Holbrook Farms – Geotechnical Overview

The developer intends to construct basements on residential structures within Holbrook Farms. If subsurface drains are required, the developer intends to follow recommendations for construction of basements, and subsurface drains detailed in pages 19 and 20 of the geotechnical report. It is anticipated that subsurface drains may tie into the storm drain system for the project. In the event of such a tie in, guidelines set forth in the report will be followed.

AGEC
Applied GeoTech

GEOTECHNICAL INVESTIGATION

PROPOSED HOLBROOK PROPERTY

REDWOOD ROAD AND HIGHWAY 85

LEHI, UTAH

PREPARED FOR:

IVORY HOMES
978 EAST WOODOAK LANE
SALT LAKE CITY, UTAH 84117

ATTENTION: BRAD MACKAY

PROJECT NO. 1140850

NOVEMBER 25, 2014

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EXECUTIVE SUMMARY

1. The subsurface soils encountered west of Redwood Road consist of a mixture of clay, silt, sand and gravel. Practical excavation equipment refusal was encountered in gravel in Test Pits TP-1-1, TP-1-2, TP-1-6 and Boring B-2-4. Practical excavation equipment refusal was encountered in Test Pit TP-1-15 in clay. The excavation equipment used was a rubber-tired backhoe. Much of the upper clay west of Redwood Road and some areas east of Redwood Road is porous and laboratory tests indicate that it becomes more compressible when wetted. Most of the porous soil appears to be in the upper several feet but extends to a greater depth in Test Pit TP-1-13. Some of the shallower depth test pits excavated to obtain samples for California Bearing Ratio tests did not extend through the porous soil. The areas of porous and cemented soil encountered in the test pits are indicated on the logs of the test pits.

   Most of the soil east of Redwood Road consists of clay with some sand layers. There were some gravel layers encountered near Redwood Road. Relatively soft clay, particularly in the lower portion of test pits, was encountered in the southeast portion of the property east of Redwood Road and north of Highway 85. Similar soil was encountered for the property south of Highway 85.

2. Subsurface water was encountered in Test Pit TP-1-5 west of Redwood Road and in several of the test pits and borings east of Redwood Road. The water level is at relatively shallow depths in the southeast portion of the property east of Redwood Road. Slotted PVC pipe was installed in borings and test pits to facilitate future measurement of the water level.

3. Moisture-sensitive soil was encountered in some areas west of Redwood Road. The site is suitable for the proposed construction if the moisture-sensitive soil is removed from below proposed building areas. The proposed buildings may be supported on spread footings bearing on the undisturbed natural soil or on compacted structural fill extending down to the undisturbed natural soil and may be designed using an allowable net bearing pressure of 1,500 pounds per square foot in most areas of the site. However, lower bearing pressures or structural fill may be needed for the southeast portion of the property east of Redwood Road. Higher bearing pressures are suitable for footings bearing on the gravel.

4. The upper soil consists predominantly of clay and will be easily disturbed by construction traffic when the clay is very moist to wet such as in the winter and spring and at times of prolonged rainfall or where excavations extend down to the very moist soil. Placement of granular fill may be needed to provide construction equipment access and to facilitate construction of the pavement when the upper soil is very moist to wet.

Executive Summary (continued)

5. Some cemented soil was encountered in the western portion of the proposed development west of Redwood Road. Heavy-duty excavation equipment and possibly some rock-excavation equipment may be needed to facilitate excavations in this area.

6. There is a concern for the stability of the slopes along the eastern side of the proposed development where the property adjoins the flood plain for the Jordan River. Slope stability should be evaluated for buildings to be constructed within 50 feet of the crest of this slope.

7. Geotechnical information related to foundations, subgrade preparation, pavement design and materials is included in the report.

SCOPE

This report presents the results of a geotechnical investigation for the Holbrook Property located east and west of Redwood Road and mostly north of Highway 85. However, a portion of the property extends south of Highway 85 near the Jordan River. The approximate location of the site is presented on Figures 1, 2 and 3. The report presents the subsurface conditions encountered, laboratory test results and recommendations for foundations and pavement. The study was conducted in general accordance with our proposal dated September 18, 2014.

Field exploration was conducted to obtain information on the subsurface conditions. Samples obtained from the field investigation were tested in the laboratory to determine physical and engineering characteristics of the on-site soil. Information obtained from the field and laboratory was used to define conditions at the site for our engineering analysis and to develop recommendations for the proposed foundations and pavement.

This report has been prepared to summarize the data obtained during the study and to present our conclusions and recommendations based on the proposed construction and the subsurface conditions encountered. Design parameters and a discussion of geotechnical engineering considerations related to construction are included in the report.

SITE CONDITIONS

At the time of our field study, most of the property consisted of cultivated fields. There are some unplanted areas in the extreme western portion of the property west of Redwood Road and areas along the Jordan River flood plain.

There are numerous boulders on the ground surface in the uncultivated area west of Redwood Road. There are some canals and roads that extend through the property.

Vegetation at the site varies from the native vegetation in the extreme western portion of the property west of Redwood Road and the areas along the Jordan River flood plain to primarily cultivated fields throughout most of the property.

The ground surface at the site slopes gently down toward the east throughout the majority of the property. There is a steeper slope along the western edge of the Jordan River flood plain.

The Jordan River and a golf course are east of the property. There is mostly farmland to the south of the property and undeveloped fields to the west. There is undeveloped land and a large data center and driver training course north of the property.

Redwood Road extends through a portion of the property and Highway 85 extends in a general east/west direction along the south edge and through portions of the property.

FIELD STUDY

The field study was conducted from October 10 to October 27, 2014. Six borings were drilled at the approximate locations indicated on Figures 2 and 3 using 8-inch diameter, hollow-stem auger powered by a truck-mounted drill rig. The test pits were excavated at the approximate locations indicated on Figures 1 through 3 using a rubber-tired backhoe. The borings and test pits were logged and soil samples obtained by representatives from AGEC. Logs of the subsurface conditions encountered in the test pits and borings are graphically shown on Figures 4 through 14 with legend and notes on Figure 15.

The test pits were backfilled without significant compaction. The backfill in the test pits should be properly compacted where it will support buildings, floor slabs, pavement or other improvements.

SUBSURFACE CONDITIONS

The subsurface soils encountered west of Redwood Road consist of a mixture of clay, silt, sand and gravel. Practical excavation equipment refusal was encountered in gravel in Test Pits TP-1-1, TP-1-2, TP-1-6 and Boring B-2-4. Practical excavation equipment refusal was encountered in Test Pit TP-1-15 in clay. The excavation equipment used was a rubber-tired backhoe. Much of the upper clay west of Redwood Road and some of the soil east of Redwood Road is porous and laboratory tests indicate that it becomes more compressible when wetted. Most of the porous soil appears to be in the upper several feet but extends to a greater depth in Test Pit TP-1-13. Some of the shallower depth test pits excavated to obtain samples for California Bearing Ratio tests did not extend through the porous soil. The areas of porous and cemented soil encountered in the test pits are indicated on the logs of the test pits.

Most of the soil east of Redwood Road consists of clay with some sand layers. There were some gravel layers encountered near Redwood Road. Relatively soft clay, particularly in the lower portion of test pits, was encountered in the southeast portion of the property east of Redwood Road and north of Highway 85. Similar soil was encountered for the property south of Highway 85.

A description of the various soils encountered in the borings and test pits follows:

Topsoil - The topsoil consists of sandy lean clay to lean clay throughout most of the site. Silty to clayey sand with gravel, cobbles and occasional boulders was encountered in Test Pits TP-1-1, TP-1-6, TP-2-9 and CBR-2-18. The topsoil consisted of silty sand in Test Pit TP-1-10. The topsoil is slightly moist to moist, brown to dark brown and contains roots and organics.

Lean Clay - The clay contains a small to moderate amount of sand and thin silt and sand layers. Some gravel was encountered in Test Pits TP-1-2, TP-1-8, TP-1-11, TP-1-13 and TP1-15. The clay is soft to hard, slightly moist to wet, brown to gray.

The clay was cemented in Test Pits TP-1-5 and Test Pits TP-1-15. The clay was porous in several of the test pits.

Laboratory tests conducted on samples of the clay indicate natural moisture contents range from 8 to 43 percent and natural dry densities range from 66 to 102 pounds per cubic foot (pcf). Unconfined compressive strengths ranging from 440 to 10,500 pounds per square foot (psf) were measured from samples of the clay.

Consolidation tests conducted on samples of the clay indicate that it will compress a small to moderate amount with the addition of light to moderate loads. The clay was found to be more compressible when wetted for test pits west of Redwood Road. The results of consolidation tests are presented on Figures 18 through 27.

Silt - The silt contains a small to large amount of sand. It is stiff to very stiff, slightly moist to wet, brown and cemented in TP-1-4.

Laboratory tests conducted on samples of the silt indicate natural moisture contents range from 27 to 30 percent and a natural dry density of 85 pcf.

Interlayered Lean Clay and Silty Sand - The interlayered soil is medium stiff to stiff, medium dense, moist to wet and brown.

Interlayered Silt and Silty Sand - The interlayered soil is medium dense, moist and yellowish brown and slightly porous.

Laboratory tests conducted on a sample of the interlayered soil indicate it has a natural moisture content of 15 percent and a natural dry density of 74 pcf. A consolidation test conducted on a sample of the interlayered soil indicates that it will compress a small to moderate amount with the addition of light to moderate loads. The results of the consolidation test are presented on Figure 16.

Clayey Sand - The sand contains some clay and silt layers. It is medium dense, moist and brown with cobbles in Test Pit TP-1-6.

Laboratory tests conducted on a sample of the clayey sand indicate it has a natural moisture content of 9 percent and a natural dry density of 87 pcf. A consolidation test conducted on a sample of the clayey sand indicates that it will compress a small to moderate amount with the addition of light to moderate loads. The clayey sand was found to be more compressible when wetted. The results of the consolidation test are presented on Figure 17.

Silty Sand - The sand contains a small to large amount of gravel and occasional clay layers. It is medium dense to dense, moist to wet, brown to yellowish brown and slightly cemented in Test Pits TP-1 1 and TP-1-6. The sand is more heavily cemented in Test Pit TP-1-7. The sand is slightly porous in Test Pits TP-1-3 and TP-1-12.

Laboratory tests conducted on samples of the silty sand indicate natural moisture contents range from 13 to 25 percent and natural dry densities range from 86 to 101 pcf.

Poorly-graded Sand with Silt - The sand is medium dense, moist to wet and brown.

Clayey Gravel with Sand - The gravel contains silty layers. It is medium dense to very dense, moist, brown to gray and slightly cemented in Test Pit TP-1-1.

Poorly-graded Gravel with Silt and Sand - The gravel contains cobbles and boulders up to approximately 2 feet in size. The gravel is medium dense to very dense, moist to wet, brown to gray and cemented in Test Pits TP-1-1, TP-1-2 and TP-1-6.

Results of the laboratory tests are summarized on Table I and are included on the logs of the borings and test pits.

SUBSURFACE WATER

Subsurface water was encountered in Test Pit TP-1-5 west of Redwood Road and in several of the test pits and borings east of Redwood Road. The water level is generally at a relatively shallow depth in the southeast portion of the property east of Redwood Road. Slotted PVC pipe was installed in borings and test pits to facilitate future measurement of the water level. Fluctuations in water levels should be expected over time. The following table provides a list of the water level in test pits and borings based on measurements from November 14, 2014.

Test Pit or Boring	Depth to Water, ft
TP-1-5	9.7
TP-2-7	11.8
TP-2-12	12.8
TP-2-16	6.0
TP-2-21	11.5
TP-2-22	6.0
TP-2-23	6.0
TP-2-24	9.7
TP-2-27	4.9
TP-2-28	5.8
TP-2-31	5.8
TP-2-32	5.7
TP-2-33	8.8
TP-2-34	7.5
TP-2-35	6.6
TP-3-1	9.3
TP-3-2	12.1
TP-3-3	7.4
B-2-1	29.9
B-2-2	23.5
B-2-3	26.3
B-2-5	15.6
B-3-1	10.1

PROPOSED CONSTRUCTION

We understand that the site encompasses approximately 670 acres, which will be subdivided for residential and commercial construction. We anticipate that the buildings will consist of one to three-story, wood-framed structures with some having basements. We have assumed building loads consisting of wall loads up to 4 kips per lineal foot and column loads up to 50 kips. Additional study is recommended for commercial buildings with higher loads.

We understand that paved roads will be constructed through the development. We have assumed three traffic conditions for the roads; one consisting predominantly of passenger vehicles with no significant truck traffic, a second typical of a residential collector with 1,000 vehicles per day 1.5 percent trucks and a third typical of a collector road with 2,000 vehicles per day and 4 percent trucks. A truck is assumed to have a load coefficient of 0.20.

If the proposed construction, building loads or traffic is significantly different from what is described above, we should be notified so that we can reevaluate the recommendations given.

RECOMMENDATIONS

A. Site Grading

Site grading plans were not provided for our review. We anticipate that there will be less than 5 feet of grade change for the proposed development. If more than about 3 feet of site grading fill will be placed over relatively large areas, the fill should be placed well in advance of building construction, generally 3 to 6 months in advance depending on the extent of the fill, and the settlement monitored to determine when building construction may begin.

There are some landslides and steep slope along the west side of the Jordan River flood plain. Slope stability should be evaluated for grade changes and buildings to be constructed within 50 feet of the crest of slope along the west side of the Jordan River flood plain.

1. Subgrade Preparation

Prior to placing grading fill or base course, the topsoil, organic material, unsuitable fill and other deleterious materials should be removed.

The upper soil at the site consists of lean clay. Construction equipment access difficulties may be encountered when the clay is very moist to wet such as during the winter and spring or after periods of precipitation or snowmelt. Placement of granular borrow will improve site access and may be needed to facilitate pavement construction. Generally, 1½ to 2 feet of granular borrow will provide limited support for moderately loaded rubber-tired construction equipment above a very moist to wet clay subgrade.

Much of the upper clay west of Redwood Road and some areas east of Redwood Road is porous and laboratory tests indicate that it becomes more compressible when wetted. Most of the porous soil appears to be in the upper several feet but extends to a greater depth in Test Pit TP-1-13. Some of the shallower depth test pits excavated to obtain samples for California Bearing Ratio tests did not extend through the porous soil. The areas of porous and cemented soil encountered in the test pits are indicated on the logs of the test pits. There is a risk of differential settlement for pavement and exterior concrete flatwork where they are constructed above moisture-sensitive soils. Where the moisture-sensitive soil is left in-place below pavement and other improvements, the soil may collapse and become more compressible when wetted. We estimate potential settlement up to

approximately 1½ inches if the moisture-sensitive soil remains below pavement and flatwork concrete and becomes wet. Removing the moisture-sensitive soil below these areas and replacing it with properly compacted fill would eliminate the risk of movement due to moisture-sensitive soil. A portion of the moisture-sensitive soil could be removed and replaced with low permeable compacted fill to reduce the amount of differential settlement. The on-site clay could be used as low permeable fill if properly compacted at a moisture content within 2 percent of the optimum moisture content.

2. Excavation

Some cemented soil was encountered in the western portion of the proposed development west of Redwood Road. Heavy-duty excavation equipment and possibly some rock-excavation equipment may be needed to facilitate excavations in this area. We anticipate that excavation west of Redwood Road can be accomplished with typical excavation equipment. Care should be taken not to disturb the natural soil to remain in the proposed building and pavement areas.

If an excavation extends below the water level, the excavation should be dewatered. The water level should be maintained below the base of the excavation during initial fill placement. Free-draining material with less than 5 percent passing the No. 200 sieve should be used for fill or backfill below the original water level. Consideration should be given to using a support fabric between the free-draining material and the natural soil.

3. Materials

Listed below are materials recommended for imported structural fill:

Fill to Support	Recommendations
Footings	Non-expansive granular soil Passing No. 200 Sieve < 35% Liquid Limit < 30% Maximum size 4 inches
Floor Slab (Upper 4 inches)	Sand and/or Gravel Passing No. 200 Sieve < 5% Maximum size 2 inches
Slab Support	Non-expansive granular soil Passing No. 200 Sieve < 50% Liquid Limit < 30% Maximum size 6 inches

Fill placed below areas of proposed buildings should consist of granular soils as indicated above. The sand and gravel exclusive of topsoil, organics, over sized particles may be considered for use as structural fill if it meets the criteria given above for imported structural fill or it may be used as retaining wall or utility trench backfill and as general site grading fill. The natural clay and silt are not recommended for use as structural fill below the proposed buildings but may be used as retaining wall or utility trench backfill and as general site grading fill.

Consideration may be given to using fine-grained soils, such as reuse of the existing porous soil, as fill below areas of proposed pavement or other site improvement or for use as backfill. If fine-grained material such as the natural clay is used as fill, the moisture content of the material should be adjusted to within 2 percent of the optimum moisture content to facilitate compaction. This will likely require significant moisture conditioning (wetting or drying) depending on whether the moisture of the soil is above or below the optimum moisture content at the time of construction. Drying of the soil may not be practical during cold or wet times of the year.

4. Compaction

Compaction of materials placed at the site should equal or exceed the minimum densities as indicated below when compared to the maximum dry density as determined by ASTM D 1557.

Fill To Support	Compaction
Foundations	≥ 95%
Concrete Slabs and Pavement	≥ 90%
Landscaping	≥ 85%
Retaining Wall Backfill	85 - 90%

Base course should be compacted to at least 95 percent of the maximum dry density as determined by ASTM D 1557.

The moisture of the soil should be adjusted to within 2 percent of optimum to facilitate compaction.

Fill and pavement materials placed for the project should be frequently tested for compaction. Fill should be placed in thin enough lifts to allow for proper compaction.

5. Drainage

The ground surface surrounding the proposed buildings should be sloped away from the residences in all directions. Roof down spouts and drains should discharge beyond the limits of backfill.

The collection and diversion of drainage away from the pavement surface is important to the satisfactory performance of the pavement section. Proper drainage should be provided.

B. Foundations

1. Bearing Material

Moisture-sensitive soil was encountered west of Redwood Road and some areas east of Redwood Road. The moisture-sensitive soil is not suitable to support the proposed buildings. The proposed buildings may be supported on spread footings bearing on the undisturbed natural soil below the moisture-sensitive soil or on compacted structural fill that extends below the moisture-sensitive soil. Structural fill placed below footings should extend out away from the edge of footings at least a distance equal to the depth of fill below footings.

2. Bearing Pressure

Spread footings bearing on the undisturbed natural soil or on compacted structural fill extending down to the undisturbed natural soil assuming the moisture-sensitive soil is removed may be designed using an allowable net bearing pressure of 1,500 psf for most of the site. There is soft clay in the southeast portion of the site where at least 2 feet of structural fill should be placed to allow for a net allowable bearing pressure of 1,500 psf to be used. The need for structural fill can be determined at the time of construction. A net allowable bearing pressure of 3,500 psf may be used where footing bear on the natural undisturbed gravel such as exist in portions of the site west of Redwood Road.

3. Settlement

We estimate that total and differential settlement will be on the order of 1 inch and 3/4 inches or less for footings designed as indicated above.

4. Temporary Loading Conditions

The allowable bearing pressure may be increased by one-half for temporary loading conditions such as wind or seismic loads.

5. Minimum Footing Width and Embedment

Spread footings should have a minimum width of 1½ feet and a minimum depth of embedment of 10 inches.

6. Frost Depth

Exterior footings and footings beneath unheated areas should be placed at least 30 inches below grade for frost protection.

7. Foundation Base

The base of foundation excavations should be cleared of loose or deleterious material prior to structural fill or concrete placement. The subgrade should not be scarified prior to structural fill placement.

8. Construction Observation

A representative of the geotechnical engineer should observe footing excavations prior to structural fill or concrete placement.

C. Concrete Slab-on-Grade

1. Slab Support

Concrete slabs may be supported on the undisturbed natural soil below the moisture-sensitive soil or on compacted structural fill that extends down to the undisturbed natural soil below the moisture-sensitive soil.

Topsoil, unsuitable fill, organics, debris, moisture-sensitive soil and other deleterious materials should be removed from below proposed slabs.

2. Underslab Sand and/or Gravel

Consideration may be given to placing a 4-inch layer of free-draining sand and/or gravel (less than 5 percent passing the No. 200 sieve) below slabs to promote even curing of the slab concrete.

D. Lateral Earth Pressures

1. Lateral Resistance for Footings

Lateral resistance for footings placed on natural soil or on compacted structural fill is controlled by sliding resistance between the footing and foundation soils. A friction value of 0.35 may be used in design for ultimate lateral resistance.

2. Subgrade Walls and Retaining Structures

The following equivalent fluid weights are given for design of subgrade walls and retaining structures. The active condition is where the wall moves away from the soil. The passive condition is where the wall moves into the soil and the at-rest condition is where the wall does not move. The values listed below assume a horizontal surface adjacent the top and bottom of the wall.

Soil Type	Active	At-Rest	Passive
Clay & Silt	50 pcf	65 pcf	250 pcf
Sand & Gravel	40 pcf	55 pcf	300 pcf

3. Seismic Conditions

Under seismic conditions, the equivalent fluid weight should be increased by 29 pcf and 14 pcf for active and at-rest conditions, respectively, and decreased by 29 pcf for the passive condition. This assumes a peak

horizontal ground acceleration of 0.46g for a seismic event having a 2 percent probability of exceedance in a 50-year period (IBC, 2012).

4. Safety Factors

The values recommended above for active and passive conditions assume mobilization of the soil to achieve the soil strength. Conventional safety factors used for structural analysis for such items as overturning and sliding resistance should be used in design.

E. Seismicity, Faulting, Liquefaction and Slope Stability

1. Seismicity

Listed below is a summary of the site parameters for the 2012 International Building Code.

a.	Site Class	D
b.	Short Period Spectral Response Acceleration, S_S	1.11g
c.	One Second Period Spectral Response Acceleration, S_1	0.37g

2. Faulting

There are no mapped active faults extending near or through the site. The closest mapped faults, considered to be active or potentially, are the Wasatch fault located approximately 7½ miles east of the site and the Utah Lake faults located approximately 4 miles to the south(Black and others, 2002).

3. Liquefaction

The area of the proposed subdivision is mapped as having a "very low" to "high" potential for liquefaction (Anderson and others, 1994). Based on the subsurface conditions encountered at the site, liquefaction is not considered to be a significant hazard for the proposed development.

4. Slope Stability

There is a concern for the stability of the slopes along the eastern side of the proposed development where the property adjoins the flood plain for the Jordan River. Slope stability should be evaluated for buildings to be constructed within 50 feet of the crest of this slope.

F. Water Soluble Sulfates

Five samples of the natural soil were tested in the laboratory for water soluble sulfate content. Results of the tests indicate there is less than 0.1 percent water soluble sulfate in the samples tested. Based on the results of the test and published literature, the natural soil possesses negligible sulfate attack potential on concrete.

No special cement type is required for concrete placed in contact with the natural soil. Other conditions may dictate the type of cement to be used in concrete for the project.

G. Pavement

Based on the subsurface soil conditions encountered, laboratory test results and the assumed traffic, the following pavement support recommendations are given:

1. Subgrade Support

The near surface soil consists of lean clay. A California Bearing Ratio (CBR) of 3 percent was used in the analysis assuming a clay subgrade. Once the CBR testing for this project is complete, additional pavement recommendations can be provided.

2. Pavement Thickness

Based on the subsoil conditions, assumed traffic, a design life of 20 years for flexible and 30 years for rigid pavement and methods presented by the Utah Department of Transportation, the following pavement sections are calculated.

Traffic *	Rigid Pavement	Flexible Pavement		
	Portland Cement Concrete Thickness	Asphaltic Concrete Thickness	Base Course Thickness	Granular Borrow Thickness
1	5"	—	—	—
	—	3"	6"	—
2	5"	—	—	—
	—	3"	6"	6"
3	5½"	—	—	—
	—	4"	6"	9"

*Refer to the proposed construction section for a description of the assumed traffic.

Granular borrow may be needed in areas where the subgrade consists of very moist to wet clay or silt as discussed in the subgrade preparation section of the report.

3. Pavement Materials and Construction

a. Flexible Pavement (Asphaltic Concrete)

The pavement materials should meet the material specifications for the applicable jurisdiction. Other materials may be considered for use in the pavement section. The use of other materials may result in the need for different pavement material thicknesses.

b. Rigid Pavement (Portland Cement Concrete)

The pavement thickness indicated assumes that the pavement will have aggregate interlock joints and that a concrete shoulder or curb will be provided.

The pavement materials should meet the material specifications for the applicable jurisdiction. The pavement thickness indicated above assumes that the concrete will have a 28-day compressive strength of 4,000 pounds per square inch. Concrete should be air-entrained with approximately 6 percent air. Maximum allowable slump will depend on the method of placement but should not exceed 4 inches.

4. Jointing

Joints for concrete pavement should be laid out in a square or rectangular pattern. Joint spacings should not exceed 30 times the thickness of the slab. The joint spacings indicated should accommodate the contraction of the concrete and under these conditions steel reinforcing will not be required. The depth of joints should be approximately one-fourth of the slab thickness.

H. Subsurface Drains

The natural soil ranges from clay, silt, sand and gravel. The clay classifies as Group II soil based on Table R405.1 of the International Residential Code. Foundation drains would be recommended for below-grade floor portions of the buildings for most of the site. There may be some areas where foundation drain may not be needed. Foundation drains should include at least the following items:

1. The underdrain system should consist of a perforated pipe installed in a gravel filled trench around the perimeter of the subgrade floor portion of the building.

2. The flow line of the pipe should be placed at least 14 inches below the finished floor level and should slope to a sump or outlet where water can be removed by pumping or by gravity flow.

3. If placing the gravel and drain pipe requires excavation below the bearing level of the footing, the excavation for the drain pipe and gravel should have a slope no steeper than 1 horizontal to 1 vertical so as not to disturb the soil below the footing.

4. A filter fabric should be placed between the natural soil and the drain gravel. This will help reduce the potential for fine-grained material filling in the void spaces of the gravel.

5. The subgrade floor slab should have at least 6 inches of free-draining gravel placed below it and the underslab gravel should connect to the perimeter drain.

6. Consideration should be given to installing cleanouts to allow access into the perimeter drain should cleaning of the pipe be required in the future.

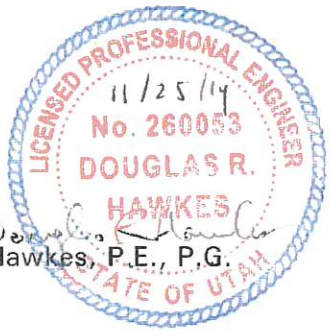
I. Preconstruction Meeting

A preconstruction meeting should be held with residences of the owner, project architect, geotechnical engineer, general contractor, earthwork contractor and other design team members to view construction plans, specifications, methods and schedule.

LIMITATIONS

This report has been prepared in accordance with generally accepted soil and foundation engineering practices in the area for the use of the client for design purposes. The conclusions and recommendations included within the report are based on the information obtained from the borings drilled and test pits excavated at the approximate locations indicated on the site plan and the data obtained from laboratory testing. Variations in the subsurface conditions may not become evident until additional exploration or excavation is conducted. If the proposed construction, subsurface conditions or groundwater level is found to be significantly different from what is described above, we should be notified to reevaluate the recommendations given.

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.



Douglas R. Hawkes, P.E., P.G.

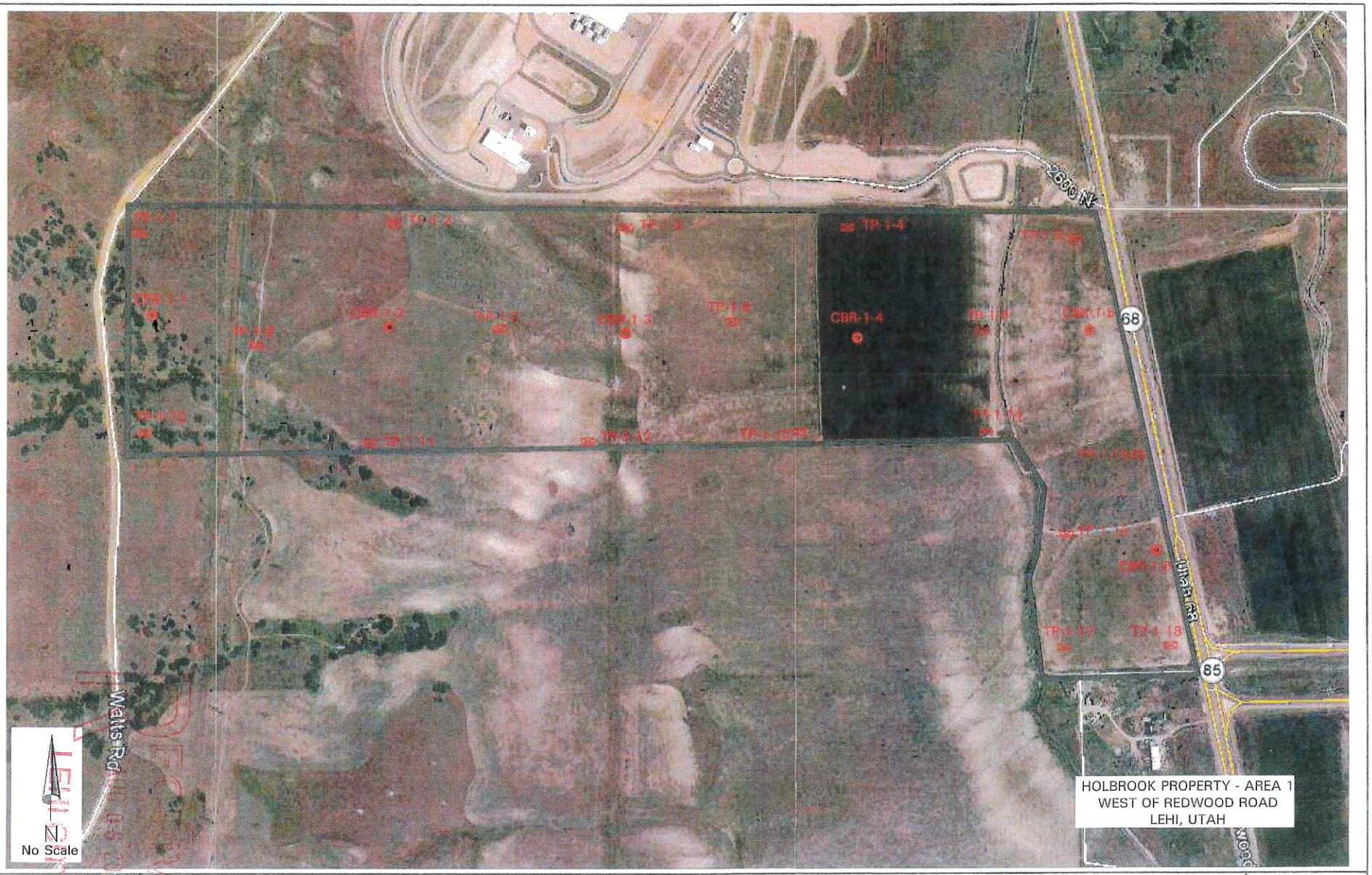
Reviewed by Christopher J. Beckman, P.E.

DRH/rs

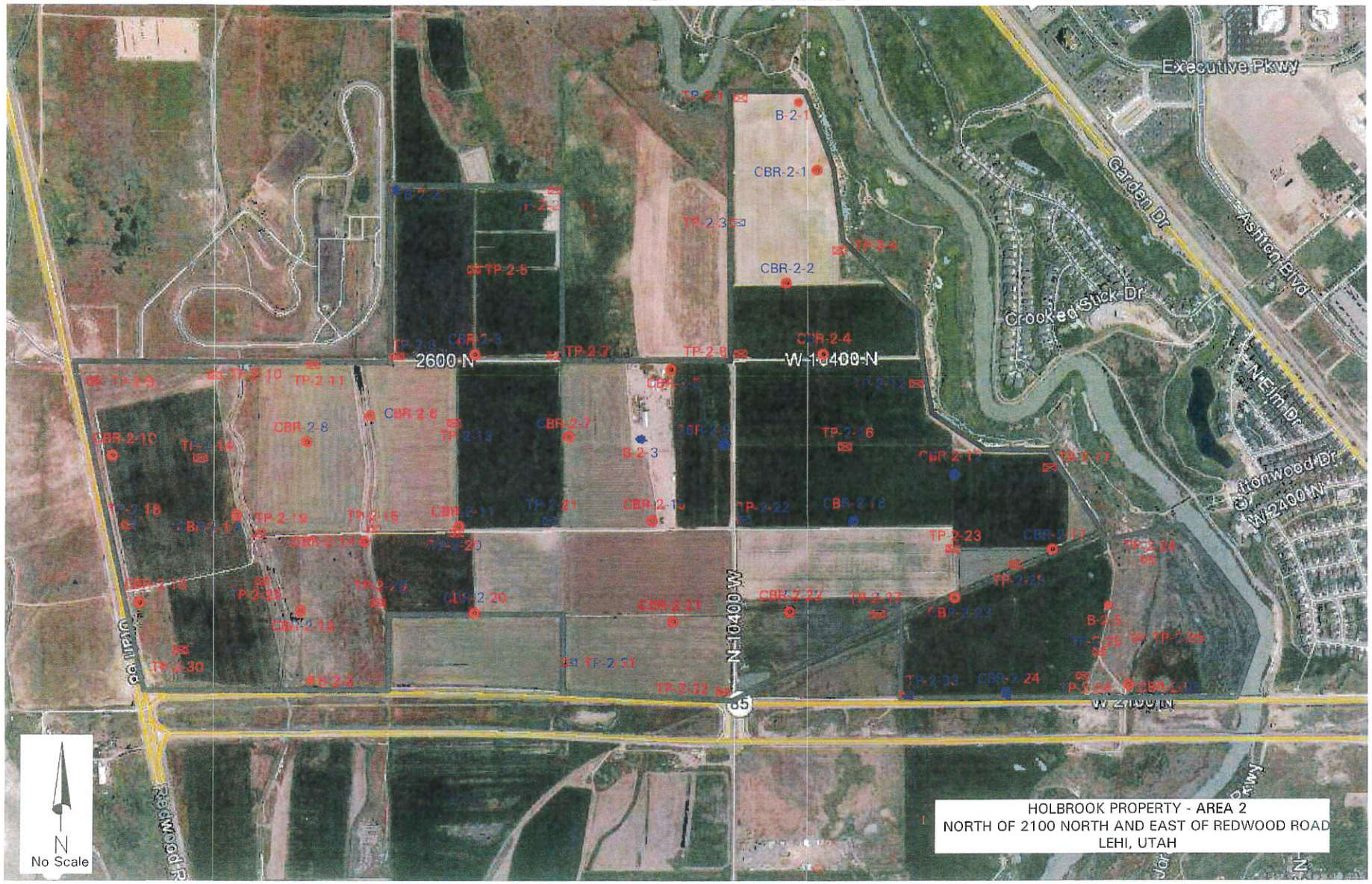
REFERENCES

International Building Codes, 2012; International Code Council, Inc., Falls Church, Virginia.

Salt Lake County, 2002; Surface Rupture and Liquefaction Potential Special Study Areas Map, Salt Lake County, Utah, adopted March 31, 1989, updated March 2002, Salt Lake County Public Works - Planning Division, 2001 South State Street, Salt Lake City, Utah.

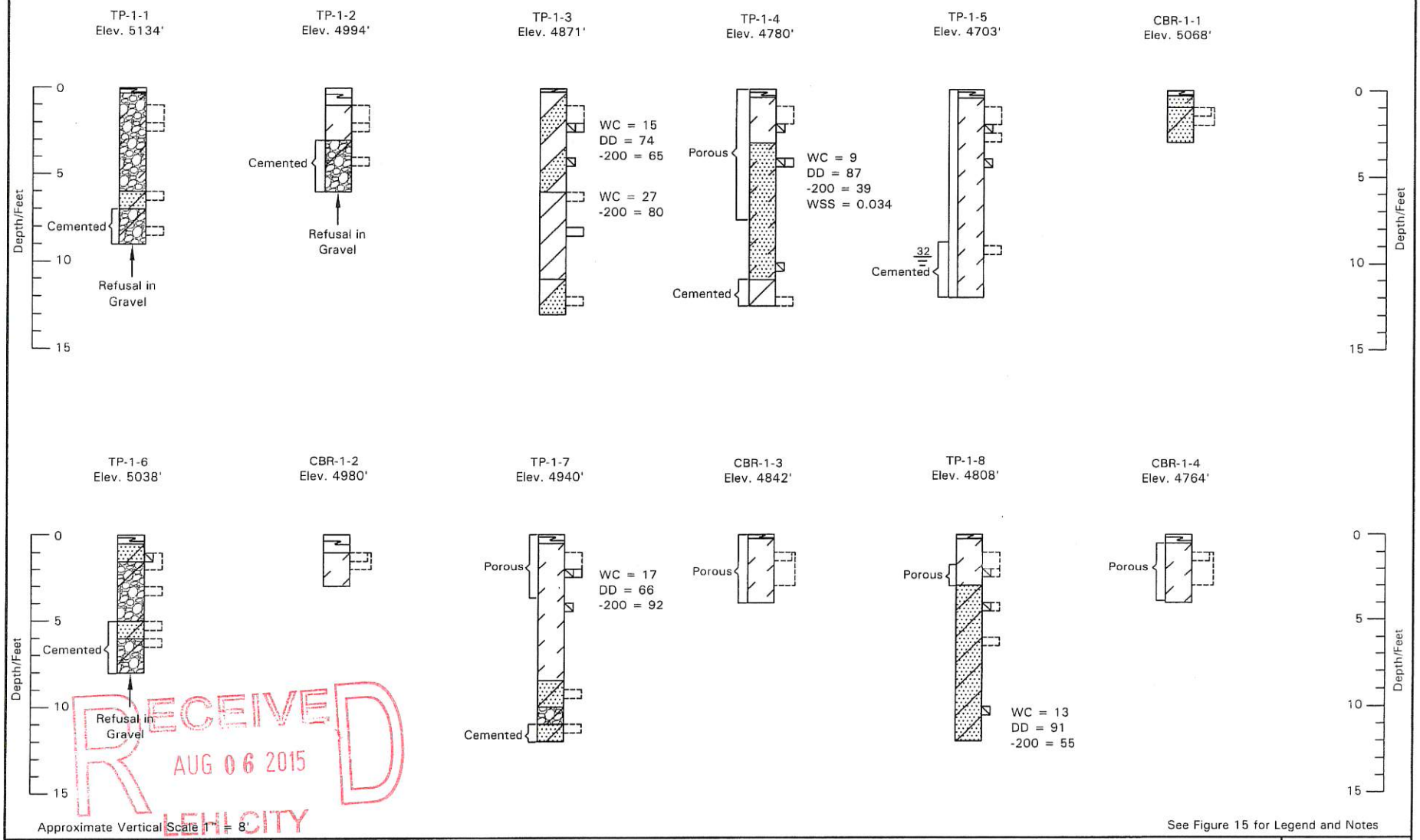


1140850	AGEC	Locations of Test Pits in Area 1	Figure 1



1140850	AGEC	Locations of Exploratory Borings and Test Pits in Area 2	Figure 2

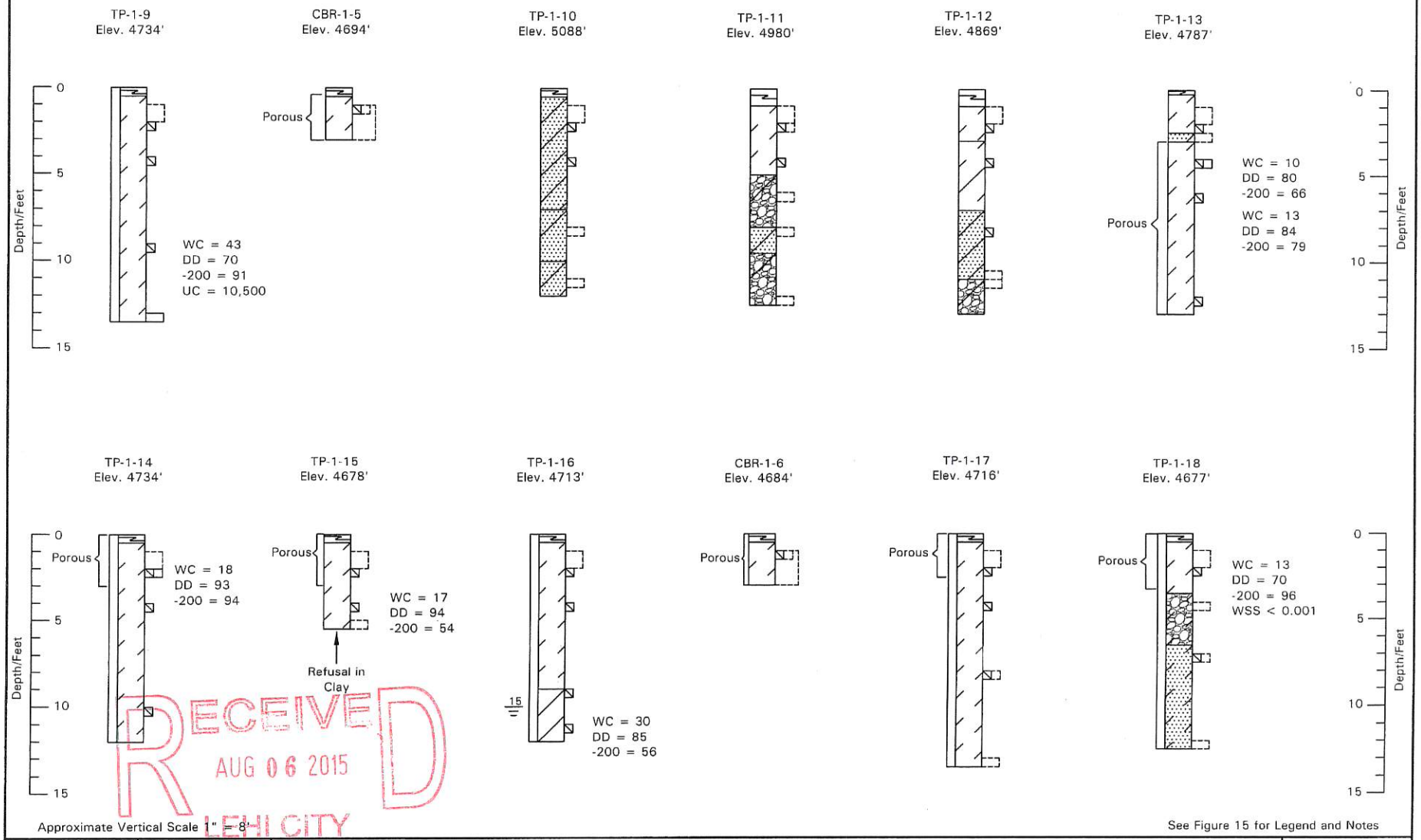
1140850	AGEC	Locations of Exploratory Borings and Test Pits in Area 3	Figure 3



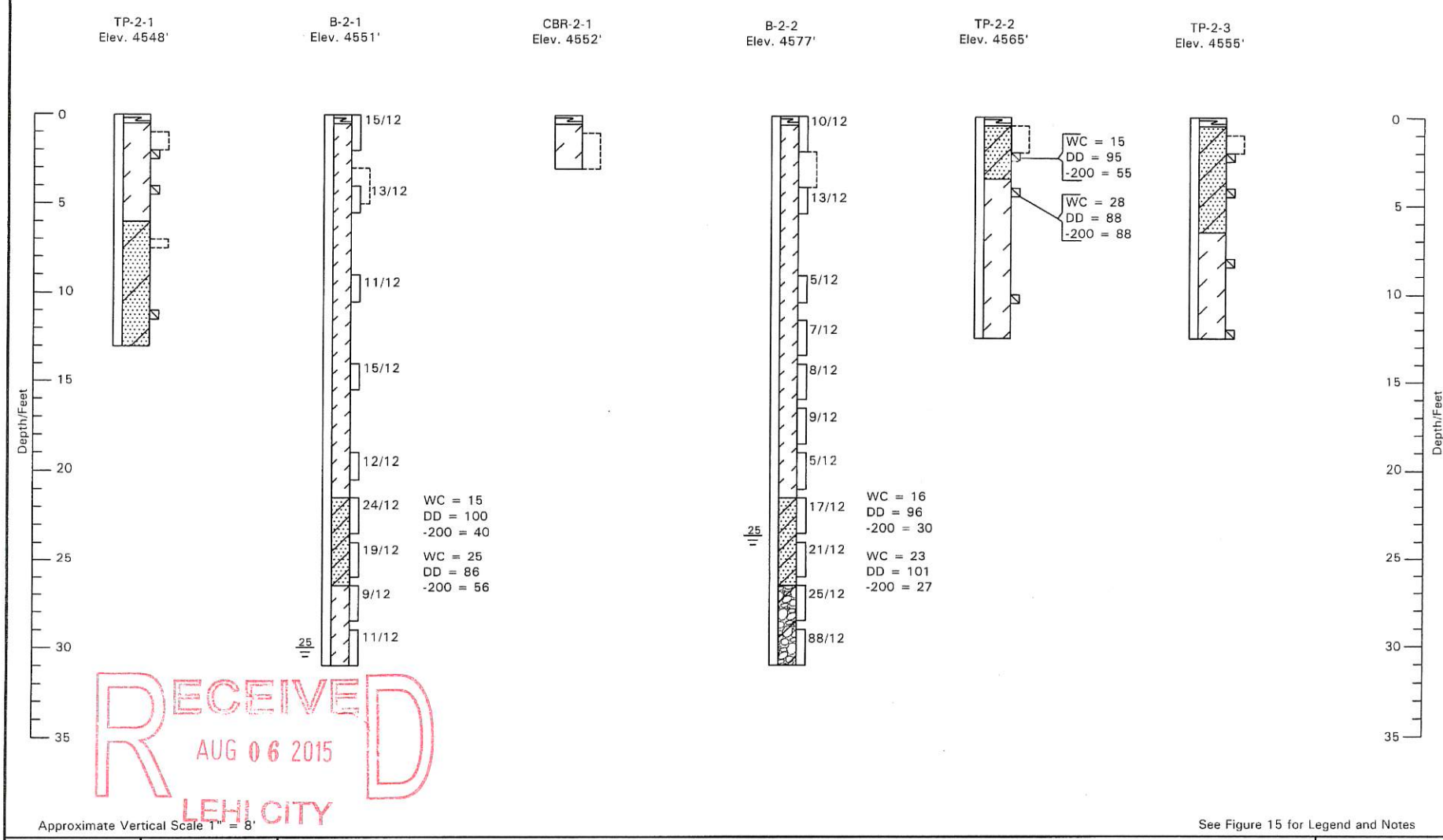
Approximate Vertical Scale 1" = 8'

See Figure 15 for Legend and Notes

1140850	AGEC	Logs of Test Pits - Area 1	Figure 4



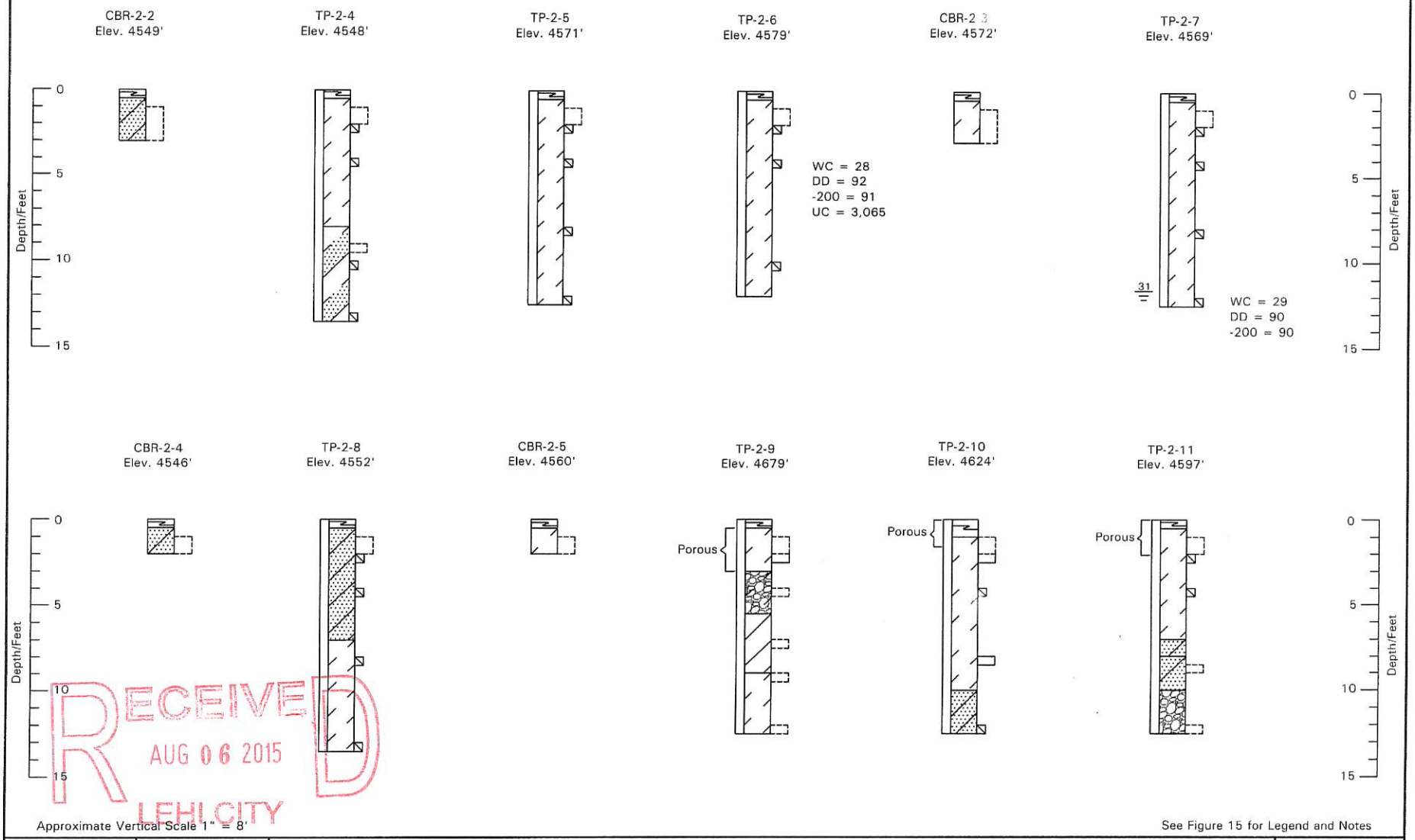
1140850	AGEC	Logs of Test Pits - Area 1	Figure 5



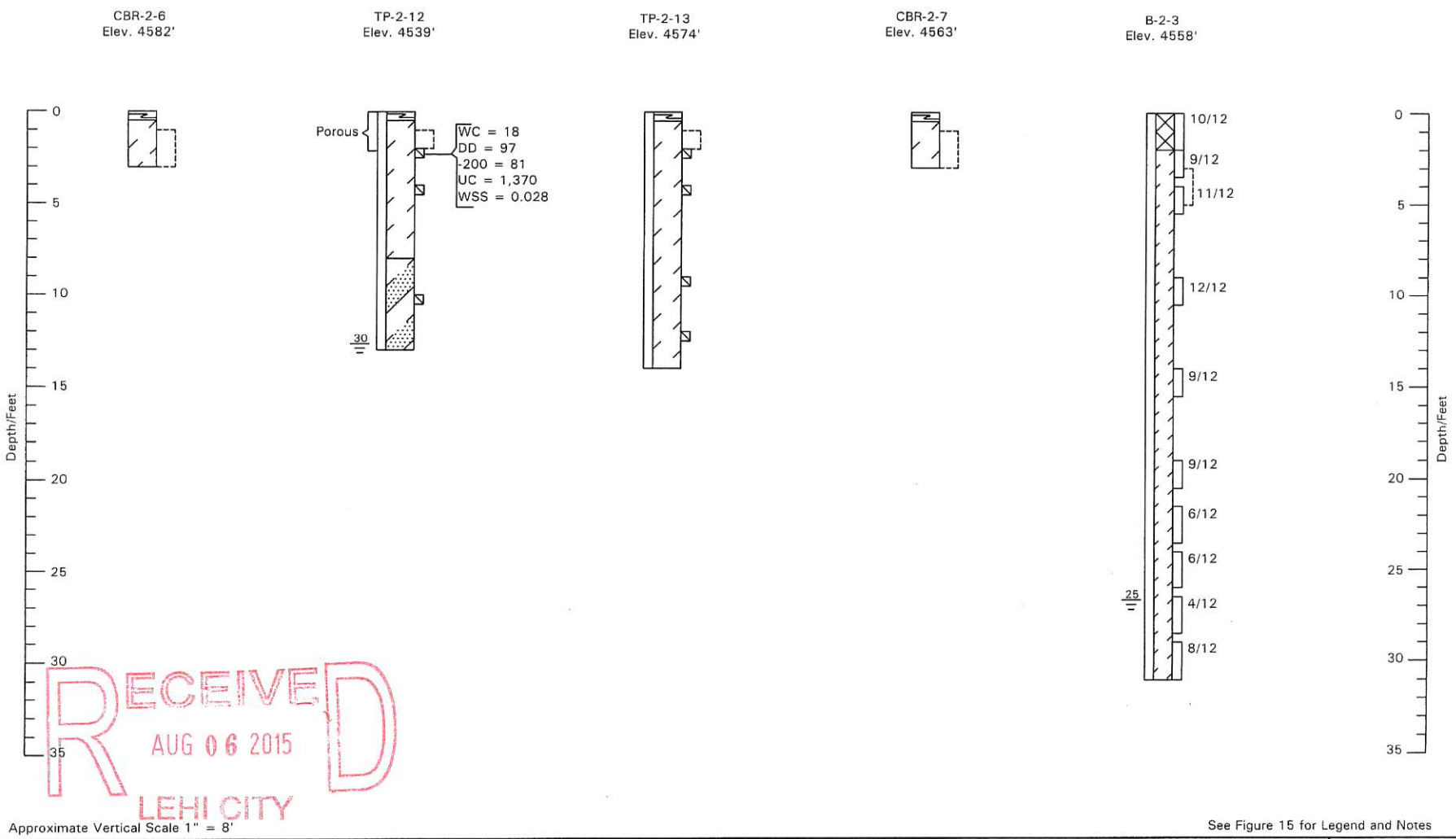
Approximate Vertical Scale 1" = 8'

