light brown silty Sand (SM)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mara

unit weight Kast P24426G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24503G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S114			
Mass of Container & Wet Specimen, M1 (g)	559.53			
Mass of Container & Dry Specimen, M2 (g)	490.84			
Mass of Container, M3 (g)	96.50			
WATER CONTENT, wn (%)	**17.42**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	932.24
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	932.24
Specimen Diameter, D (in) or ( )	2.419
Specimen Length, L (in) or ( )	5.844
Specimen Area, A (in^2) or ( )	4.595
Specimen Volume, V (cm^3) or ( )	440.06
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.6
VOID RATIO	0.497
DEGREE OF SATURATION, S (%)	94.72

	MEASURED DIMENSIONS Length	Diameter
1	5.844	2.410
2	5.910	2.424
3	5.829	2.437
4	5.867	2.424
5	5.770	2.409
6	**XXXXX**	2.409
Average	5.844	2.419

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Brown clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24503G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24503G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	FJ-10			
Mass of Container & Wet Specimen, M1 (g)	1058.51			
Mass of Container & Dry Specimen, M2 (g)	914.10			
Mass of Container, M3 (g)	111.29			
WATER CONTENT, wn (%)	**17.99**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	FJ-10
Mass of Container and Wet Specimen, M4 (g)	947.67
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	947.67
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	5.993
Specimen Area, A (in^2) or ( )	4.568
Specimen Volume, V (cm^3) or ( )	448.63
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	131.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	111.7
VOID RATIO	0.509
DEGREE OF SATURATION, S (%)	95.43

	MEASURED DIMENSIONS Length	Diameter
1	6.002	2.412
2	5.993	2.411
3	5.990	2.408
4	5.994	2.412
5	5.987	2.412
6	**XXXXX**	2.415
Average	5.993	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark blueish gray Clay with sand (CL)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24503G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24503G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE	X	2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M8			
Mass of Container & Wet Specimen, M1 (g)	583.79			
Mass of Container & Dry Specimen, M2 (g)	534.63			
Mass of Container, M3 (g)	89.43			
WATER CONTENT, wn (%)	**11.04**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	496.92
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	496.92
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	4.106
Specimen Area, A (in^2) or ( )	4.569
Specimen Volume, V (cm^3) or ( )	307.37
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	100.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	90.9
VOID RATIO	0.855
DEGREE OF SATURATION, S (%)	34.89

	MEASURED DIMENSIONS Length	Diameter
1	4.071	2.415
2	4.085	2.419
3	4.185	2.408
4	4.125	2.408
5	4.062	2.418
6	**XXXXX**	2.403
Average	4.106	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light gray silty Sand (SM)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24503G S06 15 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24533G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S121			
Mass of Container & Wet Specimen, M1 (g)	522.19			
Mass of Container & Dry Specimen, M2 (g)	470.29			
Mass of Container, M3 (g)	95.54			
WATER CONTENT, wn (%)	**13.85**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S121
Mass of Container and Wet Specimen, M4 (g)	961.19
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	961.19
Specimen Diameter, D (in) or ( )	2.418
Specimen Length, L (in) or ( )	5.918
Specimen Area, A (in^2) or ( )	4.591
Specimen Volume, V (cm^3) or ( )	445.22
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	134.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	118.4
VOID RATIO	0.424
DEGREE OF SATURATION, S (%)	88.27

	MEASURED DIMENSIONS Length	Diameter
1	5.910	2.412
2	5.919	2.414
3	5.935	2.412
4	5.909	2.432
5	5.918	2.416
6	**XXXXX**	2.420
Average	5.918	2.418

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark yellowish brown clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

AECOM

unit weight Kast P24533G S03 5 ft .xlsx

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24533G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE	X	2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT	X	1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S108			
Mass of Container & Wet Specimen, M1 (g)	506.09			
Mass of Container & Dry Specimen, M2 (g)	488.90			
Mass of Container, M3 (g)	95.91			
WATER CONTENT, wn (%)	**4.37**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	658.77
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	658.77
Specimen Diameter, D (in) or ( )	2.406
Specimen Length, L (in) or ( )	5.236
Specimen Area, A (in^2) or ( )	4.547
Specimen Volume, V (cm^3) or ( )	390.14
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	105.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	100.8
VOID RATIO	0.672
DEGREE OF SATURATION, S (%)	17.57

	MEASURED DIMENSIONS Length	Diameter
1	5.244	2.395
2	5.239	2.411
3	5.253	2.422
4	5.230	2.401
5	5.216	2.401
6	**XXXXX**	
Average	5.236	2.406

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light brown silty Sand with seashells (SM)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24533G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24608G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S207			
Mass of Container & Wet Specimen, M1 (g)	551.41			
Mass of Container & Dry Specimen, M2 (g)	493.97			
Mass of Container, M3 (g)	139.33			
WATER CONTENT, wn (%)	**16.20**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Some roots in the the sample

UNIT WEIGHT

Container No.	S207
Mass of Container and Wet Specimen, M4 (g)	895.88
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	895.88
Specimen Diameter, D (in) or ( )	2.388
Specimen Length, L (in) or ( )	5.968
Specimen Area, A (in^2) or ( )	4.479
Specimen Volume, V (cm^3) or ( )	438.03
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	127.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	109.9
VOID RATIO	0.534
DEGREE OF SATURATION, S (%)	81.90

	MEASURED DIMENSIONS Length	Diameter
1	5.973	2.394
2	5.941	2.395
3	5.960	2.372
4	5.986	2.373
5	5.981	2.422
6	**XXXXX**	2.372
Average	5.968	2.388

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark grayish brown clayey Sand with shell fragments (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24608G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24608G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S106			
Mass of Container & Wet Specimen, M1 (g)	523.66			
Mass of Container & Dry Specimen, M2 (g)	479.72			
Mass of Container, M3 (g)	95.33			
WATER CONTENT, wn (%)	**11.43**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Strong fuel smell

Oil stained

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	912.42
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	912.42
Specimen Diameter, D (in) or ( )	2.407
Specimen Length, L (in) or ( )	6.012
Specimen Area, A (in^2) or ( )	4.550
Specimen Volume, V (cm^3) or ( )	448.32
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	127.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	114.0
VOID RATIO	0.478
DEGREE OF SATURATION, S (%)	64.52

	MEASURED DIMENSIONS Length	Diameter
1	6.048	2.401
2	5.987	2.411
3	6.002	2.409
4	6.006	2.410
5	6.019	2.408
6	**XXXXX**	2.403
Average	6.012	2.407

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Very dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24608G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24618G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S201			
Mass of Container & Wet Specimen, M1 (g)	498.96			
Mass of Container & Dry Specimen, M2 (g)	453.93			
Mass of Container, M3 (g)	147.66			
WATER CONTENT, wn (%)	**14.70**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	932.67
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	932.67
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.959
Specimen Area, A (in^2) or ( )	4.565
Specimen Volume, V (cm^3) or ( )	445.76
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	130.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.9
VOID RATIO	0.480
DEGREE OF SATURATION, S (%)	82.67

	MEASURED DIMENSIONS Length	Diameter
1	5.959	2.414
2	6.011	2.418
3	5.955	2.408
4	5.937	2.403
5	5.933	2.409
6	**XXXXX**	2.413
Average	5.959	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24618G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24618G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S222			
Mass of Container & Wet Specimen, M1 (g)	513.35			
Mass of Container & Dry Specimen, M2 (g)	468.77			
Mass of Container, M3 (g)	140.49			
WATER CONTENT, wn (%)	**13.58**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	928.15
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	928.15
Specimen Diameter, D (in) or ( )	2.418
Specimen Length, L (in) or ( )	5.968
Specimen Area, A (in^2) or ( )	4.590
Specimen Volume, V (cm^3) or ( )	448.90
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	129.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.6
VOID RATIO	0.484
DEGREE OF SATURATION, S (%)	75.74

	MEASURED DIMENSIONS Length	Diameter
1	5.950	2.423
2	5.960	2.406
3	5.975	2.420
4	5.996	2.417
5	5.959	2.421
6	**XXXXX**	2.418
Average	5.968	2.418

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24618G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24708G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S124			
Mass of Container & Wet Specimen, M1 (g)	350.26			
Mass of Container & Dry Specimen, M2 (g)	327.99			
Mass of Container, M3 (g)	95.34			
WATER CONTENT, wn (%)	**9.57**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	913.48
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	913.48
Specimen Diameter, D (in) or ( )	2.399
Specimen Length, L (in) or ( )	5.992
Specimen Area, A (in^2) or ( )	4.521
Specimen Volume, V (cm^3) or ( )	443.96
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	117.2
VOID RATIO	0.438
DEGREE OF SATURATION, S (%)	59.03

	MEASURED DIMENSIONS Length	Diameter
1	5.995	2.412
2	5.984	2.404
3	5.993	2.402
4	5.991	2.393
5	5.997	2.396
6	**XXXXX**	2.389
Average	5.992	2.399

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24708G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24708G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY	X	1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S112			
Mass of Container & Wet Specimen, M1 (g)	343.99			
Mass of Container & Dry Specimen, M2 (g)	316.47			
Mass of Container, M3 (g)	94.79			
WATER CONTENT, wn (%)	**12.41**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S112
Mass of Container and Wet Specimen, M4 (g)	854.94
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	854.94
Specimen Diameter, D (in) or ( )	2.418
Specimen Length, L (in) or ( )	5.593
Specimen Area, A (in^2) or ( )	4.590
Specimen Volume, V (cm^3) or ( )	420.71
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	126.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.8
VOID RATIO	0.494
DEGREE OF SATURATION, S (%)	67.81

	MEASURED DIMENSIONS Length	Diameter
1	5.593	2.435
2	5.605	2.400
3	5.593	2.425
4	5.583	2.412
5	5.592	2.423
6	**XXXXX**	2.410
Average	5.593	2.418

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24708G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24709G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S101			
Mass of Container & Wet Specimen, M1 (g)	374.83			
Mass of Container & Dry Specimen, M2 (g)	344.19			
Mass of Container, M3 (g)	95.29			
WATER CONTENT, wn (%)	**12.31**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	935.32
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	935.32
Specimen Diameter, D (in) or ( )	2.394
Specimen Length, L (in) or ( )	5.978
Specimen Area, A (in^2) or ( )	4.503
Specimen Volume, V (cm^3) or ( )	441.08
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	117.9
VOID RATIO	0.430
DEGREE OF SATURATION, S (%)	77.29

	MEASURED DIMENSIONS Length	Diameter
1	5.983	2.400
2	5.985	2.395
3	5.963	2.398
4	5.984	2.390
5	5.975	2.394
6	**XXXXX**	2.389
Average	5.978	2.394

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive gray clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24709G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24709G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC	X	2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S111			
Mass of Container & Wet Specimen, M1 (g)	515.89			
Mass of Container & Dry Specimen, M2 (g)	461.12			
Mass of Container, M3 (g)	96.28			
WATER CONTENT, wn (%)	**15.01**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	901.13
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	901.13
Specimen Diameter, D (in) or ( )	2.393
Specimen Length, L (in) or ( )	5.955
Specimen Area, A (in^2) or ( )	4.498
Specimen Volume, V (cm^3) or ( )	438.89
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	111.4
VOID RATIO	0.512
DEGREE OF SATURATION, S (%)	79.09

	MEASURED DIMENSIONS Length	Diameter
1	5.954	2.403
2	5.955	2.403
3	5.953	2.405
4	5.954	2.381
5	5.959	2.378
6	**XXXXX**	2.388
Average	5.955	2.393

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24709G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24709G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	X
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM	X	6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE		7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S102			
Mass of Container & Wet Specimen, M1 (g)	386.59			
Mass of Container & Dry Specimen, M2 (g)	350.79			
Mass of Container, M3 (g)	96.40			
WATER CONTENT, wn (%)	**14.07**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	805.17
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	805.17
Specimen Diameter, D (in) or ( )	2.404
Specimen Length, L (in) or ( )	5.981
Specimen Area, A (in^2) or ( )	4.540
Specimen Volume, V (cm^3) or ( )	444.96
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	113.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	99.1
VOID RATIO	0.701
DEGREE OF SATURATION, S (%)	54.21

	MEASURED DIMENSIONS Length	Diameter
1	5.985	2.414
2	5.973	2.397
3	5.977	2.407
4	5.981	2.396
5	5.987	2.430
6	**XXXXX**	2.382
Average	5.981	2.404

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Light yellowish brown clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24709G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24719G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S103			
Mass of Container & Wet Specimen, M1 (g)	457.72			
Mass of Container & Dry Specimen, M2 (g)	427.93			
Mass of Container, M3 (g)	95.48			
WATER CONTENT, wn (%)	**8.96**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	942.31
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	942.31
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	6.086
Specimen Area, A (in^2) or ( )	4.567
Specimen Volume, V (cm^3) or ( )	455.43
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	129.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	118.6
VOID RATIO	0.421
DEGREE OF SATURATION, S (%)	57.44

	MEASURED DIMENSIONS Length	Diameter
1	6.092	2.414
2	6.083	2.409
3	6.117	2.414
4	6.036	2.405
5	6.101	2.413
6	**XXXXX**	2.413
Average	6.086	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24719G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24719G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S118			
Mass of Container & Wet Specimen, M1 (g)	431.03			
Mass of Container & Dry Specimen, M2 (g)	397.90			
Mass of Container, M3 (g)	95.30			
WATER CONTENT, wn (%)	**10.95**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Has oil stain

UNIT WEIGHT

Container No.	S118
Mass of Container and Wet Specimen, M4 (g)	972.91
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	972.91
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	5.990
Specimen Area, A (in^2) or ( )	4.567
Specimen Volume, V (cm^3) or ( )	448.35
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	135.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	122.1
VOID RATIO	0.380
DEGREE OF SATURATION, S (%)	77.70

	MEASURED DIMENSIONS Length	Diameter
1	5.996	2.414
2	5.994	2.415
3	5.993	2.414
4	5.988	2.406
5	5.981	2.412
6	**XXXXX**	2.408
Average	5.990	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Very dark brown Clay (CL)

TESTED BY: LV DATE: 8/18/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24719G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24722G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE		1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS	X	2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S15			
Mass of Container & Wet Specimen, M1 (g)	349.20			
Mass of Container & Dry Specimen, M2 (g)	326.85			
Mass of Container, M3 (g)	79.58			
WATER CONTENT, wn (%)	**9.04**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Minor roots

UNIT WEIGHT

Container No.	M7
Mass of Container and Wet Specimen, M4 (g)	909.02
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	909.02
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	6.008
Specimen Area, A (in^2) or ( )	4.565
Specimen Volume, V (cm^3) or ( )	449.41
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	126.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.8
VOID RATIO	0.456
DEGREE OF SATURATION, S (%)	53.58

	MEASURED DIMENSIONS Length	Diameter
1	6.022	2.408
2	6.004	2.407
3	6.004	2.410
4	6.004	2.409
5	6.005	2.415
6	**XXXXX**	2.416
Average	6.008	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/28/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24722G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24722G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S223			
Mass of Container & Wet Specimen, M1 (g)	460.87			
Mass of Container & Dry Specimen, M2 (g)	429.33			
Mass of Container, M3 (g)	140.62			
WATER CONTENT, wn (%)	**10.92**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	940.78
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	940.78
Specimen Diameter, D (in) or ( )	2.408
Specimen Length, L (in) or ( )	6.018
Specimen Area, A (in^2) or ( )	4.555
Specimen Volume, V (cm^3) or ( )	449.21
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	130.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	117.9
VOID RATIO	0.429
DEGREE OF SATURATION, S (%)	68.69

	MEASURED DIMENSIONS Length	Diameter
1	6.018	2.410
2	6.039	2.414
3	6.020	2.409
4	5.998	2.407
5	6.013	2.401
6	**XXXXX**	2.409
Average	6.018	2.408

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/28/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24722G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24738G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	C4			
Mass of Container & Wet Specimen, M1 (g)	413.18			
Mass of Container & Dry Specimen, M2 (g)	374.60			
Mass of Container, M3 (g)	71.90			
WATER CONTENT, wn (%)	**12.75**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	914.30
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	914.30
Specimen Diameter, D (in) or ( )	2.401
Specimen Length, L (in) or ( )	5.852
Specimen Area, A (in^2) or ( )	4.528
Specimen Volume, V (cm^3) or ( )	434.28
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	131.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	116.6
VOID RATIO	0.446
DEGREE OF SATURATION, S (%)	77.17

	MEASURED DIMENSIONS Length	Diameter
1	5.850	2.392
2	5.848	2.396
3	5.841	2.405
4	5.879	2.408
5	5.844	2.408
6	**XXXXX**	2.398
Average	5.852	2.401

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Brown clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24738G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24738G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS		1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED	X	3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S108			
Mass of Container & Wet Specimen, M1 (g)	447.77			
Mass of Container & Dry Specimen, M2 (g)	401.83			
Mass of Container, M3 (g)	95.90			
WATER CONTENT, wn (%)	**15.02**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	799.86
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	799.86
Specimen Diameter, D (in) or ( )	2.400
Specimen Length, L (in) or ( )	5.915
Specimen Area, A (in^2) or ( )	4.525
Specimen Volume, V (cm^3) or ( )	438.62
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	113.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	99.0
VOID RATIO	0.703
DEGREE OF SATURATION, S (%)	57.68

	MEASURED DIMENSIONS Length	Diameter
1	5.921	2.406
2	5.910	2.401
3	5.921	2.390
4	5.912	2.404
5	5.913	
6	**XXXXX**	
Average	5.915	2.400

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mara

unit weight Kast P24738G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24803G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M8			
Mass of Container & Wet Specimen, M1 (g)	498.03			
Mass of Container & Dry Specimen, M2 (g)	454.26			
Mass of Container, M3 (g)	89.40			
WATER CONTENT, wn (%)	**12.00**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	911.96
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	911.96
Specimen Diameter, D (in) or ( )	2.302
Specimen Length, L (in) or ( )	5.988
Specimen Area, A (in^2) or ( )	4.160
Specimen Volume, V (cm^3) or ( )	408.21
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	139.5
DRY UNIT WEIGHT, DUW (pcf) or ( )	124.6
VOID RATIO	0.353
DEGREE OF SATURATION, S (%)	91.82

	MEASURED DIMENSIONS Length	Diameter
1	5.999	2.204
2	5.980	2.203
3	5.980	2.206
4	5.986	2.397
5	5.994	2.398
6	**XXXXX**	2.401
Average	5.988	2.302

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Brown clayey Sand (SC)

TESTED BY: LV DATE: 8/28/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24803G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24803G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M7			
Mass of Container & Wet Specimen, M1 (g)	374.89			
Mass of Container & Dry Specimen, M2 (g)	340.09			
Mass of Container, M3 (g)	91.04			
WATER CONTENT, wn (%)	**13.97**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	M7
Mass of Container and Wet Specimen, M4 (g)	959.80
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	959.80
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.958
Specimen Area, A (in^2) or ( )	4.564
Specimen Volume, V (cm^3) or ( )	445.61
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	134.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	117.9
VOID RATIO	0.429
DEGREE OF SATURATION, S (%)	87.87

	MEASURED DIMENSIONS Length	Diameter
1	5.941	2.411
2	5.962	2.410
3	5.966	2.412
4	5.959	2.410
5	5.961	2.412
6	**XXXXX**	2.409
Average	5.958	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/28/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24803G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24803G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT	X	1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M3			
Mass of Container & Wet Specimen, M1 (g)	806.18			
Mass of Container & Dry Specimen, M2 (g)	768.19			
Mass of Container, M3 (g)	89.90			
WATER CONTENT, wn (%)	**5.60**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Lots of broken seashells

UNIT WEIGHT

Container No.	M7
Mass of Container and Wet Specimen, M4 (g)	702.28
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	702.28
Specimen Diameter, D (in) or ( )	2.388
Specimen Length, L (in) or ( )	5.613
Specimen Area, A (in^2) or ( )	4.477
Specimen Volume, V (cm^3) or ( )	411.79
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	106.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	100.8
VOID RATIO	0.673
DEGREE OF SATURATION, S (%)	22.47

	MEASURED DIMENSIONS Length	Diameter
1	5.584	2.319
2	5.650	2.400
3	5.582	2.389
4	5.619	2.395
5	5.630	2.402
6	**XXXXX**	2.420
Average	5.613	2.388

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray poorly graded Sand with silt (SP-SM)

TESTED BY: LV DATE: 8/28/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mara

unit weight Kast P24803G S06 15 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24812G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET	X	3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S18			
Mass of Container & Wet Specimen, M1 (g)	700.74			
Mass of Container & Dry Specimen, M2 (g)	620.53			
Mass of Container, M3 (g)	83.54			
WATER CONTENT, wn (%)	**14.94**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S18
Mass of Container and Wet Specimen, M4 (g)	890.72
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	890.72
Specimen Diameter, D (in) or ( )	2.399
Specimen Length, L (in) or ( )	5.858
Specimen Area, A (in^2) or ( )	4.521
Specimen Volume, V (cm^3) or ( )	433.96
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	111.5
VOID RATIO	0.512
DEGREE OF SATURATION, S (%)	78.78

	MEASURED DIMENSIONS Length	Diameter
1	5.865	2.410
2	5.861	2.411
3	5.851	2.414
4	5.866	2.402
5	5.846	2.392
6	**XXXXX**	2.366
Average	5.858	2.399

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Brown clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24812G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24812G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S14			
Mass of Container & Wet Specimen, M1 (g)	515.29			
Mass of Container & Dry Specimen, M2 (g)	461.93			
Mass of Container, M3 (g)	122.04			
WATER CONTENT, wn (%)	**15.70**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	S14
Mass of Container and Wet Specimen, M4 (g)	961.54
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	961.54
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	5.999
Specimen Area, A (in^2) or ( )	4.569
Specimen Volume, V (cm^3) or ( )	449.12
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.5
VOID RATIO	0.459
DEGREE OF SATURATION, S (%)	92.32

	MEASURED DIMENSIONS Length	Diameter
1	5.999	2.416
2	6.007	2.410
3	5.992	2.409
4	6.003	2.410
5	5.994	2.415
6	**XXXXX**	2.411
Average	5.999	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24812G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24819G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S114			
Mass of Container & Wet Specimen, M1 (g)	344.11			
Mass of Container & Dry Specimen, M2 (g)	314.87			
Mass of Container, M3 (g)	96.46			
WATER CONTENT, wn (%)	**13.39**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S101
Mass of Container and Wet Specimen, M4 (g)	949.00
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	949.00
Specimen Diameter, D (in) or ( )	2.408
Specimen Length, L (in) or ( )	5.792
Specimen Area, A (in^2) or ( )	4.553
Specimen Volume, V (cm^3) or ( )	432.10
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	137.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	120.9
VOID RATIO	0.394
DEGREE OF SATURATION, S (%)	91.75

	MEASURED DIMENSIONS Length	Diameter
1	5.796	2.405
2	5.779	2.403
3	5.800	2.406
4	5.789	2.410
5	5.794	2.413
6	**XXXXX**	2.409
Average	5.792	2.408

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24819G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24819G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S101			
Mass of Container & Wet Specimen, M1 (g)	565.81			
Mass of Container & Dry Specimen, M2 (g)	523.50			
Mass of Container, M3 (g)	95.29			
WATER CONTENT, wn (%)	**9.88**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S101
Mass of Container and Wet Specimen, M4 (g)	977.52
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	977.52
Specimen Diameter, D (in) or ( )	2.406
Specimen Length, L (in) or ( )	5.965
Specimen Area, A (in^2) or ( )	4.546
Specimen Volume, V (cm^3) or ( )	444.39
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	137.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	125.0
VOID RATIO	0.349
DEGREE OF SATURATION, S (%)	76.50

	MEASURED DIMENSIONS Length	Diameter
1	5.961	2.405
2	5.968	2.401
3	5.967	2.404
4	5.959	2.406
5	5.972	2.409
6	**XXXXX**	2.410
Average	5.965	2.406

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24819G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24833G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S124			
Mass of Container & Wet Specimen, M1 (g)	436.97			
Mass of Container & Dry Specimen, M2 (g)	411.67			
Mass of Container, M3 (g)	95.36			
WATER CONTENT, wn (%)	**8.00**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S124
Mass of Container and Wet Specimen, M4 (g)	968.12
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	968.12
Specimen Diameter, D (in) or ( )	2.415
Specimen Length, L (in) or ( )	5.919
Specimen Area, A (in^2) or ( )	4.581
Specimen Volume, V (cm^3) or ( )	444.28
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	136.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	126.0
VOID RATIO	0.338
DEGREE OF SATURATION, S (%)	63.86

	MEASURED DIMENSIONS Length	Diameter
1	5.915	2.420
2	5.921	2.420
3	5.908	2.416
4	5.936	2.409
5	5.914	2.416
6	**XXXXX**	2.409
Average	5.919	2.415

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24833G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: P24833G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S124			
Mass of Container & Wet Specimen, M1 (g)	510.15			
Mass of Container & Dry Specimen, M2 (g)	455.38			
Mass of Container, M3 (g)	95.53			
WATER CONTENT, wn (%)	**15.22**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S124
Mass of Container and Wet Specimen, M4 (g)	944.64
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	944.64
Specimen Diameter, D (in) or ( )	2.413
Specimen Length, L (in) or ( )	5.943
Specimen Area, A (in^2) or ( )	4.574
Specimen Volume, V (cm^3) or ( )	445.45
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	114.9
VOID RATIO	0.467
DEGREE OF SATURATION, S (%)	88.00

	MEASURED DIMENSIONS Length	Diameter
1	5.954	2.416
2	5.939	2.412
3	5.944	2.412
4	5.924	2.415
5	5.956	2.410
6	**XXXXX**	2.414
Average	5.943	2.413

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/27/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast P24833G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24412G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S36			
Mass of Container & Wet Specimen, M1 (g)	423.05			
Mass of Container & Dry Specimen, M2 (g)	378.18			
Mass of Container, M3 (g)	82.81			
WATER CONTENT, wn (%)	**15.19**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	883.34
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	883.34
Specimen Diameter, D (in) or ( )	2.406
Specimen Length, L (in) or ( )	5.552
Specimen Area, A (in^2) or ( )	4.548
Specimen Volume, V (cm^3) or ( )	413.65
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.7
VOID RATIO	0.457
DEGREE OF SATURATION, S (%)	89.78

	MEASURED DIMENSIONS Length	Diameter
1	5.546	2.398
2	5.554	2.406
3	5.557	2.410
4	5.551	2.403
5	5.553	2.413
6	**XXXXX**	2.408
Average	5.552	2.406

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24412G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24412G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)	X	3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S9			
Mass of Container & Wet Specimen, M1 (g)	489.25			
Mass of Container & Dry Specimen, M2 (g)	432.40			
Mass of Container, M3 (g)	87.89			
WATER CONTENT, wn (%)	**16.50**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S9
Mass of Container and Wet Specimen, M4 (g)	890.81
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	890.81
Specimen Diameter, D (in) or ( )	2.406
Specimen Length, L (in) or ( )	5.616
Specimen Area, A (in^2) or ( )	4.545
Specimen Volume, V (cm^3) or ( )	418.26
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	114.1
VOID RATIO	0.477
DEGREE OF SATURATION, S (%)	93.42

	MEASURED DIMENSIONS Length	Diameter
1	5.602	2.403
2	5.630	2.410
3	5.614	2.403
4	5.630	2.406
5	5.605	2.405
6	**XXXXX**	2.406
Average	5.616	2.406

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive gray sandy Clay (CL)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24412G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24412G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT	X						3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S14			
Mass of Container & Wet Specimen, M1 (g)	423.37			
Mass of Container & Dry Specimen, M2 (g)	377.22			
Mass of Container, M3 (g)	122.08			
WATER CONTENT, wn (%)	**18.09**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S14
Mass of Container and Wet Specimen, M4 (g)	846.93
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	846.93
Specimen Diameter, D (in) or ( )	2.407
Specimen Length, L (in) or ( )	5.905
Specimen Area, A (in^2) or ( )	4.551
Specimen Volume, V (cm^3) or ( )	440.35
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	120.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	101.7
VOID RATIO	0.658
DEGREE OF SATURATION, S (%)	74.25

	MEASURED DIMENSIONS Length	Diameter
1	5.936	2.400
2	5.932	2.410
3	5.917	2.410
4	5.865	2.407
5	5.873	2.403
6	**XXXXX**	2.413
Average	5.905	2.407

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray silty Sand (SM)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24412G S06 15 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24423G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S215			
Mass of Container & Wet Specimen, M1 (g)	542.90			
Mass of Container & Dry Specimen, M2 (g)	489.62			
Mass of Container, M3 (g)	137.45			
WATER CONTENT, wn (%)	**15.13**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S215
Mass of Container and Wet Specimen, M4 (g)	907.76
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	907.76
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	5.666
Specimen Area, A (in^2) or ( )	4.567
Specimen Volume, V (cm^3) or ( )	423.99
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	116.1
VOID RATIO	0.452
DEGREE OF SATURATION, S (%)	90.39

	MEASURED DIMENSIONS Length	Diameter
1	5.670	2.410
2	5.662	2.404
3	5.676	2.405
4	5.659	2.416
5	5.661	2.418
6	**XXXXX**	2.415
Average	5.666	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24423G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24423G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY	X	1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL		X	3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED		1). NONE	
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S200			
Mass of Container & Wet Specimen, M1 (g)	510.91			
Mass of Container & Dry Specimen, M2 (g)	467.56			
Mass of Container, M3 (g)	140.63			
WATER CONTENT, wn (%)	**13.26**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	945.66
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	945.66
Specimen Diameter, D (in) or ( )	2.405
Specimen Length, L (in) or ( )	5.973
Specimen Area, A (in^2) or ( )	4.543
Specimen Volume, V (cm^3) or ( )	444.63
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	117.2
VOID RATIO	0.438
DEGREE OF SATURATION, S (%)	81.77

	MEASURED DIMENSIONS Length	Diameter
1	5.968	2.402
2	5.988	2.396
3	5.988	2.382
4	5.950	2.417
5	5.970	2.426
6	**XXXXX**	2.407
Average	5.973	2.405

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24423G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24426G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S205			
Mass of Container & Wet Specimen, M1 (g)	518.79			
Mass of Container & Dry Specimen, M2 (g)	472.73			
Mass of Container, M3 (g)	139.34			
WATER CONTENT, wn (%)	**13.82**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	895.89
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	895.89
Specimen Diameter, D (in) or ( )	2.414
Specimen Length, L (in) or ( )	5.959
Specimen Area, A (in^2) or ( )	4.576
Specimen Volume, V (cm^3) or ( )	446.78
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	125.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	110.0
VOID RATIO	0.532
DEGREE OF SATURATION, S (%)	70.07

	MEASURED DIMENSIONS Length	Diameter
1	5.943	2.419
2	5.969	2.426
3	5.956	2.411
4	5.966	2.403
5	5.959	2.414
6	**XXXXX**	2.409
Average	5.959	2.414

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown Clay (CL)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24426G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24426G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S219			
Mass of Container & Wet Specimen, M1 (g)	597.94			
Mass of Container & Dry Specimen, M2 (g)	547.63			
Mass of Container, M3 (g)	140.70			
WATER CONTENT, wn (%)	**12.36**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	943.27
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	943.27
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.808
Specimen Area, A (in^2) or ( )	4.557
Specimen Volume, V (cm^3) or ( )	433.65
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	135.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	120.8
VOID RATIO	0.396
DEGREE OF SATURATION, S (%)	84.36

	MEASURED DIMENSIONS Length	Diameter
1	5.801	2.402
2	5.809	2.402
3	5.796	2.401
4	5.810	2.412
5	5.822	2.422
6	**XXXXX**	2.413
Average	5.808	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown sandy Clay (CL)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24426G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24426G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S218			
Mass of Container & Wet Specimen, M1 (g)	583.08			
Mass of Container & Dry Specimen, M2 (g)	478.31			
Mass of Container, M3 (g)	140.42			
WATER CONTENT, wn (%)	**31.01**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	864.35
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	864.35
Specimen Diameter, D (in) or ( )	2.411
Specimen Length, L (in) or ( )	6.021
Specimen Area, A (in^2) or ( )	4.566
Specimen Volume, V (cm^3) or ( )	450.49
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	119.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	91.4
VOID RATIO	0.844
DEGREE OF SATURATION, S (%)	99.24

	MEASURED DIMENSIONS Length	Diameter
1	6.027	2.398
2	6.036	2.414
3	6.003	2.409
4	6.021	2.404
5	6.016	2.420
6	**XXXXX**	2.422
Average	6.021	2.411

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray Clay (CL)

TESTED BY: LV DATE: 8/17/15 CALCULATED BY: TO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24426G S06 15 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24508G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S211			
Mass of Container & Wet Specimen, M1 (g)	627.28			
Mass of Container & Dry Specimen, M2 (g)	563.43			
Mass of Container, M3 (g)	148.48			
WATER CONTENT, wn (%)	**15.39**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S211
Mass of Container and Wet Specimen, M4 (g)	906.10
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	906.10
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	5.737
Specimen Area, A (in^2) or ( )	4.556
Specimen Volume, V (cm^3) or ( )	428.34
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	114.4
VOID RATIO	0.473
DEGREE OF SATURATION, S (%)	87.76

	MEASURED DIMENSIONS Length	Diameter
1	5.729	2.411
2	5.750	2.412
3	5.714	2.409
4	5.748	2.406
5	5.745	2.410
6	**XXXXX**	2.403
Average	5.737	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24508G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24508G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S200			
Mass of Container & Wet Specimen, M1 (g)	554.77			
Mass of Container & Dry Specimen, M2 (g)	505.99			
Mass of Container, M3 (g)	140.65			
WATER CONTENT, wn (%)	**13.35**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S200
Mass of Container and Wet Specimen, M4 (g)	933.37
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	933.37
Specimen Diameter, D (in) or ( )	2.409
Specimen Length, L (in) or ( )	6.001
Specimen Area, A (in^2) or ( )	4.556
Specimen Volume, V (cm^3) or ( )	448.05
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	130.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	114.7
VOID RATIO	0.469
DEGREE OF SATURATION, S (%)	76.84

	MEASURED DIMENSIONS Length	Diameter
1	6.020	2.403
2	5.977	2.413
3	5.992	2.407
4	6.011	2.405
5	6.006	2.412
6	**XXXXX**	2.411
Average	6.001	2.409

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast R24508G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24508G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT		X					3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY							4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT	X	1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S221			
Mass of Container & Wet Specimen, M1 (g)	667.05			
Mass of Container & Dry Specimen, M2 (g)	645.85			
Mass of Container, M3 (g)	140.34			
WATER CONTENT, wn (%)	**4.19**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S221
Mass of Container and Wet Specimen, M4 (g)	683.91
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	683.91
Specimen Diameter, D (in) or ( )	2.408
Specimen Length, L (in) or ( )	5.791
Specimen Area, A (in^2) or ( )	4.554
Specimen Volume, V (cm^3) or ( )	432.17
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	98.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	94.8
VOID RATIO	0.778
DEGREE OF SATURATION, S (%)	14.56

	MEASURED DIMENSIONS Length	Diameter
1	5.800	2.412
2	5.779	2.400
3	5.807	2.411
4	5.796	2.419
5	5.773	2.406
6	**XXXXX**	2.400
Average	5.791	2.408

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Yellowish gray silty Sand (SM)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24508G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24509G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	C8			
Mass of Container & Wet Specimen, M1 (g)	539.30			
Mass of Container & Dry Specimen, M2 (g)	500.22			
Mass of Container, M3 (g)	71.56			
WATER CONTENT, wn (%)	**9.12**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	C8
Mass of Container and Wet Specimen, M4 (g)	952.06
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	952.06
Specimen Diameter, D (in) or ( )	2.390
Specimen Length, L (in) or ( )	6.041
Specimen Area, A (in^2) or ( )	4.487
Specimen Volume, V (cm^3) or ( )	444.16
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	122.7
VOID RATIO	0.374
DEGREE OF SATURATION, S (%)	65.87

	MEASURED DIMENSIONS Length	Diameter
1	6.032	2.388
2	6.061	2.390
3	6.076	2.388
4	5.985	2.393
5	6.050	2.390
6	**XXXXX**	2.392
Average	6.041	2.390

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24509G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24509G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S29			
Mass of Container & Wet Specimen, M1 (g)	463.46			
Mass of Container & Dry Specimen, M2 (g)	416.54			
Mass of Container, M3 (g)	126.01			
WATER CONTENT, wn (%)	**16.15**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S29
Mass of Container and Wet Specimen, M4 (g)	910.36
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	910.36
Specimen Diameter, D (in) or ( )	2.397
Specimen Length, L (in) or ( )	6.032
Specimen Area, A (in^2) or ( )	4.513
Specimen Volume, V (cm^3) or ( )	446.03
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	127.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	109.7
VOID RATIO	0.537
DEGREE OF SATURATION, S (%)	81.28

	MEASURED DIMENSIONS Length	Diameter
1	6.058	2.391
2	5.994	2.388
3	6.018	2.389
4	6.076	2.407
5	6.012	2.397
6	**XXXXX**	2.410
Average	6.032	2.397

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Very dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24509G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24509G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S88			
Mass of Container & Wet Specimen, M1 (g)	472.17			
Mass of Container & Dry Specimen, M2 (g)	421.90			
Mass of Container, M3 (g)	113.06			
WATER CONTENT, wn (%)	**16.28**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S88
Mass of Container and Wet Specimen, M4 (g)	909.71
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	909.71
Specimen Diameter, D (in) or ( )	2.400
Specimen Length, L (in) or ( )	5.990
Specimen Area, A (in^2) or ( )	4.523
Specimen Volume, V (cm^3) or ( )	443.98
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	127.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	110.0
VOID RATIO	0.532
DEGREE OF SATURATION, S (%)	82.57

	MEASURED DIMENSIONS Length	Diameter
1	5.990	2.403
2	5.979	2.395
3	5.991	2.398
4	5.987	2.406
5	6.002	2.401
6	**XXXXX**	2.396
Average	5.990	2.400

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive gray clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24509G S06 15 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24522G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S45			
Mass of Container & Wet Specimen, M1 (g)	353.60			
Mass of Container & Dry Specimen, M2 (g)	319.33			
Mass of Container, M3 (g)	77.62			
WATER CONTENT, wn (%)	**14.18**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S45
Mass of Container and Wet Specimen, M4 (g)	855.08
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	855.08
Specimen Diameter, D (in) or ( )	2.390
Specimen Length, L (in) or ( )	5.658
Specimen Area, A (in^2) or ( )	4.486
Specimen Volume, V (cm^3) or ( )	415.99
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.4
VOID RATIO	0.500
DEGREE OF SATURATION, S (%)	76.60

	MEASURED DIMENSIONS Length	Diameter
1	5.659	2.387
2	5.661	2.391
3	5.665	2.388
4	5.657	2.390
5	5.650	2.392
6	**XXXXX**	2.392
Average	5.658	2.390

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24522G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24522G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND					OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S46			
Mass of Container & Wet Specimen, M1 (g)	461.02			
Mass of Container & Dry Specimen, M2 (g)	422.01			
Mass of Container, M3 (g)	113.82			
WATER CONTENT, wn (%)	**12.66**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S46
Mass of Container and Wet Specimen, M4 (g)	894.50
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	894.50
Specimen Diameter, D (in) or ( )	2.404
Specimen Length, L (in) or ( )	5.828
Specimen Area, A (in^2) or ( )	4.537
Specimen Volume, V (cm^3) or ( )	433.32
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	114.3
VOID RATIO	0.474
DEGREE OF SATURATION, S (%)	72.05

	MEASURED DIMENSIONS Length	Diameter
1	5.817	2.405
2	5.843	2.399
3	5.834	2.404
4	5.828	2.416
5	5.819	2.406
6	**XXXXX**	2.391
Average	5.828	2.404

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray Clay (CL)

TESTED BY: LV DATE: 08/20/215 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24522G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24522G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S33			
Mass of Container & Wet Specimen, M1 (g)	412.72			
Mass of Container & Dry Specimen, M2 (g)	366.82			
Mass of Container, M3 (g)	110.14			
WATER CONTENT, wn (%)	**17.88**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S33
Mass of Container and Wet Specimen, M4 (g)	776.55
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	776.55
Specimen Diameter, D (in) or ( )	2.398
Specimen Length, L (in) or ( )	6.008
Specimen Area, A (in^2) or ( )	4.516
Specimen Volume, V (cm^3) or ( )	444.56
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	109.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	92.5
VOID RATIO	0.822
DEGREE OF SATURATION, S (%)	58.73

	MEASURED DIMENSIONS Length	Diameter
1	6.019	2.396
2	5.986	2.391
3	6.019	2.397
4	5.994	2.398
5	6.020	2.400
6	**XXXXX**	2.405
Average	6.008	2.398

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray clayey Sand (SC)

TESTED BY: LV DATE: 08/20/215 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24522G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24609G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S205			
Mass of Container & Wet Specimen, M1 (g)	499.91			
Mass of Container & Dry Specimen, M2 (g)	464.21			
Mass of Container, M3 (g)	139.35			
WATER CONTENT, wn (%)	**10.99**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S205
Mass of Container and Wet Specimen, M4 (g)	918.54
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	918.54
Specimen Diameter, D (in) or ( )	2.414
Specimen Length, L (in) or ( )	5.744
Specimen Area, A (in^2) or ( )	4.575
Specimen Volume, V (cm^3) or ( )	430.61
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.1
DRY UNIT WEIGHT, DUW (pcf) or ( )	119.9
VOID RATIO	0.406
DEGREE OF SATURATION, S (%)	73.16

	MEASURED DIMENSIONS Length	Diameter
1	5.727	2.408
2	5.738	2.409
3	5.748	2.418
4	5.746	2.416
5	5.760	2.412
6	**XXXXX**	2.418
Average	5.744	2.414

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 08/20/215 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24609G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24609G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S222			
Mass of Container & Wet Specimen, M1 (g)	444.92			
Mass of Container & Dry Specimen, M2 (g)	406.13			
Mass of Container, M3 (g)	140.48			
WATER CONTENT, wn (%)	**14.60**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S222
Mass of Container and Wet Specimen, M4 (g)	917.86
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	917.86
Specimen Diameter, D (in) or ( )	2.403
Specimen Length, L (in) or ( )	5.981
Specimen Area, A (in^2) or ( )	4.535
Specimen Volume, V (cm^3) or ( )	444.42
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.5
VOID RATIO	0.498
DEGREE OF SATURATION, S (%)	79.13

	MEASURED DIMENSIONS Length	Diameter
1	5.954	2.406
2	5.991	2.407
3	5.982	2.396
4	5.997	2.410
5	5.980	2.403
6	**XXXXX**	2.395
Average	5.981	2.403

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24609G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24612G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S215			
Mass of Container & Wet Specimen, M1 (g)	457.54			
Mass of Container & Dry Specimen, M2 (g)	427.83			
Mass of Container, M3 (g)	137.44			
WATER CONTENT, wn (%)	**10.23**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S215
Mass of Container and Wet Specimen, M4 (g)	757.46
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	757.46
Specimen Diameter, D (in) or ( )	2.375
Specimen Length, L (in) or ( )	5.369
Specimen Area, A (in^2) or ( )	4.431
Specimen Volume, V (cm^3) or ( )	389.85
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	121.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	110.1
VOID RATIO	0.531
DEGREE OF SATURATION, S (%)	52.03

	MEASURED DIMENSIONS Length	Diameter
1	5.355	2.397
2	5.357	2.313
3	5.360	2.311
4	5.391	2.411
5	5.380	2.409
6	**XXXXX**	2.411
Average	5.369	2.375

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Reddish brown silty Sand with seashells (SM)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24612G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24612G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S220			
Mass of Container & Wet Specimen, M1 (g)	429.69			
Mass of Container & Dry Specimen, M2 (g)	406.12			
Mass of Container, M3 (g)	140.52			
WATER CONTENT, wn (%)	**8.87**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S220
Mass of Container and Wet Specimen, M4 (g)	289.38
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	289.38
Specimen Diameter, D (in) or ( )	2.383
Specimen Length, L (in) or ( )	2.215
Specimen Area, A (in^2) or ( )	4.460
Specimen Volume, V (cm^3) or ( )	161.89
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	111.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	102.5
VOID RATIO	0.645
DEGREE OF SATURATION, S (%)	37.18

	MEASURED DIMENSIONS Length	Diameter
1	2.238	2.385
2	2.224	2.381
3	2.247	
4	2.227	
5	2.139	
6	**XXXXX**	
Average	2.215	2.383

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24612G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24706G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S209			
Mass of Container & Wet Specimen, M1 (g)	520.09			
Mass of Container & Dry Specimen, M2 (g)	498.12			
Mass of Container, M3 (g)	146.55			
WATER CONTENT, wn (%)	**6.25**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S209
Mass of Container and Wet Specimen, M4 (g)	757.72
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	757.72
Specimen Diameter, D (in) or ( )	2.390
Specimen Length, L (in) or ( )	5.696
Specimen Area, A (in^2) or ( )	4.484
Specimen Volume, V (cm^3) or ( )	418.56
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	113.0
DRY UNIT WEIGHT, DUW (pcf) or ( )	106.3
VOID RATIO	0.586
DEGREE OF SATURATION, S (%)	28.81

	MEASURED DIMENSIONS Length	Diameter
1	5.691	2.386
2	5.740	2.379
3	5.694	2.378
4	5.615	2.398
5	5.739	2.396
6	**XXXXX**	2.400
Average	5.696	2.390

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown clayey Sand (SC)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TO CHECKED BY: TJO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24706G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24706G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S214			
Mass of Container & Wet Specimen, M1 (g)	687.35			
Mass of Container & Dry Specimen, M2 (g)	620.37			
Mass of Container, M3 (g)	138.73			
WATER CONTENT, wn (%)	**13.91**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S214
Mass of Container and Wet Specimen, M4 (g)	965.58
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	965.58
Specimen Diameter, D (in) or ( )	2.414
Specimen Length, L (in) or ( )	6.002
Specimen Area, A (in^2) or ( )	4.575
Specimen Volume, V (cm^3) or ( )	449.94
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	133.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	117.6
VOID RATIO	0.434
DEGREE OF SATURATION, S (%)	86.54

	MEASURED DIMENSIONS Length	Diameter
1	6.002	2.416
2	5.986	2.407
3	6.012	2.410
4	5.996	2.416
5	6.012	2.417
6	**XXXXX**	2.415
Average	6.002	2.414

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown sandy Clay (CL)

TESTED BY: LV DATE: 8/21/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24706G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24709G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S44			
Mass of Container & Wet Specimen, M1 (g)	576.37			
Mass of Container & Dry Specimen, M2 (g)	526.94			
Mass of Container, M3 (g)	116.86			
WATER CONTENT, wn (%)	**12.05**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S44
Mass of Container and Wet Specimen, M4 (g)	941.43
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	941.43
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	6.008
Specimen Area, A (in^2) or ( )	4.569
Specimen Volume, V (cm^3) or ( )	449.89
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	130.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	116.6
VOID RATIO	0.446
DEGREE OF SATURATION, S (%)	73.00

	MEASURED DIMENSIONS Length	Diameter
1	6.025	2.418
2	6.014	2.414
3	6.003	2.412
4	6.013	2.406
5	5.987	2.404
6	**XXXXX**	2.418
Average	6.008	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24709G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24709G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S25			
Mass of Container & Wet Specimen, M1 (g)	476.81			
Mass of Container & Dry Specimen, M2 (g)	435.31			
Mass of Container, M3 (g)	99.00			
WATER CONTENT, wn (%)	**12.34**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S25
Mass of Container and Wet Specimen, M4 (g)	919.89
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	919.89
Specimen Diameter, D (in) or ( )	2.403
Specimen Length, L (in) or ( )	6.024
Specimen Area, A (in^2) or ( )	4.534
Specimen Volume, V (cm^3) or ( )	447.56
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	114.2
VOID RATIO	0.476
DEGREE OF SATURATION, S (%)	70.03

	MEASURED DIMENSIONS Length	Diameter
1	6.027	2.400
2	6.008	2.410
3	6.051	2.406
4	6.036	2.406
5	5.997	2.403
6	**XXXXX**	2.391
Average	6.024	2.403

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24709G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24709G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)	X	1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))		2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S216			
Mass of Container & Wet Specimen, M1 (g)	394.09			
Mass of Container & Dry Specimen, M2 (g)	378.75			
Mass of Container, M3 (g)	148.60			
WATER CONTENT, wn (%)	**6.67**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S216
Mass of Container and Wet Specimen, M4 (g)	688.25
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	688.25
Specimen Diameter, D (in) or ( )	2.402
Specimen Length, L (in) or ( )	5.916
Specimen Area, A (in^2) or ( )	4.533
Specimen Volume, V (cm^3) or ( )	439.40
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	97.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	91.7
VOID RATIO	0.839
DEGREE OF SATURATION, S (%)	21.46

	MEASURED DIMENSIONS Length	Diameter
1	5.927	2.397
2	5.972	2.399
3	5.953	2.401
4	5.888	2.407
5	5.838	2.399
6	**XXXXX**	2.411
Average	5.916	2.402

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray silty Sand (SM)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24709G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24719G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S213			
Mass of Container & Wet Specimen, M1 (g)	500.46			
Mass of Container & Dry Specimen, M2 (g)	475.39			
Mass of Container, M3 (g)	137.54			
WATER CONTENT, wn (%)	**7.42**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S213
Mass of Container and Wet Specimen, M4 (g)	933.32
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	933.32
Specimen Diameter, D (in) or ( )	2.412
Specimen Length, L (in) or ( )	5.879
Specimen Area, A (in^2) or ( )	4.569
Specimen Volume, V (cm^3) or ( )	440.23
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.4
DRY UNIT WEIGHT, DUW (pcf) or ( )	123.2
VOID RATIO	0.368
DEGREE OF SATURATION, S (%)	54.44

	MEASURED DIMENSIONS Length	Diameter
1	5.878	2.407
2	5.879	2.401
3	5.890	2.405
4	5.871	2.420
5	5.879	2.421
6	**XXXXX**	2.418
Average	5.879	2.412

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24719G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24719G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S201			
Mass of Container & Wet Specimen, M1 (g)	437.07			
Mass of Container & Dry Specimen, M2 (g)	405.57			
Mass of Container, M3 (g)	147.64			
WATER CONTENT, wn (%)	**12.21**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S201
Mass of Container and Wet Specimen, M4 (g)	854.73
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	854.73
Specimen Diameter, D (in) or ( )	2.394
Specimen Length, L (in) or ( )	5.700
Specimen Area, A (in^2) or ( )	4.501
Specimen Volume, V (cm^3) or ( )	420.48
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	126.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.1
VOID RATIO	0.490
DEGREE OF SATURATION, S (%)	67.23

	MEASURED DIMENSIONS Length	Diameter
1	5.714	2.397
2	5.696	2.384
3	5.677	2.389
4	5.702	2.394
5	5.713	2.400
6	**XXXXX**	2.400
Average	5.700	2.394

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Grayish brown clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24719G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24719G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S208			
Mass of Container & Wet Specimen, M1 (g)	476.10			
Mass of Container & Dry Specimen, M2 (g)	426.01			
Mass of Container, M3 (g)	146.58			
WATER CONTENT, wn (%)	**17.93**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S208
Mass of Container and Wet Specimen, M4 (g)	880.50
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	880.50
Specimen Diameter, D (in) or ( )	2.413
Specimen Length, L (in) or ( )	5.952
Specimen Area, A (in^2) or ( )	4.574
Specimen Volume, V (cm^3) or ( )	446.08
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	123.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	104.5
VOID RATIO	0.613
DEGREE OF SATURATION, S (%)	78.94

	MEASURED DIMENSIONS Length	Diameter
1	5.956	2.410
2	5.945	2.413
3	5.954	2.415
4	5.946	2.418
5	5.958	2.414
6	**XXXXX**	2.409
Average	5.952	2.413

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown clayey Sand (SC)

TESTED BY: LV DATE: 8/20/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24719G S06 15 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24732G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE		0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT	X	1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND	X				OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY		X					4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF	X	4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S32			
Mass of Container & Wet Specimen, M1 (g)	426.87			
Mass of Container & Dry Specimen, M2 (g)	396.04			
Mass of Container, M3 (g)	78.26			
WATER CONTENT, wn (%)	**9.70**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	843.70
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	843.70
Specimen Diameter, D (in) or ( )	2.383
Specimen Length, L (in) or ( )	5.678
Specimen Area, A (in^2) or ( )	4.461
Specimen Volume, V (cm^3) or ( )	415.10
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	126.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	115.7
VOID RATIO	0.457
DEGREE OF SATURATION, S (%)	57.28

	MEASURED DIMENSIONS Length	Diameter
1	5.683	2.372
2	5.659	2.391
3	5.710	2.391
4	5.634	2.372
5	5.704	2.383
6	**XXXXX**	2.391
Average	5.678	2.383

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark grayish brown clayey Sand (SC)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24732G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24732G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE	X	1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL		3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S33			
Mass of Container & Wet Specimen, M1 (g)	367.32			
Mass of Container & Dry Specimen, M2 (g)	337.30			
Mass of Container, M3 (g)	110.09			
WATER CONTENT, wn (%)	**13.21**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	900.98
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	900.98
Specimen Diameter, D (in) or ( )	2.400
Specimen Length, L (in) or ( )	5.912
Specimen Area, A (in^2) or ( )	4.525
Specimen Volume, V (cm^3) or ( )	438.40
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	113.4
VOID RATIO	0.486
DEGREE OF SATURATION, S (%)	73.35

	MEASURED DIMENSIONS Length	Diameter
1	5.864	2.406
2	5.930	2.407
3	5.940	2.403
4	5.917	2.397
5	5.909	2.395
6	**XXXXX**	2.394
Average	5.912	2.400

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown sandy Clay (CL)

TESTED BY: LV DATE: CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24732G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24739G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET	X	3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	C8			
Mass of Container & Wet Specimen, M1 (g)	157.50			
Mass of Container & Dry Specimen, M2 (g)	151.82			
Mass of Container, M3 (g)	71.57			
WATER CONTENT, wn (%)	**7.08**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	C8
Mass of Container and Wet Specimen, M4 (g)	638.56
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	638.56
Specimen Diameter, D (in) or ( )	2.394
Specimen Length, L (in) or ( )	4.495
Specimen Area, A (in^2) or ( )	4.499
Specimen Volume, V (cm^3) or ( )	331.43
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	120.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.3
VOID RATIO	0.501
DEGREE OF SATURATION, S (%)	38.18

	MEASURED DIMENSIONS Length	Diameter
1	4.458	2.392
2	4.512	2.407
3	4.543	2.397
4	4.525	2.367
5	4.437	2.397
6	**XXXXX**	2.401
Average	4.495	2.394

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown Clay (CL)

TESTED BY: LV DATE: CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24739G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24739G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S36			
Mass of Container & Wet Specimen, M1 (g)	270.29			
Mass of Container & Dry Specimen, M2 (g)	253.31			
Mass of Container, M3 (g)	82.81			
WATER CONTENT, wn (%)	**9.96**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	
Mass of Container and Wet Specimen, M4 (g)	881.53
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	881.53
Specimen Diameter, D (in) or ( )	2.382
Specimen Length, L (in) or ( )	5.874
Specimen Area, A (in^2) or ( )	4.456
Specimen Volume, V (cm^3) or ( )	428.98
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	128.3
DRY UNIT WEIGHT, DUW (pcf) or ( )	116.7
VOID RATIO	0.445
DEGREE OF SATURATION, S (%)	60.46

	MEASURED DIMENSIONS Length	Diameter
1	5.833	2.392
2	5.897	2.396
3	5.864	2.393
4	5.883	2.375
5	5.895	2.373
6	**XXXXX**	2.363
Average	5.874	2.382

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown sandy Clay (CL)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24739G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24739G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT	X	2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF		3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S5			
Mass of Container & Wet Specimen, M1 (g)	774.78			
Mass of Container & Dry Specimen, M2 (g)	707.15			
Mass of Container, M3 (g)	117.25			
WATER CONTENT, wn (%)	**11.46**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S5
Mass of Container and Wet Specimen, M4 (g)	803.19
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	803.19
Specimen Diameter, D (in) or ( )	2.381
Specimen Length, L (in) or ( )	5.829
Specimen Area, A (in^2) or ( )	4.453
Specimen Volume, V (cm^3) or ( )	425.32
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	117.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	105.8
VOID RATIO	0.594
DEGREE OF SATURATION, S (%)	52.14

	MEASURED DIMENSIONS Length	Diameter
1	5.796	2.394
2	5.787	2.387
3	5.855	2.389
4	5.848	2.384
5	5.860	2.382
6	**XXXXX**	2.350
Average	5.829	2.381

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown sandy Clay (CL)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24739G S07 20 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24749G

Project Name: Former Kast Property Sample No.: 1

Project Engineer: DS Depth (ft): 2.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M3			
Mass of Container & Wet Specimen, M1 (g)	517.07			
Mass of Container & Dry Specimen, M2 (g)	473.91			
Mass of Container, M3 (g)	89.90			
WATER CONTENT, wn (%)	**11.24**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

Saturated with Oil in the Middle. Very Sticky!

UNIT WEIGHT

Container No.	M3
Mass of Container and Wet Specimen, M4 (g)	887.66
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	887.66
Specimen Diameter, D (in) or ( )	2.401
Specimen Length, L (in) or ( )	5.981
Specimen Area, A (in^2) or ( )	4.528
Specimen Volume, V (cm^3) or ( )	443.84
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	124.9
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.3
VOID RATIO	0.501
DEGREE OF SATURATION, S (%)	60.58

	MEASURED DIMENSIONS Length	Diameter
1	5.988	2.403
2	5.995	2.405
3	5.985	2.398
4	5.976	2.394
5	5.962	2.404
6	**XXXXX**	2.403
Average	5.981	2.401

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive brown sandy Clay (CL)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J O'Mean

unit weight Kast R24749G S01 2.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24749G

Project Name: Former Kast Property Sample No.: 4

Project Engineer: DS Depth (ft): 7.5

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET	X	3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M91			
Mass of Container & Wet Specimen, M1 (g)	435.05			
Mass of Container & Dry Specimen, M2 (g)	387.19			
Mass of Container, M3 (g)	89.75			
WATER CONTENT, wn (%)	**16.09**			
Circle Approximate Max. Grain Size in "Sample"	3" 1-1/2" 3/4" 3/8" #4 #10 <#10			

Remarks

UNIT WEIGHT

Container No.	M91
Mass of Container and Wet Specimen, M4 (g)	964.63
Mass of Container, M5 (g)	78.06
Mass of Wet Specimen, M6 (g)	886.57
Specimen Diameter, D (in) or ( )	2.378
Specimen Length, L (in) or ( )	5.870
Specimen Area, A (in^2) or ( )	4.440
Specimen Volume, V (cm^3) or ( )	427.12
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	129.6
DRY UNIT WEIGHT, DUW (pcf) or ( )	111.6
VOID RATIO	0.510
DEGREE OF SATURATION, S (%)	85.17

	MEASURED DIMENSIONS Length	Diameter
1	5.888	2.341
2	5.905	2.389
3	5.823	2.380
4	5.877	2.396
5	5.858	2.375
6	**XXXXX**	2.385
Average	5.870	2.378

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark olive gray Clay (CL)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24749G S04 7.5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24749G

Project Name: Former Kast Property Sample No.: 6

Project Engineer: DS Depth (ft): 15.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST		2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET	X	3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	M5			
Mass of Container & Wet Specimen, M1 (g)	446.86			
Mass of Container & Dry Specimen, M2 (g)	400.02			
Mass of Container, M3 (g)	91.23			
WATER CONTENT, wn (%)	**15.17**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	M5
Mass of Container and Wet Specimen, M4 (g)	861.84
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	861.84
Specimen Diameter, D (in) or ( )	2.389
Specimen Length, L (in) or ( )	6.012
Specimen Area, A (in^2) or ( )	4.482
Specimen Volume, V (cm^3) or ( )	441.58
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	121.8
DRY UNIT WEIGHT, DUW (pcf) or ( )	105.8
VOID RATIO	0.593
DEGREE OF SATURATION, S (%)	69.04

	MEASURED DIMENSIONS Length	Diameter
1	6.023	2.376
2	6.050	2.382
3	6.051	2.388
4	5.961	2.396
5	5.977	2.385
6	**XXXXX**	2.406
Average	6.012	2.389

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Olive gray Clay (CL)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24749G S06 15 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24752G

Project Name: Former Kast Property Sample No.: 3

Project Engineer: DS Depth (ft): 5.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S102			
Mass of Container & Wet Specimen, M1 (g)	517.32			
Mass of Container & Dry Specimen, M2 (g)	475.74			
Mass of Container, M3 (g)	96.45			
WATER CONTENT, wn (%)	**10.96**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S102
Mass of Container and Wet Specimen, M4 (g)	955.56
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	955.56
Specimen Diameter, D (in) or ( )	2.405
Specimen Length, L (in) or ( )	6.061
Specimen Area, A (in^2) or ( )	4.543
Specimen Volume, V (cm^3) or ( )	451.20
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	132.2
DRY UNIT WEIGHT, DUW (pcf) or ( )	119.2
VOID RATIO	0.414
DEGREE OF SATURATION, S (%)	71.49

	MEASURED DIMENSIONS Length	Diameter
1	6.074	2.408
2	6.122	2.406
3	6.109	2.399
4	5.889	2.412
5	6.111	2.404
6	**XXXXX**	2.401
Average	6.061	2.405

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Dark brown Clay (CL)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24752G S03 5 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24752G

Project Name: Former Kast Property Sample No.: 5

Project Engineer: DS Depth (ft): 10.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM		GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED	X	2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S103			
Mass of Container & Wet Specimen, M1 (g)	580.54			
Mass of Container & Dry Specimen, M2 (g)	518.15			
Mass of Container, M3 (g)	95.54			
WATER CONTENT, wn (%)	**14.76**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S103
Mass of Container and Wet Specimen, M4 (g)	939.90
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	939.90
Specimen Diameter, D (in) or ( )	2.399
Specimen Length, L (in) or ( )	6.117
Specimen Area, A (in^2) or ( )	4.521
Specimen Volume, V (cm^3) or ( )	453.21
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	129.5
DRY UNIT WEIGHT, DUW (pcf) or ( )	112.8
VOID RATIO	0.494
DEGREE OF SATURATION, S (%)	80.67

	MEASURED DIMENSIONS Length	Diameter
1	6.125	2.383
2	6.127	2.394
3	6.106	2.414
4	6.118	2.401
5	6.108	2.405
6	**XXXXX**	2.399
Average	6.117	2.399

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

Specimen Color and Description: Strong brown Clay (CL)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24752G S05 10 ft.xlsx

AECOM

WATER CONTENT, UNIT WEIGHT, AND VISUAL DESCRIPTION

ASTM D2216, D7263, D2488

Project Number: 60422689 Task Number: 49194150.2015203 Boring No.: R24752G

Project Name: Former Kast Property Sample No.: 7

Project Engineer: DS Depth (ft): 20.0

TYPE OF SAMPLE		VISUAL SIGNS OF DISTURBANCE (1)		SOIL COMPONENT	Major	Minor	WATER CONTENT ADJECTIVES		COLOR		GRADATION		SHAPE OF GRAINS	
1). BULK		1). NONE	X	0). BOULDERS (>12")			1). DRY		1). UNIFORM	X	GRAVEL		1). ANGULAR	
2). SPT		2). SLIGHT		1). COBBLES (>3")			2). MOIST	X	2). SPOTTED		1). COARSE		2). SUBANGULAR	
3). CALIFORNIA SLEEVE	X	3). MODERATE		2). GRAVEL			3). WET		3). STREAKED		2). FINE		3). ROUNDED	
4). CORE		4). EXCESSIVE		3). SAND		X			OTHER:		SAND		4). SUBROUNDED	
5). RINGS				4). SILT							3). COARSE		5). FLAT	
6). THIN WALL TUBE				5). CLAY	X						4). MEDIUM		6). ELONGATED	
7). RECONSTITUTED				6). ORGANIC							5). FINE	X	7). FLAT & ELONG.	
				7). PEAT										
				OTHER:										

CONSISTENCY (MANUAL)		PLASTICITY ADJECTIVES		STRUCTURE		ORGANIC APPEARANCE		ORGANIC ODOR		HCl REACTION		MICA CONTENT	
1). VERY SOFT		1). NON-PLASTIC (PI = 0)		1). HOMOGENEOUS	X	1). NONE	X	1). NONE		1). NOT TESTED	X	1). NONE	X
2). SOFT		2). LOW (PI = 1 to 10))	X	2). STRATIFIED		2). FIBROUS		2).ORGANIC		2). NONE		2). LOW	
3). MED. STIFF	X	3). MEDIUM (PI >10 to 20)		3). FISSURED		3).DECOMPOSED		3). FUEL	X	3). WEAK		3). MEDIUM	
4). STIFF		4). HIGH (PI >20 to 40)		4). SLICKENSIDED		OTHER:				4).STRONG		4). HIGH	
5). VERY STIFF		5). VERY PLASTIC (PI >40)		5). BLOCKY						OTHER:		OTHER:	
6). HARD				6). POROUS									
				7). CEMENTED									
				8). FRIABLE									

AS-RECEIVED WATER CONTENT (OVEN DRIED)	Average	Sub-Specimen / Sub-Layer		
Container No.	S114			
Mass of Container & Wet Specimen, M1 (g)	465.61			
Mass of Container & Dry Specimen, M2 (g)	396.36			
Mass of Container, M3 (g)	96.50			
WATER CONTENT, wn (%)	**23.09**			

Circle Approximate Max. Grain Size in "Sample" 3" 1-1/2" 3/4" 3/8" #4 #10 <#10

Remarks

UNIT WEIGHT

Container No.	S114
Mass of Container and Wet Specimen, M4 (g)	789.06
Mass of Container, M5 (g)	0.00
Mass of Wet Specimen, M6 (g)	789.06
Specimen Diameter, D (in) or ( )	2.408
Specimen Length, L (in) or ( )	5.855
Specimen Area, A (in^2) or ( )	4.555
Specimen Volume, V (cm^3) or ( )	437.10
assumed Specific Gravity, Gs	2.70
WET UNIT WEIGHT, WUW (pcf) or ( )	112.7
DRY UNIT WEIGHT, DUW (pcf) or ( )	91.6
VOID RATIO	0.841
DEGREE OF SATURATION, S (%)	74.13

	MEASURED DIMENSIONS Length	Diameter
1	5.876	2.406
2	5.852	2.416
3	5.866	2.415
4	5.843	2.397
5	5.840	2.395
6	**XXXXX**	2.421
Average	5.855	2.408

This Excel spreadsheet is used to verify calculations.

w or wn = ((M1 - M2) / (M2 - M3)) * 100

WUW = (M6,g) / (V,cm^3) * (62.43, lb/ft^3 DUW = WUW / (1 + (w / 100))

S = (DUW * w * Gs) / ((Gs * Unit Weight or Density of Water) - DUW)

Unit Weight or Density of Water (20° C) = 62.32 pcf or 0.9982 g/cm^3

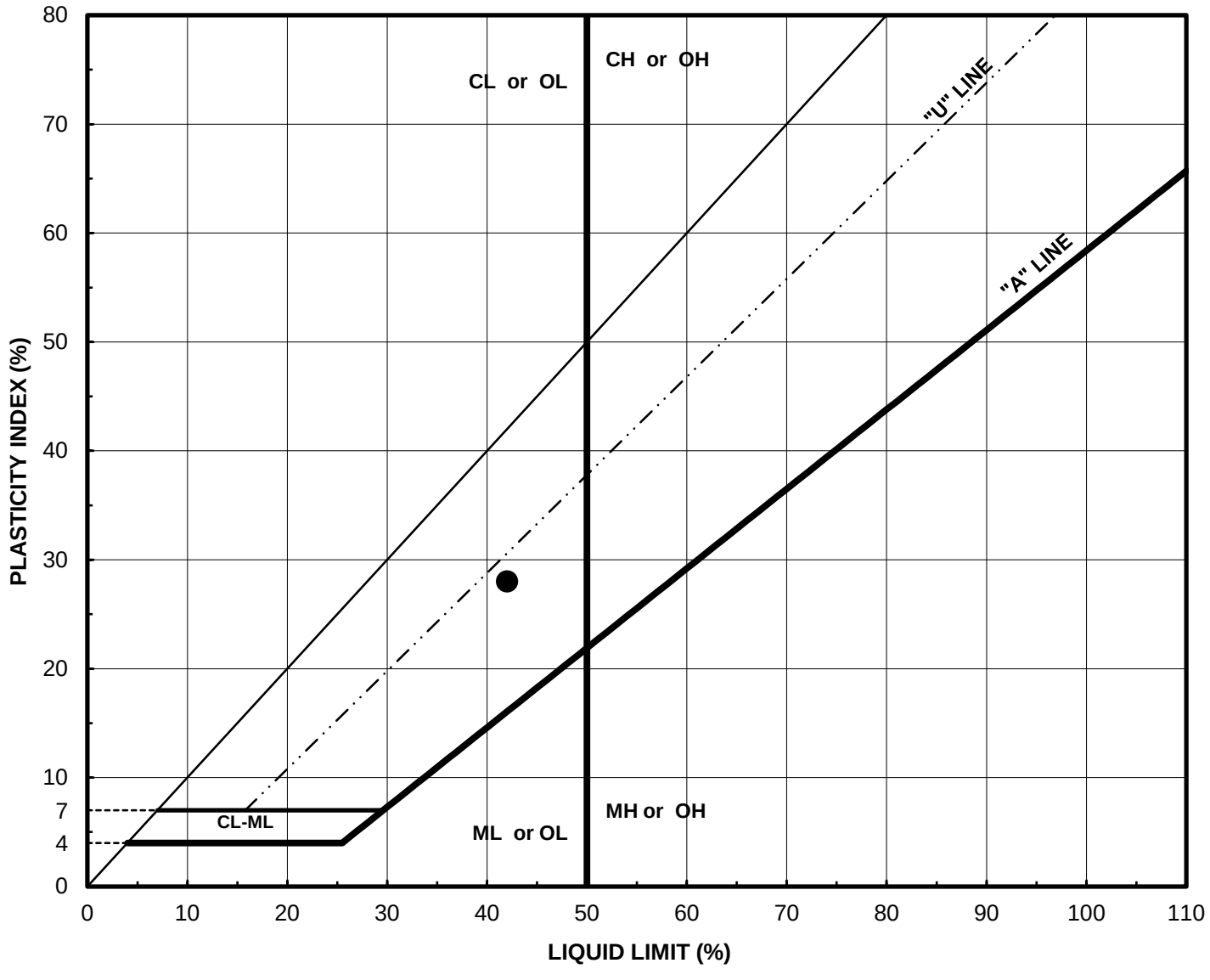
Specimen Color and Description: Olive gray Clay (CL)

TESTED BY: LV DATE: 8/7/15 CALCULATED BY: TJO CHECKED BY: TO

SUBMITTED BY: Thomas J. O'Mean

unit weight Kast R24752G S07 20 ft.xlsx

AECOM

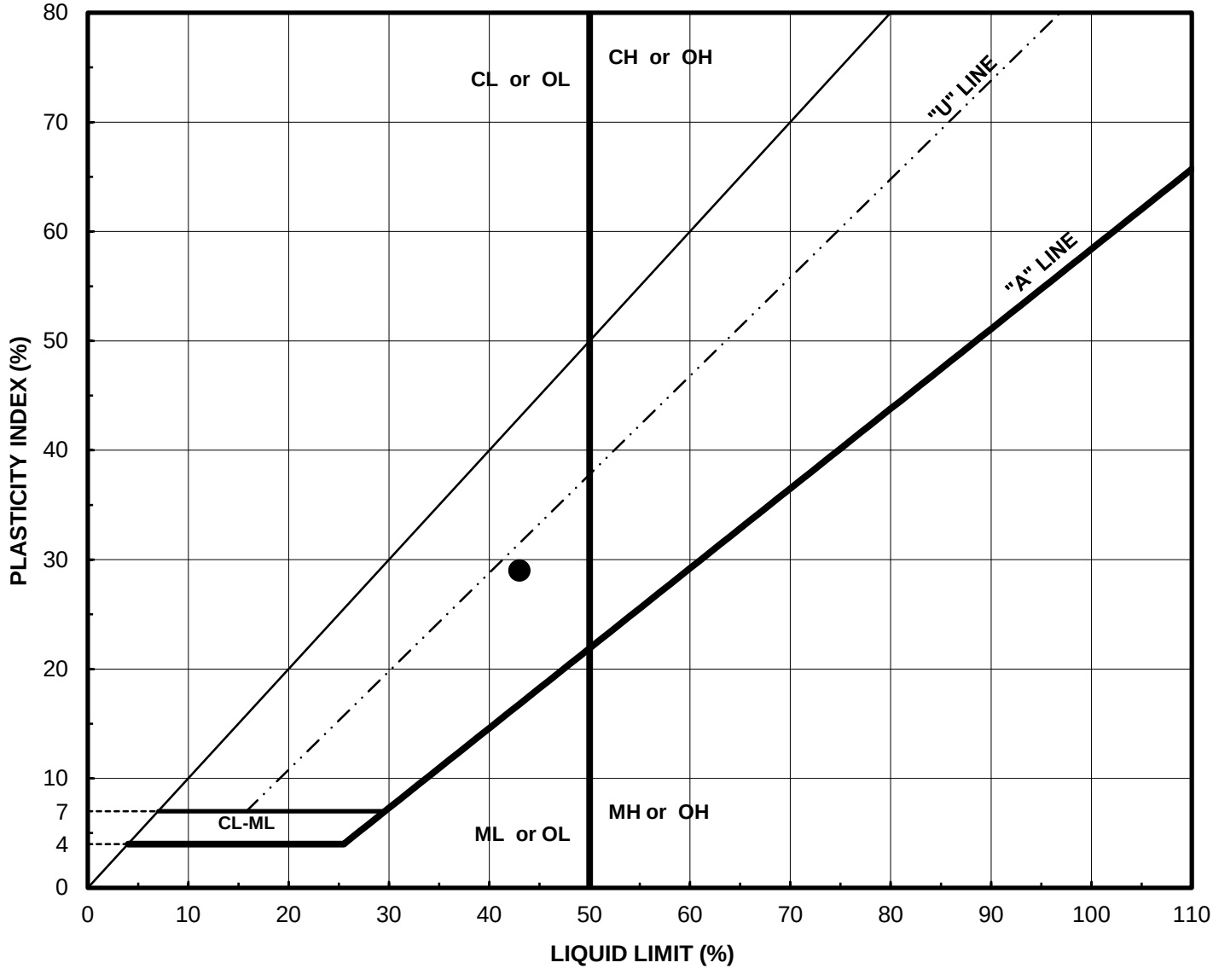


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
244305G	2	2.5~5.0	12.4	42	28	Dark yellowish brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

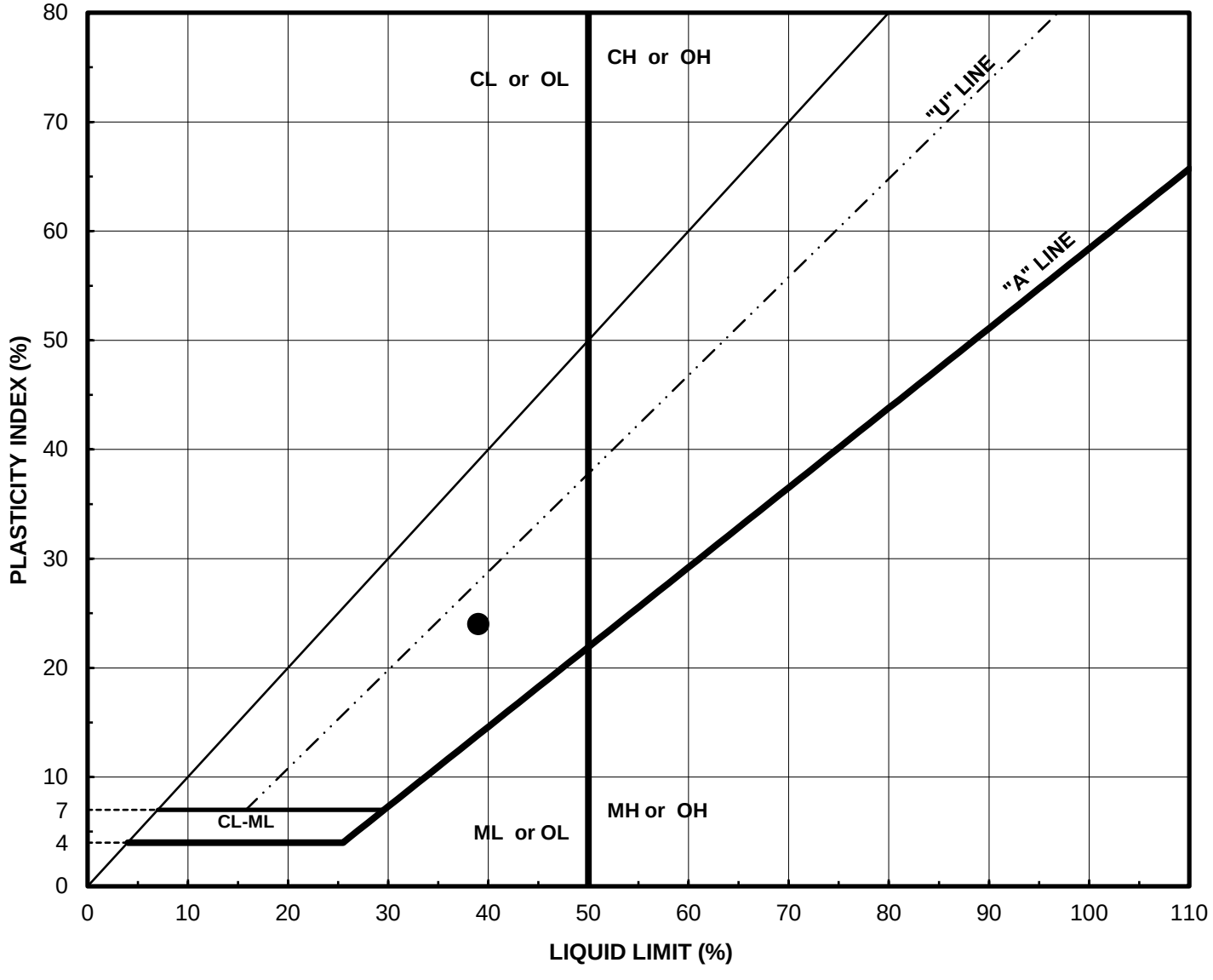


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
244321G	2	2.5~5.0	9.5	43	29	Dark yellowish brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

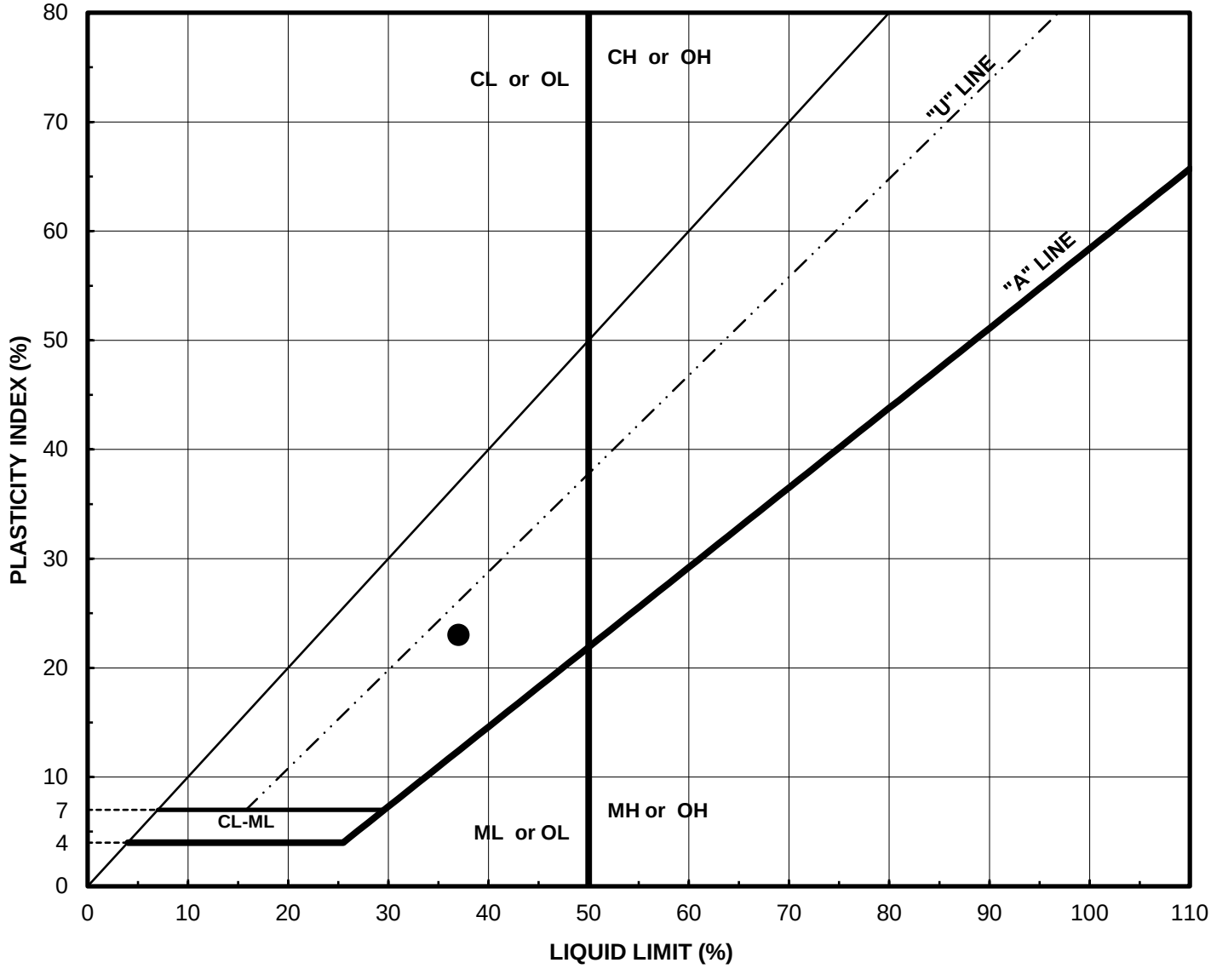


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
244337G	2	2.5~5.0	12.7	39	24	Dark grayish brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

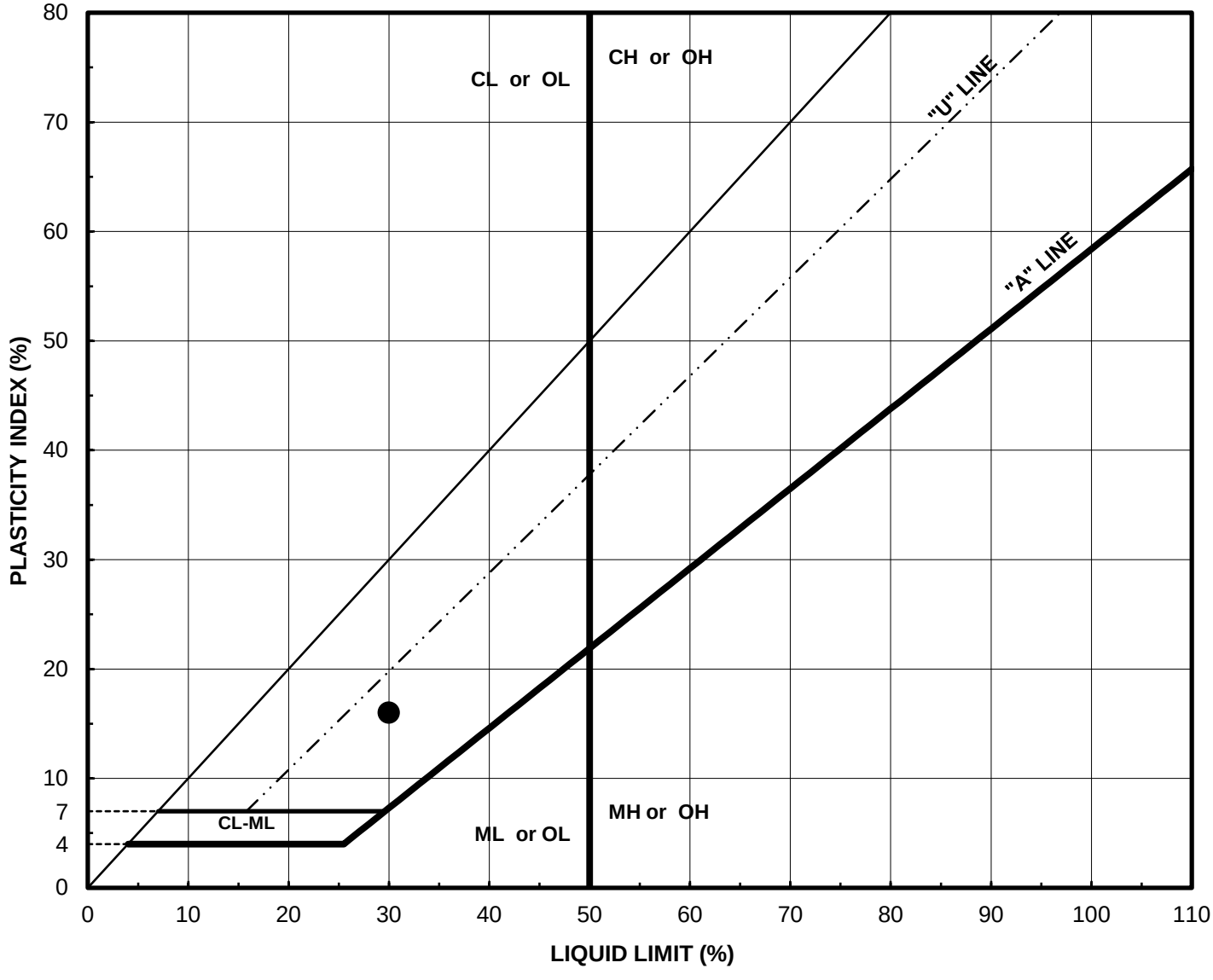


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
244357G	3	5.0	11.0	37	23	Strong brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



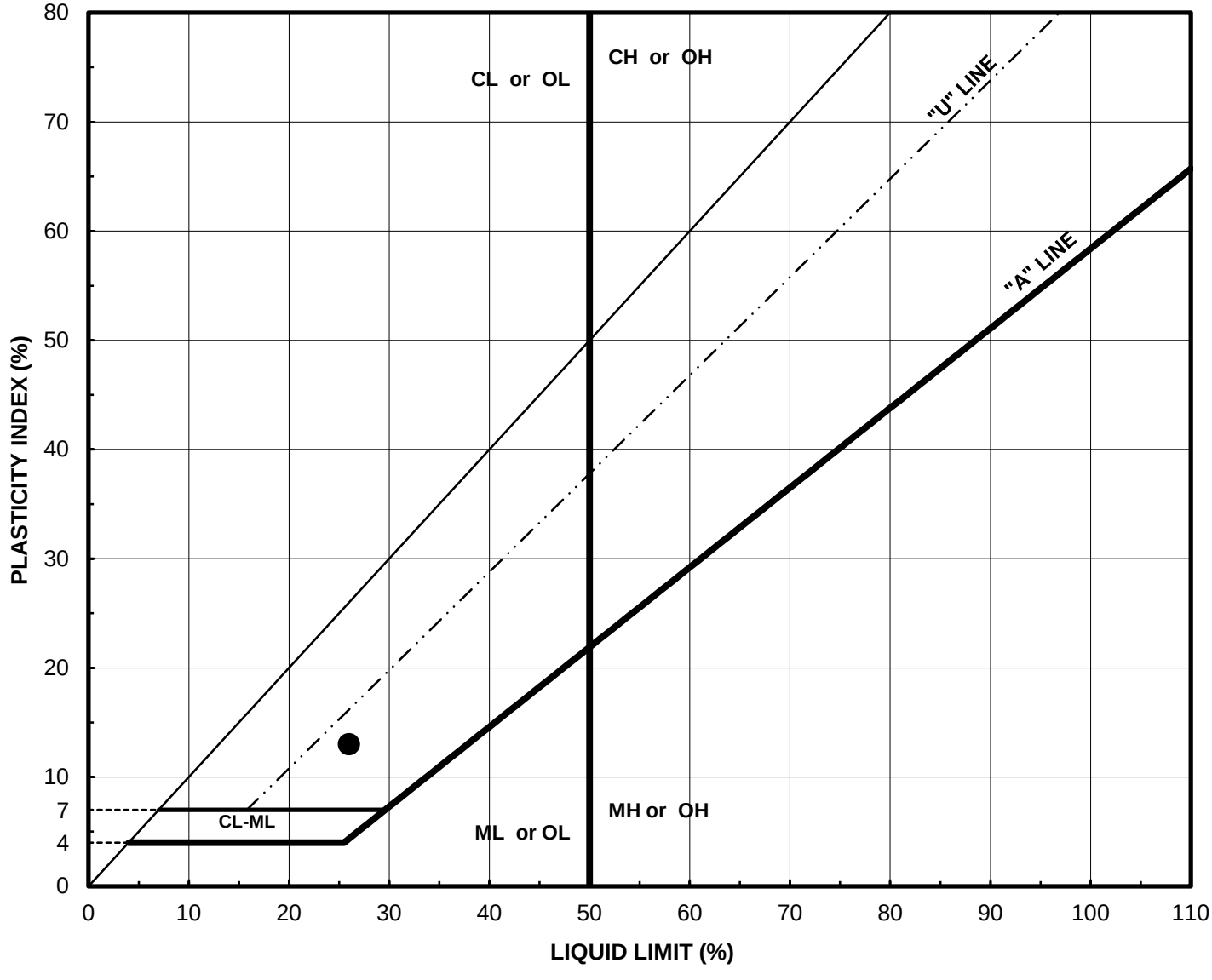
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
248348G	4	7.5	14.1	30	16	Strong brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM

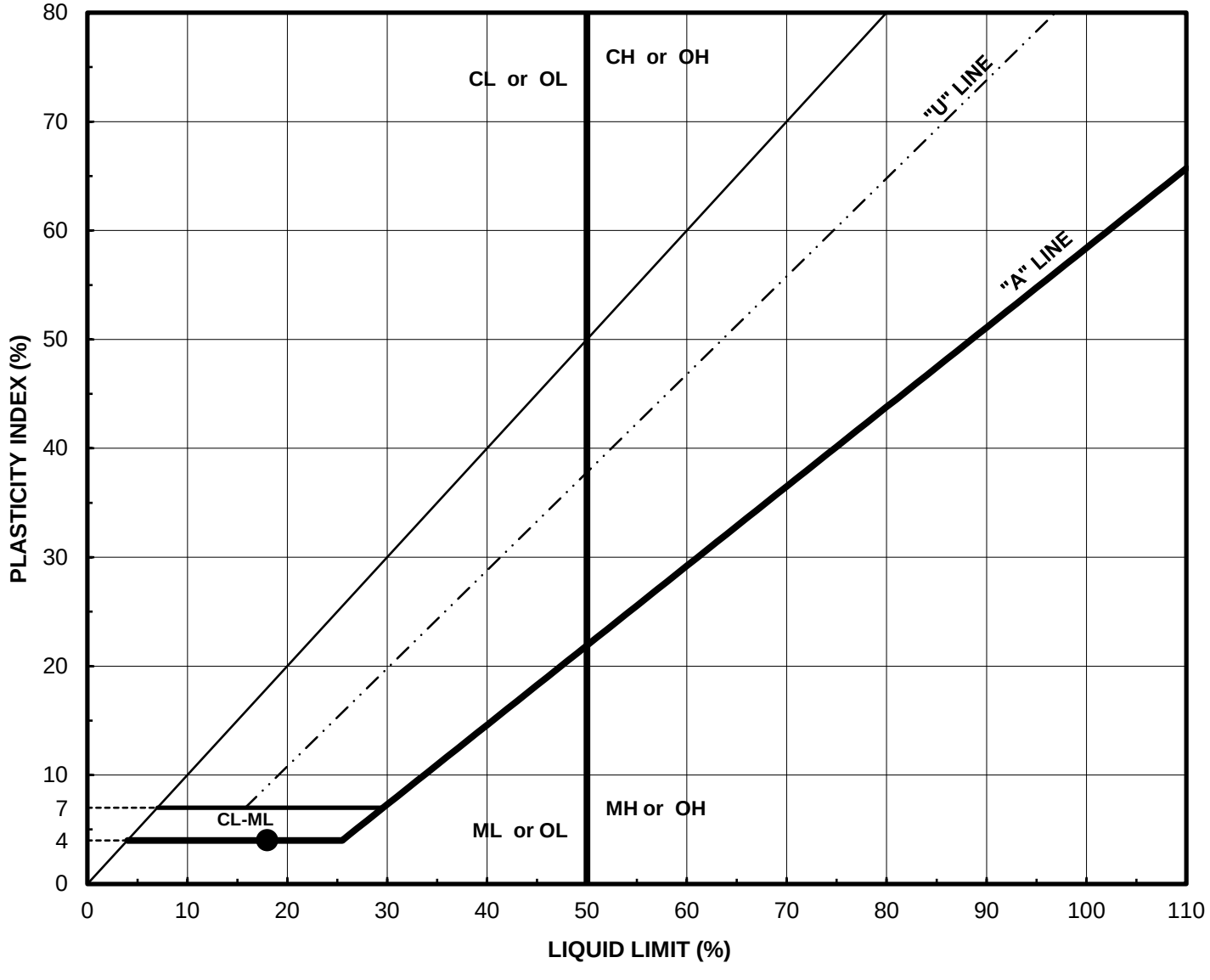


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
248360G	4	7.5	16.5	26	13	Dark olive brown clayey sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



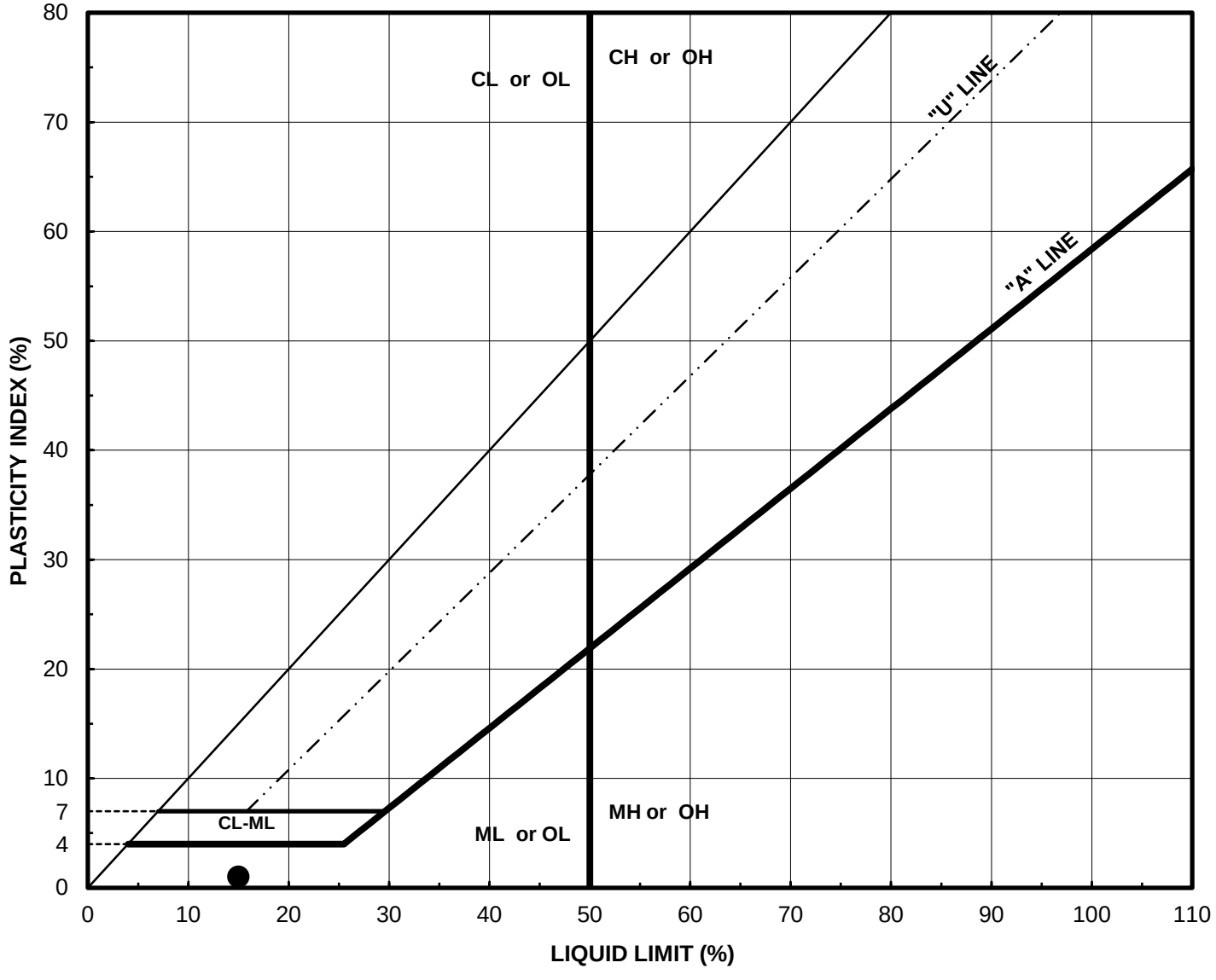
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
249345G	2	2.5 - 5.0	8.3	18	4	Strong brown silty, clayey Sand (SC-SM)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM

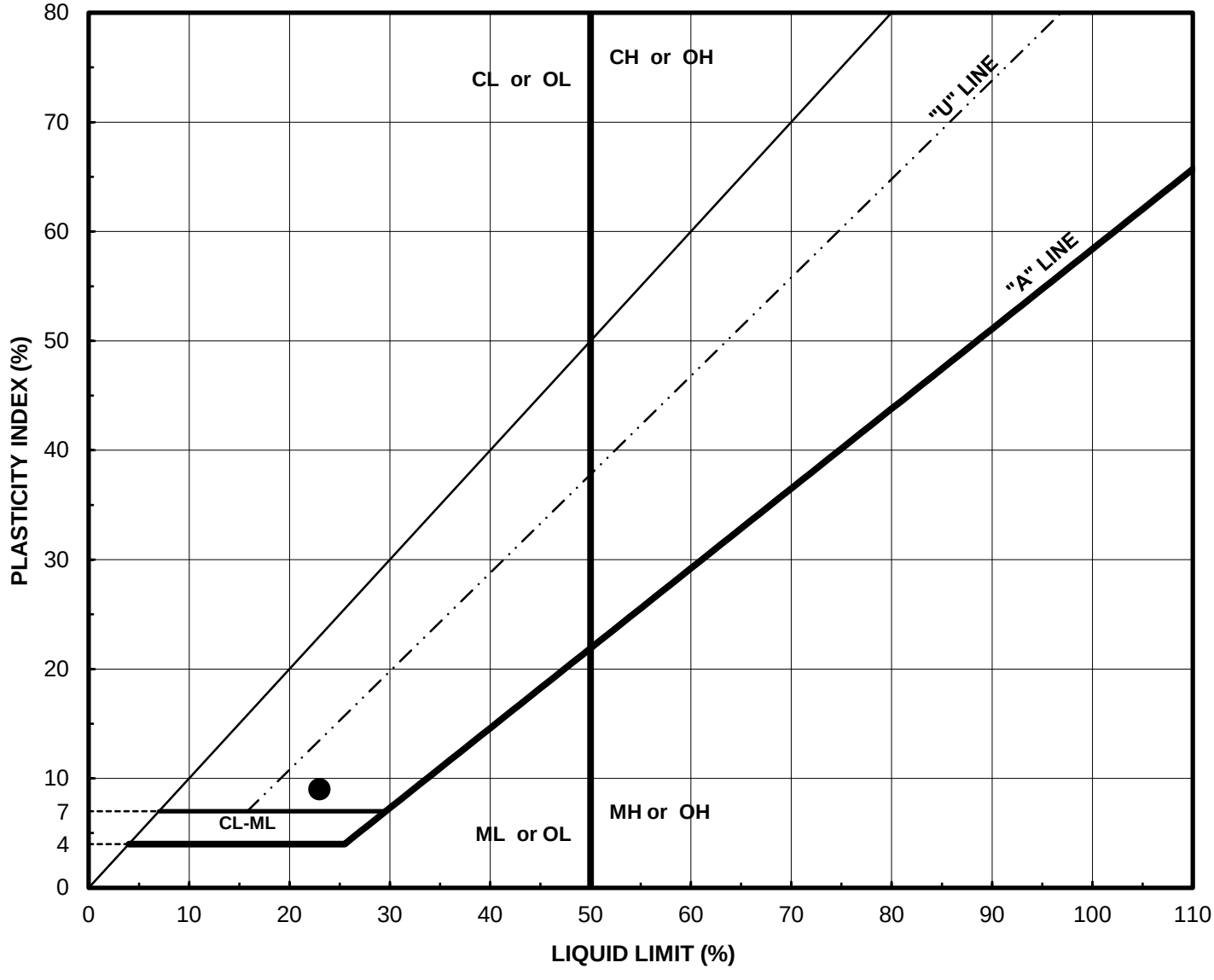


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
249348G	3	5.0	7.8	15	1	Dark brown silty Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

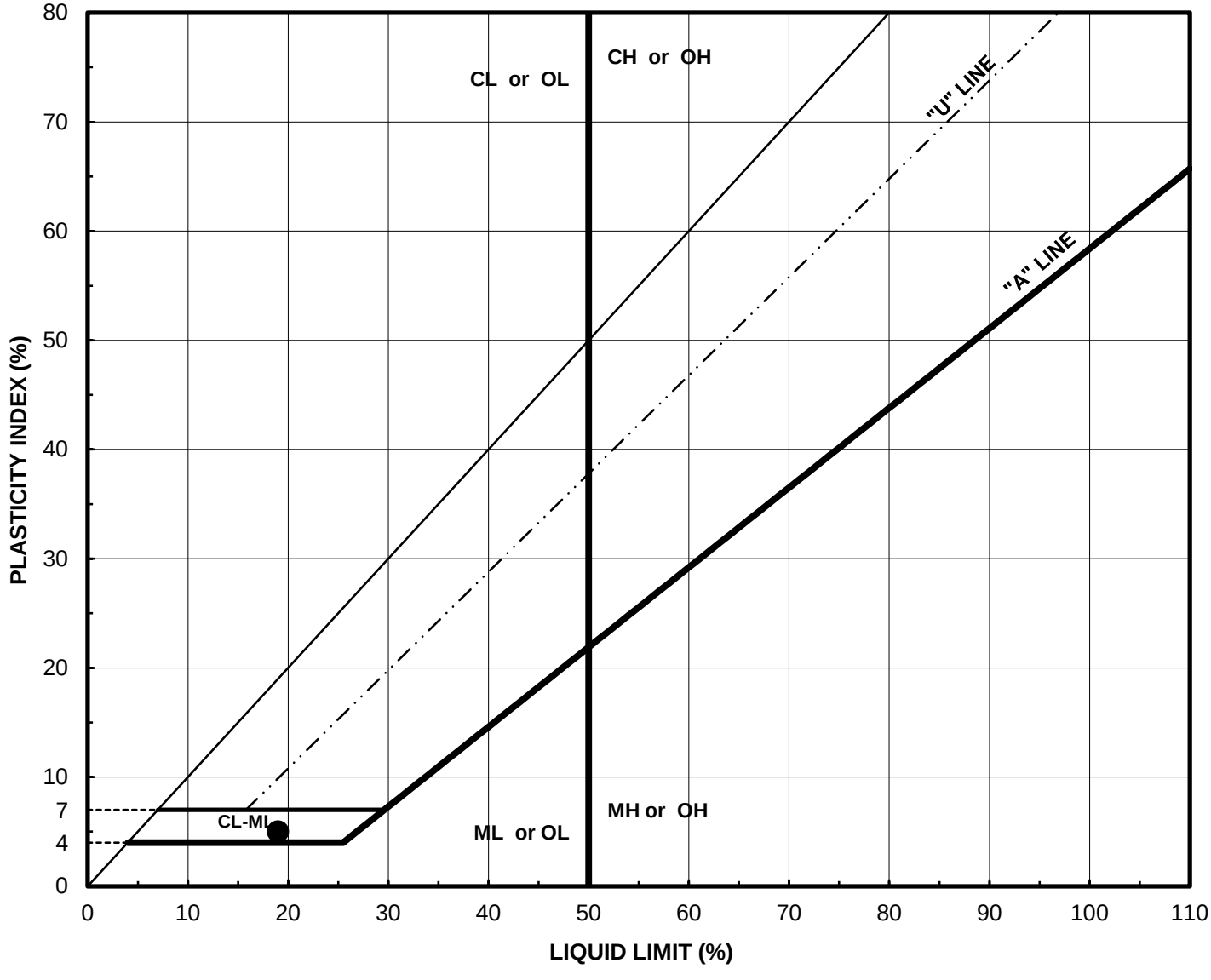


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
249363G	4	7.5	16.0	23	9	Dark grayish brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



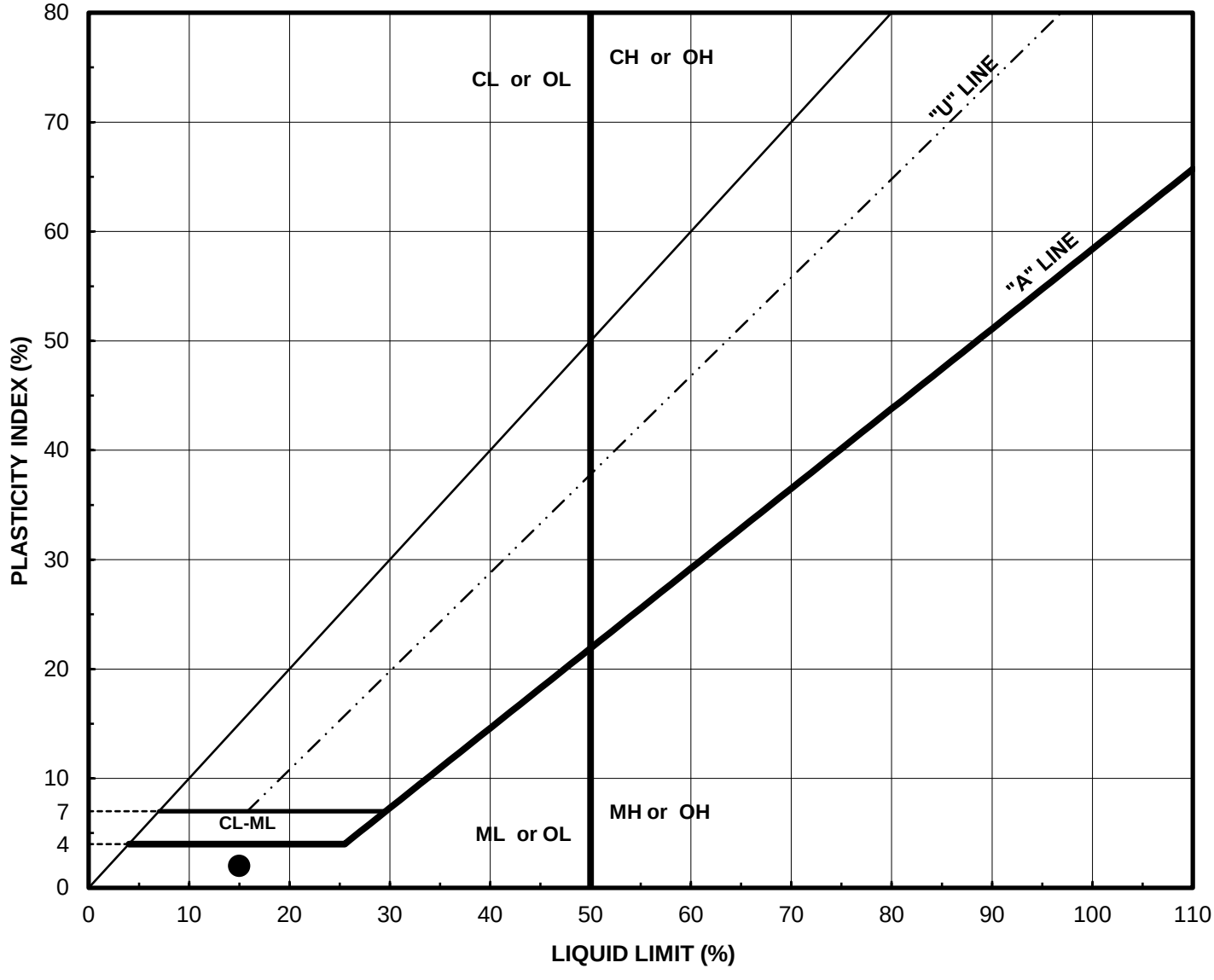
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
249377G	5	10.0	11.9	19	5	Dark brown silty, clayey Sand (SC-SM)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM

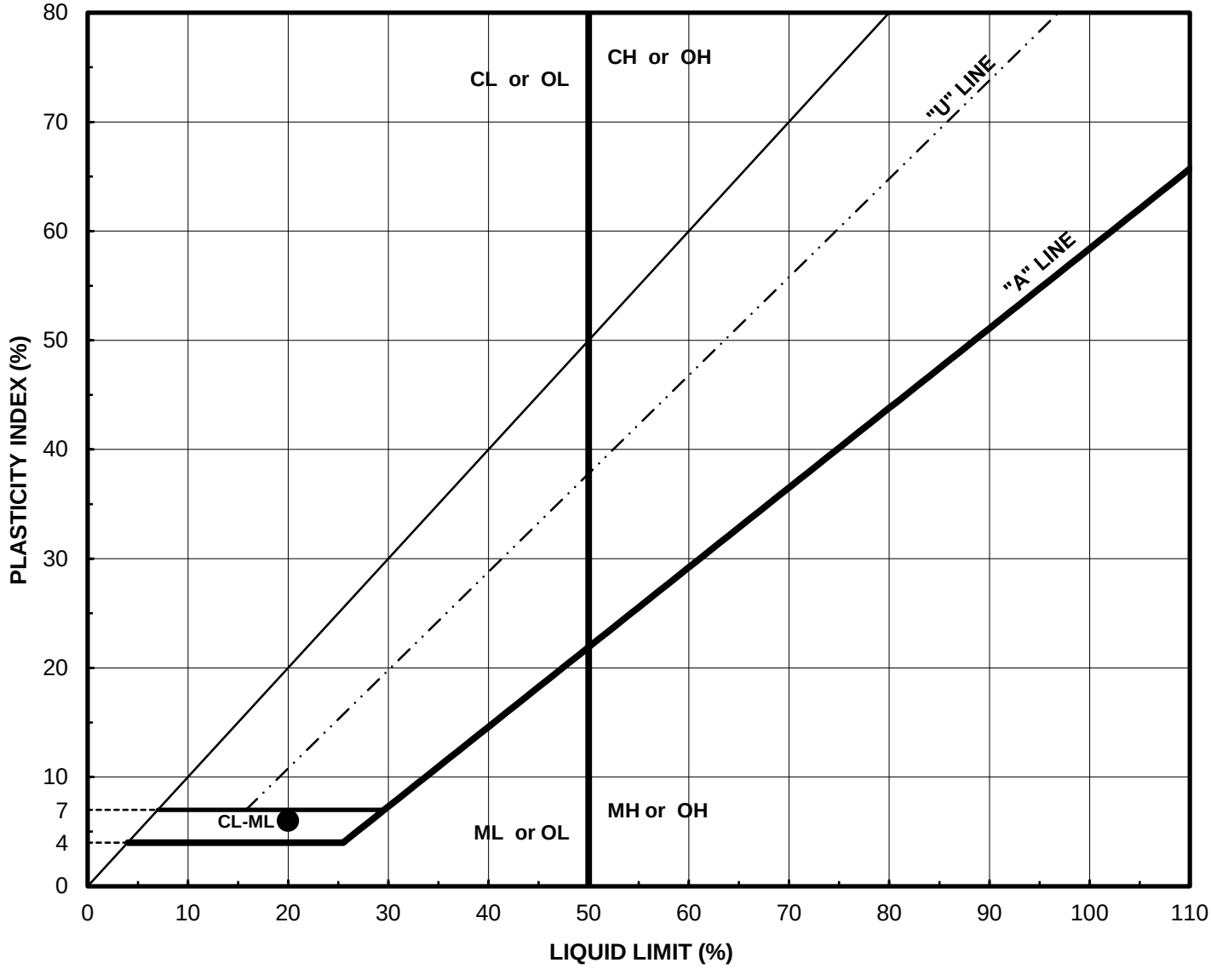


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
249378G	2	2.5 - 5.0	6.3	15	2	Strong brown silty Sand (SM)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

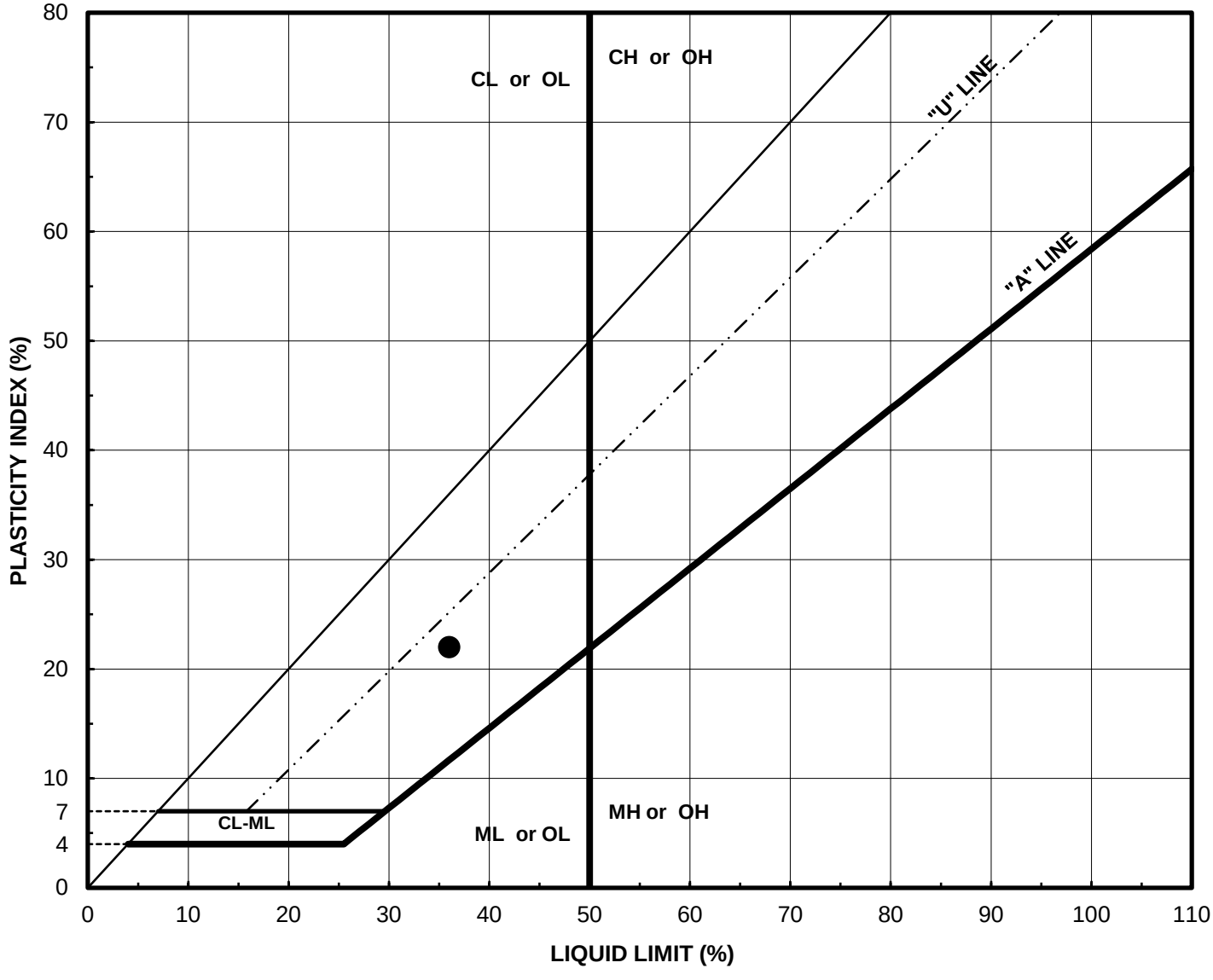


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
249412G	2	2.5 - 5.0	9.5	20	6	Strong brown silty, clayey Sand (SC-SM)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

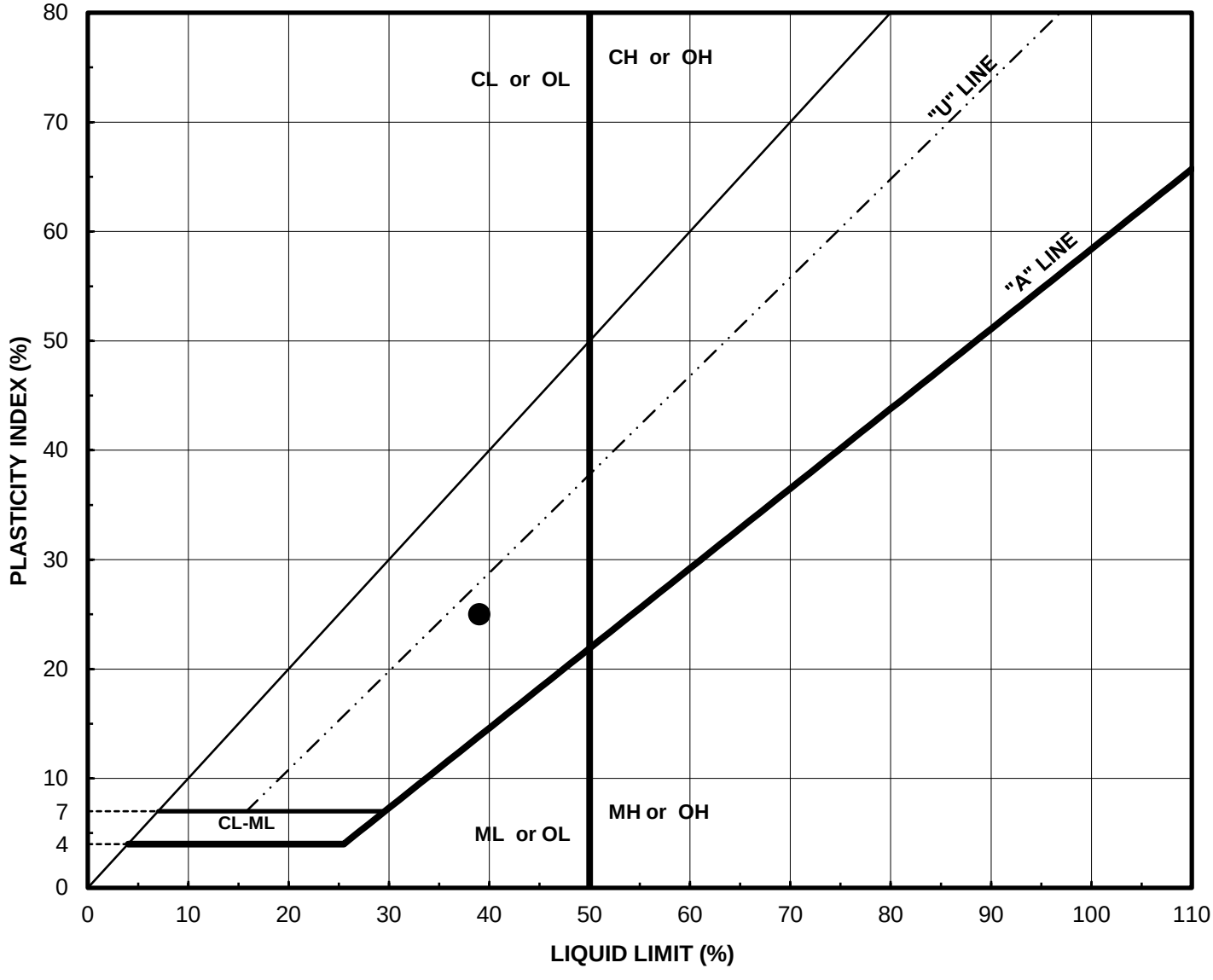


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24406G	3	5.0	10.9	36	22	Dark yellowish brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

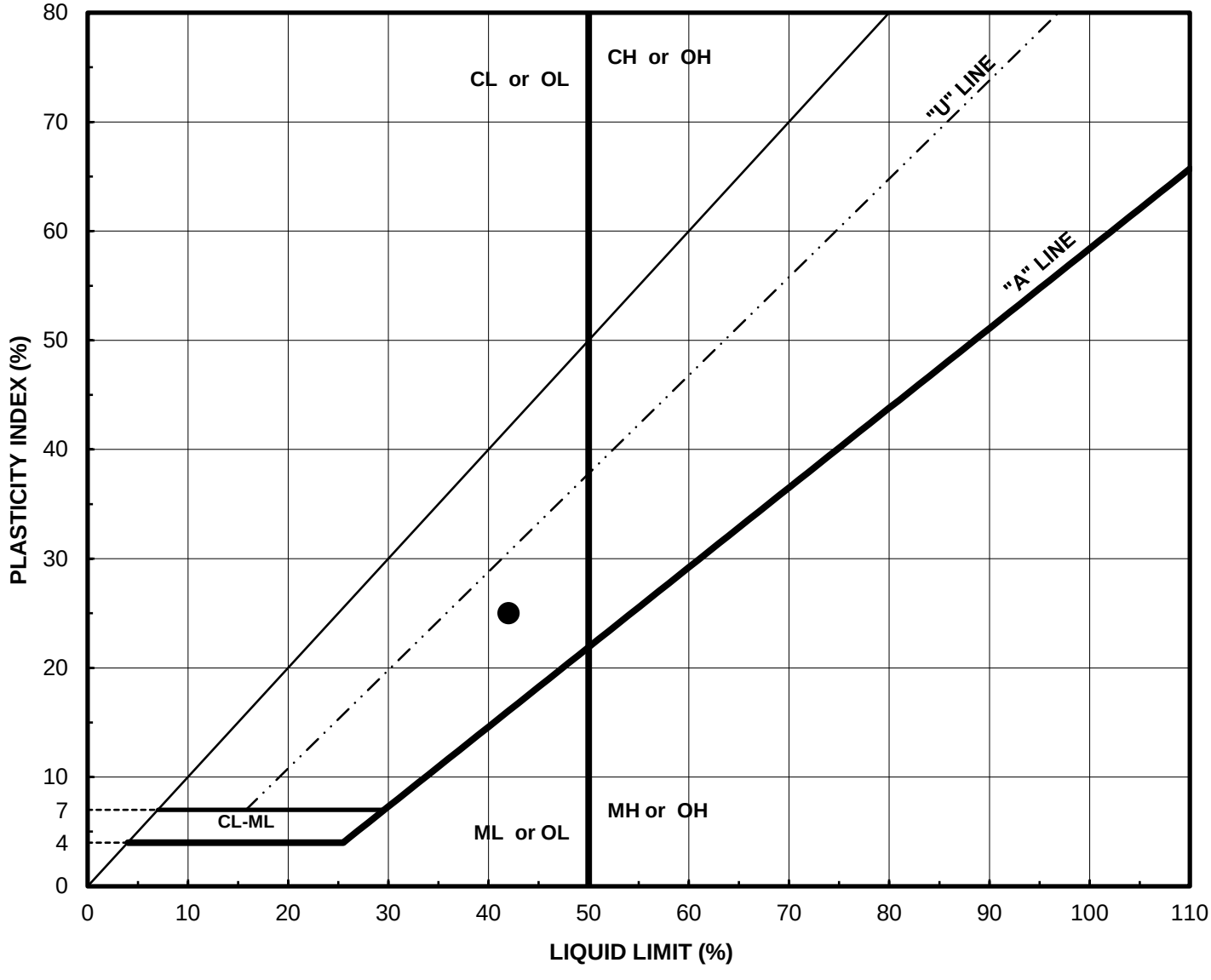


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24411G	2	2.5~5.0	11.4	39	25	Dark grayish brown Clay with sand (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

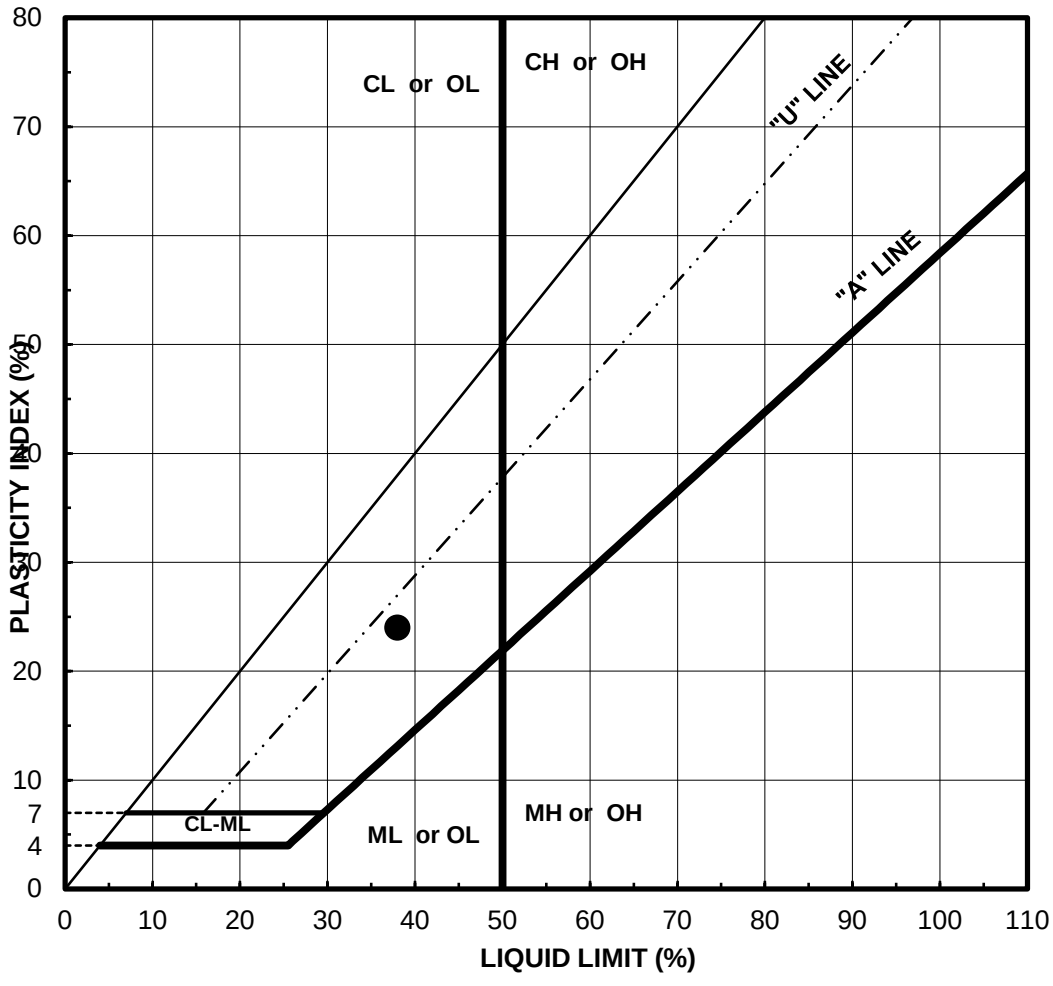


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24411G	3	5.0	13.7	42	25	Dark brown Clay with sand (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

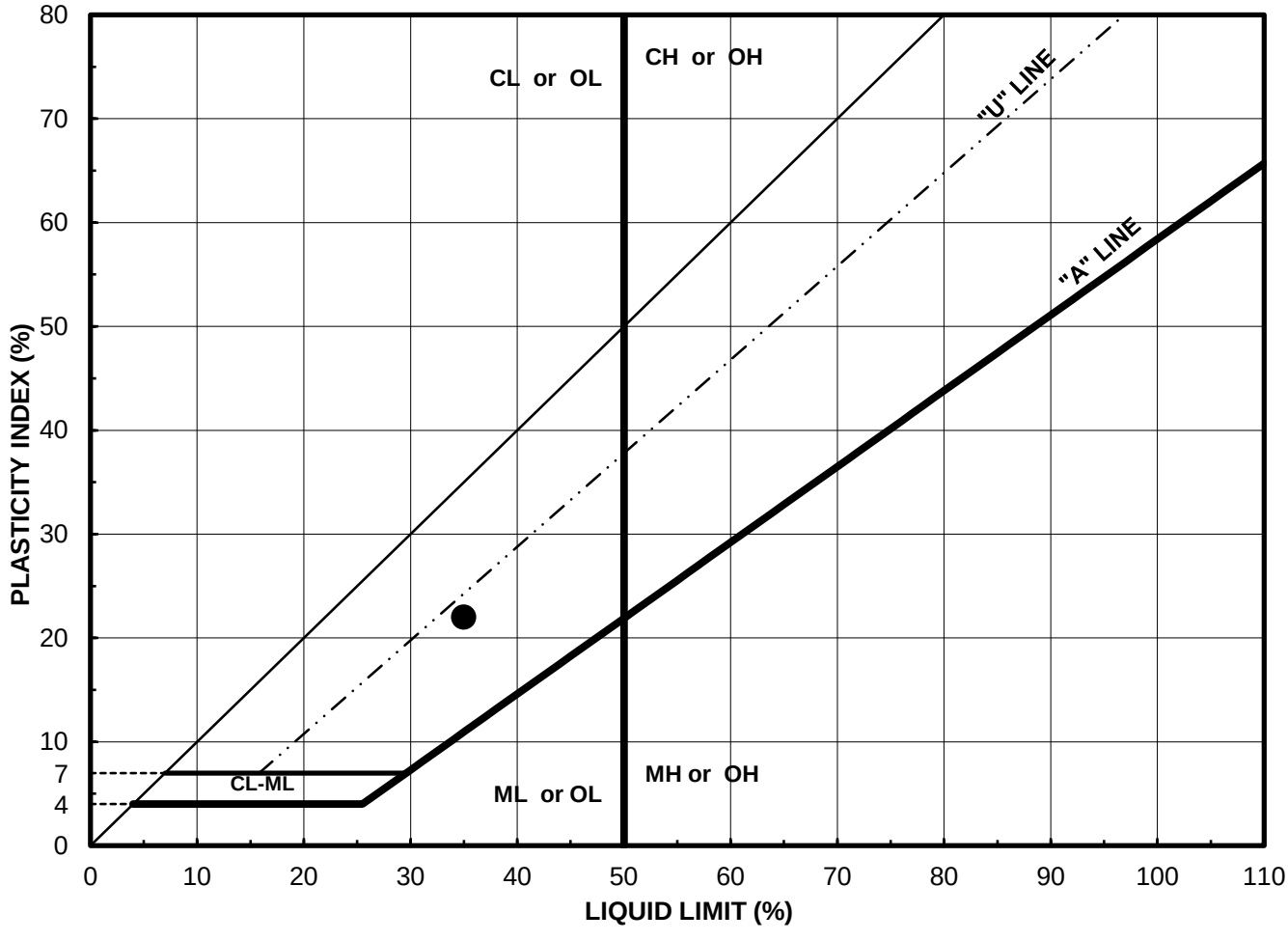


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24512G	2	2.5~5.0	8.9	38	24	Dark brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



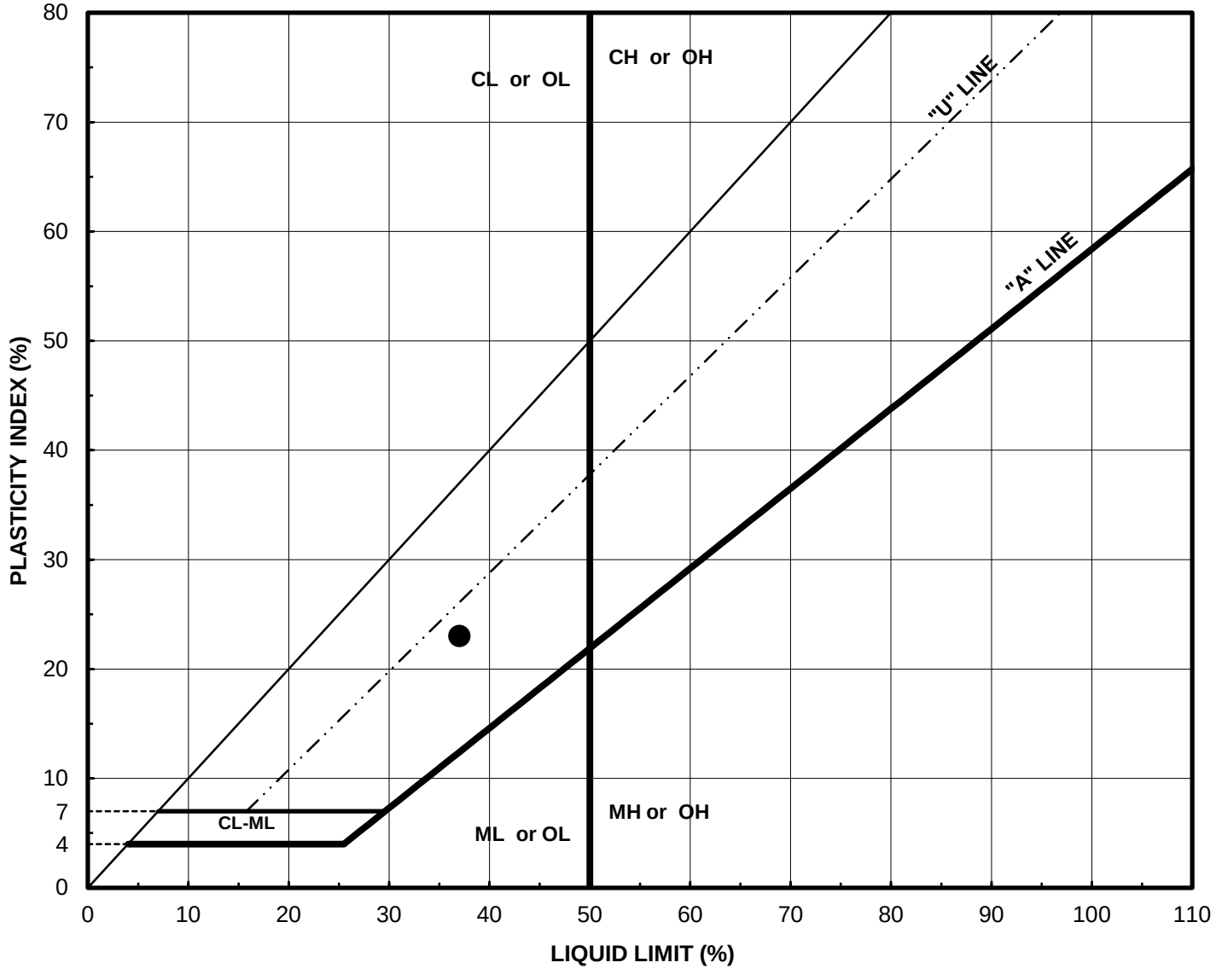
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24517G	2	2.5~5.0	9.4	35	22	Strong brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM

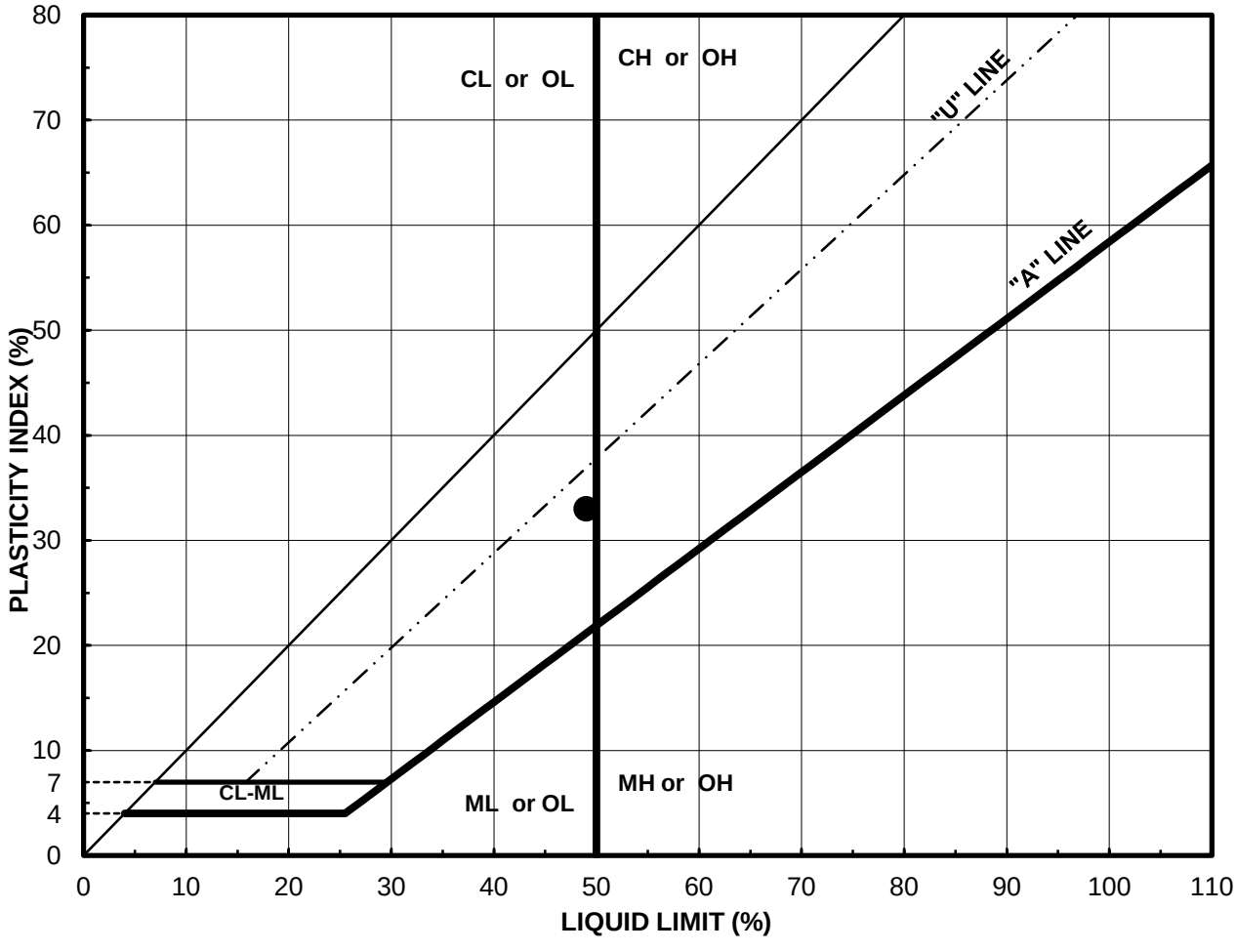


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24606G	2	2.5~5.0	9.0	37	23	Strong brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



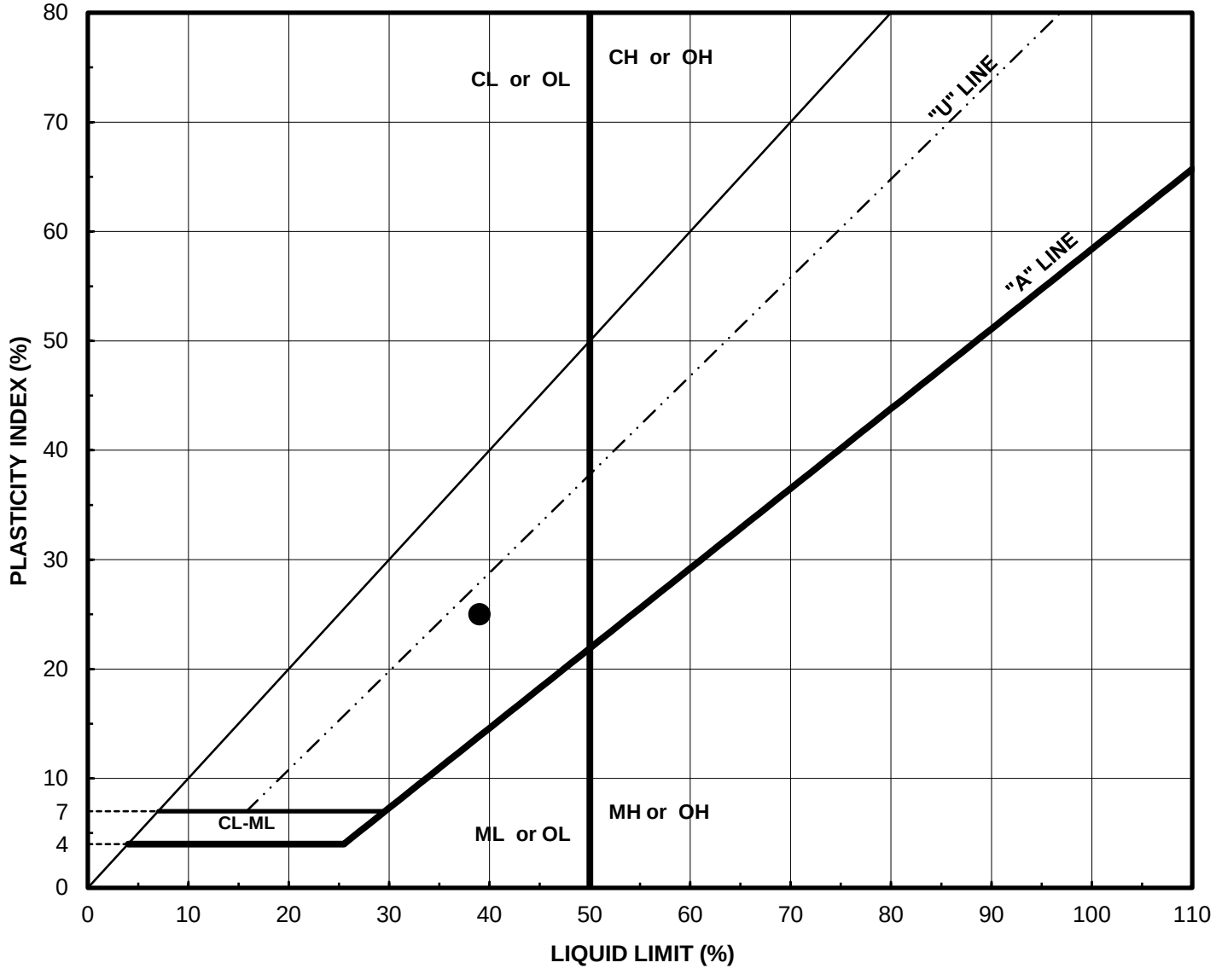
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24613G	2	2.5~5.0	12.1	49	33	Yellowish brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM



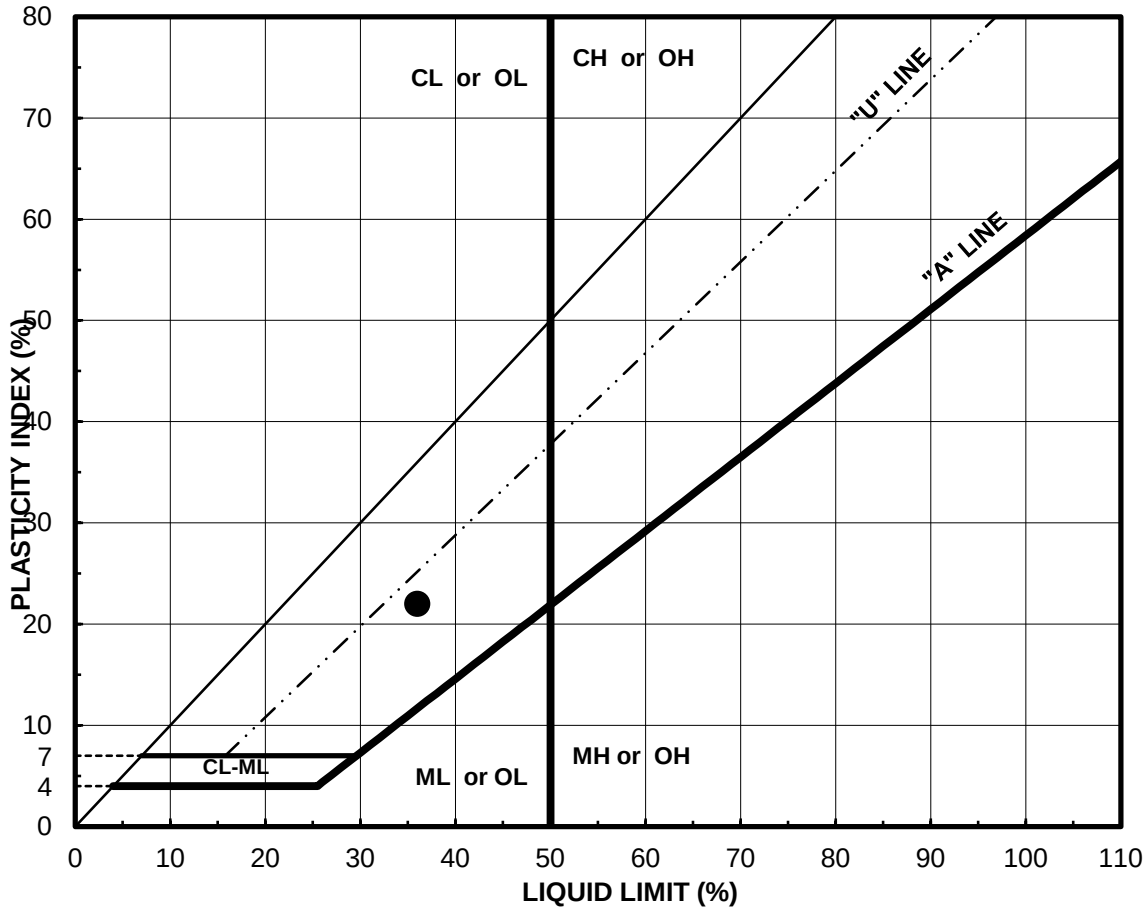
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24616G	2	2.5~5.0	14.4	39	25	Dark brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM

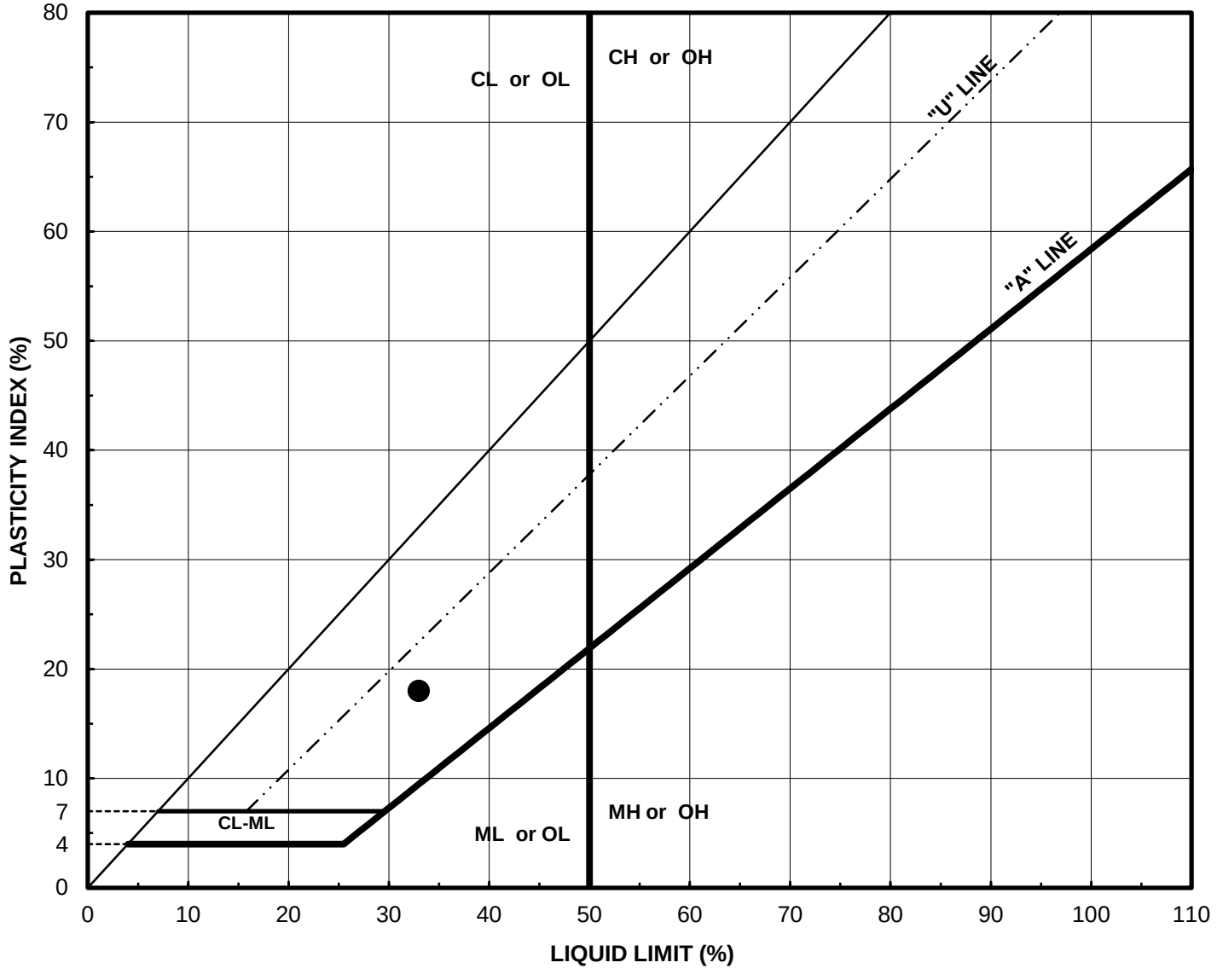


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24628G	2	2.5~5.0	9.0	36	22	Strong brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

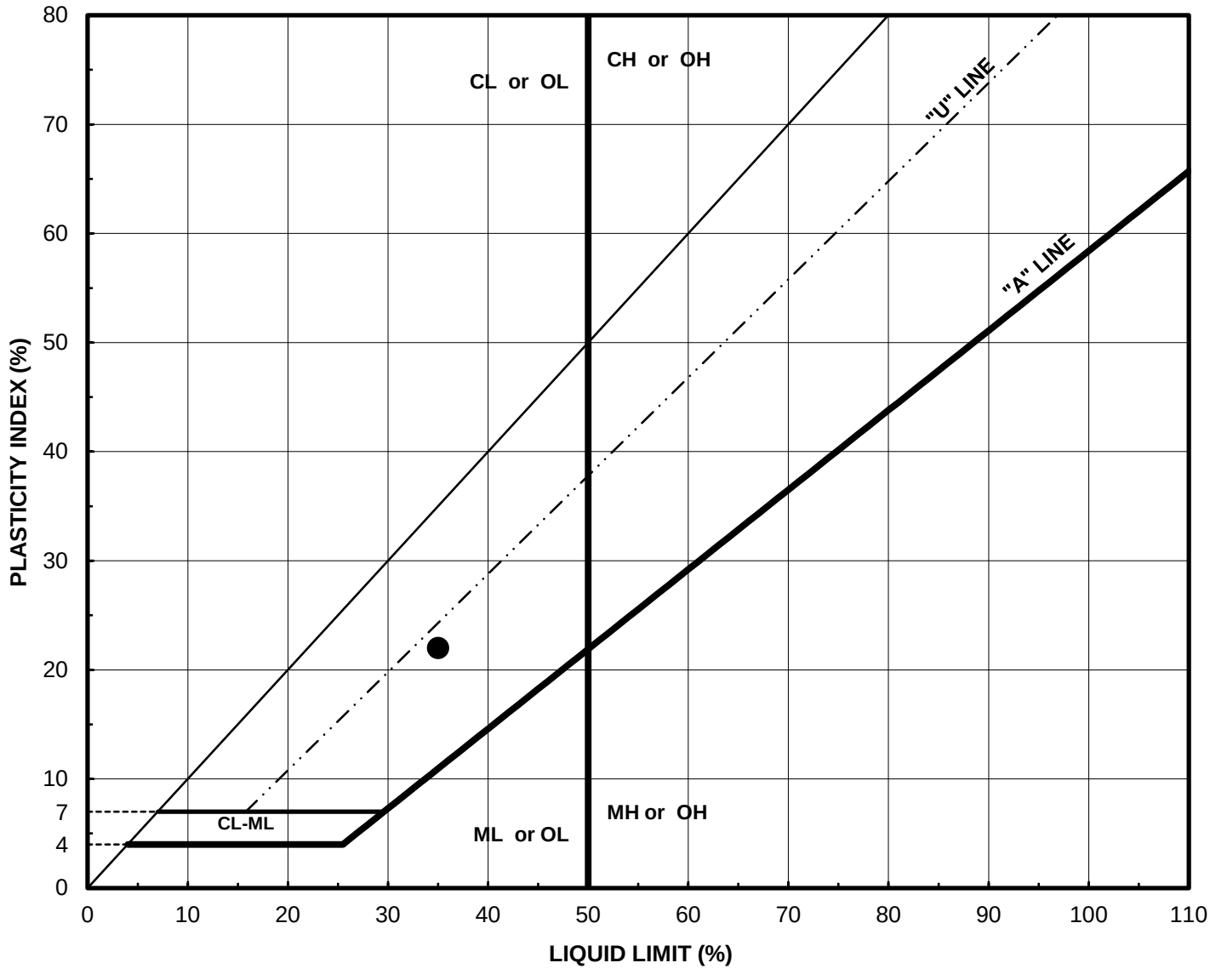


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24703G	2	2.5~5.0	9.4	33	18	Light brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

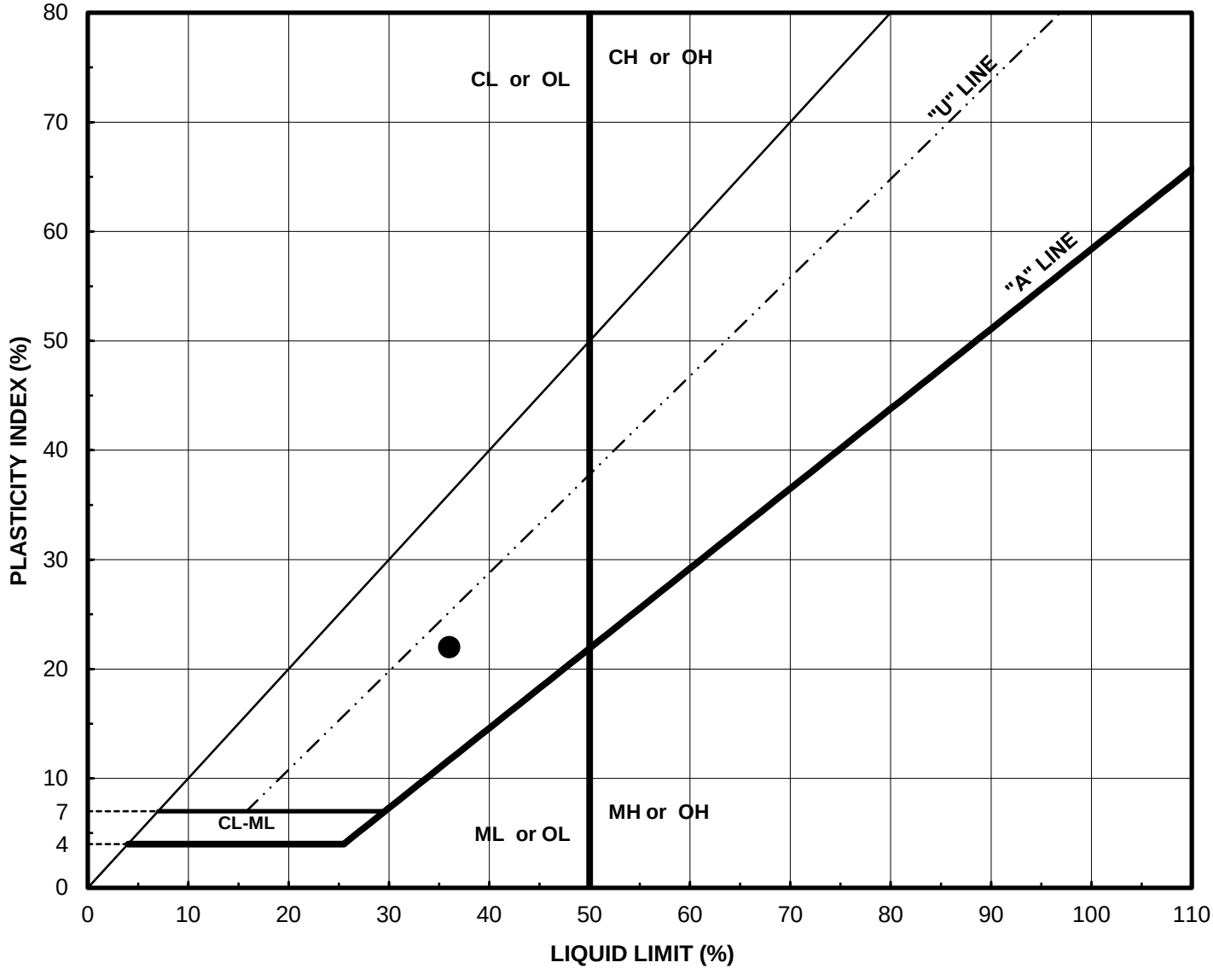


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24706G	2	2.5~5.0	10.1	35	22	Dark yellowish brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

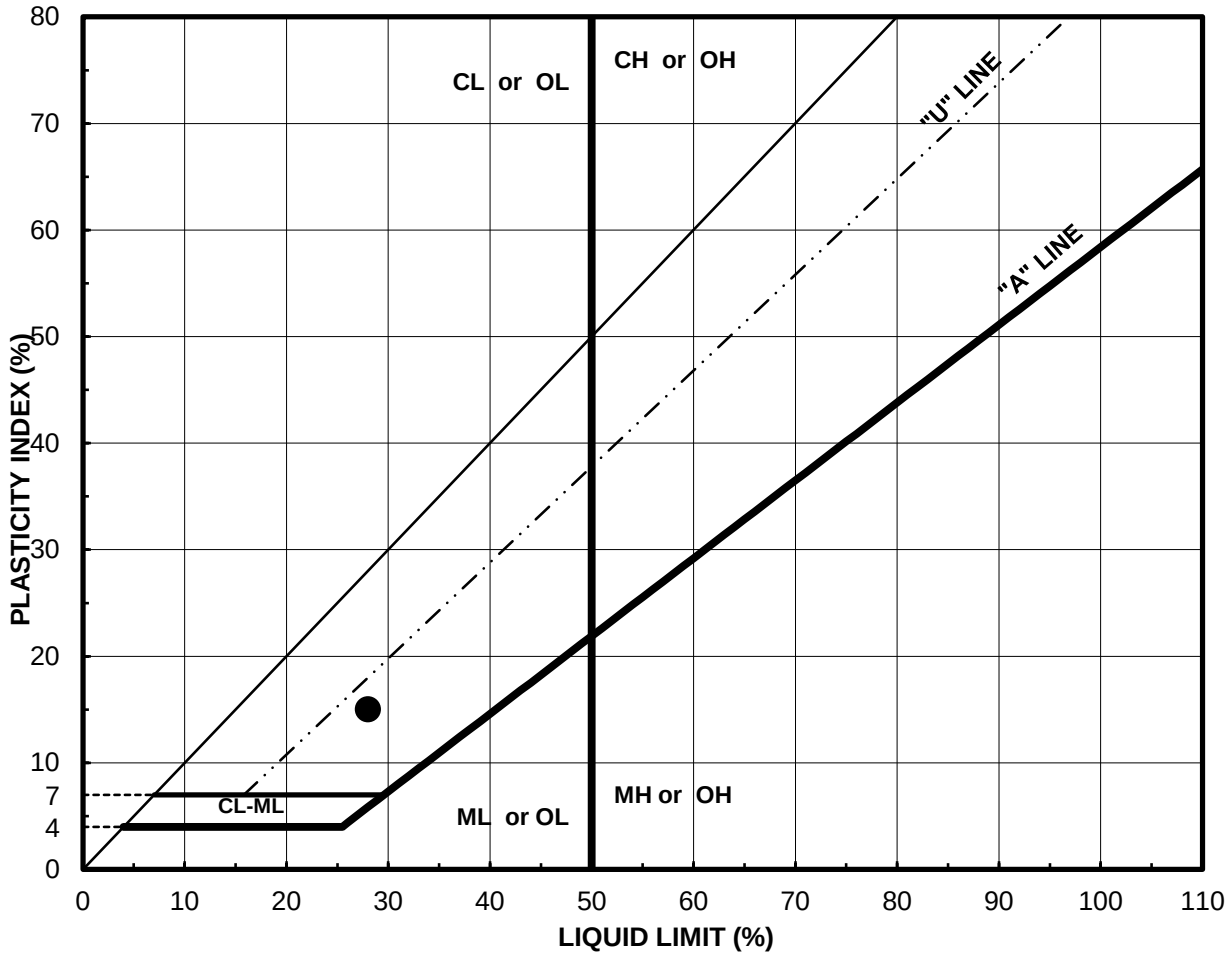


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24716G	2	2.5~5.0	11.3	36	22	Grayish brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

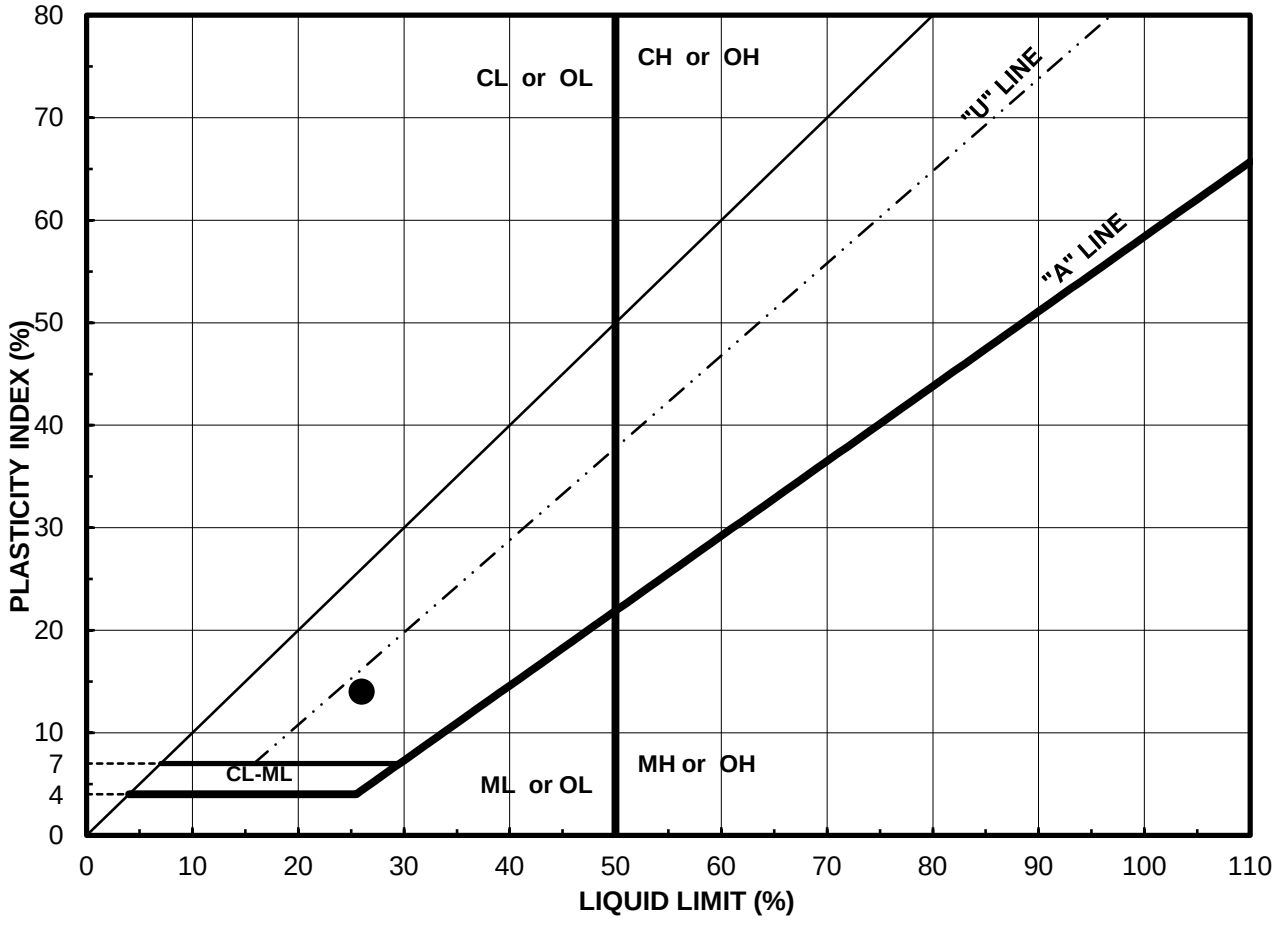


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24717G	2	2.5-5.0	16.7	28	15	Dak brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

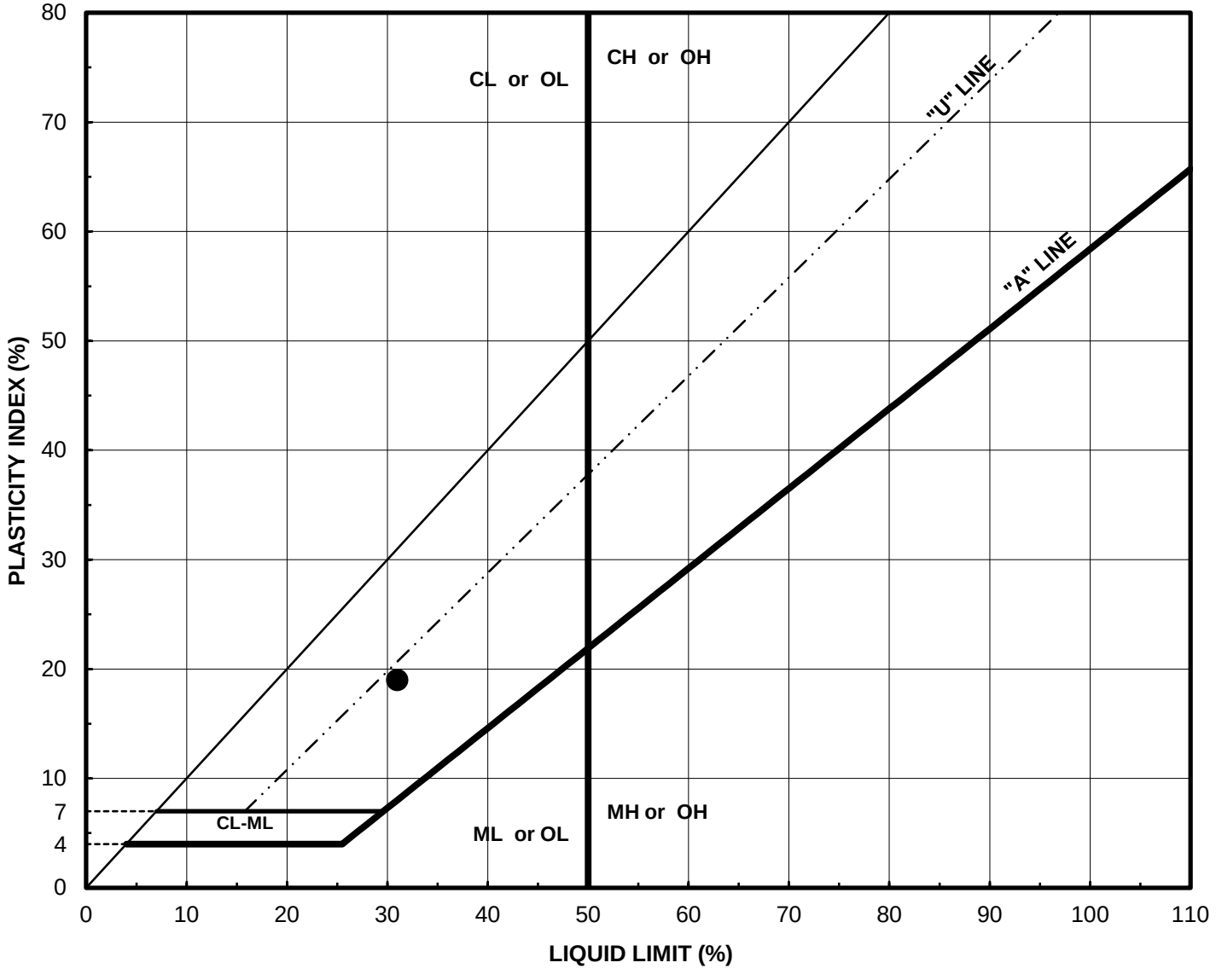


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
M24744G	2	2.5~5.0	7.7	26	14	Strong brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