See Figure 15 for Legend and Notes

1140850	AGEC	Logs of Exploratoy Borings and Test Pits - Area 2	Figure 6



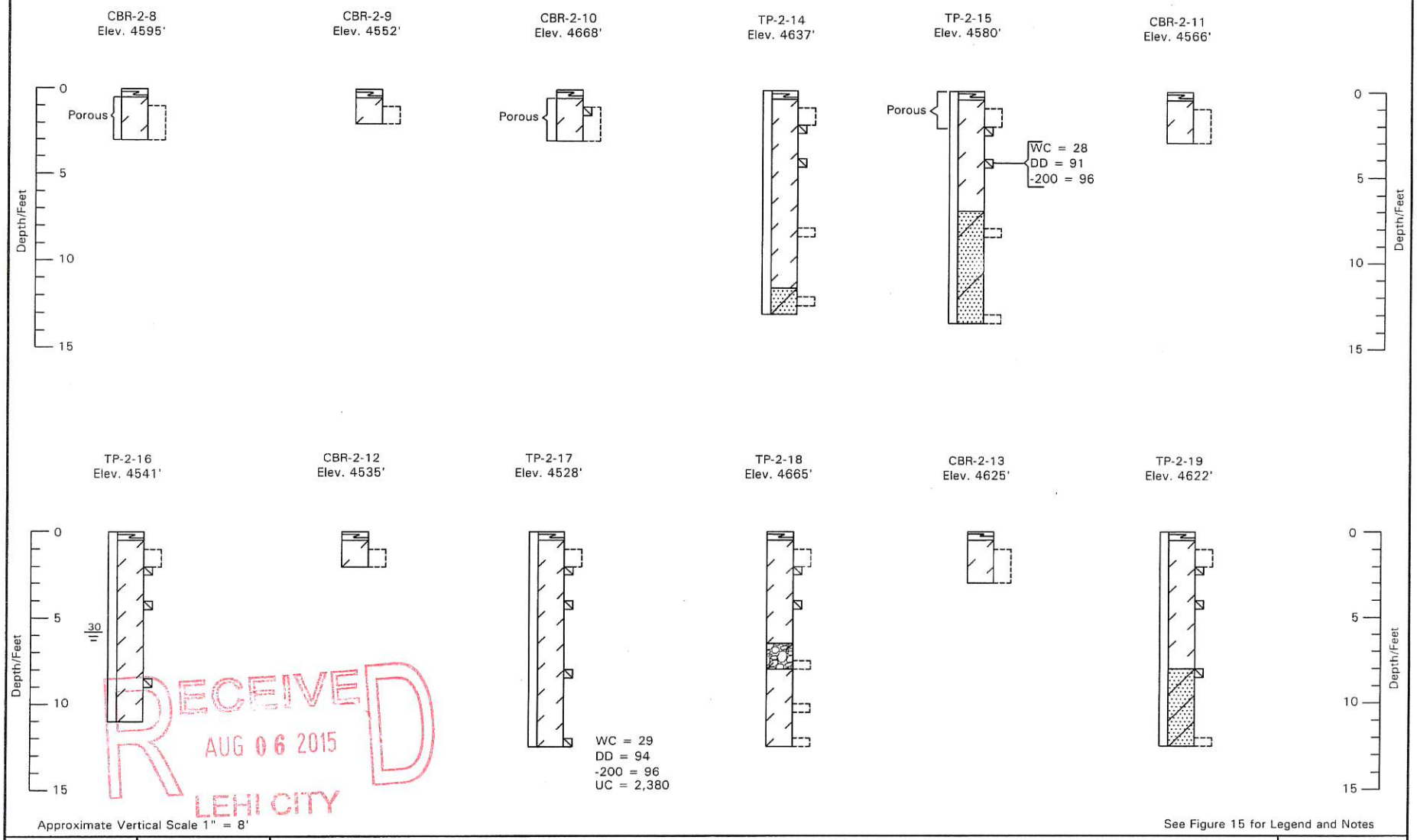
1140850	AGEC	Logs of Exploratoy Borings and Test Pits - Area 2	Figure 7



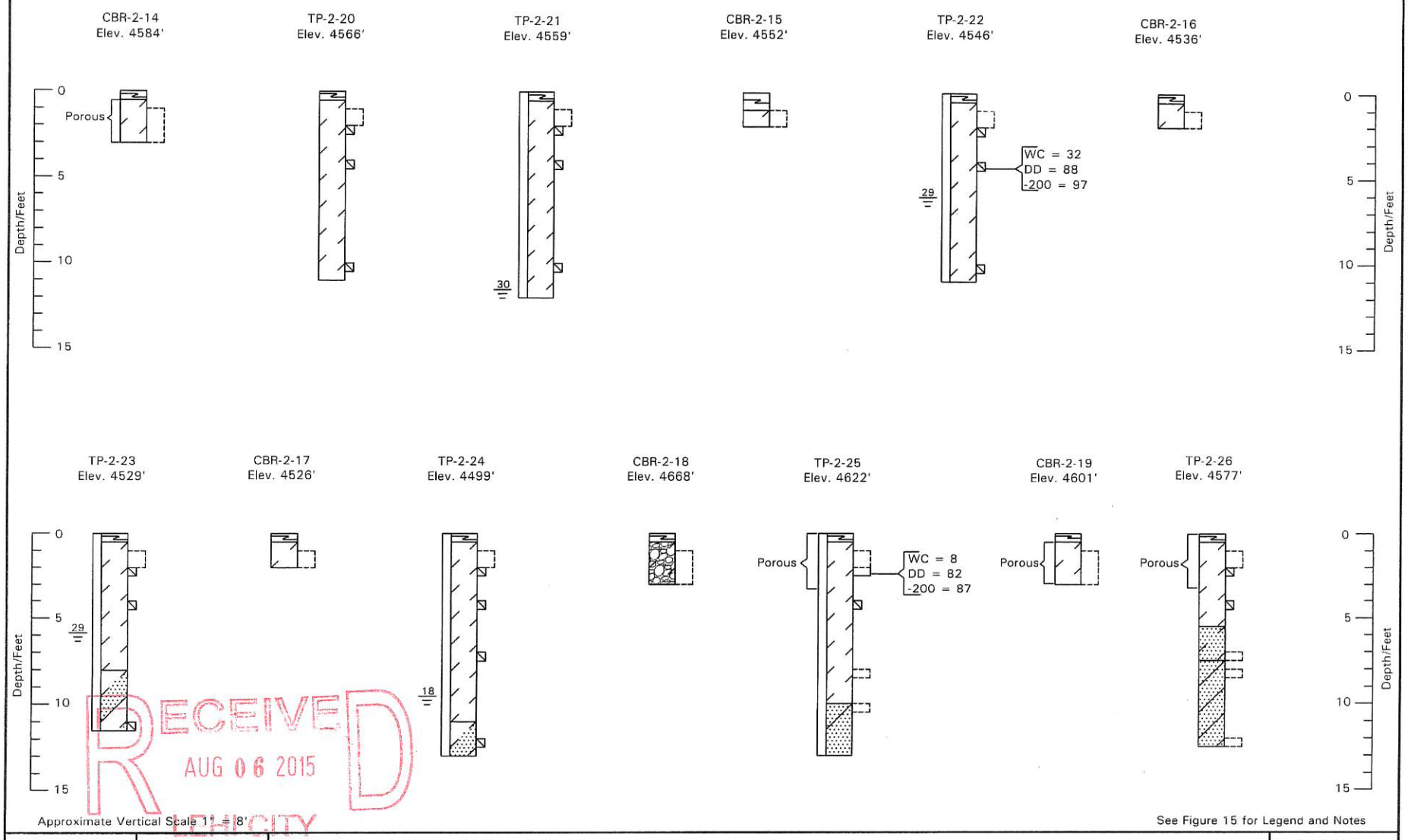
Approximate Vertical Scale 1" = 8'

See Figure 15 for Legend and Notes

1140850	AGEC	Logs of Exploratoy Borings and Test Pits - Area 2	Figure 8



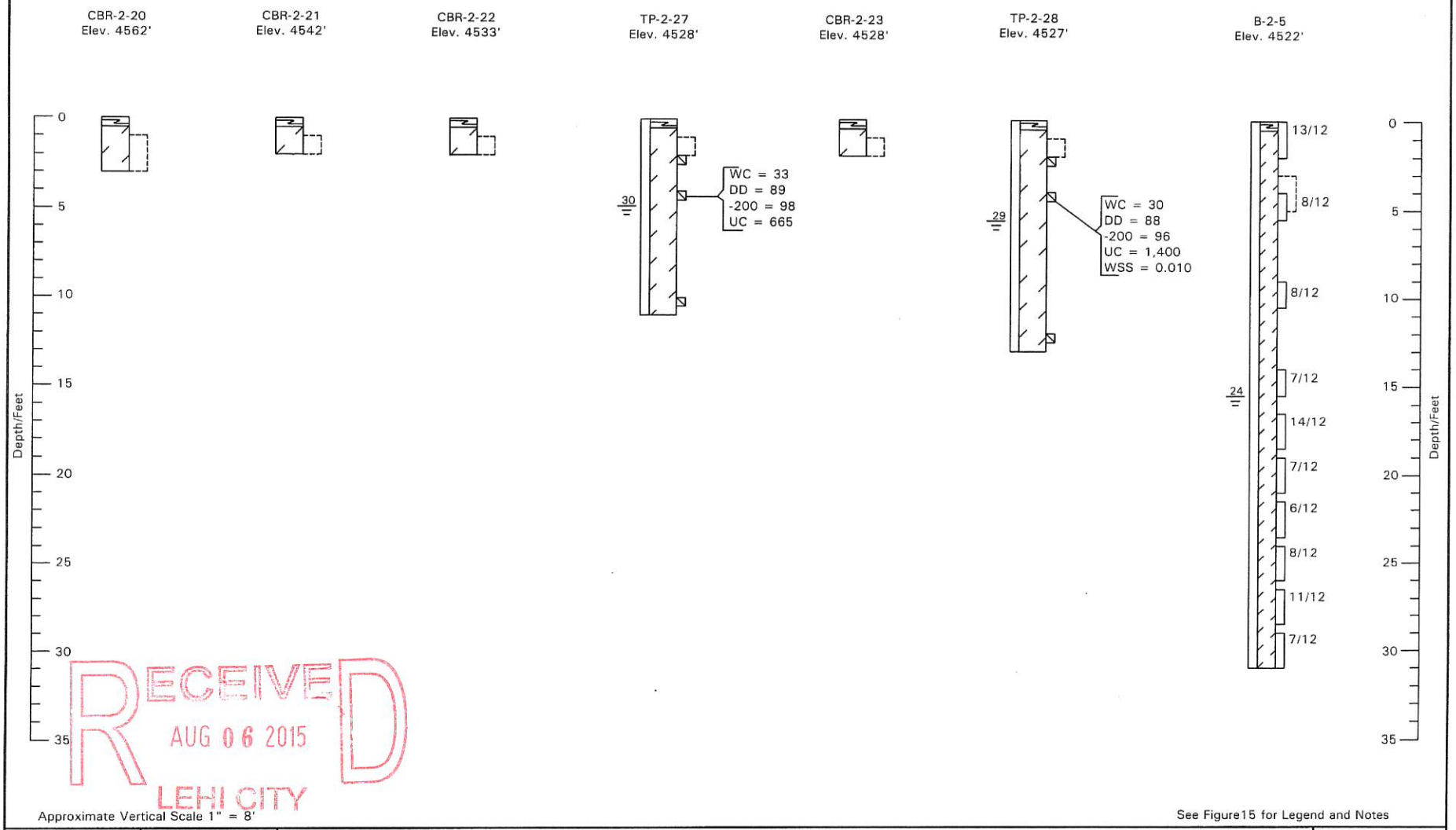
1140850	AGEC	Logs of Exploratoy Borings and Test Pits - Area 2	Figure 9



Approximate Vertical Scale 1" = 8'

See Figure 15 for Legend and Notes

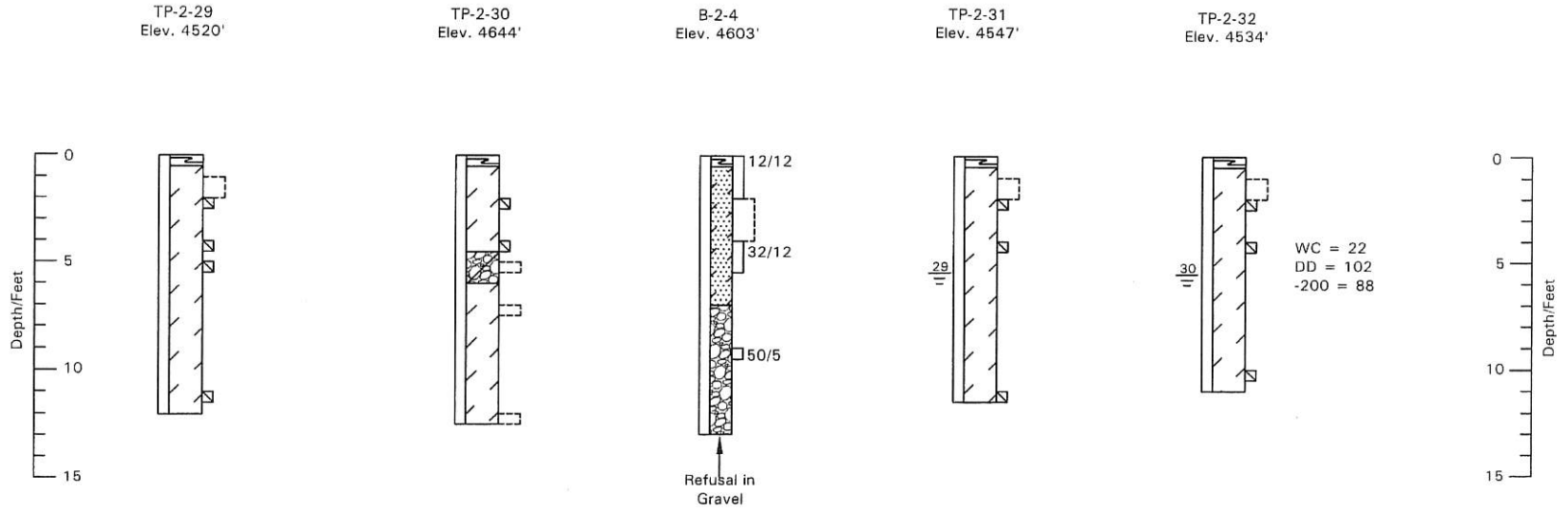
1140850	AGEC	Logs of Exploratoy Borings and Test Pits - Area 2	Figure 10



Approximate Vertical Scale 1" = 8'

See Figure15 for Legend and Notes

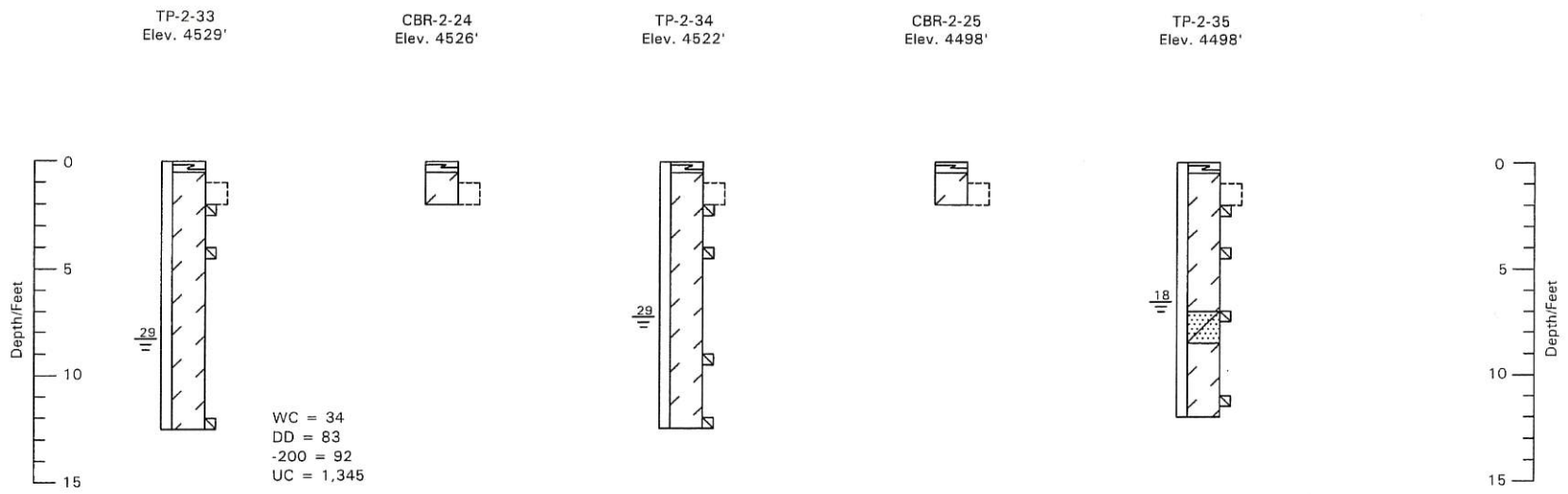
1140850	AGEC	Logs of Exploratoy Borings and Test Pits - Area 2	Figure 11



Approximate Vertical Scale 1" = 8'

See Figure 15 for Legend and Notes

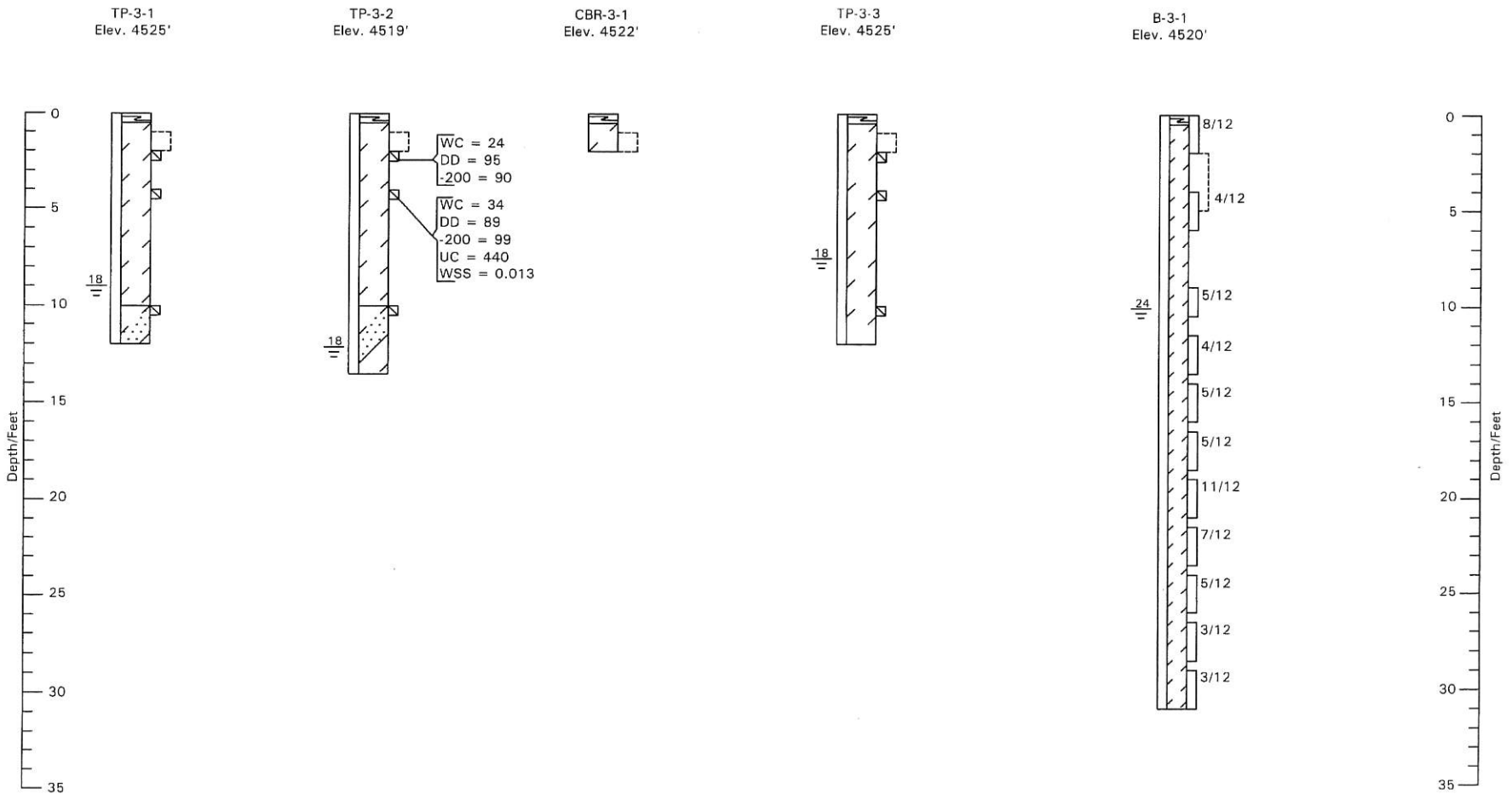
1140850	AGEC	Logs of Exploratoy Borings and Test Pits - Area 2	Figure 12



Approximate Vertical Scale 1" = 8'

See Figure 15 for Legend and Notes

1140850	AGEC	Logs of Exploratoy Borings and Test Pits - Area 2	Figure 13



Approximate Vertical Scale 1" = 8'

See Figure 15 for Legend and Notes

1140850	AGEC	Logs of Exploratoy Boring and Test Pits - Area 3	Figure 14

LEGEND:

Topsoil; sandy lean clay to lean clay, silty to clayey sand with gravel, cobbles and occasional boulders in TP-1-1, TP-1-6, TP-2-9 and CBR -2-13, silty sand in TP-1-10, slightly moist to moist, brown to dark brown, roots, organics.

Lean Clay (CL); small to moderate amount of sand, thin silt and sand layers, some gravel in TP-1-2, TP-1-8, TP-1-11, TP-1-13 and TP-1-15, soft to hard, slightly moist to wet, brown to gray, cemented in TP-1-5 and TP-1-15, porous in numerous test pits.

Silt (ML); small to large amount of sand, stiff to very stiff, slightly moist to wet, brown, cemented in TP-1-4.

Interlayered Lean Clay and Silty Sand (CL/SM); medium stiff to stiff, medium dense, moist to wet, brown.

Interlayered Silt and Silty Sand (ML/SM); medium dense, moist, yellowish brown, slightly porous.

Clayey Sand (SC); some clay and silt layers, medium dense, moist, brown, cobbles in TP-1-6.

Silty Sand (SM); small to large amount of gravel, occasional clay layers, medium dense to dense, moist to wet, brown to yellowish brown, slightly cemented in TP-1-1 and TP-1-6, Cemented in TP-1-7, slightly porous in TP-1-3 and TP-1-12.

Poorly-graded Sand with Silt (SP-SM); medium dense, moist to wet, brown.

Clayey Gravel with Sand (GC); silty layers, medium dense to very dense, moist, brown to gray, slightly cemented in TP-1-1

Poorly-graded Gravel with Silt and Sand (GP-GM); cobbles and boulders up to approximately 2 feet in size, medium dense to very dense, moist to wet, brown to gray, cemented in TP-1-1, TP-1-2 and TP-1-6.

10/12 California Drive sample taken. The symbol 10/12 indicates that 10 blows from a 140 pound automatic hammer falling 30 inches were required to drive the sampler 12 inches.

Indicates relatively undisturbed hand drive sample taken.

Indicates disturbed sample taken.

Indicates relatively undisturbed block sample taken.

LEGEND(Cont.):

Indicates slotted 1 ½ inch PVC pipe installed in the boring/test pit to the depth shown.

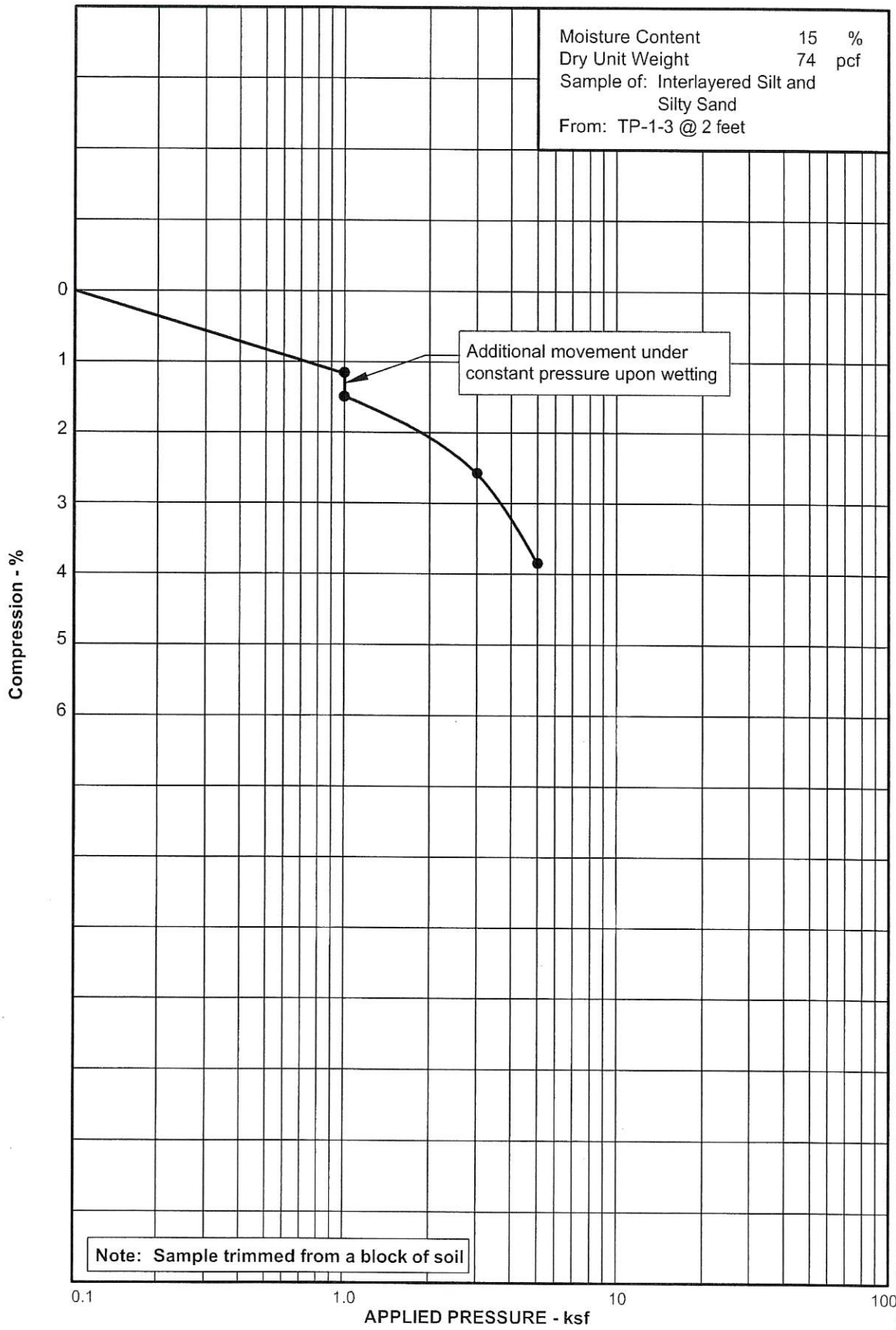
30 Indicates the depth to free water and the number of days after drilling/excavation the measurement was taken.

Indicates practical excavation equipment refusal.

NOTES:

1. The borings were drilled on October 20, 21 and 23, 2014 with 8-inch diameter hollowstem auger. The test pits were excavated on October 10, 13, 14, 15 16 and 27, 2014 with a rubber-tired backhoe.
2. Locations of the borings and test pits were measured approximately by pacing from features shown on the site plan provided.
3. Elevations of the borings and test pits were estimated from Google Earth information.
4. The boring and test pit locations and elevations should be considered accurate only to the degree implied by the method used.
5. The lines between the materials shown on the boring and test pit logs represent the approximate boundaries between material types and the transitions may be gradual.
6. Water level readings shown on the logs were made at the time and under the conditions indicated. Fluctuations in the water level may occur with time.
7. WC = Water Content (%);
   DD = Dry Density (pcf);
   +4 = Percent Retained on No. 4 Sieve;
   -200 = Percent Passing No. 200 Sieve;
   UC = Unconfined Compressive Strength (psf);
   WSS = Water Soluble Sulfates (%).

Applied Geotechnical Engineering Consultants, Inc.

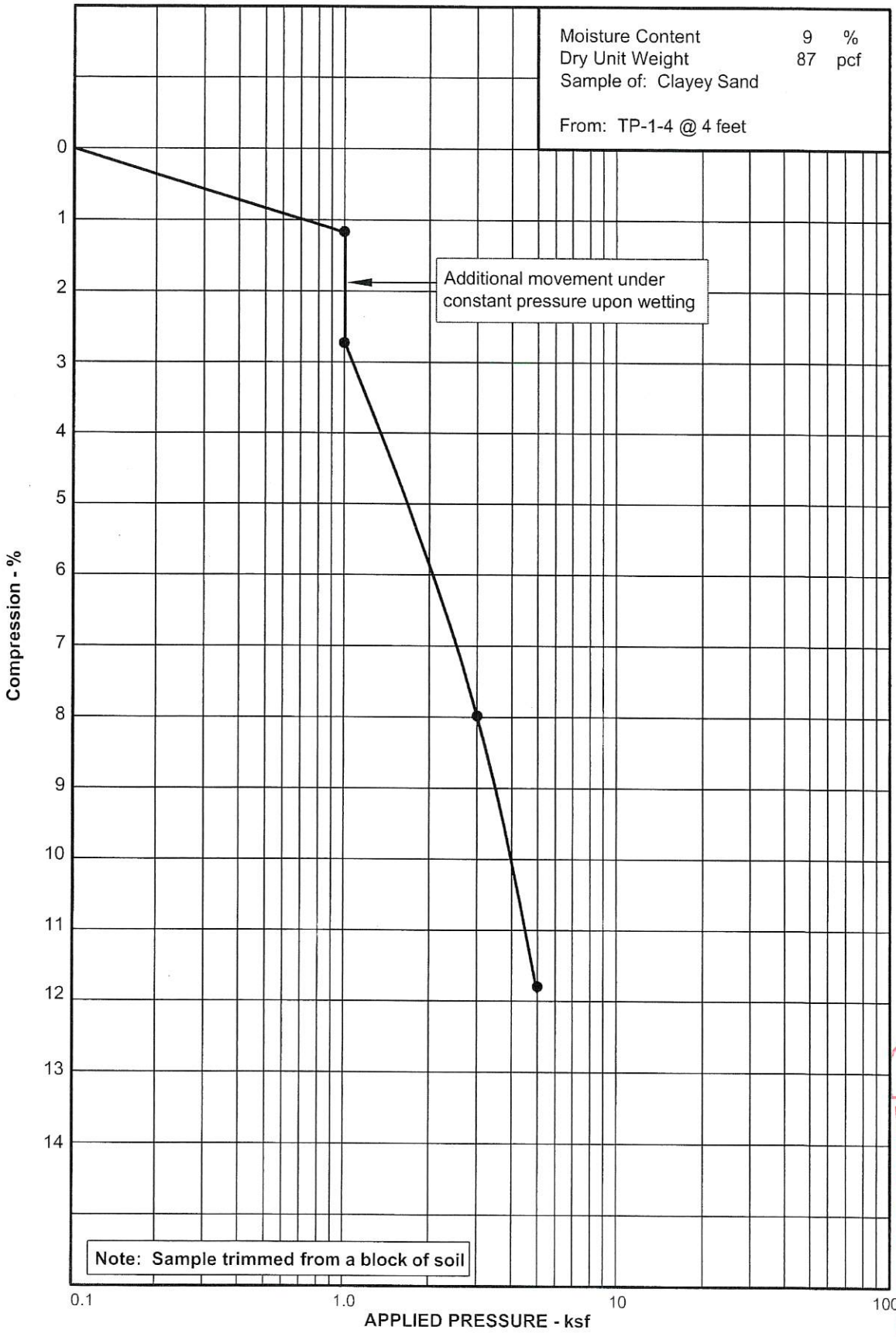


Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 16

Applied Geotechnical Engineering Consultants, Inc.

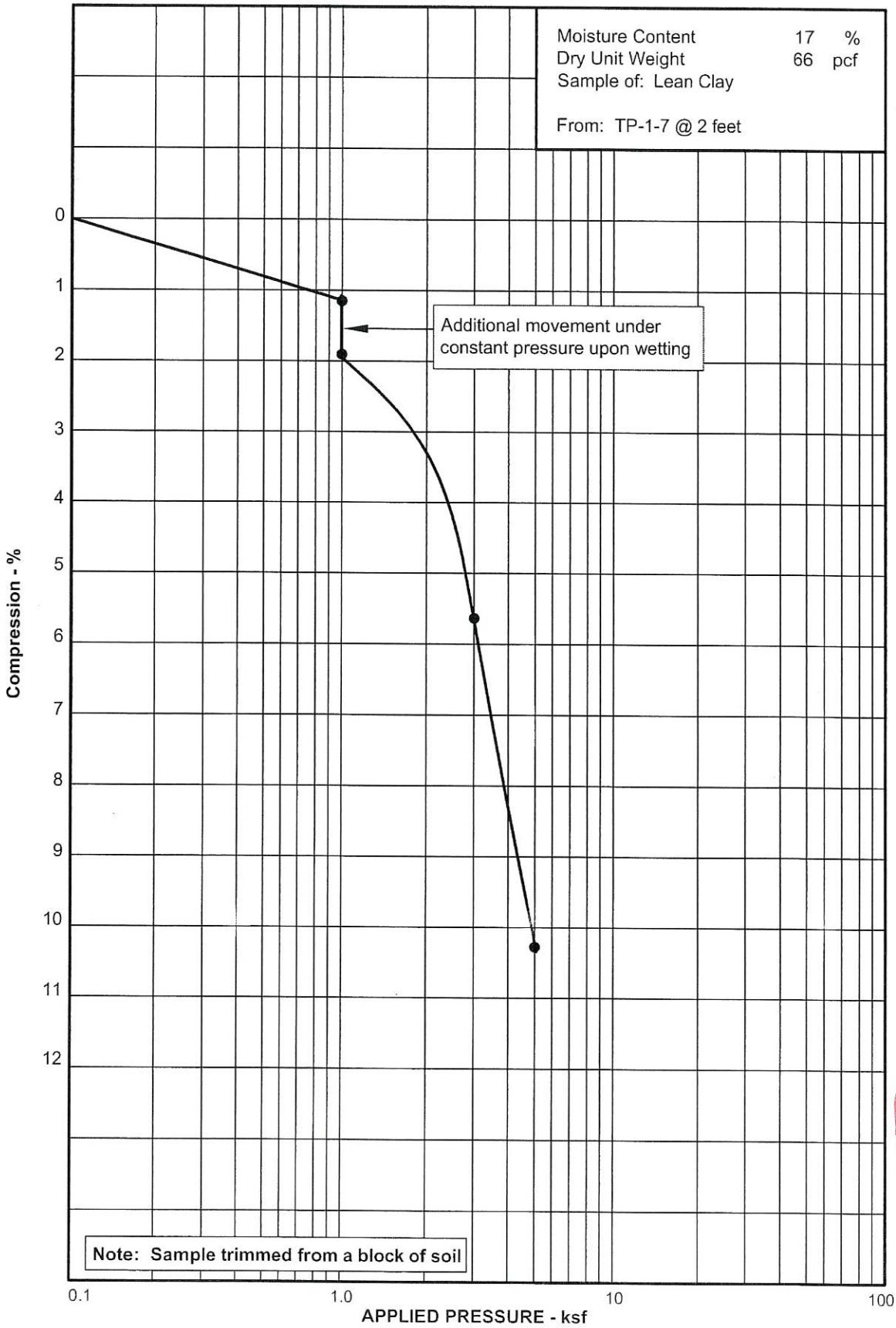


Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 17

Applied Geotechnical Engineering Consultants, Inc.

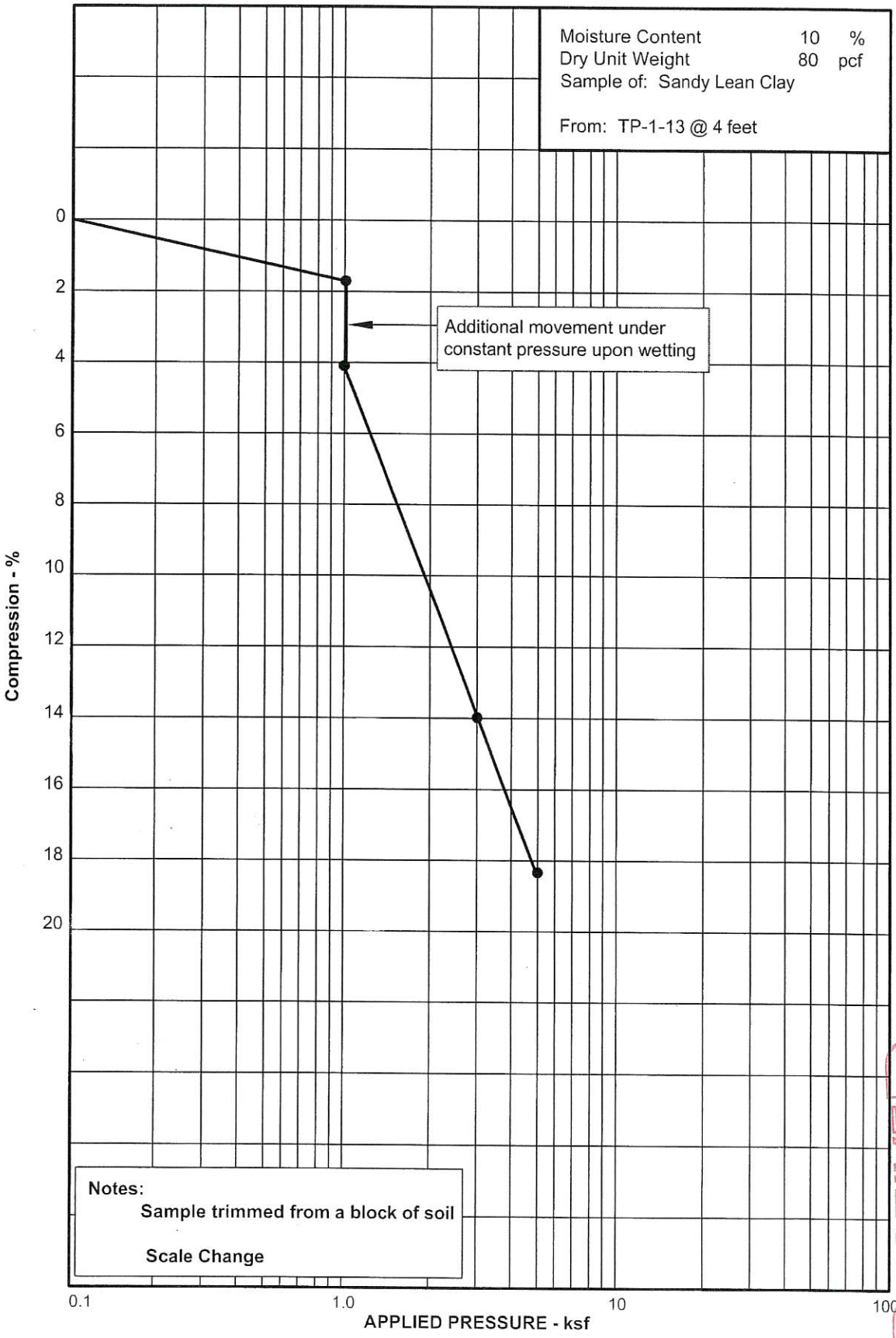


Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 18

Applied Geotechnical Engineering Consultants, Inc.

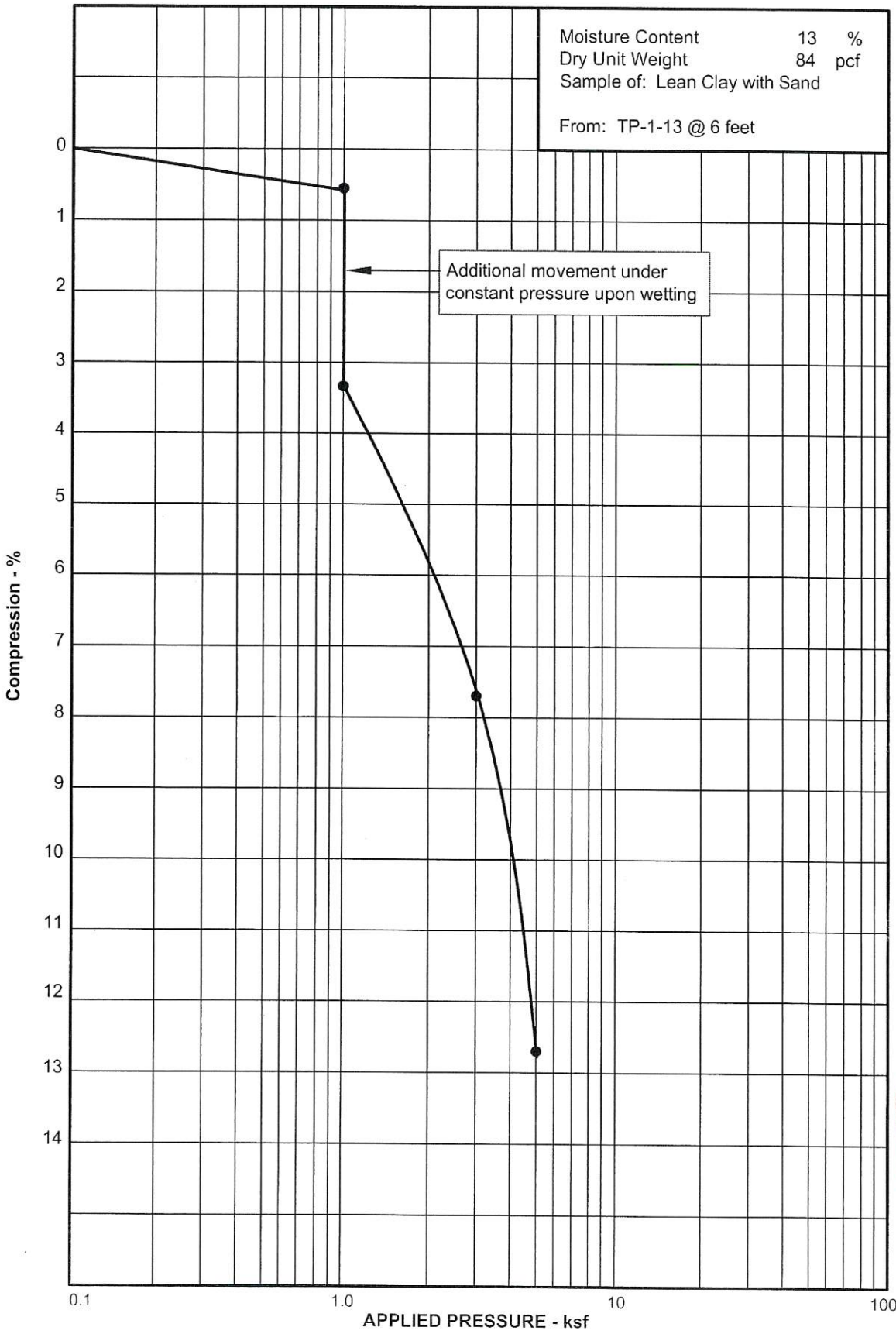


Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 19

Applied Geotechnical Engineering Consultants, Inc.

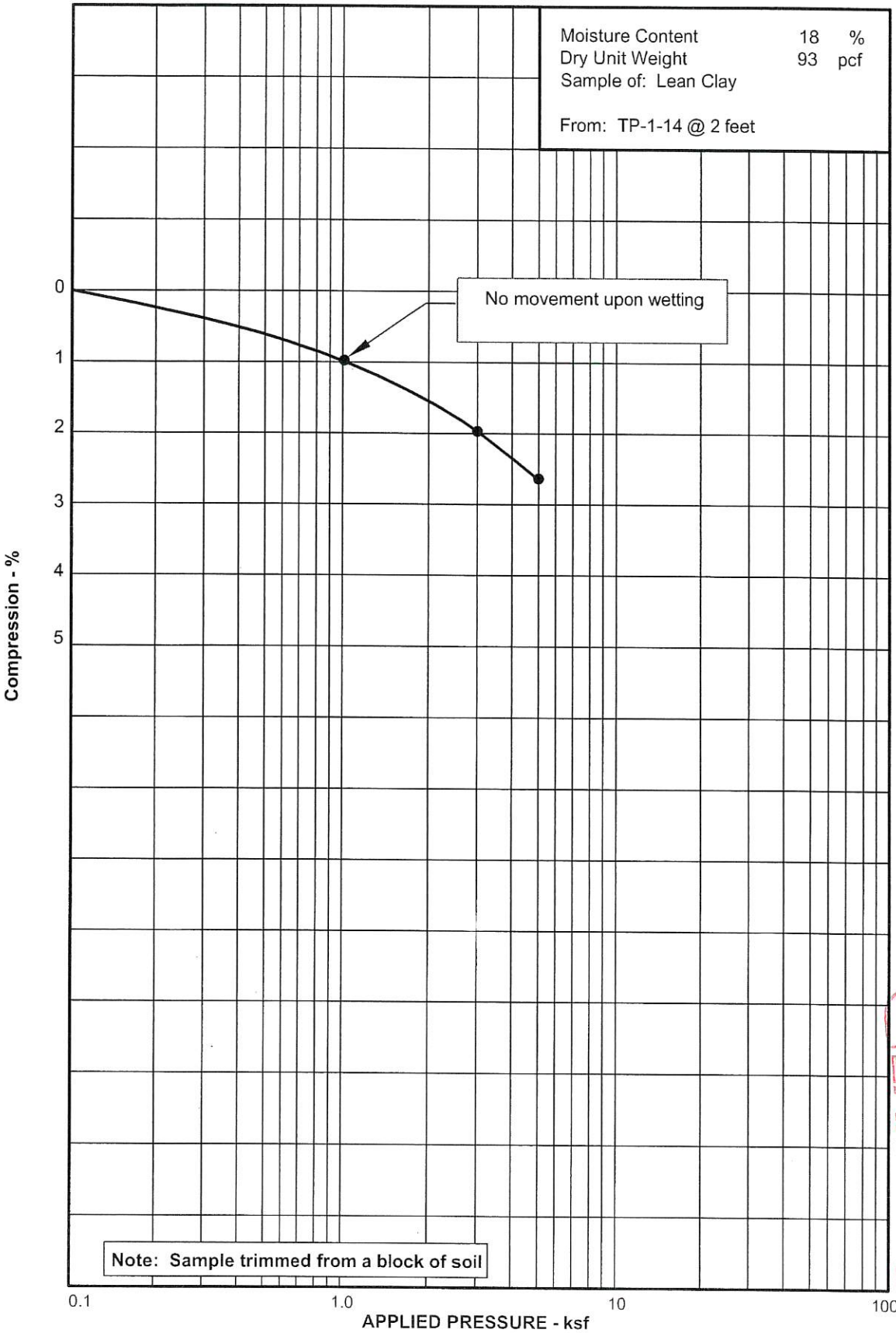


Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 20

Applied Geotechnical Engineering Consultants, Inc.

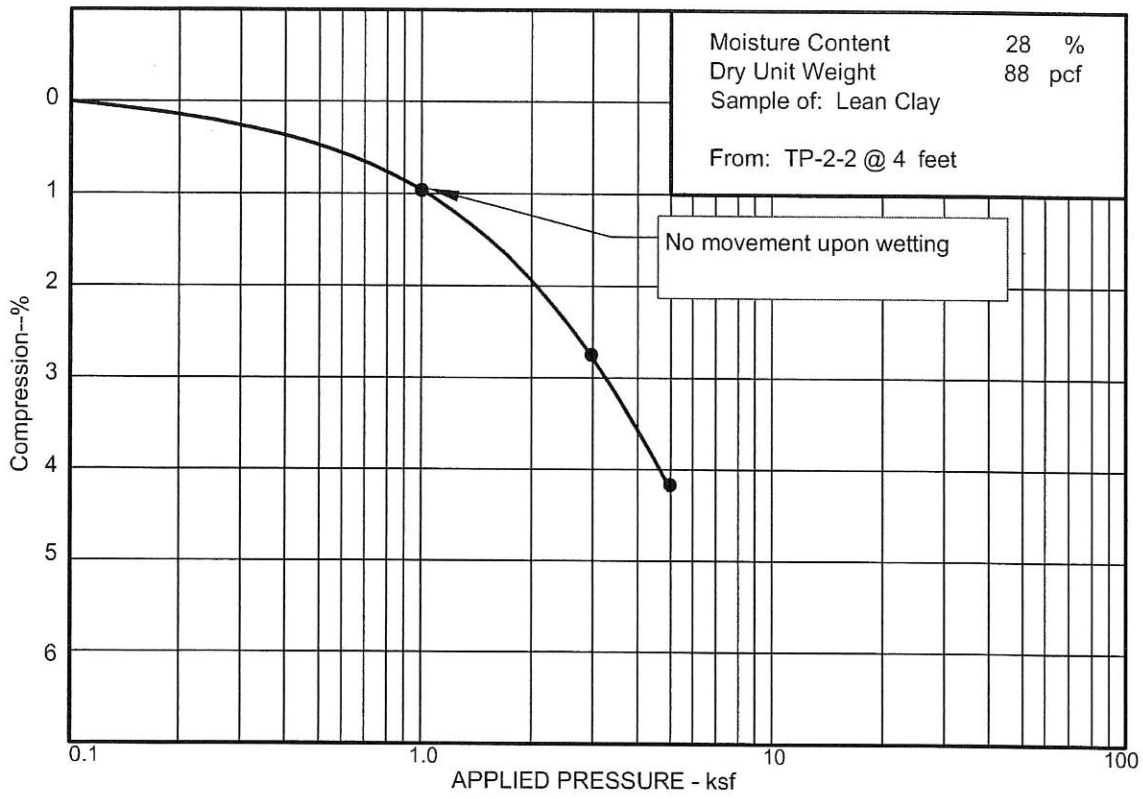


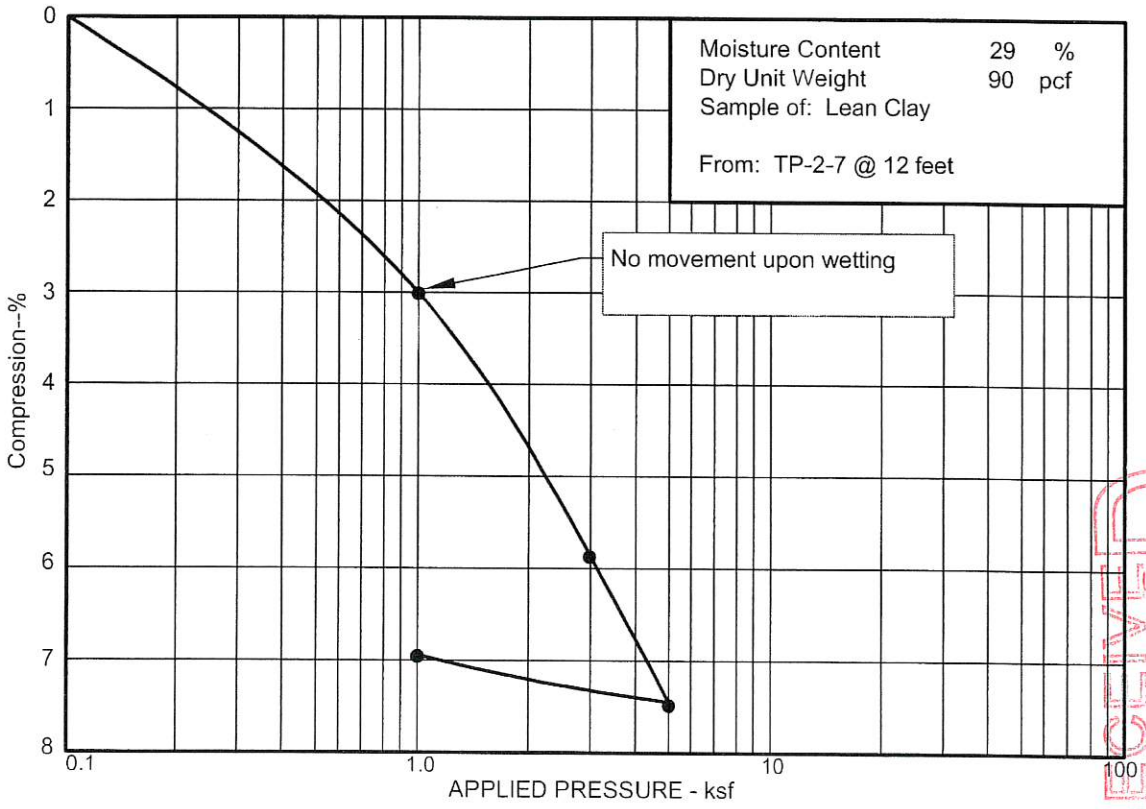
Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 21

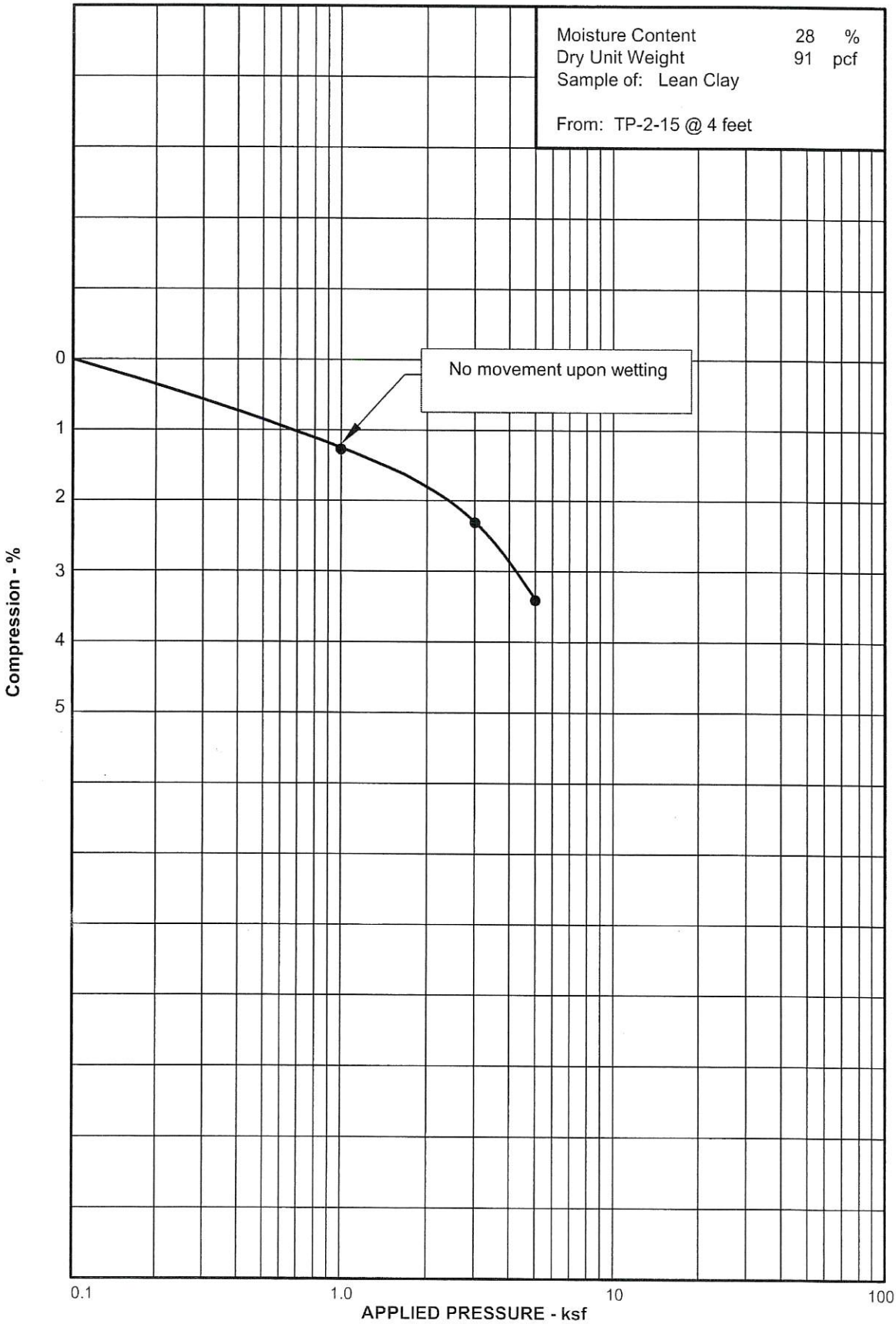
Applied Geotechnical Engineering Consultants, Inc.





Project No. 1140850 CONSOLIDATION TEST RESULTS Figure 22

Applied Geotechnical Engineering Consultants, Inc.

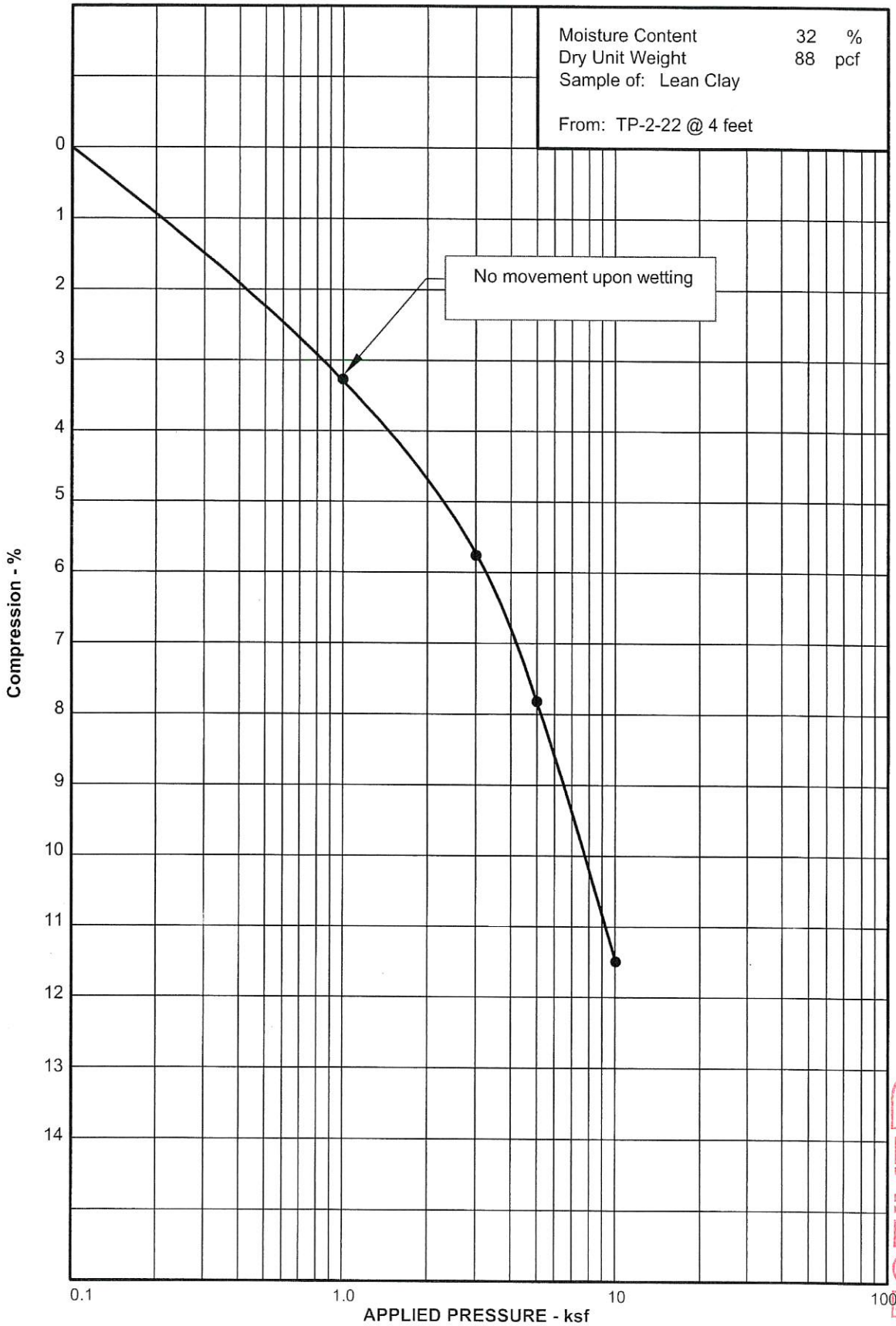


Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 23

Applied Geotechnical Engineering Consultants, Inc.

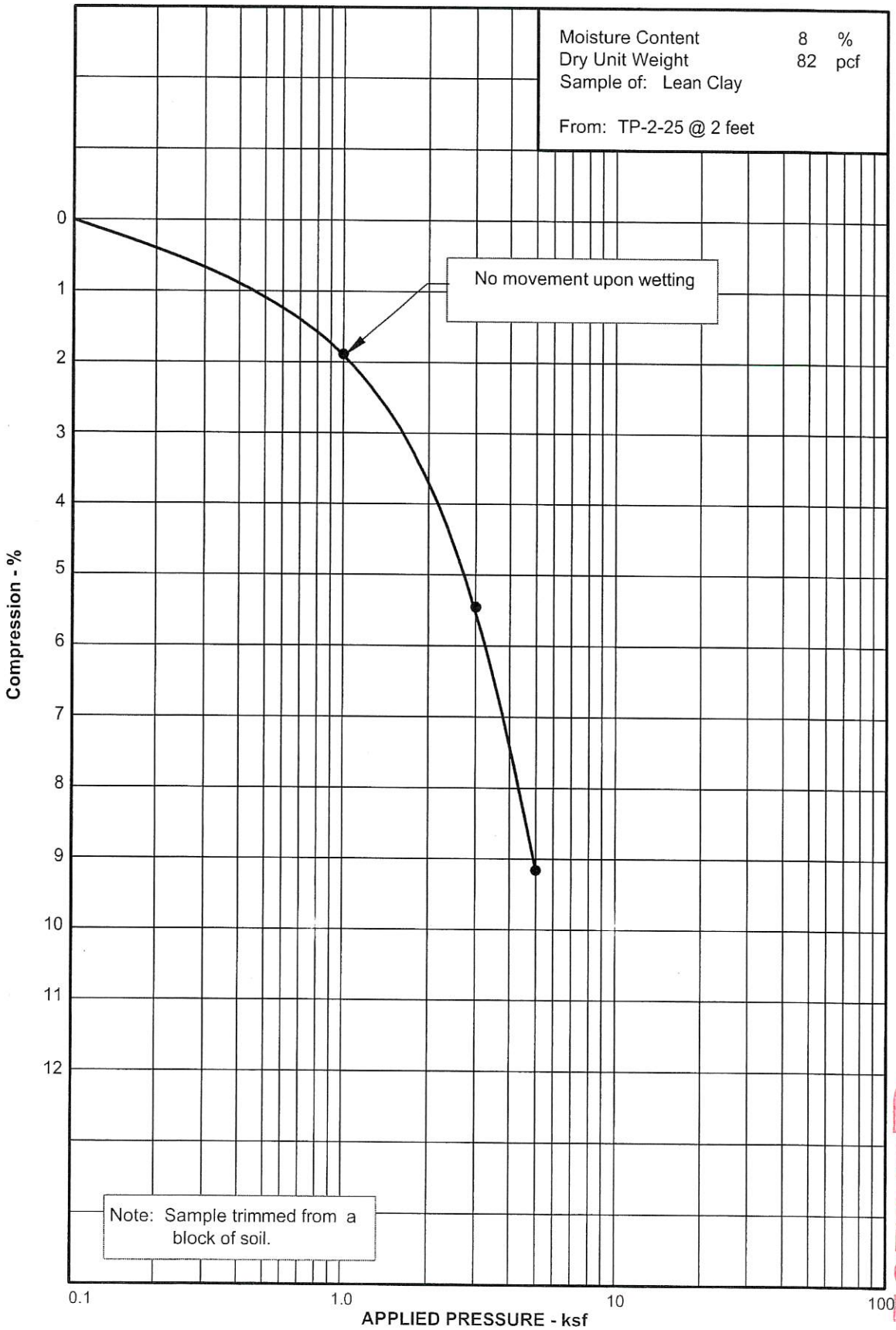


Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 24

Applied Geotechnical Engineering Consultants, Inc.

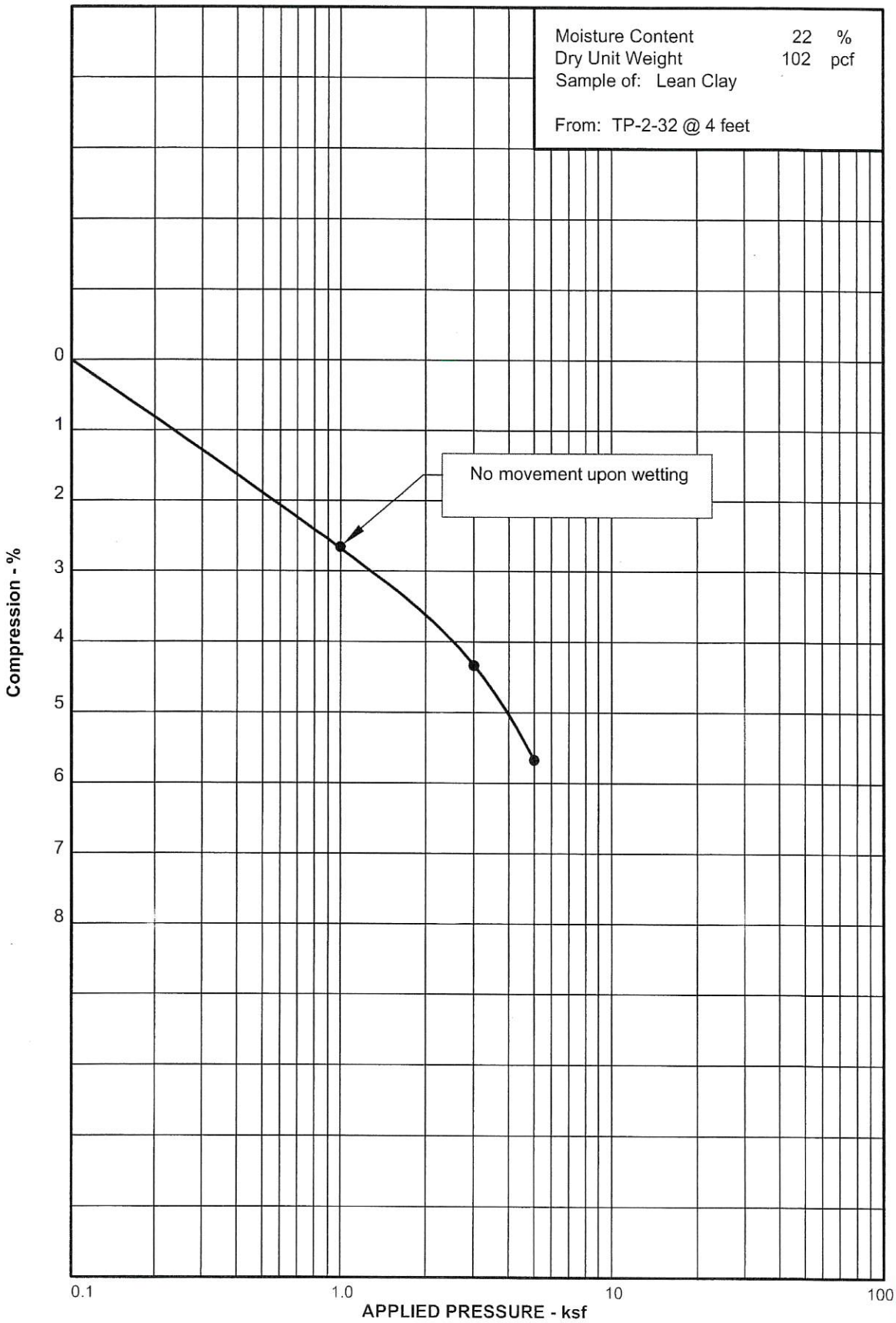


Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 25

Applied Geotechnical Engineering Consultants, Inc.

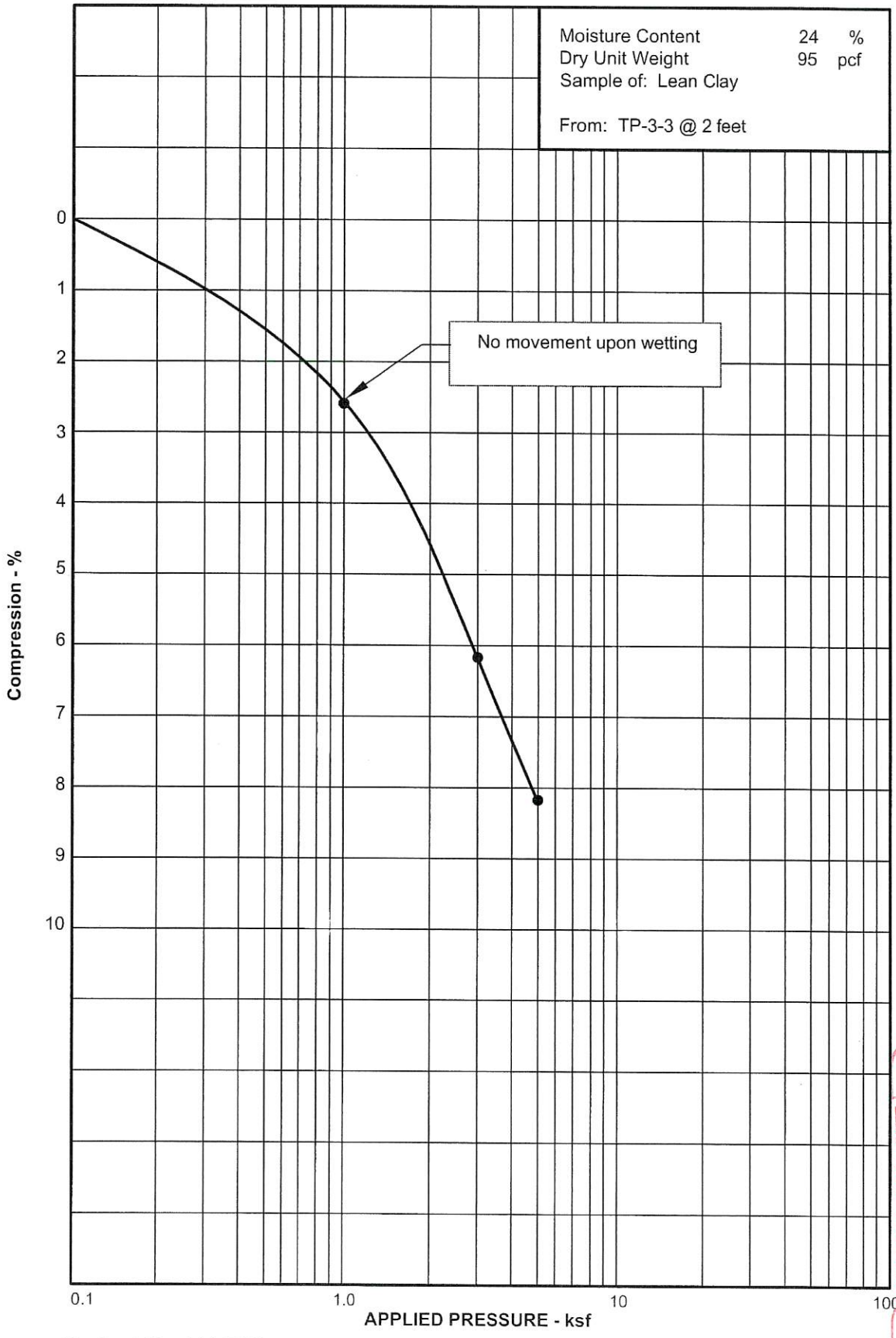


Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 26

Applied Geotechnical Engineering Consultants, Inc.



Project No. 1140850

CONSOLIDATION TEST RESULTS

Figure 27

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

PROJECT NUMBER 1140850

SAMPLE LOCATION		NATURAL MOISTURE CONTENT (%)	NATURAL DRY DENSITY (PCF)	GRADATION			ATTERBERG LIMITS		UNCONFINED COMPRESSIVE STRENGTH (PSF)	WATER SOLUBLE SULFATE (%)	SAMPLE CLASSIFICATION
BORING/ TEST PIT	DEPTH (FEET)			GRAVEL (%)	SAND (%)	SILT/ CLAY (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)			
TP-1-3	2	15	74			65					Interlayered Silt and Silty Sand
	6	27				80					Silt with Sand
TP-1-4	4	9	87			39				0.034	Clayey Sand
TP-1-7	2	17	66			92					Lean Clay
TP-1-8	10	13	91			55					Sandy Silt
TP-1-9	9	43	70			91			10,500		Lean Clay
TP-1-13	4	10	80			66					Sandy Lean Clay
	6	13	84			79					Lean Clay with Sand
TP-1-14	2	18	93			94					Lean Clay
TP-1-15	4	17	94			54					Sandy Lean Clay
TP-1-16	11	30	85			56					Sandy Silt

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

PROJECT NUMBER 1140850

SAMPLE LOCATION		NATURAL MOISTURE CONTENT (%)	NATURAL DRY DENSITY (PCF)	GRADATION			ATTERBERG LIMITS		UNCONFINED COMPRESSIVE STRENGTH (PSF)	WATER SOLUBLE SULFATE (%)	SAMPLE CLASSIFICATION
BORING/ TEST PIT	DEPTH (FEET)			GRAVEL (%)	SAND (%)	SILT/ CLAY (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)			
TP-1-18	2	13	70			96				<0.001	Lean Clay
B-2-1	21½	15	100			40					Silty Sand
	24	25	96			56					Sandy Silt
B-2-2	21½	16	96			30					Silty Sand
	24	23	101			27					Silty Sand
TP-2-2	2	15	95			55					Sandy Silt
	4	28	88			88					Lean Clay
TP-2-6	4	28	92			91			3,065		Lean Clay
TP-2-7	12	29	90			90					Lean Clay
TP-2-12	2	18	97			81			1,370	0.028	Lean Clay with Sand
TP-2-15	4	28	91			96					Lean Clay
TP-2-17	12	29	94			96			2,380		Lean Clay

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

PROJECT NUMBER 1140850

SAMPLE LOCATION		NATURAL MOISTURE CONTENT (%)	NATURAL DRY DENSITY (PCF)	GRADATION			ATTERBERG LIMITS		UNCONFINED COMPRESSIVE STRENGTH (PSF)	WATER SOLUBLE SULFATE (%)	SAMPLE CLASSIFICATION
BORING/ TEST PIT	DEPTH (FEET)			GRAVEL (%)	SAND (%)	SILT/ CLAY (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)			
TP-2-22	4	32	88			97					Lean Clay
TP-2-25	2	8	82			87					Lean Clay
TP-2-27	4	33	89			98			665		Lean Clay
TP-2-28	4	30	88			96			1,400	0.010	Lean Clay
TP-2-32	4	22	102			88					Lean Clay
TP-2-33	12	34	83			92			1,345		Lean Clay
TP-3-2	2	24	95			90					Lean Clay
	4	34	89			99			440	0.013	Lean Clay

AGEC
Applied GeoTech

March 10, 2015

Ivory Homes
978 East Woodoak Lane
Salt Lake City, UT 84117

Attention: Brad Mackay
EMAIL: bradm@ivorydevelopment.com

Subject: Proctor and CBR Test Results
Holbrook Property
2100 North Redwood Road
Lehi, UT
Project No. 1140850

Gentlemen:

Applied Geotechnical Engineering Consultants, Inc. was requested to perform Proctor and CBR tests for the proposed Holbrook property located at Redwood Road and Highway 85 in Lehi, Utah. We performed a geotechnical investigation for the project and submitted our findings and recommendations in a report dated November 25, 2014 under Project No. 1140850. Results of the Proctor and CBR tests along with soil classification tests are attached. The test results are summarized on Table I.

If you have questions or if we can be of further service, please call.

Sincerely,

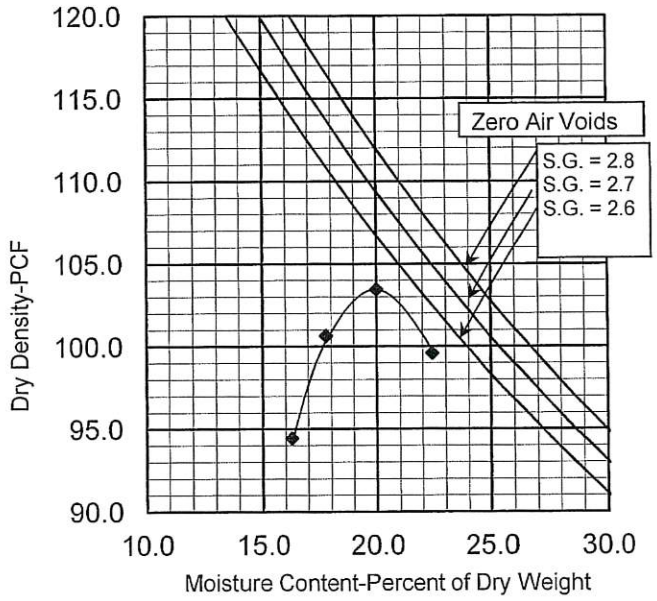
APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

Douglas R. Hawkes, P.E., P.G.

DRH/rs
Enclosures

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13255
Sample Location: TP 1-1 at 1' to 2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/22/14
Tested By: WJ
Reviewed By: KBB
Test Procedure: AASHTO T-99D, Scalp&Replace
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 103.5 pcf
Optimum Moisture 20 %
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Clayey Gravel with Sand (GC)

GRADATION RESULTS

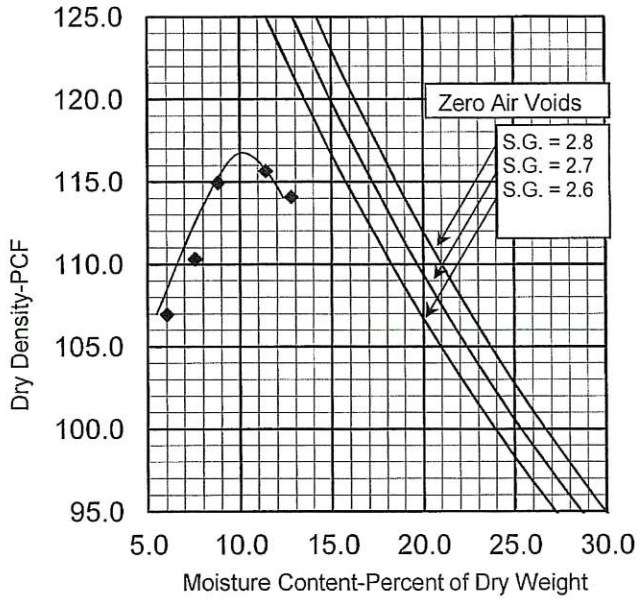
Sieve Designation	Sieve Opening Size (mm)	Percent Passing, Based on 3-In Minus	Percent Passing, Based on Total Sample
6"	152.4	-	83%
5"	127.0	-	83%
4"	101.6	-	83%
3"	76.2	100%	80%
1 1/2"	38.1	93%	75%
3/4"	19.1	88%	70%
3/8"	9.52	85%	68%
#4	4.76	82%	66%
#8	2.38	75%	60%
#16	1.19	69%	56%
#30	0.59	64%	52%
#50	0.297	58%	47%
#100	0.149	53%	42%
#200	0.074	46%	37%

GRAVEL	SAND	SILT & CLAY
34%	29%	37%

Figure 1

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13256
Sample Location: TP1-2 at 1' to 2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/20/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T-99D, Scalp&Replace
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	116.7 pcf
Optimum Moisture	10.4%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Clayey Sand with Gravel (SC)

GRADATION RESULTS

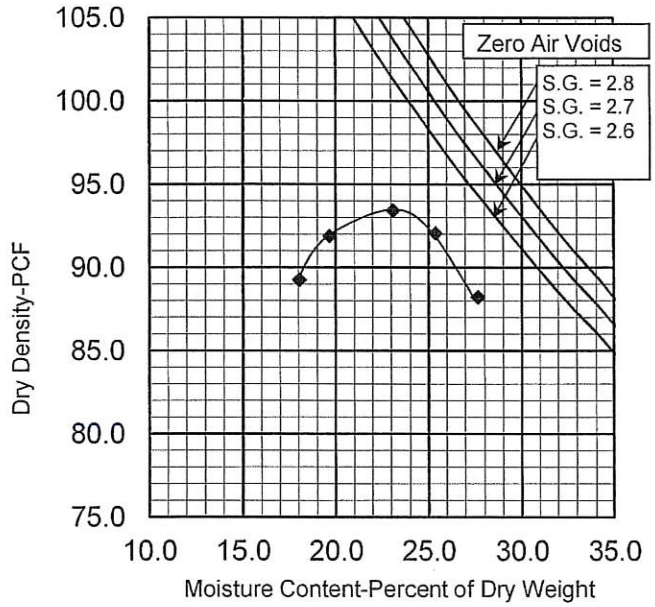
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	98	-
3/4"	19.1	88	-
3/8"	9.52	81	-
#4	4.76	77	-
#8	2.38	71	-
#16	1.19	63	-
#30	0.59	51	-
#50	0.297	44	-
#100	0.149	39	-
#200	0.074	31	-

GRAVEL	SAND	SILT & CLAY
23%	46%	31%

Figure 2

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13257
Sample Location: TP 1-3 at 1' to 2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/20/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	93.5 pcf
Optimum Moisture	23.1%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Silt (ML)

GRADATION RESULTS

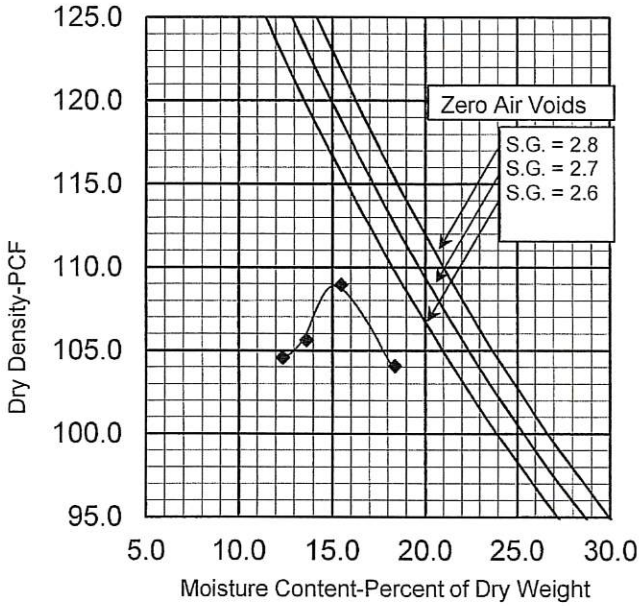
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	100	-
#16	1.19	99	-
#30	0.59	99	-
#50	0.297	99	-
#100	0.149	98	-
#200	0.074	87	-

GRAVEL	SAND	SILT & CLAY
0%	13%	87%

Figure 3

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13258
Sample Location: TP 1-4 at 1' to 2'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/21/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	109 pcf
Optimum Moisture	15.5%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

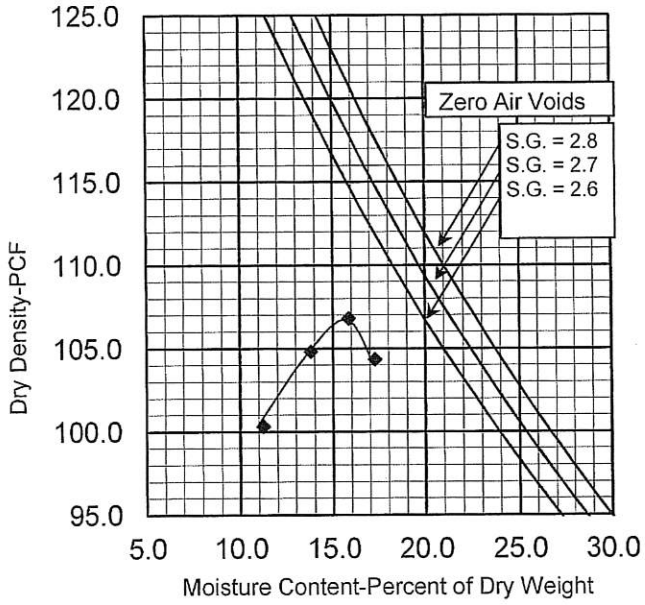
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	99	-
3/8"	9.52	97	-
#4	4.76	96	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	52	-

GRAVEL	SAND	SILT & CLAY
4%	44%	52%

Figure 4

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13259
Sample Location: TP 1-5 at 1' to 2'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/21/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	106.8 pcf
Optimum Moisture	15.9%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

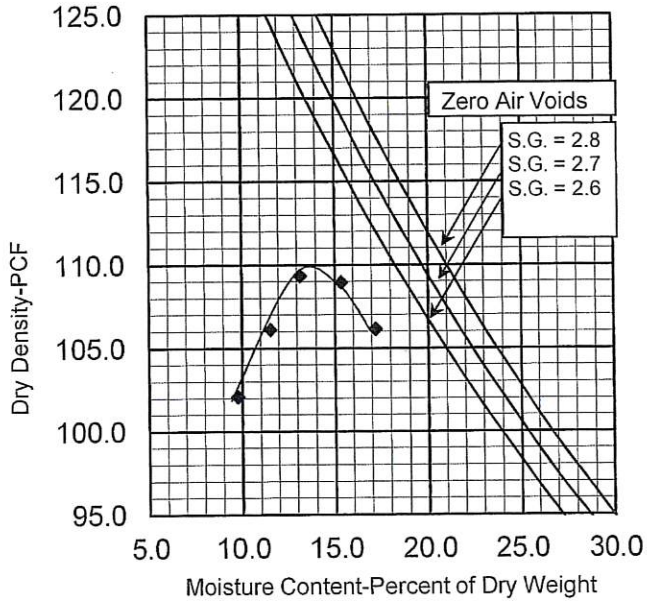
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	99	-
3/8"	9.52	98	-
#4	4.76	96	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	67	-

GRAVEL	SAND	SILT & CLAY
4%	29%	67%

Figure 5

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13260
Sample Location: TP 1-6 at 1' to 2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/22/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	110 pcf
Optimum Moisture	13.9%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Silty Sand (SM)

GRADATION RESULTS

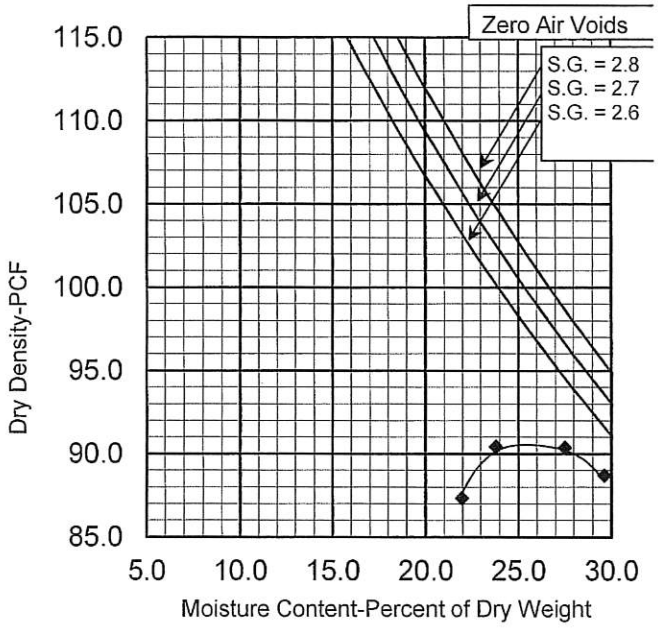
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	99	-
3/8"	9.52	97	-
#4	4.76	93	-
#8	2.38	87	-
#16	1.19	76	-
#30	0.59	66	-
#50	0.297	60	-
#100	0.149	52	-
#200	0.074	40	-

GRAVEL	SAND	SILT & CLAY
7%	53%	40%

Figure 6

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13268
Sample Location: TP1-7 at 1'-2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/24/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	90.8 pcf
Optimum Moisture	25.5%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

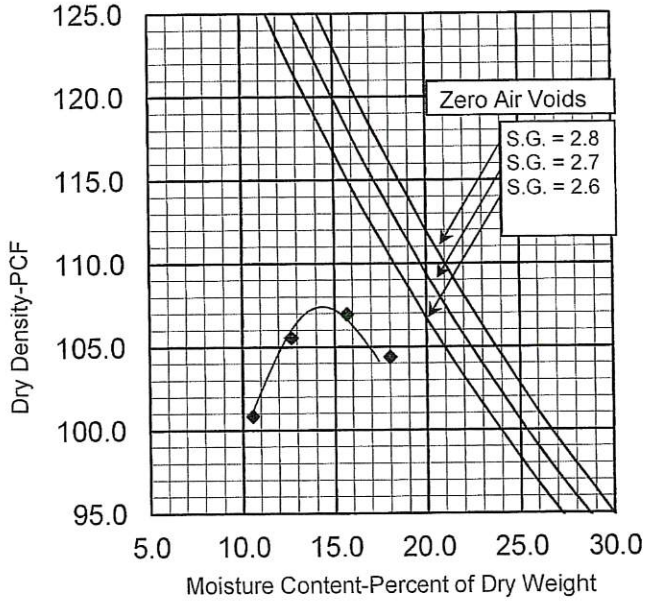
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	99	-
#16	1.19	98	-
#30	0.59	97	-
#50	0.297	97	-
#100	0.149	95	-
#200	0.074	88	-

GRAVEL	SAND	SILT & CLAY
0%	12%	88%

Figure 7

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13269
Sample Location: TP 1-8 at 1' to 2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/24/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	107.5 pcf
Optimum Moisture	14.5%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

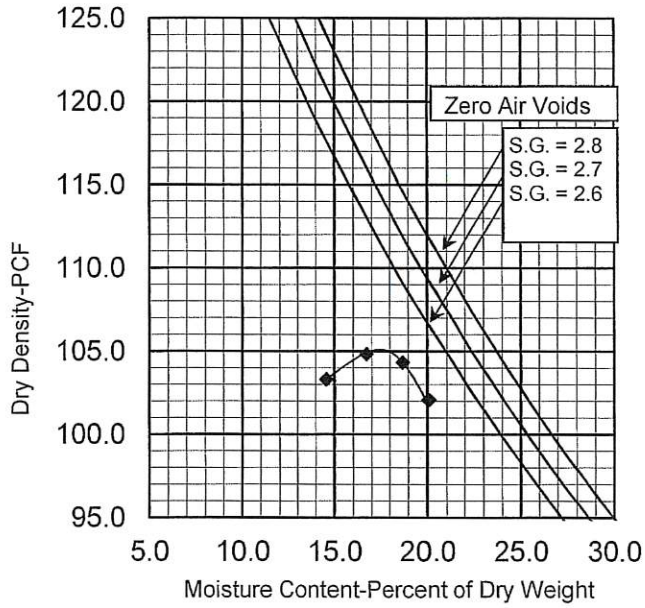
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	99	-
3/4"	19.1	97	-
3/8"	9.52	95	-
#4	4.76	93	-
#8	2.38	91	-
#16	1.19	86	-
#30	0.59	79	-
#50	0.297	73	-
#100	0.149	68	-
#200	0.074	57	-

GRAVEL	SAND	SILT & CLAY
7%	36%	57%

Figure 8

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13270
Sample Location: TP 1-9 at 1' to 2'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/08/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	105.2 pcf
Optimum Moisture	17.5%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

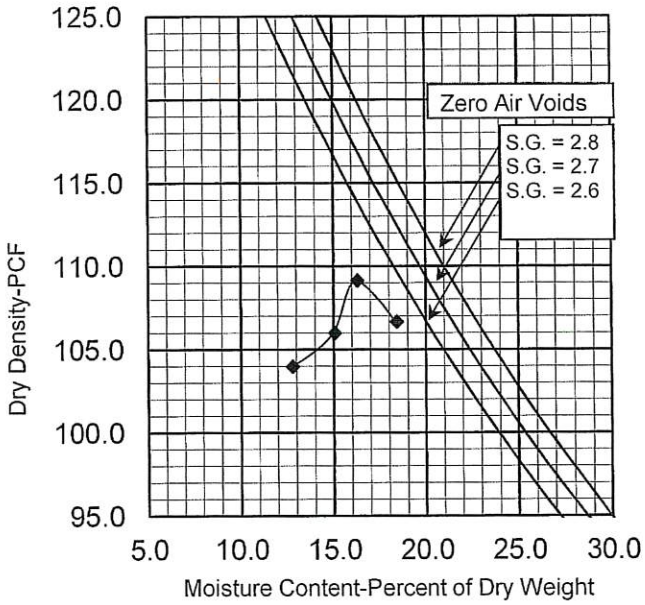
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	85	-

GRAVEL	SAND	SILT & CLAY
0%	15%	85%

Figure 9

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13271
Sample Location: TP 1-10 at 1' to 2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/02/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	109.2 pcf
Optimum Moisture	16.3%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Silty Sand (SM)

GRADATION RESULTS

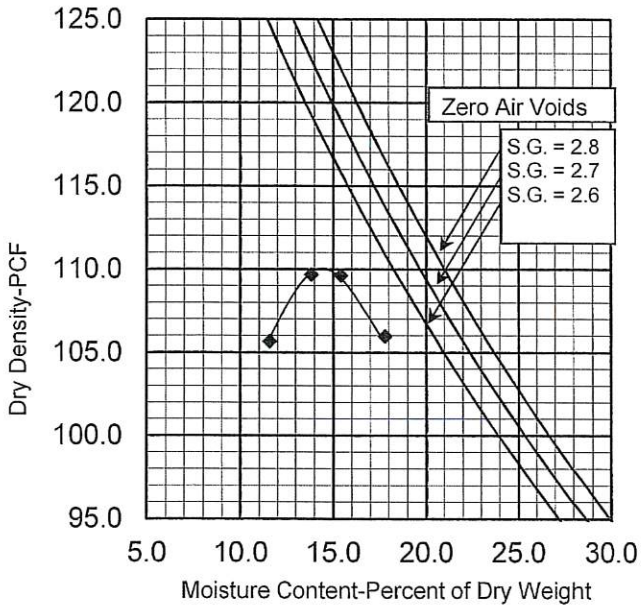
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	99	-
#16	1.19	96	-
#30	0.59	86	-
#50	0.297	60	-
#100	0.149	43	-
#200	0.074	33	-

GRAVEL	SAND	SILT & CLAY
0%	67%	33%

Figure 10

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13293
Sample Location: TP 1-11 at 1' to 2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/09/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	110.2 pcf
Optimum Moisture	14.5%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Clayey Sand (SC)

GRADATION RESULTS

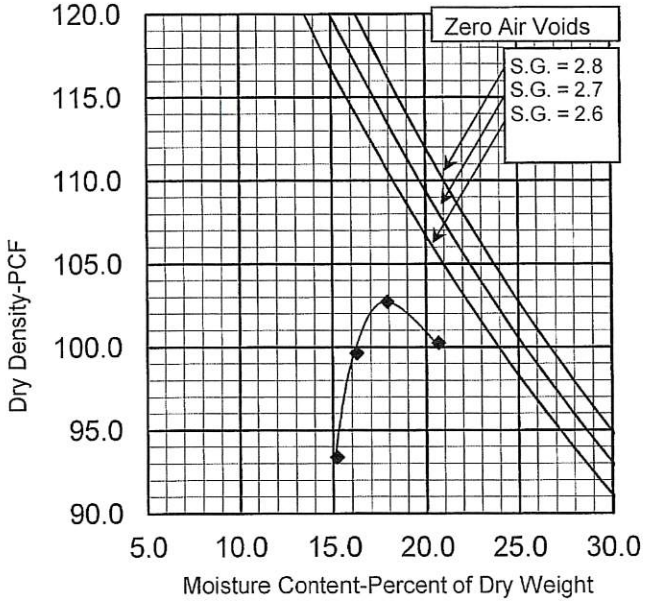
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	96	-
#8	2.38	88	-
#16	1.19	77	-
#30	0.59	66	-
#50	0.297	60	-
#100	0.149	54	-
#200	0.074	43	-

GRAVEL	SAND	SILT & CLAY
4%	53%	43%

Figure 11

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13294
Sample Location: TP 1-12 at 1'-2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/08/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	102.7 pcf
Optimum Moisture	17.9%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

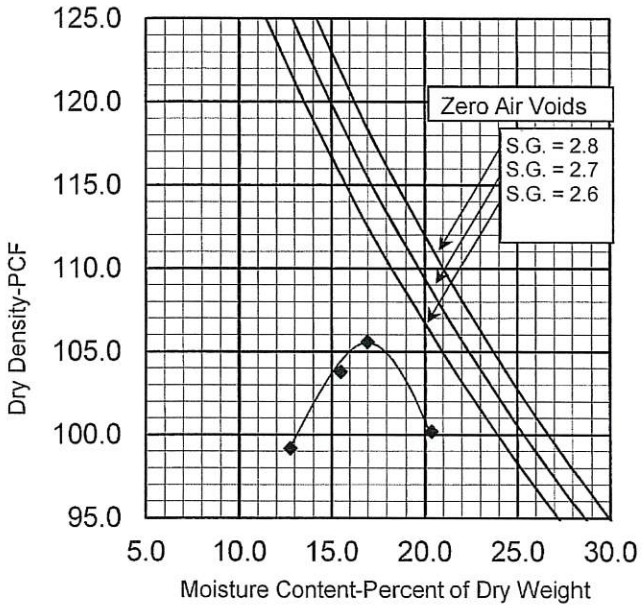
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	87	-

GRAVEL	SAND	SILT & CLAY
0%	13%	87%

Figure 12

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13295
Sample Location: TP 1-13 at 1' to 2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/09/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	105.6 pcf
Optimum Moisture	17%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

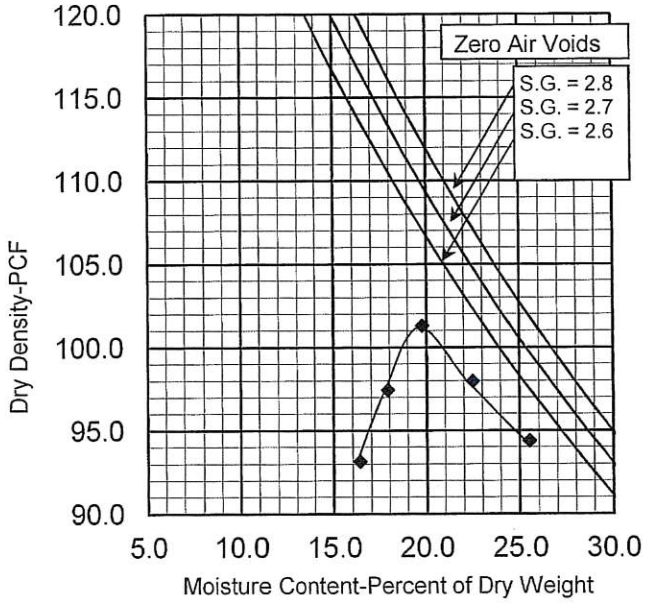
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	99	-
3/8"	9.52	98	-
#4	4.76	97	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	69	-

GRAVEL	SAND	SILT & CLAY
3%	28%	69%

Figure 13

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13296
Sample Location: TP 1-14 at 1' to 2'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/12/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	101.3 pcf
Optimum Moisture	19.8%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

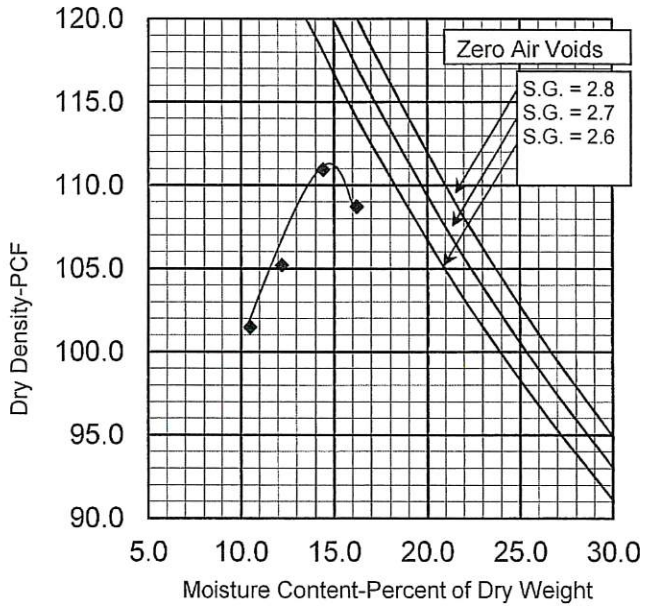
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	94	-

GRAVEL	SAND	SILT & CLAY
0%	6%	94%

Figure 14

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13310
Sample Location: TP 1-15 at 1' to 2'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/12/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 111.2 pcf
Optimum Moisture 15%
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

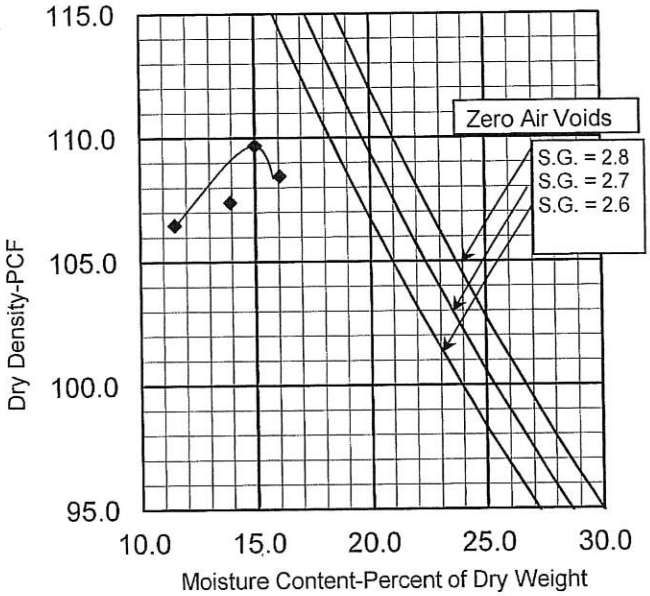
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	99	-
3/8"	9.52	97	-
#4	4.76	95	-
#8	2.38	93	-
#16	1.19	90	-
#30	0.59	84	-
#50	0.297	73	-
#100	0.149	66	-
#200	0.074	57	-

GRAVEL	SAND	SILT & CLAY
5%	38%	57%

Figure 15

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13311
Sample Location: TP 1-16 at 1' to 2'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/18/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T-99 D
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 109.7 pcf
Optimum Moisture 15 %
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Gravelly Lean Clay with Sand (CL)

GRADATION RESULTS

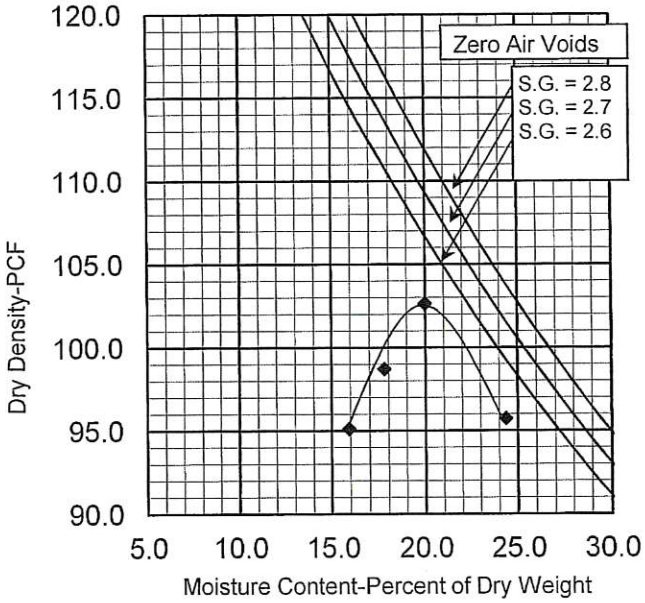
Sieve Designation	Sieve Opening Size (mm)	Percent Passing, Based on 3-In Minus	Percent Passing, Based on Total Sample
6"	152.4	-	100%
5"	127.0	-	100%
4"	101.6	-	100%
3"	76.2	100%	93%
1 1/2"	38.1	86%	80%
3/4"	19.1	81%	76%
3/8"	9.52	78%	73%
#4	4.76	75%	71%
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	55%	52%

GRAVEL	SAND	SILT & CLAY
29%	19%	52%

Figure 16

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13312
Sample Location: TP 1-17 at 1' to 2'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/12/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 102.7 pcf
Optimum Moisture 20%
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

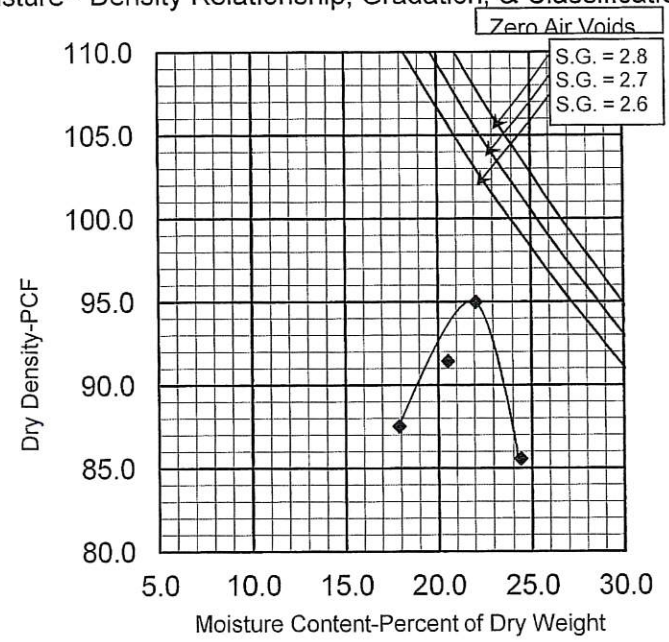
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	99	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	84	-

GRAVEL	SAND	SILT & CLAY
1%	15%	84%

Figure 17

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13313
Sample Location: TP 1-18 at 1' to 2'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/15/14
Tested By: WJ
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 95 pcf
Optimum Moisture 22.1%
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

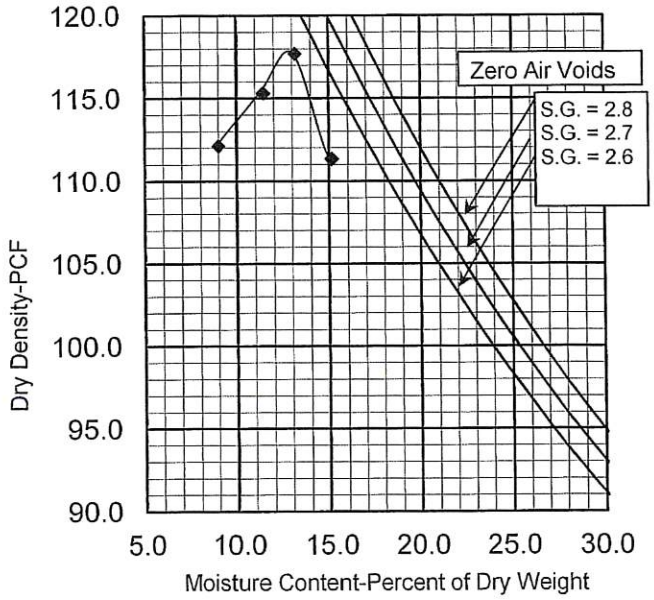
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	99	-
#16	1.19	99	-
#30	0.59	98	-
#50	0.297	98	-
#100	0.149	97	-
#200	0.074	95	-

GRAVEL	SAND	SILT & CLAY
0%	5%	95%

Figure 18

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13304 QC
Sample Location: CBR 1-1 at 1' to 2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/12/15
Tested By: DJ
Reviewed By: KBB
Test Procedure: AASHTO T-99D,Scalp&Replace
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 34
Plastic Index (PI) 13

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 117.7 pcf
Optimum Moisture 13.2 %
Final Based On Microwave Oven Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Poorly-graded Sand with Clay and Gravel (SP-SC)