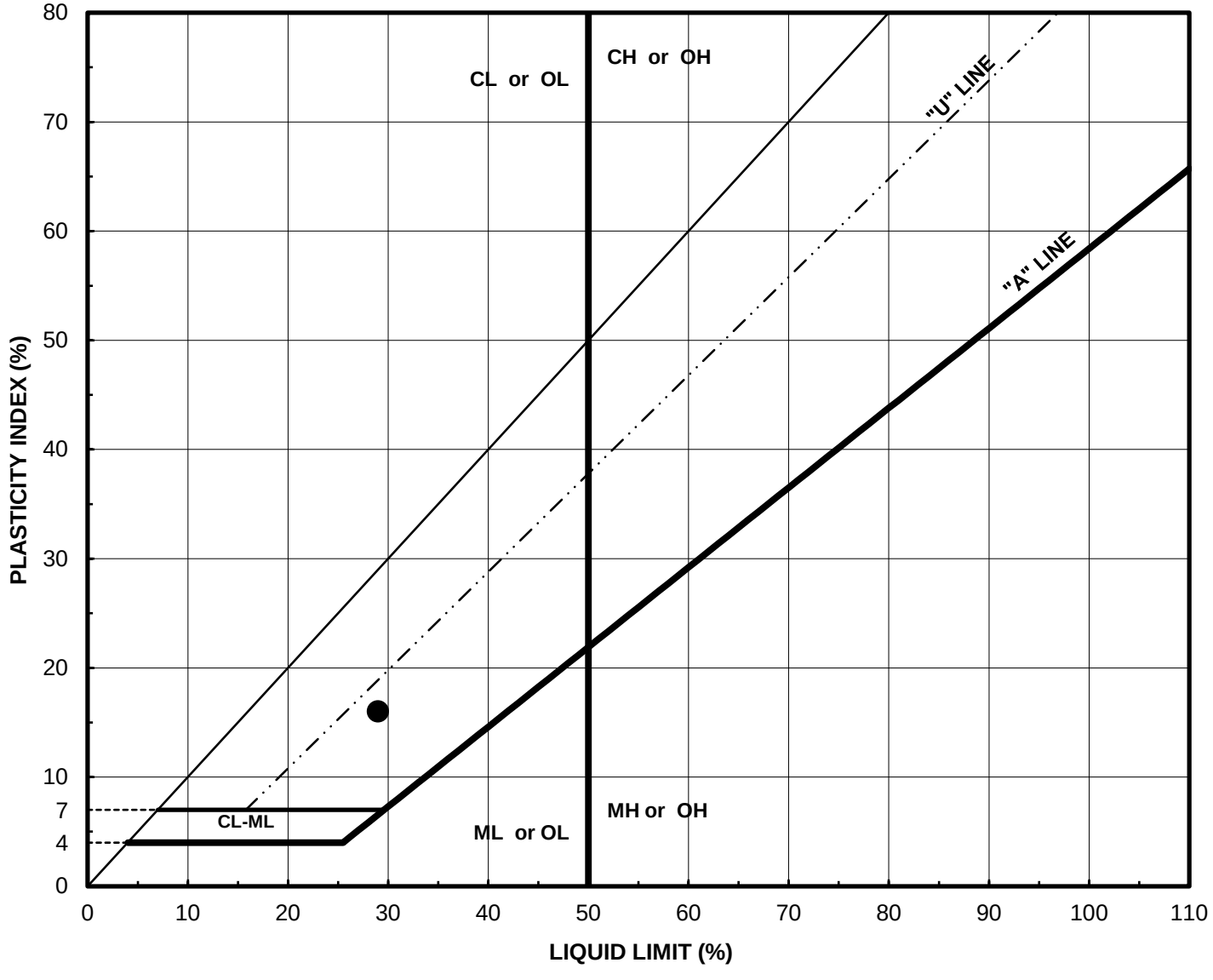


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24402G	2	2.5~5.0	10.3	31	19	Dark yellowish brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

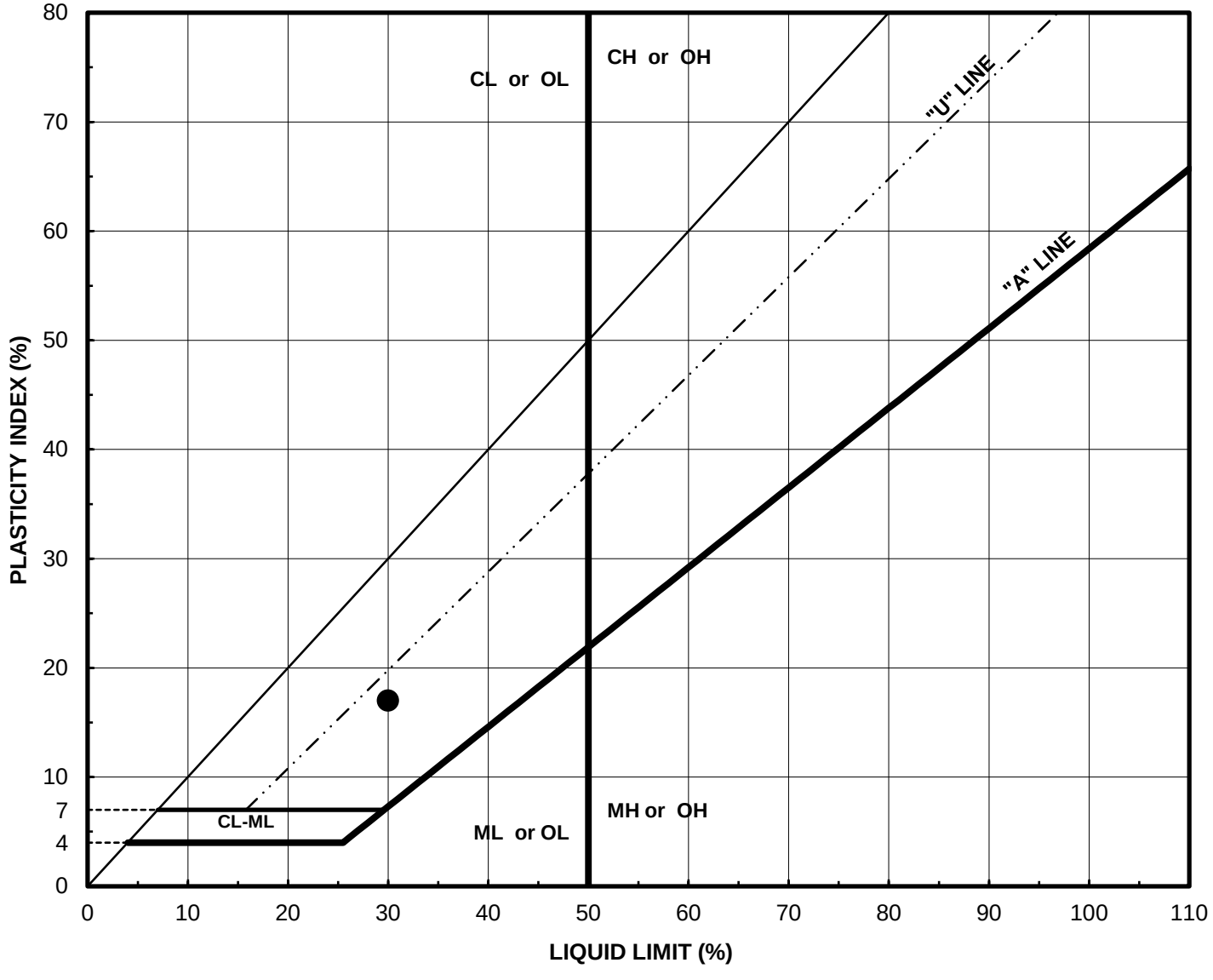


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24409G	2	2.5~5.0	8.6	29	16	Dark yellowish brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



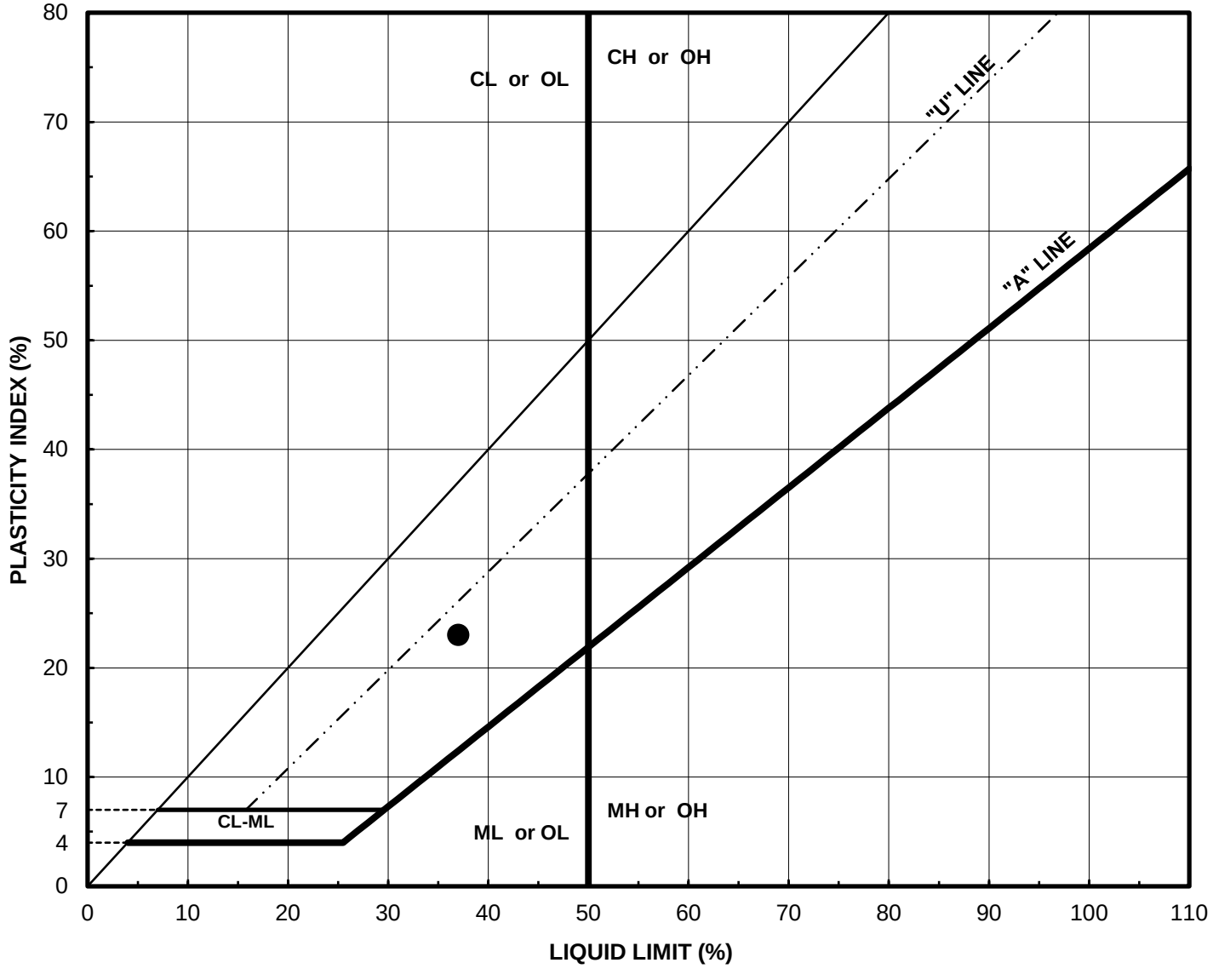
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24503G	2	2.5 - 5.	7.1	30	17	Brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM



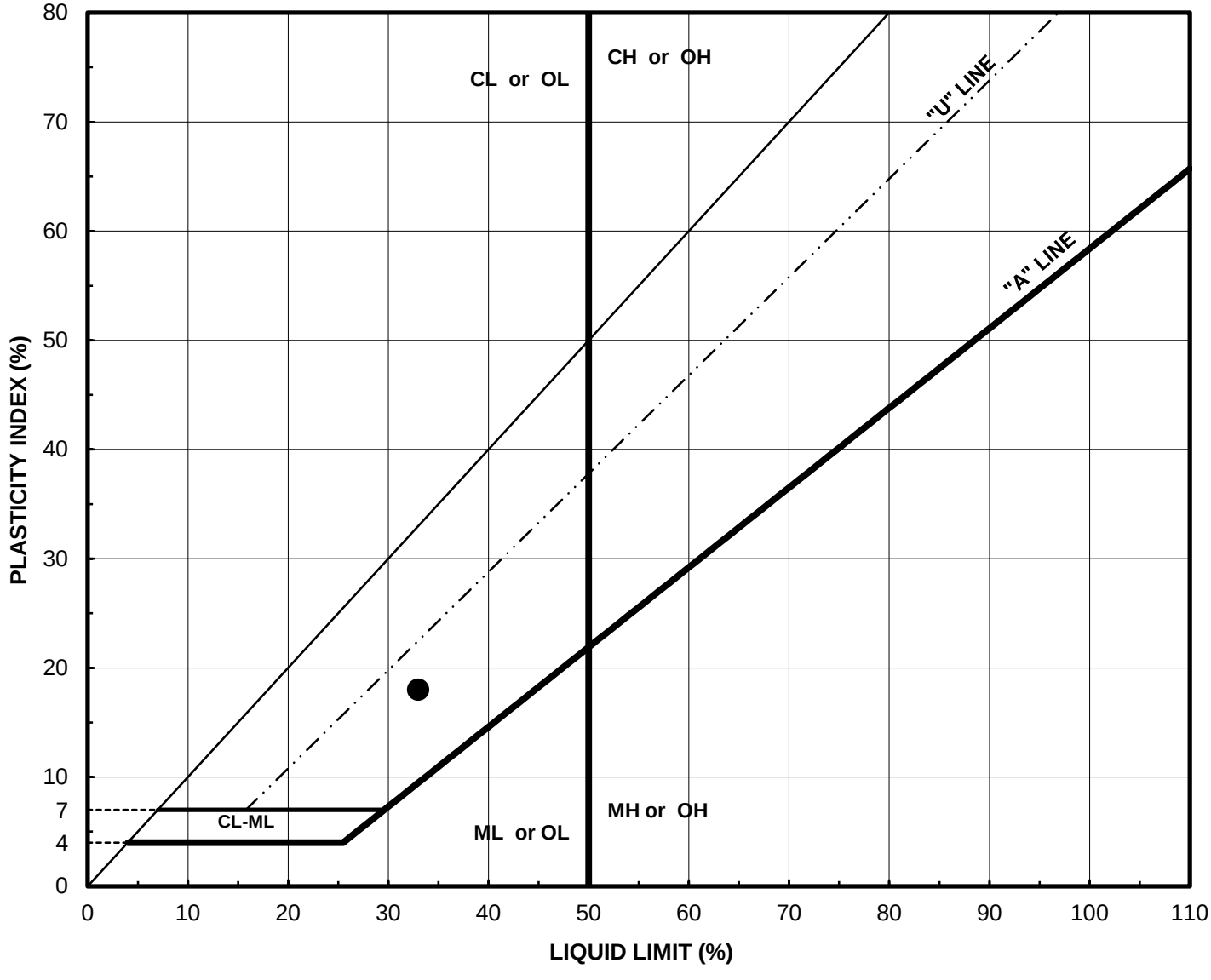
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24508G	2	2.5 - 5.0	10.8	37	23	Olive brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM



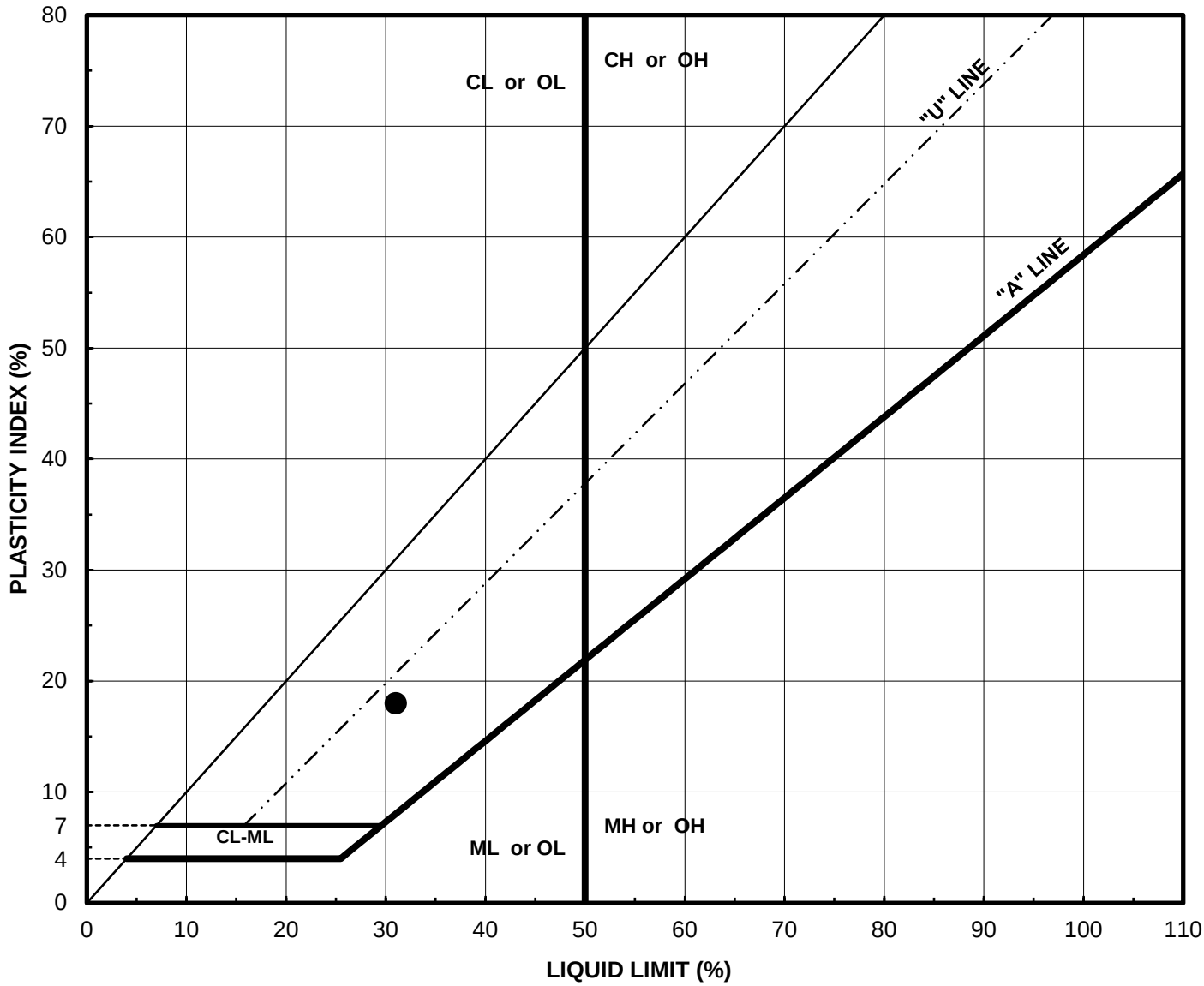
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24522G	4	7.5	13.6	33	18	Olive gray sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

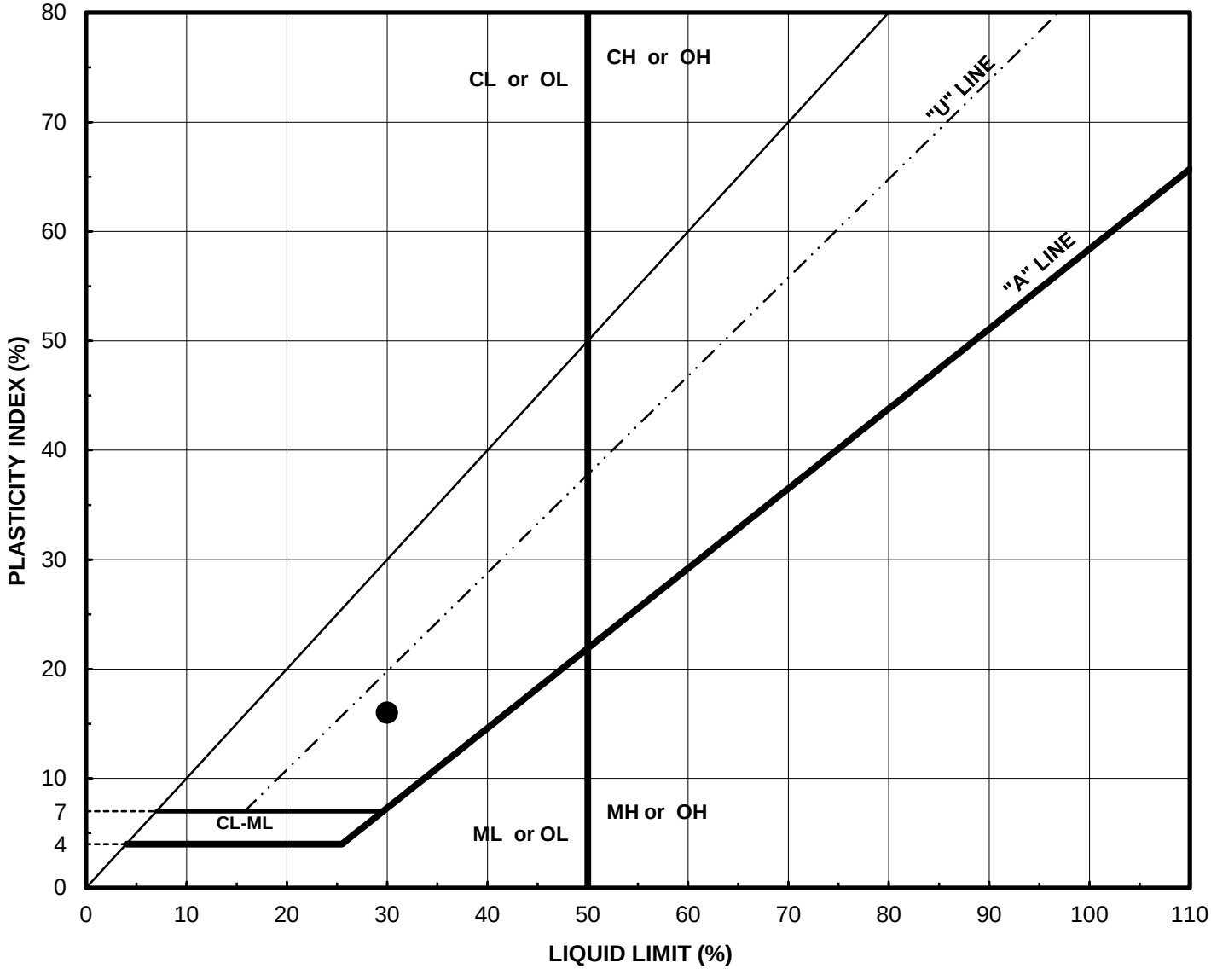
AECOM



Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24523G	2	2.5~5.0	9.1	31	18	Light olive brown sandy Clay (CL)

Project Name: **Former Kast Property** **PLASTICITY CHART**

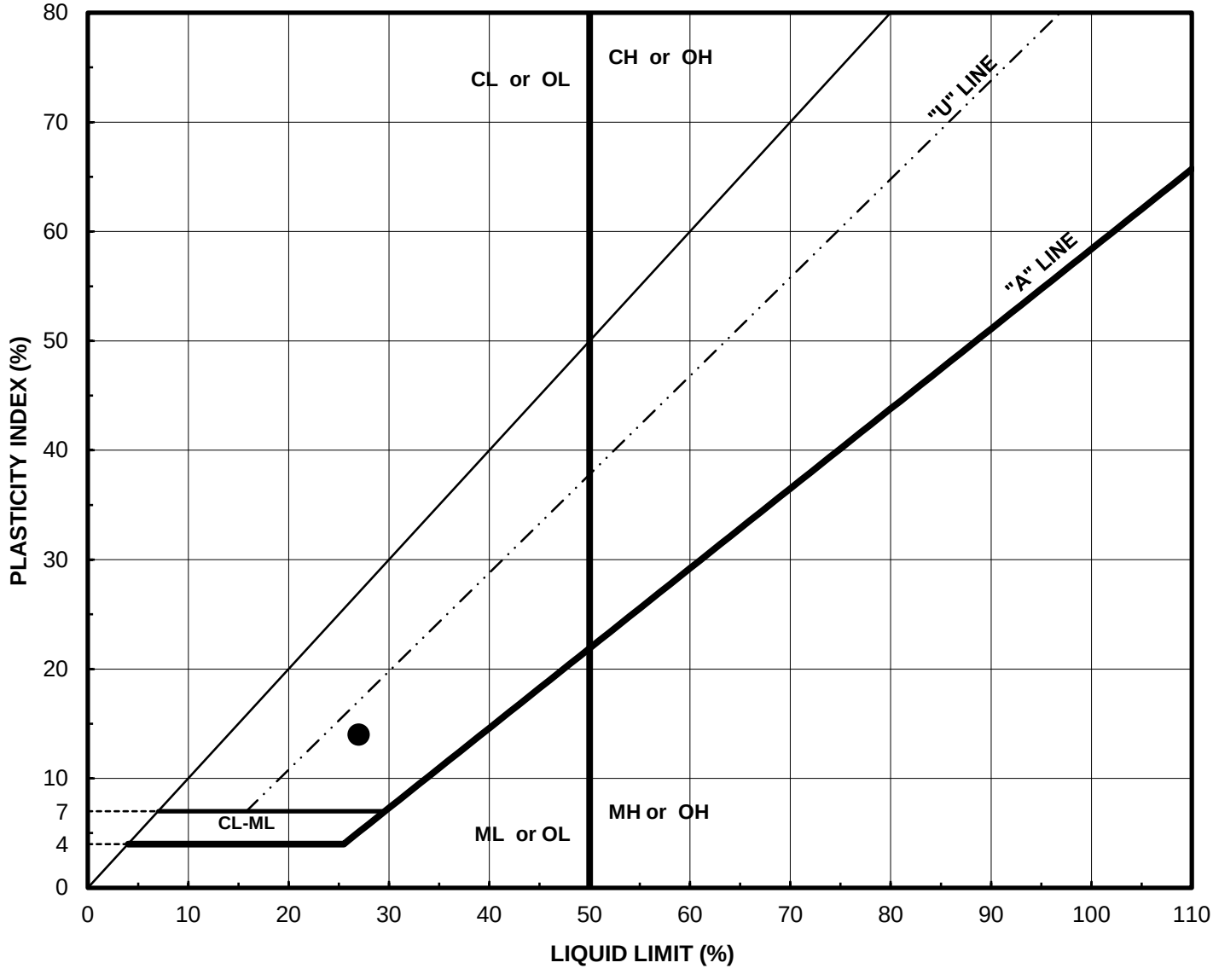
Project Number: **60422689**



Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24613G	2	2.5~5.0	14.5	30	16	Dark olive brown clayey Sand (SC)

Project Name: **Former Kast Property** **PLASTICITY CHART**

Project Number: **60422689**

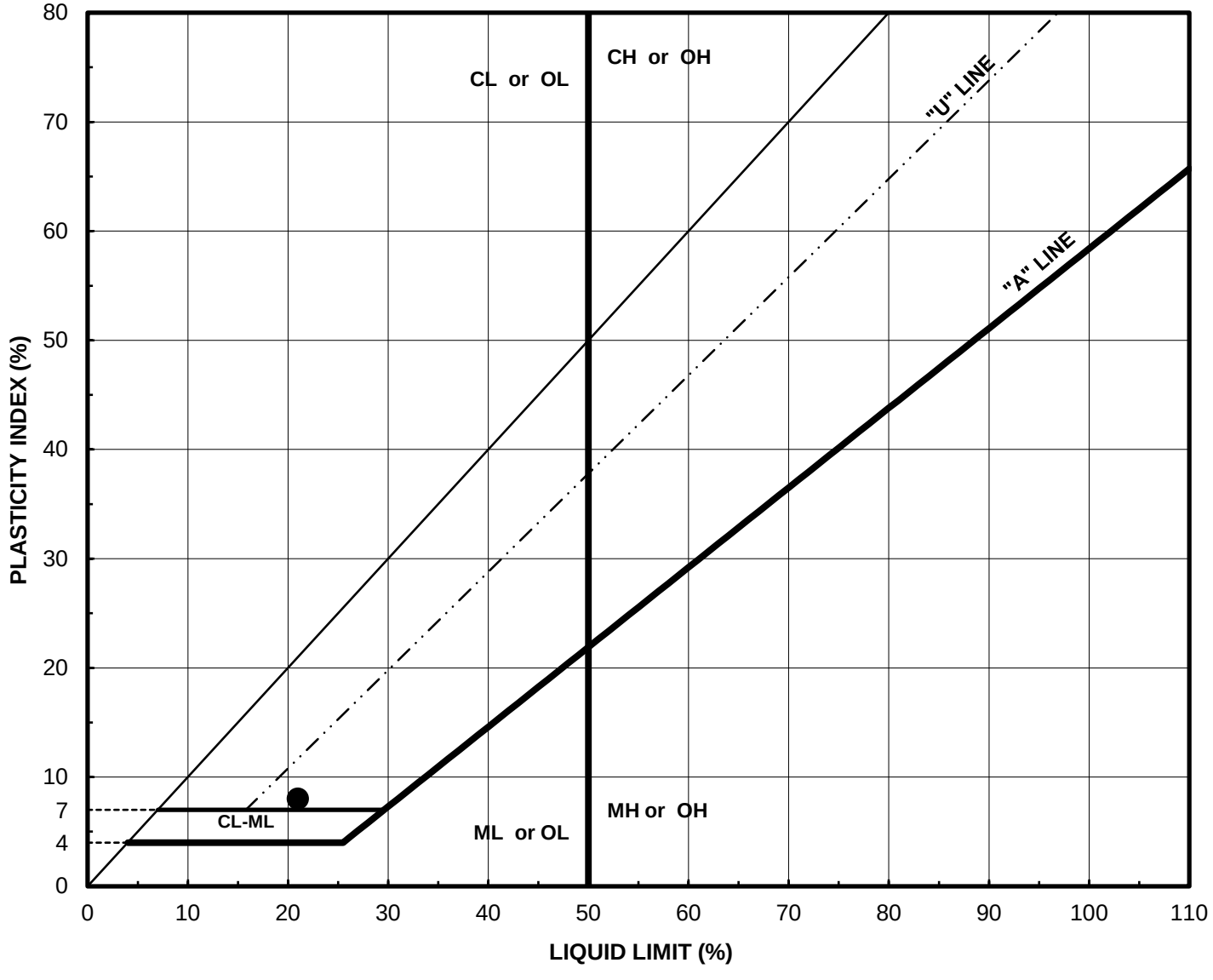


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24622G	3	5.0	14.4	27	14	Darl olive gray clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

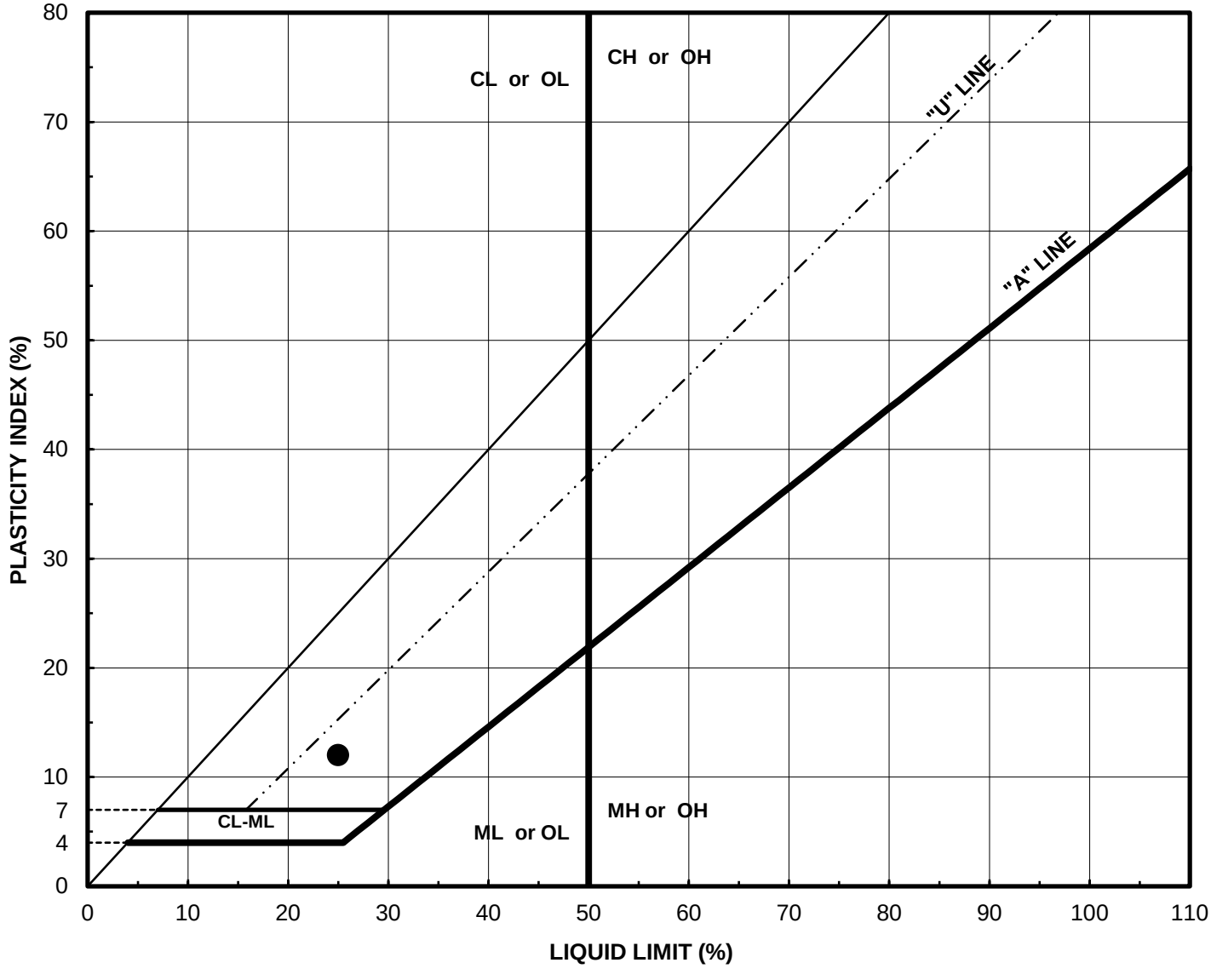


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24703G	4	7.5	13.2	21	8	Very dark grayish brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

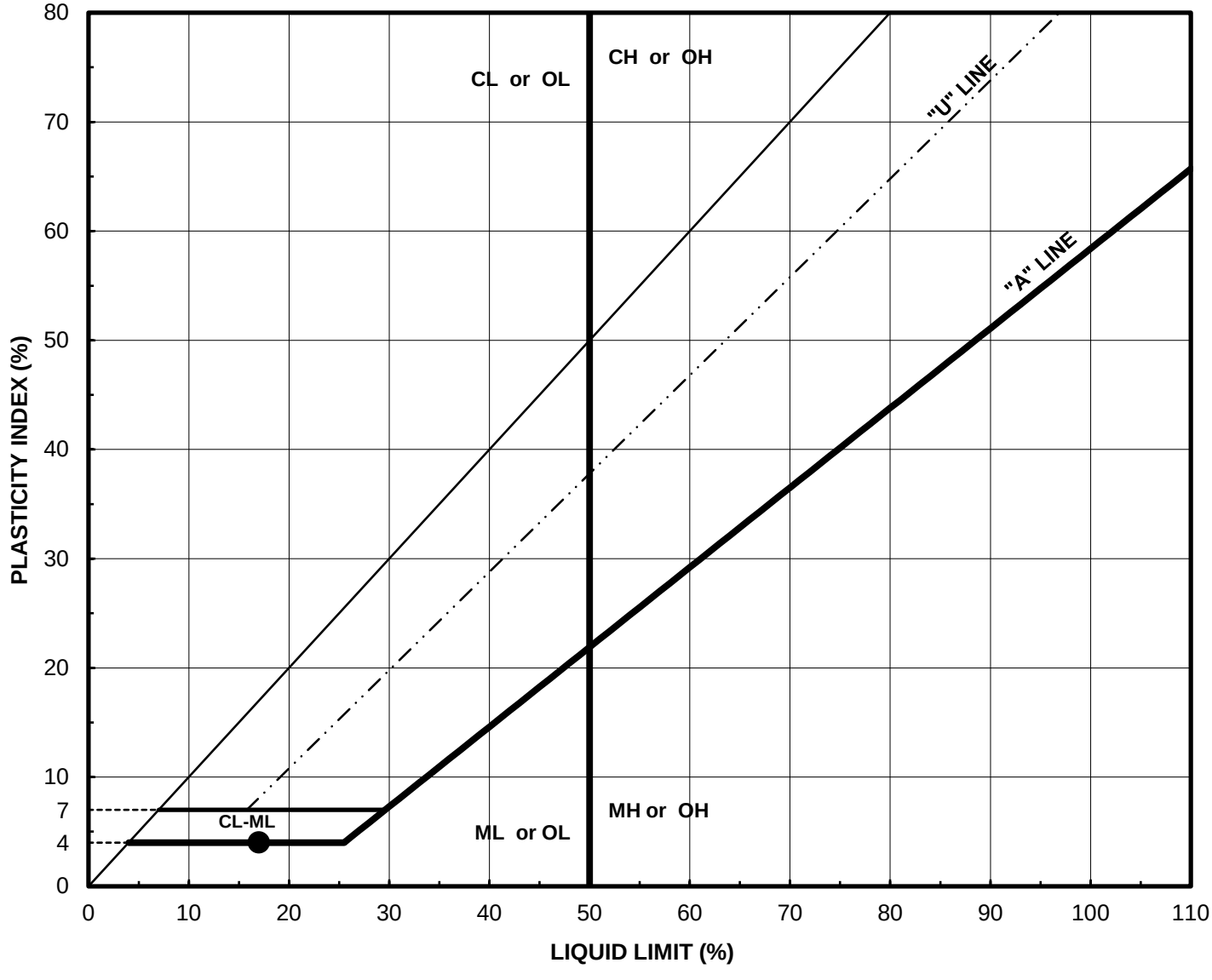


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24712G	2	2.5 - 5.0	7.2	25	12	Olive brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



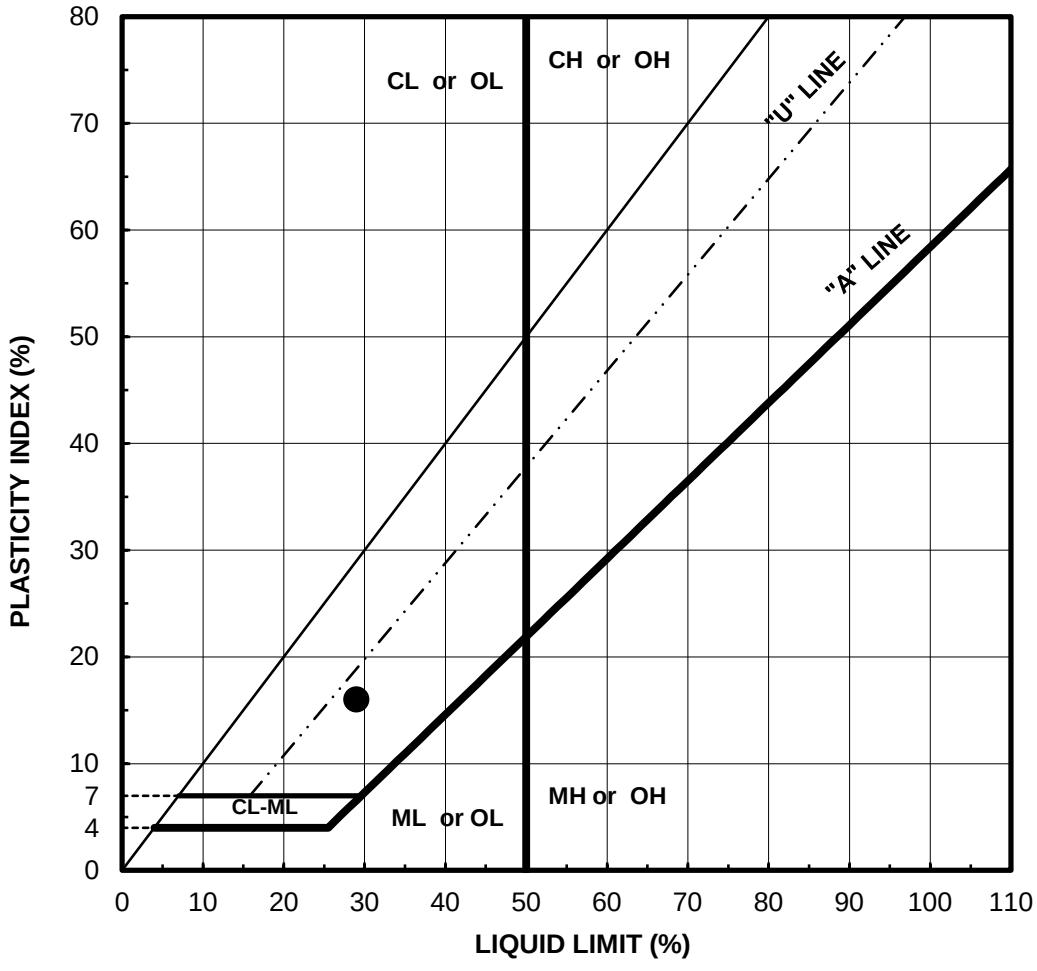
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24732G	2	2.5 - 5.0	10.1	17	4	Dark yelowish brown silty. clayey Sand (CL-ML)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM

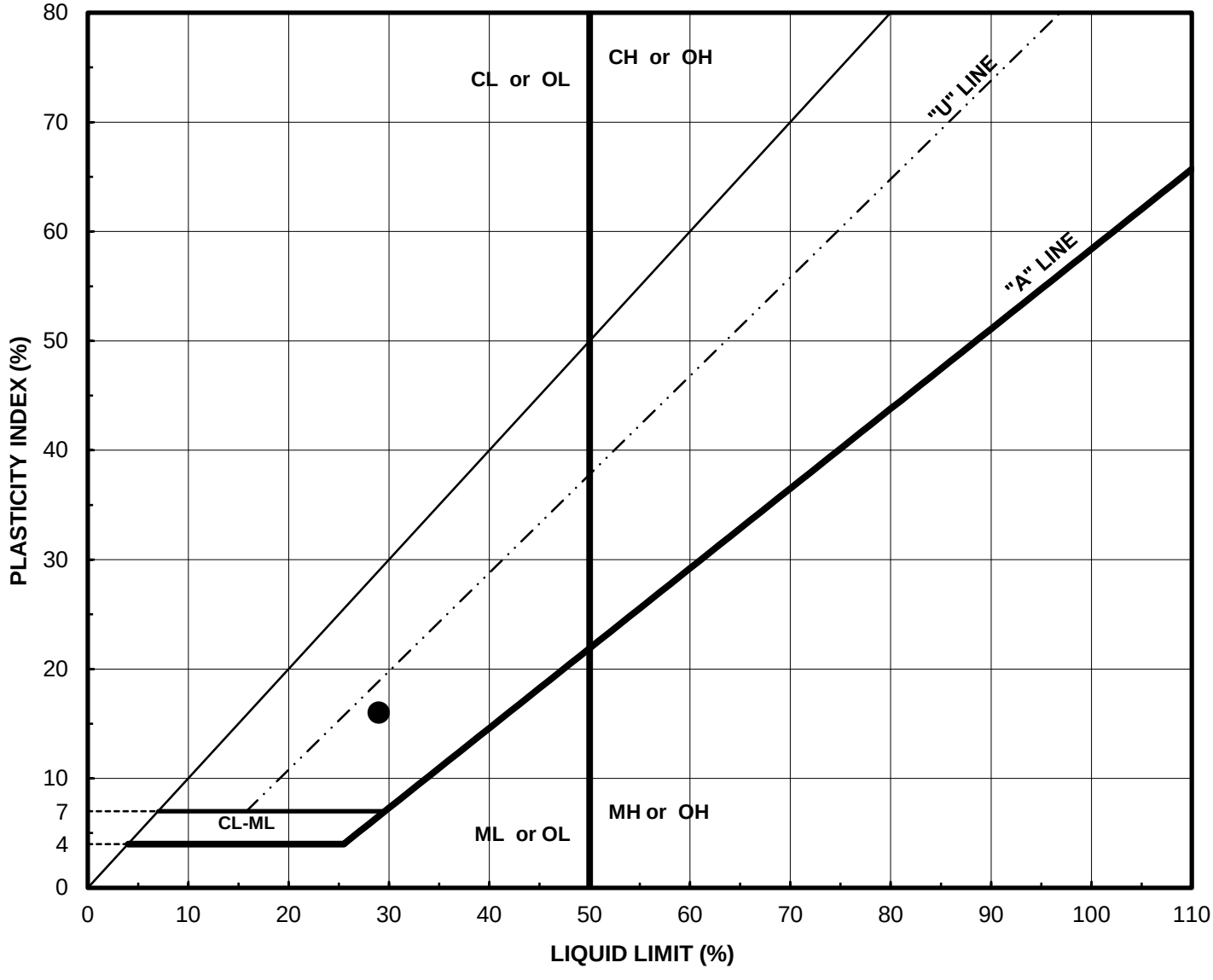


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
N24733G	2	2.5~5.0	14.6	29	16	Dark brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

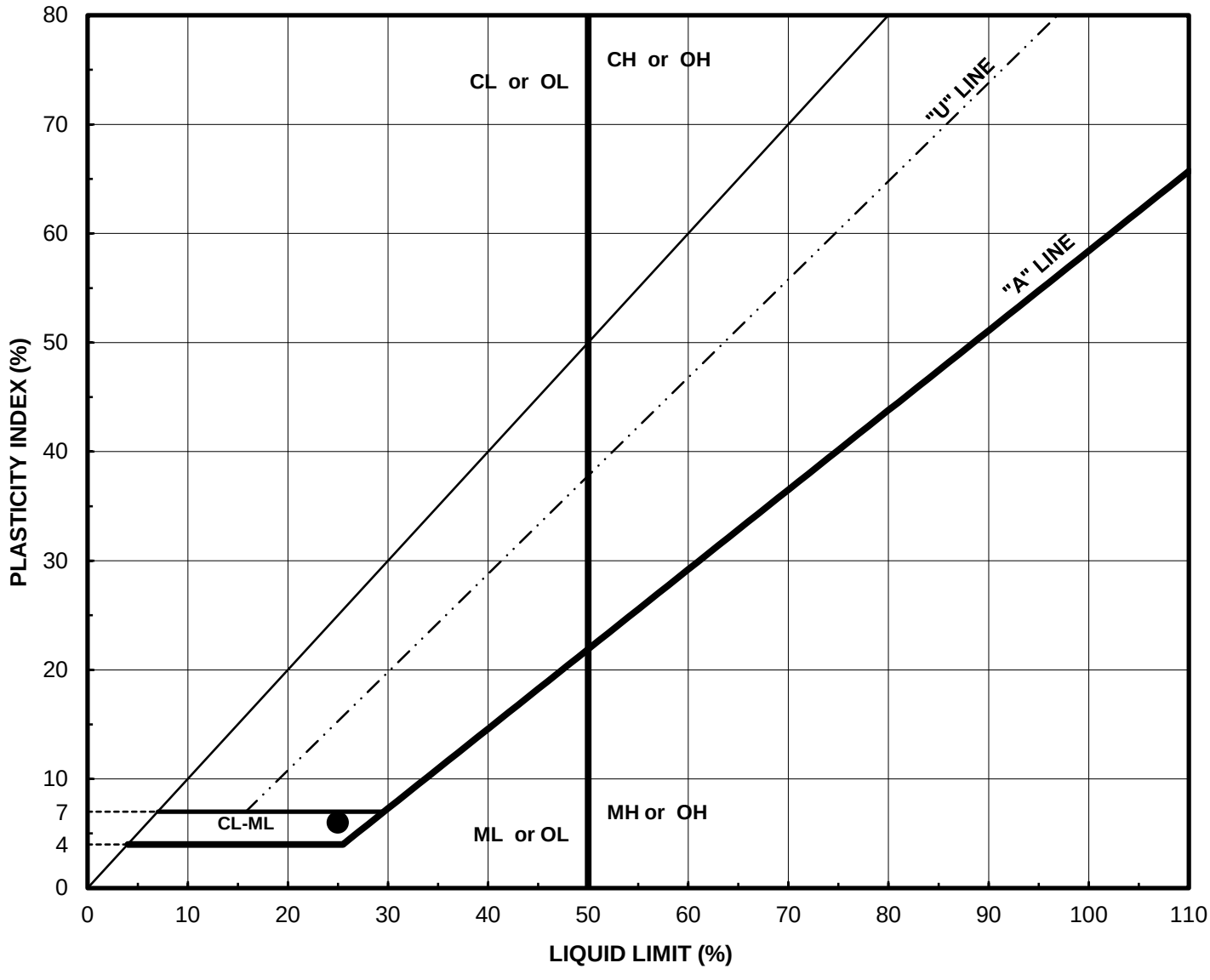


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24402G	2	2.5-5.0	7.1	29	16	Strong brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

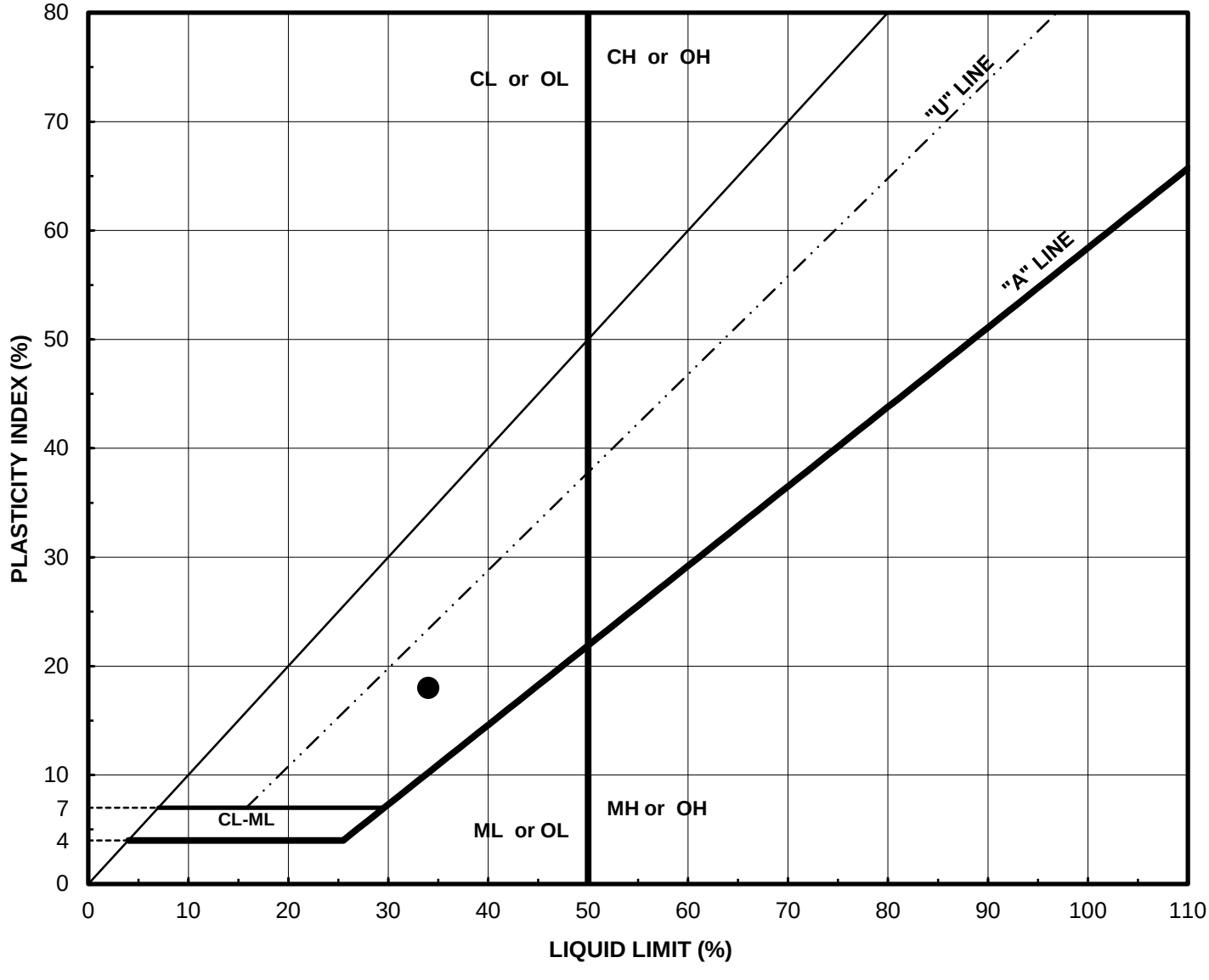


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24411G	4	7.5	16.1	25	6	Olive brown sandy, silty Clay (CL-ML)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

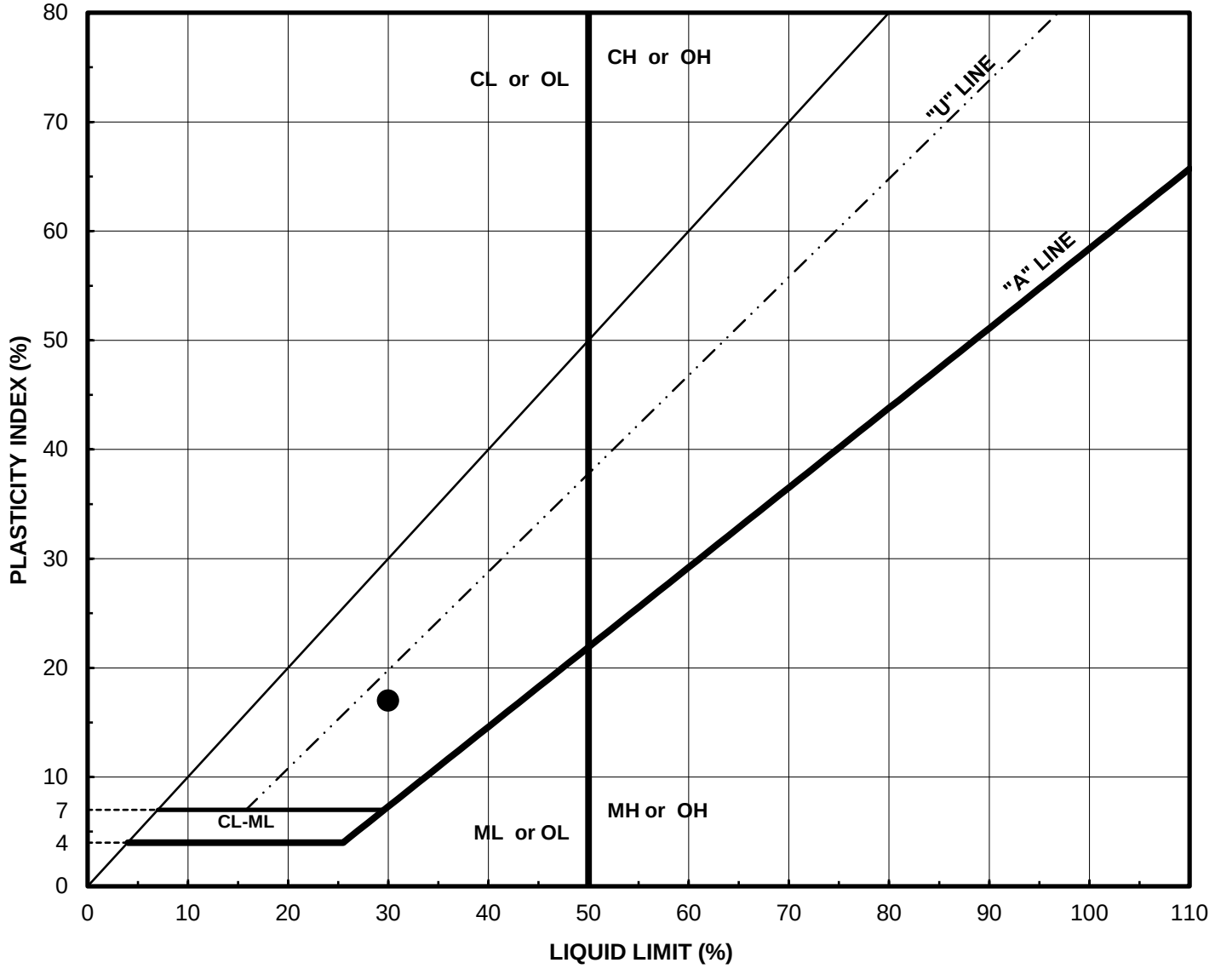


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24426G	3	5.0	15.3	34	18	Strong brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

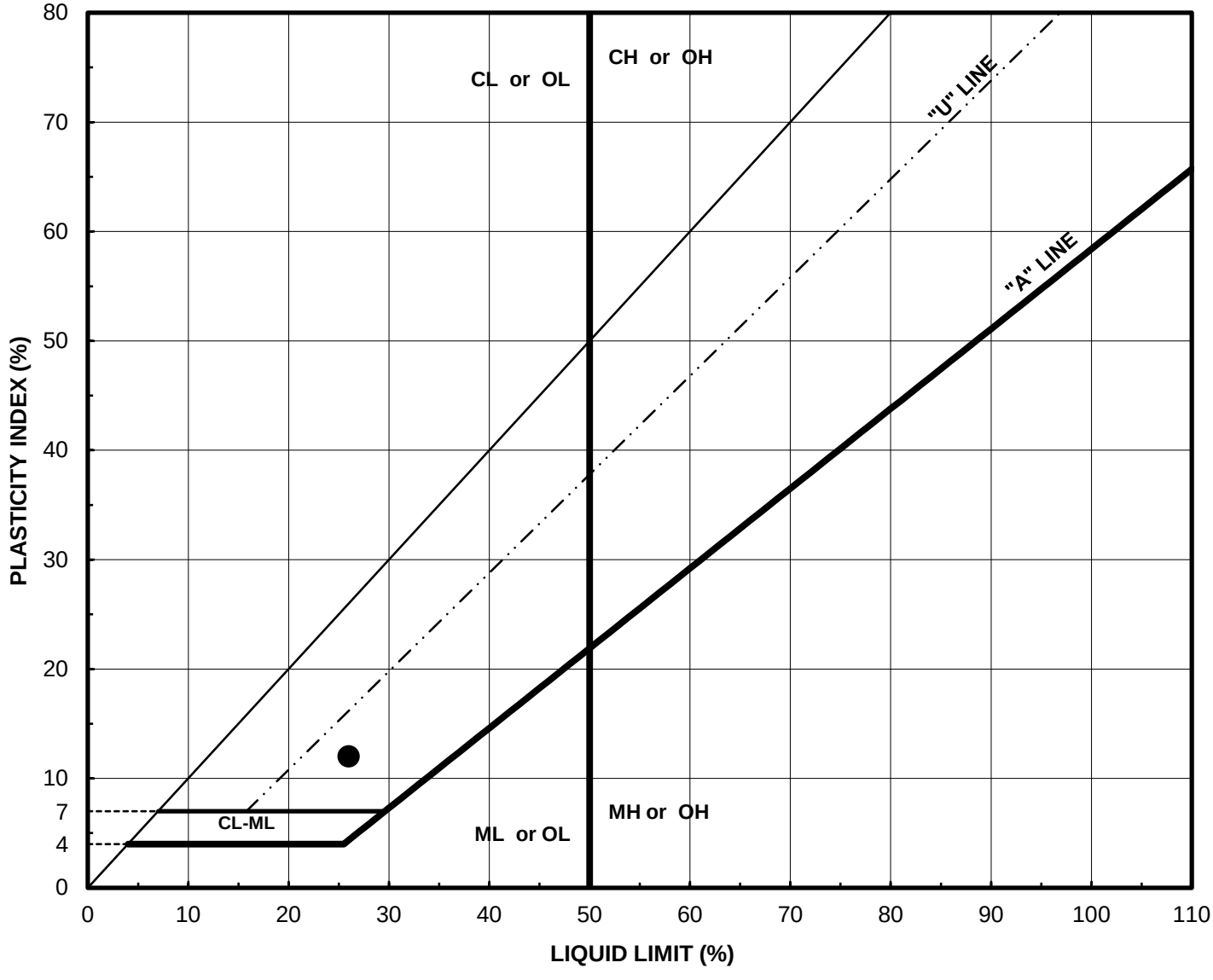


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24503G	2	2.5~5.0	12.5	30	17	Brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

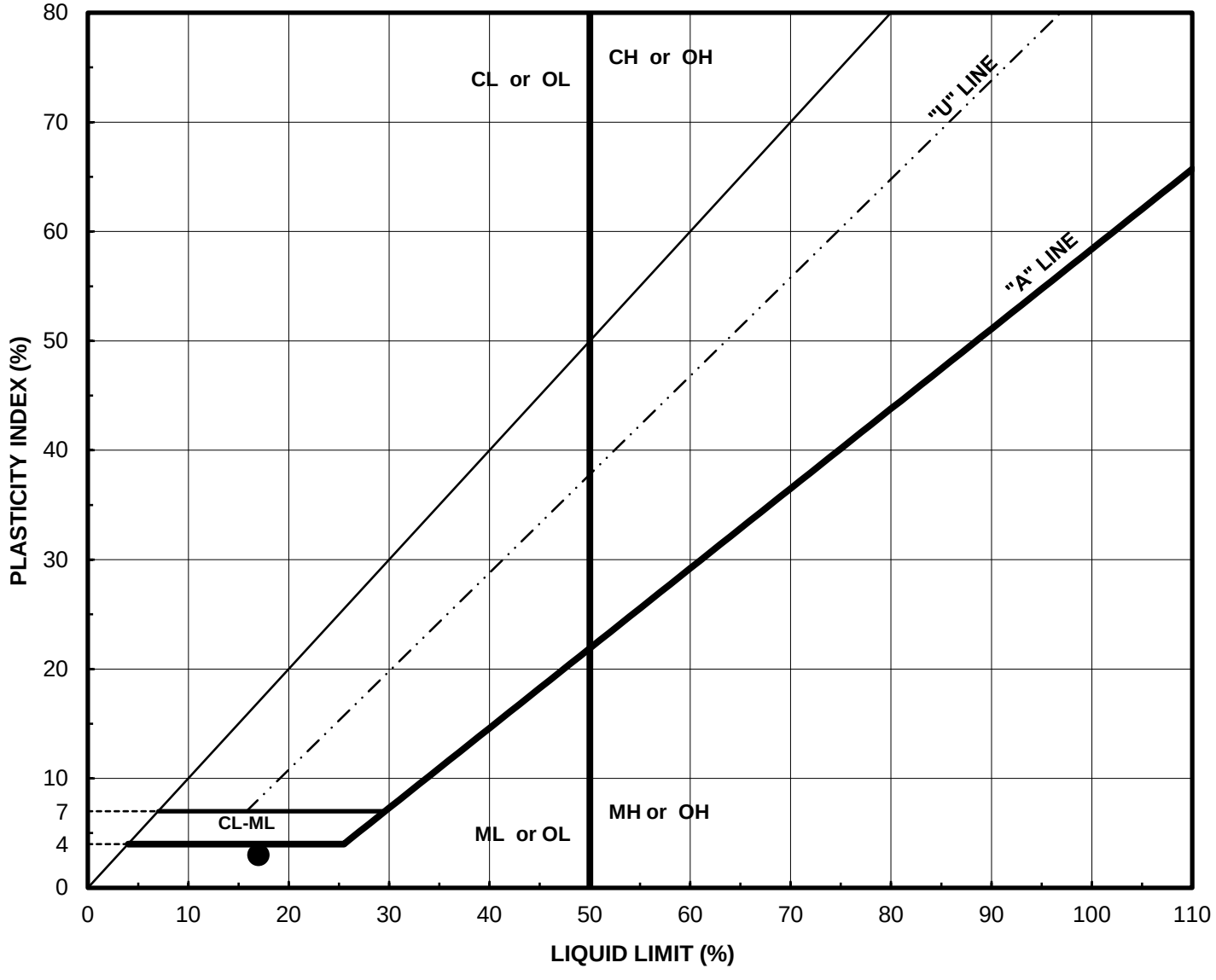
PLASTICITY CHART



Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24608G	1	2.5	13.8	26	12	Dark grayish brown clayey Sand with shell fragments(SC)

Project Name: **Former Kast Property** **PLASTICITY CHART**

Project Number: **60422689**

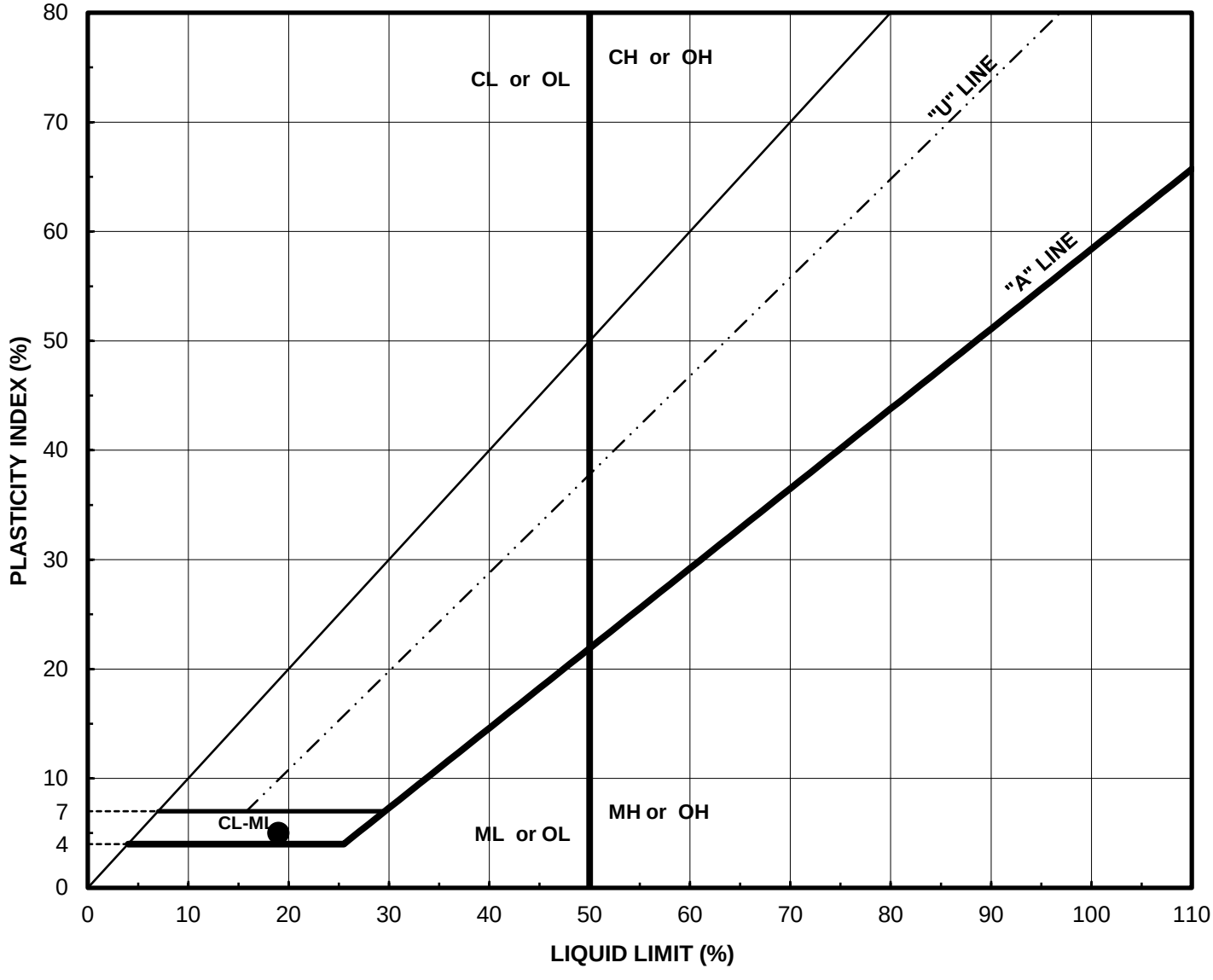


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24618G	4	7.5	9.8	17	3	Dark yellowish brown silty Sand with gravel (SM)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

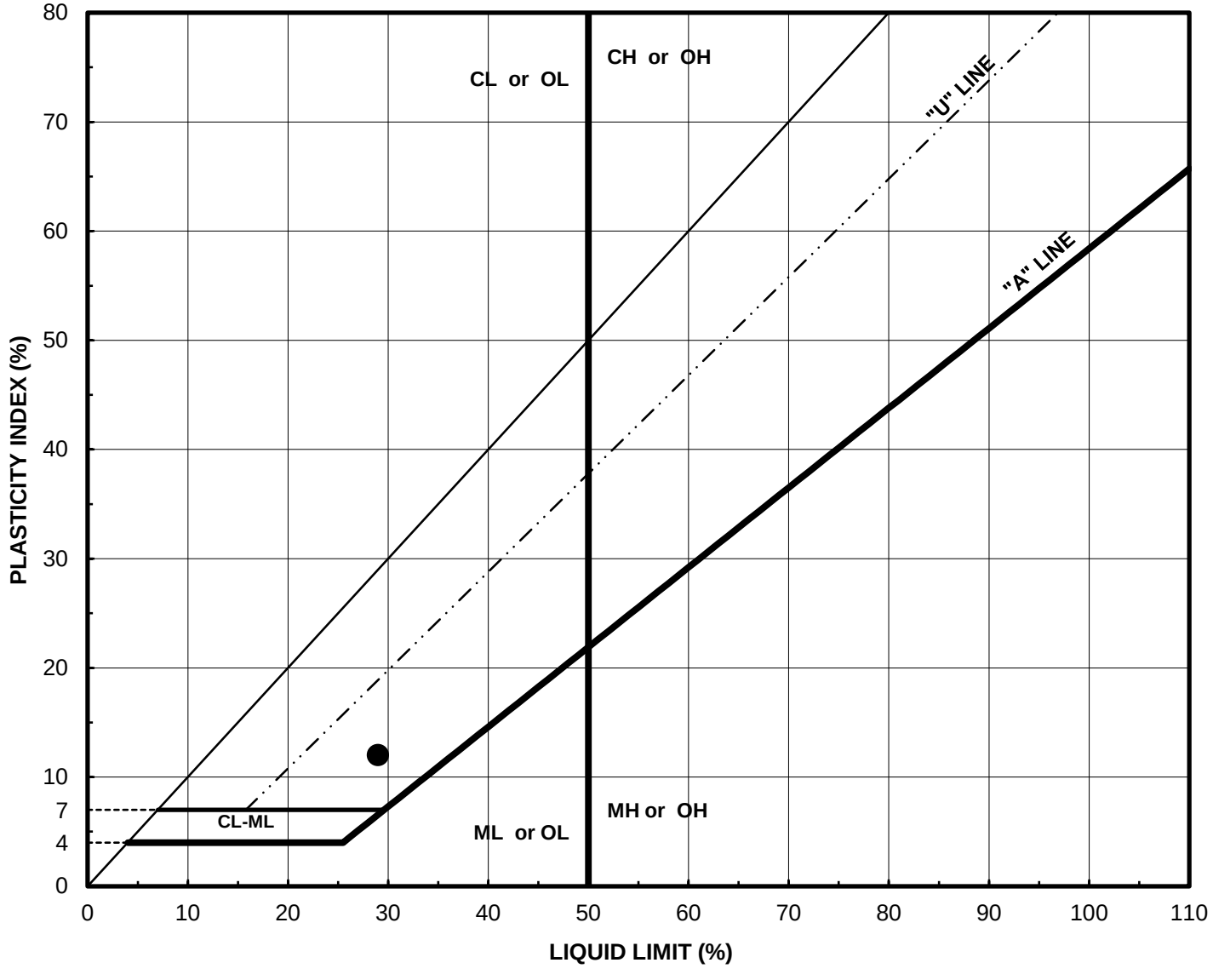


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24709G	4	7.5	12.4	19	5	Dark brown silty, clayey Sand (SC-SM)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

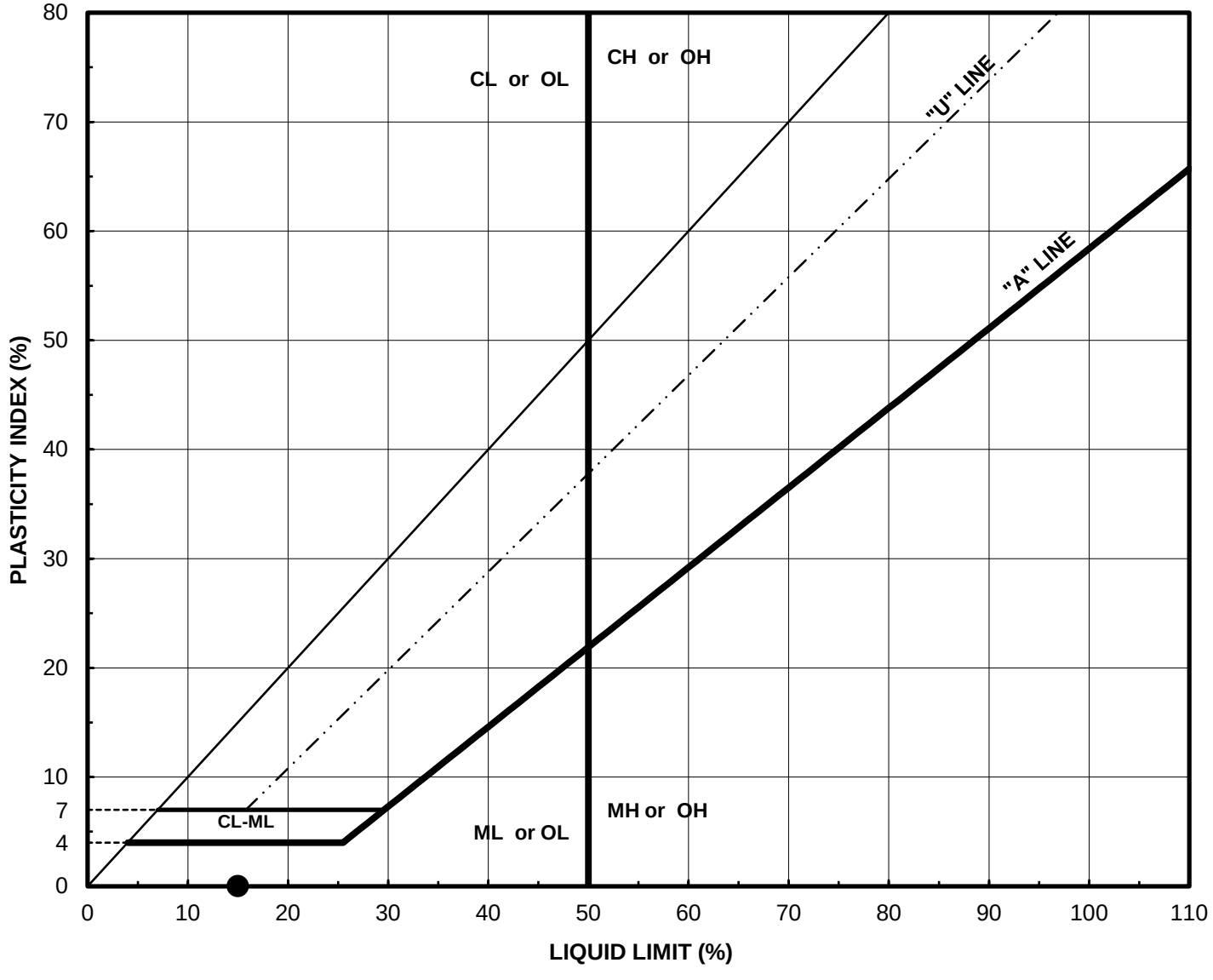


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24719G	2	2.5 - 5.0	9.1	29	12	Olive brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

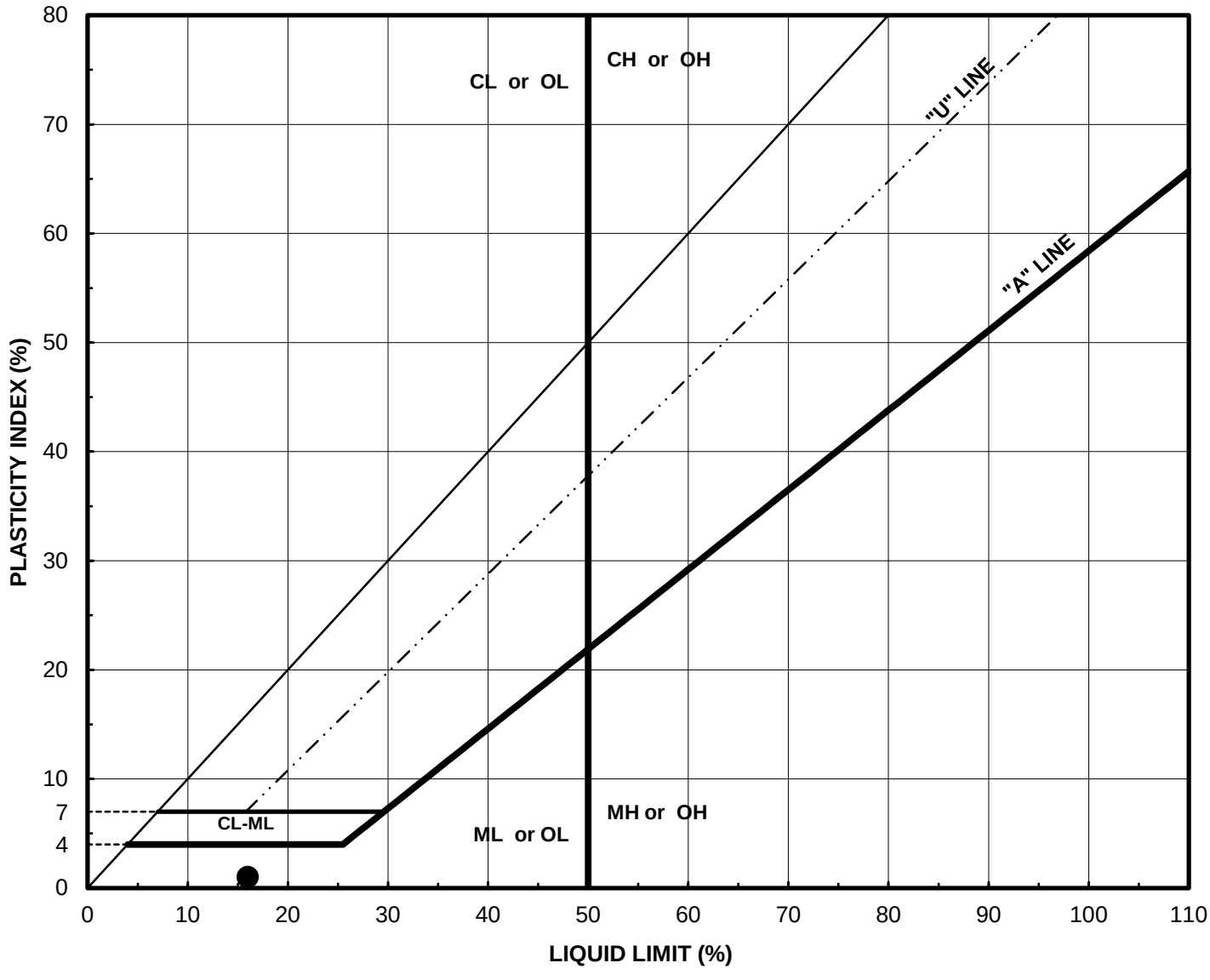


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24738G	2	2.5 - 5.0	12.8	15	NP	Strong brown silty Sand (SM)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24803G	3	5.0	12.7	16	1	Light brown silty Sand (SM)

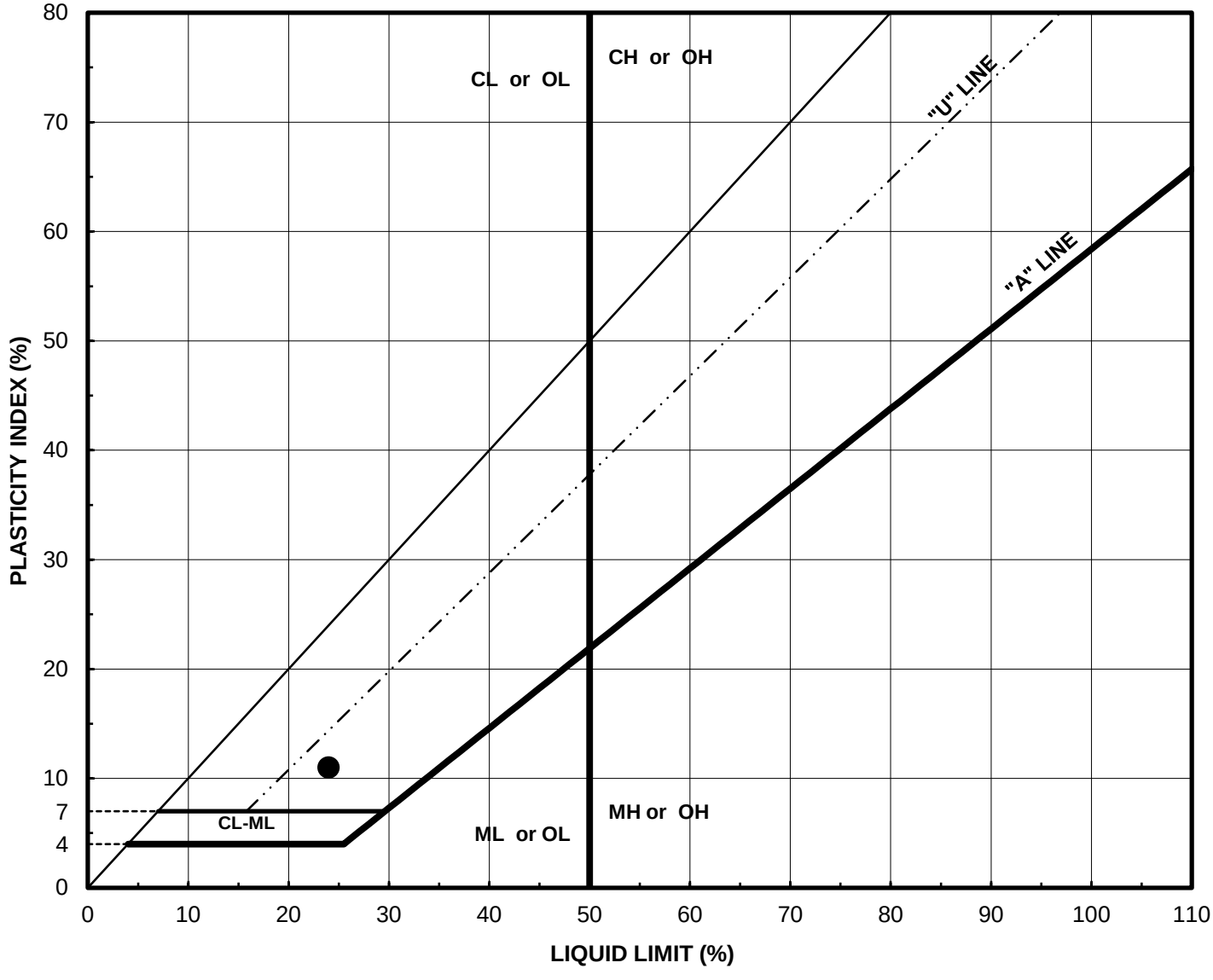
Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

Limits Kast P24803G S03 5 ft.xlsx

AECOM

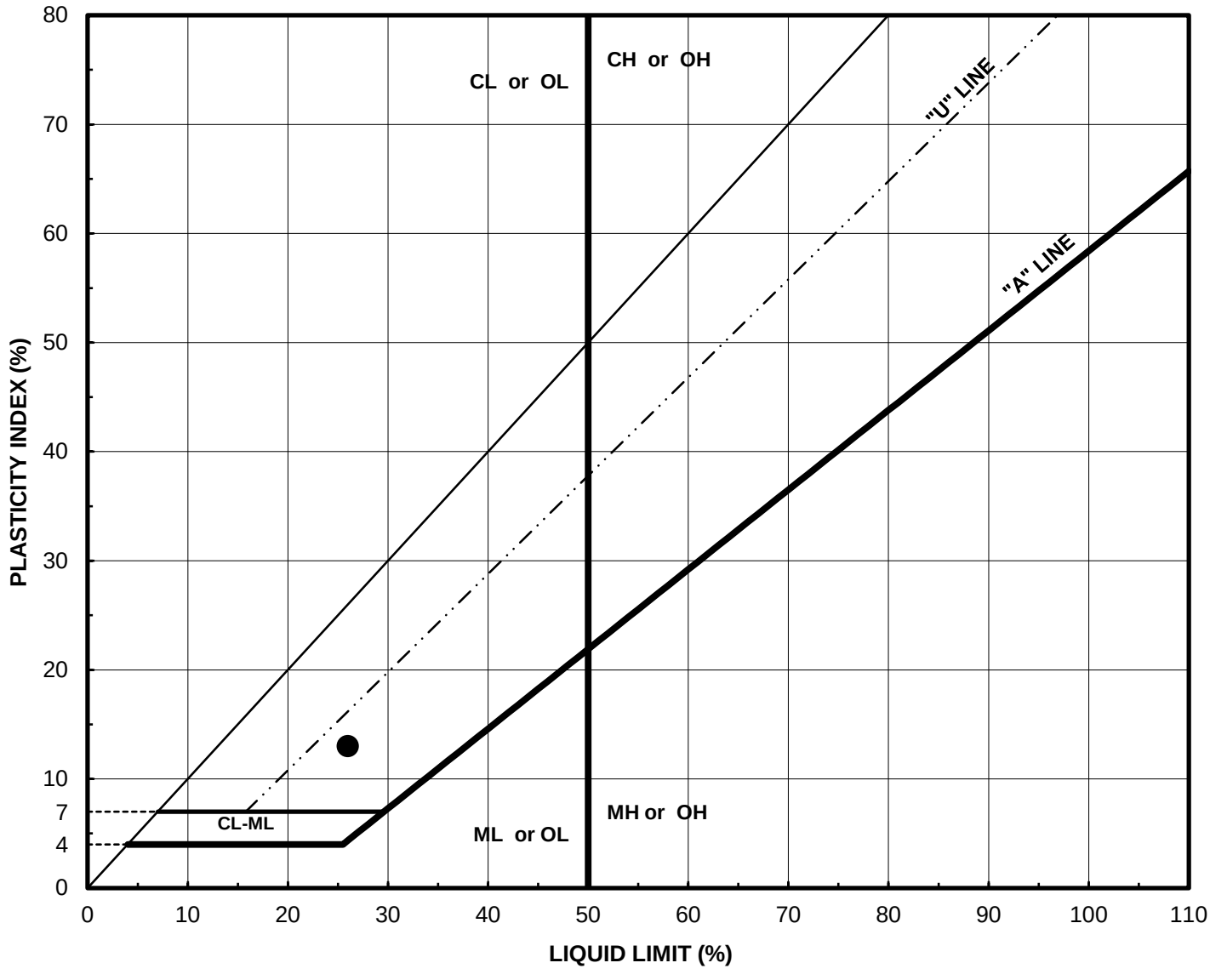


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24819G	2	2.5 - 5.0	9.1	24	11	Strong brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

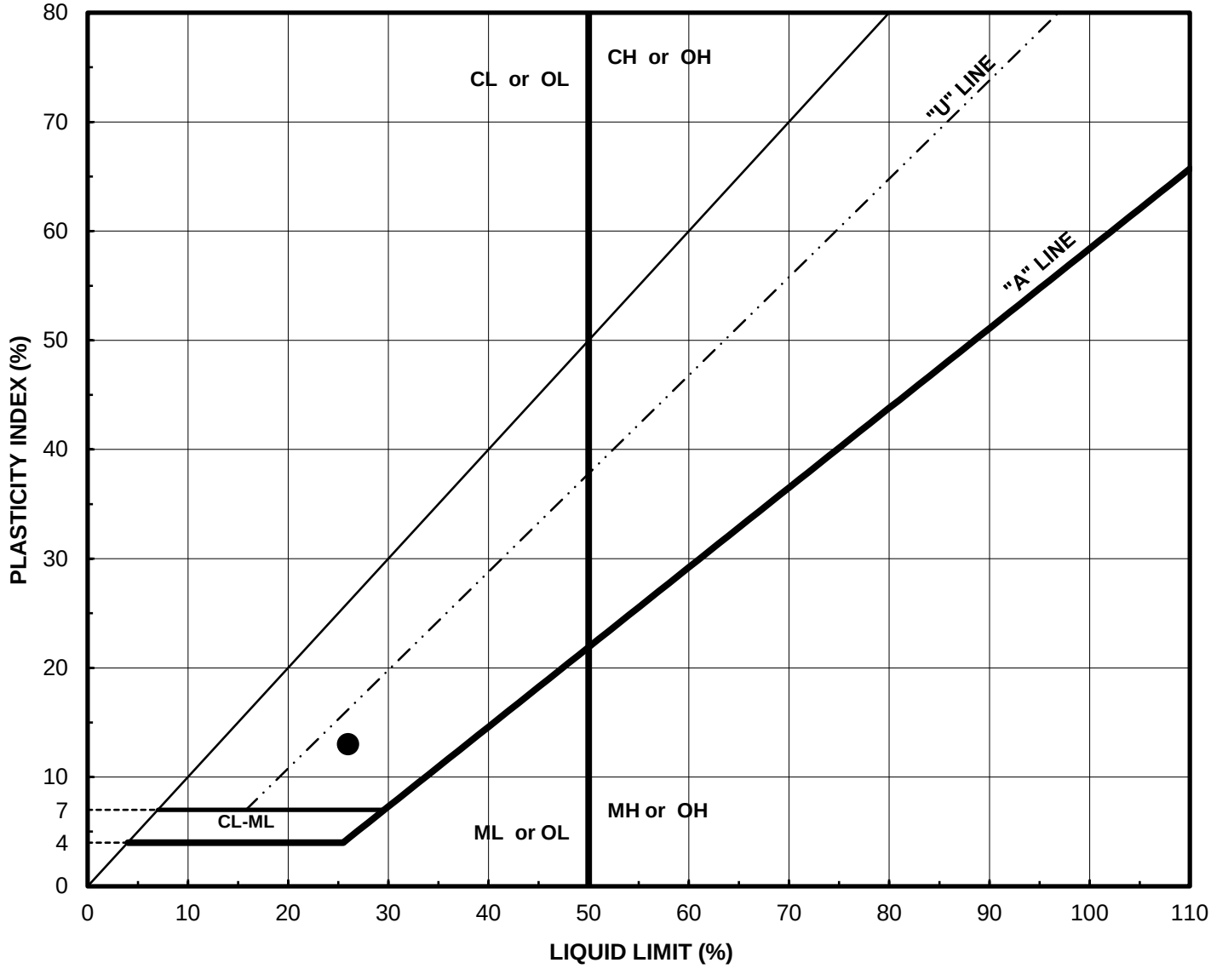


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
P24833G	1	2.5	10.7	26	13	Dark yellowish brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



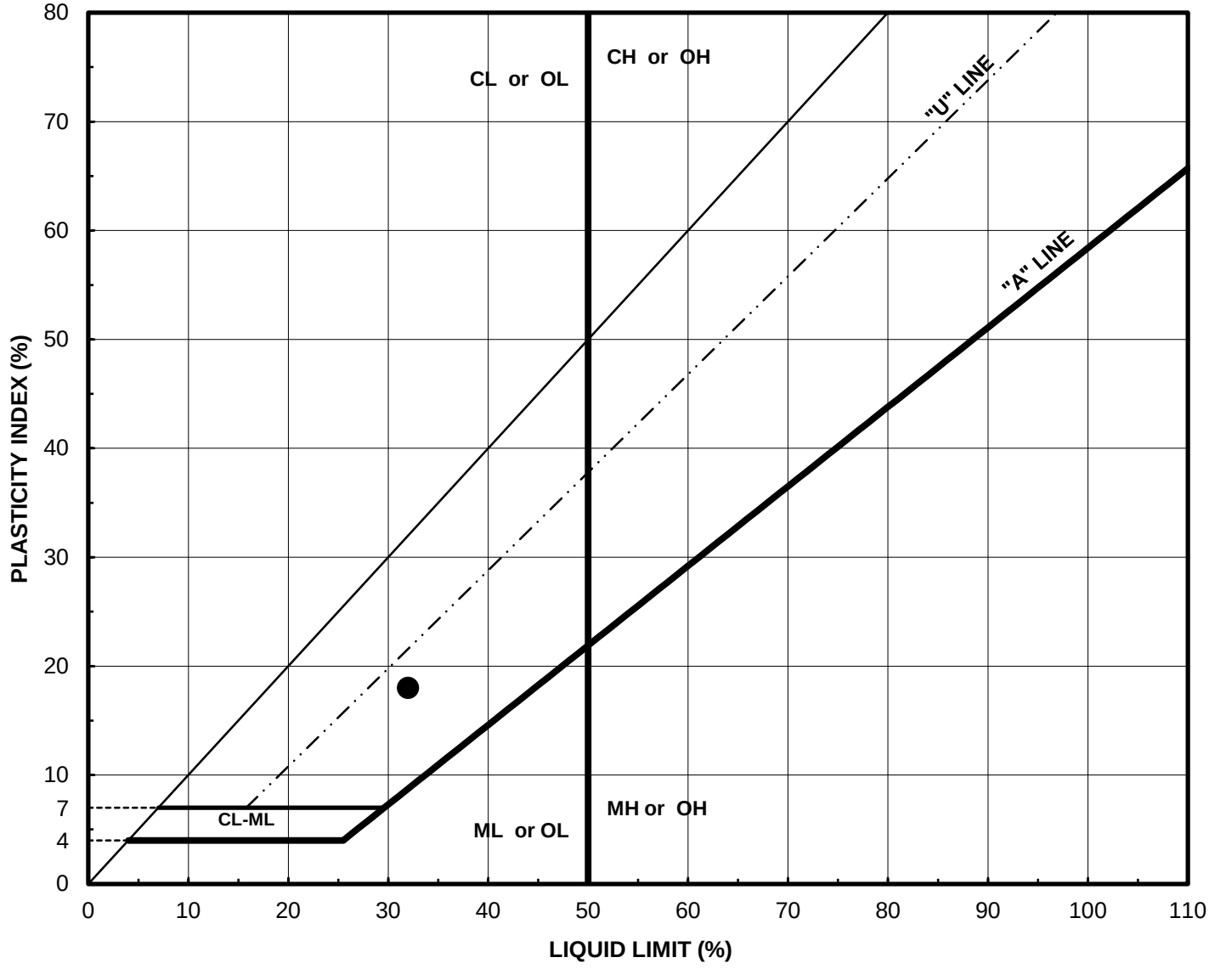
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24423G	4	7.5	NA	26	13	Olive brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM

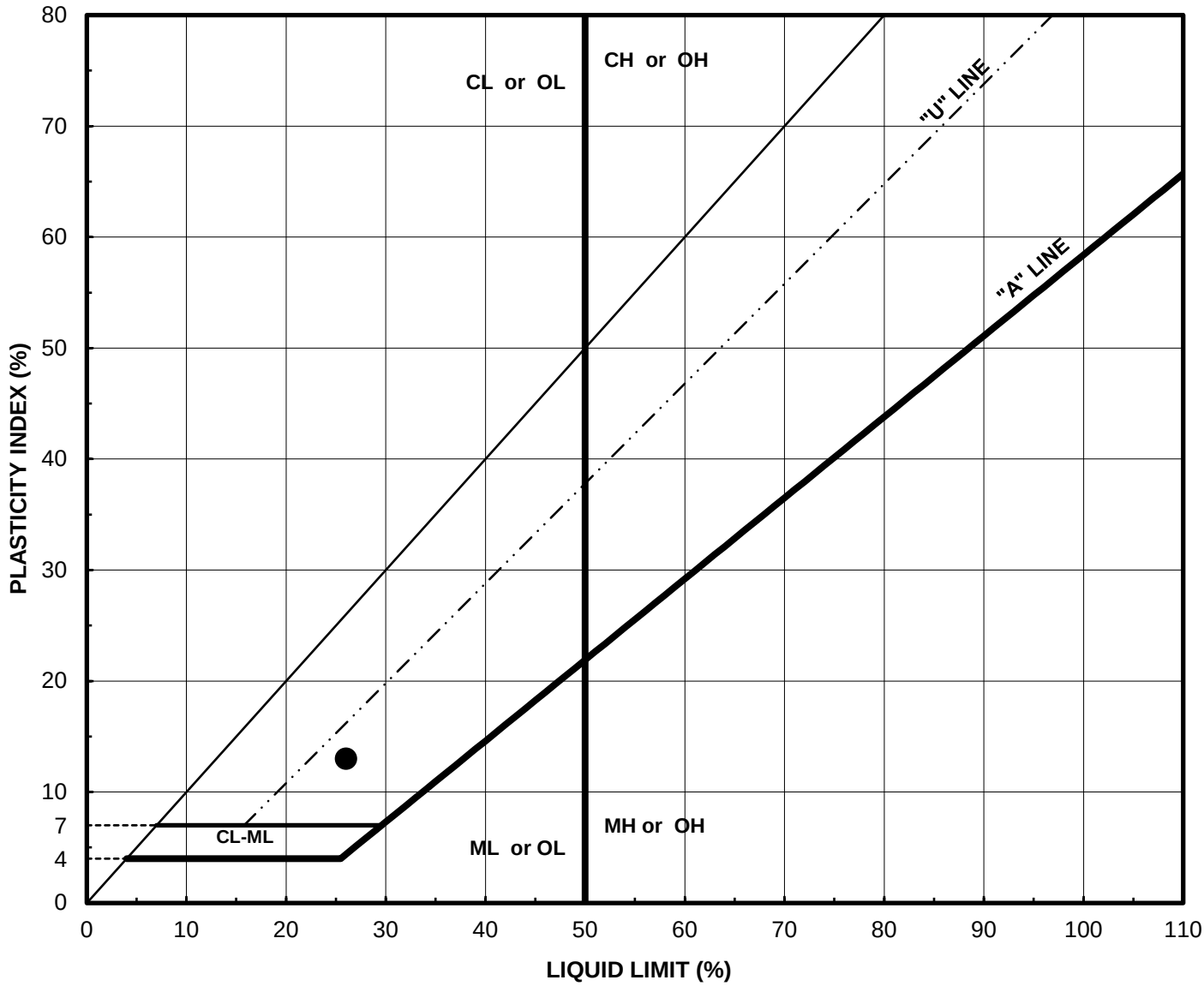


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24426G	2	2.5 - 5.0	9.6	32	18	Strong brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

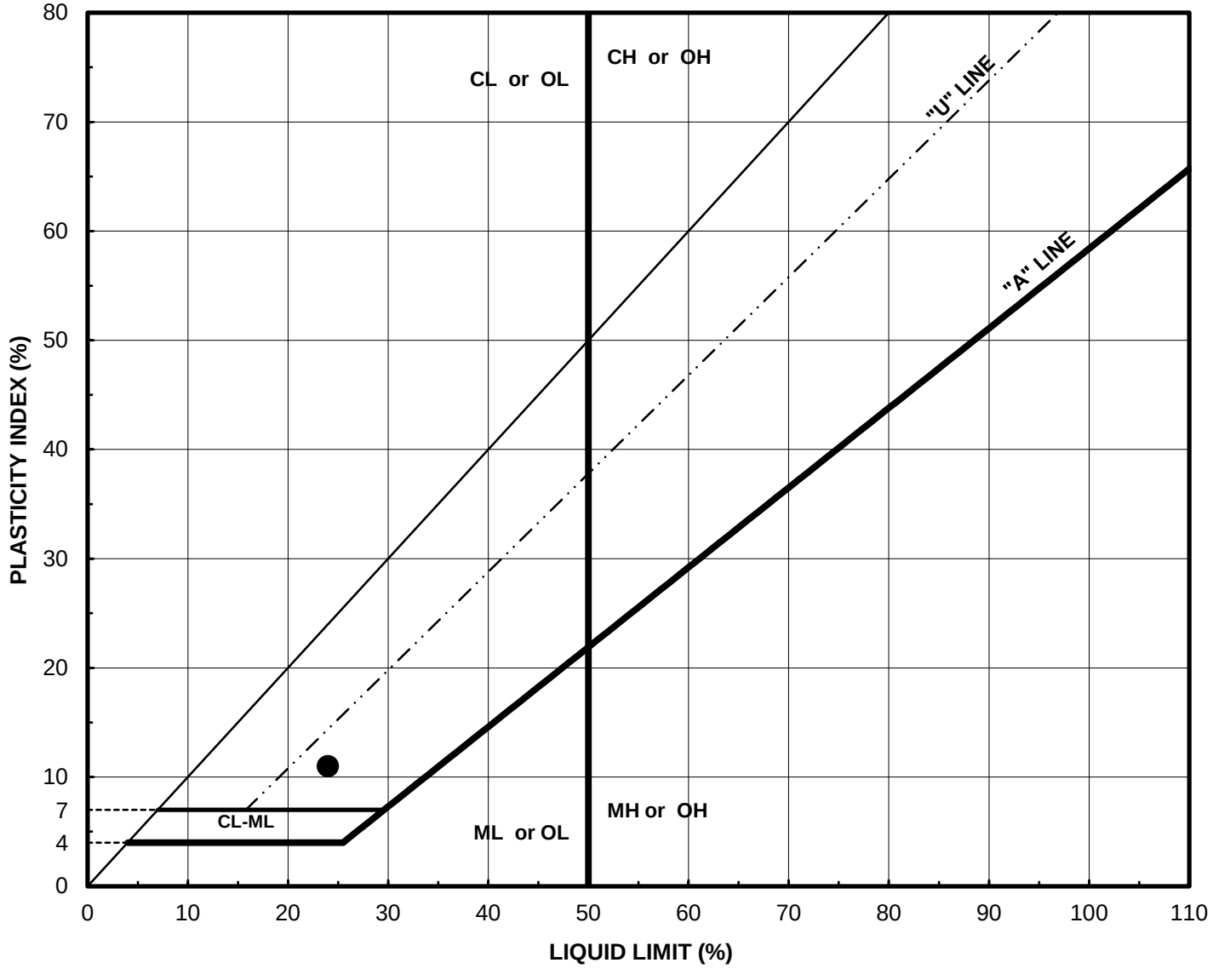


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24509G	2	2.5 - 5.0	7.7	26	13	Strong brown sandy Clay (CL)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

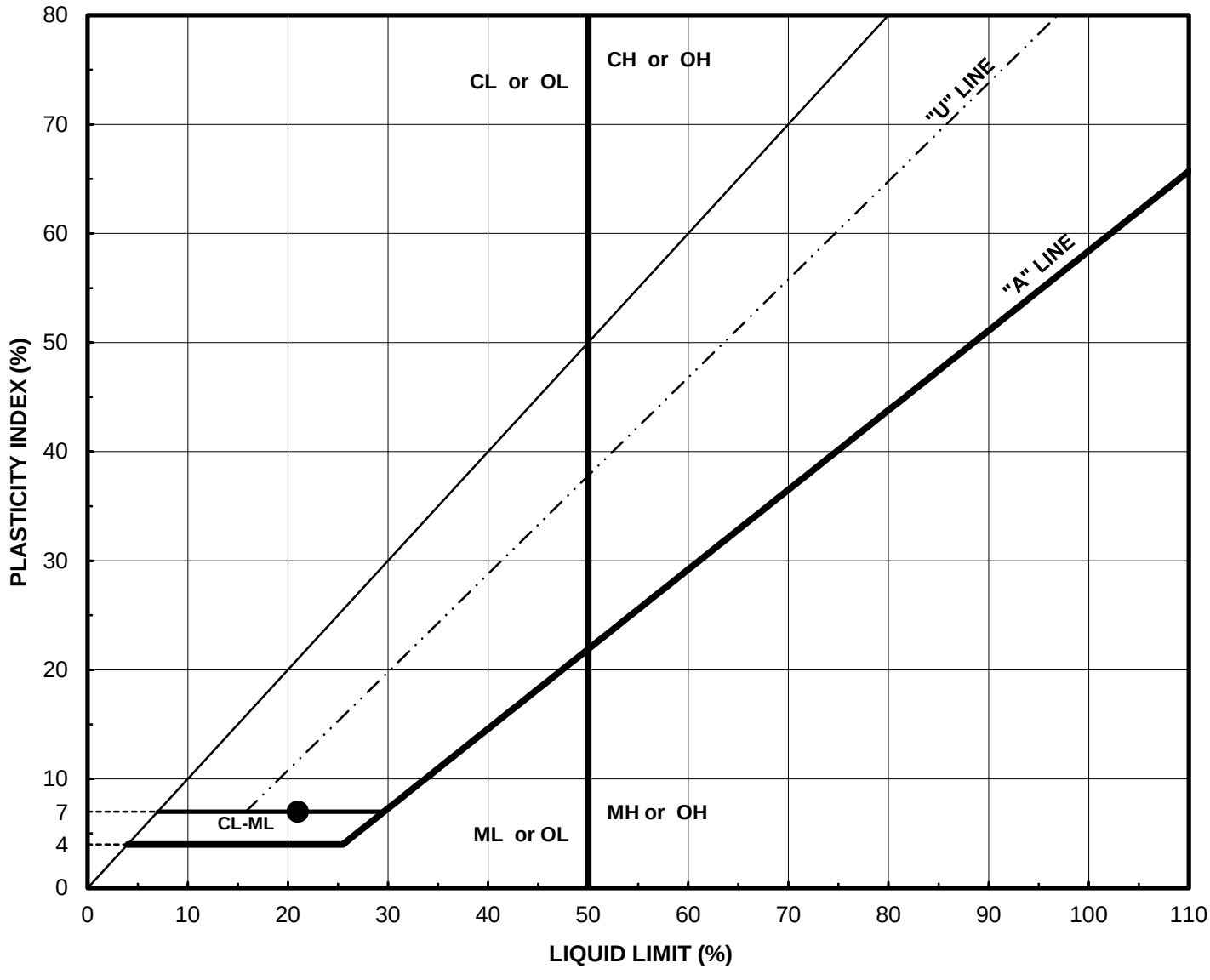


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24522G	4	7.5	11.1	24	11	Dark gray clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



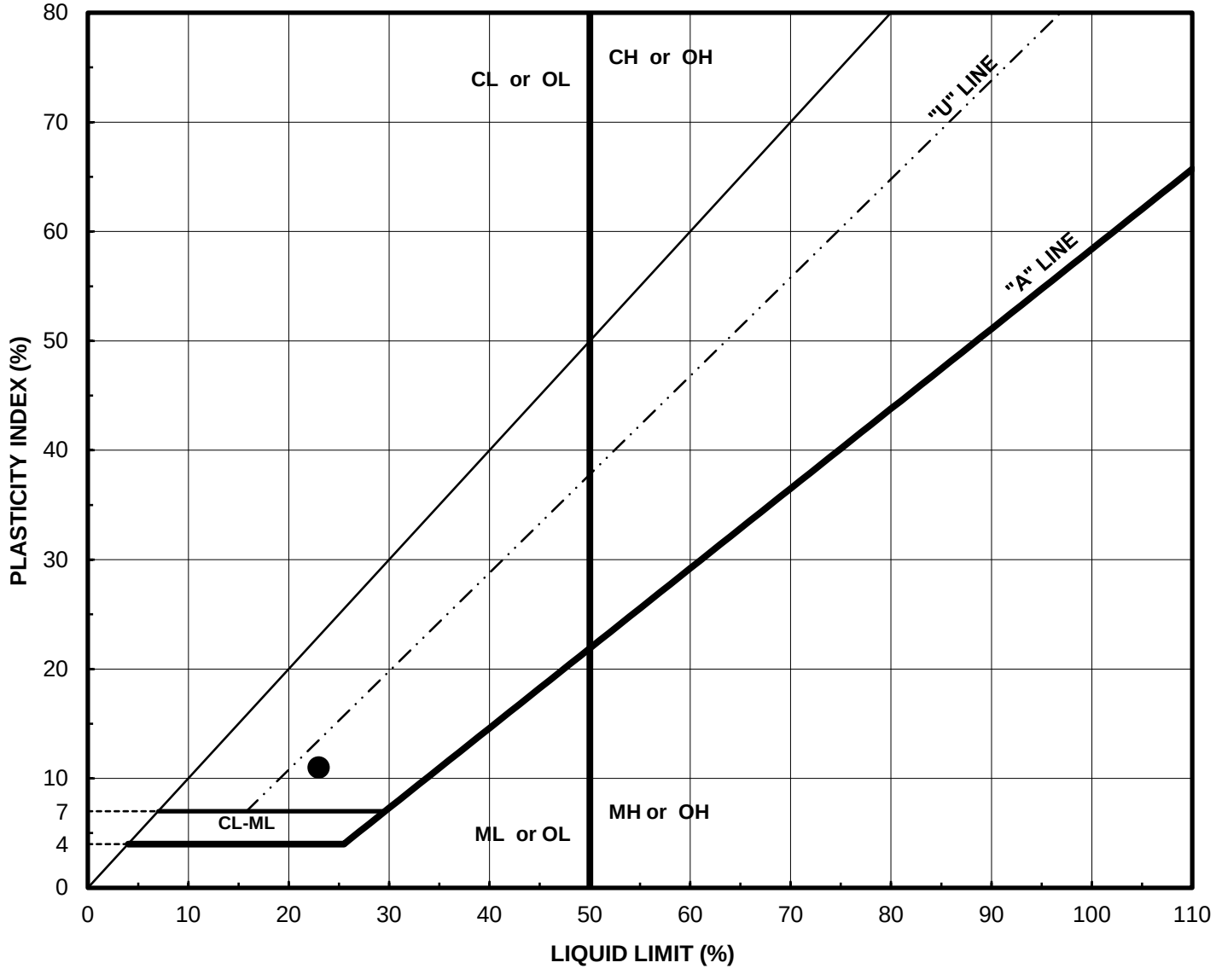
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24609G	2	2.5 - 5.0	10.2	21	7	Strong brown silty, clayey Sand (SC-SM)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

AECOM

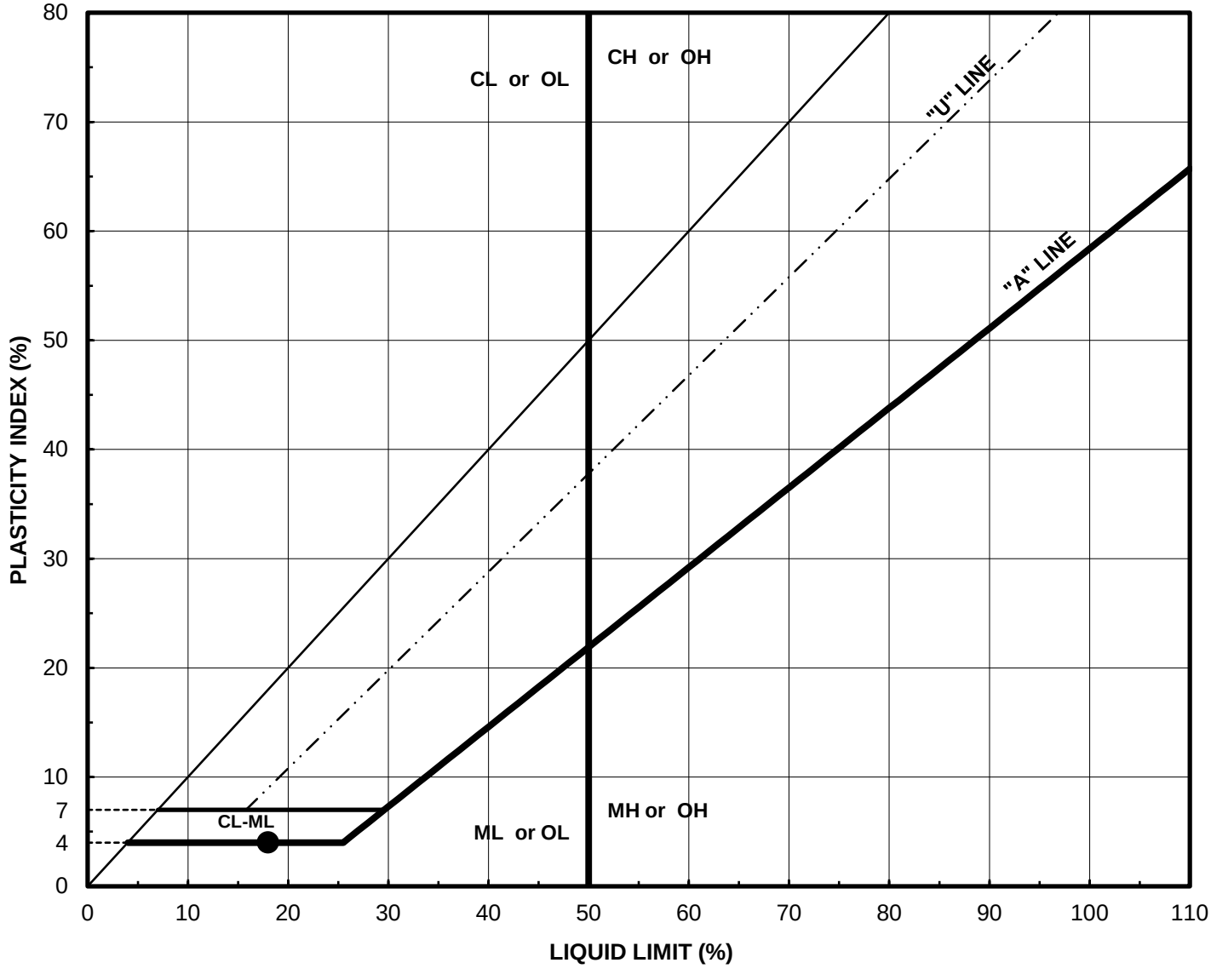


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24706G	3	5.0	11.3	23	11	Strong brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

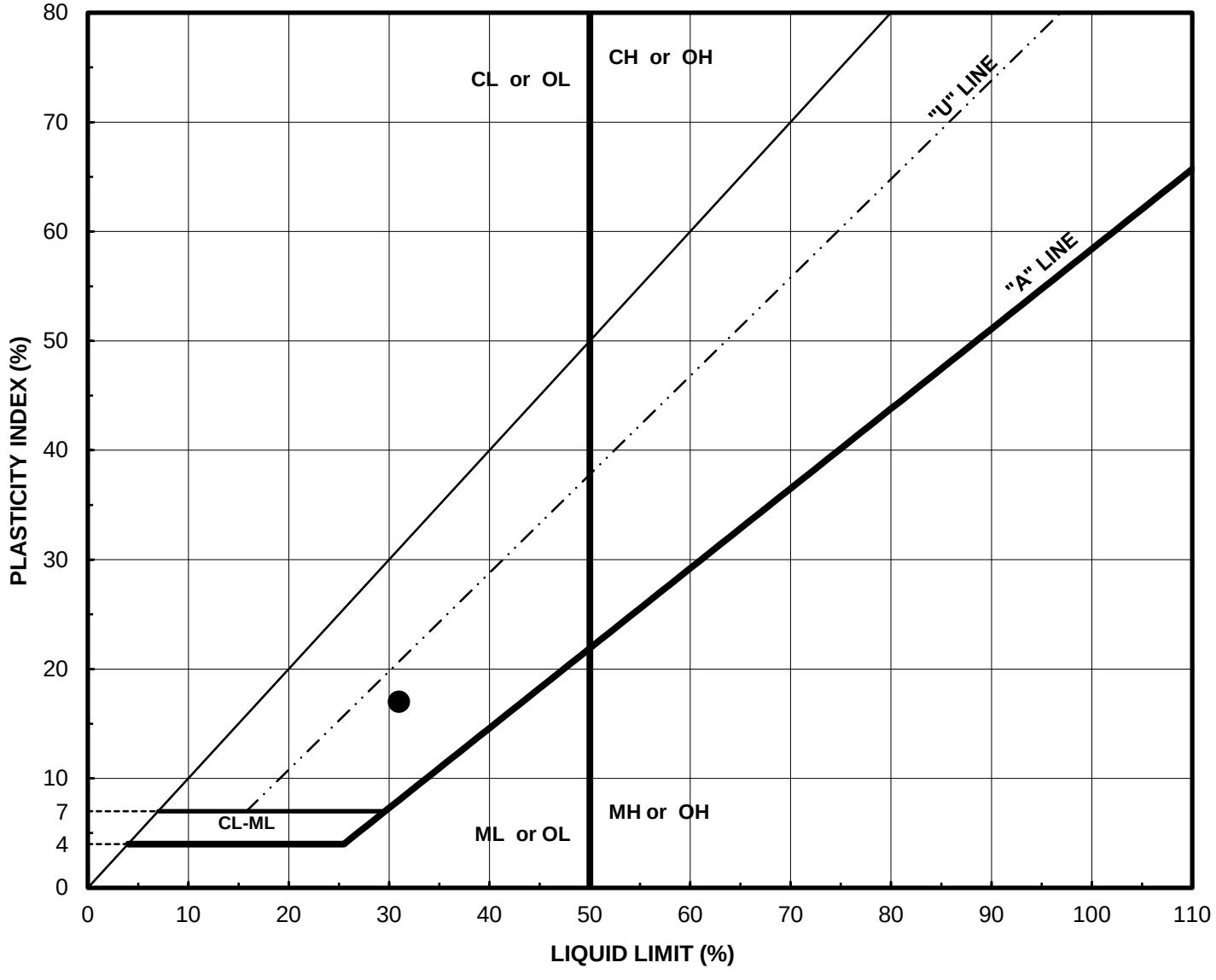


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24709G	2	2.5 - 5.0	7.7	18	4	Brown silty, clayey Sand (SC-SM)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

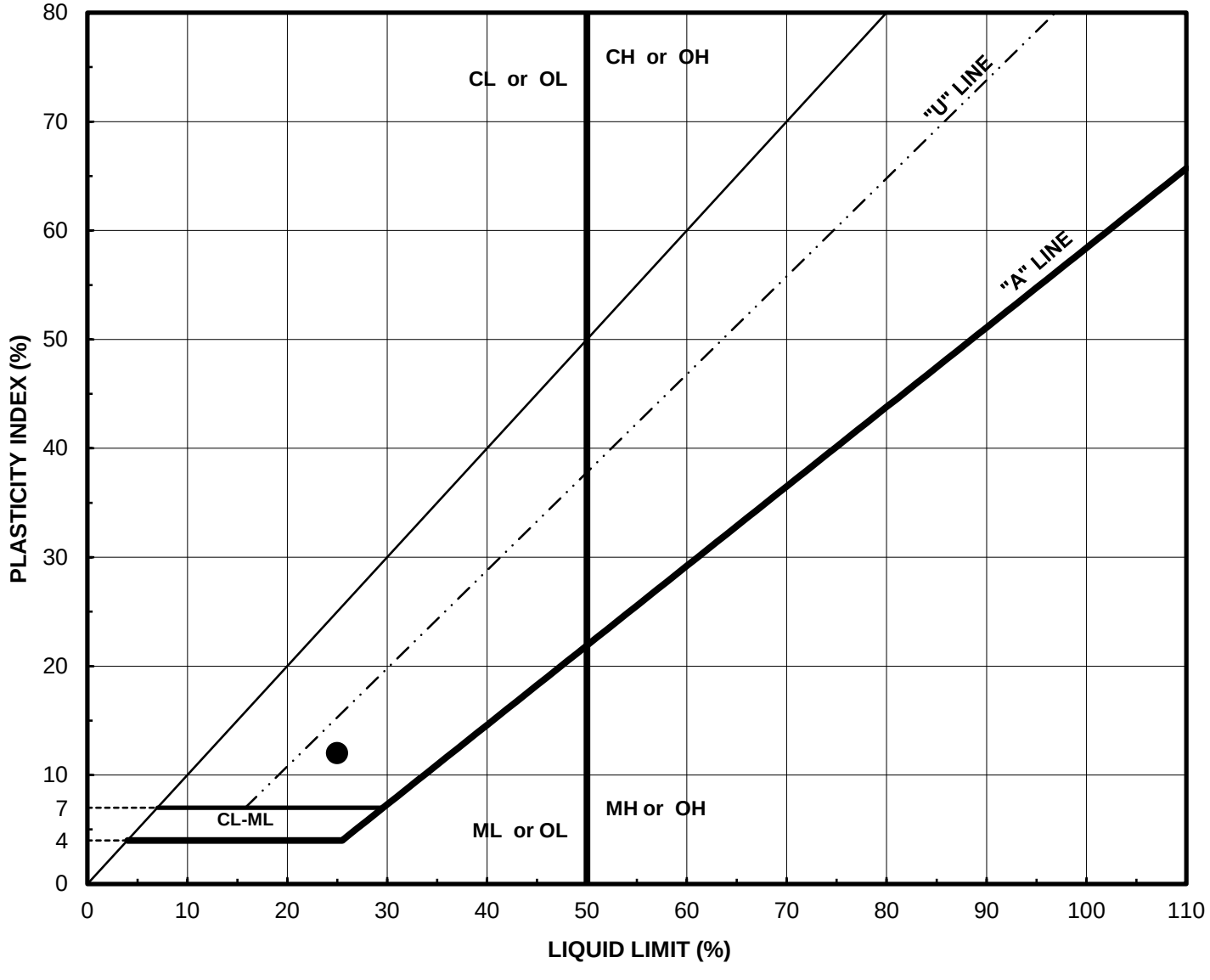


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24719G	5	10.0	11.3	31	17	Olive brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

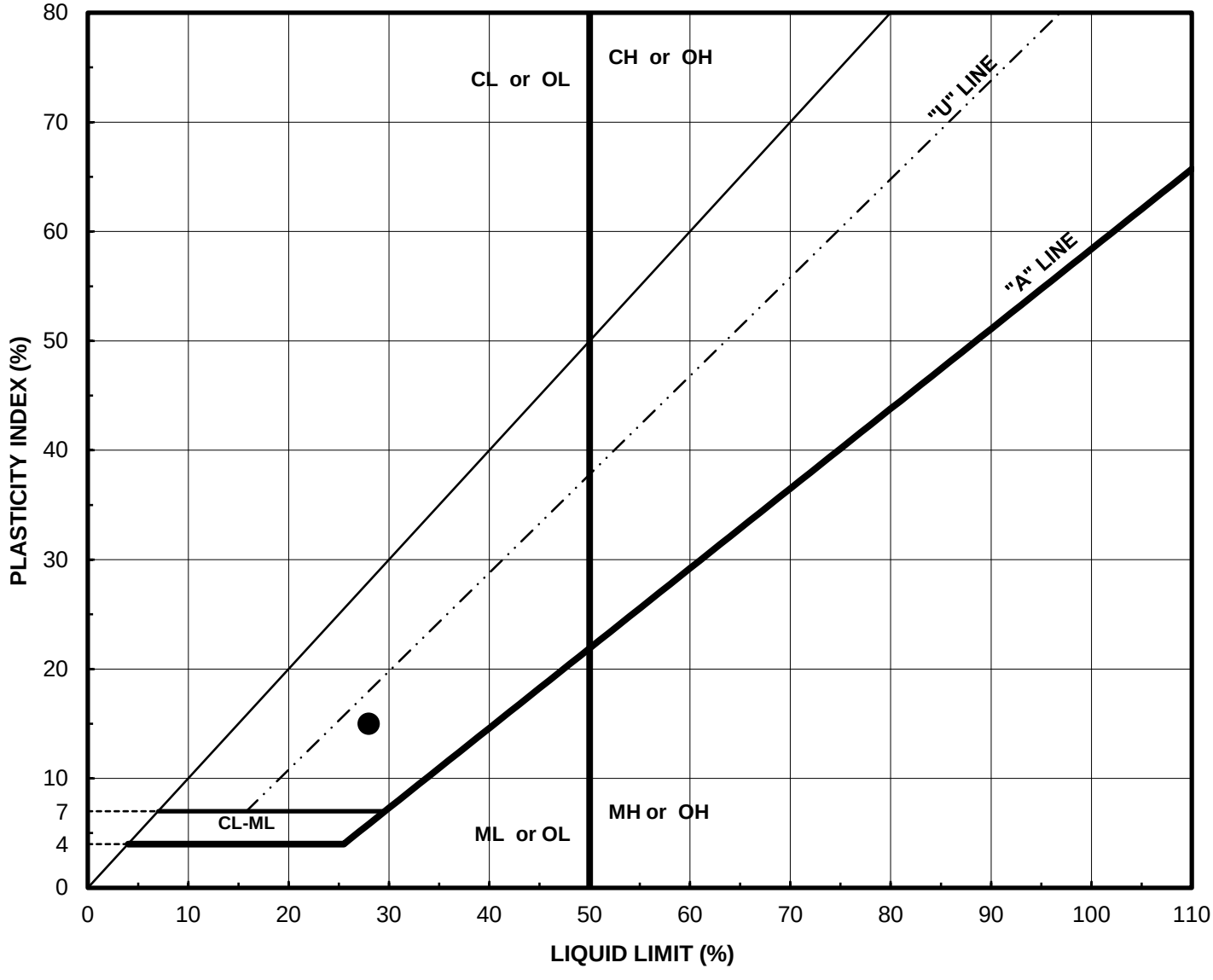


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24732G	2	2.5 - 5.0	7.5	25	12	Strong brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

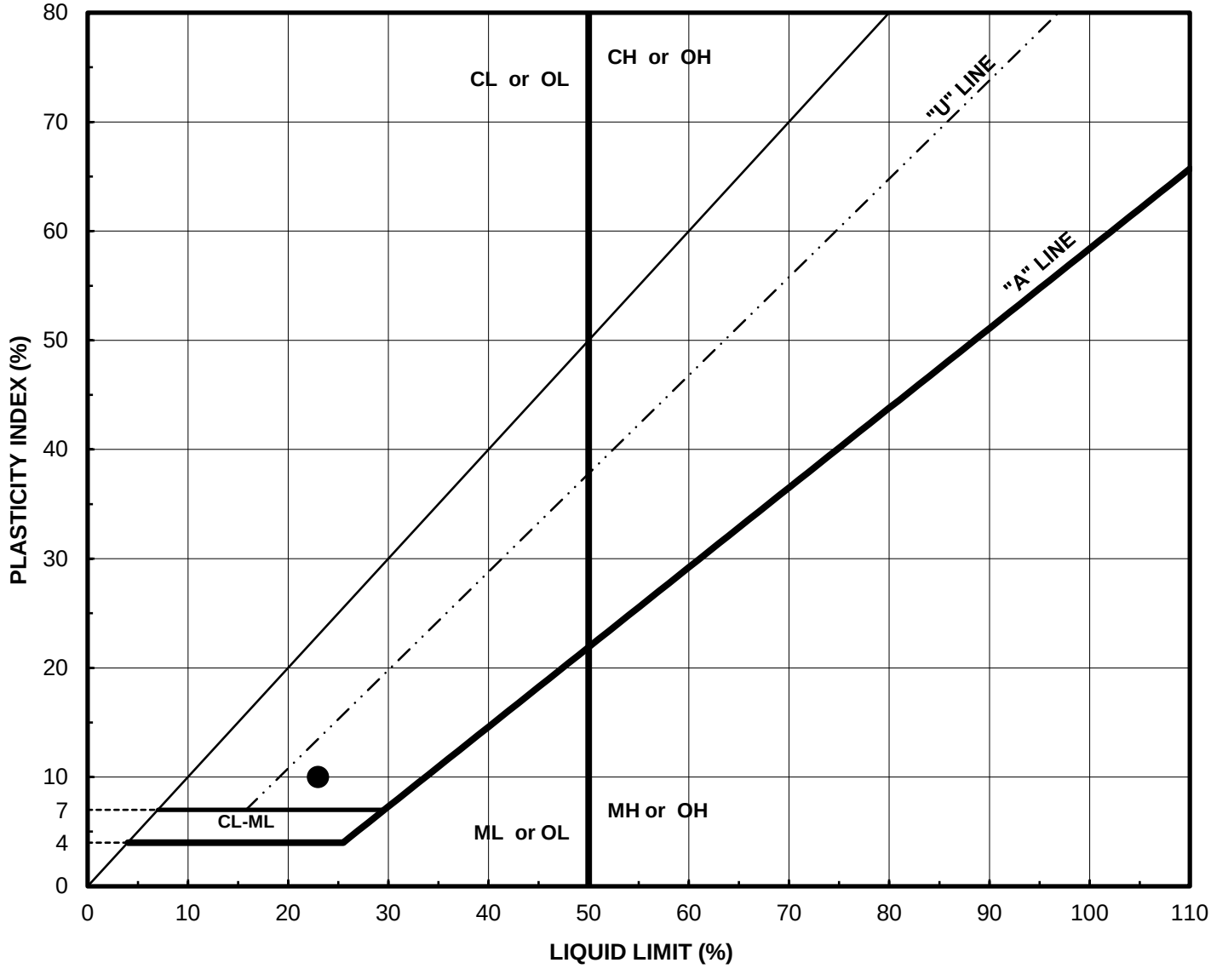


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24739G	4	7.5	10.8	28	15	Dark brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

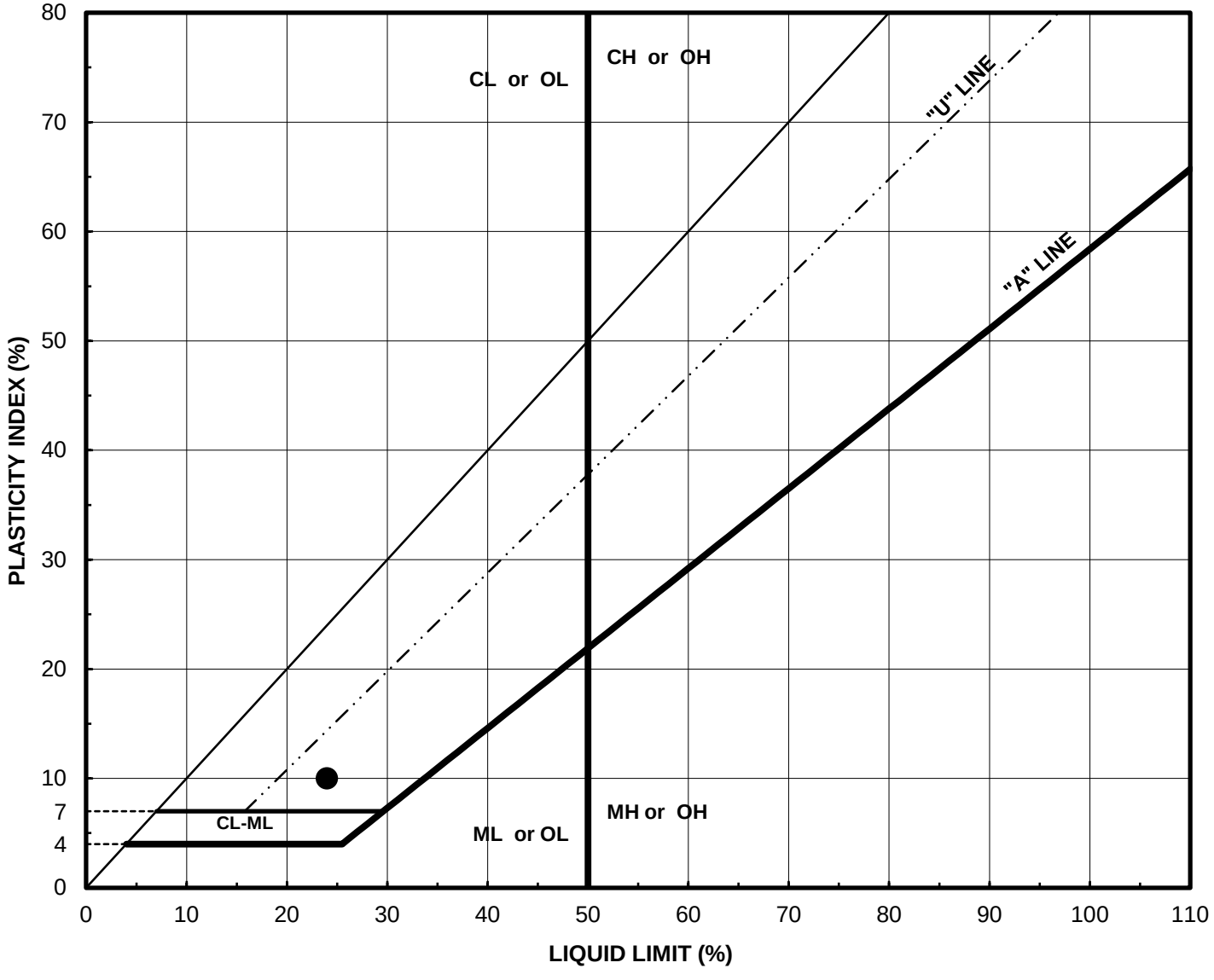


Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24749G	2	2.5 - 5.0	9.3	23	10	Dark brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART



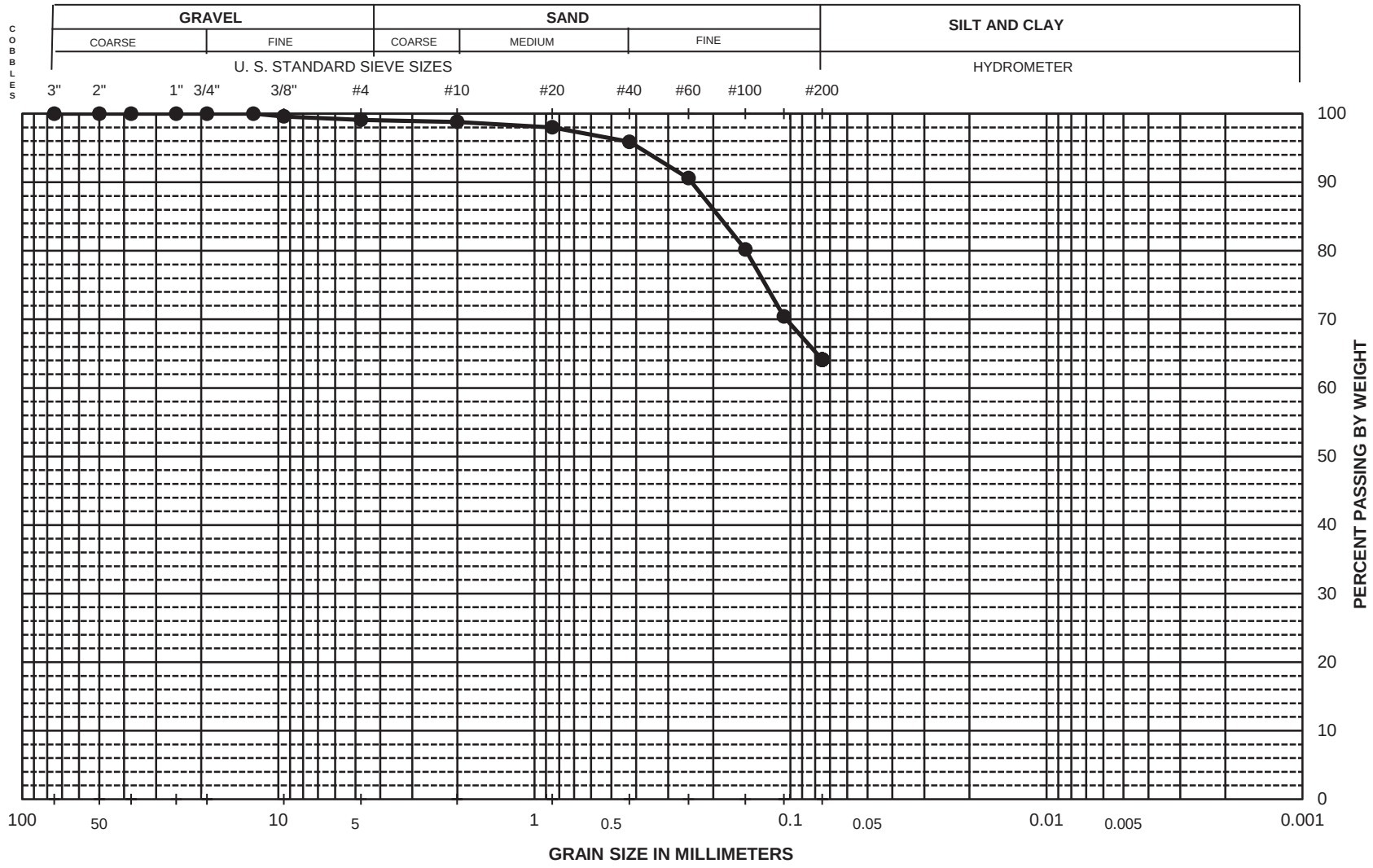
Boring Number	Sample Number	Depth (ft)	Water Content (%)	LL	PI	DESCRIPTION / CLASSIFICATION
R24752G	2	2.5 - 5.0	14.6	24	10	Dark brown clayey Sand (SC)

Project Name: **Former Kast Property**

Project Number: **60422689**

PLASTICITY CHART

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	99.6
#4	4.75	99.1
#10	2.00	98.8
#20	0.850	98.0
#40	0.425	95.9
#60	0.250	90.6
#100	0.150	80.2
#140	0.106	70.4
#200	0.075	64.1
Hydrometer Analysis	0.0750	64.1
	0.0750	64.1
	0.0750	64.1
	0.0750	64.1
	0.0750	64.1
	0.0750	64.1
	0.0750	64.1
	0.0750	64.1
	0.0750	64.1
	0.0750	64.1

% Cobbles	---
% Gravel	0.9
% Sand	35.0
% Fines	64.1
D_{85}	0.190
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
244305G	2	2.5~5.0	●	12.4	42	28		**Dark yellowish brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

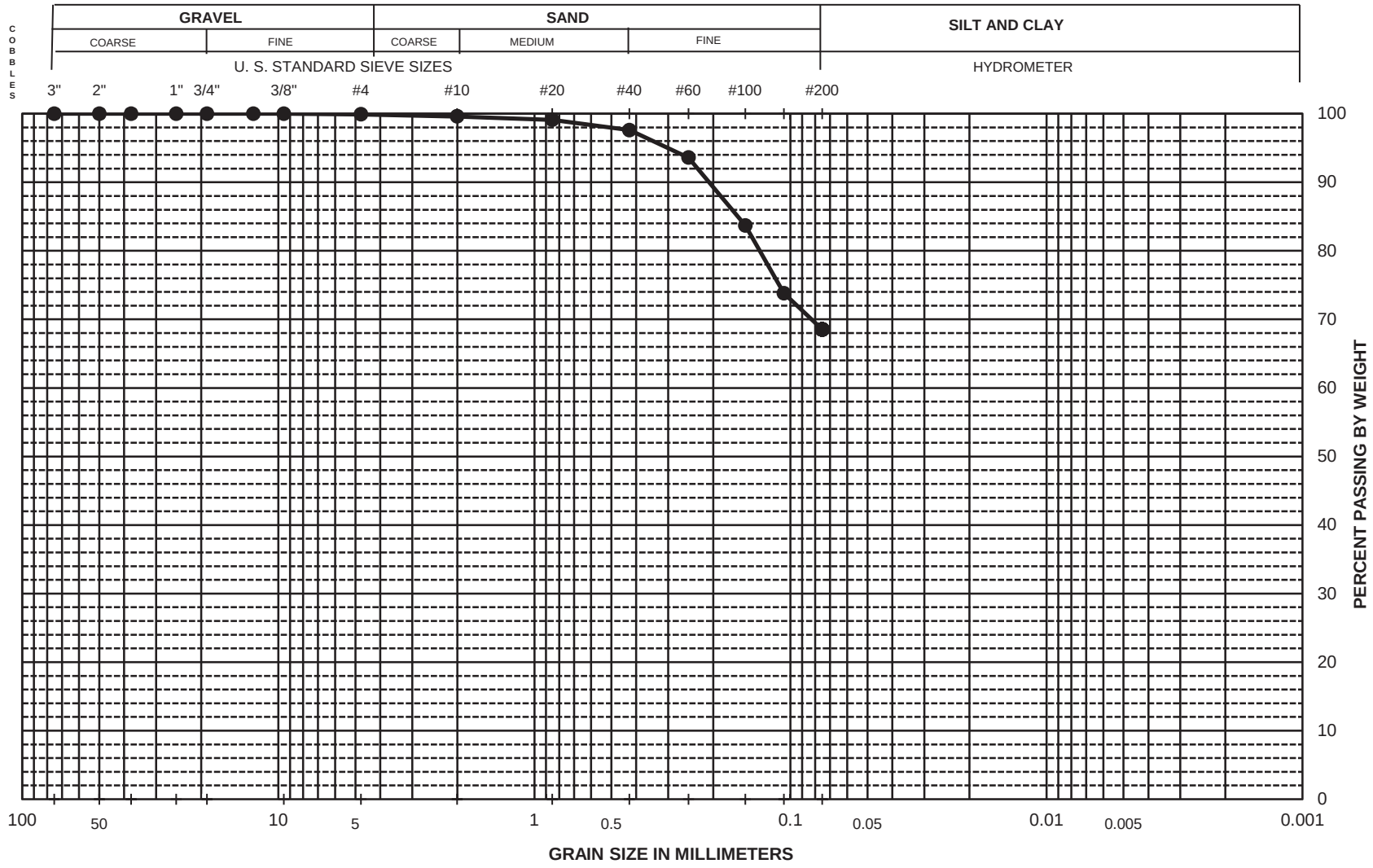
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 244305G S02 2.5~5.0FT.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.9
#10	2.00	99.6
#20	0.850	99.1
#40	0.425	97.6
#60	0.250	93.6
#100	0.150	83.7
#140	0.106	73.8
#200	0.075	68.5
Hydrometer Analysis	0.0750	68.5
	0.0750	68.5
	0.0750	68.5
	0.0750	68.5
	0.0750	68.5
	0.0750	68.5
	0.0750	68.5
	0.0750	68.5
	0.0750	68.5
	0.0750	68.5

% Cobbles	---
% Gravel	0.1
% Sand	31.4
% Fines	68.5
D_{85}	0.160
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
244321G	2	2.5~5.0	●	9.5	43	29		**Dark yellowish brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

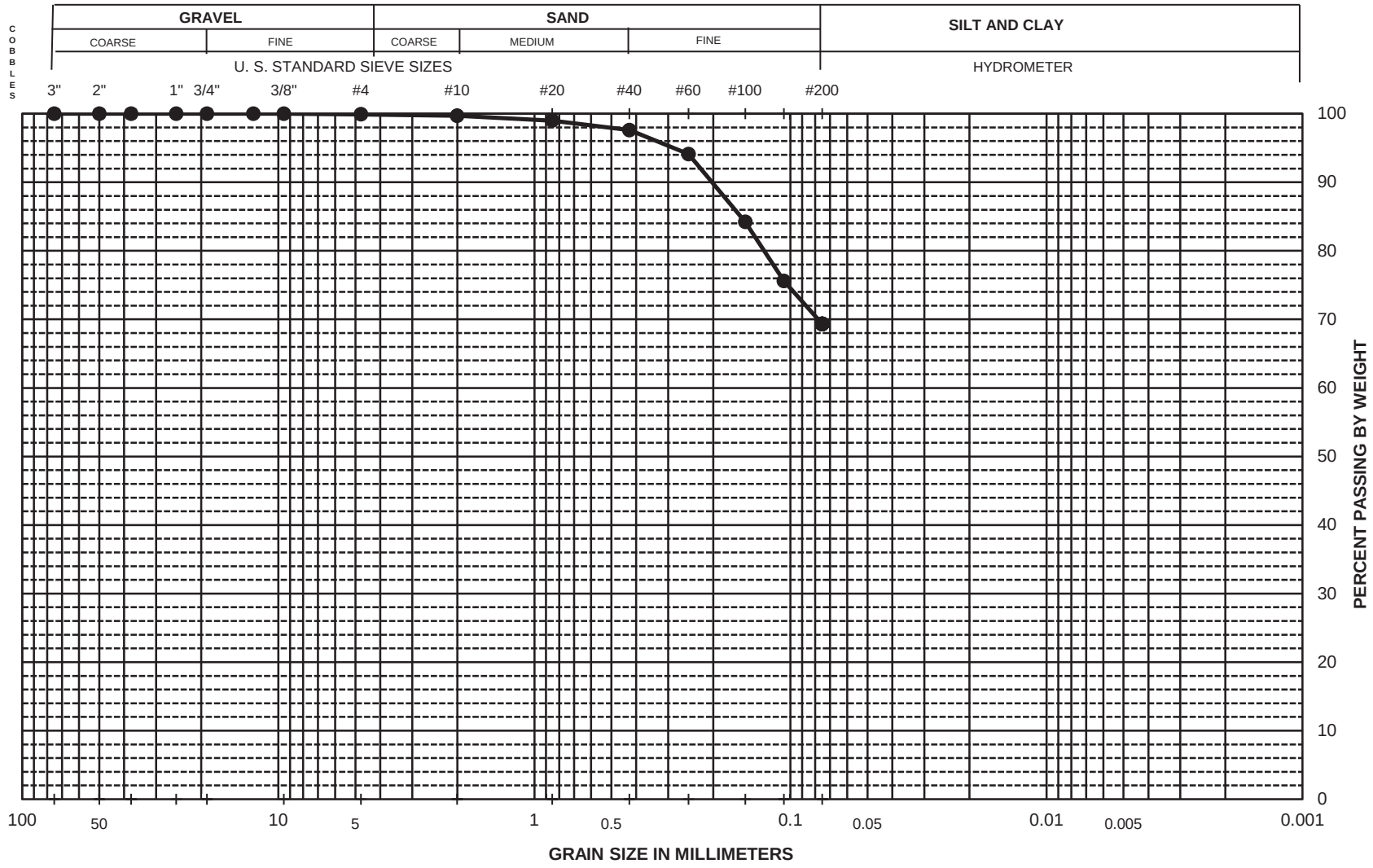
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 244321G S02 2.5~5.0FT.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.9
#10	2.00	99.7
#20	0.850	99.0
#40	0.425	97.6
#60	0.250	94.1
#100	0.150	84.2
#140	0.106	75.6
#200	0.075	69.3
Hydrometer Analysis	0.0750	69.3
	0.0750	69.3
	0.0750	69.3
	0.0750	69.3
	0.0750	69.3
	0.0750	69.3
	0.0750	69.3
	0.0750	69.3
	0.0750	69.3
	0.0750	69.3

% Cobbles	---
% Gravel	0.1
% Sand	30.6
% Fines	69.3
D_{85}	0.156
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
244337G	2	2.5~5.0	●	12.7	39	24		**Dark grayish brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

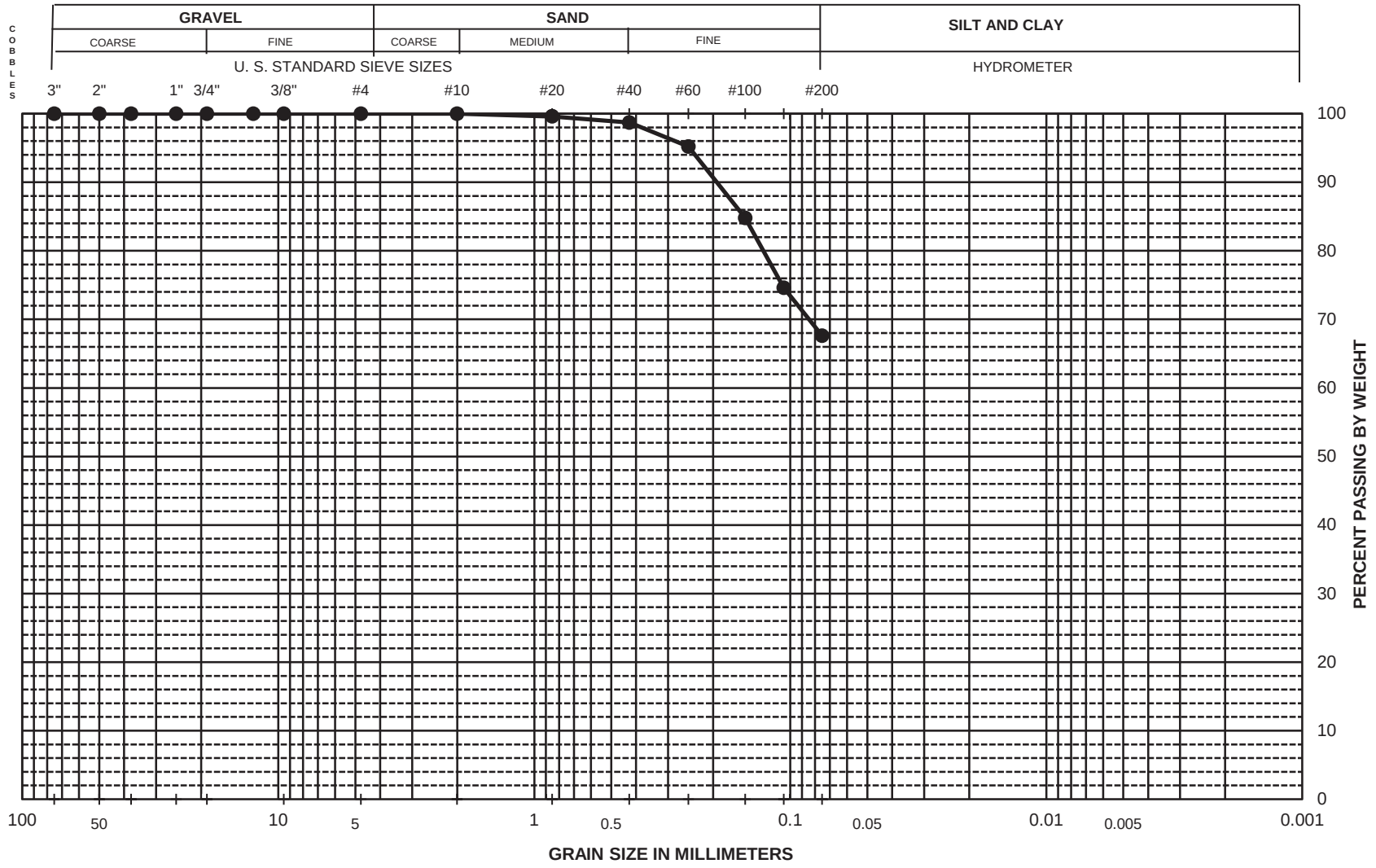
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 244337G S02 2.5~5.0FT.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.6
#40	0.425	98.7
#60	0.250	95.2
#100	0.150	84.8
#140	0.106	74.6
#200	0.075	67.6
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	32.4
% Fines	67.6
D_{85}	0.151
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
244357G	3	5.0	●	11.0	37	23		**Strong brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

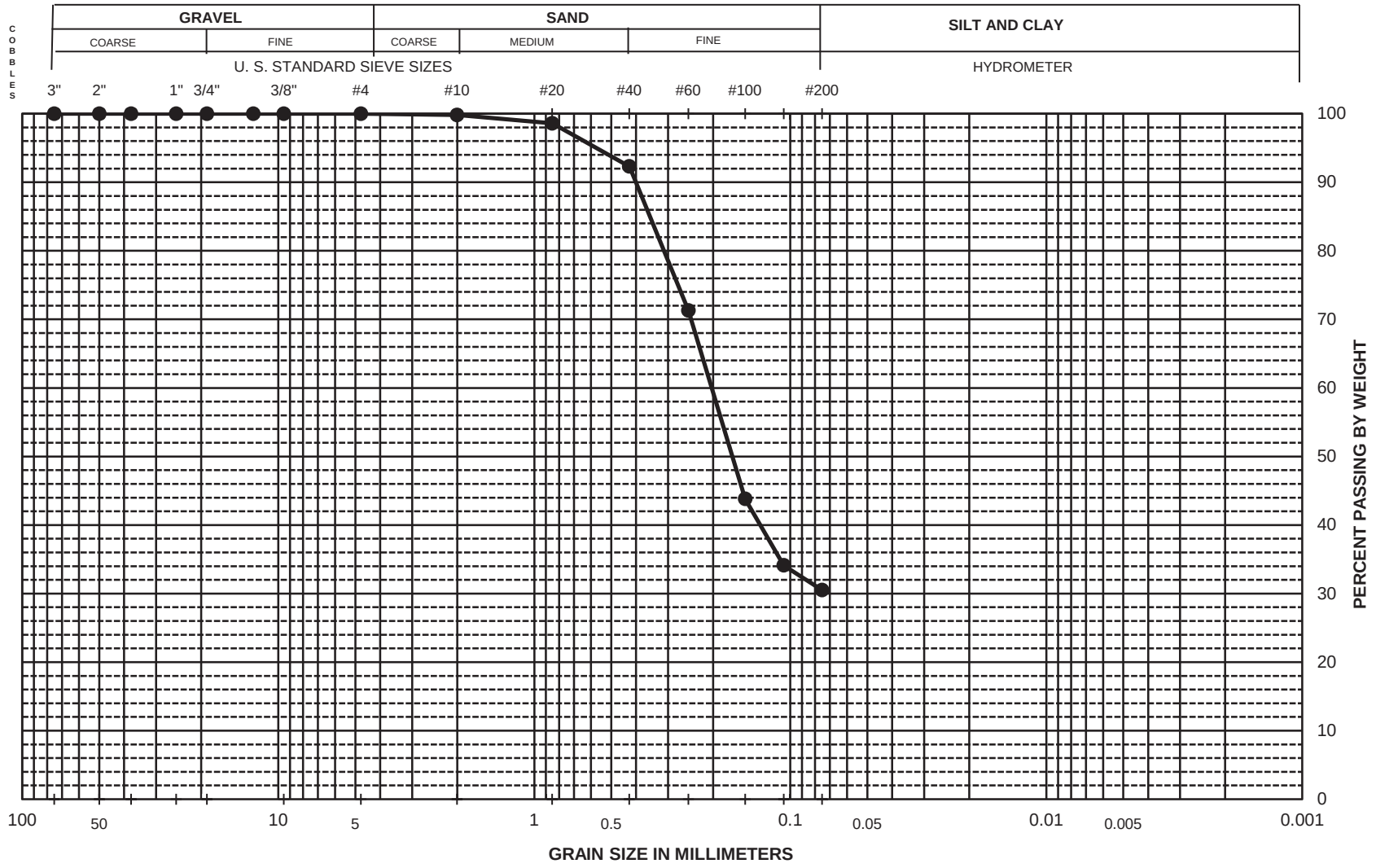
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 244357G S05 10 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.8
#20	0.850	98.6
#40	0.425	92.3
#60	0.250	71.3
#100	0.150	43.8
#140	0.106	34.1
#200	0.075	30.5
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	69.5
% Fines	30.5
D_{85}	0.353
D_{60}	0.203
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
248348G	4	7.5	●	14.1	---	---		**Strong brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

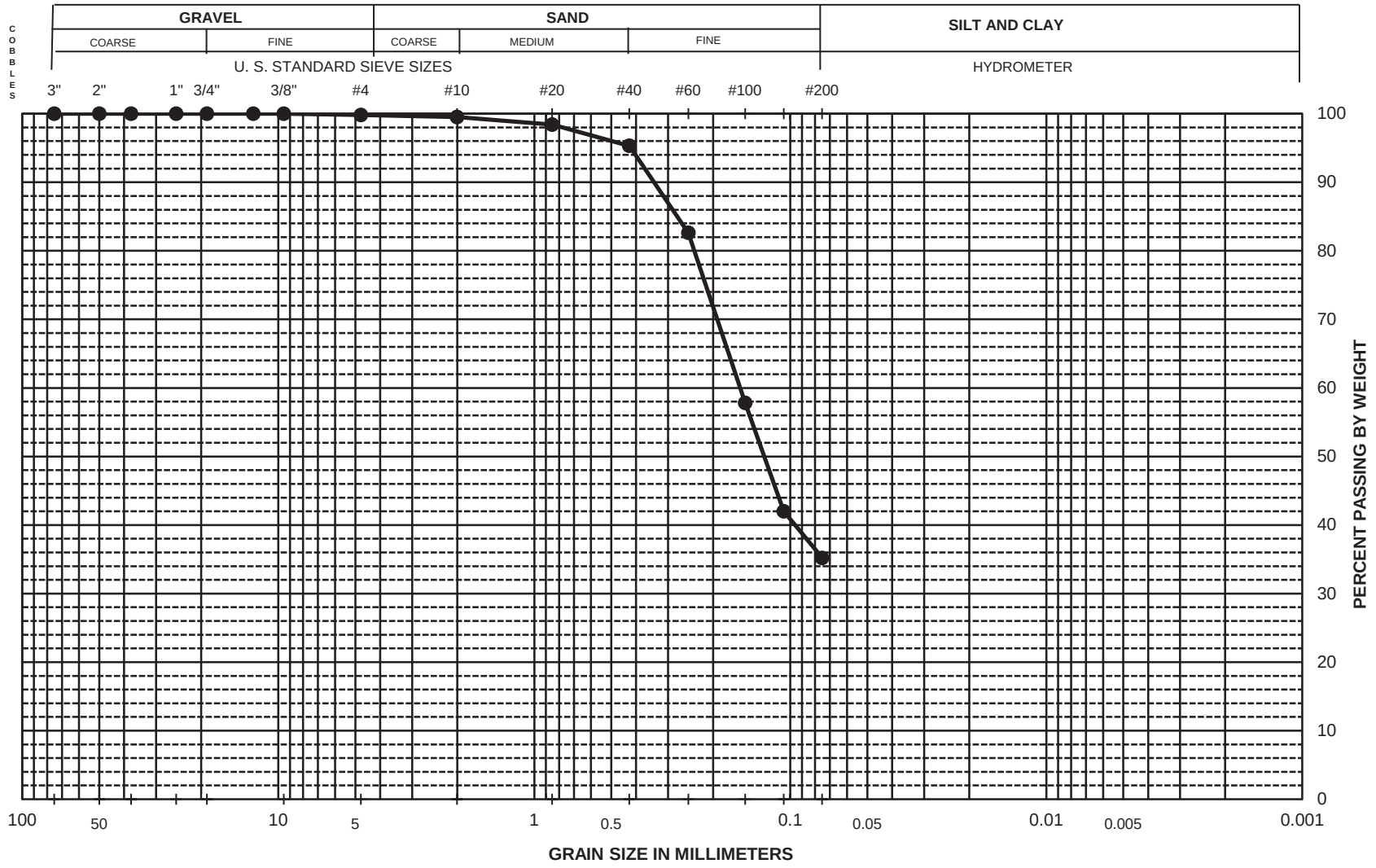
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 248348G S04 7.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.8
#10	2.00	99.5
#20	0.850	98.4
#40	0.425	95.3
#60	0.250	82.6
#100	0.150	57.8
#140	0.106	42.0
#200	0.075	35.2
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.2
% Sand	64.6
% Fines	35.2
D_{85}	0.276
D_{60}	0.157
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
248360G	4	7.5	●	16.5	26	13		**Dark olive brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

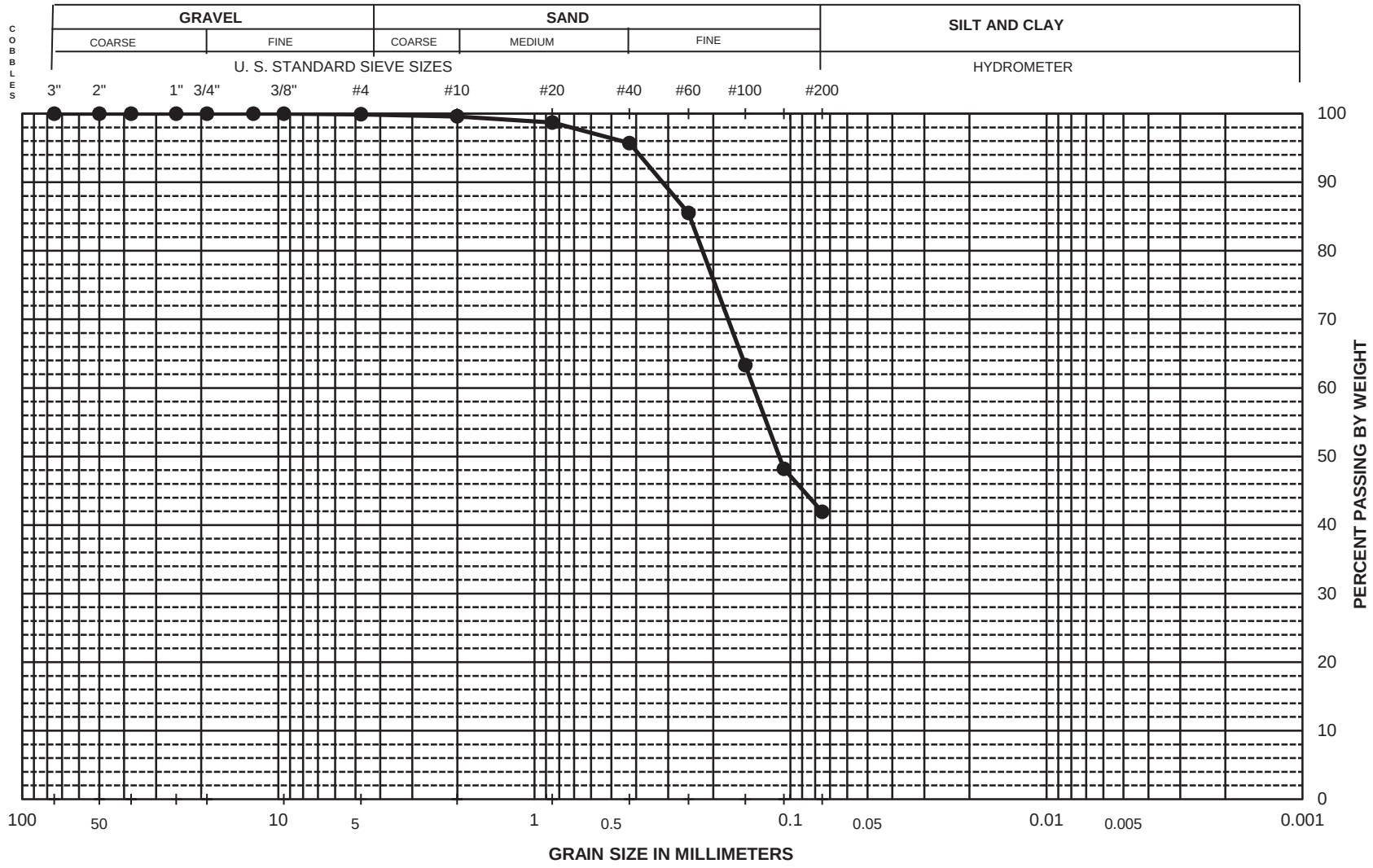
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 248360G S04 7.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.9
#10	2.00	99.6
#20	0.850	98.7
#40	0.425	95.7
#60	0.250	85.5
#100	0.150	63.3
#140	0.106	48.2
#200	0.075	41.9
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.1
% Sand	58.0
% Fines	41.9
D_{85}	0.247
D_{60}	0.139
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
249345G	2	2.5 - 5.0	●	8.3	---	---		**Strong brown silty, clayey Sand (SC-SM)**

PROJECT NAME: **Former Kast Property**

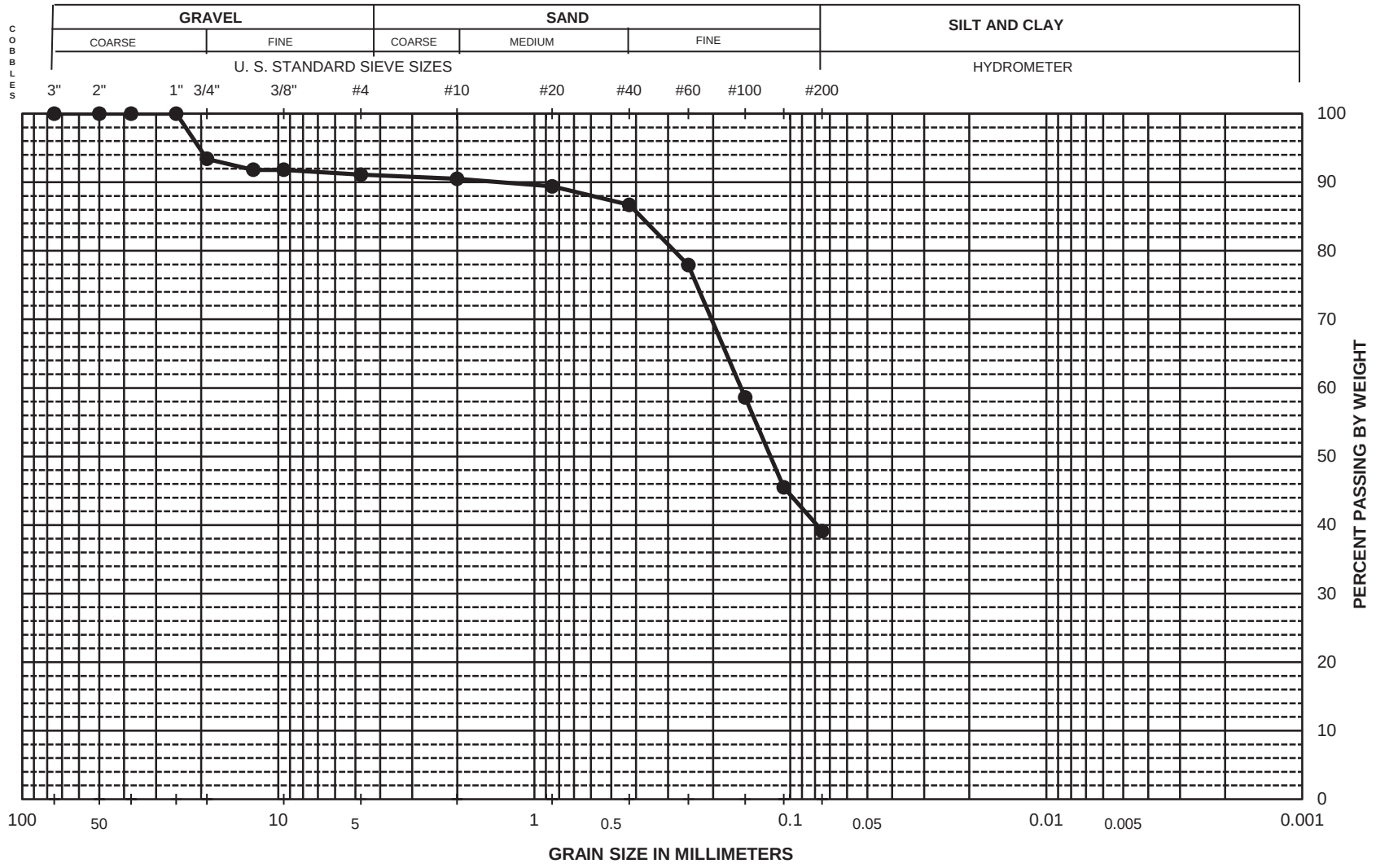
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 249345G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	93.4
1/2"	12.50	91.8
3/8"	9.50	91.8
#4	4.75	91.1
#10	2.00	90.5
#20	0.850	89.4
#40	0.425	86.7
#60	0.250	77.9
#100	0.150	58.6
#140	0.106	45.5
#200	0.075	39.1
Hydrometer Analysis		

% Cobbles	---
% Gravel	8.9
% Sand	52.0
% Fines	39.1
D_{85}	0.384
D_{60}	0.156
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
249348G	3	5.0	●	7.8	15	1		**Dark brown silty Sand (SM)**

PROJECT NAME: **Former Kast Property**

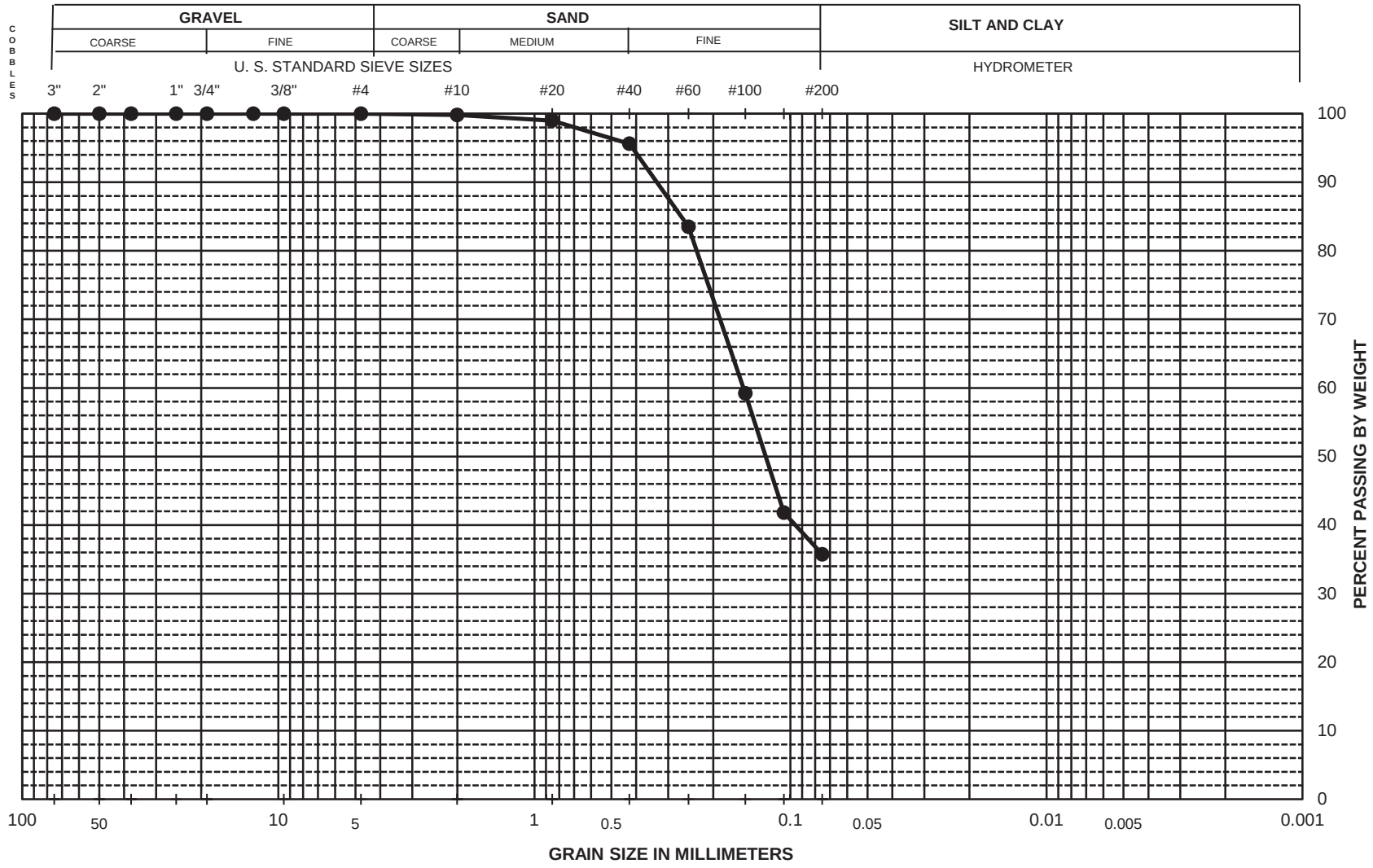
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 249348G S03 5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.8
#20	0.850	99.0
#40	0.425	95.6
#60	0.250	83.5
#100	0.150	59.2
#140	0.106	41.8
#200	0.075	35.7
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	64.3
% Fines	35.7
D_{85}	0.267
D_{60}	0.153
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
249363G	4	7.5	●	16.0	23	9		**Dark grayish brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