GRADATION RESULTS

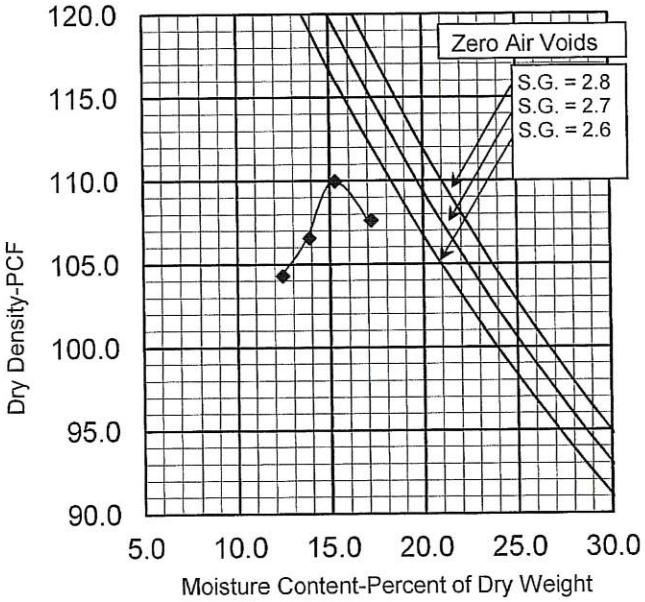
Sieve Designation	Sieve Opening Size (mm)	Percent Passing, Based on 3-In Minus	Percent Passing, Based on Total Sample
6"	152.4	100%	96%
5"	127.0	100%	90%
4"	101.6	90%	86%
1.00"	25	88%	85%
3/4"	19.1	87%	84%
1/2"	12.5	84%	81%
3/8"	9.52	82%	78%
#4	4.76	71%	68%
#8	2.38	52%	50%
#16	1.19	41%	39%
#30	0.59	36%	35%
#50	0.297	29%	28%
#100	0.149	22%	21%
#200	0.074	12%	12%

GRAVEL	SAND	SILT & CLAY
32%	56%	12%

Figure 19

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13305 QC
Sample Location: CBR 1-2 at 1' to 2'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 02/28/15
Tested By: MN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 40
Plastic Index (PI) 23

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 110 pcf
Optimum Moisture 15.3%

Final Based On Microwave Oven Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Clayey Sand (SC)

GRADATION RESULTS

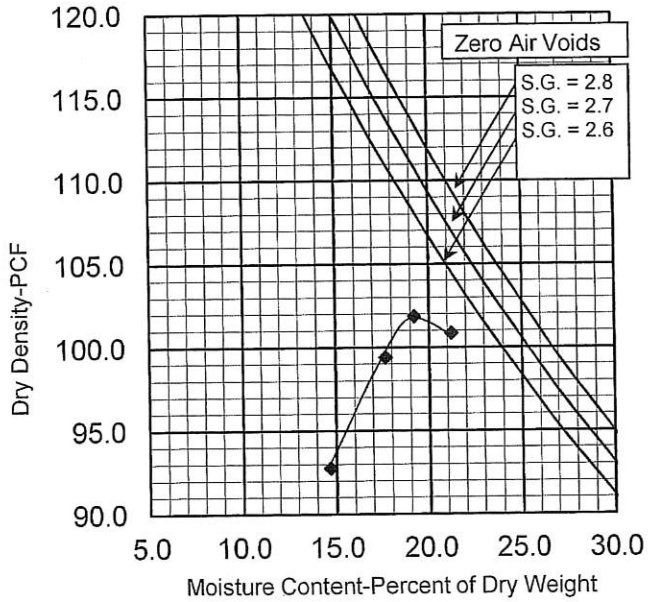
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
3"	76.2	100	-
1.00"	25	100	-
3/4"	19.1	100	-
1/2"	12.5	100	-
3/8"	9.52	99	-
#4	4.76	96	-
#8	2.38	89	-
#16	1.19	80	-
#30	0.59	70	-
#50	0.297	64	-
#100	0.149	60	-
#200	0.074	47	-

GRAVEL	SAND	SILT & CLAY
4%	49%	47%

Figure 20

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13306 QC
Sample Location: CBR 1-3 at 1' to 3'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 02/28/15
Tested By: WJ
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 33
Plastic Index (PI) 19

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 101.9 pcf
Optimum Moisture 19.2%

Final Based On Microwave Oven Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Sandy Lean Clay (CL)

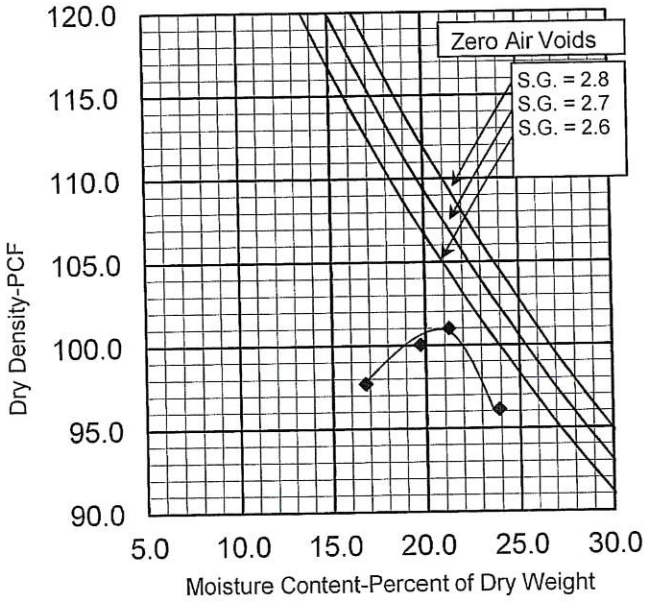
GRADATION RESULTS

Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	-	100
3"	76.2	-	100
1 1/2"	38.1	-	100
3/4"	19.1	-	100
3/8"	9.52	-	100
#4	4.76	-	99
#8	2.38	-	99
#16	1.19	-	99
#30	0.59	-	97
#50	0.297	-	92
#100	0.149	-	83
#200	0.074	-	67

GRAVEL	SAND	SILT & CLAY
1%	32%	67%

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13307 QC
Sample Location: CBR 1-4 at 1' to 3'

Date Sampled: 10/10/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 03/03/15
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 38
Plastic Index (PI) 20

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 101 pcf
Optimum Moisture 21%

Final Based On Microwave Oven Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Sandy Lean Clay (CL)

GRADATION RESULTS

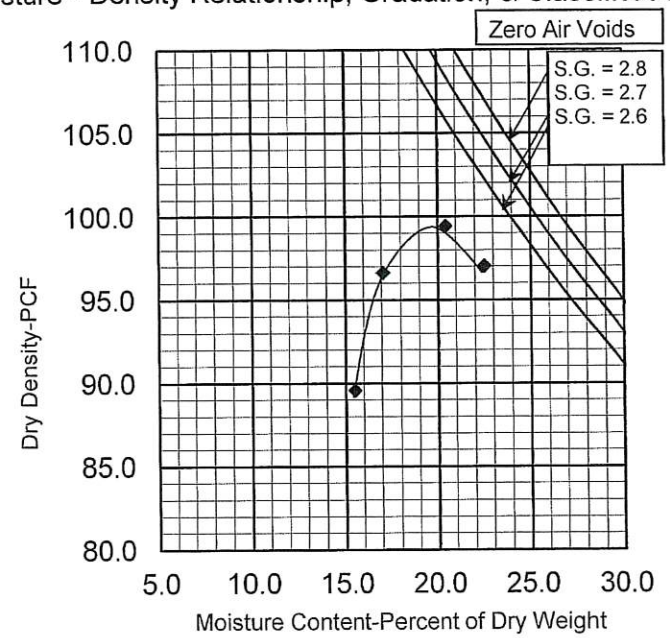
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	0
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	99	-
#8	2.38	99	-
#16	1.19	98	-
#30	0.59	96	-
#50	0.297	93	-
#100	0.149	85	-
#200	0.074	67	-

GRAVEL	SAND	SILT & CLAY
1%	32%	67%

Figure 22

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13308 QC
Sample Location: CBR 1-5 at 1' to 3'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 02/26/15
Tested By: DJ
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 40
Plastic Index (PI) 21

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 99.5 pcf
Optimum Moisture 19.8%

Final Based On Microwave Oven Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Sandy Lean Clay (CL)

GRADATION RESULTS

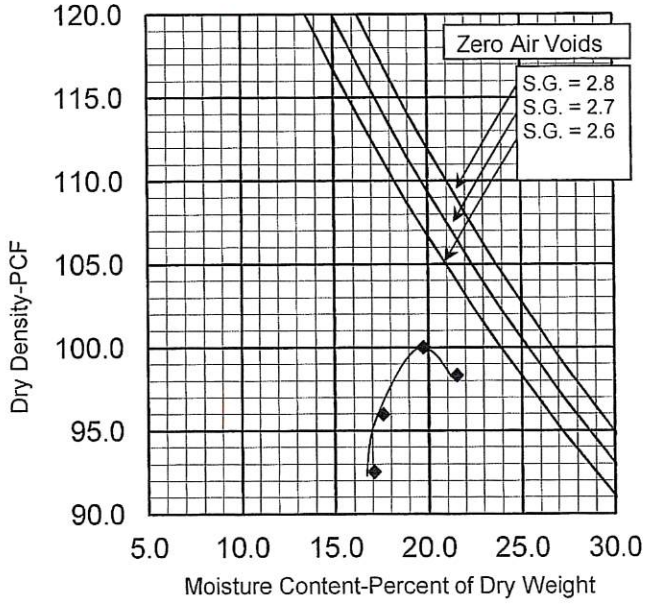
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	100	-
#16	1.19	99	-
#30	0.59	98	-
#50	0.297	93	-
#100	0.149	83	-
#200	0.074	70	-

GRAVEL	SAND	SILT & CLAY
0%	30%	70%

Figure 23

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13309 QC
Sample Location: CBR1-6 at 1' to 3'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 02/28/15
Tested By: DJ
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 43
Plastic Index (PI) 26

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 100 pcf
Optimum Moisture 19.8%

Final Based On Microwave Oven Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay with Sand (CL)

GRADATION RESULTS

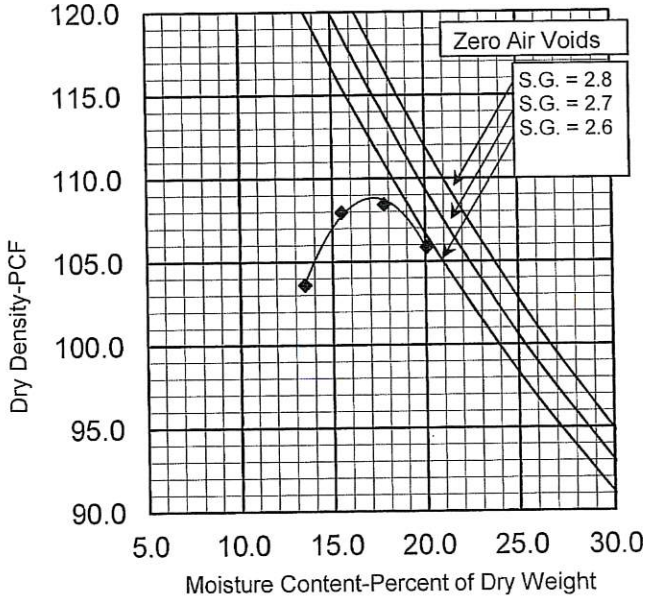
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
1.00"	25	100	-
3/4"	19.1	100	-
1/2"	12.5	99	-
3/8"	9.52	99	-
#4	4.76	99	-
#8	2.38	99	-
#16	1.19	98	-
#30	0.59	96	-
#50	0.297	91	-
#100	0.149	83	-
#200	0.074	75	-

GRAVEL	SAND	SILT & CLAY
1%	24%	75%

Figure 24

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13326
Sample Location: TP 2-1 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/17/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 108.8 pcf
Optimum Moisture 17.2%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

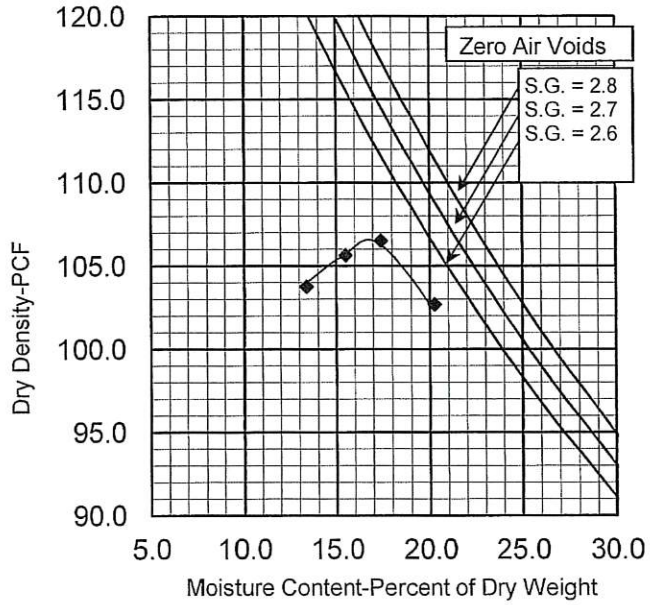
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	99	-
3/8"	9.52	99	-
#4	4.76	98	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	75	-

GRAVEL	SAND	SILT & CLAY
2%	23%	75%

Figure 25

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13327
Sample Location: TP 2-2 at 1' to 2'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/17/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 106.7 pcf
Optimum Moisture 17%
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Silt (ML)

GRADATION RESULTS

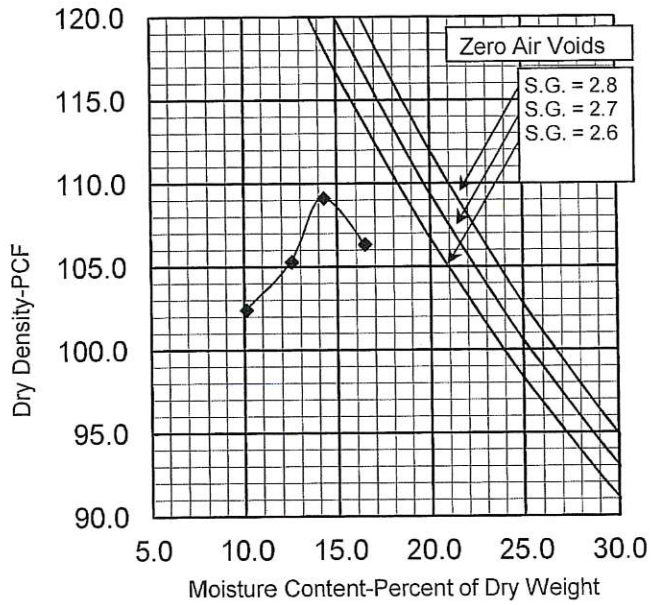
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	100	-
#16	1.19	100	-
#30	0.59	99	-
#50	0.297	98	-
#100	0.149	78	-
#200	0.074	52	-

GRAVEL	SAND	SILT & CLAY
0%	48%	52%

Figure 26

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13328
Sample Location: TP 2-3 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/18/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 109.1 pcf
Optimum Moisture 14.3%
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Silt (ML)

GRADATION RESULTS

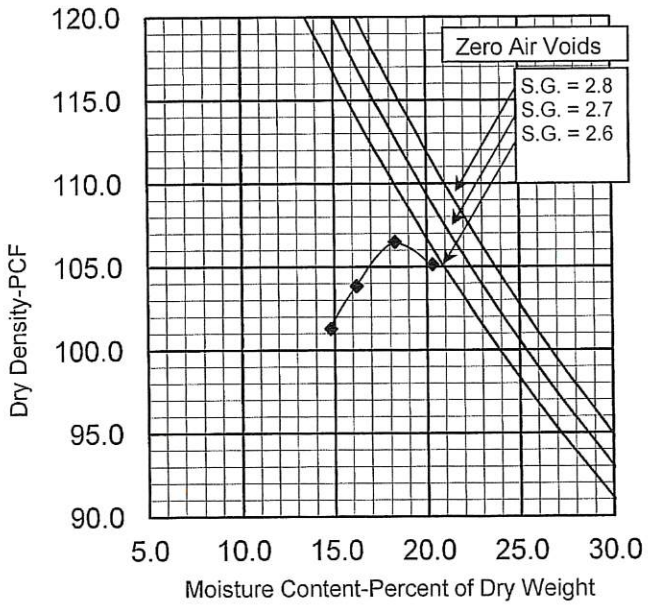
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	100	-
#16	1.19	100	-
#30	0.59	100	-
#50	0.297	99	-
#100	0.149	95	-
#200	0.074	53	-

GRAVEL	SAND	SILT & CLAY
0%	47%	53%

Figure 27

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13329
Sample Location: TP 2-4 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/17/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 106.5 pcf
Optimum Moisture 18.3%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

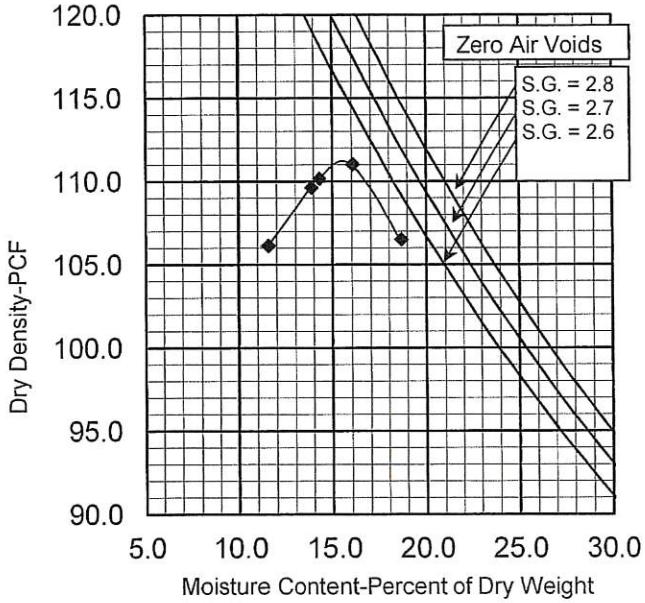
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	94	-

GRAVEL	SAND	SILT & CLAY
0%	6%	94%

Figure 28

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13337
Sample Location: TP 2-5 at 1' to 2'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/22/14
Tested By: MN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	111.2 pcf
Optimum Moisture	15.5%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

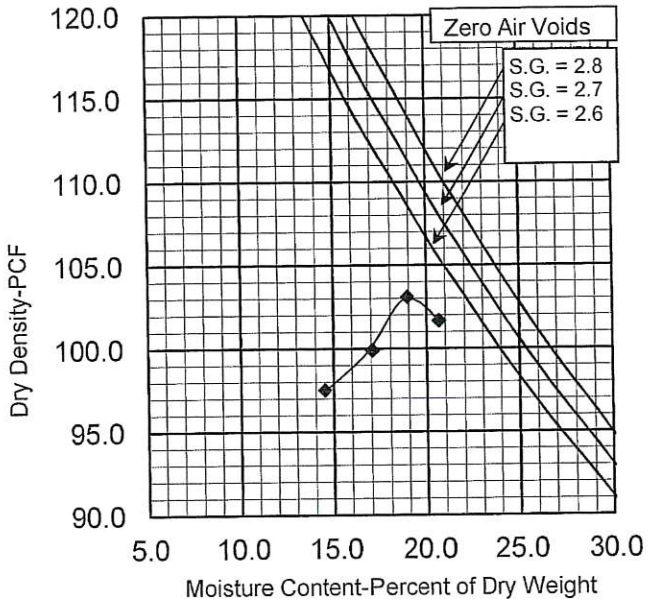
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	50	-

GRAVEL	SAND	SILT & CLAY
0%	50%	50%

Figure 29

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13338
Sample Location: TP 2-6 at 1'-2'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/17/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Liquid Limit (LL) 31
Plastic Index (PI) 15

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 103.1 pcf
Optimum Moisture 18.9%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay with Sand (CL)

GRADATION RESULTS

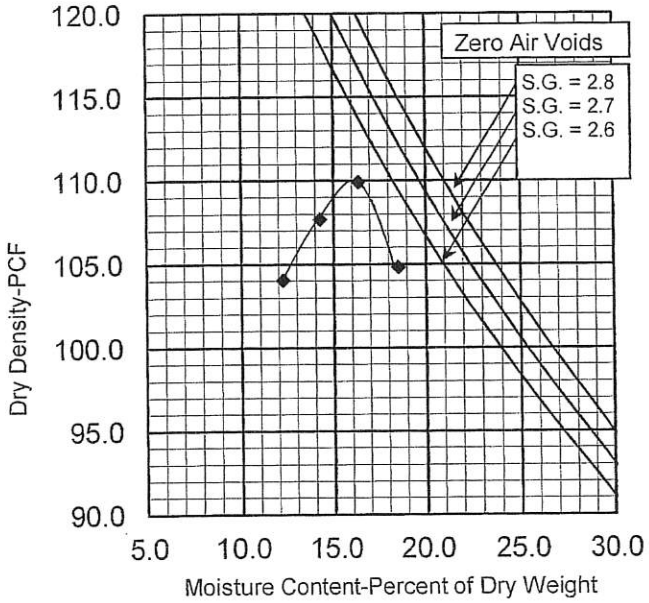
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	78	-

GRAVEL	SAND	SILT & CLAY
0%	22%	78%

Figure 30

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13339
Sample Location: TP 2-7 at 1' to 2'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/29/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 109.9 pcf
Optimum Moisture 16.4%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

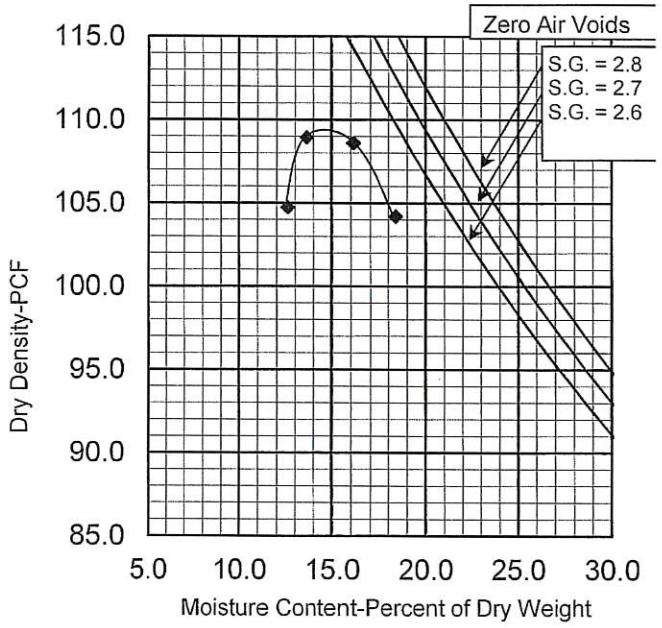
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	95	-
3/4"	19.1	95	-
3/8"	9.52	95	-
#4	4.76	92	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	59	-

GRAVEL	SAND	SILT & CLAY
8%	33%	59%

Figure 31

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13340
Sample Location: TP 2-8 at 1'-2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/23/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 37
Plastic Index (PI) 17

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 109.4 pcf
Optimum Moisture 15%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Sandy Lean Clay (CL)

GRADATION RESULTS

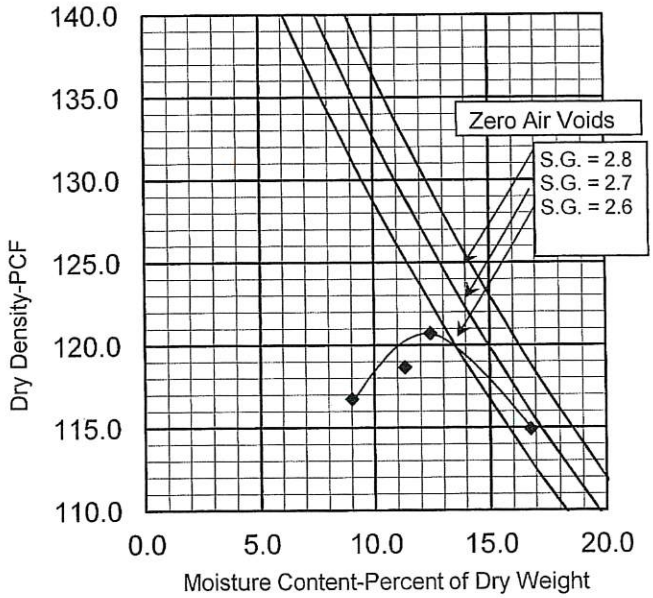
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	99	-
#16	1.19	99	-
#30	0.59	99	-
#50	0.297	98	-
#100	0.149	93	-
#200	0.074	55	-

GRAVEL	SAND	SILT & CLAY
0%	45%	55%

Figure 32

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13341
Sample Location: TP 2-9 at 1' to 2'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/23/14
Tested By: MN
Reviewed By: KBB
Test Procedure: AASHTO T-99D, Scalp&Replace
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 120.7 pcf
Optimum Moisture 12.4 %
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Clayey Gravel with Sand (GC)

GRADATION RESULTS

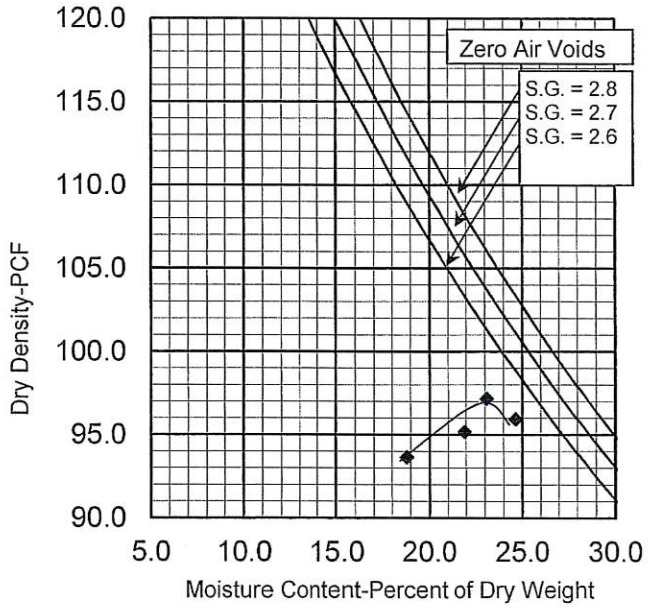
Sieve Designation	Sieve Opening Size (mm)	Percent Passing, Based on 3-In Minus	Percent Passing, Based on Total Sample
6"	152.4	-	100%
5"	127.0	-	100%
4"	101.6	-	85%
3"	76.2	100%	78%
1 1/2"	38.1	89%	69%
3/4"	19.1	88%	68%
3/8"	9.52	86%	67%
#4	4.76	85%	66%
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	43%	34%

GRAVEL	SAND	SILT & CLAY
34%	32%	34%

Figure 33

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name:	Holbrook
Project No.	1140850
Sample No.	13342
Sample Location:	TP 2-10 at 1' to 2'
Date Sampled:	10/13/14
Sampled By:	JD

TESTING INFORMATION

Date Tested:	12/23/14
Tested By:	MN
Reviewed By:	KBB
Test Procedure:	AASHTO T99 A
Specific Gravity:	Not Used
Moisture Curing:	16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	97.2 pcf
Optimum Moisture	23.1%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

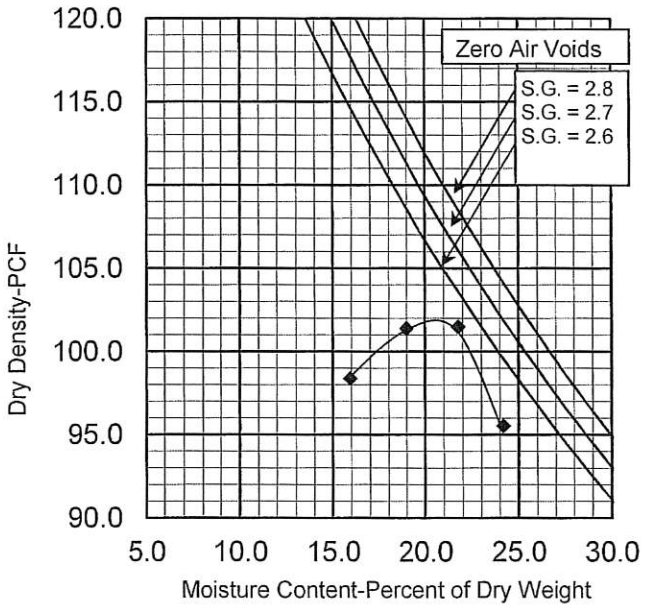
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	83	-

GRAVEL	SAND	SILT & CLAY
0%	17%	83%

Figure 34

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13345
Sample Location: TP 2-11 at 1' to 2'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/29/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	102 pcf
Optimum Moisture	20.8%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

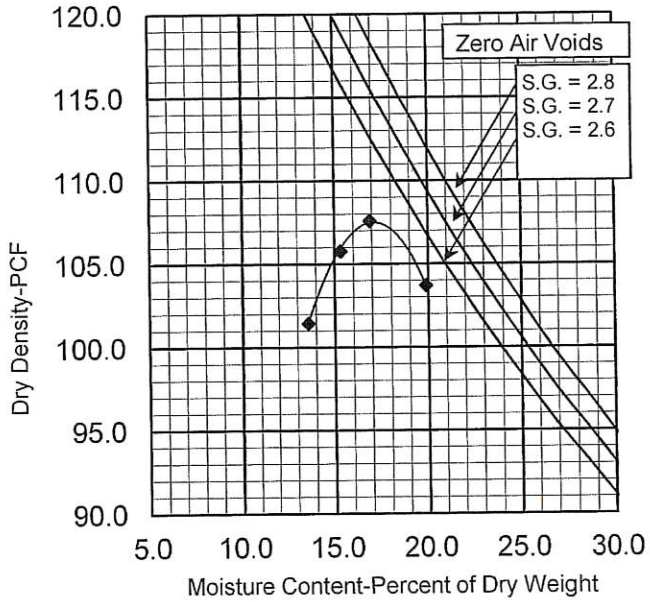
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	88	-

GRAVEL	SAND	SILT & CLAY
0%	12%	88%

Figure 35

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13346
Sample Location: TP 2-12 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/30/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 107.6 pcf
Optimum Moisture 16.9%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

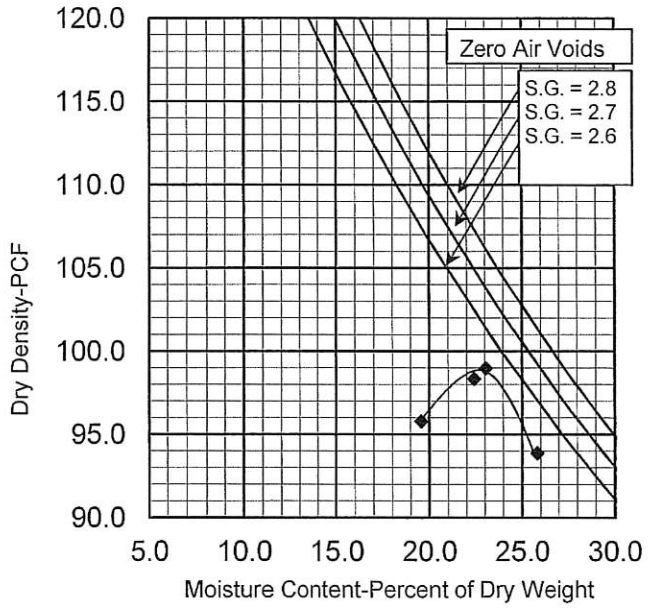
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	99	-
#4	4.76	99	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	77	-

GRAVEL	SAND	SILT & CLAY
1%	22%	77%

Figure 36

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13347
Sample Location: TP 2-13 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/30/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	99 pcf
Optimum Moisture	23%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

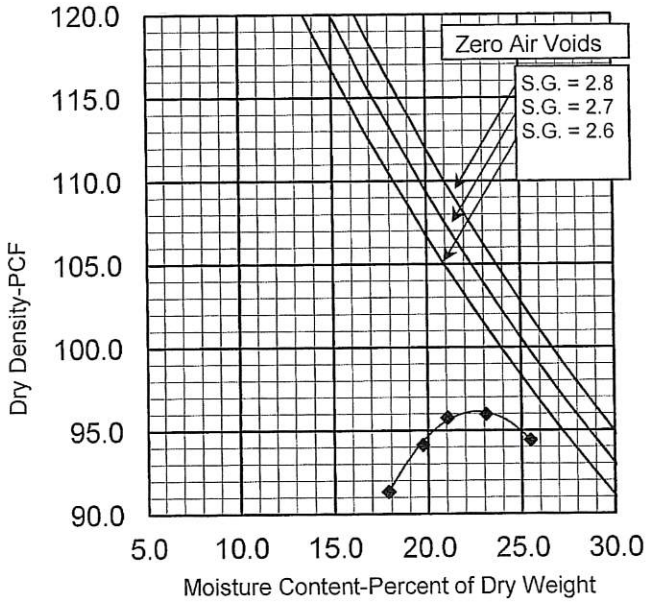
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	94	-

GRAVEL	SAND	SILT & CLAY
0%	6%	94%

Figure 37

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13348
Sample Location: TP 2-14 at 1' to 2'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/29/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 96.1 pcf
Optimum Moisture 22.5%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

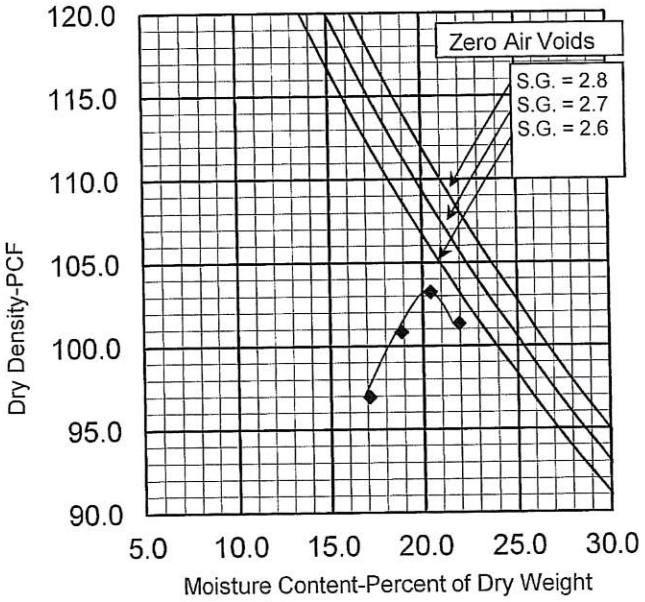
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	88	-

GRAVEL	SAND	SILT & CLAY
0%	12%	88%

Figure 38

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13349
Sample Location: TP 2-15 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/31/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 103.2 pcf
Optimum Moisture 20.4%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

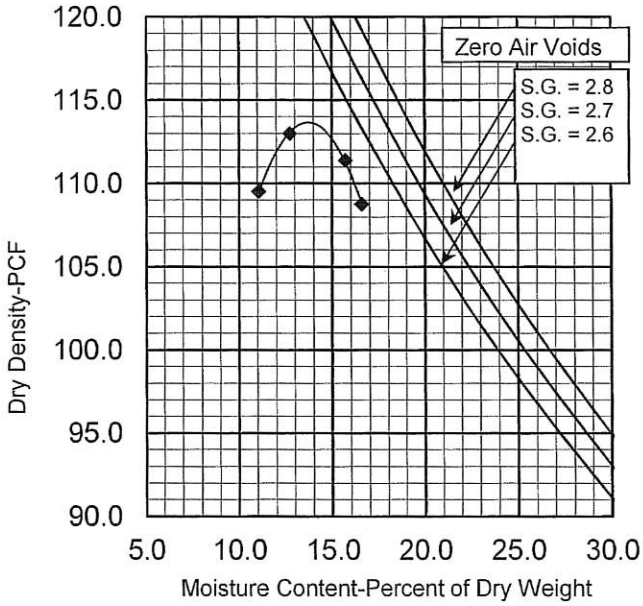
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	90	-

GRAVEL	SAND	SILT & CLAY
0%	10%	90%

Figure 39

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13350
Sample Location: TP 2-16 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/05/15
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	113.6 pcf
Optimum Moisture	13.8%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Clayey Sand (SC)

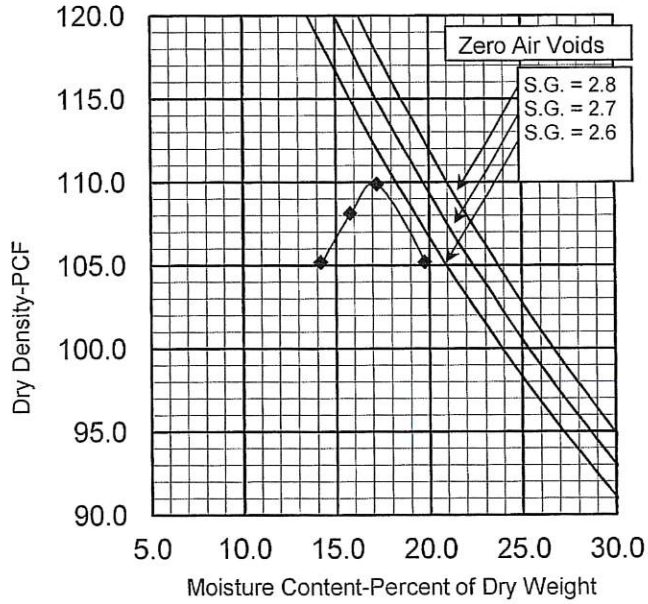
GRADATION RESULTS

Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	99	-
#4	4.76	98	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	48	-

GRAVEL	SAND	SILT & CLAY
2%	50%	48%

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13351
Sample Location: TP 2-17 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/31/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	109.9 pcf
Optimum Moisture	17.2%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

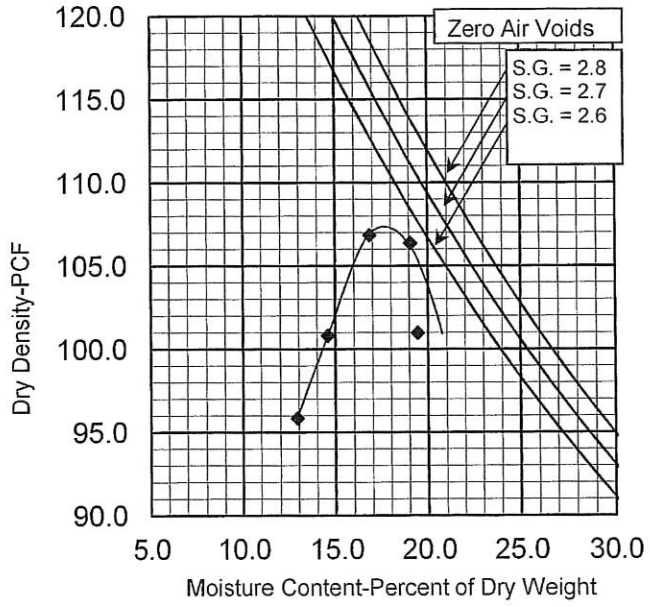
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	70	-

GRAVEL	SAND	SILT & CLAY
0%	30%	70%

Figure 41

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13352
Sample Location: TP 2-18 at 1'-2'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/04/14
Tested By: DJ
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	107.4 pcf
Optimum Moisture	17.7%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

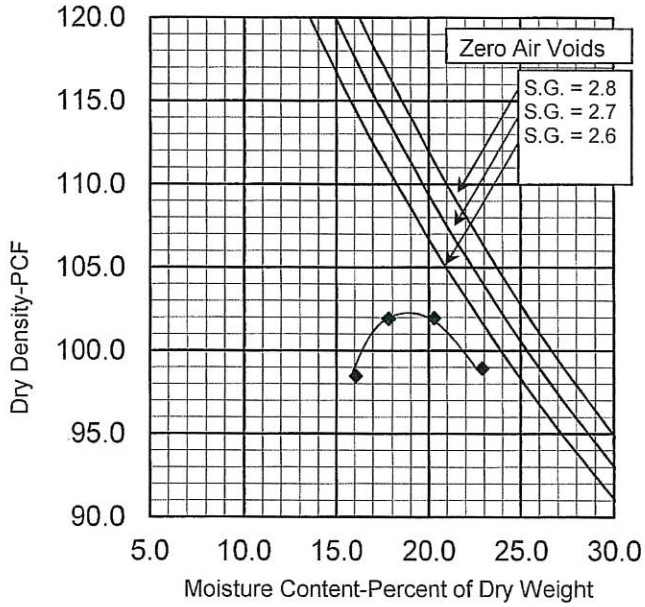
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	72	-

GRAVEL	SAND	SILT & CLAY
0%	28%	72%

Figure 42

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13353
Sample Location: TP 2-19 at 1' to 2'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/02/14
Tested By: CE/KBB
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	102.4 pcf
Optimum Moisture	19.1%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

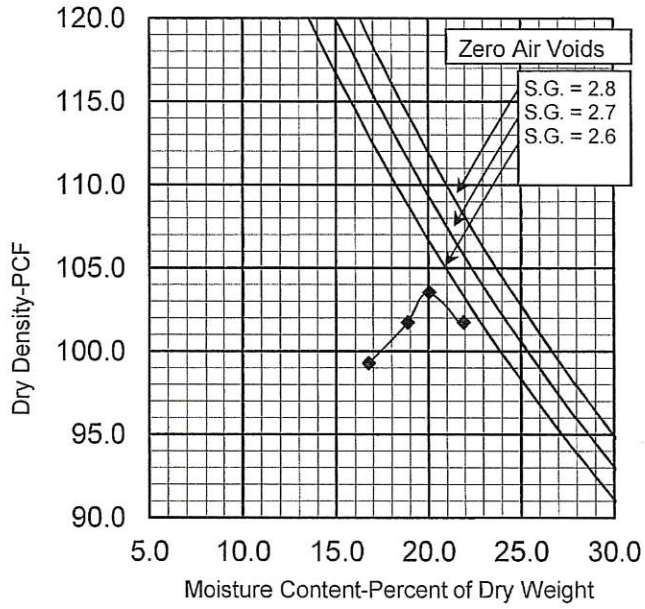
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	93	-

GRAVEL	SAND	SILT & CLAY
0%	7%	93%

Figure 43

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13354
Sample Location: TP 2-20 at 1' to 2'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 12/31/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 103.6 pcf
Optimum Moisture 20%
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

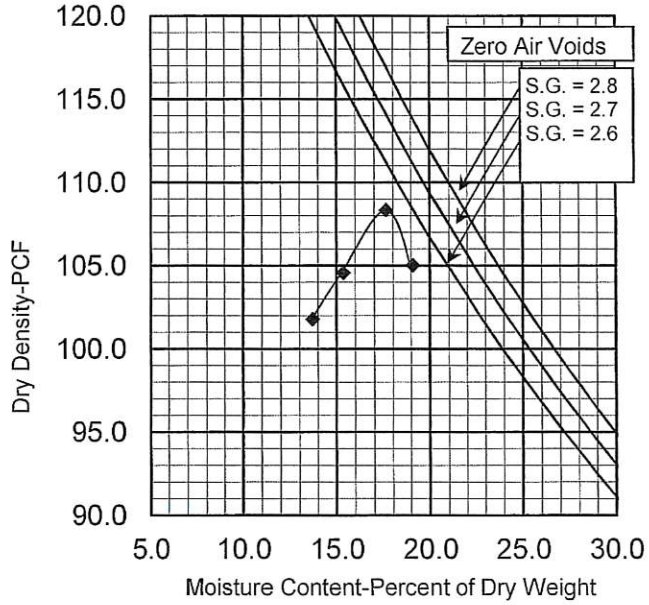
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	99	-
3/4"	19.1	97	-
3/8"	9.52	97	-
#4	4.76	96	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	84	-

GRAVEL	SAND	SILT & CLAY
4%	12%	84%

Figure 44

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13355
Sample Location: TP 2-21 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/05/15
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	108.4 pcf
Optimum Moisture	17.6%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

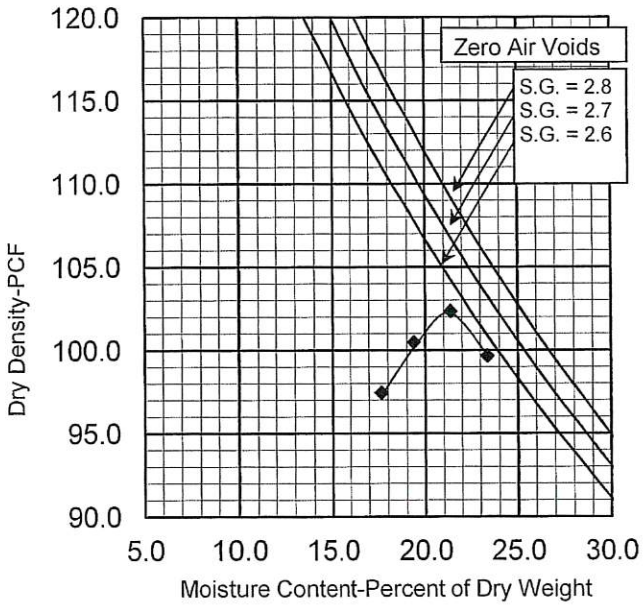
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	65	-

GRAVEL	SAND	SILT & CLAY
0%	35%	65%

Figure 45

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13356
Sample Location: TP 2-22 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/06/15
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 102.4 pcf
Optimum Moisture 21.4%
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

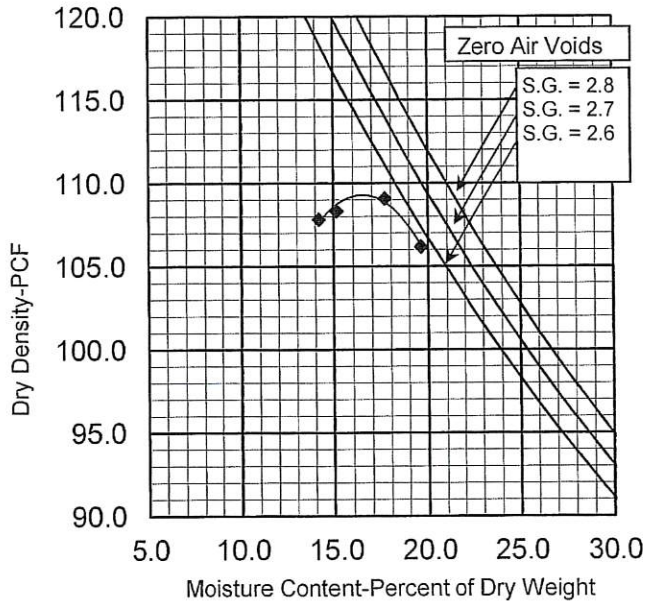
GRADATION RESULTS

Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	92	-

GRAVEL	SAND	SILT & CLAY
0%	8%	92%

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13357
Sample Location: TP 2-23 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/06/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 109.3 pcf
Optimum Moisture 16.5%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

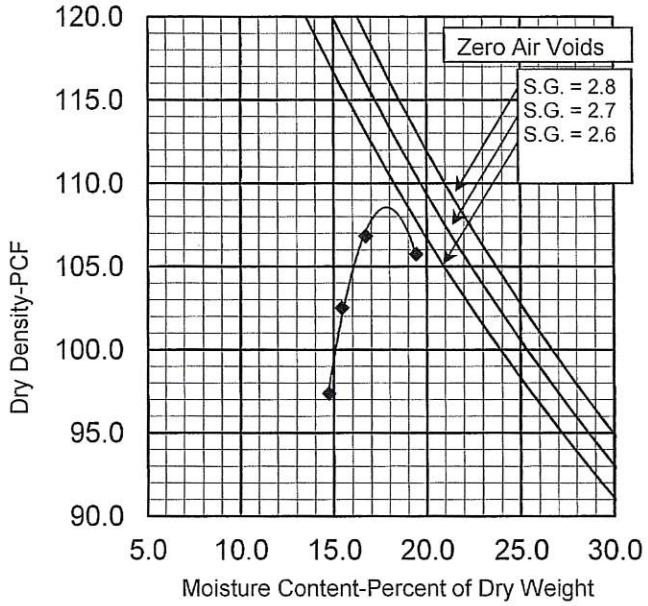
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	74	-

GRAVEL	SAND	SILT & CLAY
0%	26%	74%

Figure 47

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
13358

Sample Location: TP 2-24 at 1' to 2'

Date Sampled: 10/27/14

Sampled By: JD

TESTING INFORMATION

Date Tested: 01/05/15

Tested By: RN

Reviewed By: KBB

Test Procedure: AASHTO T99 A

Specific Gravity: Not Used

Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	108.5 pcf
Optimum Moisture	17.9%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

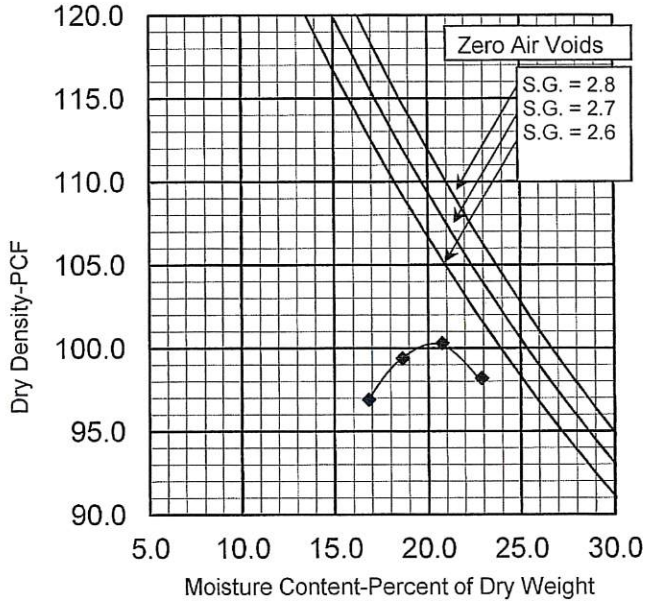
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	91	-

GRAVEL	SAND	SILT & CLAY
0%	9%	91%

Figure 4B

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13359
Sample Location: TP 2-25 at 1-2

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/12/15
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	100.4 pcf
Optimum Moisture	20.5%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

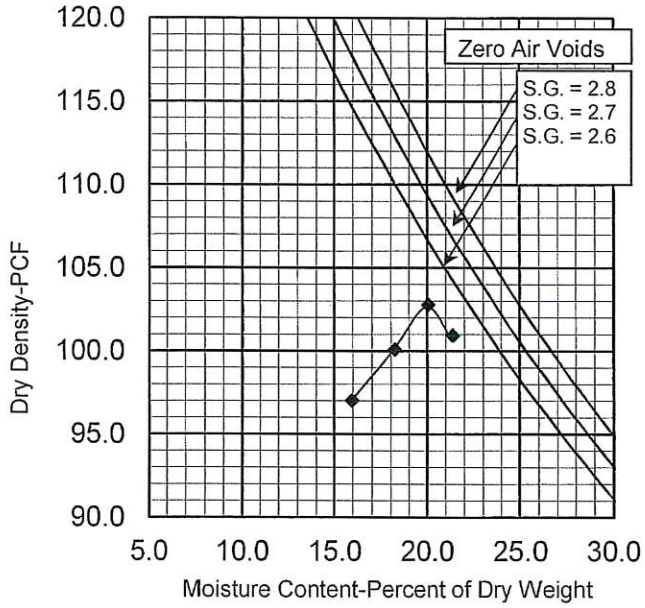
GRADATION RESULTS

Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	91	-

GRAVEL	SAND	SILT & CLAY
0%	9%	91%

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13360
Sample Location: TP 2-26 at 1' to 2'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/09/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	102.8 pcf
Optimum Moisture	20.1%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

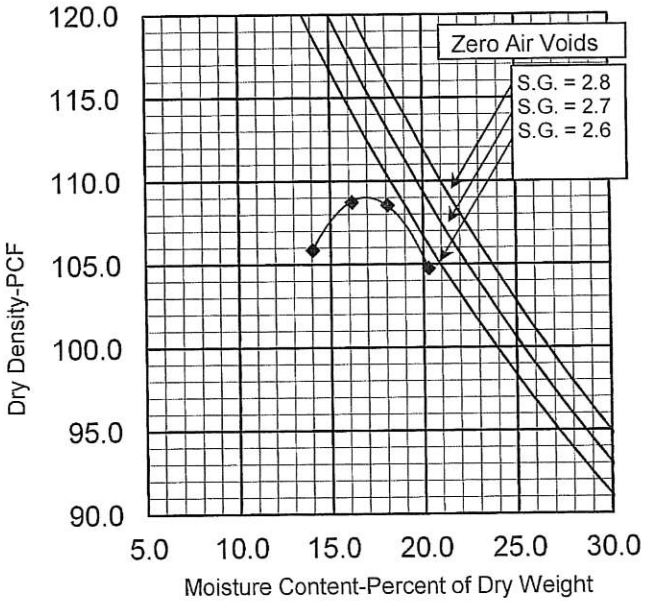
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	82	-

GRAVEL	SAND	SILT & CLAY
0%	18%	82%

Figure 50

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13361
Sample Location: TP 2-27 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/14/15
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 109 pcf
Optimum Moisture 17%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

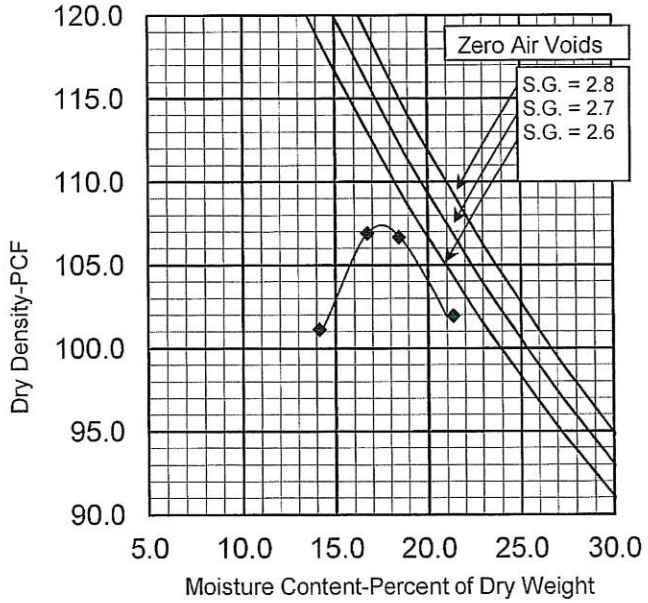
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	76	-

GRAVEL	SAND	SILT & CLAY
0%	24%	76%

Figure 51

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13362
Sample Location: TP 2-28 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/09/15
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	107.3 pcf
Optimum Moisture	17.5%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

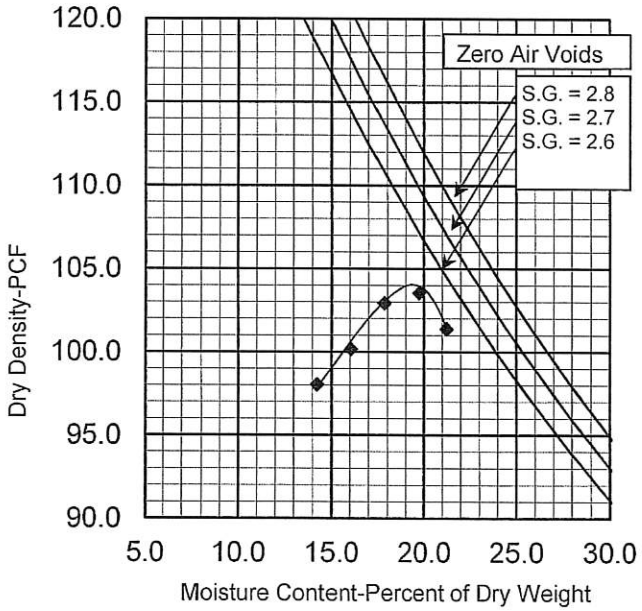
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	-	-
3"	76.2	-	-
1 1/2"	38.1	-	-
3/4"	19.1	-	-
3/8"	9.52	-	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	64	-

GRAVEL	SAND	SILT & CLAY
0%	36%	64%

Figure 52

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13363
Sample Location: TP 2-29 at 1' to 2'

Date Sampled: 10/27/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/09/15
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 104.2 pcf
Optimum Moisture 19.3%
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

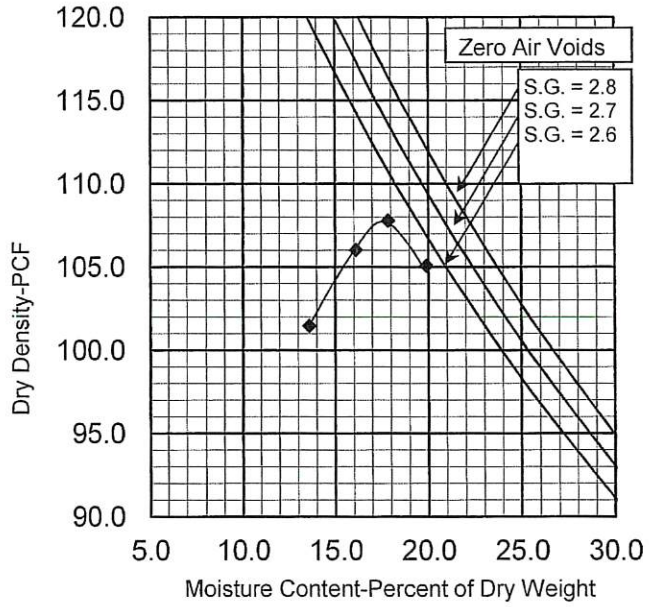
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	94	-

GRAVEL	SAND	SILT & CLAY
0%	6%	94%

Figure 53

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13364
Sample Location: TP 2-30 at 1' to 2'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/09/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	107.8 pcf
Optimum Moisture	17.9%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

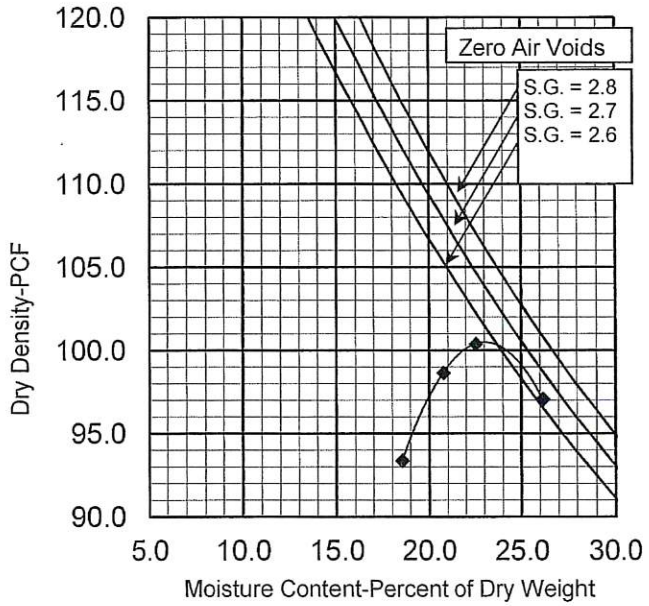
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	-	-
3"	76.2	-	-
1 1/2"	38.1	-	-
3/4"	19.1	-	-
3/8"	9.52	-	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	75	-

GRAVEL	SAND	SILT & CLAY
0%	25%	75%

Figure 54

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13366
Sample Location: TP 2-31 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/16/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 100.5 pcf
Optimum Moisture 23%
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

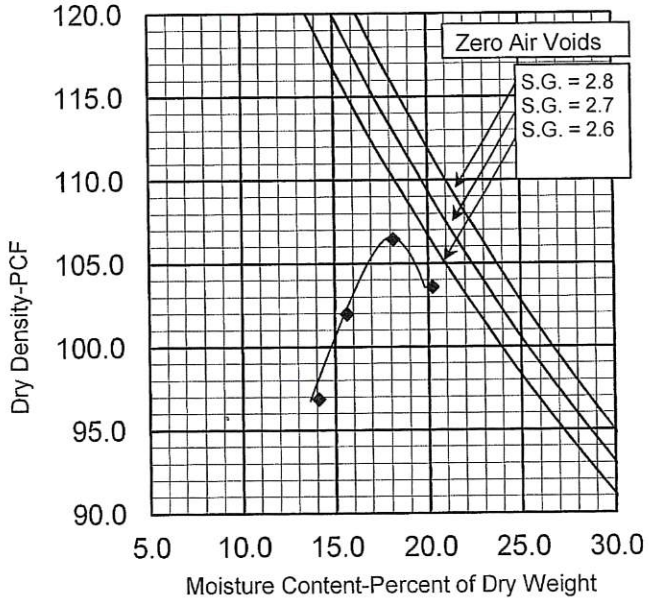
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	92	-

GRAVEL	SAND	SILT & CLAY
0%	8%	92%

Figure 55

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13367
Sample Location: TP 2-32 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/16/15
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 18+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 106.5 pcf
Optimum Moisture 18.1%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

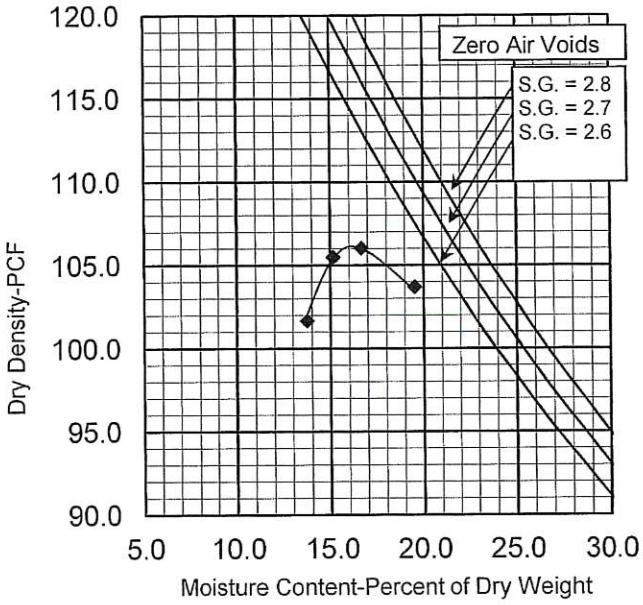
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	80	-

GRAVEL	SAND	SILT & CLAY
0%	20%	80%

Figure 5G

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13368
Sample Location: TP 2-33 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/15/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 106.2 pcf
Optimum Moisture 16.2%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

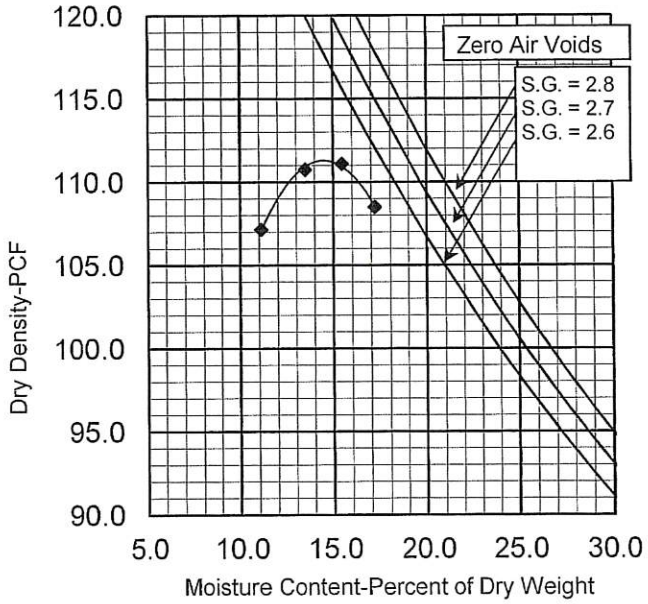
Lean Clay with Sand (CL)

Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	73	-

GRAVEL	SAND	SILT & CLAY
0%	27%	73%

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13369
Sample Location: TP 2-34 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/14/15
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 111.2 pcf
Optimum Moisture 14.5%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

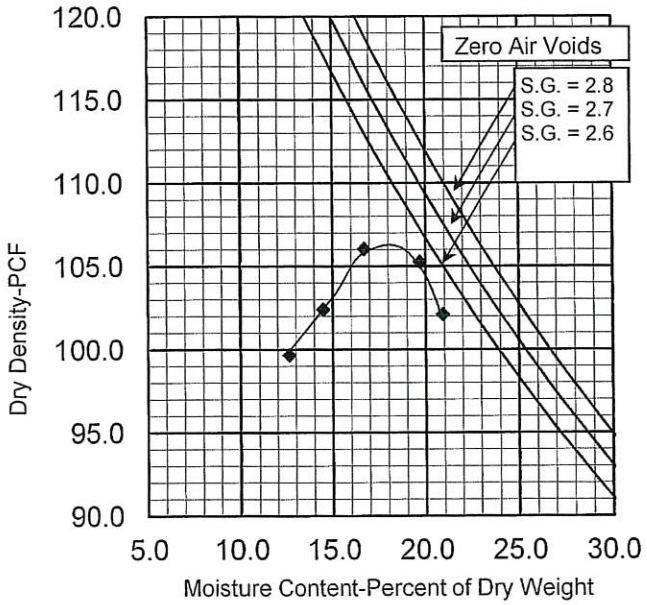
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	65	-

GRAVEL	SAND	SILT & CLAY
0%	35%	65%

Figure 58

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13370
Sample Location: TP 2-35 at 1'-2'

Date Sampled: 10/27/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/17/15
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 106.3 pcf
Optimum Moisture 18.2%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

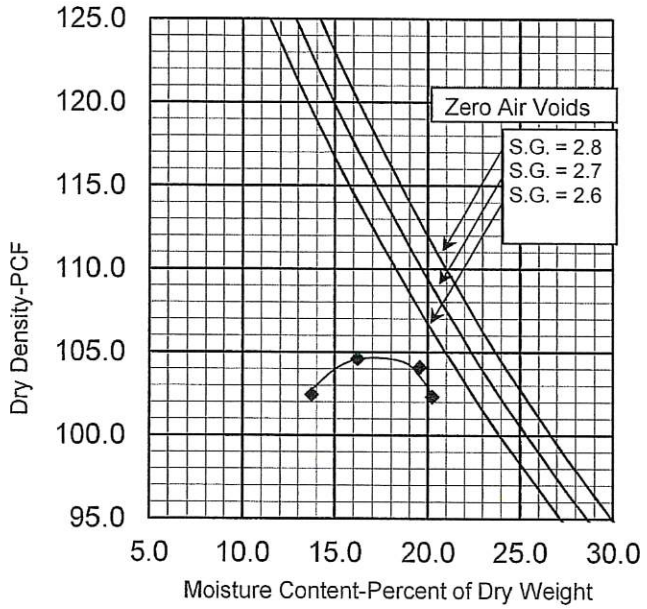
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	83	-

GRAVEL	SAND	SILT & CLAY
0%	17%	83%

Figure 59

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13173
Sample Location: CBR 2-1 at 1' to 3'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/24/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 24+ hours

ATTERBERG DATA

Liquid Limit (LL) 29
Plastic Index (PI) 12

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 104.8 pcf
Optimum Moisture 17.5%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay with Sand (CL)

GRADATION RESULTS

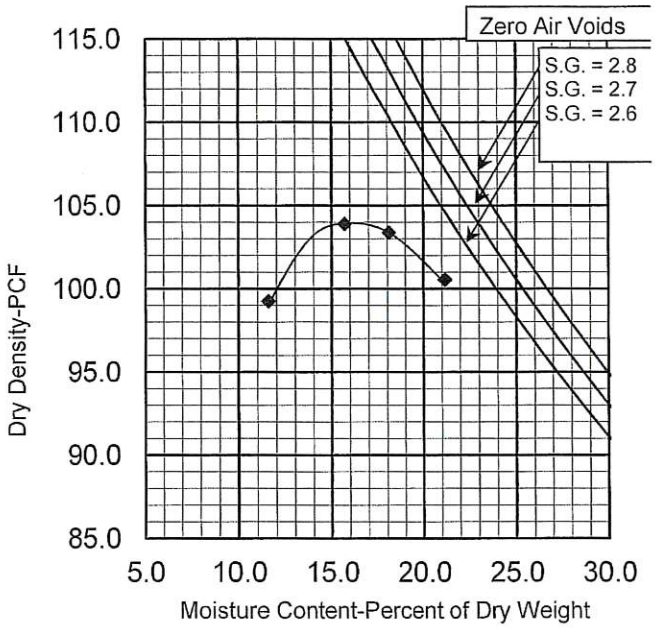
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	76	-

GRAVEL	SAND	SILT & CLAY
0%	24%	76%

Figure 60

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13174
Sample Location: CBR 2-2 at 1' to 3'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/24/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) / Plastic Index (PI): Nonplastic

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density	104 pcf
Optimum Moisture	16%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Silty Sand (SM)

GRADATION RESULTS

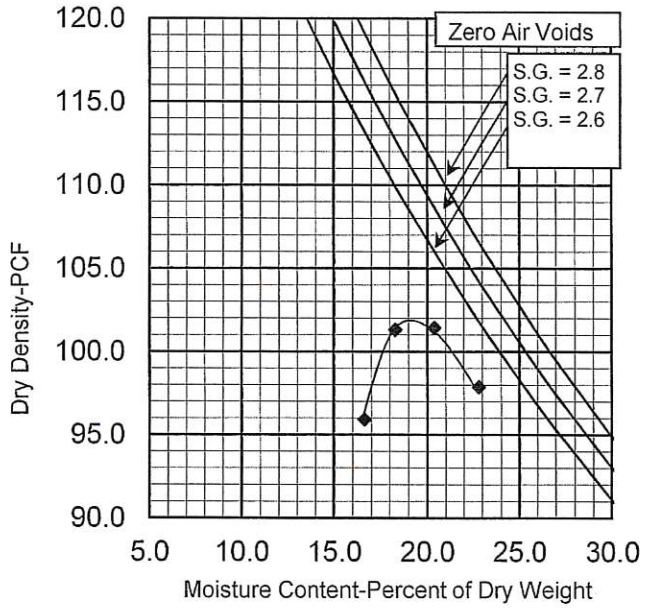
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	99	-
#16	1.19	97	-
#30	0.59	95	-
#50	0.297	92	-
#100	0.149	79	-
#200	0.074	44	-

GRAVEL	SAND	SILT & CLAY
0%	56%	44%

Figure 6.1

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13144
Sample Location: CBR 2-3 at 1' to 3'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/17/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Liquid Limit (LL) 31
Plastic Index (PI) 15

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 102 pcf
Optimum Moisture 19.1%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay with Sand (CL)

GRADATION RESULTS

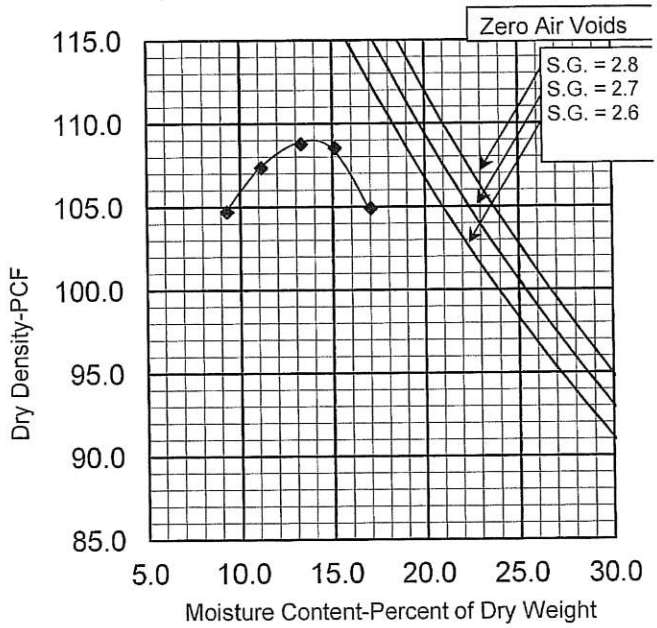
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	85	-

GRAVEL	SAND	SILT & CLAY
0%	15%	85%

Figure 62

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13175
Sample Location: CBR 2-4 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/29/14
Tested By: RN/WJ
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 24+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	109 pcf
Optimum Moisture	14%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Silty Sand (SM)

GRADATION RESULTS

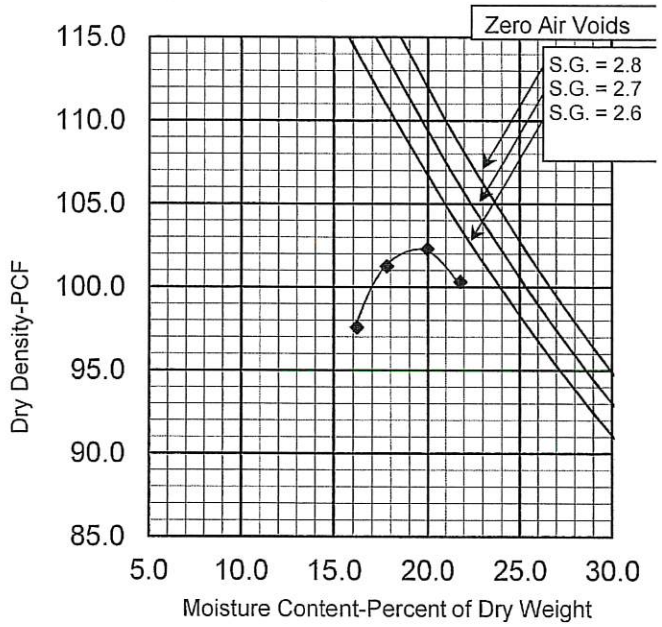
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	27	-

GRAVEL	SAND	SILT & CLAY
0%	73%	27%

Figure 63

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13176
Sample Location: CBR 2-5 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/29/14
Tested By: RN/CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 24+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	102.4 pcf
Optimum Moisture	19.5%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

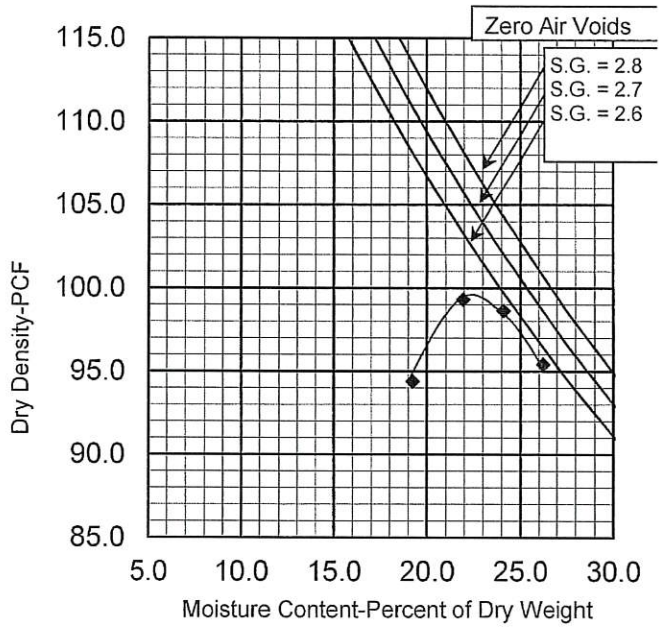
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	68	-

GRAVEL	SAND	SILT & CLAY
0%	32%	68%

Figure 64

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13177
Sample Location: CBR 2-6 at 1' to 3'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/29/14
Tested By: MN/WJ
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16 hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	99.6 pcf
Optimum Moisture	22.5%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

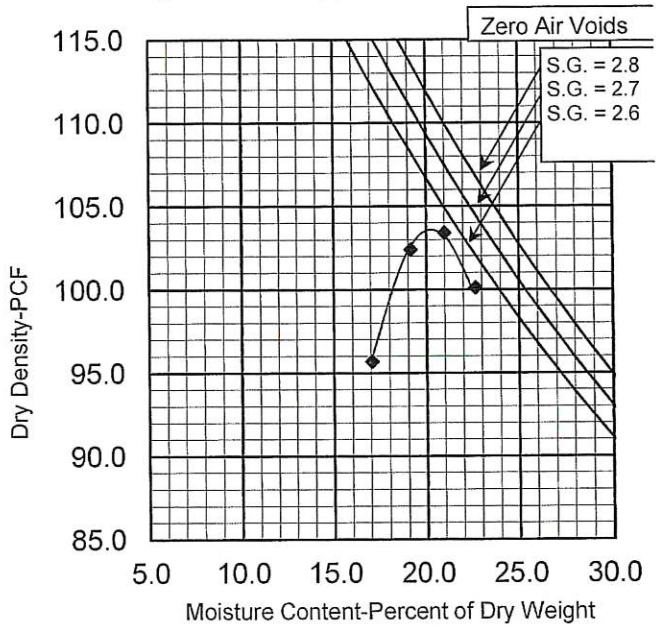
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	99	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	89	-

GRAVEL	SAND	SILT & CLAY
1%	10%	89%

Figure 65

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13178
Sample Location: CBR 2-7 at 1' to 3'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/31/14
Tested By: MN/WJ
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	104.6 pcf
Optimum Moisture	20.4%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

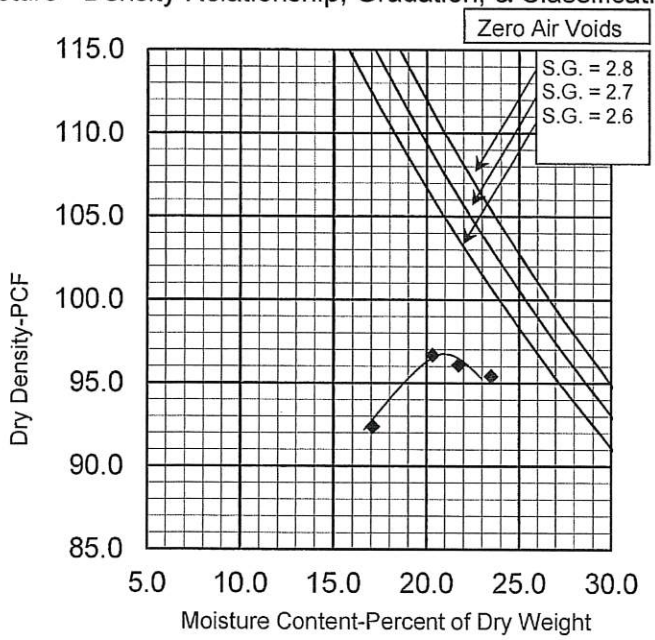
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	82	-

GRAVEL	SAND	SILT & CLAY
0%	18%	82%

Figure 66

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13145
Sample Location: CBR 2-8 at 1' to 3'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/20/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Liquid Limit (LL) 33
Plastic Index (PI) 15

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density	96.8 pcf
Optimum Moisture	21%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay (CL)

GRADATION RESULTS

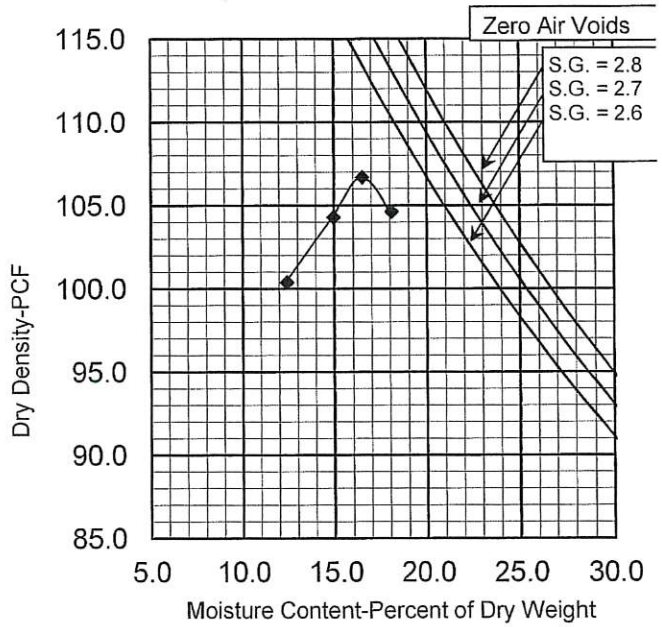
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	92	-

GRAVEL	SAND	SILT & CLAY
0%	8%	92%

Figure 67

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13179
Sample Location: CBR 2-9 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/04/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	106.7 pcf
Optimum Moisture	16.5%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay with Sand (CL)

GRADATION RESULTS

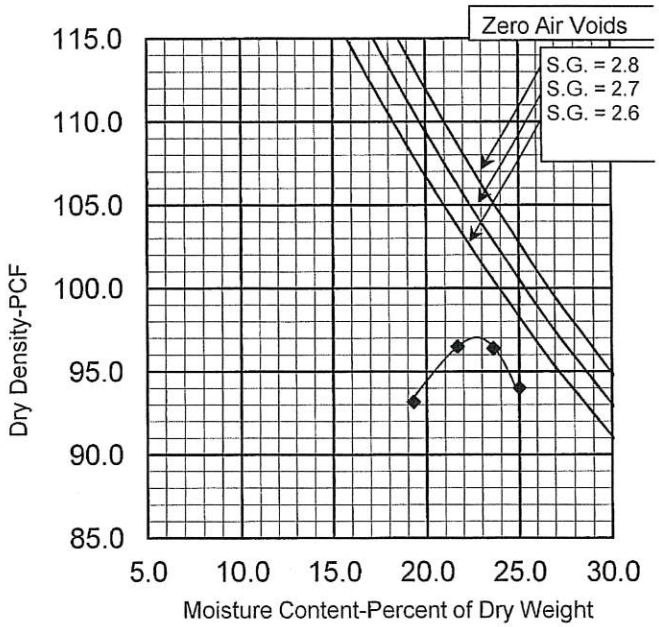
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	79	-

GRAVEL	SAND	SILT & CLAY
0%	21%	79%

Figure 68

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13146
Sample Location: CBR 2-10 at 1' to 3'

Date Sampled: 10/13/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/23/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 37
Plastic Index (PI) 17

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density	97.2 pcf
Optimum Moisture	22.8%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay (CL)

GRADATION RESULTS

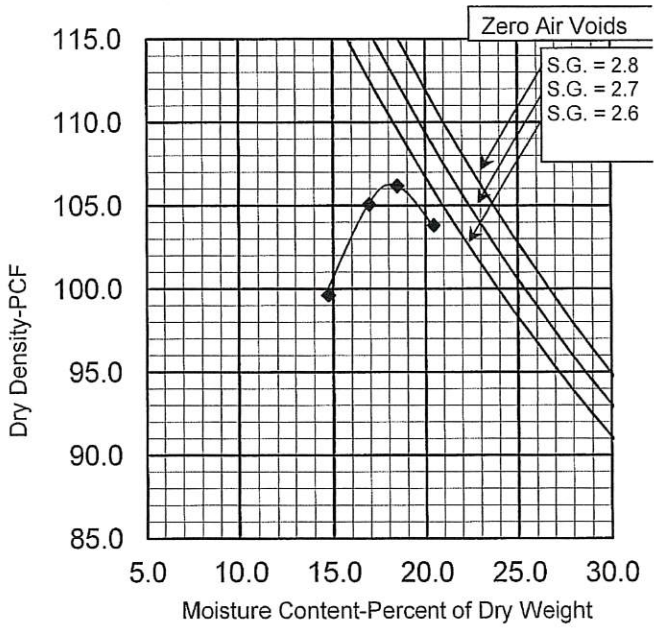
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	87	-

GRAVEL	SAND	SILT & CLAY
0%	13%	87%

Figure 69

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13147
Sample Location: CBR 2-11 at 1' to 3'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/23/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 24+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	106.3 pcf
Optimum Moisture	18.2%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

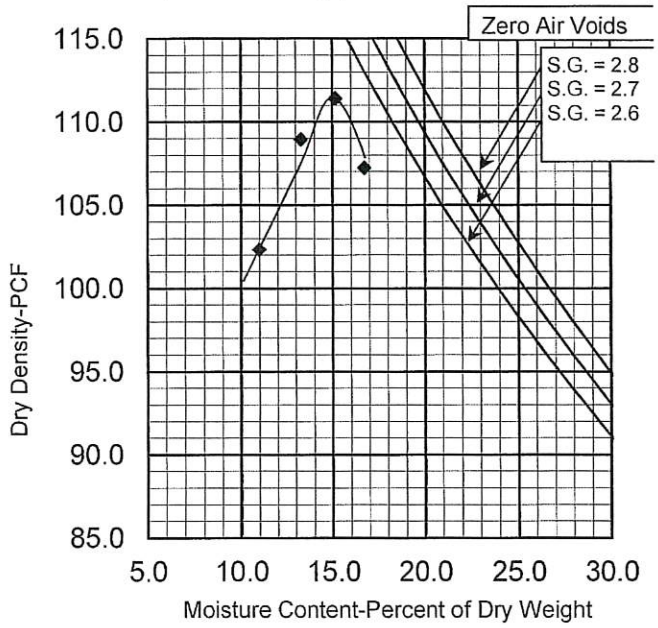
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	74	-

GRAVEL	SAND	SILT & CLAY
0%	26%	74%

Figure 70

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13186
Sample Location: CBR 2-12 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/03/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	111.4 pcf
Optimum Moisture	15.2%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

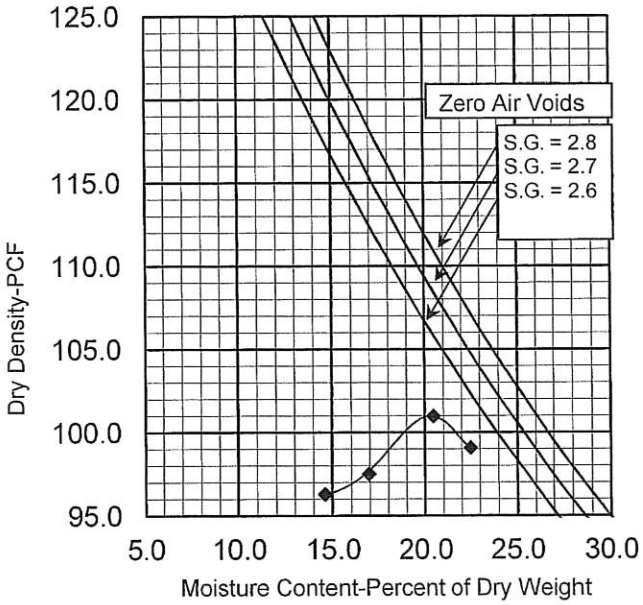
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	72	-

GRAVEL	SAND	SILT & CLAY
0%	28%	72%

Figure 71

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13148
Sample Location: CBR 2-13 at 1' to 3'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/16/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Liquid Limit (LL) 35
Plastic Index (PI) 16

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density	101 pcf
Optimum Moisture	20.5%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay (CL)

GRADATION RESULTS

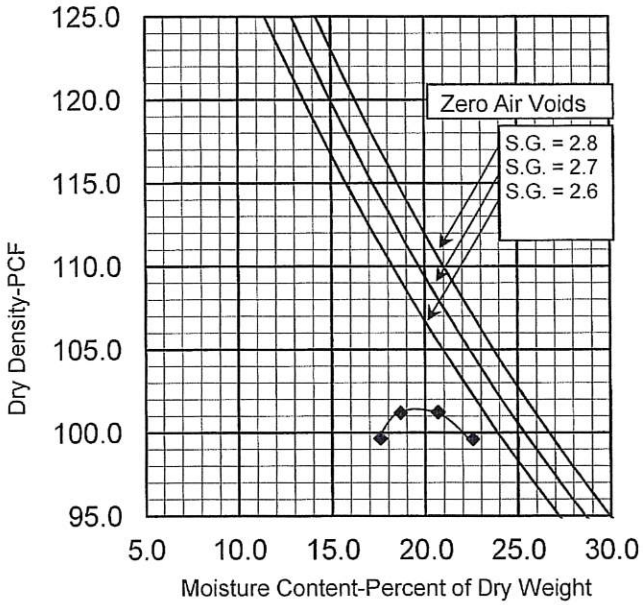
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	94	-

GRAVEL	SAND	SILT & CLAY
0%	6%	94%

Figure 72

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13149
Sample Location: CBR 2-14 at 1' to 3'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/17/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	101.4 pcf
Optimum Moisture	19.5%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

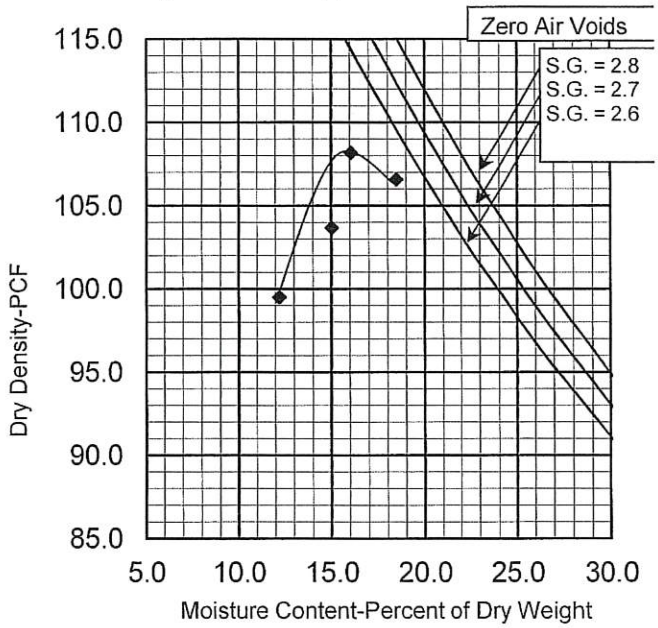
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	-	-
3"	76.2	-	-
1 1/2"	38.1	-	-
3/4"	19.1	-	-
3/8"	9.52	-	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	82	-

GRAVEL	SAND	SILT & CLAY
0%	18%	82%

Figure 73

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13187
Sample Location: CBR 2-15 at 1' to 2'

Date Sampled: 10/15/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/03/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	108.2 pcf
Optimum Moisture	16.1%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

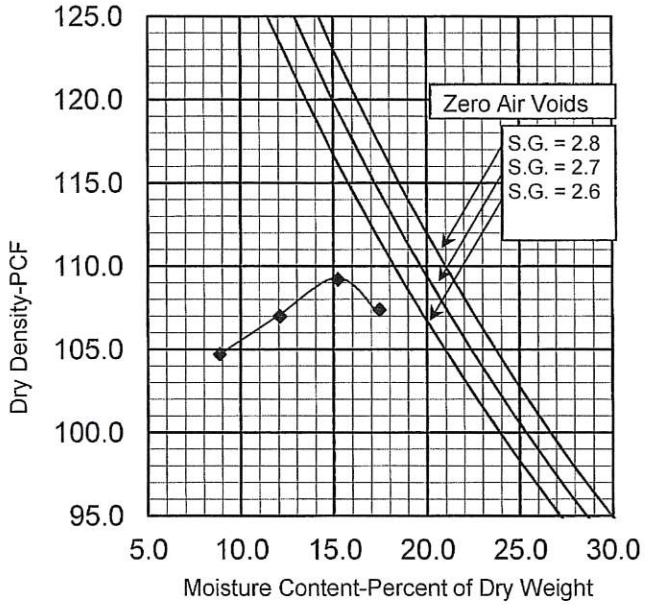
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	70	-

GRAVEL	SAND	SILT & CLAY
0%	30%	70%

Figure 74

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13188
Sample Location: CBR 2-16 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/01/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 28
Plastic Index (PI) 12

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 109.2 pcf
Optimum Moisture 15.2%

Preliminary Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Sandy Lean Clay (CL)

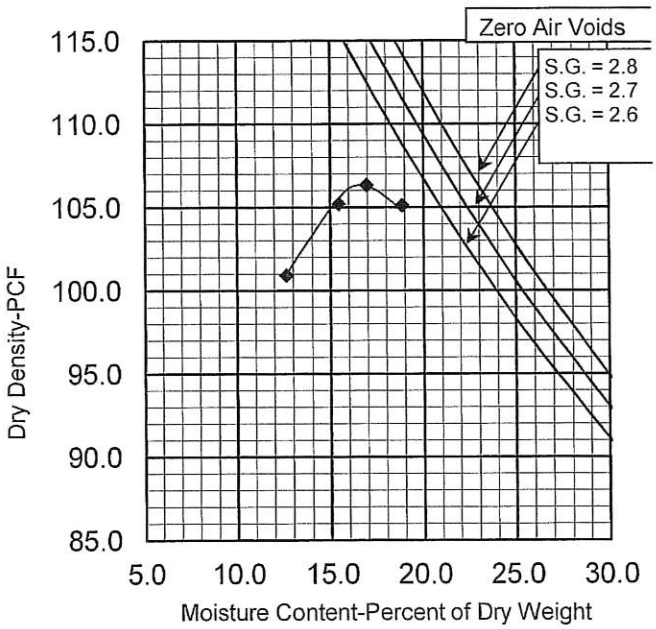
GRADATION RESULTS

Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	99	-
3/8"	9.52	98	-
#4	4.76	97	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	60	-

GRAVEL	SAND	SILT & CLAY
3%	37%	60%

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13189
Sample Location: CBR 2-17 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/01/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	106.3 pcf
Optimum Moisture	17%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

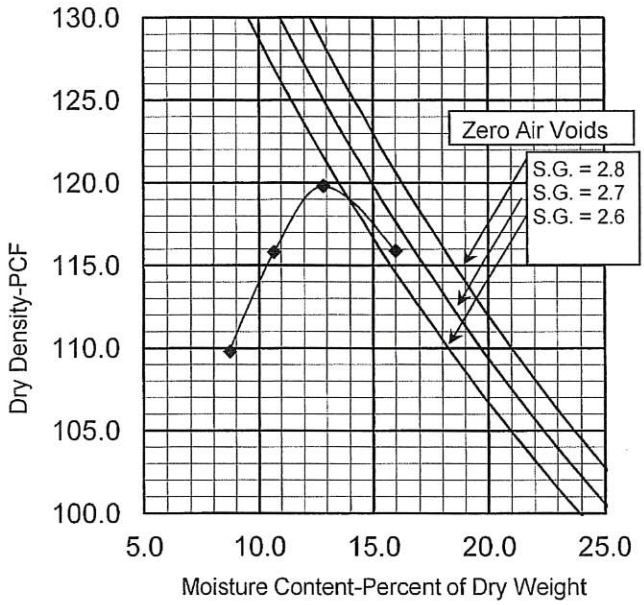
GRADATION RESULTS

Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	67	-

GRAVEL	SAND	SILT & CLAY
0%	33%	67%

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13150
Sample Location: CBR 2-18 at 1' to 3'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/20/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T-99D, Scalp&Replace
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	119.8 pcf
Optimum Moisture	12.9 %

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Clayey Gravel with Sand (GC)

GRADATION RESULTS

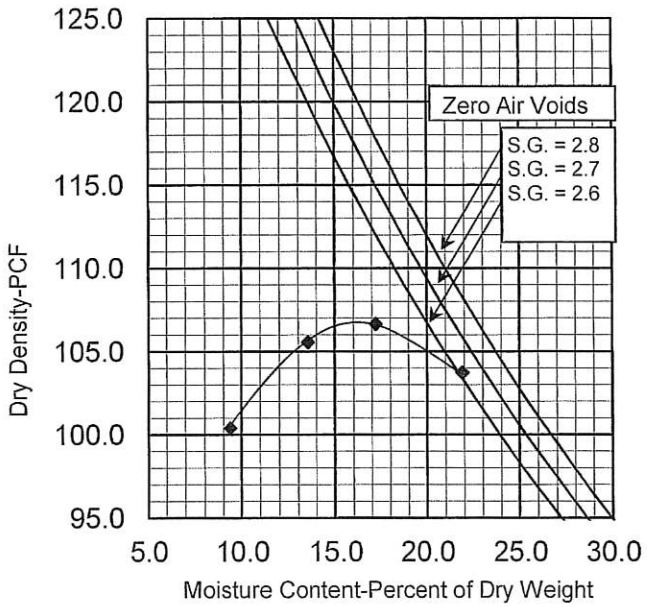
Sieve Designation	Sieve Opening Size (mm)	Percent Passing, Based on 3-In Minus	Percent Passing, Based on Total Sample
6"	152.4	-	100%
5"	127.0	-	100%
4"	101.6	-	92%
3"	76.2	100%	81%
1 1/2"	38.1	86%	69%
3/4"	19.1	75%	61%
3/8"	9.52	67%	54%
#4	4.76	61%	50%
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	36%	29%

GRAVEL	SAND	SILT & CLAY
50%	21%	29%

Figure 77

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13151
Sample Location: 2-19 at 1' to 3'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/16/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	106.8 pcf
Optimum Moisture	16.5%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

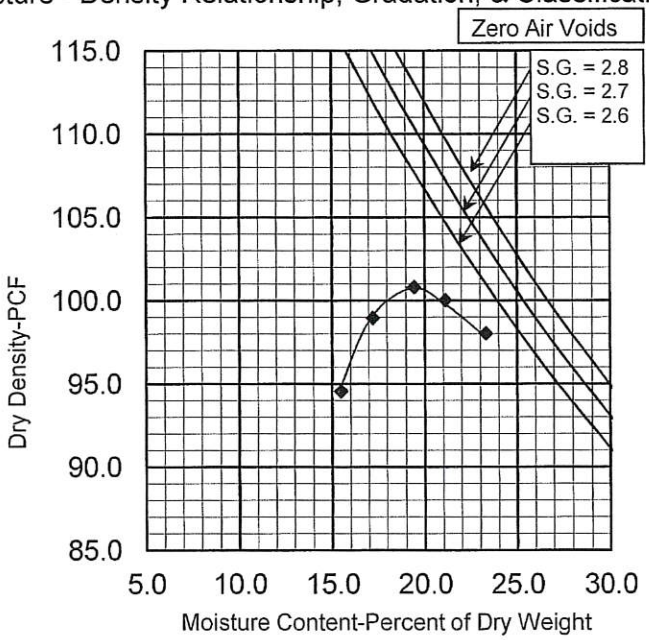
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	99	-
#4	4.76	99	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	60	-

GRAVEL	SAND	SILT & CLAY
1%	39%	60%

Figure 78

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13152
Sample Location: CBR 2-20 at 1' to 3'

Date Sampled: 10/14/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 10/17/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Liquid Limit (LL) 36
Plastic Index (PI) 18

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density	100.8 pcf
Optimum Moisture	19.4%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay (CL)

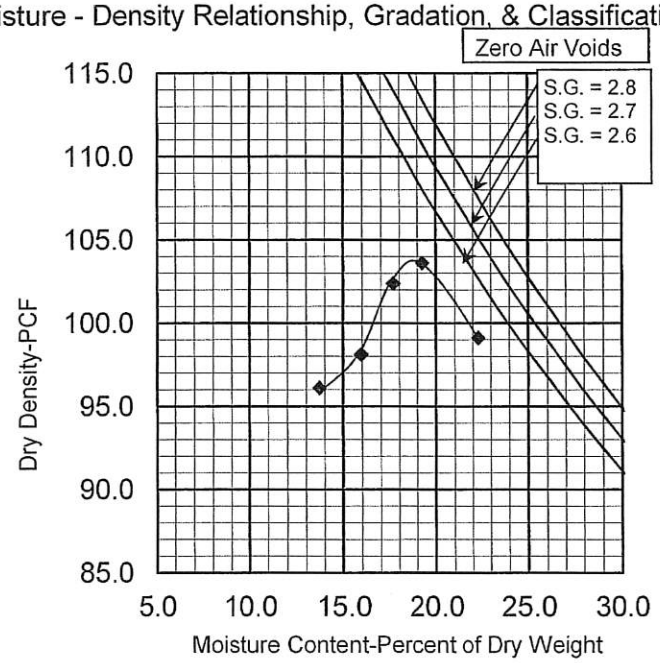
GRADATION RESULTS

Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	94	-

GRAVEL	SAND	SILT & CLAY
0%	6%	94%

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 113221
Sample Location: CBR 2-21 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/11/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	103.6 pcf
Optimum Moisture	19%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

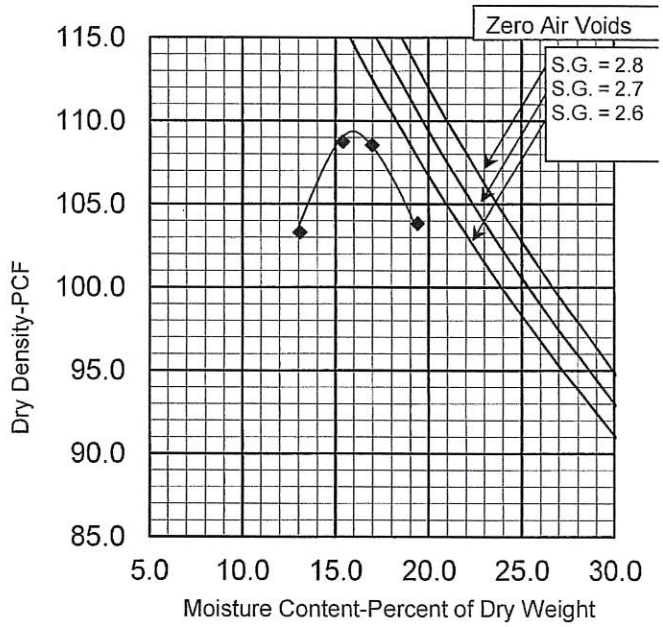
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	-	-
3"	76.2	-	-
1 1/2"	38.1	-	-
3/4"	19.1	-	-
3/8"	9.52	-	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	92	-

GRAVEL	SAND	SILT & CLAY
0%	8%	92%

Figure 80

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13222
Sample Location: CBR 2-22 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/11/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	109.4 pcf
Optimum Moisture	16.1%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

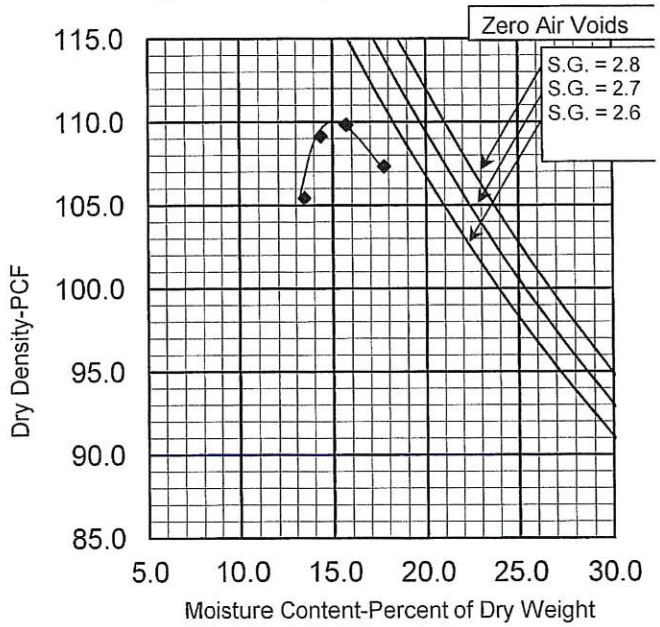
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	99	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	75	-

GRAVEL	SAND	SILT & CLAY
1%	24%	75%

Figure 81

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13223
Sample Location: CBR 2-23 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/12/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 30
Plastic Index (PI) 15

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 110 pcf
Optimum Moisture 15.2%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay with Sand (CL)

GRADATION RESULTS

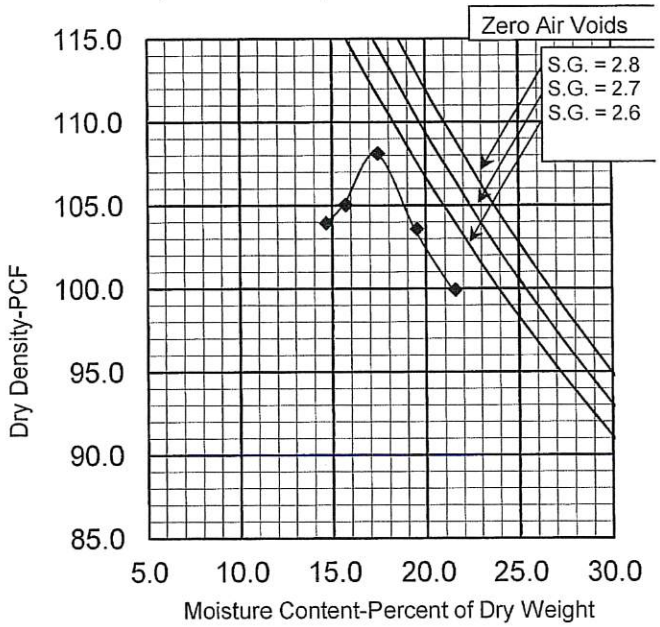
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	80	-

GRAVEL	SAND	SILT & CLAY
0%	20%	80%

Figure 82

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13224
Sample Location: CBR 2-24 at 1' to 2'

Date Sampled: 10/16/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/08/14
Tested By: WJ
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	108.1 pcf
Optimum Moisture	17.4%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

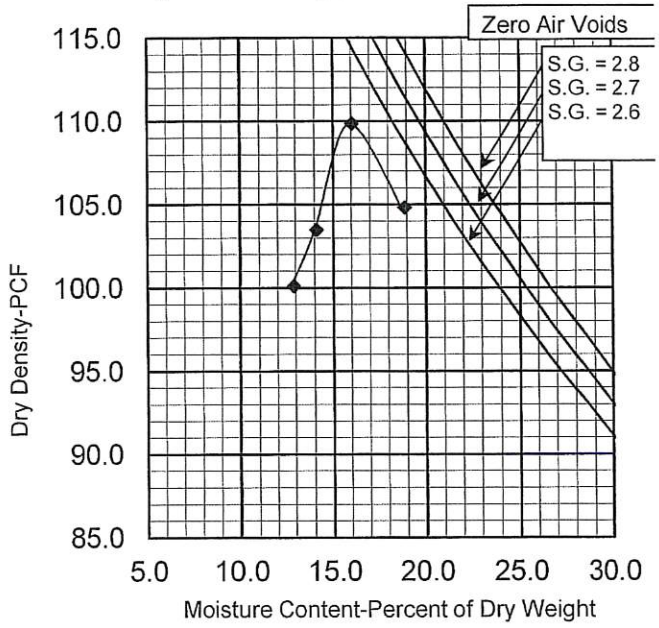
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	70	-

GRAVEL	SAND	SILT & CLAY
0%	30%	70%

Figure 83

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13225
Sample Location: CBR 2-25 at 1' to 2'

Date Sampled: 10/27/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 11/12/14
Tested By: WJ
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 109.9 pcf
Optimum Moisture 16%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

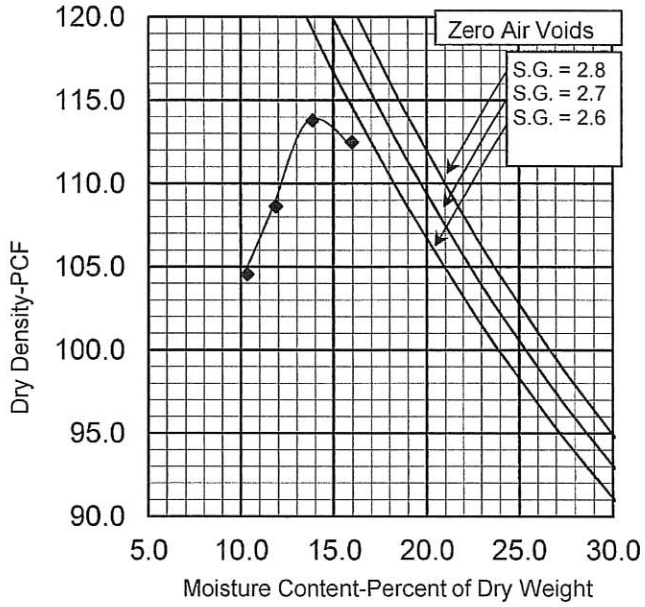
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	68	-

GRAVEL	SAND	SILT & CLAY
0%	32%	68%

Figure 84

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13246
Sample Location: B 2-1 at 3' to 5'

Date Sampled: 10/20/14
Sampled By: RH

TESTING INFORMATION

Date Tested: 11/15/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	113.8 pcf
Optimum Moisture	13.9%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Sandy Lean Clay (CL)

GRADATION RESULTS

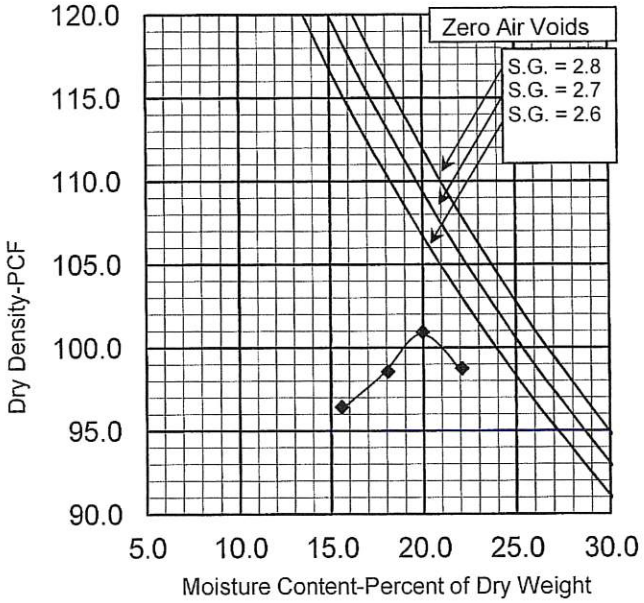
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	99	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	64	-