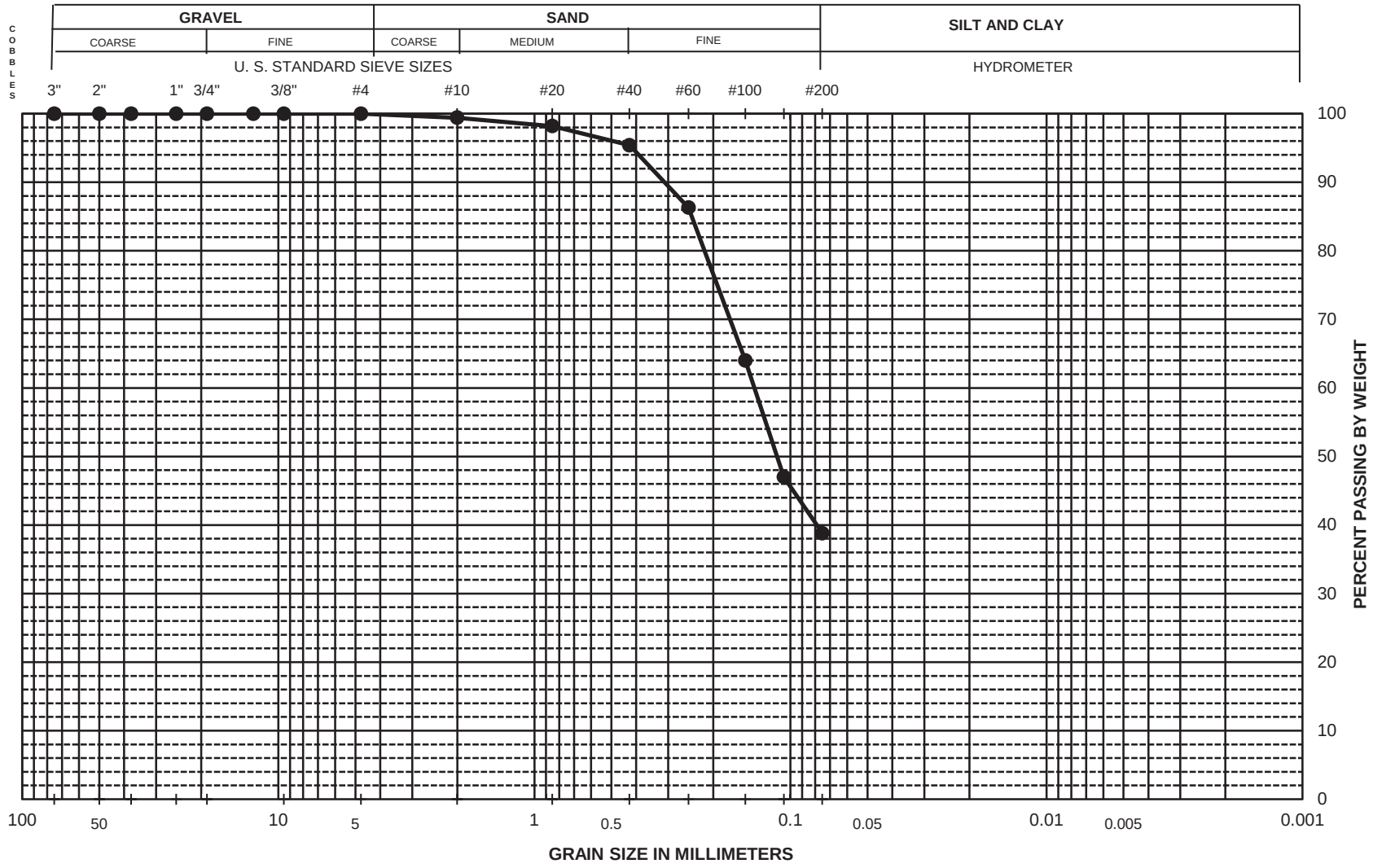
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 249363G S04 7.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.4
#20	0.850	98.2
#40	0.425	95.4
#60	0.250	86.3
#100	0.150	64.0
#140	0.106	47.0
#200	0.075	38.8
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	61.2
% Fines	38.8
D_{85}	0.243
D_{60}	0.138
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
249377G	5	10.0	●	11.9	19	5		**Dark brown silty, clayey Sand (SC-SM)**

PROJECT NAME: **Former Kast Property**

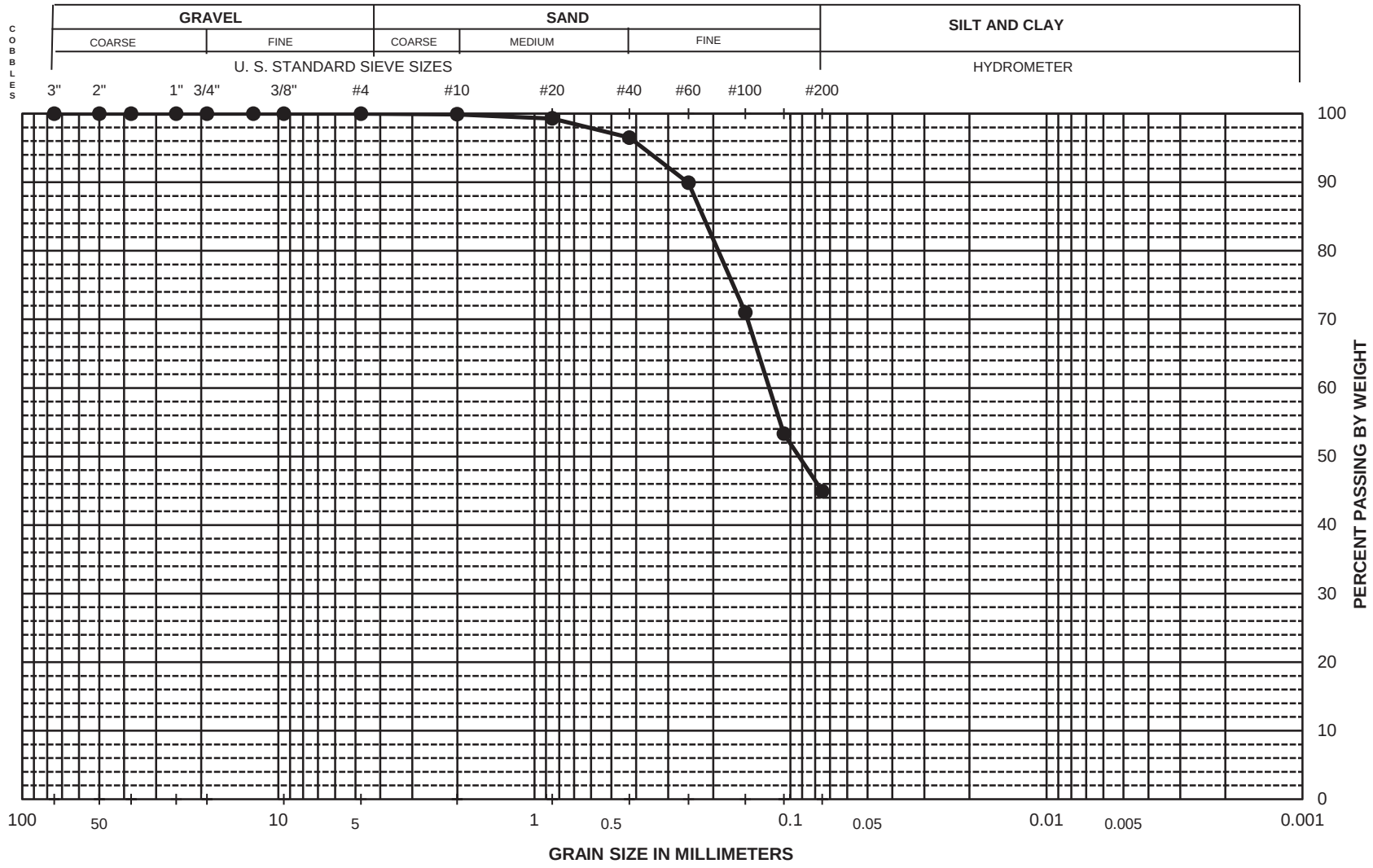
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 249377G S05 10 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.3
#40	0.425	96.5
#60	0.250	89.9
#100	0.150	71.0
#140	0.106	53.3
#200	0.075	44.9
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	55.1
% Fines	44.9
D_{85}	0.219
D_{60}	0.121
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
249378G	2	2.5 - 5.0	●	6.3	15	2		**Strong brown silty Sand (SM)**

PROJECT NAME: **Former Kast Property**

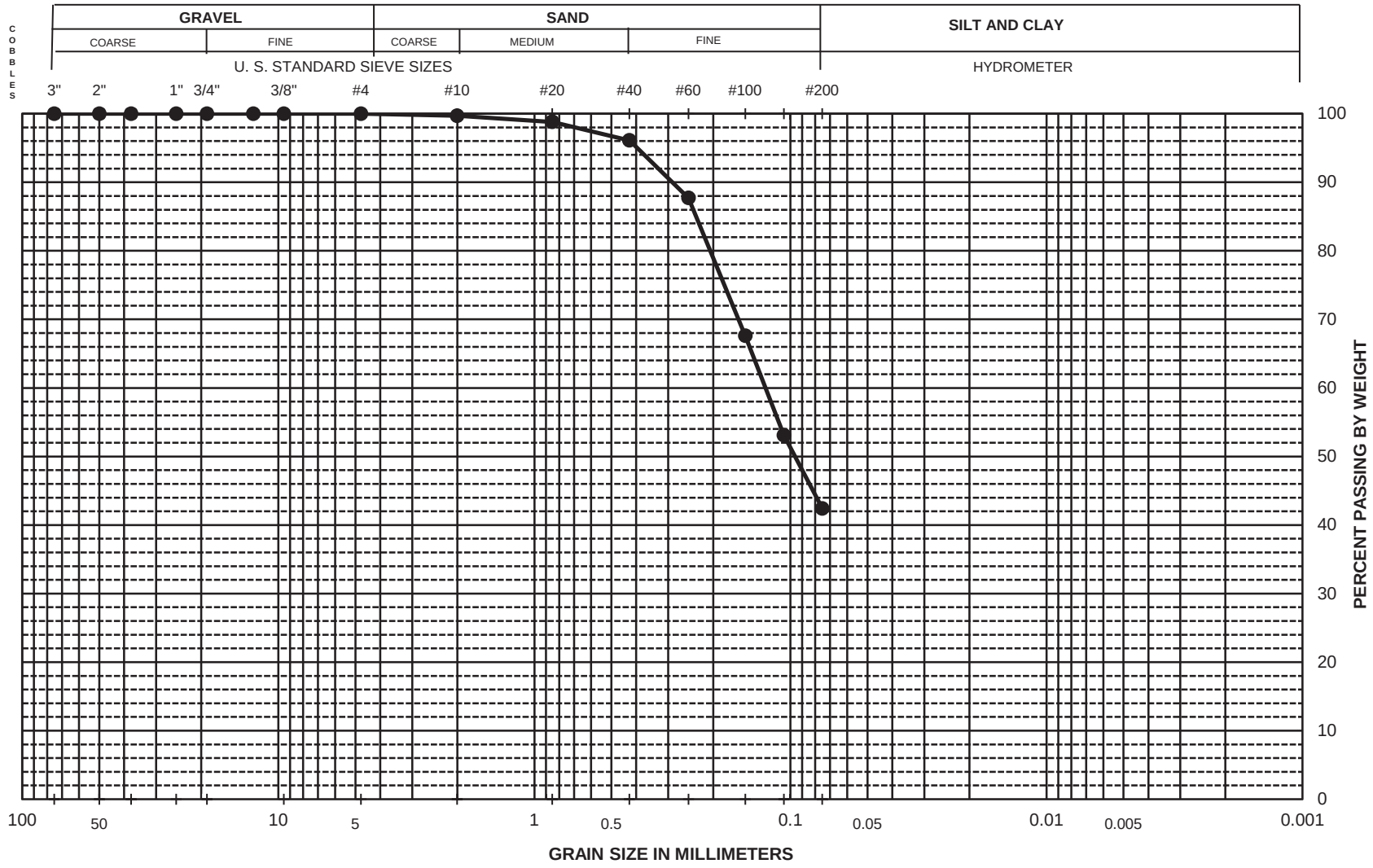
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 249378G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.7
#20	0.850	98.8
#40	0.425	96.1
#60	0.250	87.7
#100	0.150	67.6
#140	0.106	53.1
#200	0.075	42.4
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	57.6
% Fines	42.4
D_{85}	0.233
D_{60}	0.125
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
249412G	2	2.5 - 5.0	●	9.5	20	6		**Strong brown silty, clayey Sand (SC-SM)**

PROJECT NAME: **Former Kast Property**

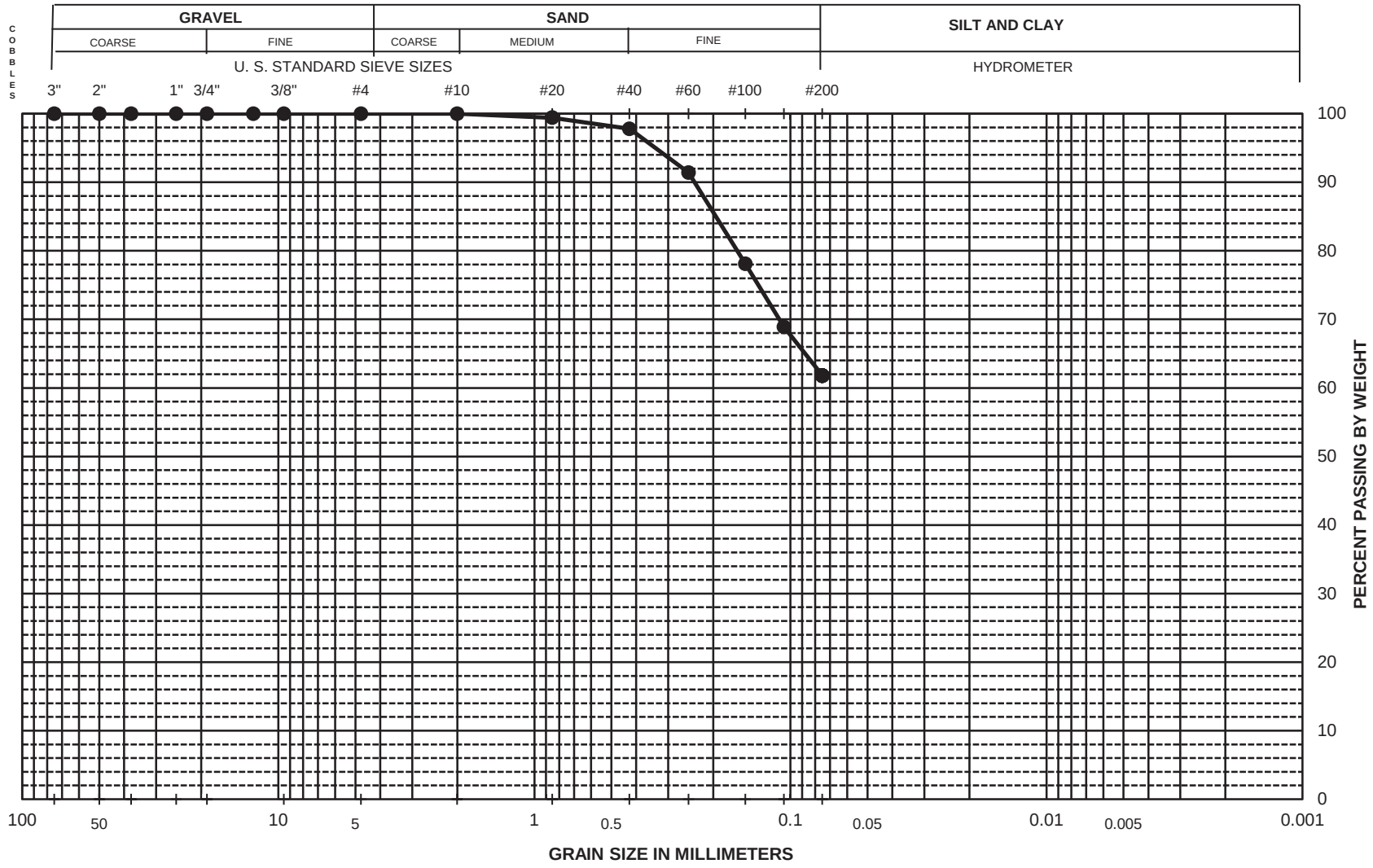
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast 249412G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.4
#40	0.425	97.8
#60	0.250	91.4
#100	0.150	78.1
#140	0.106	68.9
#200	0.075	61.8
Hydrometer Analysis	0.0750	61.8
	0.0750	61.8
	0.0750	61.8
	0.0750	61.8
	0.0750	61.8
	0.0750	61.8
	0.0750	61.8
	0.0750	61.8
	0.0750	61.8
	0.0750	61.8

% Cobbles	---
% Gravel	0.0
% Sand	38.2
% Fines	61.8
D_{85}	0.196
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24406G	3	5.0	●	10.9	36	22		**Dark yellowish brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

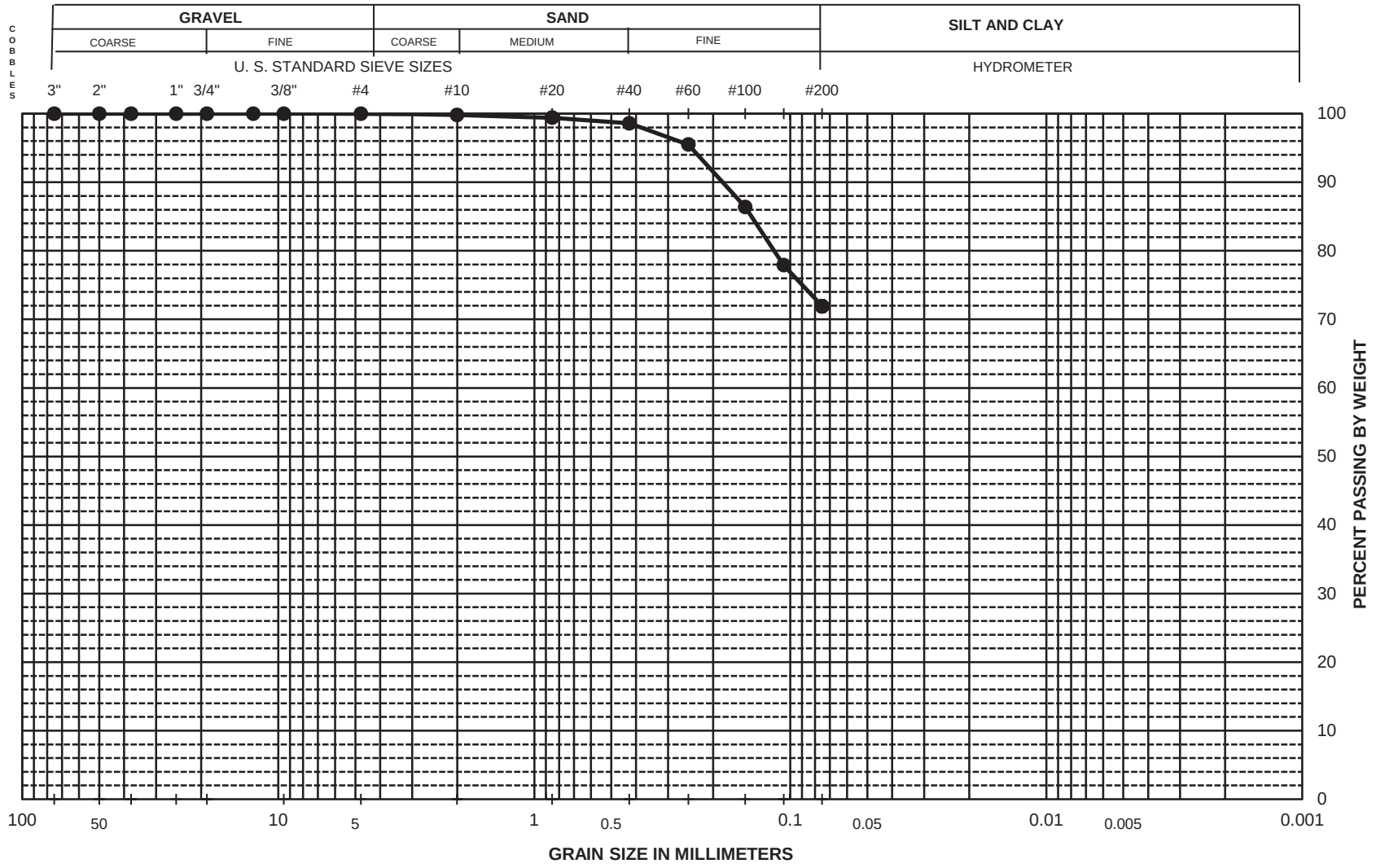
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24406G S03 5FT.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.8
#20	0.850	99.4
#40	0.425	98.6
#60	0.250	95.5
#100	0.150	86.4
#140	0.106	77.9
#200	0.075	71.9
Hydrometer Analysis	0.0750	71.9
	0.0750	71.9
	0.0750	71.9
	0.0750	71.9
	0.0750	71.9
	0.0750	71.9
	0.0750	71.9
	0.0750	71.9
	0.0750	71.9
	0.0750	71.9

% Cobbles	---
% Gravel	0.0
% Sand	28.1
% Fines	71.9
D_{85}	0.142
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
244337G	2	2.5~5.0	●	11.4	39	25		**Dark grayish brown Clay with sand (CL)**

PROJECT NAME: **Former Kast Property**

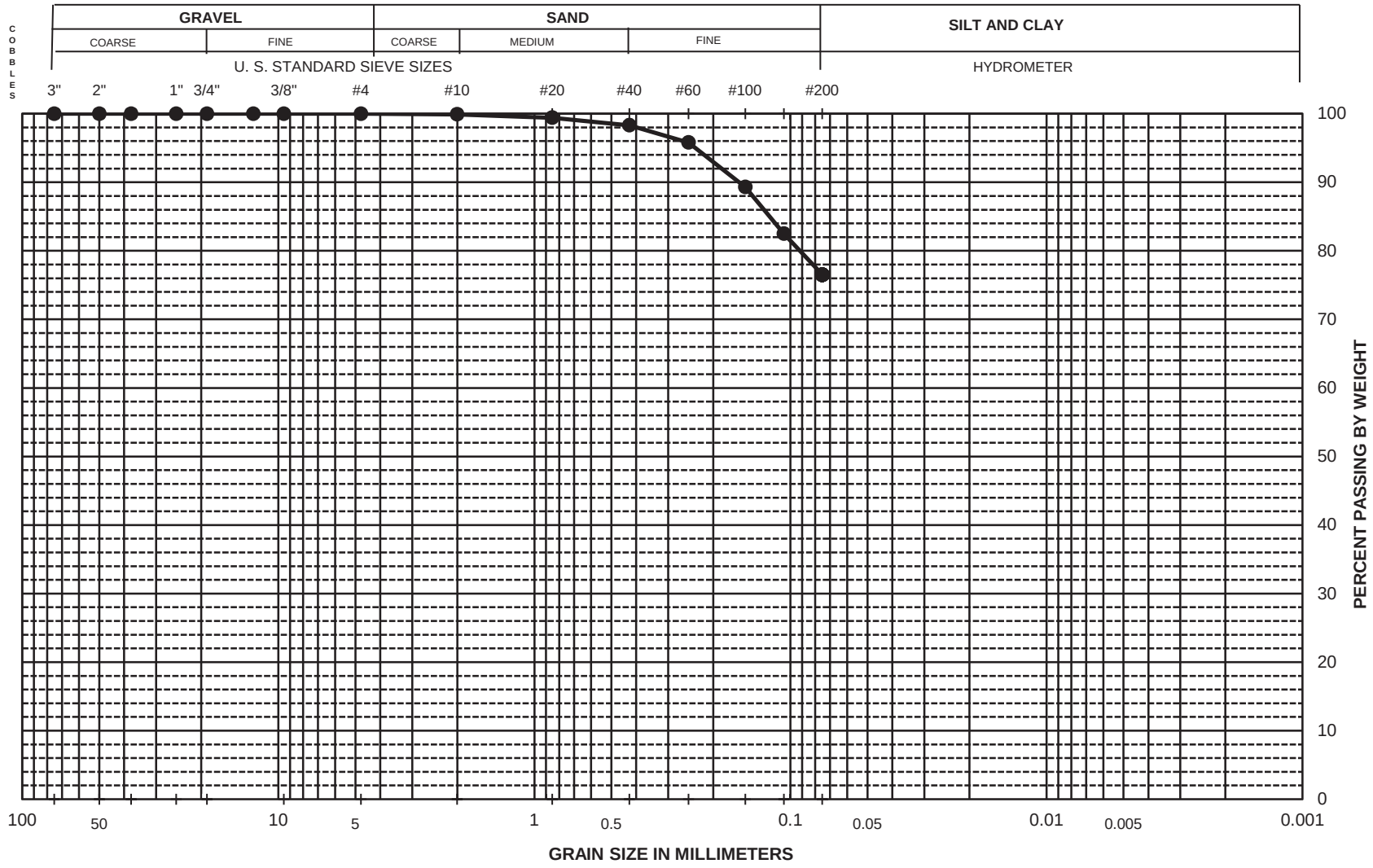
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24411G S02 2.5~5.0FT.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.4
#40	0.425	98.3
#60	0.250	95.8
#100	0.150	89.3
#140	0.106	82.5
#200	0.075	76.5
Hydrometer Analysis	0.0750	76.5
	0.0750	76.5
	0.0750	76.5
	0.0750	76.5
	0.0750	76.5
	0.0750	76.5
	0.0750	76.5
	0.0750	76.5
	0.0750	76.5
	0.0750	76.5

% Cobbles	---
% Gravel	0.0
% Sand	23.5
% Fines	76.5
D_{85}	0.120
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24411G	3	5.0	●	13.7	42	25		**Dark brown Clay with sand (CL)**

PROJECT NAME: **Former Kast Property**

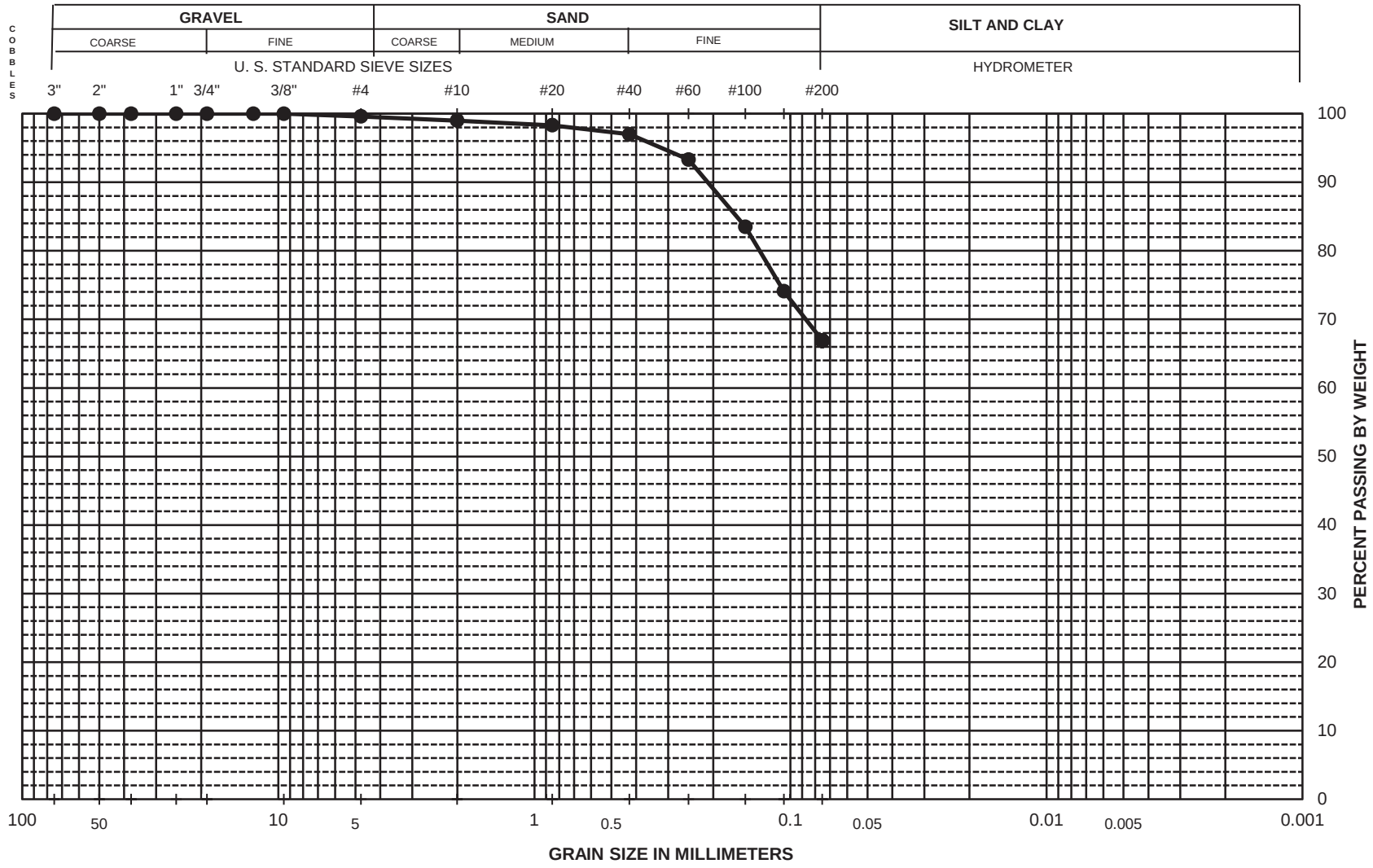
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24411G S03 5FT.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.6
#10	2.00	99.0
#20	0.850	98.3
#40	0.425	97.0
#60	0.250	93.3
#100	0.150	83.5
#140	0.106	74.1
#200	0.075	66.9
Hydrometer Analysis	0.0750	66.9
	0.0750	66.9
	0.0750	66.9
	0.0750	66.9
	0.0750	66.9
	0.0750	66.9
	0.0750	66.9
	0.0750	66.9
	0.0750	66.9
	0.0750	66.9

% Cobbles	---
% Gravel	0.4
% Sand	32.7
% Fines	66.9
D_{85}	0.162
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24512G	2	2.5~5.0	●	8.9	38	24		**Dark brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

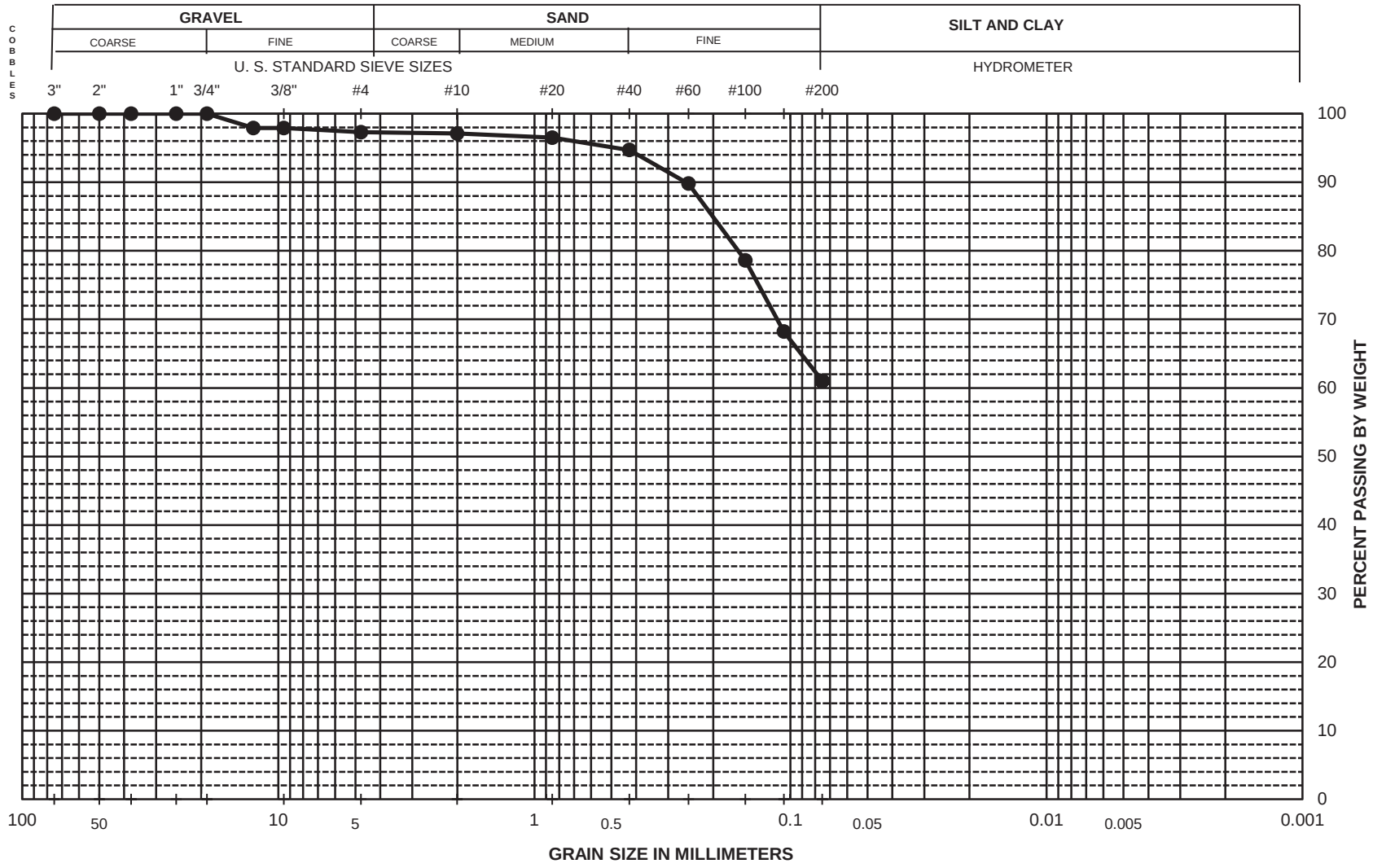
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24512G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	97.9
3/8"	9.50	97.9
#4	4.75	97.3
#10	2.00	97.1
#20	0.850	96.5
#40	0.425	94.7
#60	0.250	89.8
#100	0.150	78.6
#140	0.106	68.2
#200	0.075	61.0
Hydrometer Analysis	0.0750	61.0
	0.0750	61.0
	0.0750	61.0
	0.0750	61.0
	0.0750	61.0
	0.0750	61.0
	0.0750	61.0
	0.0750	61.0
	0.0750	61.0
	0.0750	61.0

% Cobbles	---
% Gravel	2.7
% Sand	36.3
% Fines	61.0
D_{85}	0.201
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24517G	2	2.5~5.0	●	9.4	35	22		**Strong brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

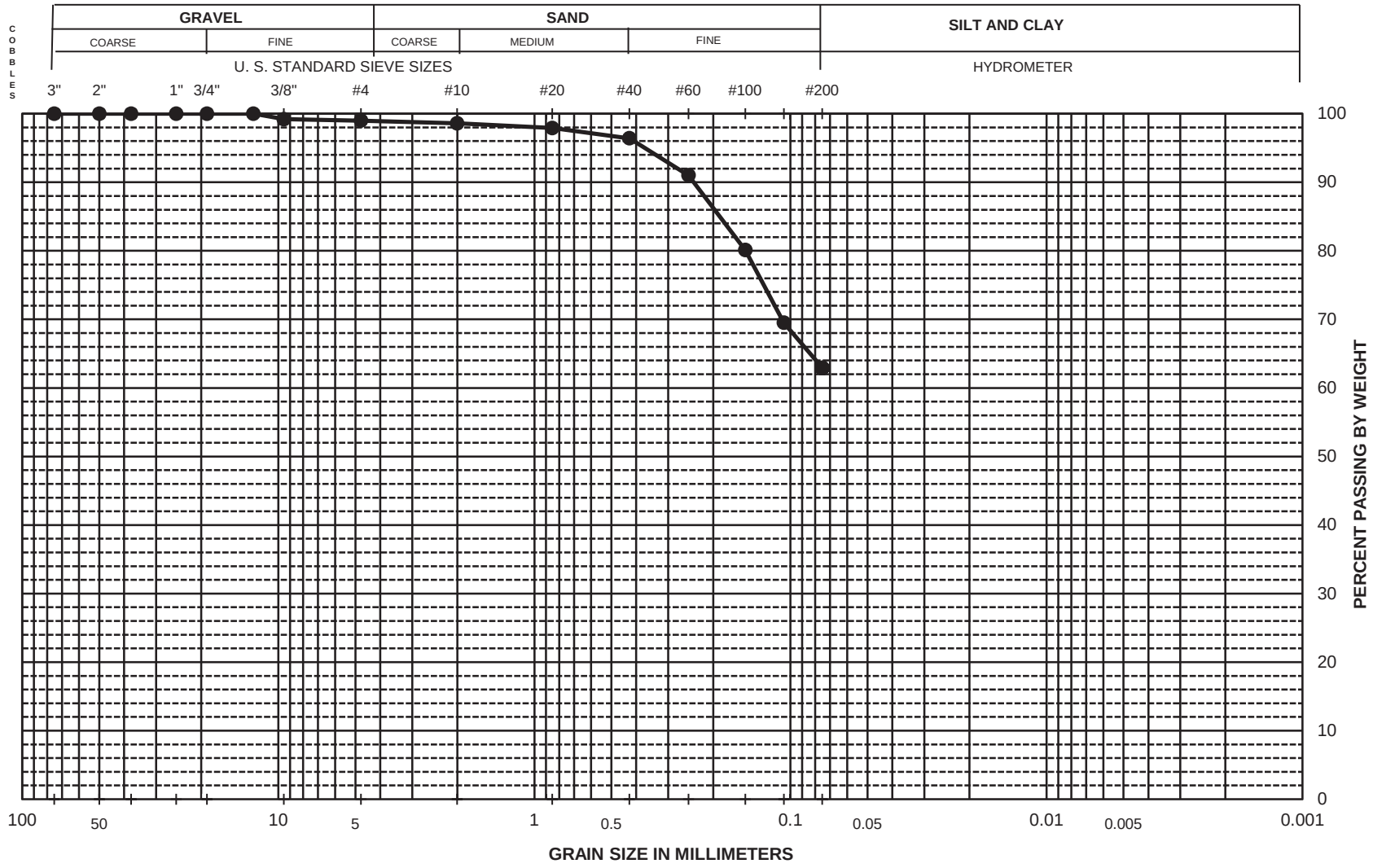
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24517G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	99.2
#4	4.75	99.0
#10	2.00	98.6
#20	0.850	97.9
#40	0.425	96.4
#60	0.250	91.0
#100	0.150	80.1
#140	0.106	69.5
#200	0.075	62.9
Hydrometer Analysis	0.0750	62.9
	0.0750	62.9
	0.0750	62.9
	0.0750	62.9
	0.0750	62.9
	0.0750	62.9
	0.0750	62.9
	0.0750	62.9
	0.0750	62.9
	0.0750	62.9

% Cobbles	---
% Gravel	1.0
% Sand	36.1
% Fines	62.9
D_{85}	0.189
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24606G	2	2.5~5.0	●	9.0	37	23		**Strong brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

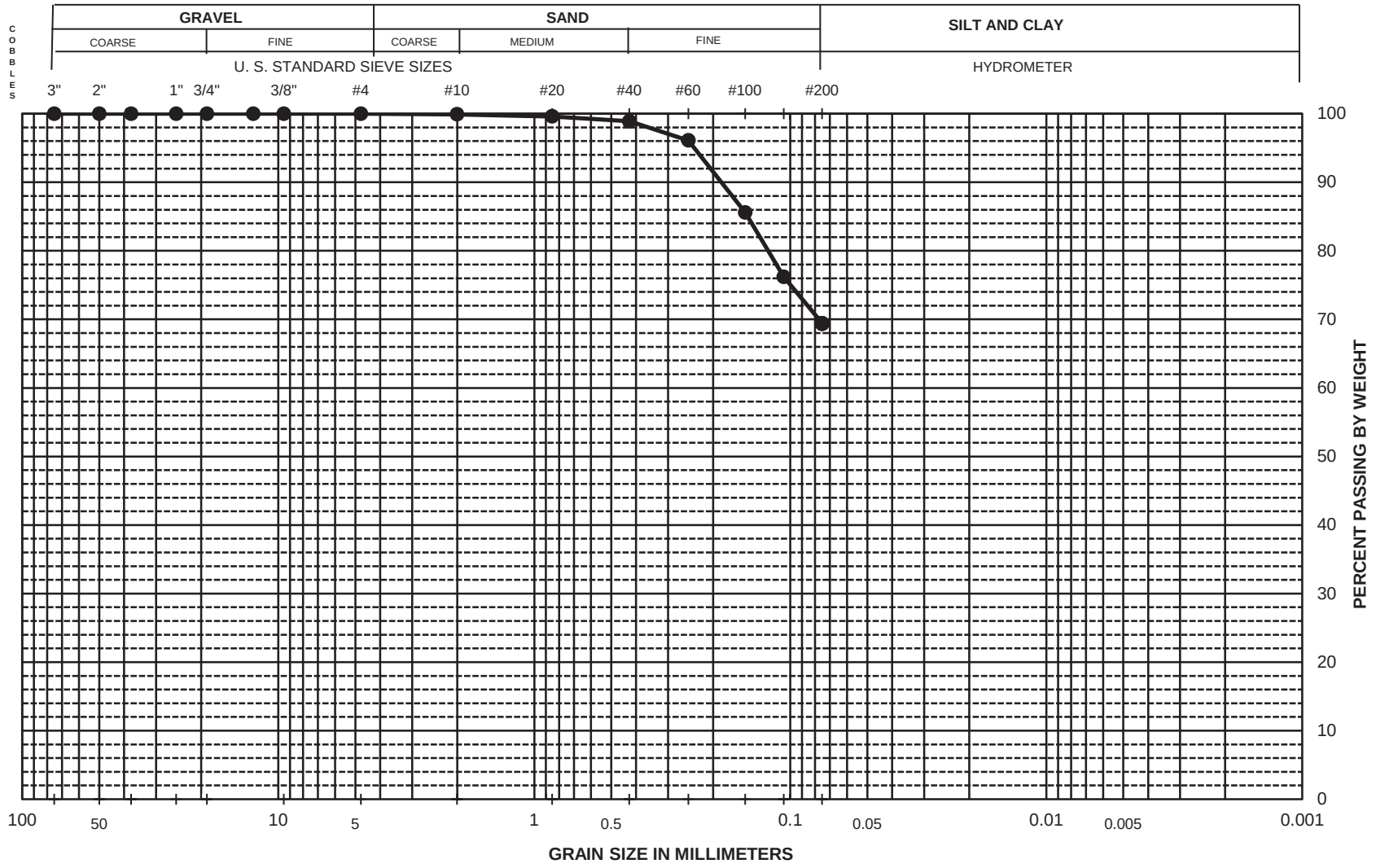
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24606G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.6
#40	0.425	98.9
#60	0.250	96.1
#100	0.150	85.6
#140	0.106	76.2
#200	0.075	69.4
Hydrometer Analysis	0.0750	69.4
	0.0750	69.4
	0.0750	69.4
	0.0750	69.4
	0.0750	69.4
	0.0750	69.4
	0.0750	69.4
	0.0750	69.4
	0.0750	69.4
	0.0750	69.4

% Cobbles	---
% Gravel	0.0
% Sand	30.6
% Fines	69.4
D_{85}	0.147
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24613G	2	2.5~5.0	●	12.1	49	33		**Yellowish brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

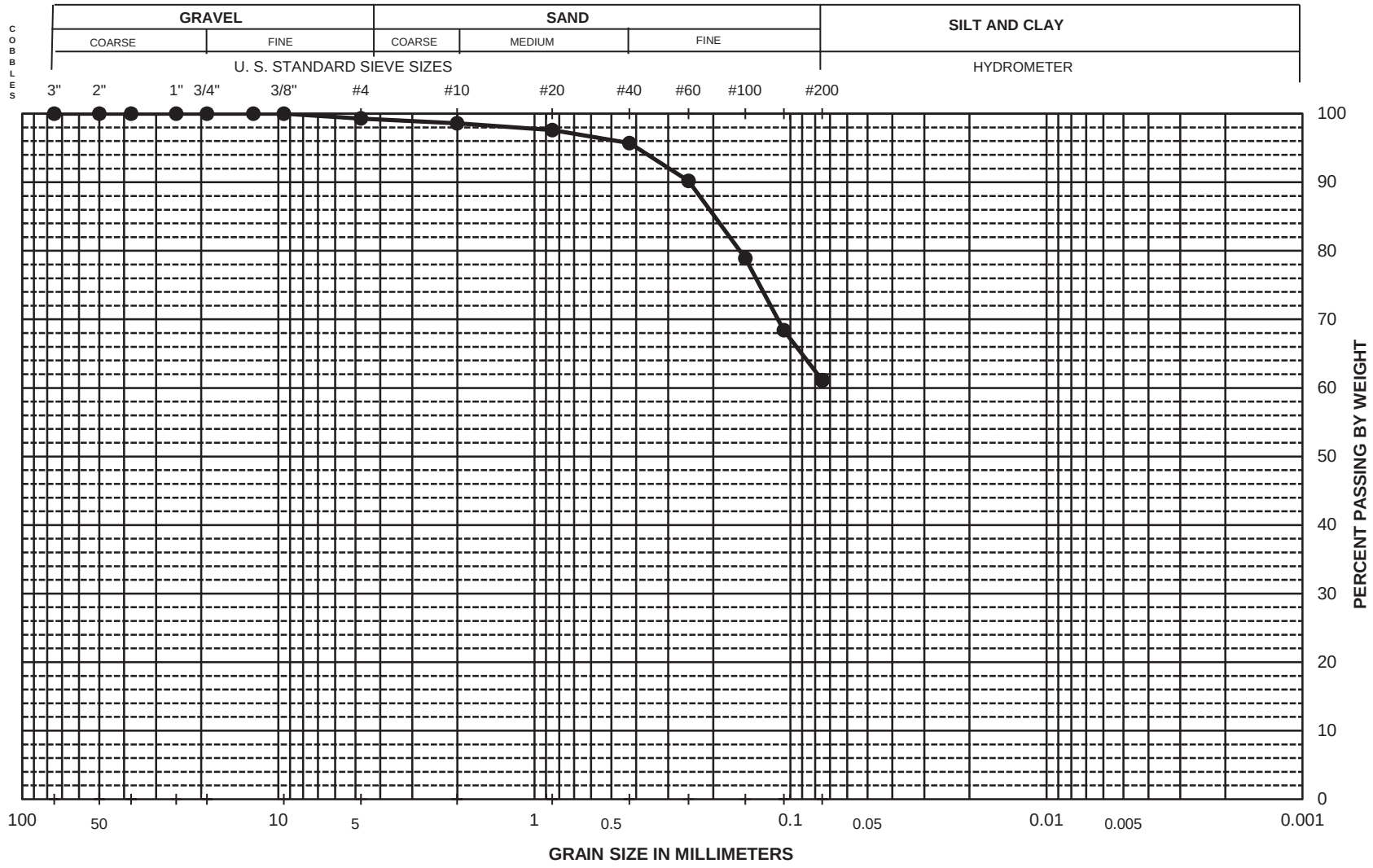
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24613G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.3
#10	2.00	98.6
#20	0.850	97.6
#40	0.425	95.7
#60	0.250	90.2
#100	0.150	78.9
#140	0.106	68.4
#200	0.075	61.1
Hydrometer Analysis	0.0750	61.1
	0.0750	61.1
	0.0750	61.1
	0.0750	61.1
	0.0750	61.1
	0.0750	61.1
	0.0750	61.1
	0.0750	61.1
	0.0750	61.1
	0.0750	61.1

% Cobbles	---
% Gravel	0.7
% Sand	38.2
% Fines	61.1
D_{85}	0.198
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24616G	2	2.5~5.0	●	14.4	39	25		**Dark brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

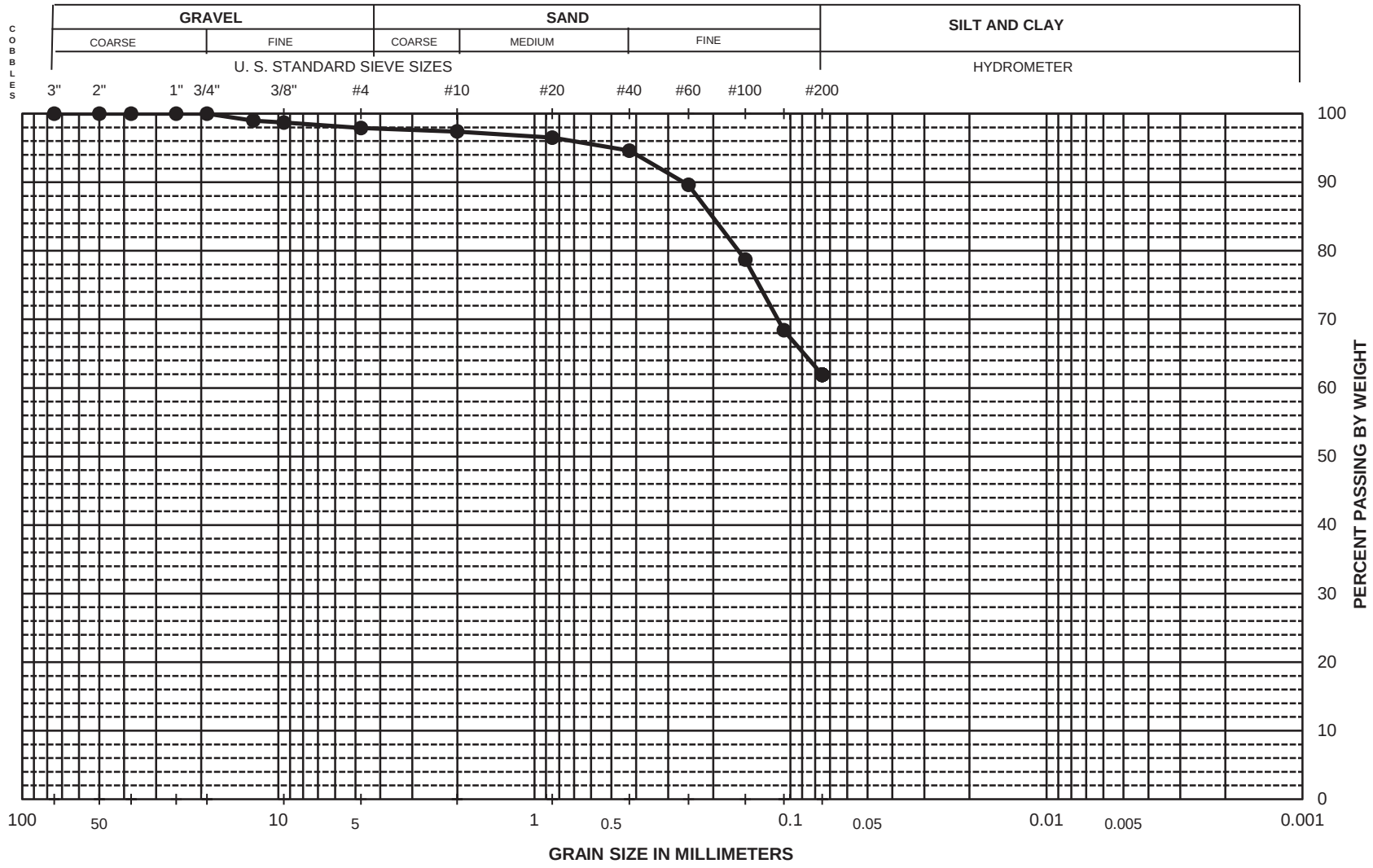
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24616G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	99.0
3/8"	9.50	98.7
#4	4.75	97.9
#10	2.00	97.4
#20	0.850	96.5
#40	0.425	94.6
#60	0.250	89.6
#100	0.150	78.7
#140	0.106	68.4
#200	0.075	61.9
Hydrometer Analysis	0.0750	61.9
	0.0750	61.9
	0.0750	61.9
	0.0750	61.9
	0.0750	61.9
	0.0750	61.9
	0.0750	61.9
	0.0750	61.9
	0.0750	61.9
	0.0750	61.9

% Cobbles	---
% Gravel	2.1
% Sand	36.0
% Fines	61.9
D_{85}	0.202
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24628G	2	2.5~5.0	●	9.0	36	22		**Strong brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

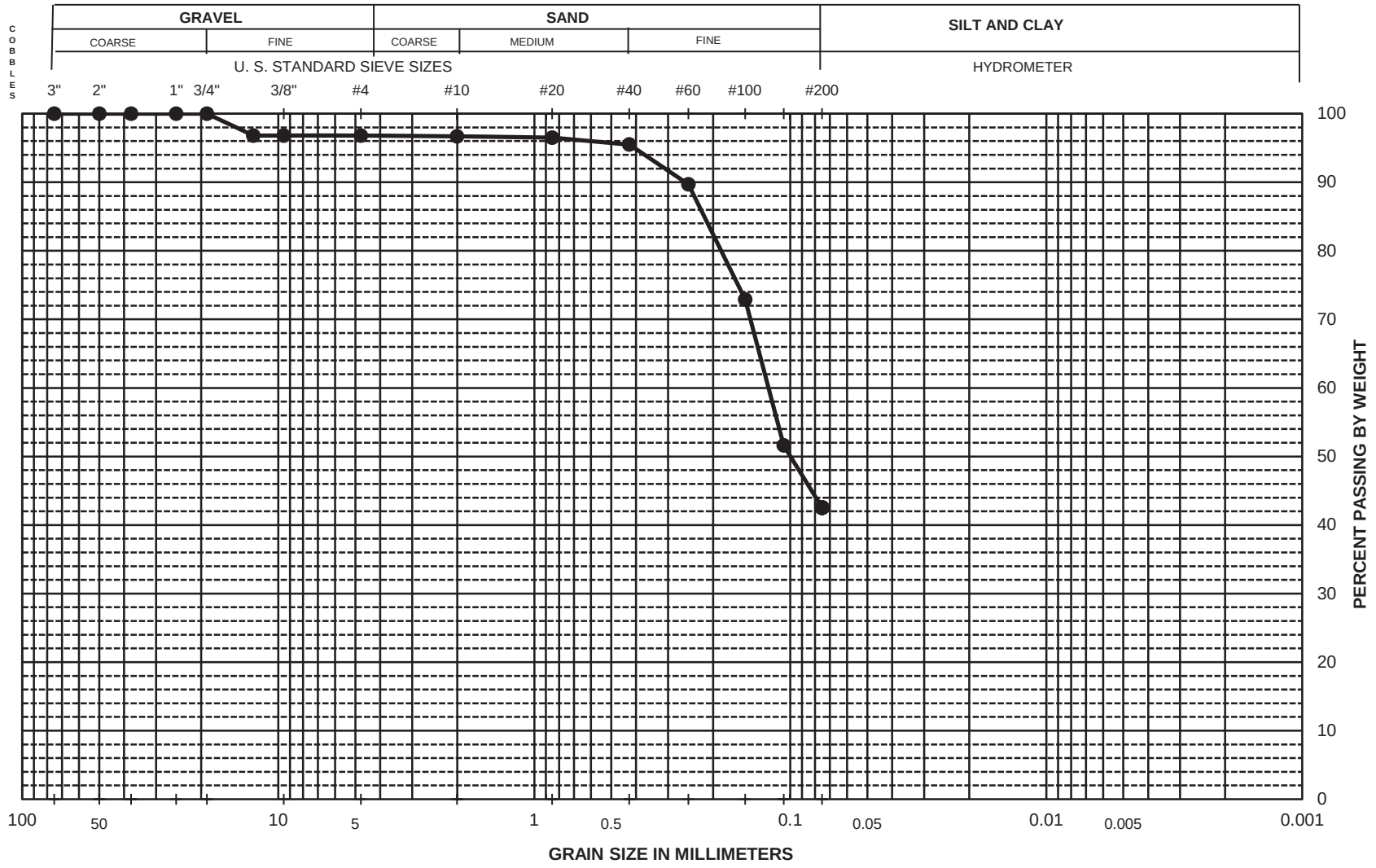
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24628G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	96.8
3/8"	9.50	96.8
#4	4.75	96.8
#10	2.00	96.7
#20	0.850	96.5
#40	0.425	95.5
#60	0.250	89.7
#100	0.150	72.9
#140	0.106	51.6
#200	0.075	42.5
Hydrometer Analysis	0.0750	42.5
	0.0750	42.5
	0.0750	42.5
	0.0750	42.5
	0.0750	42.5
	0.0750	42.5
	0.0750	42.5
	0.0750	42.5
	0.0750	42.5
	0.0750	42.5

% Cobbles	---
% Gravel	3.2
% Sand	54.3
% Fines	42.5
D_{85}	0.217
D_{60}	0.122
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24703G	2	2.5~5.0	●	9.4	33	18		**Light brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

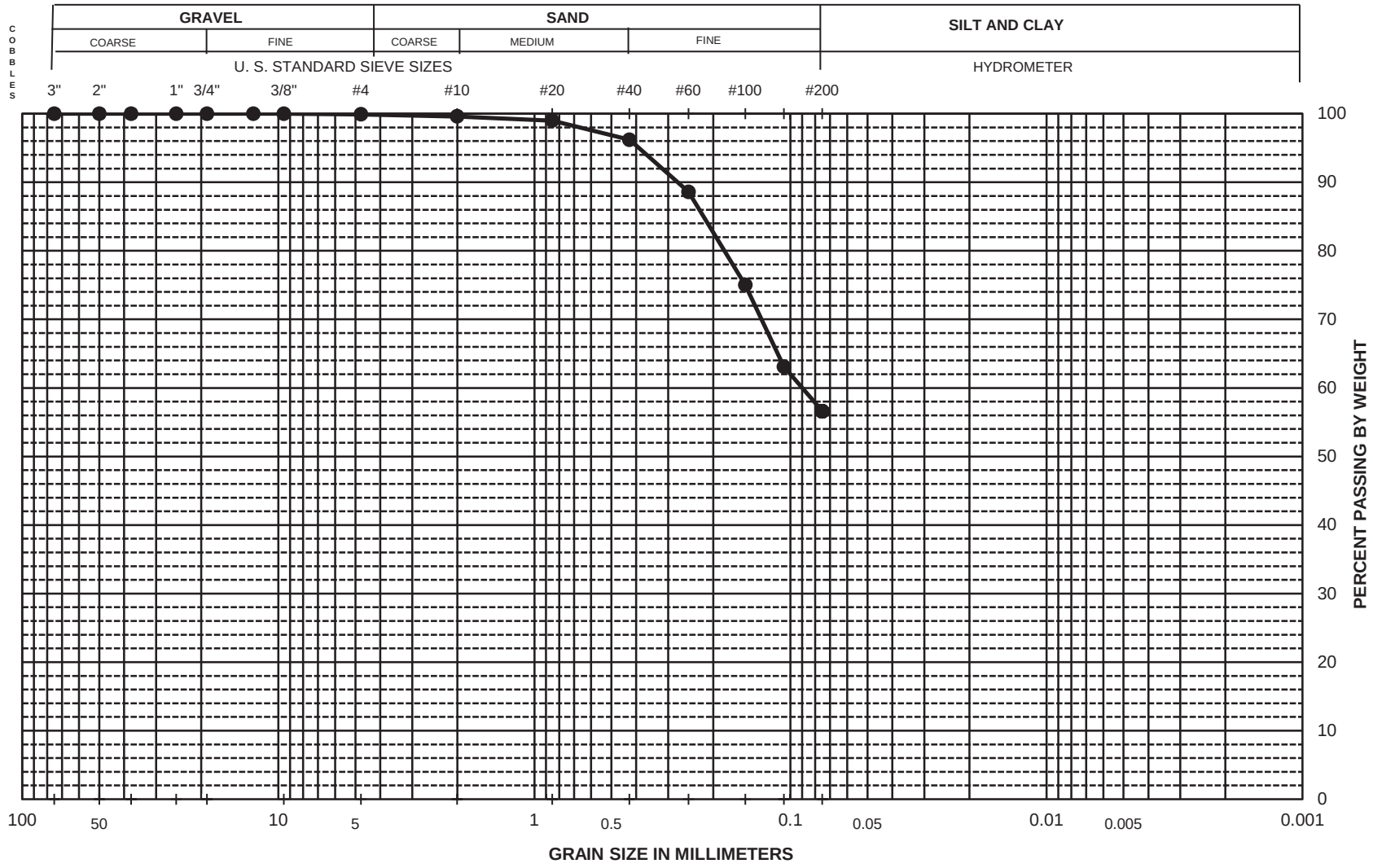
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24703G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.9
#10	2.00	99.6
#20	0.850	99.0
#40	0.425	96.2
#60	0.250	88.6
#100	0.150	75.0
#140	0.106	63.1
#200	0.075	56.6
Hydrometer Analysis	0.0750	56.6
	0.0750	56.6
	0.0750	56.6
	0.0750	56.6
	0.0750	56.6
	0.0750	56.6
	0.0750	56.6
	0.0750	56.6
	0.0750	56.6
	0.0750	56.6

% Cobbles	---
% Gravel	0.1
% Sand	43.3
% Fines	56.6
D_{85}	0.218
D_{60}	0.090
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24706G	2	2.5~5.0	●	10.1	35	22		**Dark yellowish brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

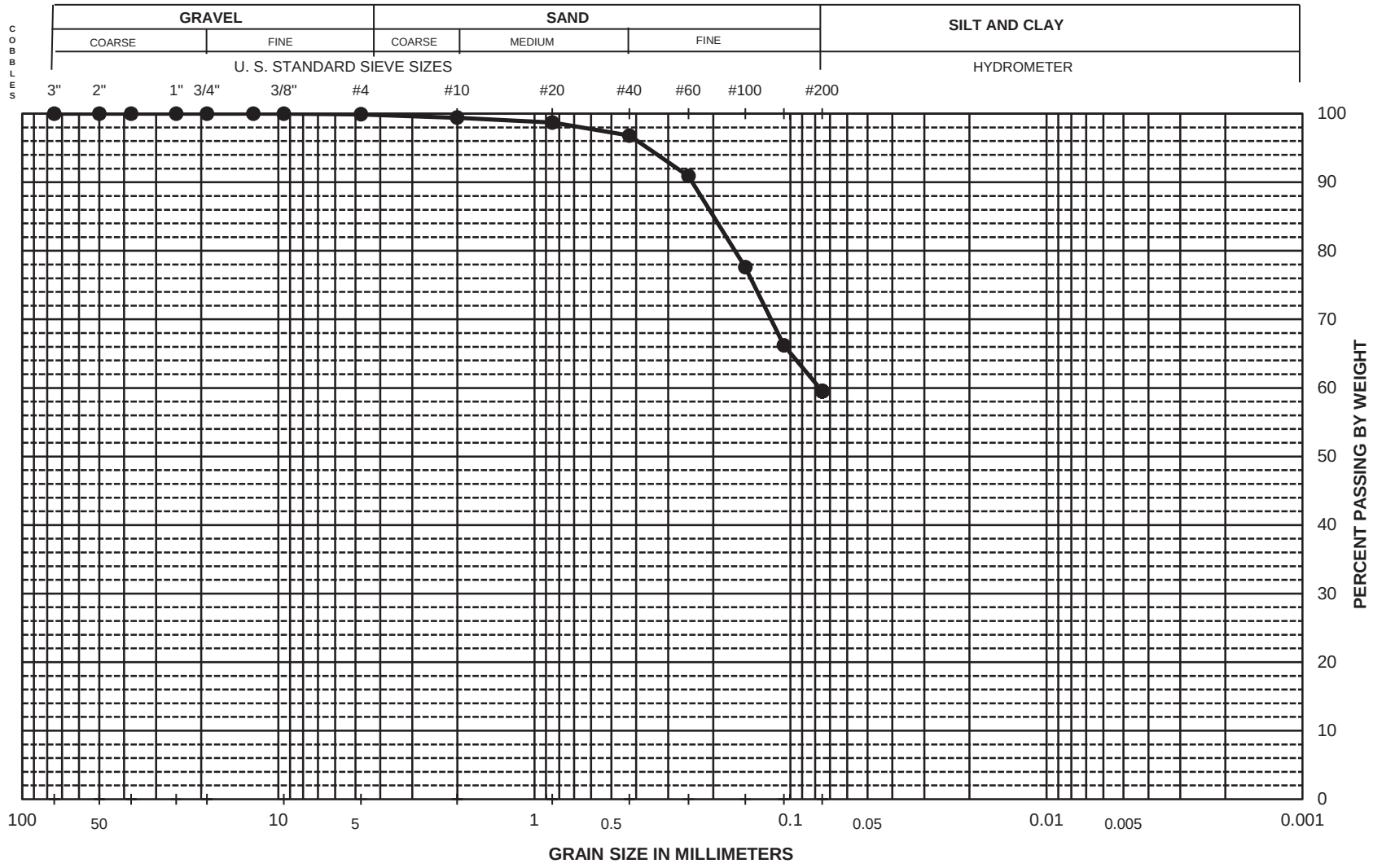
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24706G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.9
#10	2.00	99.4
#20	0.850	98.7
#40	0.425	96.8
#60	0.250	90.9
#100	0.150	77.6
#140	0.106	66.2
#200	0.075	59.5
Hydrometer Analysis	0.0750	59.5
	0.0750	59.5
	0.0750	59.5
	0.0750	59.5
	0.0750	59.5
	0.0750	59.5
	0.0750	59.5
	0.0750	59.5
	0.0750	59.5
	0.0750	59.5

% Cobbles	---
% Gravel	0.1
% Sand	40.4
% Fines	59.5
D_{85}	0.199
D_{60}	0.077
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24716G	2	2.5~5.0	●	11.3	36	22		**Grayish brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

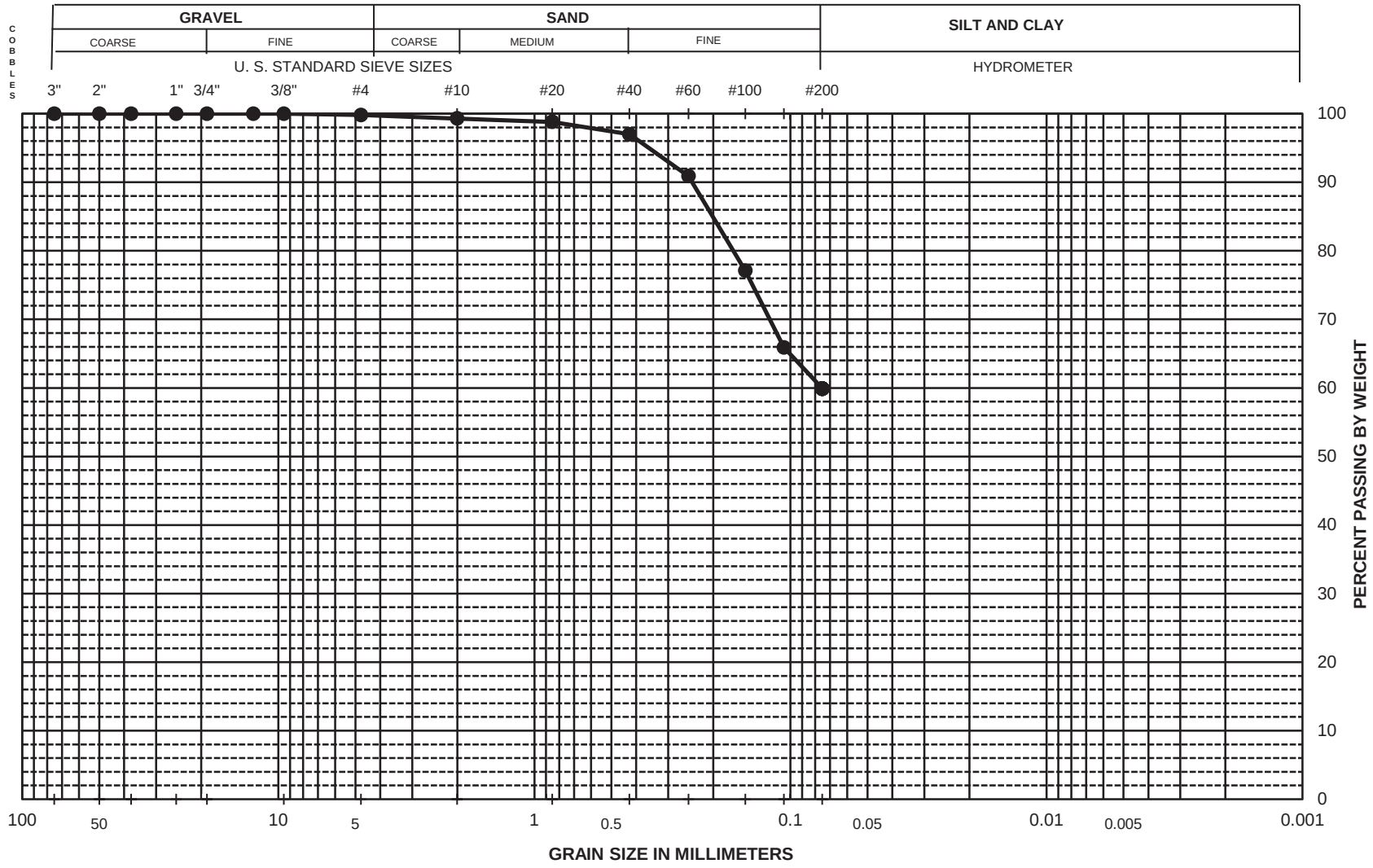
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24716G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.8
#10	2.00	99.3
#20	0.850	98.8
#40	0.425	97.0
#60	0.250	90.9
#100	0.150	77.1
#140	0.106	65.9
#200	0.075	59.9
Hydrometer Analysis	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9

% Cobbles	---
% Gravel	0.2
% Sand	39.9
% Fines	59.9
D_{85}	0.201
D_{60}	0.075
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24717G	2	2.5~5.0	●	16.7	28	15		**Dark brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

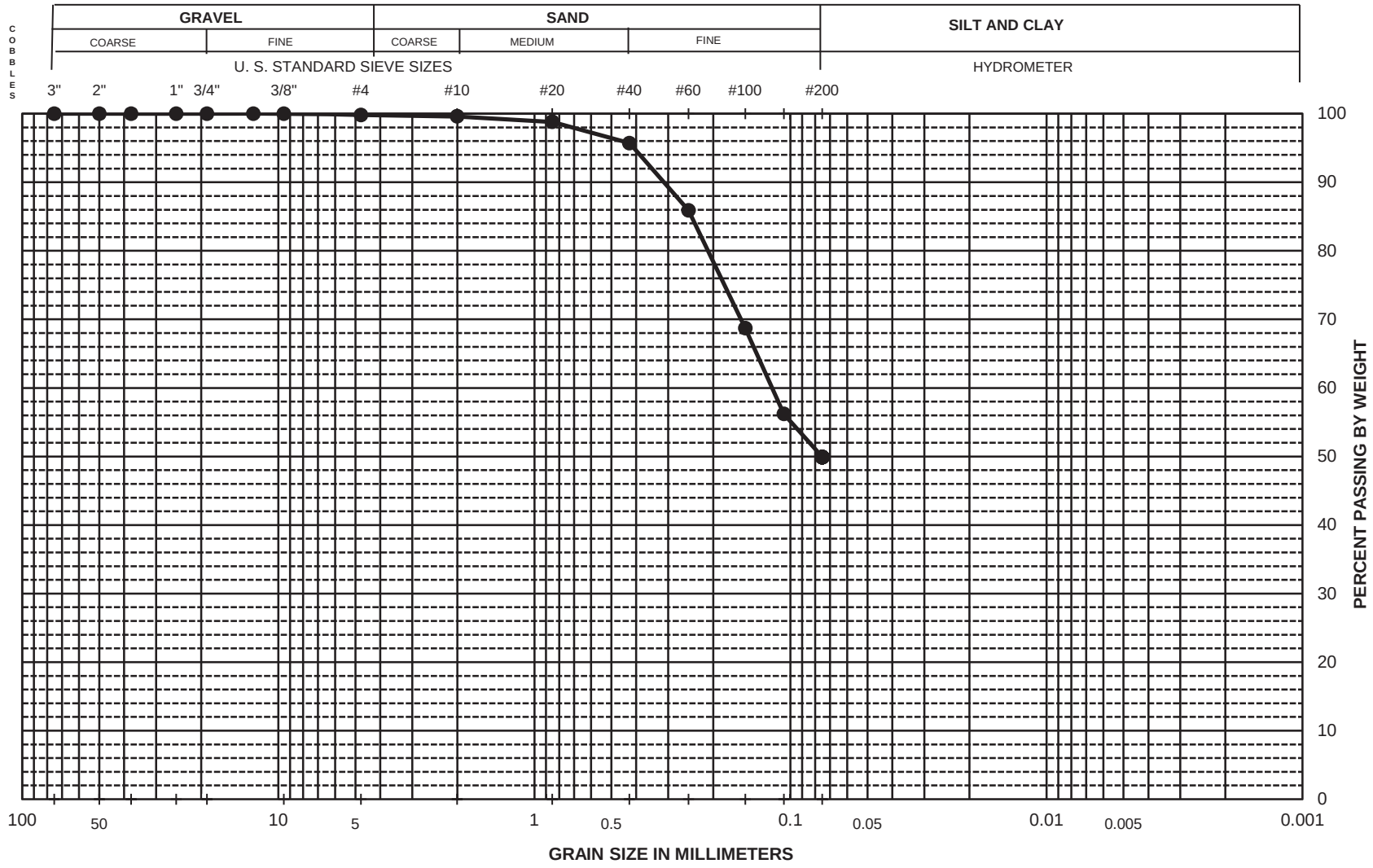
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24717G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.8
#10	2.00	99.6
#20	0.850	98.8
#40	0.425	95.7
#60	0.250	85.9
#100	0.150	68.7
#140	0.106	56.2
#200	0.075	49.9
Hydrometer Analysis	0.0750	49.9
	0.0750	49.9
	0.0750	49.9
	0.0750	49.9
	0.0750	49.9
	0.0750	49.9
	0.0750	49.9
	0.0750	49.9
	0.0750	49.9
	0.0750	49.9

% Cobbles	---
% Gravel	0.2
% Sand	49.9
% Fines	49.9
D_{85}	0.243
D_{60}	0.118
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24733G	2	2.5~5.0	●	14.6	29	16		**Dark brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

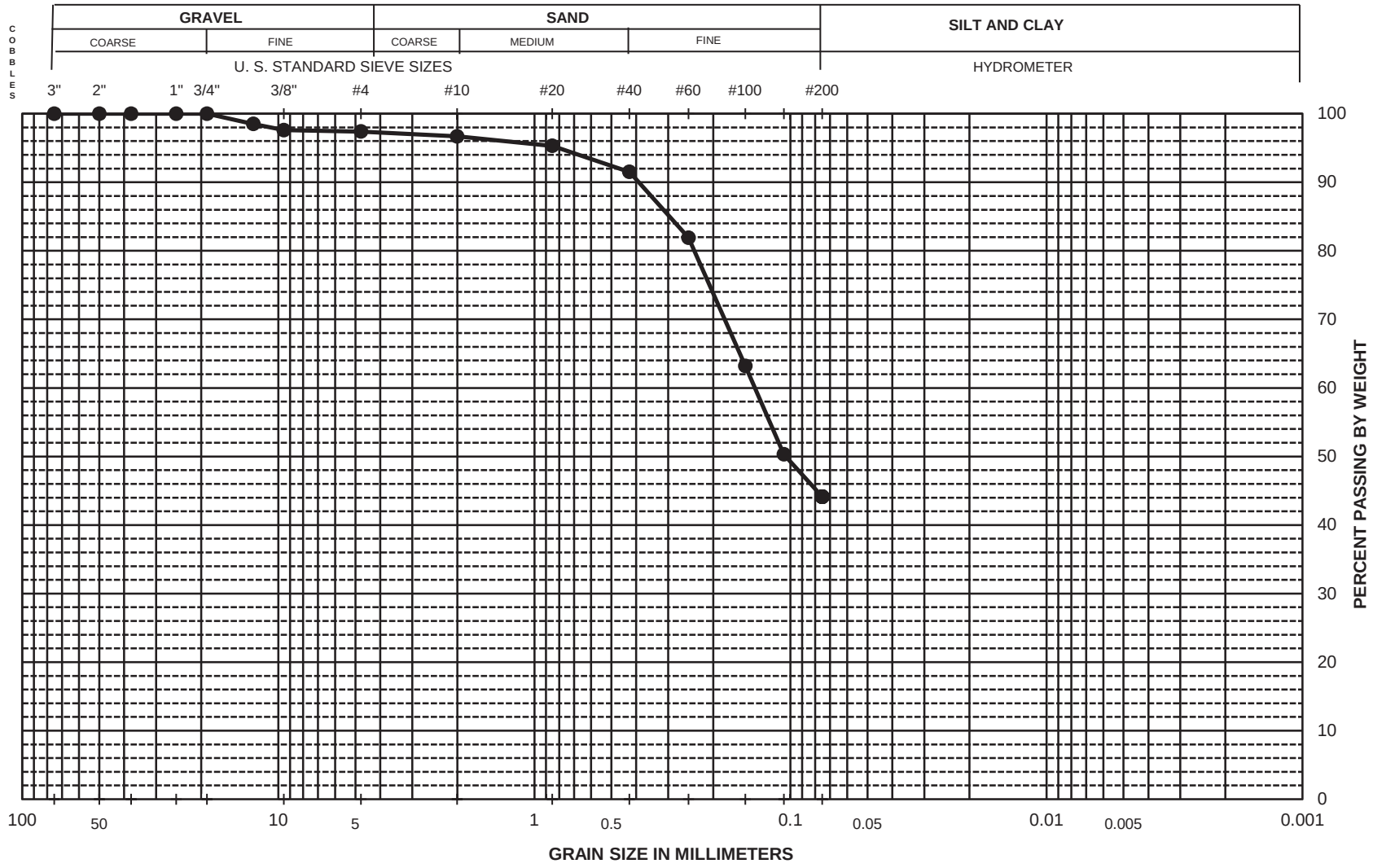
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24733G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	98.5
3/8"	9.50	97.6
#4	4.75	97.4
#10	2.00	96.7
#20	0.850	95.3
#40	0.425	91.5
#60	0.250	81.9
#100	0.150	63.2
#140	0.106	50.3
#200	0.075	44.1
Hydrometer Analysis	0.0750	44.1
	0.0750	44.1
	0.0750	44.1
	0.0750	44.1
	0.0750	44.1
	0.0750	44.1
	0.0750	44.1
	0.0750	44.1
	0.0750	44.1
	0.0750	44.1

% Cobbles	---
% Gravel	2.6
% Sand	53.3
% Fines	44.1
D_{85}	0.297
D_{60}	0.138
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
M24744G	2	2.5~5.0	●	7.7	26	14		**Strong brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

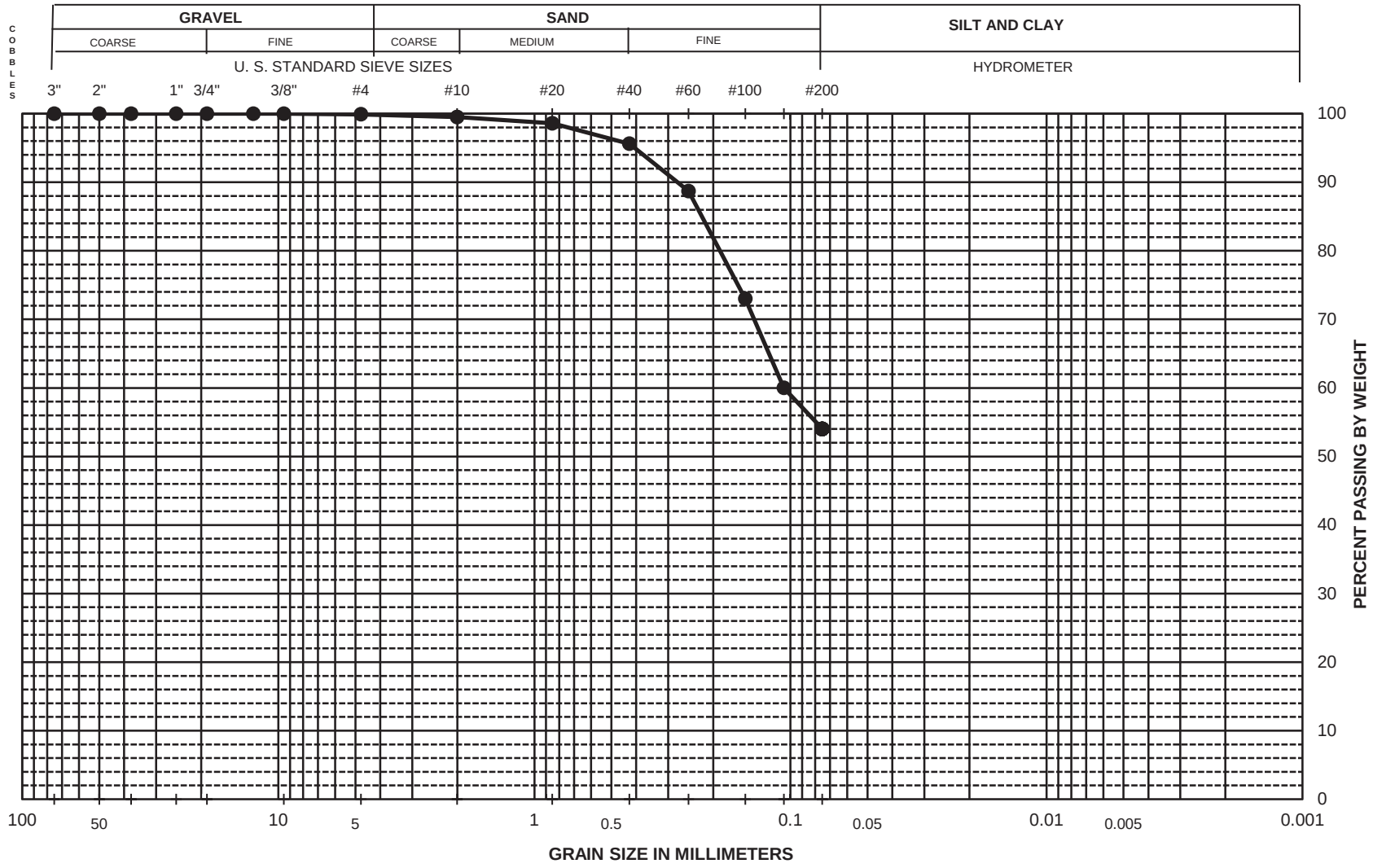
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast M24744G S02 2.5-5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.9
#10	2.00	99.5
#20	0.850	98.6
#40	0.425	95.6
#60	0.250	88.7
#100	0.150	73.0
#140	0.106	60.0
#200	0.075	54.0
Hydrometer Analysis	0.0750	54.0
	0.0750	54.0
	0.0750	54.0
	0.0750	54.0
	0.0750	54.0
	0.0750	54.0
	0.0750	54.0
	0.0750	54.0
	0.0750	54.0
	0.0750	54.0

% Cobbles	---
% Gravel	0.1
% Sand	45.9
% Fines	54.0
D_{85}	0.222
D_{60}	0.106
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24402G	2	2.5~5.0	●	10.3	31	19		**Dark yellowish brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

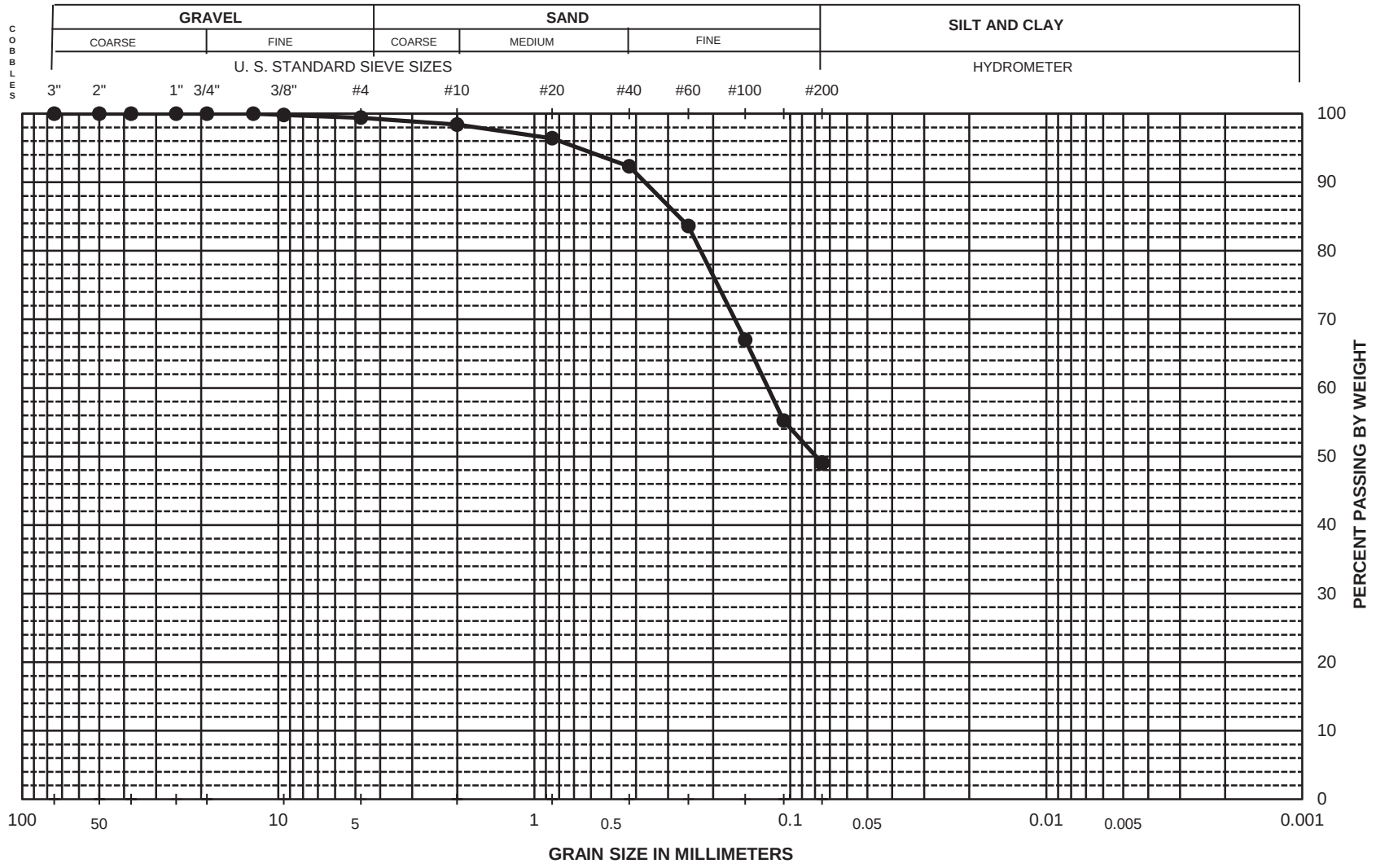
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24402G S02 2.5~5.0FT.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	99.8
#4	4.75	99.4
#10	2.00	98.4
#20	0.850	96.4
#40	0.425	92.3
#60	0.250	83.6
#100	0.150	67.0
#140	0.106	55.2
#200	0.075	49.0
Hydrometer Analysis	0.0750	49.0
	0.0750	49.0
	0.0750	49.0
	0.0750	49.0
	0.0750	49.0
	0.0750	49.0
	0.0750	49.0
	0.0750	49.0
	0.0750	49.0
	0.0750	49.0

% Cobbles	---
% Gravel	0.6
% Sand	50.4
% Fines	49.0
D_{85}	0.272
D_{60}	0.122
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24409G	2	2.5~5.0	●	8.6	29	16		**Dark yellowish brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

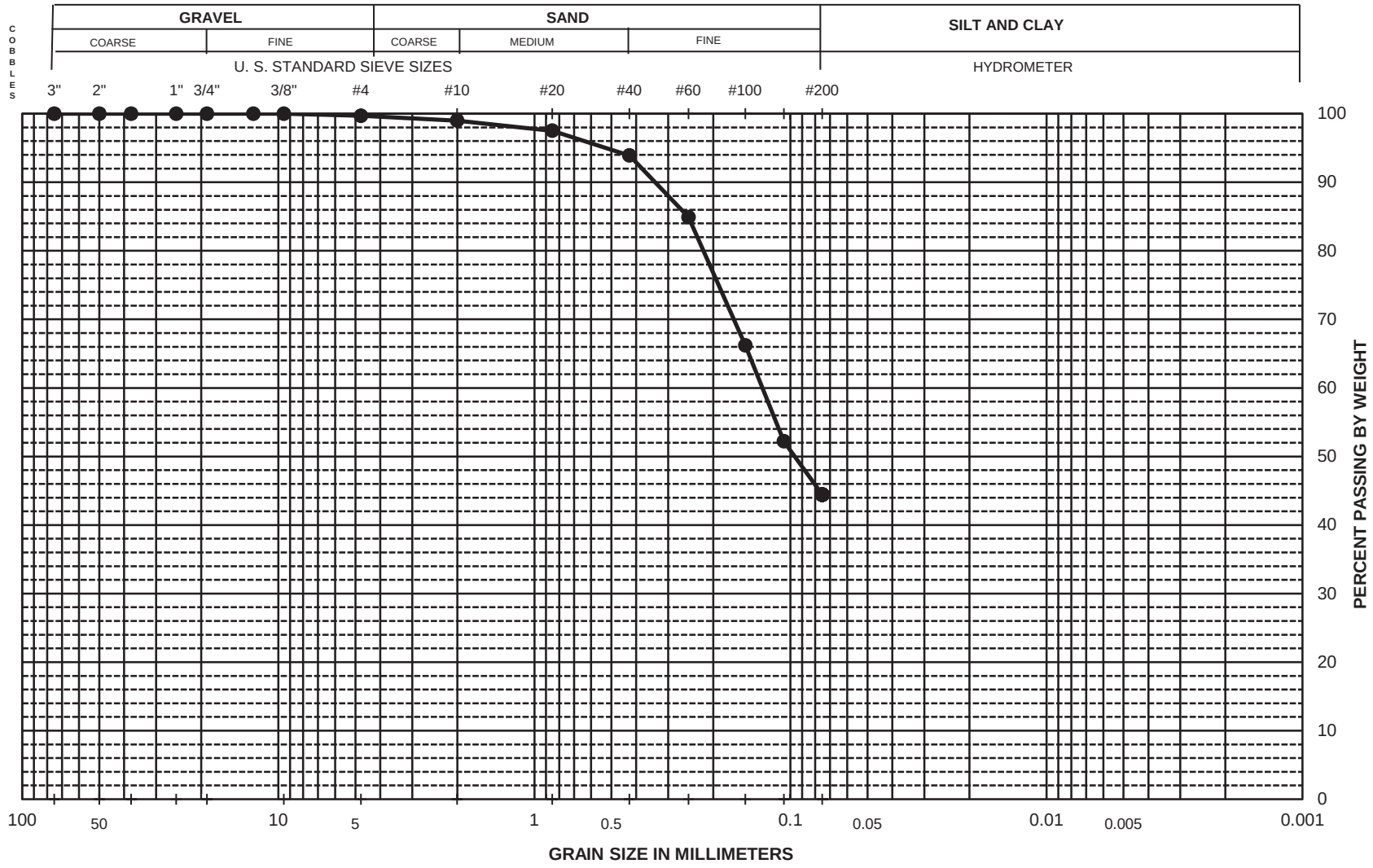
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24409G S02 2.5~5.0FT.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.7
#10	2.00	99.0
#20	0.850	97.5
#40	0.425	93.9
#60	0.250	84.9
#100	0.150	66.2
#140	0.106	52.2
#200	0.075	44.4
Hydrometer Analysis	0.0750	44.4
	0.0750	44.4
	0.0750	44.4
	0.0750	44.4
	0.0750	44.4
	0.0750	44.4
	0.0750	44.4
	0.0750	44.4
	0.0750	44.4
	0.0750	44.4

% Cobbles	---
% Gravel	0.3
% Sand	55.3
% Fines	44.4
D_{85}	0.251
D_{60}	0.129
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24503G	2	2.5	●	7.1	30	17		**Brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

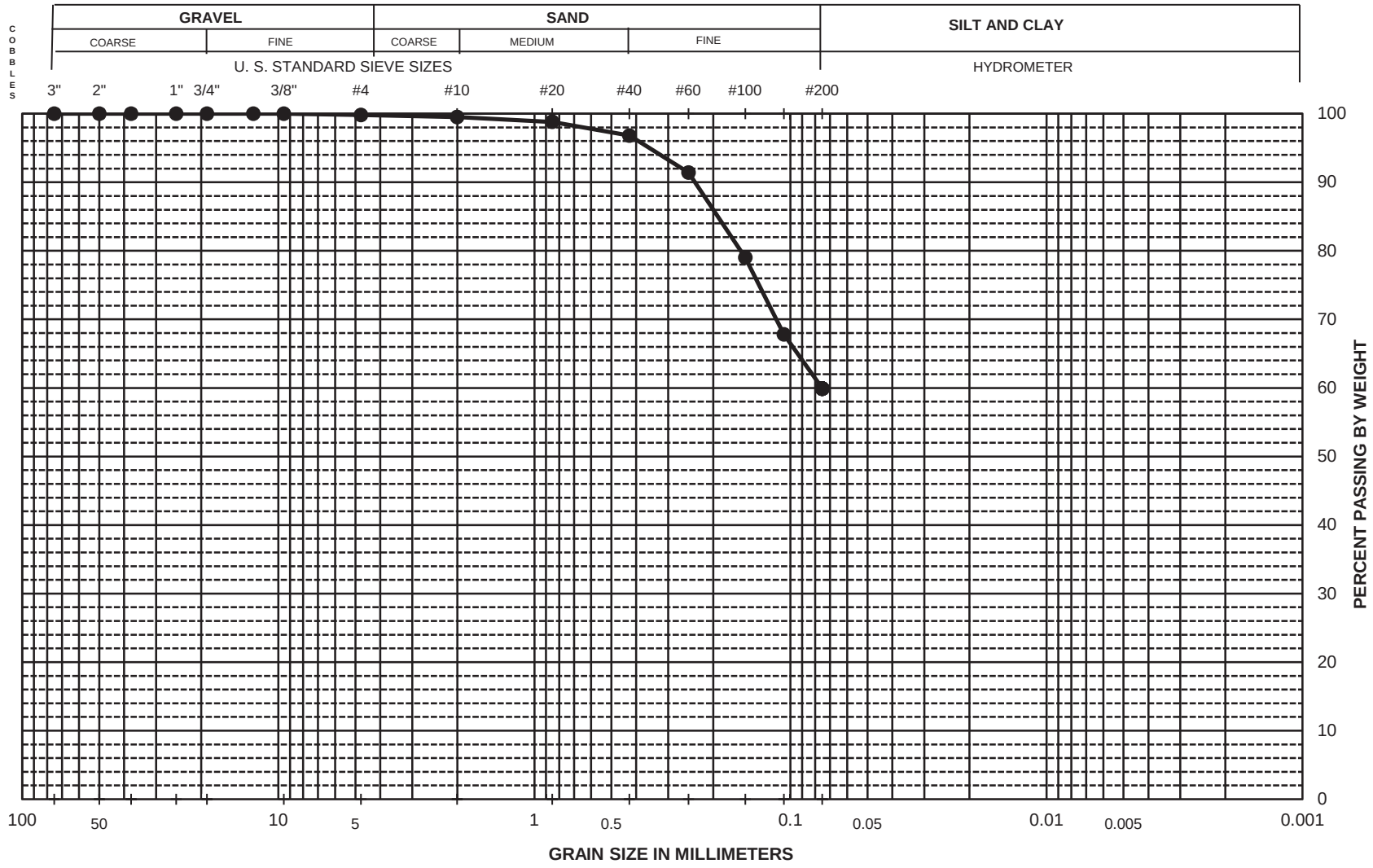
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24503G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.8
#10	2.00	99.5
#20	0.850	98.8
#40	0.425	96.8
#60	0.250	91.4
#100	0.150	79.0
#140	0.106	67.8
#200	0.075	59.9
Hydrometer Analysis	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9
	0.0750	59.9

% Cobbles	---
% Gravel	0.2
% Sand	39.9
% Fines	59.9
D_{85}	0.192
D_{60}	0.075
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24508G	2	2.5 - 5.0	●	10.8	37	23		**Olive brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

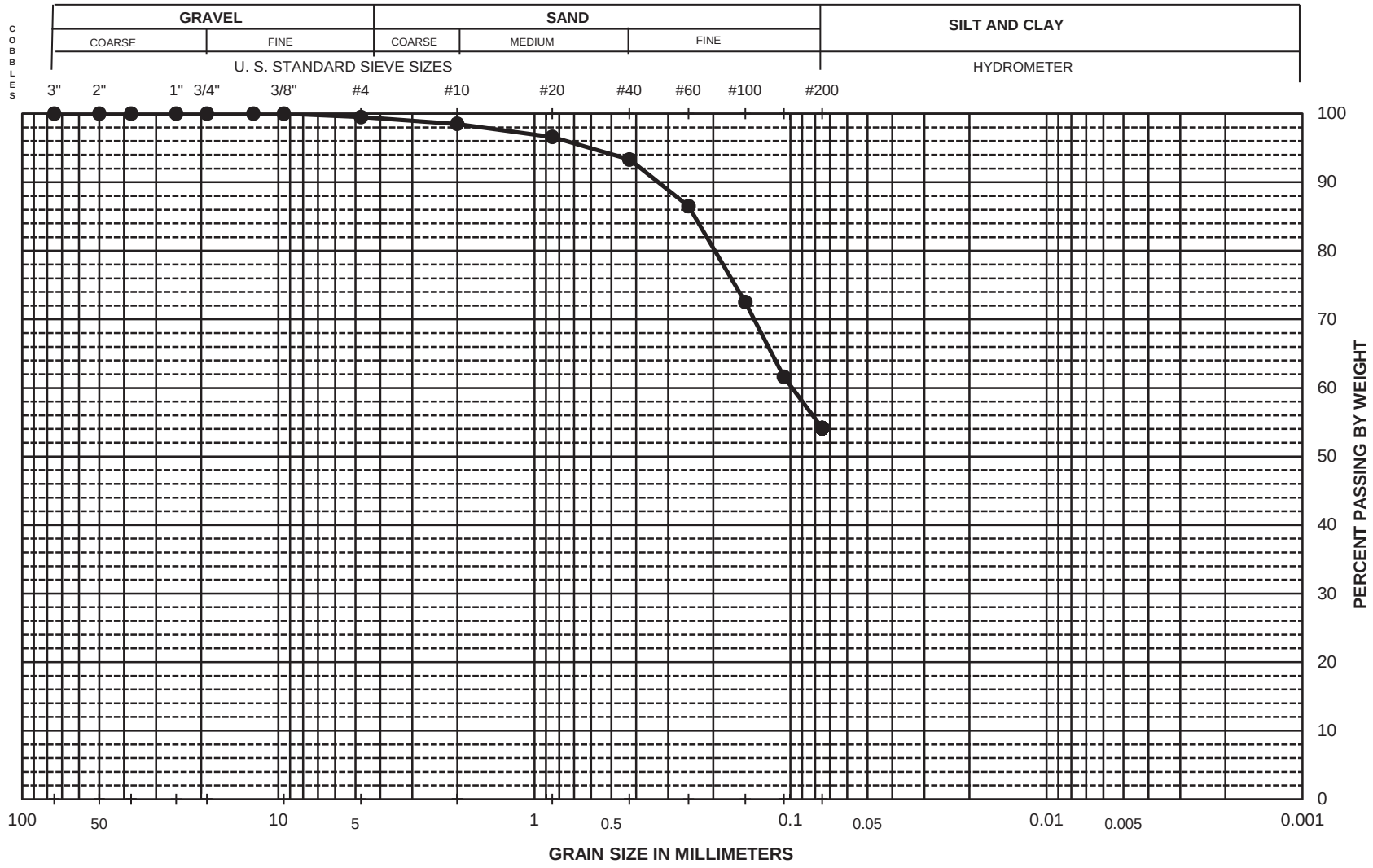
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24508G S2 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.5
#10	2.00	98.5
#20	0.850	96.6
#40	0.425	93.3
#60	0.250	86.5
#100	0.150	72.5
#140	0.106	61.6
#200	0.075	54.1
Hydrometer Analysis	0.0750	54.1
	0.0750	54.1
	0.0750	54.1
	0.0750	54.1
	0.0750	54.1
	0.0750	54.1
	0.0750	54.1
	0.0750	54.1
	0.0750	54.1
	0.0750	54.1

% Cobbles	---
% Gravel	0.5
% Sand	45.4
% Fines	54.1
D_{85}	0.237
D_{60}	0.098
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24522G	4	7.5	●	13.6	33	18		**Olive gray sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

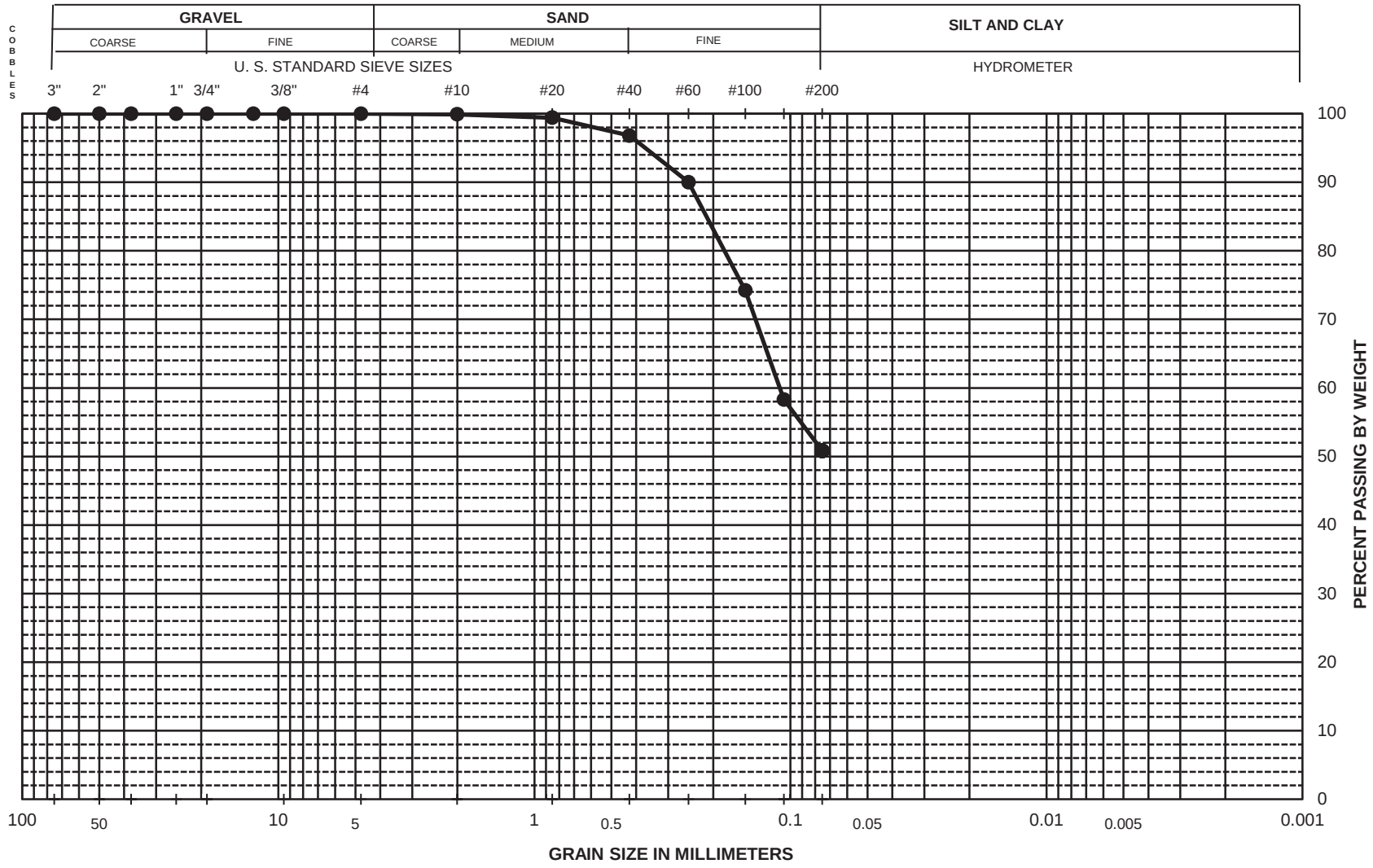
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24522G S04 7.5FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.4
#40	0.425	96.8
#60	0.250	90.0
#100	0.150	74.2
#140	0.106	58.3
#200	0.075	50.8
Hydrometer Analysis	0.0750	50.8
	0.0750	50.8
	0.0750	50.8
	0.0750	50.8
	0.0750	50.8
	0.0750	50.8
	0.0750	50.8
	0.0750	50.8
	0.0750	50.8
	0.0750	50.8

% Cobbles	---
% Gravel	0.0
% Sand	49.2
% Fines	50.8
D_{85}	0.213
D_{60}	0.110
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24523G	2	2.5~5.0	●	9.1	31	18		**Light olive brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

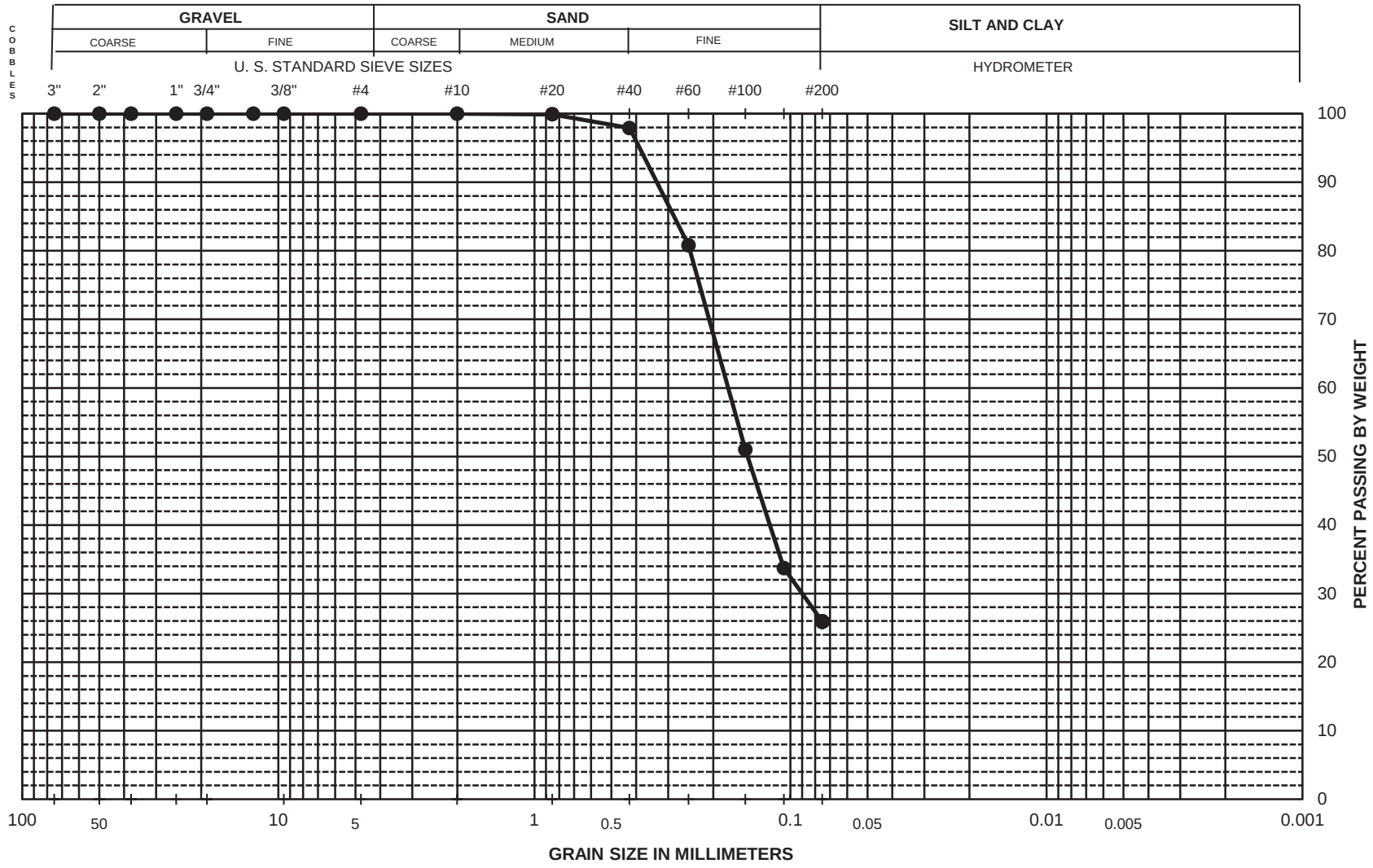
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24523G S02 2.5~5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.9
#40	0.425	97.9
#60	0.250	80.8
#100	0.150	51.0
#140	0.106	33.7
#200	0.075	25.9
Hydrometer Analysis	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9

% Cobbles	---
% Gravel	0.0
% Sand	74.1
% Fines	25.9
D_{85}	0.285
D_{60}	0.175
D_{30}	0.090
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24603G	3	5.0	●	8.2	25	8		**Yellowish brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

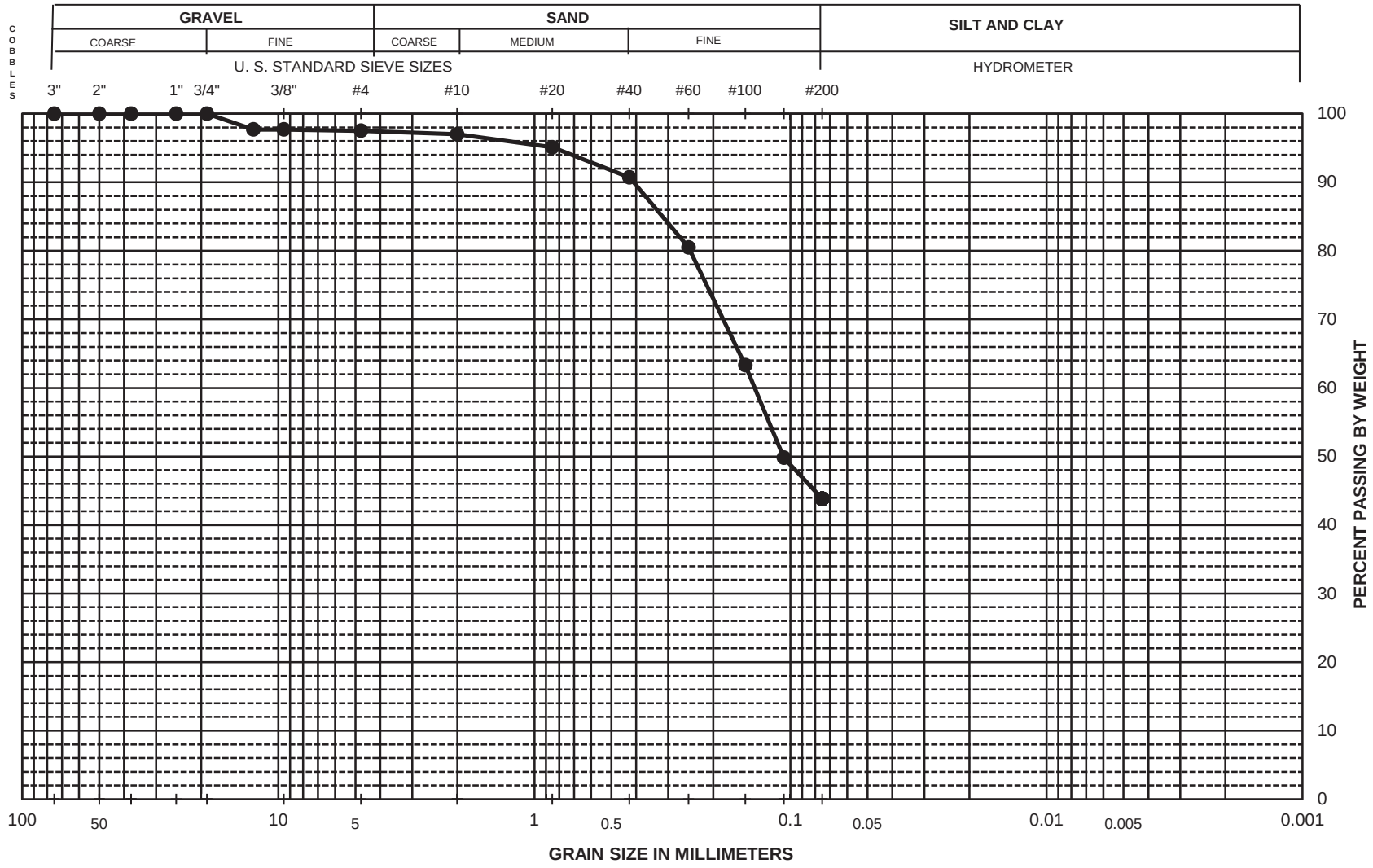
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24603G S03 5FT.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	97.7
3/8"	9.50	97.7
#4	4.75	97.5
#10	2.00	97.0
#20	0.850	95.1
#40	0.425	90.7
#60	0.250	80.5
#100	0.150	63.3
#140	0.106	49.8
#200	0.075	43.8
Hydrometer Analysis	0.0750	43.8
	0.0750	43.8
	0.0750	43.8
	0.0750	43.8
	0.0750	43.8
	0.0750	43.8
	0.0750	43.8
	0.0750	43.8
	0.0750	43.8
	0.0750	43.8

% Cobbles	---
% Gravel	2.5
% Sand	53.7
% Fines	43.8
D_{85}	0.316
D_{60}	0.138
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24613G	2	2.5~5.0	●	14.5	30	16		**Dark olive brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

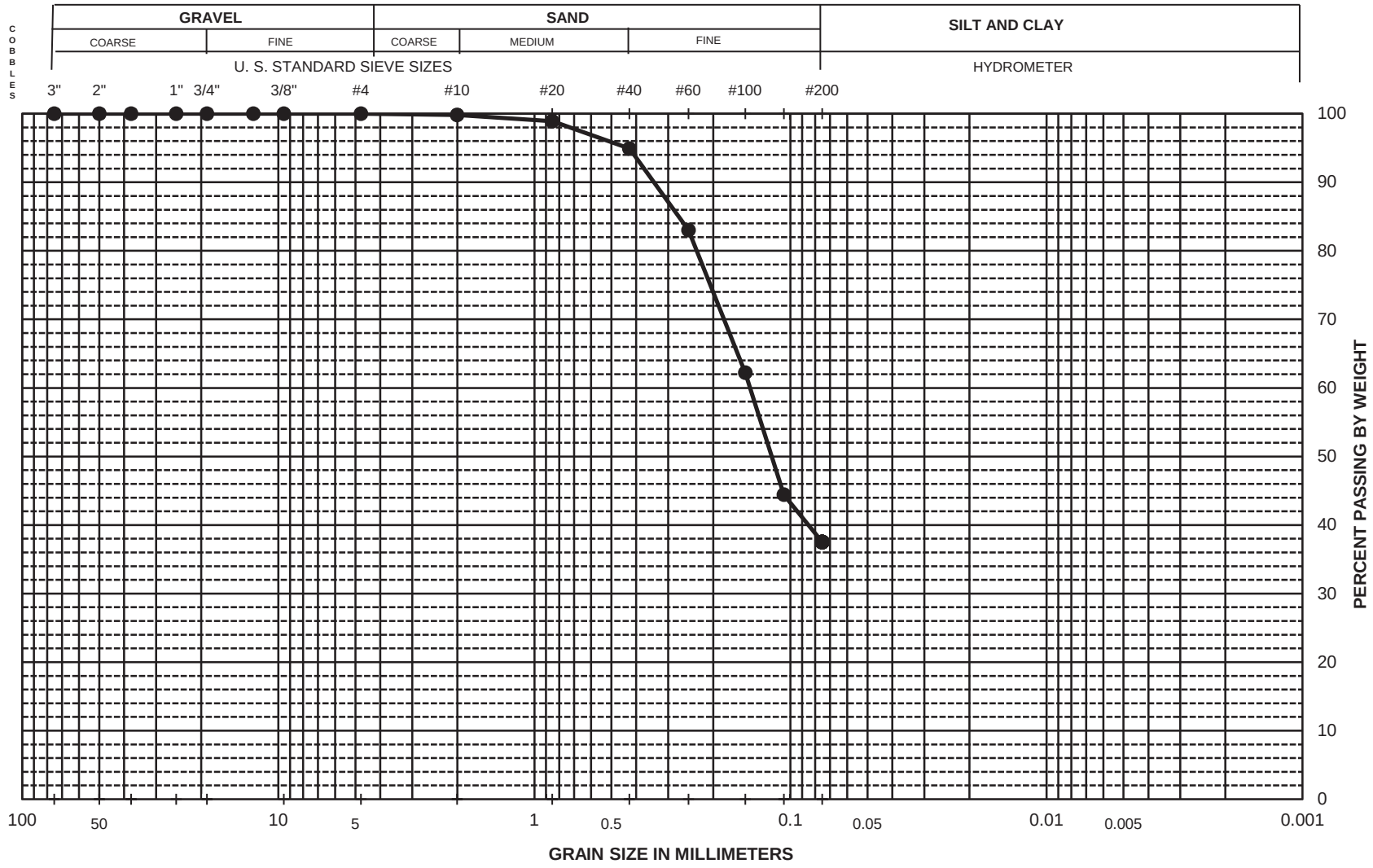
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24613G S02 2.5~5.0FT.xls

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.8
#20	0.850	98.9
#40	0.425	94.9
#60	0.250	83.0
#100	0.150	62.2
#140	0.106	44.4
#200	0.075	37.5
Hydrometer Analysis	0.0750	37.5
	0.0750	37.5
	0.0750	37.5
	0.0750	37.5
	0.0750	37.5
	0.0750	37.5
	0.0750	37.5
	0.0750	37.5
	0.0750	37.5
	0.0750	37.5

% Cobbles	---
% Gravel	0.0
% Sand	62.5
% Fines	37.5
D_{85}	0.273
D_{60}	0.144
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24622G	3	5.0	●	14.4	27	14		**Dark olive gray clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

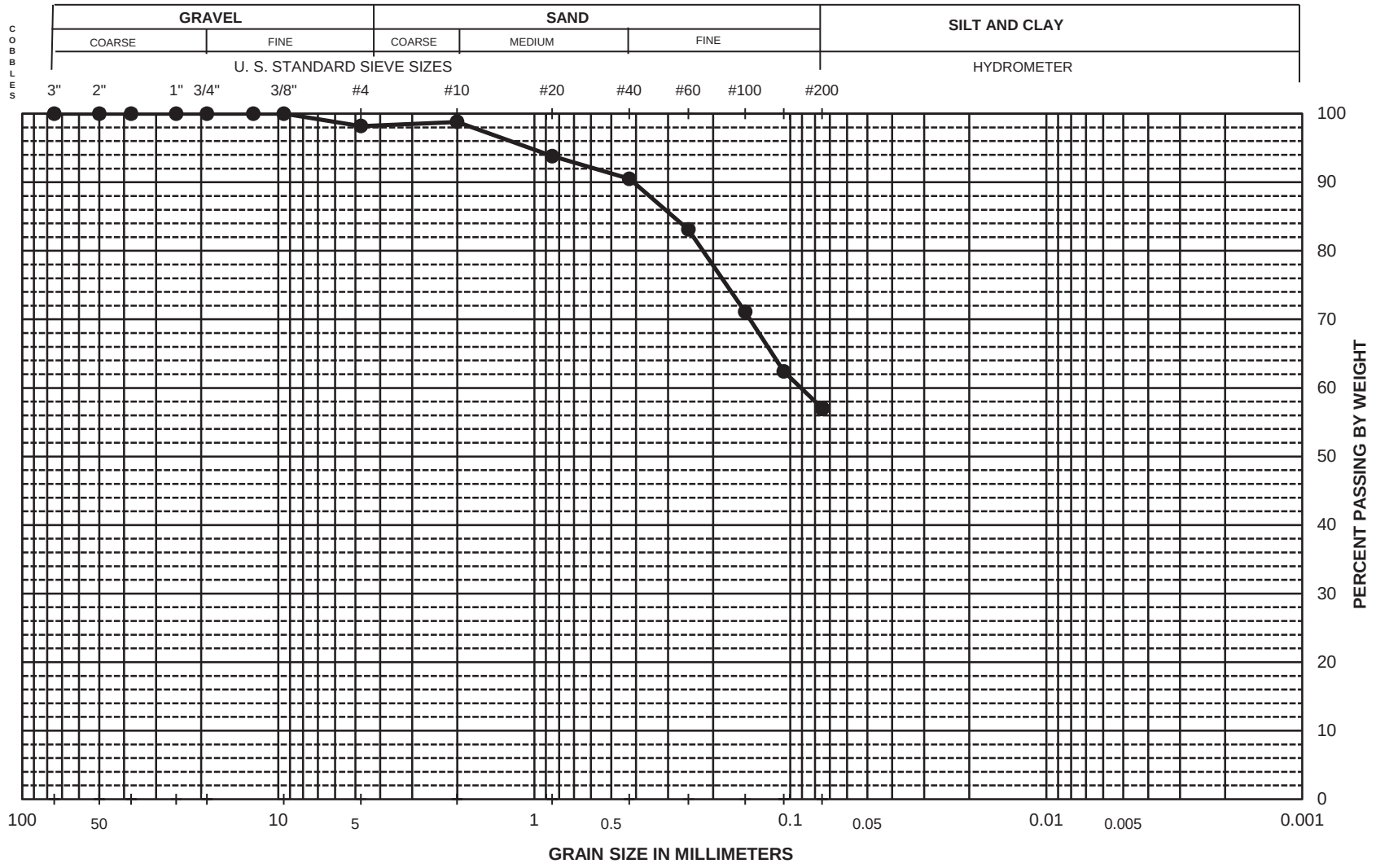
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24622G S03 5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	98.2
#10	2.00	98.8
#20	0.850	93.8
#40	0.425	90.5
#60	0.250	83.1
#100	0.150	71.1
#140	0.106	62.4
#200	0.075	57.0
Hydrometer Analysis	0.0750	57.0
	0.0750	57.0
	0.0750	57.0
	0.0750	57.0
	0.0750	57.0
	0.0750	57.0
	0.0750	57.0
	0.0750	57.0
	0.0750	57.0
	0.0750	57.0

% Cobbles	---
% Gravel	1.8
% Sand	41.2
% Fines	57.0
D_{85}	0.286
D_{60}	0.091
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24629G	3	5.0	●	11.6	33	17		**Olive brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

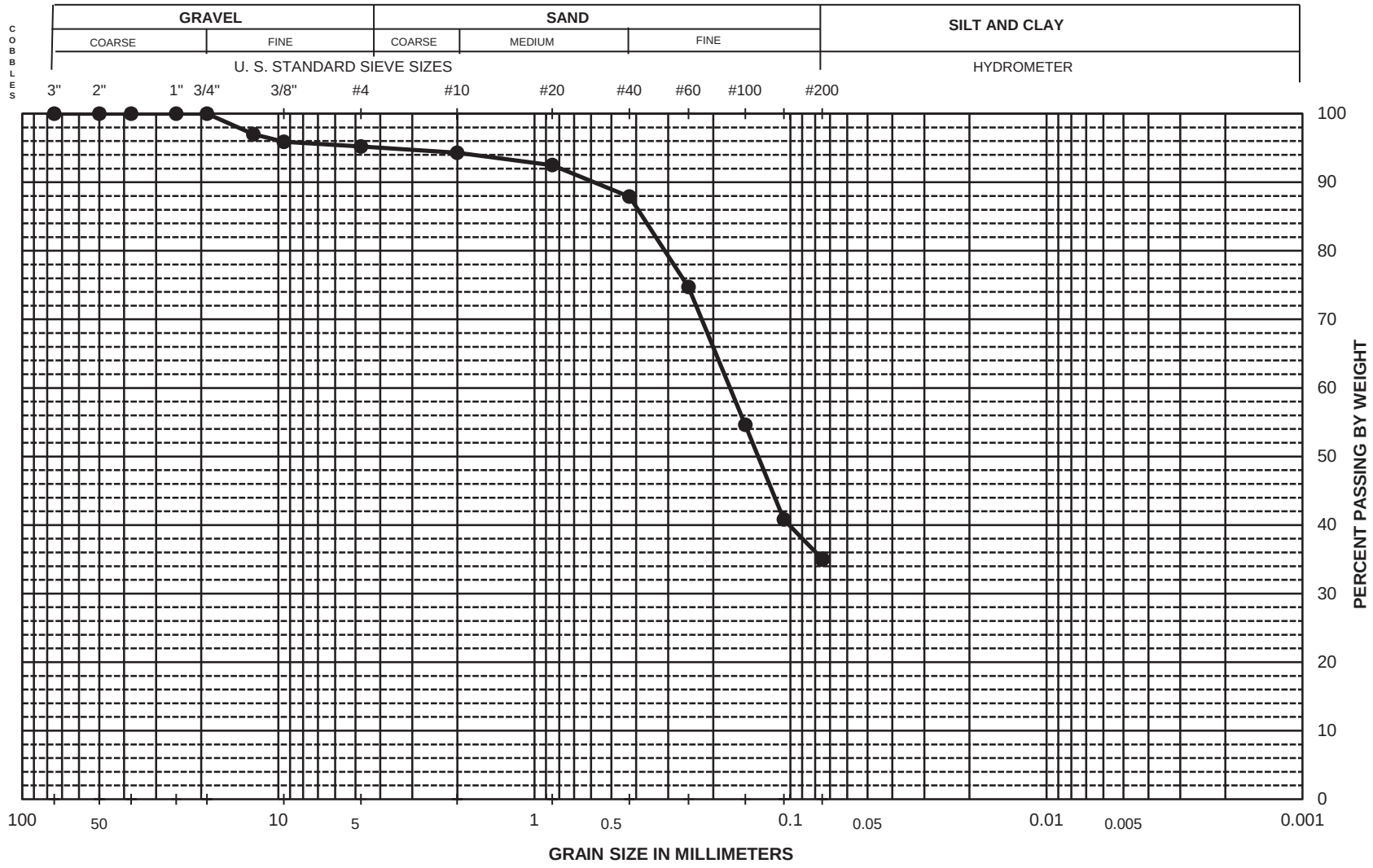
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24629G S03 5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	97.0
3/8"	9.50	95.9
#4	4.75	95.2
#10	2.00	94.3
#20	0.850	92.5
#40	0.425	87.9
#60	0.250	74.7
#100	0.150	54.6
#140	0.106	40.8
#200	0.075	35.0
Hydrometer Analysis	0.0750	35.0
	0.0750	35.0
	0.0750	35.0
	0.0750	35.0
	0.0750	35.0
	0.0750	35.0
	0.0750	35.0
	0.0750	35.0
	0.0750	35.0
	0.0750	35.0
	0.0750	35.0

% Cobbles	---
% Gravel	4.8
% Sand	60.2
% Fines	35.0
D_{85}	0.378
D_{60}	0.172
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24703G	4	7.5	●	13.2	21	8		**Very dark grayish brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

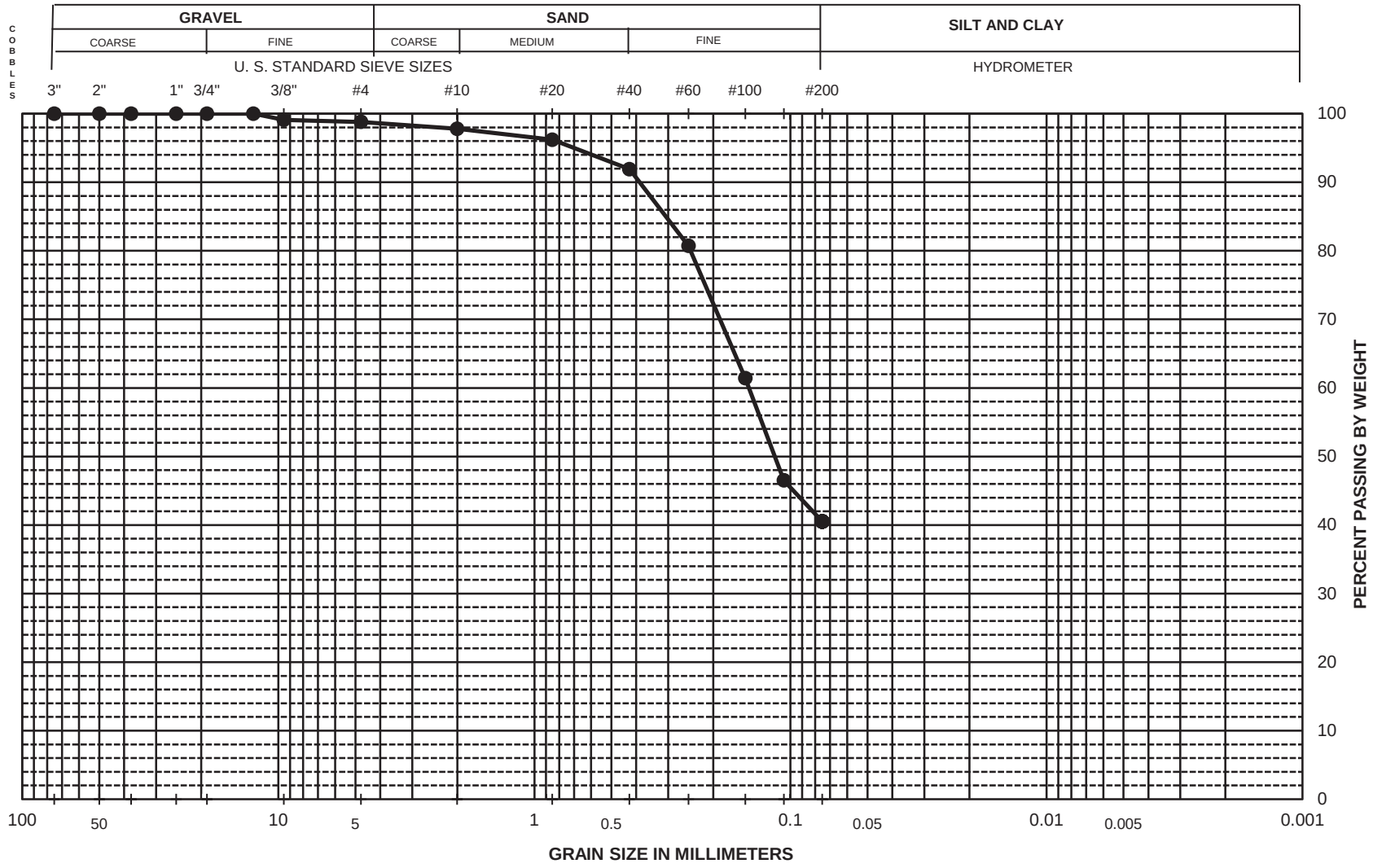
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24703G S04 7.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	99.1
#4	4.75	98.8
#10	2.00	97.8
#20	0.850	96.2
#40	0.425	91.9
#60	0.250	80.7
#100	0.150	61.4
#140	0.106	46.5
#200	0.075	40.5
Hydrometer Analysis	0.0750	40.5
	0.0750	40.5
	0.0750	40.5
	0.0750	40.5
	0.0750	40.5
	0.0750	40.5
	0.0750	40.5
	0.0750	40.5
	0.0750	40.5
	0.0750	40.5

% Cobbles	---
% Gravel	1.2
% Sand	58.3
% Fines	40.5
D_{85}	0.306
D_{60}	0.145
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24712G	2	2.5 - 5.0	●	7.2	25	12		**Olive brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

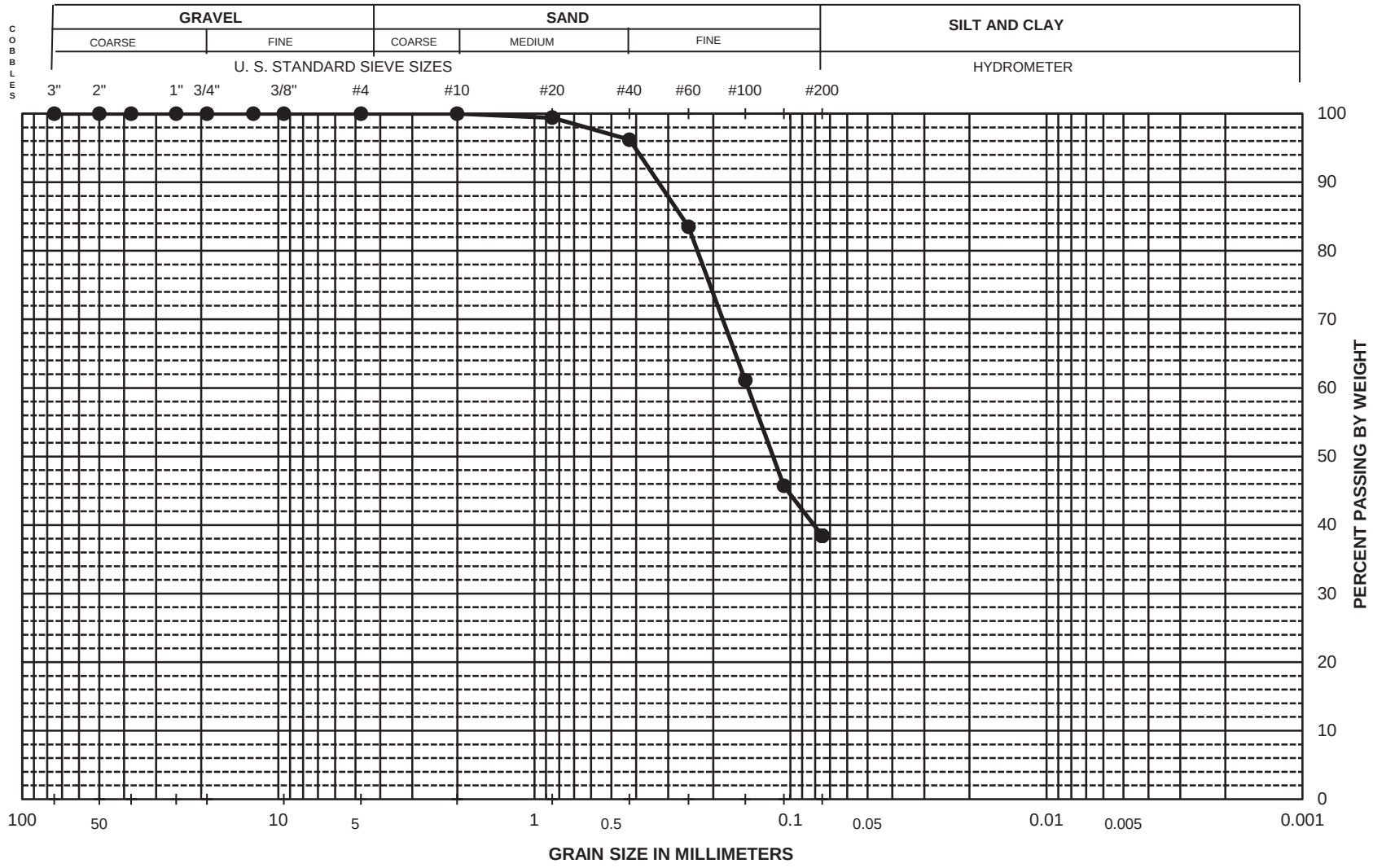
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24712G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.4
#40	0.425	96.2
#60	0.250	83.5
#100	0.150	61.1
#140	0.106	45.7
#200	0.075	38.4
Hydrometer Analysis	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4

% Cobbles	---
% Gravel	0.0
% Sand	61.6
% Fines	38.4
D_{85}	0.266
D_{60}	0.146
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24729G	3	5.0	●	13.0	26	13		**Strong brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

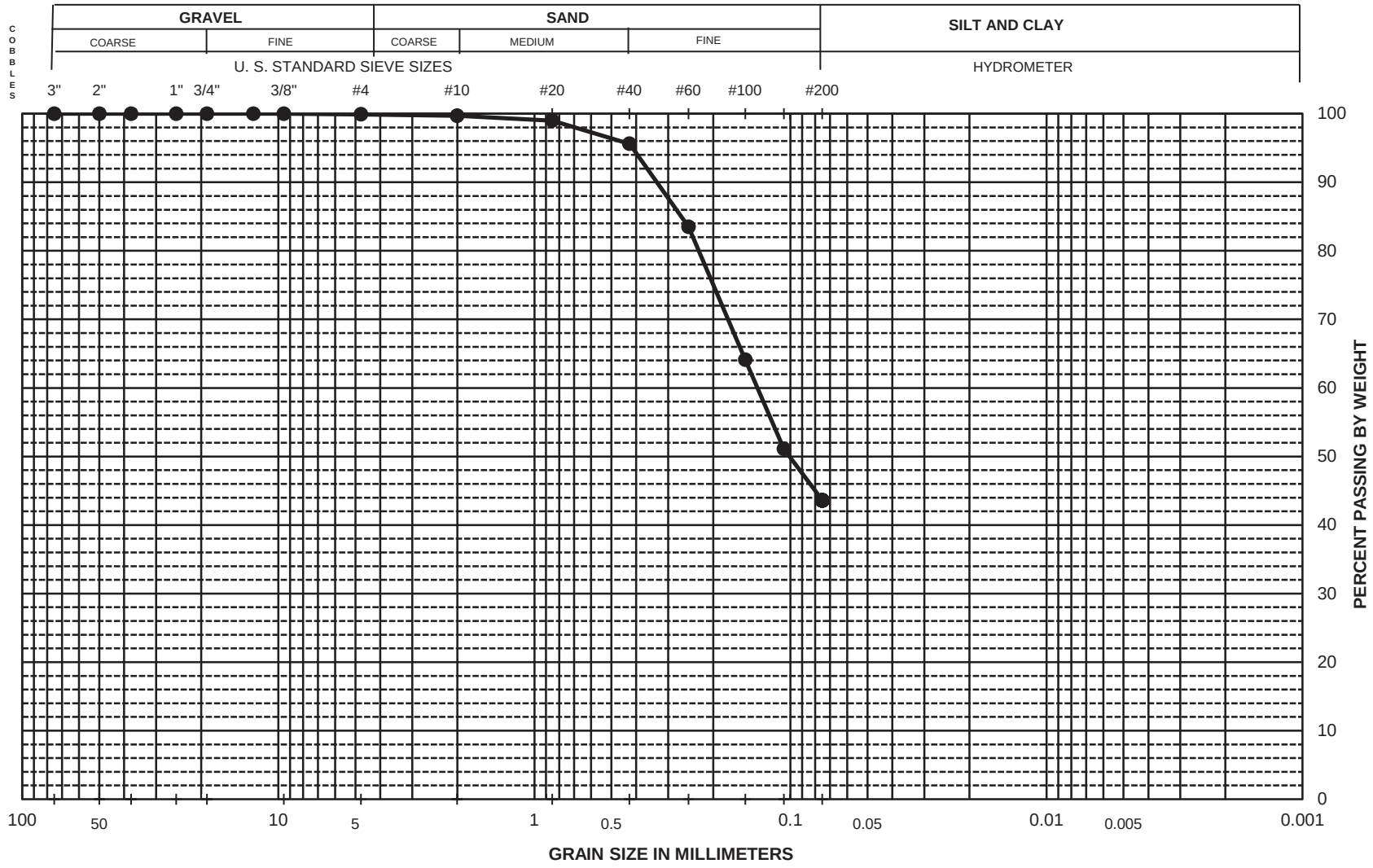
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24729G S03 5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.9
#10	2.00	99.7
#20	0.850	99.0
#40	0.425	95.6
#60	0.250	83.5
#100	0.150	64.1
#140	0.106	51.1
#200	0.075	43.6
Hydrometer Analysis	0.0750	43.6
	0.0750	43.6
	0.0750	43.6
	0.0750	43.6
	0.0750	43.6
	0.0750	43.6
	0.0750	43.6
	0.0750	43.6
	0.0750	43.6
	0.0750	43.6

% Cobbles	---
% Gravel	0.1
% Sand	56.3
% Fines	43.6
D_{85}	0.267
D_{60}	0.134
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24732G	2	2.5 - 5.0	●	10.1	17	4		**Dark yellowish brown silty, clayey Sand (SC-SM)**

PROJECT NAME: **Former Kast Property**

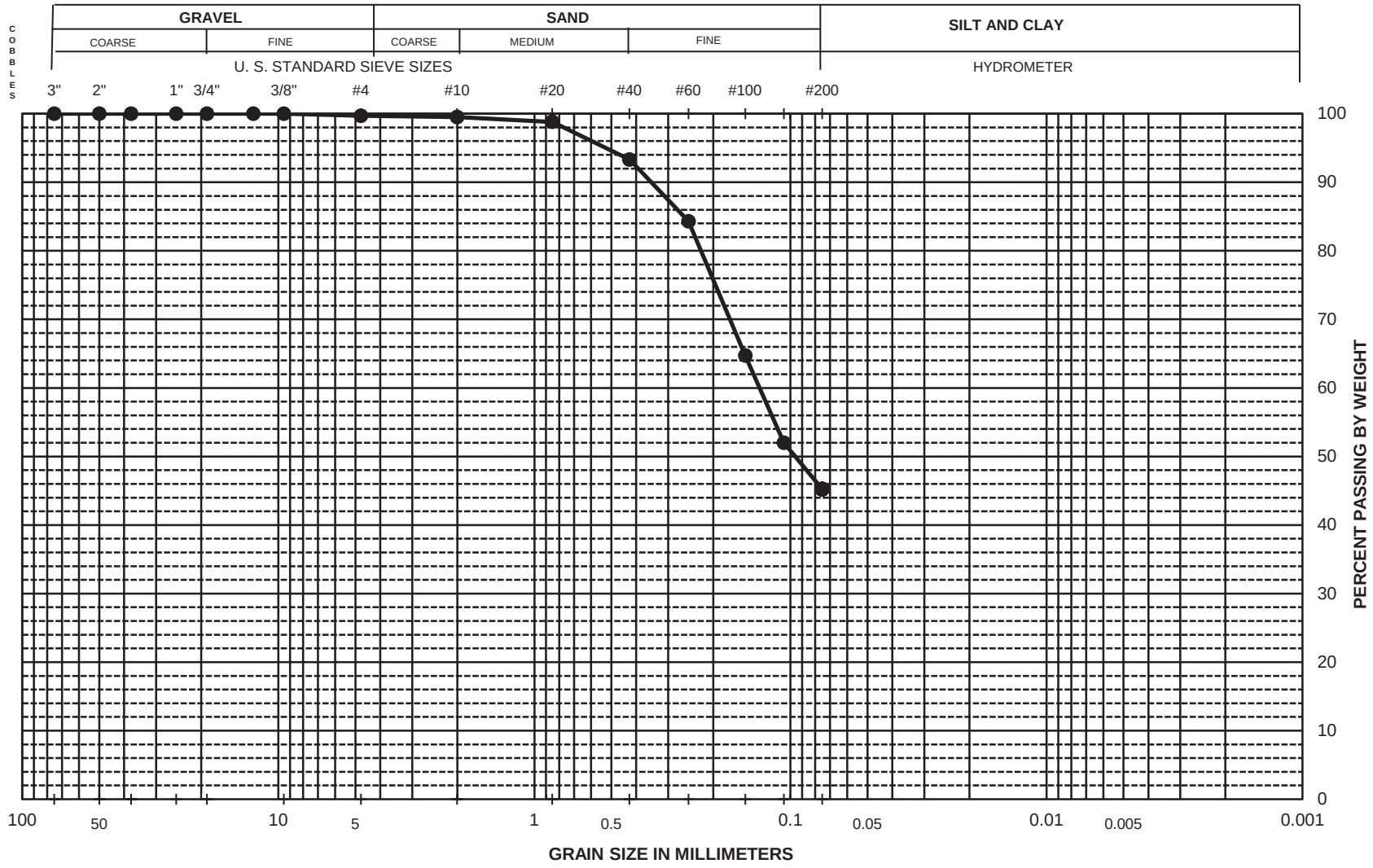
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24732G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.7
#10	2.00	99.5
#20	0.850	98.8
#40	0.425	93.3
#60	0.250	84.3
#100	0.150	64.7
#140	0.106	52.0
#200	0.075	45.2
Hydrometer Analysis	0.0750	45.2
	0.0750	45.2
	0.0750	45.2
	0.0750	45.2
	0.0750	45.2
	0.0750	45.2
	0.0750	45.2
	0.0750	45.2
	0.0750	45.2
	0.0750	45.2

% Cobbles	---
% Gravel	0.3
% Sand	54.5
% Fines	45.2
D_{85}	0.256
D_{60}	0.132
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
N24803G	2	2.5 - 5.0	●	10.3	18	5		**Brown silty, clayey Sand (SC-SM)**

PROJECT NAME: **Former Kast Property**

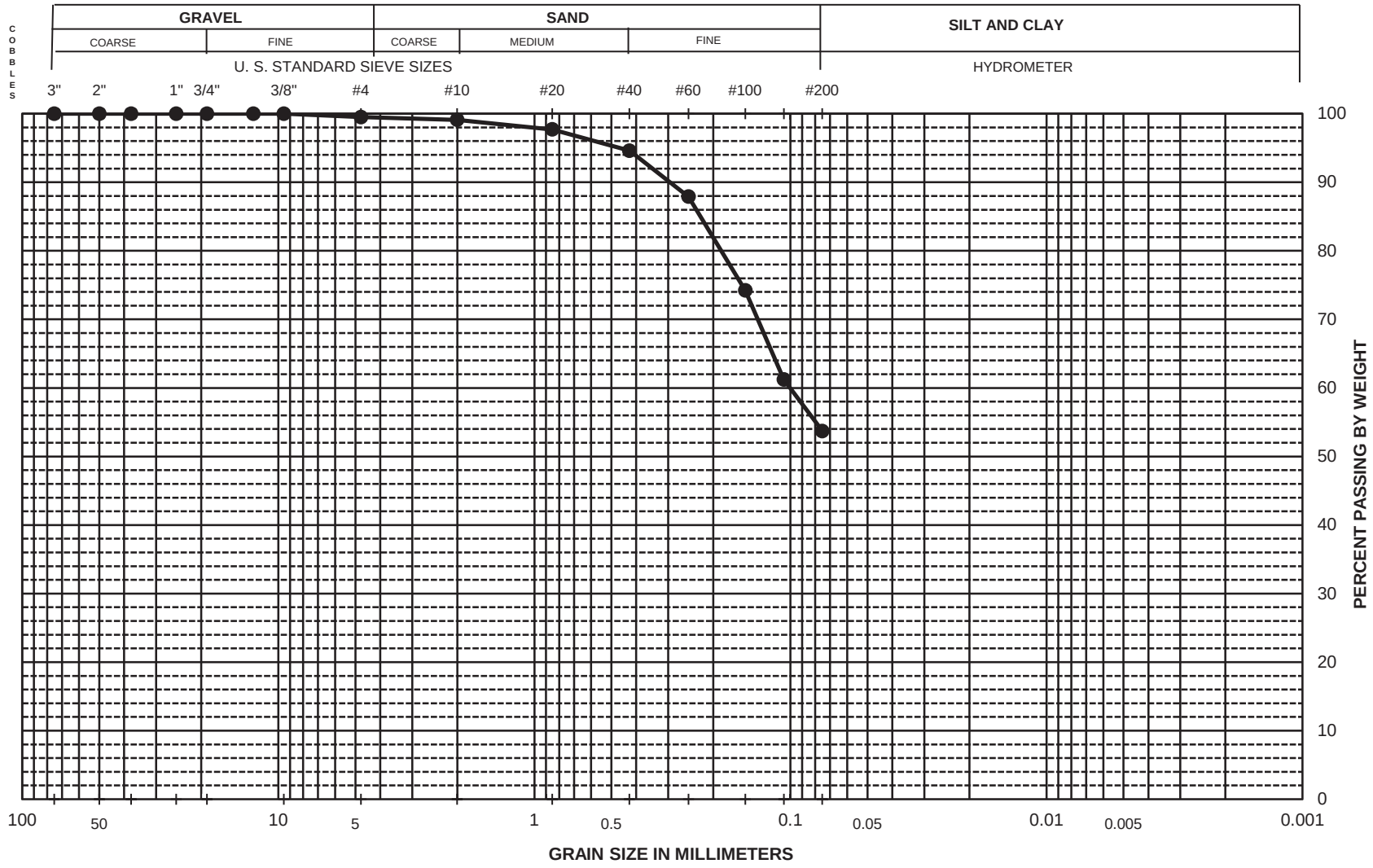
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast N24803G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.5
#10	2.00	99.1
#20	0.850	97.7
#40	0.425	94.6
#60	0.250	87.9
#100	0.150	74.2
#140	0.106	61.2
#200	0.075	53.7
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.5
% Sand	45.8
% Fines	53.7
D_{85}	0.224
D_{60}	0.100
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24402G	2	2.5 - 5.0	●	7.1	29	16		**Strong brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

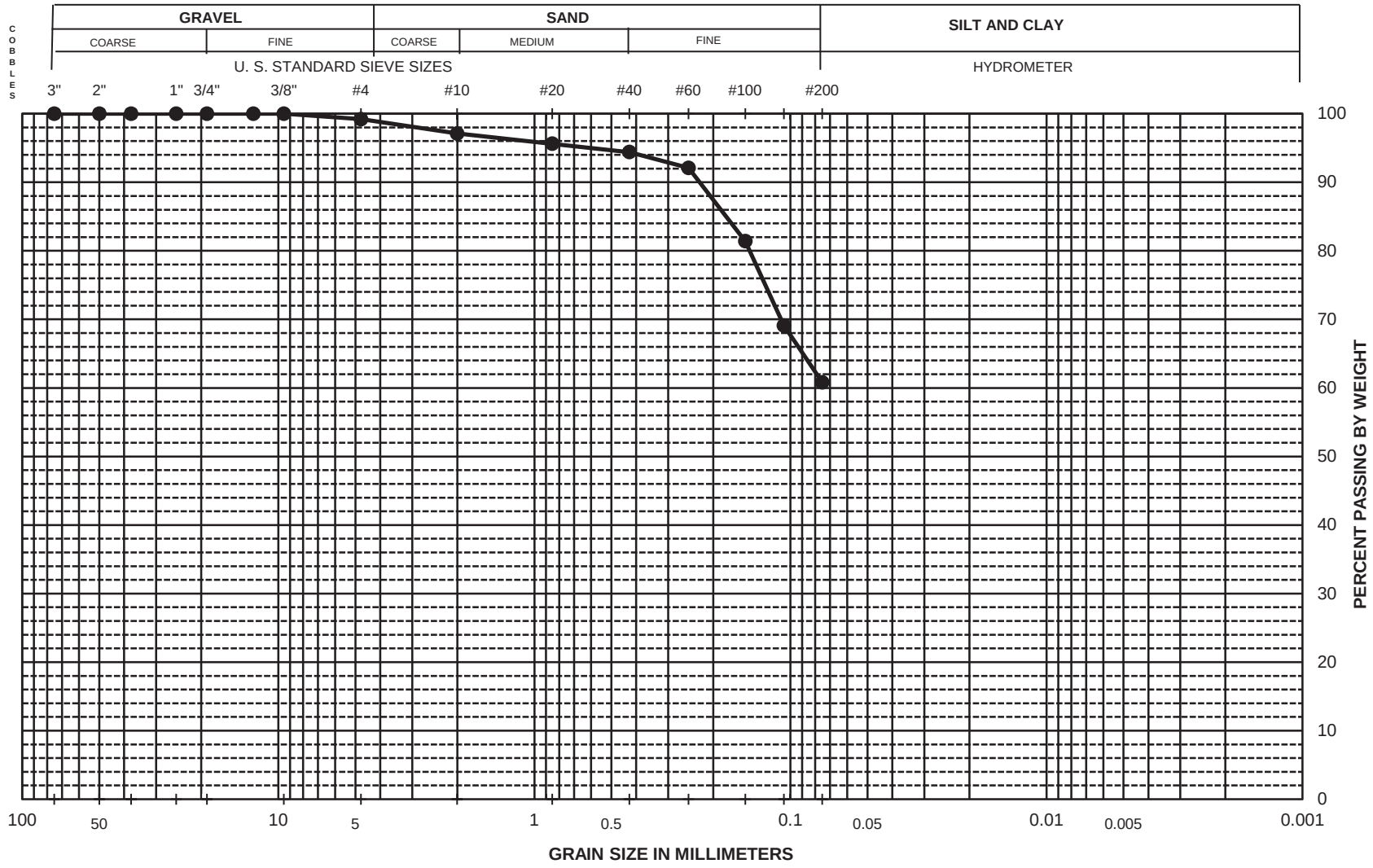
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24402G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.2
#10	2.00	97.1
#20	0.850	95.6
#40	0.425	94.4
#60	0.250	92.1
#100	0.150	81.4
#140	0.106	69.1
#200	0.075	60.8
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.8
% Sand	38.4
% Fines	60.8
D_{85}	0.178
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24411G	4	7.5	●	16.1	25	6		**Olive brown sandy silty Clay (CL-ML)**

PROJECT NAME: **Former Kast Property**

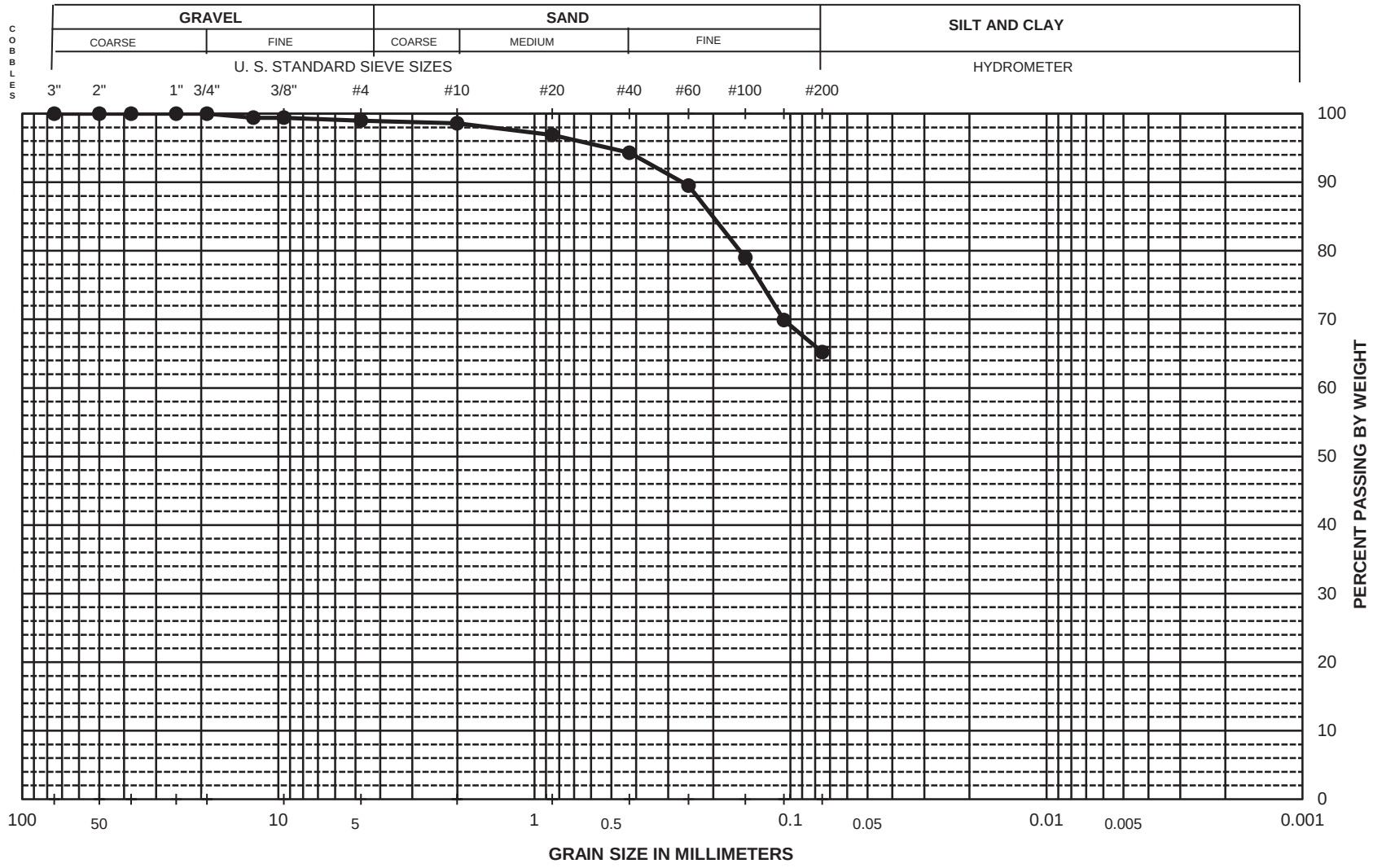
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24411G S04 7.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	99.4
3/8"	9.50	99.4
#4	4.75	99.0
#10	2.00	98.6
#20	0.850	96.9
#40	0.425	94.3
#60	0.250	89.5
#100	0.150	79.0
#140	0.106	69.9
#200	0.075	65.2
Hydrometer Analysis		

% Cobbles	---
% Gravel	1.0
% Sand	33.8
% Fines	65.2
D_{85}	0.201
D_{60}	#N/A
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24421G	2	2.5 - 5.0	●	3.8	51	36		**Dark brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

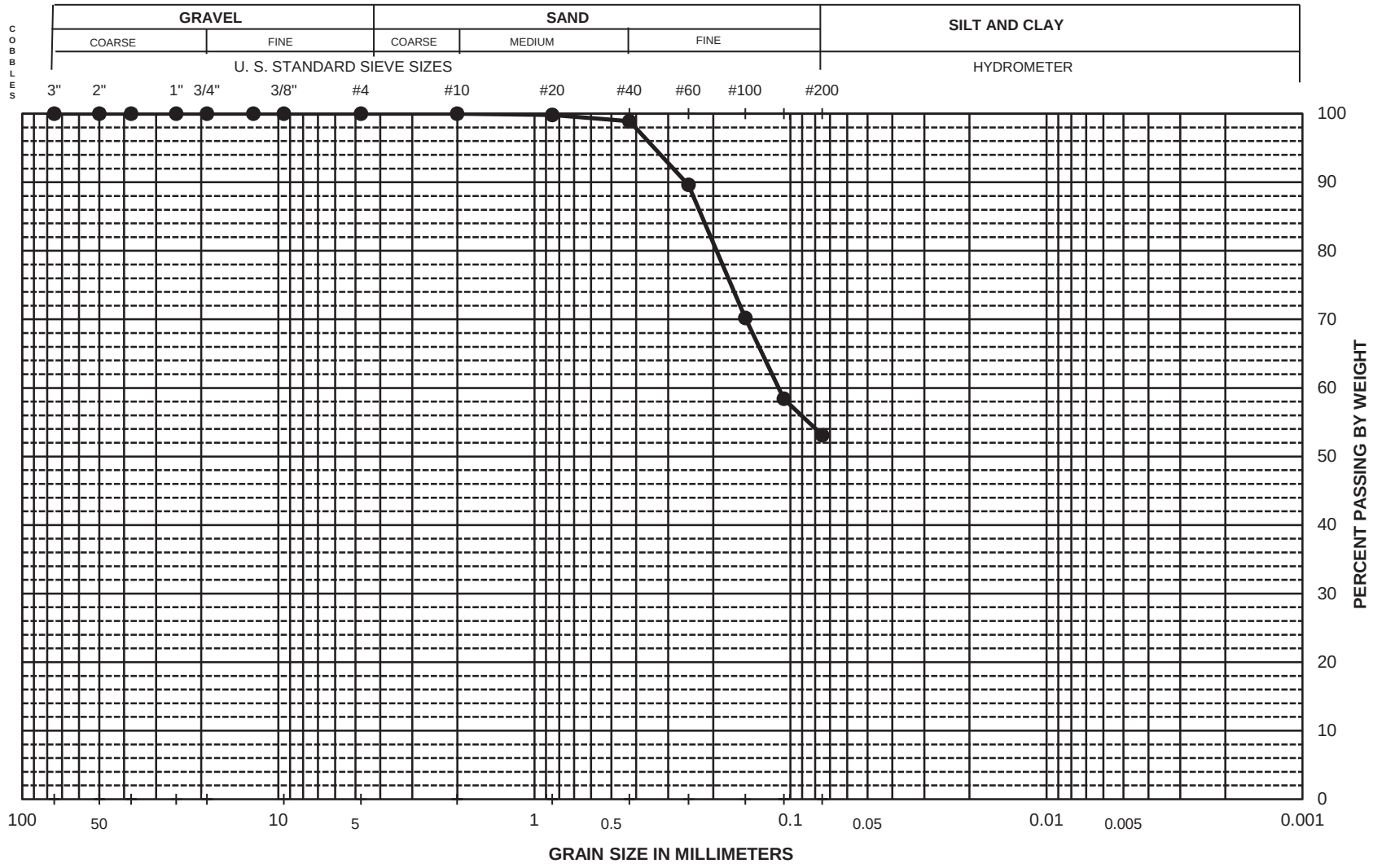
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24421G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.8
#40	0.425	98.9
#60	0.250	89.6
#100	0.150	70.2
#140	0.106	58.4
#200	0.075	53.1
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	46.9
% Fines	53.1
D_{85}	0.221
D_{60}	0.111
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24426G	3	5.0	●	15.3	34	18		**Strong brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

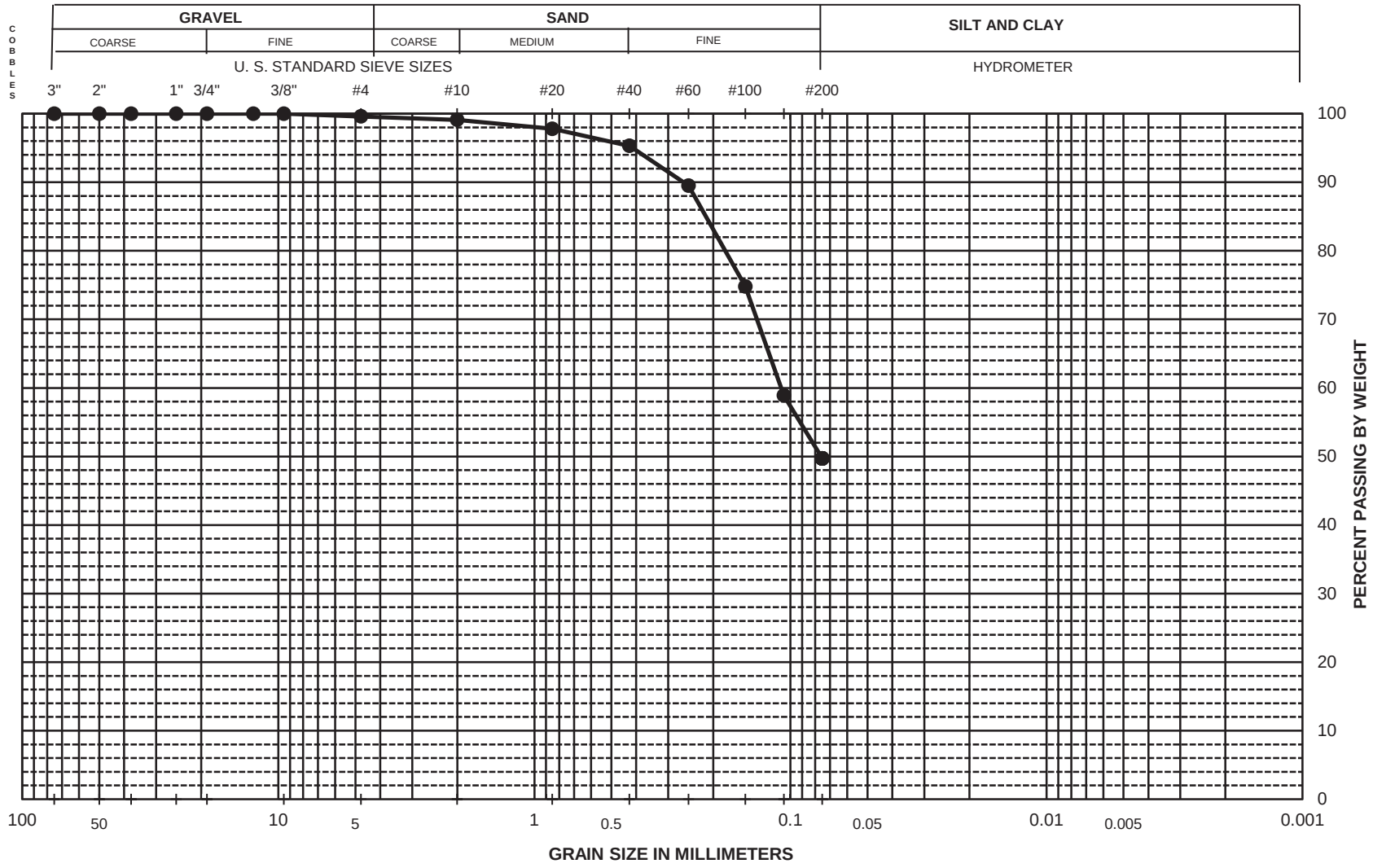
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24426G S03 5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.6
#10	2.00	99.1
#20	0.850	97.8
#40	0.425	95.3
#60	0.250	89.5
#100	0.150	74.8
#140	0.106	58.9
#200	0.075	49.7
Hydrometer Analysis	0.0750	49.7
	0.0750	49.7
	0.0750	49.7
	0.0750	49.7
	0.0750	49.7
	0.0750	49.7
	0.0750	49.7
	0.0750	49.7
	0.0750	49.7
	0.0750	49.7

% Cobbles	---
% Gravel	0.4
% Sand	49.9
% Fines	49.7
D_{85}	0.214
D_{60}	0.109
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24503G	2	2.5	●	12.5	30	17		**Brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

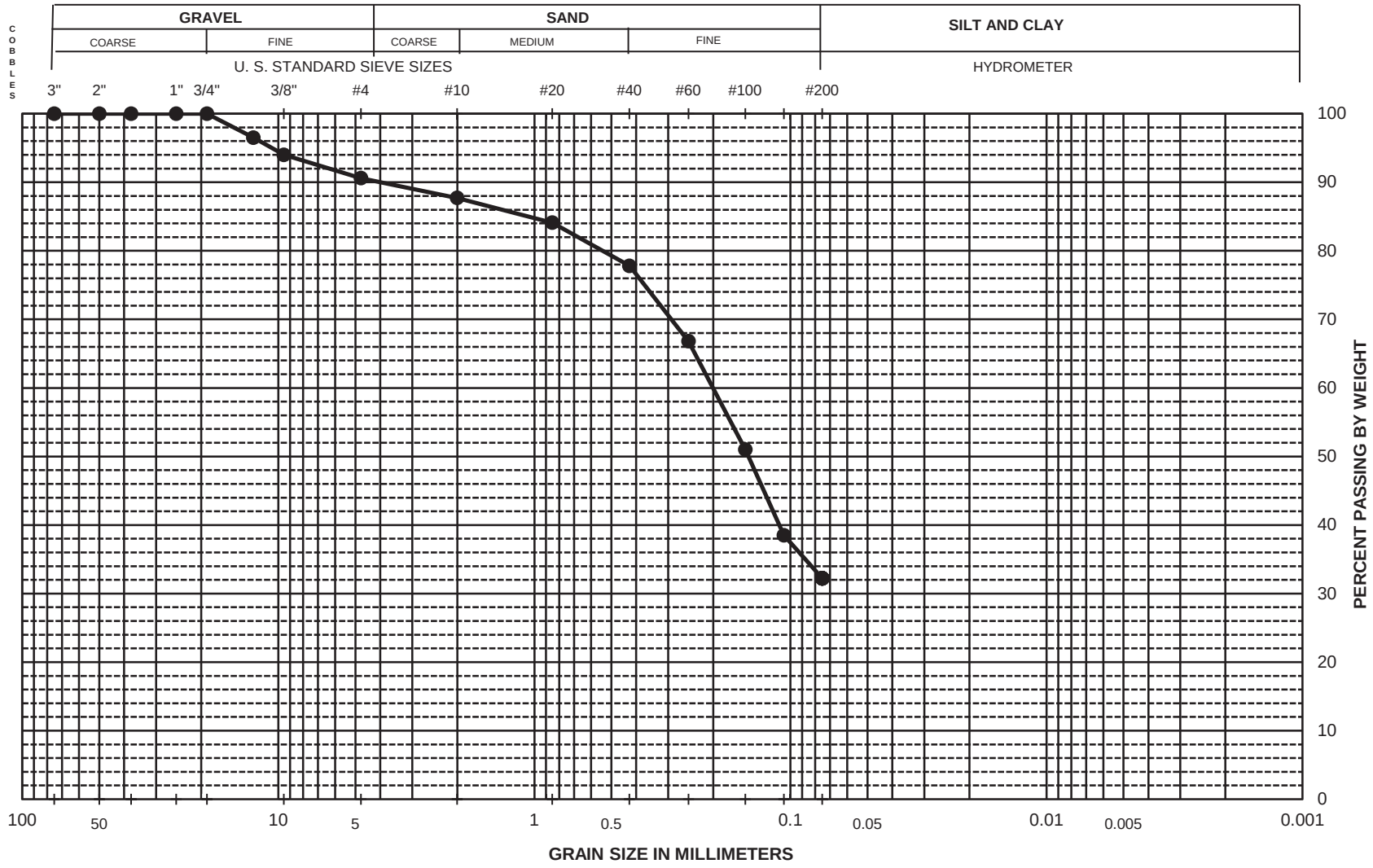
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24503G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	96.5
3/8"	9.50	94.0
#4	4.75	90.6
#10	2.00	87.7
#20	0.850	84.1
#40	0.425	77.8
#60	0.250	66.8
#100	0.150	51.0
#140	0.106	38.5
#200	0.075	32.2
Hydrometer Analysis	0.0750	32.2
	0.0750	32.2
	0.0750	32.2
	0.0750	32.2
	0.0750	32.2
	0.0750	32.2
	0.0750	32.2
	0.0750	32.2
	0.0750	32.2
	0.0750	32.2