GRAVEL	SAND	SILT & CLAY
1%	35%	64%

Figure 85

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13247
Sample Location: B 2-2 at 2' to 4'

Date Sampled: 10/20/14
Sampled By: RH

TESTING INFORMATION

Date Tested: 11/15/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	101 pcf
Optimum Moisture	20%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

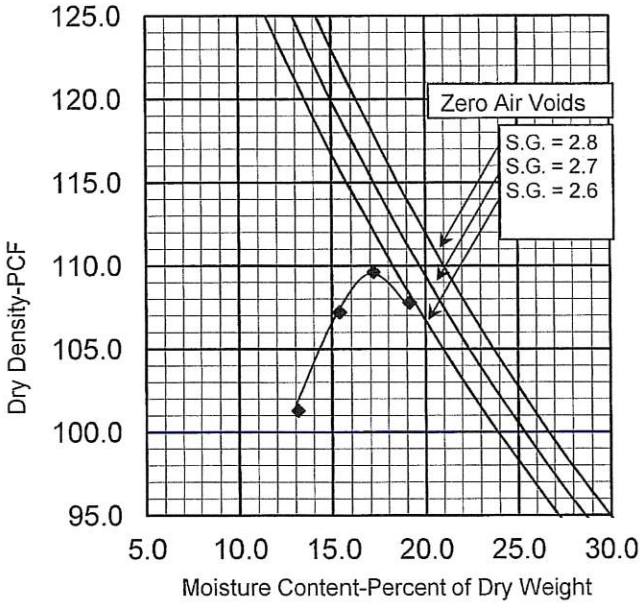
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	92	-

GRAVEL	SAND	SILT & CLAY
0%	8%	92%

Figure 86

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13248
Sample Location: B 2-3 at 3' to 5'

Date Sampled: 10/20/14
Sampled By: RH

TESTING INFORMATION

Date Tested: 04/08/36
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	109.7 pcf
Optimum Moisture	17.2%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay with Sand (CL)

GRADATION RESULTS

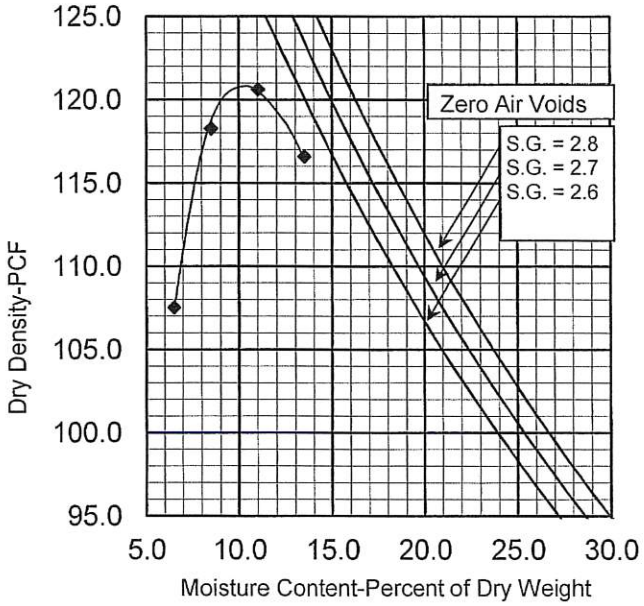
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	98	-
#4	4.76	97	-
#8	2.38	96	-
#16	1.19	95	-
#30	0.59	94	-
#50	0.297	92	-
#100	0.149	84	-
#200	0.074	73	-

GRAVEL	SAND	SILT & CLAY
3%	23%	74%

Figure 87

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13249
Sample Location: B 2-4 at 2' to 4'

Date Sampled: 10/23/14
Sampled By: RH

TESTING INFORMATION

Date Tested: 11/18/14
Tested By: CE
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	120.7 pcf
Optimum Moisture	10.5%

Final Based On Microwave Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Clayey Sand (SC)

GRADATION RESULTS

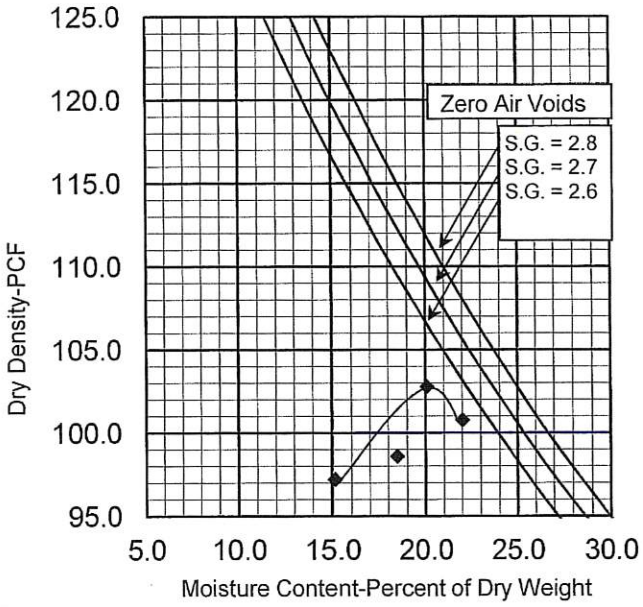
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	97	-
#4	4.76	92	-
#8	2.38	83	-
#16	1.19	73	-
#30	0.59	63	-
#50	0.297	51	-
#100	0.149	42	-
#200	0.074	34	-

GRAVEL	SAND	SILT & CLAY
8%	58%	34%

Figure 88

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13250
Sample Location: B 2-5 at 3' to 5'

Date Sampled: 10/21/14
Sampled By: RH

TESTING INFORMATION

Date Tested: 11/20/14
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 42
Plastic Index (PI) 25

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 102.8 pcf
Optimum Moisture 20.1%

Final Based On Microwave Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay (CL)

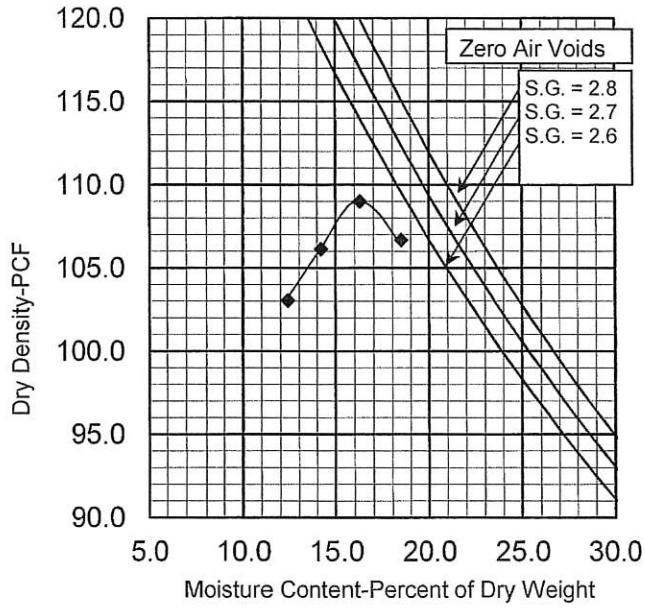
GRADATION RESULTS

Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	94	-

GRAVEL	SAND	SILT & CLAY
0%	5%	95%

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13373
Sample Location: TP 3-1 at 1' to 2'

Date Sampled: 10/27/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/17/15
Tested By: MN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Liquid Limit (LL) 26
Plastic Index (PI) 10

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density 109 pcf
Optimum Moisture 16.3%
Final Based On Microwave Oven Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay with Sand (CL)

GRADATION RESULTS

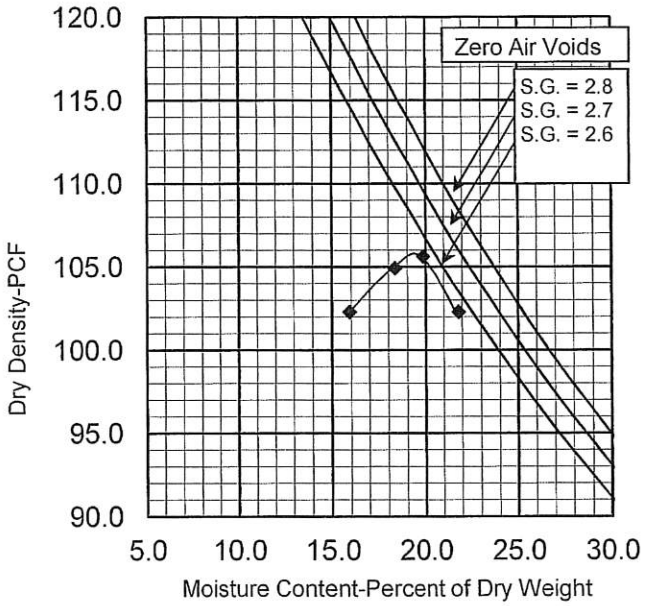
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	80	-

GRAVEL	SAND	SILT & CLAY
0%	20%	80%

Figure 90

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13374
Sample Location: TP 3-2 at 1' to 2'

Date Sampled: 10/27/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/22/15
Tested By: RN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: Not Used

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	105.8 pcf
Optimum Moisture	19.5%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

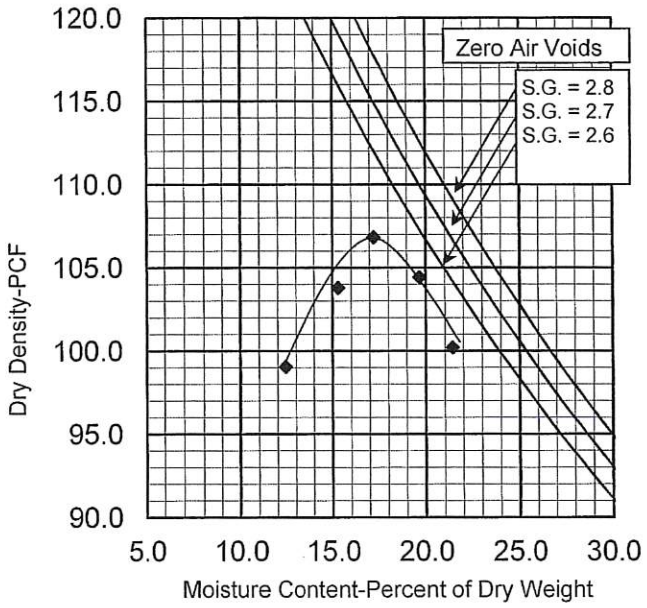
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	94	-

GRAVEL	SAND	SILT & CLAY
0%	6%	94%

Figure 91

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13375
Sample Location: TP 3-3 at 1' to 2'

Date Sampled: 10/27/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/20/15
Tested By: MN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density	106.9 pcf
Optimum Moisture	17.2%

Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

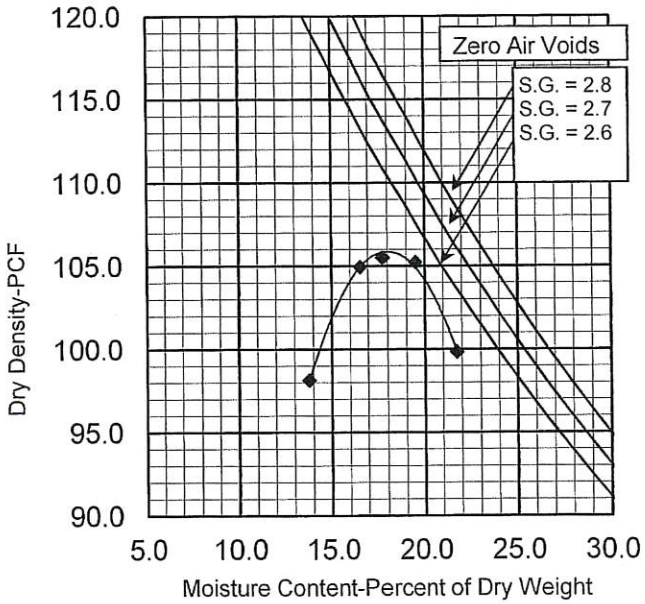
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	87	-

GRAVEL	SAND	SILT & CLAY
0%	13%	87%

Figure 92

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name: Holbrook

Project No. 1140850
Sample No. 13372
Sample Location: CBR 3-1 at 1' to 2'

Date Sampled: 10/27/14
Sampled By: JD

TESTING INFORMATION

Date Tested: 01/17/15
Tested By: MN
Reviewed By: KBB
Test Procedure: AASHTO T99 A
Specific Gravity: Not Used
Moisture Curing: 16+ hours

ATTERBERG DATA

Plasticity Determined by ASTM D 2488

PROCTOR RESULTS

Maximum Dry Density 105.8 pcf
Optimum Moisture 18.1%
Final Based On Microwave Oven Moisture Contents

VISUAL-MANUAL DESCRIPTION (ASTM D2488)

Lean Clay (CL)

GRADATION RESULTS

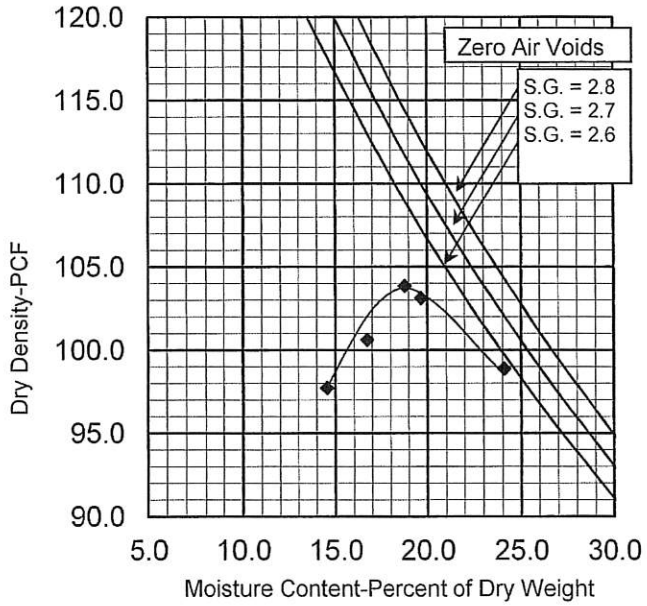
Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	88	-

GRAVEL	SAND	SILT & CLAY
0%	12%	88%

Figure 93

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, Inc.

Moisture - Density Relationship, Gradation, & Classification Results



SAMPLE IDENTIFICATION

Project Name:	Holbrook
Project No.	1140850
Sample No.	13376
Sample Location:	B 3-1 at 2' to 5'
Date Sampled:	10/21/14
Sampled By:	RH

TESTING INFORMATION

Date Tested:	01/20/15
Tested By:	MN
Reviewed By:	KBB
Test Procedure:	AASHTO T99 A
Specific Gravity:	Not Used
Moisture Curing:	16+ hours

ATTERBERG DATA

Liquid Limit (LL)	40
Plastic Index (PI)	21

Test Procedure ASTM D4318

PROCTOR RESULTS

Maximum Dry Density	103.9 pcf
Optimum Moisture	18.8%

Final Based On Microwave Oven Moisture Contents

UNIFIED SOIL CLASSIFICATION (ASTM D2487)

Lean Clay (CL)

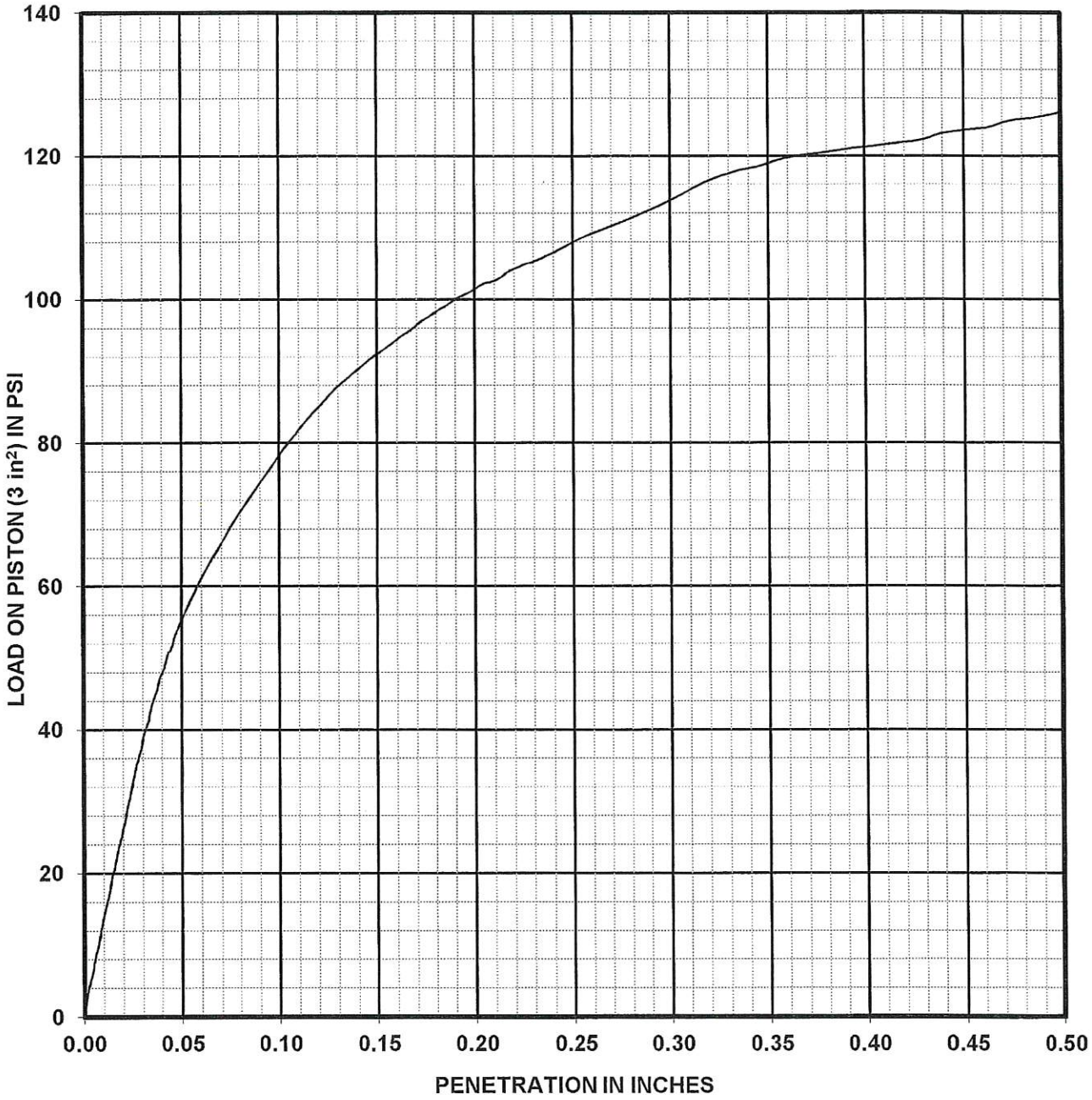
GRADATION RESULTS

Sieve Designation	Sieve Opening Size (mm)	Percent Passing (%)	Project Specification (%)
5"	127	100	-
3"	76.2	100	-
1 1/2"	38.1	100	-
3/4"	19.1	100	-
3/8"	9.52	100	-
#4	4.76	100	-
#8	2.38	-	-
#16	1.19	-	-
#30	0.59	-	-
#50	0.297	-	-
#100	0.149	-	-
#200	0.074	99	-

GRAVEL	SAND	SILT & CLAY
0%	1%	99%

Figure 94

Applied Geotechnical Engineering Consultants, Inc.



Sample of Clayey Gravel with Sand (GC)
Location: TP 1-1 at 1' to 2' CS #: 13255
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99D, Scalp & Replace

Sample penetration after soaking for 89 hours

Dry Density:	as molded	104	pcf	Moisture Content:	as molded	19	percent
	after soaking	103	pcf		top 1-inch after soaking	24	percent
Swell:	after soaking	0.5	percent		average after soaking	23	percent

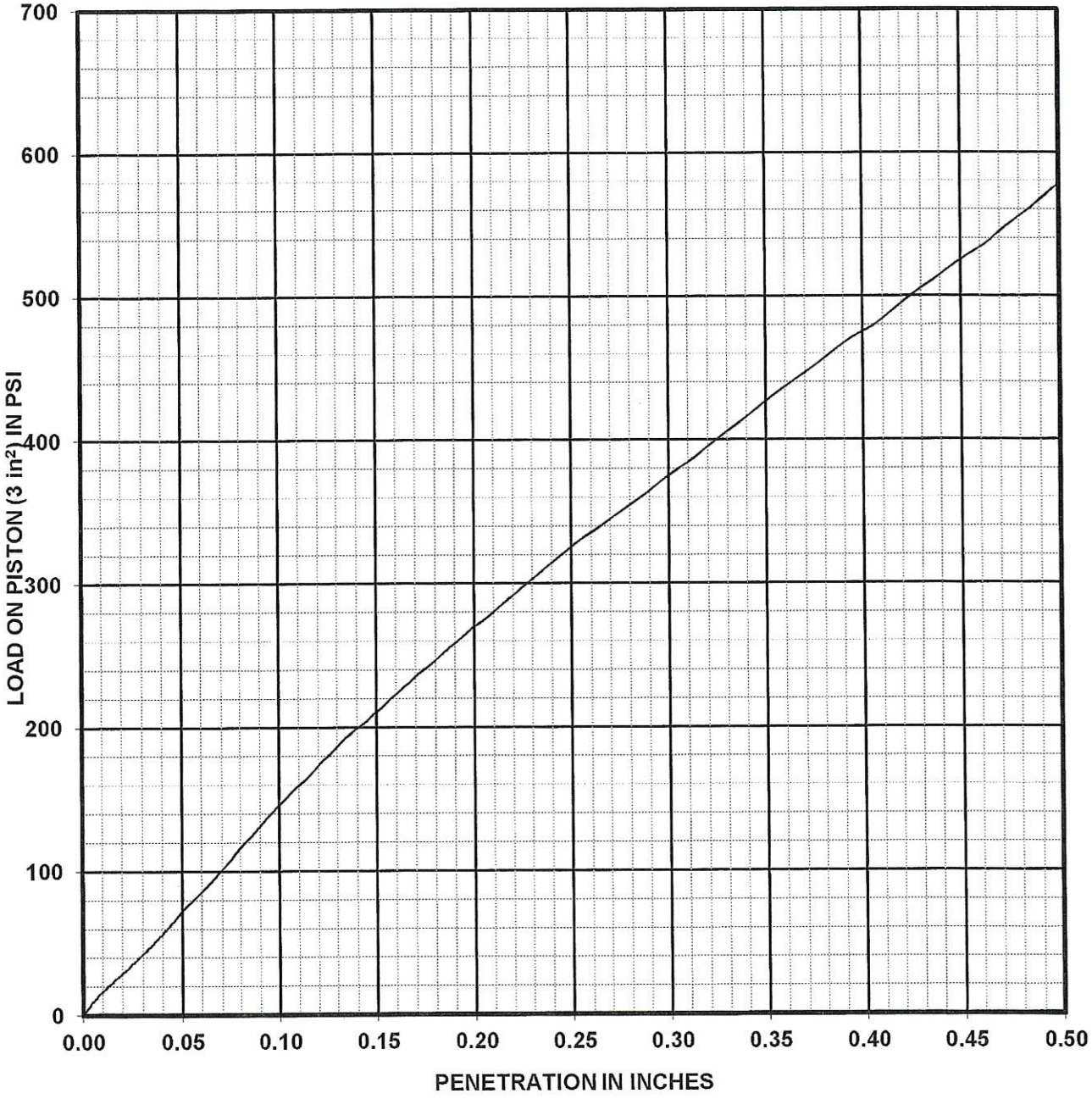
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 5.9* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 95

Applied Geotechnical Engineering Consultants, Inc.



Sample of Clayey Sand with Gravel (SC)
Location: TP 1-2 at 1' to 2' CS #: 13256
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99D, Scalp & Replace

Sample penetration after soaking for 89 hours

Dry Density: as molded 117 pcf
after soaking 118 pcf

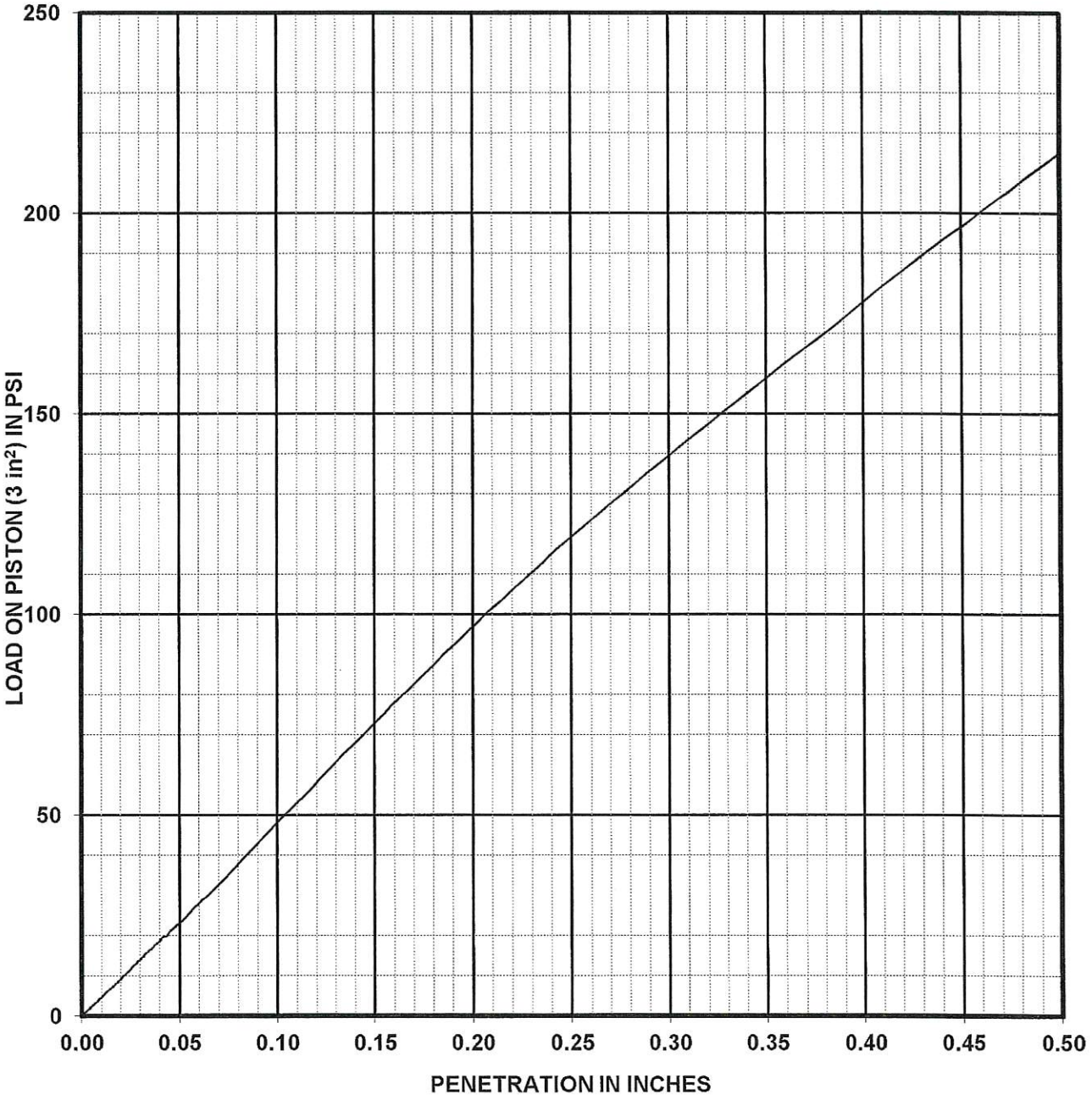
Moisture Content: as molded 12 percent
top 1-inch after soaking 13 percent
average after soaking 13 percent

Swell: after soaking 0.0 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 14* percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 96

Applied Geotechnical Engineering Consultants, Inc.



Sample of Silt (ML)
Location: TP 1-3 at 1' to 2' CS #: 13257
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 86 hours

Dry Density:	as molded	94 pcf	Moisture Content:	as molded	26	percent
	after soaking	95 pcf		top 1-inch after soaking	26	percent
Swell:	after soaking	0.1 percent		average after soaking	25	percent

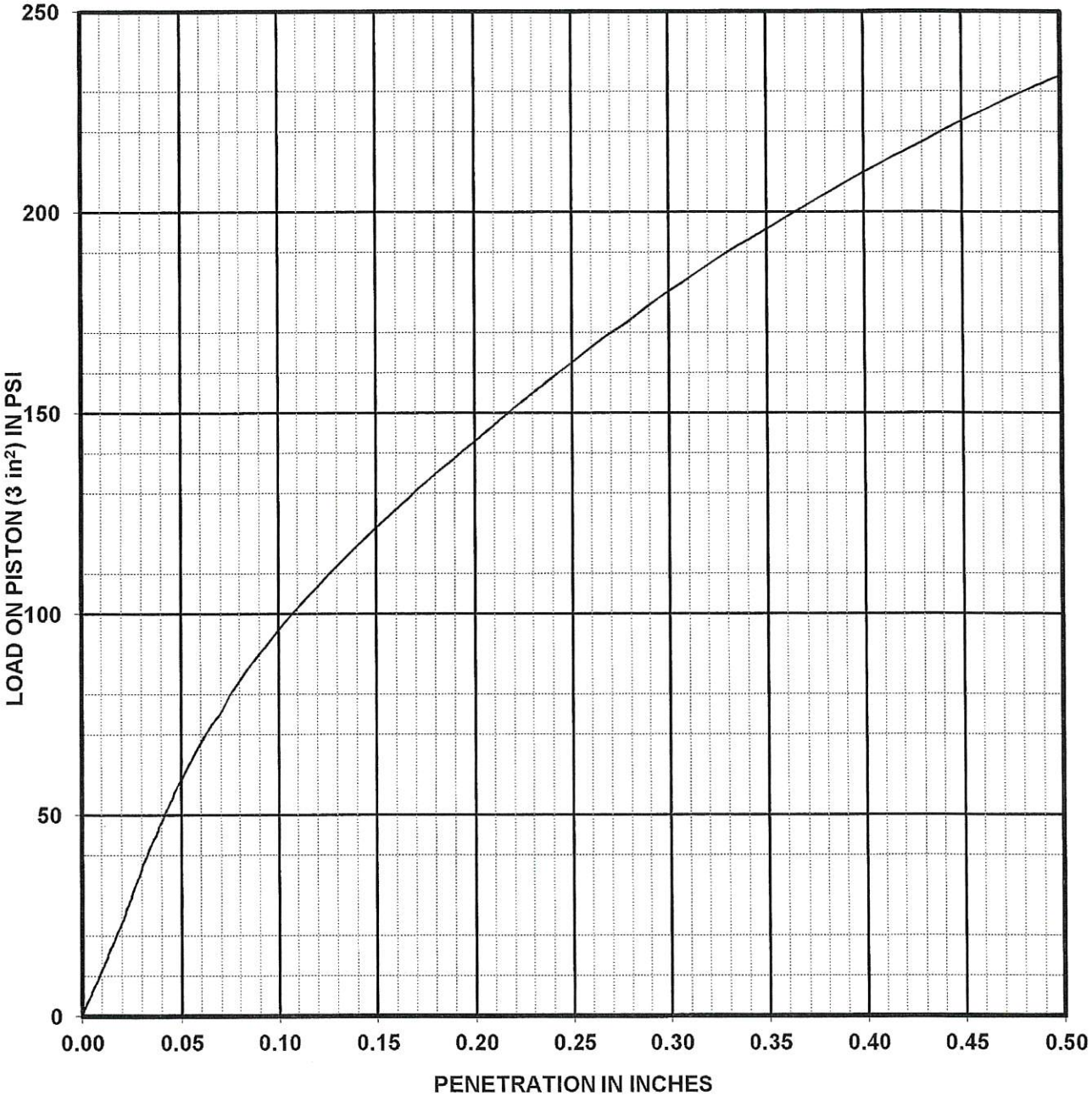
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 3.2* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 97

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 1-4 at 1' to 2' CS #: 13258
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 92 hours

Dry Density:	as molded	109 pcf	Moisture Content:	as molded	17	percent
	after soaking	110 pcf		top 1-inch after soaking	17	percent
Swell:	after soaking	0.1 percent		average after soaking	17	percent

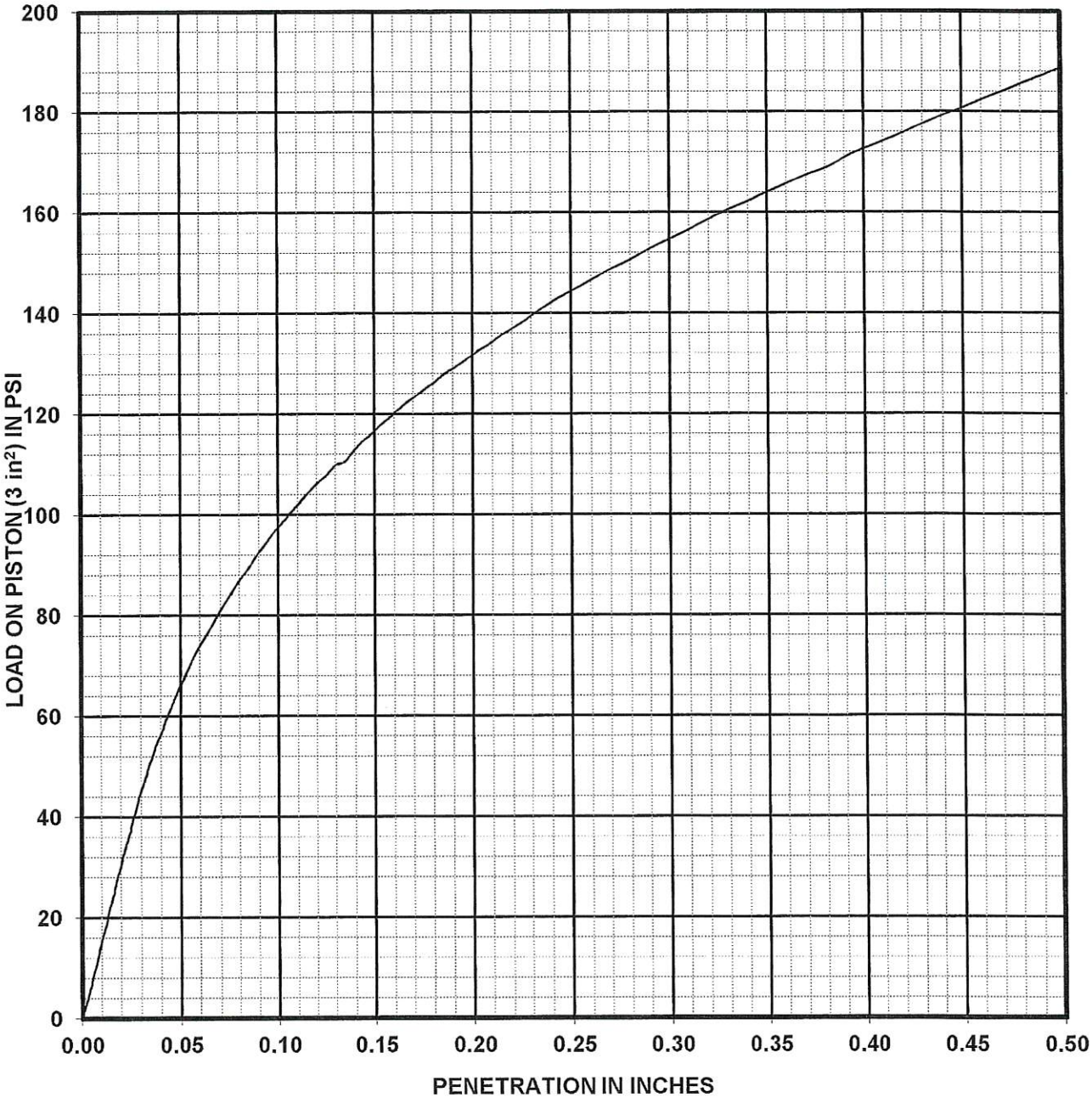
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 5.8* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 98

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 1-5 at 1' to 2' CS #: 13259
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 94 hours

Dry Density:	as molded	107 pcf	Moisture Content:	as molded	16	percent
	after soaking	107 pcf		top 1-inch after soaking	18	percent
Swell:	after soaking	0.2 percent		average after soaking	18	percent

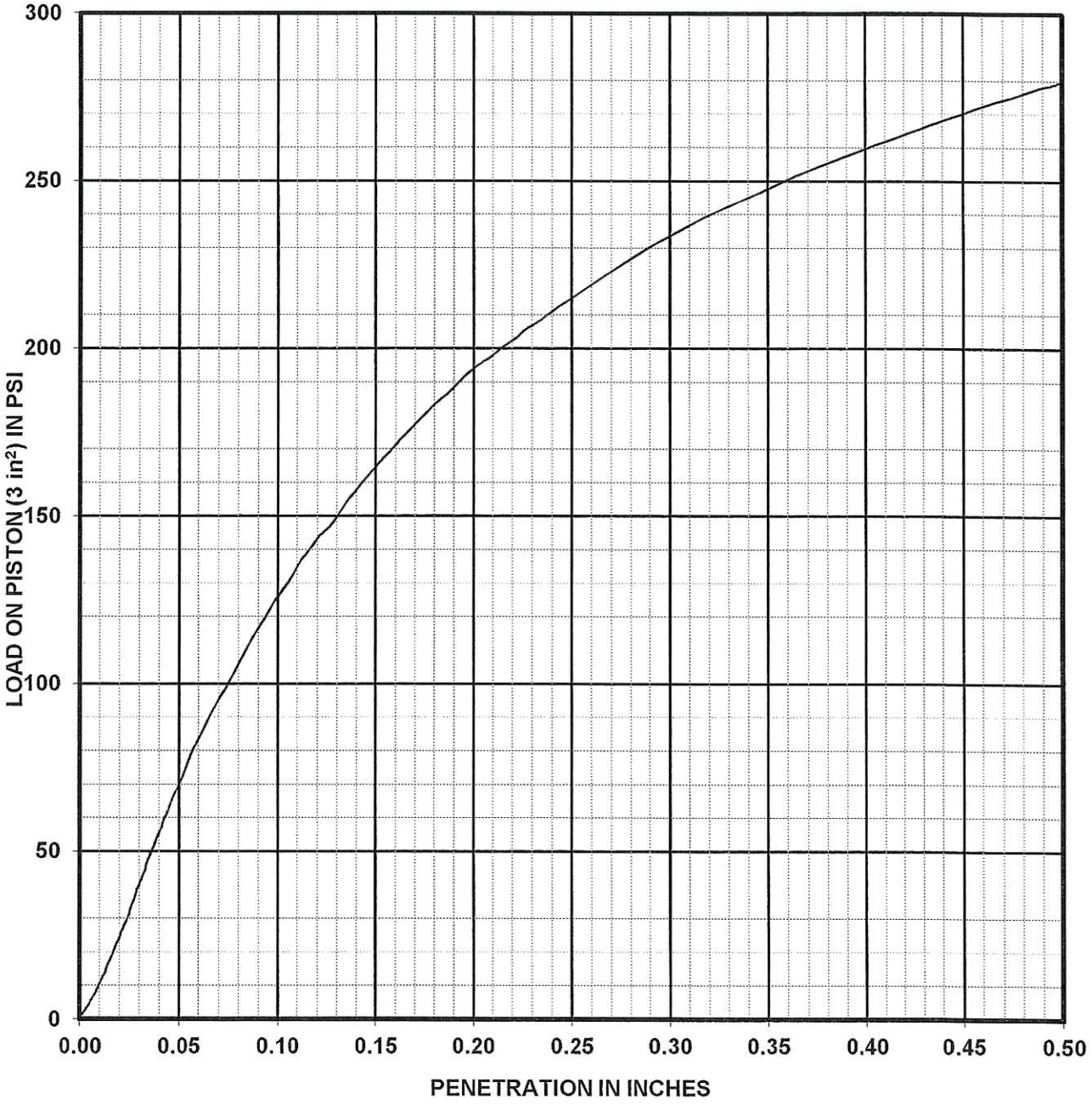
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **5.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 99

Applied Geotechnical Engineering Consultants, Inc.



Sample of Silty Sand (SM)
Location: TP 1-6 at 1' to 2' CS #: 13260
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 92 hours

Dry Density:	as molded	109 pcf	Moisture Content:	as molded	16	percent
	after soaking	111 pcf		top 1-inch after soaking	16	percent
Swell:	after soaking	0.6 percent		average after soaking	16	percent

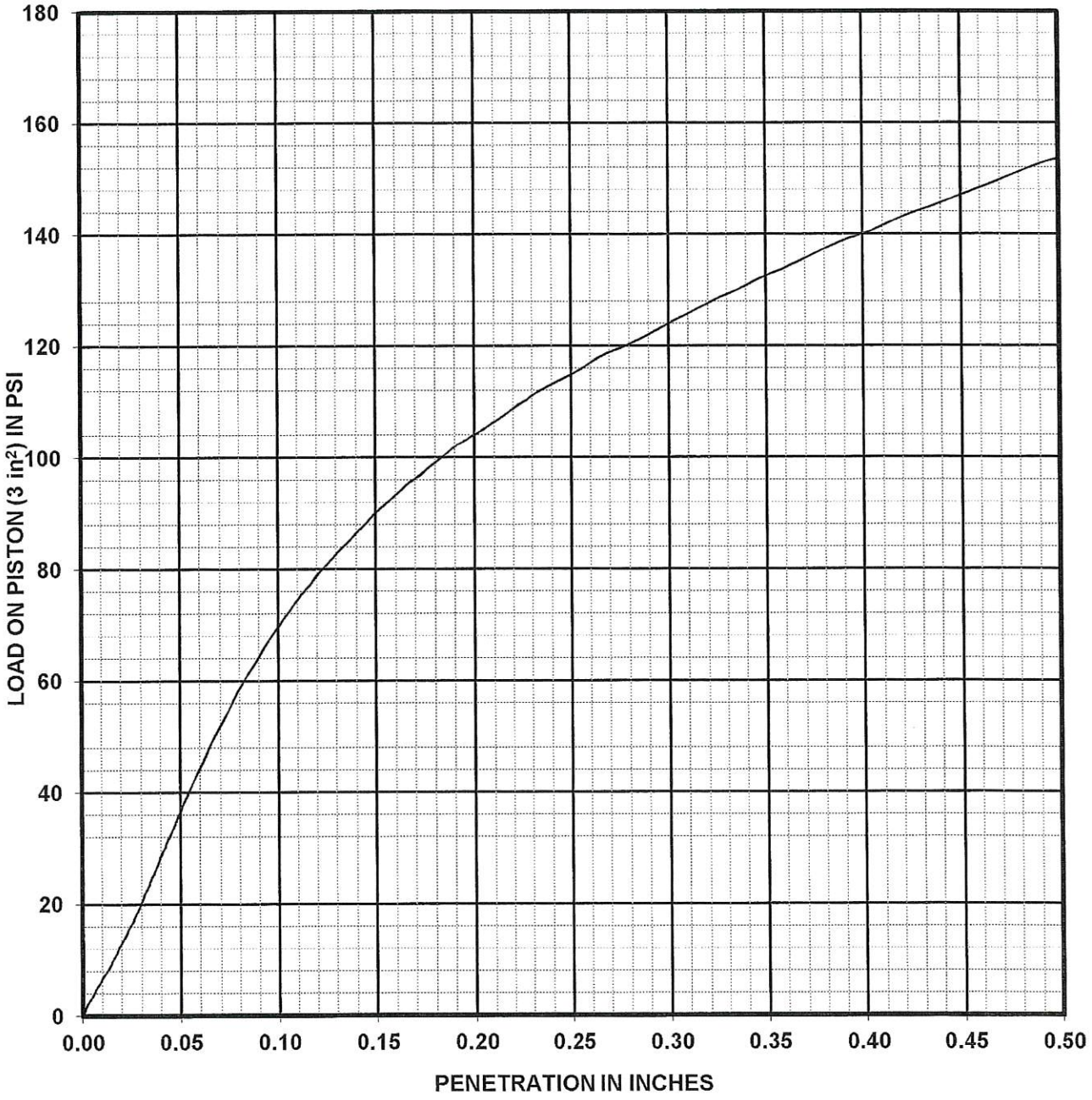
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 9.7* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 100

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 1-7 at 1' to 2' CS #: 13268
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 90 hours

Dry Density:	as molded	91 pcf	Moisture Content:	as molded	27	percent
	after soaking	91 pcf		top 1-inch after soaking	30	percent
Swell:	after soaking	0.7 percent		average after soaking	30	percent

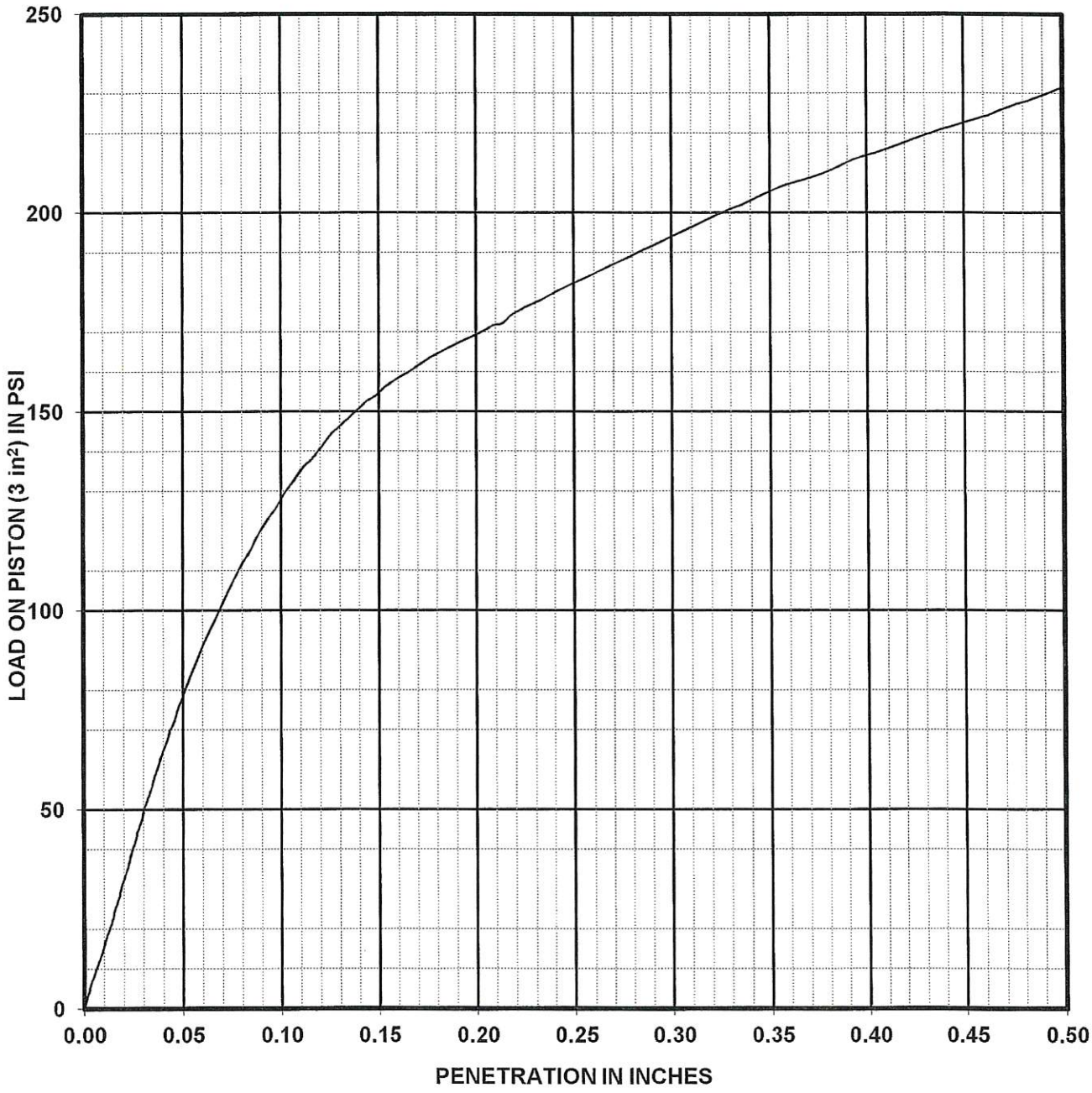
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **3.5*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 101

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 1-8 at 1' to 2' CS#: 13269
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 94 hours

Dry Density:	as molded	107 pcf	Moisture Content:	as molded	16	percent
	after soaking	109 pcf		top 1-inch after soaking	18	percent
Swell:	after soaking	0.5 percent		average after soaking	17	percent

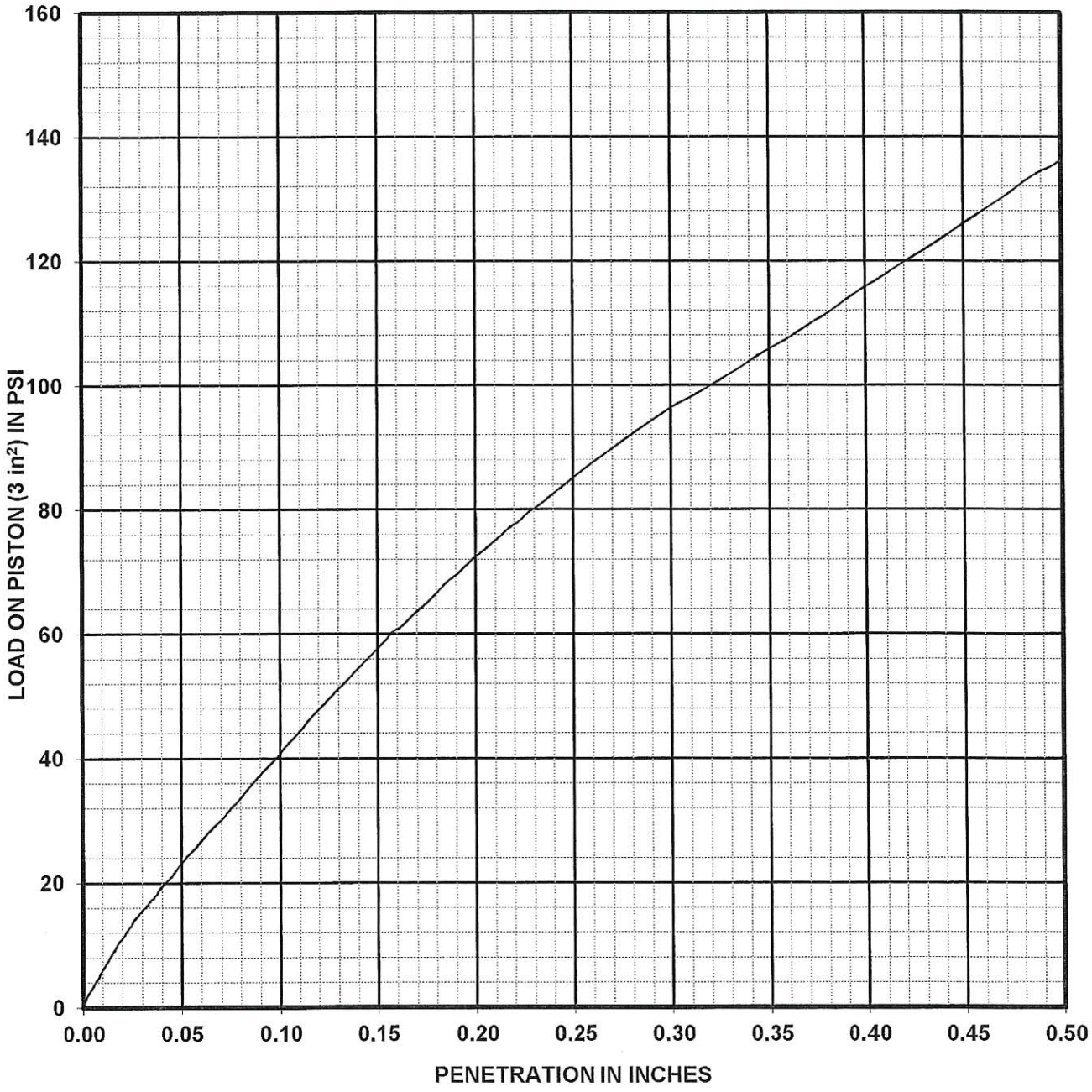
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 7.6* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 102

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 1-9 at 1' to 2' CS#: 13270
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 91 hours

Dry Density:	as molded	105 pcf	Moisture Content:	as molded	18	percent
	after soaking	107 pcf		top 1-inch after soaking	18	percent
Swell:	after soaking	0.1 percent		average after soaking	18	percent

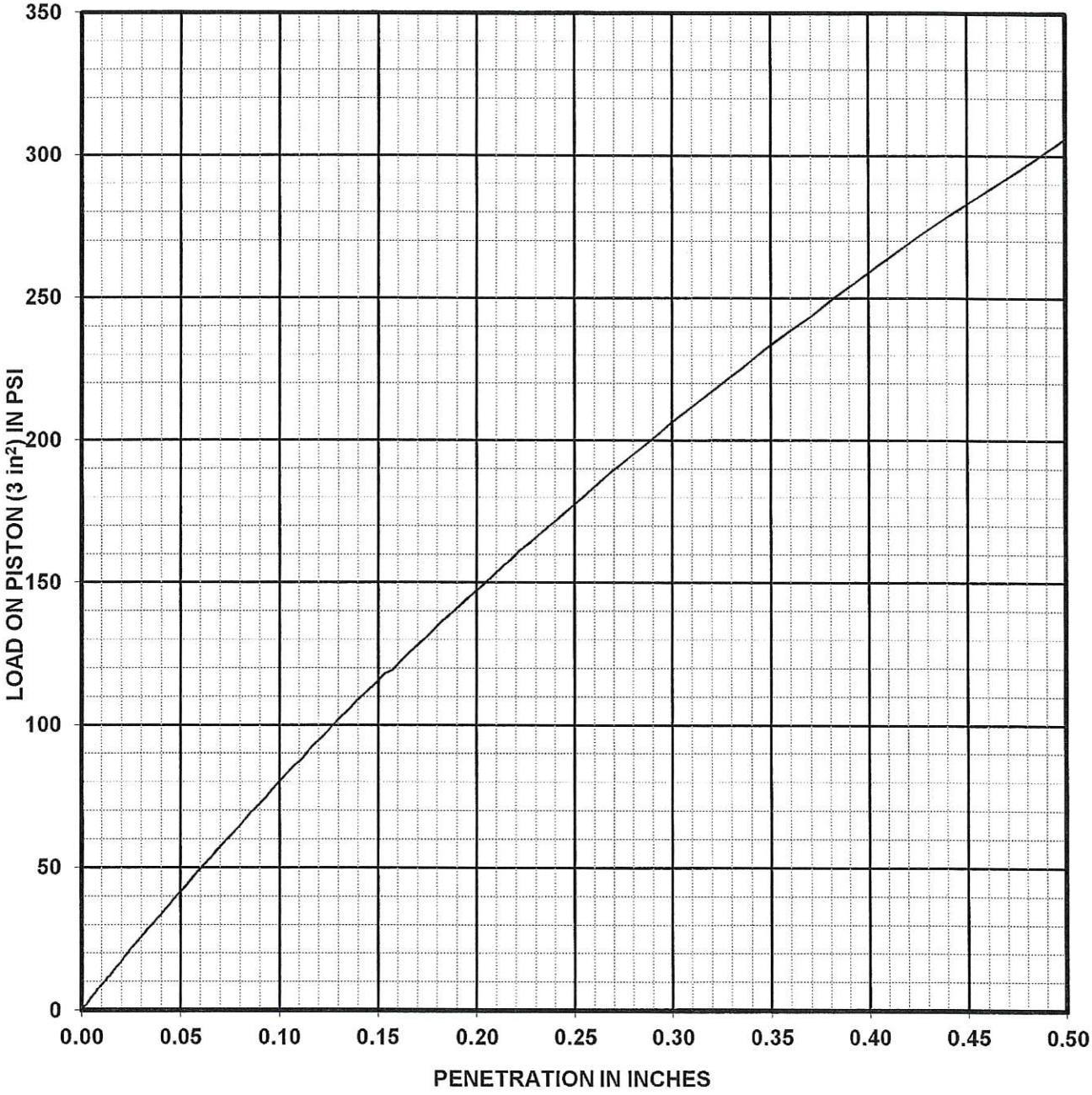
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 2.4* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 103

Applied Geotechnical Engineering Consultants, Inc.