% Cobbles	---
% Gravel	9.4
% Sand	58.4
% Fines	32.2
D_{85}	1.053
D_{60}	0.201
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24533G	2	2.5 - 5.0	●	7.4	25	10		**Brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

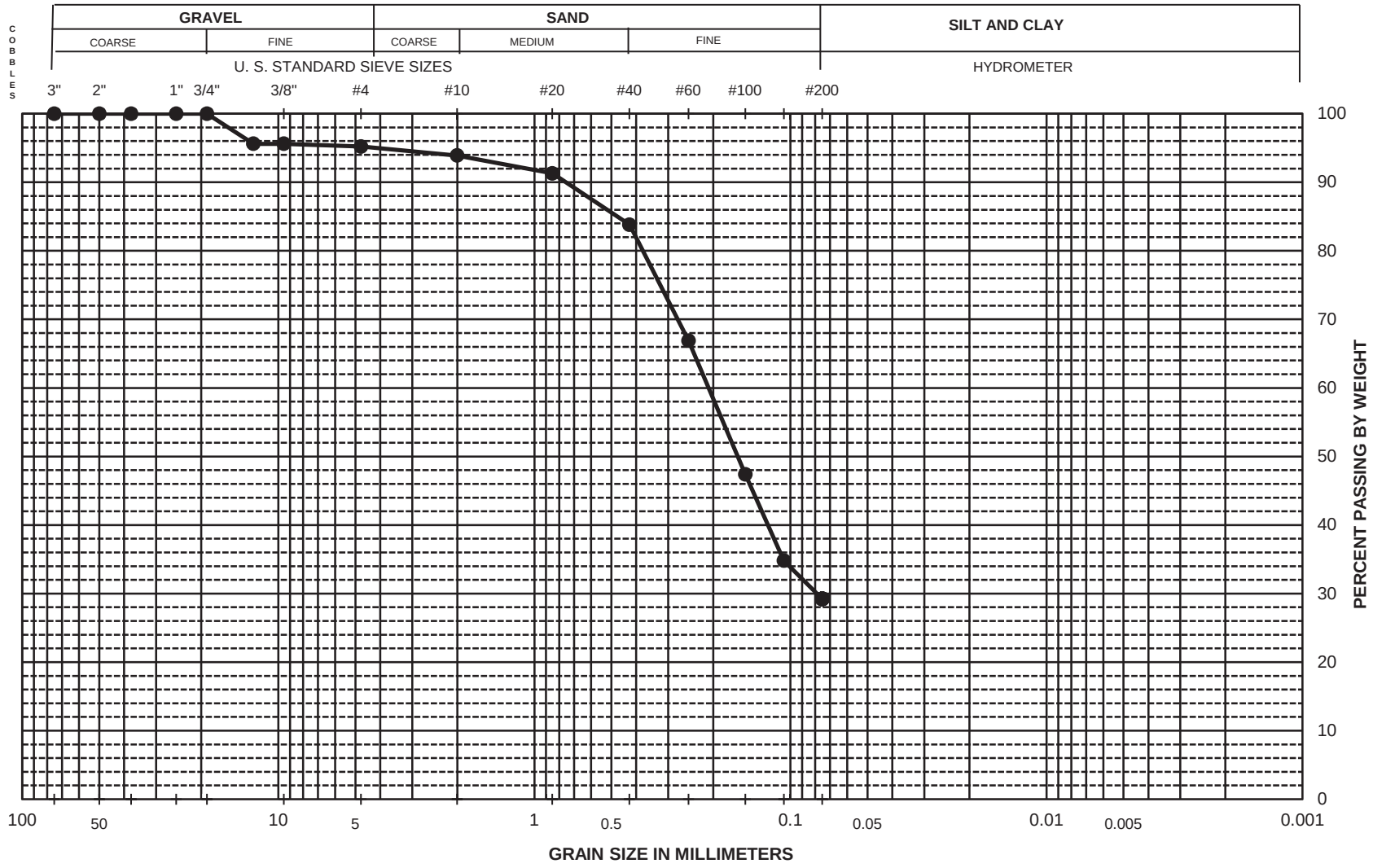
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24533G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	95.6
3/8"	9.50	95.6
#4	4.75	95.2
#10	2.00	93.9
#20	0.850	91.3
#40	0.425	83.8
#60	0.250	66.9
#100	0.150	47.4
#140	0.106	34.8
#200	0.075	29.2
Hydrometer Analysis	0.0750	29.2
	0.0750	29.2
	0.0750	29.2
	0.0750	29.2
	0.0750	29.2
	0.0750	29.2
	0.0750	29.2
	0.0750	29.2
	0.0750	29.2
	0.0750	29.2

% Cobbles	---
% Gravel	4.8
% Sand	66.0
% Fines	29.2
D_{85}	0.475
D_{60}	0.209
D_{30}	0.079
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24608G	1	2.5	●	13.8	26	12		**Dark grayish brown clayey Sand with shell fragments (SC)**

PROJECT NAME: **Former Kast Property**

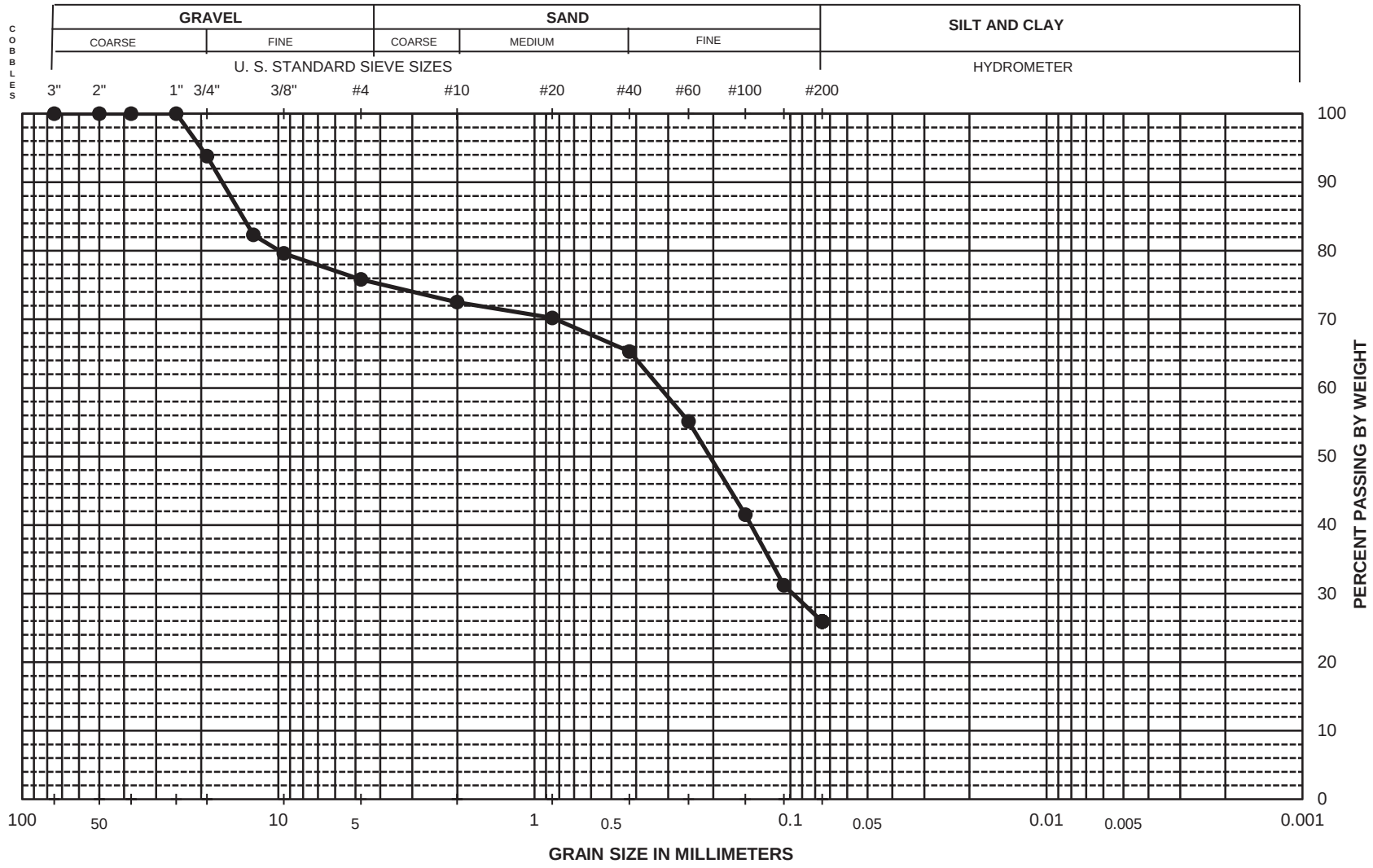
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24608G S012.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	93.8
1/2"	12.50	82.3
3/8"	9.50	79.6
#4	4.75	75.8
#10	2.00	72.5
#20	0.850	70.2
#40	0.425	65.3
#60	0.250	55.1
#100	0.150	41.5
#140	0.106	31.2
#200	0.075	25.9
Hydrometer Analysis	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9
	0.0750	25.9

% Cobbles	---
% Gravel	24.2
% Sand	49.9
% Fines	25.9
D_{85}	#REF!
D_{60}	0.323
D_{30}	0.098
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24618G	4	7.5	●	9.8	17	3		**Dark yellowish brown silty Sand with gravel (SM)**

PROJECT NAME: **Former Kast Property**

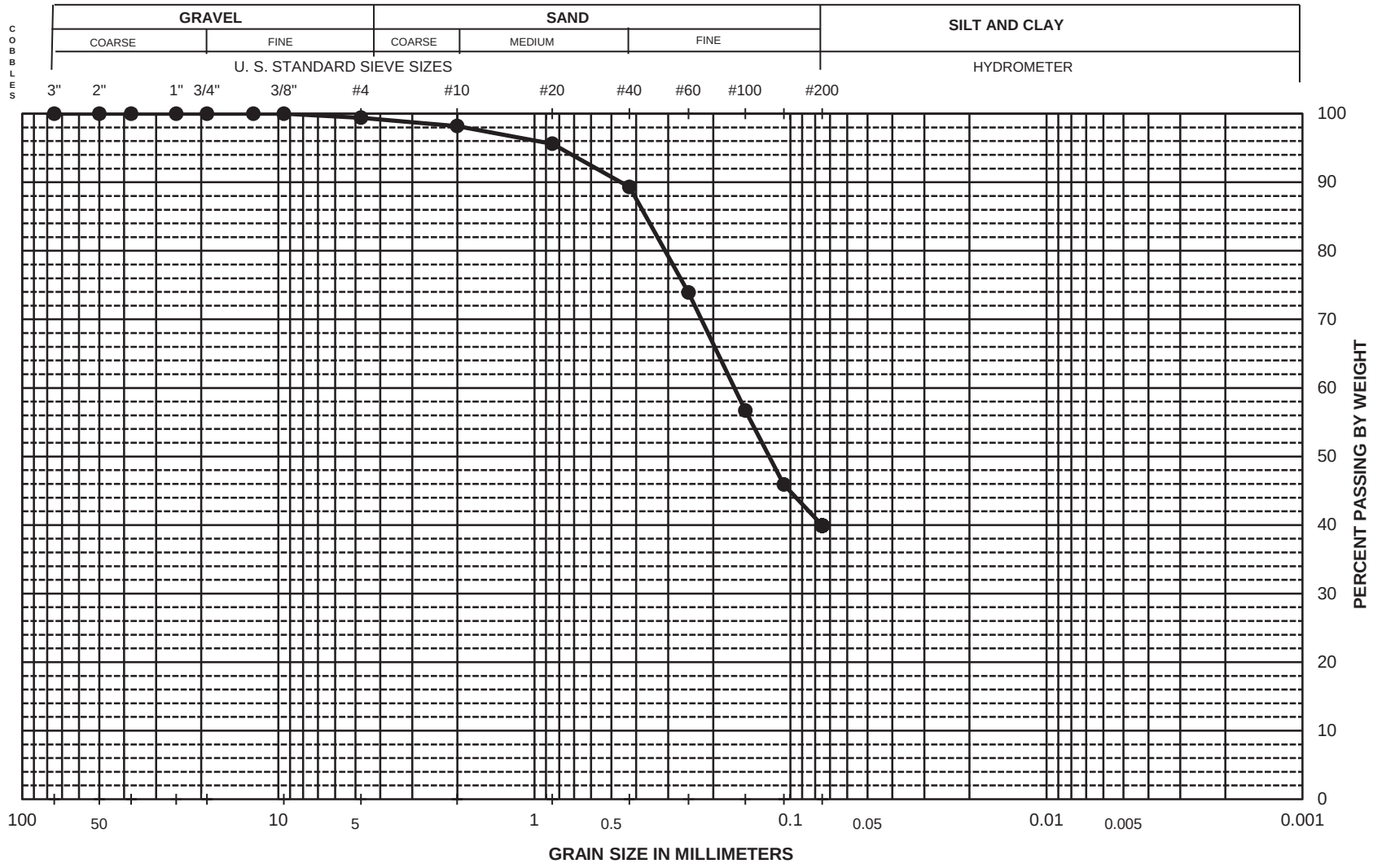
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24618G S04 7.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.4
#10	2.00	98.2
#20	0.850	95.6
#40	0.425	89.3
#60	0.250	73.9
#100	0.150	56.7
#140	0.106	45.9
#200	0.075	39.9
Hydrometer Analysis	0.0750	39.9
	0.0750	39.9
	0.0750	39.9
	0.0750	39.9
	0.0750	39.9
	0.0750	39.9
	0.0750	39.9
	0.0750	39.9
	0.0750	39.9
	0.0750	39.9

% Cobbles	---
% Gravel	0.6
% Sand	59.5
% Fines	39.9
D_{85}	0.366
D_{60}	0.165
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24708G	2	2.5 - 5.0	●	9.0	29	15		**Olive brown clayey Sand with seashells (SC)**

PROJECT NAME: **Former Kast Property**

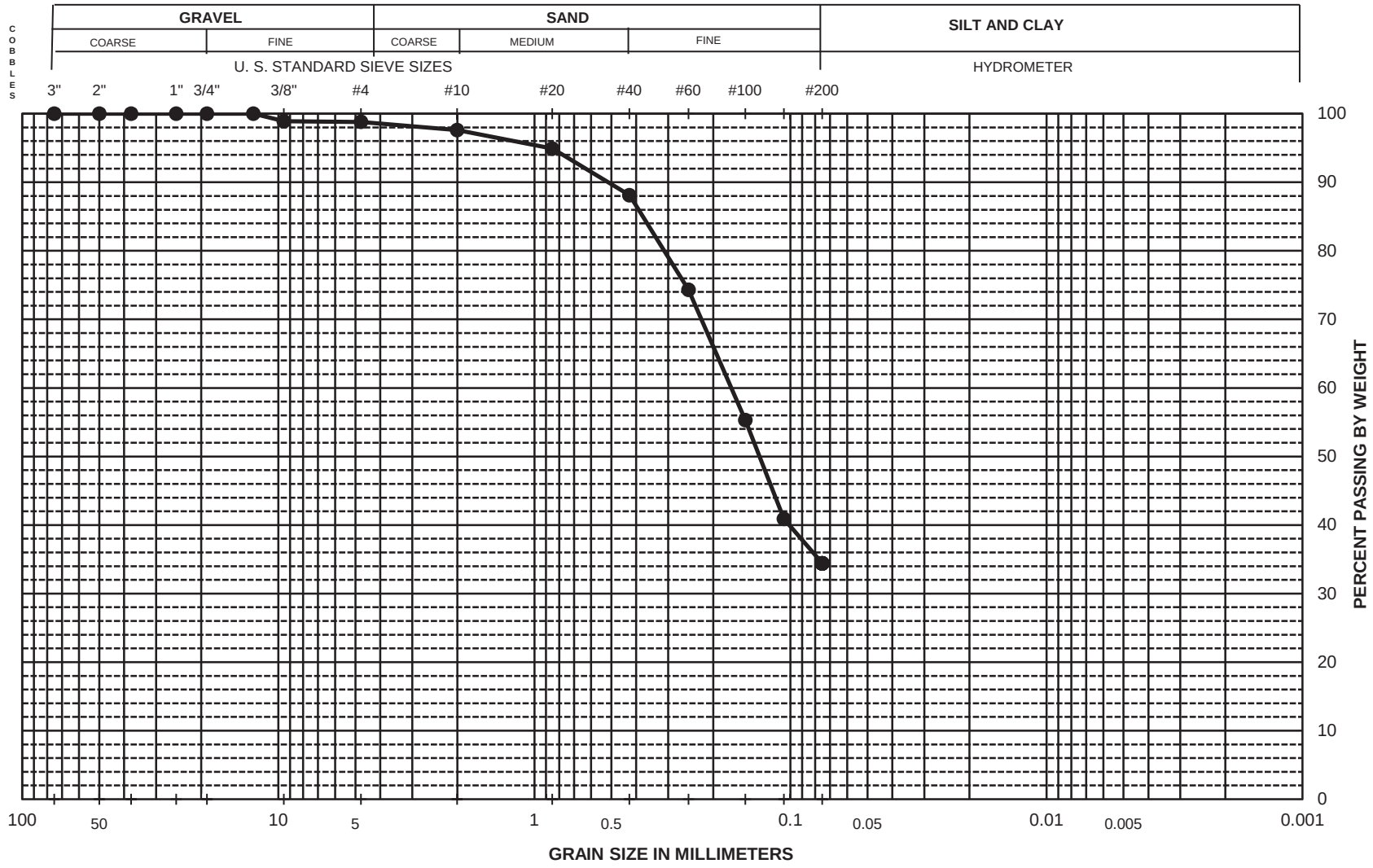
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24708G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	98.9
#4	4.75	98.8
#10	2.00	97.6
#20	0.850	94.9
#40	0.425	88.1
#60	0.250	74.3
#100	0.150	55.3
#140	0.106	40.9
#200	0.075	34.4
Hydrometer Analysis	0.0750	34.4
	0.0750	34.4
	0.0750	34.4
	0.0750	34.4
	0.0750	34.4
	0.0750	34.4
	0.0750	34.4
	0.0750	34.4
	0.0750	34.4
	0.0750	34.4

% Cobbles	---
% Gravel	1.2
% Sand	64.4
% Fines	34.4
D_{85}	0.377
D_{60}	0.170
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24709G	4	7.5	●	10.5	19	5		**Dark brown silty, clayey Sand (SC-SM)**

PROJECT NAME: **Former Kast Property**

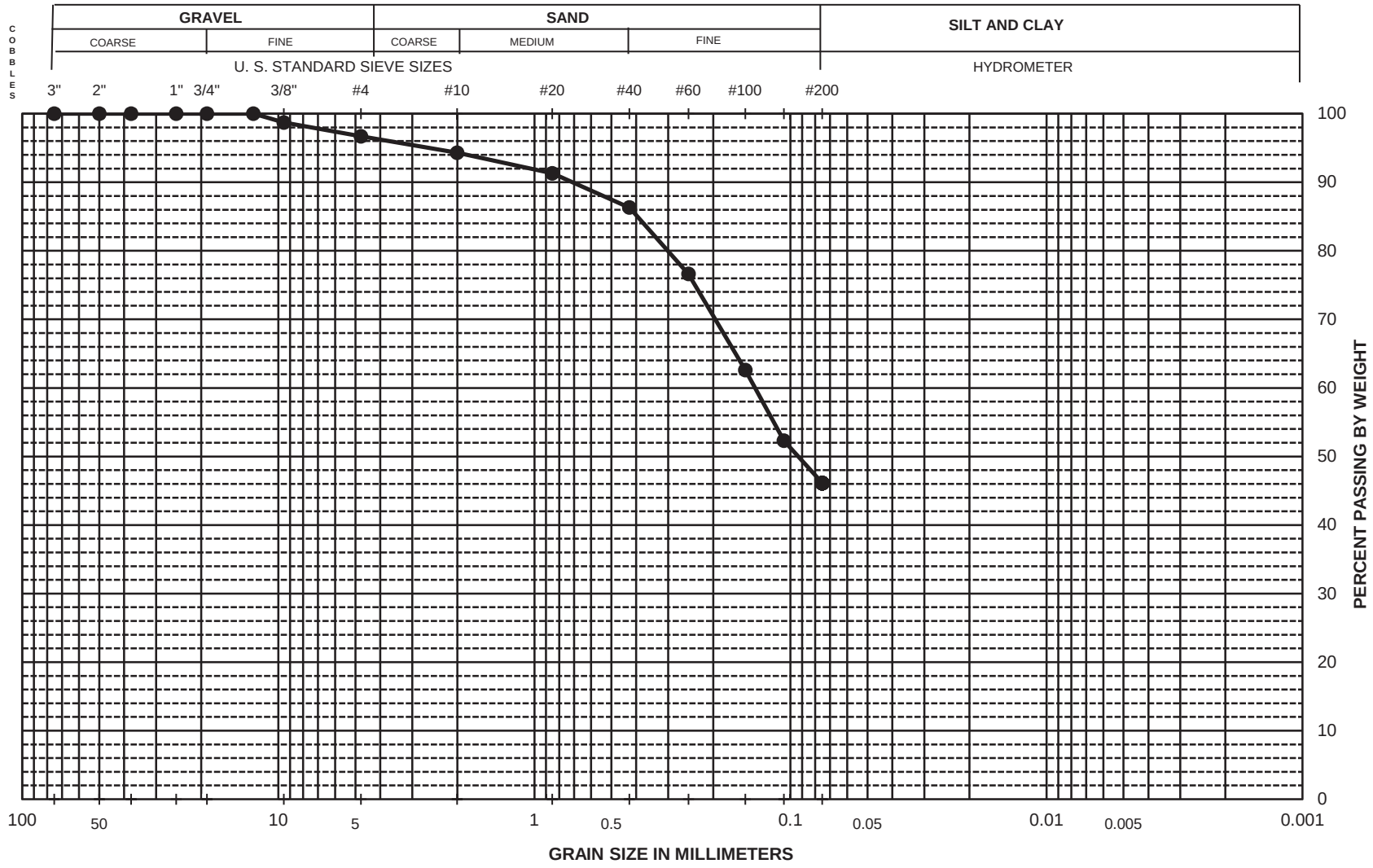
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24709G S04 7.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	98.7
#4	4.75	96.7
#10	2.00	94.3
#20	0.850	91.3
#40	0.425	86.3
#60	0.250	76.6
#100	0.150	62.6
#140	0.106	52.3
#200	0.075	46.1
Hydrometer Analysis	0.0750	46.1
	0.0750	46.1
	0.0750	46.1
	0.0750	46.1
	0.0750	46.1
	0.0750	46.1
	0.0750	46.1
	0.0750	46.1
	0.0750	46.1
	0.0750	46.1

% Cobbles	---
% Gravel	3.3
% Sand	50.6
% Fines	46.1
D_{85}	0.396
D_{60}	0.137
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24719G	2	2.5 - 5.0	●	9.1	29	12		**Olive brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

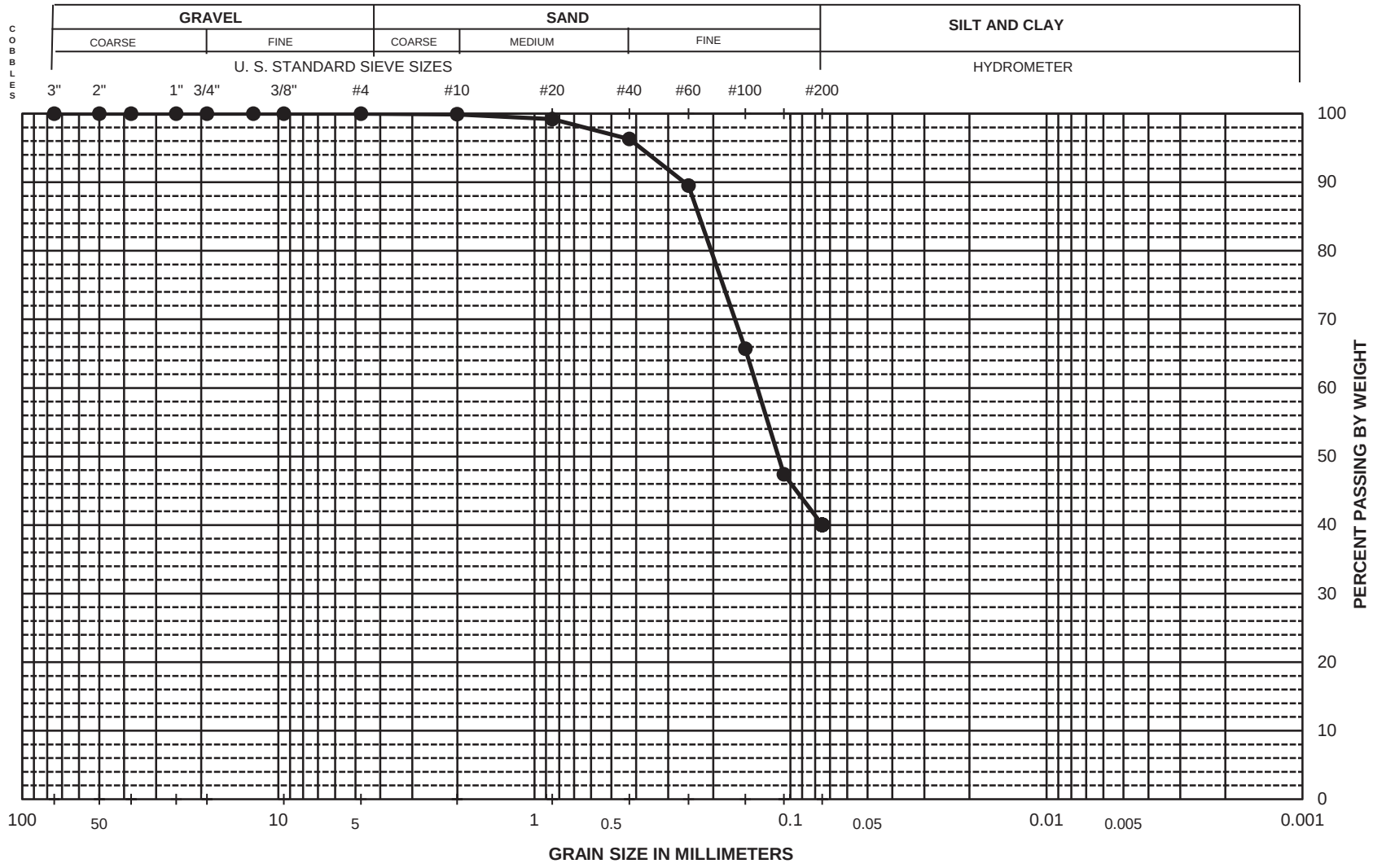
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24719G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.2
#40	0.425	96.3
#60	0.250	89.5
#100	0.150	65.7
#140	0.106	47.4
#200	0.075	40.0
Hydrometer Analysis	0.0750	40.0
	0.0750	40.0
	0.0750	40.0
	0.0750	40.0
	0.0750	40.0
	0.0750	40.0
	0.0750	40.0
	0.0750	40.0
	0.0750	40.0
	0.0750	40.0

% Cobbles	---
% Gravel	0.0
% Sand	60.0
% Fines	40.0
D_{85}	0.227
D_{60}	0.135
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24722G	3	5.0	●	8.9	15	1		**Strong brown silty Sand (SM)**

PROJECT NAME: **Former Kast Property**

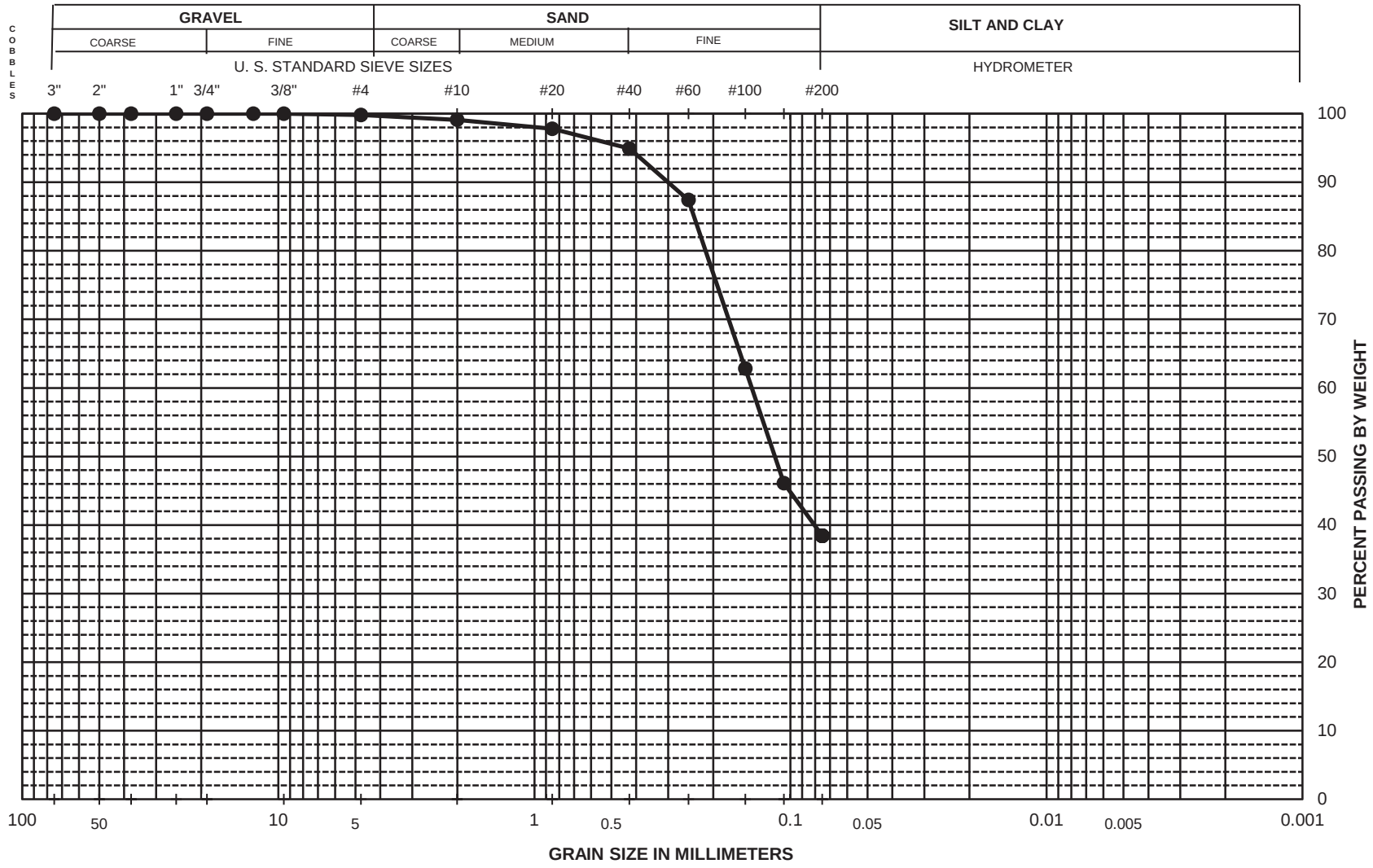
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24722G S03 5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.8
#10	2.00	99.1
#20	0.850	97.8
#40	0.425	94.9
#60	0.250	87.4
#100	0.150	62.8
#140	0.106	46.1
#200	0.075	38.4
Hydrometer Analysis	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4
	0.0750	38.4

% Cobbles	---
% Gravel	0.2
% Sand	61.4
% Fines	38.4
D_{85}	0.238
D_{60}	0.142
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24738G	2	2.5 - 5.0	●	12.8	15	NP		**Strong brown silty Sand (SM)**

PROJECT NAME: **Former Kast Property**

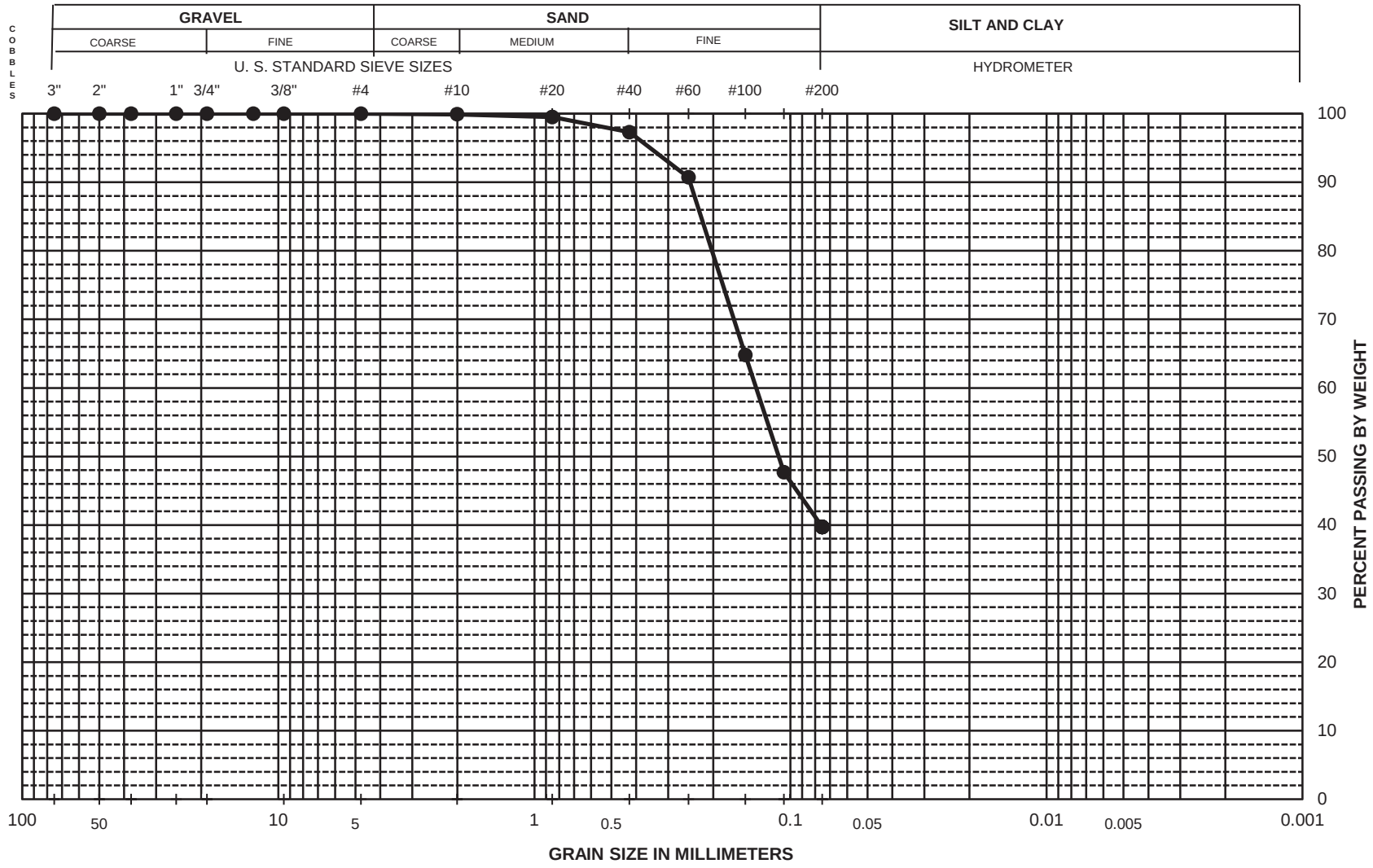
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24738G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.5
#40	0.425	97.3
#60	0.250	90.7
#100	0.150	64.8
#140	0.106	47.7
#200	0.075	39.7
Hydrometer Analysis	0.0750	39.7
	0.0750	39.7
	0.0750	39.7
	0.0750	39.7
	0.0750	39.7
	0.0750	39.7
	0.0750	39.7
	0.0750	39.7
	0.0750	39.7
	0.0750	39.7

% Cobbles	---
% Gravel	0.0
% Sand	60.3
% Fines	39.7
D_{85}	0.223
D_{60}	0.136
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24803G	3	5.0	●	12.7	16	1		**Light brown silty Sand (SM)**

PROJECT NAME: **Former Kast Property**

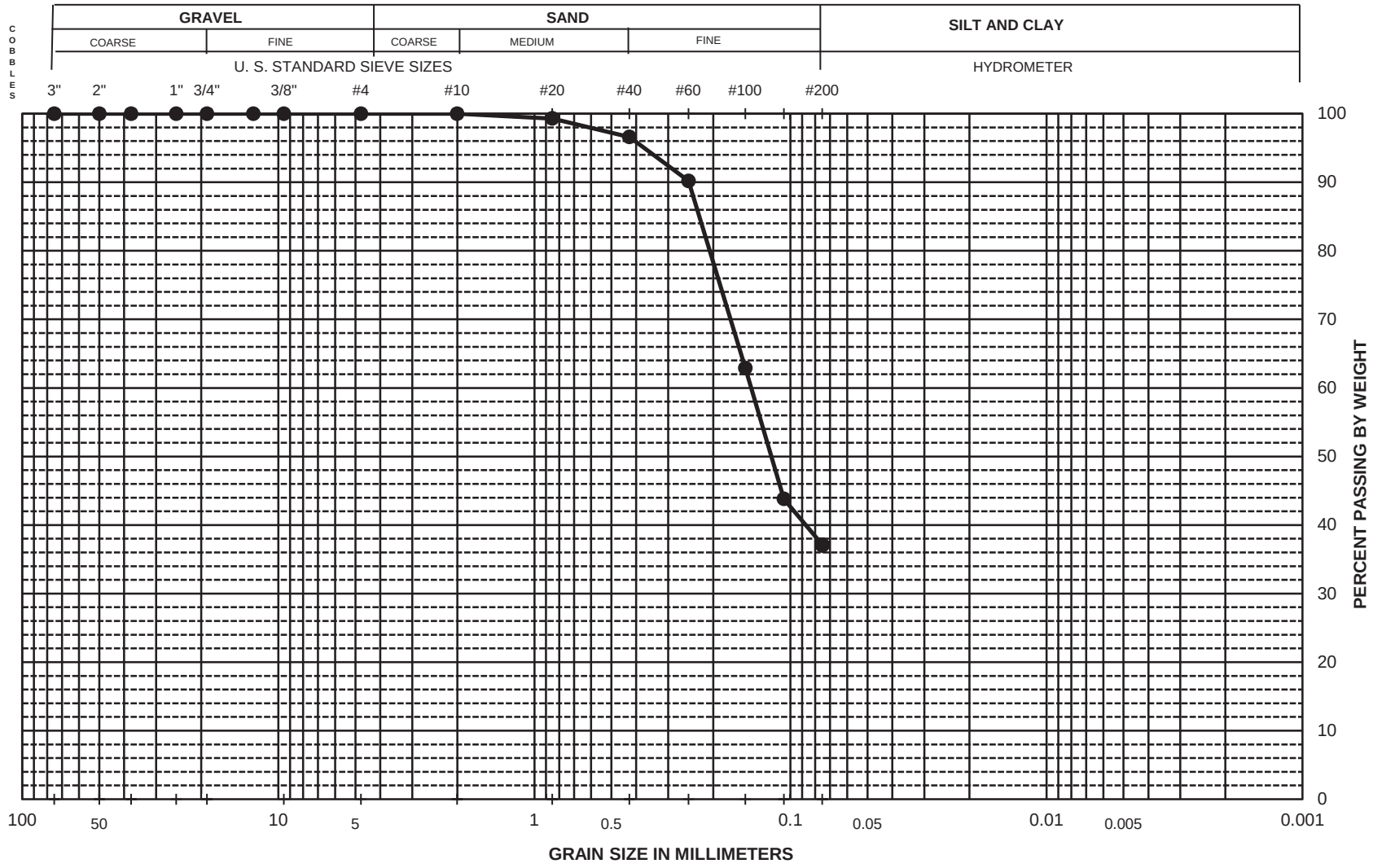
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24803G S03 5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	100.0
#20	0.850	99.3
#40	0.425	96.6
#60	0.250	90.2
#100	0.150	62.9
#140	0.106	43.8
#200	0.075	37.1
Hydrometer Analysis	0.0750	37.1
	0.0750	37.1
	0.0750	37.1
	0.0750	37.1
	0.0750	37.1
	0.0750	37.1
	0.0750	37.1
	0.0750	37.1
	0.0750	37.1
	0.0750	37.1

% Cobbles	---
% Gravel	0.0
% Sand	62.9
% Fines	37.1
D_{85}	0.227
D_{60}	0.142
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24812G	4	7.5	●	16.2	19	4		**Yellowish brown silty Sand (SM)**

PROJECT NAME: **Former Kast Property**

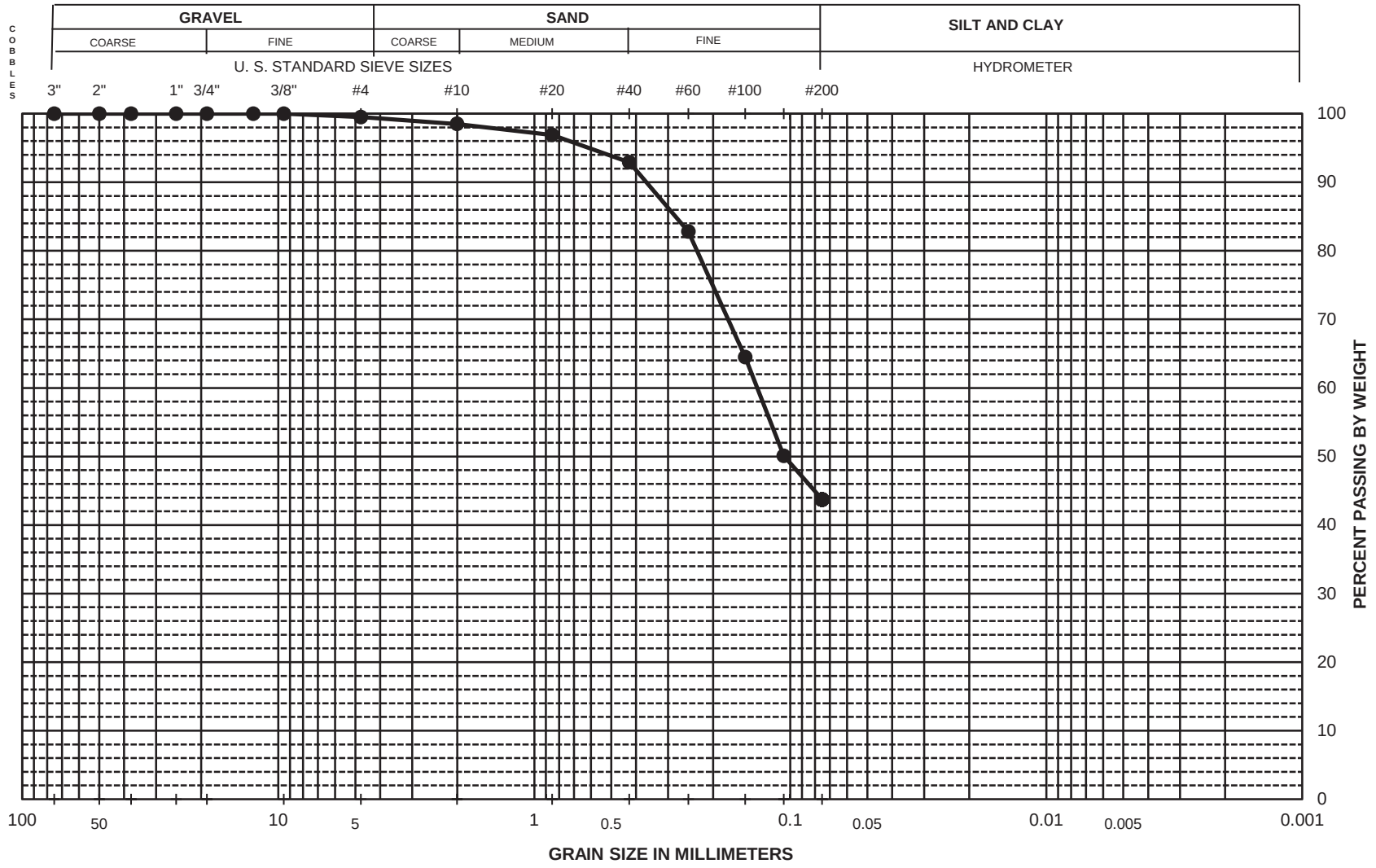
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24812G S04 7.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.5
#10	2.00	98.5
#20	0.850	96.9
#40	0.425	92.9
#60	0.250	82.8
#100	0.150	64.5
#140	0.106	50.1
#200	0.075	43.7
Hydrometer Analysis	0.0750	43.7
	0.0750	43.7
	0.0750	43.7
	0.0750	43.7
	0.0750	43.7
	0.0750	43.7
	0.0750	43.7
	0.0750	43.7
	0.0750	43.7
	0.0750	43.7

% Cobbles	---
% Gravel	0.5
% Sand	55.8
% Fines	43.7
D_{85}	0.281
D_{60}	0.135
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24819G	2	2.5 - 5.0	●	9.1	24	11		**Strong brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

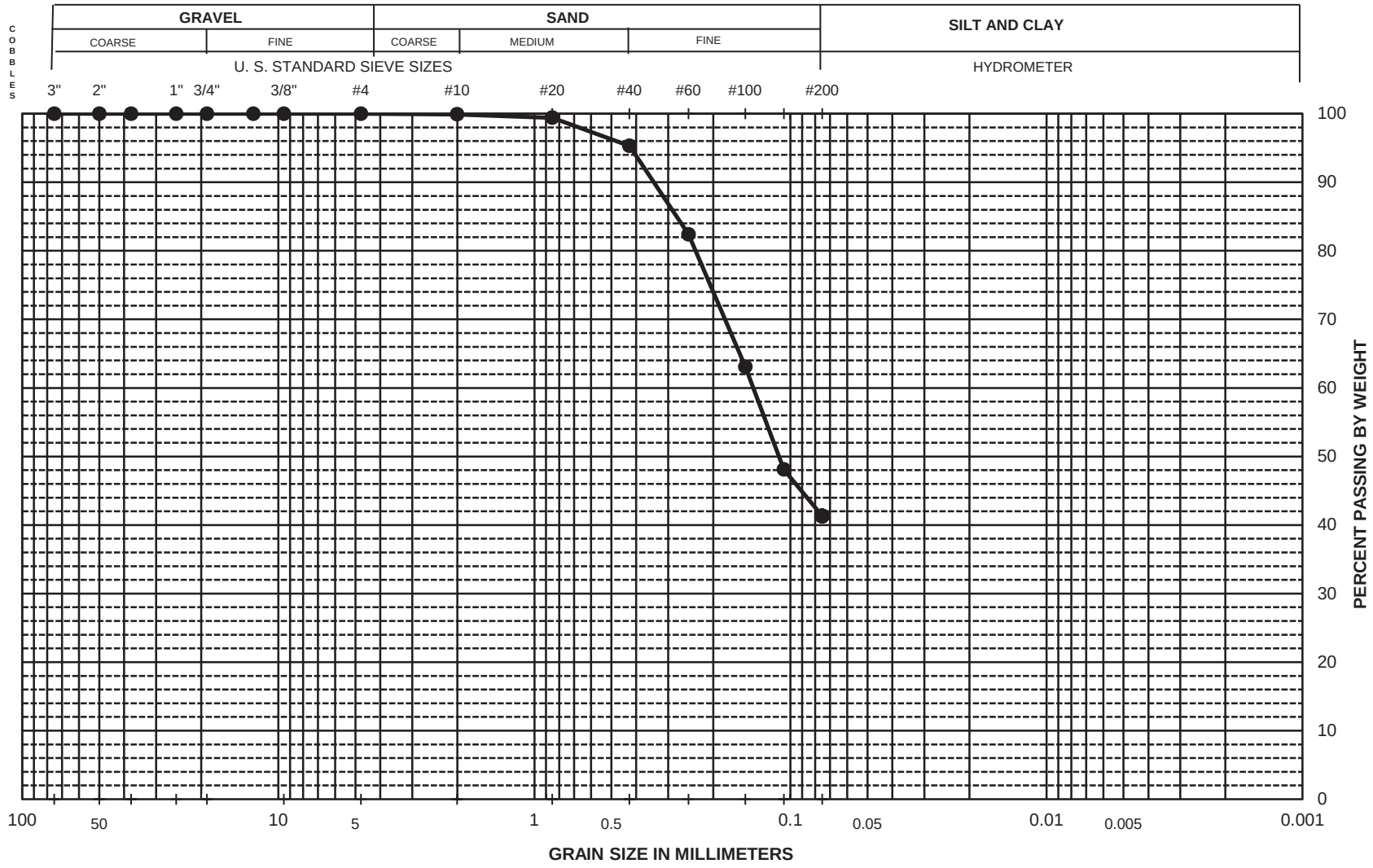
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24819G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.9
#20	0.850	99.4
#40	0.425	95.3
#60	0.250	82.4
#100	0.150	63.1
#140	0.106	48.1
#200	0.075	41.3
Hydrometer Analysis	0.0750	41.3
	0.0750	41.3
	0.0750	41.3
	0.0750	41.3
	0.0750	41.3
	0.0750	41.3
	0.0750	41.3
	0.0750	41.3
	0.0750	41.3
	0.0750	41.3

% Cobbles	---
% Gravel	0.0
% Sand	58.7
% Fines	41.3
D_{85}	0.278
D_{60}	0.140
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
P24833G	1	2.5	●	10.7	26	13		**Dark yellowish brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

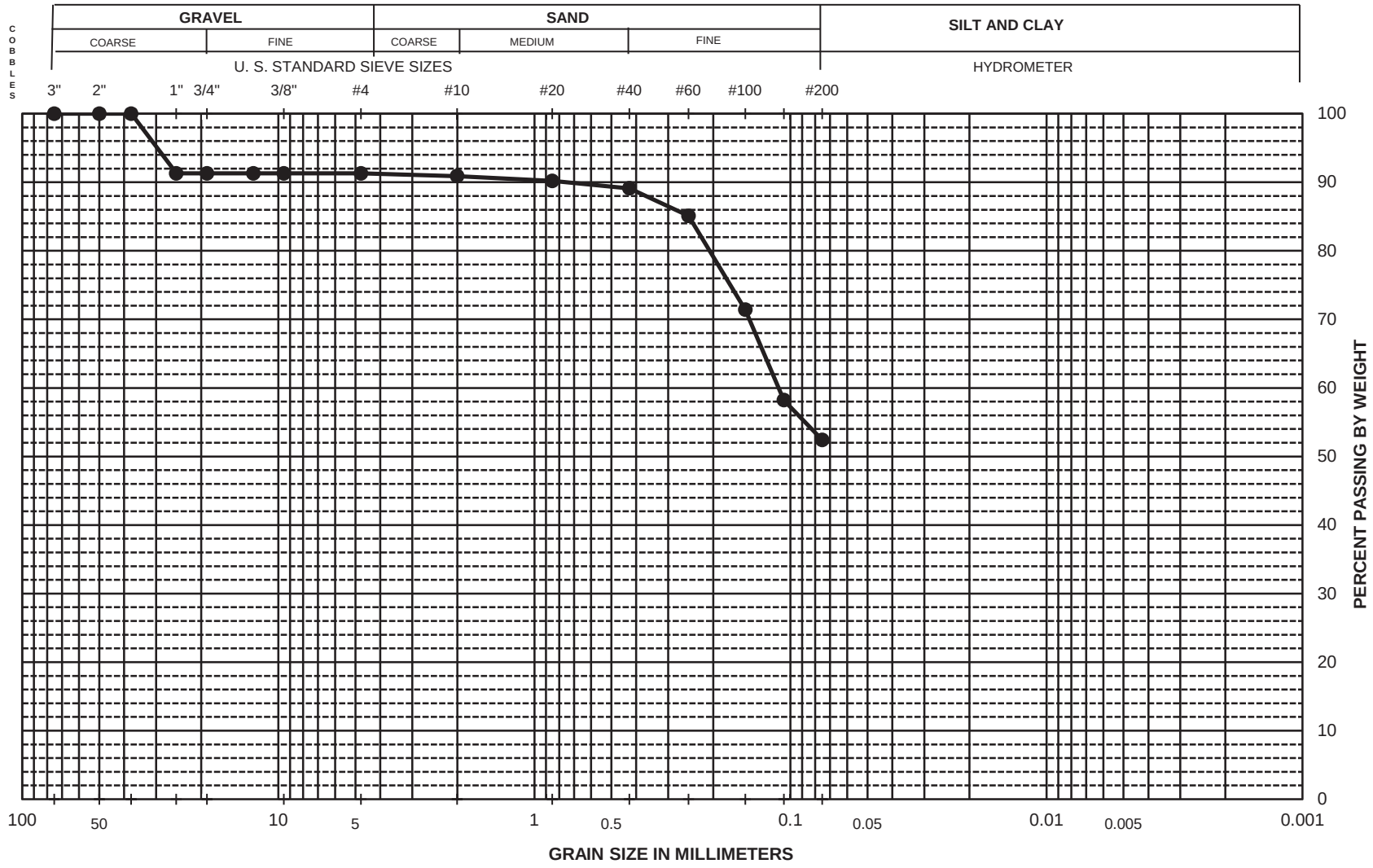
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast P24833G S01 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	91.3
3/4"	19.00	91.3
1/2"	12.50	91.3
3/8"	9.50	91.3
#4	4.75	91.3
#10	2.00	90.9
#20	0.850	90.2
#40	0.425	89.1
#60	0.250	85.1
#100	0.150	71.4
#140	0.106	58.2
#200	0.075	52.4
Hydrometer Analysis		

% Cobbles	---
% Gravel	8.7
% Sand	38.9
% Fines	52.4
D_{85}	0.249
D_{60}	0.111
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24412G	3	5.0	●	20.3	30	16		**Olive gray sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

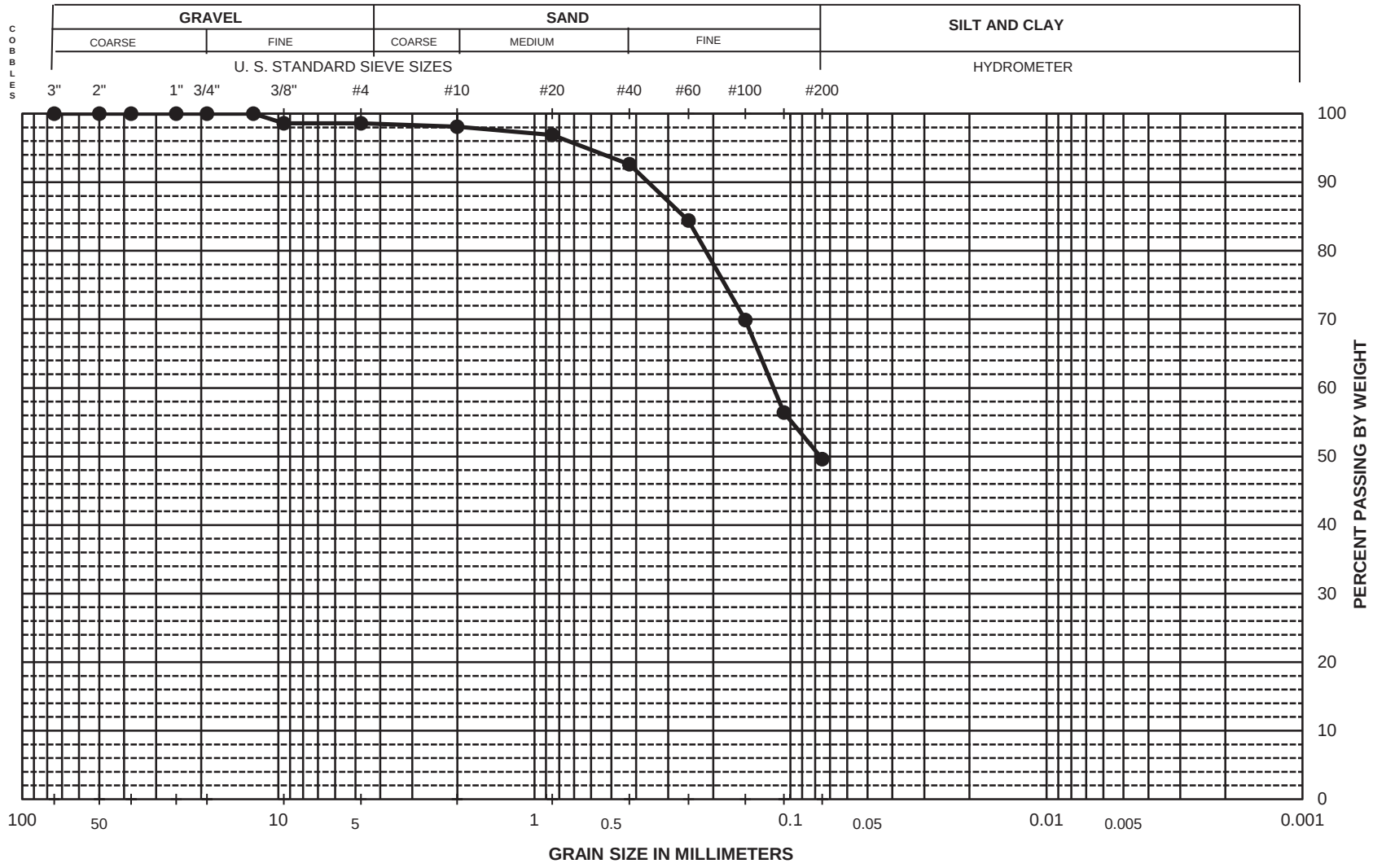
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24412G S03 5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	98.6
#4	4.75	98.6
#10	2.00	98.1
#20	0.850	96.9
#40	0.425	92.6
#60	0.250	84.4
#100	0.150	69.9
#140	0.106	56.4
#200	0.075	49.6
Hydrometer Analysis		

% Cobbles	---
% Gravel	1.4
% Sand	49.0
% Fines	49.6
D_{85}	0.260
D_{60}	0.116
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24423G	3	5.0	●	12.7	---	---		**Dark brown Clay (SC)**

PROJECT NAME: **Former Kast Property**

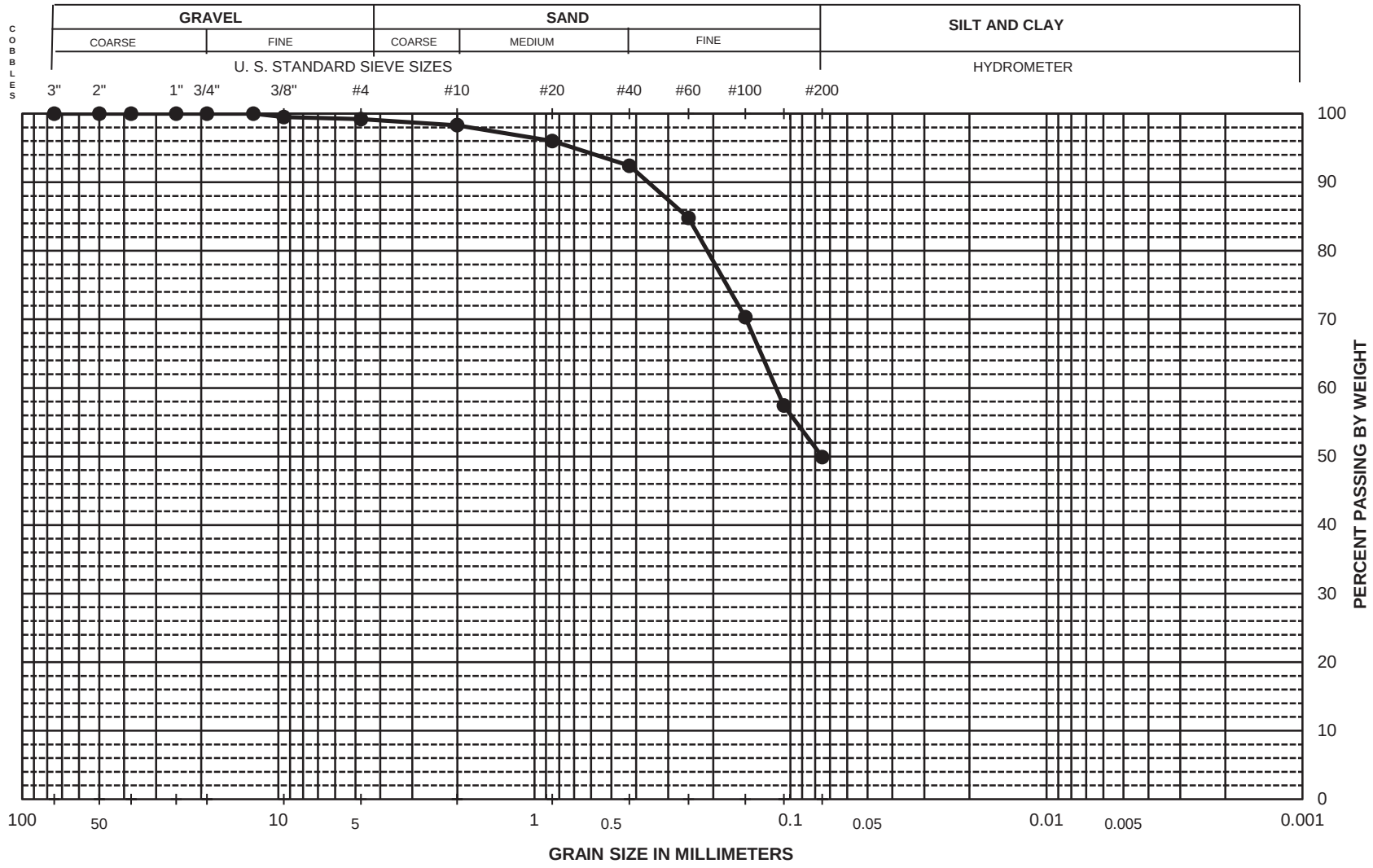
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24423G S03 5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	99.5
#4	4.75	99.2
#10	2.00	98.3
#20	0.850	96.0
#40	0.425	92.4
#60	0.250	84.8
#100	0.150	70.3
#140	0.106	57.4
#200	0.075	49.9
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.8
% Sand	49.3
% Fines	49.9
D_{85}	0.254
D_{60}	0.114
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24426G	2	2.5 - 5.0	●	9.6	32	18		**Strong brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

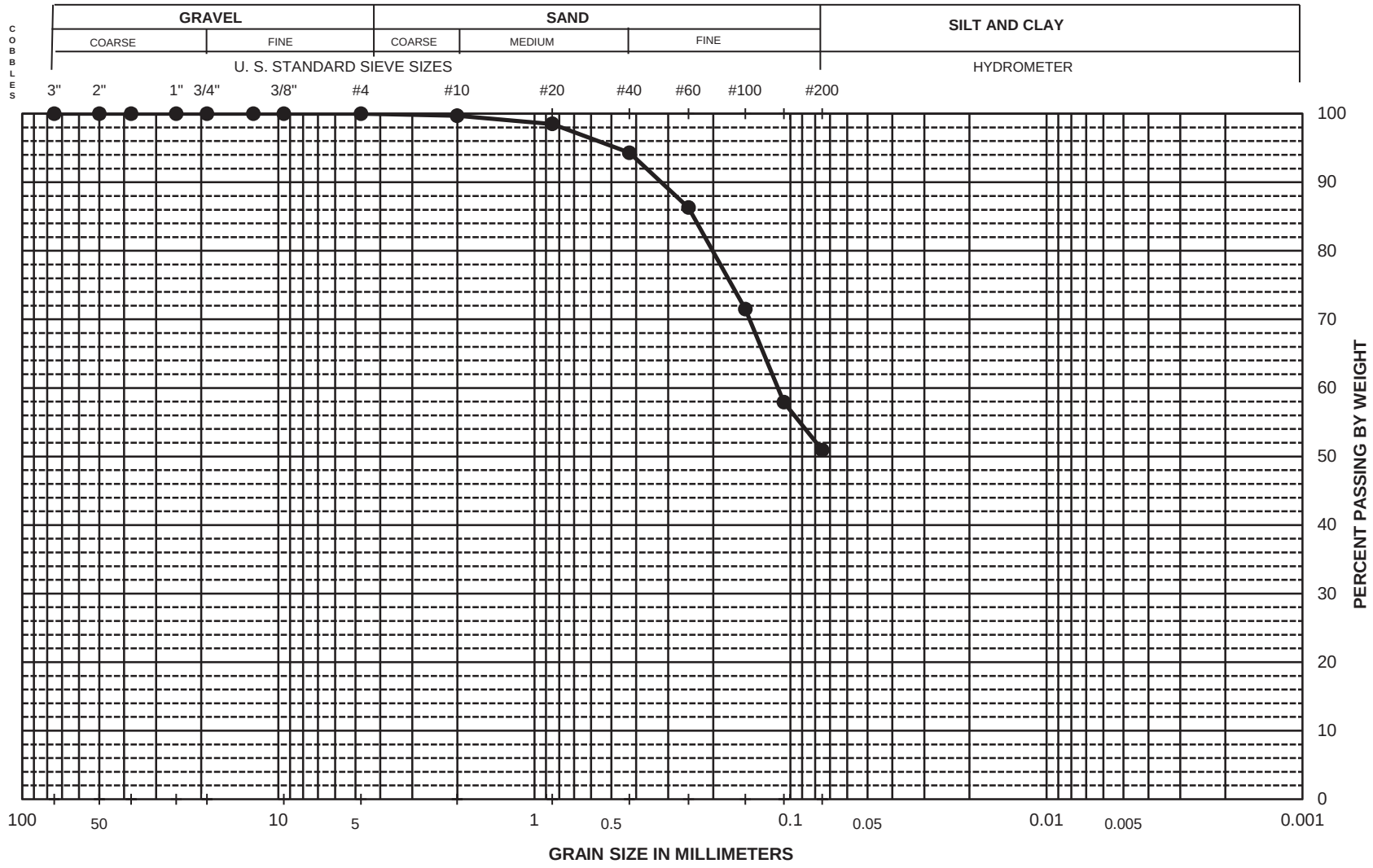
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24426G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.7
#20	0.850	98.5
#40	0.425	94.3
#60	0.250	86.3
#100	0.150	71.5
#140	0.106	57.9
#200	0.075	50.9
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	49.1
% Fines	50.9
D_{85}	0.239
D_{60}	0.112
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24508G	2	2.5 - 5.0	●	10.7	27	14		**Strong brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

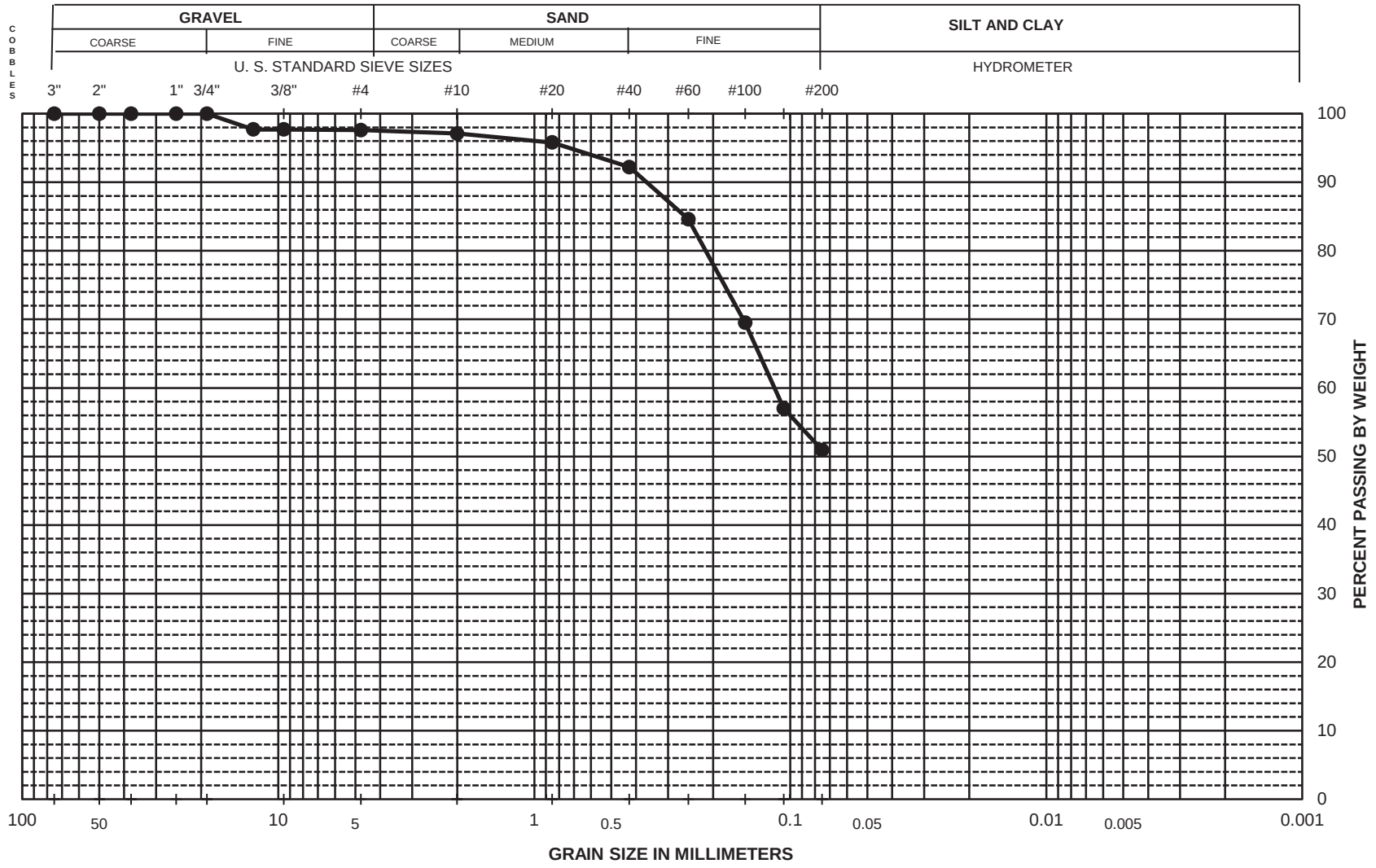
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24508G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	97.7
3/8"	9.50	97.7
#4	4.75	97.6
#10	2.00	97.1
#20	0.850	95.8
#40	0.425	92.2
#60	0.250	84.6
#100	0.150	69.5
#140	0.106	57.0
#200	0.075	50.9
Hydrometer Analysis		

% Cobbles	---
% Gravel	2.4
% Sand	46.7
% Fines	50.9
D_{85}	0.257
D_{60}	0.115
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24509G	2	2.5 - 5.0	●	7.7	26	13		**Strong brown sandy Clay (CL)**

PROJECT NAME: **Former Kast Property**

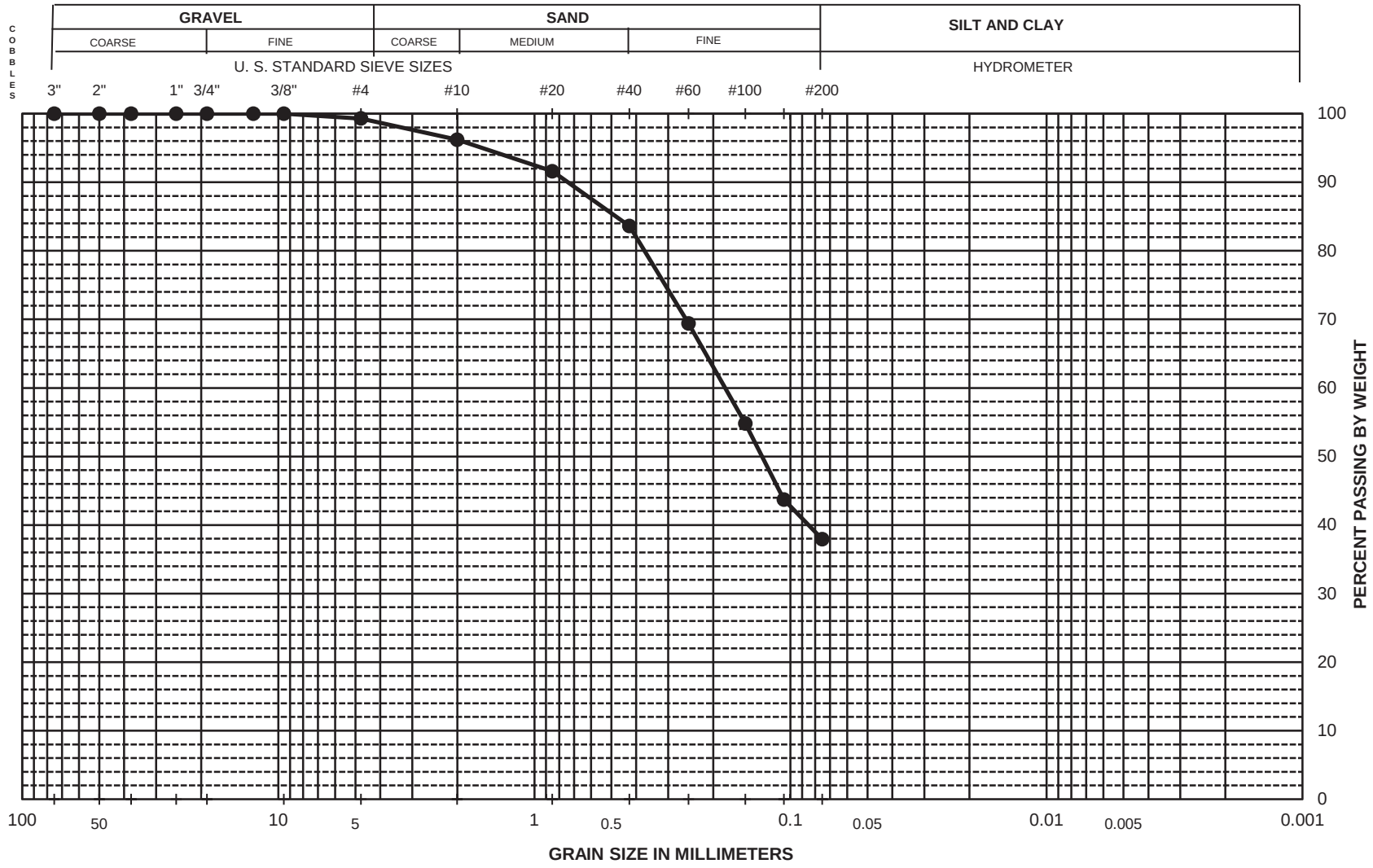
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24509G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.3
#10	2.00	96.2
#20	0.850	91.6
#40	0.425	83.6
#60	0.250	69.4
#100	0.150	54.8
#140	0.106	43.7
#200	0.075	37.9
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.7
% Sand	61.4
% Fines	37.9
D_{85}	0.480
D_{60}	0.180
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24522G	4	7.5	●	11.1	24	11		**Dark gray clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

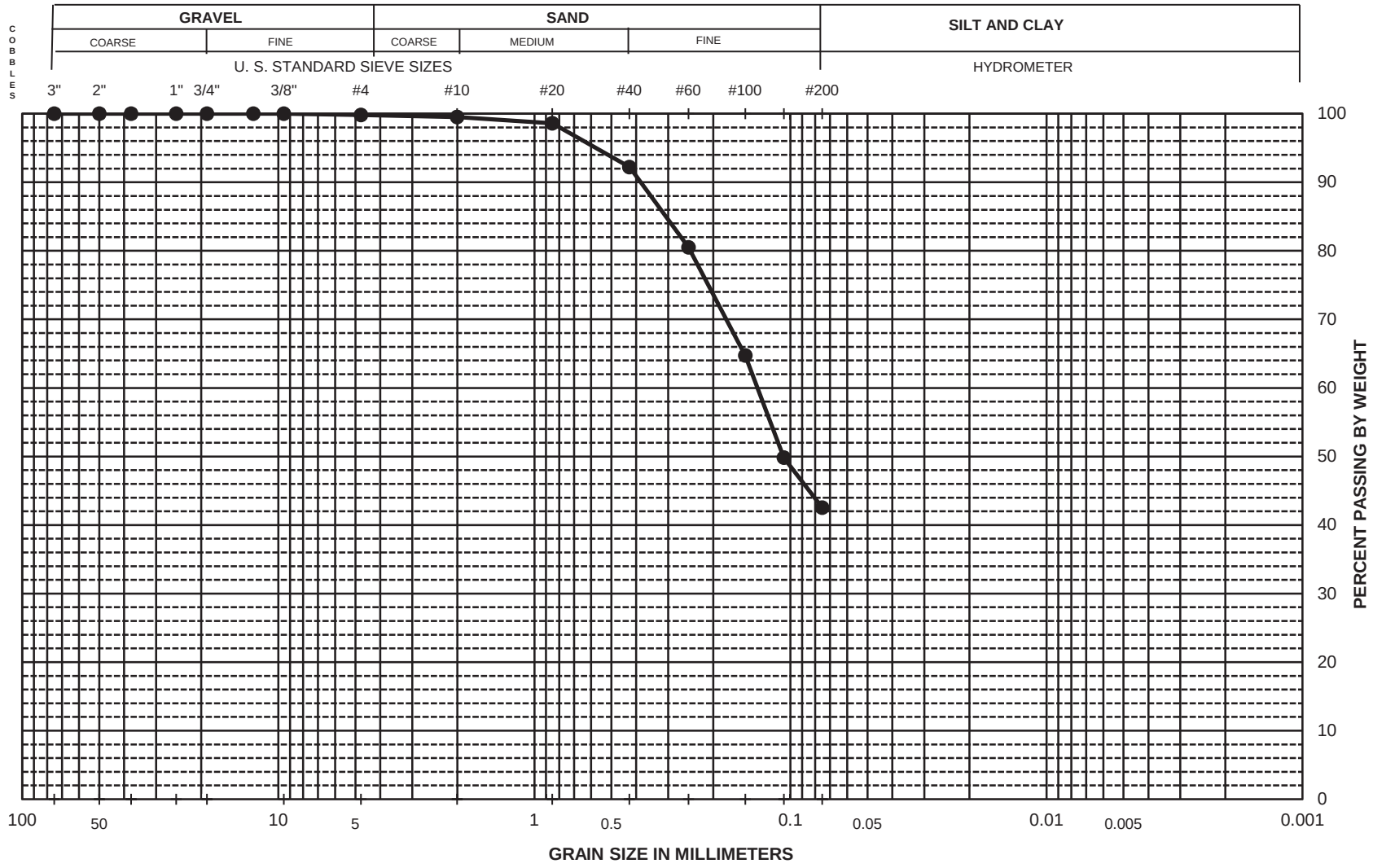
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24522G S04 7.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.8
#10	2.00	99.5
#20	0.850	98.6
#40	0.425	92.2
#60	0.250	80.5
#100	0.150	64.7
#140	0.106	49.8
#200	0.075	42.5
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.2
% Sand	57.3
% Fines	42.5
D_{85}	0.307
D_{60}	0.134
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24609G	2	2.5 - 5.0	●	10.2	21	7		**Stong brown silty, clayey Sand (SC-SM)**

PROJECT NAME: **Former Kast Property**

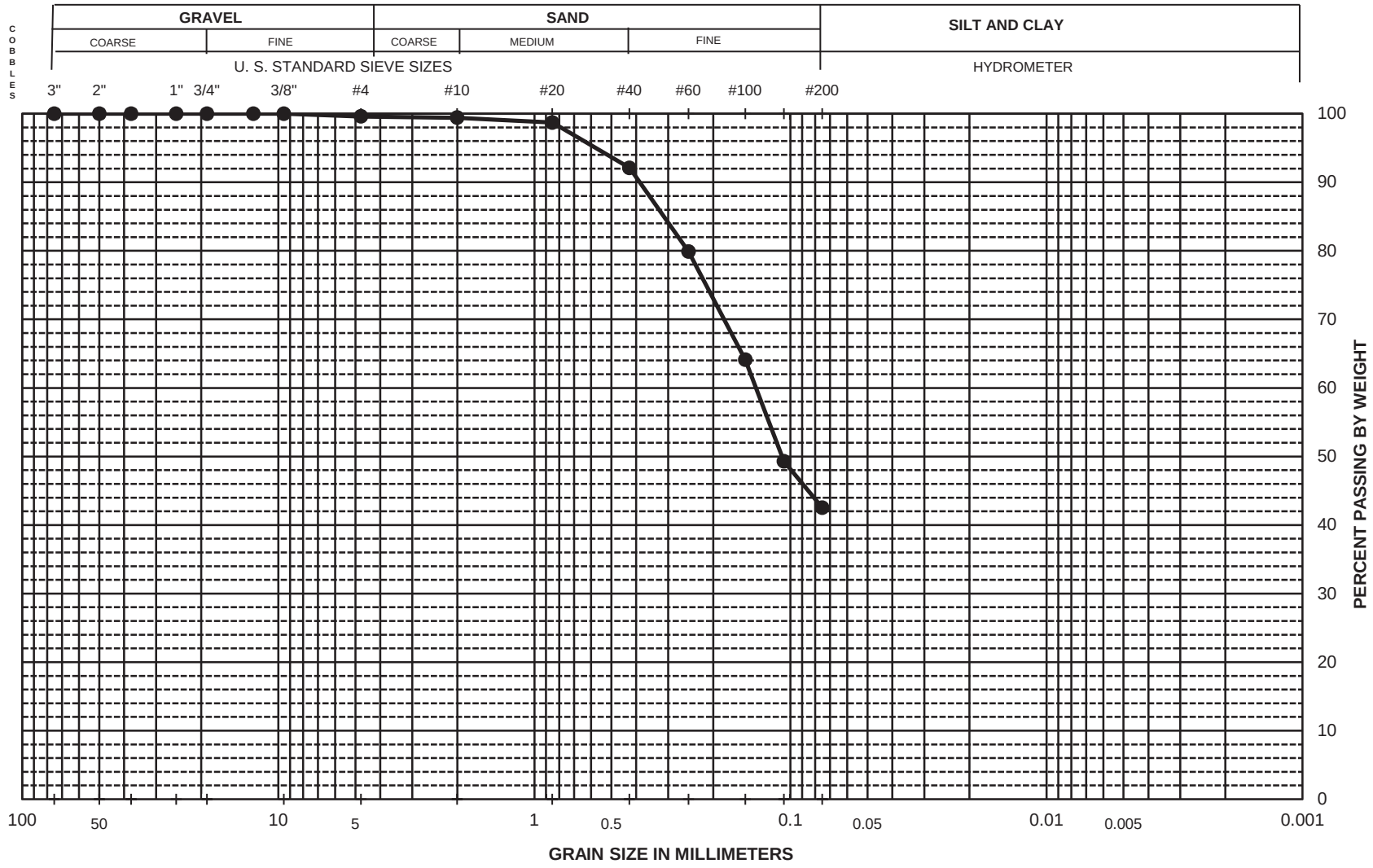
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24609G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.6
#10	2.00	99.4
#20	0.850	98.7
#40	0.425	92.1
#60	0.250	79.9
#100	0.150	64.1
#140	0.106	49.3
#200	0.075	42.5
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.4
% Sand	57.1
% Fines	42.5
D_{85}	0.312
D_{60}	0.136
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24612G	2	2.5 - 5.0	●	5.7	21	8		**Strong brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

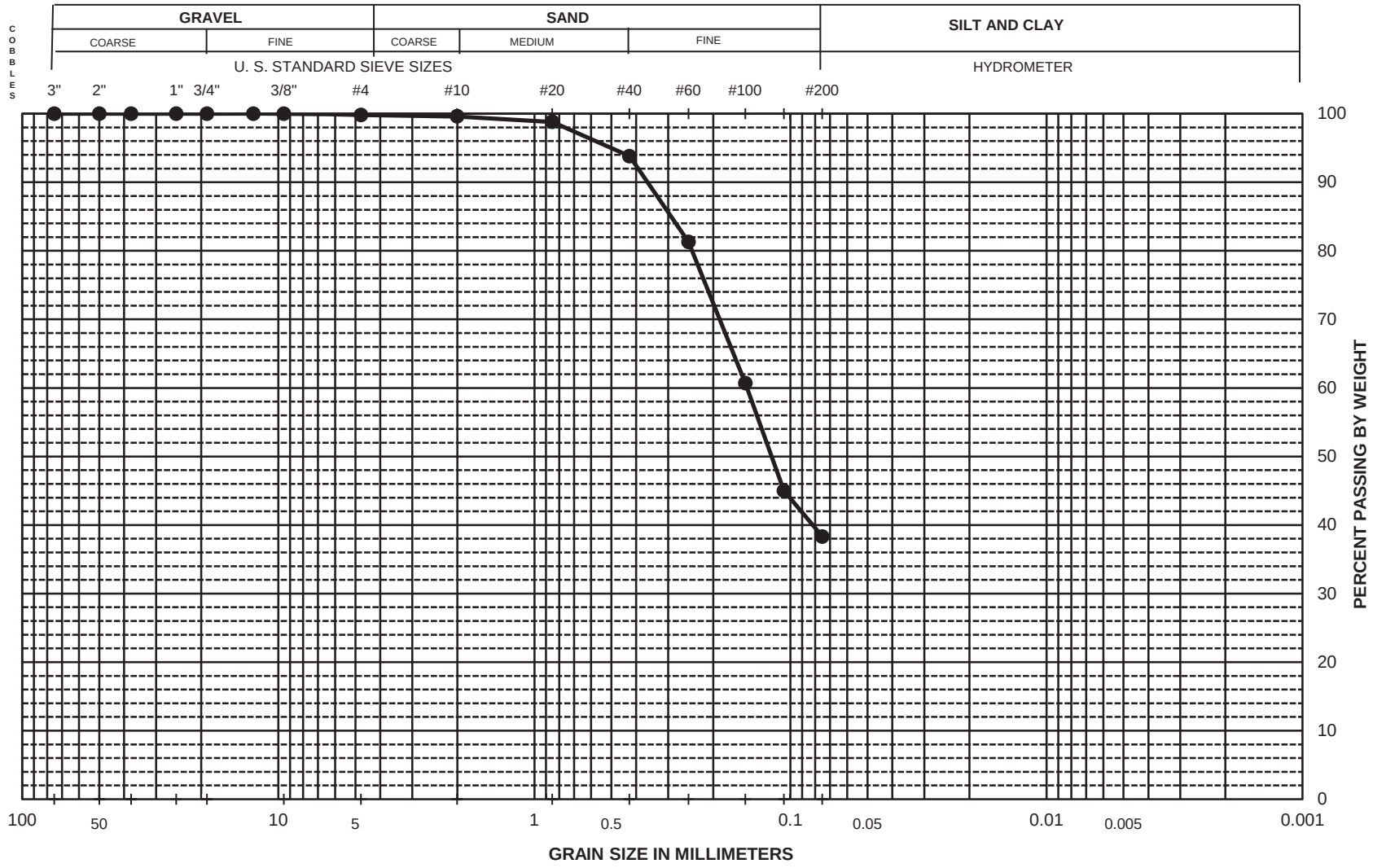
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24612G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.8
#10	2.00	99.6
#20	0.850	98.8
#40	0.425	93.8
#60	0.250	81.3
#100	0.150	60.7
#140	0.106	45.0
#200	0.075	38.3
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.2
% Sand	61.5
% Fines	38.3
D_{85}	0.293
D_{60}	0.148
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24706G	3	5.0	●	11.3	23	11		**Strong brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

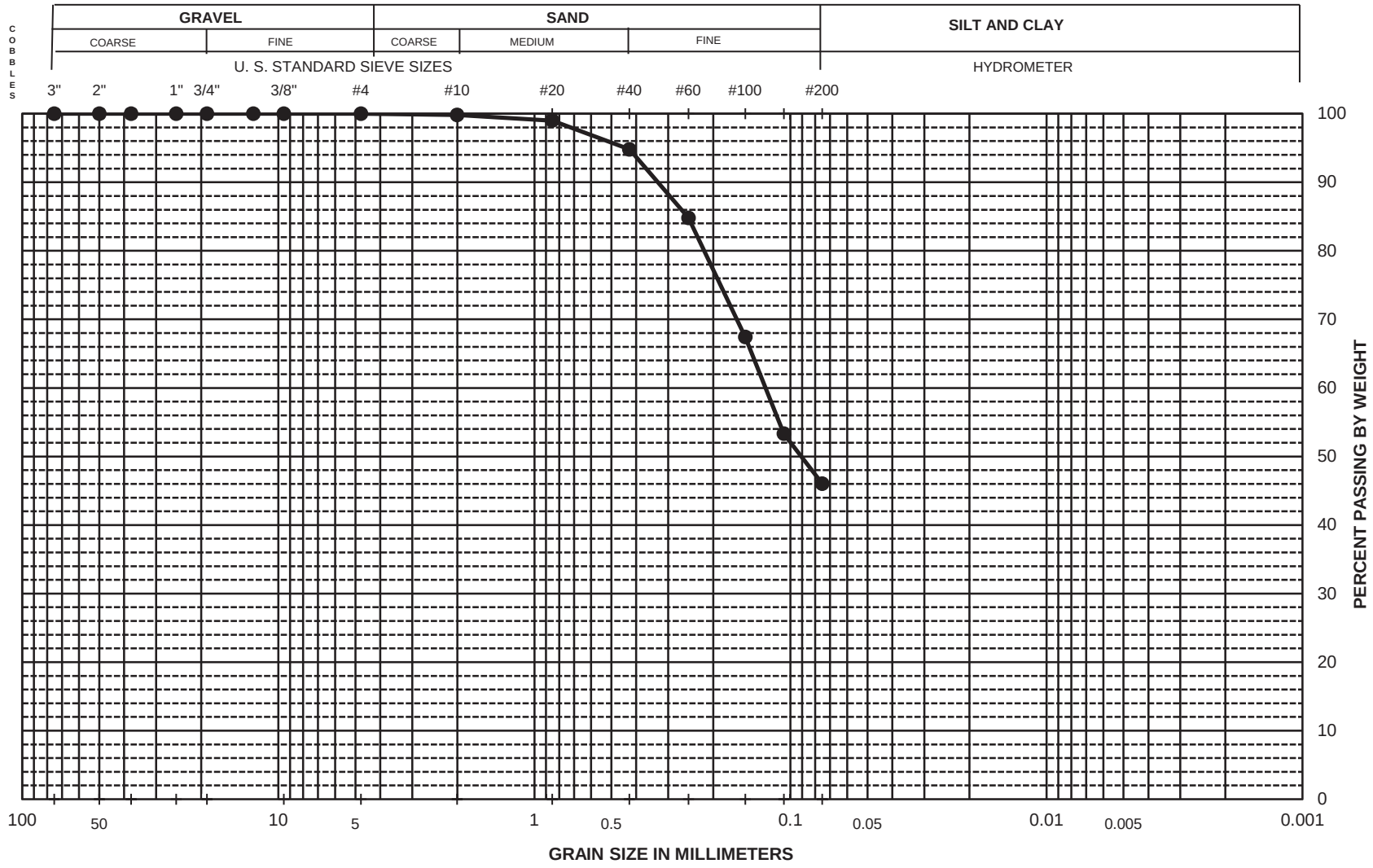
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24706G S03 5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.8
#20	0.850	99.0
#40	0.425	94.8
#60	0.250	84.8
#100	0.150	67.4
#140	0.106	53.3
#200	0.075	46.0
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	54.0
% Fines	46.0
D_{85}	0.253
D_{60}	0.125
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24709G	2	2.5 - 5.0	●	7.7	18	4		**Brown silty, clayey Sand (SC-SM)**

PROJECT NAME: **Former Kast Property**

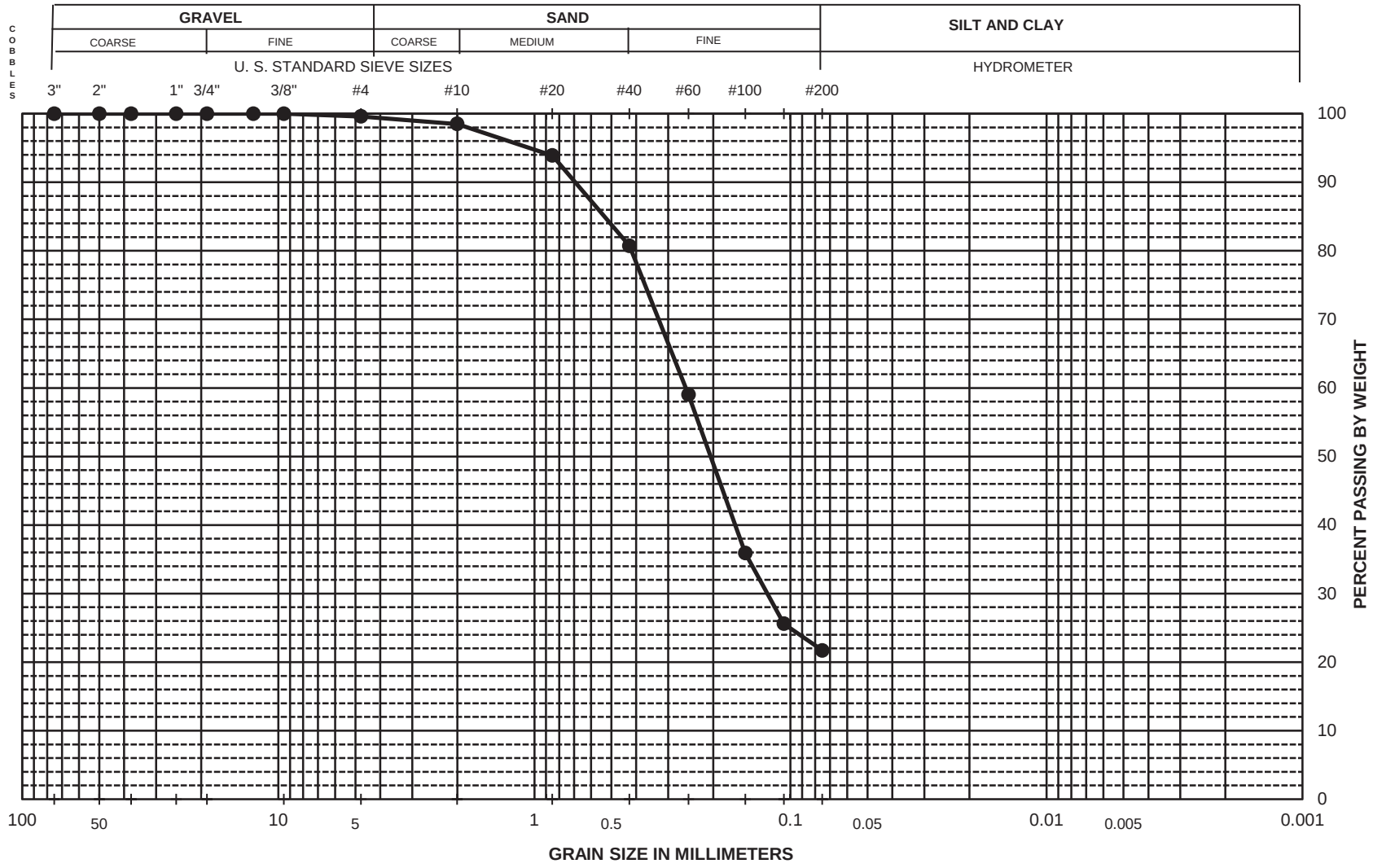
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24709G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	99.6
#10	2.00	98.5
#20	0.850	93.9
#40	0.425	80.7
#60	0.250	59.0
#100	0.150	35.9
#140	0.106	25.6
#200	0.075	21.7
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.4
% Sand	77.9
% Fines	21.7
D_{85}	0.533
D_{60}	0.256
D_{30}	0.123
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24719G	5	10.0	●	11.3	31	17		**Olive brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

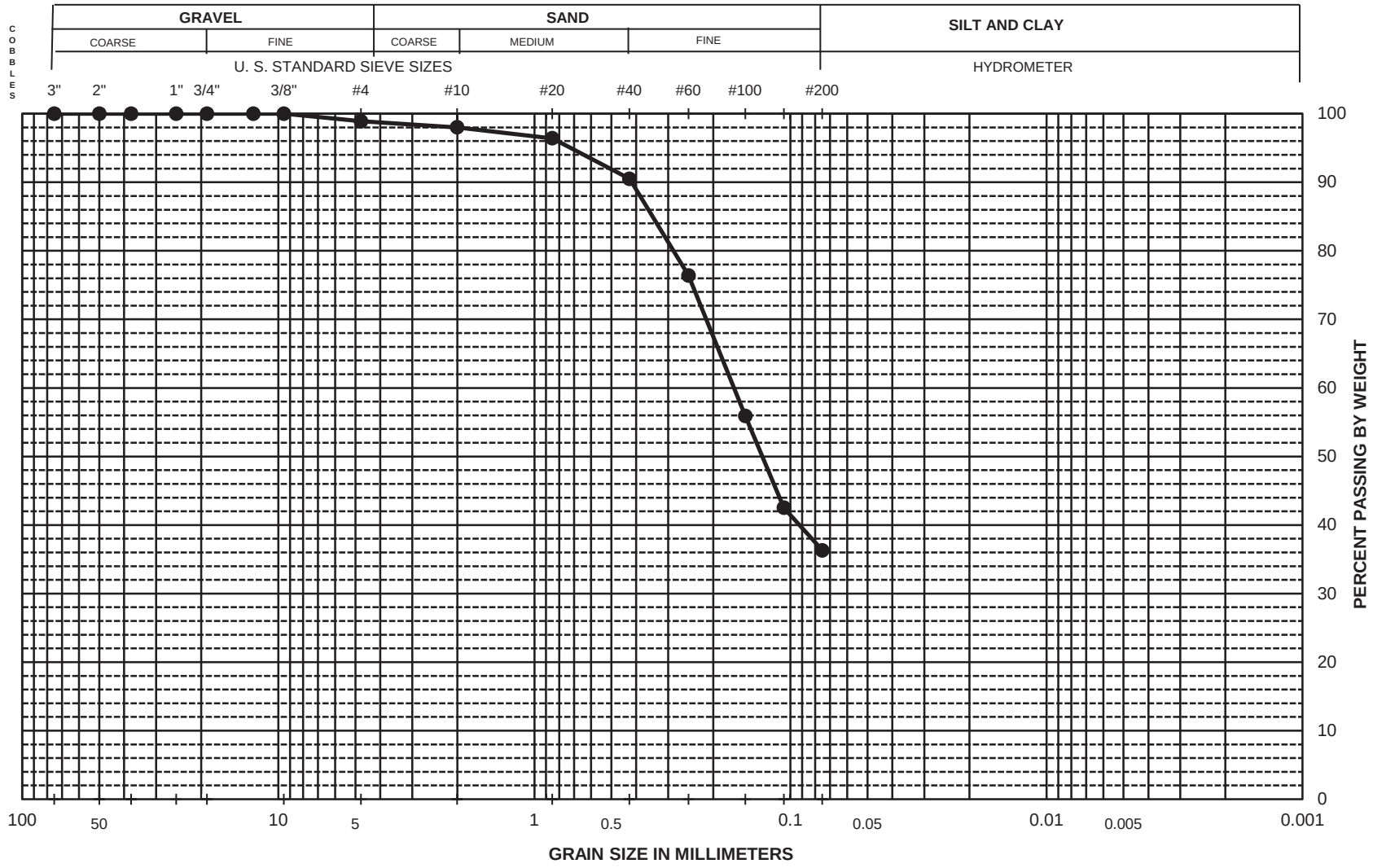
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24719G S05 10 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	98.9
#10	2.00	98.0
#20	0.850	96.4
#40	0.425	90.5
#60	0.250	76.4
#100	0.150	55.9
#140	0.106	42.5
#200	0.075	36.3
Hydrometer Analysis		

% Cobbles	---
% Gravel	1.1
% Sand	62.6
% Fines	36.3
D_{85}	0.346
D_{60}	0.166
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24732G	2	2.5 - 5.0	●	7.5	25	12		**Strong brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

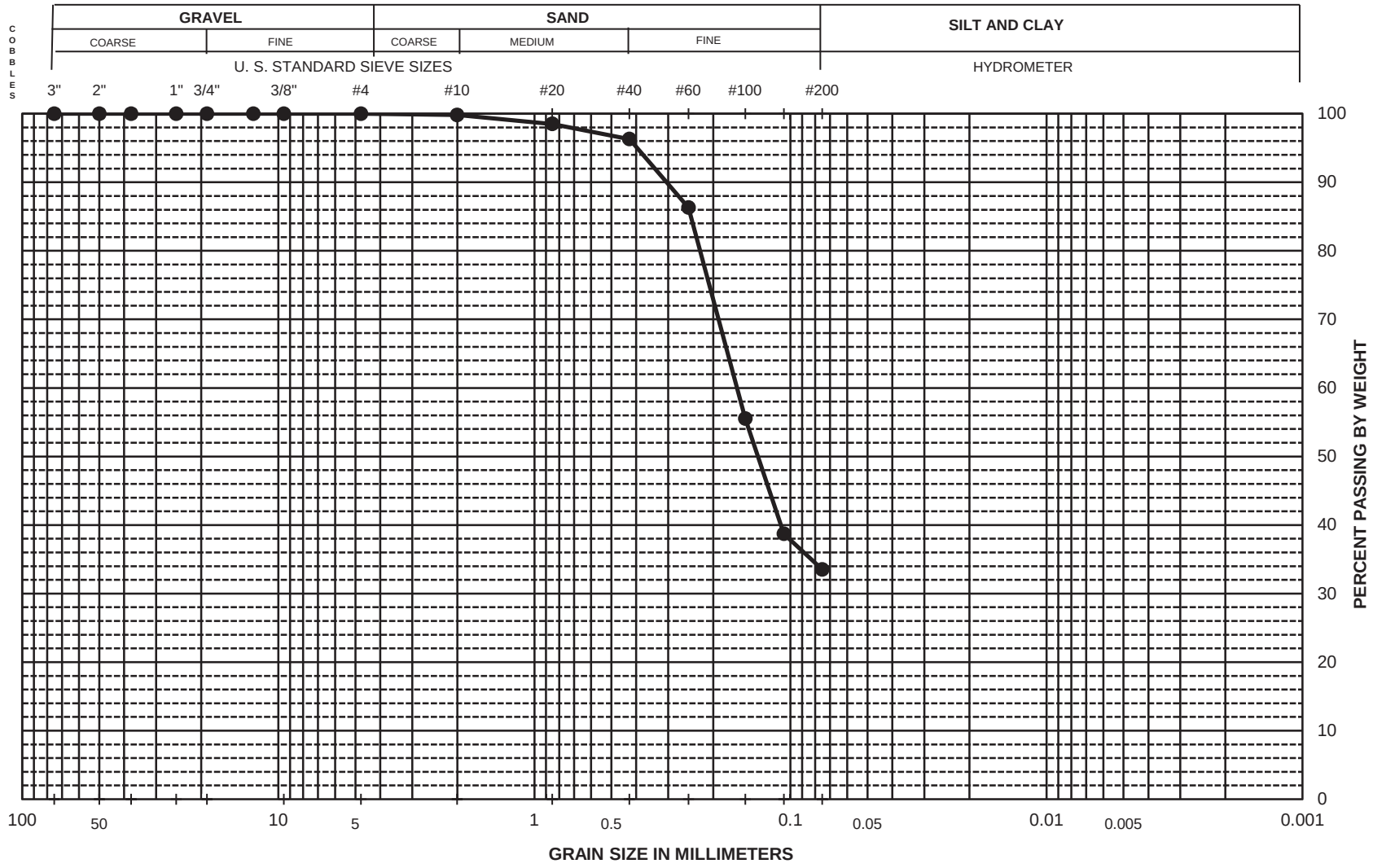
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24732G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.8
#20	0.850	98.5
#40	0.425	96.3
#60	0.250	86.3
#100	0.150	55.5
#140	0.106	38.7
#200	0.075	33.5
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	66.5
% Fines	33.5
D_{85}	0.245
D_{60}	0.162
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24739G	4	7.5	●	10.8	28	15		**Dark brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

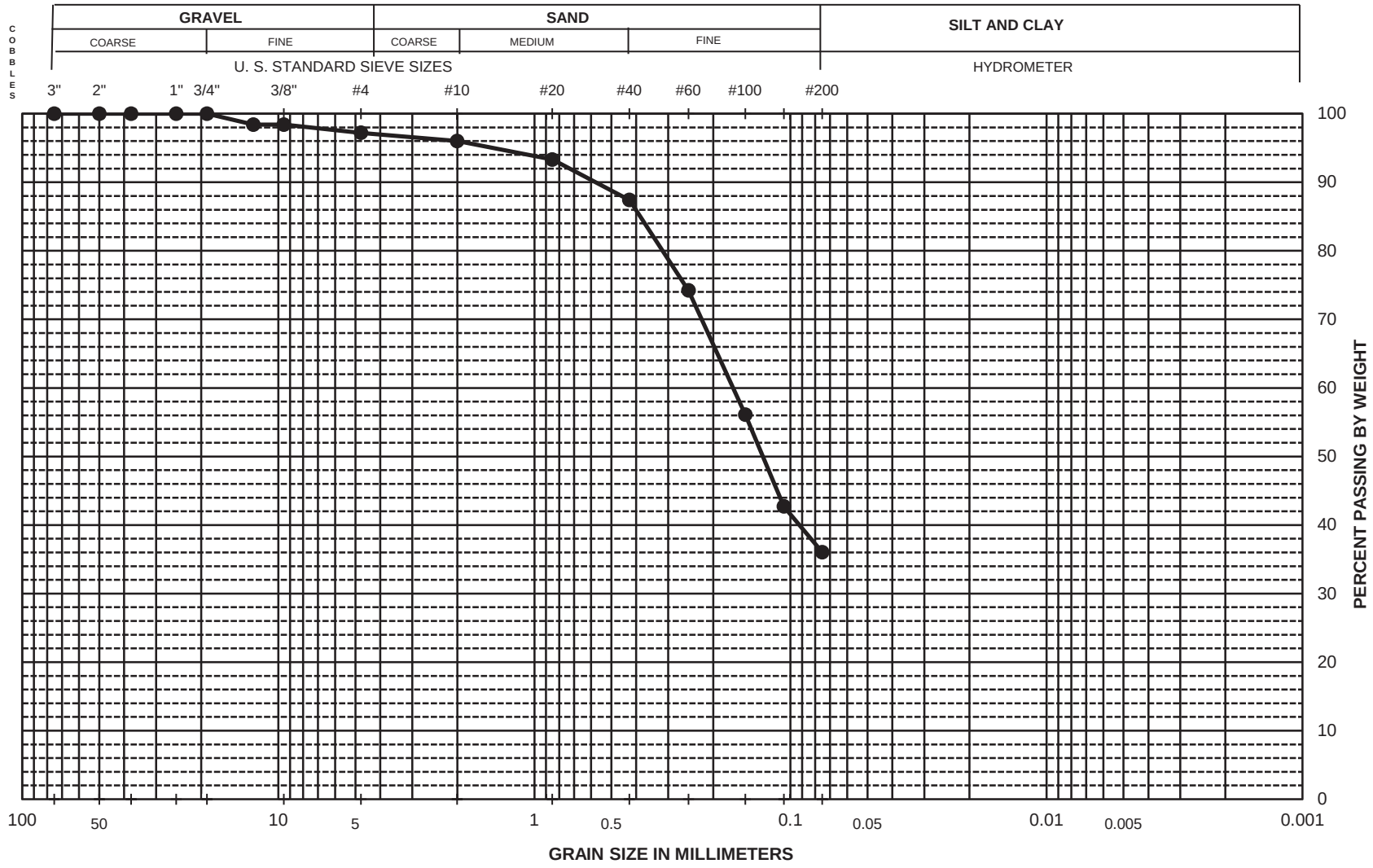
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24739G S04 7.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	98.4
3/8"	9.50	98.4
#4	4.75	97.2
#10	2.00	96.0
#20	0.850	93.3
#40	0.425	87.4
#60	0.250	74.2
#100	0.150	56.1
#140	0.106	42.7
#200	0.075	36.0
Hydrometer Analysis		

% Cobbles	---
% Gravel	2.8
% Sand	61.2
% Fines	36.0
D_{85}	0.386
D_{60}	0.167
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24749G	2	2.5 - 5.0	●	9.3	23	10		**Dark brown clayey Sand (SC)**

PROJECT NAME: **Former Kast Property**

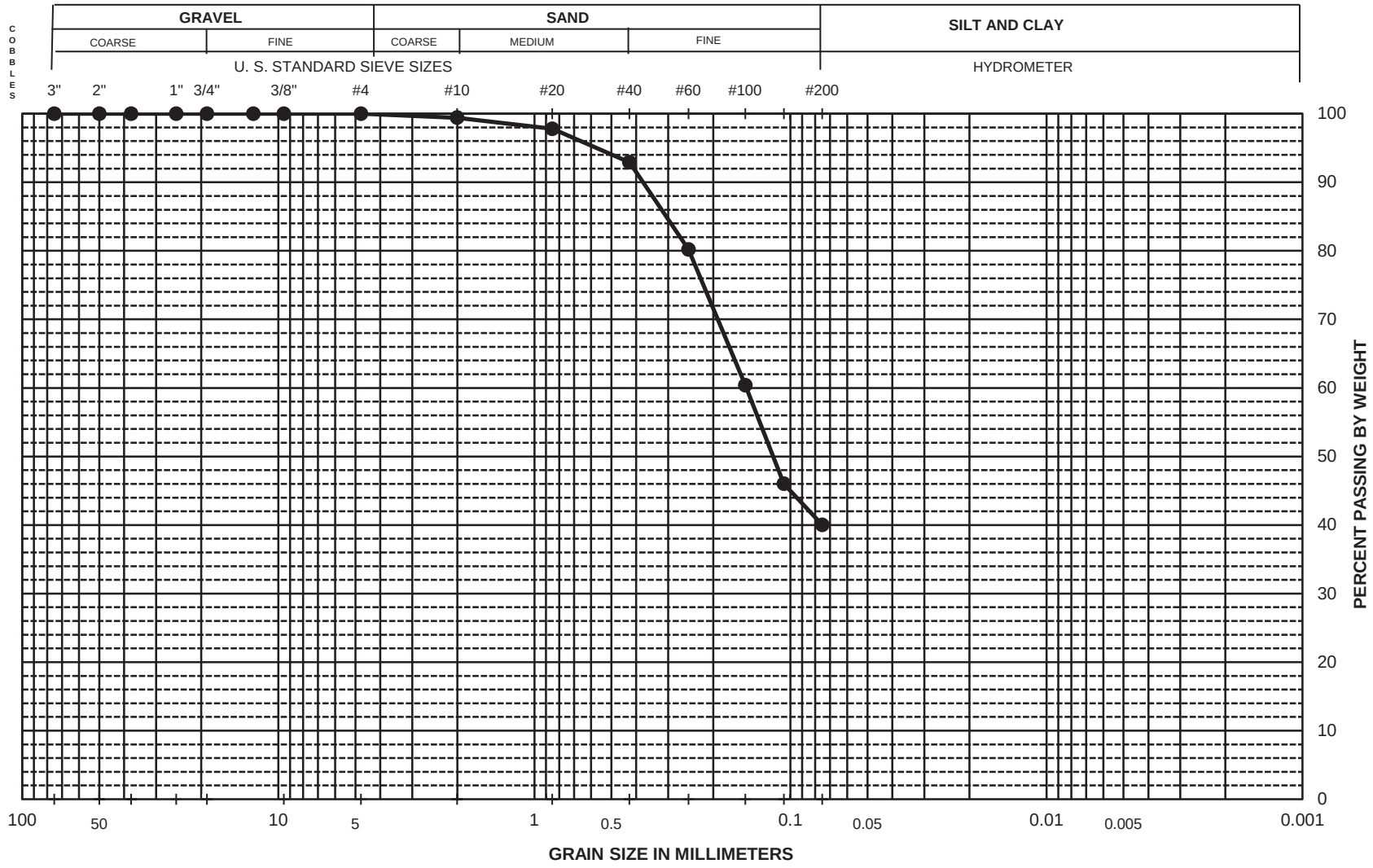
PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24749G S02 2.5 ft.xlsx

AECOM

UNIFIED SOIL CLASSIFICATION



Sieve No.	Dia. mm	% Finer
3"	75.0	100.0
2"	50.0	100.0
1.5"	37.5	100.0
1"	25.0	100.0
3/4"	19.00	100.0
1/2"	12.50	100.0
3/8"	9.50	100.0
#4	4.75	100.0
#10	2.00	99.4
#20	0.850	97.8
#40	0.425	92.9
#60	0.250	80.2
#100	0.150	60.4
#140	0.106	46.0
#200	0.075	40.0
Hydrometer Analysis		

% Cobbles	---
% Gravel	0.0
% Sand	60.0
% Fines	40.0
D_{85}	0.306
D_{60}	0.149
D_{30}	#N/A
D_{15}	#N/A
D_{10}	#N/A
C_u	----
C_c	----

Boring No.	Sample No.	Depth (ft)	SYMBOL	Wn (%)	LL	PI	% 2 μm	Description and Classification
R24752G	2	2.5 - 5.0	●	14.6	24	10		**Dark brown clayey Sand (SC)**

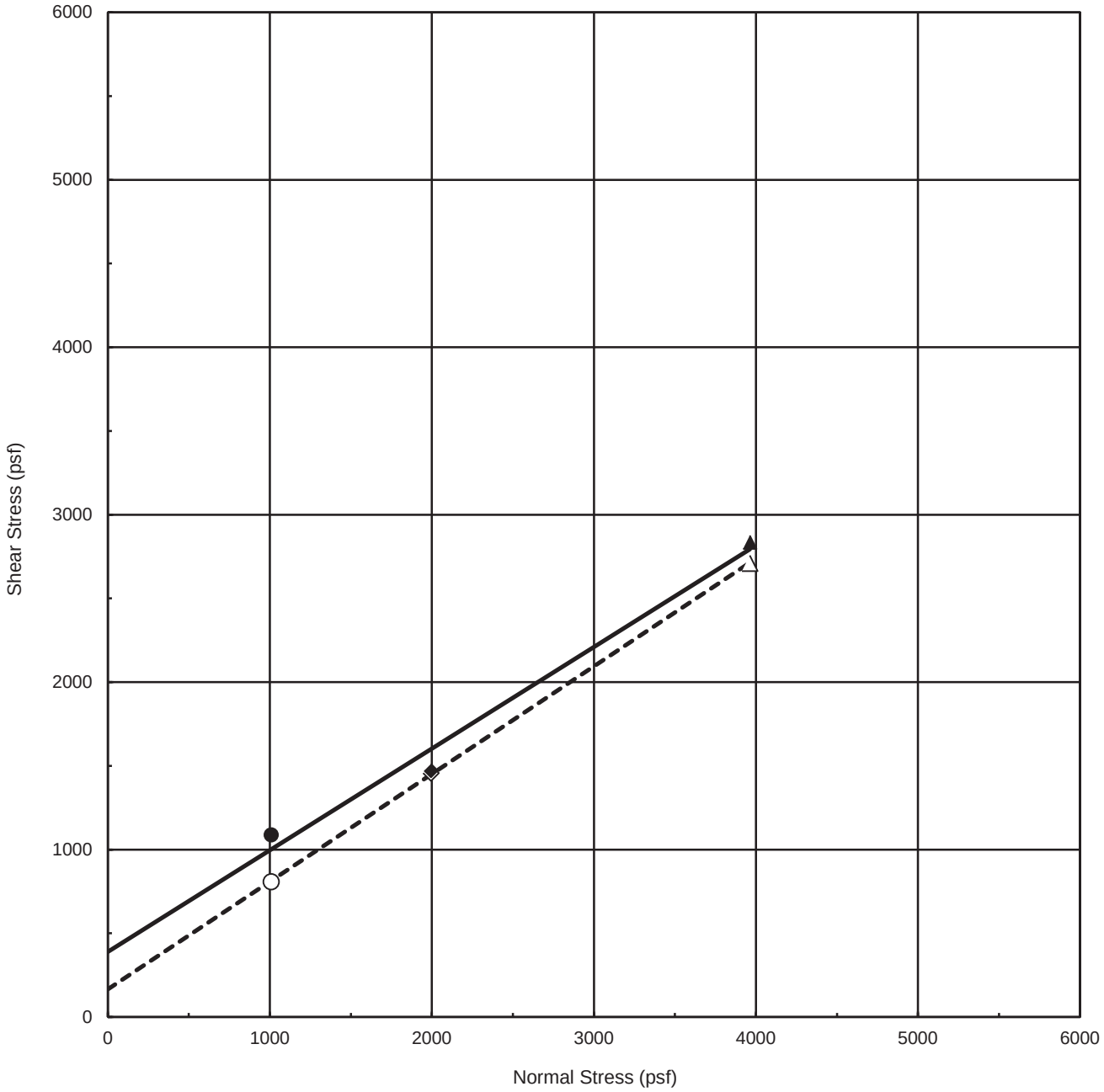
PROJECT NAME: **Former Kast Property**

PROJECT NUMBER: **60422689**

PARTICLE-SIZE DISTRIBUTION CURVES

T:\!12\Shell Carson, Kast Tank Farm_Kast - 2015 Geotech\3. Lab\Lab Test Results\Sieve\Sieve Hydrometer Kast R24752G S02 2.5 ft.xlsx

AECOM



Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	244305G		Strength Intercept (C) :		389.9	psf	Peak	165.4	psf	Ultimate	
Sample No.:	3				18.7	kPa		7.9	kPa		
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :		31	degree		33	degree		
Description:	**Dark brown sandy Clay (CL)**						Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		15.0	126.1	19.8	109.6	17.2	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	20.7	131.4	20.6	108.9	17.1	1009	48	1087	52	808	39
pre-shear	◆ spec. 2	18.9	134.0	21.1	112.7	17.7	1995	96	1472	70	1457	70
pre-shear	▲ spec. 3	19.5	136.5	21.4	114.2	17.9	3962	190	2836	136	2710	130

AECOM

Former Kast Property

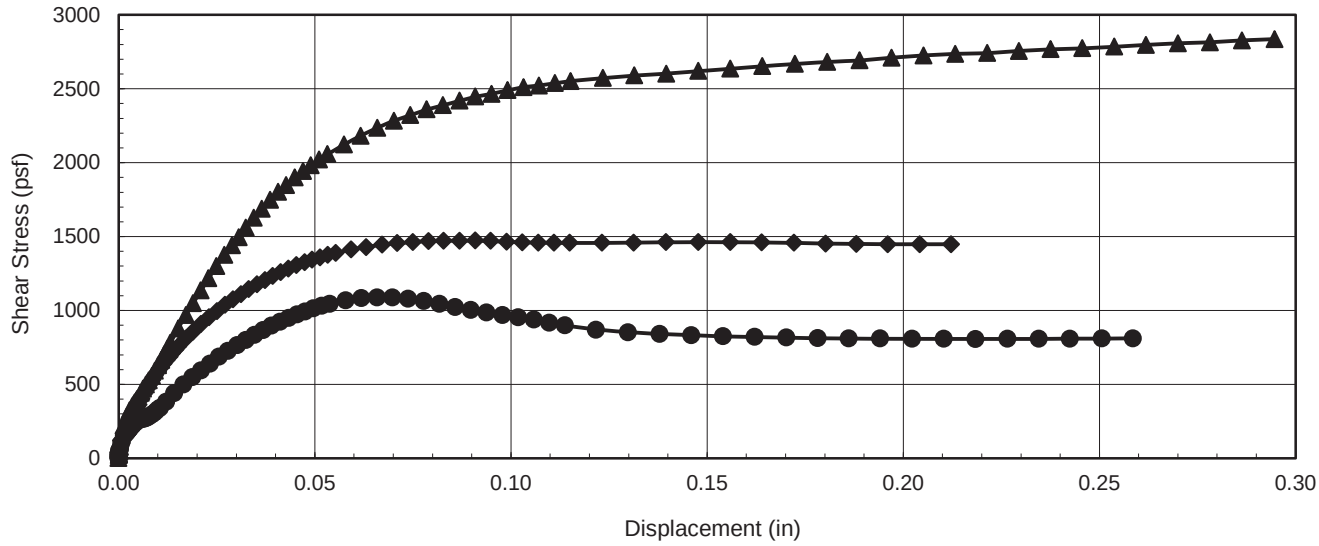
Project Number: 60422689
Test Date: 9/8/2015

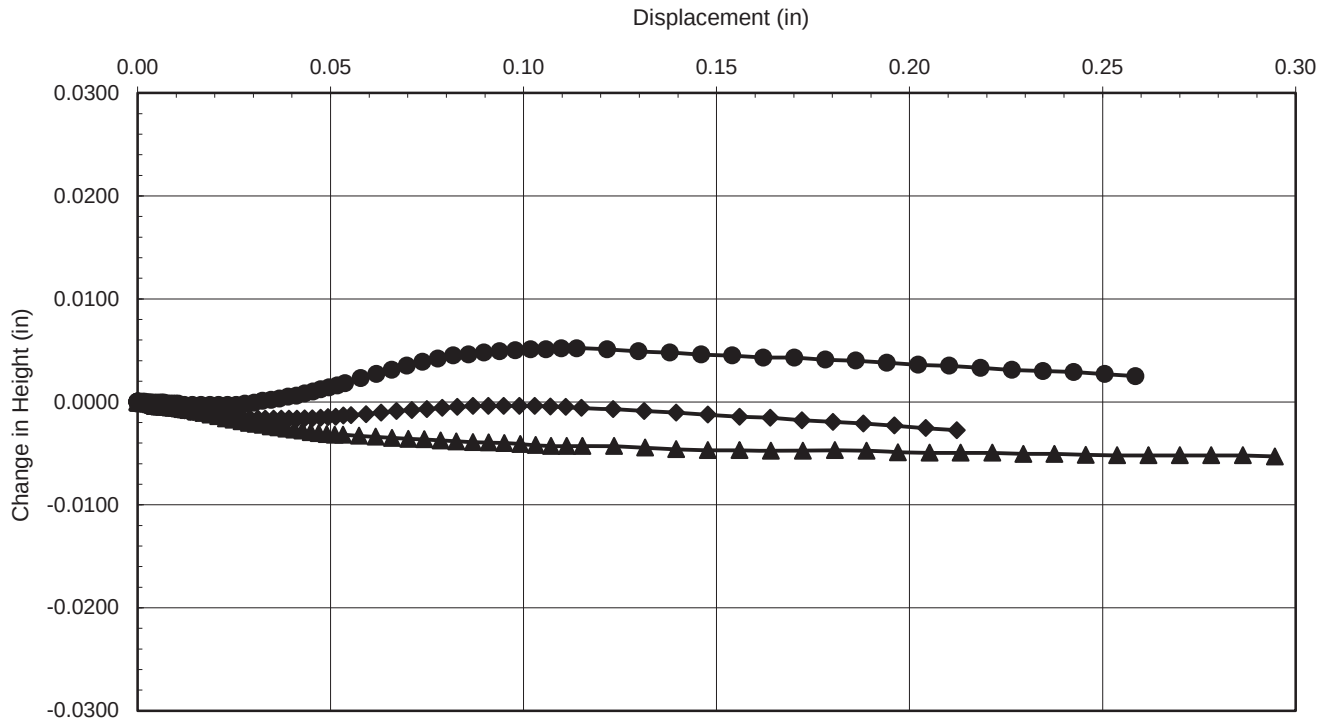
DIRECT SHEAR TEST
ASTM D 3080

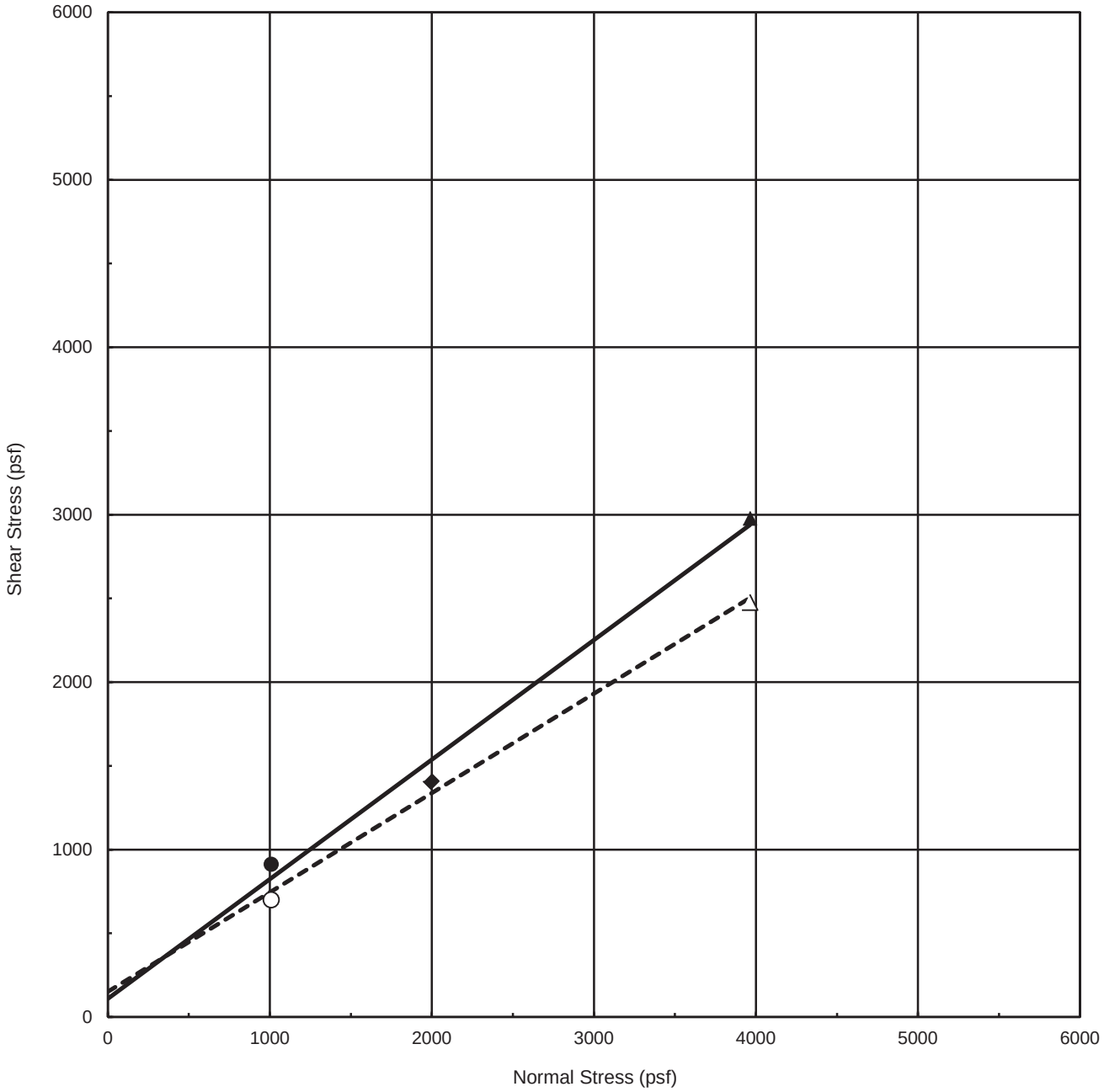
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark brown sandy Clay (CL)
Apparatus No.: DS2
Shear rate (in/min): 0.004

Boring No.: 244305G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1009 ●
Normal Stress (psf): 1995 ◆
Normal Stress (psf): 3962 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	244357G		Strength Intercept (C) :		109.2	psf	Peak	151.1	psf	Ultimate	
Sample No.:	5				5.2	kPa		7.2	kPa		
Depth (ft | m)	10.0	3.0	Friction Angle (ϕ) :		36	degree		31	degree		
Description:	**Olive brown clayey Sand (SC)**						Shear rate :	0.0020 (in/min) ,		0.0051 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		13.0	123.2	19.4	109.0	17.1	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	17.5	125.3	19.7	106.7	16.8	1009	48	912	44	700	34
pre-shear	◆ spec. 2	21.0	130.0	20.4	107.4	16.9	1994	95	1409	67	1409	67
pre-shear	▲ spec. 3	16.8	129.8	20.4	111.1	17.5	3962	190	2979	143	2477	119

AECOM

Former Kast Property

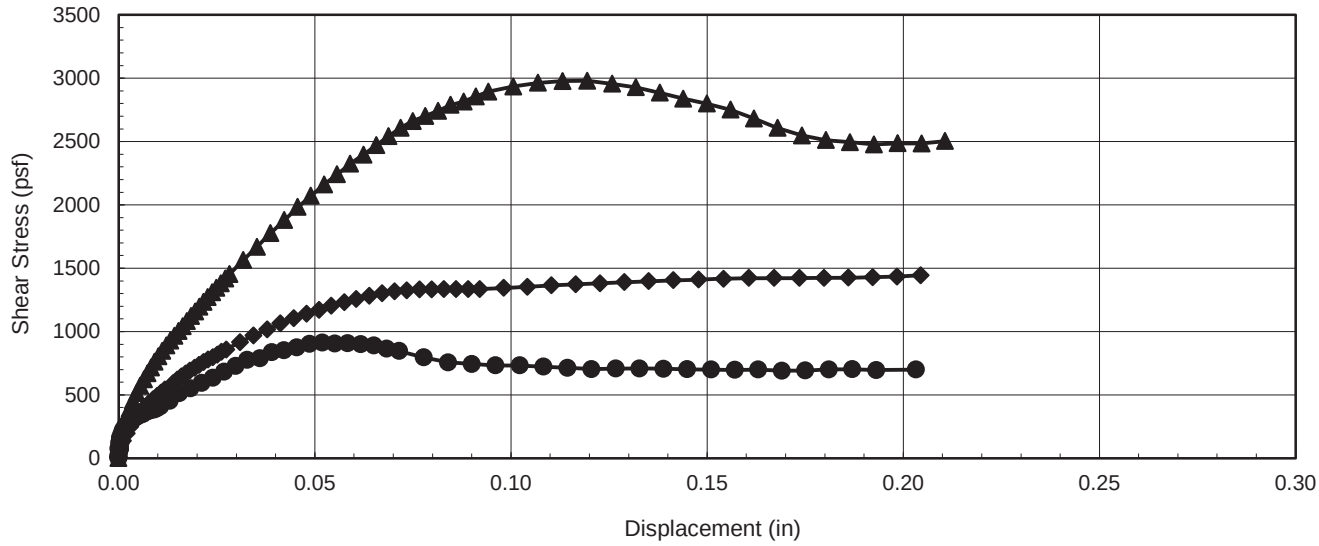
Project Number: 60422689
Test Date: 8/25/2015

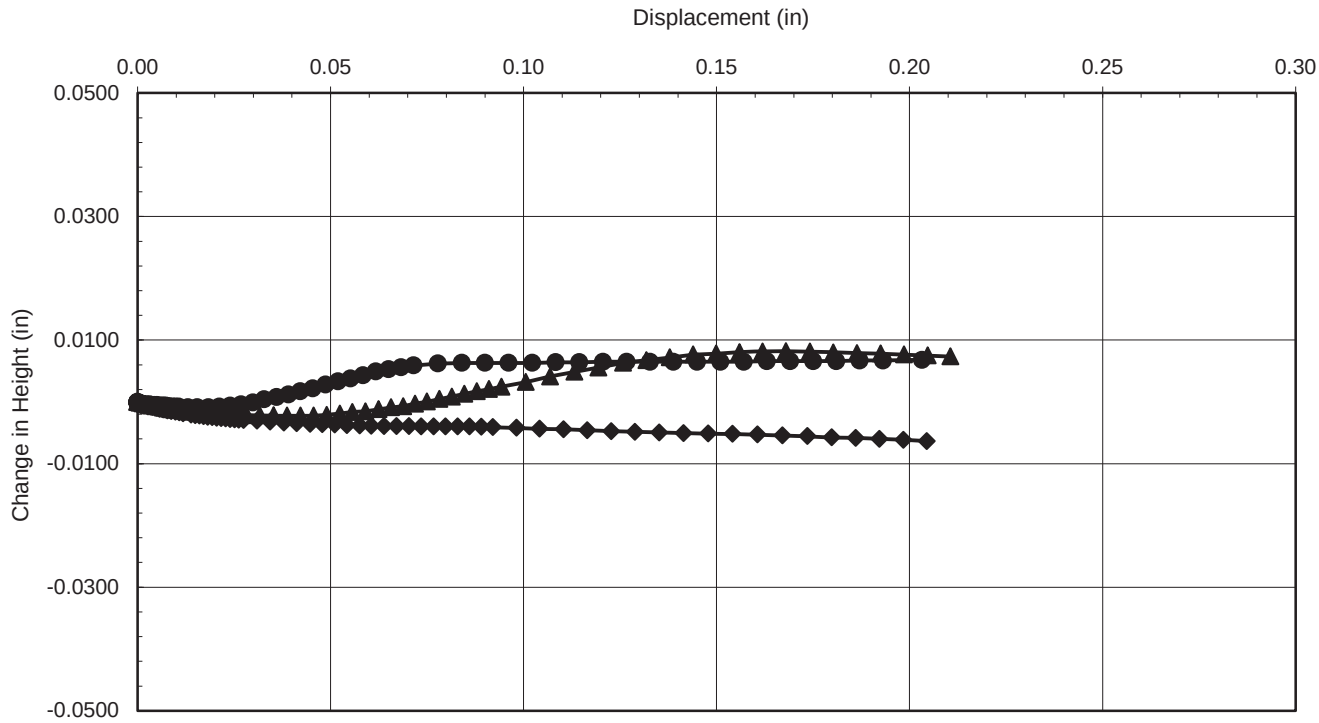
DIRECT SHEAR TEST
ASTM D 3080

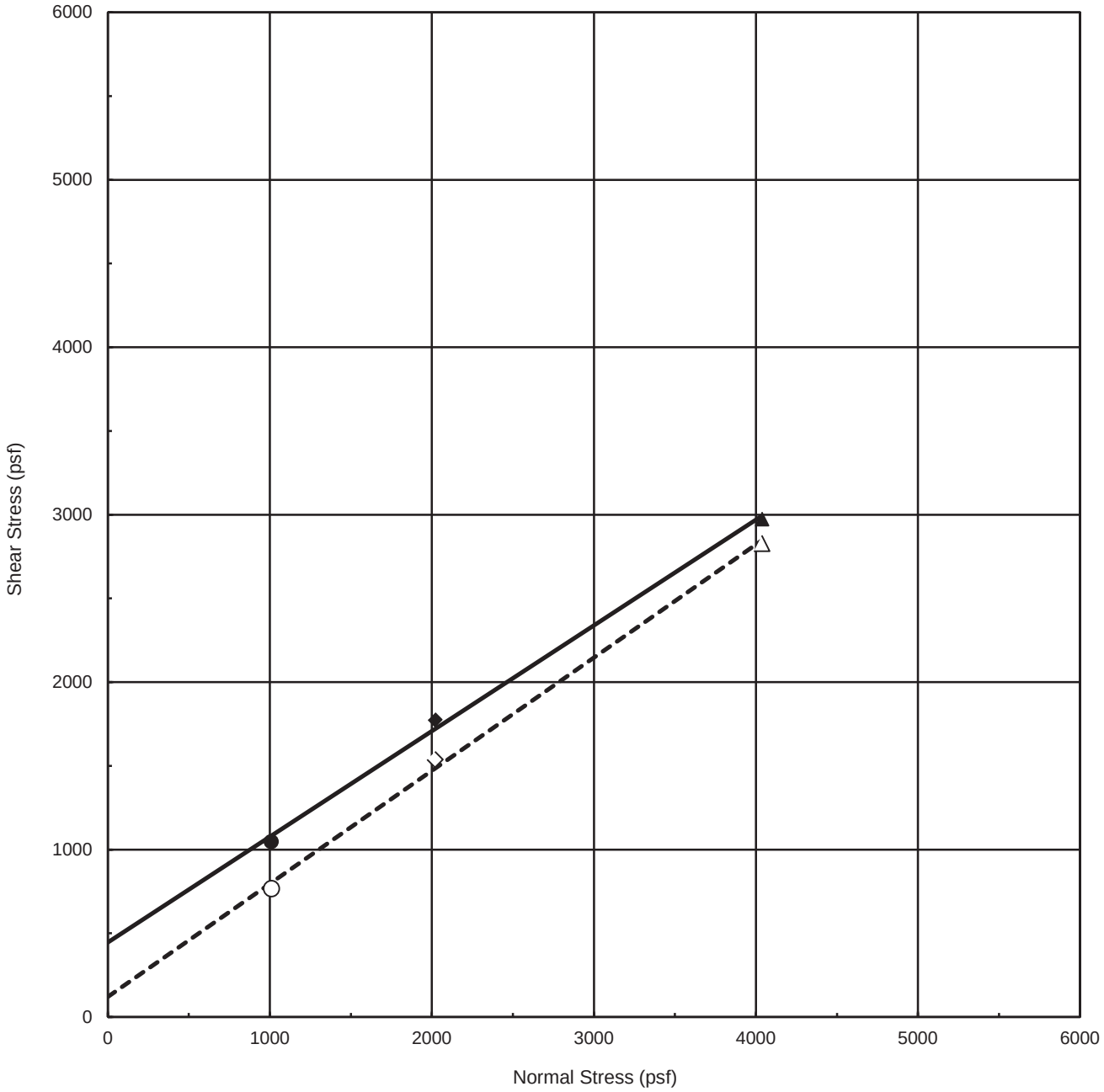
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Olive brown clayey Sand (SC)
Apparatus No.: DS2
Shear rate (in/min): 0.002

Boring No.: 244357G
Sample No.: 5
Sample Depth (ft.): 10
Normal Stress (psf): 1009 ●
Normal Stress (psf): 1994 ◆
Normal Stress (psf): 3962 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	248348G		Strength Intercept (C) :		446.5	psf	Peak	120.4	psf	Ultimate	
Sample No.:	3				21.4	kPa		5.8	kPa		
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :		32	degree		34	degree		
Description:	**Olive brown clayey Sand (SC)**						Shear rate :	0.0020 (in/min) ,		0.0051 (cm/min)	
SYMBOL	% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up	7.1	122.8	19.3	114.7	18.0	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear ● spec. 1	14.9	135.9	21.4	118.3	18.6	1010	48	1047	50	767	37
pre-shear ◆ spec. 2	14.8	135.7	21.3	118.3	18.6	2020	97	1776	85	1538	74
pre-shear ▲ spec. 3	14.0	135.7	21.3	119.0	18.7	4036	193	2975	142	2829	135

AECOM

Former Kast Property

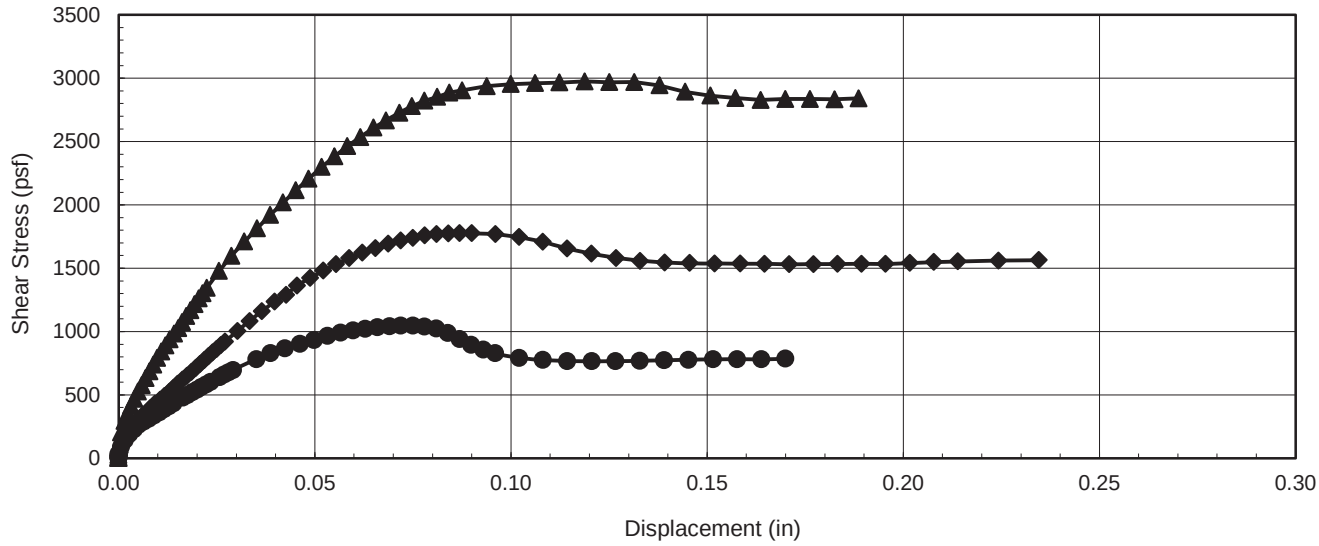
Project Number: 60422689
Test Date: 8/14/2015

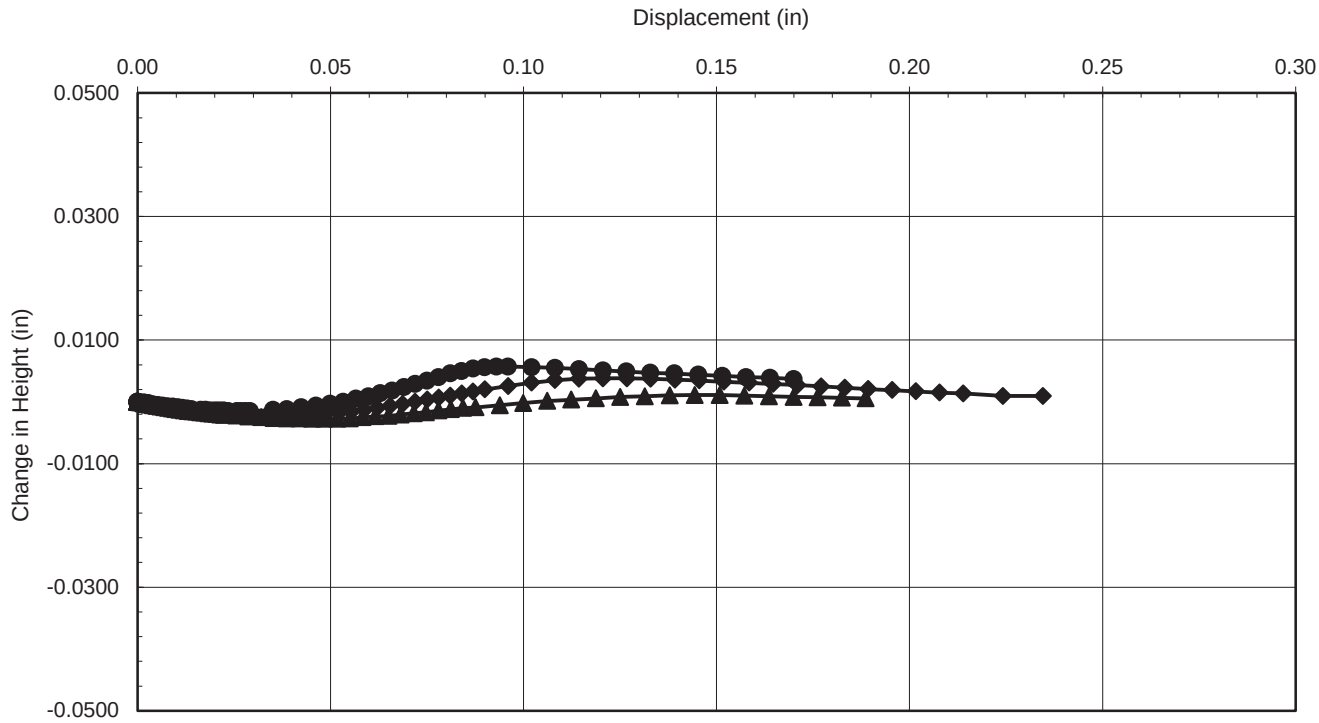
DIRECT SHEAR TEST
ASTM D 3080

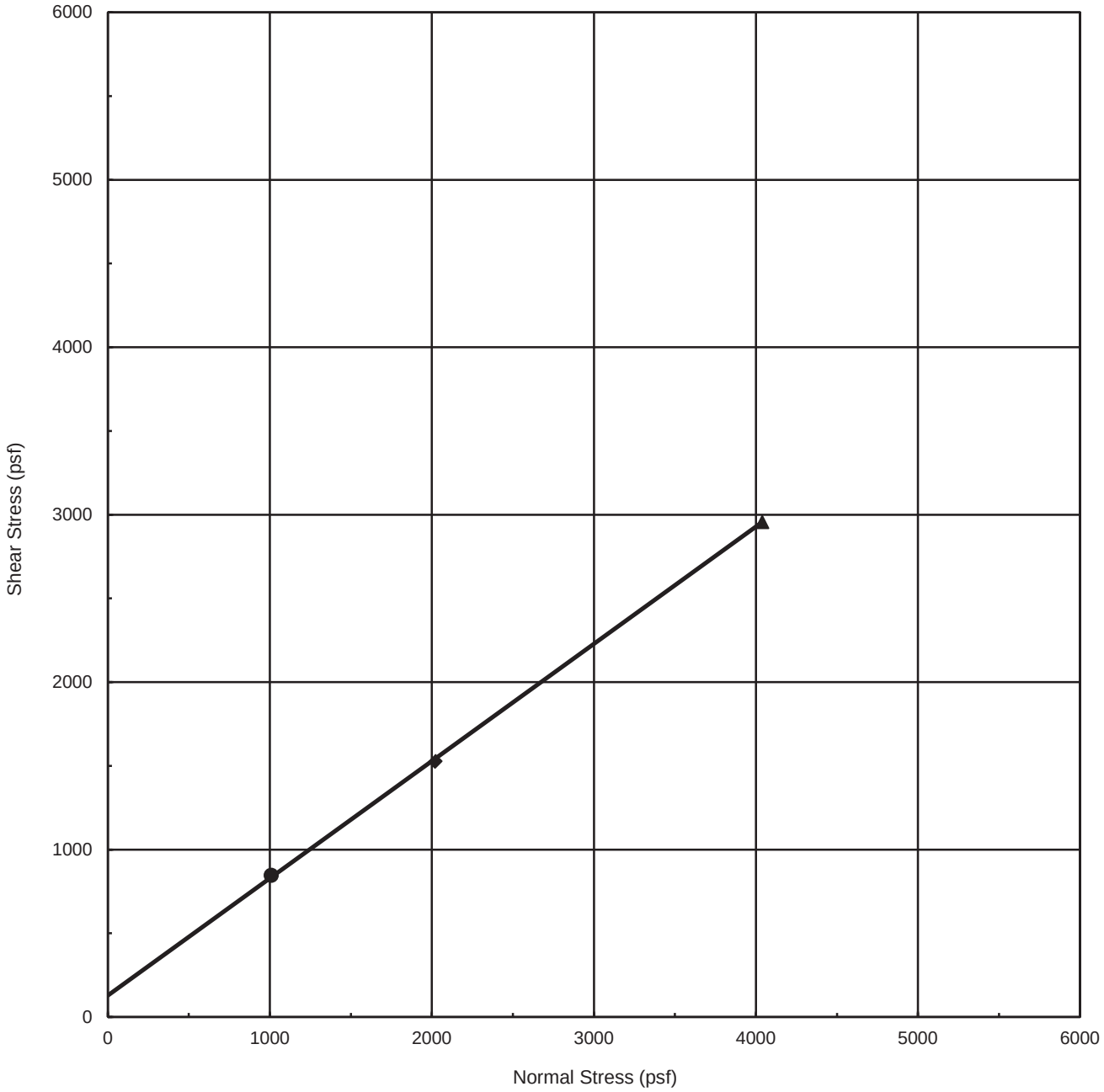
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Olive brown clayey Sand (SC)
Apparatus No.: DS2
Shear rate (in/min): 0.002

Boring No.: 248348G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1010 ●
Normal Stress (psf): 2020 ◆
Normal Stress (psf): 4036 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	248360G		Strength Intercept (C) :		129.4	psf	Peak	0.0	psf	Ultimate	
Sample No.:	4				6.2	kPa		0.0	kPa		
Depth (ft | m)	7.5	2.3	Friction Angle (ϕ) :		35	degree		0	degree		
Description:	**Dark olive brown clayey Sand (SC)**						Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		16.5	131.0	20.6	112.4	17.7	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	16.0	130.8	20.6	112.8	17.7	1010	48	846	41		0
pre-shear	◆ spec. 2	15.9	131.3	20.6	113.3	17.8	2020	97	1528	73		0
pre-shear	▲ spec. 3	15.3	133.9	21.0	116.1	18.2	4036	193	2959	142		0

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 8/14/2015

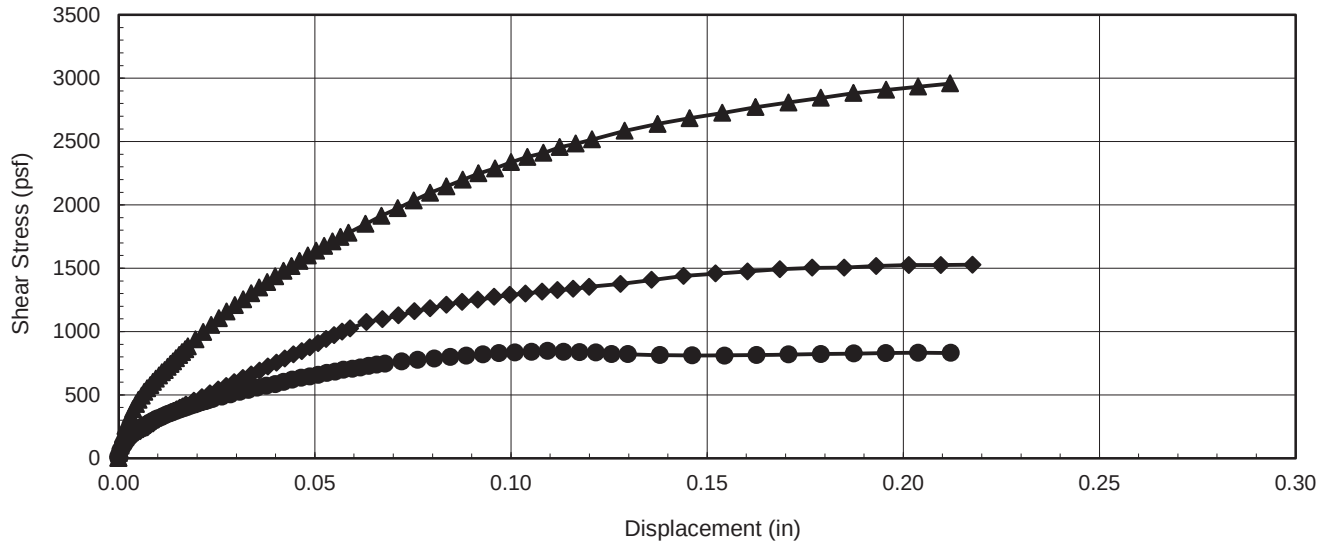
DIRECT SHEAR TEST
ASTM D 3080

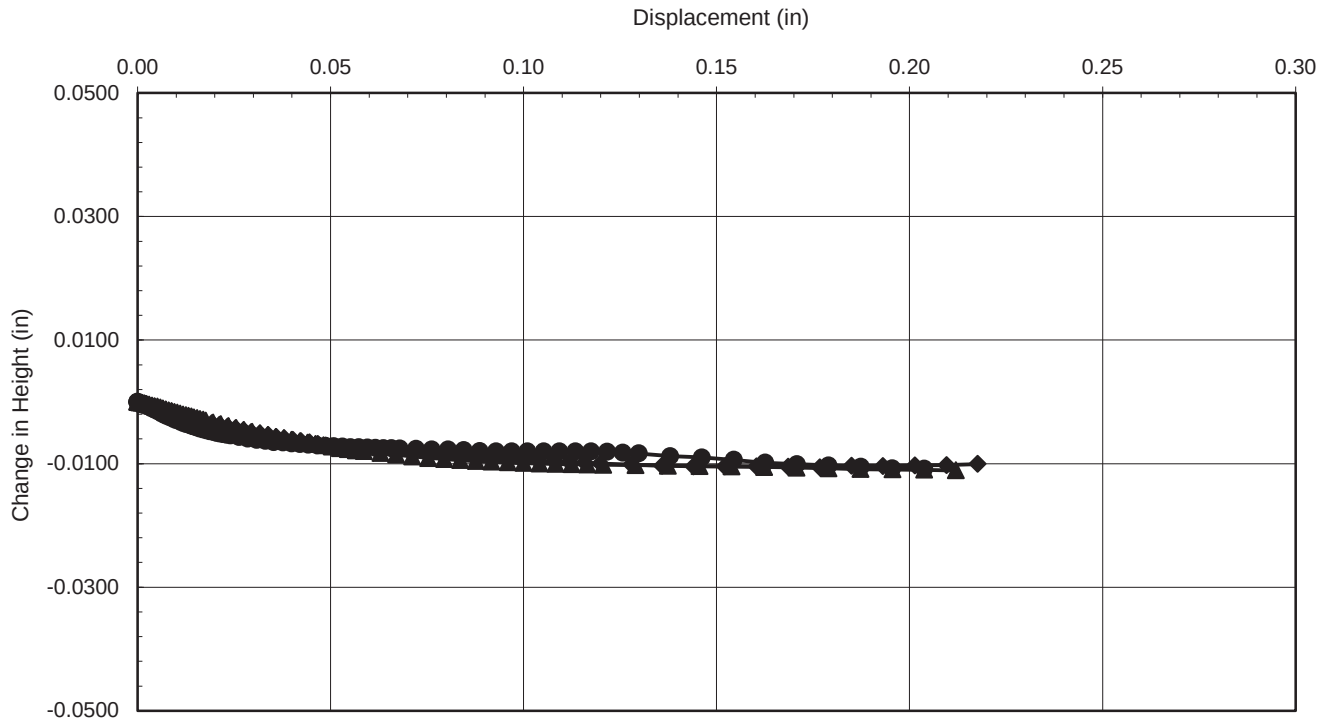
DS Plot AECOM Kast 248360G s04 7.5 ft.xlsx

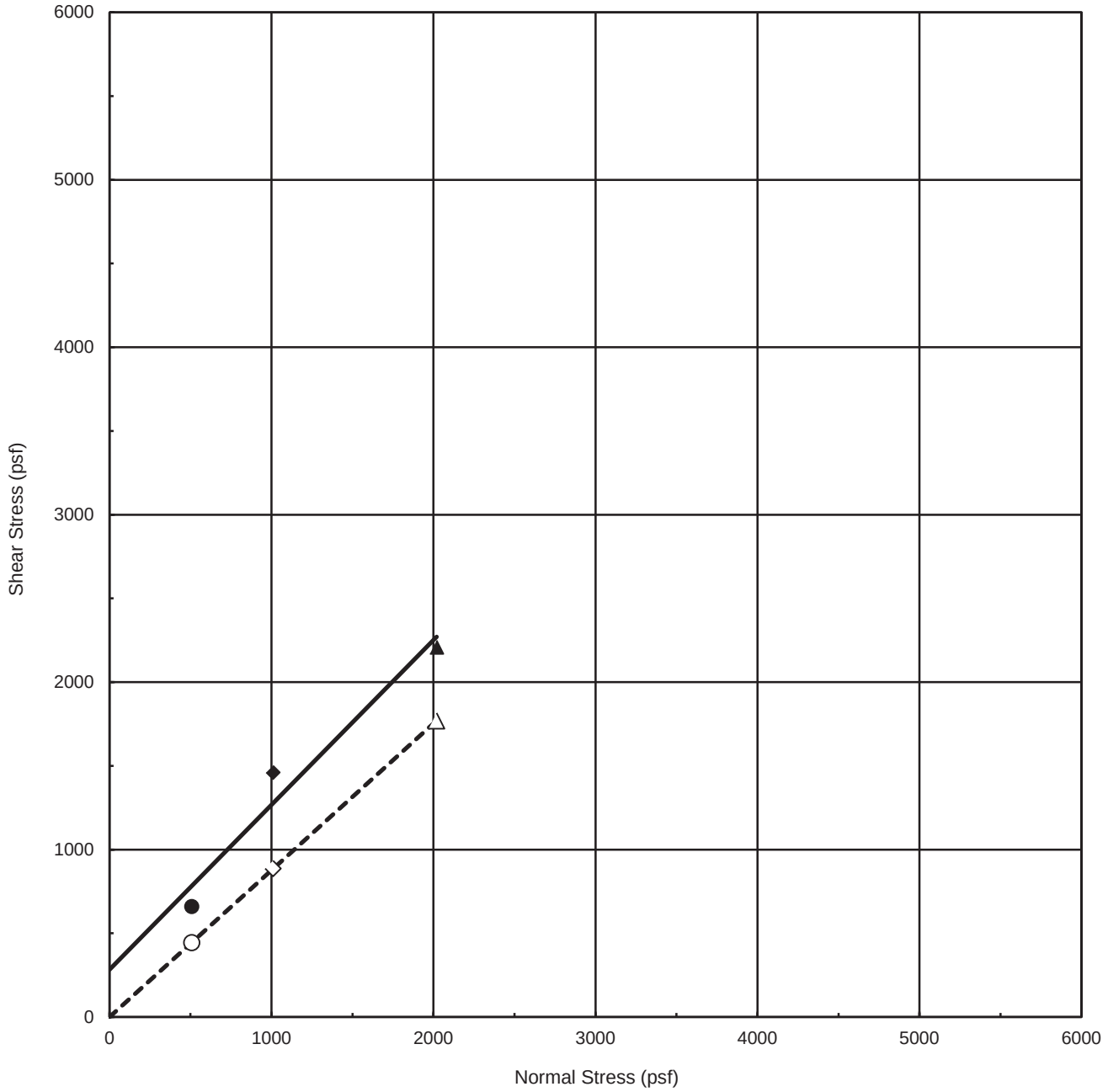
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark olive brown clayey Sand (SC)
Apparatus No.: DS3
Shear rate (in/min): 0.004

Boring No.: 248360G
Sample No.: 4
Sample Depth (ft.): 7.5
Normal Stress (psf): 1010 ●
Normal Stress (psf): 2020 ◆
Normal Stress (psf): 4036 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	249345G		Strength Intercept (C) :	283.3	psf	Peak	0.3	psf	Ultimate
Sample No.:	1			13.6	kPa		0.0	kPa	
Depth (ft | m)	2.5	0.8	Friction Angle (ϕ) :	45	degree		41	degree	

Description: **Dark brown silty, clayey Sand with tar (SC-SM)** Shear rate : 0.0030 (in/min) , 0.0076 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		8.7	136.1	21.4	125.2	19.7	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	15.4	135.7	21.3	117.6	18.5	508	24	660	32	444	21
pre-shear	◆ spec. 2	14.1	139.2	21.9	122.0	19.2	1010	48	1461	70	887	42
pre-shear	▲ spec. 3	11.8	143.9	22.6	128.7	20.2	2020	97	2209	106	1769	85

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 8/11/2015

DIRECT SHEAR TEST
ASTM D 3080

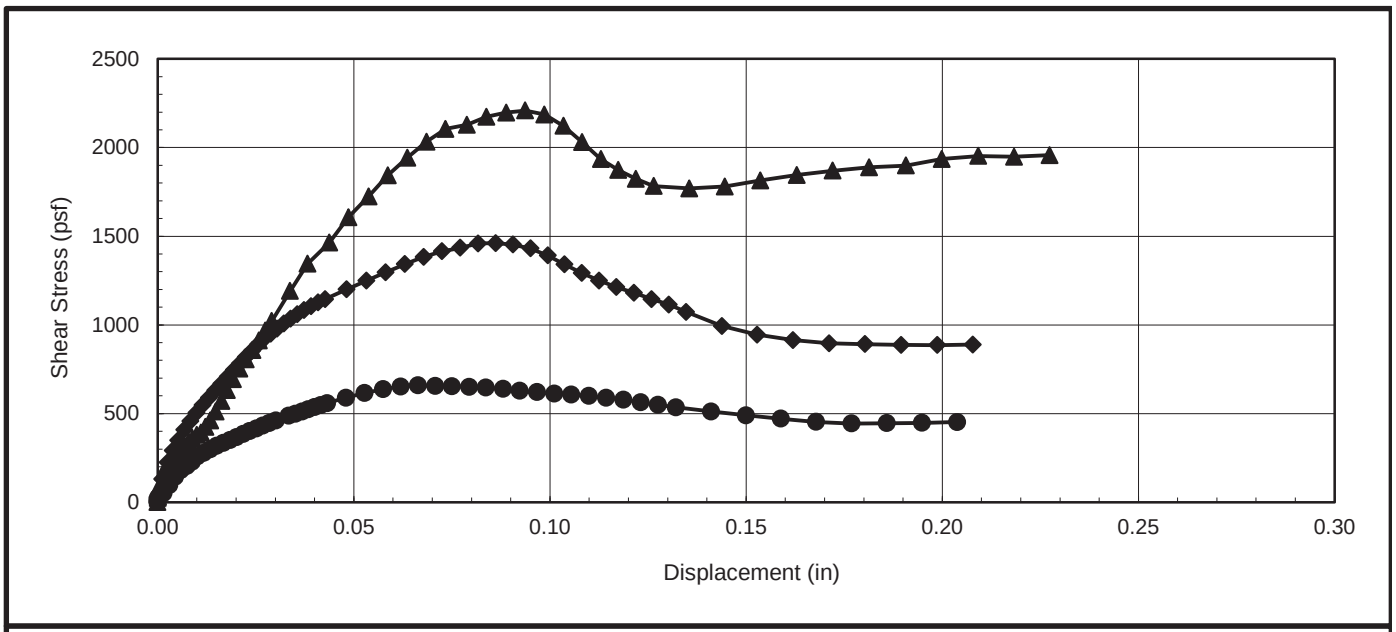
DIRECT SHEAR TEST
ASTM D 3080

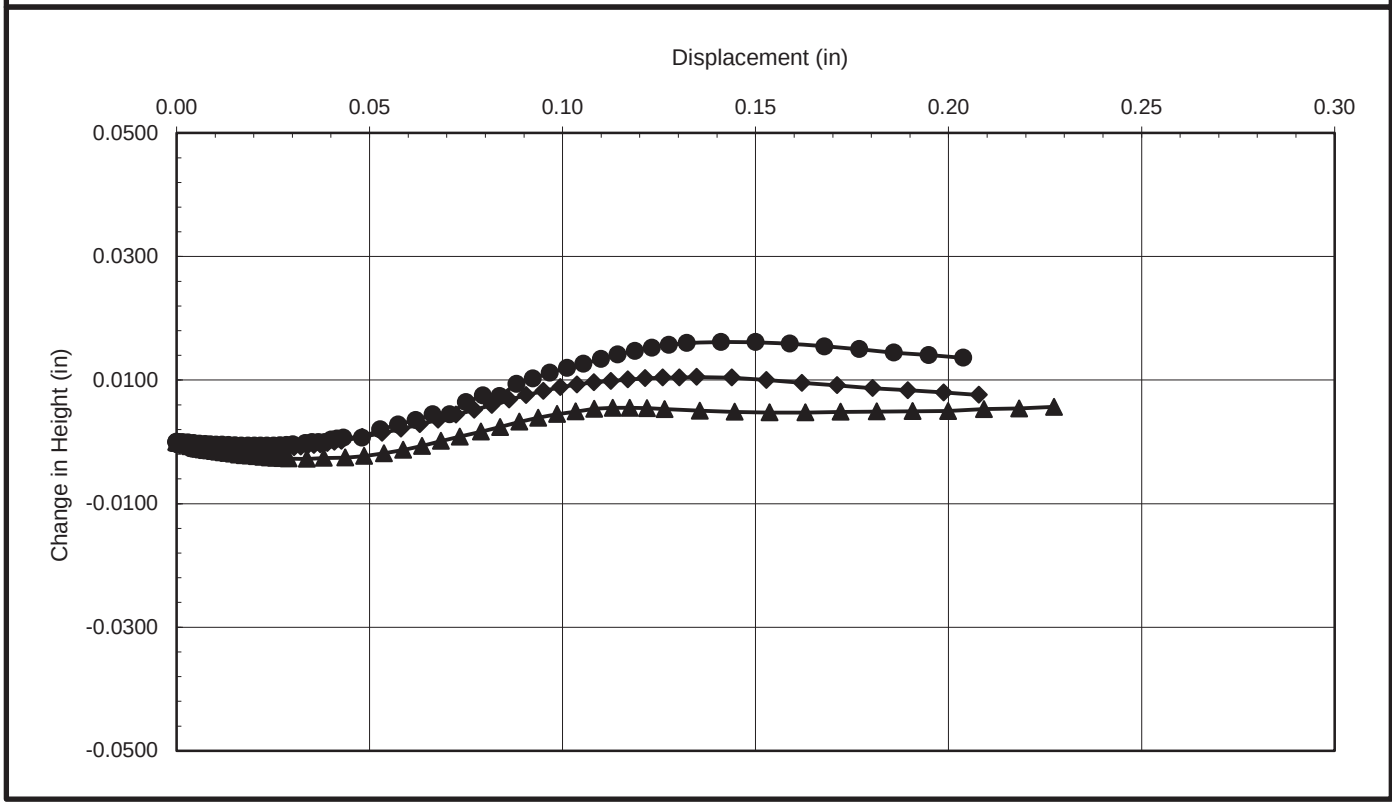
Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark brown silty, clayey Sand with tar (SC-SM)

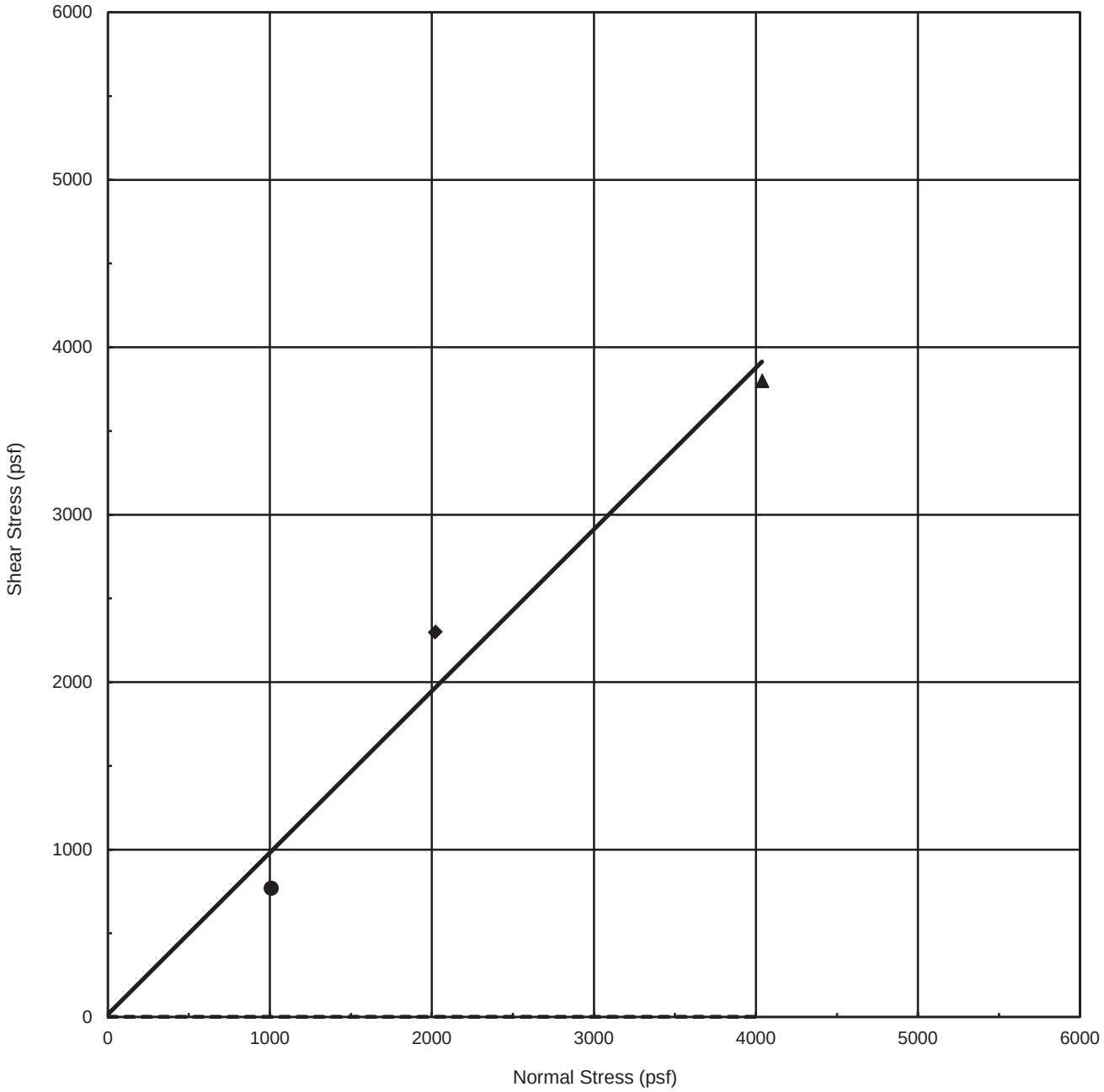
Apparatus No.: DS2
Shear rate (in/min): 0.003

Boring No.: 249345G
Sample No.: 1
Sample Depth (ft.): 2.5

Normal Stress (psf): 508 ●
Normal Stress (psf): 1010 ◆
Normal Stress (psf): 2020 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	249348G		Strength Intercept (C) :	16.3	psf	Peak	0.0	psf	Ultimate
Sample No.:	3			0.8	kPa		0.0	kPa	
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :	44	degree		0	degree	

Description: **Dark brown silty Sand (SM)** Shear rate : 0.0040 (in/min) , 0.0102 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		7.8	128.6	20.2	119.3	18.7	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	18.4	129.7	20.4	109.6	17.2	1010	48	768	37		0
pre-shear	◆ spec. 2	10.9	145.9	22.9	131.5	20.7	2020	97	2301	110		0
pre-shear	▲ spec. 3	14.2	143.4	22.5	125.5	19.7	4036	193	3801	182		0

AECOM

Former Kast Property

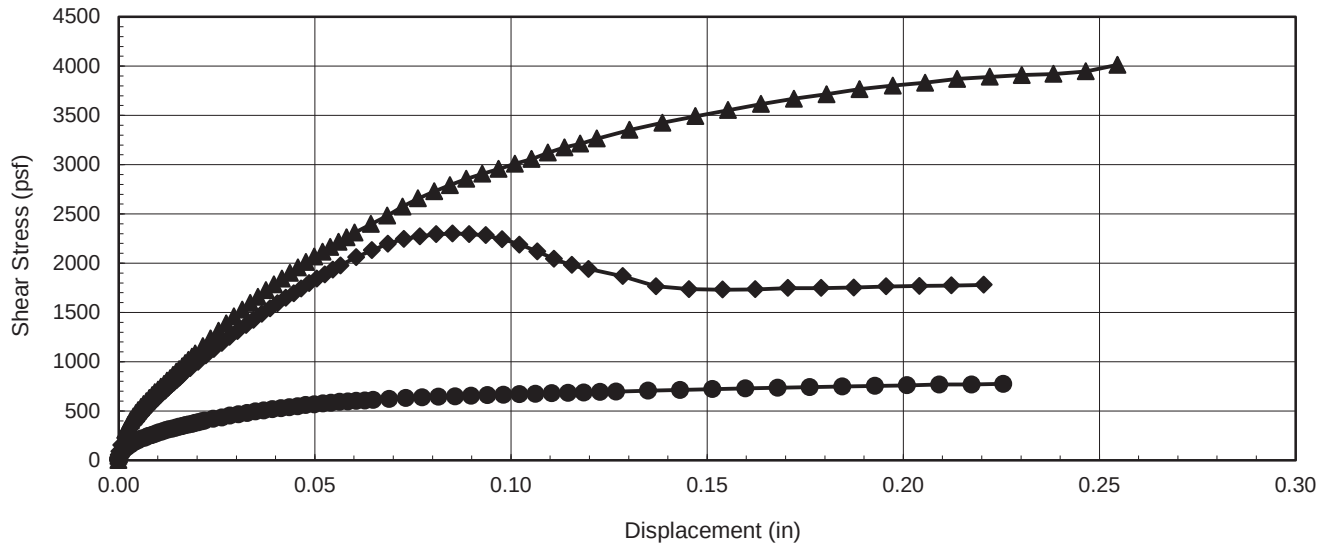
Project Number: 60422689
Test Date: 8/11/2015

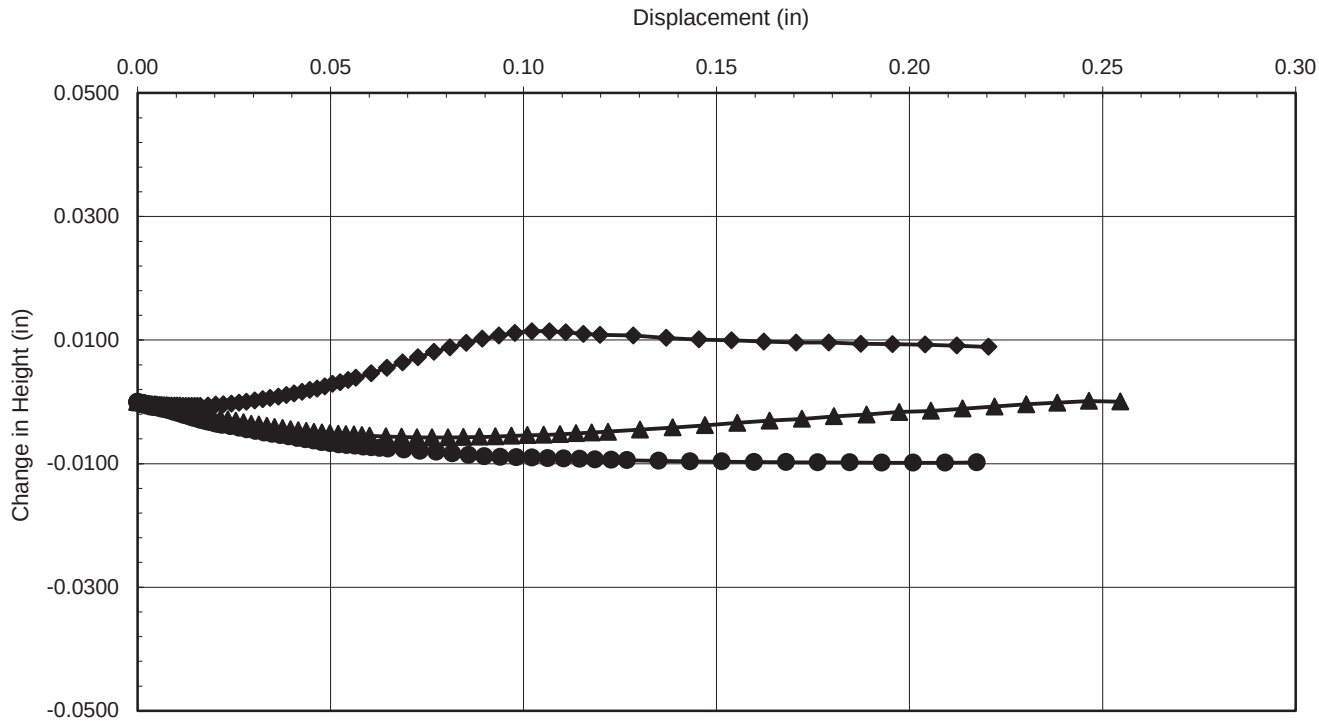
DIRECT SHEAR TEST
ASTM D 3080

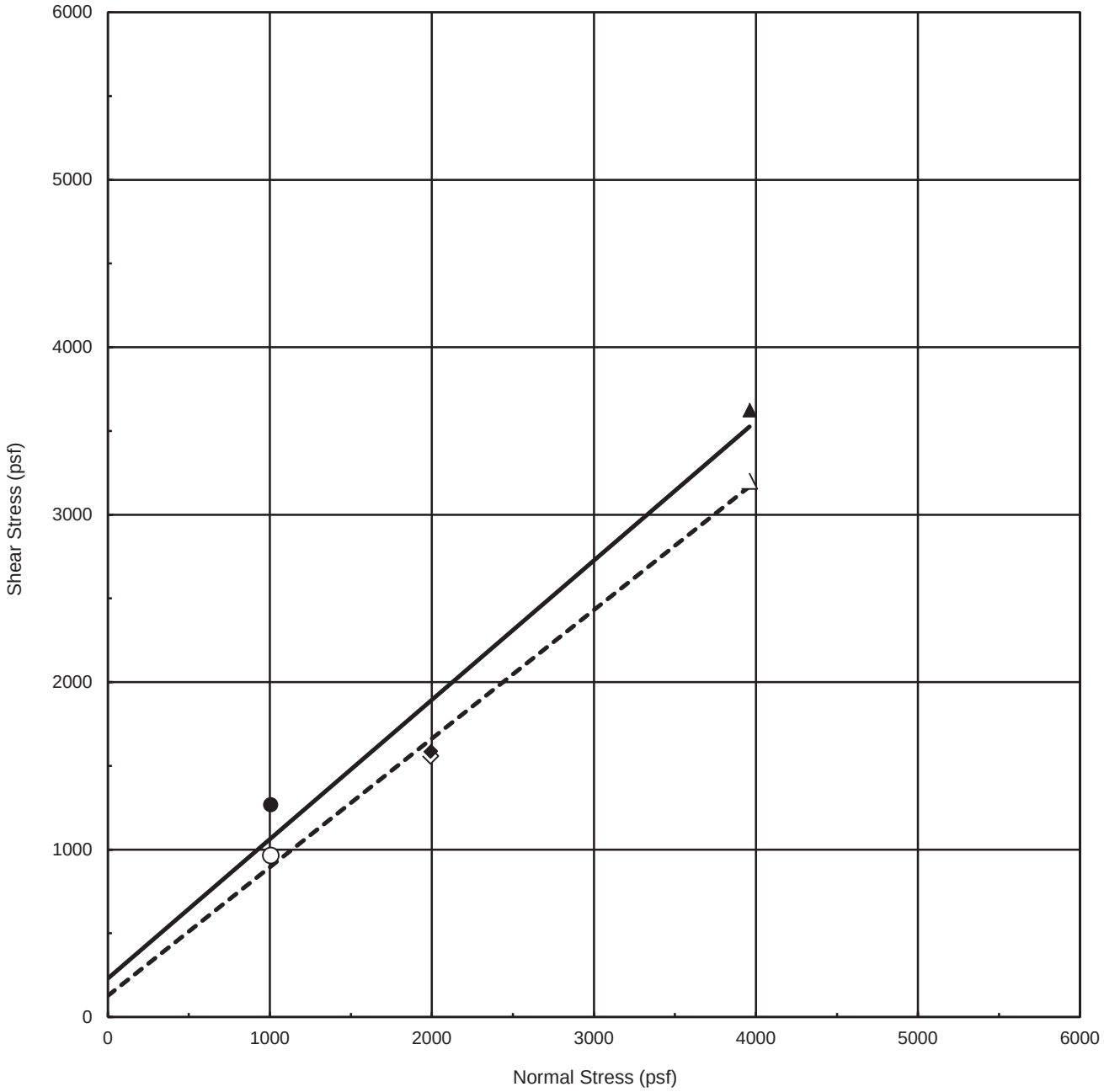
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark brown silty Sand (SM)
Apparatus No.: DS3
Shear rate (in/min): 0.004

Boring No.: 249348G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1010 ●
Normal Stress (psf): 2020 ◆
Normal Stress (psf): 4036 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	249377G		Strength Intercept (C) :		230.6	psf	Peak	126.9	psf	Ultimate	
Sample No.:	5				11.0	kPa		6.1	kPa		
Depth (ft | m)	10.0	3.0	Friction Angle (ϕ) :		40	degree		38	degree		
Description:	**Dark brown silty, clayey Sand with tar (SC-SM)**						Shear rate :	0.0020 (in/min) ,		0.0051 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		11.9	135.4	21.3	121.0	19.0	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	13.5	137.9	21.7	121.5	19.1	1006	48	1268	61	965	46
pre-shear	◆ spec. 2	15.2	136.6	21.5	118.6	18.6	1992	95	1588	76	1559	75
pre-shear	▲ spec. 3	14.3	145.9	22.9	127.7	20.1	3959	190	3626	174	3201	153

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 8/22/2015

DIRECT SHEAR TEST
ASTM D 3080

DS Plot AECOM Kast 249377G s05 10 ft.xlsx

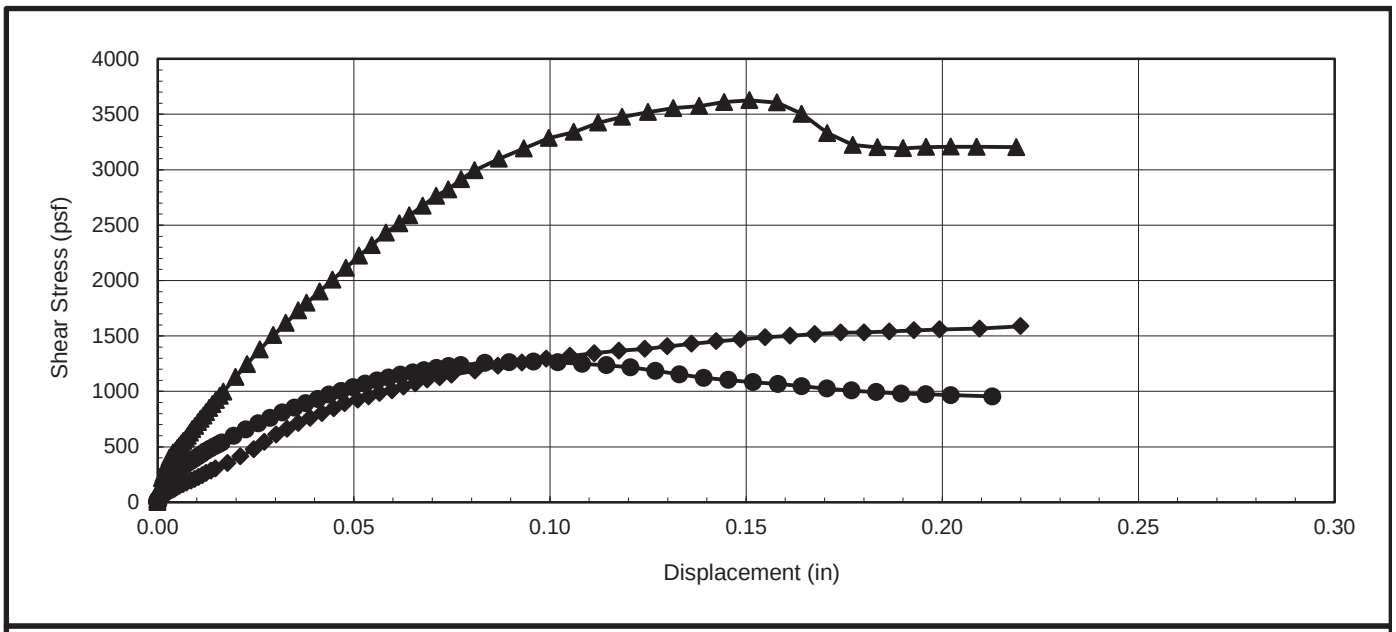
DIRECT SHEAR TEST
ASTM D 3080

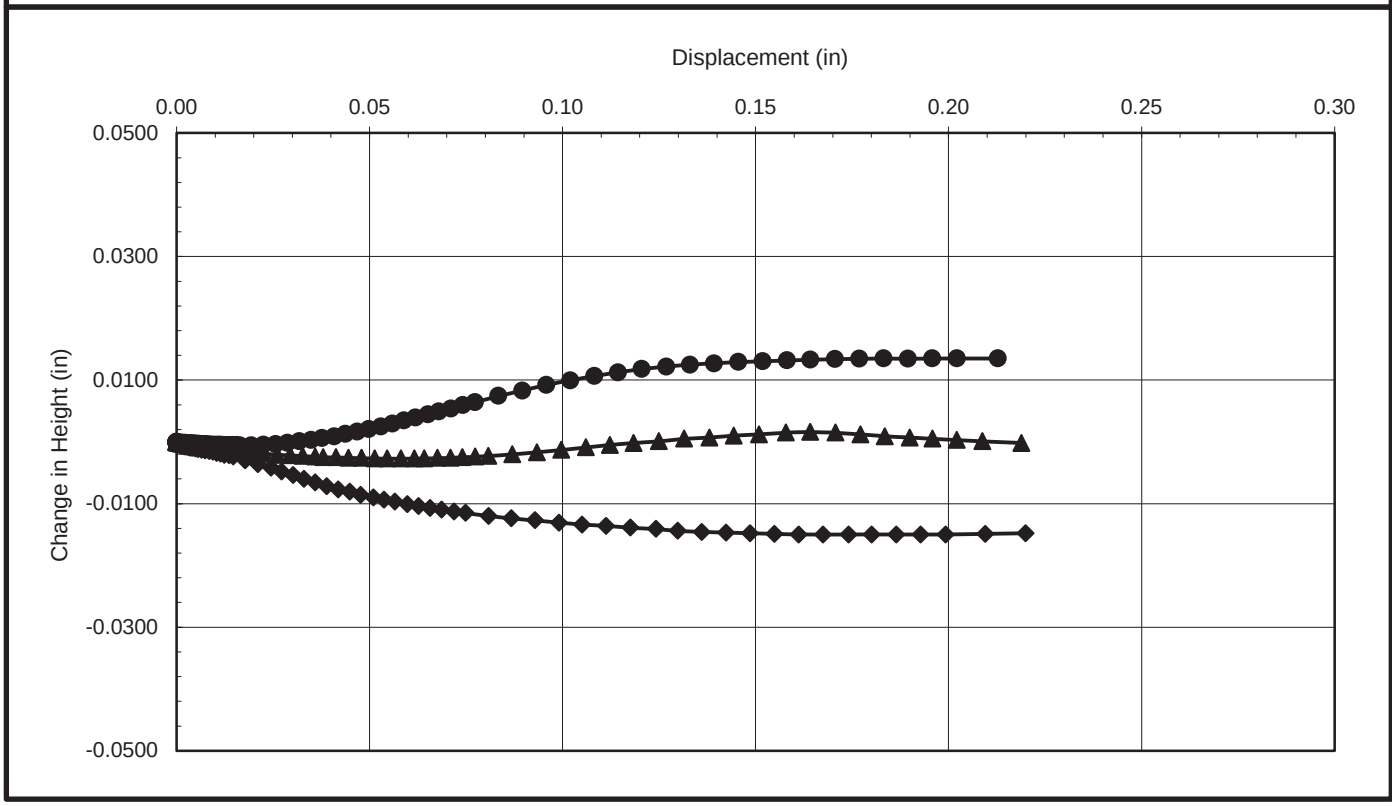
Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark brown silty, clayey Sand with tar (SC-SM)

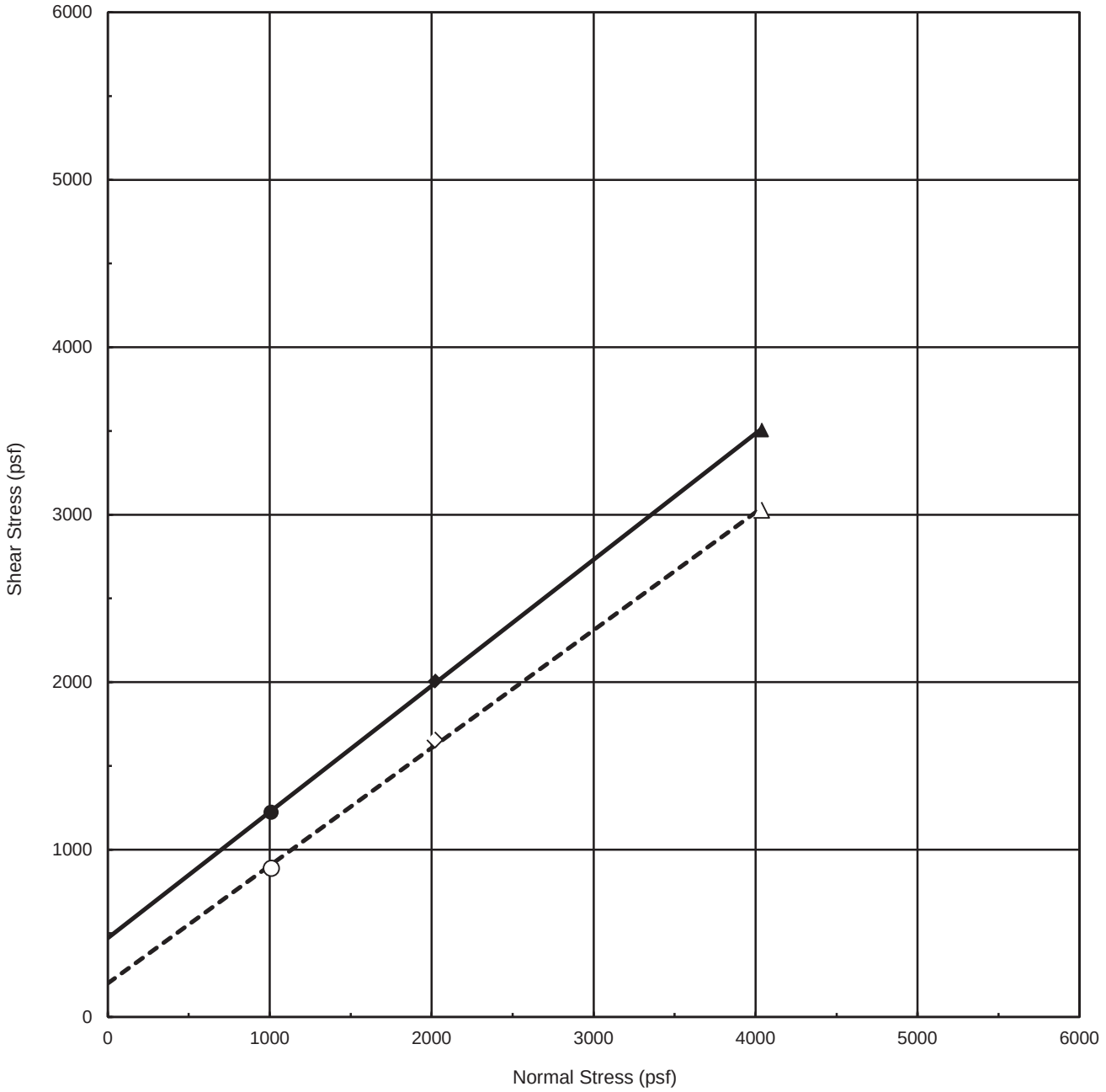
Apparatus No.: DS1
Shear rate (in/min): 0.002

Boring No.: 249377G
Sample No.: 5
Sample Depth (ft.): 10

Normal Stress (psf): 1006 ●
Normal Stress (psf): 1992 ◆
Normal Stress (psf): 3959 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	249412G		Strength Intercept (C) :		471.3	psf	Peak	201.4	psf	Ultimate	
Sample No.:	5				22.6	kPa		9.6	kPa		
Depth (ft | m)	10.0	3.0	Friction Angle (ϕ) :		37	degree		35	degree		
Description:	**Strong brown clayey Sand (SC)**						Shear rate :	0.0020 (in/min) ,		0.0051 (cm/min)	
SYMBOL	% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up	14.6	132.7	20.9	115.8	18.2	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear ● spec. 1	16.2	135.6	21.3	116.7	18.3	1010	48	1222	59	889	43
pre-shear ◆ spec. 2	15.6	135.9	21.4	117.6	18.5	2020	97	2008	96	1655	79
pre-shear ▲ spec. 3	15.6	137.5	21.6	118.9	18.7	4036	193	3507	168	3028	145

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 8/14/2015

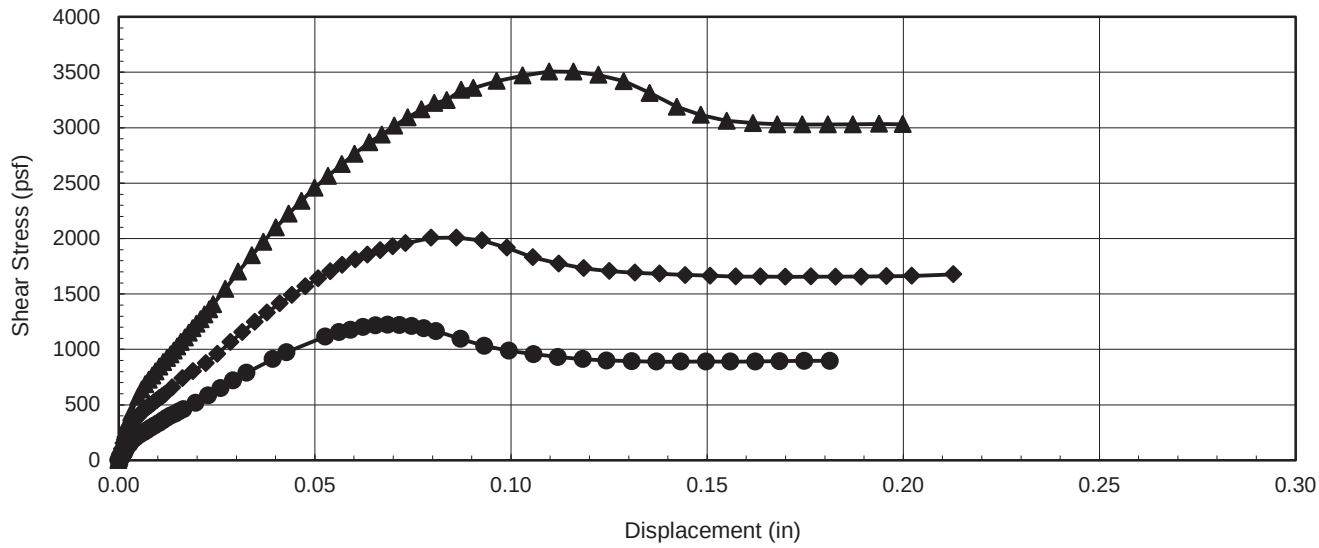
DIRECT SHEAR TEST
ASTM D 3080

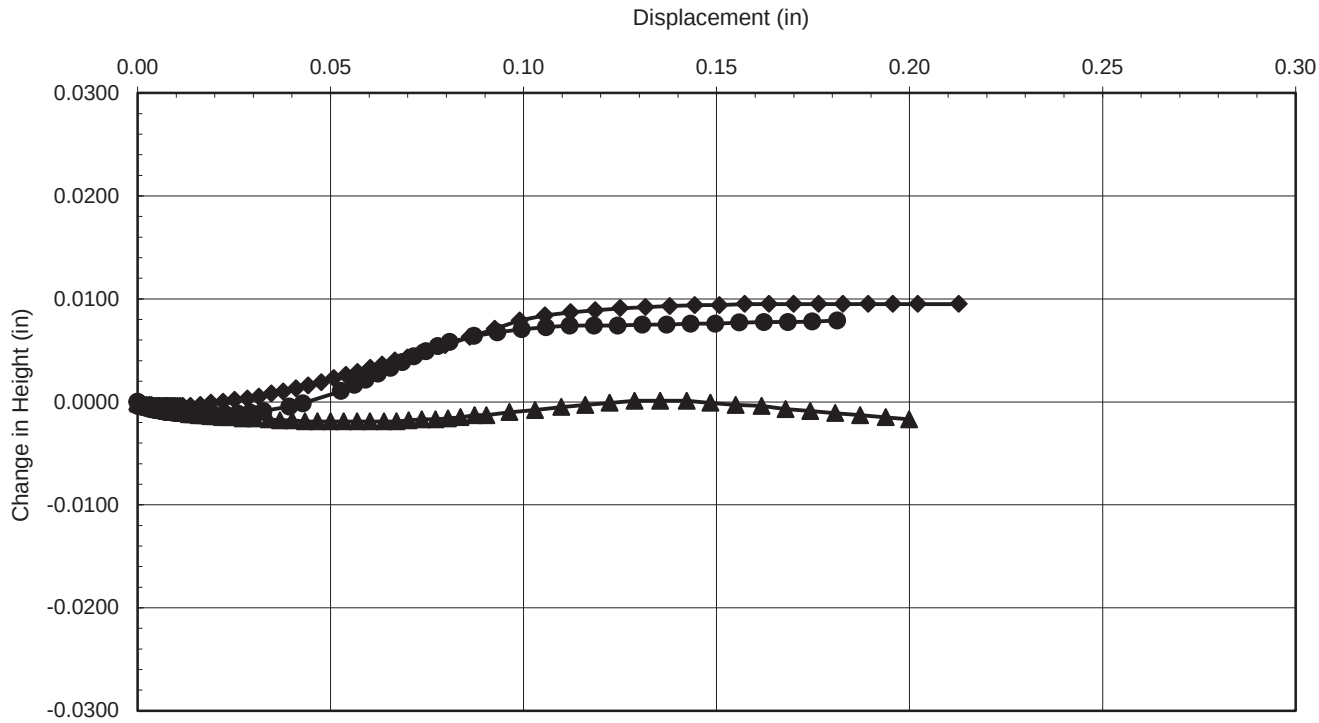
DS Plot AECOM Kast 249412G s05 10 ft.xlsx

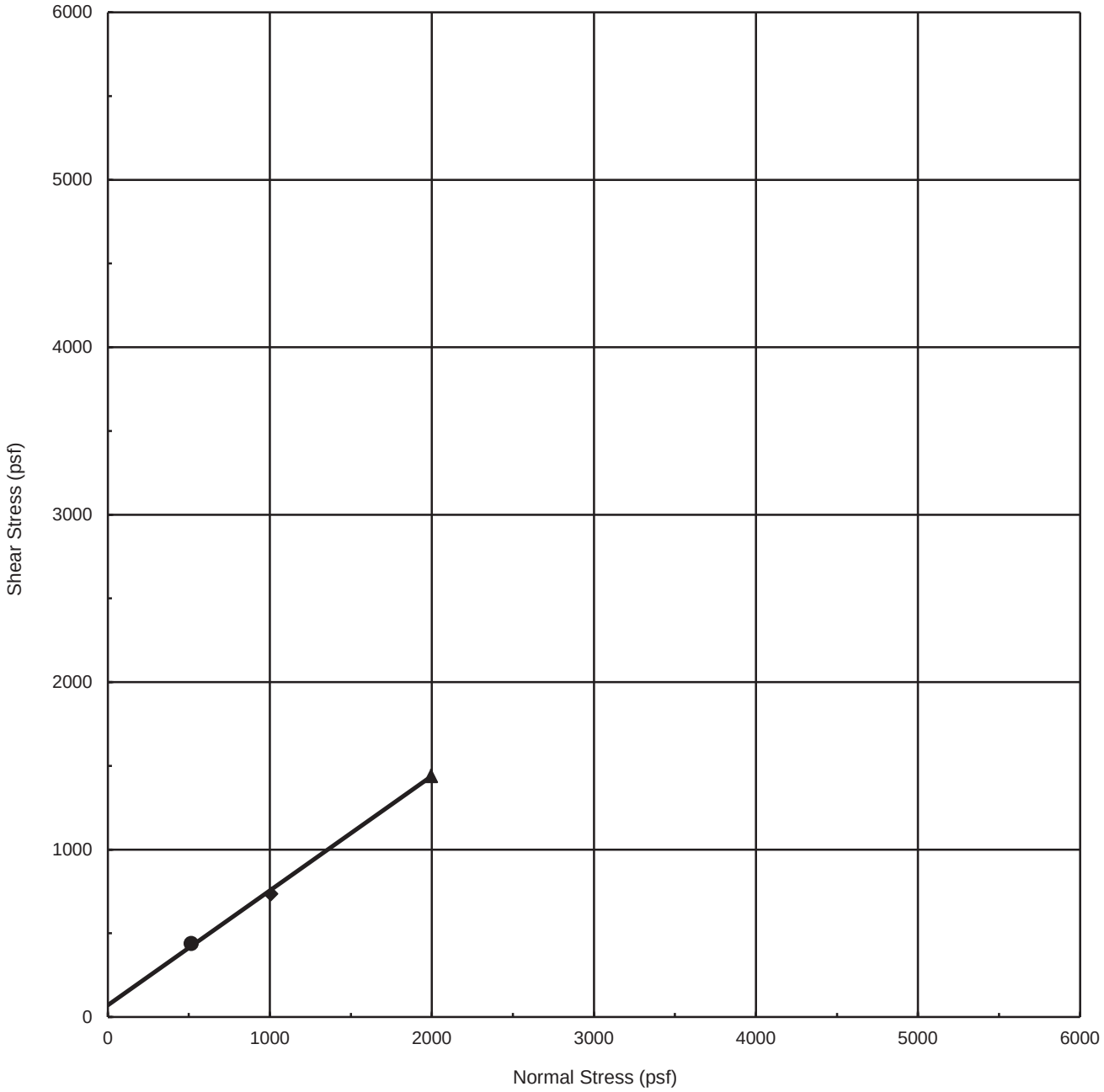
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Strong brown clayey Sand (SC)
Apparatus No.: DS1
Shear rate (in/min): 0.002

Boring No.: 249412G
Sample No.: 5
Sample Depth (ft.): 10
Normal Stress (psf): 1010 ●
Normal Stress (psf): 2020 ◆
Normal Stress (psf): 4036 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	M24406G		Strength Intercept (C) :	71.1	psf	Peak	XXXXX	psf	Ultimate
Sample No.:	1			3.4	kPa		XXXXX	kPa	
Depth (ft | m)	2.5	0.8	Friction Angle (ϕ) :	34	degree		XXXXX	degree	

Description: **Dark brown sandy Clay with roots (CL)** Shear rate : 0.0010 (in/min) , 0.0025 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		8.7	122.0	19.2	112.3	17.6	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	21.0	127.3	20.0	105.3	16.5	515	25	439	21	XXXXX	XXXXX
pre-shear	◆ spec. 2	19.7	125.1	19.7	104.5	16.4	1006	48	736	35	XXXXX	XXXXX
pre-shear	▲ spec. 3	18.5	129.2	20.3	109.0	17.1	1992	95	1442	69	XXXXX	XXXXX

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 9/8/2015

DIRECT SHEAR TEST
ASTM D 3080

DIRECT SHEAR TEST
ASTM D 3080

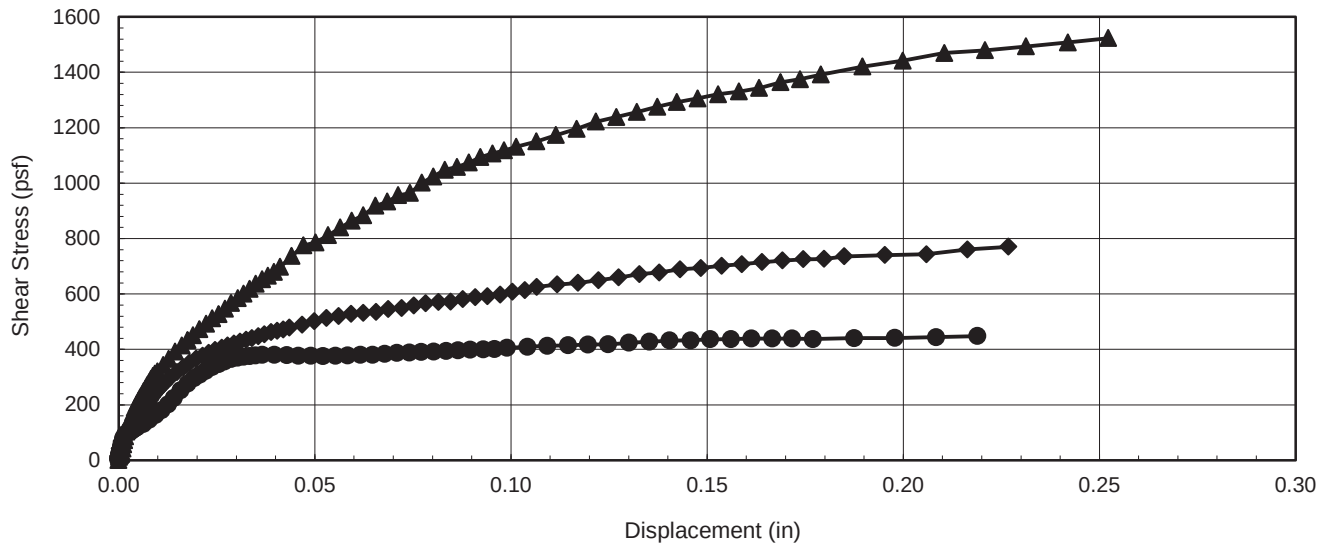
Project Name : Former Kast Property
Project Number : 60422689

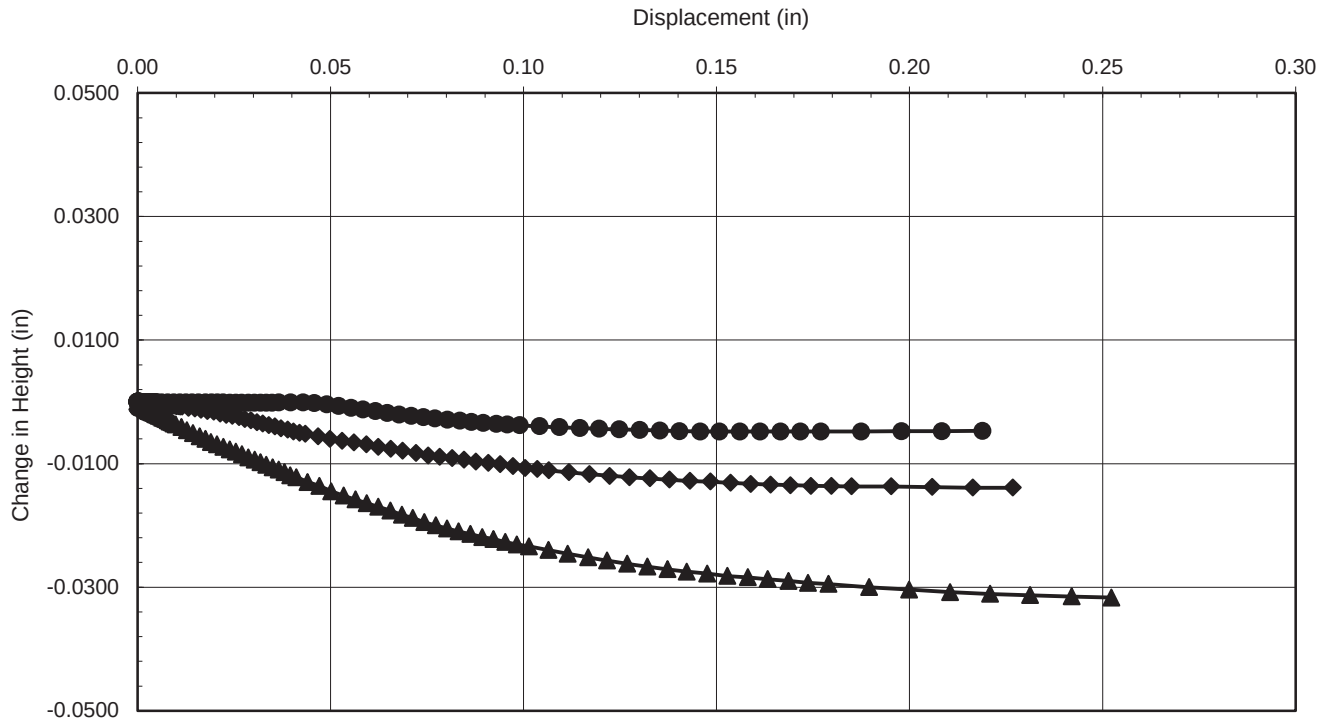
Boring No.: M24406G
Sample No.: 1
Sample Depth (ft.): 2.5

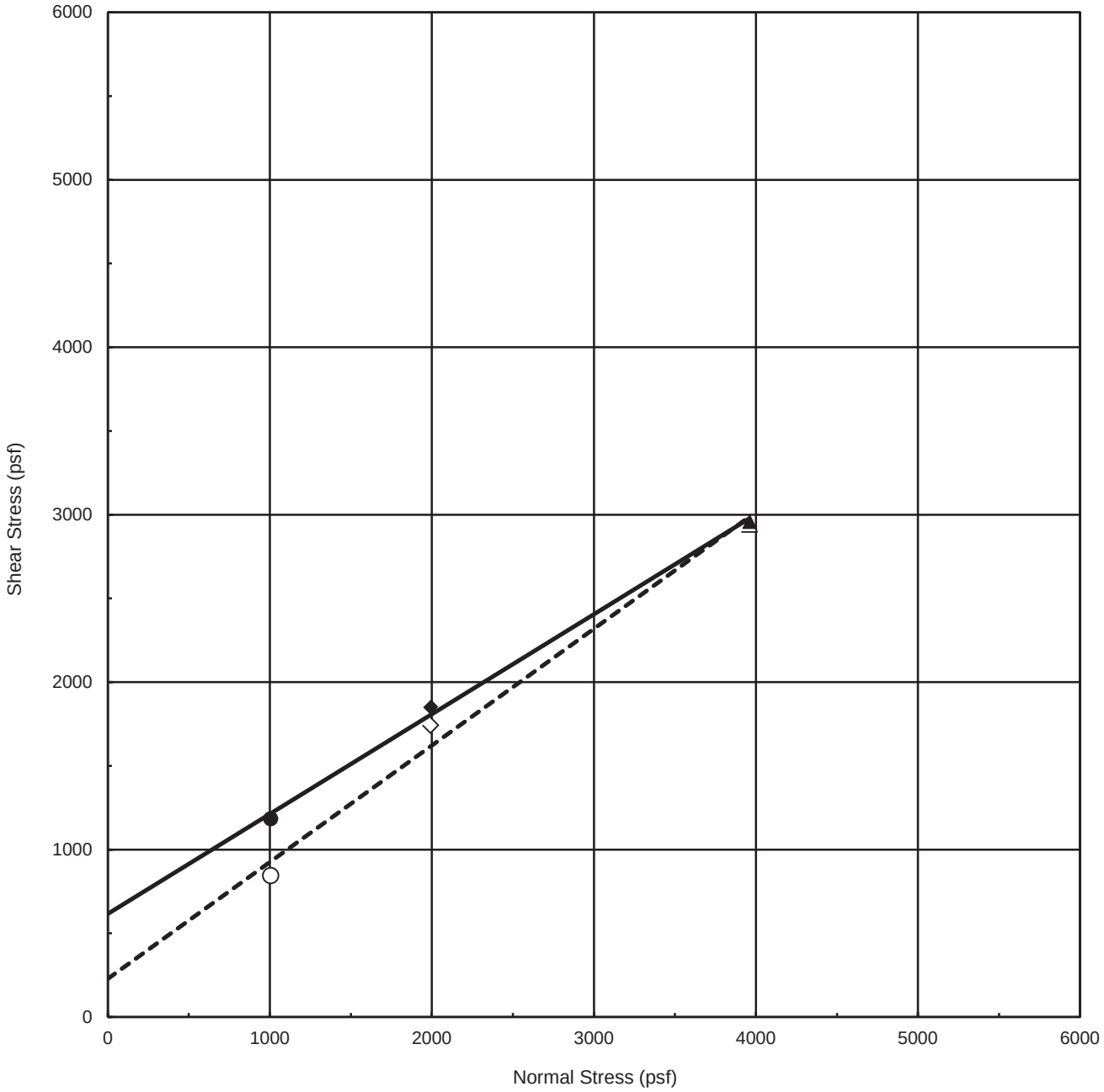
Specimen Description : Dark brown sandy Clay with roots (CL)

Normal Stress (psf): 515 ●
Normal Stress (psf): 1006 ◆
Normal Stress (psf): 1992 ▲

Apparatus No.: DS1
Shear rate (in/min): 0.001







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	M24411G		Strength Intercept (C) :	616.6	psf	Peak	229.4	psf	Ultimate
Sample No.:	3			29.5	kPa		11.0	kPa	
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :	31	degree		35	degree	

Description: **Dark brown Clay with sand (CL)** Shear rate : 0.0040 (in/min) , 0.0102 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		13.7	128.9	20.3	113.3	17.8	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	17.8	134.0	21.1	113.8	17.9	1005	48	1183	57	845	40
pre-shear	◆ spec. 2	17.1	133.9	21.0	114.3	18.0	1991	95	1853	89	1743	83
pre-shear	▲ spec. 3	16.5	136.4	21.4	117.0	18.4	3958	190	2960	142	2944	141

AECOM

Former Kast Property

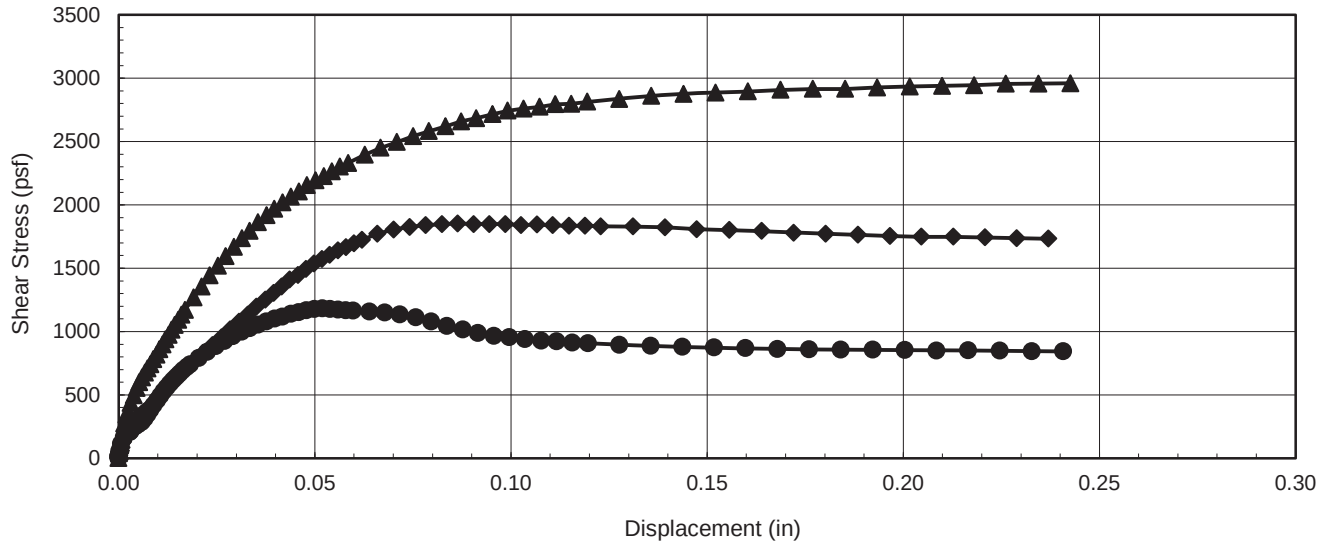
Project Number: 60422689
Test Date: 9/8/2015

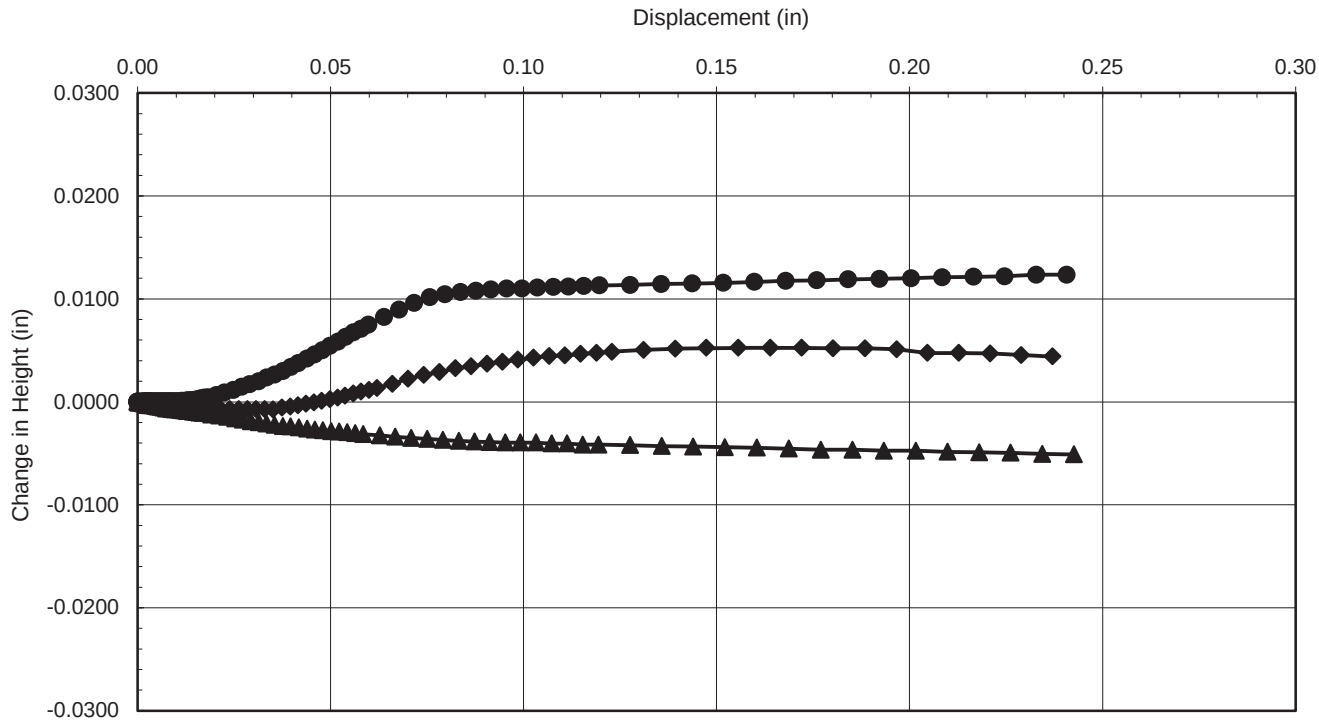
DIRECT SHEAR TEST
ASTM D 3080

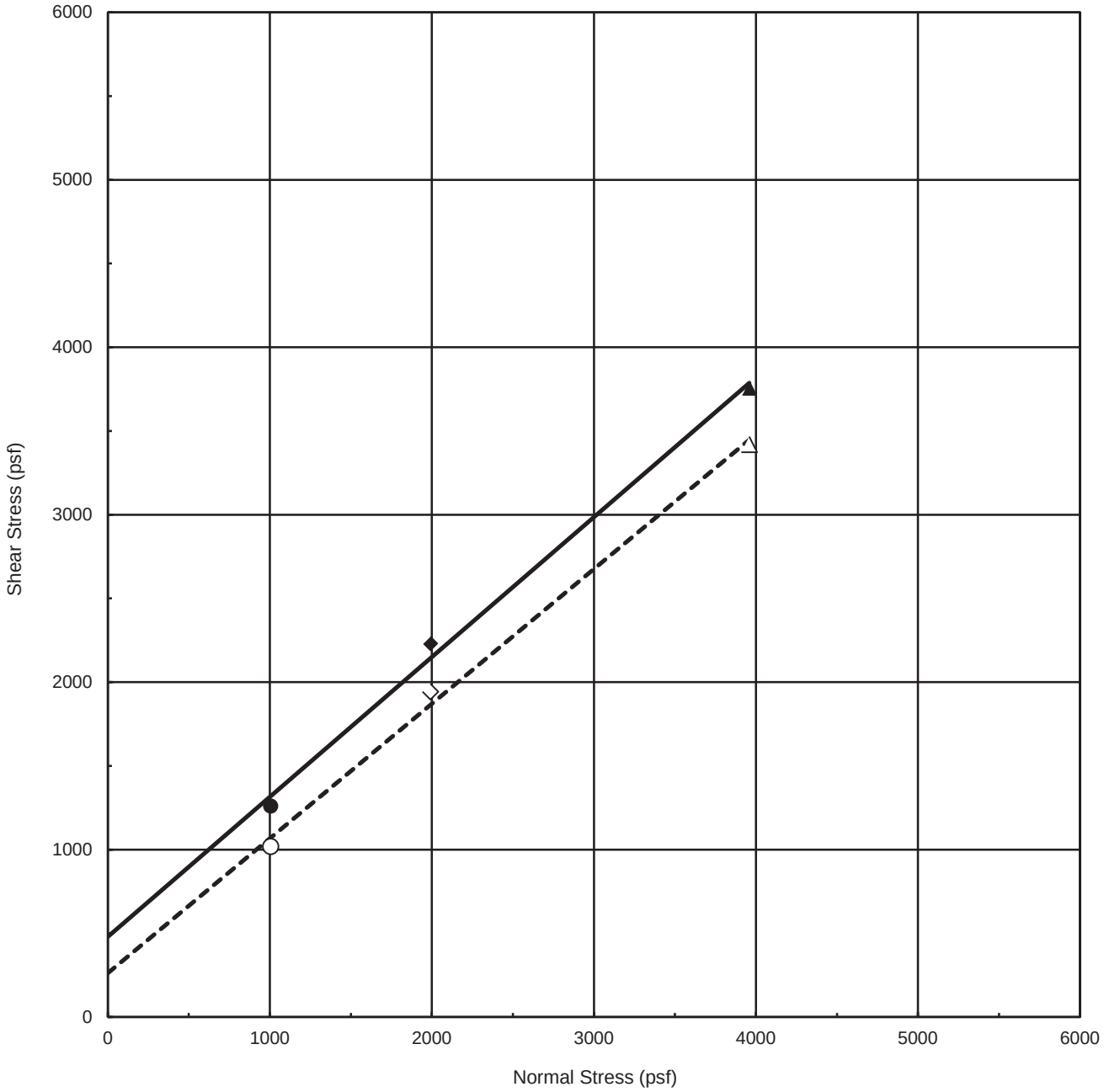
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark brown Clay with sand (CL)
Apparatus No.: DS3
Shear rate (in/min): 0.004

Boring No.: M24411G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1005 ●
Normal Stress (psf): 1991 ◆
Normal Stress (psf): 3958 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	M24616G		Strength Intercept (C) :	479.5	psf	Peak	263.1	psf	Ultimate
Sample No.:	3			23.0	kPa		12.6	kPa	
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :	40	degree		39	degree	

Description: **Very dark gray silty Sand (SM)** Shear rate : 0.0040 (in/min) , 0.0102 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		9.8	121.9	19.5	104.3	16.4	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	18.0	125.5	19.7	106.4	16.7	1005	48	1260	60	1019	49
pre-shear	◆ spec. 2	18.1	125.4	19.7	106.2	16.7	1991	95	2231	107	1943	93
pre-shear	▲ spec. 3	15.2	128.3	20.2	111.4	17.5	3958	190	3756	180	3420	164

AECOM

Former Kast Property

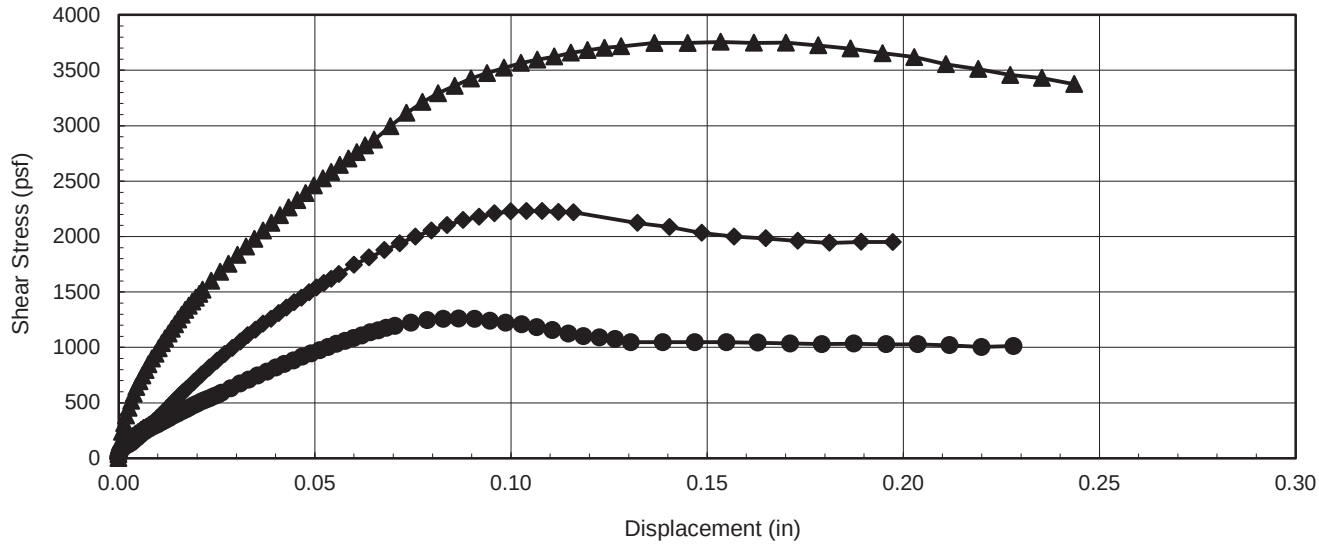
Project Number: 60422689
Test Date: 9/23/2015

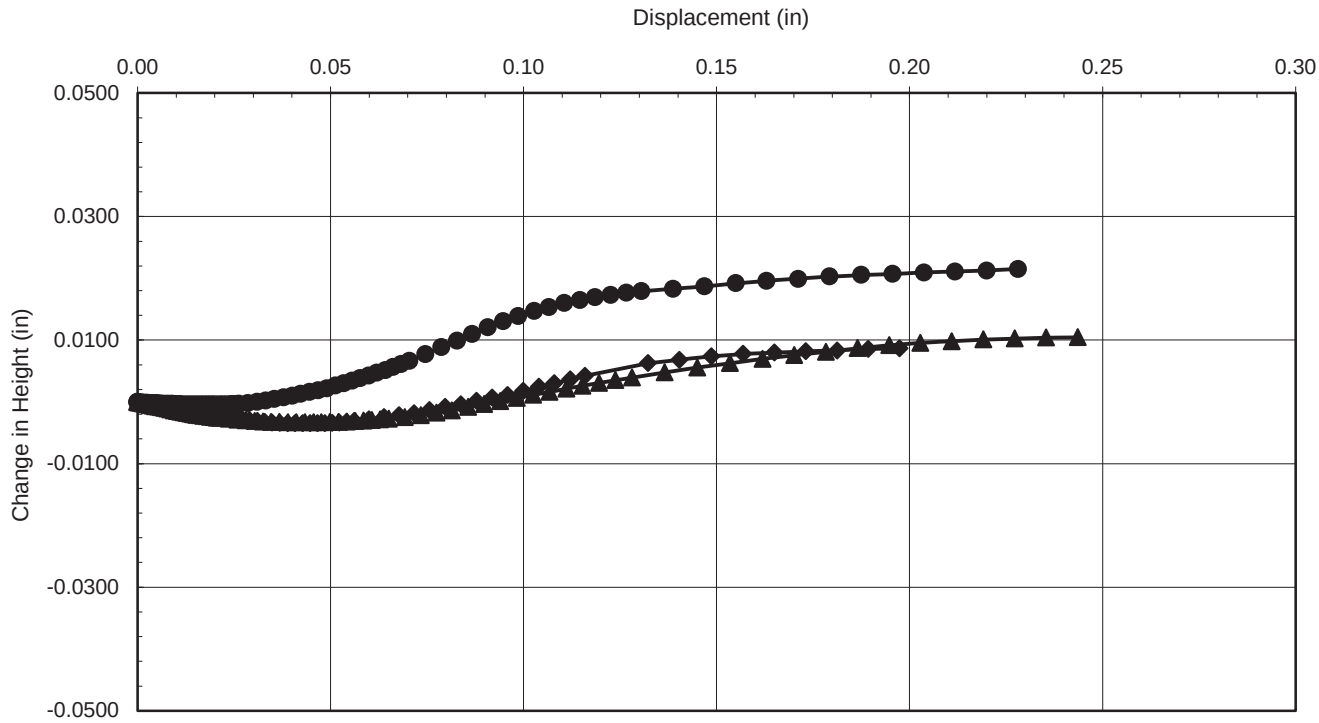
DIRECT SHEAR TEST
ASTM D 3080

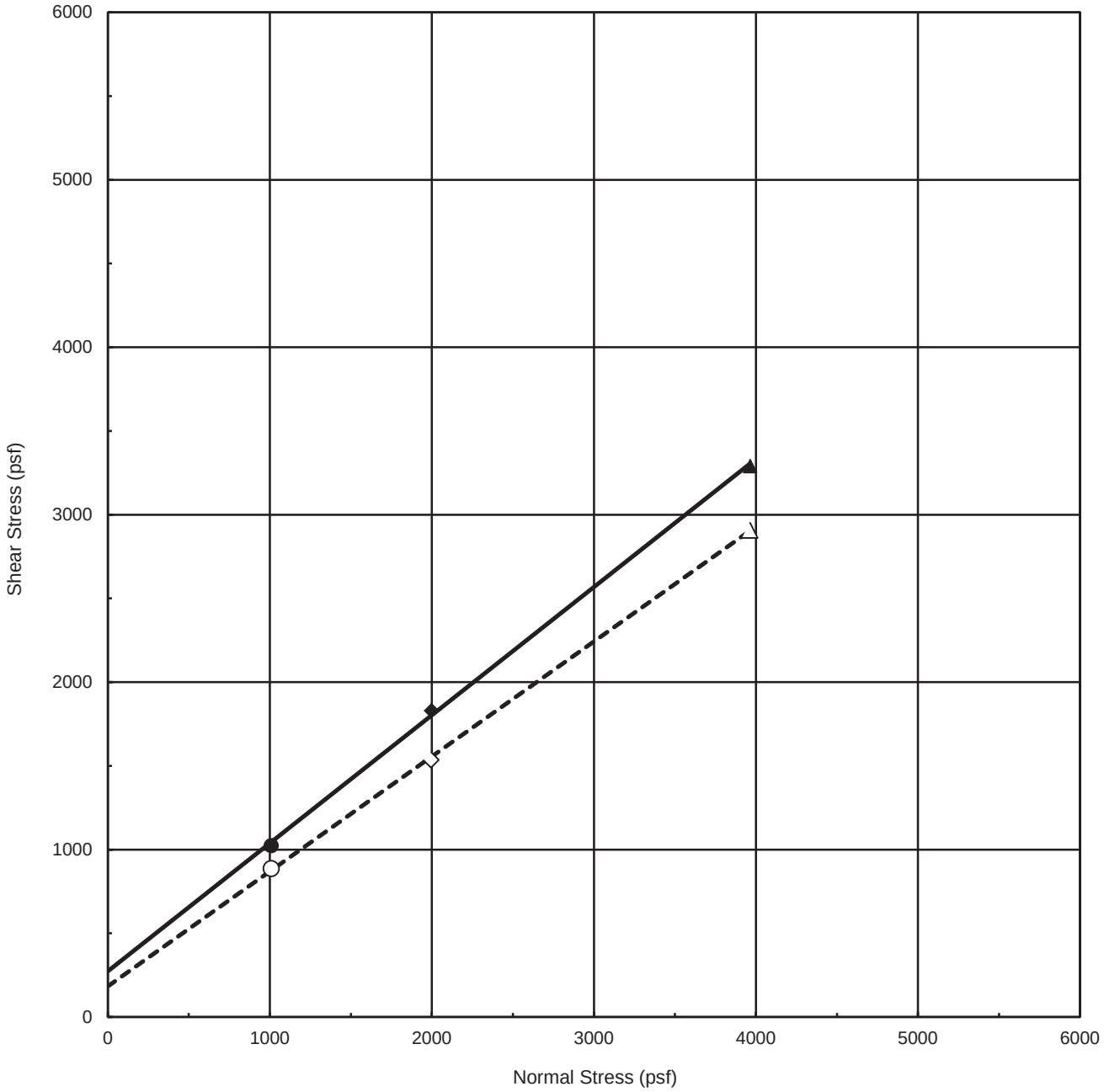
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Very dark gray silty Sand (SM)
Apparatus No.: DS3
Shear rate (in/min): 0.004

Boring No.: M24616G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1005 ●
Normal Stress (psf): 1991 ◆
Normal Stress (psf): 3958 ▲







Peak Values are : ● ,solid trend line									Ultimate Values are: ❍ ,dashed trend line		
Exploration No.:	M24628G		Strength Intercept (C) :		274.4	psf	Peak		183.9	psf	Ultimate
Sample No.:	4				13.1	kPa			8.8	kPa	
Depth (ft | m)	7.5	2.3	Friction Angle (ϕ) :		37	degree			34	degree	
Description:	**Olive gray silty Sand (SM)**						Shear rate :	0.0040	(in/min) ,	0.0102	(cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		19.8	124.6	19.6	104.0	16.3	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	24.2	126.5	19.9	101.9	16.0	1009	48	1023	49	887	42
pre-shear	◆ spec. 2	24.2	129.1	20.3	103.9	16.3	1994	95	1833	88	1536	74
pre-shear	▲ spec. 3	24.0	129.4	20.3	104.4	16.4	3962	190	3292	158	2908	139

AECOM

Former Kast Property

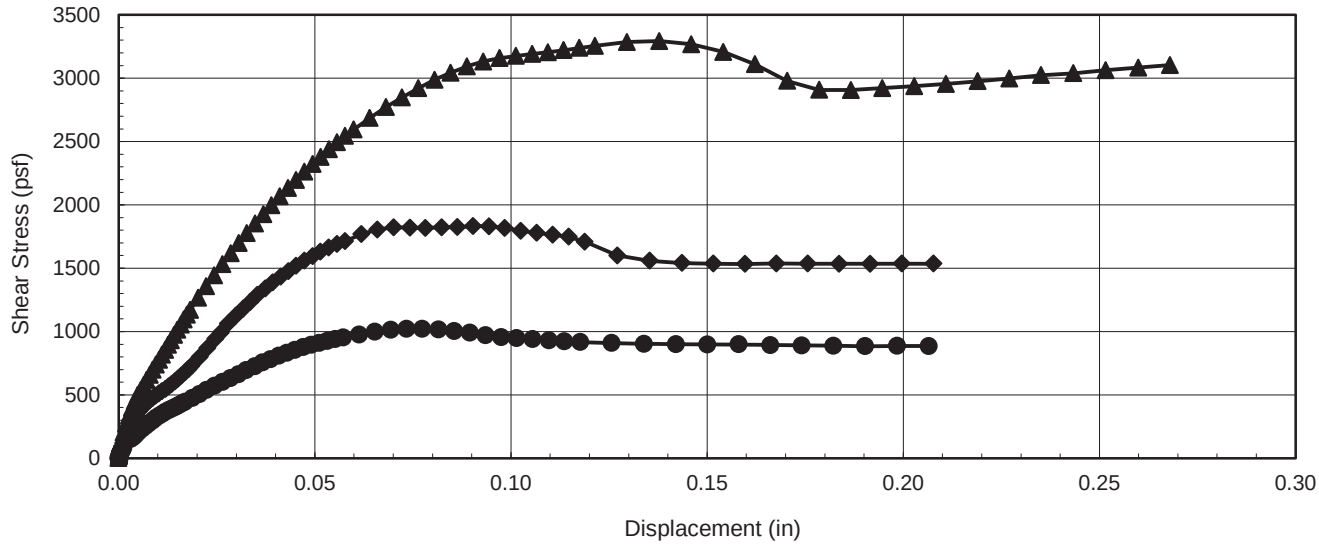
Project Number: 60422689
Test Date: 9/12/2015

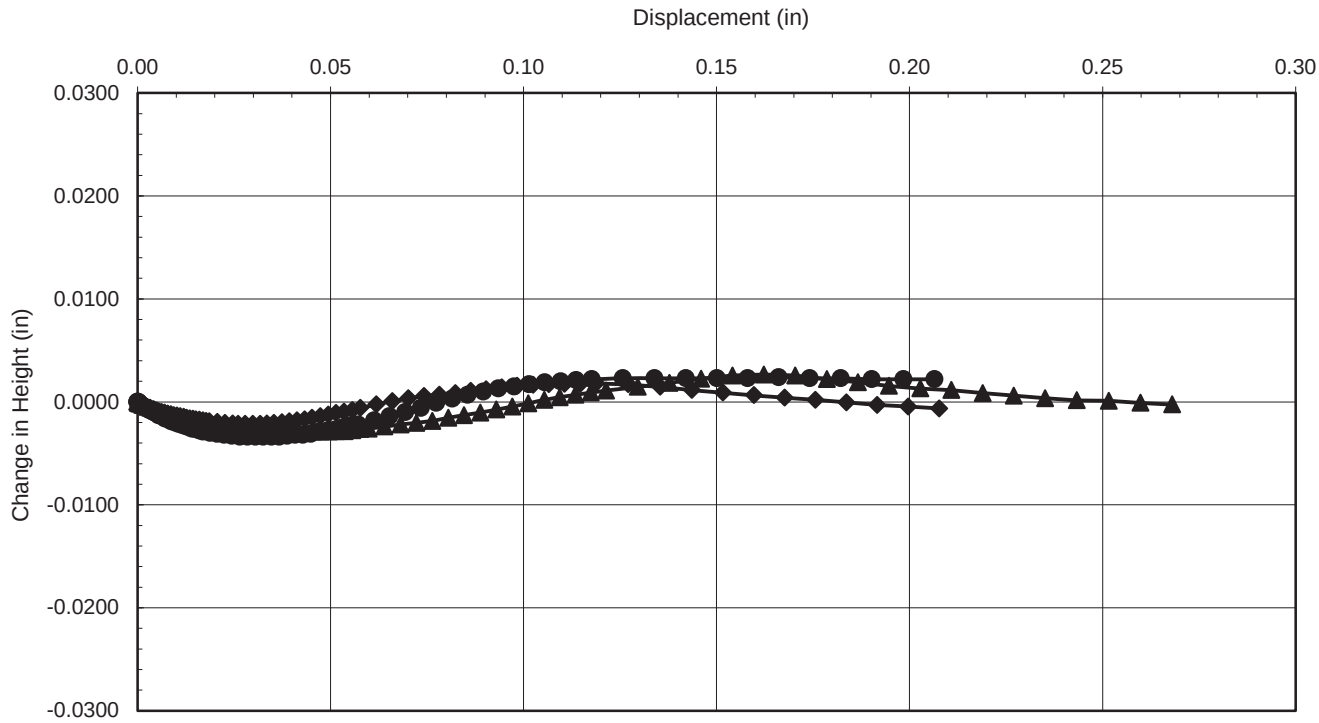
DIRECT SHEAR TEST
ASTM D 3080

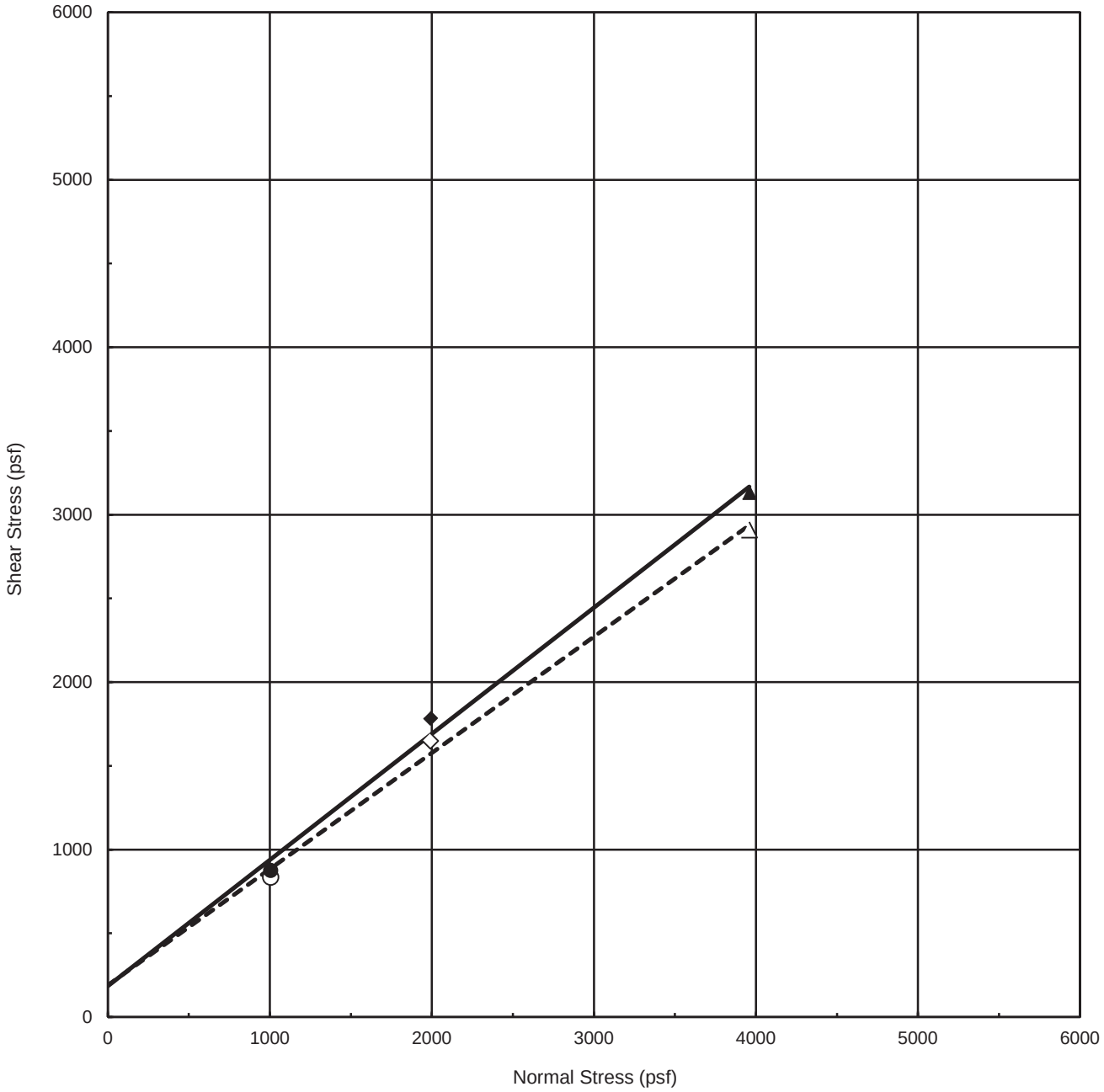
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Olive gray silty Sand (SM)
Apparatus No.: DS2
Shear rate (in/min): 0.004

Boring No.: M24628G
Sample No.: 4
Sample Depth (ft.): 7.5
Normal Stress (psf): 1009 ●
Normal Stress (psf): 1994 ◆
Normal Stress (psf): 3962 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	M24703G		Strength Intercept (C) :	184.8	psf	Peak	189.6	psf	Ultimate
Sample No.:	3			8.8	kPa		9.1	kPa	
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :	37	degree		35	degree	
Description:	**Light yellowish brown silty Sand (SM)**				Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		12.9	116.3	18.3	103.0	16.2	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	23.1	121.5	19.1	98.7	15.5	1005	48	875	42	835	40
pre-shear	◆ spec. 2	22.1	123.4	19.4	101.1	15.9	1991	95	1785	85	1649	79
pre-shear	▲ spec. 3	24.0	122.9	19.3	99.1	15.6	3958	190	3133	150	2910	139

AECOM

Former Kast Property

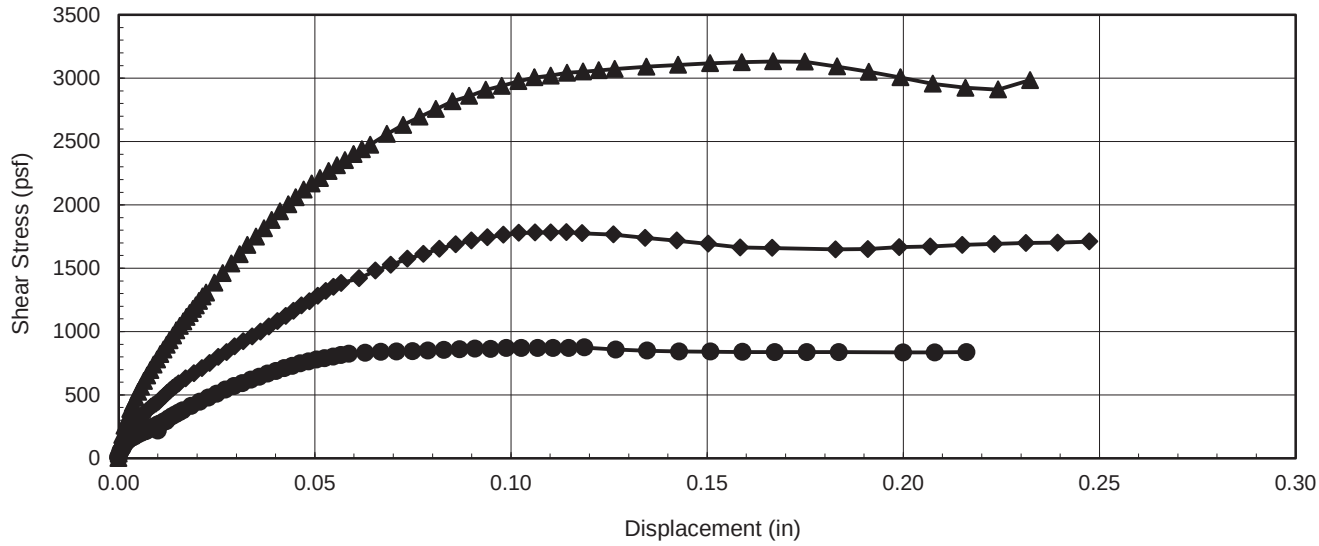
Project Number: 60422689
Test Date: 9/12/2015

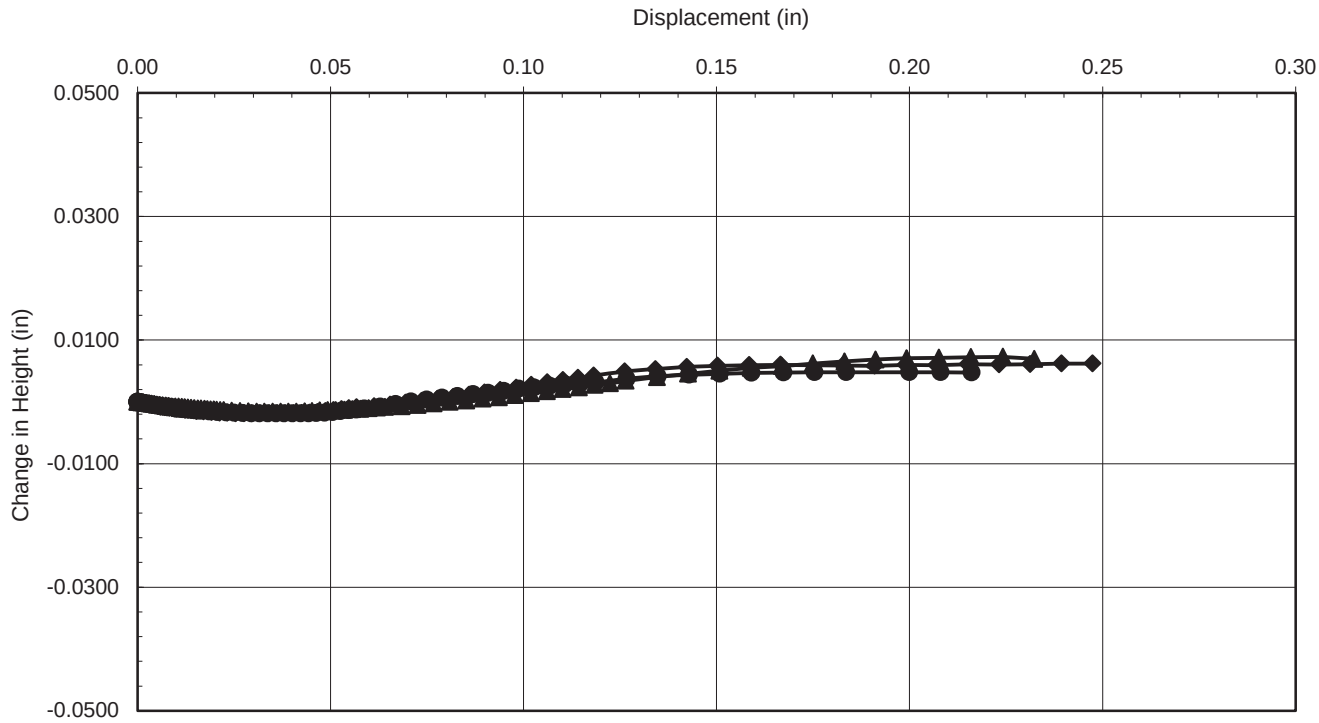
DIRECT SHEAR TEST
ASTM D 3080

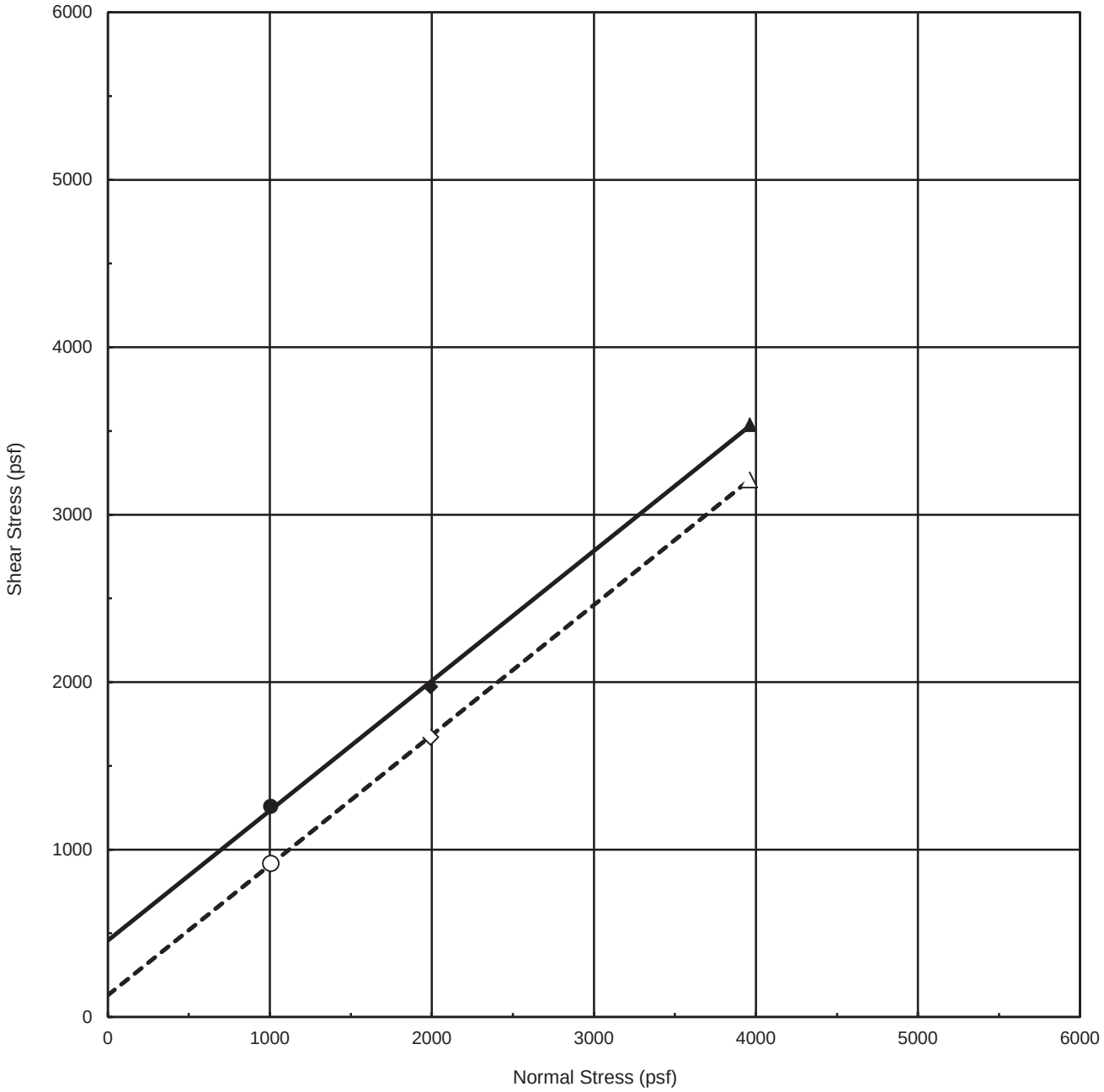
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Light yellowish brown silty Sand (SM)
Apparatus No.: DS3
Shear rate (in/min): 0.004

Boring No.: M24703G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1005 ●
Normal Stress (psf): 1991 ◆
Normal Stress (psf): 3958 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	M24706G		Strength Intercept (C) :		457.8	psf	Peak	131.2	psf	Ultimate	
Sample No.:	4				21.9	kPa		6.3	kPa		
Depth (ft | m)	7.5	2.3	Friction Angle (ϕ) :		38	degree		38	degree		
Description:	**Light yellowish brown silty Sand (SM)**						Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	
SYMBOL	% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up	13.0	111.2	17.5	98.4	15.5	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear ● spec. 1	22.7	127.9	20.1	104.2	16.4	1006	48	1258	60	917	44
pre-shear ◆ spec. 2	24.9	128.5	20.2	102.9	16.2	1992	95	1973	94	1672	80
pre-shear ▲ spec. 3	22.4	129.1	20.3	105.4	16.6	3959	190	3539	169	3209	154

AECOM

Former Kast Property

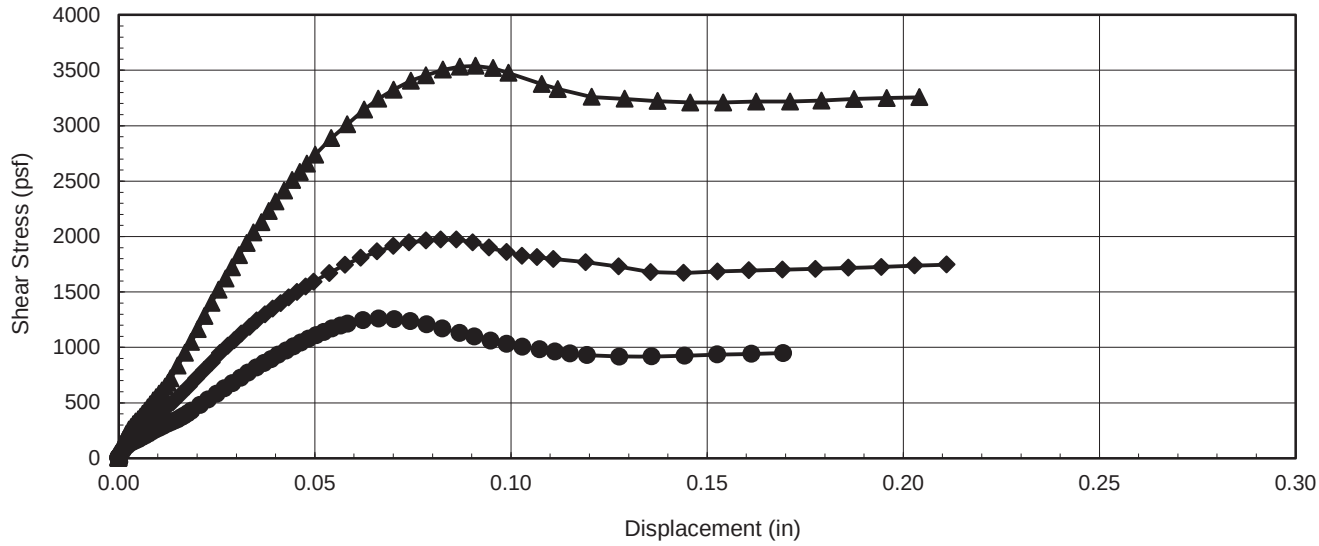
Project Number: 60422689
Test Date: 9/23/2015

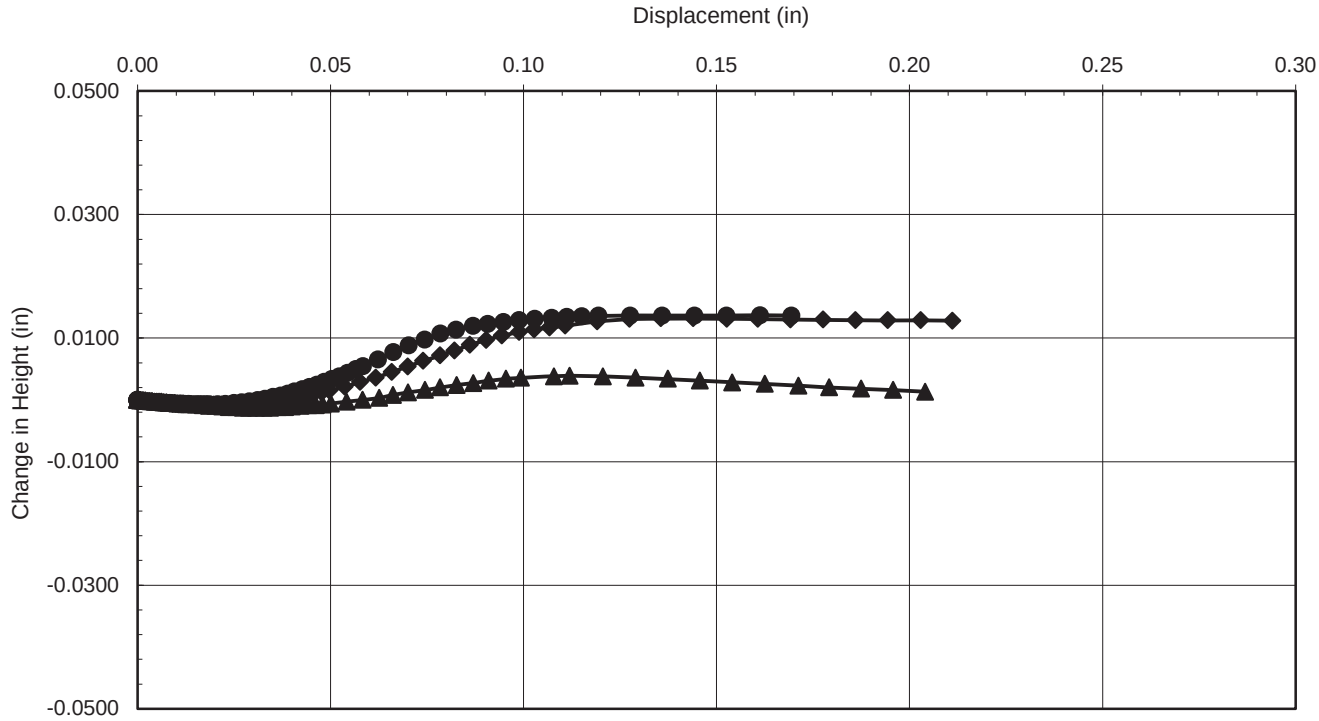
DIRECT SHEAR TEST
ASTM D 3080

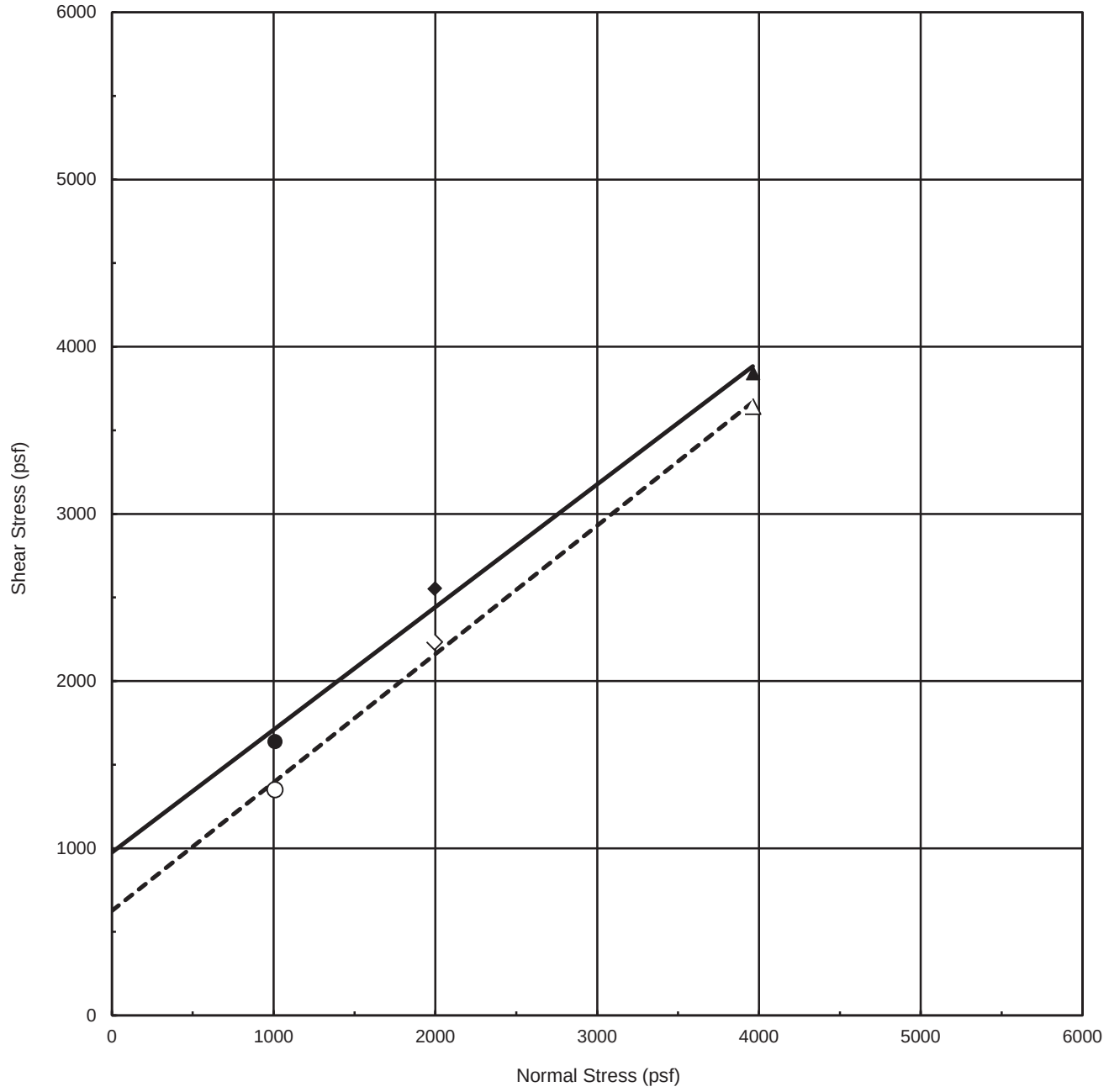
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Light yellowish brown silty Sand (SM)
Apparatus No.: DS1
Shear rate (in/min): 0.004

Boring No.: M24706G
Sample No.: 4
Sample Depth (ft.): 7.5
Normal Stress (psf): 1006 ●
Normal Stress (psf): 1992 ◆
Normal Stress (psf): 3959 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	M24716G		Strength Intercept (C) :		975.1	psf	Peak	626.3	psf	Ultimate	
Sample No.:	5				46.7	kPa		30.0	kPa		
Depth (ft | m)	10.0	3.0	Friction Angle (ϕ) :		36	degree		38	degree		
Description:	**Olive yellowish gray silty Sand (SM)**						Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	
SYMBOL	% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up	8.8	114.9	18.1	105.7	16.6	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear ● spec. 1	24.2	127.3	20.0	102.5	16.1	1009	48	1638	78	1350	65
pre-shear ◆ spec. 2	25.2	127.2	20.0	101.6	16.0	1995	95	2555	122	2234	107
pre-shear ▲ spec. 3	26.9	126.9	19.9	100.0	15.7	3962	190	3844	184	3643	174

AECOM

Former Kast Property

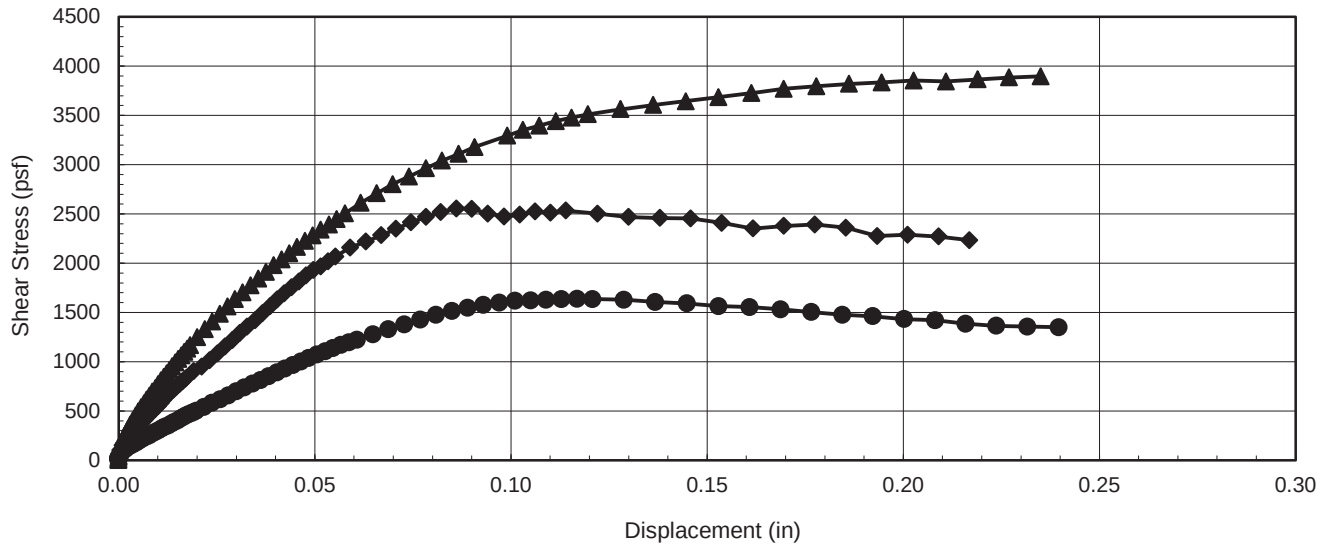
Project Number: 60422689
Test Date: 9/23/2015

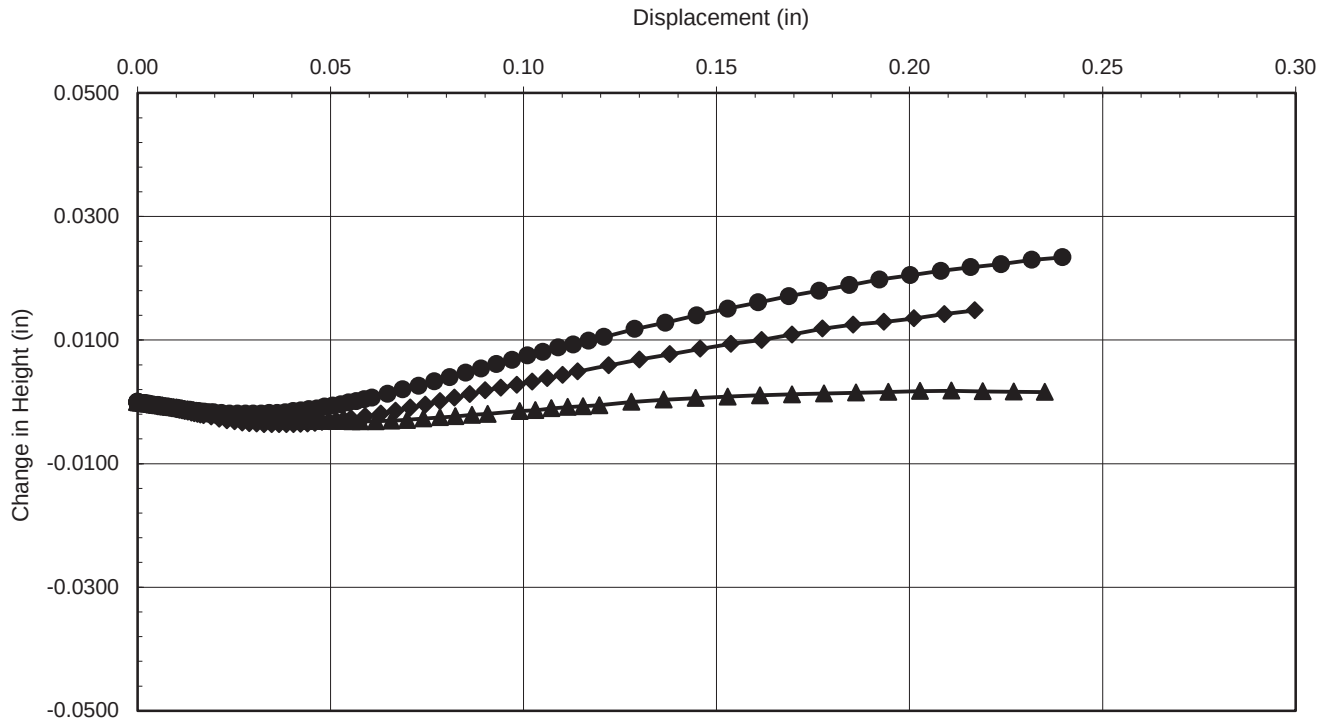
DIRECT SHEAR TEST
ASTM D 3080

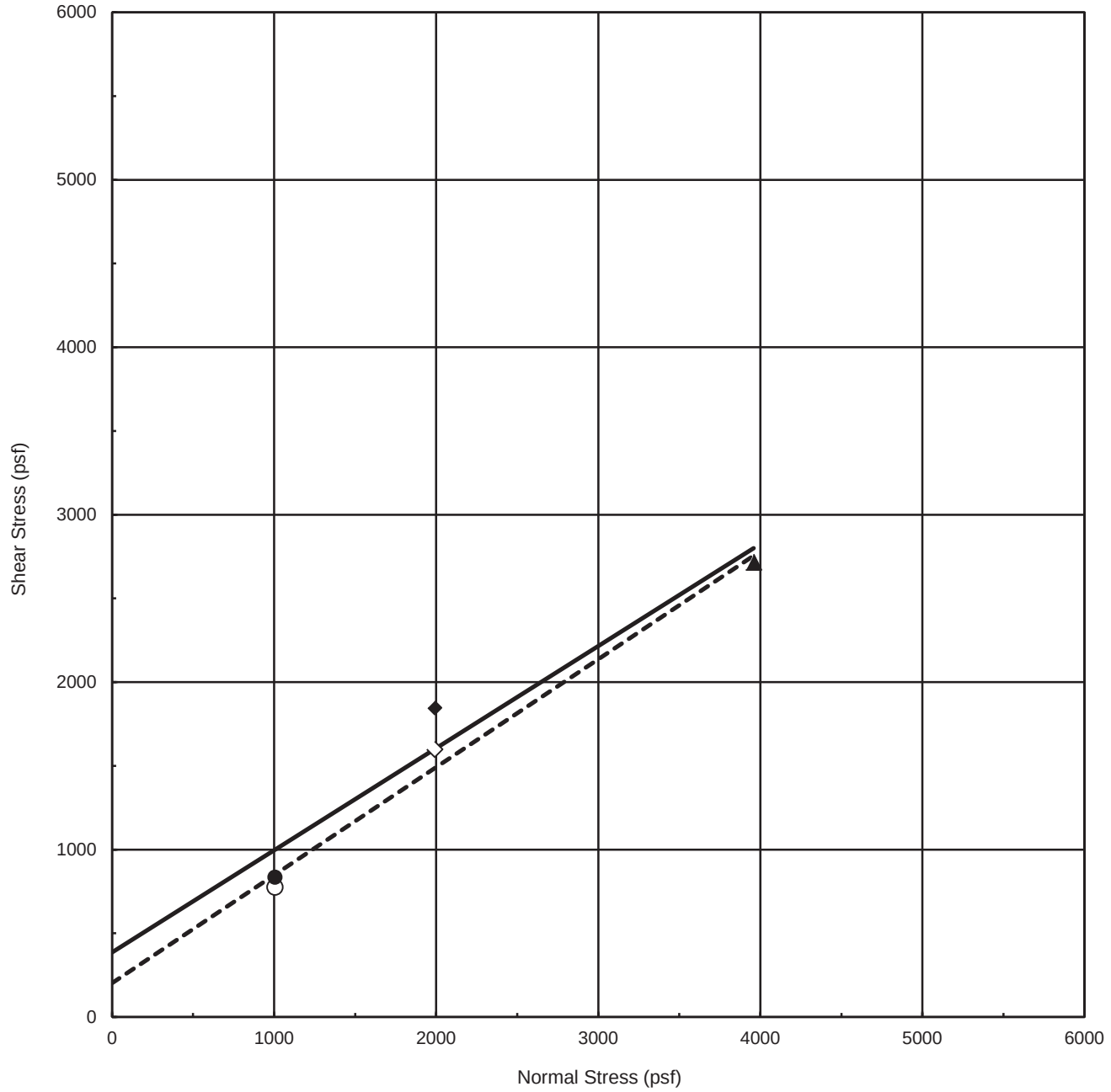
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Olive yellowish gray silty Sand (SM)
Apparatus No.: DS2
Shear rate (in/min): 0.004

Boring No.: M24716G
Sample No.: 5
Sample Depth (ft.): 10
Normal Stress (psf): 1009 ●
Normal Stress (psf): 1995 ◆
Normal Stress (psf): 3962 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	M24717G		Strength Intercept (C) :	386.7	psf	Peak	203.1	psf	Ultimate
Sample No.:	3			18.5	kPa		9.7	kPa	
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :	31	degree		33	degree	
Description:	**Strong brown silty Sand (SM)**					Shear rate :	0.0020 (in/min) ,	0.0051 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		9.1	114.9	18.1	105.3	16.5	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	17.3	126.3	19.8	107.7	16.9	1005	48	835	40	776	37
pre-shear	◆ spec. 2	16.8	131.5	20.7	112.6	17.7	1991	95	1847	88	1599	77
pre-shear	▲ spec. 3	16.1	135.8	21.3	117.0	18.4	3958	190	2717	130	2717	130

AECOM

Former Kast Property

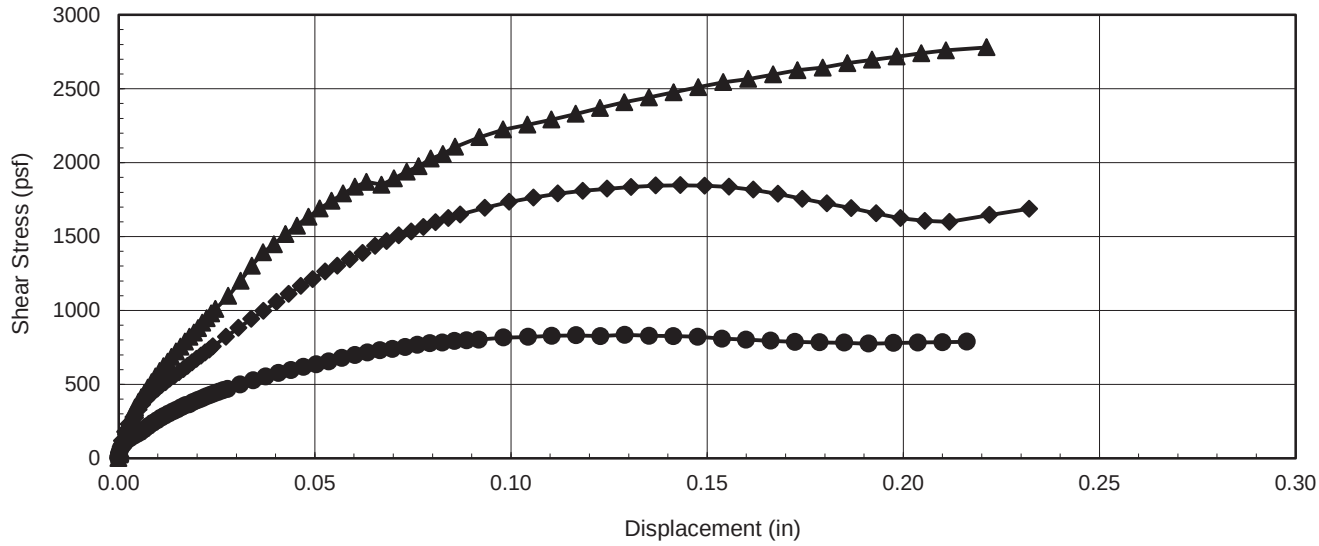
Project Number: 60422689
Test Date: 9/15/2015

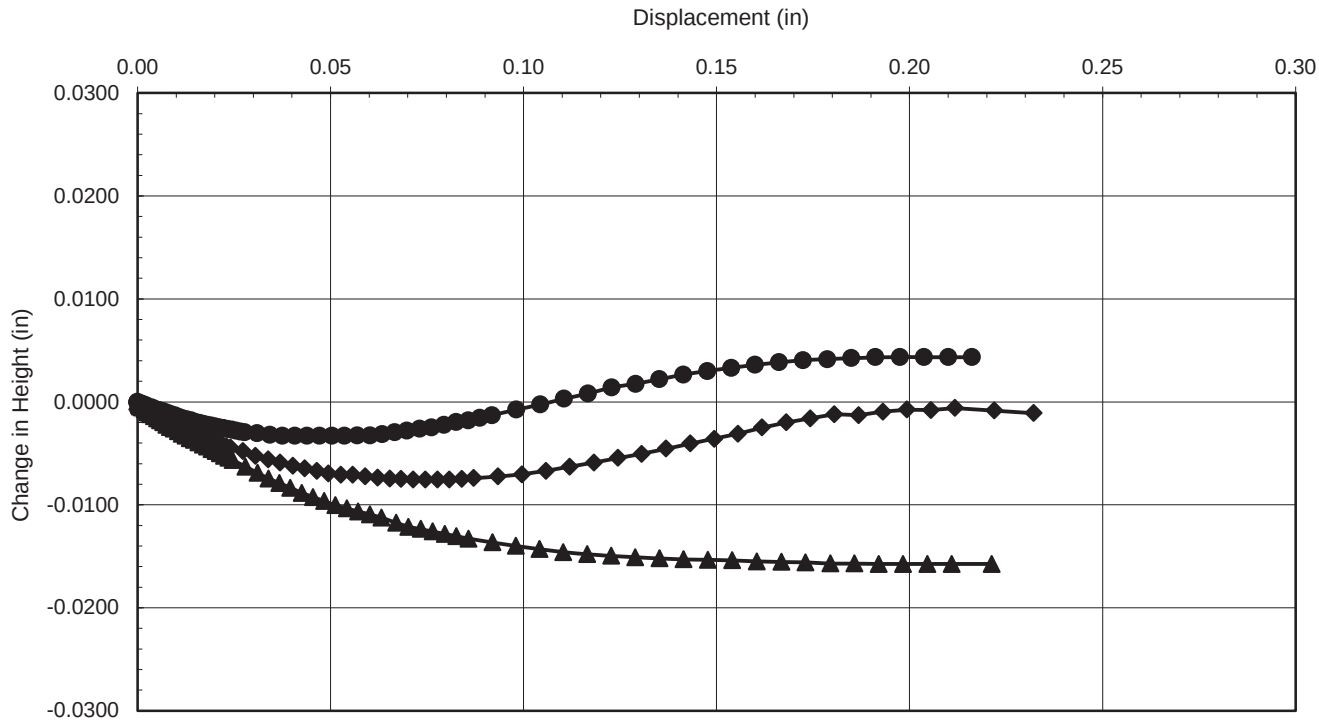
DIRECT SHEAR TEST
ASTM D 3080

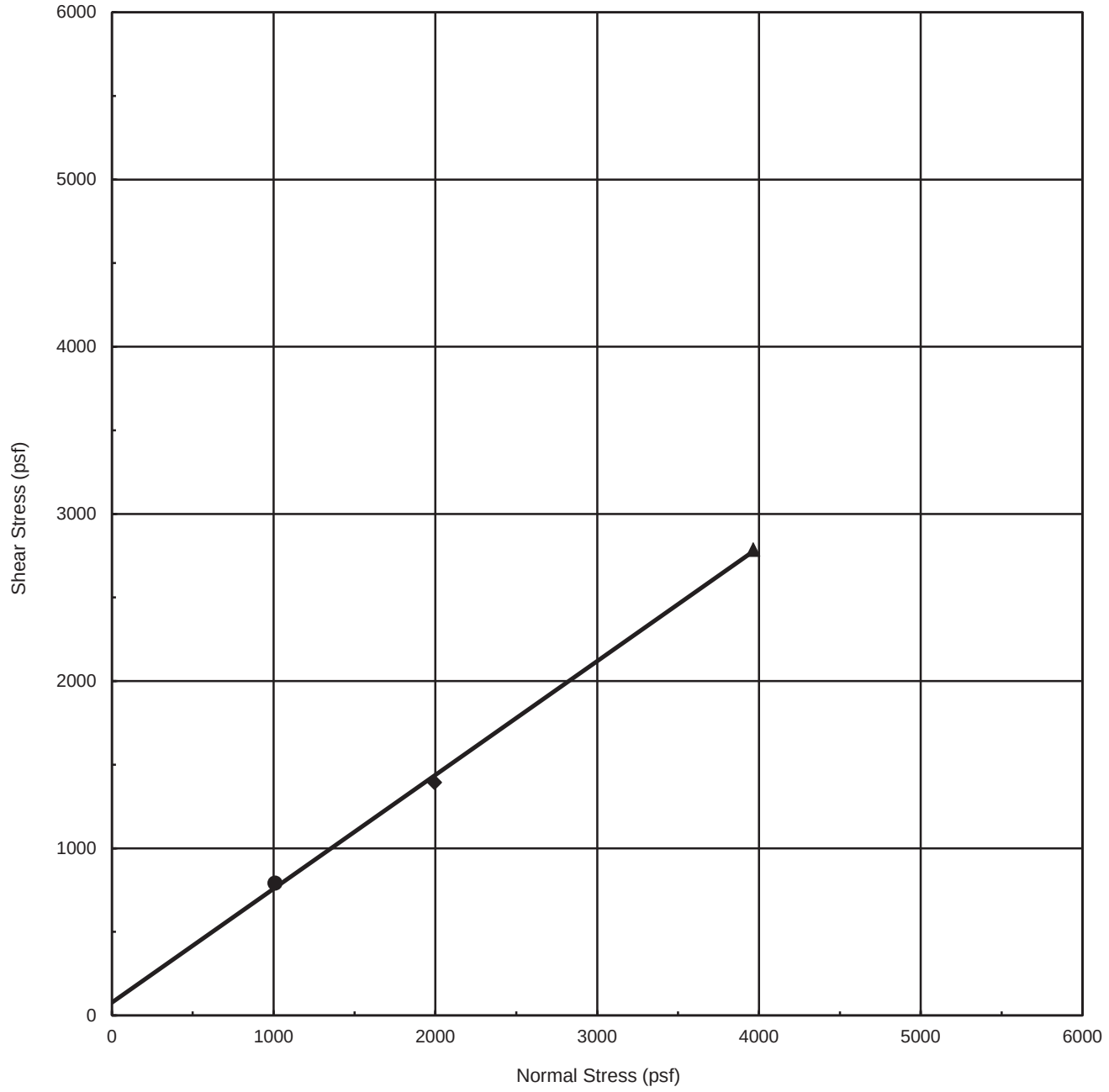
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Strong brown silty Sand (SM)
Apparatus No.: DS3
Shear rate (in/min): 0.002

Boring No.: M24717G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1005 ●
Normal Stress (psf): 1991 ◆
Normal Stress (psf): 3958 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	M24744G		Strength Intercept (C) :		76.9	psf	Peak	XXXXX	psf	Ultimate	
Sample No.:	3				3.7	kPa		XXXXX	kPa		
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :		34	degree		XXXXX	degree		
Description:	**Strong brown clayey Sand (SC)**					Shear rate :	0.0010 (in/min) ,		0.0025 (cm/min)		

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		10.4	120.1	18.9	108.8	17.1	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	18.1	128.9	20.3	109.1	17.1	1009	48	791	38	XXXXX	XXXXX
pre-shear	◆ spec. 2	17.4	131.7	20.7	112.2	17.6	1994	95	1394	67	XXXXX	XXXXX
pre-shear	▲ spec. 3	16.3	132.4	20.8	113.9	17.9	3962	190	2788	133	XXXXX	XXXXX

AECOM

Former Kast Property

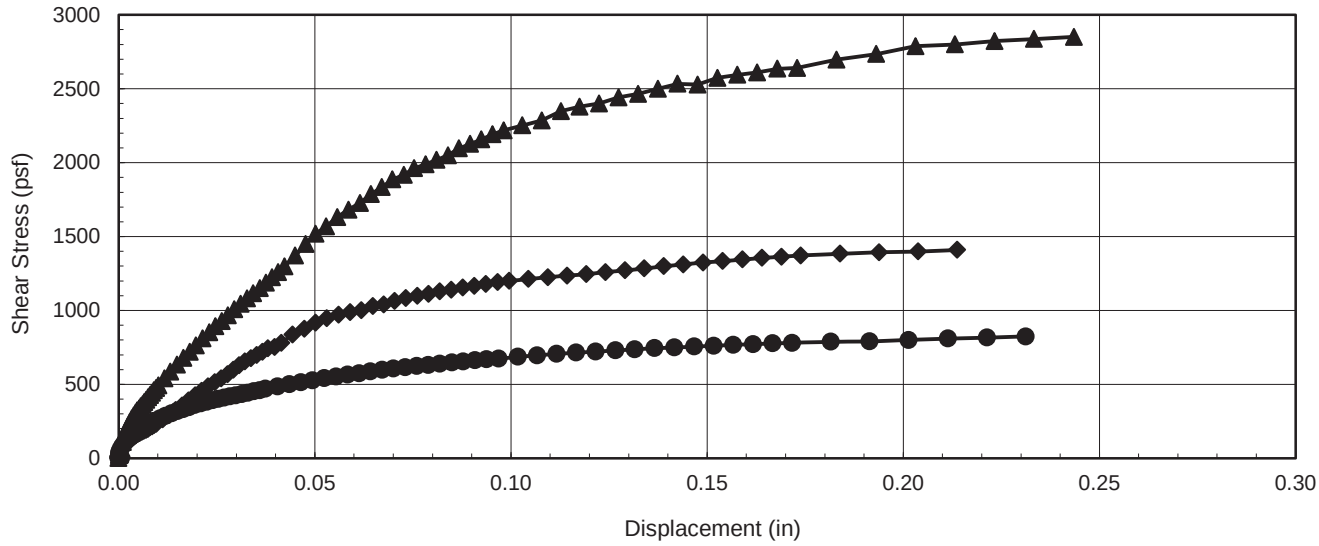
Project Number: 60422689
Test Date: 9/15/2015

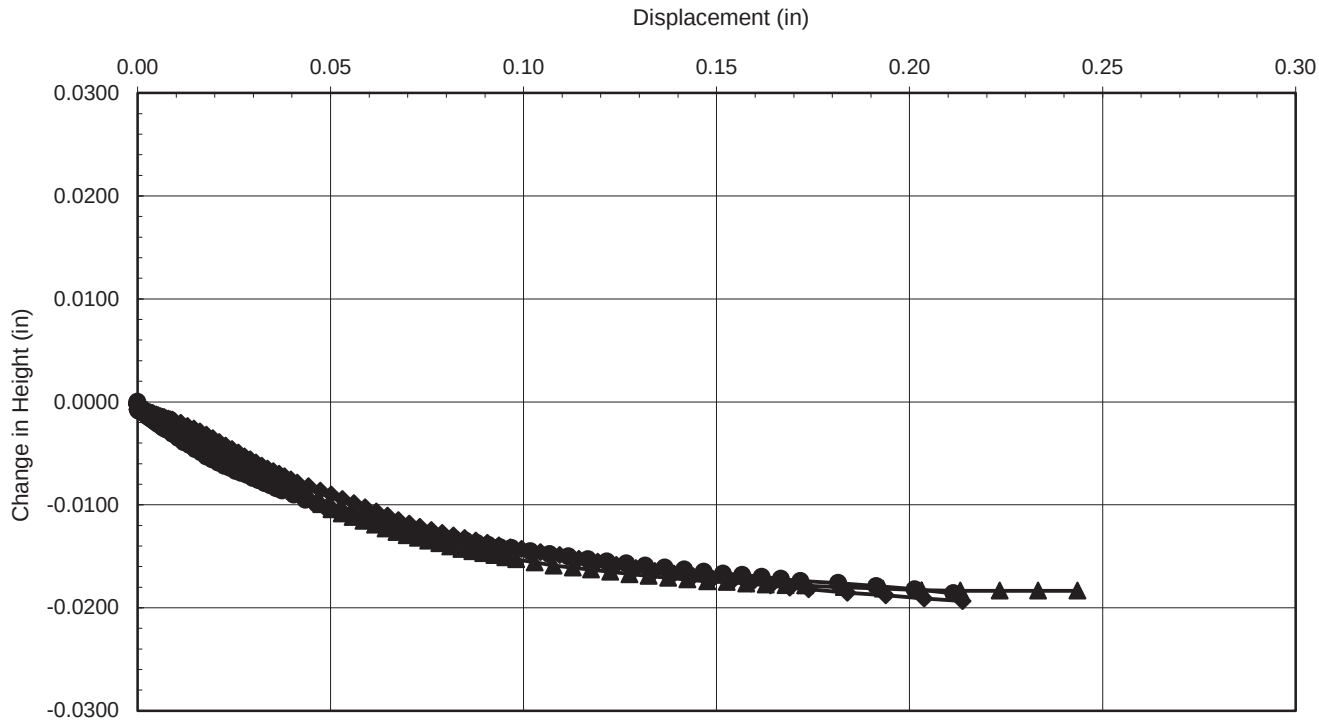
DIRECT SHEAR TEST
ASTM D 3080

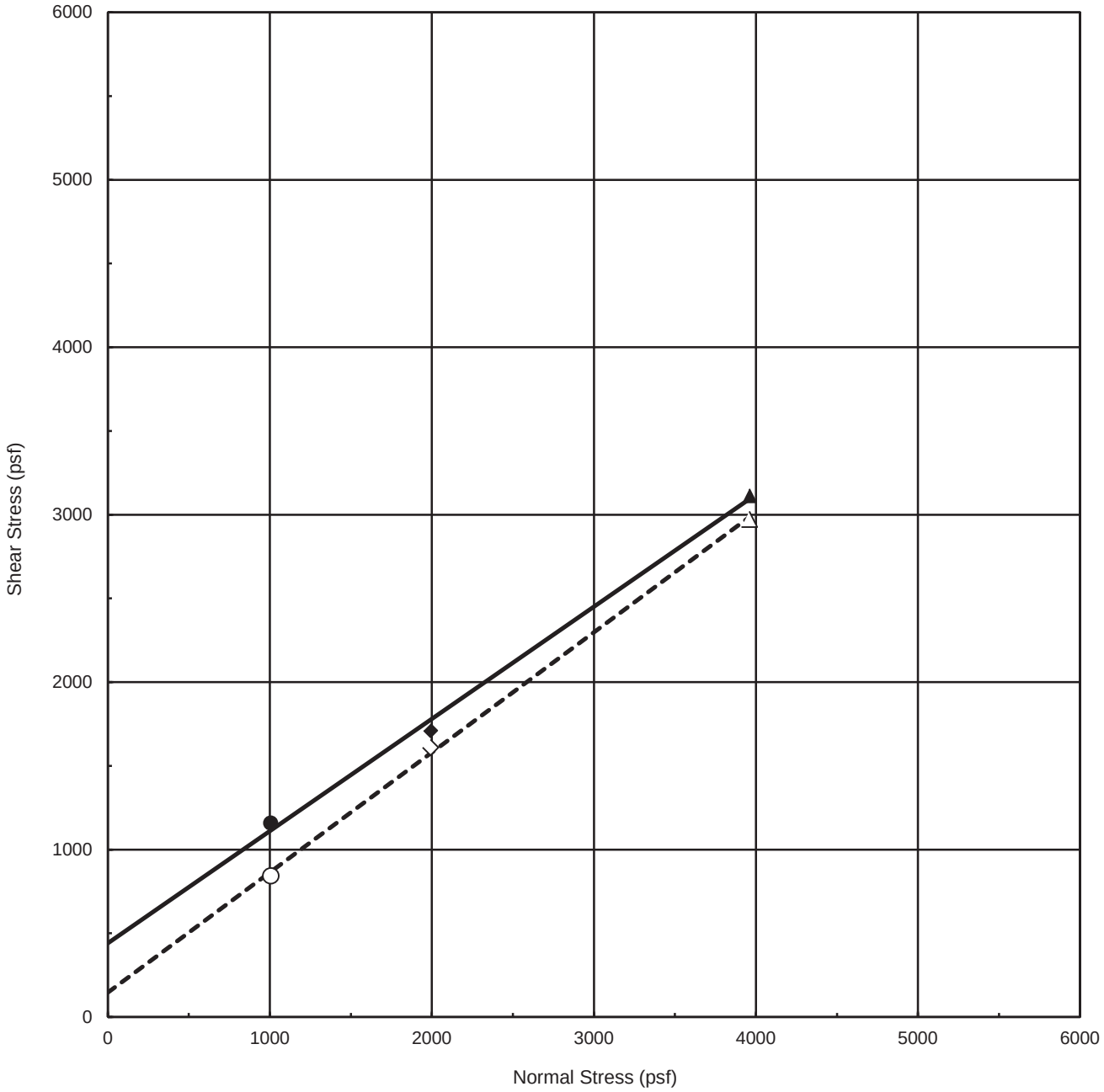
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Strong brown clayey Sand (SC)
Apparatus No.: DS2
Shear rate (in/min): 0.001

Boring No.: M24744G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1009 ●
Normal Stress (psf): 1994 ◆
Normal Stress (psf): 3962 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	N24503G		Strength Intercept (C) :	441.6	psf	Peak	146.5	psf	Ultimate
Sample No.:	4			21.1	kPa		7.0	kPa	
Depth (ft | m)	7.5	2.3	Friction Angle (ϕ) :	34	degree		36	degree	

Description: **Dark blueish gray Clay with sand (CL)** Shear rate : 0.0010 (in/min) , 0.0025 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		15.7	133.2	20.9	115.1	18.1	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	14.8	135.8	21.3	118.3	18.6	1006	48	1158	55	844	40
pre-shear	◆ spec. 2	15.9	138.8	21.8	119.7	18.8	1992	95	1711	82	1610	77
pre-shear	▲ spec. 3	16.6	141.6	22.3	121.4	19.1	3959	190	3114	149	2973	142

AECOM

Former Kast Property

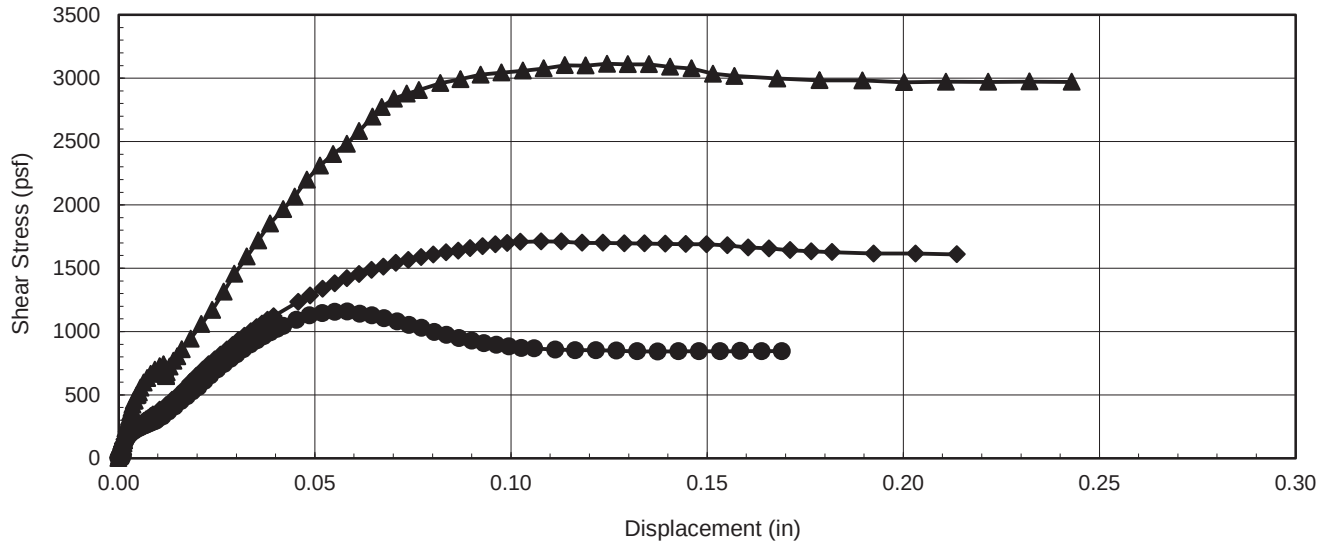
Project Number: 60422689
Test Date: 8/27/2015

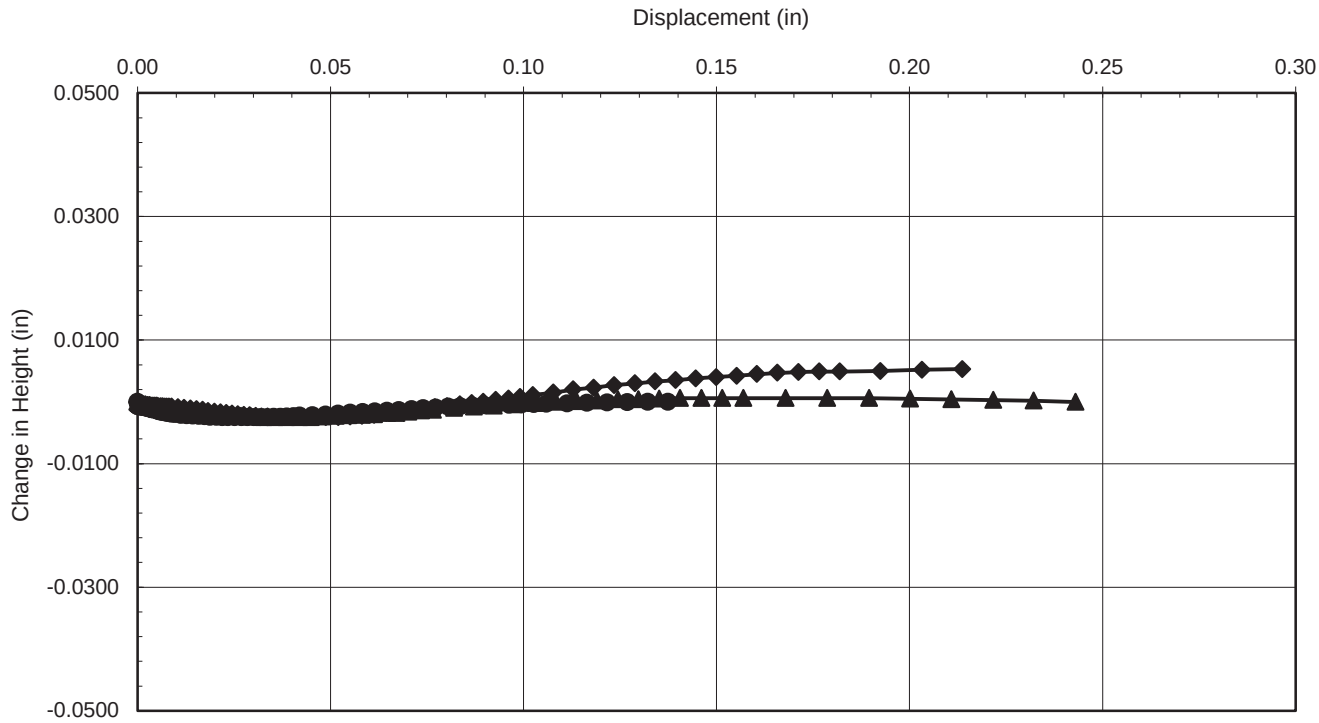
DIRECT SHEAR TEST
ASTM D 3080

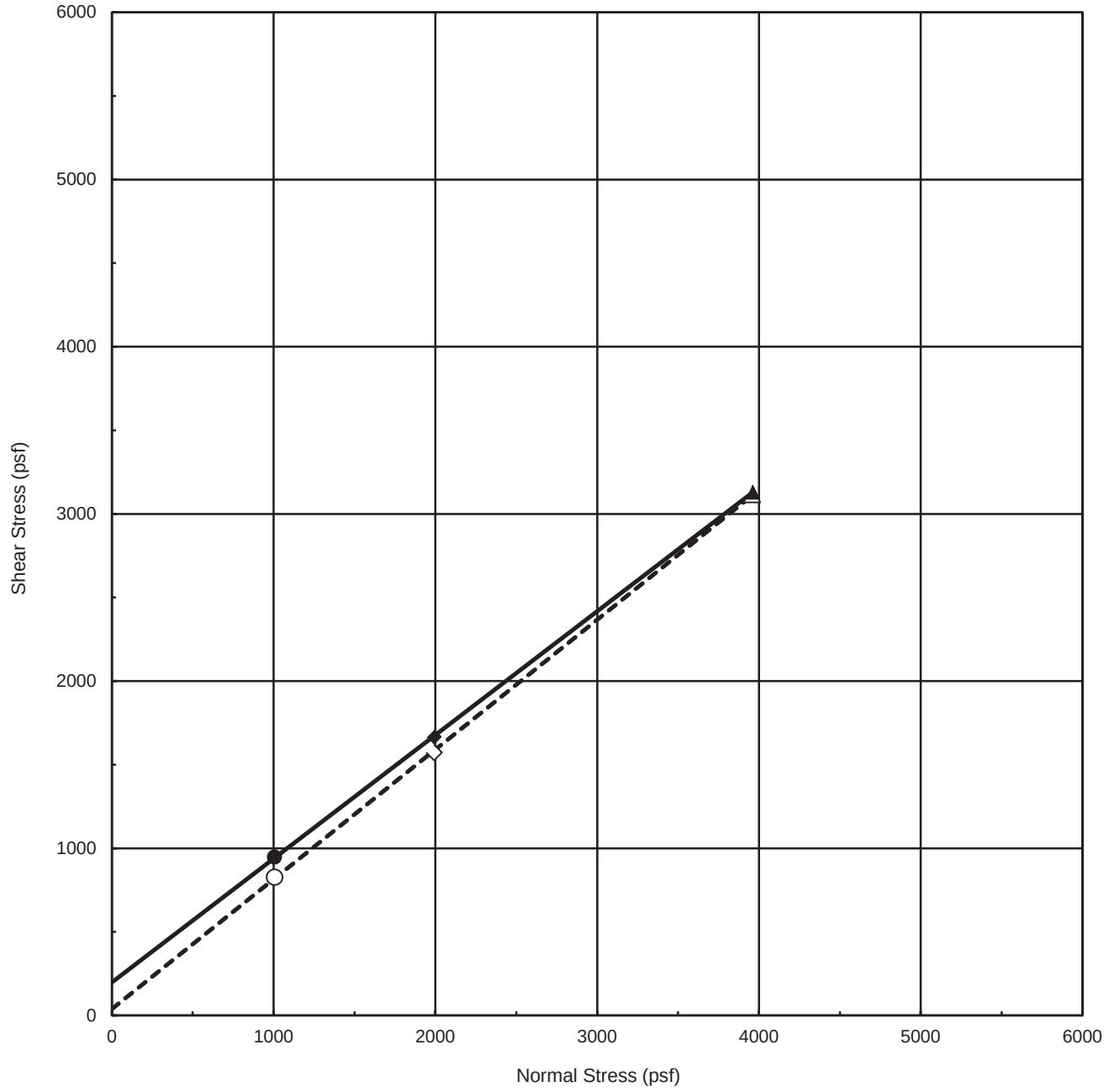
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark blueish gray Clay with sand (CL)
Apparatus No.: DS1
Shear rate (in/min): 0.001

Boring No.: N24503G
Sample No.: 4
Sample Depth (ft.): 7.5
Normal Stress (psf): 1006 ●
Normal Stress (psf): 1992 ◆
Normal Stress (psf): 3959 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	N24603G		Strength Intercept (C) :	198.5	psf	Peak	38.2	psf	Ultimate
Sample No.:	4			9.5	kPa		1.8	kPa	
Depth (ft | m)	7.5	2.3	Friction Angle (ϕ) :	37	degree		38	degree	
Description:	**Grayish brown silty Sand (SM)**				Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		9.9	113.9	17.9	103.6	16.3	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	18.1	125.9	19.8	106.6	16.8	1006	48	947	45	827	40
pre-shear	◆ spec. 2	18.3	123.4	19.4	104.4	16.4	1992	95	1667	80	1573	75
pre-shear	▲ spec. 3	16.8	125.9	19.8	107.8	16.9	3959	190	3131	150	3116	149

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 9/15/2015

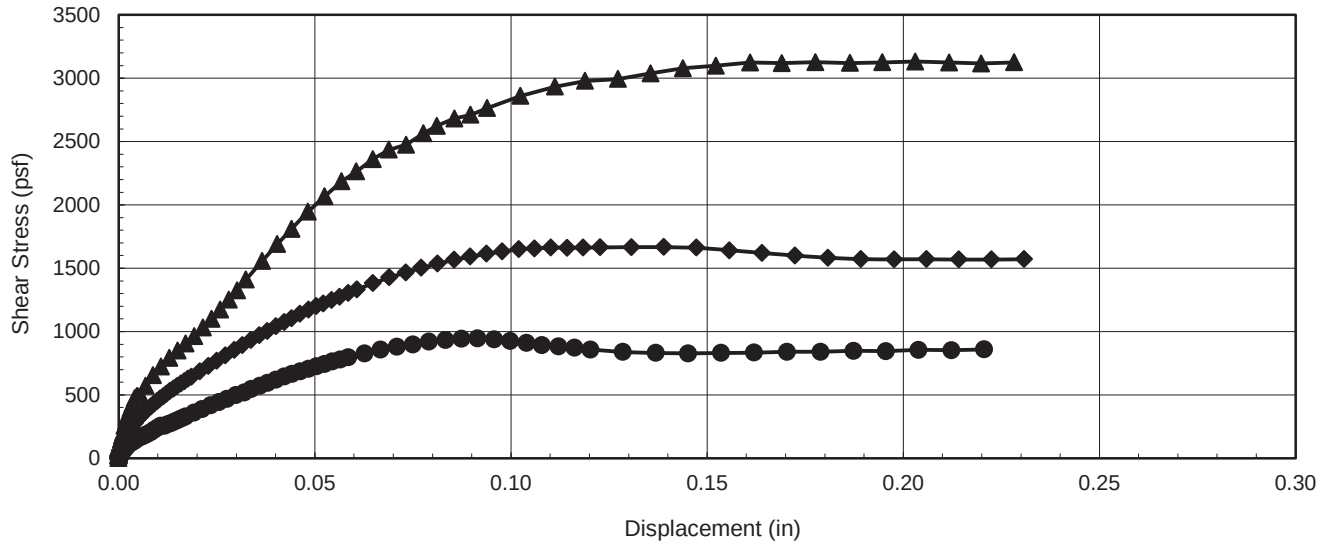
DIRECT SHEAR TEST
ASTM D 3080

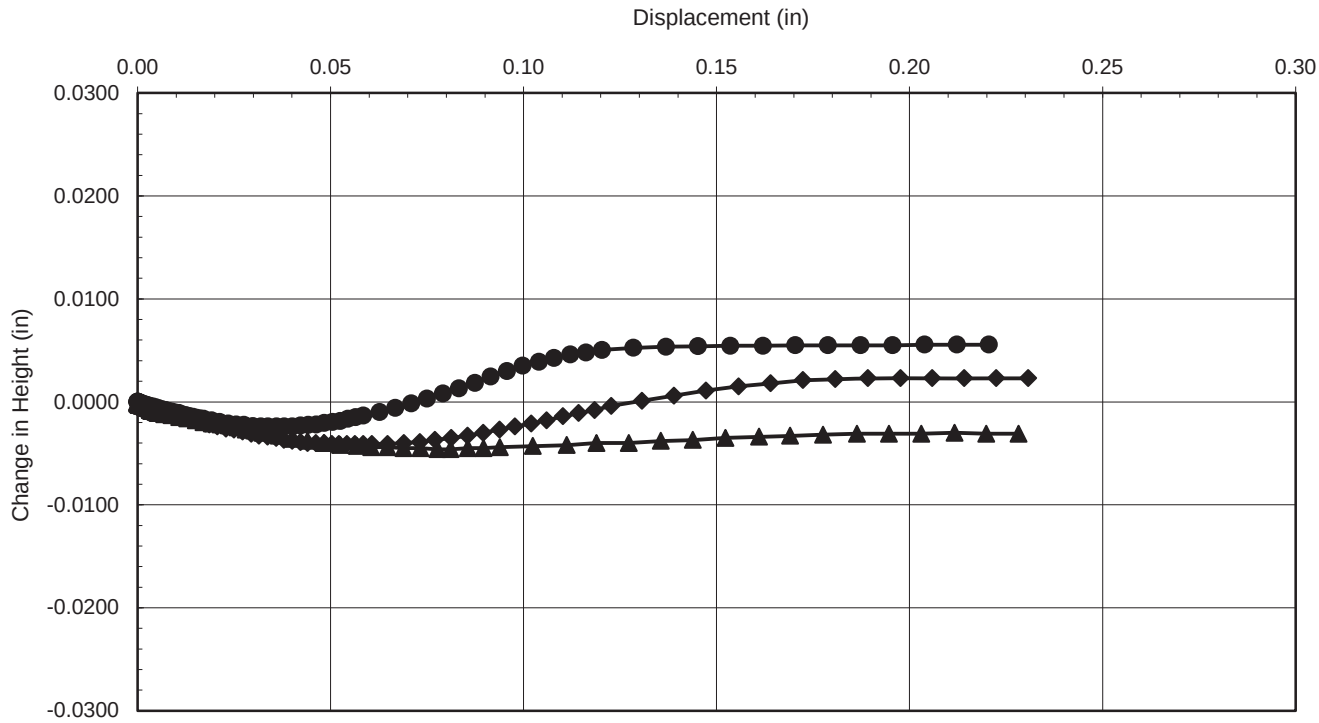
DS Plot AECOM Kast N24603G s04 7.5 ft.xlsx

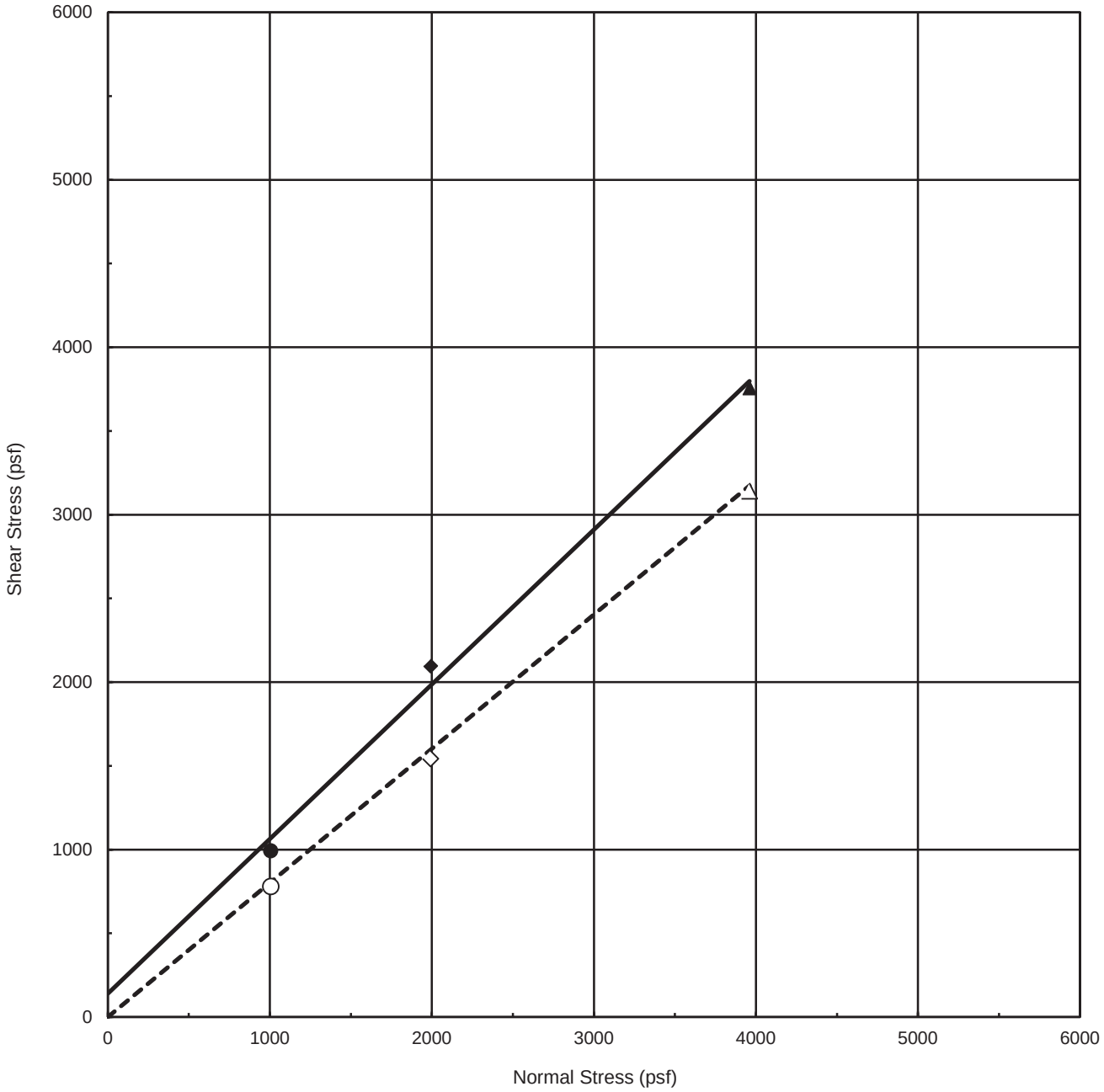
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Grayish brown silty Sand (SM)
Apparatus No.: DS1
Shear rate (in/min): 0.004

Boring No.: N24603G
Sample No.: 4
Sample Depth (ft.): 7.5
Normal Stress (psf): 1006 ●
Normal Stress (psf): 1992 ◆
Normal Stress (psf): 3959 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	N24613G		Strength Intercept (C) :		140.7	psf	Peak	0.0	psf	Ultimate	
Sample No.:	5				6.7	kPa		0.0	kPa		
Depth (ft | m)	10.0	3.0	Friction Angle (ϕ) :		43	degree		39	degree		
Description:	**Brown poorly graded Sand with silt (SP-SM)**						Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	
SYMBOL	% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up	7.4	101.7	16.0	94.7	14.9	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear ● spec. 1	21.8	124.1	19.5	101.9	16.0	1006	48	992	47	780	37
pre-shear ◆ spec. 2	21.8	125.9	19.8	103.3	16.2	1992	95	2097	100	1543	74
pre-shear ▲ spec. 3	23.9	122.1	19.2	98.6	15.5	3959	190	3758	180	3142	150

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 9/12/2015

DIRECT SHEAR TEST
ASTM D 3080

DS Plot AECOM Kast N24613G s05 10 ft.xlsx

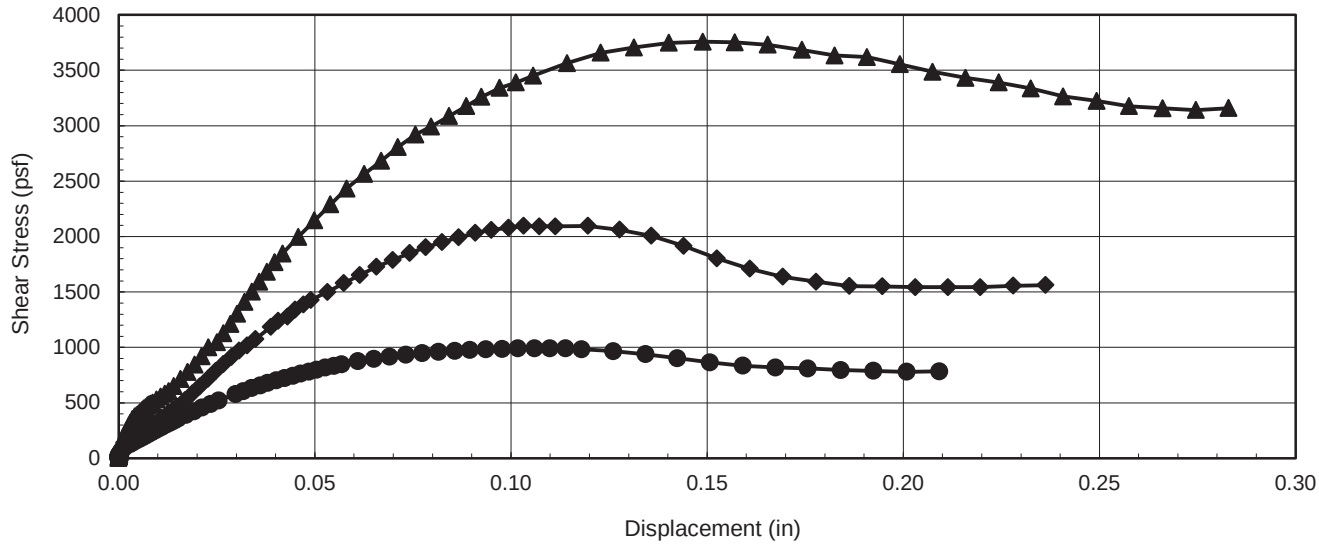
DIRECT SHEAR TEST
ASTM D 3080

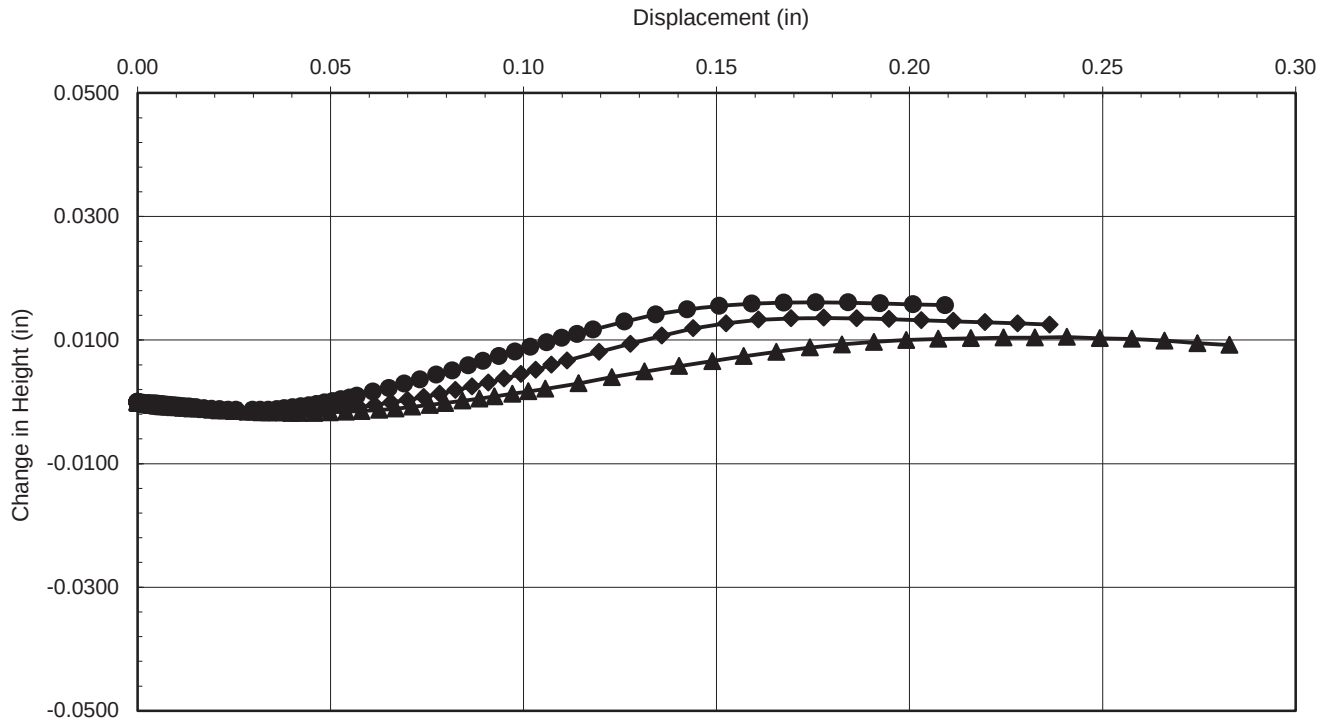
Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Brown poorly graded Sand with silt (SP-SM)

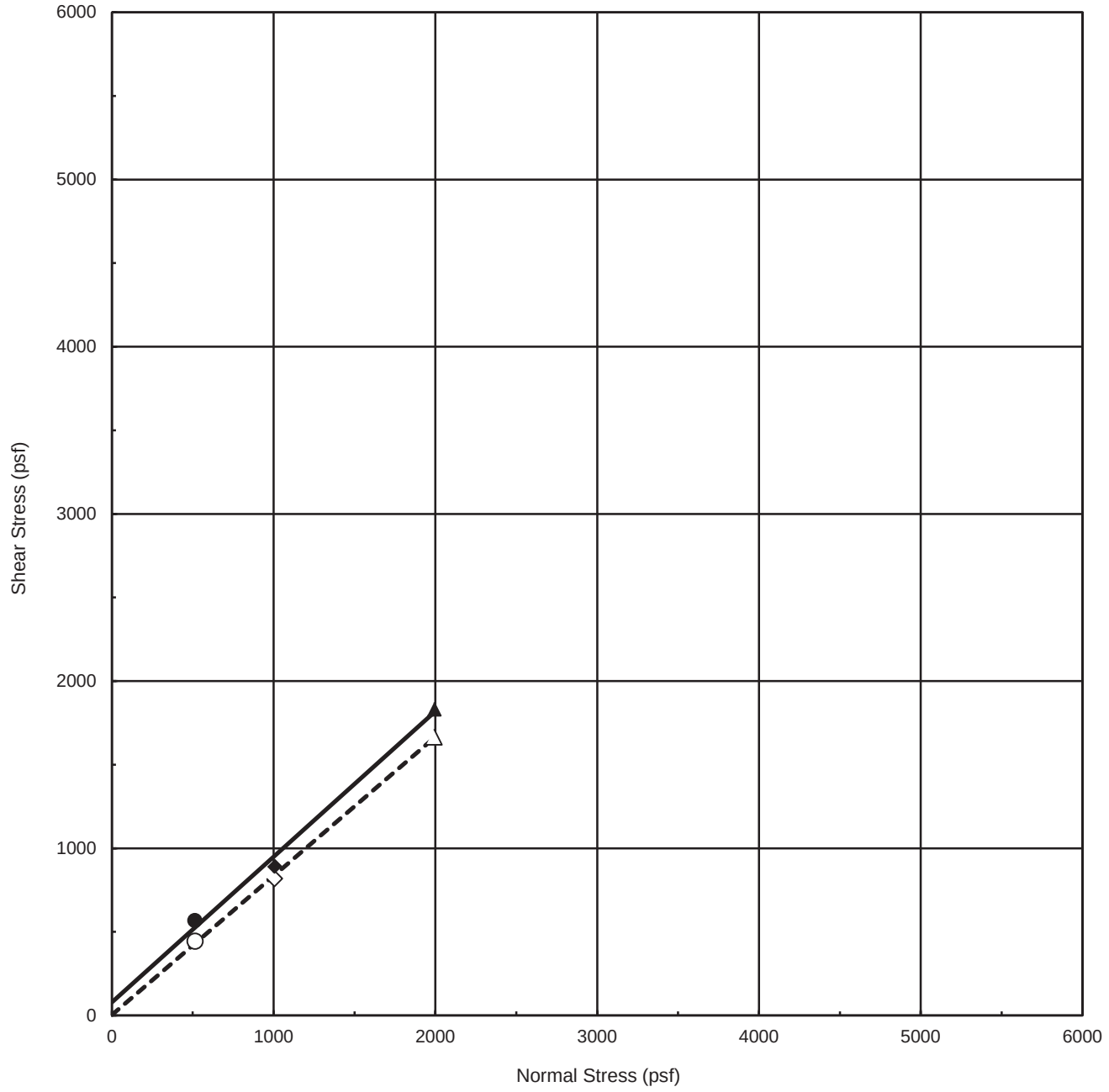
Apparatus No.: DS1
Shear rate (in/min): 0.004

Boring No.: N24613G
Sample No.: 5
Sample Depth (ft.): 10

Normal Stress (psf): 1006 ●
Normal Stress (psf): 1992 ◆
Normal Stress (psf): 3959 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	N24622G		Strength Intercept (C) :	78.4	psf	Peak	2.8	psf	Ultimate
Sample No.:	1			3.8	kPa		0.1	kPa	
Depth (ft | m)	2.5	0.8	Friction Angle (ϕ) :	41	degree		40	degree	

Description: **Olive brown clayey Sand (SC)** Shear rate : 0.0040 (in/min) , 0.0102 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		10.5	138.5	21.8	125.3	19.7	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	14.5	134.9	21.2	117.9	18.5	514	25	567	27	444	21
pre-shear	◆ spec. 2	14.8	134.1	21.1	116.8	18.4	1005	48	893	43	819	39
pre-shear	▲ spec. 3	14.1	137.7	21.6	120.7	19.0	1992	95	1833	88	1666	80

AECOM

Former Kast Property

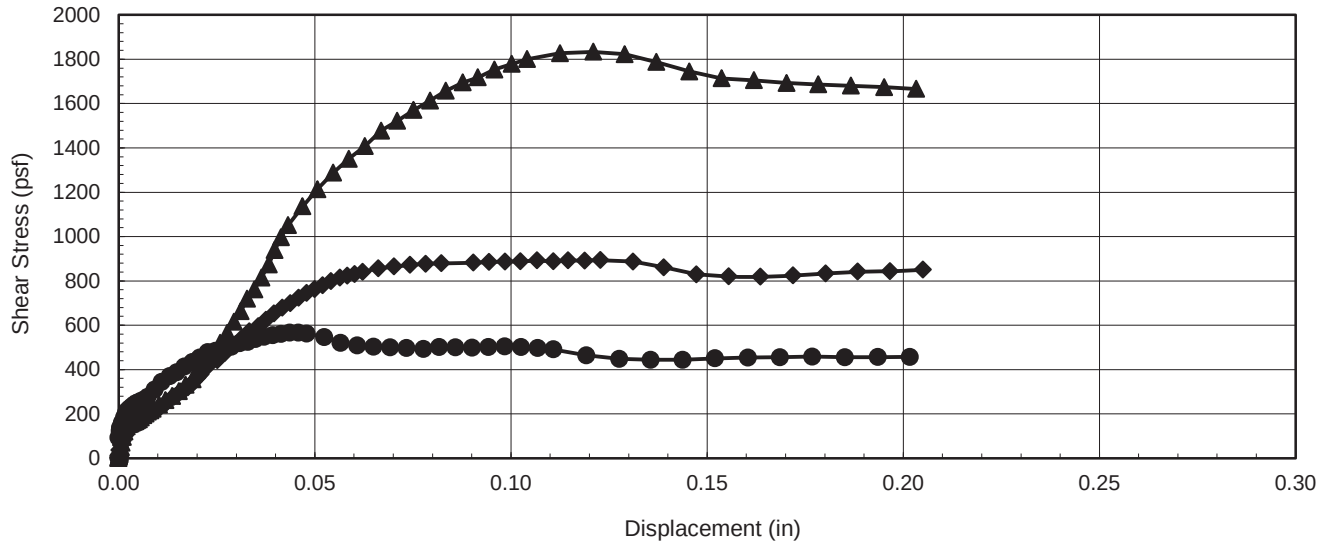
Project Number: 60422689
Test Date: 8/29/2015

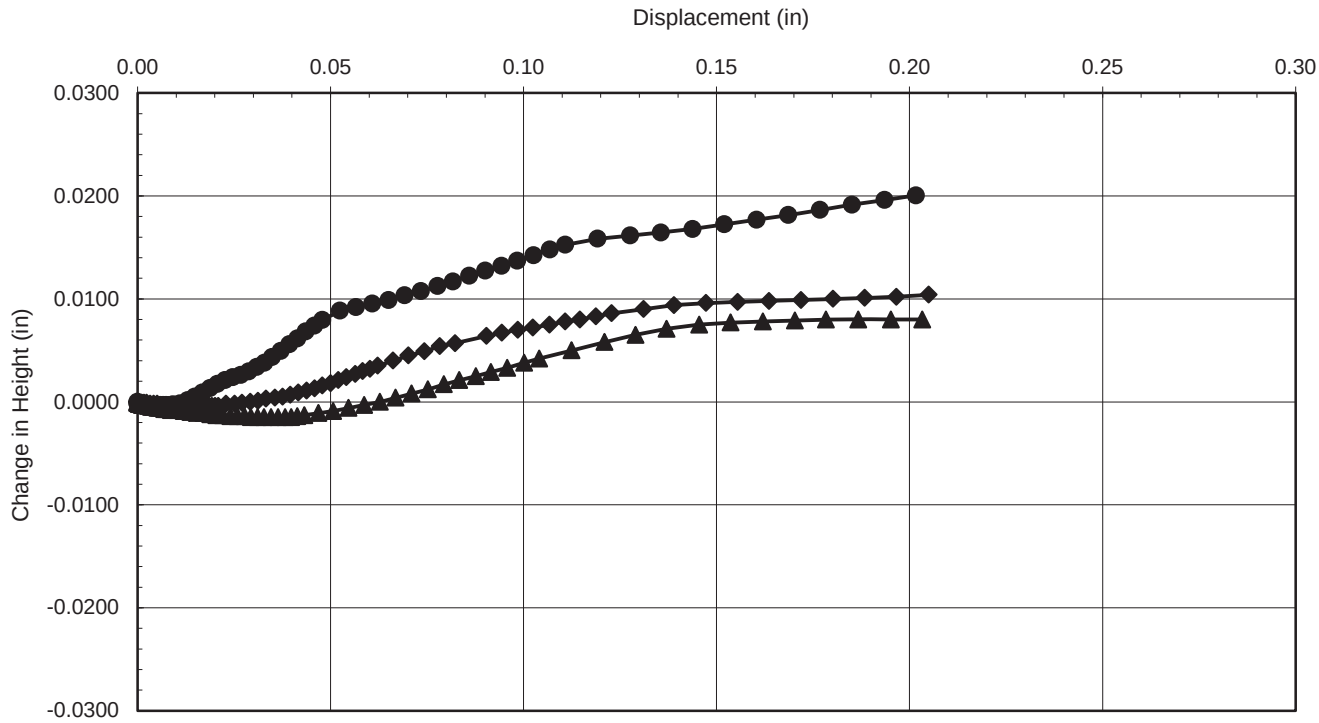
DIRECT SHEAR TEST
ASTM D 3080

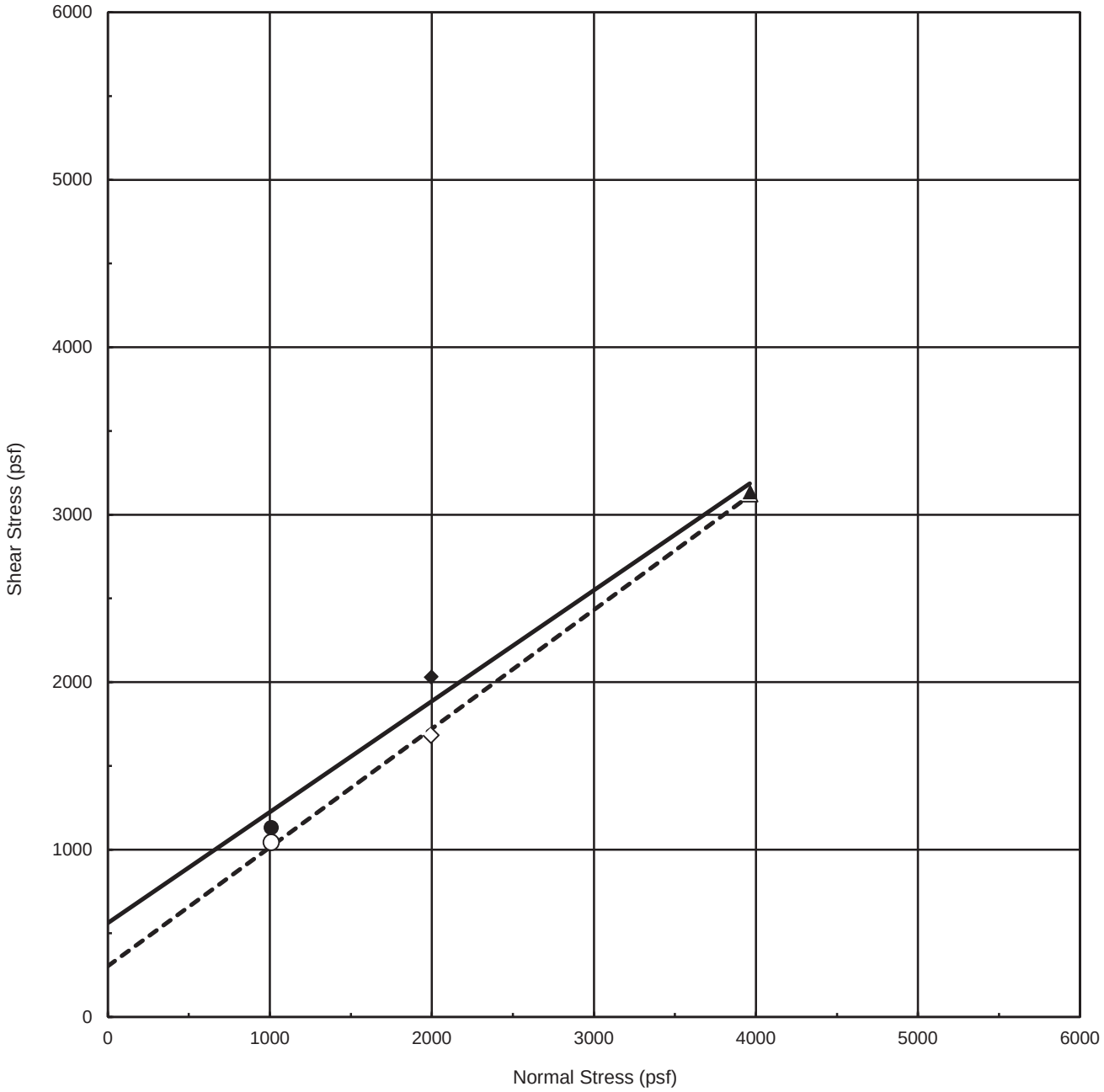
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Olive brown clayey Sand (SC)
Apparatus No.: DS1
Shear rate (in/min): 0.004

Boring No.: N24622G
Sample No.: 1
Sample Depth (ft.): 2.5
Normal Stress (psf): 514 ●
Normal Stress (psf): 1005 ◆
Normal Stress (psf): 1992 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	N24703G		Strength Intercept (C) :	562.2	psf	Peak	305.2	psf	Ultimate
Sample No.:	3			26.9	kPa		14.6	kPa	
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :	34	degree		35	degree	
Description:	**Dark greenish gray sandy Clay (CL)**				Shear rate :	0.0020 (in/min) ,		0.0051 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		13.2	132.9	20.9	117.4	18.4	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	18.0	135.0	21.2	114.4	18.0	1009	48	1131	54	1044	50
pre-shear	◆ spec. 2	16.3	136.7	21.5	117.6	18.5	1994	95	2033	97	1683	81
pre-shear	▲ spec. 3	17.8	137.1	21.5	116.3	18.3	3962	190	3137	150	3125	150

AECOM

Former Kast Property

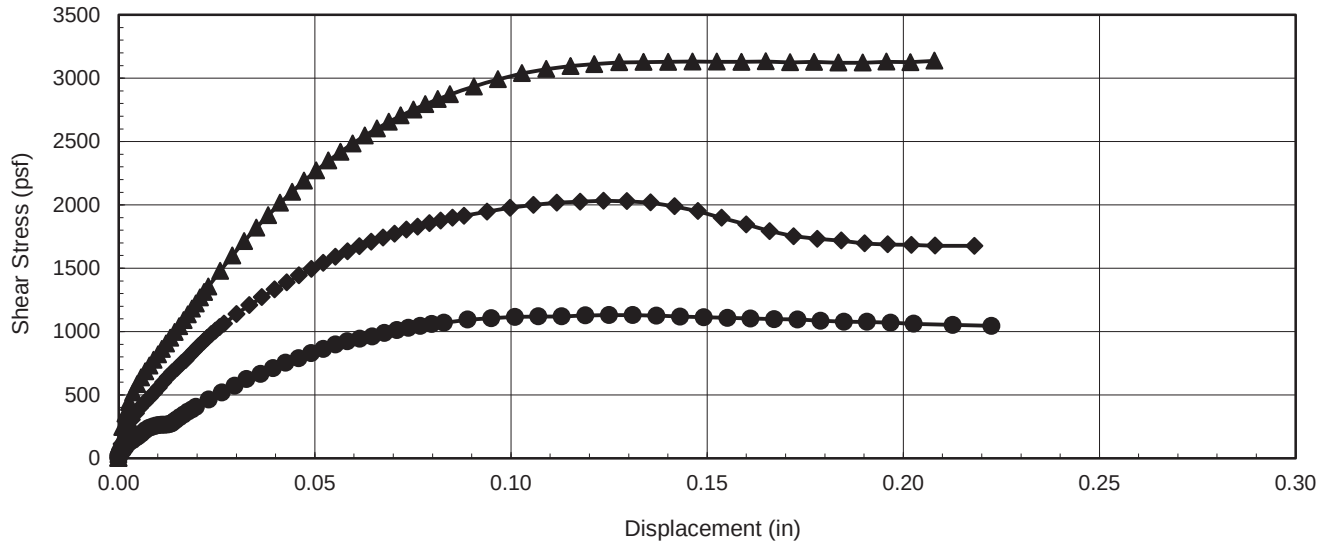
Project Number: 60422689
Test Date: 9/2/2015