Sample of Silty Sand (SM)
Location: TP 1-10 at 1' to 2' CS#: 13271
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 89 hours

Dry Density:	as molded	109 pcf	Moisture Content:	as molded	17	percent
	after soaking	111 pcf		top 1-inch after soaking	17	percent
Swell:	after soaking	0.0 percent		average after soaking	17	percent

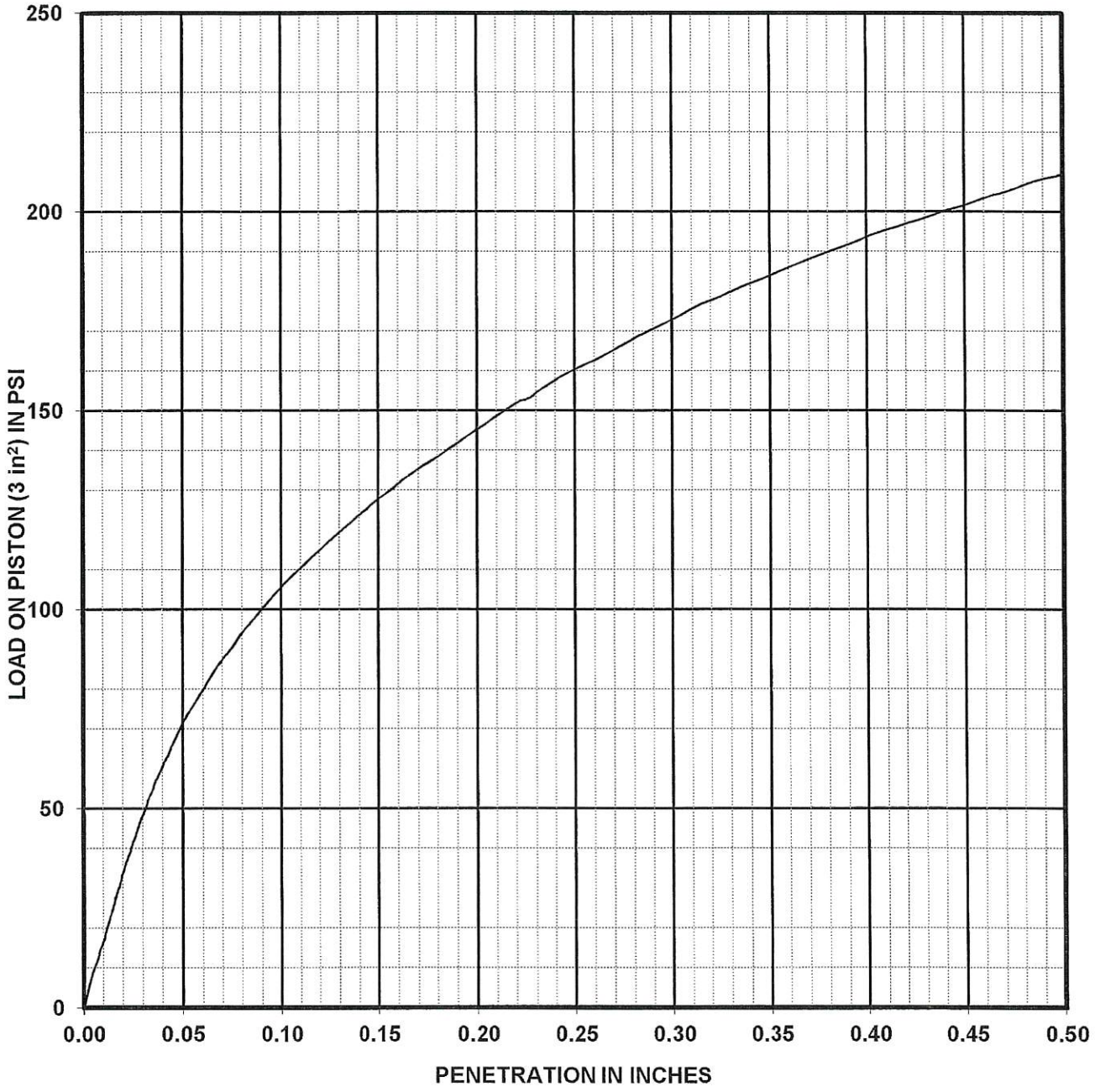
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 7.3* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 104

Applied Geotechnical Engineering Consultants, Inc.



Sample of Clayey Sand (SC)
Location: TP 1-11 at 1' to 2' CS#: 13293
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 90 hours

Dry Density: as molded 110 pcf
after soaking 111 pcf
Swell: after soaking 0.1 percent

Moisture Content: as molded 16 percent
top 1-inch after soaking 16 percent
average after soaking 16 percent

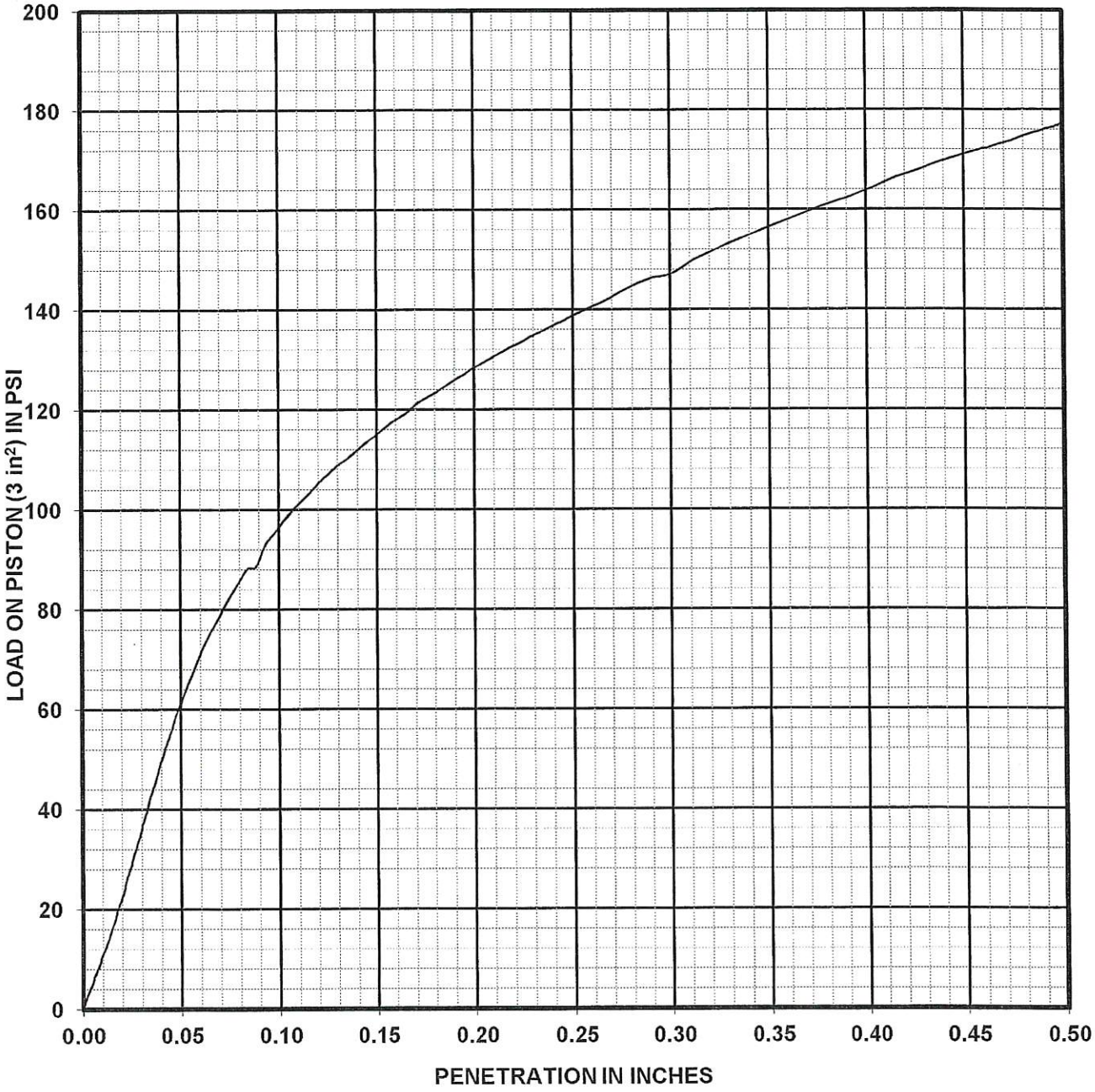
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 6.3* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 105

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 1-12 at 1' to 2' CS#: 13294
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 98 hours

Dry Density: as molded 103 pcf
after soaking 103 pcf
Swell: after soaking 0.6 percent

Moisture Content: as molded 19 percent
top 1-inch after soaking 22 percent
average after soaking 21 percent

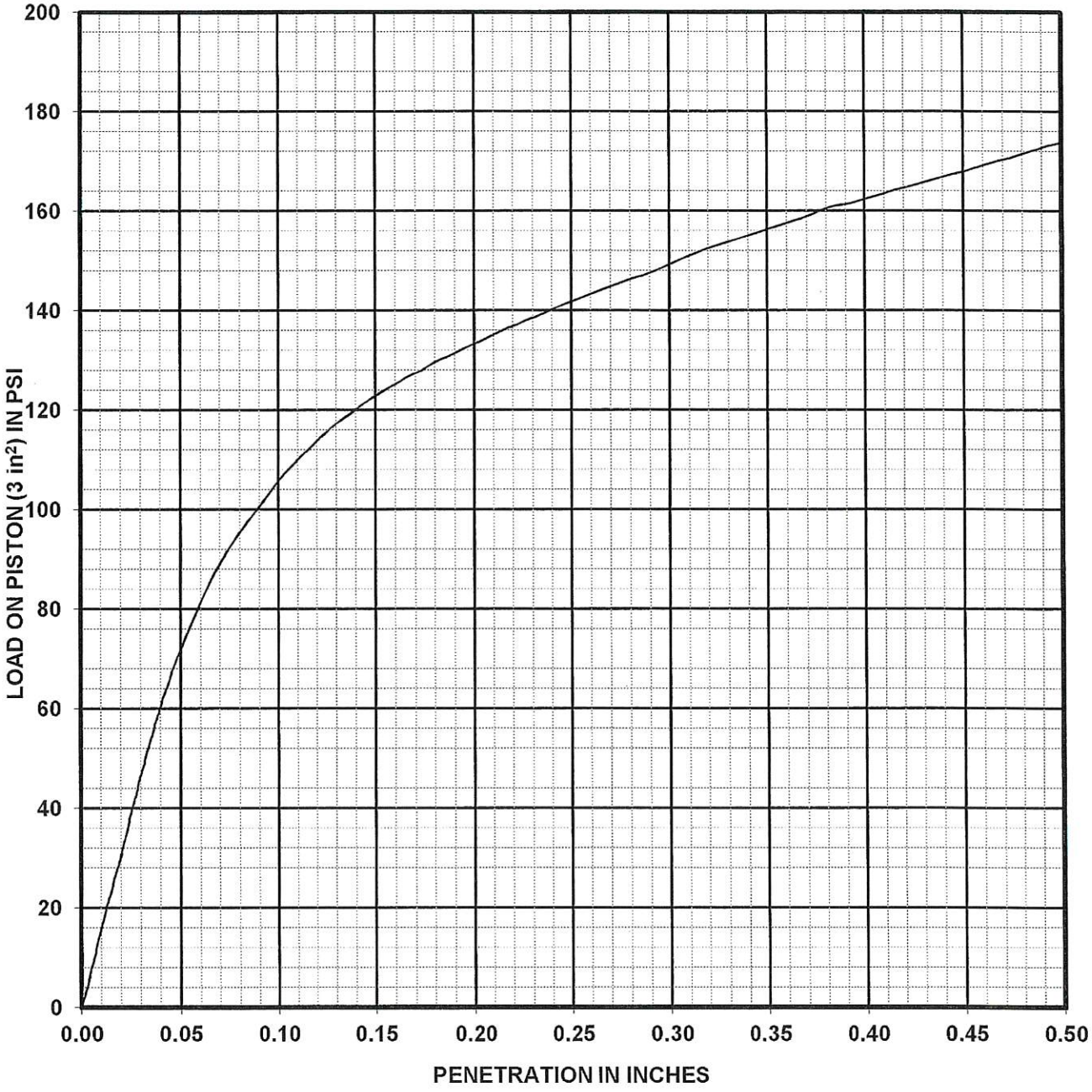
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **4.8*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 106

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 1-13 at 1' to 2' CS#: 13295
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 101 hours

Dry Density: as molded 106 pcf
after soaking 107 pcf
Swell: after soaking 0.3 percent

Moisture Content: as molded 18 percent
top 1-inch after soaking 19 percent
average after soaking 19 percent

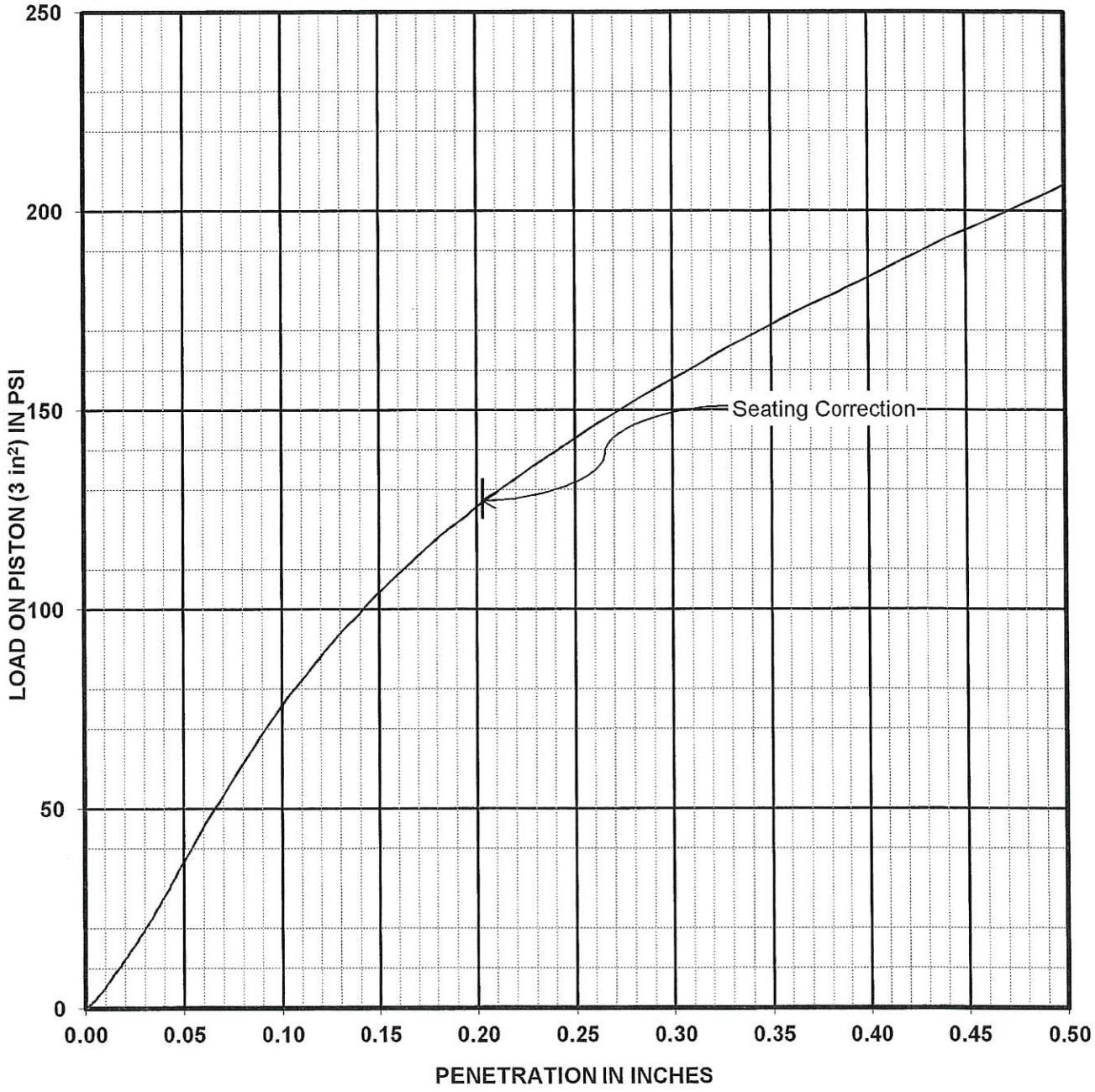
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 6.4* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 107

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 1-14 at 1' to 2' CS#: 13296
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 91 hours

Dry Density:	as molded	103	pcf	Moisture Content:	as molded	19	percent
	after soaking	102	pcf		top 1-inch after soaking	24	percent
Swell:	after soaking	0.5	percent		average after soaking	23	percent

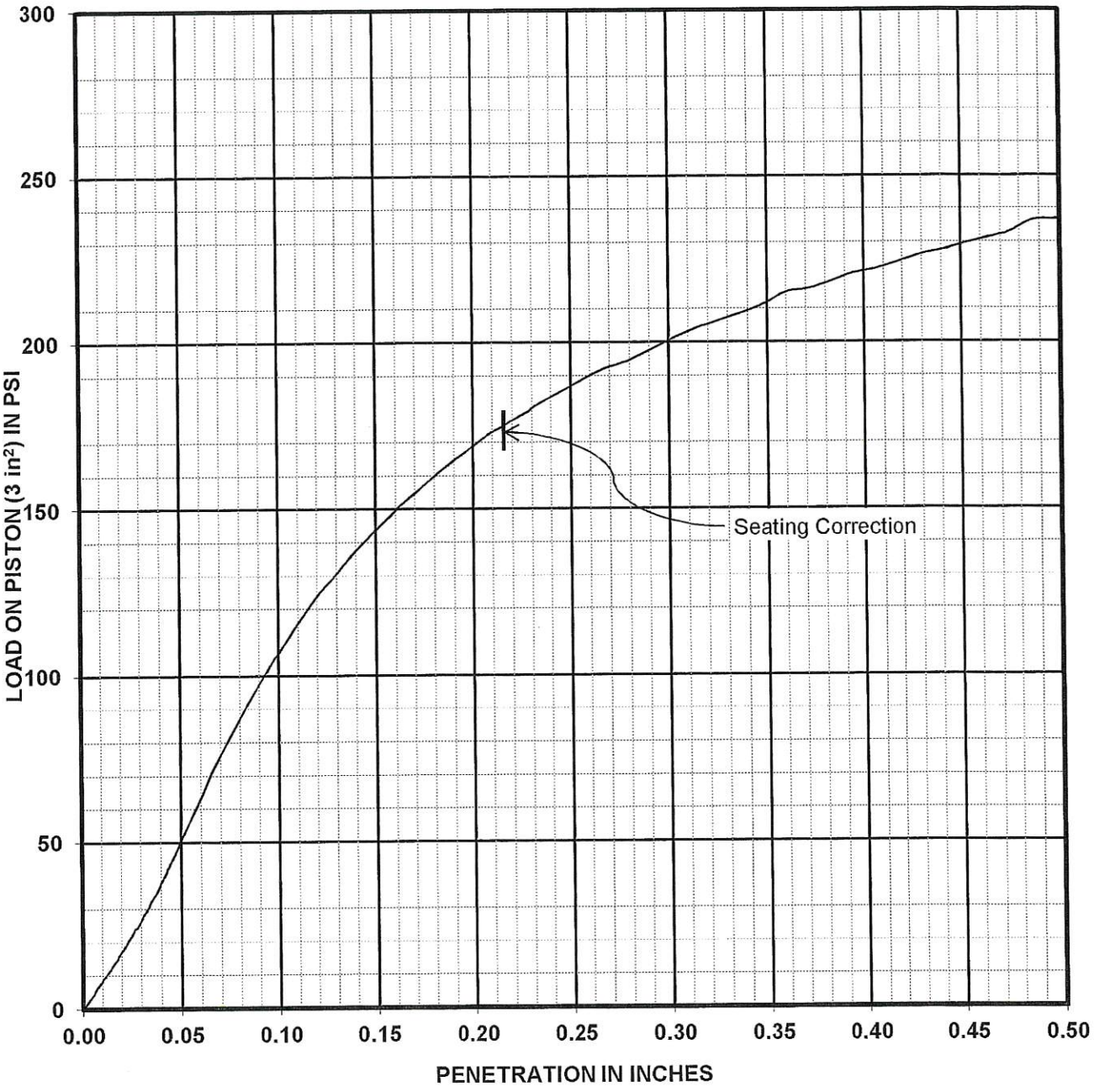
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 4.3* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 108

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 1-15 at 1' to 2' CS#: 13310
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 91 hours

Dry Density: as molded 111 pcf
after soaking 113 pcf

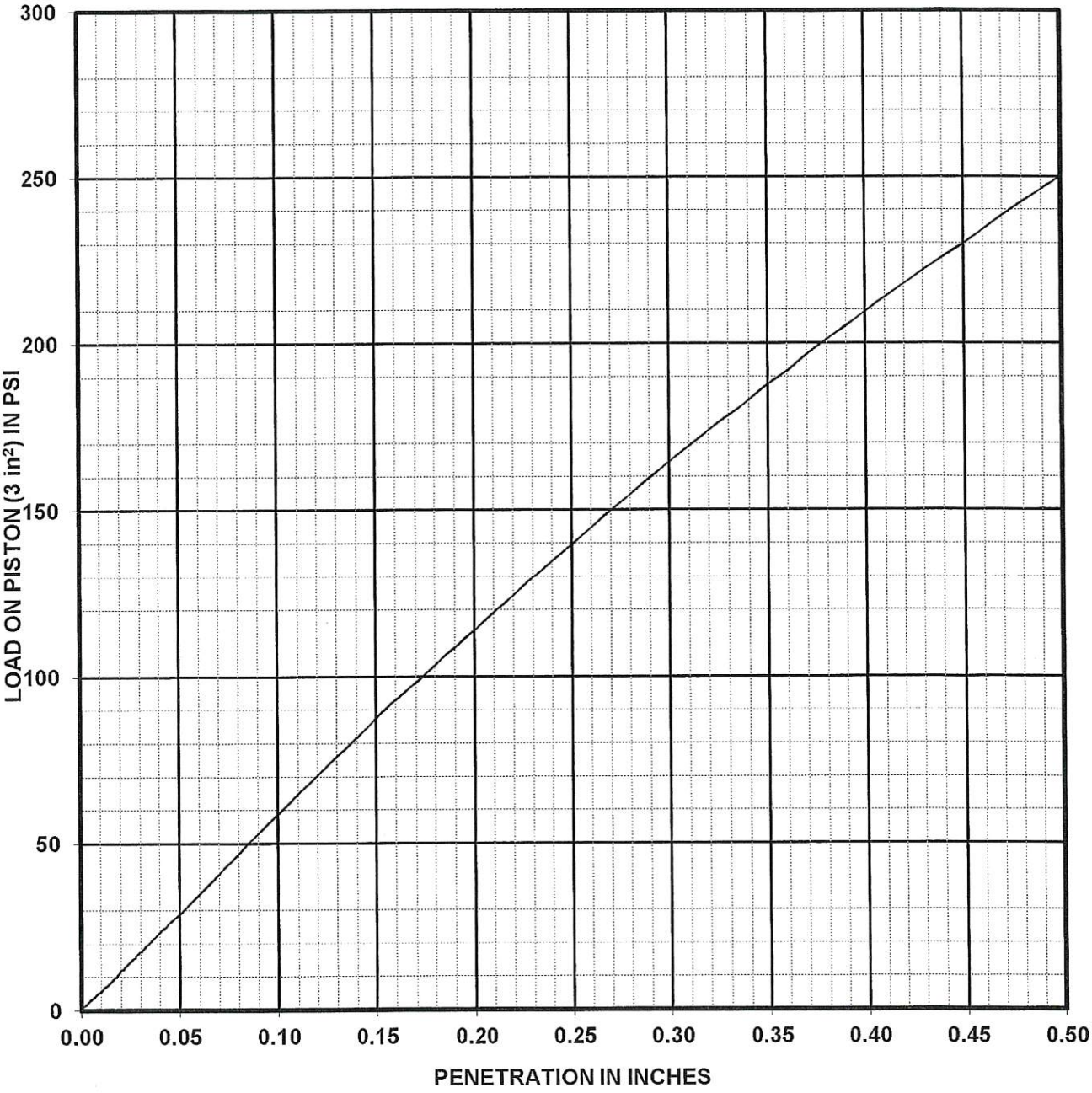
Moisture Content: as molded 16 percent
top 1-inch after soaking 16 percent
average after soaking 16 percent

Swell: after soaking 0.3 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 7.1* percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 109

Applied Geotechnical Engineering Consultants, Inc.



Sample of Gravelly Lean Clay with Sand (CL)
Location: TP 1-16 at 1' to 2' CS#: 13311
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99D, Scalp&Replace

Sample penetration after soaking for 93 hours

Dry Density: as molded 110 pcf
after soaking 109 pcf
Swell: after soaking -0.1 percent

Moisture Content: as molded 15 percent
top 1-inch after soaking 17 percent
average after soaking 18 percent

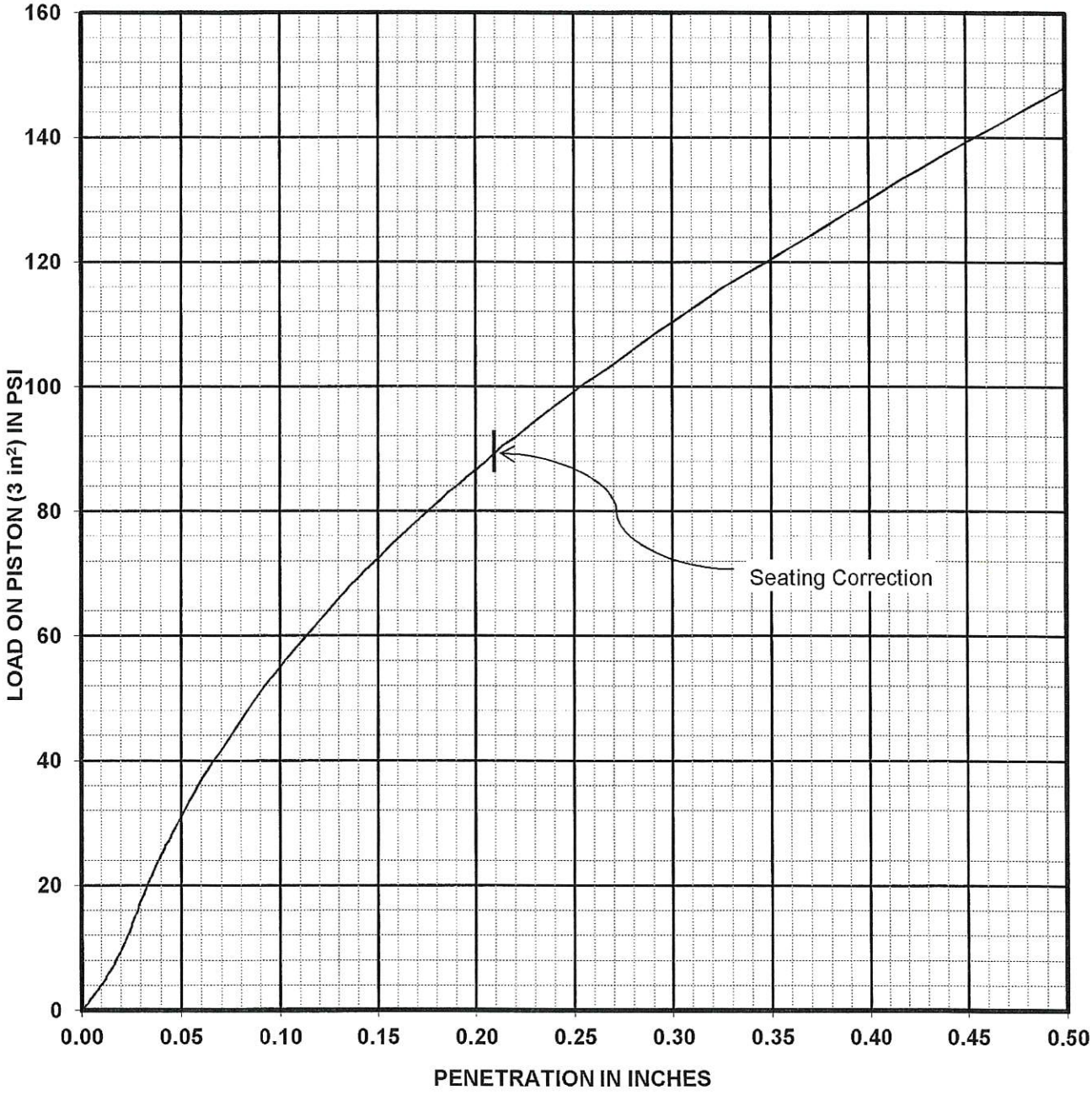
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 4.5* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 110

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 1-17 at 1' to 2' CS#: 13312
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 92 hours

Dry Density: as molded 103 pcf
after soaking 105 pcf
Swell: after soaking 0.1 percent

Moisture Content: as molded 19 percent
top 1-inch after soaking 20 percent
average after soaking 20 percent

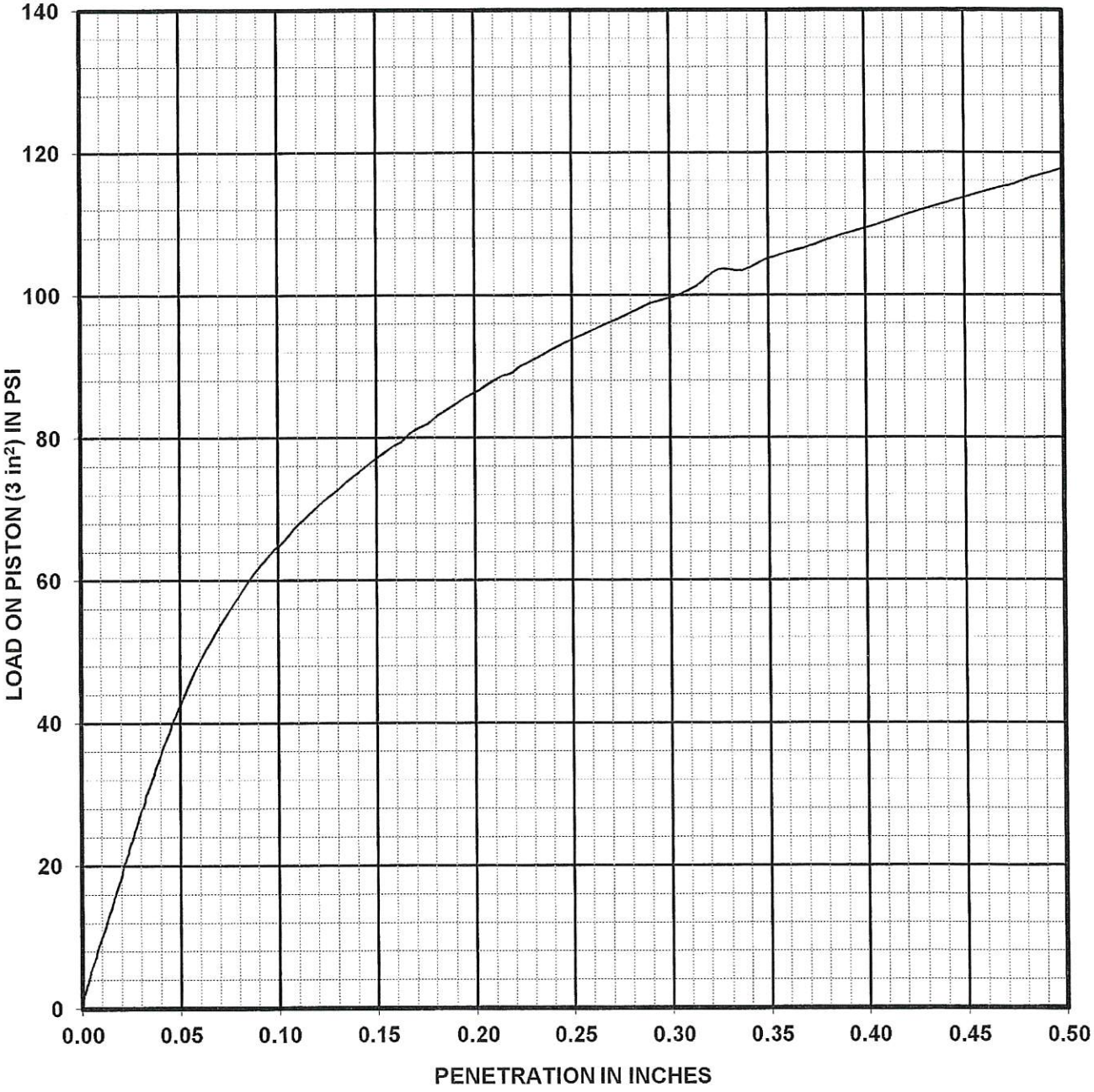
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **3.0*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 111

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 1-18 at 1' to 2' CS#: 13313
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 95 hours

Dry Density:	as molded	95 pcf	Moisture Content:	as molded	23	percent
	after soaking	94 pcf		top 1-inch after soaking	26	percent
Swell:	after soaking	1.1 percent		average after soaking	26	percent

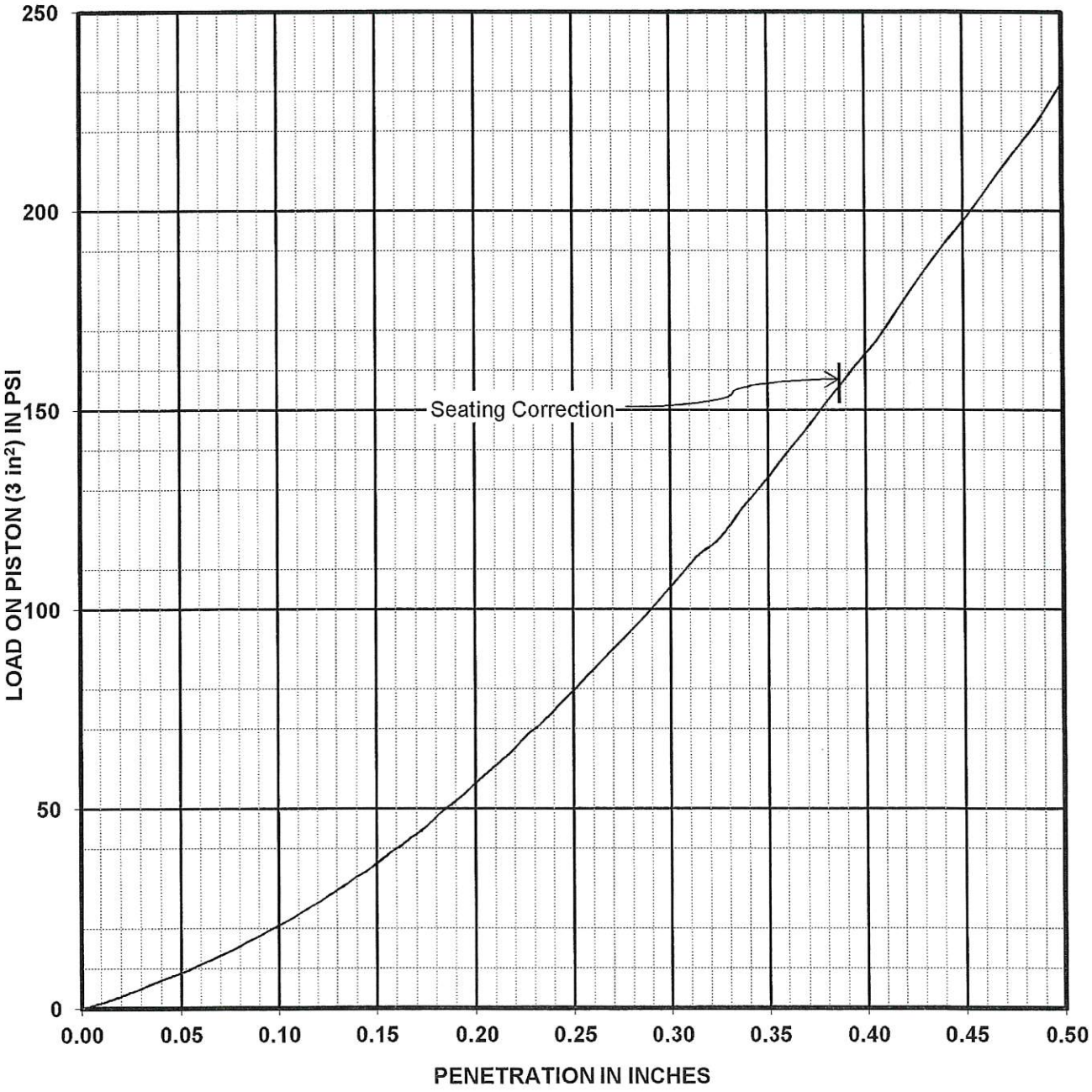
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **3.2*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 112

Applied Geotechnical Engineering Consultants, Inc.



Sample of Poorly-graded Sand with Clay and Gravel (SP-SC)
Location: CBR 1-1 at 1' to 2' CS#: 13304 QC
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99D, Scalp & Replace

Sample penetration after soaking for 95 hours

Dry Density: as molded 118 pcf
after soaking 120 pcf
Swell: after soaking -0.4 percent

Moisture Content: as molded 12 percent
top 1-inch after soaking 12 percent
average after soaking 12 percent

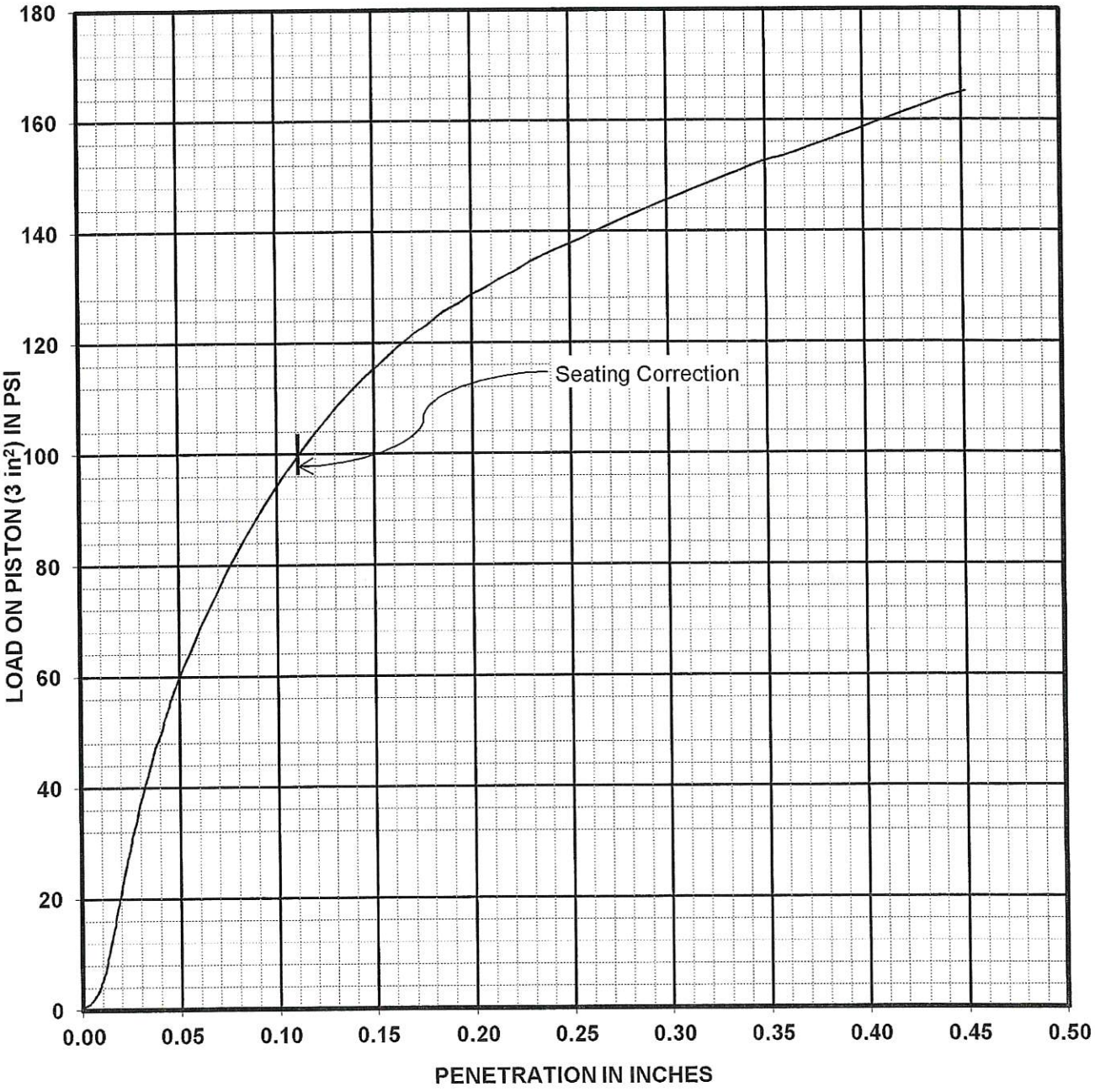
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 7.9* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 113

Applied Geotechnical Engineering Consultants, Inc.



Sample of Clayey Sand (SC)
Location: CBR 1-2 at 1' to 2' CS#: 13305 QC
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 71 hours

Dry Density: as molded 109 pcf
after soaking 110 pcf

Moisture Content: as molded 15 percent
top 1-inch after soaking 18 percent
average after soaking 18 percent

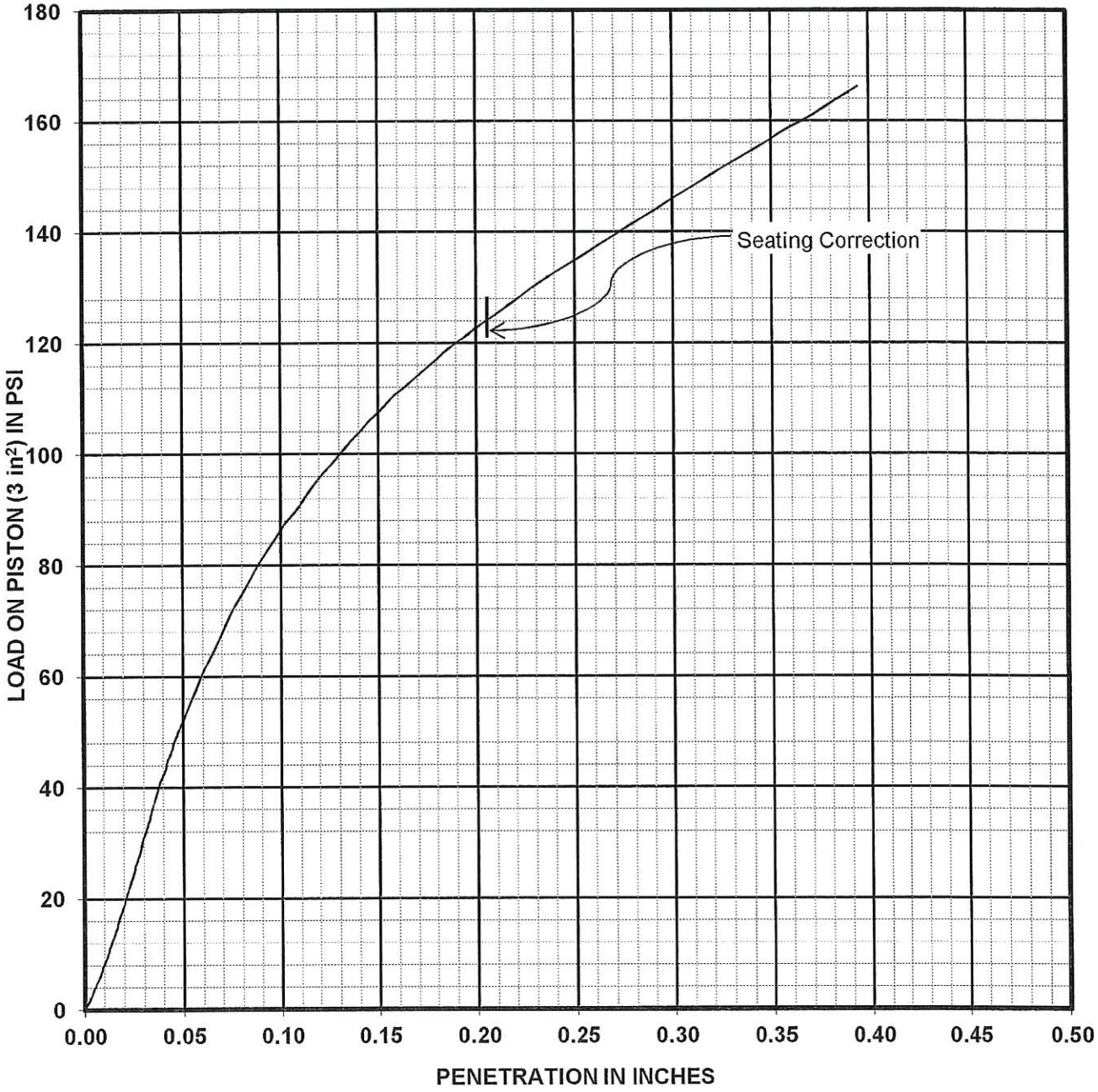
Swell: after soaking 0.2 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 5.9* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 114

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: CBR 1-3 at 1' to 3' CS#: 13306 QC
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 96 hours

Dry Density:	as molded	102 pcf	Moisture Content:	as molded	19	percent
	after soaking	103 pcf		top 1-inch after soaking	20	percent
Swell:	after soaking	0.3 percent		average after soaking	20	percent

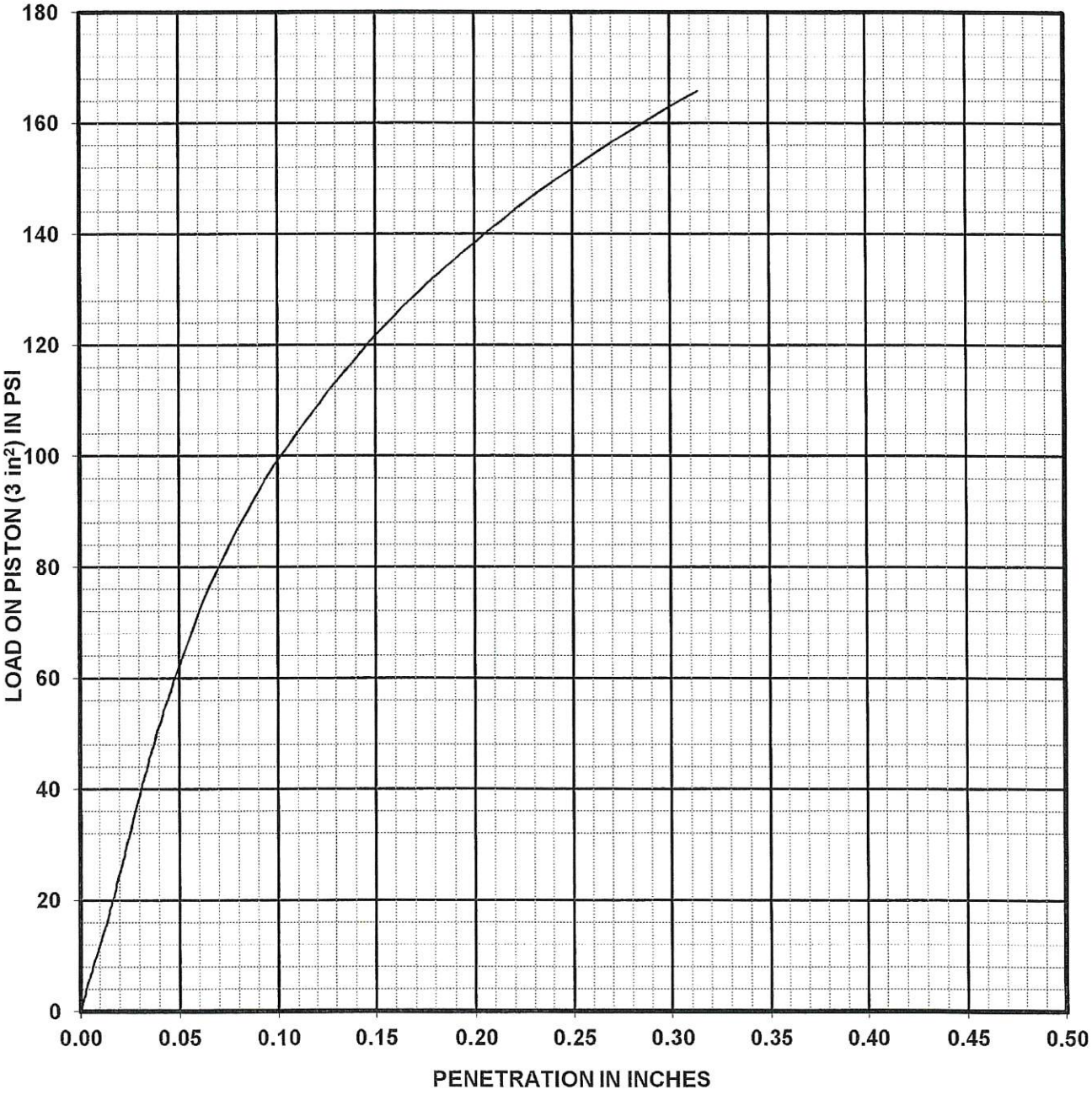
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, CBR = 4.1* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 115

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: CBR 1-4 at 1' to 3' CS#: 13307 QC
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 88 hours

Dry Density:	as molded	101 pcf	Moisture Content:	as molded	20	percent
	after soaking	101 pcf		top 1-inch after soaking	22	percent
Swell:	after soaking	0.1 percent		average after soaking	22	percent

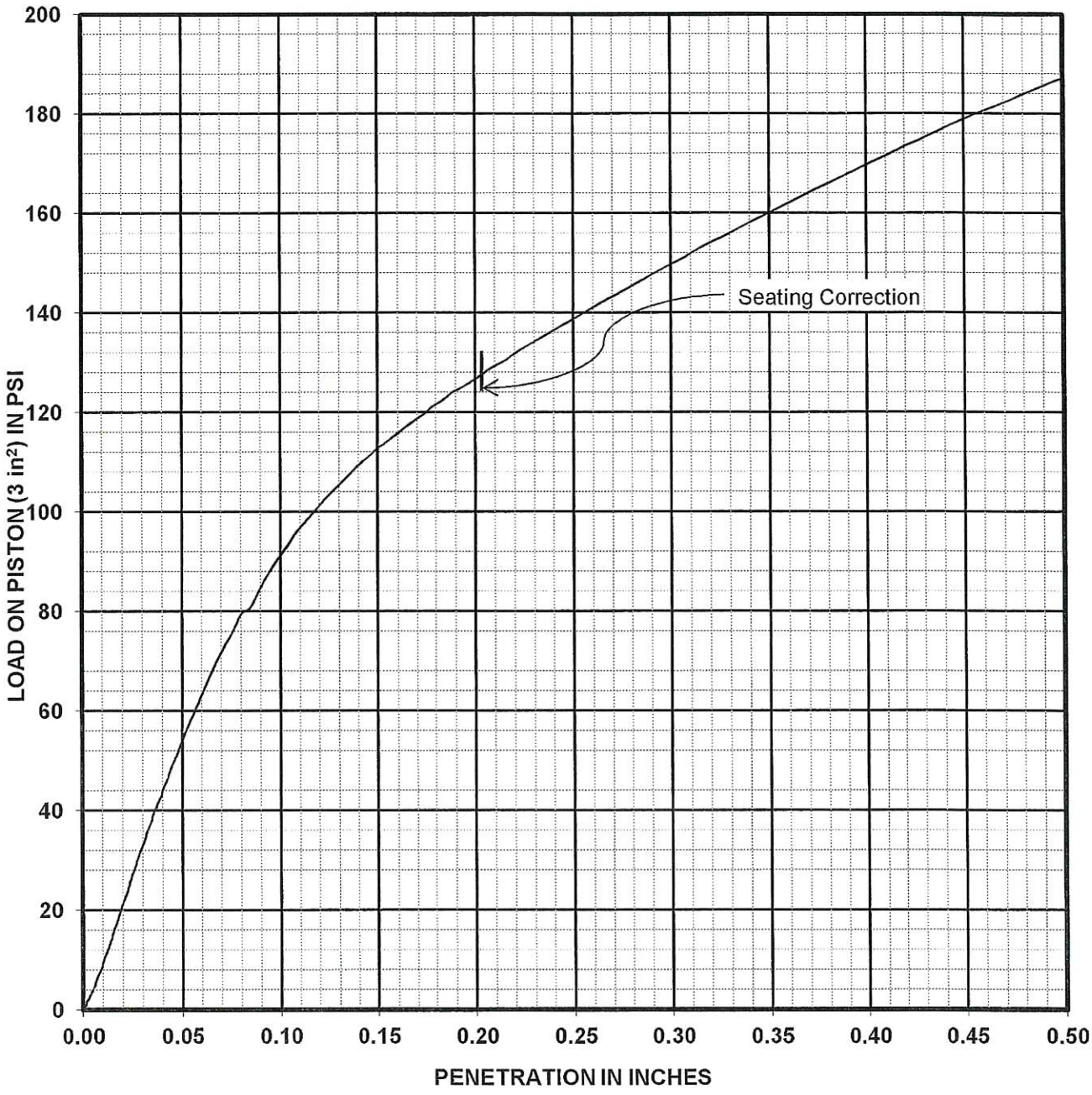
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 4.9* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 116