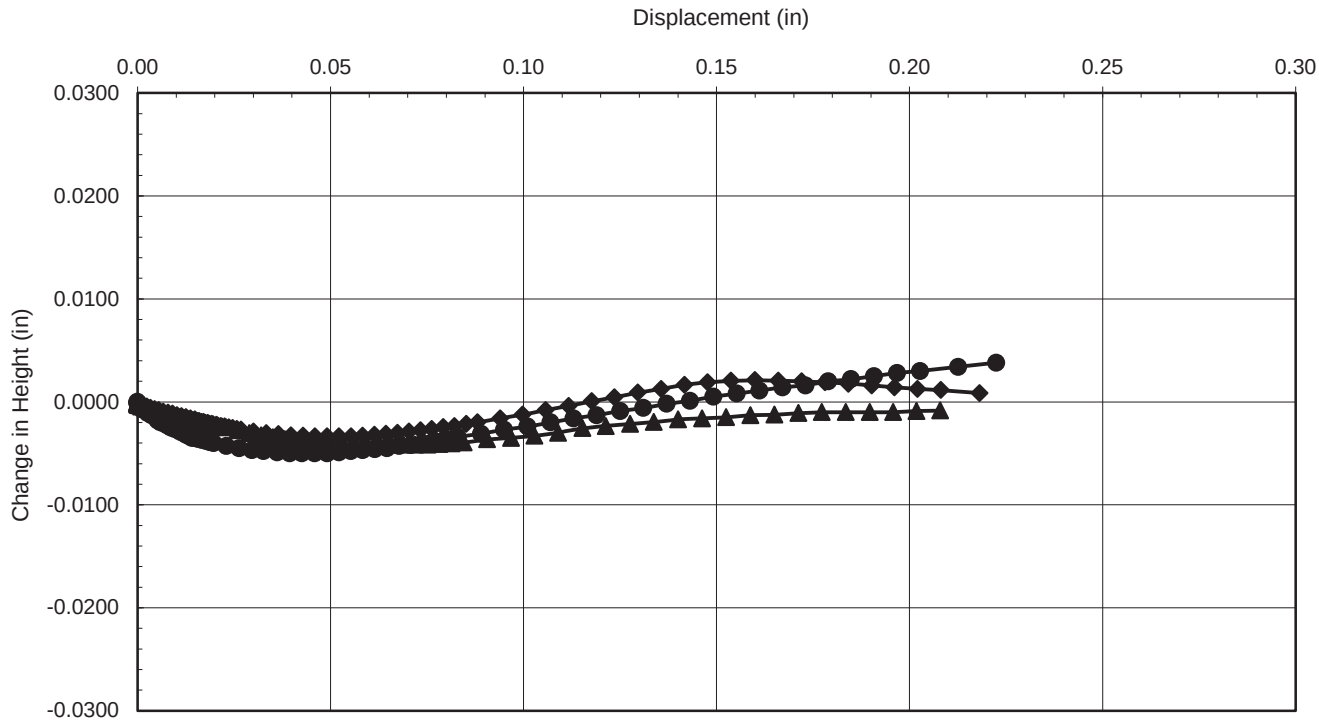
DIRECT SHEAR TEST
ASTM D 3080

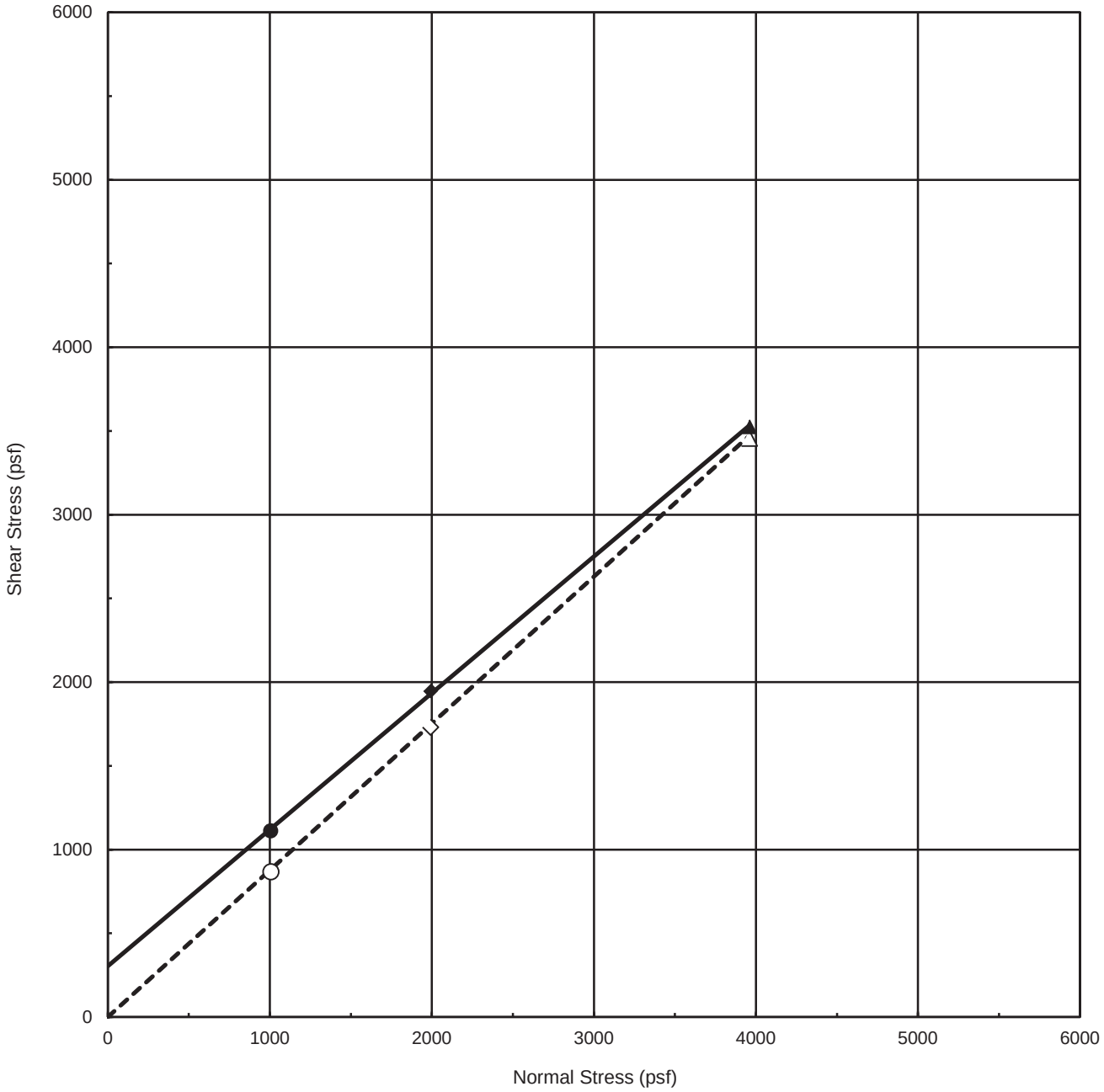
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark greenish gray sandy Clay (CL)
Apparatus No.: DS2
Shear rate (in/min): 0.002

Boring No.: N24703G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1009 ●
Normal Stress (psf): 1994 ◆
Normal Stress (psf): 3962 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	N24729G		Strength Intercept (C) :		304.1	psf	Peak	0.0	psf	Ultimate	
Sample No.:	4				14.6	kPa		0.0	kPa		
Depth (ft | m)	7.5	2.3	Friction Angle (ϕ) :		39	degree		41	degree		
Description:	**Strong brown clayey Sand (SC)**						Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	
SYMBOL	% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up	12.2	129.8	20.4	115.7	18.2	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear ● spec. 1	15.5	144.3	22.7	124.9	19.6	1006	48	1111	53	868	42
pre-shear ◆ spec. 2	15.1	134.0	21.1	116.5	18.3	1992	95	1949	93	1731	83
pre-shear ▲ spec. 3	14.8	135.0	21.2	117.6	18.5	3959	190	3526	169	3457	166

AECOM

Former Kast Property

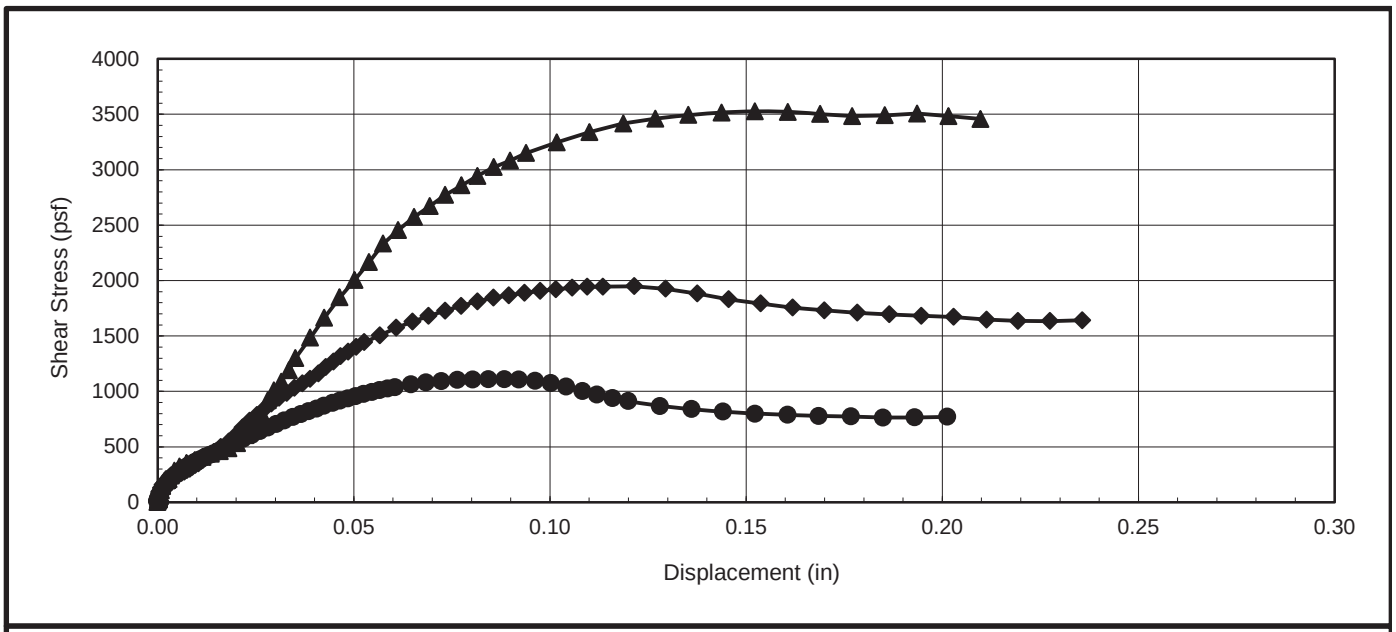
Project Number: 60422689
Test Date: 9/2/2015

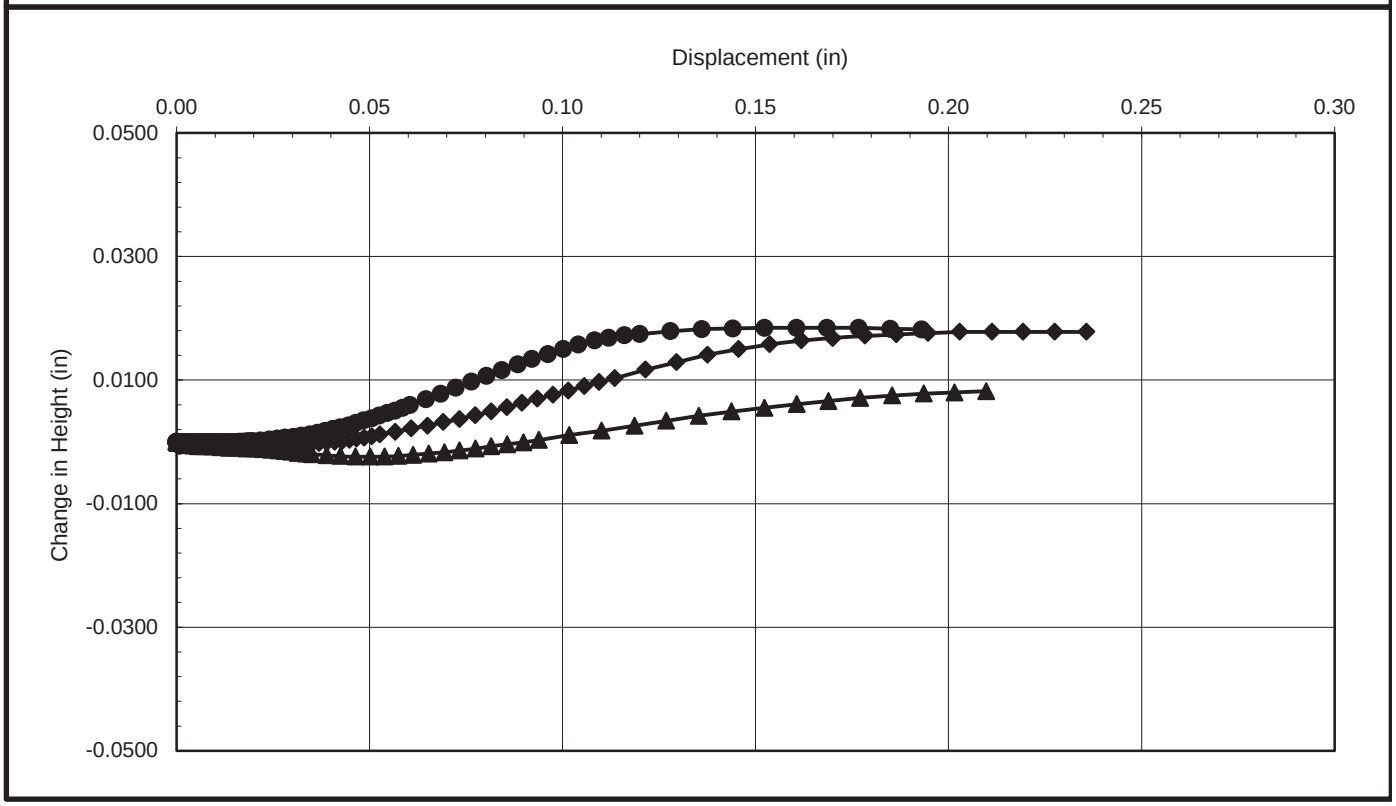
DIRECT SHEAR TEST
ASTM D 3080

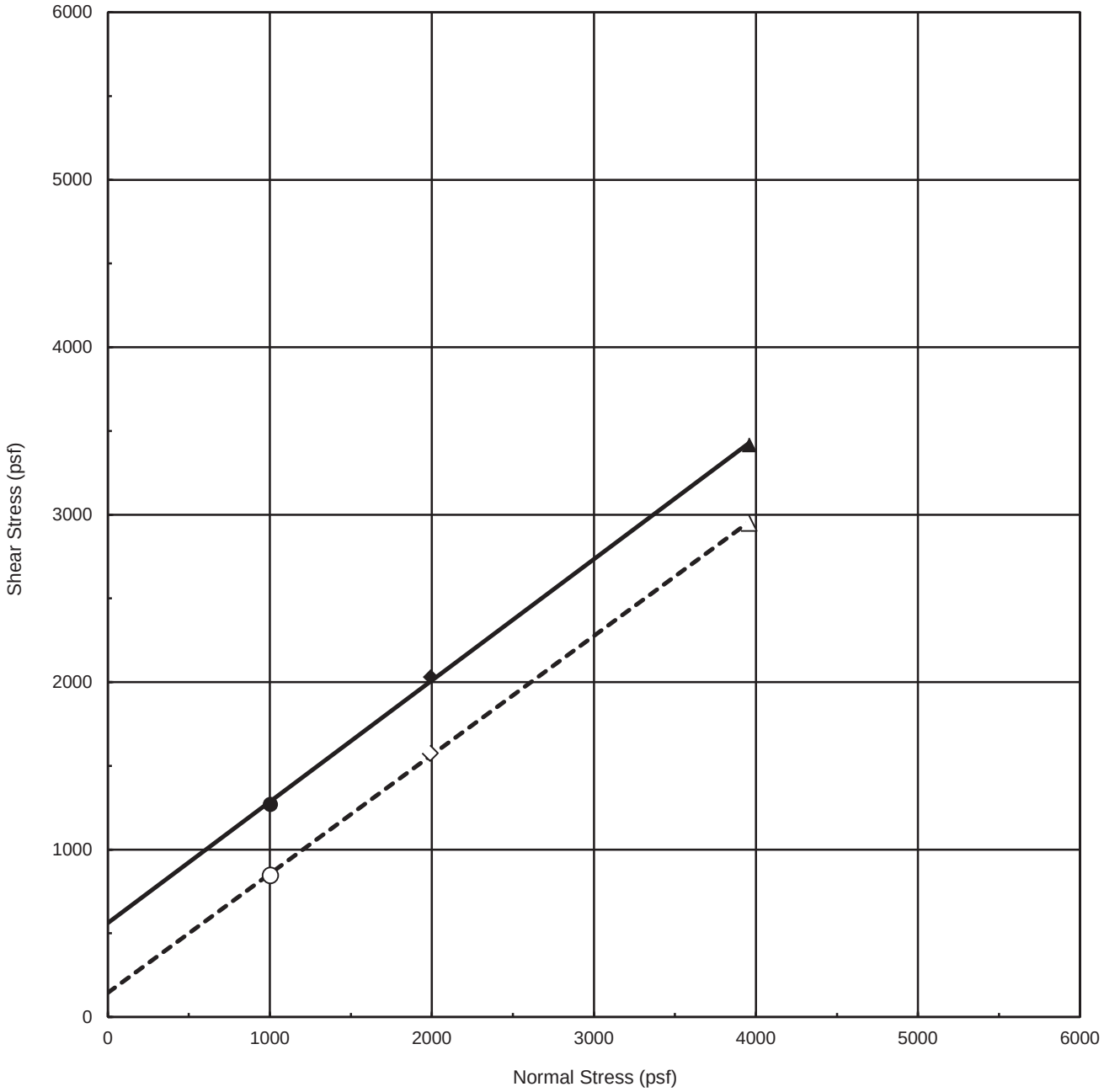
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Strong brown clayey Sand (SC)
Apparatus No.: DS1
Shear rate (in/min): 0.004

Boring No.: N24729G
Sample No.: 4
Sample Depth (ft.): 7.5
Normal Stress (psf): 1006 ●
Normal Stress (psf): 1992 ◆
Normal Stress (psf): 3959 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	N24732G		Strength Intercept (C) :	562.7	psf	Peak	145.0	psf	Ultimate
Sample No.:	3			26.9	kPa		6.9	kPa	
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :	36	degree		35	degree	

Description: **Strong brown clayey Sand (SC)** Shear rate : 0.0040 (in/min) , 0.0102 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		14.4	134.2	21.1	117.3	18.4	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	14.9	136.5	21.4	118.8	18.7	1003	48	1269	61	846	41
pre-shear	◆ spec. 2	15.8	135.7	21.3	117.1	18.4	1989	95	2034	97	1576	75
pre-shear	▲ spec. 3	16.0	138.7	21.8	119.6	18.8	3956	189	3418	164	2950	141

AECOM

Former Kast Property

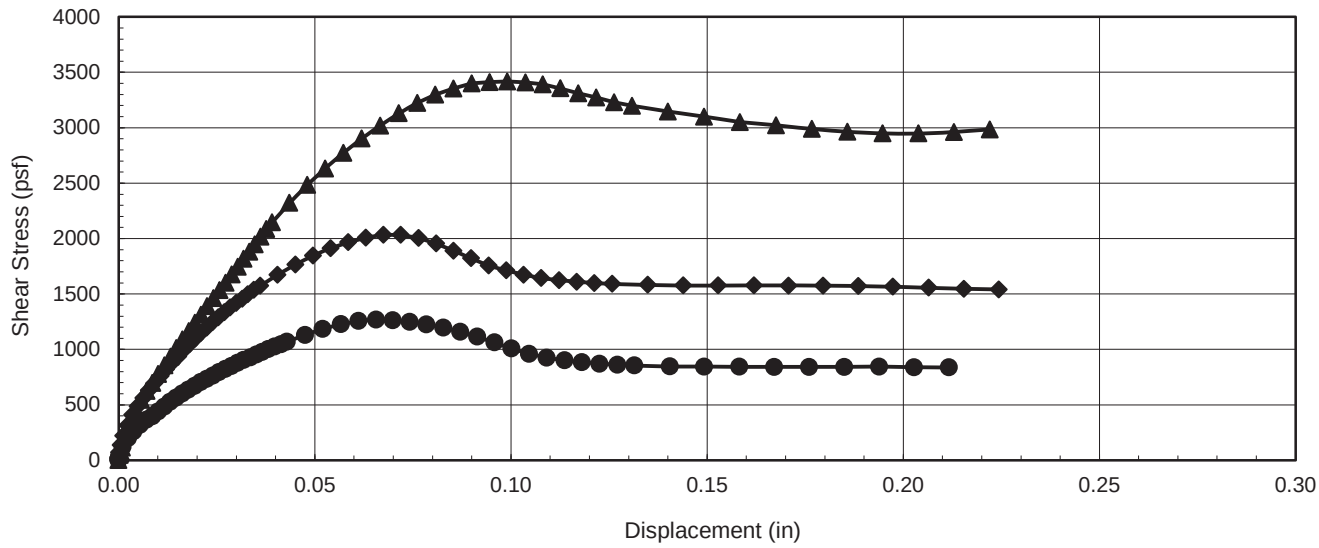
Project Number: 60422689
Test Date: 9/10/2015

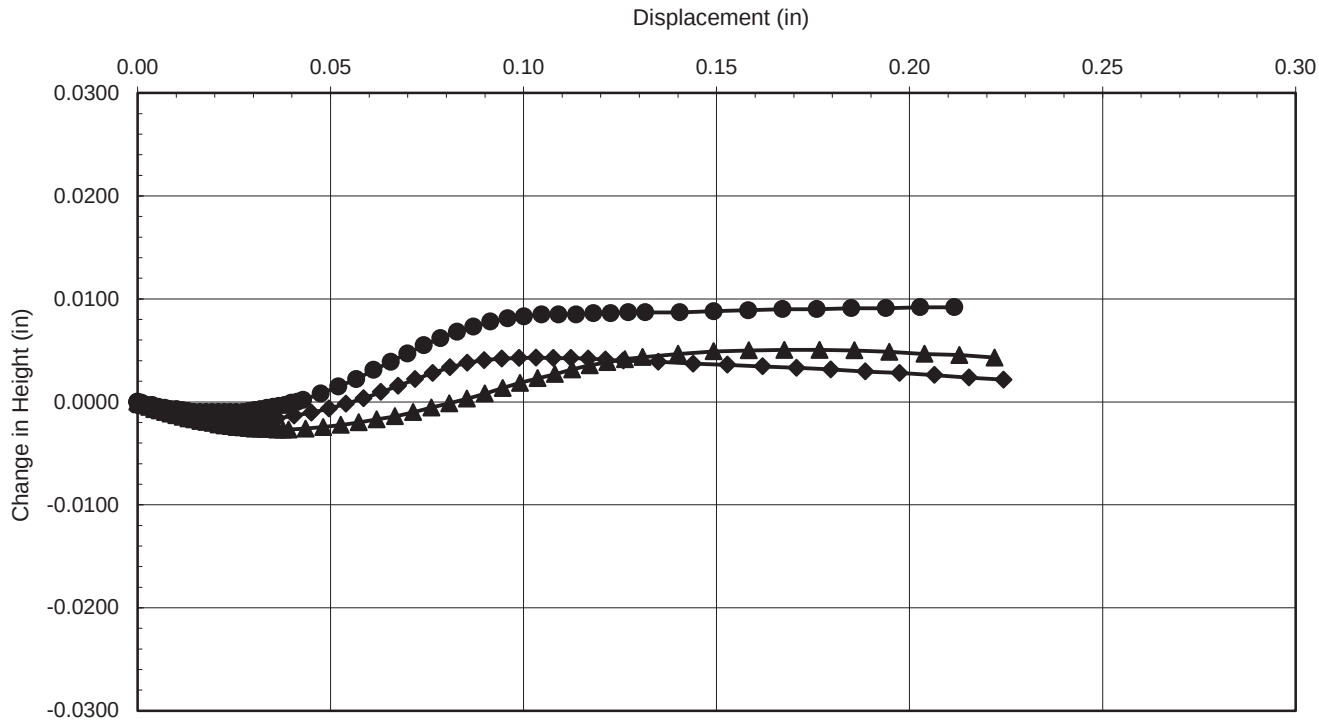
DIRECT SHEAR TEST
ASTM D 3080

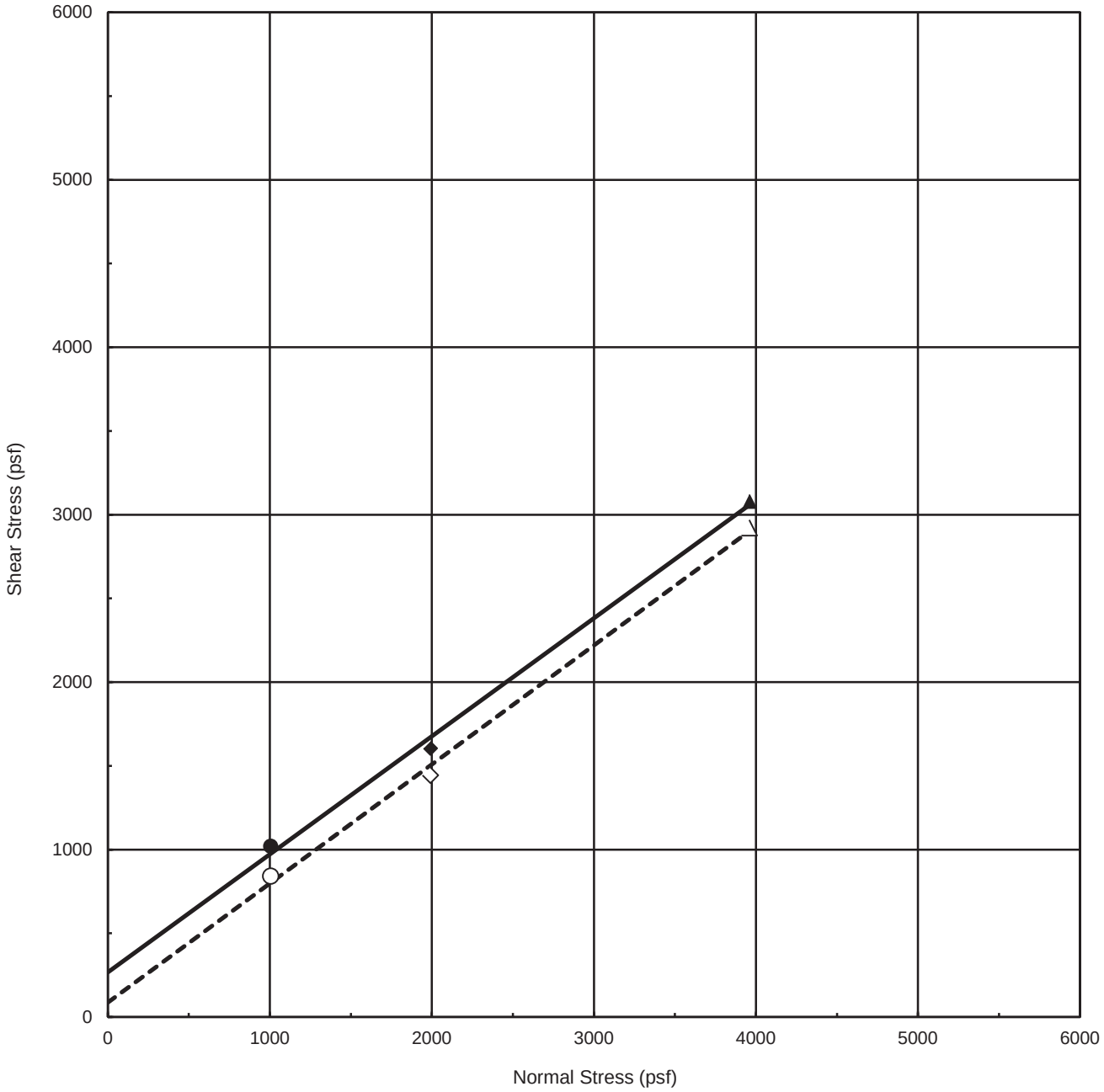
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Strong brown clayey Sand (SC)
Apparatus No.: DS2
Shear rate (in/min): 0.004

Boring No.: N24732G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1003 ●
Normal Stress (psf): 1989 ◆
Normal Stress (psf): 3956 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	P24411G		Strength Intercept (C) :	267.3	psf	Peak	87.7	psf	Ultimate
Sample No.:	5			12.8	kPa		4.2	kPa	
Depth (ft | m)	10.0	3.0	Friction Angle (ϕ) :	35	degree		35	degree	
Description:	**Yellowish brown silty Sand (SM)**				Shear rate :	0.0020 (in/min) ,		0.0051 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		6.7	107.5	16.9	100.7	15.8	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	26.3	124.5	19.6	98.6	15.5	1005	48	1020	49	842	40
pre-shear	◆ spec. 2	24.4	125.8	19.8	101.1	15.9	1991	95	1605	77	1444	69
pre-shear	▲ spec. 3	25.0	124.7	19.6	99.8	15.7	3959	190	3080	147	2922	140

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 8/25/2015

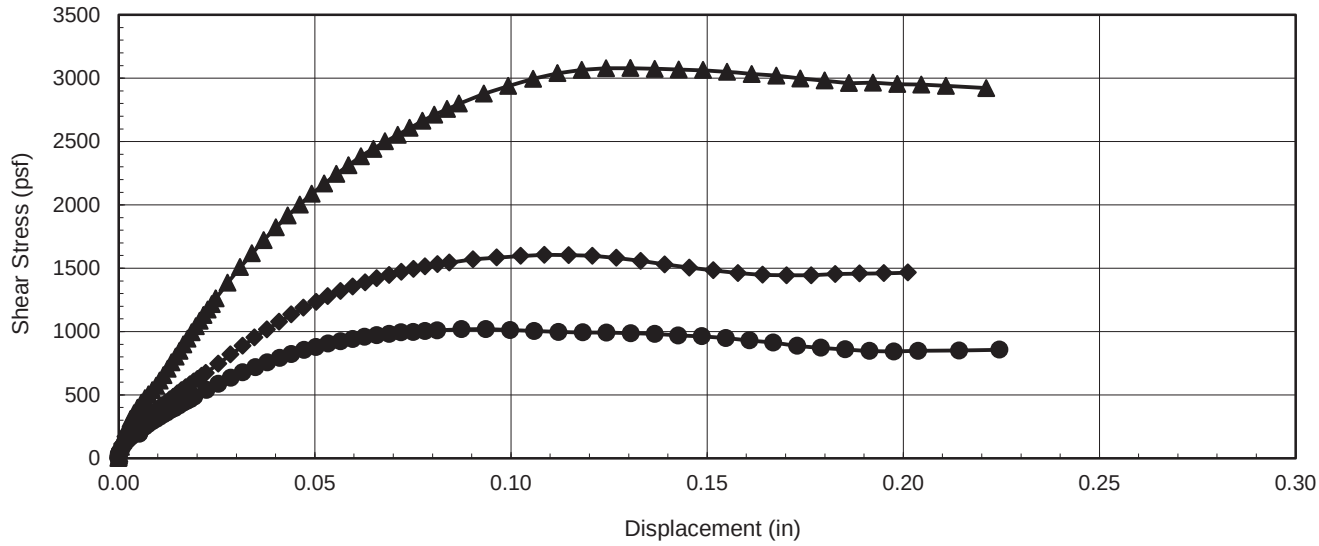
DIRECT SHEAR TEST
ASTM D 3080

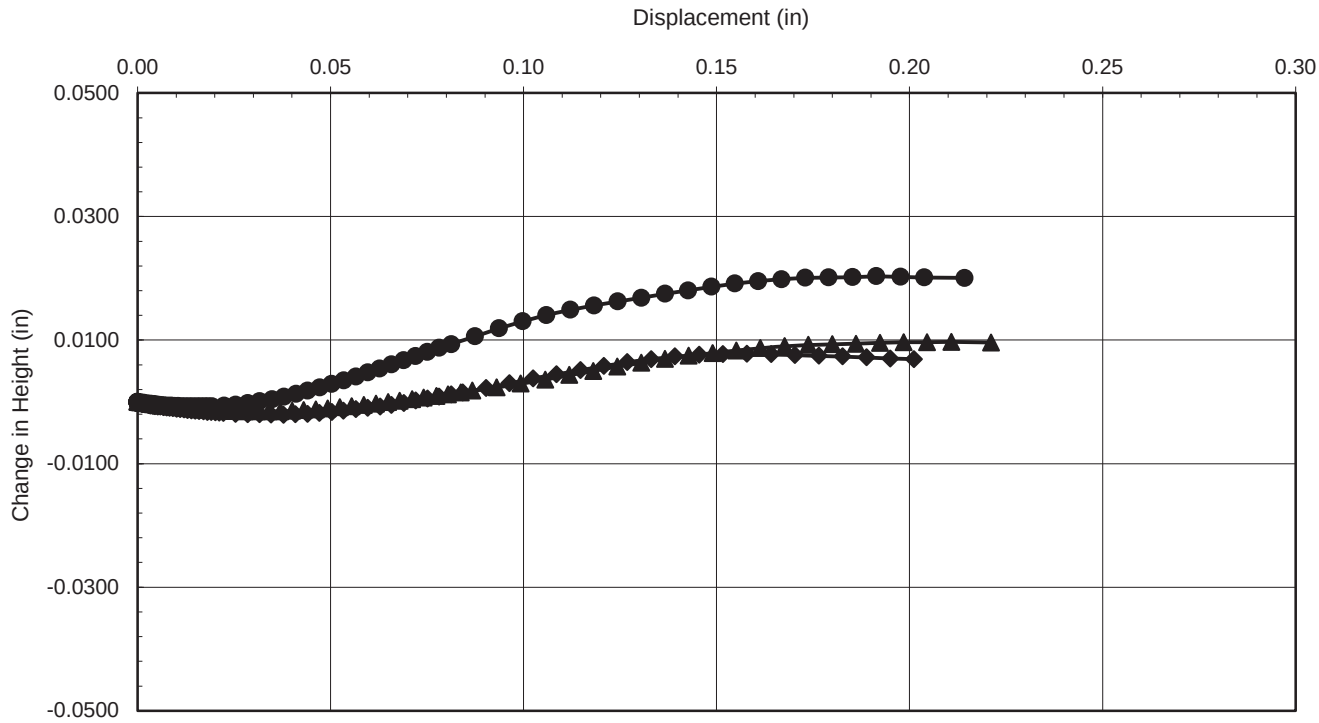
DS Plot AECOM Kast P24411G s05 10 ft.xlsx

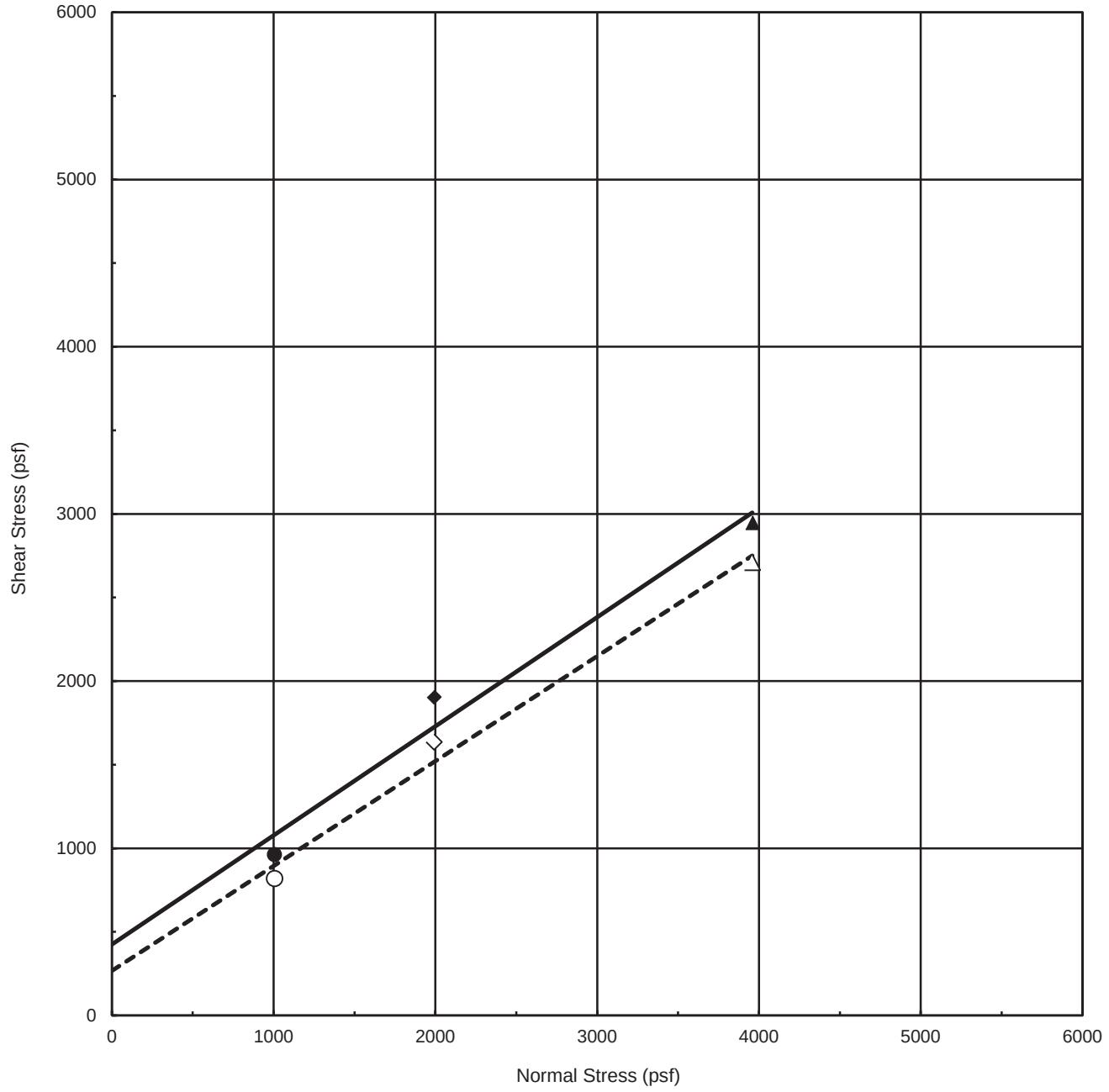
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Yellowish brown silty Sand (SM)
Apparatus No.: DS3
Shear rate (in/min): 0.002

Boring No.: P24411G
Sample No.: 5
Sample Depth (ft.): 10
Normal Stress (psf): 1005 ●
Normal Stress (psf): 1991 ◆
Normal Stress (psf): 3959 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	P24421G		Strength Intercept (C) :	424.8	psf	Peak	268.0	psf	Ultimate
Sample No.:	4			20.3	kPa		12.8	kPa	
Depth (ft | m)	7.5	2.3	Friction Angle (ϕ) :	33	degree		32	degree	

Description: **Olive brown silty Sand (SM)** Shear rate : 0.0020 (in/min) , 0.0051 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		17.9	126.9	19.9	107.6	16.9	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	18.7	131.4	20.6	110.7	17.4	1006	48	961	46	819	39
pre-shear	◆ spec. 2	17.3	133.4	21.0	113.8	17.9	1992	95	1905	91	1636	78
pre-shear	▲ spec. 3	17.4	135.9	21.4	115.8	18.2	3959	190	2948	141	2710	130

AECOM

Former Kast Property

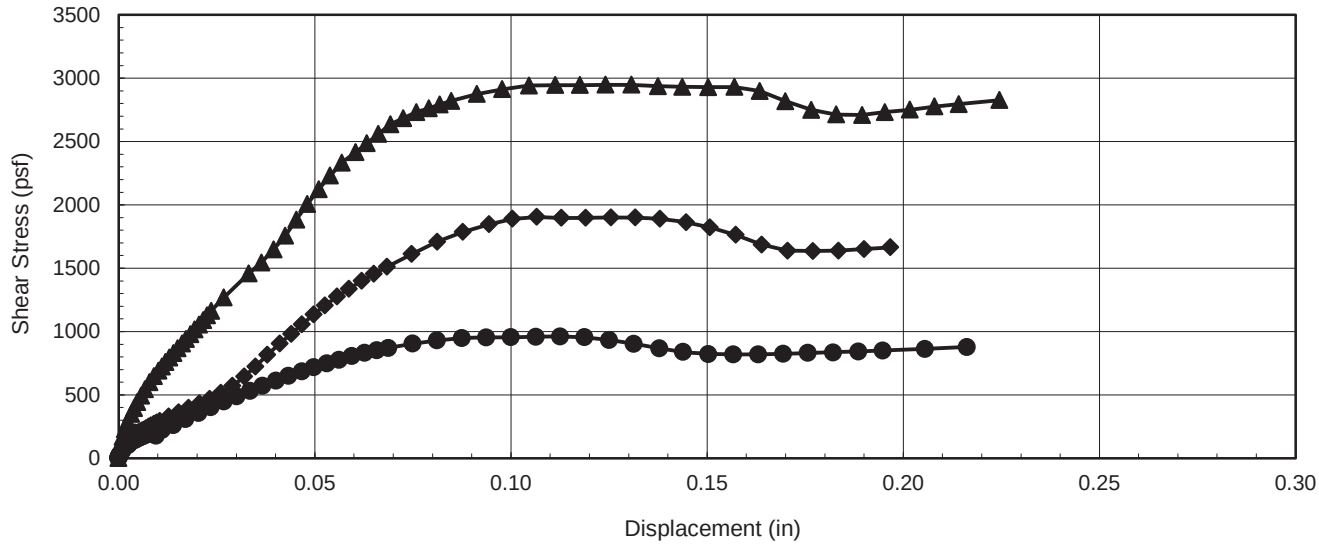
Project Number: 60422689
Test Date: 8/25/2015

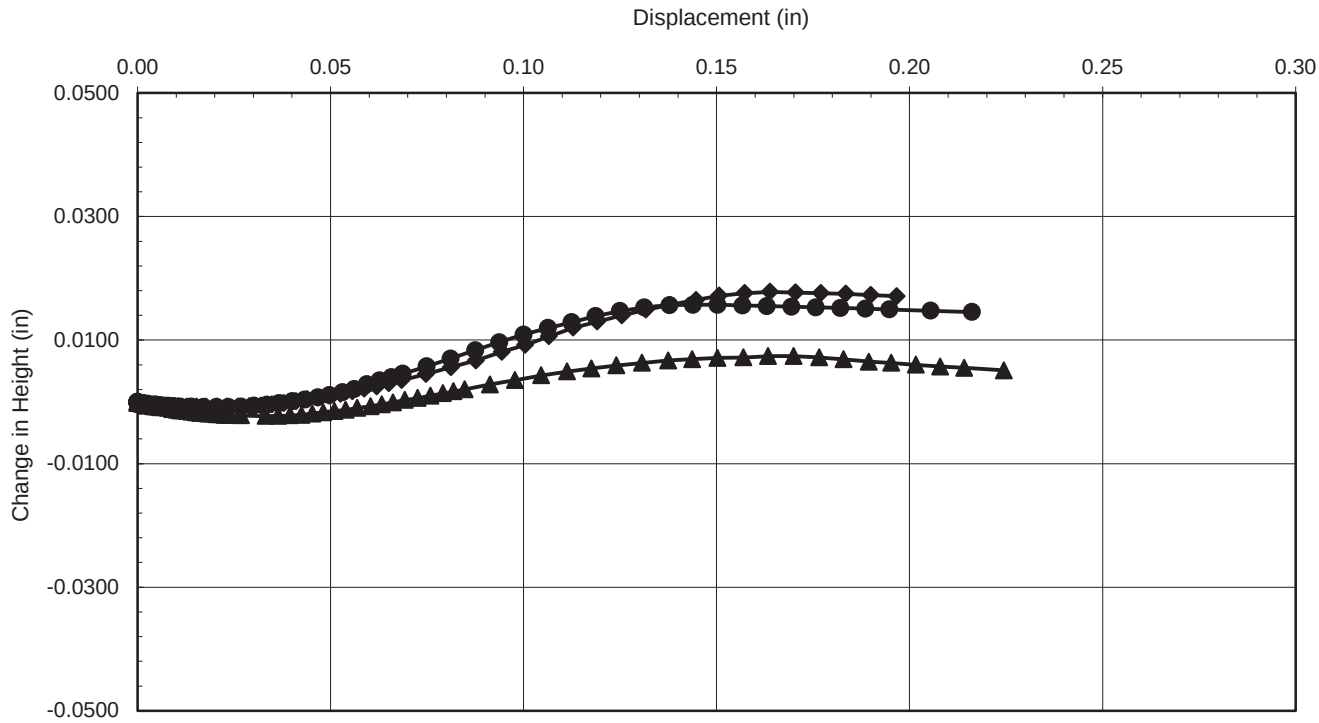
DIRECT SHEAR TEST
ASTM D 3080

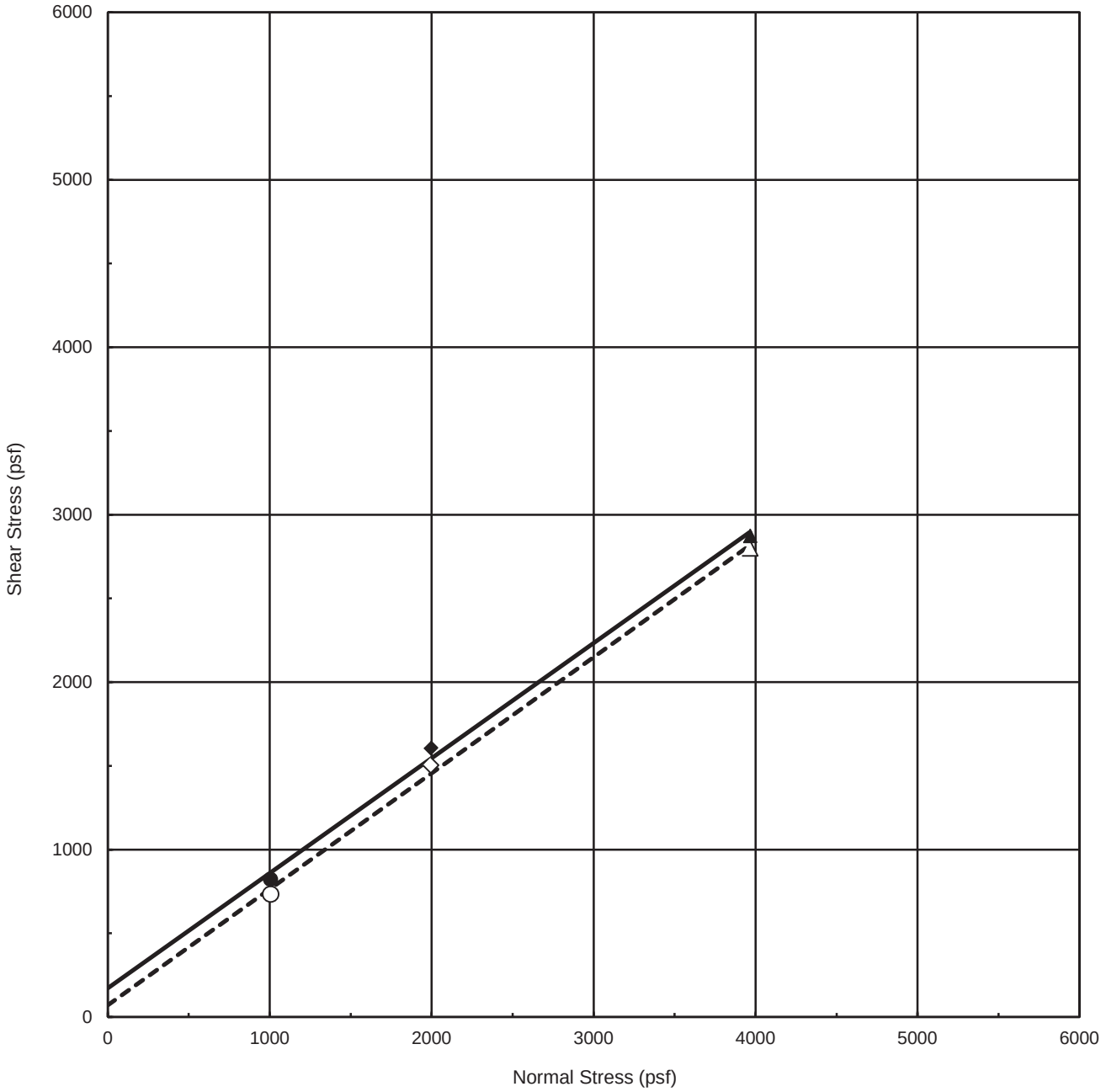
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Olive brown silty Sand (SM)
Apparatus No.: DS1
Shear rate (in/min): 0.002

Boring No.: P24421G
Sample No.: 4
Sample Depth (ft.): 7.5
Normal Stress (psf): 1006 ●
Normal Stress (psf): 1992 ◆
Normal Stress (psf): 3959 ▲







Peak Values are : ● ,solid trend line										Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	P24426G			Strength Intercept (C) :		173.2	psf	Peak		71.0	psf	Ultimate	
Sample No.:	5					8.3	kPa			3.4	kPa		
Depth (ft | m)	10.0	3.0		Friction Angle (ϕ) :		34	degree			35	degree		
Description:	**Light brown silty Sand (SM)**							Shear rate :	0.0020	(in/min) ,	0.0051	(cm/min)	
SYMBOL	% Water Content	Total Unit Weight		Dry Unit Weight		Normal Stress		Peak Stress		Ultimate Stress			
		(pcf)	(kN/m^3)	(pcf)	(kN/m^3)	(psf)	(kPa)	(psf)	(kPa)	(psf)	(kPa)		
Initial / Set up	4.6	115.0	18.1	110.0	17.3	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX		
pre-shear ● spec. 1	16.9	130.2	20.5	111.4	17.5	1006	48	821	39	734	35		
pre-shear ◆ spec. 2	19.6	128.6	20.2	107.5	16.9	1994	95	1608	77	1504	72		
pre-shear ▲ spec. 3	17.3	132.4	20.8	112.9	17.7	3965	190	2875	138	2801	134		

AECOM

Former Kast Property

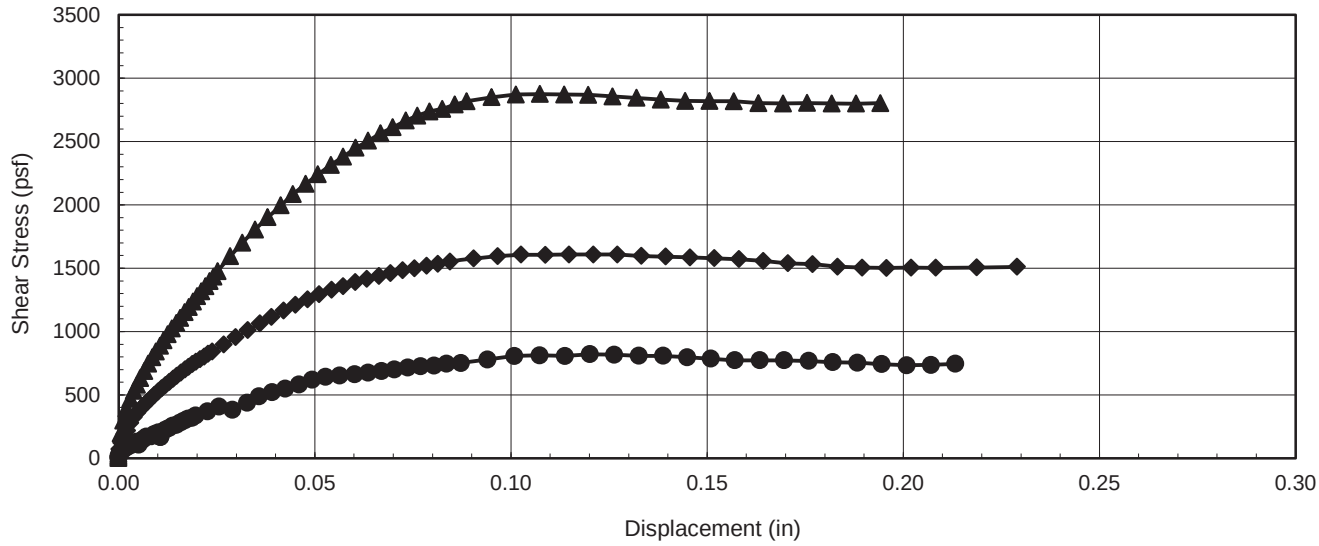
Project Number: 60422689
Test Date: 8/22/2015

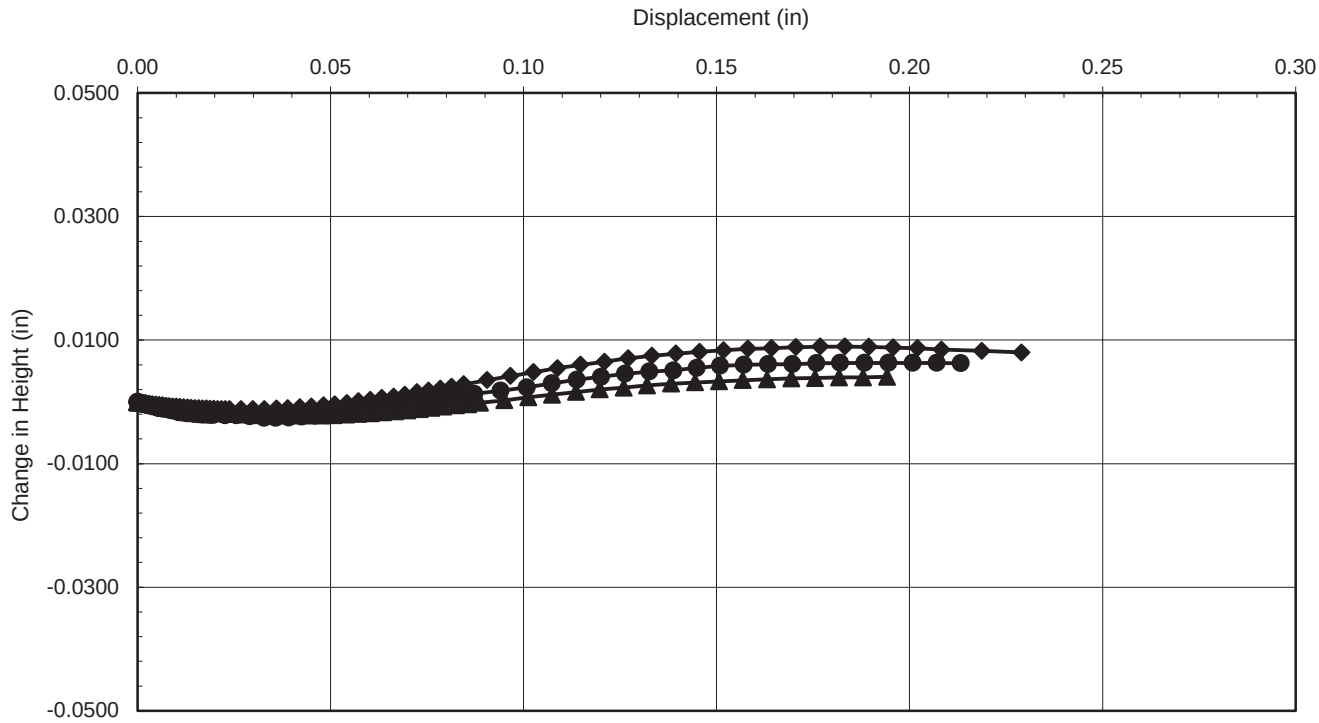
DIRECT SHEAR TEST
ASTM D 3080

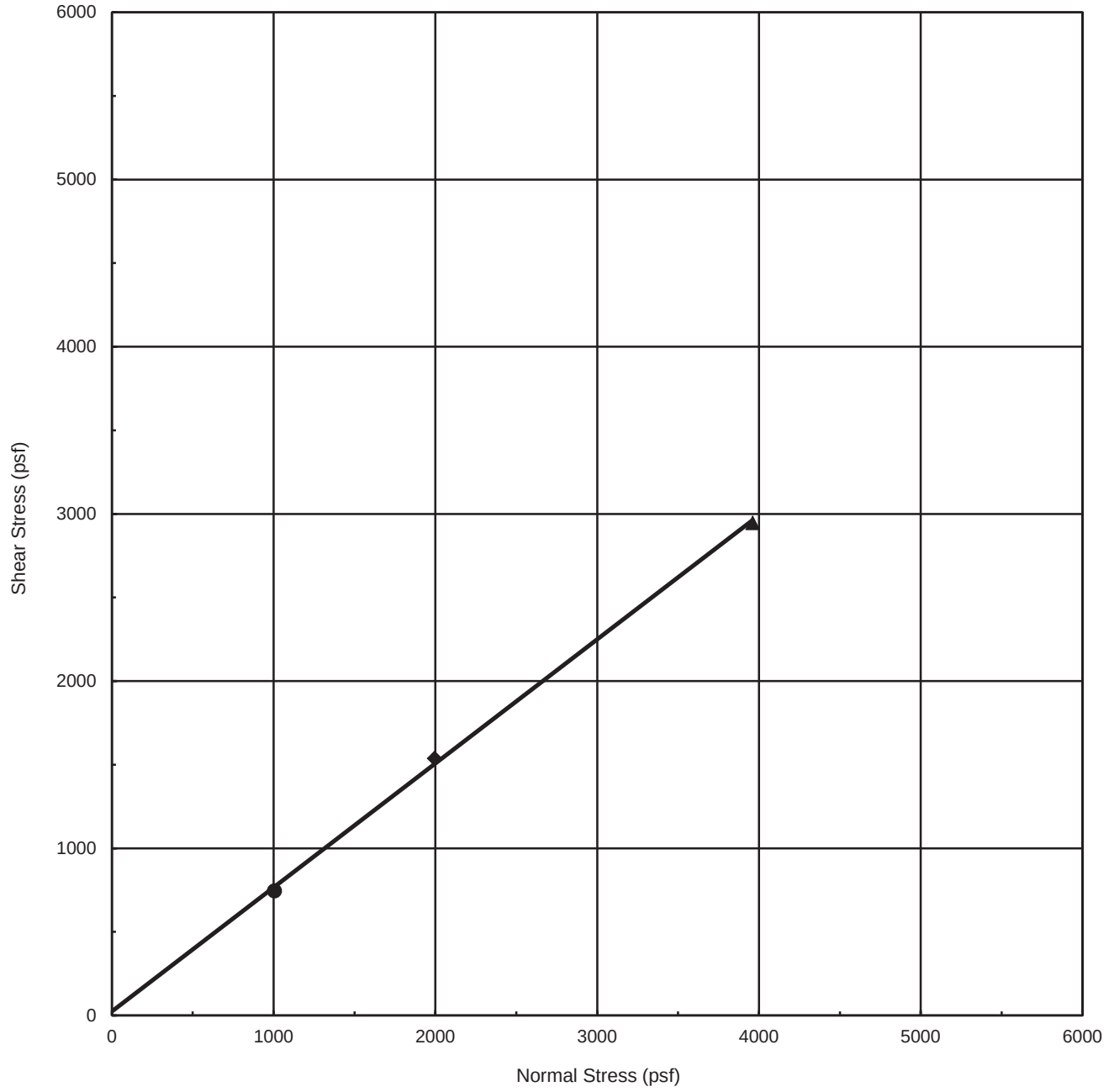
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Light brown silty Sand (SM)
Apparatus No.: DS3
Shear rate (in/min): 0.002

Boring No.: P24426G
Sample No.: 5
Sample Depth (ft.): 10
Normal Stress (psf): 1006 ●
Normal Stress (psf): 1994 ◆
Normal Stress (psf): 3965 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	P24503G		Strength Intercept (C) :		24.3	psf	Peak	XXXXX	psf	Ultimate	
Sample No.:	6				1.2	kPa		XXXXX	kPa		
Depth (ft | m)	15.0	4.6	Friction Angle (ϕ) :		37	degree		XXXXX	degree		
Description:	**Light gray silty Sand (SM)**					Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)		

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		11.0	100.9	15.9	90.9	14.3	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	30.1	115.0	18.1	88.4	13.9	1005	48	744	36	XXXXX	XXXXX
pre-shear	◆ spec. 2	27.3	119.9	18.8	94.2	14.8	1991	95	1541	74	XXXXX	XXXXX
pre-shear	▲ spec. 3	27.6	120.4	18.9	94.4	14.8	3958	190	2948	141	XXXXX	XXXXX

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 9/10/2015

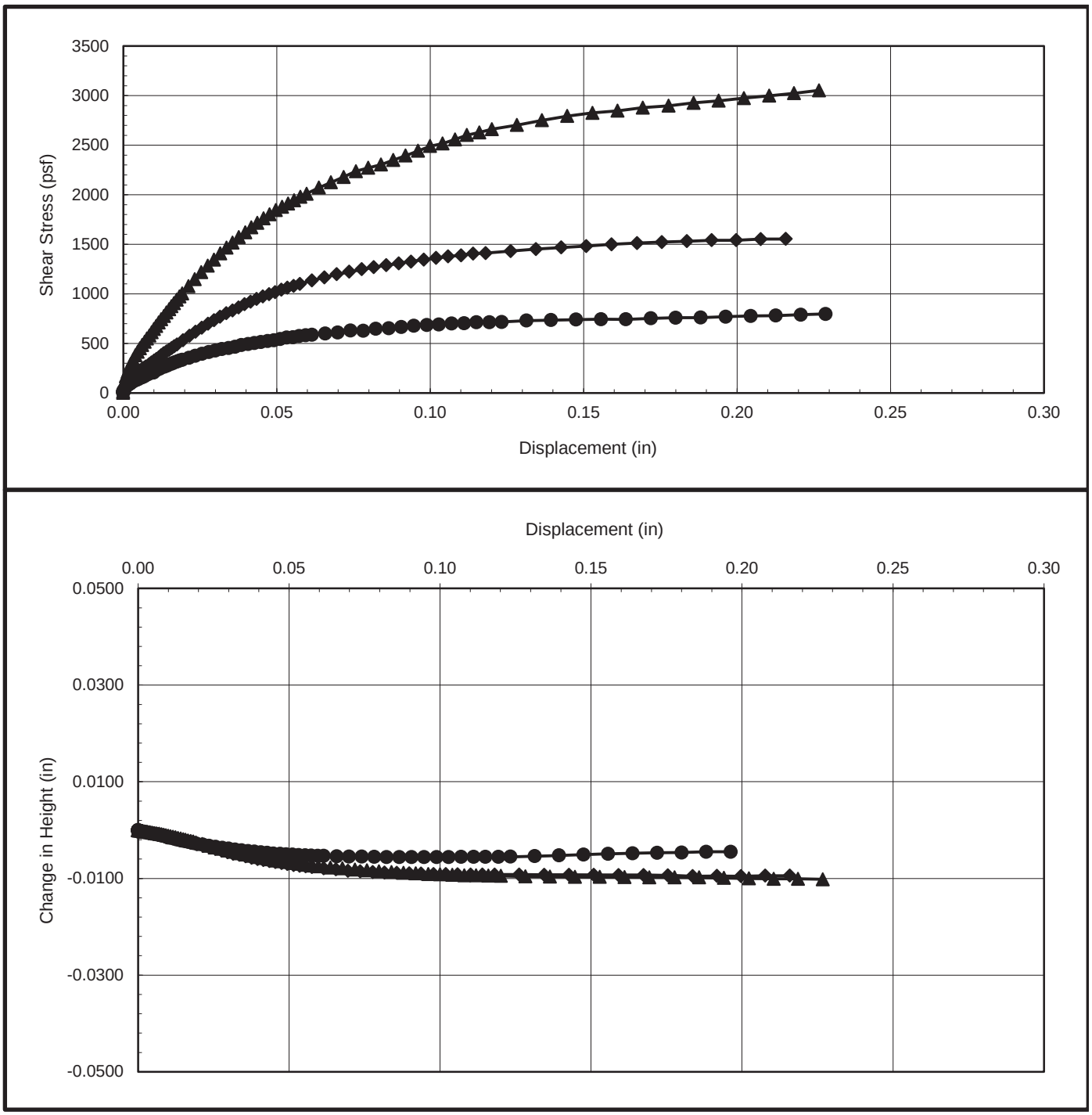
DIRECT SHEAR TEST
ASTM D 3080

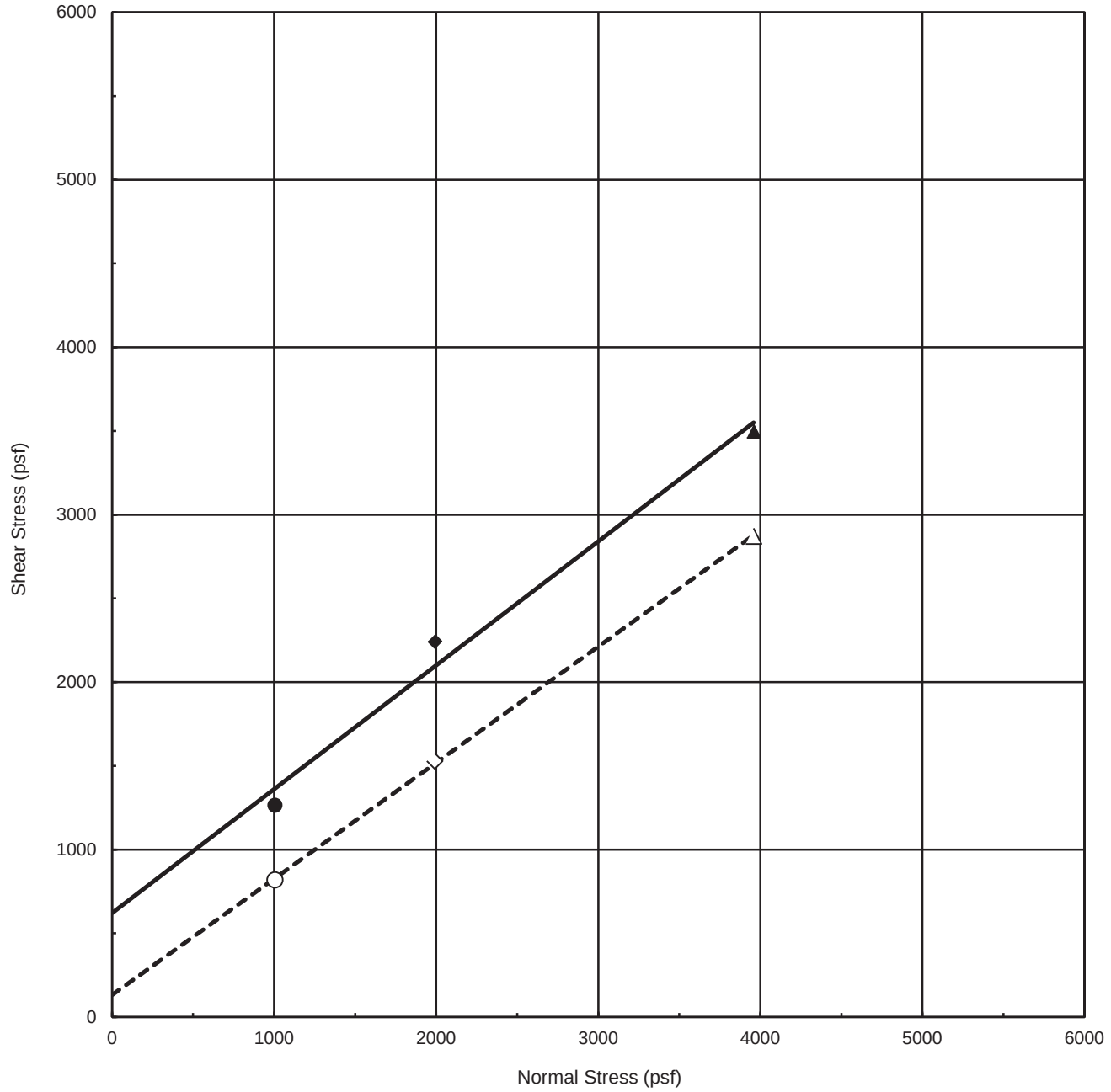
DS Plot AECOM Kast P24503G s06 15 ft.xlsx

DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Light gray silty Sand (SM)
Apparatus No.: DS3
Shear rate (in/min): 0.004

Boring No.: P24503G
Sample No.: 6
Sample Depth (ft.): 15
Normal Stress (psf): 1005 ●
Normal Stress (psf): 1991 ◆
Normal Stress (psf): 3958 ▲





Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	P24533G		Strength Intercept (C) :	621.3	psf	Peak	132.4	psf	Ultimate
Sample No.:	3			29.7	kPa		6.3	kPa	
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :	36	degree		35	degree	

Description: **Dark yellowish brown clayey Sand (SC)** Shear rate : 0.0020 (in/min) , 0.0051 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		13.9	134.7	21.2	118.3	18.6	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	14.3	134.9	21.2	118.0	18.5	1005	48	1265	61	819	39
pre-shear	◆ spec. 2	15.1	141.5	22.2	122.9	19.3	1991	95	2244	107	1529	73
pre-shear	▲ spec. 3	14.8	140.1	22.0	122.0	19.2	3958	190	3499	168	2872	138

AECOM

Former Kast Property

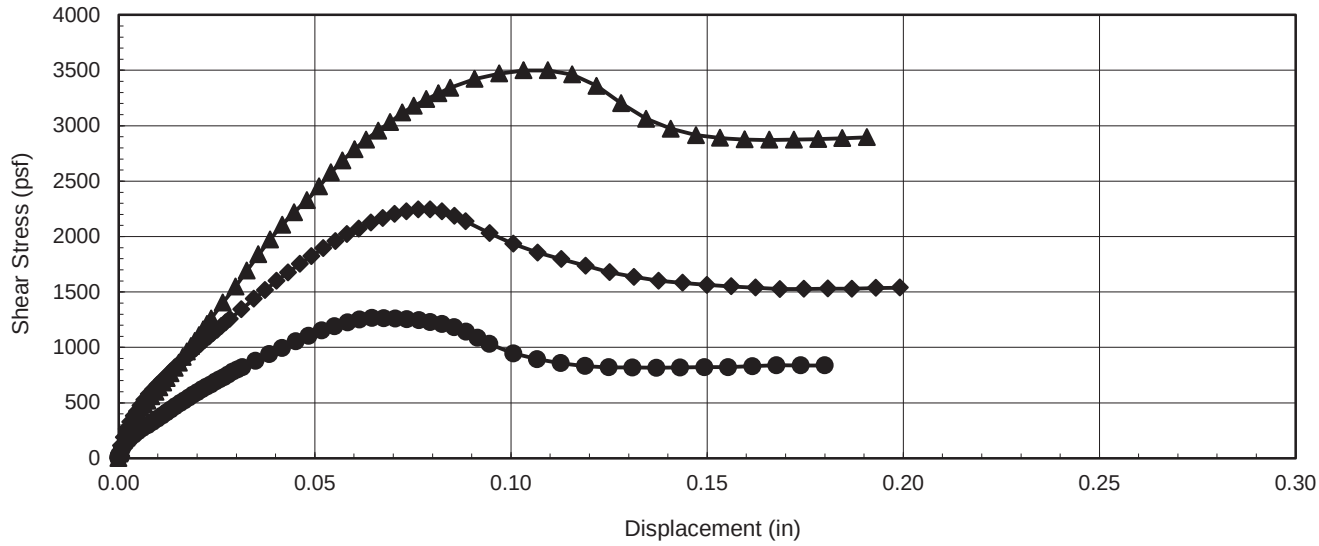
Project Number: 60422689
Test Date: 8/29/2015

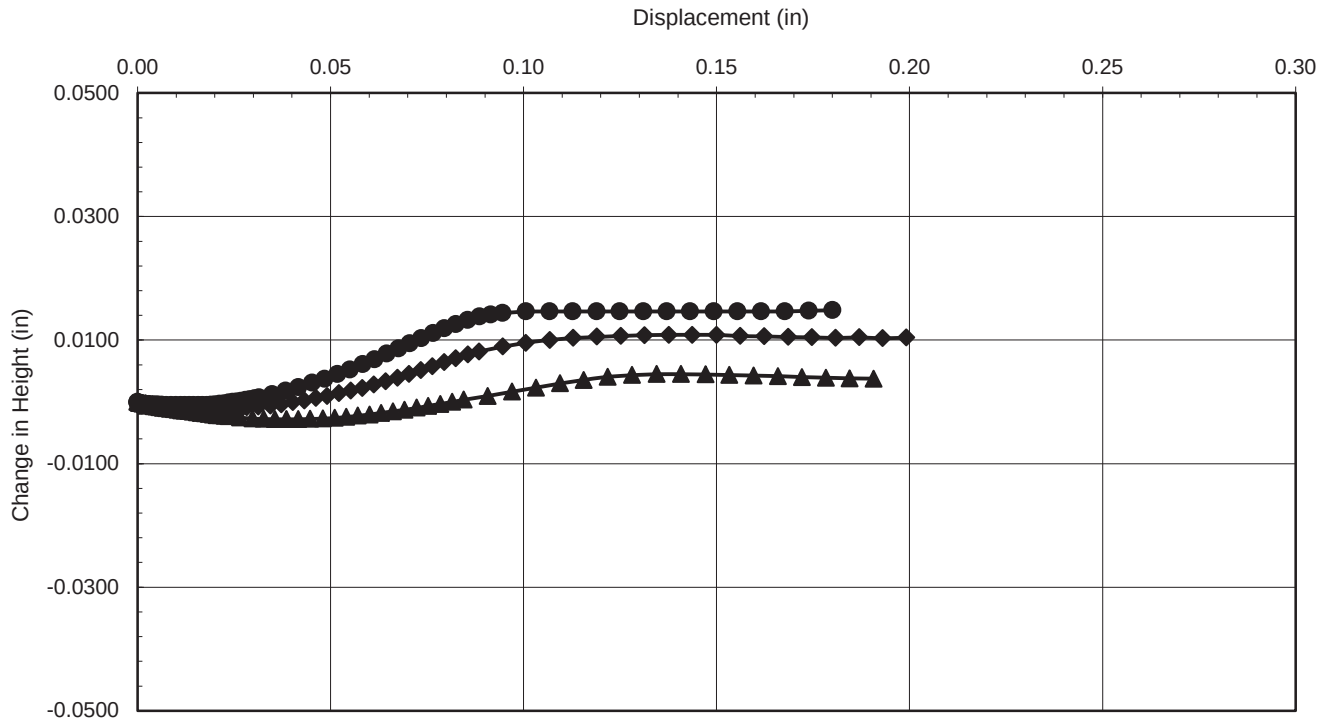
DIRECT SHEAR TEST
ASTM D 3080

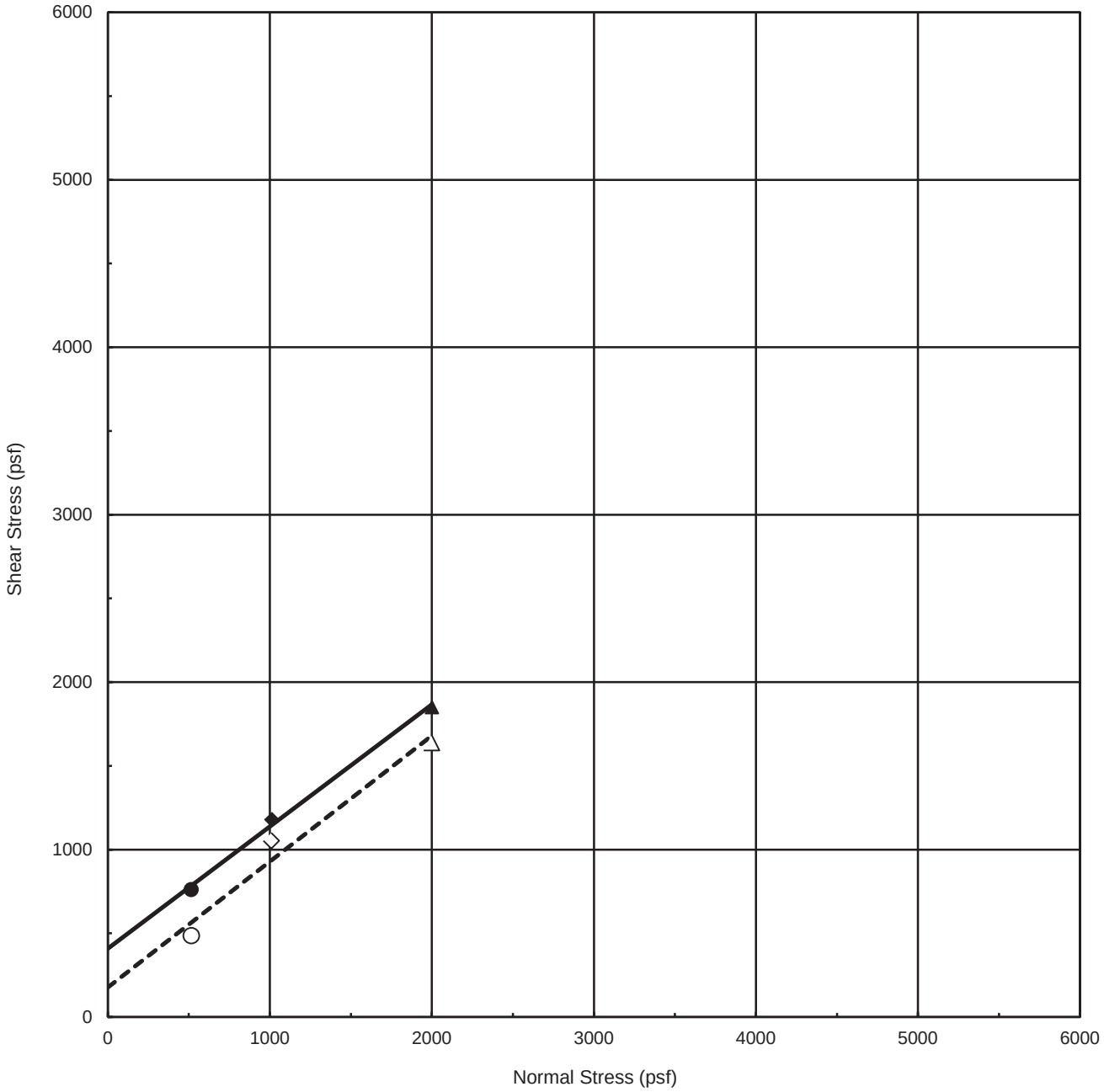
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark yellowish brown clayey Sand (SC)
Apparatus No.: DS3
Shear rate (in/min): 0.002

Boring No.: P24533G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1005 ●
Normal Stress (psf): 1991 ◆
Normal Stress (psf): 3958 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	P24708G		Strength Intercept (C) :	409.4	psf	Peak	177.5	psf	Ultimate
Sample No.:	1			19.6	kPa		8.5	kPa	
Depth (ft | m)	2.5	0.8	Friction Angle (ϕ) :	36	degree		37	degree	

Description: **Strong brown clayey Sand (SC)** Shear rate : 0.0020 (in/min) , 0.0051 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		9.6	128.4	20.2	117.2	18.4	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	19.2	137.6	21.6	115.5	18.1	515	25	760	36	486	23
pre-shear	◆ spec. 2	16.4	140.8	22.1	120.9	19.0	1009	48	1182	57	1053	50
pre-shear	▲ spec. 3	16.6	138.9	21.8	119.1	18.7	1998	96	1853	89	1639	78

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 8/22/2015

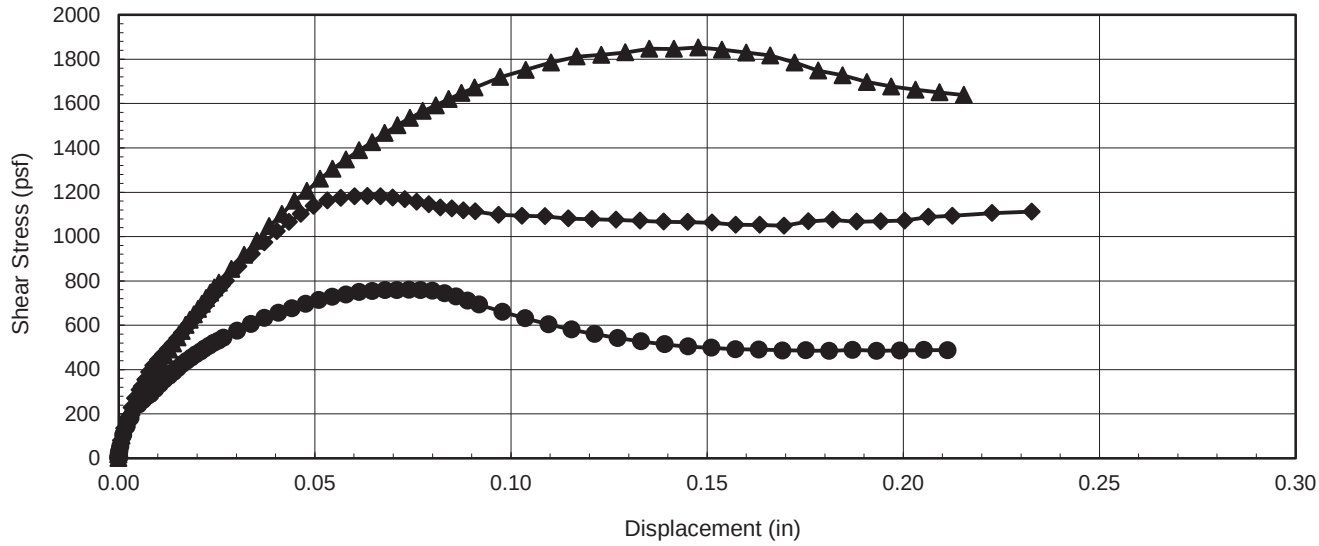
DIRECT SHEAR TEST
ASTM D 3080

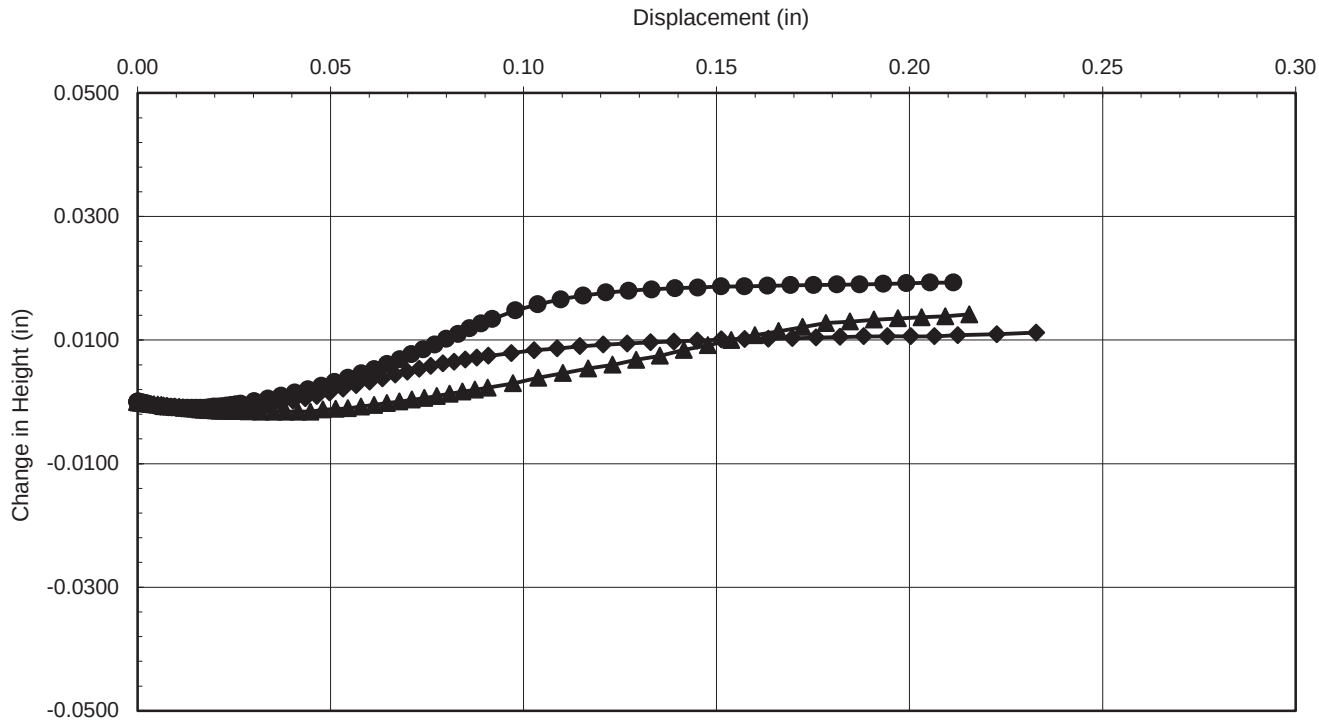
DS Plot AECOM Kast P24708G s01 2.5 ft.xlsx

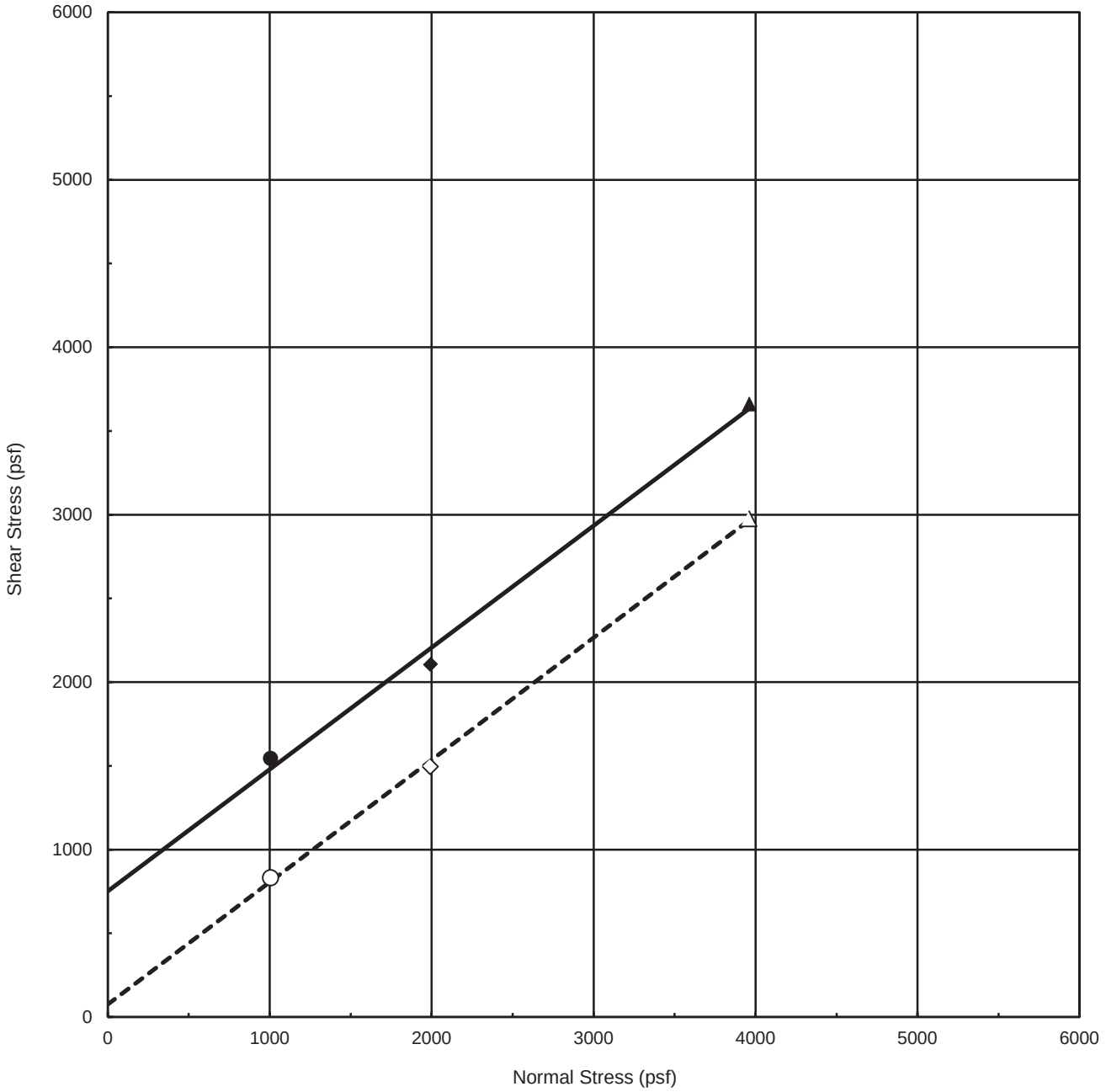
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Strong brown clayey Sand (SC)
Apparatus No.: DS2
Shear rate (in/min): 0.002

Boring No.: P24708G
Sample No.: 1
Sample Depth (ft.): 2.5
Normal Stress (psf): 515 ●
Normal Stress (psf): 1009 ◆
Normal Stress (psf): 1998 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	P24722G		Strength Intercept (C) :		752.3	psf	Peak	75.7	psf	Ultimate	
Sample No.:	4				36.0	kPa		3.6	kPa		
Depth (ft | m)	7.5	2.3	Friction Angle (ϕ) :		36	degree		36	degree		
Description:	**Strong brown clayey Sand (SC)**						Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	
SYMBOL	% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up	10.9	130.8	20.6	117.9	18.5	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear ● spec. 1	15.6	136.9	21.5	118.5	18.6	1005	48	1545	74	832	40
pre-shear ◆ spec. 2	15.3	139.4	21.9	120.9	19.0	1991	95	2108	101	1496	72
pre-shear ▲ spec. 3	15.6	140.3	22.0	121.4	19.1	3958	190	3662	175	2977	143

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 9/17/2015

DIRECT SHEAR TEST
ASTM D 3080

DIRECT SHEAR TEST
ASTM D 3080

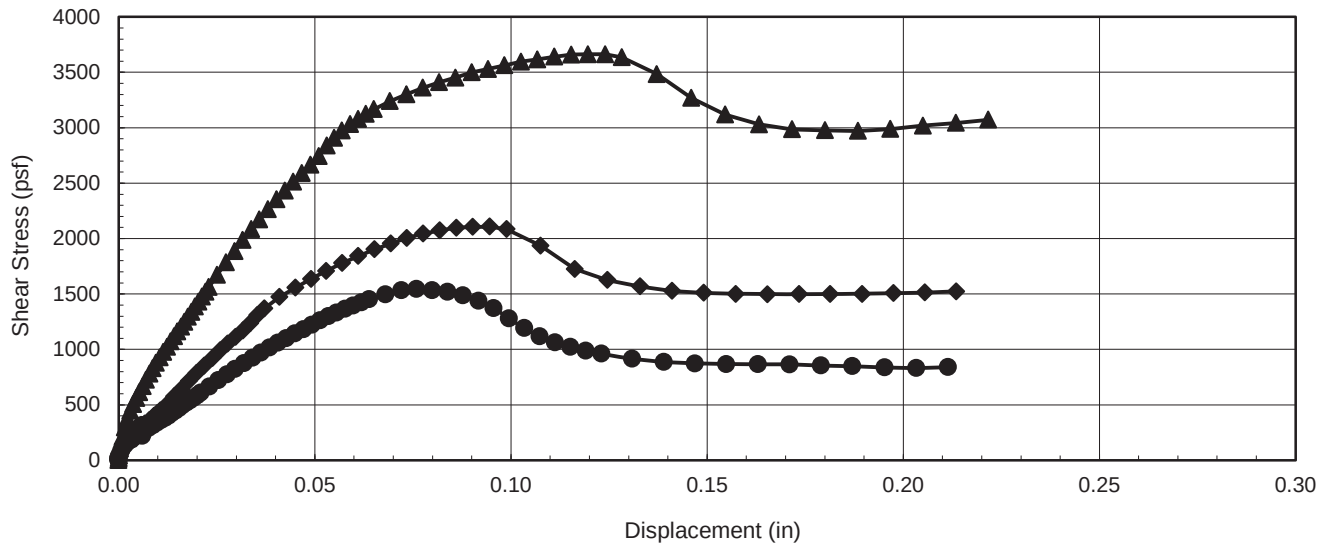
Project Name : Former Kast Property
Project Number : 60422689

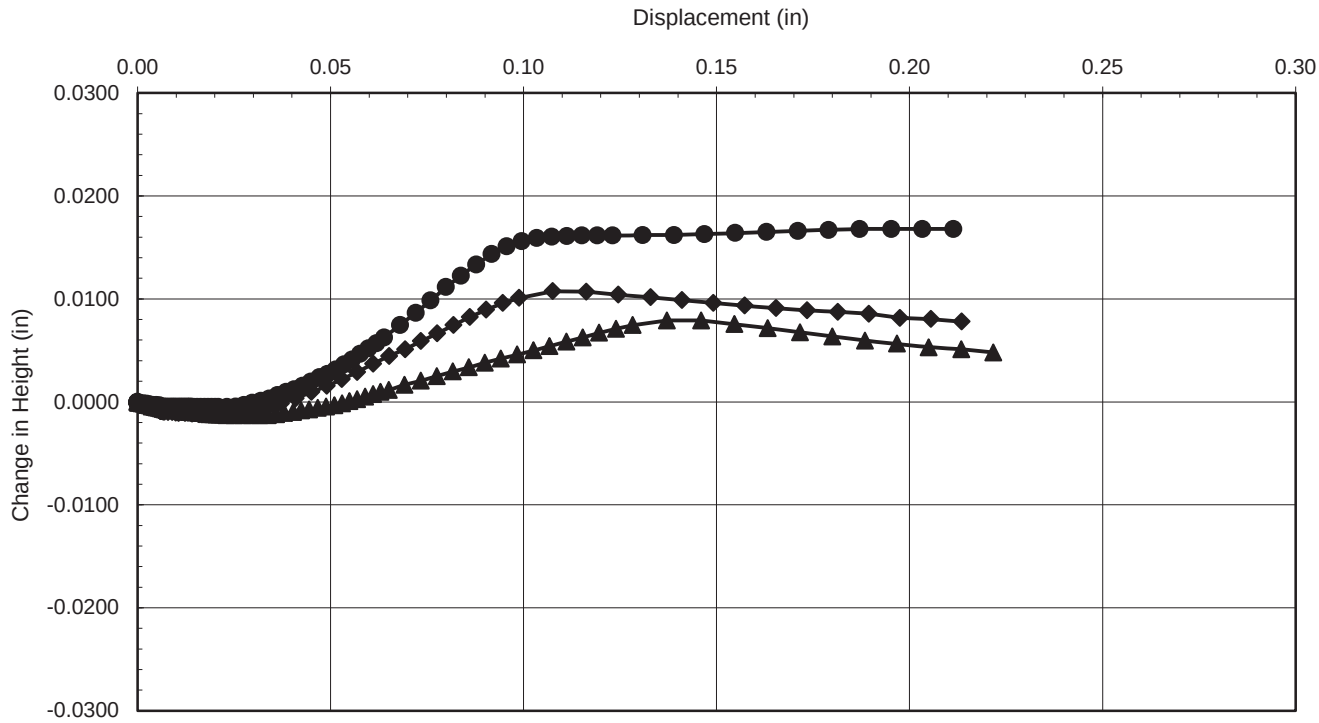
Boring No.: P24722G
Sample No.: 4
Sample Depth (ft.): 7.5

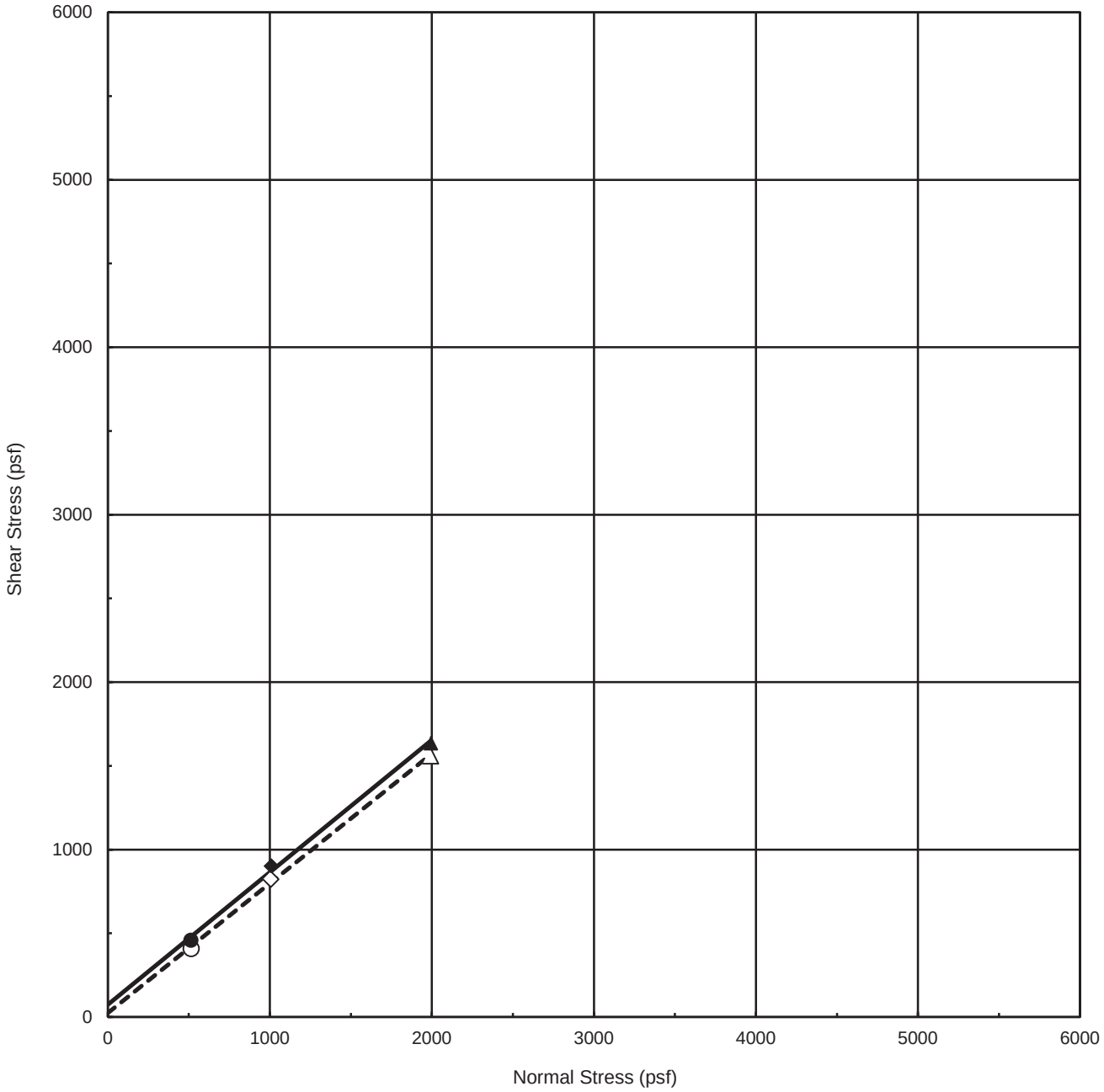
Specimen Description : Strong brown clayey Sand (SC)

Normal Stress (psf): 1005 ●
Normal Stress (psf): 1991 ◆
Normal Stress (psf): 3958 ▲

Apparatus No.: DS3
Shear rate (in/min): 0.004







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	P24803G		Strength Intercept (C) :	74.9	psf	Peak	23.7	psf	Ultimate
Sample No.:	1			3.6	kPa		1.1	kPa	
Depth (ft | m)	2.5	0.8	Friction Angle (ϕ) :	38	degree		38	degree	
Description:	**Brown clayey Sand (SC)**				Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		12.0	139.5	21.9	124.6	19.6	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	15.4	129.0	20.3	111.8	17.6	514	25	458	22	409	20
pre-shear	◆ spec. 2	14.4	129.5	20.3	113.2	17.8	1006	48	905	43	823	39
pre-shear	▲ spec. 3	14.6	129.1	20.3	112.7	17.7	1992	95	1637	78	1560	75

AECOM

Former Kast Property

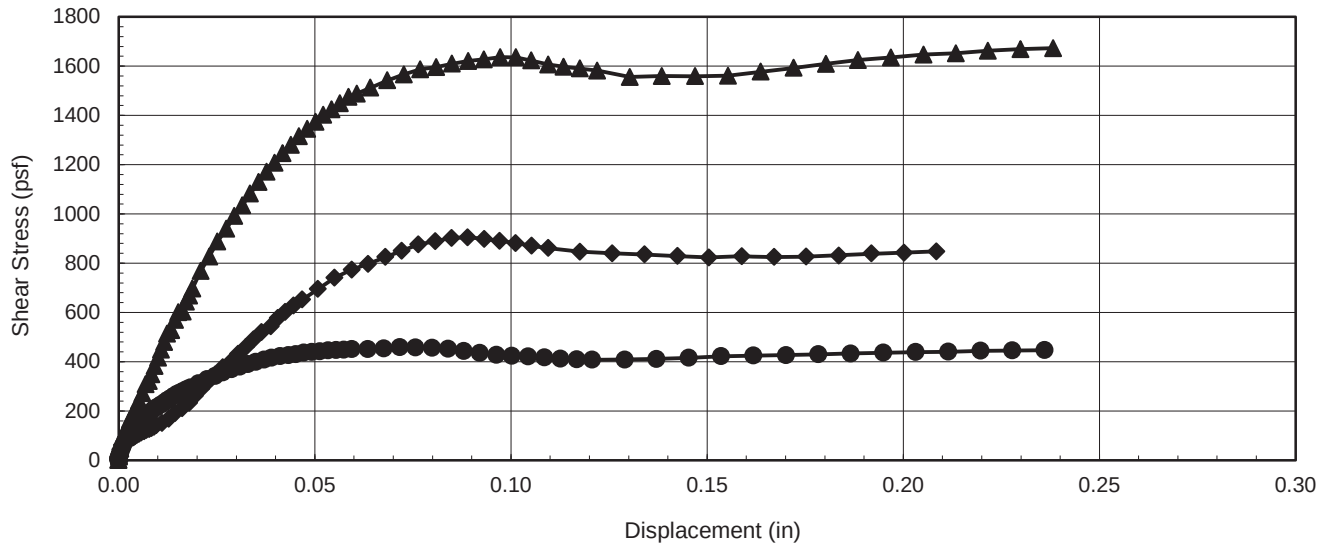
Project Number: 60422689
Test Date: 9/17/2015

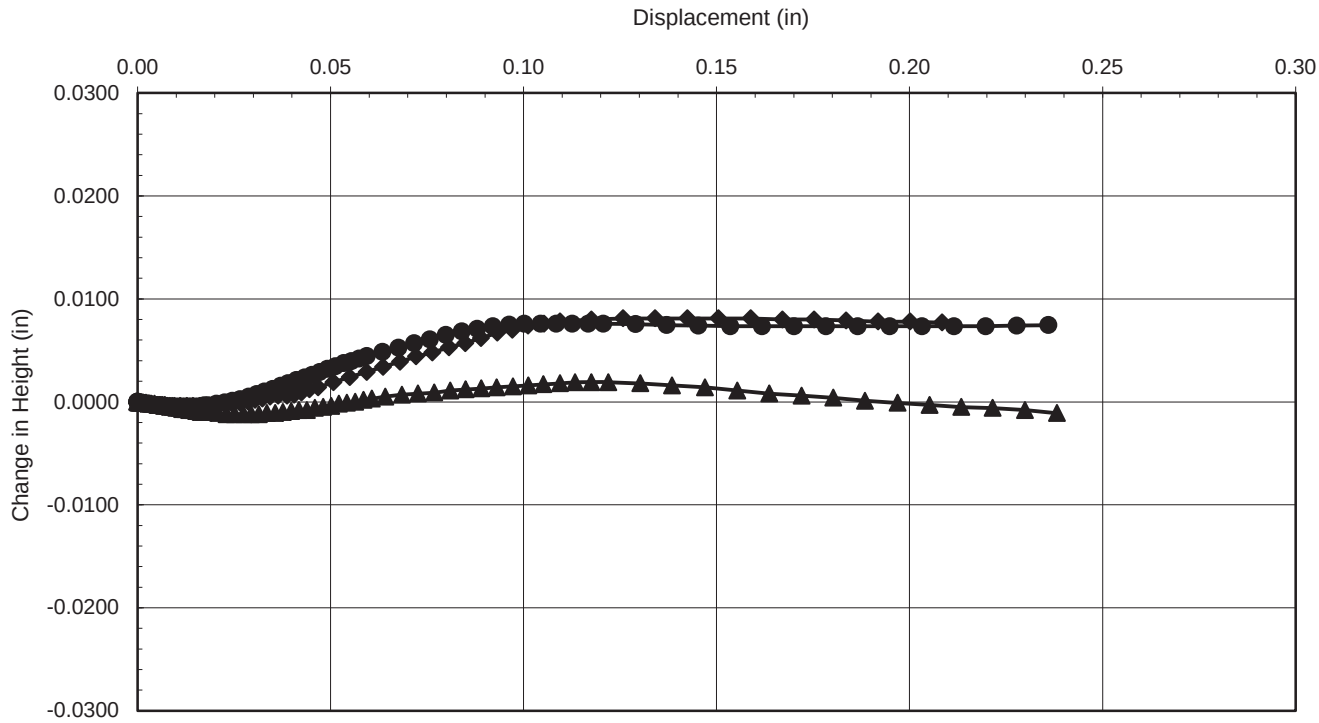
DIRECT SHEAR TEST
ASTM D 3080

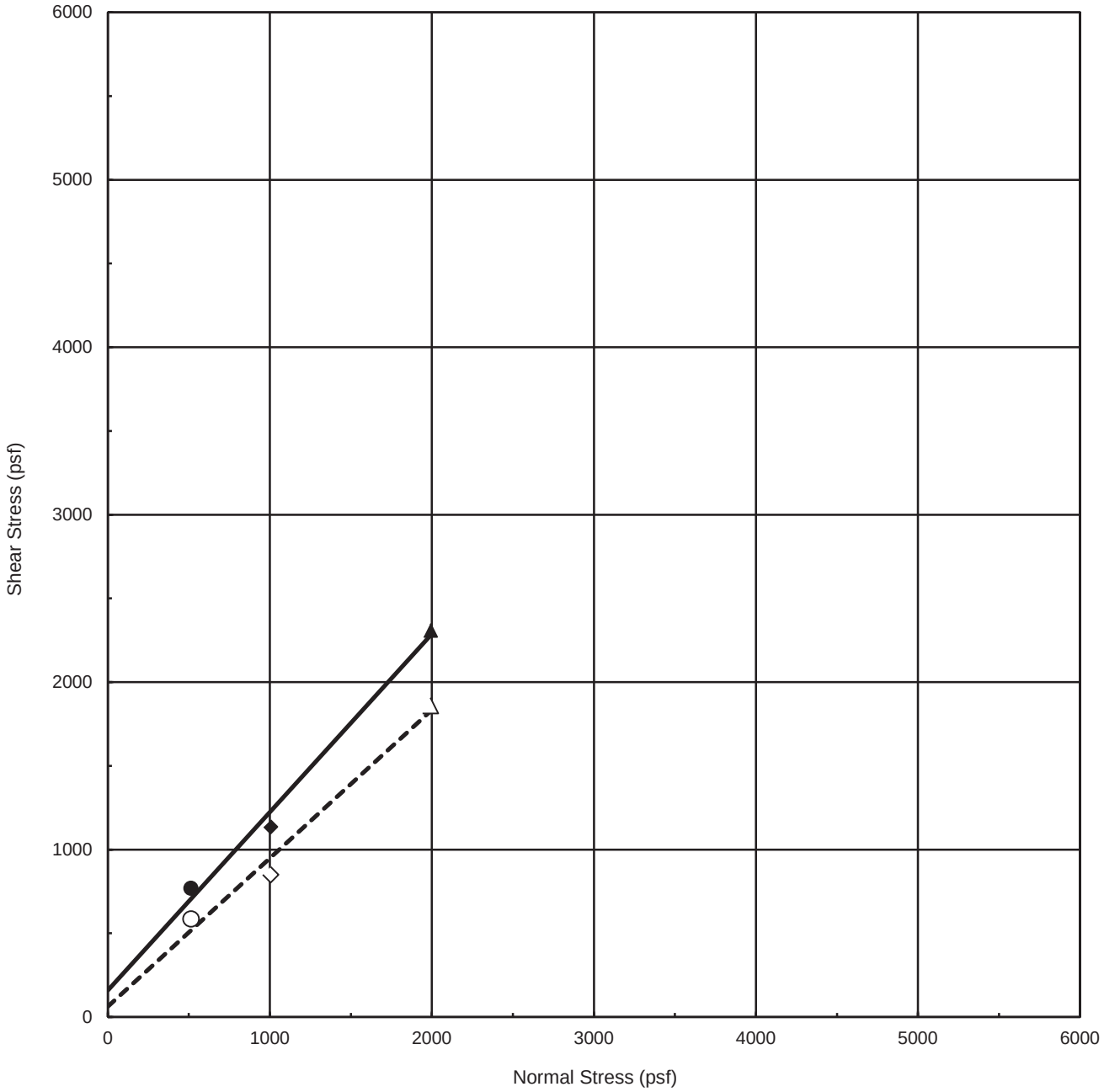
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Brown clayey Sand (SC)
Apparatus No.: DS1
Shear rate (in/min): 0.004

Boring No.: P24803G
Sample No.: 1
Sample Depth (ft.): 2.5
Normal Stress (psf): 514 ●
Normal Stress (psf): 1006 ◆
Normal Stress (psf): 1992 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	P24819G		Strength Intercept (C) :	159.7	psf	Peak	62.5	psf	Ultimate
Sample No.:	1			7.6	kPa		3.0	kPa	
Depth (ft | m)	2.5	0.8	Friction Angle (ϕ) :	47	degree		42	degree	
Description:	**Dark brown clayey Sand (SC)**					Shear rate :	0.0040 (in/min) ,	0.0102 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		13.4	137.1	21.5	120.9	19.0	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	14.2	135.0	21.2	118.2	18.6	514	25	769	37	586	28
pre-shear	◆ spec. 2	14.8	138.9	21.8	121.0	19.0	1005	48	1136	54	850	41
pre-shear	▲ spec. 3	14.3	143.8	22.6	125.8	19.8	1991	95	2310	111	1860	89

AECOM

Former Kast Property

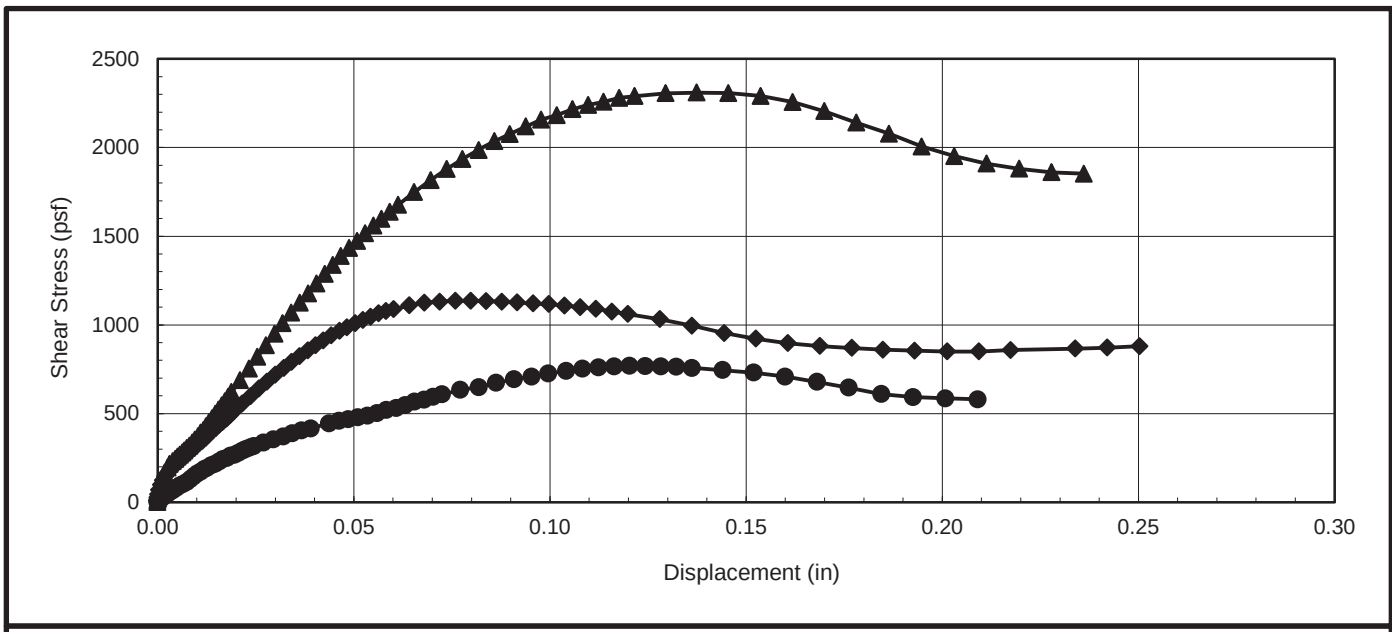
Project Number: 60422689
Test Date: 9/2/2015

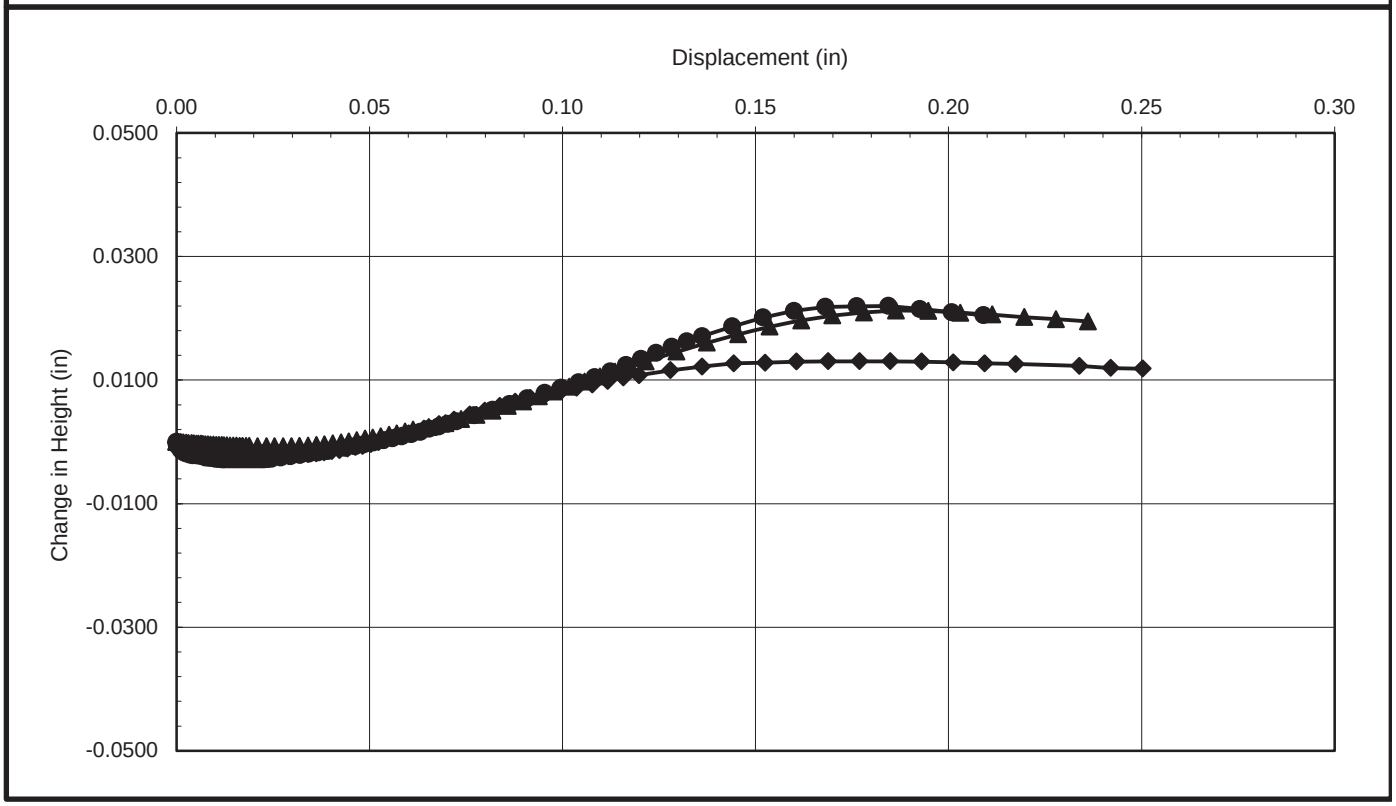
DIRECT SHEAR TEST
ASTM D 3080

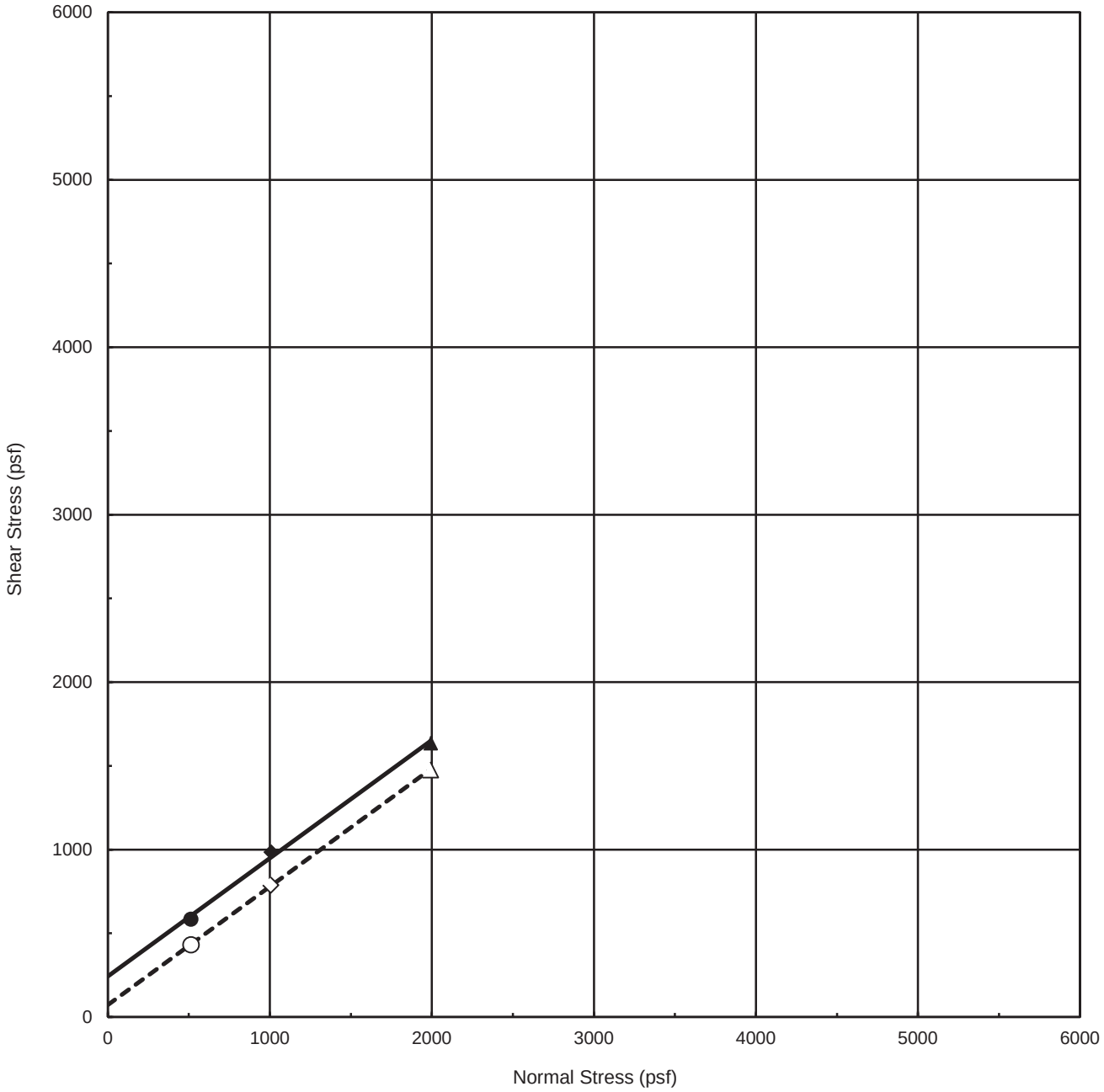
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark brown clayey Sand (SC)
Apparatus No.: DS3
Shear rate (in/min): 0.004

Boring No.: P24819G
Sample No.: 1
Sample Depth (ft.): 2.5
Normal Stress (psf): 514 ●
Normal Stress (psf): 1005 ◆
Normal Stress (psf): 1991 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	R24609G		Strength Intercept (C) :	243.8	psf	Peak	72.8	psf	Ultimate
Sample No.:	1			11.7	kPa		3.5	kPa	
Depth (ft | m)	2.5	0.8	Friction Angle (ϕ) :	35	degree		35	degree	

Description: **Strong brown clayey Sand (SC)** Shear rate : 0.0020 (in/min) , 0.0051 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		11.0	133.1	20.9	119.9	18.8	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	14.3	135.5	21.3	118.6	18.6	514	25	583	28	432	21
pre-shear	◆ spec. 2	14.7	133.7	21.0	116.6	18.3	1005	48	988	47	788	38
pre-shear	▲ spec. 3	14.7	137.2	21.6	119.6	18.8	1991	95	1637	78	1477	71

AECOM

Former Kast Property

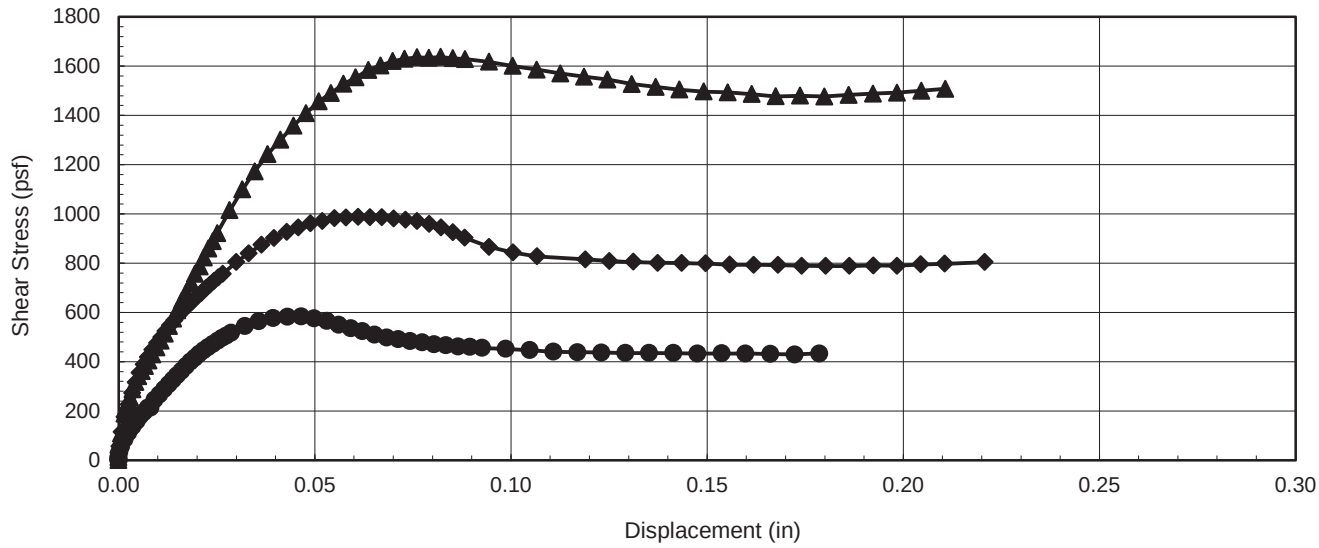
Project Number: 60422689
Test Date: 8/27/2015

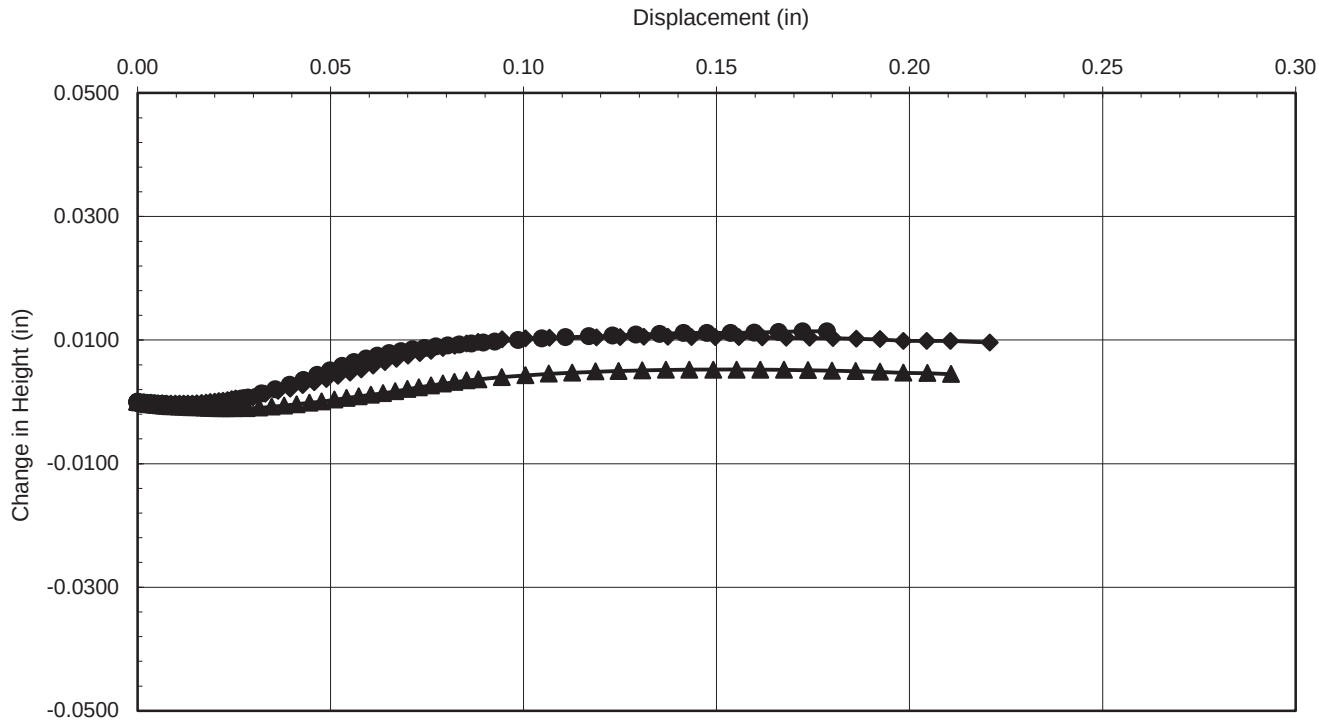
DIRECT SHEAR TEST
ASTM D 3080

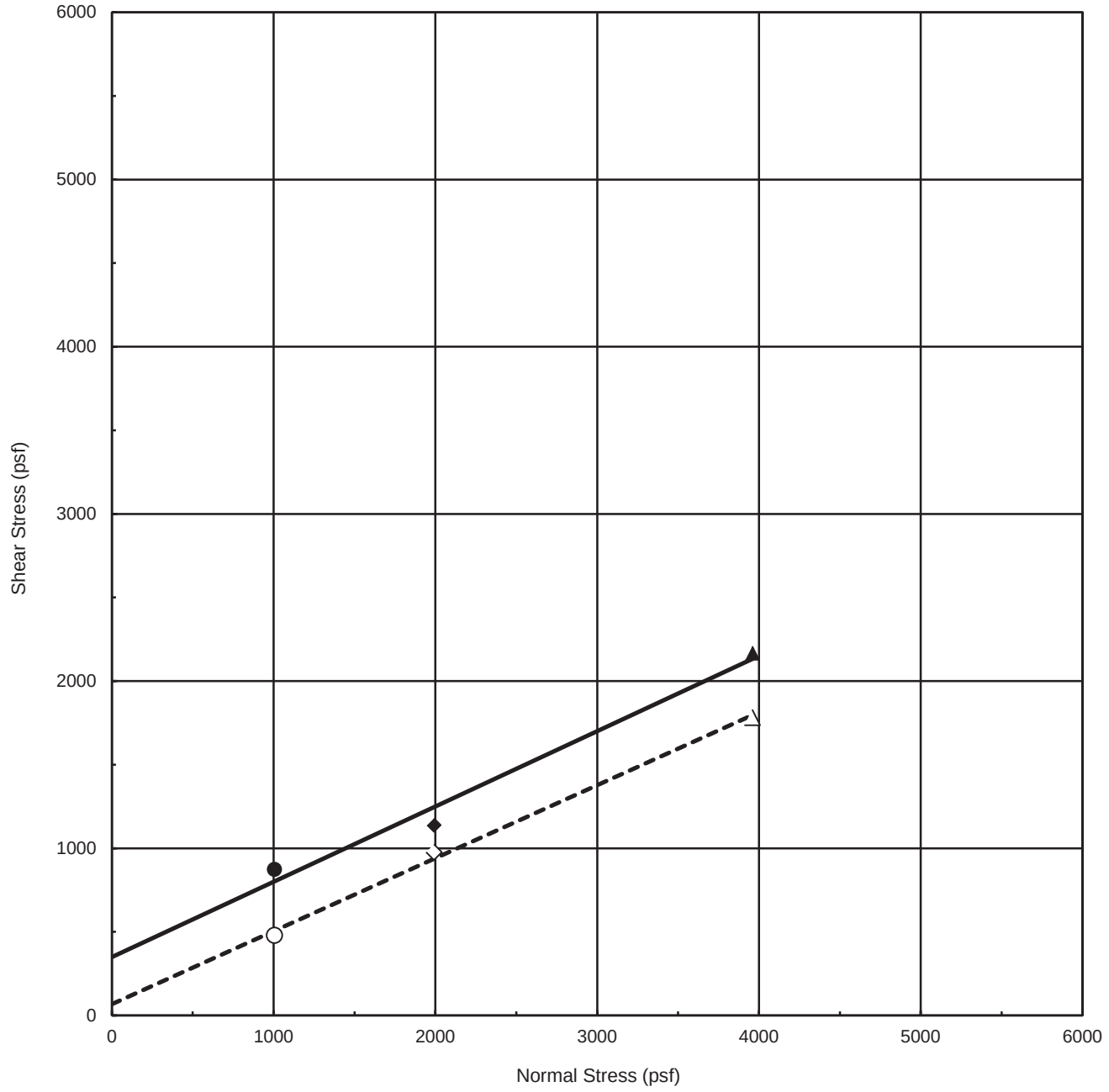
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Strong brown clayey Sand (SC)
Apparatus No.: DS3
Shear rate (in/min): 0.002

Boring No.: R24609G
Sample No.: 1
Sample Depth (ft.): 2.5
Normal Stress (psf): 514 ●
Normal Stress (psf): 1005 ◆
Normal Stress (psf): 1991 ▲







Peak Values are : ● ,solid trend line								Ultimate Values are: ❍ ,dashed trend line			
Exploration No.:	R24706G		Strength Intercept (C) :		348.9	psf	Peak	67.6	psf	Ultimate	
Sample No.:	4				16.7	kPa		3.2	kPa		
Depth (ft | m)	7.5	2.3	Friction Angle (ϕ) :		24	degree		24	degree		
Description:	**Strong brown sandy Clay (CL)**						Shear rate :	0.0040 (in/min) ,		0.0102 (cm/min)	
SYMBOL	% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up	13.9	133.9	21.0	117.5	18.5	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear ● spec. 1	19.5	137.3	21.6	114.9	18.1	1005	48	873	42	480	23
pre-shear ◆ spec. 2	18.9	136.6	21.5	114.9	18.1	1991	95	1139	55	977	47
pre-shear ▲ spec. 3	17.3	140.2	22.0	119.5	18.8	3958	190	2168	104	1783	85

AECOM

Former Kast Property

Project Number: 60422689
Test Date: 9/19/2015

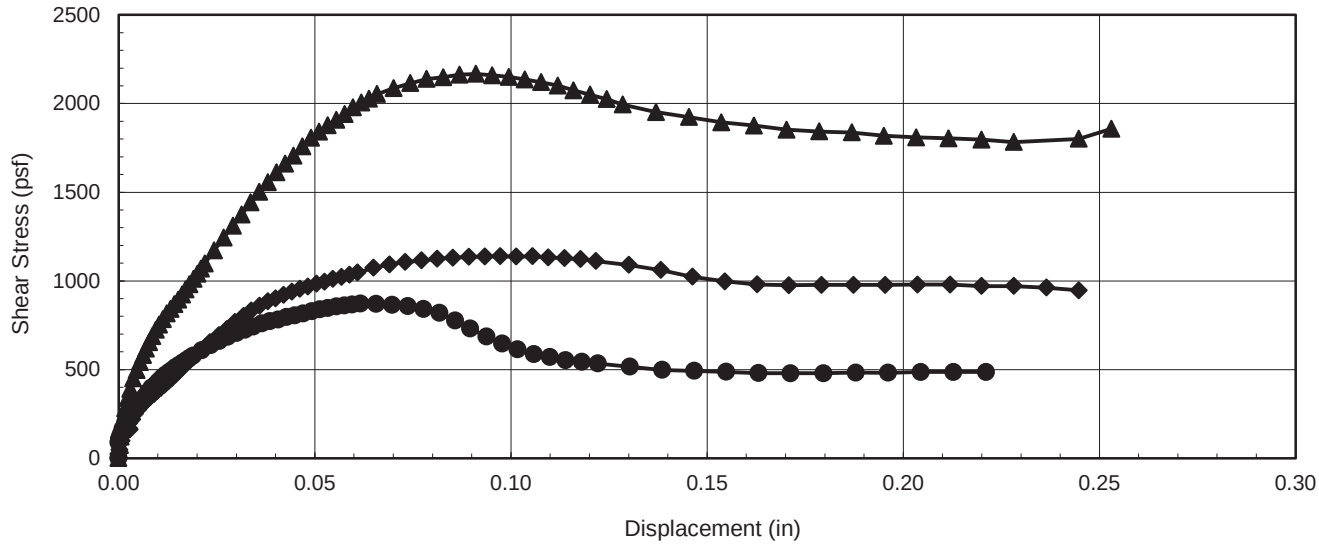
DIRECT SHEAR TEST
ASTM D 3080

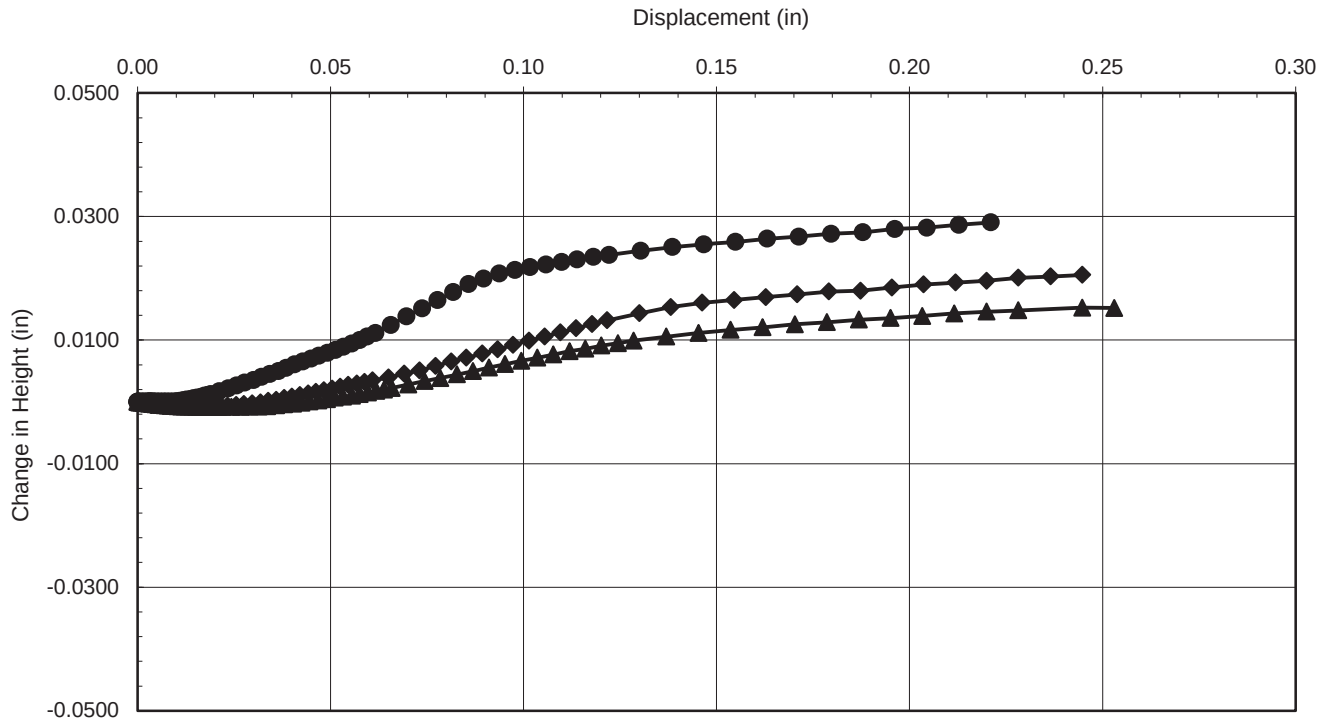
DS Plot AECOM Kast R24706G s04 7.5 ft.xlsx

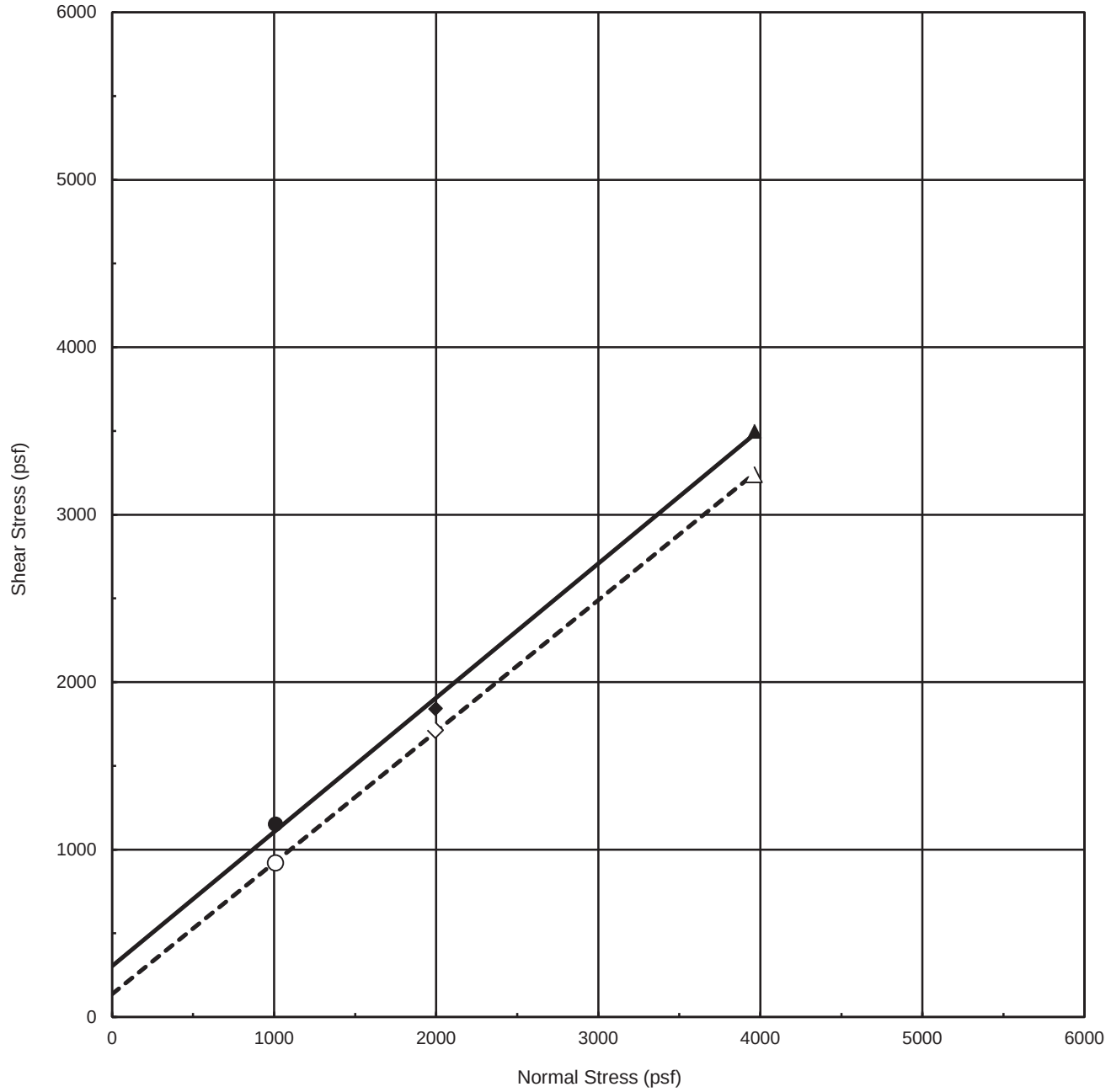
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Strong brown sandy Clay (CL)
Apparatus No.: DS3
Shear rate (in/min): 0.004

Boring No.: R24706G
Sample No.: 4
Sample Depth (ft.): 7.5
Normal Stress (psf): 1005 ●
Normal Stress (psf): 1991 ◆
Normal Stress (psf): 3958 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	R24709G		Strength Intercept (C) :	304.0	psf	Peak	137.9	psf	Ultimate
Sample No.:	3			14.6	kPa		6.6	kPa	
Depth (ft | m)	5.0	1.5	Friction Angle (ϕ) :	39	degree		38	degree	
Description:	**Strong brown clayey Sand (SC)**				Shear rate :	0.0020	(in/min) ,	0.0051	(cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		12.1	130.6	20.5	116.6	18.3	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	14.5	141.6	22.3	123.6	19.4	1009	48	1152	55	921	44
pre-shear	◆ spec. 2	14.1	138.9	21.8	121.8	19.1	1995	96	1843	88	1713	82
pre-shear	▲ spec. 3	14.4	142.6	22.4	124.7	19.6	3962	190	3499	168	3240	155

AECOM

Former Kast Property

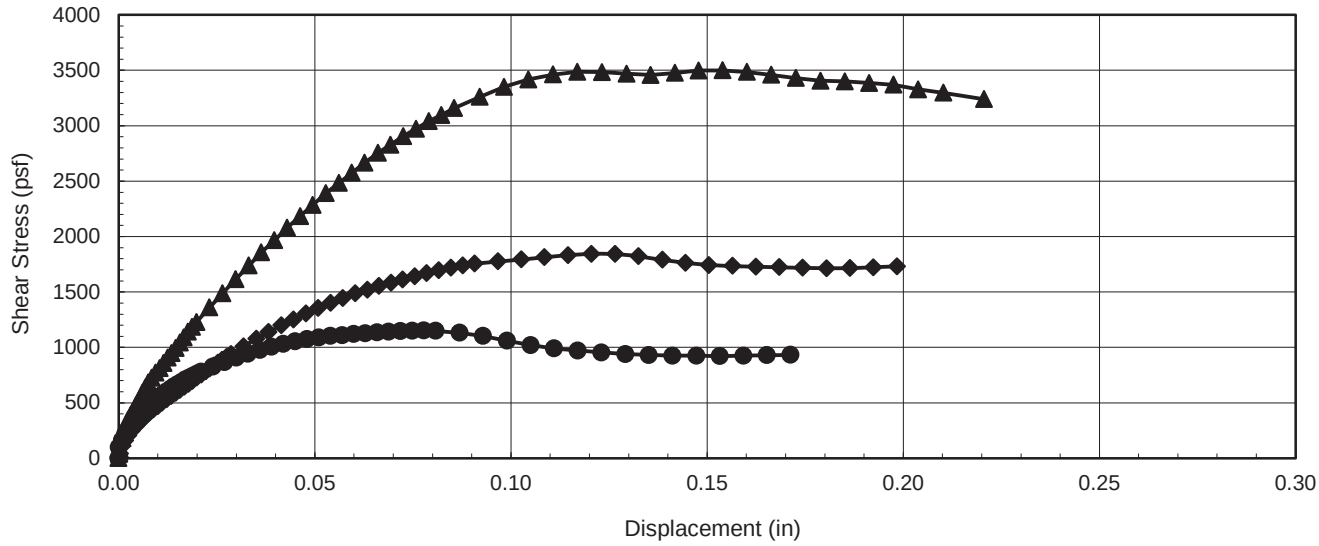
Project Number: 60422689
Test Date: 8/29/2015

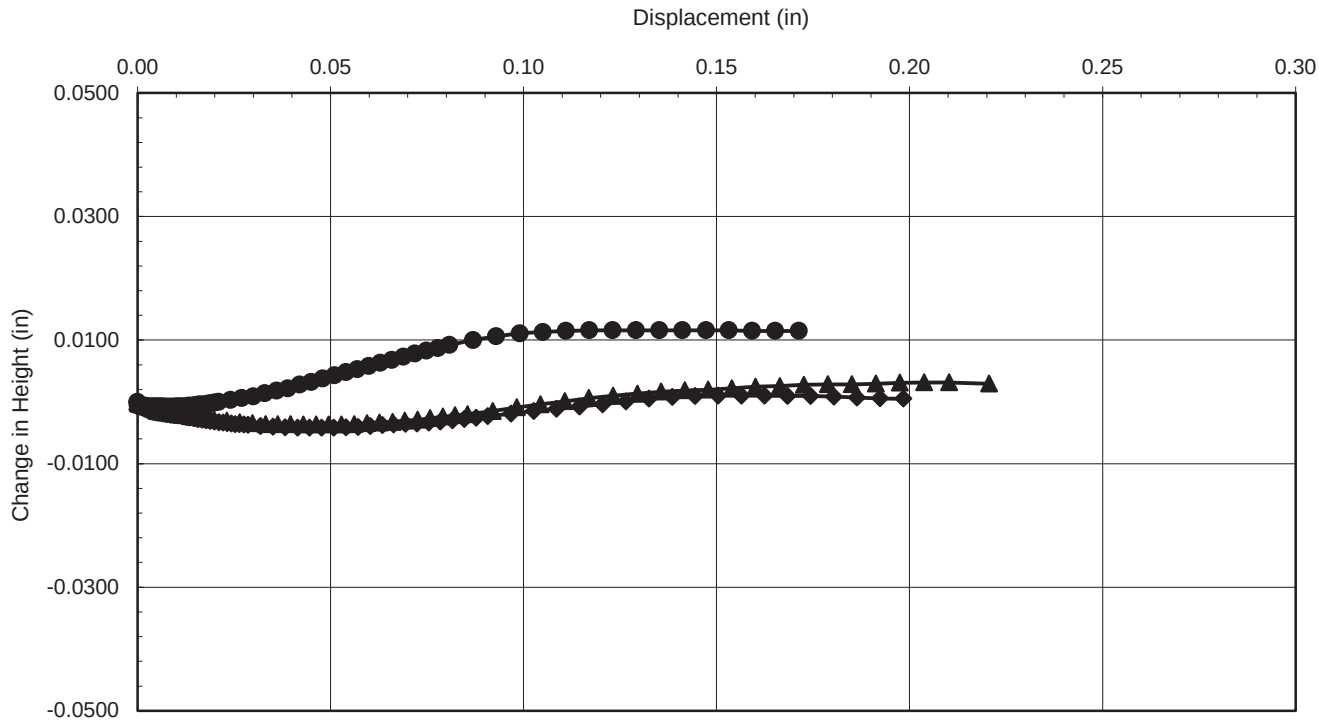
DIRECT SHEAR TEST
ASTM D 3080

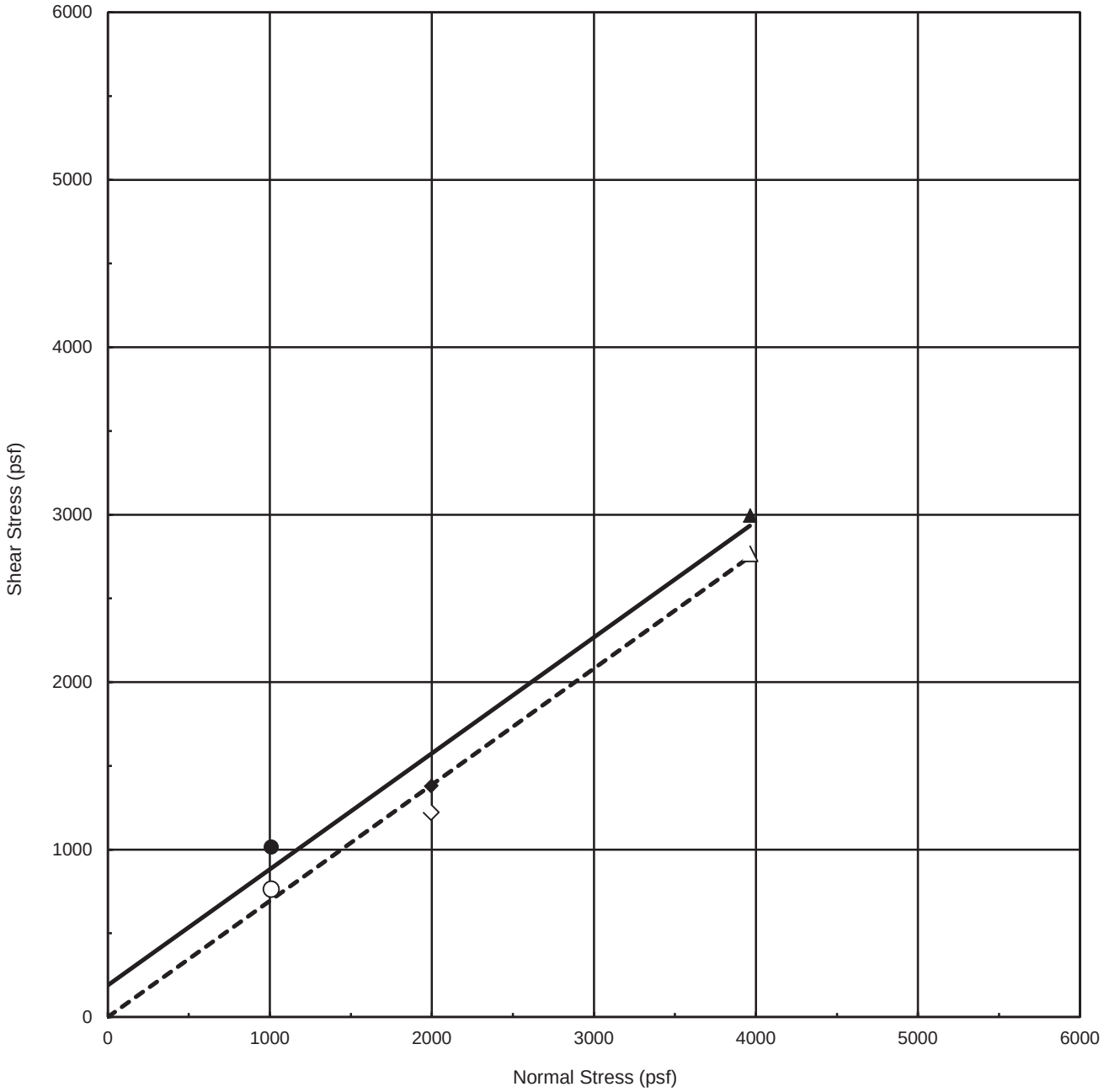
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Strong brown clayey Sand (SC)
Apparatus No.: DS2
Shear rate (in/min): 0.002

Boring No.: R24709G
Sample No.: 3
Sample Depth (ft.): 5
Normal Stress (psf): 1009 ●
Normal Stress (psf): 1995 ◆
Normal Stress (psf): 3962 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	R24719G		Strength Intercept (C) :	190.3	psf	Peak	0.0	psf	Ultimate
Sample No.:	4			9.1	kPa		0.0	kPa	
Depth (ft | m)	7.5	2.3	Friction Angle (ϕ) :	35	degree		35	degree	
Description:	**Grayish brown clayey Sand (SC)**					Shear rate :	0.0020 (in/min) ,	0.0051 (cm/min)	

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		12.2	126.9	19.9	113.1	17.8	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	16.2	132.3	20.8	113.8	17.9	1009	48	1015	49	764	37
pre-shear	◆ spec. 2	16.6	133.4	21.0	114.4	18.0	1995	96	1382	66	1223	59
pre-shear	▲ spec. 3	16.6	135.0	21.2	115.8	18.2	3962	190	2997	143	2768	133

AECOM

Former Kast Property

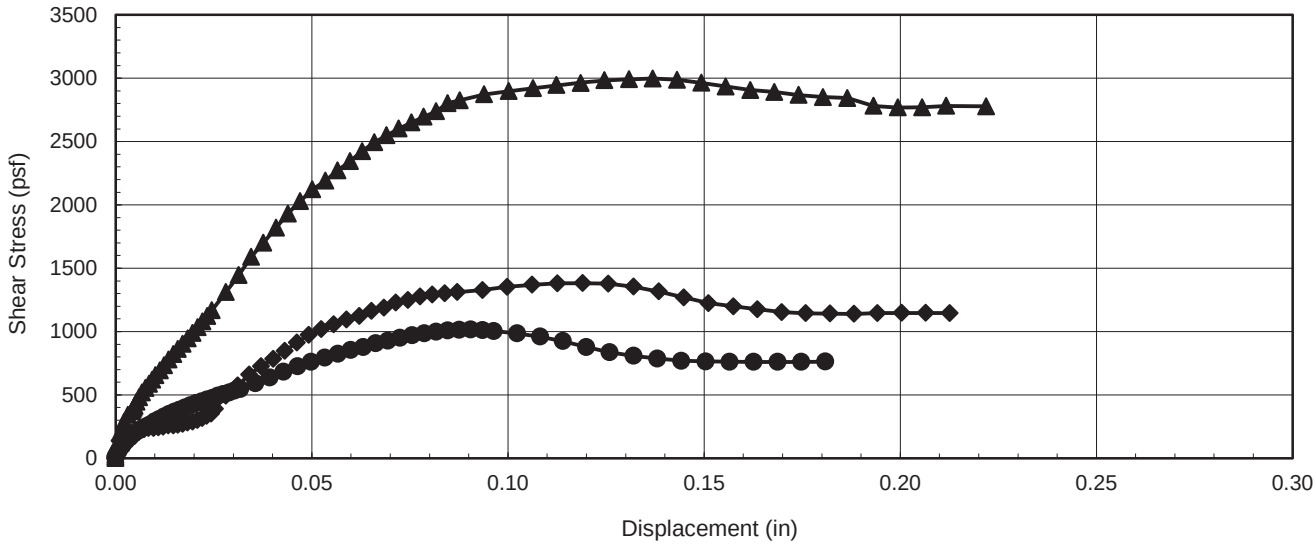
Project Number: 60422689
Test Date: 8/27/2015

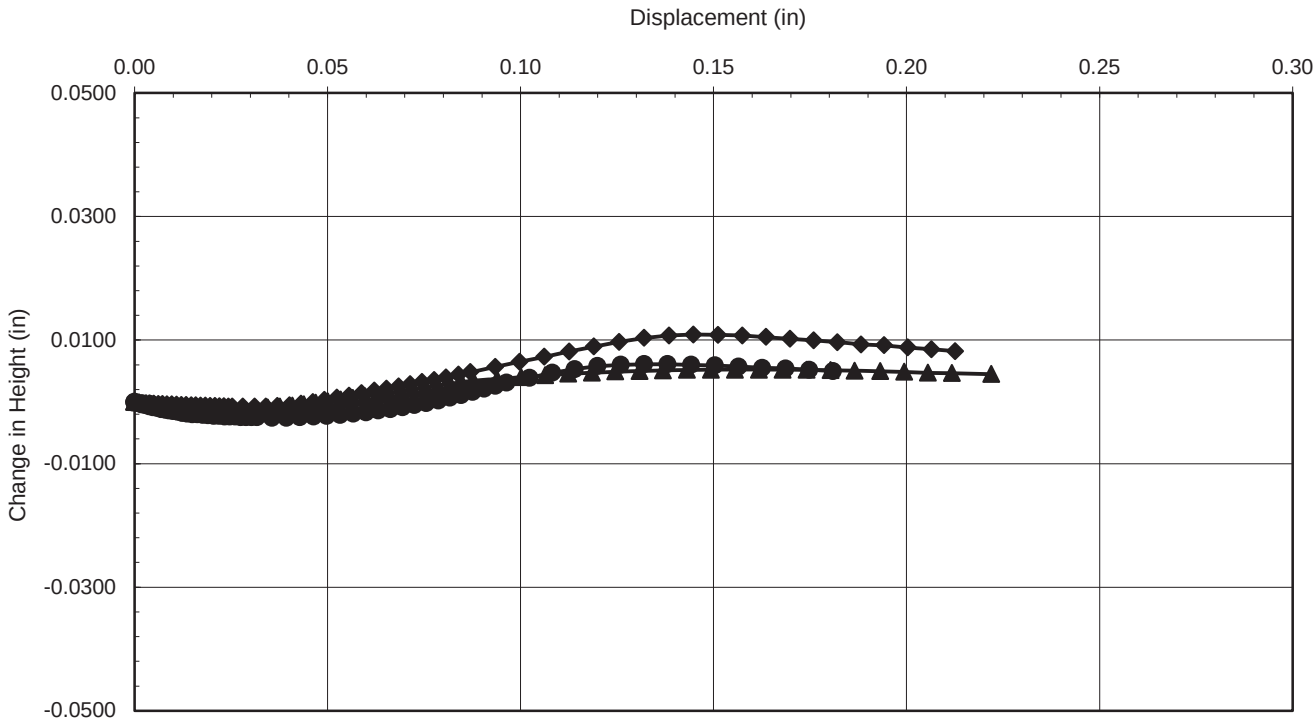
DIRECT SHEAR TEST
ASTM D 3080

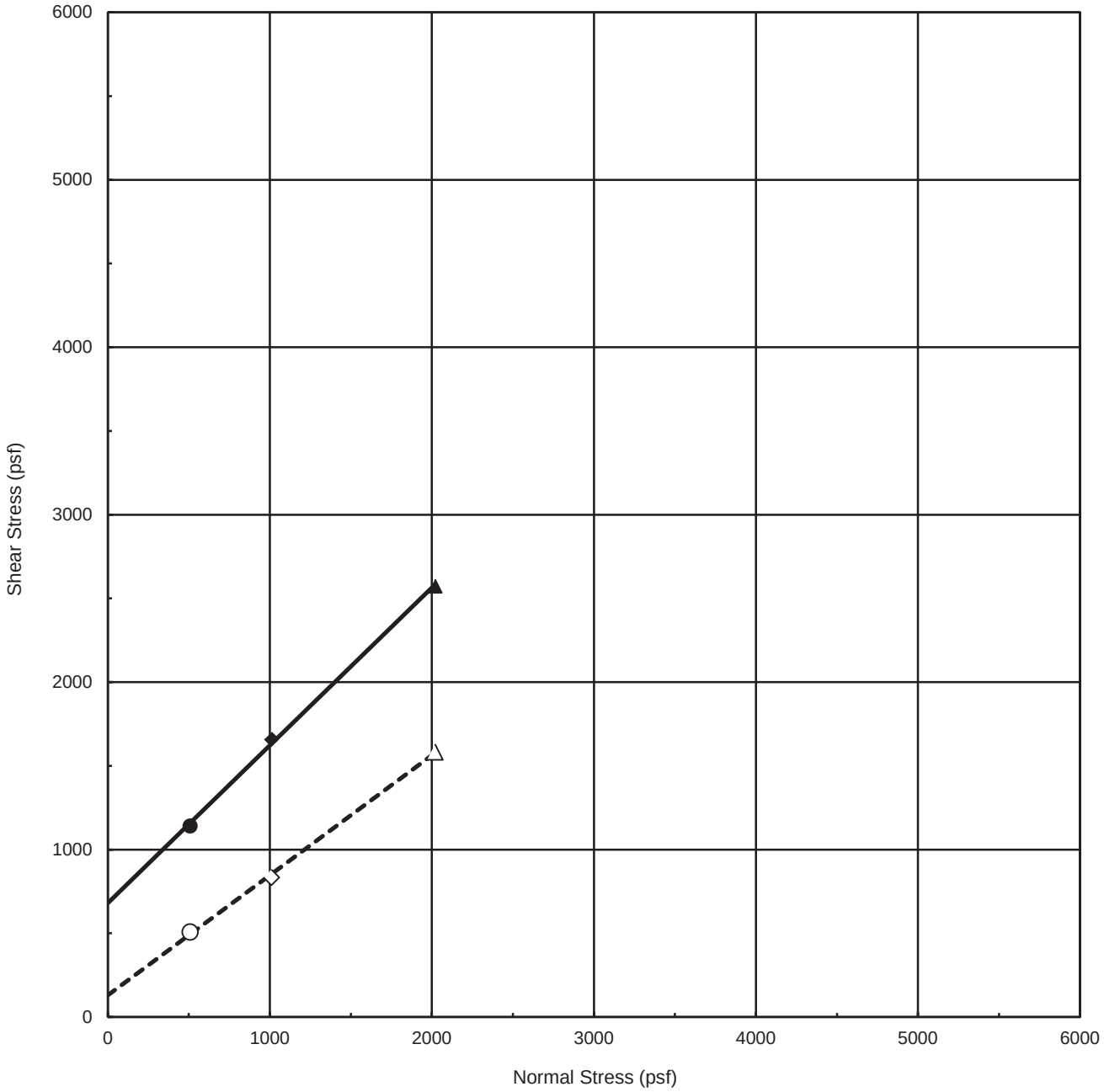
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Grayish brown clayey Sand (SC)
Apparatus No.: DS2
Shear rate (in/min): 0.002

Boring No.: R24719G
Sample No.: 4
Sample Depth (ft.): 7.5
Normal Stress (psf): 1009 ●
Normal Stress (psf): 1995 ◆
Normal Stress (psf): 3962 ▲







Peak Values are : ● ,solid trend line Ultimate Values are: ❍ ,dashed trend line

Exploration No.:	R24732G		Strength Intercept (C) :	681.1	psf	Peak	131.2	psf	Ultimate
Sample No.:	1			32.6	kPa		6.3	kPa	
Depth (ft | m)	2.5	0.8	Friction Angle (ϕ) :	43	degree		36	degree	

Description: **Dark grayish brown clayey Sand (SC)** Shear rate : 0.0030 (in/min) , 0.0076 (cm/min)

SYMBOL		% Water Content	Total Unit Weight (pcf)	Total Unit Weight (kN/m^3)	Dry Unit Weight (pcf)	Dry Unit Weight (kN/m^3)	Normal Stress (psf)	Normal Stress (kPa)	Peak Stress (psf)	Peak Stress (kPa)	Ultimate Stress (psf)	Ultimate Stress (kPa)
Initial / Set up		9.7	126.9	19.9	115.7	18.2	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX
pre-shear	● spec. 1	12.1	142.8	22.4	127.4	20.0	508	24	1141	55	508	24
pre-shear	◆ spec. 2	11.7	144.9	22.8	129.8	20.4	1010	48	1660	79	834	40
pre-shear	▲ spec. 3	15.1	139.3	21.9	121.1	19.0	2020	97	2574	123	1583	76

AECOM

Former Kast Property

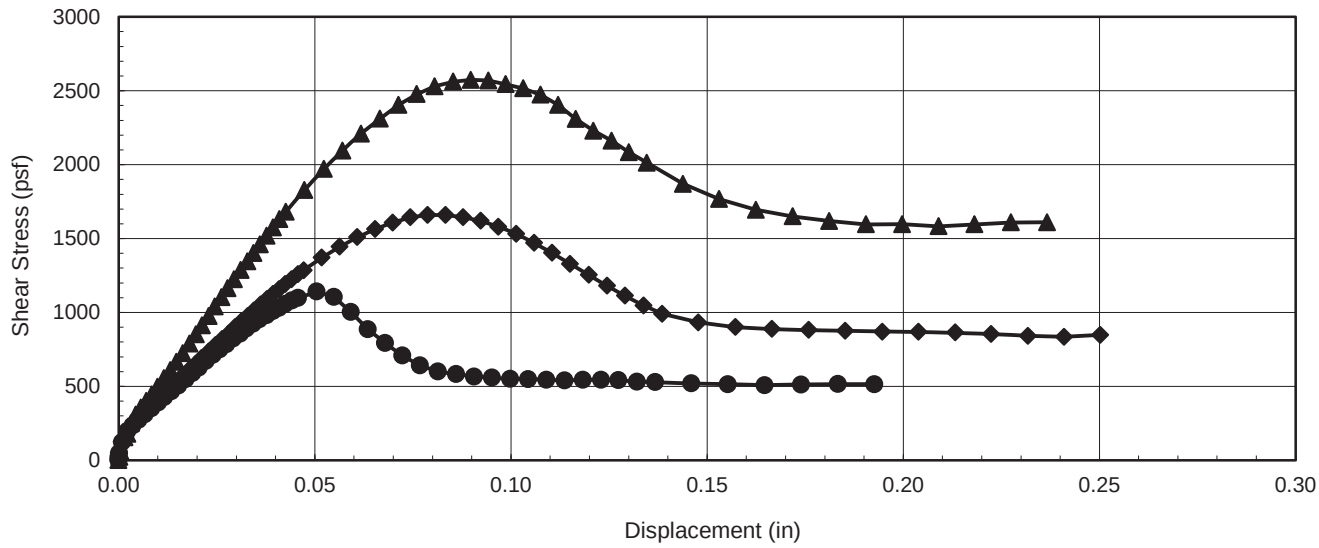
Project Number: 60422689
Test Date: 8/18/2015

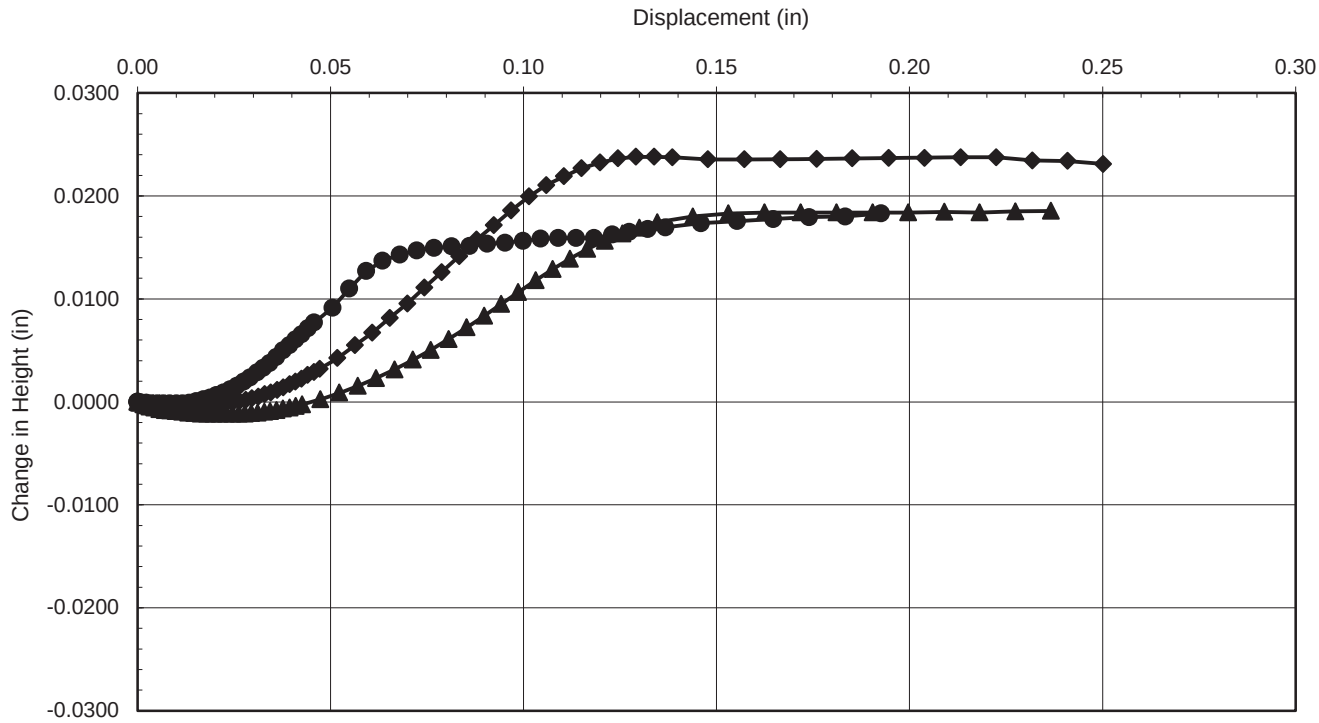
DIRECT SHEAR TEST
ASTM D 3080

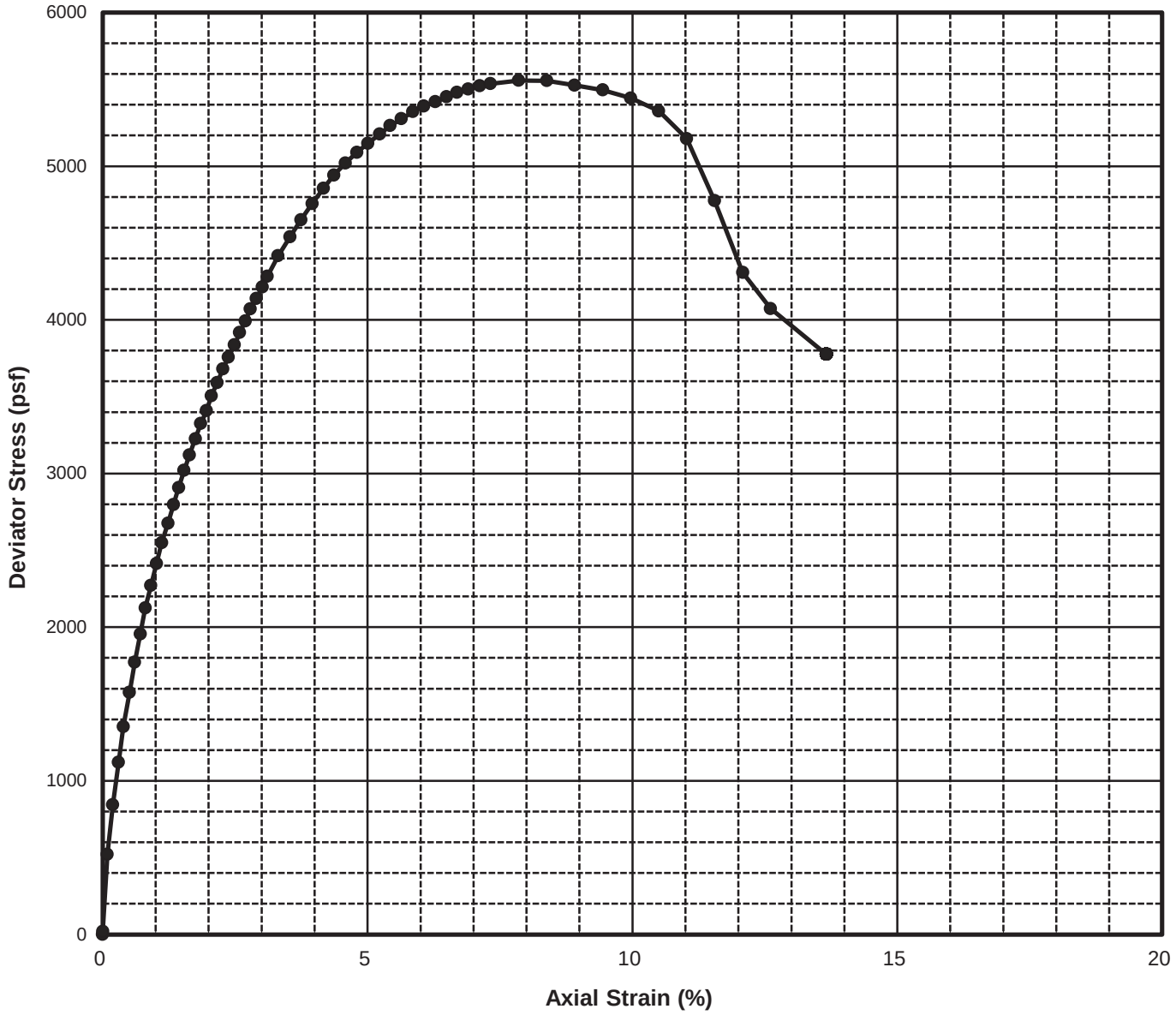
DIRECT SHEAR TEST
ASTM D 3080

Project Name : Former Kast Property
Project Number : 60422689
Specimen Description : Dark grayish brown clayey Sand (SC)
Apparatus No.: DS3
Shear rate (in/min): 0.003

Boring No.: R24732G
Sample No.: 1
Sample Depth (ft.): 2.5
Normal Stress (psf): 508 ●
Normal Stress (psf): 1010 ◆
Normal Stress (psf): 2020 ▲







Cell Pressure (psf) = 936

Strain Rate (%/min) = 1.05

Axial Strain during confinment (%): 0.12

Peak Deviator Stress (psf): 5558

at 15% axial strain

Failure Sketch

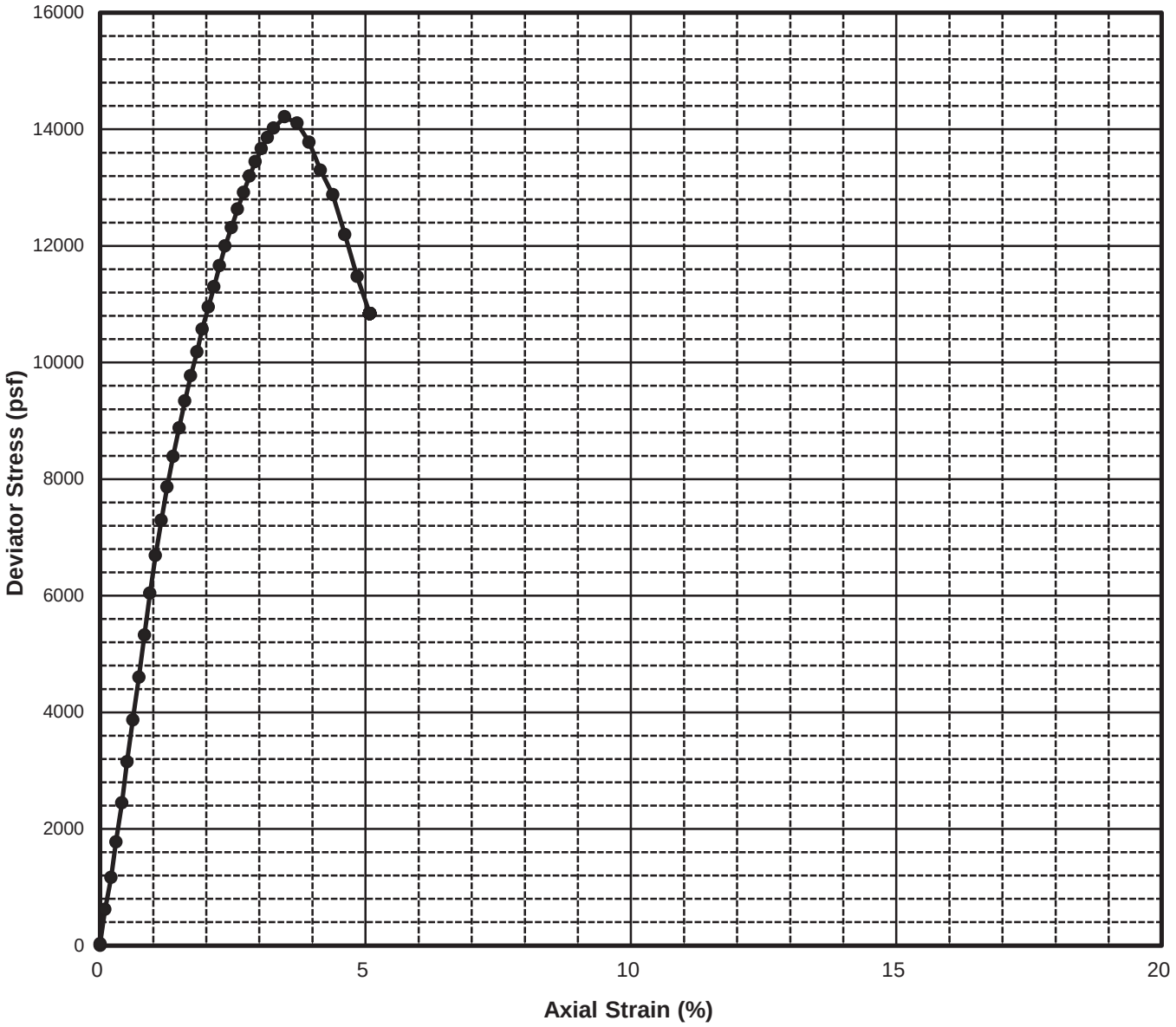
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
15.9	5.721	2.412	124.9	76.4

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**P24402G**	**Sample No.:**	**4**	**Depth (ft):**	**7.5**
Description and/or Classification:	**Strong brown sandy Clay (CL)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 576

Strain Rate (%/min) = 1.12

Axial Strain during confinment (%): 0.15

Peak Deviator Stress (psf): 14212

Failure Sketch

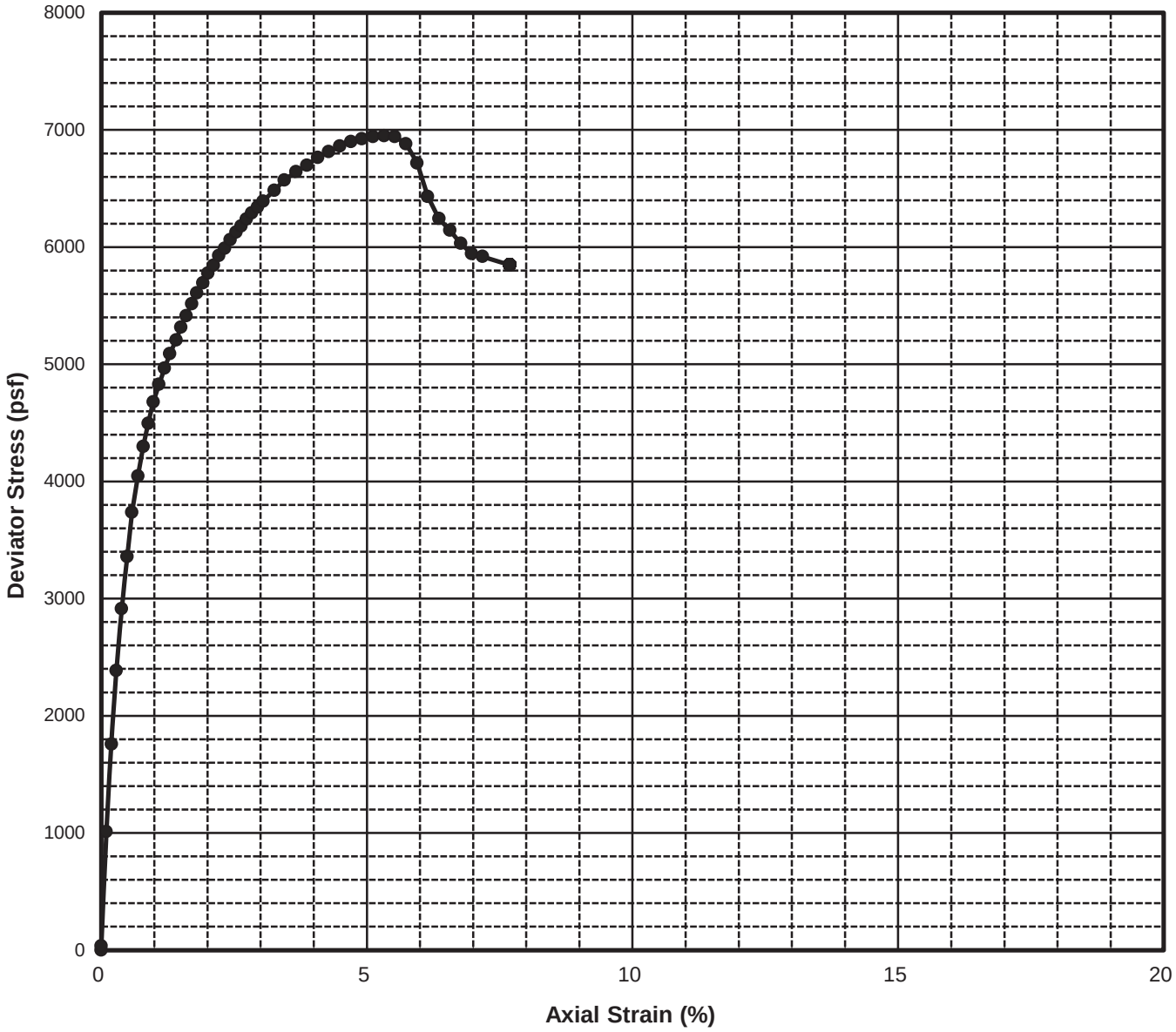
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
15.0	5.344	2.423	114.5	58.6

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**		
Project Number:	**60422689**		
Boring Number:	**244321G**	**Sample No.: 3**	**Depth (ft): 5.0**
Description and/or Classification:	**Yellowish brown silty Clay (CL-ML)**		

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 331

Strain Rate (%/min) = 1.02

Axial Strain during confinment (%): 0.02

Peak Deviator Stress (psf): 6951

Failure Sketch

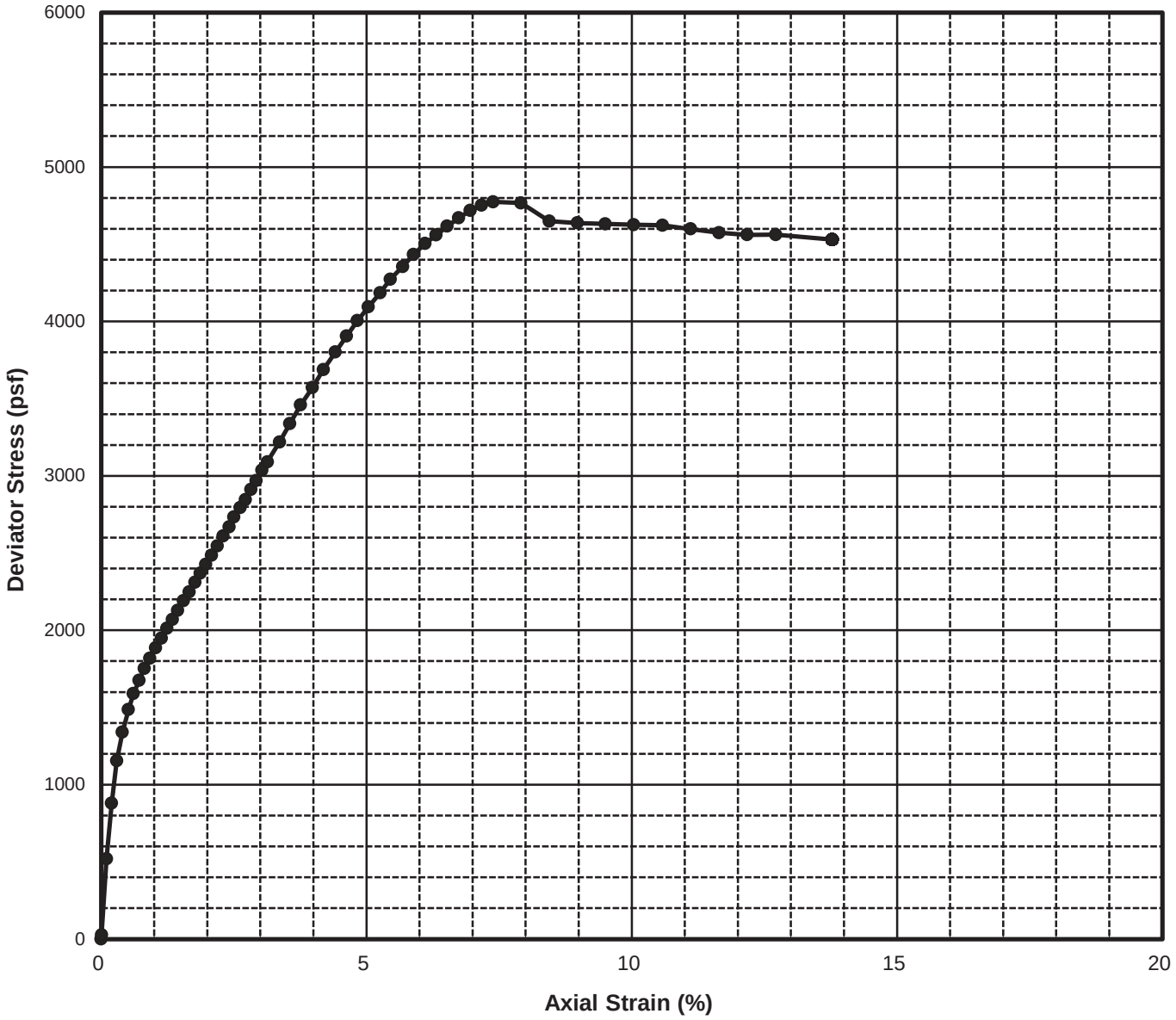
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
16.4	5.838	2.416	131.9	91.4

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**244337G**	**Sample No.:**	**1**	**Depth (ft):**	**2.5**
Description and/or Classification:	**Dark yellowish brown Clay (CL)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 950

Strain Rate (%/min) = 1.05

Axial Strain during confinment (%): 0.11

Peak Deviator Stress (psf): 4774

at 15% axial strain

Failure Sketch

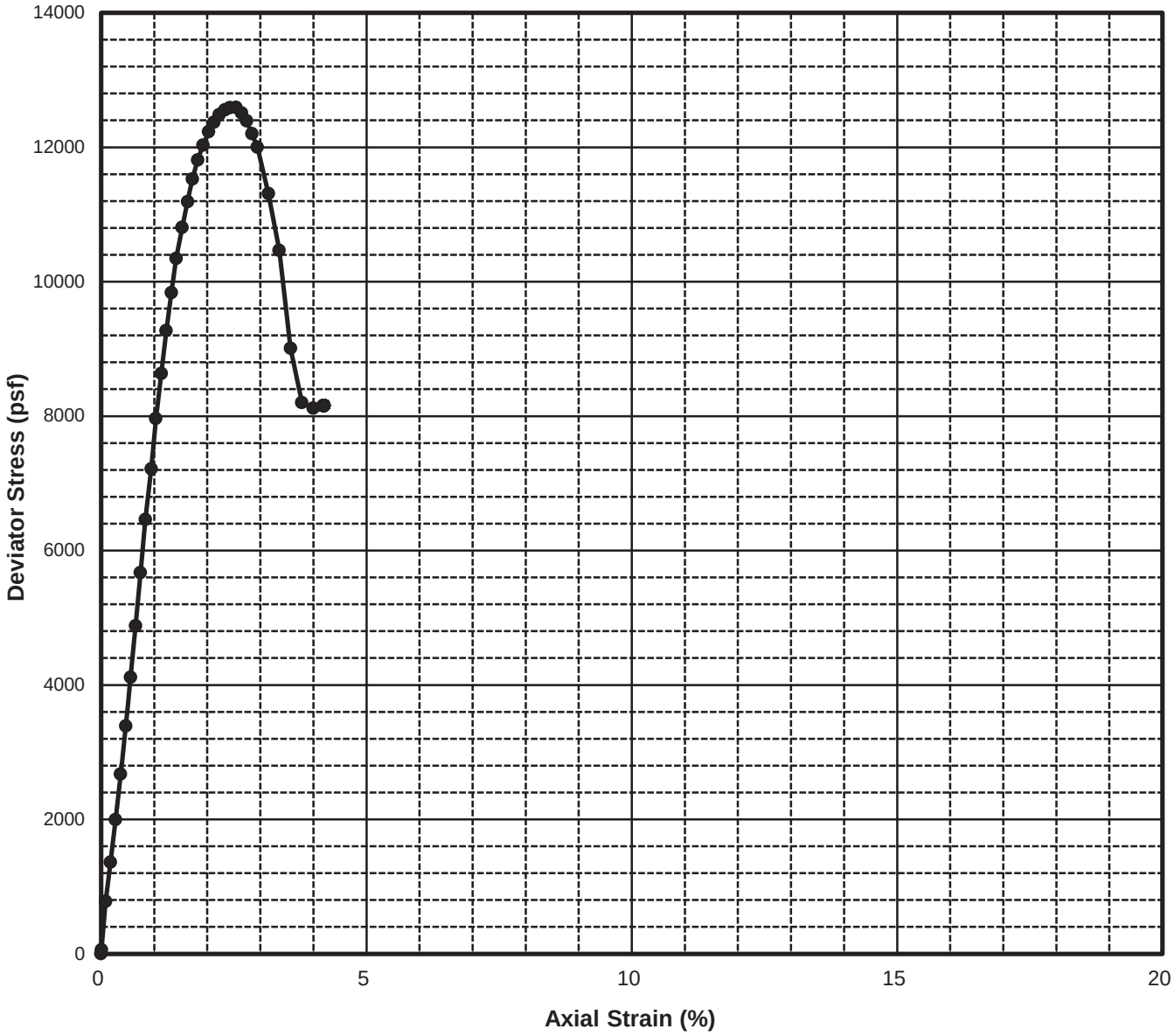
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
13.4	5.671	2.394	127.7	73.0

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**249363G**	**Sample No.:**	**4**	**Depth (ft):**	**7.5**
Description and/or Classification:	**Dark grayish brown clayey Sand (SC)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 1152

Strain Rate (%/min) = 1.01

Axial Strain during confinment (%): 0.15

Peak Deviator Stress (psf): 12589

Failure Sketch

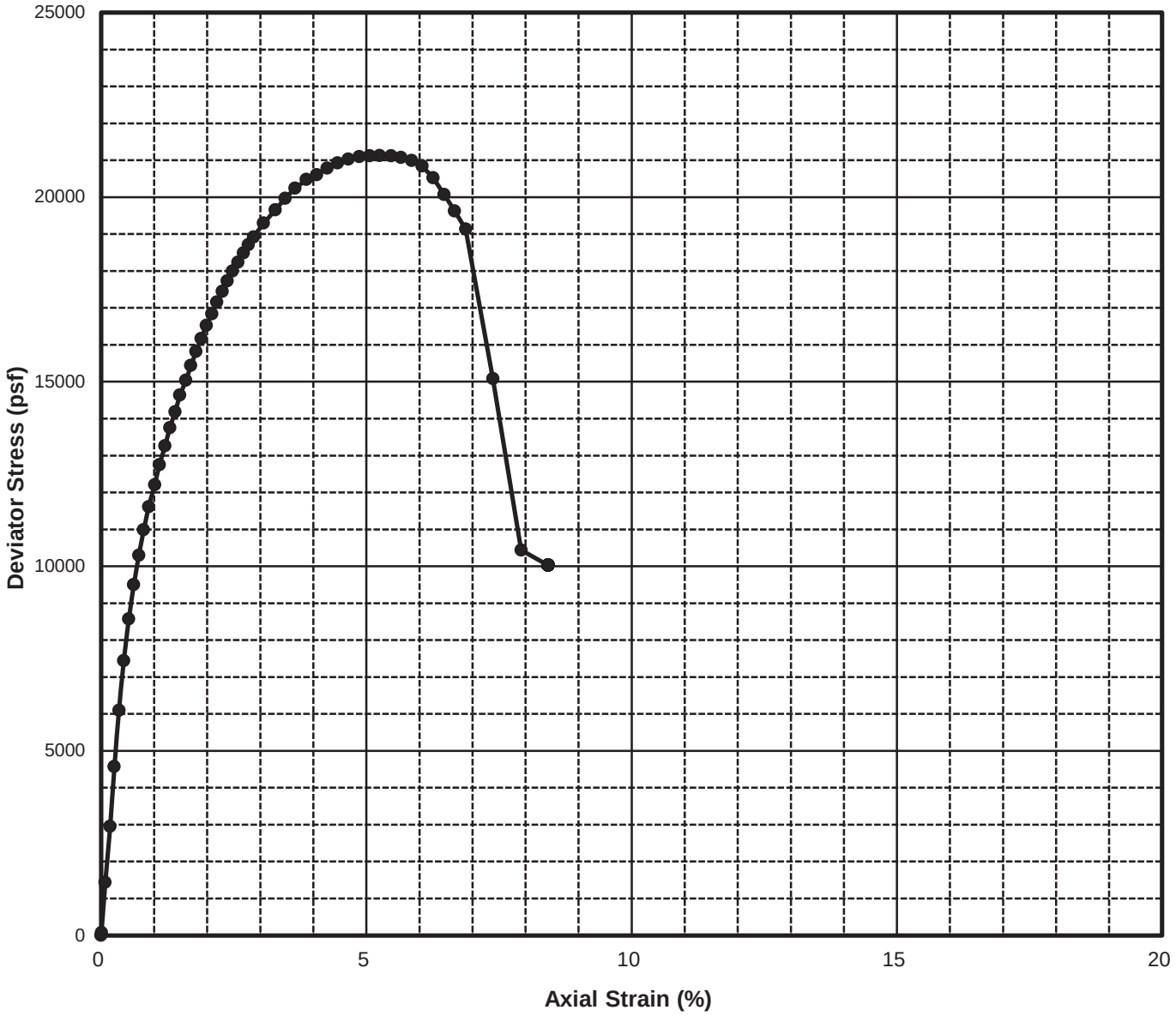
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
7.5	5.894	2.415	128.9	50.0

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**249378G**	**Sample No.:**	**1**	**Depth (ft):**	**2.5**
Description and/or Classification:	**Olive brown clayey Sand (SC)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 662

Strain Rate (%/min) = 1.00

Axial Strain during confinment (%): 0.03

Peak Deviator Stress (psf): 21127

Failure Sketch

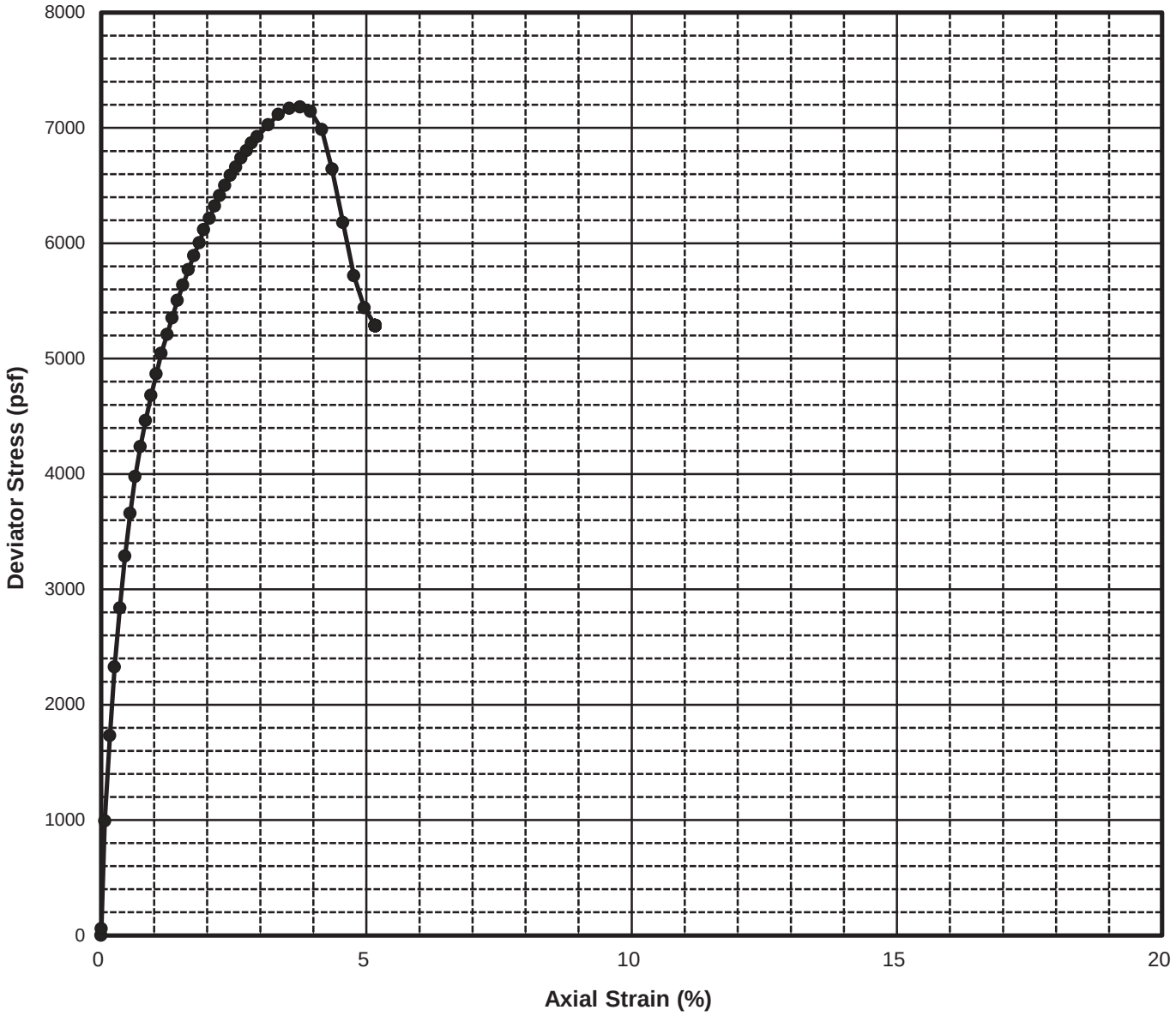
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
11.3	6.008	2.405	132.0	72.9

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**		
Project Number:	**60422689**		
Boring Number:	**M24512G**	**Sample No.: 3**	**Depth (ft): 5.0**
Description and/or Classification:	**Very dark brown clayey Sand (SC)**		

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 648

Strain Rate (%/min) = 1.00

Axial Strain during confinment (%): 0.05

Peak Deviator Stress (psf): 7180

Failure Sketch

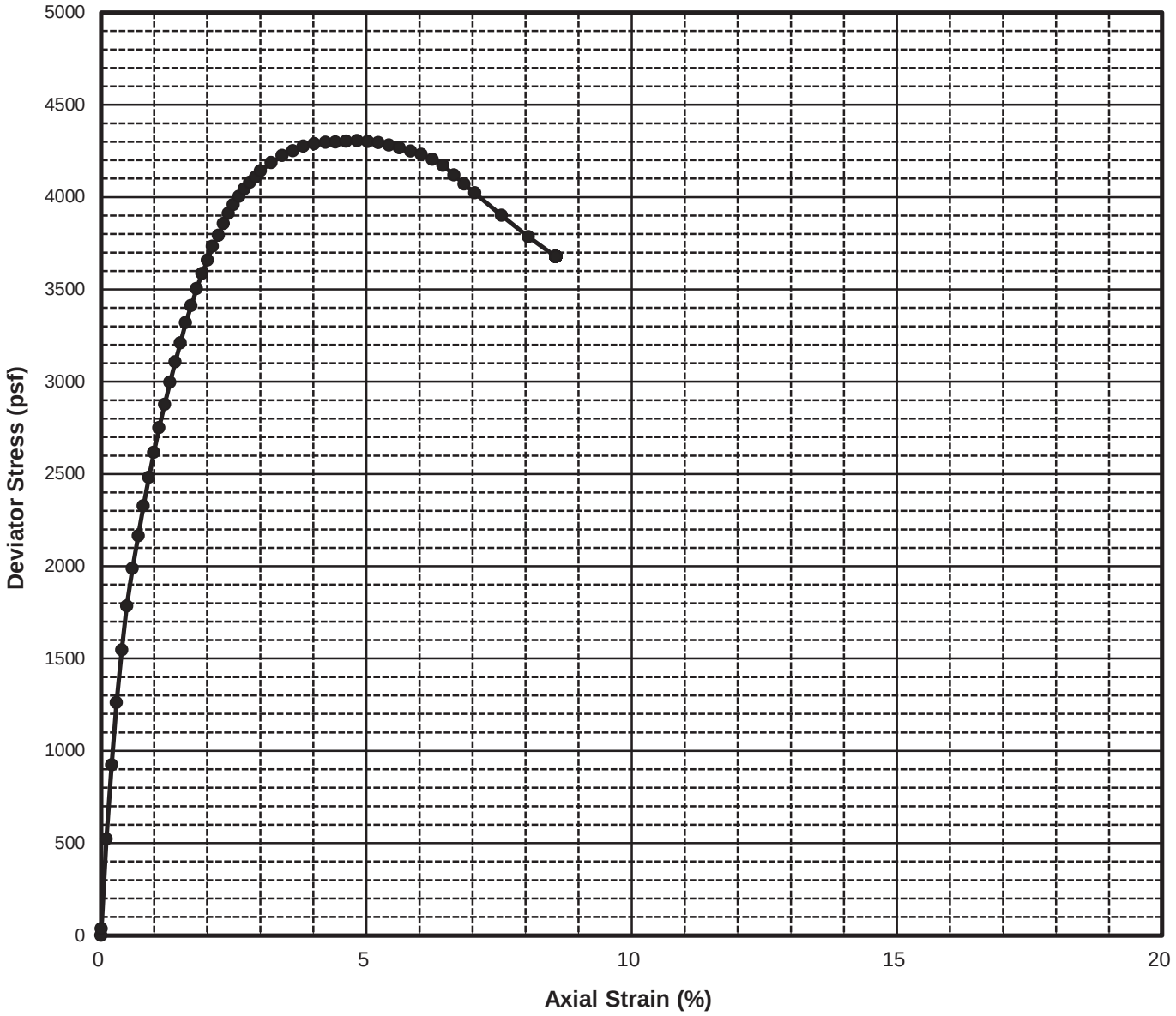
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
14.5	5.993	2.405	128.5	78.5

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**			
Project Number:	**60422689**			
Boring Number:	**M24517G**	**Sample No.: 3**	**Depth (ft):**	**5.0**
Description and/or Classification:	**Dark brown sandy Clay (CL)**			

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 576

Strain Rate (%/min) = 1.00

Axial Strain during confinment (%): 0.07

Peak Deviator Stress (psf): 4305

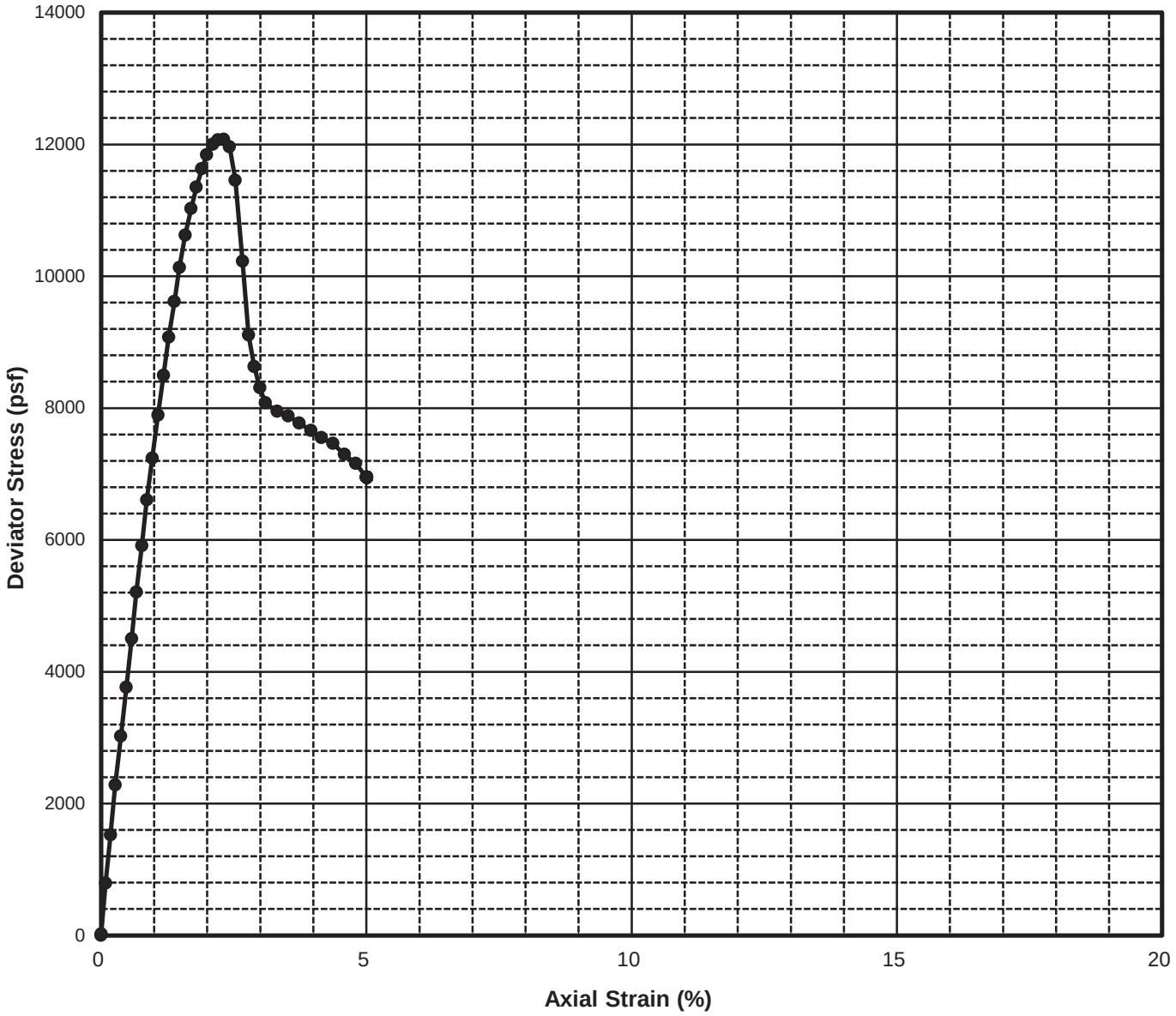
Failure Sketch

see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
10.6	5.978	2.411	116.7	48.1

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				**UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850**
Project Number:	**60422689**				
Boring Number:	**M24606 G**	**Sample No.: 3**	**Depth (ft):**	**5.0**	
Description and/or Classification:	**Strong brown clayey Sand (SC)**				



Cell Pressure (psf) = 302

Strain Rate (%/min) = 1.06

Peak Deviator Stress (psf): 12076

Axial Strain during confinment (%): 0.04

Failure Sketch

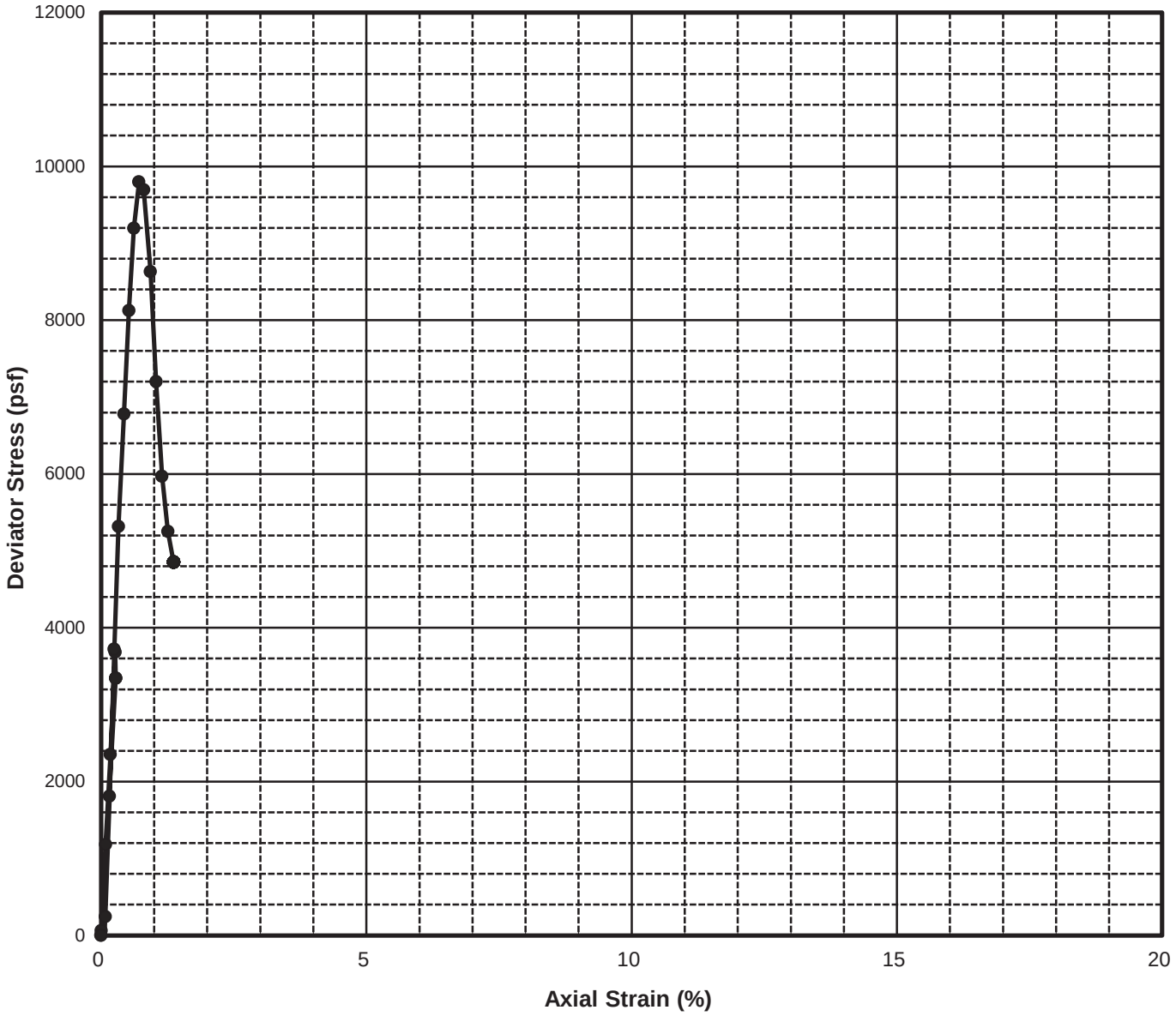
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
16.0	5.657	2.397	122.2	72.4

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**		
Project Number:	**60422689**		
Boring Number:	**M24613G**	**Sample No.: 1**	**Depth (ft): 2.5**
Description and/or Classification:	**Light yellowish brown clayey Sand (SC)**		

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 317

Strain Rate (%/min) = 1.03

Axial Strain during confinment (%): 0.05

Peak Deviator Stress (psf): 9797

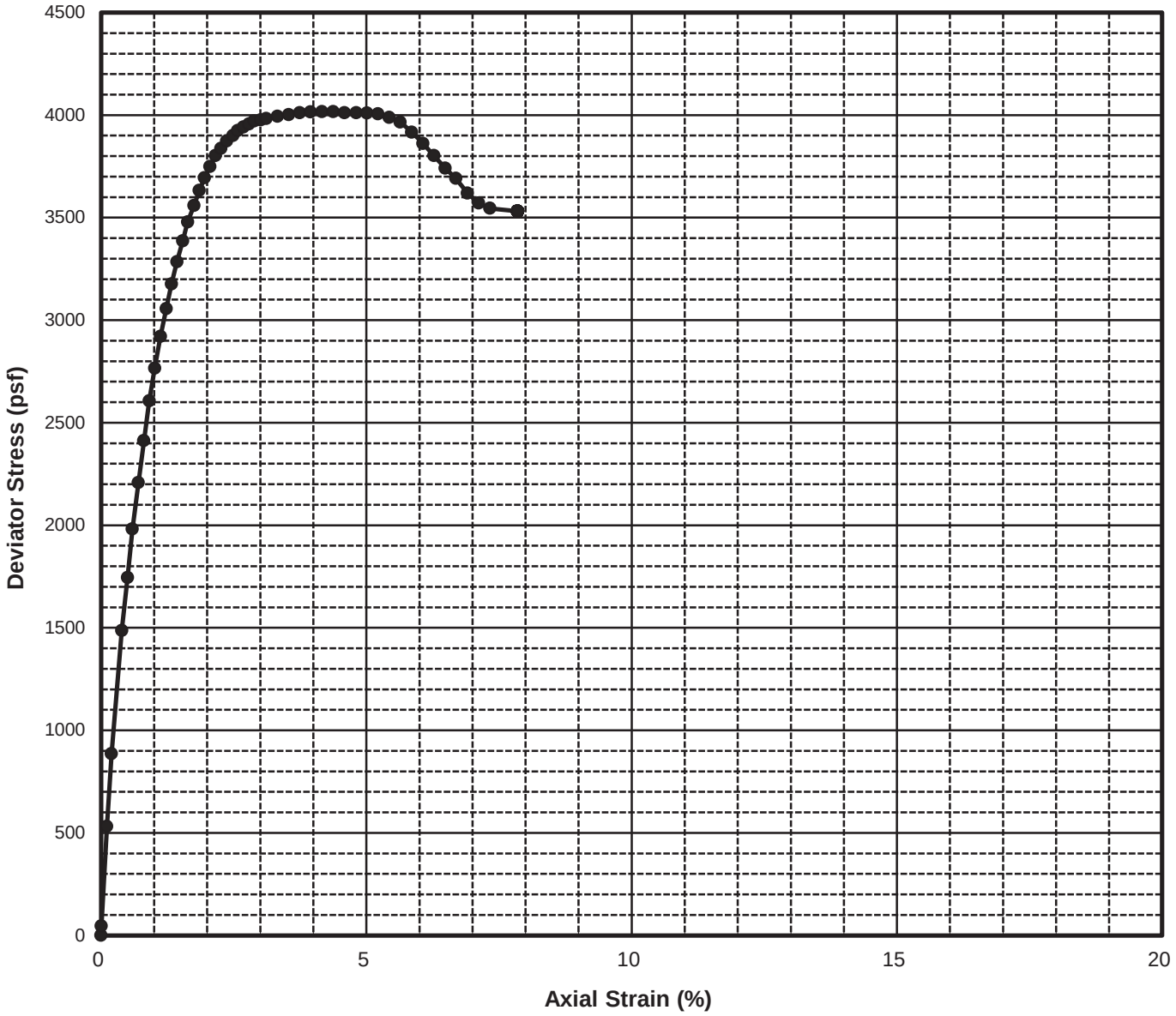
Failure Sketch

see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
6.0	5.825	2.398	125.7	38.6

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				**UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850**
Project Number:	**60422689**				
Boring Number:	**M24628G**	**Sample No.: 1**	**Depth (ft):**	**2.5**	
Description and/or Classification:	**Dark brown clayey Sand (SC)**				



Cell Pressure (psf) = 648

Strain Rate (%/min) = 1.04

Axial Strain during confinment (%): 0.07

Peak Deviator Stress (psf): 4017

Failure Sketch

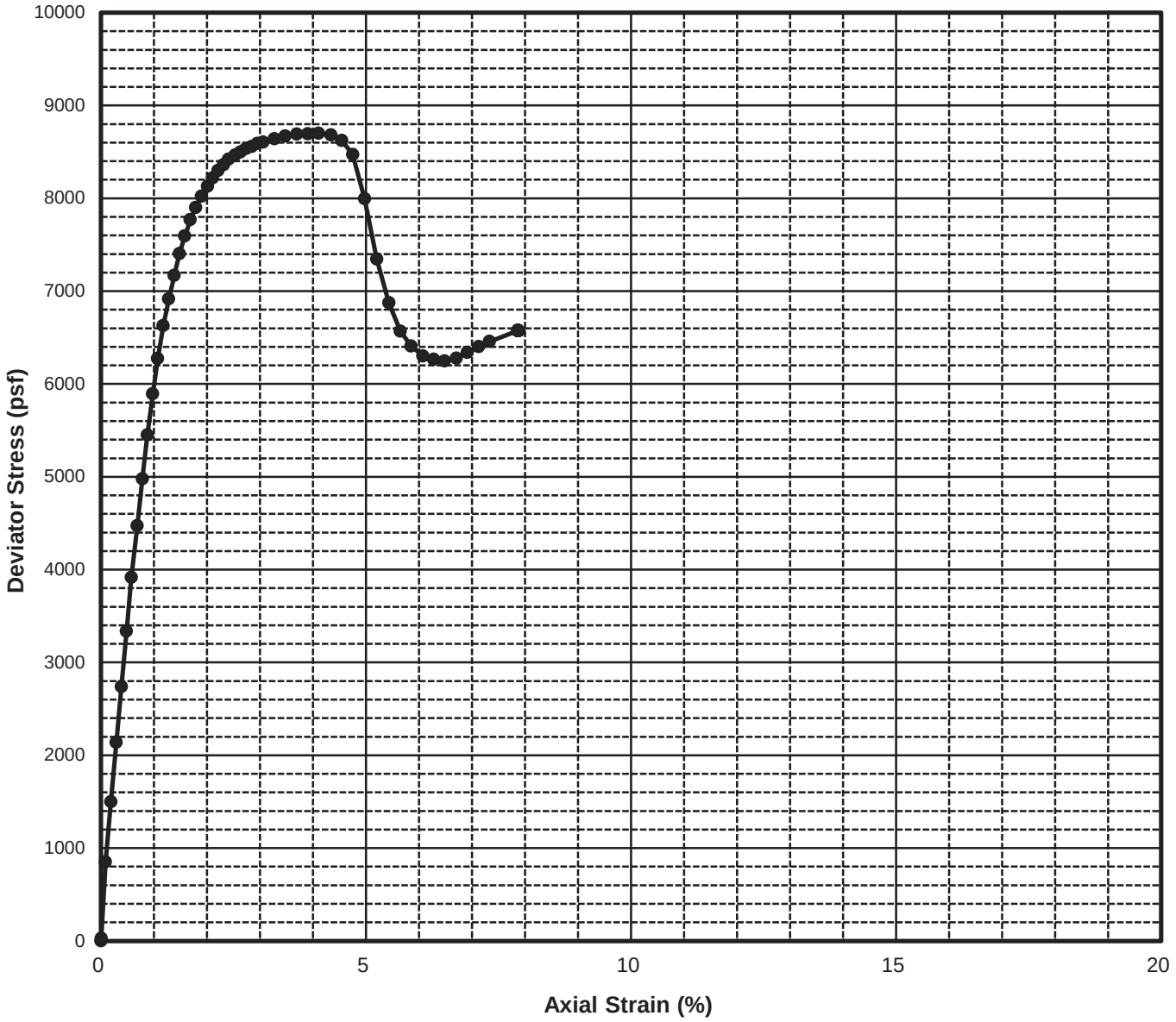
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
13.2	5.723	2.394	130.9	78.2

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**		
Project Number:	**60422689**		
Boring Number:	**M24716G**	**Sample No.: 3**	**Depth (ft): 5.0**
Description and/or Classification:	**Dark olive yellow clayey Sand (SC)**		

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 662

Strain Rate (%/min) = 1.05

Axial Strain during confinment (%): 0.04

Peak Deviator Stress (psf): 8699

at 15% axial strain

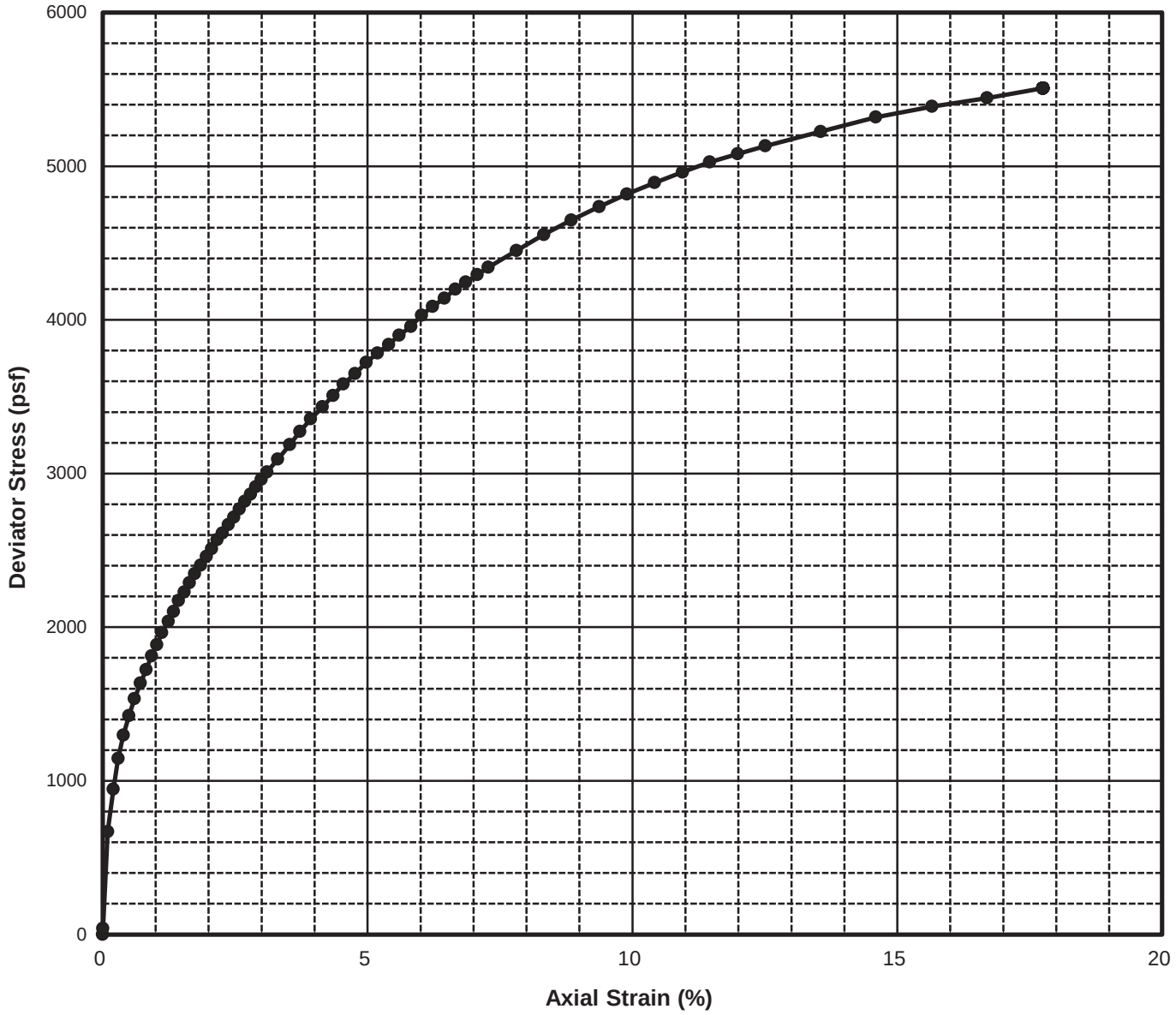
Failure Sketch

see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
12.1	5.702	2.410	131.9	76.2

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				**UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850**
Project Number:	**60422689**				
Boring Number:	**M24733G**	**Sample No.: 3**	**Depth (ft):**	**5.0**	
Description and/or Classification:	**Strong brown clayey Sand (SC)**				



Cell Pressure (psf) = 662

Strain Rate (%/min) = 1.04

Axial Strain during confinment (%): 0.03

Peak Deviator Stress (psf): 5360

at 15% axial strain

Failure Sketch

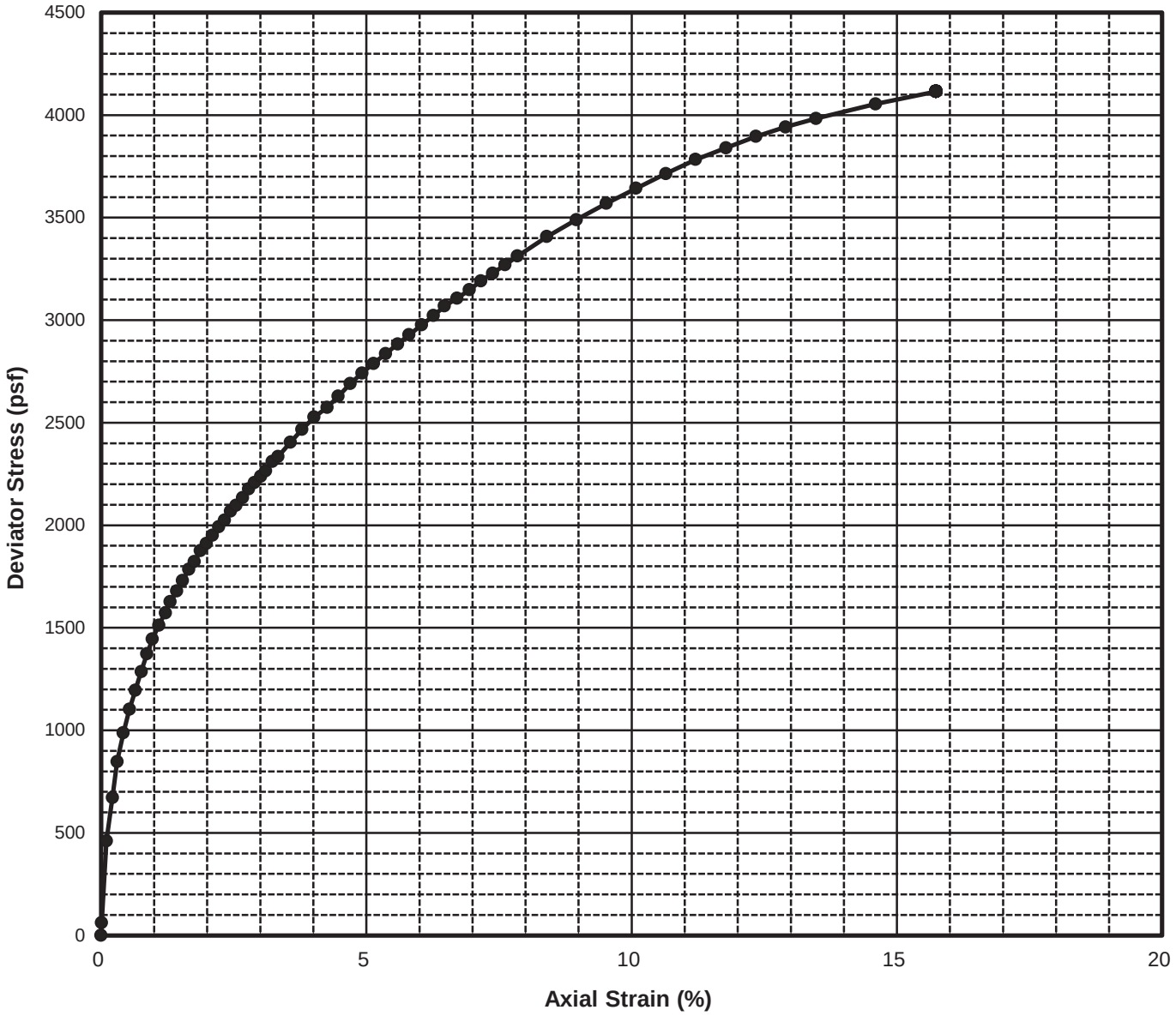
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
17.3	5.751	2.410	132.2	94.7

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**			
Project Number:	**60422689**			
Boring Number:	**N24402G**	**Sample No.: 3**	**Depth (ft):**	**5.0**
Description and/or Classification:	**Olive gray Clay (CL)**			

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 965

Strain Rate (%/min) = 1.12

Axial Strain during confinment (%): 0.19

Peak Deviator Stress (psf): 4080

at 15% axial strain

Failure Sketch

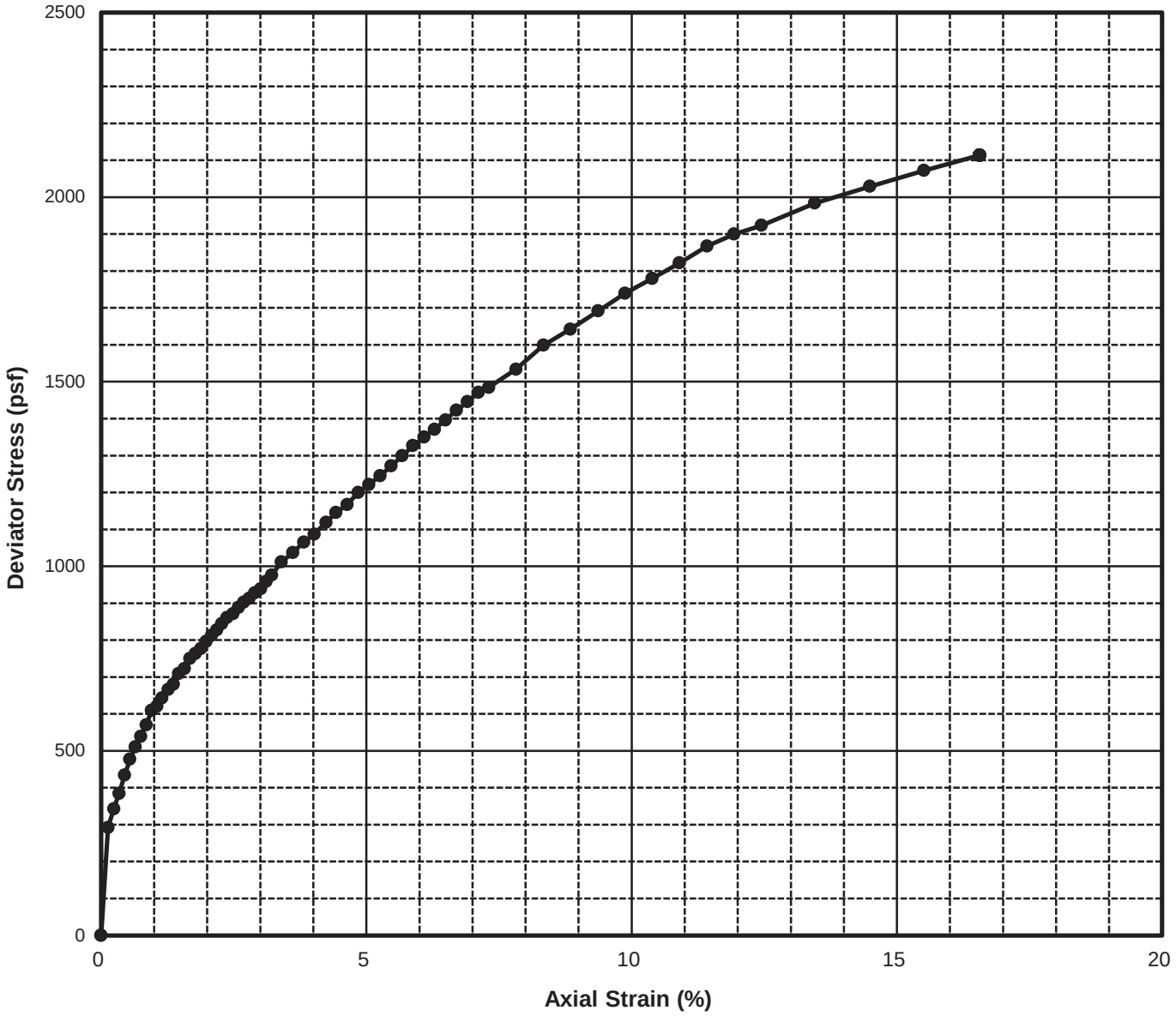
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
12.2	5.359	2.410	129.0	71.3

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**N24409G**	**Sample No.:**	**4**	**Depth (ft):**	**7.5**
Description and/or Classification:	**Dark grayish brown sandy Clay (CL)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 662

Strain Rate (%/min) = 1.02

Axial Strain during confinment (%): 0.00

Peak Deviator Stress (psf): 2050

at 15% axial strain

Failure Sketch

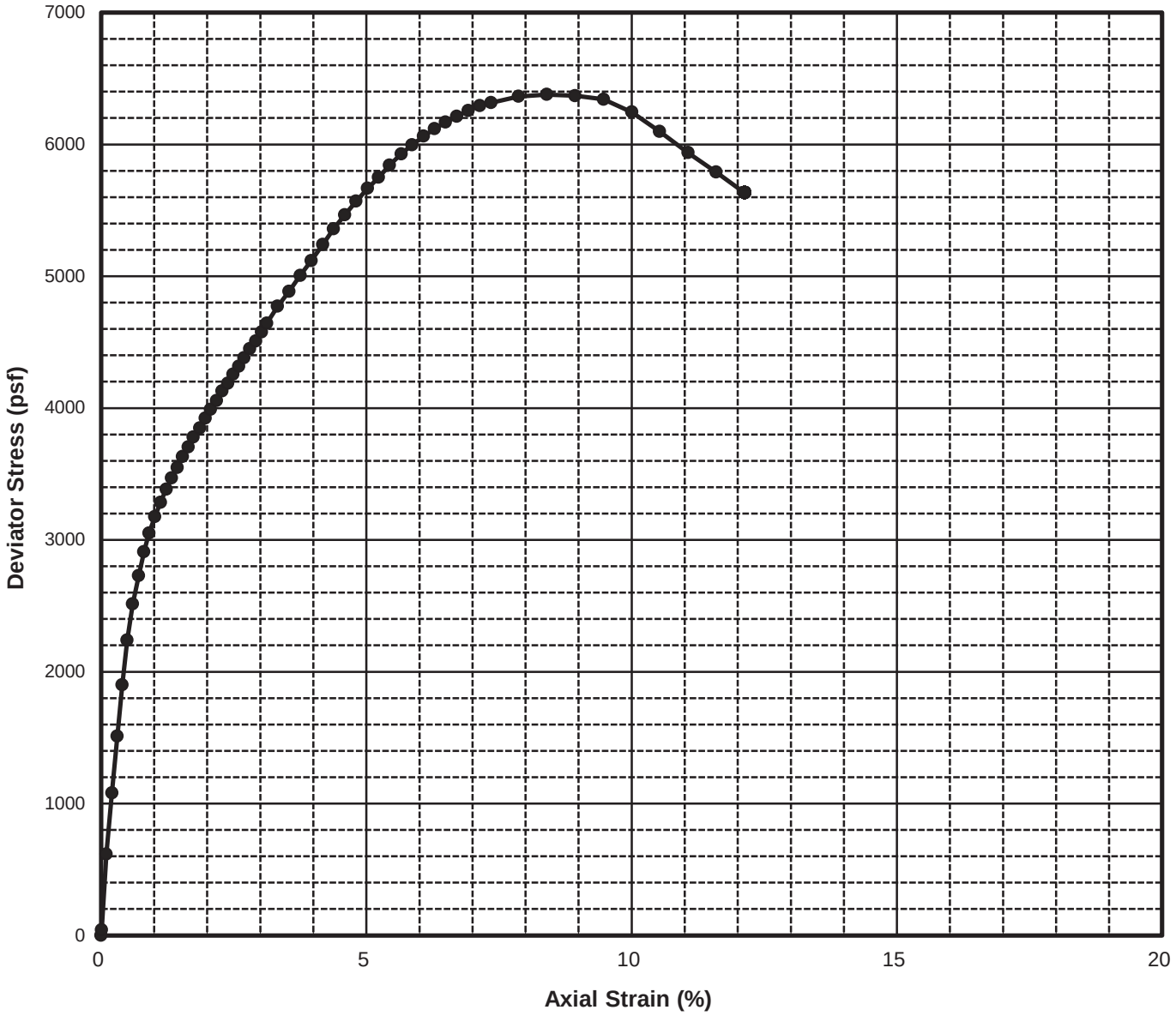
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
14.0	5.883	2.408	131.3	81.9

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**N24508G**	**Sample No.:**	**3**	**Depth (ft):**	**5.0**
Description and/or Classification:	**Dark olive brown sandy Clay (CL)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 648

Strain Rate (%/min) = 1.05

Axial Strain during confinment (%): 0.14

Peak Deviator Stress (psf): 6378

Failure Sketch

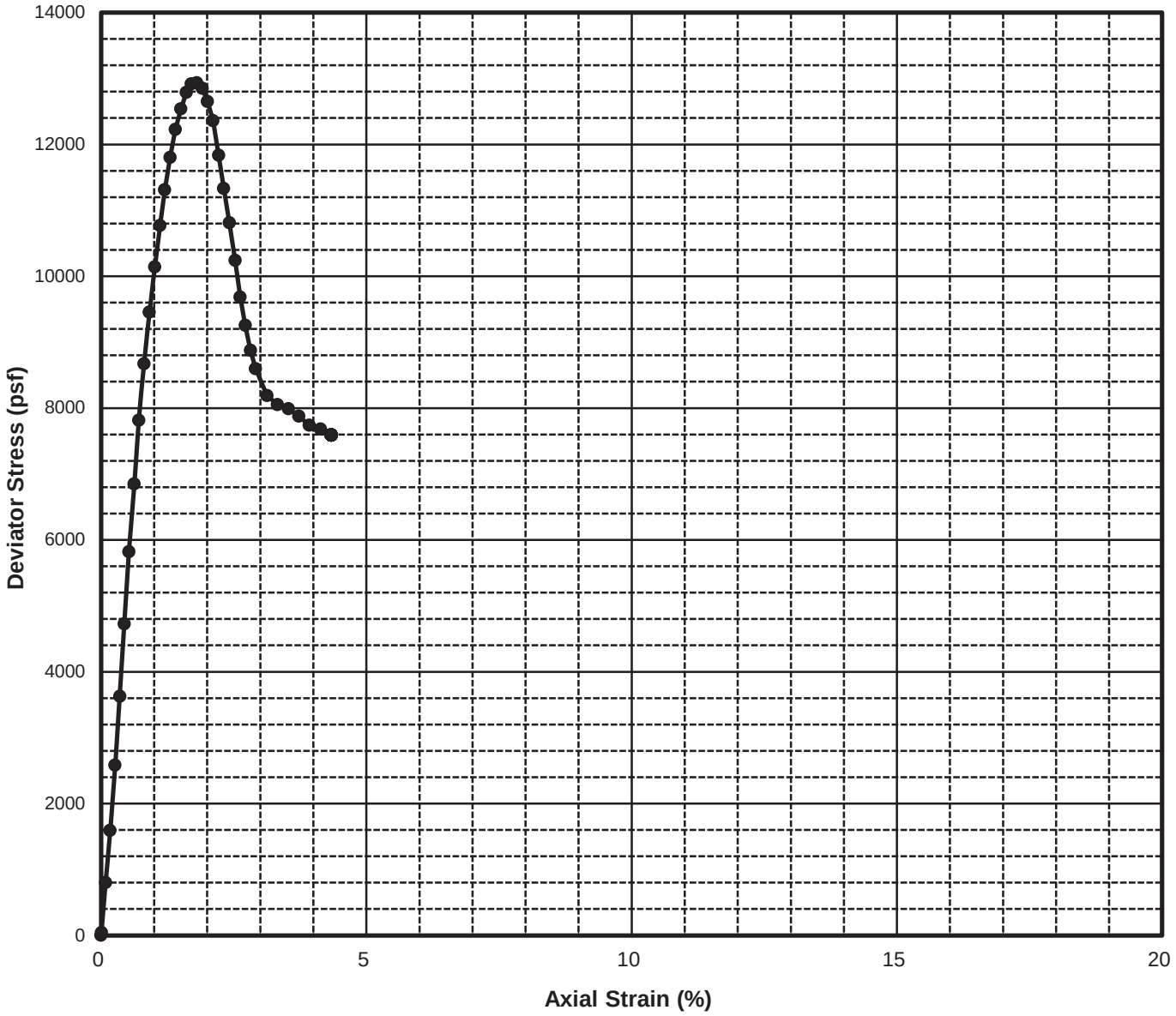
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
13.2	5.699	2.408	130.9	78.4

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**		
Project Number:	**60422689**		
Boring Number:	**N24522G**	**Sample No.: 3**	**Depth (ft): 5.0**
Description and/or Classification:	**Olive grayish brown clayey Sand (SC)**		

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 317

Strain Rate (%/min) = 0.99

Axial Strain during confinment (%): 0.02

Peak Deviator Stress (psf): 12934

Failure Sketch

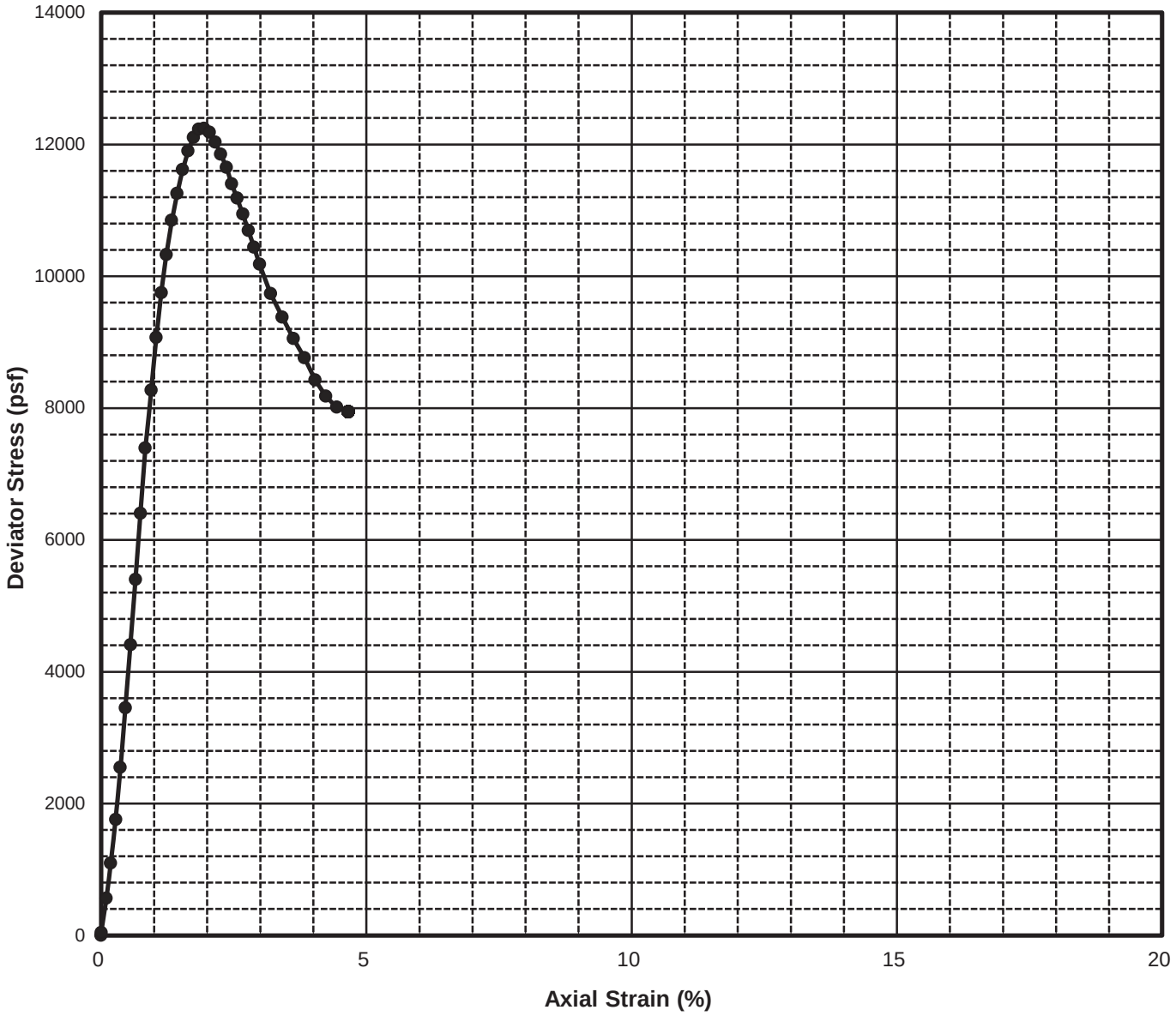
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
11.2	6.022	2.395	125.7	62.0

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**			
Project Number:	**60422689**			
Boring Number:	**N24523G**	**Sample No.: 1**	**Depth (ft):**	**2.5**
Description and/or Classification:	**Strong brown clayey Sand (SC)**			

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 317

Strain Rate (%/min) = 1.03

Axial Strain during confinment (%): 0.09

Peak Deviator Stress (psf): 12242

Failure Sketch

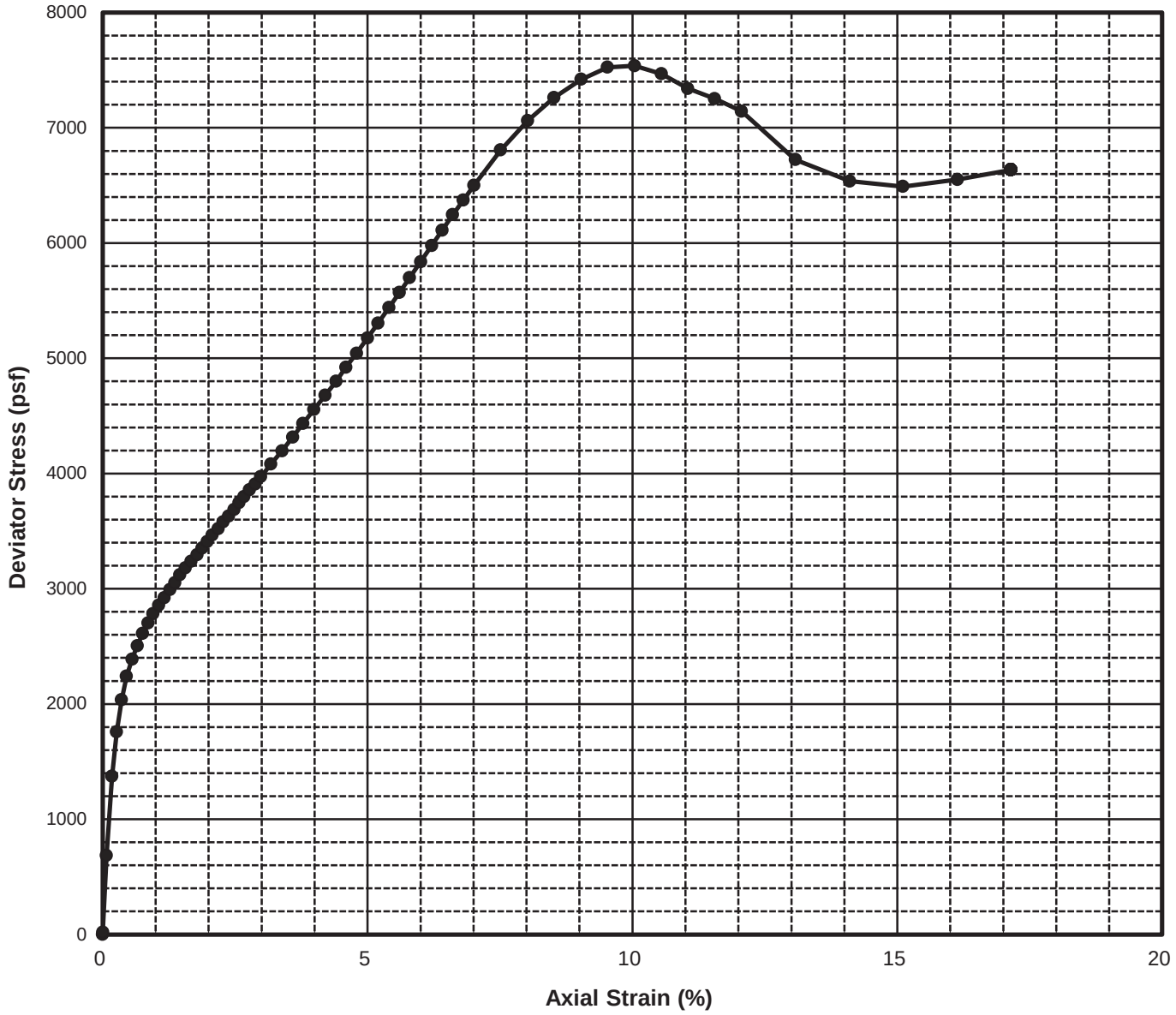
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
8.2	5.827	2.414	128.1	52.4

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**			
Project Number:	**60422689**			
Boring Number:	**N24629G**	**Sample No.: 1**	**Depth (ft):**	**2.5**
Description and/or Classification:	**Light yellowish brown clayey Sand (SC)**			

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 677

Strain Rate (%/min) = 1.01

Axial Strain during confinment (%): 0.07

Peak Deviator Stress (psf): 7538

Failure Sketch

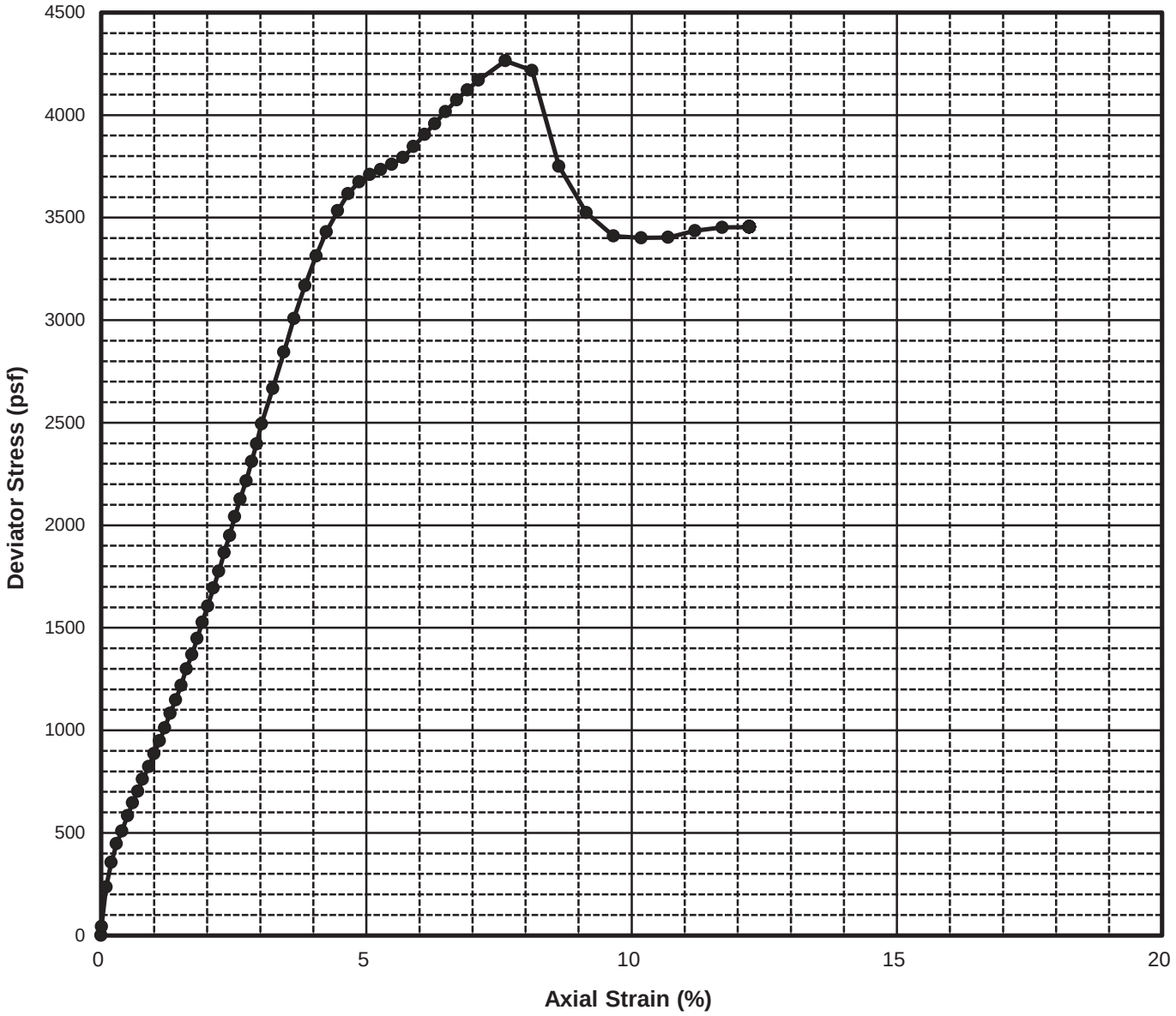
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
11.6	5.944	2.417	135.7	81.5

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**			
Project Number:	**60422689**			
Boring Number:	**N24712G**	**Sample No.: 3**	**Depth (ft):**	**5.0**
Description and/or Classification:	**Brown clayey Sand (SC)**			

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 346

Strain Rate (%/min) = 1.01

Axial Strain during confinment (%): 0.03

Peak Deviator Stress (psf): 4265

Failure Sketch

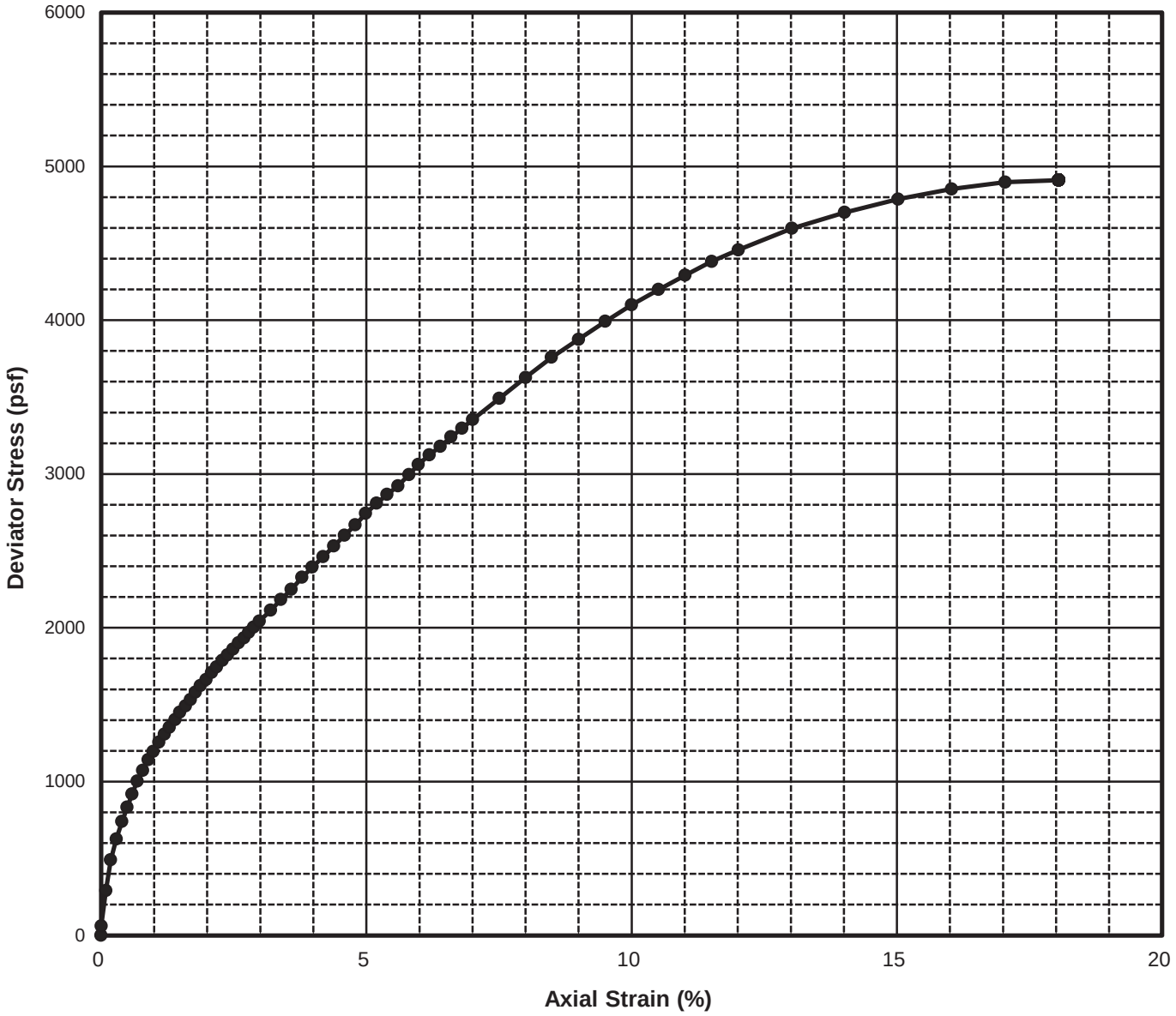
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
11.1	5.911	2.406	138.4	85.5

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**			
Project Number:	**60422689**			
Boring Number:	**N24803G**	**Sample No.: 1**	**Depth (ft):**	**2.5**
Description and/or Classification:	**Strong brown clayey Sand (SC)**			

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 950

Strain Rate (%/min) = 0.99

Axial Strain during confinment (%): 0.18

Peak Deviator Stress (psf): 4787

at 15% axial strain

Failure Sketch

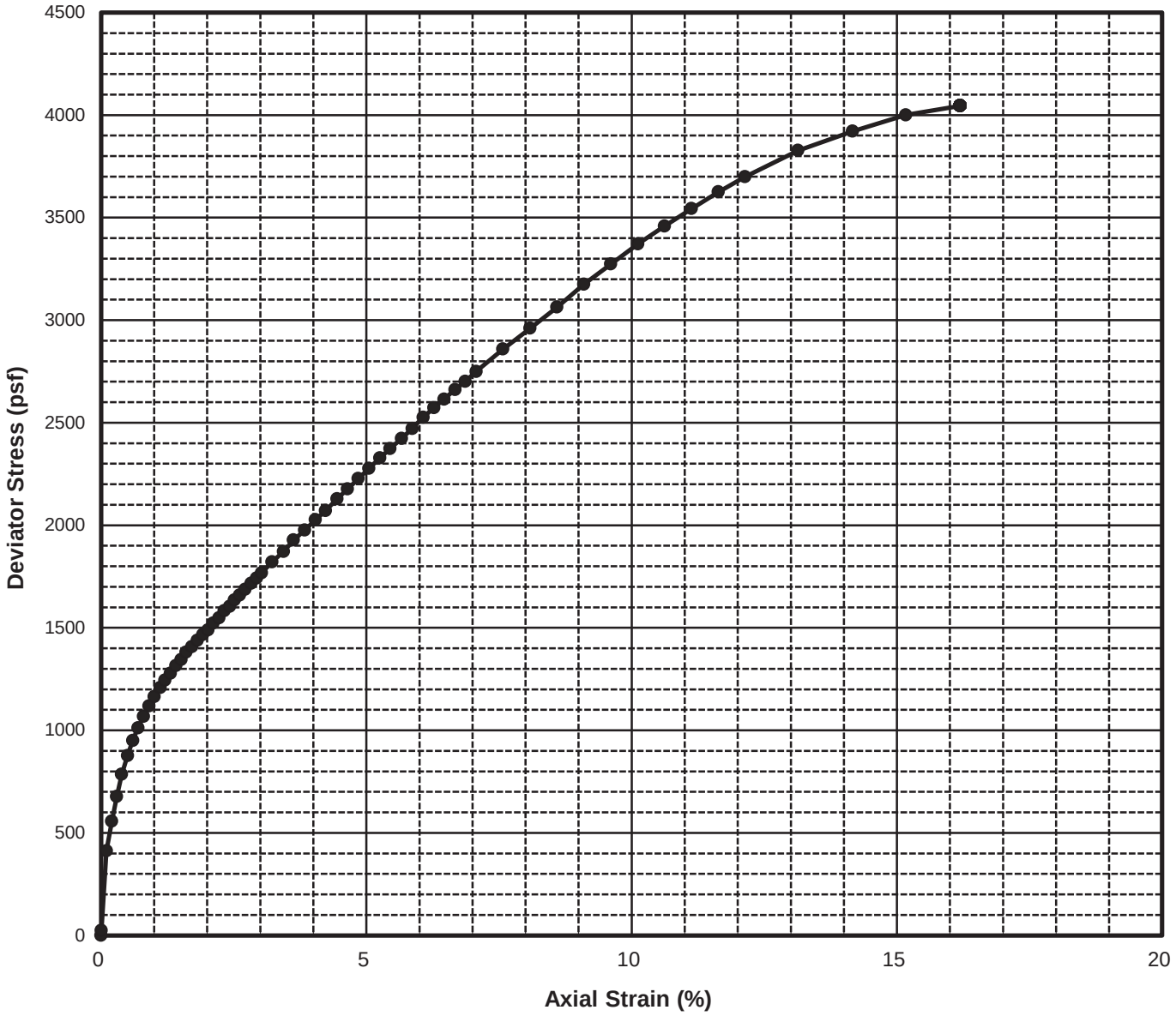
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
11.4	6.012	2.407	127.1	64.9

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**P24608G**	**Sample No.:**	**4**	**Depth (ft):**	**7.5**
Description and/or Classification:	**Very dark brown clayey Sand (SC)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 648

Strain Rate (%/min) = 1.00

Axial Strain during confinment (%): 0.17

Peak Deviator Stress (psf): 4000

at 15% axial strain

Failure Sketch

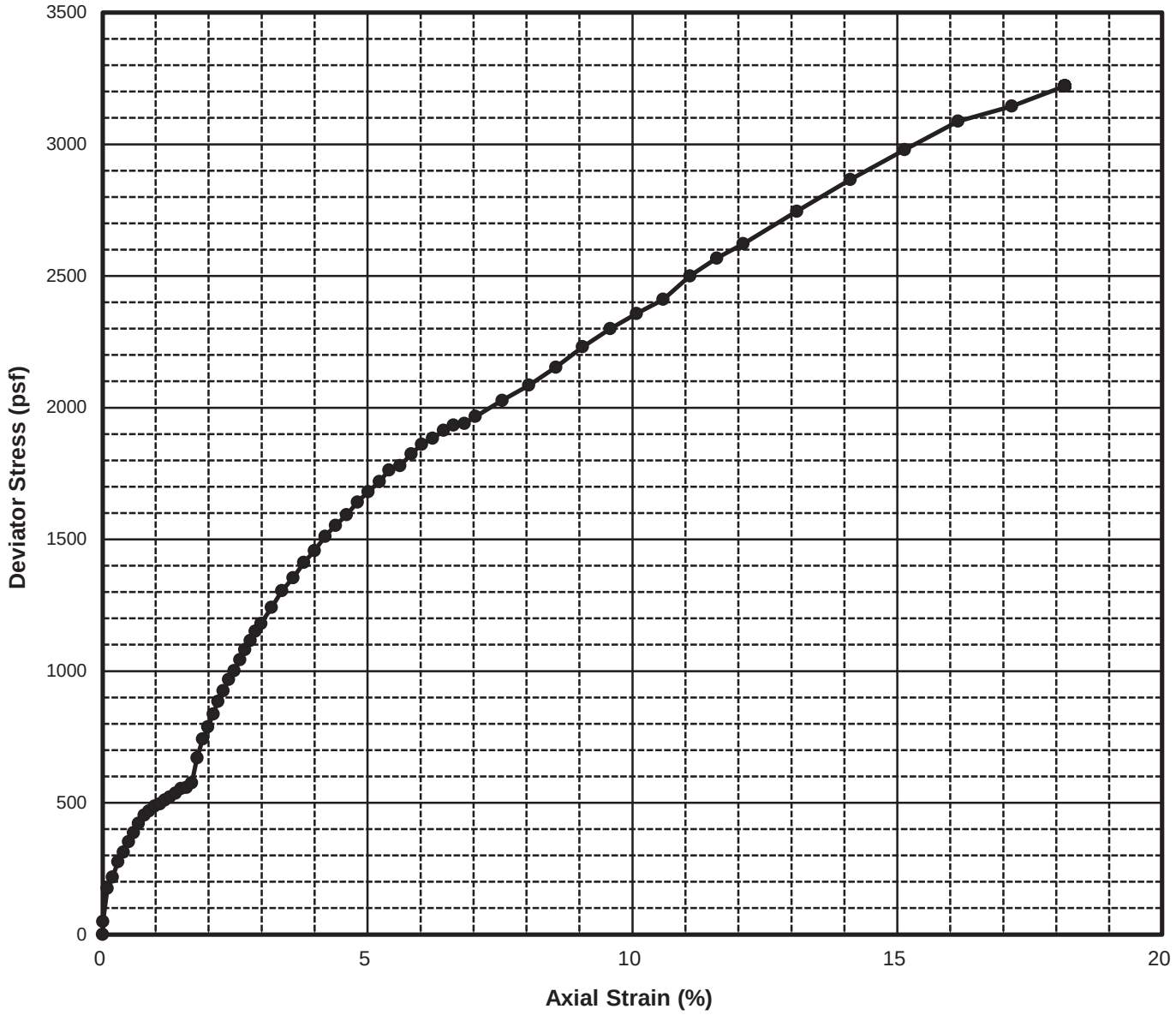
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
14.7	5.959	2.411	130.6	83.1

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**P24618G**	**Sample No.:**	**3**	**Depth (ft):**	**5.0**
Description and/or Classification:	**Dark brown clayey Sand (SC)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 662

Strain Rate (%/min) = 1.00

Axial Strain during confinment (%): 0.17

Peak Deviator Stress (psf): 2979

at 15% axial strain

Failure Sketch

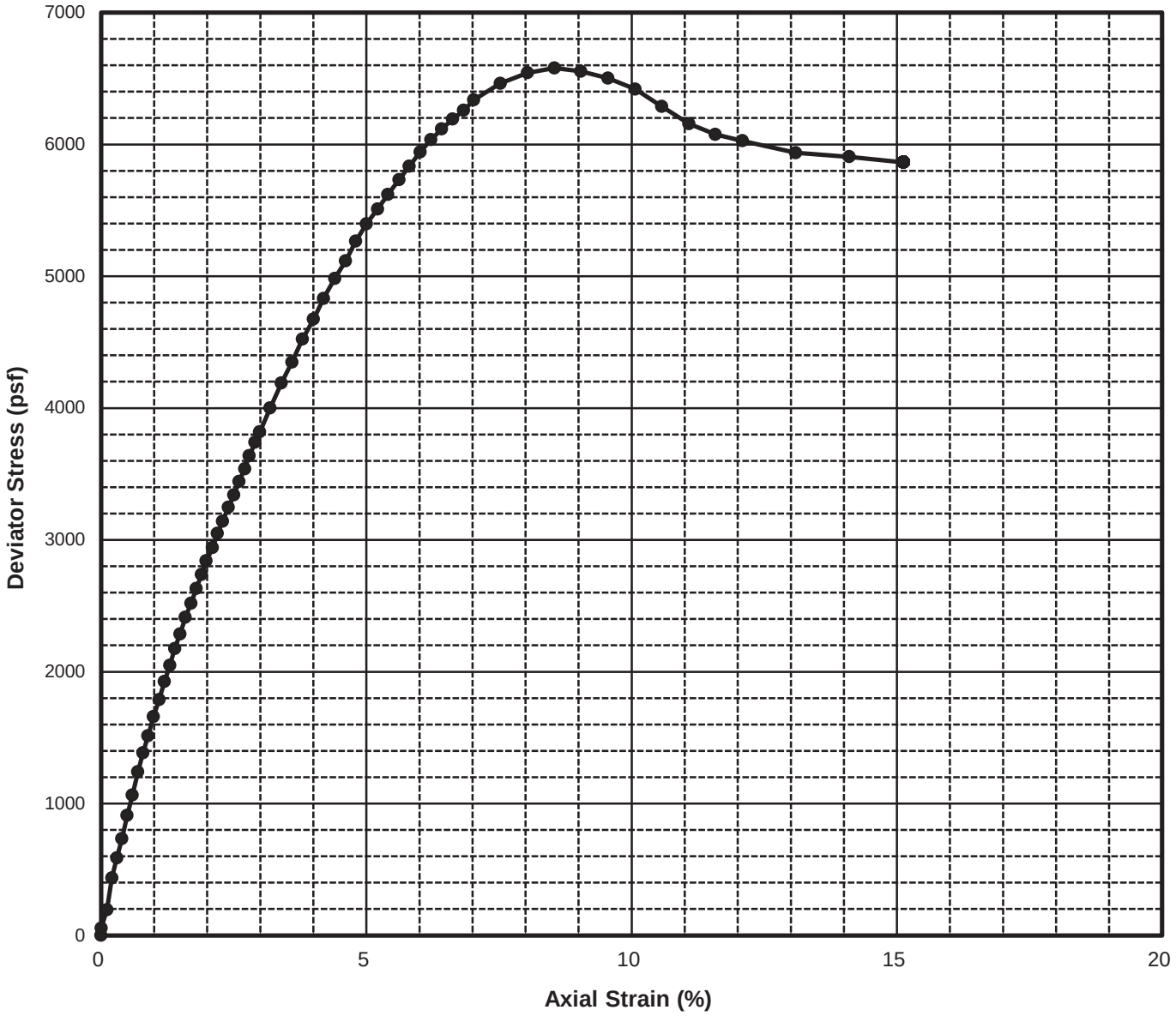
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
12.3	5.978	2.394	132.4	77.8

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**P24709G**	**Sample No.:**	**3**	**Depth (ft):**	**5.0**
Description and/or Classification:	**Dark brown clayey Sand (SC)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 1022

Strain Rate (%/min) = 1.00

Axial Strain during confinment (%): 0.35

Peak Deviator Stress (psf): 6579

Failure Sketch

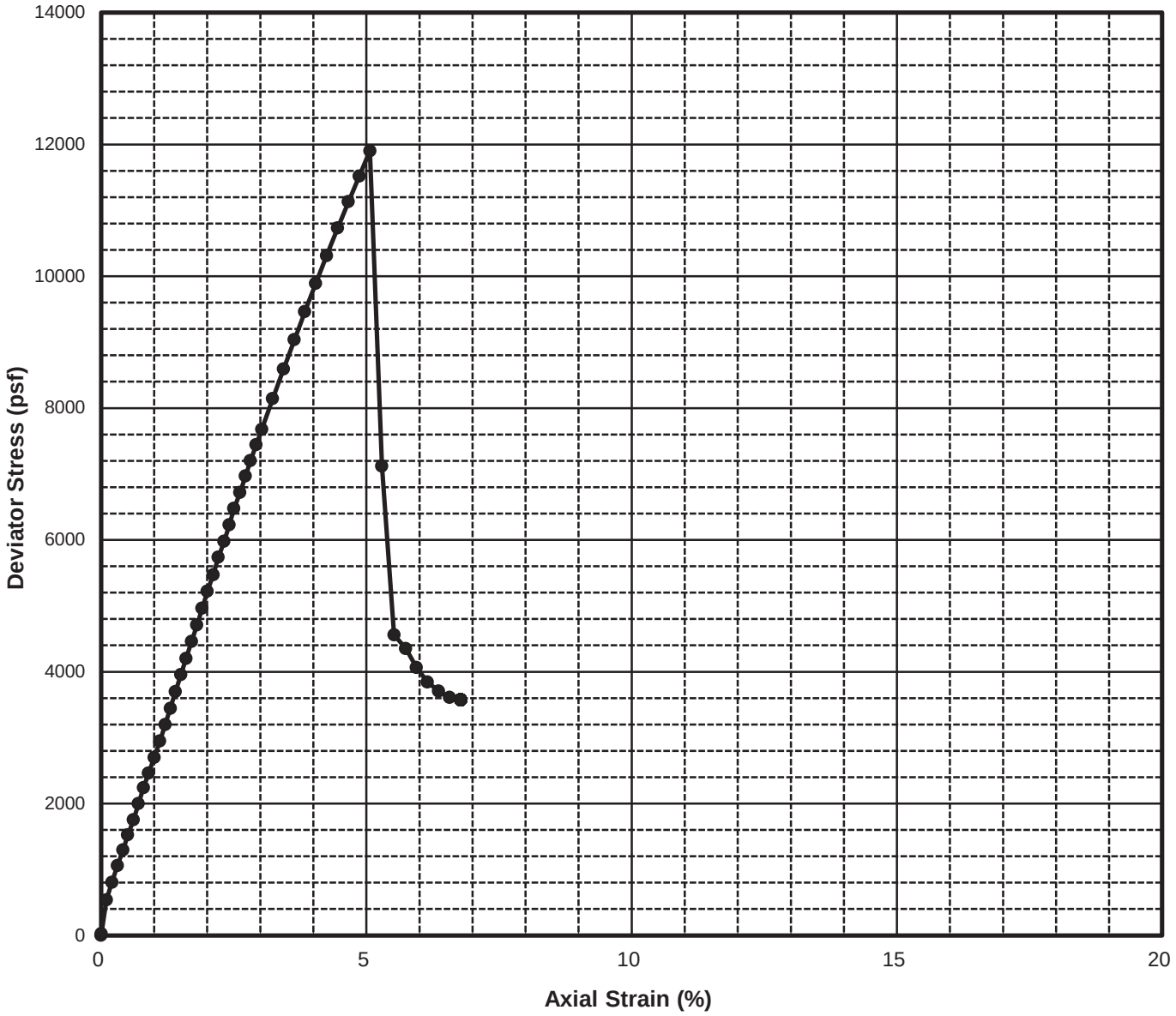
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
11.0	5.990	2.412	135.4	78.1

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**P24719G**	**Sample No.:**	**4**	**Depth (ft):**	**7.5**
Description and/or Classification:	**Very dark brown Clay (CL)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 605

Strain Rate (%/min) = 1.02

Peak Deviator Stress (psf): 11901

Axial Strain during confinment (%): 0.05

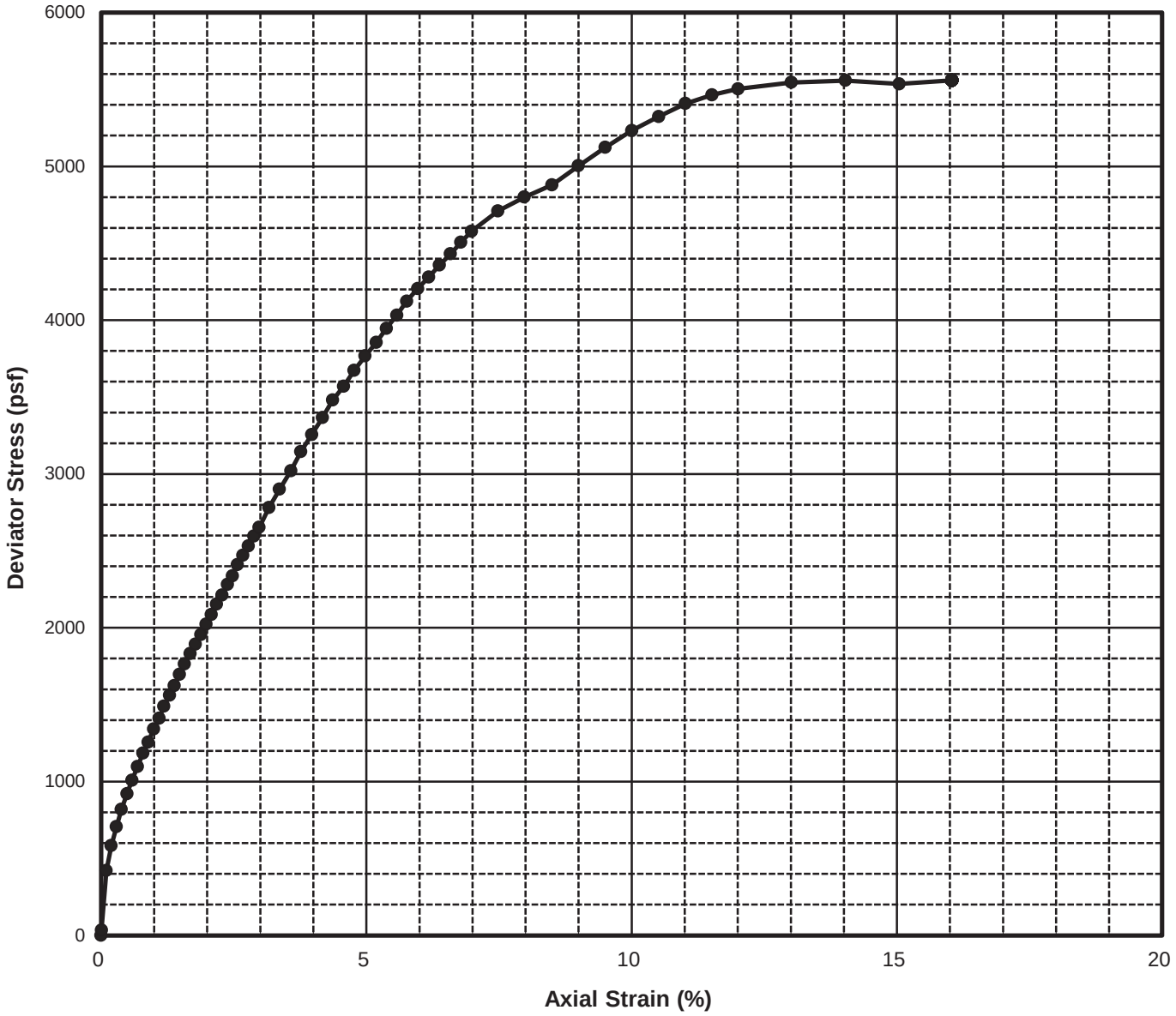
Failure Sketch

see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
12.8	5.852	2.401	131.5	77.7

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				**UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850**
Project Number:	**60422689**				
Boring Number:	**P24738G**	**Sample No.: 3**	**Depth (ft):**	**5.0**	
Description and/or Classification:	**Brown clayey Sand (SC)**				



Cell Pressure (psf) = 1325

Strain Rate (%/min) = 1.00

Axial Strain during confinment (%): 0.22

Peak Deviator Stress (psf): 5559

Failure Sketch

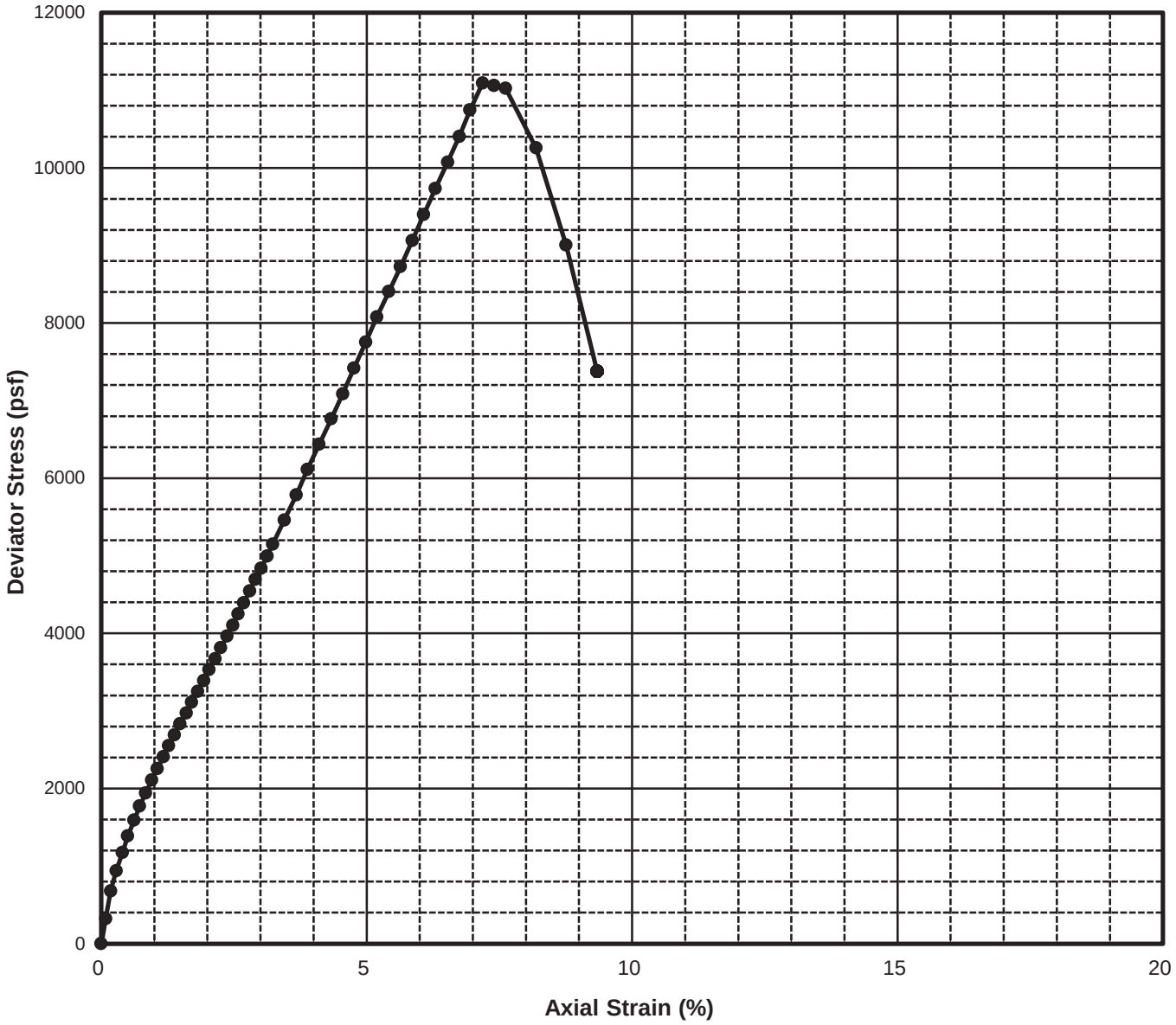
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
15.7	5.999	2.412	133.6	92.8

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**		
Project Number:	**60422689**		
Boring Number:	**P24812G**	**Sample No.: 5**	**Depth (ft): 10.0**
Description and/or Classification:	**Strong brown clayey Sand (SC)**		

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 677

Strain Rate (%/min) = 1.11

Axial Strain during confinment (%): 0.04

Peak Deviator Stress (psf): 11092

at 15% axial strain

Failure Sketch

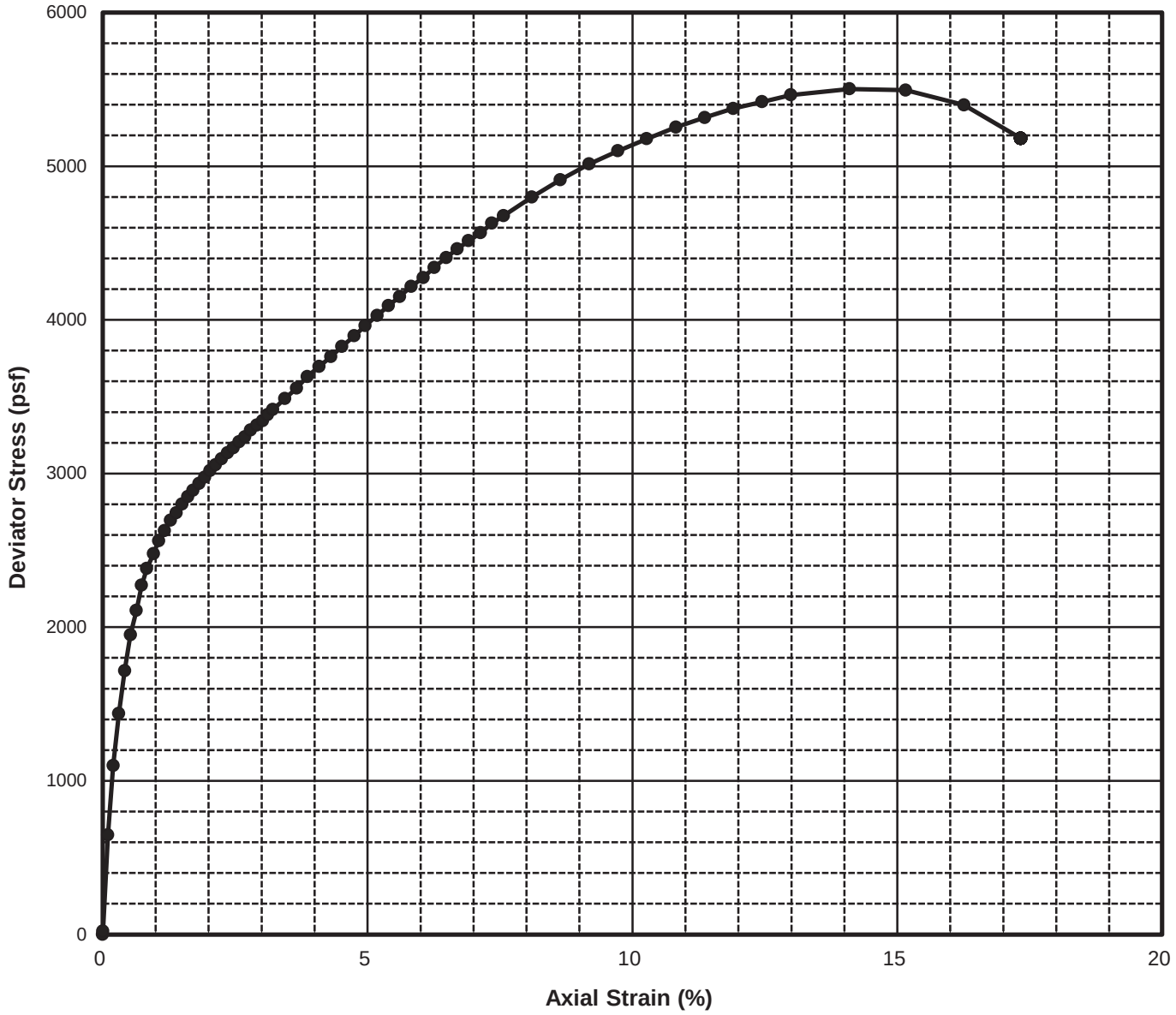
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
10.8	5.400	2.407	135.9	78.5

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**P24833G**	**Sample No.:**	**3**	**Depth (ft):**	**5.0**
Description and/or Classification:	**Olive brown clayey Sand (SC)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 317

Strain Rate (%/min) = 1.08

Axial Strain during confinment (%): 0.02

Peak Deviator Stress (psf): 5503

Failure Sketch

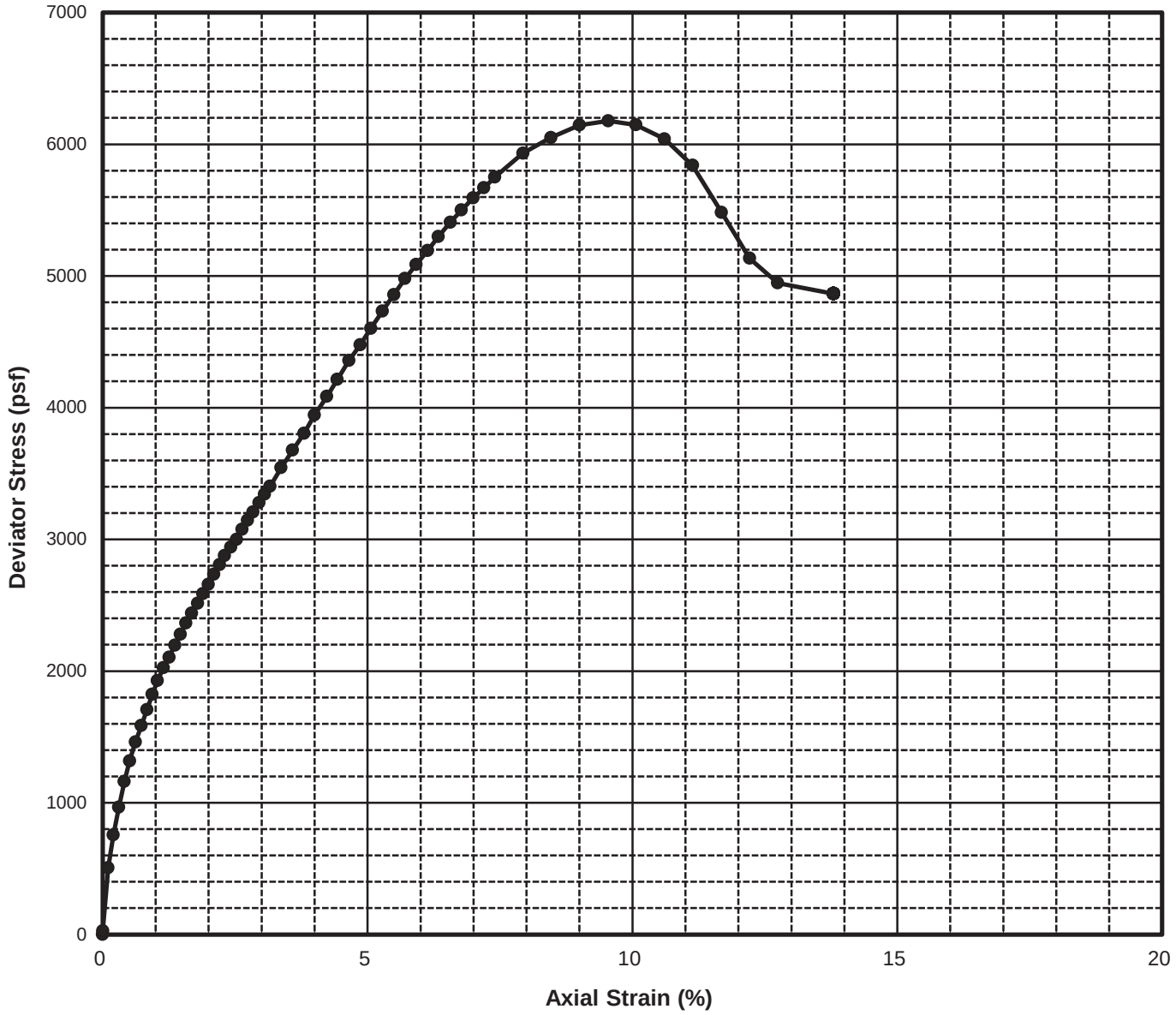
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
15.2	5.552	2.406	133.3	90.4

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**			
Project Number:	**60422689**			
Boring Number:	**R24412G**	**Sample No.: 1**	**Depth (ft):**	**2.5**
Description and/or Classification:	**Dark brown clayey Sand (SC)**			

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 662

Strain Rate (%/min) = 1.06

Axial Strain during confinment (%): 0.09

Peak Deviator Stress (psf): 6177

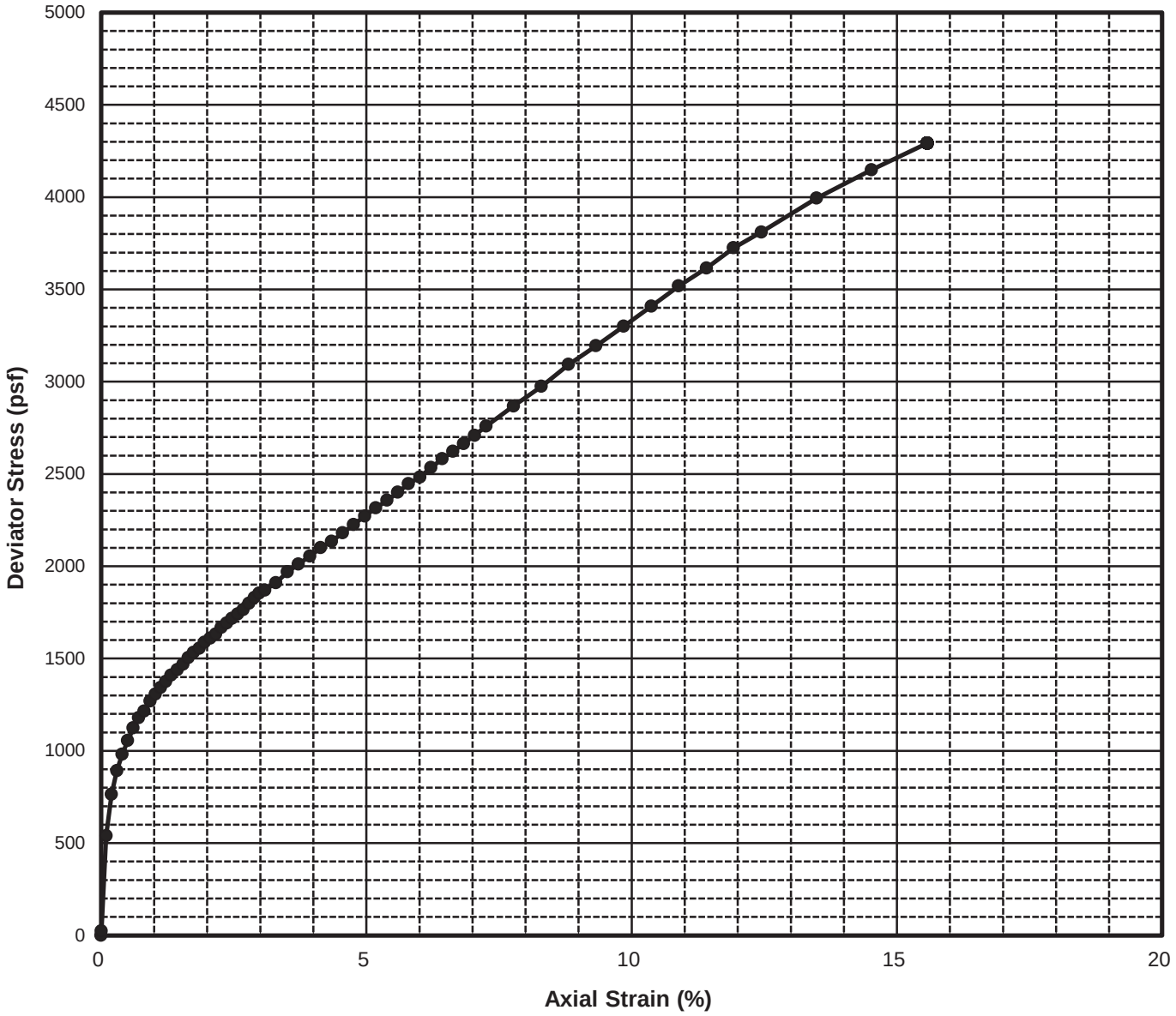
Failure Sketch

see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
15.1	5.666	2.411	133.7	91.0

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				**UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850**
Project Number:	**60422689**				
Boring Number:	**R24423G**	**Sample No.: 3**	**Depth (ft):**	**5.0**	
Description and/or Classification:	**Dark brown clayey Sand (SC)**				



Cell Pressure (psf) = 1008

Strain Rate (%/min) = 1.03

Axial Strain during confinment (%): 0.10

Peak Deviator Stress (psf): 4200

at 15% axial strain

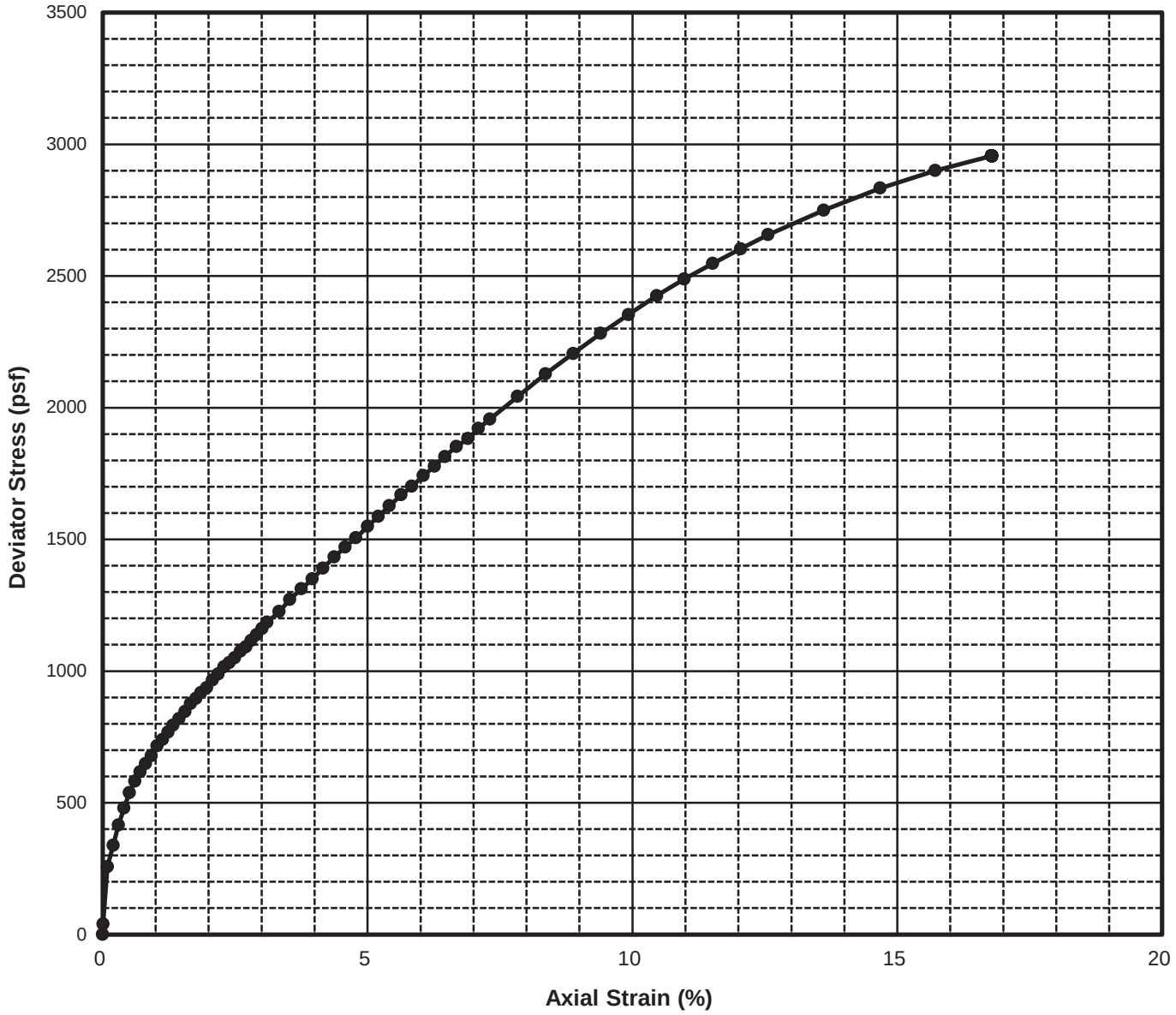
Failure Sketch

see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
12.4	5.808	2.409	135.7	85.0

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				**UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850**
Project Number:	**60422689**				
Boring Number:	**R24426G**	**Sample No.: 4**	**Depth (ft):**	**7.5**	
Description and/or Classification:	**Dark brown sandy Clay (CL)**				



Cell Pressure (psf) = 662

Strain Rate (%/min) = 1.04

Axial Strain during confinment (%): 0.07

Peak Deviator Stress (psf): 2850

at 15% axial strain

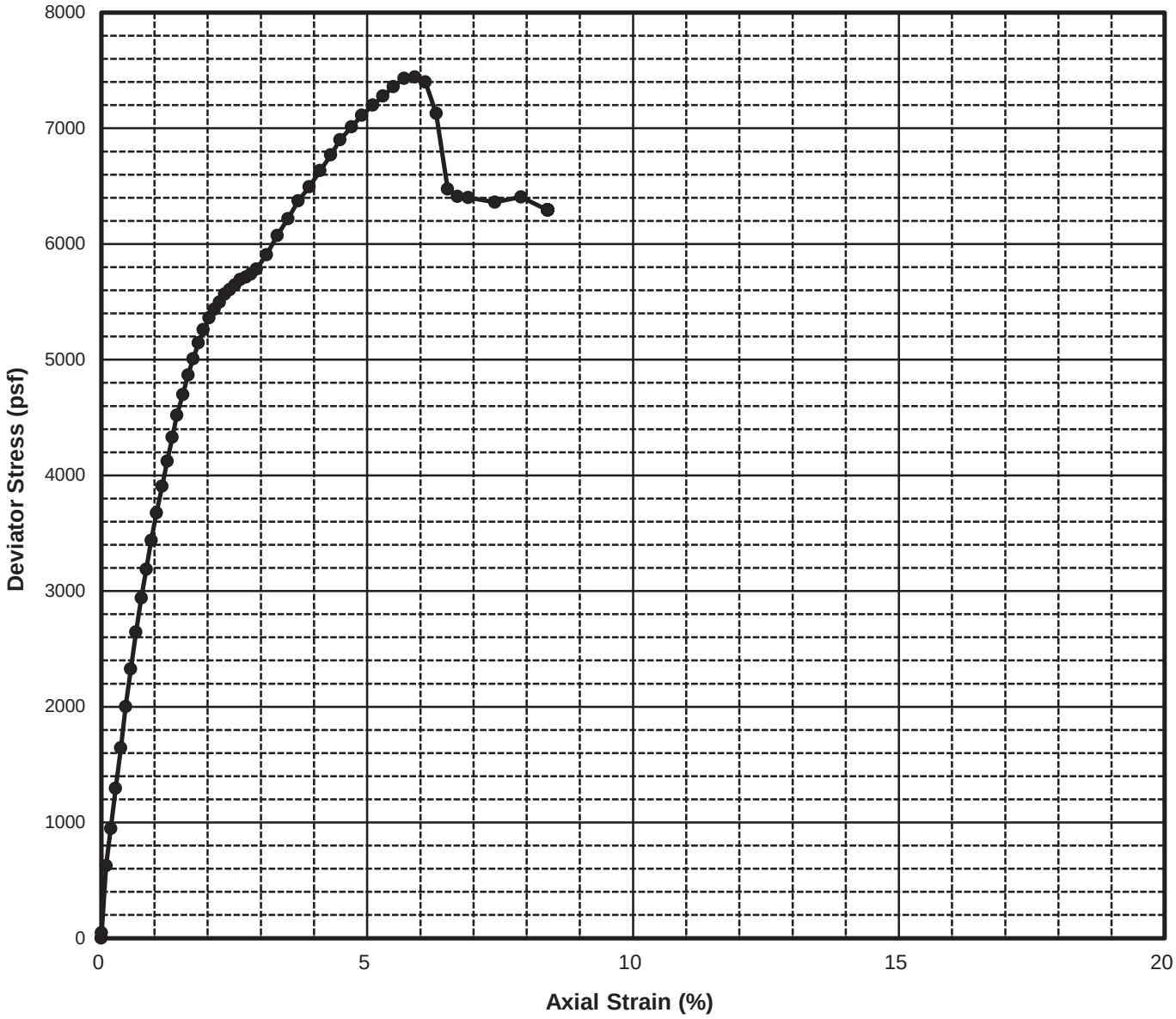
Failure Sketch

see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
15.4	5.731	2.409	132.1	88.6

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				**UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850**
Project Number:	**60422689**				
Boring Number:	**R24508G**	**Sample No.: 3**	**Depth (ft):**	**5.0**	
Description and/or Classification:	**Olive brown clayey Sand (SC)**				



Cell Pressure (psf) = 331

Strain Rate (%/min) = 0.99

Axial Strain during confinment (%): 0.07

Peak Deviator Stress (psf): 7443

Failure Sketch

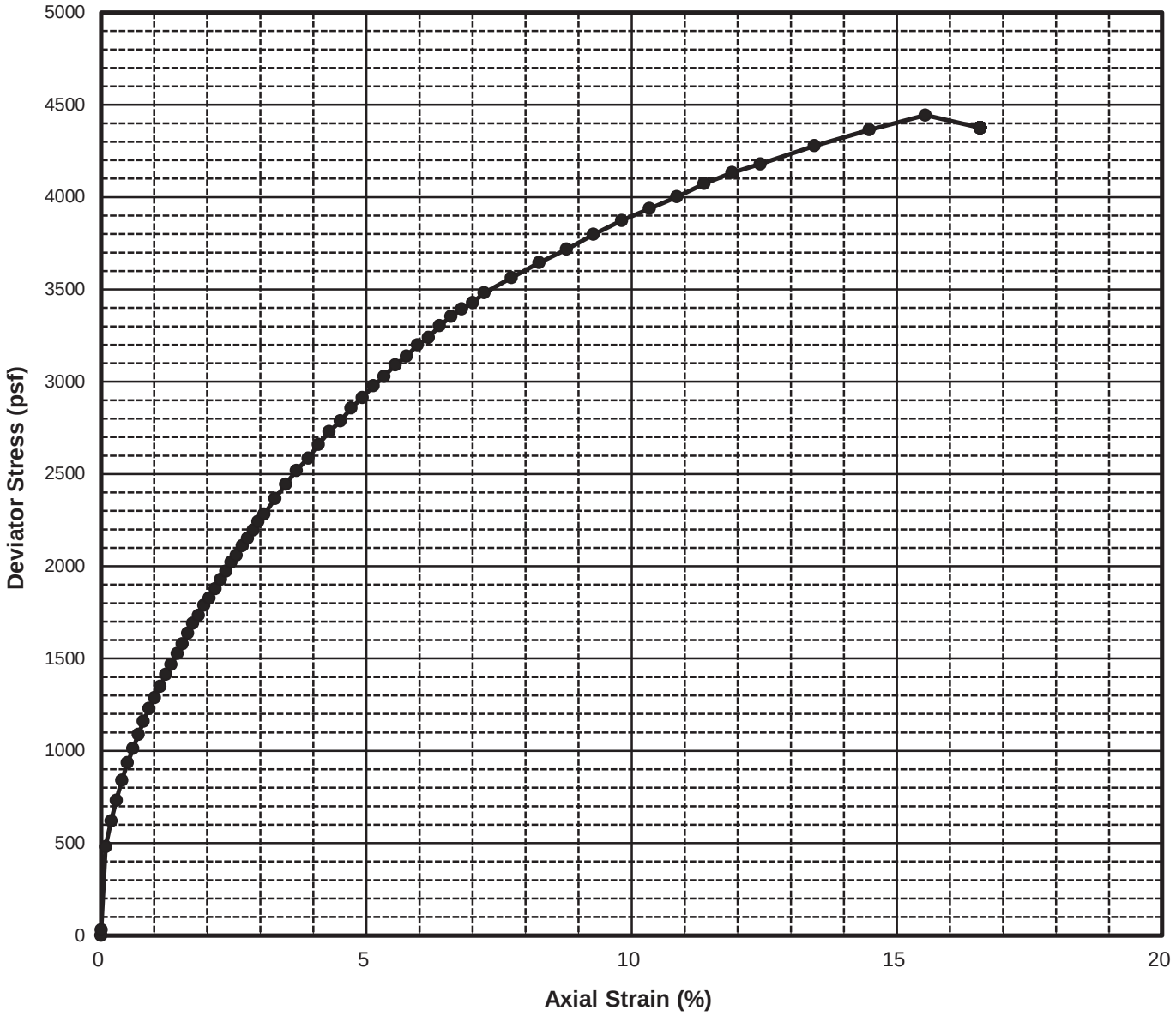
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
0.0	6.041	2.390	133.8	65.9

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**R24509G**	**Sample No.:**	**1**	**Depth (ft):**	**2.5**
Description and/or Classification:	**Strong brown clayey Sand (SC)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 1282

Strain Rate (%/min) = 1.03

Axial Strain during confinment (%): 0.22

Peak Deviator Stress (psf): 4444

Failure Sketch

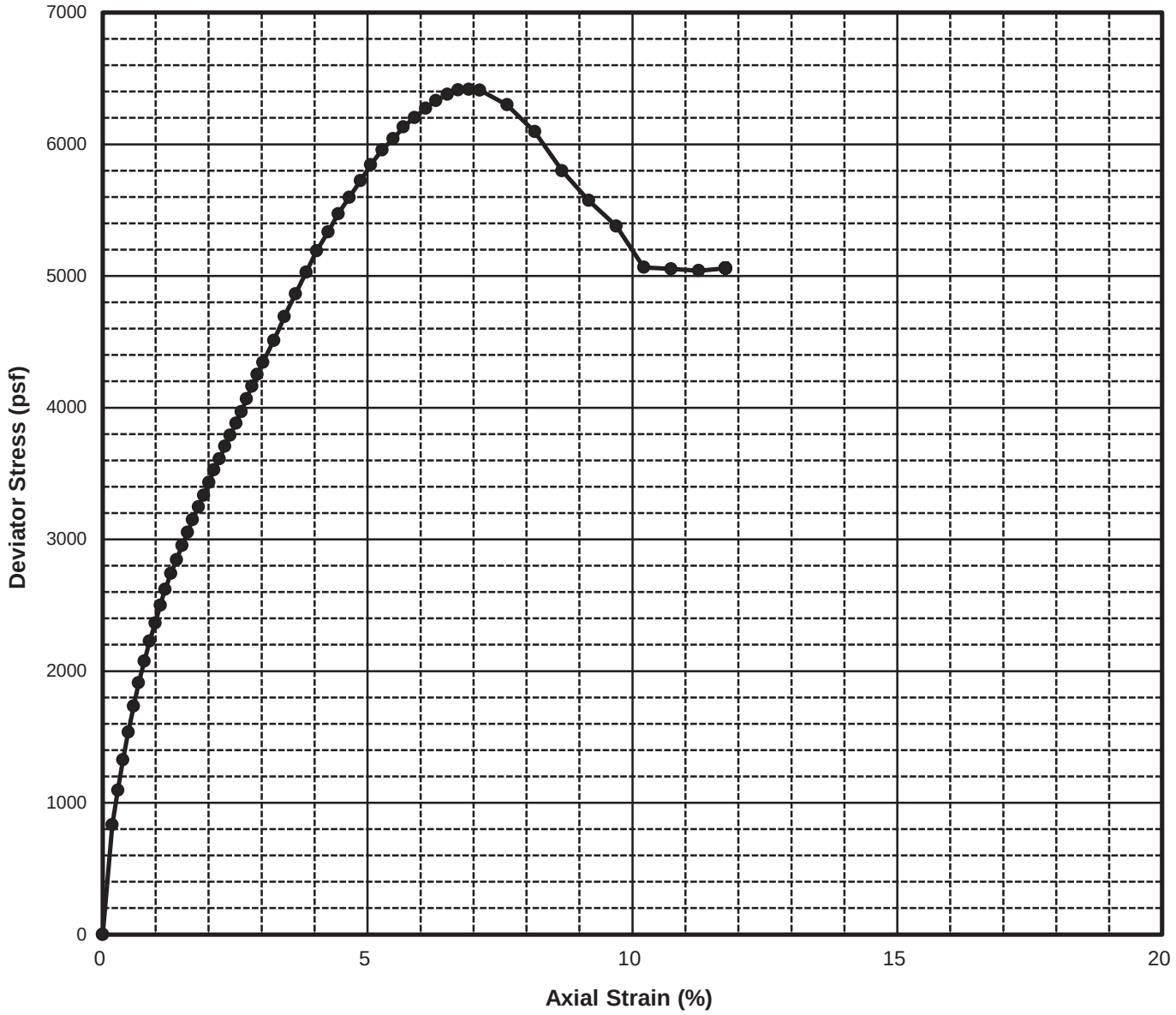
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
12.7	5.828	2.404	128.8	72.5

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**R24522G**	**Sample No.:**	**5**	**Depth (ft):**	**10.0**
Description and/or Classification:	**Olive gray sandy Clay (CL)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 1296

Strain Rate (%/min) = 1.02

Axial Strain during confinment (%): 0.29

Peak Deviator Stress (psf): 6417

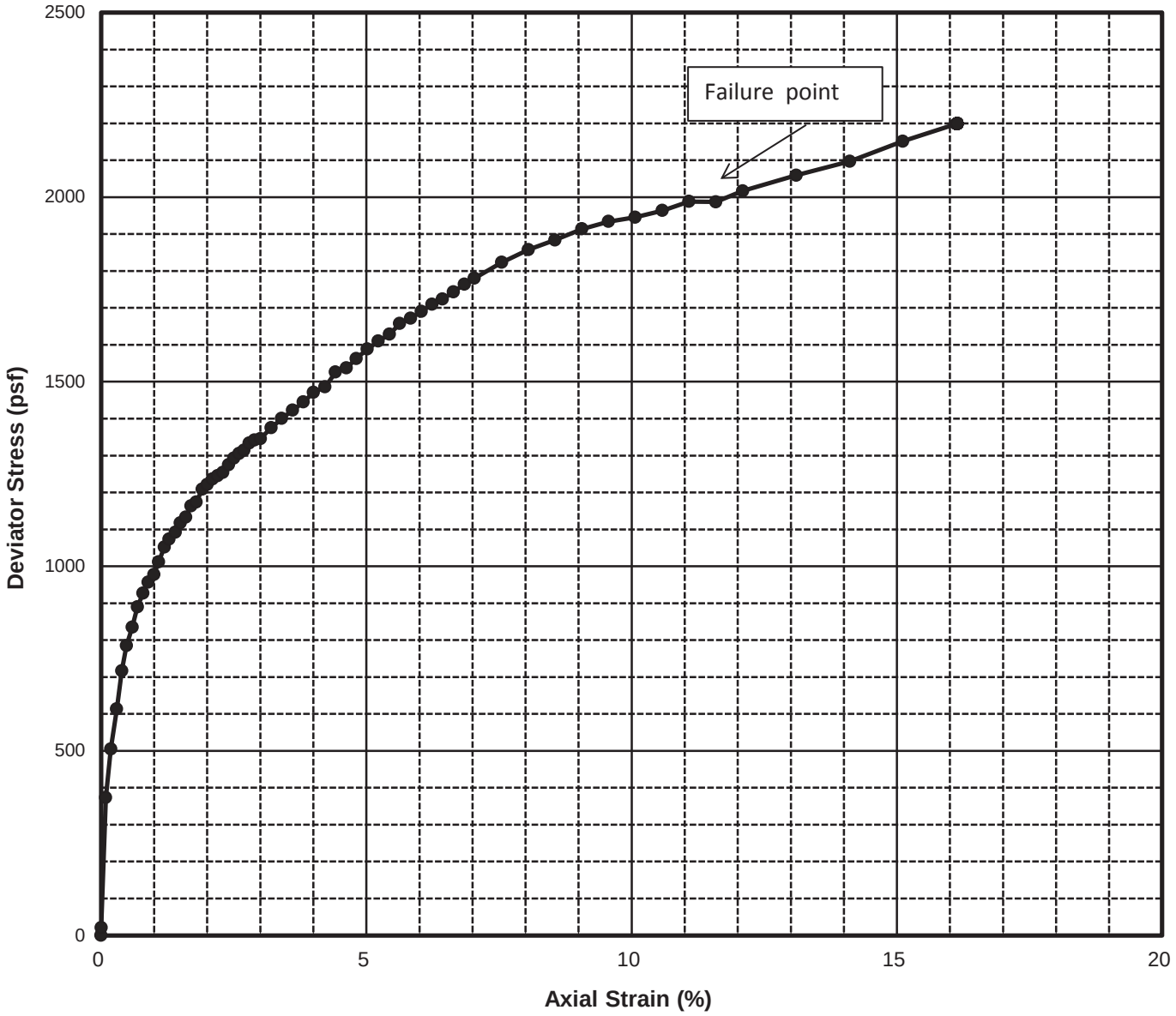
Failure Sketch

see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
10.0	5.874	2.382	128.3	60.8

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				**UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850**
Project Number:	**60422689**				
Boring Number:	**R24739G**	**Sample No.: 5**	**Depth (ft):**	**10.0**	
Description and/or Classification:	**Dark brown sandy Clay (CL)**				



Cell Pressure (psf) = 288

Strain Rate (%/min) = 1.00

Axial Strain during confinment (%): 0.03

Peak Deviator Stress (psf): 1988

at 11% axial strain

Failure Sketch

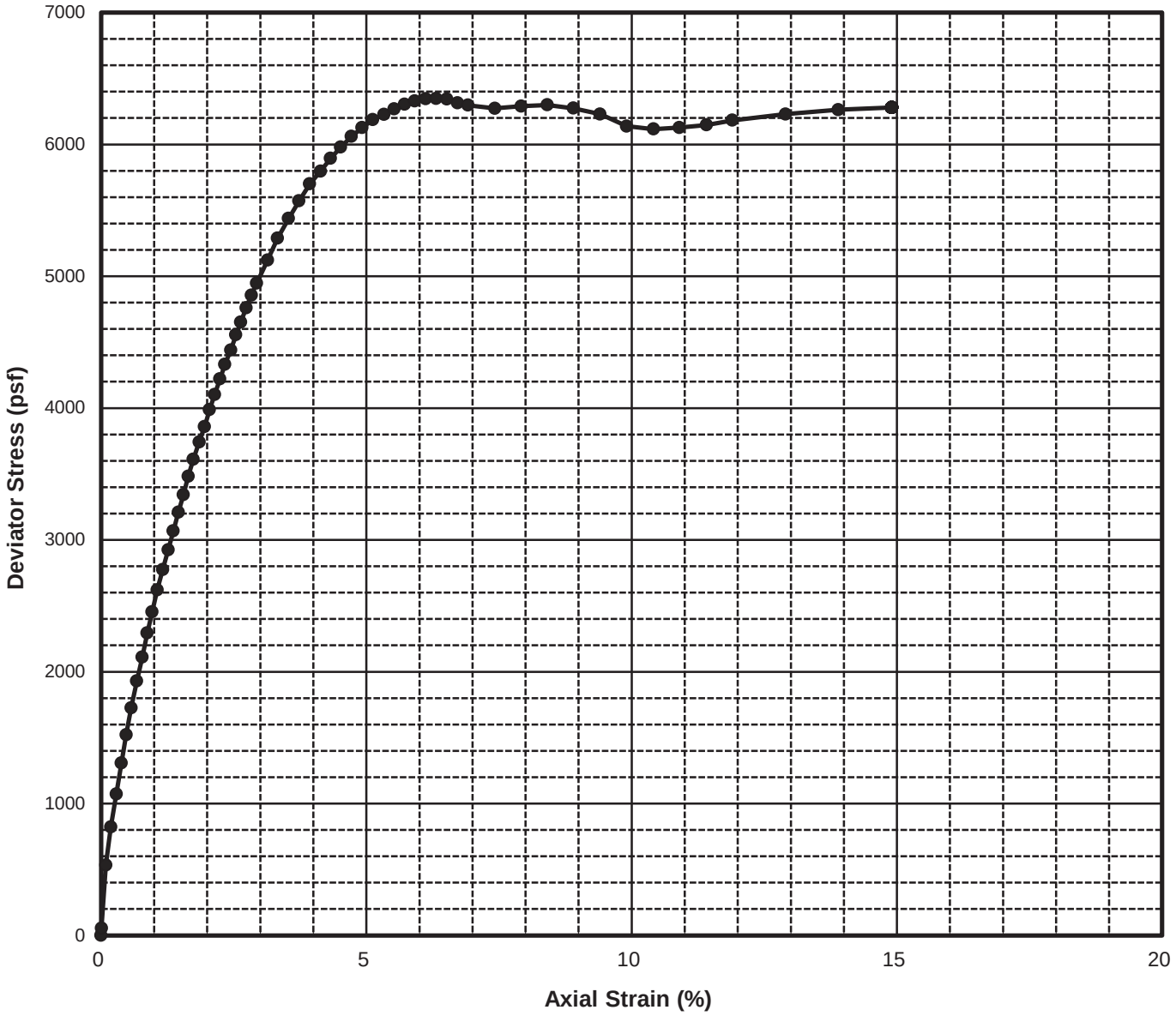
see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
11.2	5.981	2.401	124.9	60.8

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**			
Project Number:	**60422689**			
Boring Number:	**R24749G**	**Sample No.: 1**	**Depth (ft):**	**2.5**
Description and/or Classification:	**Olive brown sandy Clay (CL)**			

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850



Cell Pressure (psf) = 720

Strain Rate (%/min) = 0.99

Axial Strain during confinment (%): 0.15

Peak Deviator Stress (psf): 6347

Failure Sketch

see photo

Water Content (%)	Length (in)	Diameter (in)	Wet Unit Weight (pcf)	Degree of Saturation (%)
11.0	6.061	2.405	132.2	71.8

assumed Specific Gravity, Gs = 2.70

Project Name:	**Former Kast Property**				
Project Number:	**60422689**				
Boring Number:	**R24752G**	**Sample No.:**	**3**	**Depth (ft):**	**5.0**
Description and/or Classification:	**Dark brown Clay (CL)**				

UNCONSOLIDATED - UNDRAINED TRIAXIAL COMPRESSION TEST ASTM D2850

Soil Profiles

Calculated Strength and Settlement Parameters

244305G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	35.6

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	33	2.5	120	12.3	10	Clay		28	SPT	11.0	300	1.70	18	-	35	29	1210	Stiff Clay	
30	31	5	126.1	15	22	Clay	3.5		CAL	17.0	615	1.70	28	-	38		1870	Very Stiff Clay	
30	28	7.5	120	31.5	19	Sandy Silt			SPT	22.0	915	1.48	32	-	40		2420	Medium Dense Sand	
25	26	10	124.8	25.4	31	Sandy Silt	4.5		CAL	19.0	1227	1.28	24	-	37		2090	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

244321G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	36.0

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	34	2.5	120	25.5	22	Clay		24	SPT	25.0	300	1.70	42	-	42	30	2750	Very Stiff Clay	
30	31	5	114.6	15	33	Clay	4.5		CAL	26.0	587	1.70	44	-	42		2860	Very Stiff Clay	
30	29	7.5	120	11.7	21	Sandy Silt			SPT	24.0	887	1.50	36	-	41		2640	Medium Dense Sand	
25	26	10	122.0	27.6	35	Sandy Silt	4.25		CAL	22.0	1192	1.30	28	-	38		2420	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

244337G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	36.8

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	34	2.5	131.9	16.4	20	Clay	4.25	29	CAL	16.0	330	1.70	27	-	38	29	1760	Very Stiff Clay	
30	32	5	120	17.8	17	Clay			SPT	19.0	630	1.70	32	-	40		2090	Very Stiff Clay	
30	29	7.5	112.9	22.7	26	Sandy Silt	4.5		CAL	16.0	912	1.48	23	-	37		1760	Medium Dense Sand	
25	27	10	120	26.2	34	Sandy Silt			SPT	39.0	1212	1.28	50	-	43		4290	Dense Sand	
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Calculated Strength and Settlement Parameters

244357G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	37.5

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	35	2.5	120	11.5	26	Clay			SPT	30.0	300	1.70	50	-	43		3300	Very Stiff Clay	
35	33	5	135.1	11	41	Clay	4.5	23	CAL	33.0	638	1.70	50	-	43	30	3630	Hard Clay	
30	30	7.5	120	23.2	19	Clay			SPT	22.0	938	1.46	32	-	40		2420	Very Stiff Clay	
30	28	10	123.2	13	46	Sand			CAL	29.0	1246	1.27	36	36	41		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

248348G 0

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	44.4

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	42	2.5	120	5.8	29	Sand			SPT	33.0	300	1.70	50	37	43		-	Dense Sand	
40	39	5	122.8	7.1	40	Sand			CAL	25.0	607	1.70	42	35	42		-	Medium Dense Sand	
35	37	7.5	120	14.1	30	Sand		15	SPT	35.0	907	1.48	50	37	43	33	-	Dense Sand	
35	34	10	132.1	16.3	39	Sand	3.25		CAL	25.0	1237	1.27	31	35	39		-	Medium Dense Sand	
30	29	15	120	16.7	27	Sand	1.5		SPT	31.0	1837	1.04	32	36	40		-	Dense Sand	
25	24	20	123.6	22.9	100	Clay	2.25		CAL	81.0	2455	0.90	50	-	43		8910	Hard Clay	
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Calculated Strength and Settlement Parameters

248360G 0

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 44.6

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	42	2.5	131.1	9.4	22	Sand	4.25		CAL	14.0	328	1.70	23	31	37		-	Medium Dense Sand	
40	40	5	120	11.5	8	Sand	1.0		SPT	9.0	628	1.70	15	30	34		-	Loose Sand	
35	37	7.5	131.0	16.5	13	Sand	1.0	13	CAL	8.0	955	1.45	11	29	32	34	-	Loose Sand	
35	34	11	120	8.1	14	Clay	1.0		SPT	16.0	1375	1.21	19	-	35		1760	Very Stiff Clay	
30	30	15	111.9	10.8	82	Clay			CAL	66.0	1823	1.05	50	-	43		7260	Hard Clay	
25	25	20	120	22.2	38	Clay	2.25		SPT	44.0	2423	0.91	39	-	41		4840	Hard Clay	
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Calculated Strength and Settlement Parameters

249345G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 45.3

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	43	2.5	136.1	8.7	53	Sand		4	CAL	34.0	340	1.70	50	37	43	42	-	Dense Sand	
40	40	5	120	10.1	20	Sand			SPT	23.0	640	1.70	39	34	41		-	Medium Dense Sand	
40	38	7.5	122.3	8.9	33	Sand			CAL	21.0	946	1.45	30	33	39		-	Medium Dense Sand	
35	35	10	120	11.6	35	Clay			SPT	40.0	1246	1.27	50	-	43		4400	Hard Clay	
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Calculated Strength and Settlement Parameters

249348G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205	Consistency	
Depth GWT ft	NE		

GSE (NAVD88) 46.1

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	44	2.5	120.0	10.8	23	Sand			SPT	26.0	300	1.70	44	35	42		-	Medium Dense Sand	
40	41	5	129	7.8	36	Sand		1	CAL	23.0	622	1.70	39	34	41	53	-	Medium Dense Sand	
40	39	7.5	120.0	9.8	17	Sand			SPT	19.0	922	1.47	27	33	38		-	Medium Dense Sand	
35	36	10	127	12.7	31	Clay			CAL	25.0	1238	1.27	31	-	39		2750	Very Stiff Clay	
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Calculated Strength and Settlement Parameters

249363G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	46.8

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	44	2.5	125.2	10.2	21	Sand			CAL	13.0	313	1.70	22	31	36		-	Medium Dense Sand	
40	42	5	120	11.2	5	Sand			SPT	5.0	613	1.70	8	28	31		-	Loose Sand	
40	39	7.5	127.2	16	14	Sand		10	CAL	8.0	931	1.47	11	29	32	36	-	Loose Sand	
35	37	10	120	14.1	15	Clay			SPT	17.0	1231	1.27	21	-	36		1870	Very Stiff Clay	
30	32	15	124.8	13.4	40	Clay			CAL	32.0	1855	1.04	33	-	40		3520	Hard Clay	
25	27	20	120	24.7	18	Clay			SPT	21.0	2455	0.90	18	-	35		2310	Very Stiff Clay	
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Calculated Strength and Settlement Parameters

249377G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	47.5

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	45	2.5	120	8.9	29	Sand			SPT	33.0	300	1.70	50	37	43		-	Dense Sand	
45	43	5	137.5	9.9	28	Sand			CAL	17.0	644	1.70	28	32	38		-	Medium Dense Sand	
40	40	7.5	120	10.7	24	Sand			SPT	28.0	944	1.46	40	36	42		-	Medium Dense Sand	
40	38	10	135.4	11.9	28	Sand		5	CAL	17.0	1282	1.25	21	32	36	40	-	Medium Dense Sand	
35	33	15	120	10.4	10	Sand			SPT	11.0	1882	1.03	11	30	32		-	Medium Dense Sand	
30	28	20	122.7	19.1	35	Clay			CAL	28.0	2496	0.90	25	-	37		3080	Very Stiff Clay	
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Calculated Strength and Settlement Parameters

249378G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency	
GSE (NAVD88)	47.6

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	45	2.5	128.9	7.5	50	Sand	4.5	2	CAL	32.0	322	1.70	50	37	43	47	-	Dense Sand	
45	43	5	120	8.5	16	Sand			SPT	18.0	622	1.70	30	33	39		-	Medium Dense Sand	
40	40	7.5	133.8	12.2	50	Sand			CAL	32.0	957	1.45	46	37	43		-	Dense Sand	
40	38	10	120	14.8	35	Clay			SPT	40.0	1257	1.26	50	-	43		4400	Hard Clay	
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Calculated Strength and Settlement Parameters

249412G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 47.8

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	45	2.5	120	10.7	23	Sand		6	SPT	26.0	300	1.70	44	35	42	39	-	Medium Dense Sand	
45	43	5	134.1	12.4	42	Clay	4.5		CAL	34.0	635	1.70	50	-	43		3740	Hard Clay	
40	40	7.5	120	11.8	22	Sand			SPT	25.0	935	1.46	36	35	41		-	Medium Dense Sand	
40	38	10	132.7	14.6	42	Sand			CAL	26.0	1267	1.26	32	35	40		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	37.8

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	35	2.5	133.3	15.2	24	Clay	4		CAL	19.0	333	1.70	32	-	40		2090	Very Stiff Clay	
35	33	5	120	20.3	5	Clay		16	SPT	5.0	633	1.70	8	-	31	33	550	Medium Stiff Clay	
30	30	7.5	128.5	16.5	19	Clay	4		CAL	15.0	955	1.45	21	-	36		1650	Stiff Clay	
30	28	10	120	29.2	20	Clay			SPT	23.0	1255	1.26	29	-	39		2530	Very Stiff Clay	
25	23	15	120.1	18.1	38	Sandy Silt	4.5		CAL	24.0	1855	1.04	24	-	37		2640	Medium Dense Sand	
20	18	20	120	4	44	Sand			SPT	51.0	2455	0.90	46	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

R24423G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	38.3

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	36	2.5	120	13.9	14	Clay			SPT	16.0	300	1.70	27	-	38		1760	Very Stiff Clay	
35	33	5	134	15.1	22	Sand			CAL	14.0	634	1.70	23	31	37		-	Medium Dense Sand	
30	31	7.5	120		20	Clay		13	SPT	23.0	934	1.46	33	-	40	34	2530	Very Stiff Clay	
30	28	10	133	13.3	36	Clay			CAL	29.0	1266	1.26	36	-	41		3190	Very Stiff Clay	
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Calculated Strength and Settlement Parameters

R24426G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

	Consistency		GSE (NAVD88)	39.0
Depth Bedrock ft	205			
Depth GWT ft	NE			

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	37	2.5	125.1	13.8	22	Sand	4.5	18	CAL	14.0	313	1.70	23	31	37	32	-	Medium Dense Sand	
35	34	5	120	18.7	9	Sand			SPT	10.0	613	1.70	17	30	35		-	Loose Sand	
30	32	7.5	135.7	12.4	22	Clay	4		CAL	17.0	952	1.45	24	-	37		1870	Very Stiff Clay	
30	29	10	120	17.7	15	Clay			SPT	17.0	1252	1.26	21	-	36		1870	Very Stiff Clay	
25	24	15	119.8	31	35	Clay	4.5		CAL	28.0	1851	1.04	29	-	39		3080	Very Stiff Clay	
20	19	20	120	9.8	35	Sandy Silt			SPT	40.0	2451	0.90	36	-	41		4400	Dense Sand	
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Calculated Strength and Settlement Parameters

R24508G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 40.3

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	38	2.5	120	11.1	7	Clay		14	SPT	8.0	300	1.70	13	-	33	33	880	Medium Stiff Clay	
35	35	5	132.0	15.4	18	Clay	3		CAL	14.0	630	1.70	23	-	37		1540	Stiff Clay	
35	33	7.5	120	14.1	18	Clay			SPT	21.0	930	1.47	30	-	39		2310	Very Stiff Clay	
30	30	10	130.0	13.4	30	Clay	4.25		CAL	24.0	1255	1.26	30	-	39		2640	Very Stiff Clay	
25	25	15	120	24.6	45	Clay			SPT	52.0	1855	1.04	50	-	43		5720	Hard Clay	
20	20	20	98.8	4.2	73	Sand			CAL	46.0	2349	0.92	42	38	42		-	Dense Sand	
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Calculated Strength and Settlement Parameters

R24509G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	40.2

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	38	2.5	133.8	9.1	40	Sand	4.5	13	CAL	25.0	335	1.70	42	35	42	34	-	Medium Dense Sand	
35	35	5	120	16.8	10	Clay			SPT	11.0	635	1.70	18	-	35		1210	Stiff Clay	
35	33	7.5	127.4	16.2	28	Clay	3.5		CAL	22.0	953	1.45	31	-	39		2420	Very Stiff Clay	
30	30	10	120	16.6	19	Clay			SPT	22.0	1253	1.26	27	-	38		2420	Very Stiff Clay	
25	25	15	127.9	16.3	59	Clay	4.5		CAL	48.0	1893	1.03	49	-	43		5280	Hard Clay	
20	20	20	120	3.5	66	Sand			SPT	77.0	2493	0.90	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

R24522G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	41.1

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	39	2.5	120	10.1	16	Clay			SPT	18.0	300	1.70	30	-	39		1980	Very Stiff Clay	
35	36	5	128.3	14.2	19	Clay	3.75		CAL	15.0	621	1.70	25	-	37		1650	Stiff Clay	
35	34	7.5	120	11.1	19	Sand		11	SPT	22.0	921	1.47	32	34	40	35	-	Medium Dense Sand	
30	31	10	128.8	12.7	17	Clay	1.5		CAL	13.0	1243	1.27	16	-	34		1430	Stiff Clay	
25	26	15	120	17.4	33	Sandy Silt			SPT	38.0	1843	1.04	39	-	41		4180	Dense Sand	
20	21	20	109.0	17.2	100	Sand			CAL	64.0	2388	0.92	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

R24609G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 42.1

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	40	2.5	133.1	11	31	Sand		7	CAL	19.0	333	1.70	32	33	40	38	-	Medium Dense Sand	
35	37	5	120	12.1	21	Clay			SPT	24.0	633	1.70	40	-	42		2640	Very Stiff Clay	
35	35	7.5	128.9	14.6	35	Sand			CAL	22.0	955	1.45	31	34	39		-	Medium Dense Sand	
30	32	10	120		15	Sand			SPT	17.0	1255	1.26	21	32	36		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

R24612G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 42.4

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	40	2.5	120	6.8	25	Sand		8	SPT	29.0	300	1.70	49	36	43	37	-	Medium Dense Sand	
35	37	5	121.3	10.2	100	Sand			CAL	64.0	603	1.70	50	38	43		-	Very Dense Sand	
35	35	7.5	120	8.9	18	Sand			SPT	21.0	903	1.49	31	33	39		-	Medium Dense Sand	
30	32	10	111.6	8.9	17	Sand			CAL	10.0	1182	1.30	13	30	33		-	Loose Sand	
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Calculated Strength and Settlement Parameters

R24706G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 43.2

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	41	2.5	113.0	6.3	31	Sand			CAL	19.0	283	1.70	32	33	40		-	Medium Dense Sand	
40	38	5	120	11.3	16	Sand		11	SPT	18.0	583	1.70	30	33	39	35	-	Medium Dense Sand	
35	36	7.5	133.9	13.9	30	Sand	4.5		CAL	19.0	917	1.48	28	33	38		-	Medium Dense Sand	
35	33	10	120	11.9	17	Sand			SPT	19.0	1217	1.28	24	33	37		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

R24709G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 43.1

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	41	2.5	120	8.9	22	Sand		4	SPT	25.0	300	1.70	42	35	42	42	-	Medium Dense Sand	
40	38	5	130.6	12.1	28	Sand			CAL	17.0	627	1.70	28	32	38		-	Medium Dense Sand	
35	36	7.5	120	12.5	23	Sand			SPT	26.0	927	1.47	38	35	41		-	Medium Dense Sand	
35	33	10	128.3	12.4	33	Sand			CAL	21.0	1247	1.27	26	33	38		-	Medium Dense Sand	
30	28	15	120	23.7	26	Clay			SPT	30.0	1847	1.04	31	-	39		3300	Very Stiff Clay	
25	23	20	97.8	6.7	51	Sand			CAL	32.0	2336	0.93	29	37	39		-	Dense Sand	
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Calculated Strength and Settlement Parameters

R24719G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	43.1

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	41	2.5	132.4	7.4	60	Sand			CAL	38.0	331	1.70	50	38	43		-	Dense Sand	
40	38	5	120	10.9	26	Sand			SPT	30.0	631	1.70	50	36	43		-	Medium Dense Sand	
35	36	7.5	126.9	12.2	47	Sand			CAL	30.0	948	1.45	43	36	42		-	Medium Dense Sand	
35	33	10	120	11.3	15	Sand		17	SPT	17.0	1248	1.27	21	32	36	32	-	Medium Dense Sand	
30	28	15	123.2	17.9	47	Clay	4.5		CAL	38.0	1864	1.04	39	-	41		4180	Hard Clay	
25	23	20	120	4.2	50	Sand			SPT	58.0	2464	0.90	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

R24732G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205	Consistency	
Depth GWT ft	NE	GSE (NAVD88)	44.1

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	42	2.5	126.9	9.7	55	Sand		12	CAL	35.0	317	1.70	50	37	43	35	-	Dense Sand	
40	39	5	120	13.2	25	Clay			SPT	29.0	617	1.70	49	-	43		3190	Very Stiff Clay	
35	37	7.5	128.3	13.2	35	Clay	4.5		CAL	28.0	938	1.46	40	-	42		3080	Very Stiff Clay	
35	34	10	120	10.3	19	Sand			SPT	22.0	1238	1.27	27	34	38		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

R24739G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 44.0

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	42	2.5	120	6.4	30	Sand			SPT	35.0	300	1.70	50	37	43		-	Dense Sand	
40	39	5	120.3	7.1	48	Sand	4.5		CAL	30.0	601	1.70	50	36	43		-	Medium Dense Sand	
35	37	7.5	120	10.8	42	Sand		15	SPT	49.0	901	1.49	50	38	43	33	-	Dense Sand	
35	34	10	128.3	10	49	Clay	4.5		CAL	40.0	1222	1.28	50	-	43		4400	Hard Clay	
30	29	15	120	11.9	32	Sandy Silt			SPT	37.0	1822	1.05	38	-	41		4070	Dense Sand	
25	24	20	117.9	11.5	50	Sand	4.5		CAL	32.0	2411	0.91	29	37	39		-	Dense Sand	
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Calculated Strength and Settlement Parameters

R24749G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 45.9

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	43	2.5	124.9	11.2	21	Sand	4.5	10	CAL	13.0	312	1.70	22	31	36	36	-	Medium Dense Sand	
40	41	5	120	12.3	11	Sand			SPT	12.0	612	1.70	20	31	36		-	Medium Dense Sand	
40	38	7.5	129.6	16.1	12	Sand	1.25		CAL	7.0	936	1.46	10	29	32		-	Loose Sand	
35	36	10	120	15.5	30	Clay			SPT	35.0	1236	1.27	44	-	42		3850	Hard Clay	
30	31	15	121.8	15.2	53	Clay	4.5		CAL	43.0	1845	1.04	44	-	42		4730	Hard Clay	
25	26	20	120	4.2	38	Sand			SPT	44.0	2445	0.90	39	38	41		-	Dense Sand	
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Calculated Strength and Settlement Parameters

R24752G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	45.9

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	43	2.5	120	15.2	8	Sand	0.5	10	SPT	9.0	300	1.70	15	30	34	36	-	Loose Sand	
40	41	5	132.2	11	36	Sand	4.5		CAL	23.0	631	1.70	39	34	41		-	Medium Dense Sand	
40	38	7.5	120	11.4	23	Sand	3		SPT	26.0	931	1.47	38	35	41		-	Medium Dense Sand	
35	36	10	129.5	14.8	30	Sand	4		CAL	19.0	1254	1.26	23	33	37		-	Medium Dense Sand	
30	31	15	120	14.4	30	Clay			SPT	35.0	1854	1.04	36	-	41		3850	Hard Clay	
25	26	20	112.7	23.1	66	Clay	4.5		CAL	53.0	2418	0.91	48	-	43		5830	Hard Clay	
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Calculated Strength and Settlement Parameters

M24406G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 35.2

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	33	2.5	122.0	8.7	30	Clay	4.5		CAL	24.0	305	1.70	40	-	42		2640	Very Stiff Clay	
30	30	5	120	10.9	20	Clay		22	SPT	23.0	605	1.70	39	-	41	31	2530	Very Stiff Clay	
30	28	7.5	115.0	8	39	Sand			CAL	25.0	893	1.50	37	35	41		-	Medium Dense Sand	
25	25	10	120	15.2	19	Sand			SPT	22.0	1193	1.30	28	34	38		-	Medium Dense Sand	
20	20	15	125.7	19.9	60	Sand			CAL	38.0	1821	1.05	39	38	41		-	Dense Sand	
15	15	20	120	12.3	49	Sand			SPT	57.0	2421	0.91	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

M24411G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	34.4

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
30	32	2.5	120	11.1	20	Clay		25	SPT	23.0	300	1.70	39	-	41	30	2530	Very Stiff Clay	
30	29	5	128.9	13.7	37	Clay	4.5		CAL	30.0	622	1.70	50	-	43		3300	Very Stiff Clay	
25	27	7.5	120	15	20	Sandy Silt			SPT	23.0	922	1.47	33	-	40		2530	Medium Dense Sand	
25	24	10	122.9	27.4	27	Sandy Silt	4.5		CAL	17.0	1230	1.28	21	-	36		1870	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

M24512G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	35.5

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	33	2.5	120	9.8	21	Clay		24	SPT	24.0	300	1.70	40	-	42	30	2640	Very Stiff Clay	
30	31	5	132.0	11.3	41	Sand	4.5		CAL	26.0	630	1.70	44	35	42		-	Medium Dense Sand	
30	28	7.5	120	18	19	Sand			SPT	22.0	930	1.47	32	34	40		-	Medium Dense Sand	
25	26	10	122.5	29.9	34	Clay	4.5		CAL	27.0	1236	1.27	34	-	40		2970	Very Stiff Clay	
20	21	15	120	10	35	Sand			SPT	40.0	1836	1.04	41	38	42		-	Dense Sand	
15	16	20	113.8	11.7	62	Sand			CAL	39.0	2405	0.91	35	38	40		-	Dense Sand	
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Calculated Strength and Settlement Parameters

M24517G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	35.2

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	33	2.5	120	9.8	13	Clay		22	SPT	15.0	300	1.70	25	-	37	31	1650	Stiff Clay	
30	30	5	128.5	14.5	14	Clay	4.5		CAL	11.0	621	1.70	18	-	35		1210	Stiff Clay	
30	28	7.5	120	16	17	Clay			SPT	19.0	921	1.47	27	-	38		2090	Very Stiff Clay	
25	25	10	126.1	23.8	28	Sandy Silt	4.25		CAL	17.0	1237	1.27	21	-	36		1870	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

M24606G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205	Consistency	
Depth GWT ft	NE	GSE (NAVD88)	36.8

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	34	2.5	120	8.9	12	Clay		23	SPT	14.0	300	1.70	23	-	37	30	1540	Stiff Clay	
30	32	5	116.7	10.6	25	Clay	4.0		CAL	20.0	592	1.70	34	-	40		2200	Very Stiff Clay	
30	29	7.5	120	7.9	16	Sand			SPT	18.0	892	1.50	26	33	38		-	Medium Dense Sand	
25	27	10	118.1	25.7	39	Sand			CAL	25.0	1187	1.30	32	35	40		-	Medium Dense Sand	
20	22	15	120	5.5	37	Sand			SPT	43.0	1787	1.06	45	38	42		-	Dense Sand	
15	17	20	99.7	7.2	81	Sand			CAL	51.0	2286	0.94	47	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

M24613G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 36.0

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	34	2.5	122.2	16	31	Clay	4.5	32	CAL	25.0	306	1.70	42	-	42	28	2750	Very Stiff Clay	
30	31	5	120	16.3	18	Clay			SPT	21.0	606	1.70	35	-	40		2310	Very Stiff Clay	
30	29	7.5	124.7	19.1	42	Sand	4.5		CAL	26.0	917	1.48	38	35	41		-	Medium Dense Sand	
25	26	10	120	21.1	22	Sand			SPT	25.0	1217	1.28	32	35	40		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

M24616G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205	Consistency	
Depth GWT ft	NE		

GSE (NAVD88): 37.4

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	35	2.5	120	14.3	16	Clay		25	SPT	18.0	300	1.70	30	-	39	30	1980	Very Stiff Clay	
30	32	5	121.8	9.8	26	Sand			CAL	16.0	605	1.70	27	32	38		-	Medium Dense Sand	
30	30	7.5	120	16.8	21	Sand			SPT	24.0	905	1.49	35	34	40		-	Medium Dense Sand	
25	27	10	124.0	19	36	Sand	4.5		CAL	23.0	1215	1.28	29	34	39		-	Medium Dense Sand	
20	22	15	120	10.2	28	Sand			SPT	32.0	1815	1.05	33	37	40		-	Dense Sand	
15	17	20	112.7	8.6	52	Sand			CAL	33.0	2378	0.92	30	37	39		-	Dense Sand	
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Calculated Strength and Settlement Parameters

M24628G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	37.6

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	35	2.5	125.7	6	55	Clay	4.5	22	CAL	44.0	314	1.70	50	-	43	31	4840	Hard Clay	
35	33	5	120	29.9	9	Clay			SPT	10.0	614	1.70	17	-	35		1100	Stiff Clay	
30	30	7.5	124.6	19.8	42	Sand			CAL	26.0	926	1.47	38	35	41		-	Medium Dense Sand	
30	28	10	120	24	34	Sand			SPT	39.0	1226	1.28	49	38	43		-	Dense Sand	
25	23	15	99.6	4.8	100	Sand			CAL	64.0	1724	1.08	50	38	43		-	Very Dense Sand	
20	18	20	120	9.2	38	Sand			SPT	44.0	2324	0.93	40	38	42		-	Dense Sand	
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Calculated Strength and Settlement Parameters

M24703G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency	
GSE (NAVD88)	38.0

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	36	2.5	120	9.7	15	Sand		18	SPT	17.0	300	1.70	28	32	38	32	-	Medium Dense Sand	
35	33	5	116.3	12.9	15	Sand			CAL	9.0	591	1.70	15	30	34		-	Loose Sand	
30	31	7.5	120	22.5	19	Sand			SPT	22.0	891	1.50	32	34	40		-	Medium Dense Sand	
30	28	10	113.2	10.6	35	Sand			CAL	22.0	1174	1.31	28	34	38		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

M24706G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	39.1

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	37	2.5	131.8	11.4	40	Clay	4.5	22	CAL	32.0	330	1.70	50	-	43	31	3520	Hard Clay	
35	34	5	120	5	12	Sand			SPT	14.0	630	1.70	23	31	37		-	Medium Dense Sand	
30	32	7.5	111.2	13	38	Sand	4.5		CAL	24.0	908	1.48	35	34	40		-	Medium Dense Sand	
30	29	10	120	17.4	31	Sand			SPT	36.0	1208	1.29	46	38	43		-	Dense Sand	
25	24	15	125.3	23.3	67	Sand	4.5		CAL	42.0	1834	1.04	43	38	42		-	Dense Sand	
20	19	20	120	10.7	58	Sand			SPT	67.0	2434	0.91	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

M24716G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 40.0

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	38	2.5	120	17.7	13	Clay		22	SPT	15.0	300	1.70	25	-	37	31	1650	Stiff Clay	
35	35	5	130.9	13.2	27	Clay	4.5		CAL	22.0	627	1.70	37	-	41		2420	Very Stiff Clay	
35	33	7.5	120	23.6	30	Sand			SPT	35.0	927	1.47	50	37	43		-	Dense Sand	
30	30	10	114.9	8.8	66	Sand			CAL	42.0	1215	1.28	50	38	43		-	Dense Sand	
25	25	15	120	15.8	34	Sand			SPT	39.0	1815	1.05	40	38	42		-	Dense Sand	
20	20	20	101.7	6.9	90	Sand			CAL	57.0	2323	0.93	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

M24717G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205	Consistency	GSE (NAVD88)	40
Depth GWT ft	NE			

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	38	2.5	120	15.2	20	Clay		15	SPT	23.0	300	1.70	39	-	41	33	2530	Very Stiff Clay	
35	35	5	114.9	9.1	24	Sand			CAL	15.0	587	1.70	25	32	37		-	Medium Dense Sand	
35	33	7.5	120	26	18	Sandy Silt			SPT	21.0	887	1.50	31	-	39		2310	Medium Dense Sand	
30	30	10	107.7	10.2	36	Sand			CAL	23.0	1157	1.32	30	34	39		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

M24733G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 41.4

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	39	2.5	129.9	15.3	27	Sand	2.5	16	CAL	17.0	325	1.70	28	32	38	33	-	Medium Dense Sand	
35	36	5	132.7	13.6	42	Sand			CAL	26.0	657	1.70	44	35	42		-	Medium Dense Sand	
35	34	7.5	127.8	8.7	41	Sand			CAL	26.0	976	1.43	37	35	41		-	Medium Dense Sand	
30	31	10	120	16.9	21	Sand			SPT	24.0	1276	1.25	30	34	39		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

M24744G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 43.8

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	41	2.5	120	5.5	13	Sand		14	SPT	15.0	300	1.70	25	32	37	33	-	Medium Dense Sand	
40	39	5	120.1	10.4	14	Sand	4.5		CAL	8.0	600	1.70	13	29	33		-	Loose Sand	
35	36	7.5	120	13.1	20	Sand			SPT	23.0	900	1.49	34	34	40		-	Medium Dense Sand	
35	34	10	120.9	8.9	35	Sand			CAL	22.0	1203	1.29	28	34	38		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

N24402G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 36.7

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	34	2.5	120	12.5	14	Clay		19	SPT	16.0	300	1.70	27	-	38	32	1760	Very Stiff Clay	
30	32	5	132.2	17.3	14	Clay	1.75		CAL	11.0	631	1.70	18	-	35		1210	Stiff Clay	
30	29	7.5	120		35	Clay			SPT	40.0	931	1.47	50	-	43		4400	Hard Clay	
25	27	10	120	12.8	37	Clay			CAL	30.0	1231	1.27	38	-	41		3300	Very Stiff Clay	
20	22	15	120	3.2	34	Sand			SPT	39.0	1831	1.05	40	38	42		-	Dense Sand	
15	17	20	100.2	3.8	100	Sand			CAL	64.0	2332	0.93	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

N24409G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 36.6

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	34	2.5	128.9	12.5	23	Sand	3.25	16	CAL	14.0	322	1.70	23	31	37	33	-	Medium Dense Sand	
30	32	5	120	15.6	19	Clay			SPT	22.0	622	1.70	37	-	41		2420	Very Stiff Clay	
30	29	7.5	120	12.2	15	Clay	2.75		CAL	12.0	922	1.47	17	-	35		1320	Stiff Clay	
25	27	10	120	27	15	Sandy Silt			SPT	17.0	1222	1.28	21	-	36		1870	Medium Dense Sand	
20	22	15	117.4	18.2	30	Sandy Silt			CAL	19.0	1809	1.05	19	-	35		2090	Medium Dense Sand	
15	17	20	120	6.7	46	Sand			SPT	53.0	2409	0.91	48	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

N24503G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 38.8

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	36	2.5	121.1	6.4	61	Sand	4.5	17	CAL	39.0	303	1.70	50	38	43	32	-	Dense Sand	
35	34	5	120	8.9	36	Clay			SPT	42.0	603	1.70	50	-	43		4620	Hard Clay	
30	31	7.5	133.2	15.7	23	Clay	3.25		CAL	18.0	936	1.46	26	-	38		1980	Very Stiff Clay	
30	29	10	120	16.2	57	Clay			SPT	66.0	1236	1.27	50	-	43		7260	Hard Clay	
25	24	15	125.4	23.2	29	Clay	4.5		CAL	23.0	1863	1.04	23	-	37		2530	Very Stiff Clay	
20	19	20	120	4.7	34	Sand			SPT	39.0	2463	0.90	35	38	40		-	Dense Sand	
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Calculated Strength and Settlement Parameters

N24508G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	39.7

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	37	2.5	120	13.5	14	Clay		23	SPT	16.0	300	1.70	27	-	38	30	1760	Very Stiff Clay	
35	35	5	131.3	14	15	Clay	1.75		CAL	12.0	628	1.70	20	-	36		1320	Stiff Clay	
30	32	7.5	120	17.8	14	Clay			SPT	16.0	928	1.47	23	-	37		1760	Very Stiff Clay	
30	30	10	128.1	16.4	26	Clay	3.25		CAL	21.0	1249	1.27	26	-	38		2310	Very Stiff Clay	
25	25	15	120	22.7	31	Clay			SPT	36.0	1849	1.04	37	-	41		3960	Hard Clay	
20	20	20	113.4	10.8	55	Sand			CAL	35.0	2416	0.91	31	37	39		-	Dense Sand	
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Calculated Strength and Settlement Parameters

N24522G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	40.7

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	38	2.5	120	9.1	17	Sand		18	SPT	19.0	300	1.70	32	33	40	32	-	Medium Dense Sand	
35	36	5	130.9	13.2	34	Clay	4.25		CAL	27.0	627	1.70	45	-	42		2970	Very Stiff Clay	
35	33	7.5	120	13.6	14	Clay			SPT	16.0	927	1.47	23	-	37		1760	Very Stiff Clay	
30	31	10	129.4	15.3	25	Clay	4		CAL	20.0	1251	1.26	25	-	37		2200	Very Stiff Clay	
25	26	15	120	24.7	37	Sandy Silt			SPT	43.0	1851	1.04	44	-	42		4730	Dense Sand	
20	21	20	95.7	3.3	100	Sand			CAL	64.0	2329	0.93	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

N24523G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	40.3

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	38	2.5	125.7	11.2	33	Clay	4.5	18	CAL	26.0	314	1.70	44	-	42	32	2860	Very Stiff Clay	
35	35	5	120	17.1	12	Clay			SPT	14.0	614	1.70	23	-	37		1540	Stiff Clay	
35	33	7.5	132.8	15.0	16	Clay	4.25		CAL	13.0	946	1.45	18	-	35		1430	Stiff Clay	
30	30	10	120	17.2	15	Clay			SPT	17.0	1246	1.27	21	-	36		1870	Very Stiff Clay	
25	25	15	120.6	30.4	43	Sandy Silt	4.25		CAL	27.0	1849	1.04	28	-	38		2970	Medium Dense Sand	
20	20	20	120	4.0	39	Sand			SPT	45.0	2449	0.90	40	38	42		-	Dense Sand	
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Calculated Strength and Settlement Parameters

N24603G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	41.1

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	39	2.5	133.1	10.5	65	Clay	4.5		CAL	53.0	333	1.70	50	-	43		5830	Hard Clay	
35	36	5	120	8.2	31	Sand		8	SPT	36.0	633	1.70	50	38	43	37	-	Dense Sand	
35	34	7.5	113.9	9.9	24	Sand			CAL	15.0	918	1.48	22	32	36		-	Medium Dense Sand	
30	31	10	120	6.7	23	Sand			SPT	26.0	1218	1.28	33	35	40		-	Medium Dense Sand	
25	26	15	122.0	26.9	38	Sandy Silt	4.5		CAL	24.0	1828	1.05	25	-	37		2640	Medium Dense Sand	
20	21	20	120	6.0	43	Sand			SPT	50.0	2428	0.91	45	38	42		-	Dense Sand	
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Calculated Strength and Settlement Parameters

N24613G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	36.0

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	34	2.5	120		15	Sand		16	SPT	17.0	300	1.70	28	32	38	33	-	Medium Dense Sand	
30	31	5	120	11.7	31	Sand	4.5		CAL	19.0	600	1.70	32	33	40		-	Medium Dense Sand	
30	29	7.5	120		26	Sand			SPT	30.0	900	1.49	44	36	42		-	Medium Dense Sand	
25	26	10	120	7.4	32	Sand			CAL	20.0	1200	1.29	25	33	37		-	Medium Dense Sand	
20	21	15	120		54	Sandy Silt			SPT	63.0	1800	1.05	50	-	43		6930	Very Dense Sand	
15	16	20	120	10.5	78	Sand			CAL	50.0	2400	0.91	45	38	42		-	Dense Sand	
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Calculated Strength and Settlement Parameters

N24622G

Input	Pa	2000	psf				
Output	Pa	14	psi			Consistency	GSE (NAVD88) 42.1
Cs for CAL (SAND)		0.55		Depth Bedrock ft	205		
Cs for CAL (CLAY)		0.7		Depth GWT ft	NE		
Hammer Efficiency		70					

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	40	2.5	138.5	10.5	50	Sand	4.5		CAL	32.0	346	1.70	50	37	43		-	Dense Sand	
35	37	5	120	14.4	11	Sand		14	SPT	12.0	646	1.70	20	31	36	33	-	Medium Dense Sand	
30	32	10	120	5.1	30	Sand			SPT	35.0	1246	1.27	44	37	42		-	Dense Sand	
25	26	16.5	124.3	26	66	Sandy Silt	4.5		CAL	42.0	2054	0.99	41	-	42		4620	Dense Sand	
20	22	20	120	6.2	51	Sand			SPT	59.0	2474	0.90	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

N24629G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency	

GSE (NAVD88)	42.0

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	40	2.5	128.1	8.2	48	Clay	4.5		CAL	39.0	320	1.70	50	-	43		4290	Hard Clay	
35	37	5	120	11.6	9	Clay			SPT	10.0	620	1.70	17	-	35		1100	Stiff Clay	
35	35	7.5	129.5	14.4	37	Sand			CAL	23.0	944	1.46	33	34	40		-	Medium Dense Sand	
30	32	10	120		37	Sand			SPT	43.0	1244	1.27	50	38	43		-	Dense Sand	
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Calculated Strength and Settlement Parameters

N24703G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 42.4

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	40	2.5	120	17.1	15	Sand			SPT	17.0	300	1.70	28	32	38		-	Medium Dense Sand	
35	37	5	132.9	13.2	28	Sand	3.25		CAL	17.0	632	1.70	28	32	38		-	Medium Dense Sand	
35	35	7.5	120	13.2	20	Sand		8	SPT	23.0	932	1.46	33	34	40	37	-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

N24712G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 43.0

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	41	2.5	120	8.4	13	Sand		12	SPT	15.0	300	1.70	25	32	37	35	-	Medium Dense Sand	
40	38	5	135.7	11.6	30	Sand	4.5		CAL	19.0	639	1.70	32	33	40		-	Medium Dense Sand	
35	36	7.5	120	9.3	10	Clay			SPT	11.0	939	1.46	16	-	34		1210	Stiff Clay	
35	33	10	123.3	10.9	25	Sand			CAL	16.0	1248	1.27	20	32	36		-	Medium Dense Sand	
30	28	15	120	16.3	26	Sandy Silt			SPT	30.0	1848	1.04	31	-	39		3300	Medium Dense Sand	
25	23	20	99.6	2.5	84	Sand			CAL	53.0	2346	0.92	48	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

N24729G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	43.1

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	41	2.5	135.7	11.7	37	Sand	4.5		CAL	23.0	339	1.70	39	34	41		-	Medium Dense Sand	
40	38	5	120	13	26	Sand		13	SPT	30.0	639	1.70	50	36	43	34	-	Medium Dense Sand	
35	36	7.5	129.8	12.2	44	Sand	4.5		CAL	28.0	964	1.44	40	36	42		-	Medium Dense Sand	
35	33	10	120	8.3	18	Sand			SPT	21.0	1264	1.26	26	33	38		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

N24732G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205	Consistency	
Depth GWT ft	NE		

GSE (NAVD88) 43.9

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	41	2.5	120	11.1	23	Sand		4	SPT	26.0	300	1.70	44	35	42	42	-	Medium Dense Sand	
40	39	5	134.2	14.4	35	Sand	4.5		CAL	22.0	636	1.70	37	34	41		-	Medium Dense Sand	
35	36	7.5	120	14.6	24	Sand			SPT	28.0	936	1.46	40	36	42		-	Medium Dense Sand	
35	34	10	120.2	8.4	33	Sand			CAL	21.0	1236	1.27	26	33	38		-	Medium Dense Sand	
30	29	15	120	22.1	33	Sandy Silt			SPT	38.0	1836	1.04	39	-	41		4180	Dense Sand	
25	24	20	118.9	15.6	66	Sandy Silt	2.5		CAL	42.0	2431	0.91	38	-	41		4620	Dense Sand	
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Calculated Strength and Settlement Parameters

N24803G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	44.4

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	42	2.5	138.4	11.1	32	Sand	3.25	6	CAL	20.0	346	1.70	34	33	40	39	-	Medium Dense Sand	
40	39	5	120	12.2	18	Sand			SPT	21.0	646	1.70	35	33	40		-	Medium Dense Sand	
35	37	7.5	137.0	13.5	50	Sand	4.5		CAL	32.0	989	1.42	45	37	42		-	Dense Sand	
35	34	10	120	19	18	Sand			SPT	21.0	1289	1.25	26	33	38		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

P24402G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 38.5

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	36	2.5	114.8	13.4	25	Clay	4.5	16	CAL	20.0	287	1.70	34	-	40	33	2200	Very Stiff Clay	
35	34	5	120		18	Clay			SPT	21.0	587	1.70	35	-	40		2310	Very Stiff Clay	
30	31	7.5	127.9	16.4	32	Clay	4.5		CAL	26.0	907	1.49	38	-	41		2860	Very Stiff Clay	
30	29	10	120	6.7	29	Sand			SPT	33.0	1207	1.29	42	37	42		-	Dense Sand	
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Calculated Strength and Settlement Parameters

P24411G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 38.7

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	36	2.5	120	10.3	12	Clay			SPT	14.0	300	1.70	23	-	37		1540	Stiff Clay	
35	34	5	134.6	15.4	18	Clay	3		CAL	14.0	637	1.70	23	-	37		1540	Stiff Clay	
30	31	7.5	120	16.1	21	Clay		6	SPT	24.0	937	1.46	35	-	40	39	2640	Very Stiff Clay	
30	29	10	107.5	6.7	41	Sand			CAL	26.0	1205	1.29	33	35	40		-	Medium Dense Sand	
25	24	15	120	26.3	29	Clay			SPT	33.0	1805	1.05	34	-	40		3630	Hard Clay	
20	19	20	99.3	5.1	88	Sand			CAL	56.0	2302	0.93	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

P24421G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	38.7

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	36	2.5	133.6	12.4	42	Clay	4.5	36	CAL	34.0	334	1.70	50	-	43	28	3740	Hard Clay	
35	34	5	120	14.2	16	Clay			SPT	18.0	634	1.70	30	-	39		1980	Very Stiff Clay	
30	31	7.5	126.9	17.9	40	Sandy Silt			CAL	25.0	951	1.45	36	-	41		2750	Medium Dense Sand	
30	29	10	120	11.3	16	Sandy Silt			SPT	18.0	1251	1.26	22	-	36		1980	Medium Dense Sand	
25	24	15	121.5	32.2	39	Sandy Silt	4.5		CAL	25.0	1859	1.04	25	-	37		2750	Medium Dense Sand	
20	19	20	120	26.1	44	Sand			SPT	51.0	2459	0.90	45	38	42		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

P24426G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 39.1

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	37	2.5	120	9.5	37	Clay			SPT	43.0	300	1.70	50	-	43		4730	Hard Clay	
35	34	5	131.2	15.4	49	Clay	4.5	18	CAL	40.0	628	1.70	50	-	43	32	4400	Hard Clay	
30	32	7.5	120	12.7	19	Clay			SPT	22.0	928	1.47	32	-	40		2420	Very Stiff Clay	
30	29	10	115.0	4.6	28	Sand			CAL	17.0	1216	1.28	21	32	36		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

P24503G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205	Consistency	
Depth GWT ft	NE		
GSE (NAVD88)	39.7		

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
35	37	2.5	132.2	17.4	19	Sand	2	17	CAL	12.0	331	1.70	20	31	36	32	-	Medium Dense Sand	
35	35	5	120	16	13	Sand			SPT	15.0	631	1.70	25	32	37		-	Medium Dense Sand	
30	32	7.5	131.8	18	16	Sand			CAL	10.0	960	1.44	14	30	33		-	Loose Sand	
30	30	10	120	20.4	13	Sand			SPT	15.0	1260	1.26	18	32	35		-	Medium Dense Sand	
25	25	15	100.9	11	72	Sand			CAL	46.0	1765	1.06	48	38	43		-	Dense Sand	
20	20	20	120	5.4	91	Sand			SPT	100.0	2365	0.92	50	38	43		-	Very Dense Sand	
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Calculated Strength and Settlement Parameters

P24533G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 42.9

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	40	2.5	120	8.3	15	Sand		10	SPT	17.0	300	1.70	28	32	38	36	-	Medium Dense Sand	
40	38	5	134.7	13.9	43	Sand			CAL	27.0	637	1.70	45	35	42		-	Medium Dense Sand	
35	35	7.5	120	6.5	10	Sand			SPT	11.0	937	1.46	16	30	34		-	Medium Dense Sand	
35	33	10	105.2	4.4	38	Sand			CAL	24.0	1200	1.29	30	34	39		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

P24608G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 43.4

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	41	2.5	127.7	16.2	8	Sand	2	12	CAL	5.0	319	1.70	8	28	31	35	-	Loose Sand	
40	38	5	120	16.1	6	Sand			SPT	7.0	619	1.70	11	29	32		-	Loose Sand	
35	36	7.5	127.1	11.4	22	Sand			CAL	14.0	937	1.46	20	31	36		-	Medium Dense Sand	
35	33	10	120	7.9	15	Sand			SPT	17.0	1237	1.27	21	32	36		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

P24618G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	43.9

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	41	2.5	120	12.6	11	Clay			SPT	12.0	300	1.70	20	-	36		1320	Stiff Clay	
40	39	5	130.6	14.7	13	Sand	2		CAL	8.0	627	1.70	13	29	33		-	Loose Sand	
35	36	7.5	120	9.8	20	Sand		3	SPT	23.0	927	1.47	33	34	40	44	-	Medium Dense Sand	
35	34	10	129.0	13.6	32	Sand	4.5		CAL	20.0	1249	1.27	25	33	37		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

P24708G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88): 44.9

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	42	2.5	128.4	9.6	23	Sand		15	CAL	14.0	321	1.70	23	31	37	33	-	Medium Dense Sand	
40	40	5	120	12.8	15	Sand			SPT	17.0	621	1.70	28	32	38		-	Medium Dense Sand	
35	37	7.5	126.8	12.4	32	Sand	4.5		CAL	20.0	938	1.46	29	33	39		-	Medium Dense Sand	
35	35	10	120	15.5	14	Clay			SPT	16.0	1238	1.27	20	-	36		1760	Very Stiff Clay	
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Calculated Strength and Settlement Parameters

P24709G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 44.4

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	42	2.5	120	12.5	7	Clay			SPT	8.0	300	1.70	13	-	33		880	Medium Stiff Clay	
40	39	5	132.4	12.3	15	Sand	4		CAL	9.0	631	1.70	15	30	34		-	Loose Sand	
35	37	7.5	120	12.4	24	Sand		5	SPT	28.0	931	1.47	41	36	42	40	-	Medium Dense Sand	
35	34	10	128.2	15	29	Sand			CAL	18.0	1252	1.26	22	33	36		-	Medium Dense Sand	
30	29	15	120	4.7	10	Sand			SPT	11.0	1852	1.04	11	30	32		-	Medium Dense Sand	
25	24	20	113.0	14.1	37	Sand			CAL	23.0	2417	0.91	20	34	36		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

P24719G

Input	Pa	2000	psf				
Output	Pa	14	psi			Consistency	GSE (NAVD88) 44.9
Cs for CAL (SAND)		0.55		Depth Bedrock ft	205		
Cs for CAL (CLAY)		0.7		Depth GWT ft	NE		
Hammer Efficiency		70					

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
40	42	2.5	129.2	9	33	Sand	4.5	12	CAL	21.0	323	1.70	35	33	40	35	-	Medium Dense Sand	
40	40	5	120	9.5	19	Clay			SPT	22.0	623	1.70	37	-	41		2420	Very Stiff Clay	
35	37	7.5	135.4	11	38	Clay	4.5		CAL	31.0	962	1.44	44	-	42		3410	Hard Clay	
35	35	10	120	11.8	23	Clay			SPT	26.0	1262	1.26	32	-	40		2860	Very Stiff Clay	
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Calculated Strength and Settlement Parameters

P24722G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 45.2

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	43	2.5	126.3	9	57	Sand	4.5		CAL	36.0	316	1.70	50	38	43		-	Dense Sand	
40	40	5	120	8.9	22	Sand		1	SPT	25.0	616	1.70	42	35	42	53	-	Medium Dense Sand	
40	38	7.5	130.8	10.9	40	Sand			CAL	25.0	943	1.46	36	35	41		-	Medium Dense Sand	
35	35	10	120	14	28	Clay			SPT	32.0	1243	1.27	40	-	42		3520	Hard Clay	
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Calculated Strength and Settlement Parameters

P24738G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	46.0

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	44	2.5	120	14.6	8	Sand			SPT	9.0	300	1.70	15	30	34		-	Loose Sand	
40	41	5	121.4	12.8	28	Sand	3		CAL	17.0	604	1.70	28	32	38		-	Medium Dense Sand	
40	39	7.5	120	14.1	19	Sand			SPT	22.0	904	1.49	32	34	40		-	Medium Dense Sand	
35	36	10	113.8	15	30	Sand	4.5		CAL	19.0	1188	1.30	24	33	37		-	Medium Dense Sand	
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Calculated Strength and Settlement Parameters

P24803G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 46.3

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	44	2.5	139.5	12	9	Sand			CAL	5.0	349	1.70	8	28	31		-	Loose Sand	
40	41	5	120	12.7	20	Sand		1	SPT	23.0	649	1.70	39	34	41	53	-	Medium Dense Sand	
40	39	7.5	134.4	14	32	Sand			CAL	20.0	985	1.43	28	33	38		-	Medium Dense Sand	
35	36	10	120	14.6	22	Sand			SPT	25.0	1285	1.25	31	35	39		-	Medium Dense Sand	
30	31	15	106.4	5.6	23	Sand			CAL	14.0	1817	1.05	14	31	33		-	Medium Dense Sand	
25	26	20	120	28.2	28	Sand			SPT	32.0	2417	0.91	29	37	39		-	Dense Sand	
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Calculated Strength and Settlement Parameters

P24812G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88) 46.7

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	44	2.5	120	10	10	Sand			CAL	6.0	300	1.70	10	29	32		-	Loose Sand	
40	42	5	128.1	14.9	7	Sand	0.5		SPT	8.0	620	1.70	13	29	33		-	Loose Sand	
40	39	7.5	120	16.2	18	Sand		4	CAL	11.0	920	1.47	16	30	34	42	-	Medium Dense Sand	
35	37	10	132.8	15.7	39	Sand	4.5		SPT	45.0	1252	1.26	50	38	43		-	Dense Sand	
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Calculated Strength and Settlement Parameters

P24819G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	46.4

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	44	2.5	137.1	13.4	28	Sand	4.5	11	CAL	17.0	343	1.70	28	32	38	35	-	Medium Dense Sand	
40	41	5	120		13	Sand			SPT	15.0	643	1.70	25	32	37		-	Medium Dense Sand	
40	39	7.5	137.3	9.9	31	Sand	4.5		CAL	19.0	986	1.42	27	33	38		-	Medium Dense Sand	
35	36	10	120		10	Clay			SPT	11.0	1286	1.25	13	-	33		1210	Stiff Clay	
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Calculated Strength and Settlement Parameters

P24833G

Input	Pa	2000	psf
Output	Pa	14	psi
Cs for CAL (SAND)		0.55	
Cs for CAL (CLAY)		0.7	
Hammer Efficiency		70	

Depth Bedrock ft	205
Depth GWT ft	NE

Consistency

GSE (NAVD88)	47.0

Rounded Elevation	Sample Elevation	Depth - ft	Unit Weight pcf	Moisture Content %	N -b/ft	Soil Type	Pocket Pen (tsf)	Plasticity Index (%)	Sampler	SPT N60 - b/ft	Overburden σ_{vo}' - psf	CN	SPT N160 - b/ft	Peck Hanson Thornburn Φ'	Terzaghi Peck Mesri (1996) Φ'	Mitchell (1976) Drained Φ'	Su (psf)	Soil Consistency/Density	Notes
45	45	2.5	120	10.7	17	Sand		13	SPT	19.0	300	1.70	32	33	40	34	-	Medium Dense Sand	
40	42	5	136.0	8	56	Sand	4.5		CAL	35.0	640	1.70	50	37	43		-	Dense Sand	
40	40	7.5	120	14.3	25	Clay			SPT	29.0	940	1.46	42	-	42		3190	Very Stiff Clay	
35	37	10	132.4	15.2	36	Clay	4.5		CAL	29.0	1271	1.25	36	-	41		3190	Very Stiff Clay	
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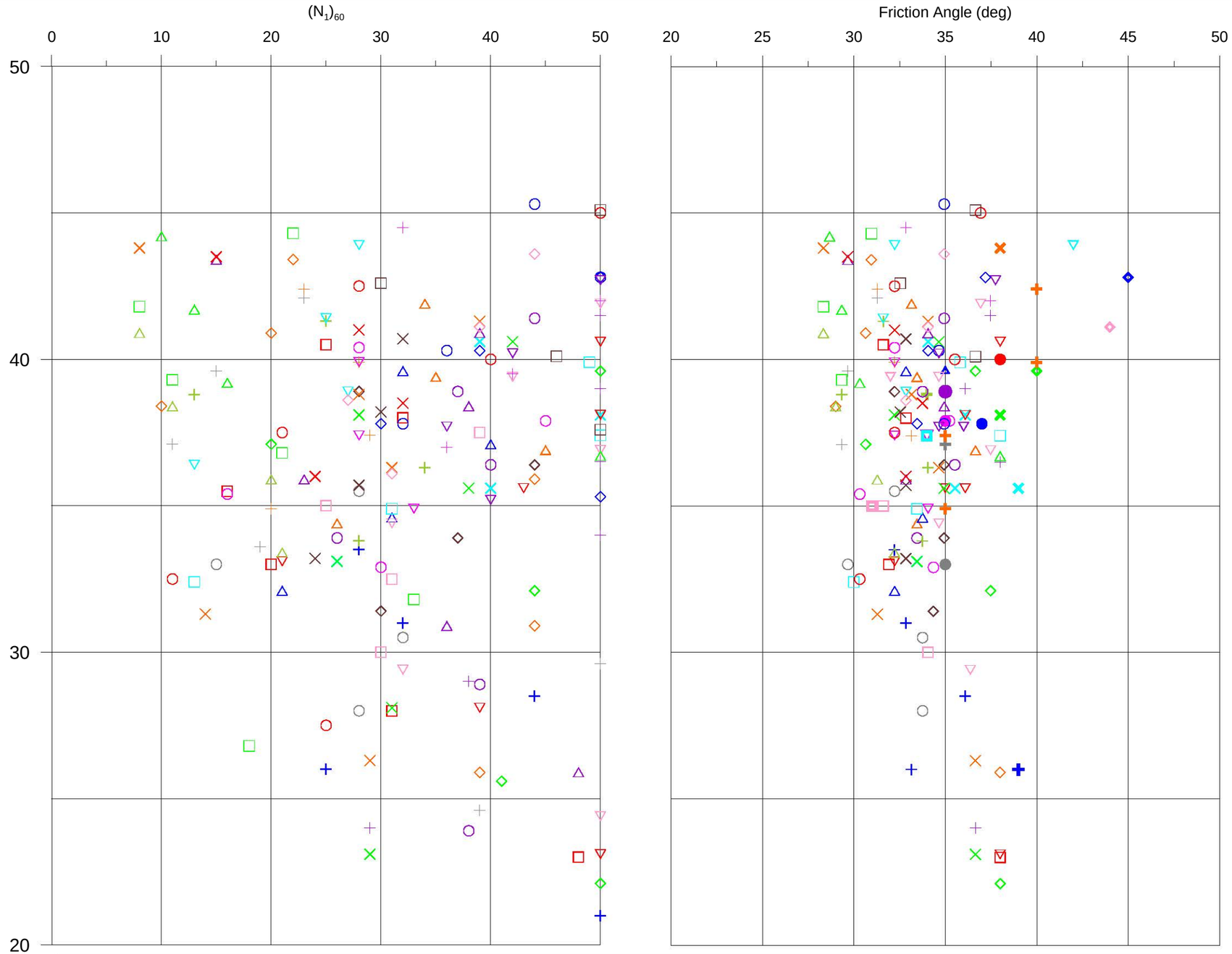
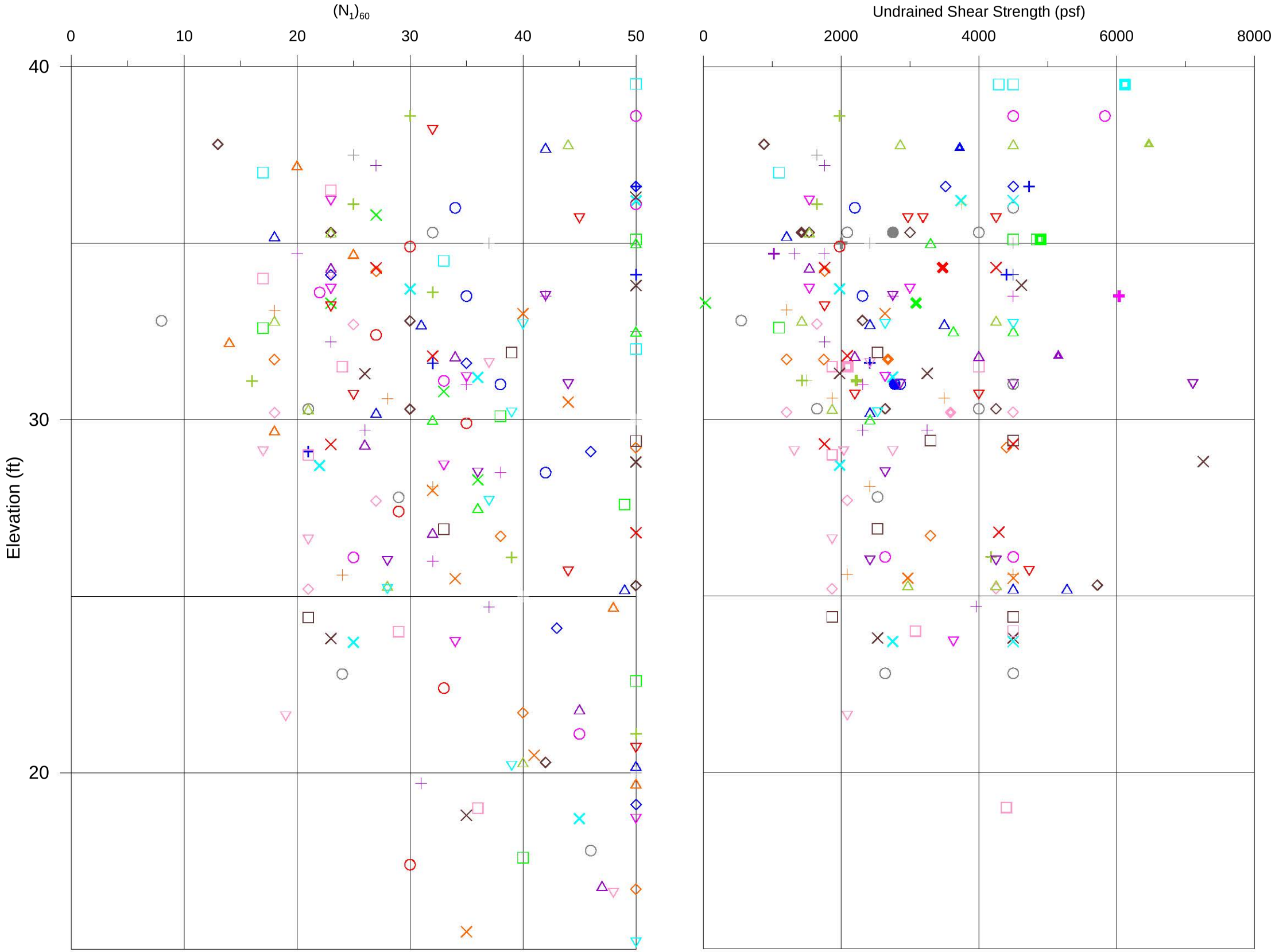


Legend

N24613G	+	N24729G	×	M24703G	○	R24749G	◇	248348G	▽	249377G	○	P24833G	+	P24812G	△
N24622G	◇	N24703G	▽	R24609G	△	R24612G	□	248360G	+	R24752G	△	249348G	◇	P24738G	×
N24712G	□	M24744G	+	R24709G	×	P24533G	○	249345G	◇	P24803G	×	249378G	□	P24722G	▽
N24732G	○	M24733G	◇	R24719G	▽	P24608G	△	249363G	□	P24819G	▽	249412G	○	P24708G	+
N24803G	△	M24717G	□	R24739G	+	R24706G	×								

Symbols in **BOLD** represent lab test results

Strength Properties **KAST Sandy Soil**	Project No. 60422689
Former KAST Property Carson, California	Figure XX

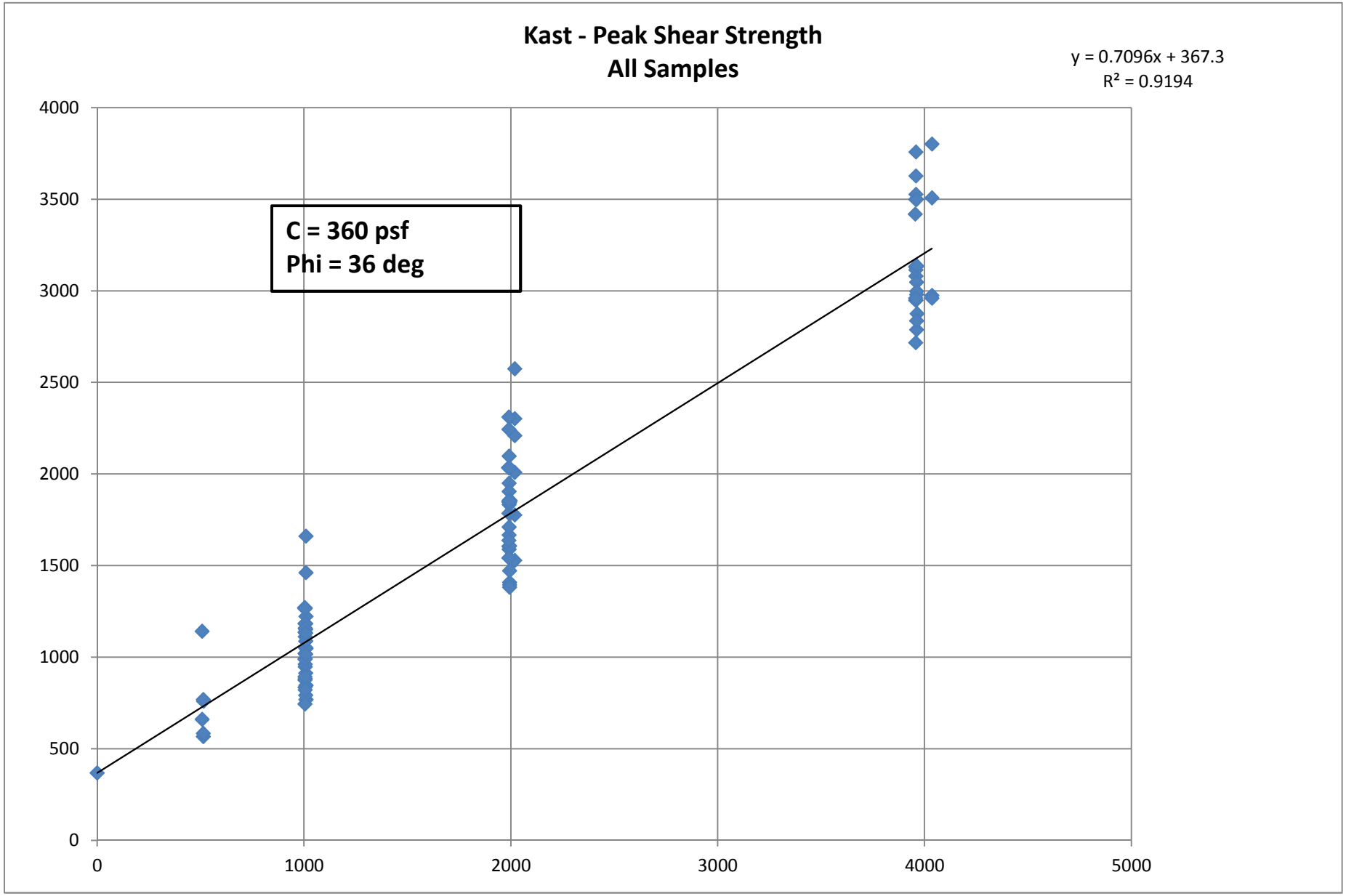


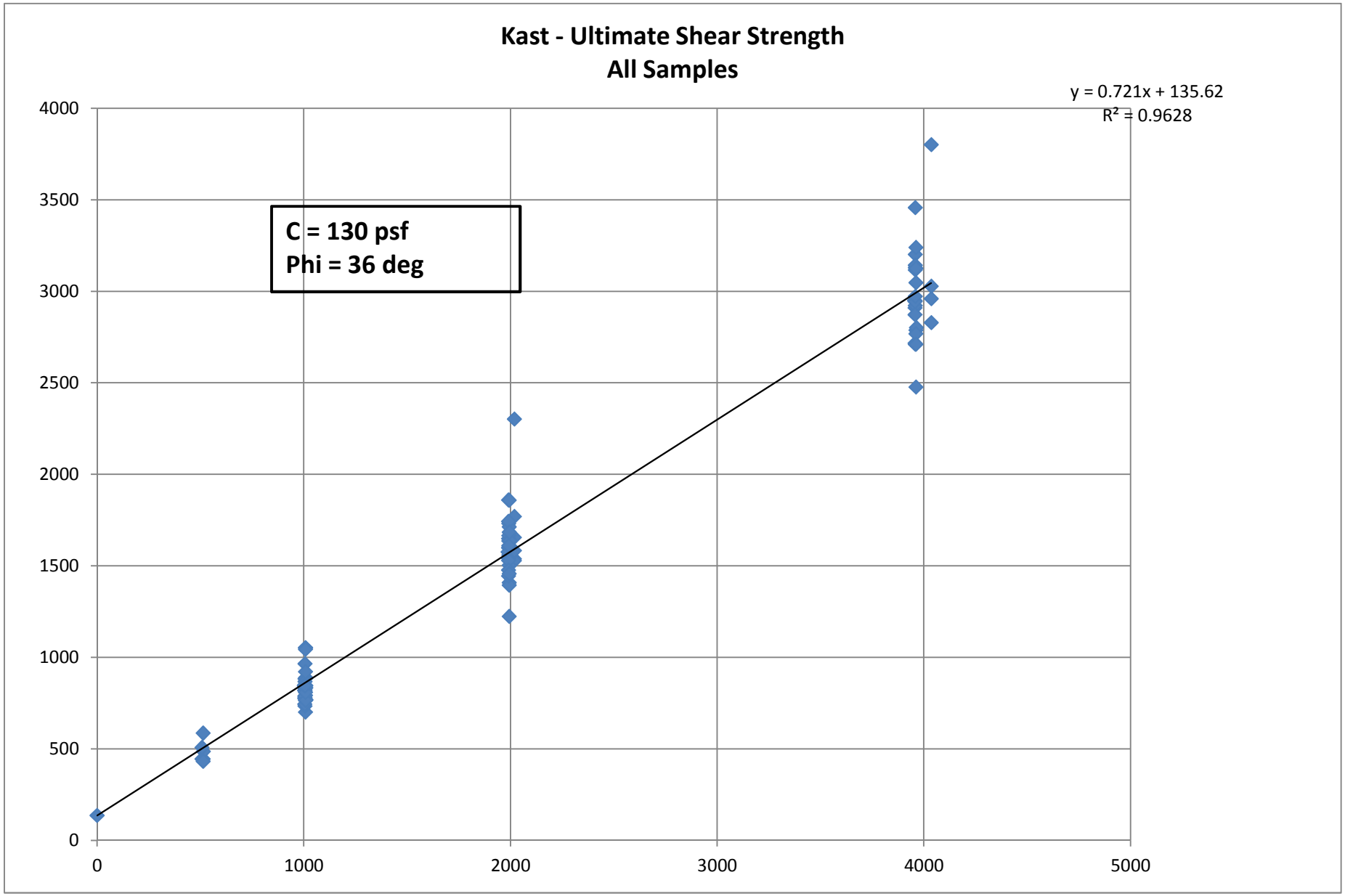
Legend

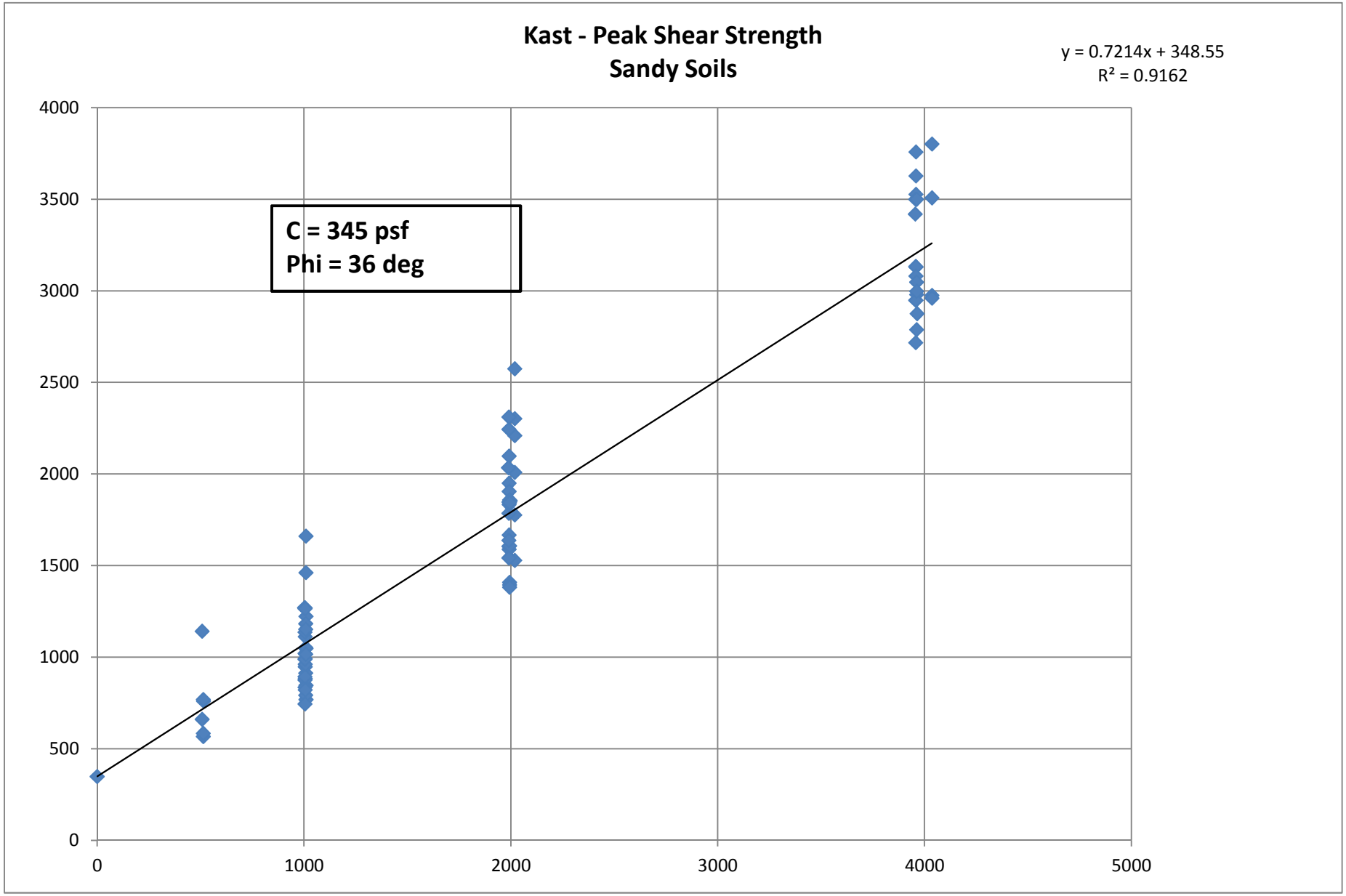
P24426G	+	R24508G	◇	R24423G	×	N24629G	□	N24409G	▽	M24616G	○	M24613G	+	244357G	△
P24503G	△	R24426G	□	N24522G	▽	N24603G	○	M24716G	+	M24606G	△	M24517G	◇	244337G	×
P24421G	×	R24412G	○	N24508G	+	N24523G	△	M24706G	◇	M24512G	×	M24411G	□	244321G	▽
P24411G	▽	R24509G	△	N24402G	◇	N24503G	×	M24628G	□	M24406G	▽	P24402G	○	244305G	+
R24522G	+														

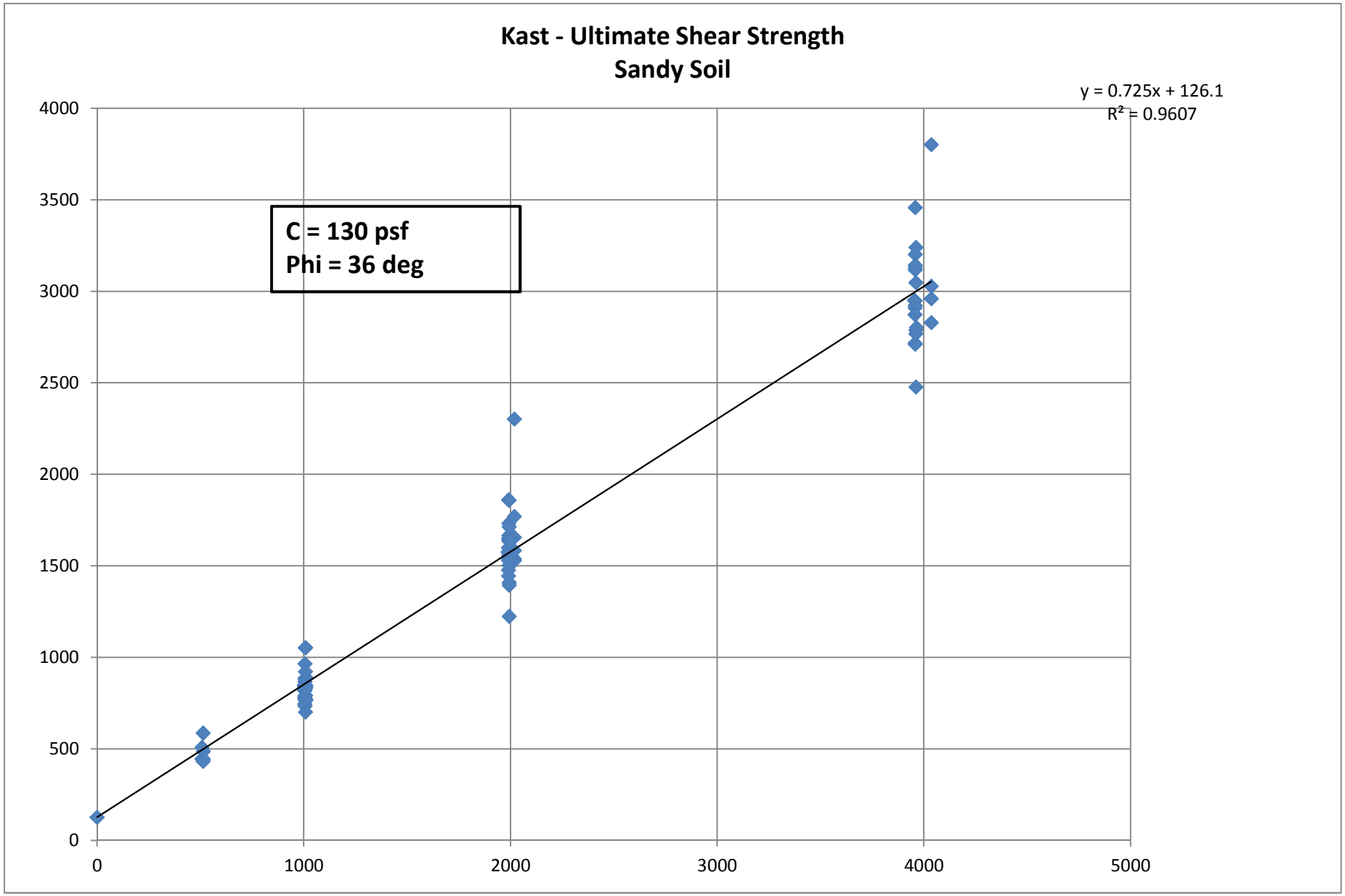
Symbols in **BOLD** represent lab test results

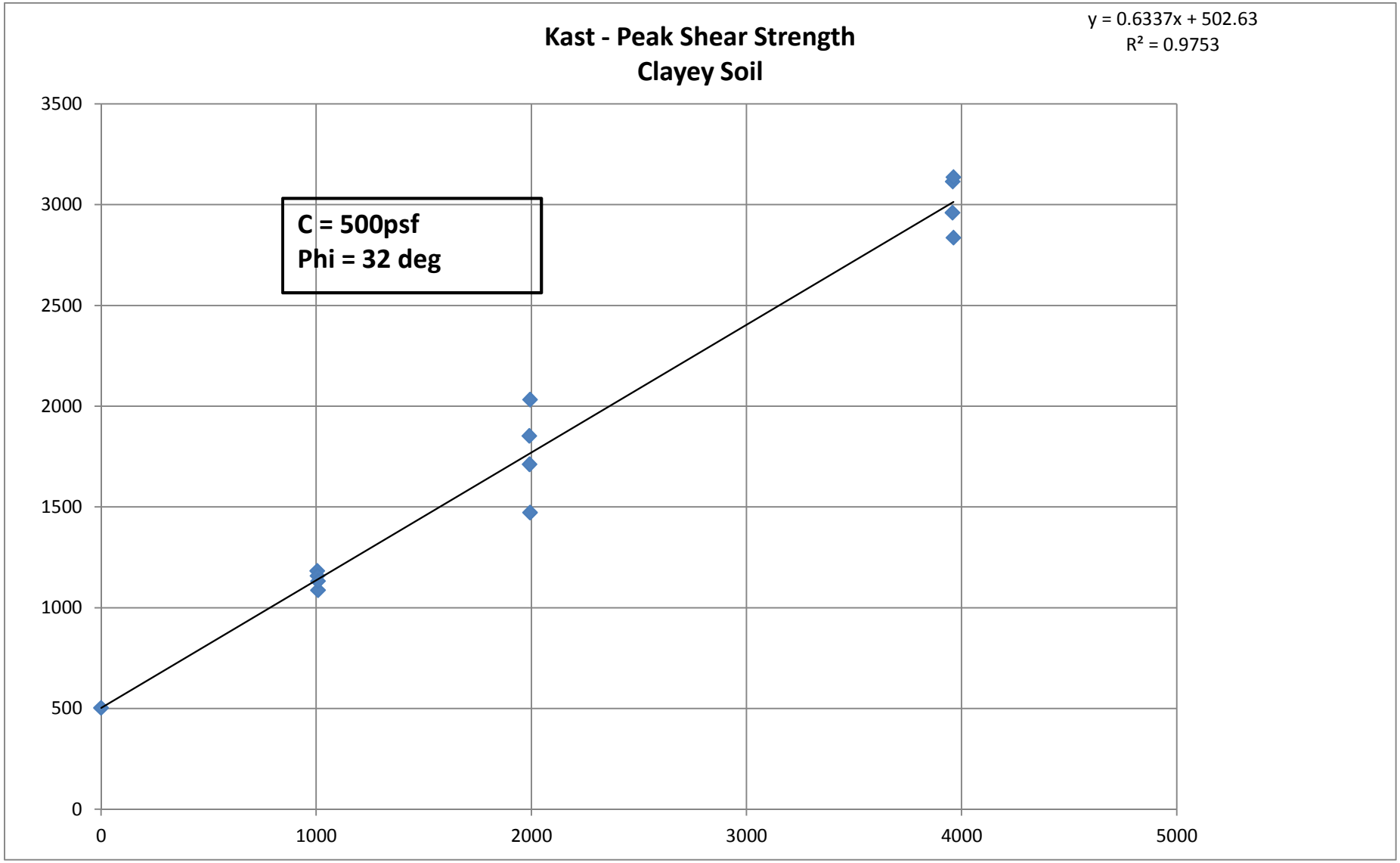
Strength Properties KAST Fine Grained Soil	Project No. 60422689
Former KAST Property Carson, California	Figure XX

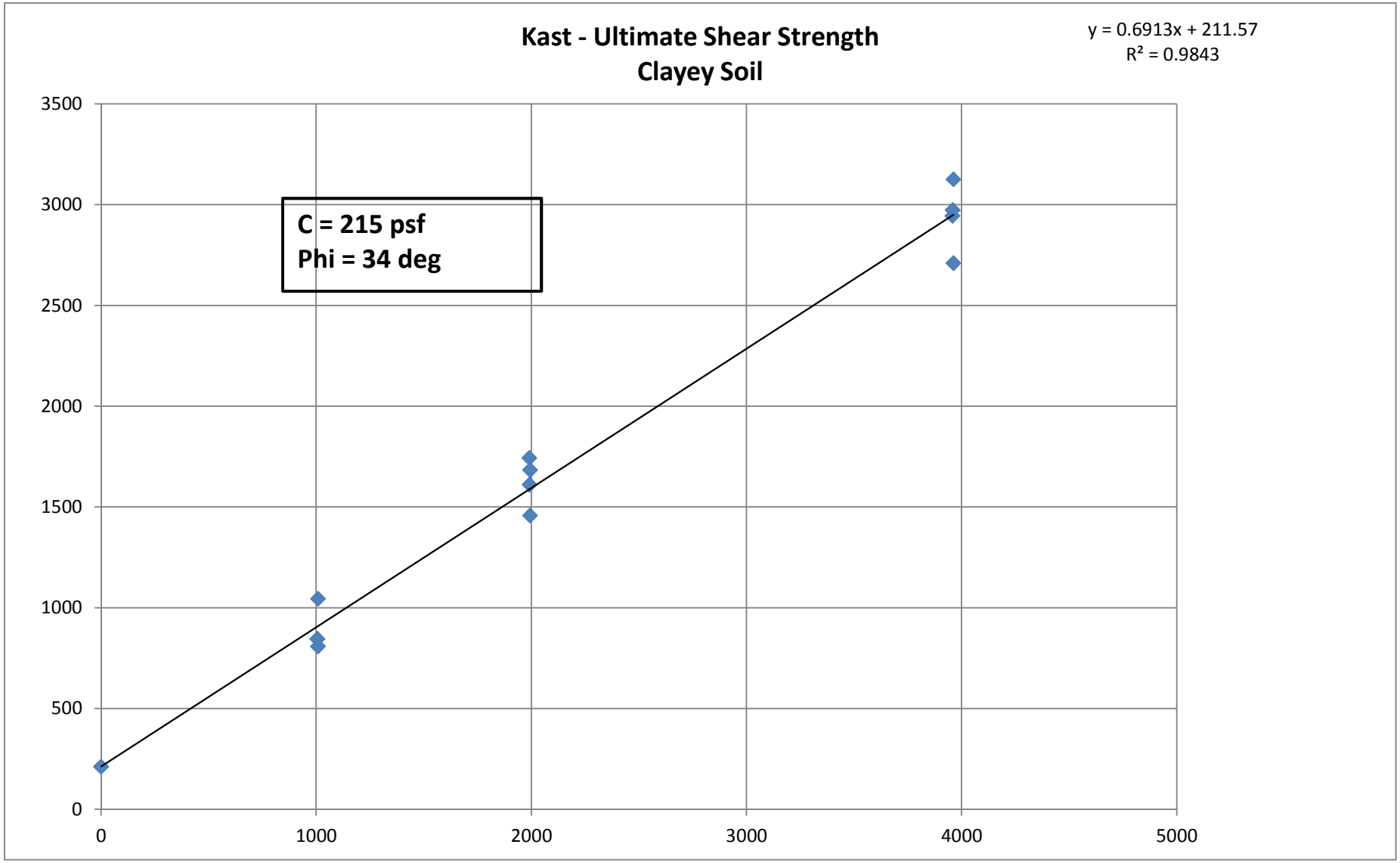

Kast - Peak Shear Strength
All Samples
y = 0.7096x + 367.3
R² = 0.9194
C = 360 psf
Phi = 36 deg
4000
3500
3000
2500
2000
1500
1000
500
0
0
1000
2000
3000
4000
5000


Kast - Ultimate Shear Strength
All Samples
y = 0.721x + 135.62
R² = 0.9628
C = 130 psf
Phi = 36 deg
4000
3500
3000
2500
2000
1500
1000
500
0
0
1000
2000
3000
4000
5000


Kast - Peak Shear Strength
Sandy Soils
y = 0.7214x + 348.55
R² = 0.9162
C = 345 psf
Phi = 36 deg
4000
3500
3000
2500
2000
1500
1000
500
0
0
1000
2000
3000
4000
5000


Kast - Ultimate Shear Strength
Sandy Soil
y = 0.725x + 126.1
R² = 0.9607
C = 130 psf
Phi = 36 deg
4000
3500
3000
2500
2000
1500
1000
500
0
0
1000
2000
3000
4000
5000


Kast - Peak Shear Strength
Clayey Soil
y = 0.6337x + 502.63
R² = 0.9753
C = 500psf
Phi = 32 deg
3500
3000
2500
2000
1500
1000
500
0
0
1000
2000
3000
4000
5000


Kast - Ultimate Shear Strength
Clayey Soil
y = 0.6913x + 211.57
R² = 0.9843
C = 215 psf
Phi = 34 deg
3500
3000
2500
2000
1500
1000
500
0
0
1000
2000
3000
4000
5000

Side Yard Analyses

- Bearing Capacity Calculations
- Slope Stability Analysis

Bearing Capacity Calculations
Former Kast Property

Station	Building			
c cohesion	345			psf
ϕ friction angle	36			deg
γ density of soil	120			pcf
L length of fnd	40.0			feet
Dw depth Water	50.0			feet
Slope	1			x:1 (H:V)
α load inclination	0.0			degrees

qall	4.12			ksf
qult	12.35			ksf

Calculation of Bearing Capacity for Type I Walls

Job Name:	Former Kast Property
Job No.	60422689
Location:	
Subject:	Excavation between Houses
Date:	9/24/2015

Input Parameters (from Input-Output Sheet)

Station	Building			
c cohesion	345			psf
ϕ friction angle	36			degrees
γ unit weight of soil	120			pcf
B'effective width of foundation	1			feet
L length of foundation	40			feet
Df depth of foundation	0			feet
Dw depth of water	100			feet
β slope inclination	0.785			radians
α load inclination	0.000			degrees

Output

Bearing Capacity Factors

Nq	37.75		
Nc	50.59		
Nγ	56.31		

Shape Factors

Fcs	1.02		
Fqs	1.02		
Fγs	0.99		

Depth Factors

Fcd (conservatively set to 1)	1.00		
Fqd (conservatively set to 1)	1.00		
Fγd (conservatively set to 1)	1.00		

Effects of Water Table

q	0.00			psf
γ	120.00			pcf

Ground Inclination Factors

Fcg	0.69		
Fqg	0.00		
Fγg	0.00		

Load Inclination Factors

Fci	1.00		
Fqi	1.00		
Fγi	1.00		

Ultimate and Allowable Bearing Pressures

q_{ult}	12.35			ksf
q_{all}	4.12			ksf

Service - Permissible Net Contact Stress (1 inch of settlement), q_{pn}

	0.0			ksf

Ref

Das 1990 Principles of Foundation Engineering Second Edition

Fang 1997 Foundation Engineering Handbook Second Edition

After Terzaghi and Peck, 1967 Bearing Pressure for One Inch of Settlement of Footings on Sands

Bearing Capacity Calculations
Former Kast Property

Station	Building			
c cohesion	215			psf
ϕ friction angle	34			deg
γ density of soil	120			pcf
L length of fnd	40.0			feet
Dw depth Water	50.0			feet
Slope	1			x:1 (H:V)
α load inclination	0.0			degrees

qall	2.14			ksf
qult	6.41			ksf

Calculation of Bearing Capacity for Type I Walls

Job Name:	Former Kast Property
Job No.	60422689
Location:	
Subject:	Excavation Between Houses
Date:	9/24/2015

Input Parameters (from Input-Output Sheet)

Station	Building			
c cohesion	215			psf
ϕ friction angle	34			degrees
γ unit weight of soil	120			pcf
B'effective width of foundation	1			feet
L length of foundation	40			feet
Df depth of foundation	0			feet
Dw depth of water	100			feet
β slope inclination	0.785			radians
α load inclination	0.000			degrees

Output

Bearing Capacity Factors

Nq	29.44		
Nc	42.16		
Nγ	41.06		

Shape Factors

Fcs	1.02		
Fqs	1.02		
Fγs	0.99		

Depth Factors

Fcd (conservatively set to 1)	1.00		
Fqd (conservatively set to 1)	1.00		
Fγd (conservatively set to 1)	1.00		

Effects of Water Table

q	0.00			psf
γ	120.00			pcf

Ground Inclination Factors

Fcg	0.69		
Fqg	0.00		
Fγg	0.00		

Load Inclination Factors

Fci	1.00		
Fqi	1.00		
Fγi	1.00		

Ultimate and Allowable Bearing Pressures

q_{ult}	6.41			ksf
q_{all}	2.14			ksf

Service - Permissible Net Contact Stress (1 inch of settlement), q_{pn}

	0.0			ksf

Ref

Das 1990 Principles of Foundation Engineering Second Edition

Fang 1997 Foundation Engineering Handbook Second Edition

After Terzaghi and Peck, 1967 Bearing Pressure for One Inch of Settlement of Footings on Sands

Bearing Capacity Calculations
Former Kast Property

Station	Building			
c cohesion	2000			psf
ϕ friction angle	0			deg
γ density of soil	120			pcf
L length of fnd	40.0			feet
Dw depth Water	50.0			feet
Slope	1			x:1 (H:V)
α load inclination	0.0			degrees

qall	2.39			ksf
qult	7.18			ksf

Calculation of Bearing Capacity for Type I Walls

Job Name:	Former Kast Property
Job No.	60422689
Location:	
Subject:	Excavation Between Houses
Date:	9/24/2015

Input Parameters (from Input-Output Sheet)

Station	Building			
c cohesion	2000			psf
ϕ friction angle	0			degrees
γ unit weight of soil	120			pcf
B'effective width of foundation	1			feet
L length of foundation	40			feet
Df depth of foundation	0			feet
Dw depth of water	100			feet
β slope inclination	0.785			radians
α load inclination	0.000			degrees

Output

Bearing Capacity Factors

Nq	1.00		
Nc	5.14		
Nγ	0.00		

Shape Factors

Fcs	1.00		
Fqs	1.00		
Fγs	0.99		

Depth Factors

Fcd (conservatively set to 1)	1.00		
Fqd (conservatively set to 1)	1.00		
Fγd (conservatively set to 1)	1.00		

Effects of Water Table

q	0.00			psf
γ	120.00			pcf

Ground Inclination Factors

Fcg	0.69		
Fqg	0.00		
Fγg	0.00		

Load Inclination Factors

Fci	1.00		
Fqi	1.00		
Fγi	1.00		

Ultimate and Allowable Bearing Pressures

q_{ult}	7.18			ksf
q_{all}	2.39			ksf

Service - Permissible Net Contact Stress (1 inch of settlement), q_{pn}

	0.0			ksf

Ref

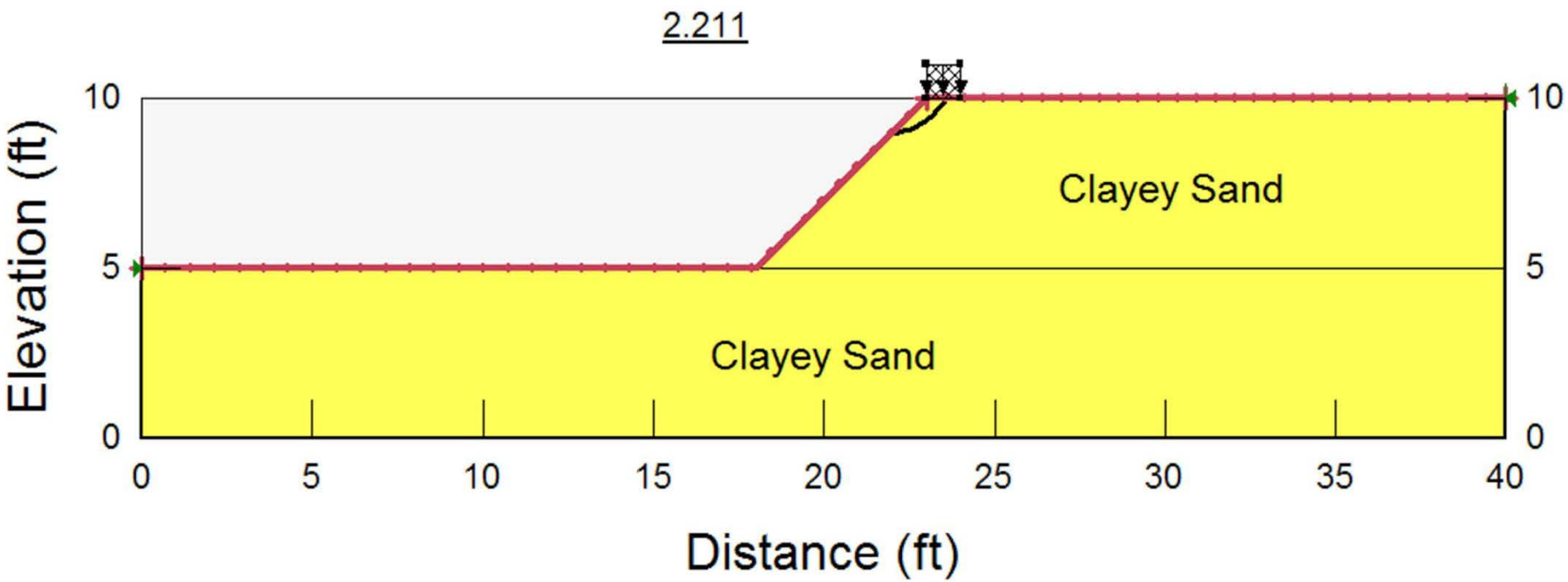
Das 1990 Principles of Foundation Engineering Second Edition

Fang 1997 Foundation Engineering Handbook Second Edition

After Terzaghi and Peck, 1967 Bearing Pressure for One Inch of Settlement of Footings on Sands

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
5t Excavation

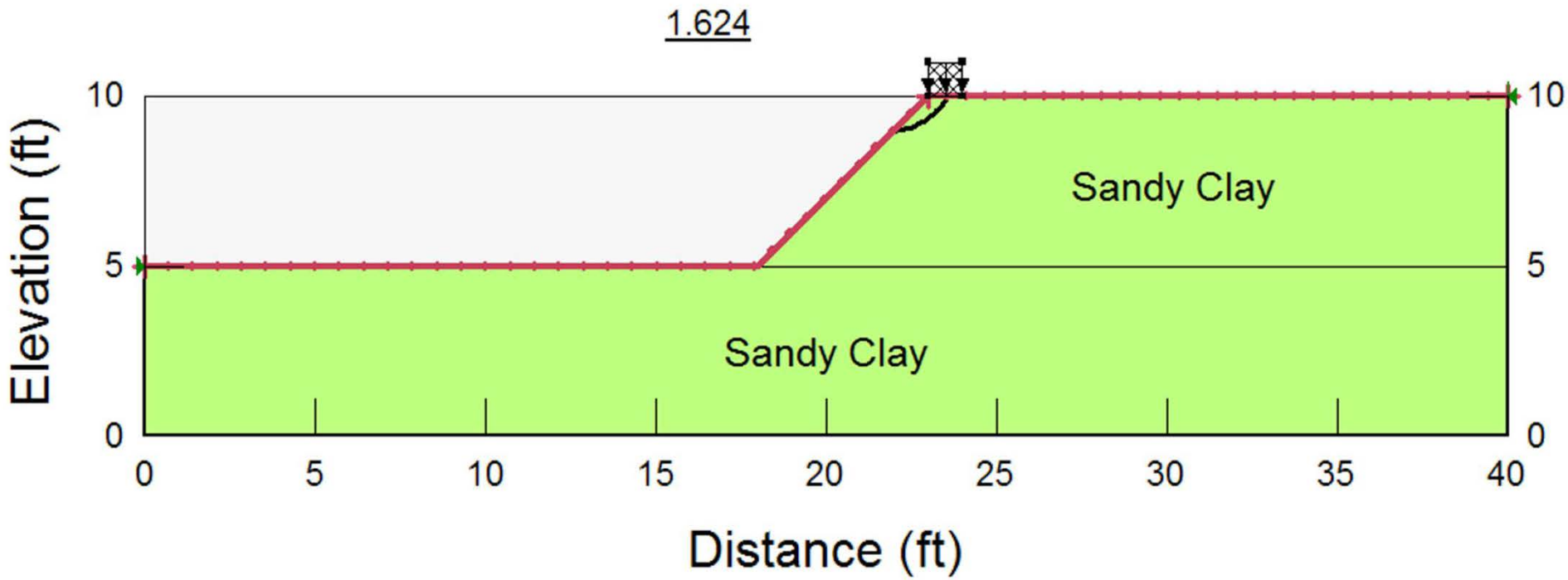
Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Clayey Sand	120	36	345
Building Surcharge = 1100 psf			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-1

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
5t Excavation

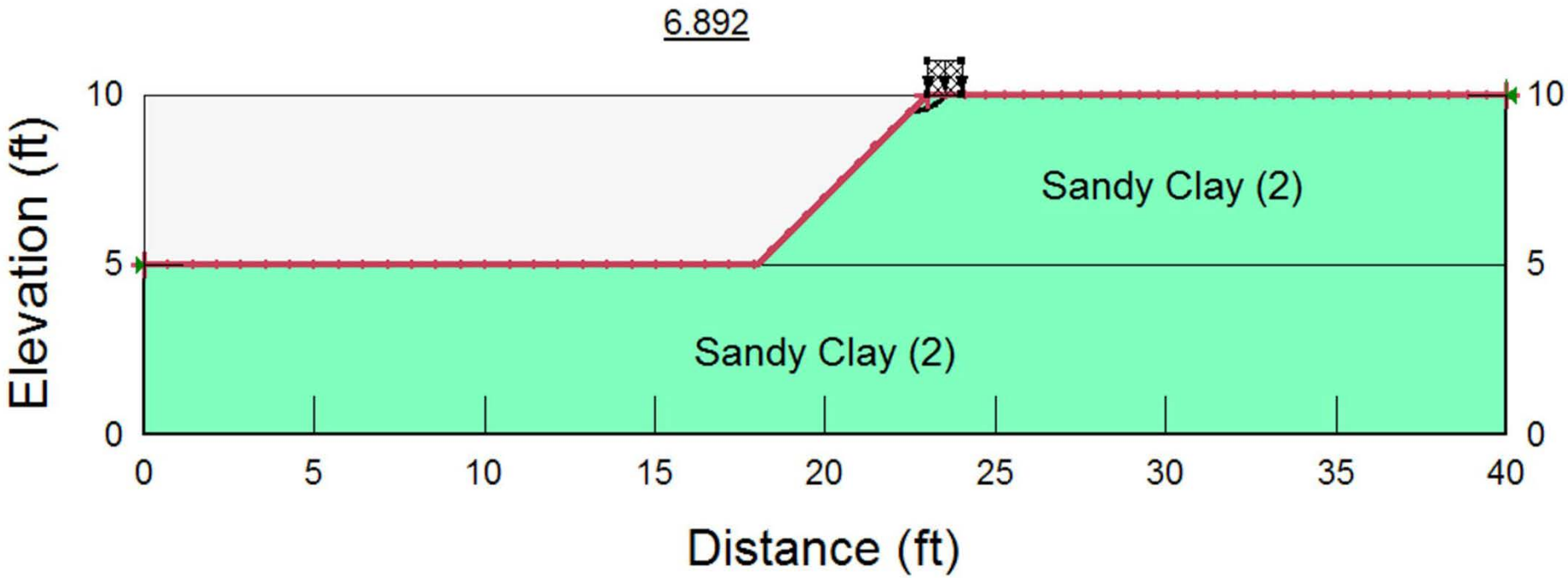
Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay	120	34	215
Building Surcharge = 1100 psf			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-2

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
5t Excavation

Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay (2)	120	-	2000
Building Surcharge = 1100 psf			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	**Former Kast Property**	**FIGURE**
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	**C-3**

Front Yard and Backyard Analyses

5 feet Excavation

- Bearing Capacity Calculations – See Side Yard Analyses
- Slope Stability Analysis – See Side Yard Analyses

10 feet Excavation

Option 1
- Bearing Capacity Calculations
- Slope Stability Analysis

Option 2
- Bearing Capacity Calculations
- Slot Trench Calculations
- Slope Stability Analysis
- Heave Analysis

Bearing Capacity Calculations
Former Kast Property

Station	Building	
c cohesion	215	psf
ϕ friction angle	34	deg
γ density of soil	120	pcf
L length of fnd	40.0	feet
Dw depth Water	50.0	feet
Slope	0.5	x:1 (H:V)
α load inclination	0.0	degrees

qall	1.41	ksf
qult	2.81	ksf

Calculation of Bearing Capacity for Type I Walls

Job Name:	Former Kast Property
Job No.	60422689
Location:	
Subject:	Excavation Between Houses
Date:	9/24/2015

Input Parameters (from Input-Output Sheet)

Station	Building	
c cohesion	215	psf
ϕ friction angle	34	degrees
γ unit weight of soil	120	pcf
B'effective width of foundation	1	feet
L length of foundation	40	feet
Df depth of foundation	0	feet
Dw depth of water	100	feet
β slope inclination	1.107	radians
α load inclination	0.000	degrees

Output

Bearing Capacity Factors

Nq	29.44
Nc	42.16
Nγ	41.06

Shape Factors

Fcs	1.02
Fqs	1.02
Fγs	0.99

Depth Factors

Fcd (conservatively set to 1)	1.00
Fqd (conservatively set to 1)	1.00
Fγd (conservatively set to 1)	1.00

Effects of Water Table

q	0.00	psf
γ	120.00	pcf

Ground Inclination Factors

Fcg	0.57
Fqg	-1.00
Fγg	-1.00

Load Inclination Factors

Fci	1.00
Fqi	1.00
Fγi	1.00

Ultimate and Allowable Bearing Pressures

q_{ult}	2.81	ksf
q_{all}	1.41	ksf

Ref

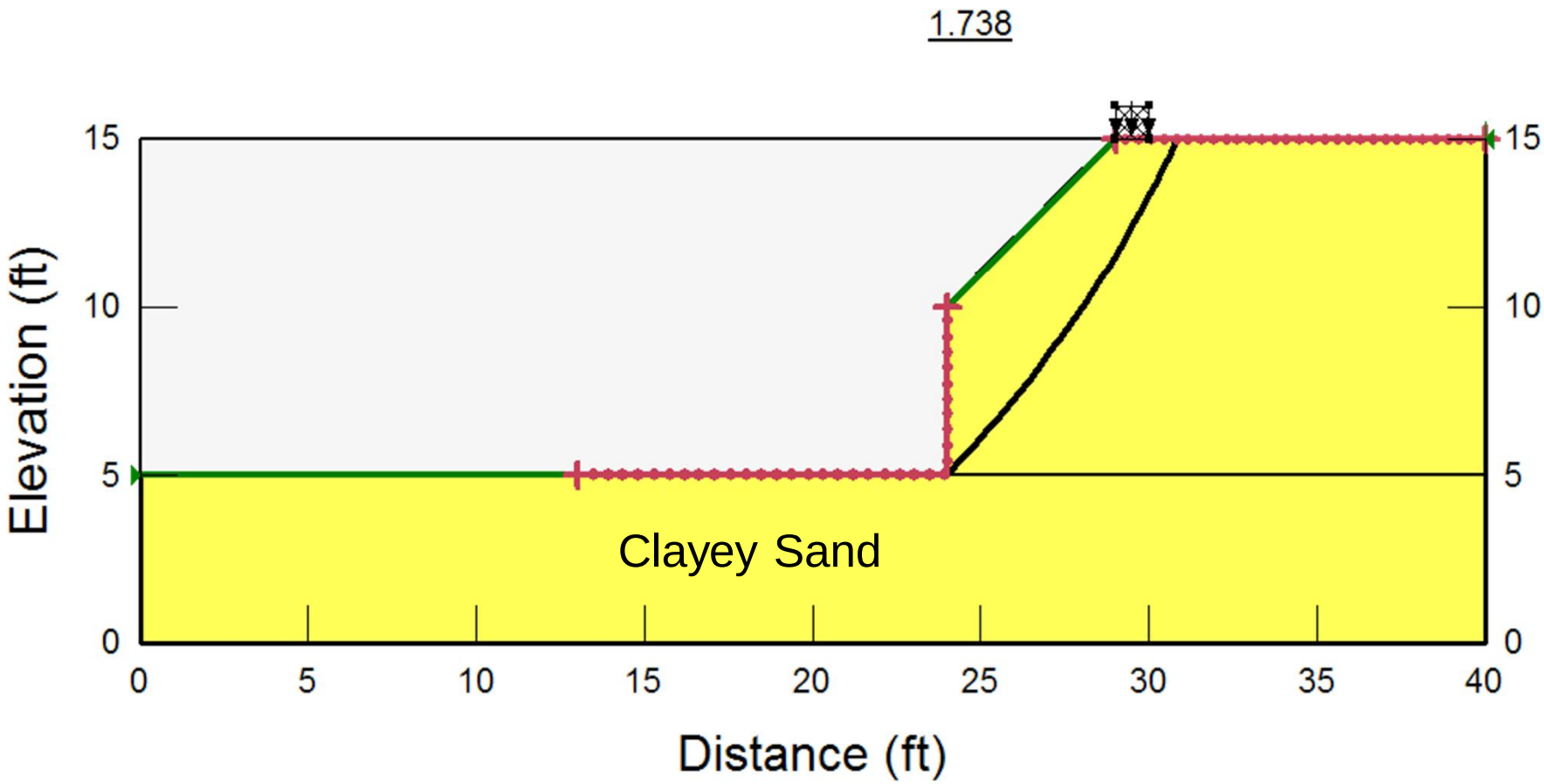
Das 1990 Principles of Foundation Engineering Second Edition

Fang 1997 Foundation Engineering Handbook Second Edition

After Terzaghi and Peck, 1967 Bearing Pressure for One Inch of Settlement of Footings on Sands

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
10ft Excavation – Option 1

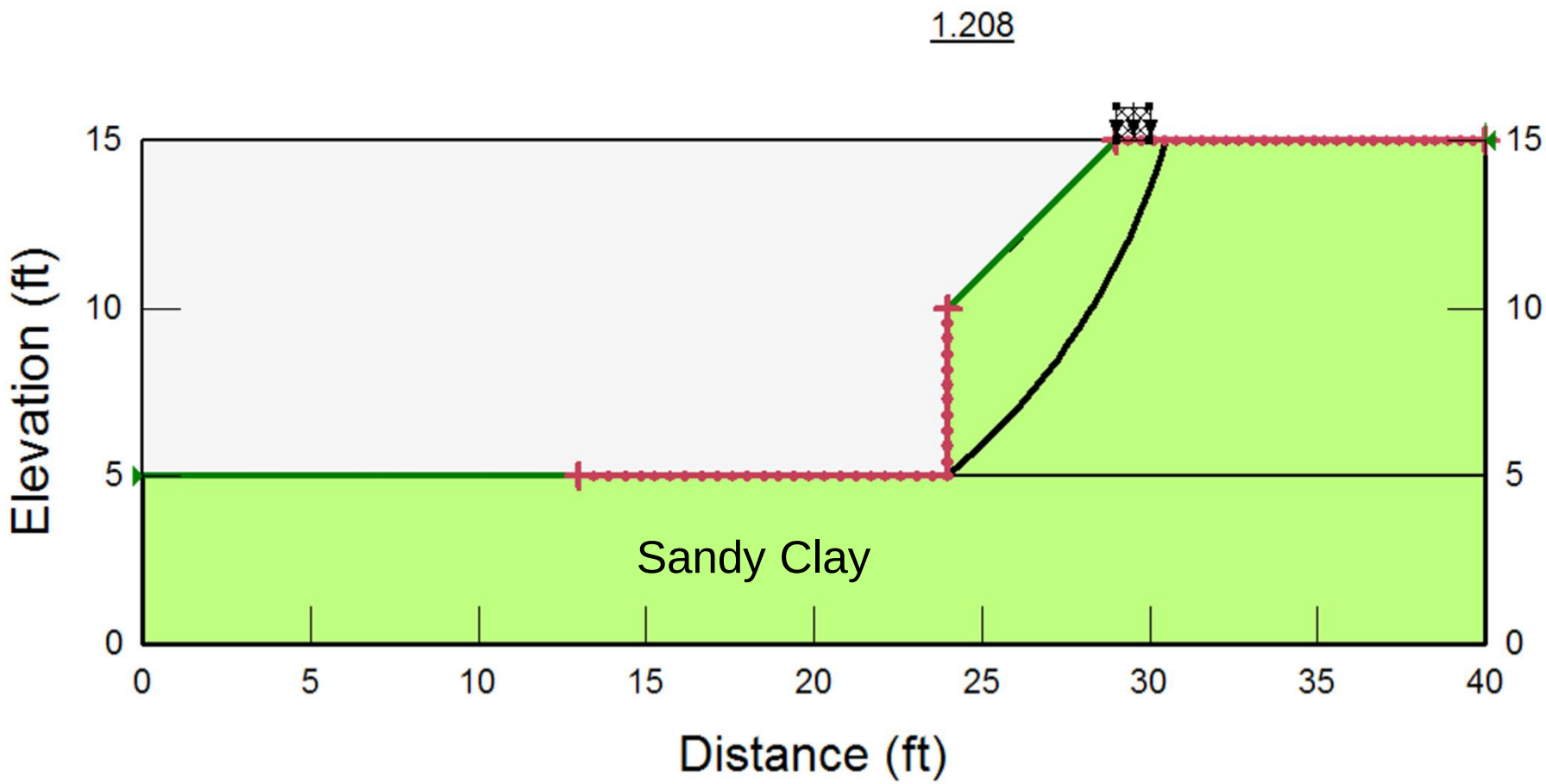
Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Clayey Sand	120	36	345
Building Surcharge = 1100 psf			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-4

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
10ft Excavation – Option 1

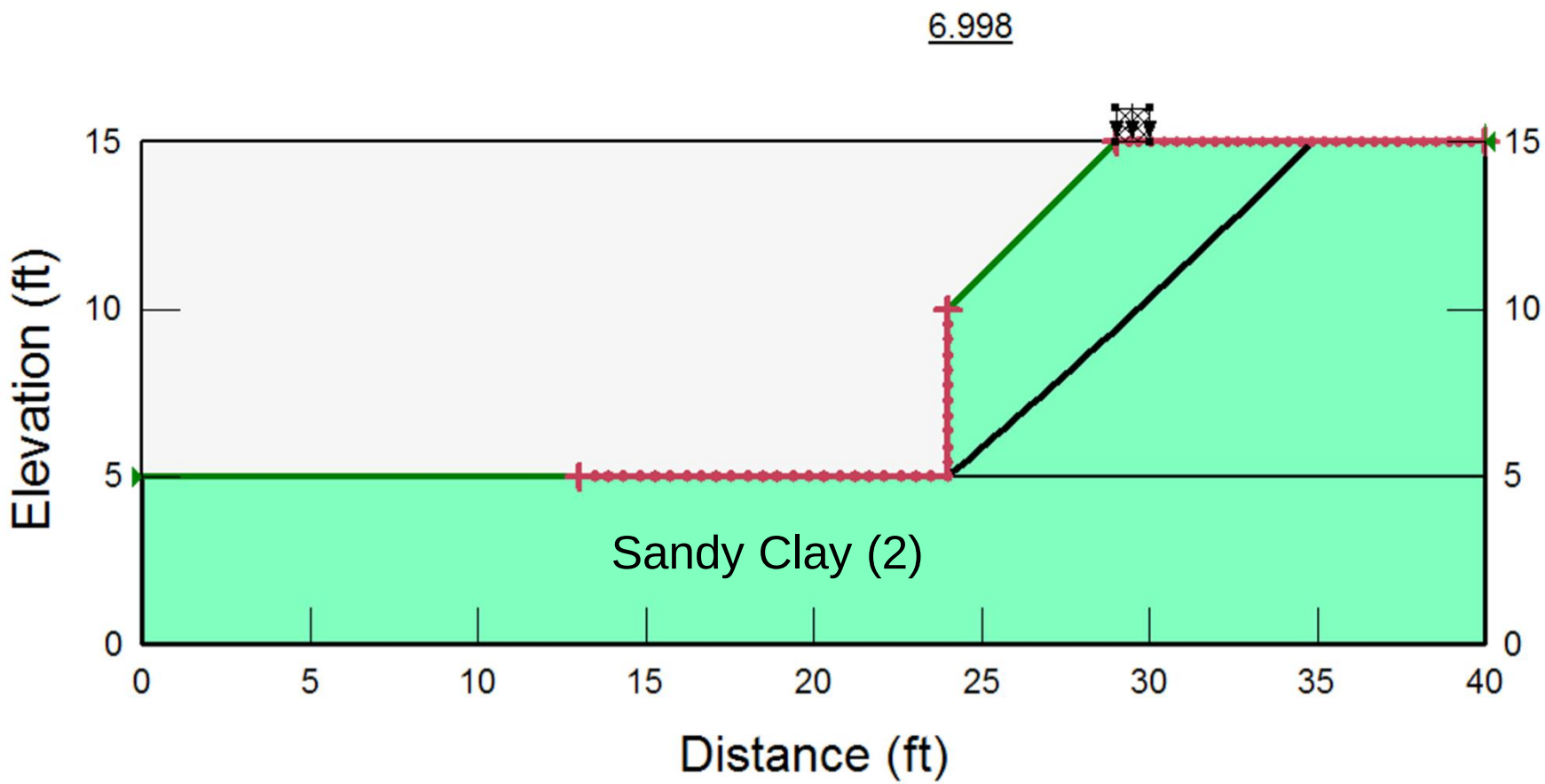
Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay	120	34	215
Building Surcharge = 1100 psf			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-5

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
10ft Excavation – Option 1

Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay (2)	120	-	2000
Building Surcharge = 1100 psf			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-6

BEARING CAPACITY OF SHALLOW FOUNDATIONS
Terzaghi and Vesic Methods

Date	September 28, 2015
Identification	Near Structures

Input

Units of Measurement

	E	SI or E

Foundation Information

Shape	CO	SQ, CI, CO, or RE
B =	2	ft
L =		ft
D =	2	ft

Soil Information

c =	200	lb/ft^2
phi =	34	deg
gamma =	120	lb/ft^3
Dw =	50	ft

Factor of Safety

F =	3

Results

	Terzaghi		Vesic	
Bearing Capacity				
q ult =	24,040	lb/ft^2	25,651	lb/ft^2
q a =	8,013	lb/ft^2	8,550	lb/ft^2
Allowable Wall Load				
P/b =	16	k/ft	17	k/ft

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SUMMARY OF BEARING CAPACITY OF SHALLOW FOUNDATIONS

Near Structures with Slot Trenches

Inputs

Reduction due to Trenches

33%

Results

Before Reduction

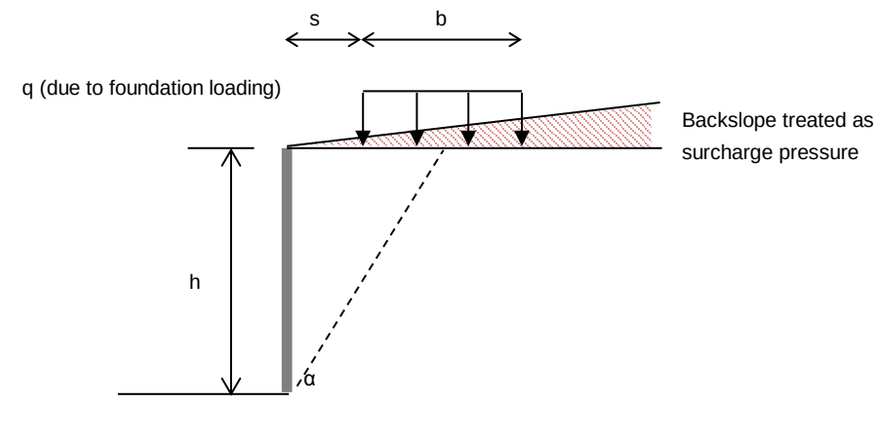
	Terzaghi		Vesic	
Bearing Capacity				
q ult =	24,040	lb/ft^2	25,651	lb/ft^2
q a =	8,013	lb/ft^2	8,550	lb/ft^2

After Reduction

	Terzaghi		Vesic	
Bearing Capacity				
q ult =	16,107	lb/ft^2	17,186	lb/ft^2
q a =	5,369	lb/ft^2	5,729	lb/ft^2

SLOT CUT STABILITY ANALYSIS FOR BUILDING SURCHARGE

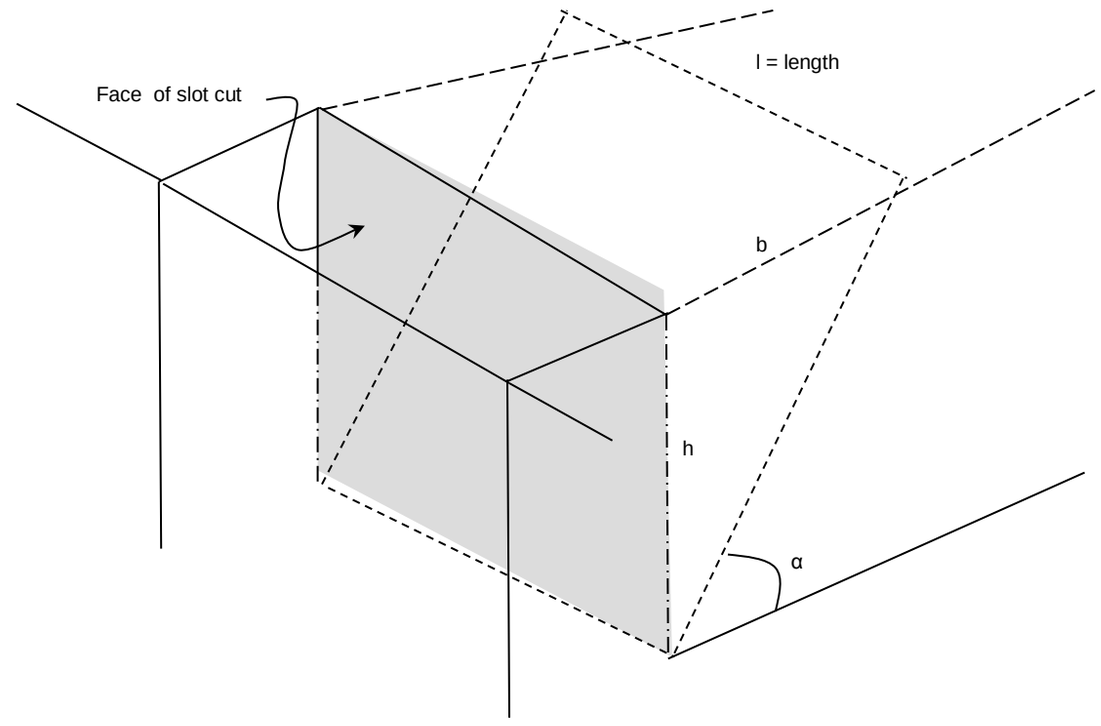
This program helps calculate a maximum slot cut length, based on a number of factors. Essentially, it looks at a failure wedge, calculates its weight, resulting horizontal force, and resisting force.



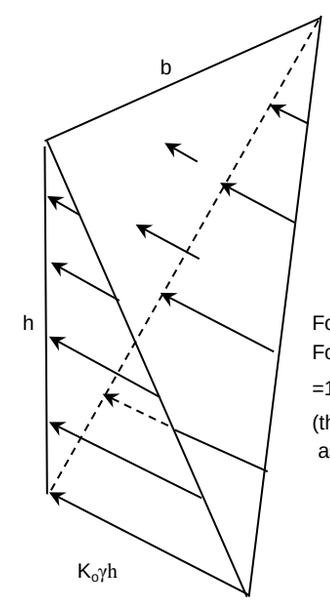
Soil		
Unit Weight (pcf) =	120	
Friction angle (deg) =	36	0.41 = Ko
Cohesion (psf) =	345	
Excavation		
Excav. Depth (ft), h =	10	
Slot cut length (ft), l =	4.5	
Foundation		
Surcharge q (psf)	0	
Footing width, b (ft)	1	
Footing length along cut (ft) Assumption: footing length > slot cut ex	100	
Distance from slot cut to footing, s (ft)	0	
Slope (X)H:(1)V	1000	use 1000 for no backslope

3.72 = Calculated Factor of Safety

Alpha		Weight of wedge	Surcharge due to backfill	Effect of surcharge	Sliding Force	Sliding Resistance	Factor of Safety
		lbs	lbs	lbs	lbs	lbs	
63	1.1	13757	0	0	12258	45644	3.72
20	0.349	74182	0	0	25372	223740	8.82
21	0.367	70337	0	0	25207	212114	8.41
22	0.384	66827	0	0	25034	201502	8.05
23	0.401	63608	0	0	24854	191773	7.72
24	0.419	60643	0	0	24666	182815	7.41
25	0.436	57902	0	0	24470	174538	7.13
26	0.454	55358	0	0	24267	166862	6.88
27	0.471	52990	0	0	24057	159722	6.64
28	0.489	50780	0	0	23840	153060	6.42
29	0.506	48709	0	0	23615	146827	6.22
30	0.524	46765	0	0	23383	140980	6.03
31	0.541	44936	0	0	23144	135483	5.85
32	0.559	43209	0	0	22897	130303	5.69
33	0.576	41576	0	0	22644	125411	5.54
34	0.593	40029	0	0	22384	120783	5.40
35	0.611	38560	0	0	22117	116396	5.26
36	0.628	37162	0	0	21843	112230	5.14
37	0.646	35830	0	0	21563	108268	5.02
38	0.663	34558	0	0	21276	104494	4.91
39	0.681	33342	0	0	20983	100893	4.81
40	0.698	32177	0	0	20683	97454	4.71
41	0.716	31060	0	0	20377	94164	4.62
42	0.733	29987	0	0	20065	91013	4.54
43	0.75	28954	0	0	19747	87992	4.46
44	0.768	27959	0	0	19422	85093	4.38
45	0.785	27000	0	0	19092	82306	4.31
46	0.803	26074	0	0	18756	79626	4.25
47	0.82	25178	0	0	18414	77046	4.18
48	0.838	24311	0	0	18067	74560	4.13
49	0.855	23471	0	0	17714	72162	4.07
50	0.873	22656	0	0	17355	69848	4.02
51	0.89	21864	0	0	16992	67612	3.98
52	0.908	21095	0	0	16623	65451	3.94
53	0.925	20346	0	0	16249	63360	3.90
54	0.942	19617	0	0	15870	61337	3.86
55	0.96	18906	0	0	15487	59376	3.83
56	0.977	18212	0	0	15098	57476	3.81
57	0.995	17534	0	0	14705	55634	3.78
58	1.012	16871	0	0	14308	53846	3.76
59	1.03	16223	0	0	13906	52110	3.75
60	1.047	15588	0	0	13500	50425	3.74
61	1.065	14966	0	0	13090	48786	3.73
62	1.082	14356	0	0	12676	47194	3.72
63	1.1	13757	0	0	12258	45644	3.72
64	1.117	13169	0	0	11836	44137	3.73
65	1.134	12590	0	0	11411	42670	3.74
66	1.152	12021	0	0	10982	41241	3.76
67	1.169	11461	0	0	10550	39849	3.78
68	1.187	10909	0	0	10114	38492	3.81
69	1.204	10364	0	0	9676	37170	3.84
70	1.222	9827	0	0	9235	35881	3.89
71	1.239	9297	0	0	8790	34623	3.94
72	1.257	8773	0	0	8343	33396	4.00
73	1.274	8255	0	0	7894	32198	4.08
74	1.292	7742	0	0	7442	31029	4.17
75	1.309	7235	0	0	6988	29887	4.28
76	1.326	6732	0	0	6532	28772	4.40
77	1.344	6233	0	0	6074	27683	4.56
78	1.361	5739	0	0	5614	26618	4.74
79	1.379	5248	0	0	5152	25578	4.96
80	1.396	4761	0	0	4689	24561	5.24



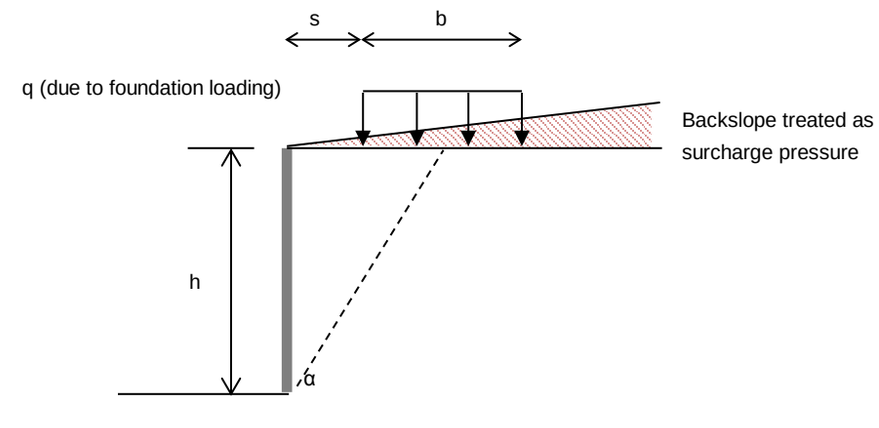
Face of the slot cut is shown shaded
Weight is the calculation of the failure wedge h x b x l times unit weight
Sliding Force is along the angle of the back surface
Resistance is found on the side triangles as well as the base of the failure wedge



Force - 1/3 Area times Height
Force = 1/3 (1/2bh)($K_o\gamma h$)
$=1/6K_o\gamma h^2 b=1/6K_o\gamma h^3/\tan\alpha$
(then remember to multiply by two as there are two sides of the wedge)

SLOT CUT STABILITY ANALYSIS FOR BUILDING SURCHARGE

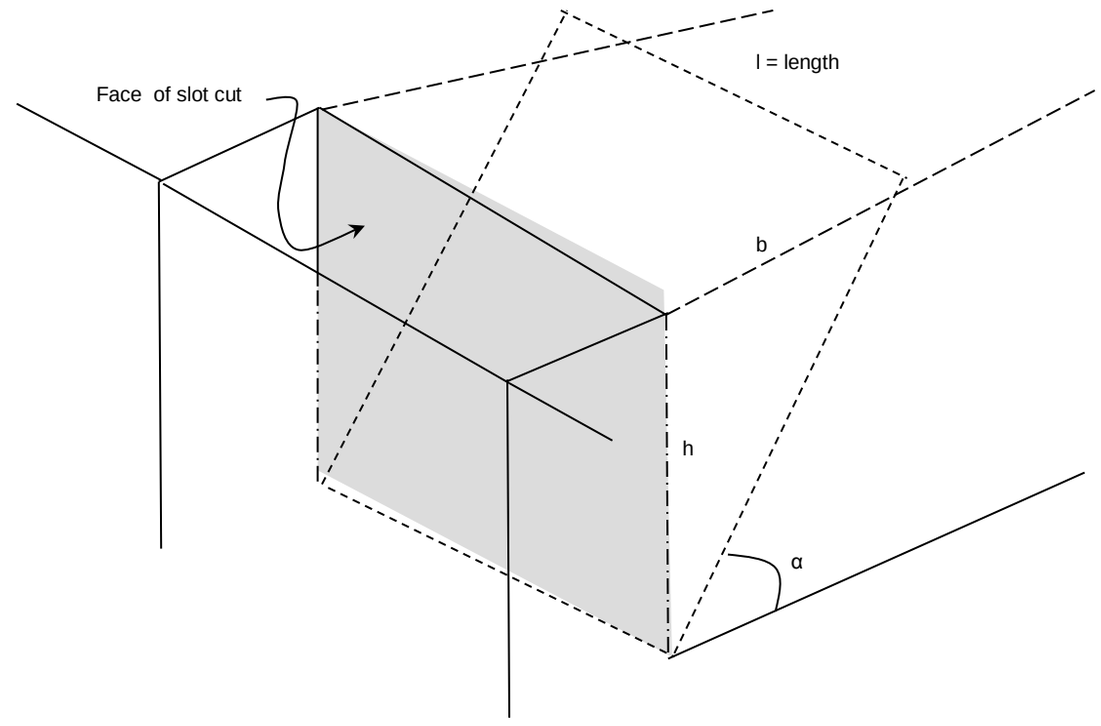
This program helps calculate a maximum slot cut length, based on a number of factors. Essentially, it looks at a failure wedge, calculates its weight, resulting horizontal force, and resisting force.



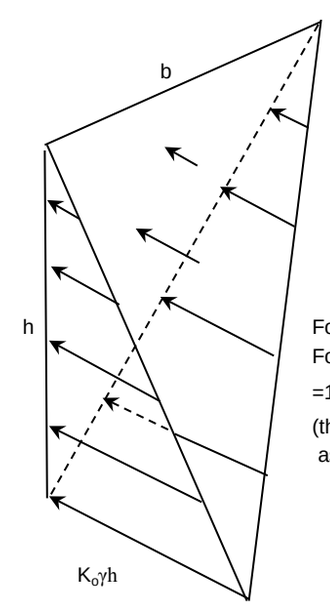
Soil		
Unit Weight (pcf) =	120	
Friction angle (deg) =	34	0.44 = Ko
Cohesion (psf) =	215	
Excavation		
Excav. Depth (ft), h =	10	
Slot cut length (ft), l =	4.5	
Foundation		
Surcharge q (psf)	1100	
Footing width, b (ft)	1	
Footing length along cut (ft) Assumption: footing length > slot cut ex	100	
Distance from slot cut to footing, s (ft)	0	
Slope (X)H:(1)V	1000	use 1000 for no backslope

2.04 = Calculated Factor of Safety

Alpha		Weight of wedge	Surcharge due to backfill	Effect of surcharge	Sliding Force	Sliding Resistance	Factor of Safety
		lbs	lbs	lbs	lbs	lbs	
62	1.082	14356	0	4950	17046	34827	2.04
20	0.349	74182	0	4950	27065	170191	6.29
21	0.367	70337	0	4950	26981	161399	5.98
22	0.384	66827	0	4950	26888	153367	5.70
23	0.401	63608	0	4950	26788	145997	5.45
24	0.419	60643	0	4950	26679	139207	5.22
25	0.436	57902	0	4950	26562	132927	5.00
26	0.454	55358	0	4950	26437	127098	4.81
27	0.471	52990	0	4950	26304	121670	4.63
28	0.489	50780	0	4950	26163	116602	4.46
29	0.506	48709	0	4950	26015	111855	4.30
30	0.524	46765	0	4950	25858	107398	4.15
31	0.541	44936	0	4950	25693	103203	4.02
32	0.559	43209	0	4950	25520	99245	3.89
33	0.576	41576	0	4950	25340	95504	3.77
34	0.593	40029	0	4950	25152	91961	3.66
35	0.611	38560	0	4950	24956	88599	3.55
36	0.628	37162	0	4950	24753	85402	3.45
37	0.646	35830	0	4950	24542	82358	3.36
38	0.663	34558	0	4950	24324	79456	3.27
39	0.681	33342	0	4950	24098	76683	3.18
40	0.698	32177	0	4950	23865	74032	3.10
41	0.716	31060	0	4950	23625	71493	3.03
42	0.733	29987	0	4950	23377	69058	2.95
43	0.75	28954	0	4950	23122	66721	2.89
44	0.768	27959	0	4950	22861	64475	2.82
45	0.785	27000	0	4950	22592	62314	2.76
46	0.803	26074	0	4950	22317	60233	2.70
47	0.82	25178	0	4950	22034	58228	2.64
48	0.838	24311	0	4950	21745	56293	2.59
49	0.855	23471	0	4950	21449	54424	2.54
50	0.873	22656	0	4950	21147	52619	2.49
51	0.89	21864	0	4950	20839	50873	2.44
52	0.908	21095	0	4950	20524	49183	2.40
53	0.925	20346	0	4950	20202	47546	2.35
54	0.942	19617	0	4950	19875	45960	2.31
55	0.96	18906	0	4950	19541	44422	2.27
56	0.977	18212	0	4950	19202	42930	2.24
57	0.995	17534	0	4950	18857	41482	2.20
58	1.012	16871	0	4950	18506	40075	2.17
59	1.03	16223	0	4950	18149	38707	2.13
60	1.047	15588	0	4950	17787	37378	2.10
61	1.065	14966	0	4950	17419	36085	2.07
62	1.082	14356	0	4950	17046	34827	2.04
63	1.1	13757	0	4950	16668	33602	2.02
64	1.117	13169	0	4950	16285	32409	1.99
65	1.134	12590	0	4950	15897	31247	1.97
66	1.152	12021	0	4950	15504	30114	1.94
67	1.169	11461	0	4950	15106	29010	1.92
68	1.187	10909	0	4950	14704	27934	1.90
69	1.204	10364	0	4950	14297	26884	1.88
70	1.222	9827	0	4950	13886	25859	1.86
71	1.239	9297	0	4950	13471	24859	1.85
72	1.257	8773	0	4950	13051	23883	1.83
73	1.274	8255	0	4950	12628	22930	1.82
74	1.292	7742	0	4950	12200	22000	1.80
75	1.309	7235	0	4950	11769	21091	1.79
76	1.326	6732	0	4950	11335	20203	1.78
77	1.344	6233	0	4950	10897	19336	1.77
78	1.361	5739	0	4950	10455	18488	1.77
79	1.379	5248	0	4950	10011	17660	1.76
80	1.396	4761	0	4950	9563	16850	1.76



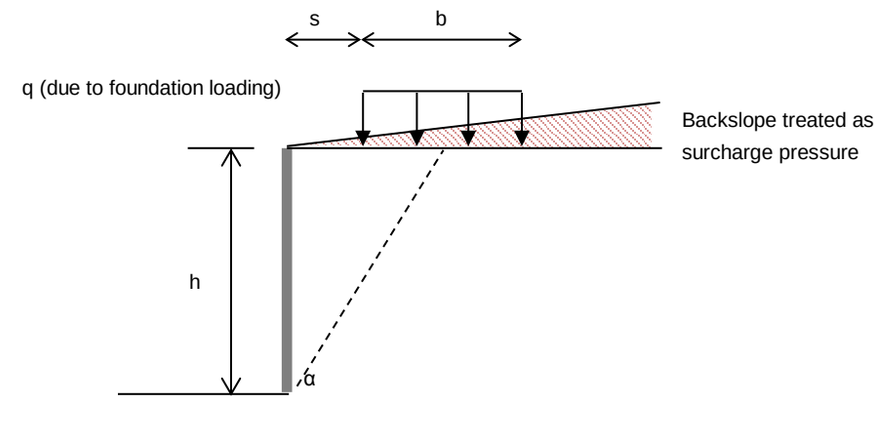
Face of the slot cut is shown shaded
Weight is the calculation of the failure wedge h x b x l times unit weight
Sliding Force is along the angle of the back surface
Resistance is found on the side triangles as well as the base of the failure wedge



Force - 1/3 Area times Height
Force = 1/3 (1/2bh)($K_o\gamma h$)
$=1/6K_o\gamma h^2 b=1/6K_o\gamma h^3/\tan\alpha$
(then remember to multiply by two as there are two sides of the wedge)

SLOT CUT STABILITY ANALYSIS FOR BUILDING SURCHARGE

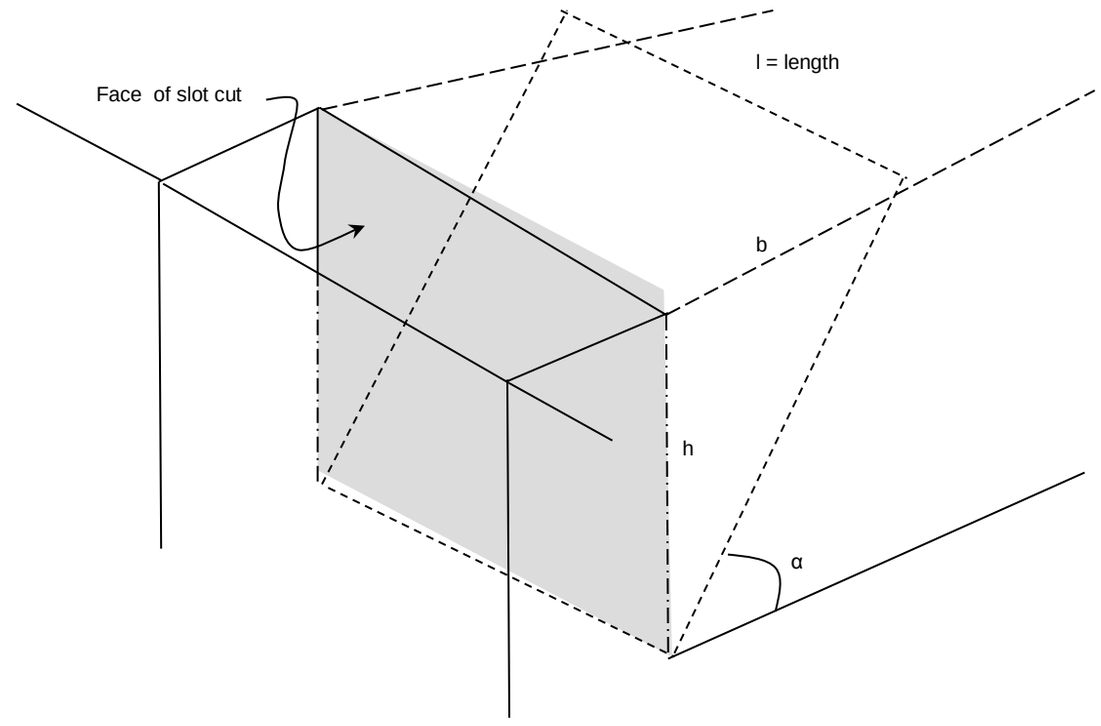
This program helps calculate a maximum slot cut length, based on a number of factors. Essentially, it looks at a failure wedge, calculates its weight, resulting horizontal force, and resisting force.



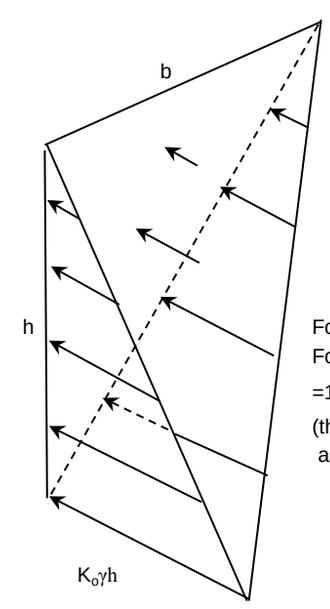
Soil		
Unit Weight (pcf) =	120	
Friction angle (deg) =	0	1.00 = Ko
Cohesion (psf) =	2000	
Excavation		
Excav. Depth (ft), h =	10	
Slot cut length (ft), l =	4.5	
Foundation		
Surcharge q (psf)	1100	
Footing width, b (ft)	1	
Footing length along cut (ft) Assumption: footing length > slot cut ex	100	
Distance from slot cut to footing, s (ft)	0	
Slope (X)H:(1)V	1000	use 1000 for no backslope

14.49 = Calculated Factor of Safety

Alpha		Weight of wedge	Surcharge due to backfill	Effect of surcharge	Sliding Force	Sliding Resistance	Factor of Safety
		lbs	lbs	lbs	lbs	lbs	
45	0.785	27000	0	4950	22592	327279	14.49
20	0.349	74182	0	4950	27065	812638	30.03
21	0.367	70337	0	4950	26981	772156	28.62
22	0.384	66827	0	4950	26888	735269	27.35
23	0.401	63608	0	4950	26788	701508	26.19
24	0.419	60643	0	4950	26679	670481	25.13
25	0.436	57902	0	4950	26562	641860	24.16
26	0.454	55358	0	4950	26437	615366	23.28
27	0.471	52990	0	4950	26304	590764	22.46
28	0.489	50780	0	4950	26163	567850	21.70
29	0.506	48709	0	4950	26015	546449	21.01
30	0.524	46765	0	4950	25858	526410	20.36
31	0.541	44936	0	4950	25693	507600	19.76
32	0.559	43209	0	4950	25520	489904	19.20
33	0.576	41576	0	4950	25340	473220	18.67
34	0.593	40029	0	4950	25152	457458	18.19
35	0.611	38560	0	4950	24956	442540	17.73
36	0.628	37162	0	4950	24753	428394	17.31
37	0.646	35830	0	4950	24542	414957	16.91
38	0.663	34558	0	4950	24324	402173	16.53
39	0.681	33342	0	4950	24098	389991	16.18
40	0.698	32177	0	4950	23865	378366	15.85
41	0.716	31060	0	4950	23625	367256	15.55
42	0.733	29987	0	4950	23377	356625	15.26
43	0.75	28954	0	4950	23122	346439	14.98
44	0.768	27959	0	4950	22861	336666	14.73
45	0.785	27000	0	4950	22592	327279	14.49
46	0.803	26074	0	4950	22317	318252	14.26
47	0.82	25178	0	4950	22034	309562	14.05
48	0.838	24311	0	4950	21745	301188	13.85
49	0.855	23471	0	4950	21449	293109	13.67
50	0.873	22656	0	4950	21147	285307	13.49
51	0.89	21864	0	4950	20839	277765	13.33
52	0.908	21095	0	4950	20524	270469	13.18
53	0.925	20346	0	4950	20202	263403	13.04
54	0.942	19617	0	4950	19875	256555	12.91
55	0.96	18906	0	4950	19541	249911	12.79
56	0.977	18212	0	4950	19202	243461	12.68
57	0.995	17534	0	4950	18857	237194	12.58
58	1.012	16871	0	4950	18506	231100	12.49
59	1.03	16223	0	4950	18149	225169	12.41
60	1.047	15588	0	4950	17787	219393	12.33
61	1.065	14966	0	4950	17419	213764	12.27
62	1.082	14356	0	4950	17046	208273	12.22
63	1.1	13757	0	4950	16668	202914	12.17
64	1.117	13169	0	4950	16285	197681	12.14
65	1.134	12590	0	4950	15897	192566	12.11
66	1.152	12021	0	4950	15504	187563	12.10
67	1.169	11461	0	4950	15106	182667	12.09
68	1.187	10909	0	4950	14704	177873	12.10
69	1.204	10364	0	4950	14297	173176	12.11
70	1.222	9827	0	4950	13886	168570	12.14
71	1.239	9297	0	4950	13471	164051	12.18
72	1.257	8773	0	4950	13051	159616	12.23
73	1.274	8255	0	4950	12628	155258	12.30
74	1.292	7742	0	4950	12200	150976	12.37
75	1.309	7235	0	4950	11769	146765	12.47
76	1.326	6732	0	4950	11335	142621	12.58
77	1.344	6233	0	4950	10897	138541	12.71
78	1.361	5739	0	4950	10455	134522	12.87
79	1.379	5248	0	4950	10011	130561	13.04
80	1.396	4761	0	4950	9563	126654	13.24



Face of the slot cut is shown shaded
Weight is the calculation of the failure wedge h x b x l times unit weight
Sliding Force is along the angle of the back surface
Resistance is found on the side triangles as well as the base of the failure wedge



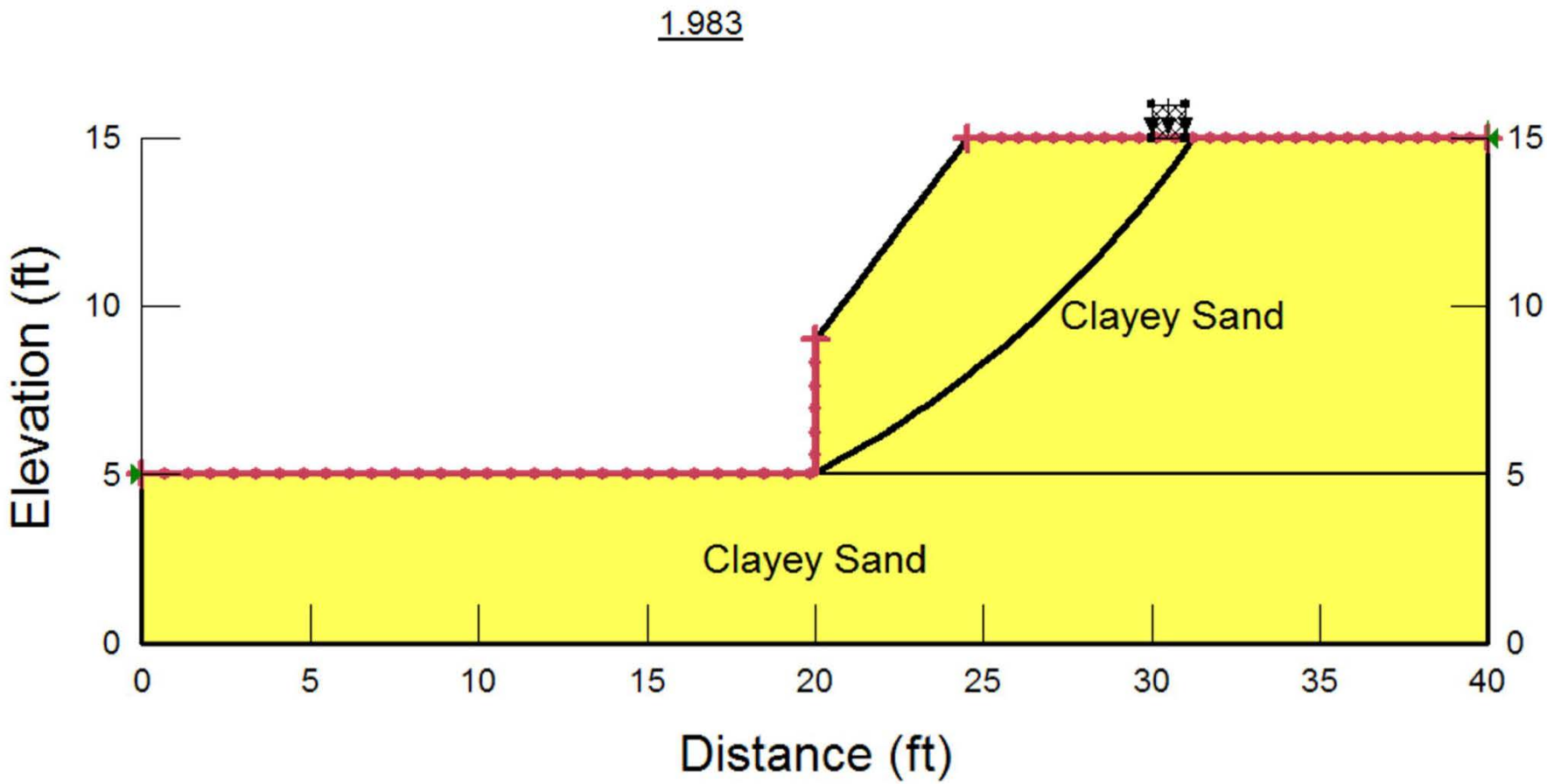
Force - 1/3 Area times Height
Force = 1/3 (1/2bh)($K_o\gamma h$)
$=1/6K_o\gamma h^2 b=1/6K_o\gamma h^3/\tan\alpha$
(then remember to multiply by two as there are two sides of the wedge)

EXCAVATION STABILITY ANALYSIS

Slope Stability Analysis

10ft Excavation – Option 2

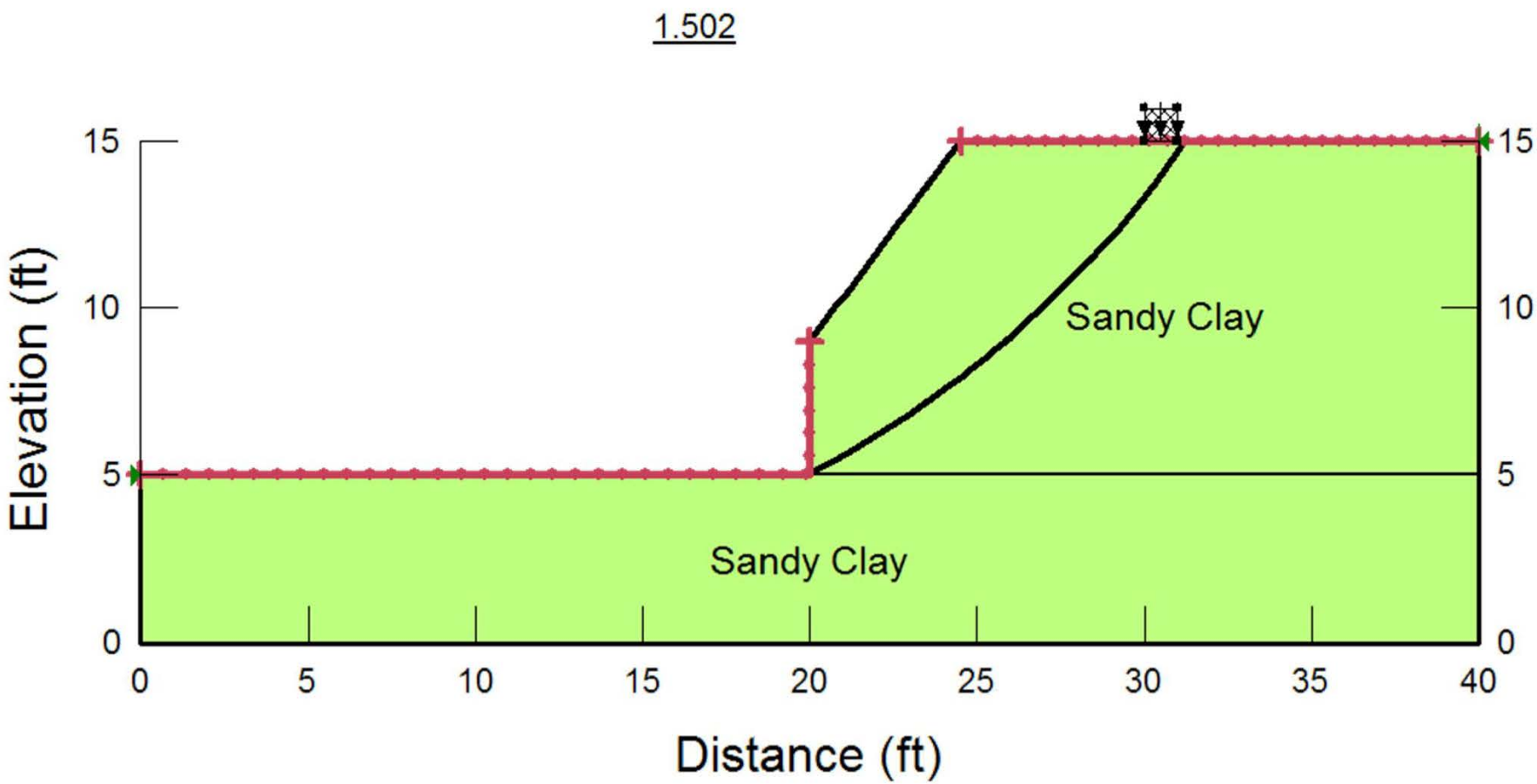
Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Clayey Sand	120	36	345
Building Surcharge = 1100 psf			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	**Former Kast Property**	**FIGURE**
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	**C-7**

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
10ft Excavation – Option 2

Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay	120	34	215
Building Surcharge = 1100 psf			



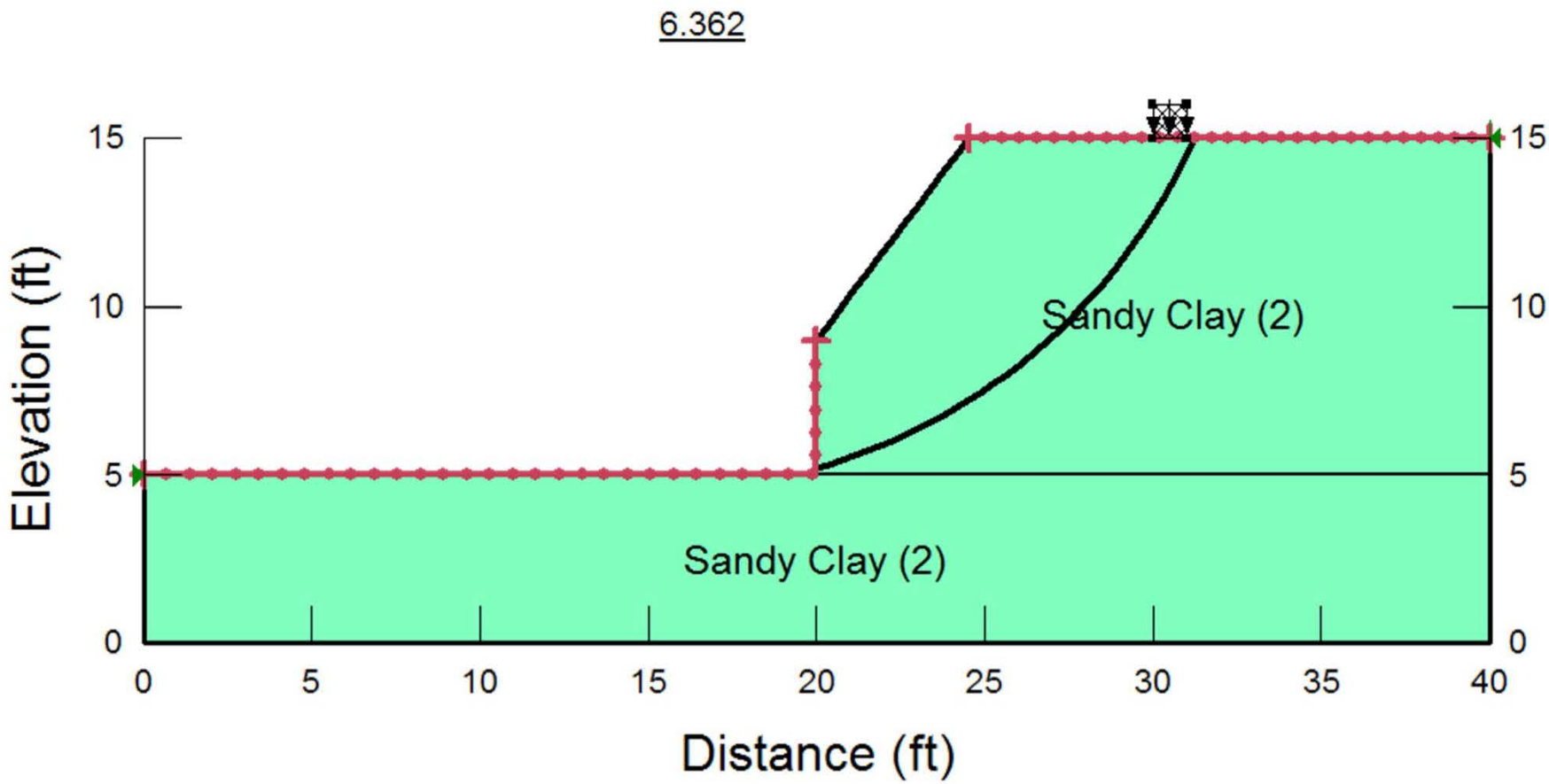
AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-8

EXCAVATION STABILITY ANALYSIS

Slope Stability Analysis

10ft Excavation – Option 2

Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay (2)	120	-	2000
Building Surcharge = 1100 psf			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	**Former Kast Property**	**FIGURE**
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	**C-9**

Heave Calculation

Based on Caltrans, Trenching and Shoring Manual 2011

Calculated:	AL	Date:	9/14/2015
Checked:	DS	Date:	9/24/2015

No = ϒH/c	6	If No>6	Heave is possible
		If No≤6	Heave is not possible

Inputs

Height (H)	10	ft
Width (B)	5	ft
Length (L)	5	ft
Surcharge (q)	1,100	psf
Cohesion (c)	200	psf
Soil Weight (γ)	115	pcf

input	
output	

Driving Forces

B'	3.5	ft
Weight of soil column (W)	1,150.0	lb
Resistance of soil due to cohesion (S)	2,000.0	lb/ft
Driving Load (Q)	3,000.0	lb/ft

Resisting Force

$N_{c\ (square)}$	8.5	unitless
$N_{c\ (rectangle)}$	8.5	unitless
q_n	1,704.7	psf
Qu	5,966.6	lb/ft

Factor of Safety	1.99	OK - NO HEAVE

$$FS = \frac{F_{RS}}{F_{DR}} \geq 1.5$$

$$F_{DR} = Q$$

$$Q = W + B' * q - S$$

$$Q_u = cN_c * B'$$

$$F_{RS} = Q_u$$

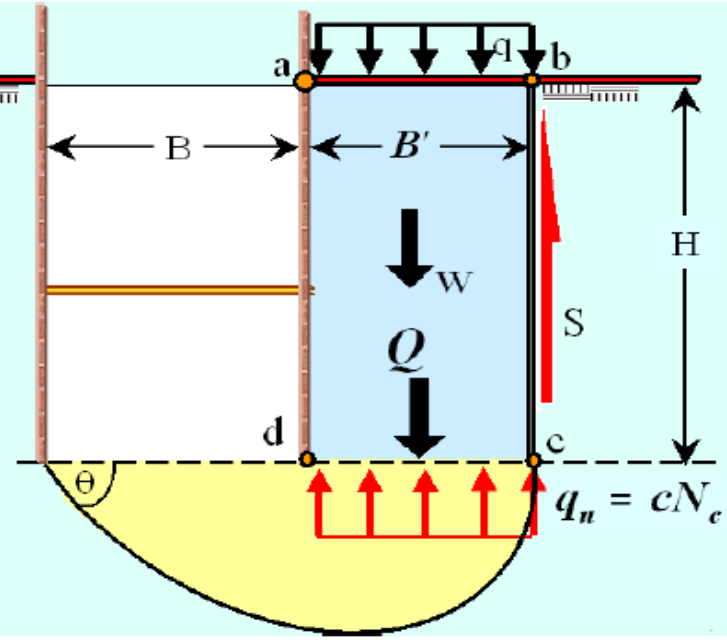


Figure 9-14. Factor of safety

Pool Analyses

5 feet Excavation

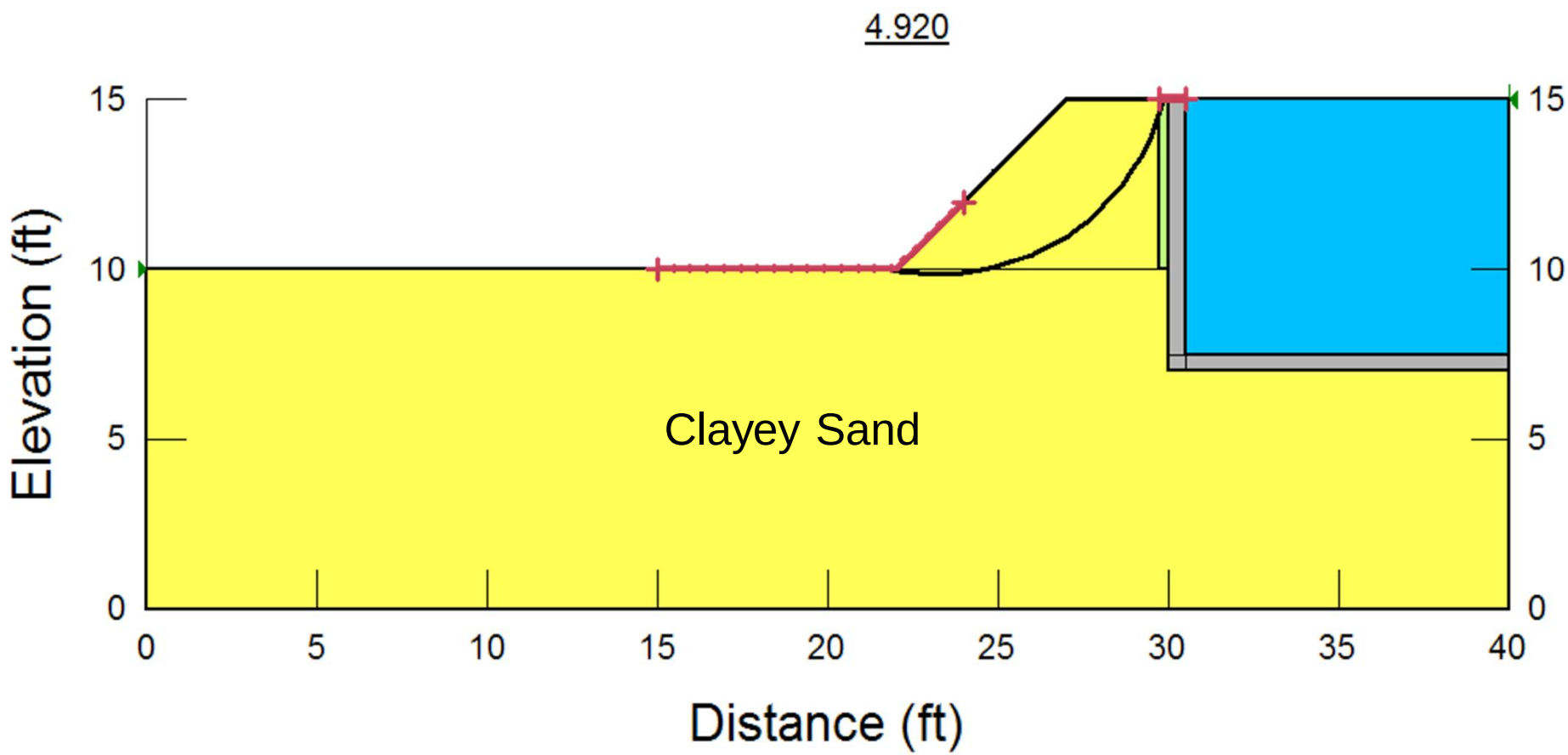
- Slope Stability Analysis

10 feet Excavation

- Slope Stability Analysis

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
5ft Excavation near Pool

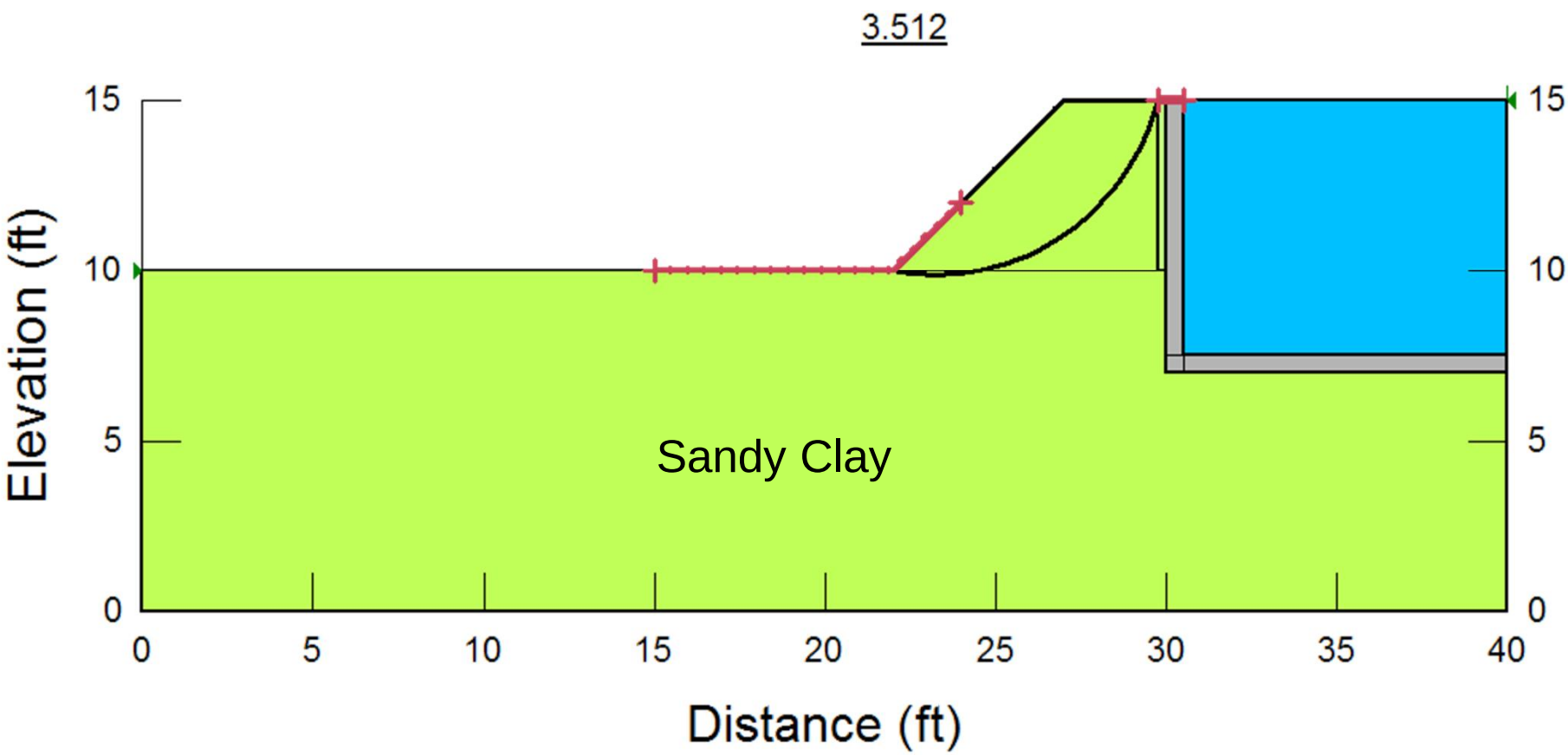
Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Clayey Sand	120	36	345
No Surcharge			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-10

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
5ft Excavation near Pool

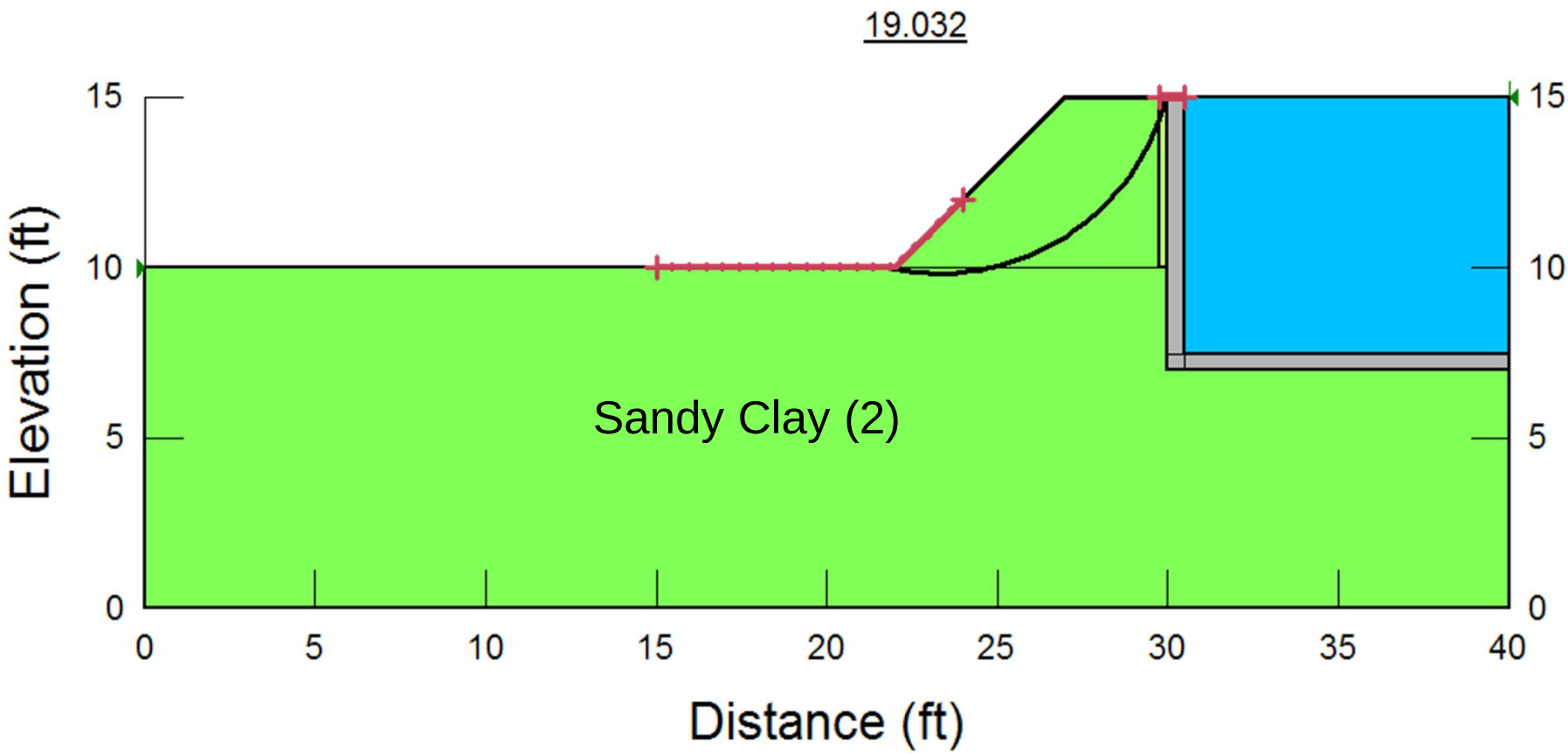
Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay	120	34	215
No Surcharge			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-12

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
5ft Excavation near Pool

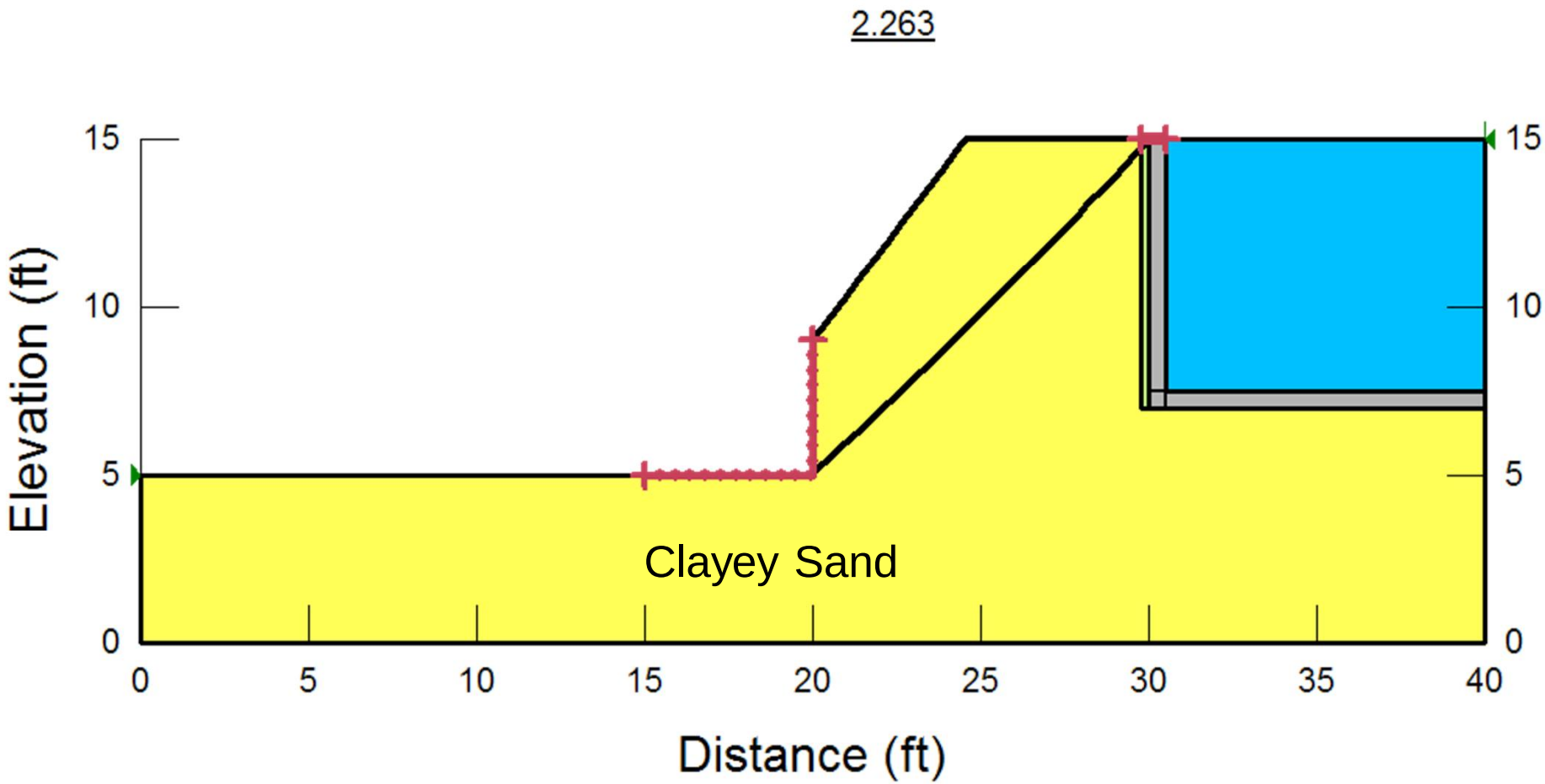
Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay (2)	120	-	2000
No Surcharge			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-14

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
10ft Excavation near Pool

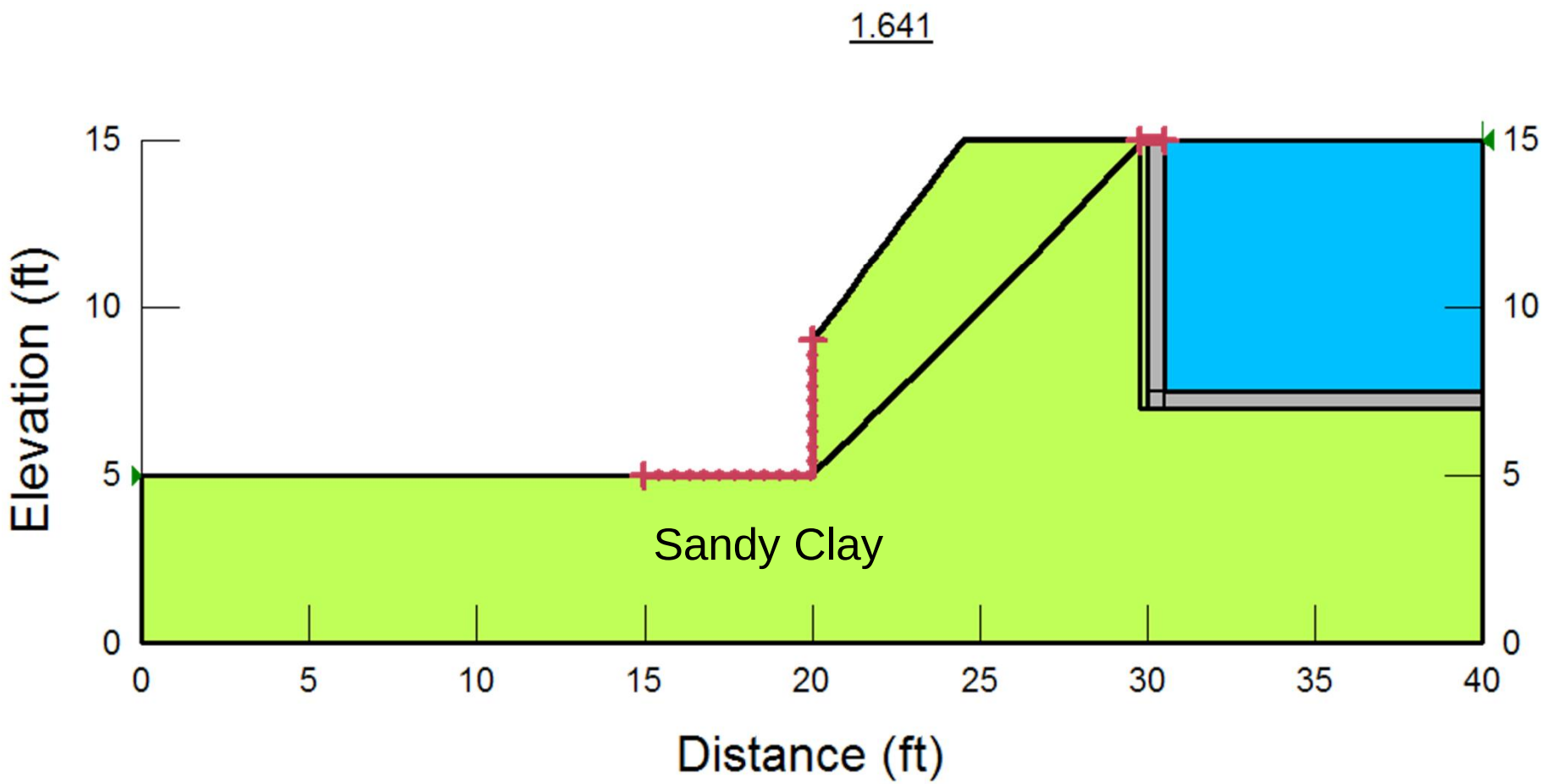
Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Clayey Sand	120	36	345
No Surcharge			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-11

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
10ft Excavation near Pool

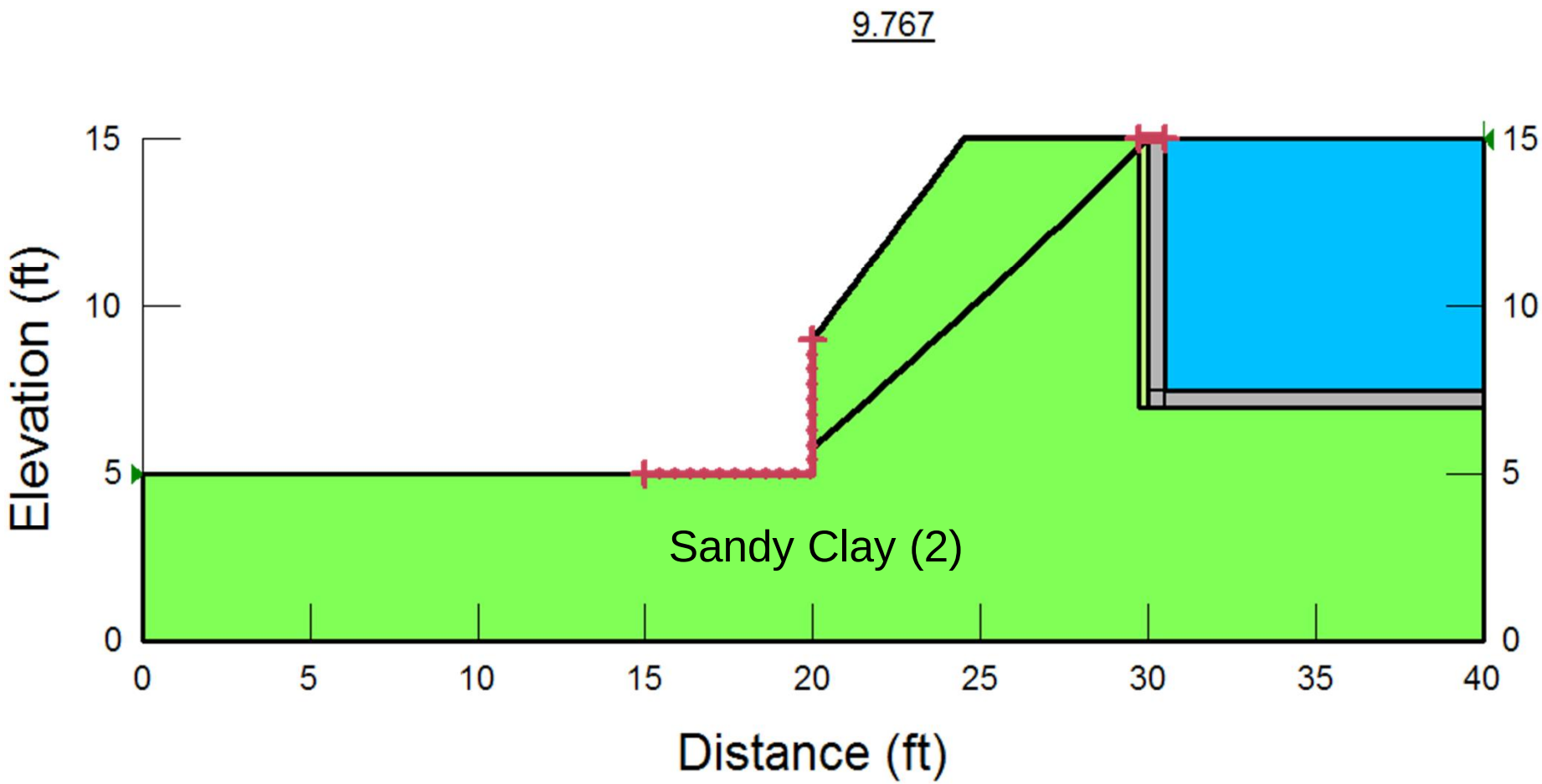
Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay	120	34	215
No Surcharge			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	**Former Kast Property**	**FIGURE**
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	**C-13**

EXCAVATION STABILITY ANALYSIS
Slope Stability Analysis
10ft Excavation near Pool

Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay (2)	120	-	2000
No Surcharge			



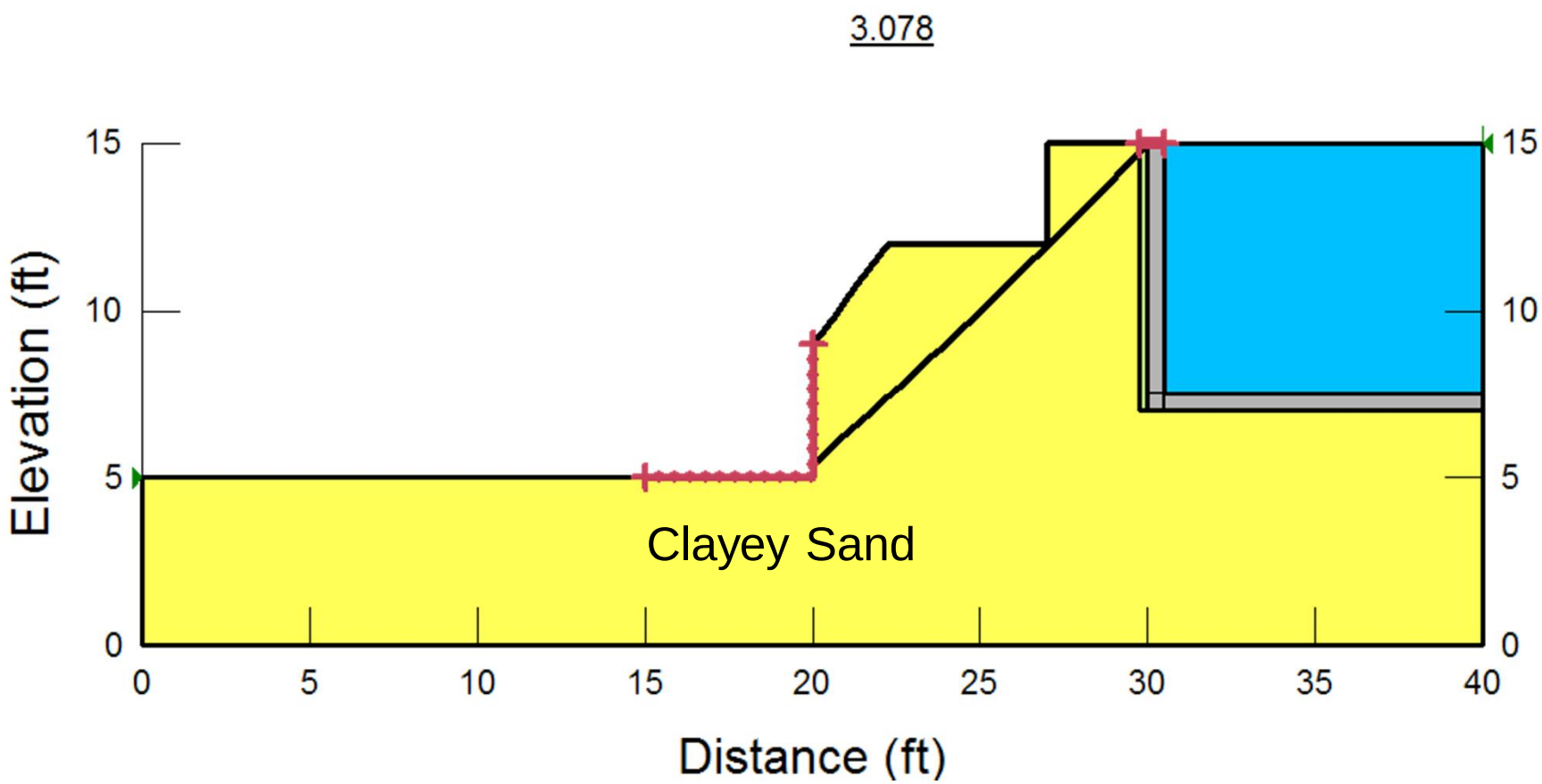
AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-15

EXCAVATION STABILITY ANALYSIS

Slope Stability Analysis

10ft Excavation near Pool with Slot Trench

Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Clayey Sand	120	36	345
No Surcharge			



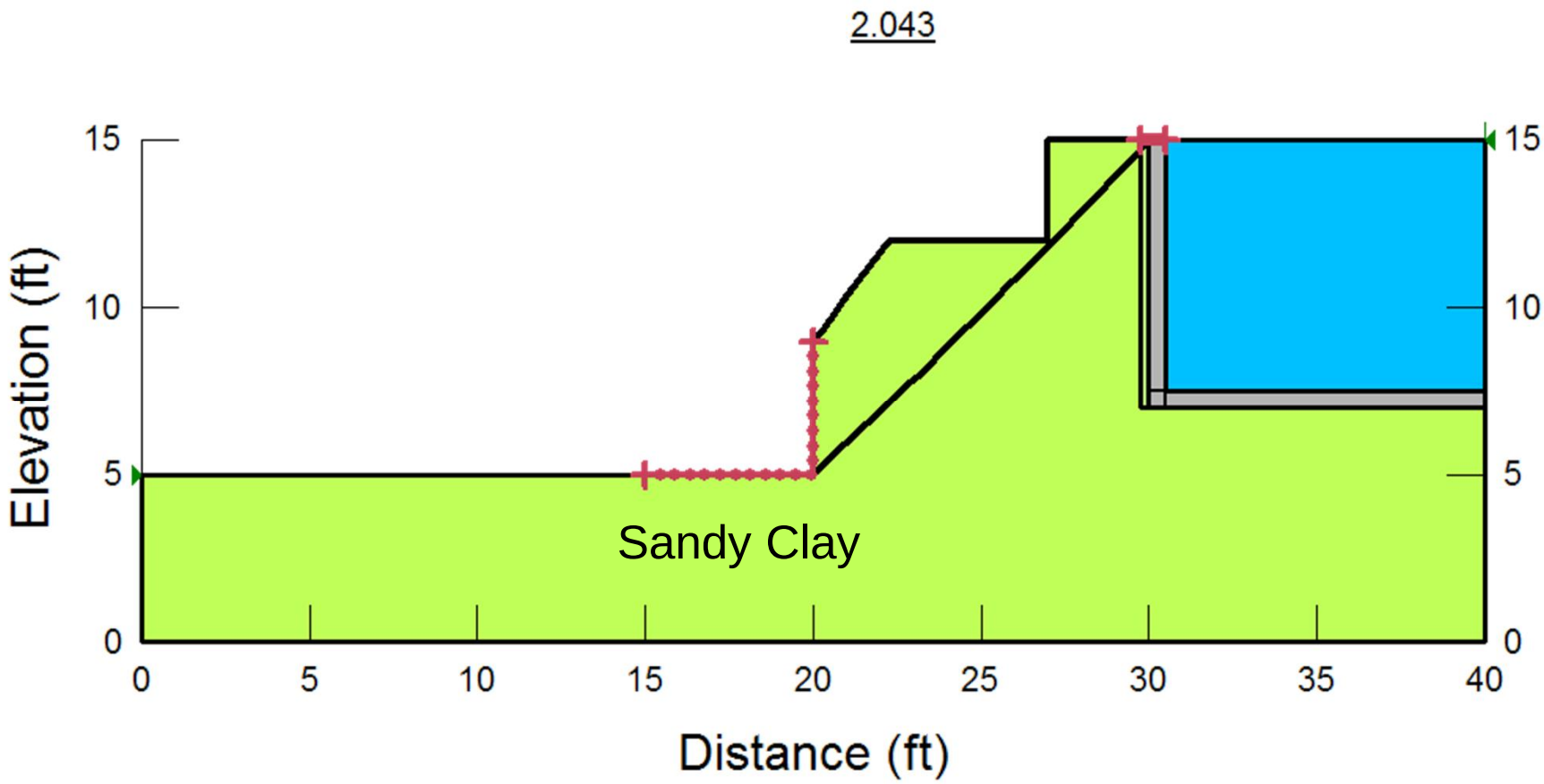
AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-16

EXCAVATION STABILITY ANALYSIS

Slope Stability Analysis

10ft Excavation near Pool with Slot Trench

Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay	120	34	215
No Surcharge			



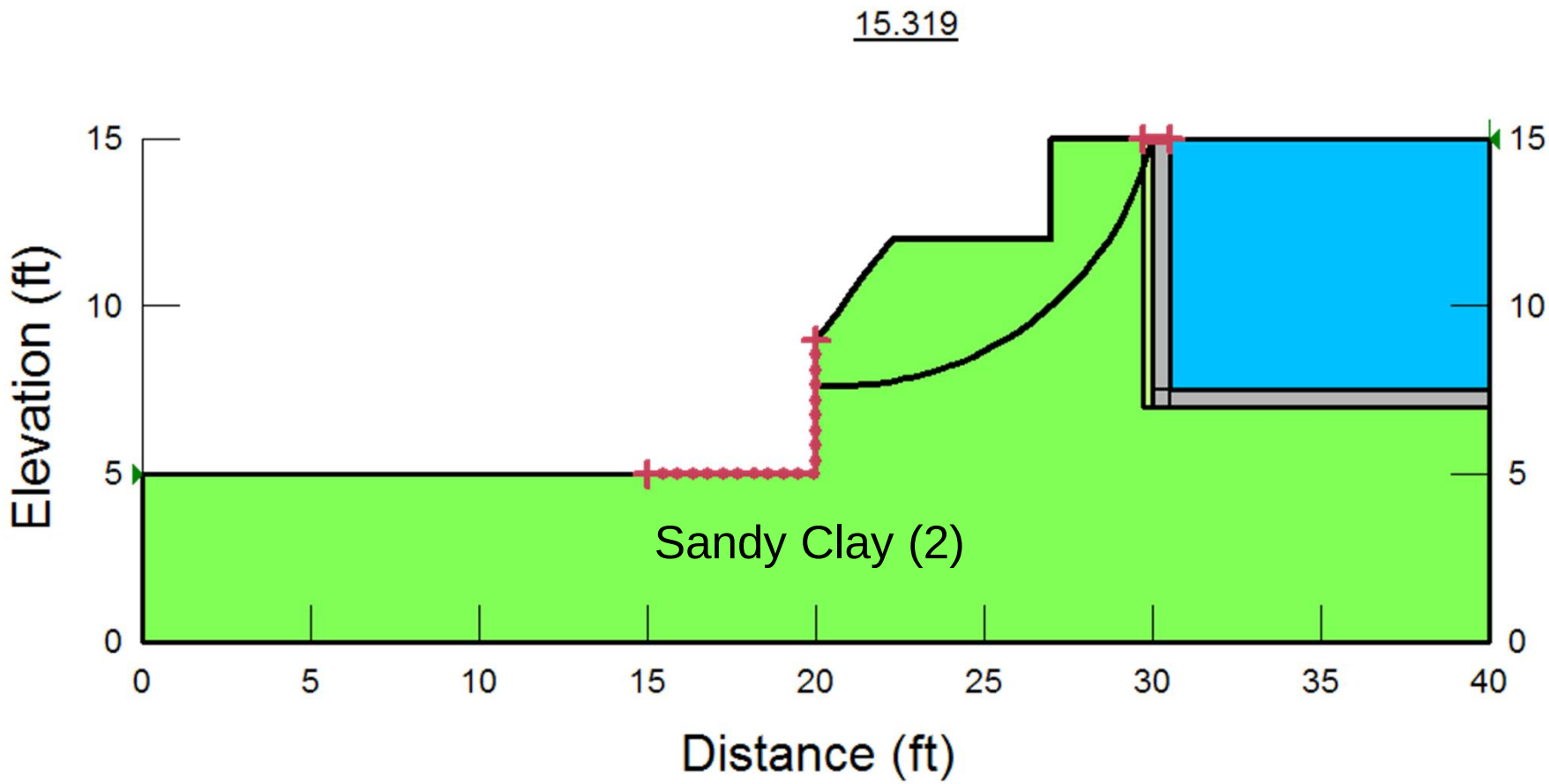
AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-17

EXCAVATION STABILITY ANALYSIS

Slope Stability Analysis

10ft Excavation near Pool with Slot Trench

Material	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Sandy Clay (2)	120	-	2000
No Surcharge			



AECOM	PROJECT No 60422689	CALCULATED BY ALEX	Former Kast Property	FIGURE
	Date OCT, 2015	CHECKED BY DAN	SLOPE STABILITY	C-18