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: CBR 1-5 at 1' to 3' CS#: 13308 QC
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 86 hours

Dry Density: as molded 100 pcf
after soaking 100 pcf
Swell: after soaking 0.8 percent

Moisture Content: as molded 20 percent
top 1-inch after soaking 23 percent
average after soaking 23 percent

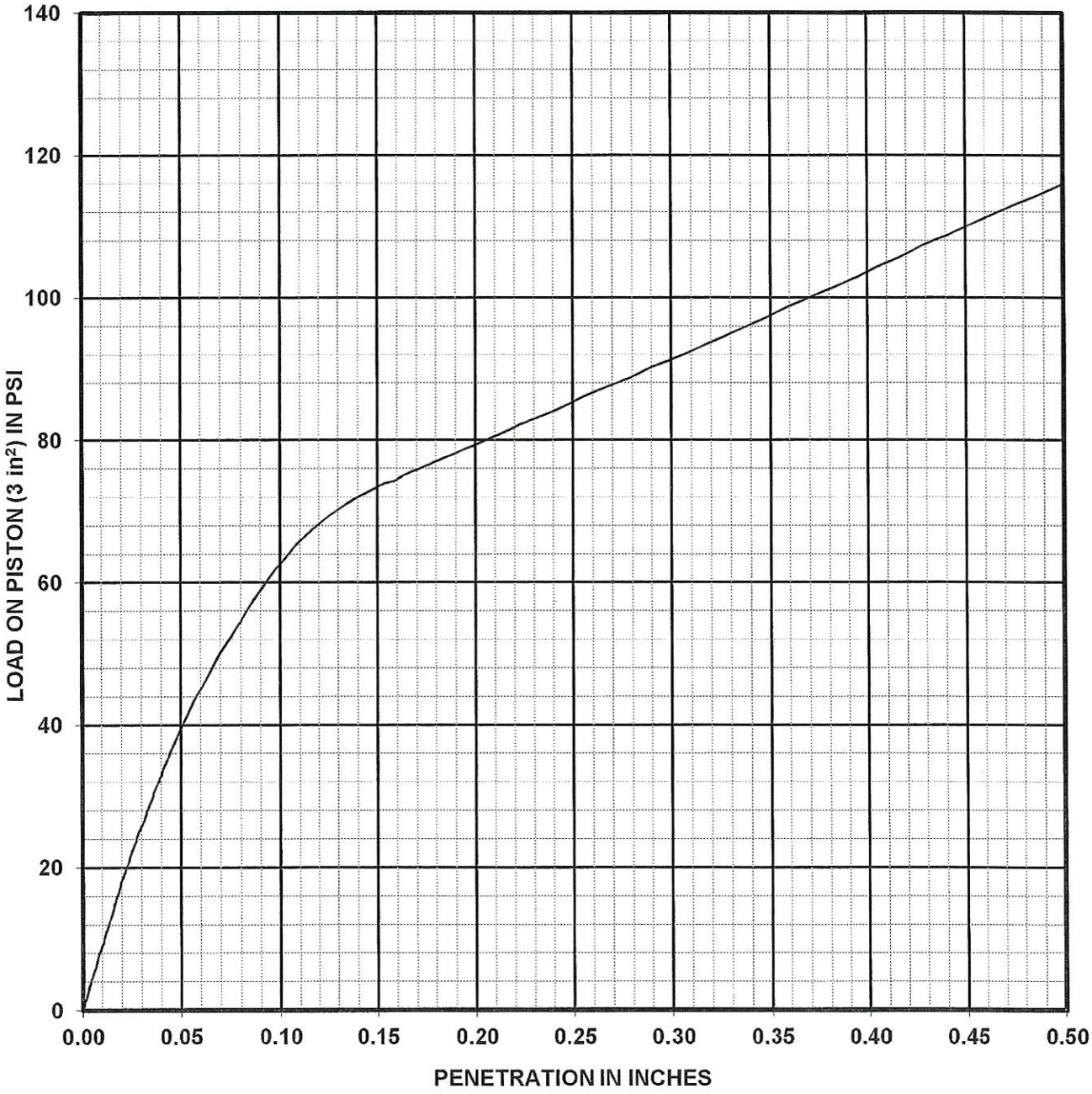
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 4.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 117

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: CBR 1-6 at 1' to 3' CS#: 13309 QC
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 97 hours

Dry Density: as molded 113 pcf
after soaking 113 pcf
Swell: after soaking 0.9 percent

Moisture Content: as molded 20 percent
top 1-inch after soaking 24 percent
average after soaking 24 percent

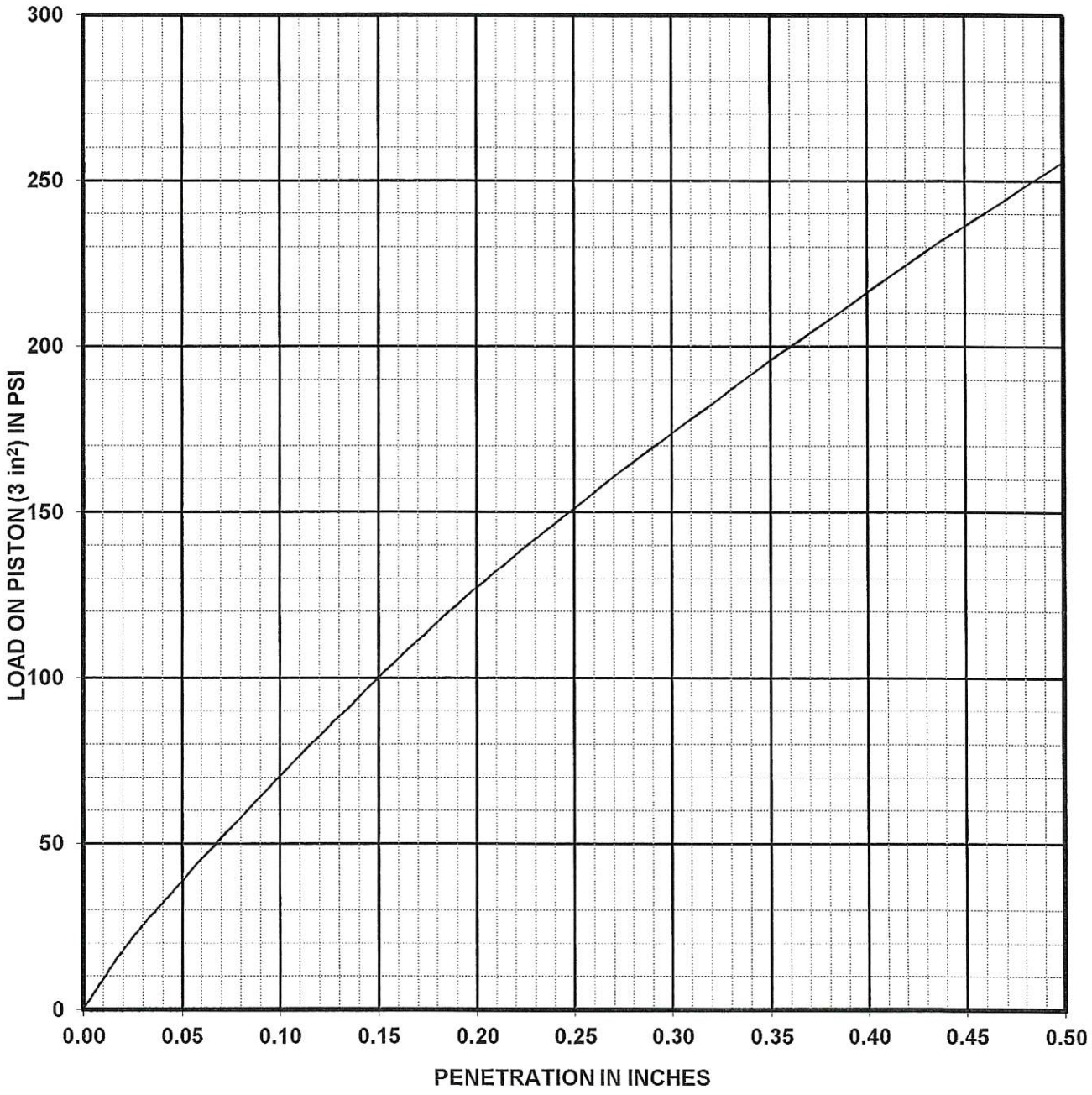
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 3.1* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 118

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-1 at 1' to 2' CS#: 13326
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 100 hours

Dry Density:	as molded	109 pcf	Moisture Content:	as molded	17	percent
	after soaking	110 pcf		top 1-inch after soaking	16	percent
Swell:	after soaking	0.1 percent		average after soaking	17	percent

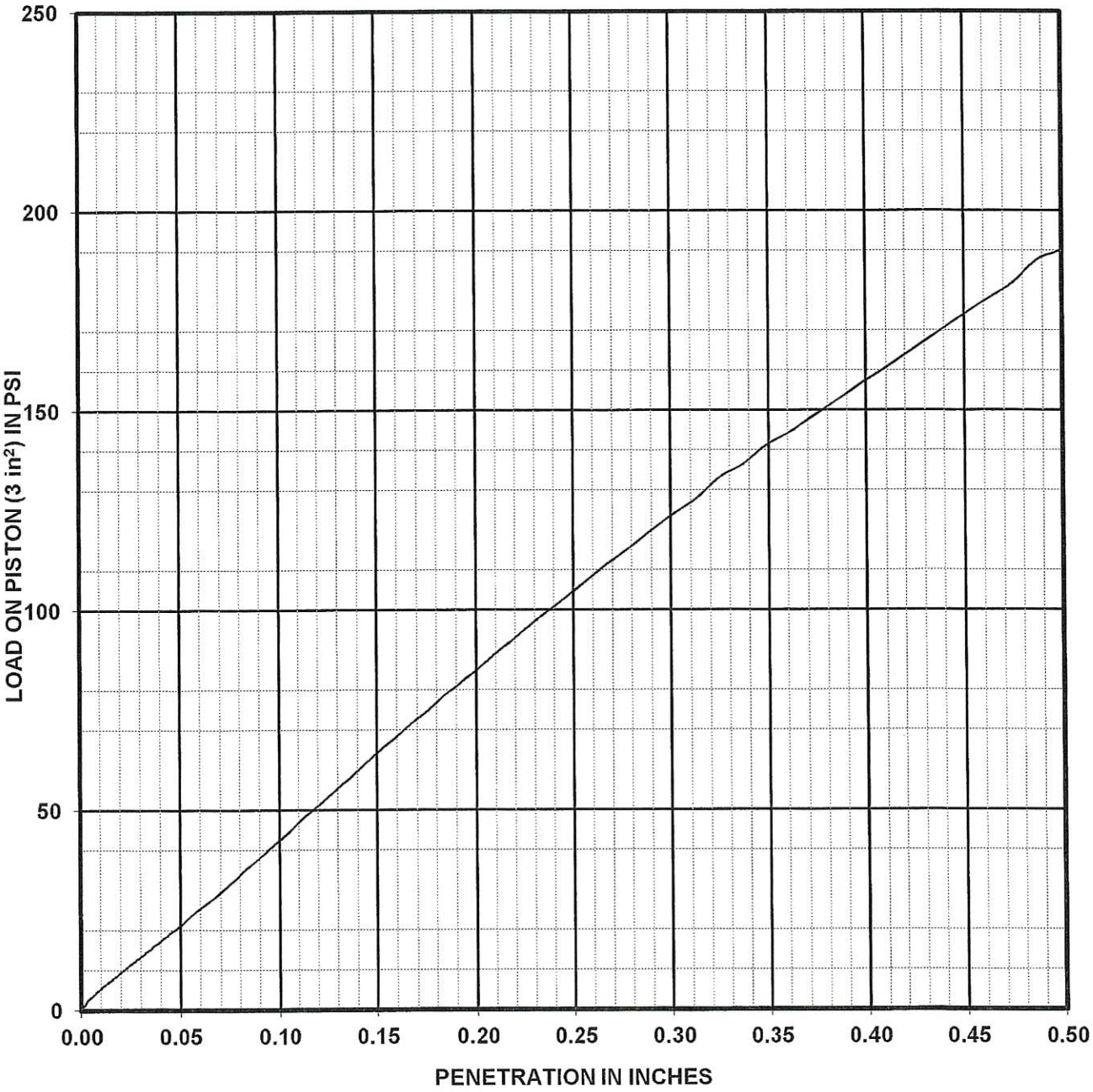
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 4.3* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 119

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Silt (ML)
Location: TP 2-2 at 1' to 2' CS#: 13327
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 88 hours

Dry Density: as molded 107 pcf
after soaking 108 pcf
Swell: after soaking 0.3 percent

Moisture Content: as molded 17 percent
top 1-inch after soaking 17 percent
average after soaking 17 percent

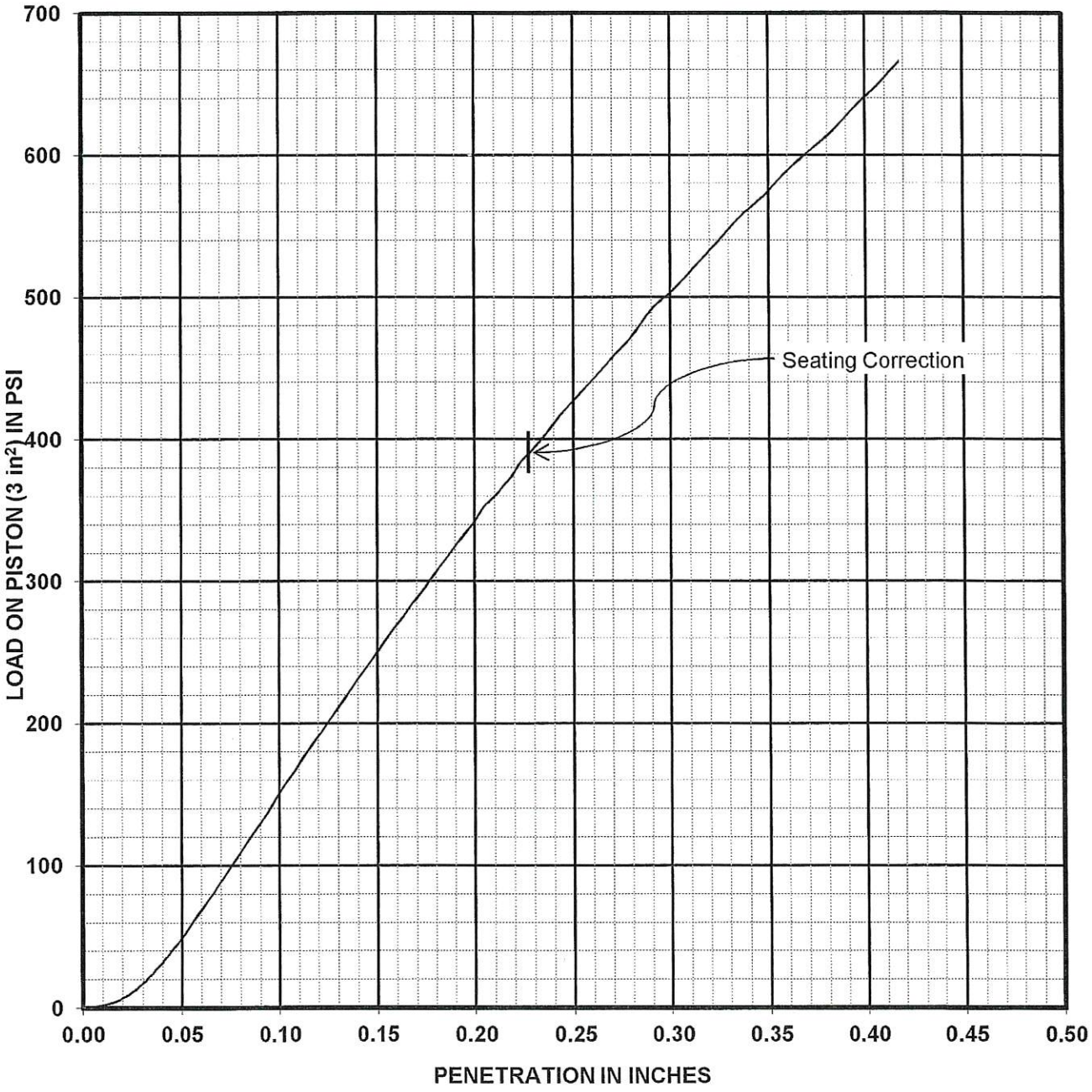
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 3.5* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 120

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Silt (ML)
Location: TP 2-3 at 1' to 2' CS#: 13328
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 92 hours

Dry Density:	as molded	109 pcf	Moisture Content:	as molded	14	percent
	after soaking	110 pcf		top 1-inch after soaking	16	percent
Swell:	after soaking	-0.1 percent		average after soaking	16	percent

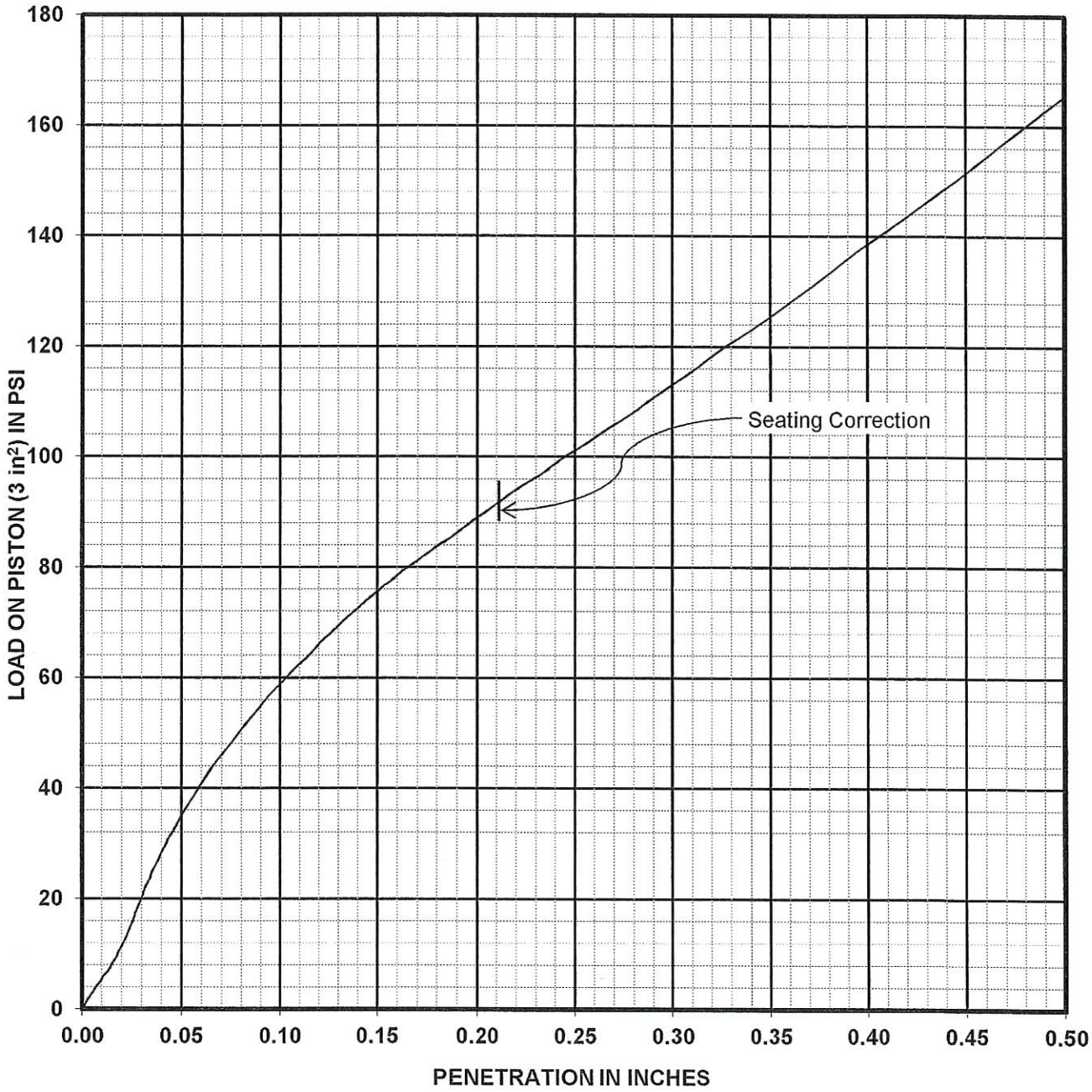
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 16* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 121

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 2-4 at 1' to 2' CS#: 13329
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 94 hours

Dry Density:	as molded	106	pcf	Moisture Content: as molded	19	percent
	after soaking	108	pcf	top 1-inch after soaking	19	percent
Swell:	after soaking	0.1	percent	average after soaking	19	percent

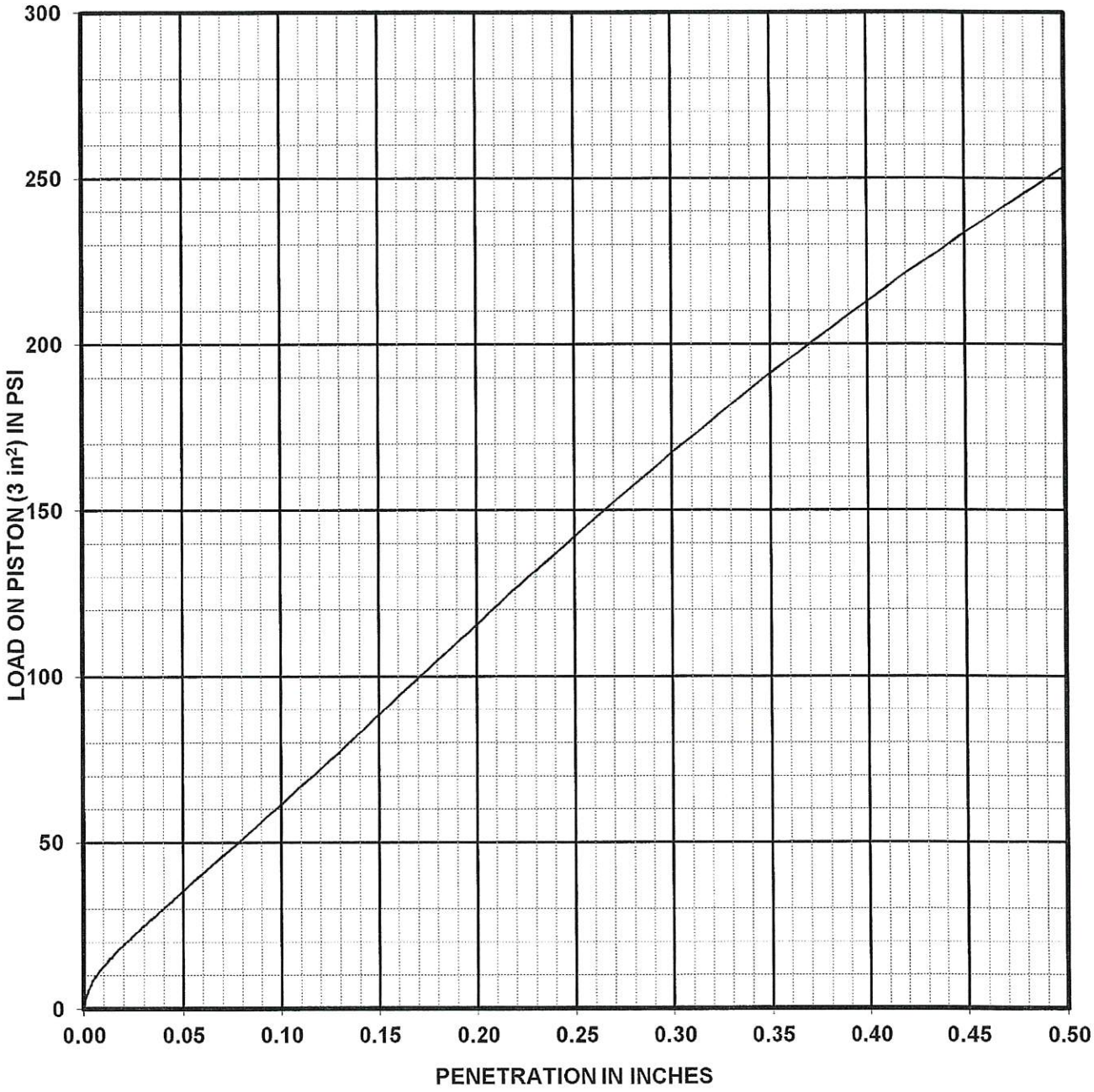
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 3.1* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 122

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 2-5 at 1' to 2' CS#: 13337
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 95 hours

Dry Density: as molded 111 pcf
after soaking 113 pcf
Swell: after soaking -0.4 percent

Moisture Content: as molded 16 percent
top 1-inch after soaking 16 percent
average after soaking 16 percent

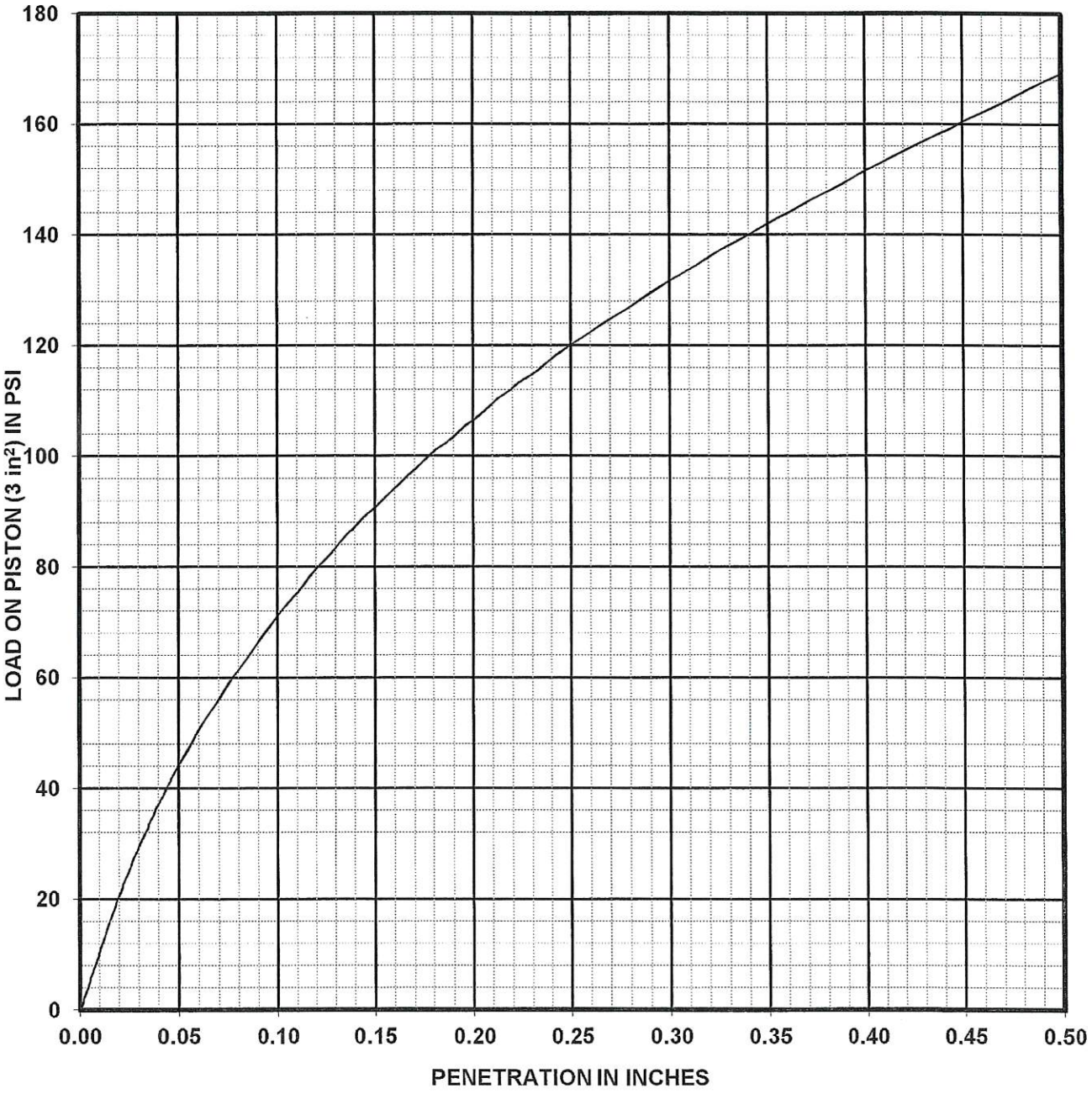
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 4.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 123

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-6 at 1' to 2' CS#: 13338
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 90 hours

Dry Density: as molded 103 pcf
after soaking 103 pcf
Swell: after soaking 0.2 percent

Moisture Content: as molded 19 percent
top 1-inch after soaking 21 percent
average after soaking 22 percent

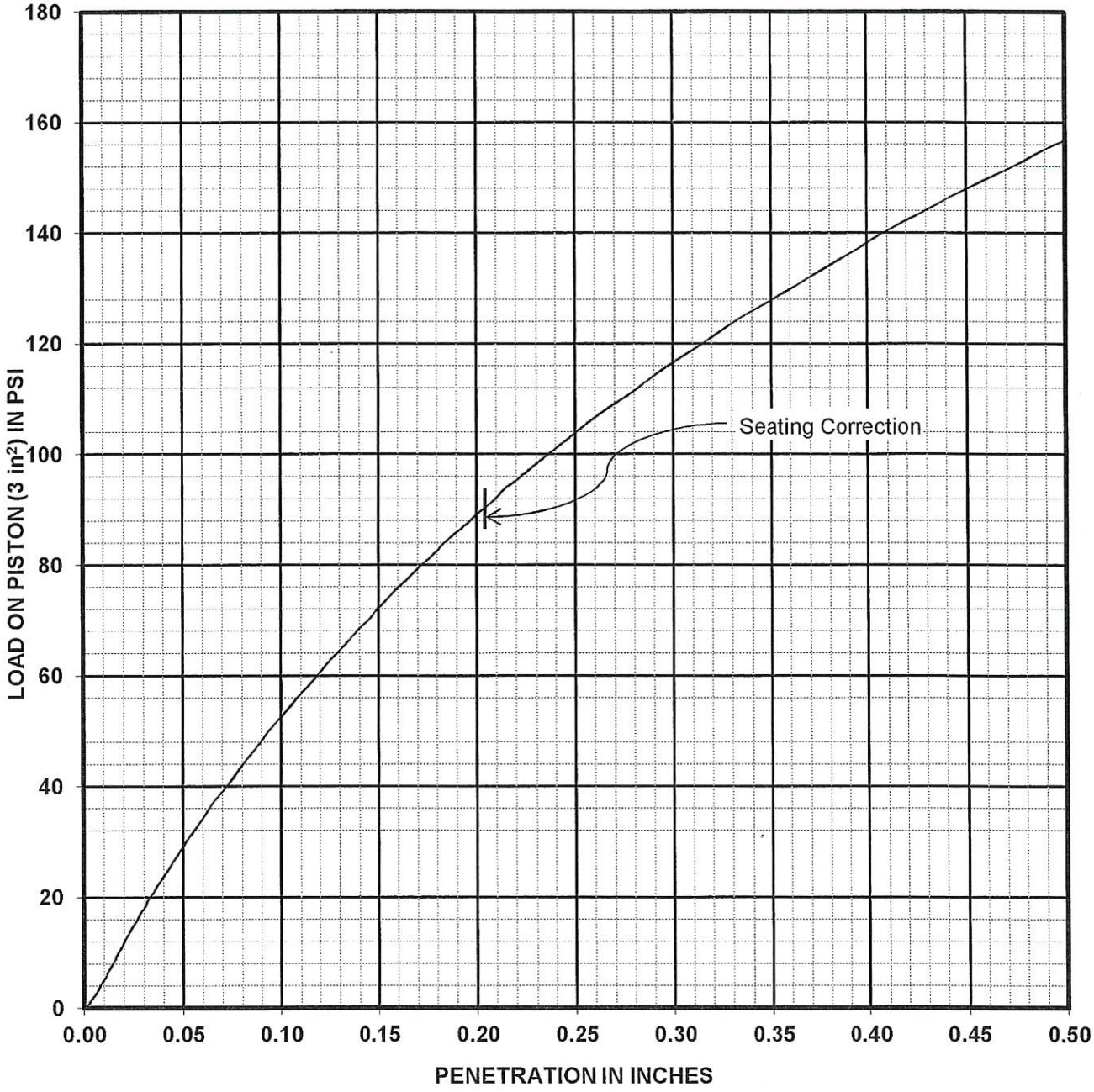
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 3.7* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 124

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 2-7 at 1' to 2' CS#: 13339
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 89 hours

Dry Density: as molded 110 pcf
after soaking 110 pcf
Swell: after soaking 0.3 percent

Moisture Content: as molded 17 percent
top 1-inch after soaking 18 percent
average after soaking 18 percent

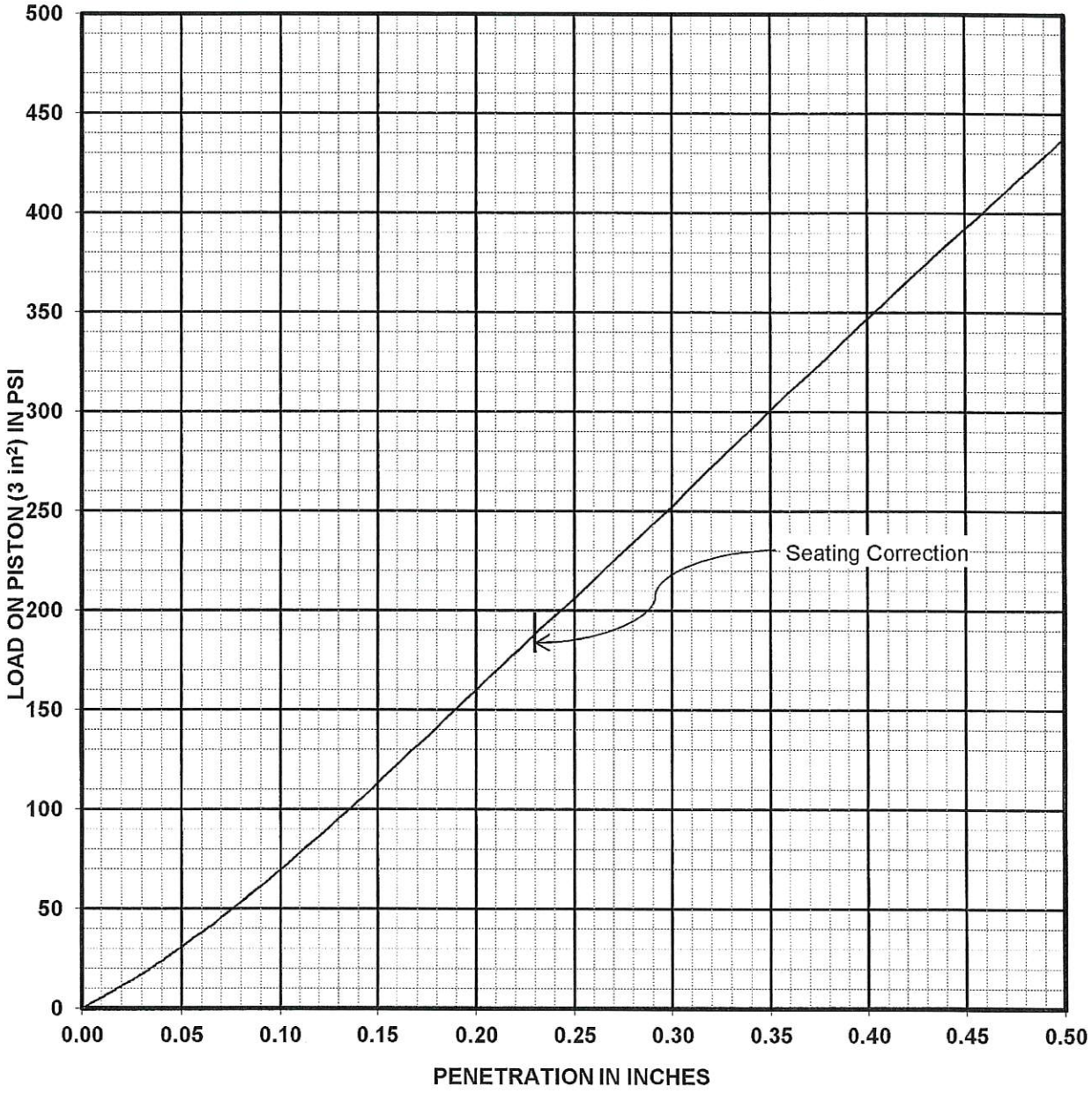
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **3.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 125

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 2-8 at 1' to 2' CS#: 13340
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 90 hours

Dry Density:	as molded	109	pcf	Moisture Content:	as molded	15	percent
	after soaking	110	pcf		top 1-inch after soaking	16	percent
Swell:	after soaking	0.0	percent		average after soaking	16	percent

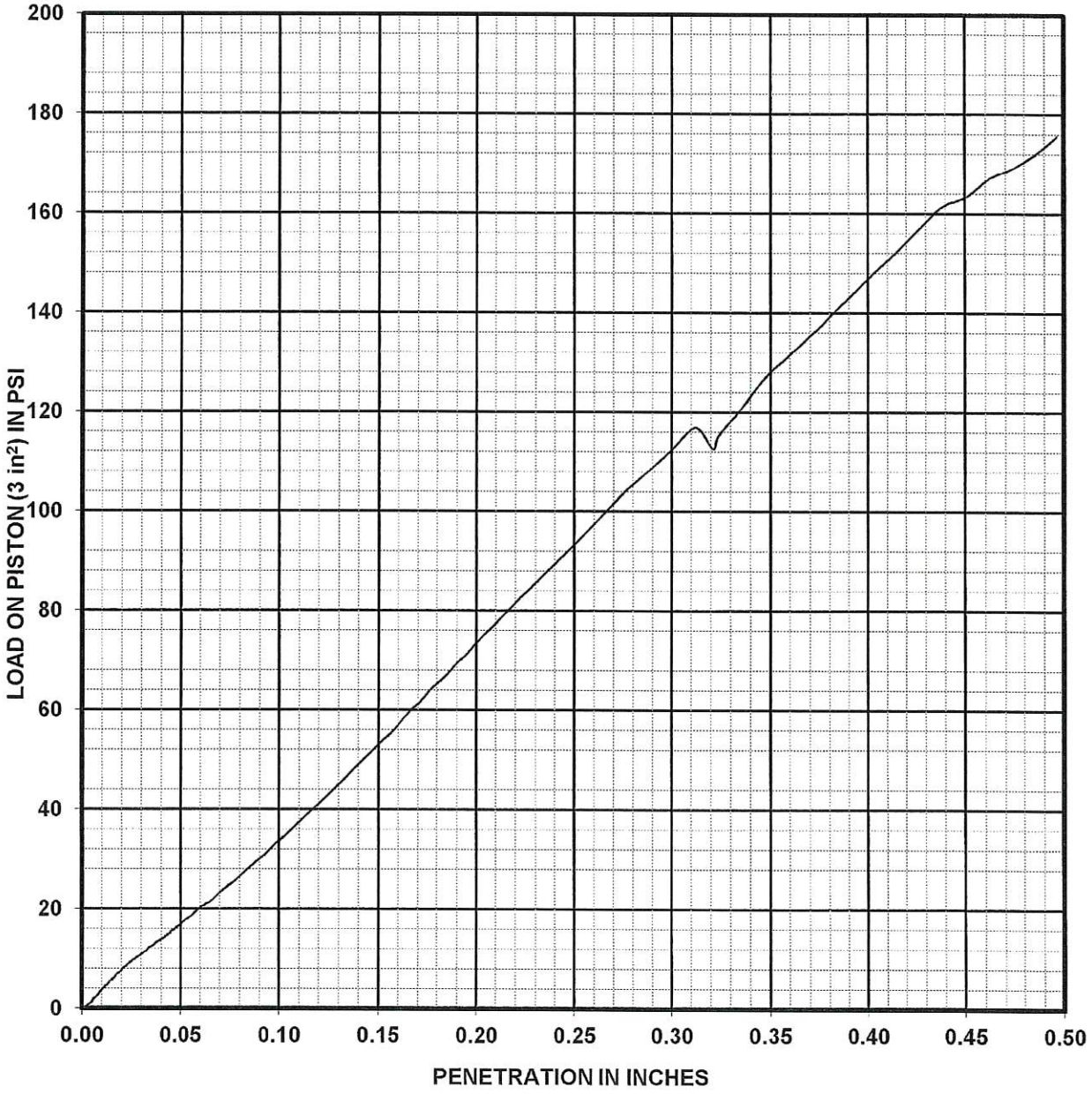
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **7.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 126

Applied Geotechnical Engineering Consultants, Inc.



Sample of Clayey Gravel with Sand (GC)
Location: TP 2-9 at 1' to 2' CS#: 13341
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99D, Scalp&Replace

Sample penetration after soaking for 93 hours

Dry Density:	as molded	121	pcf	Moisture Content:	as molded	12	percent
	after soaking	122	pcf		top 1-inch after soaking	13	percent
Swell:	after soaking	-0.4	percent		average after soaking	13	percent

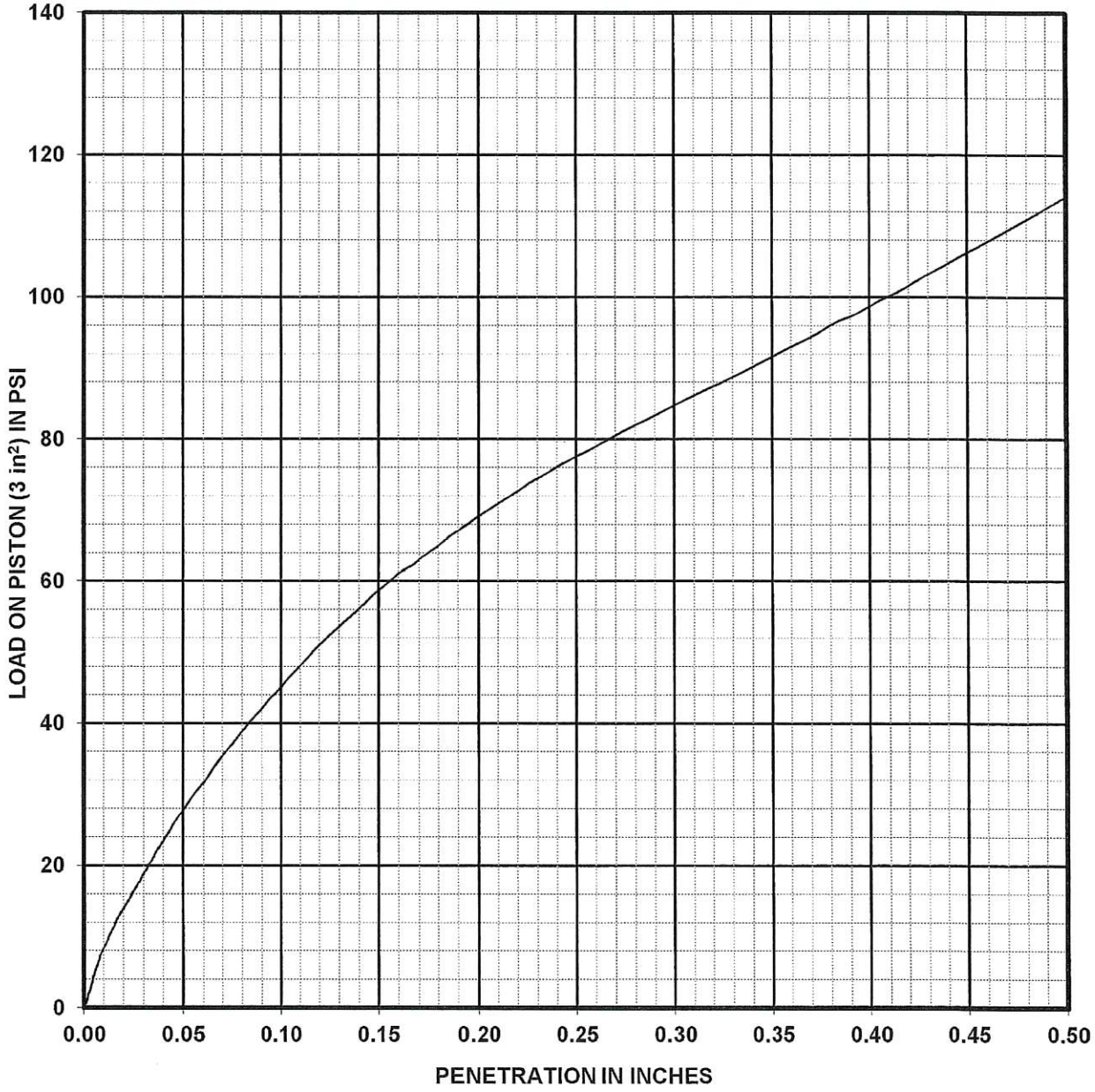
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **2.9*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 127

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-10 at 1' to 2' CS#: 13342
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 93 hours

Dry Density:	as molded	97	pcf	Moisture Content:	as molded	24	percent
	after soaking	98	pcf		top 1-inch after soaking	24	percent
Swell:	after soaking	0.0	percent		average after soaking	24	percent

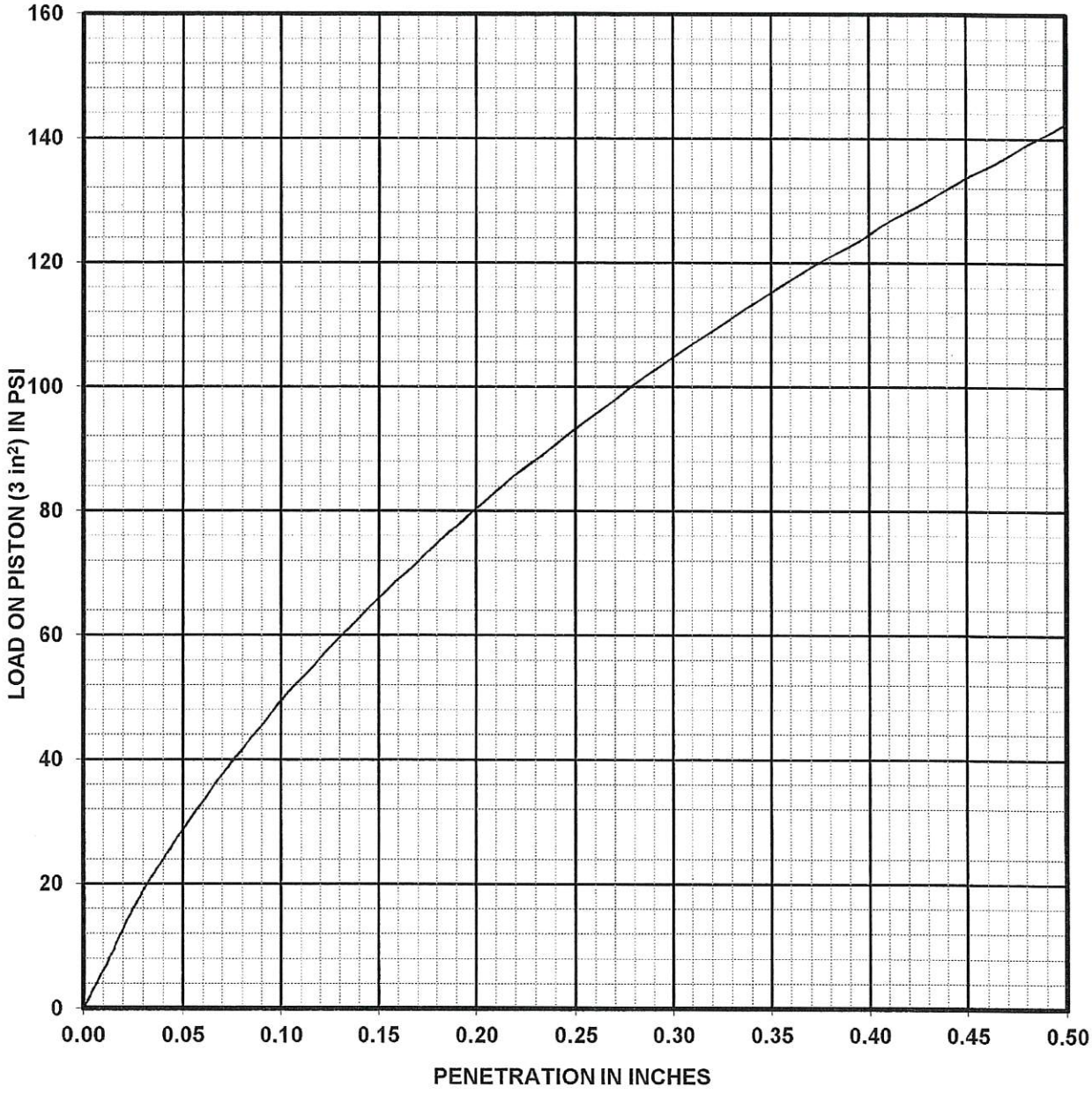
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **2.3*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 128

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 2-11 at 1' to 2' CS#: 13345
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 89 hours

Dry Density:	as molded	102 pcf	Moisture Content:	as molded	20	percent
	after soaking	103 pcf		top 1-inch after soaking	21	percent
Swell:	after soaking	0.1 percent		average after soaking	21	percent

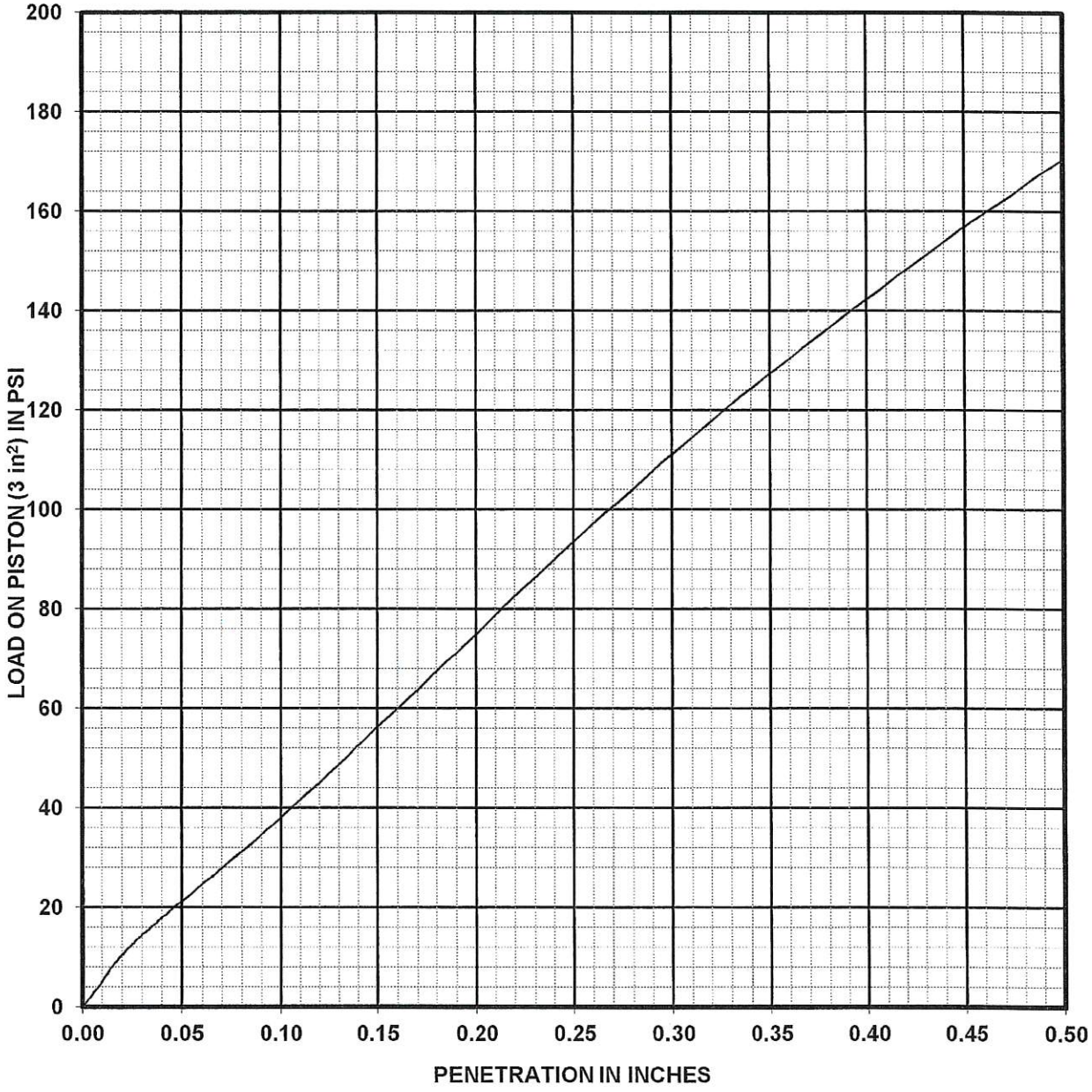
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **2.7*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 129

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-12 at 1' to 2' CS#: 13346
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 90 hours

Dry Density: as molded 107 pcf
after soaking 109 pcf
Swell: after soaking -0.3 percent

Moisture Content: as molded 18 percent
top 1-inch after soaking 18 percent
average after soaking 18 percent

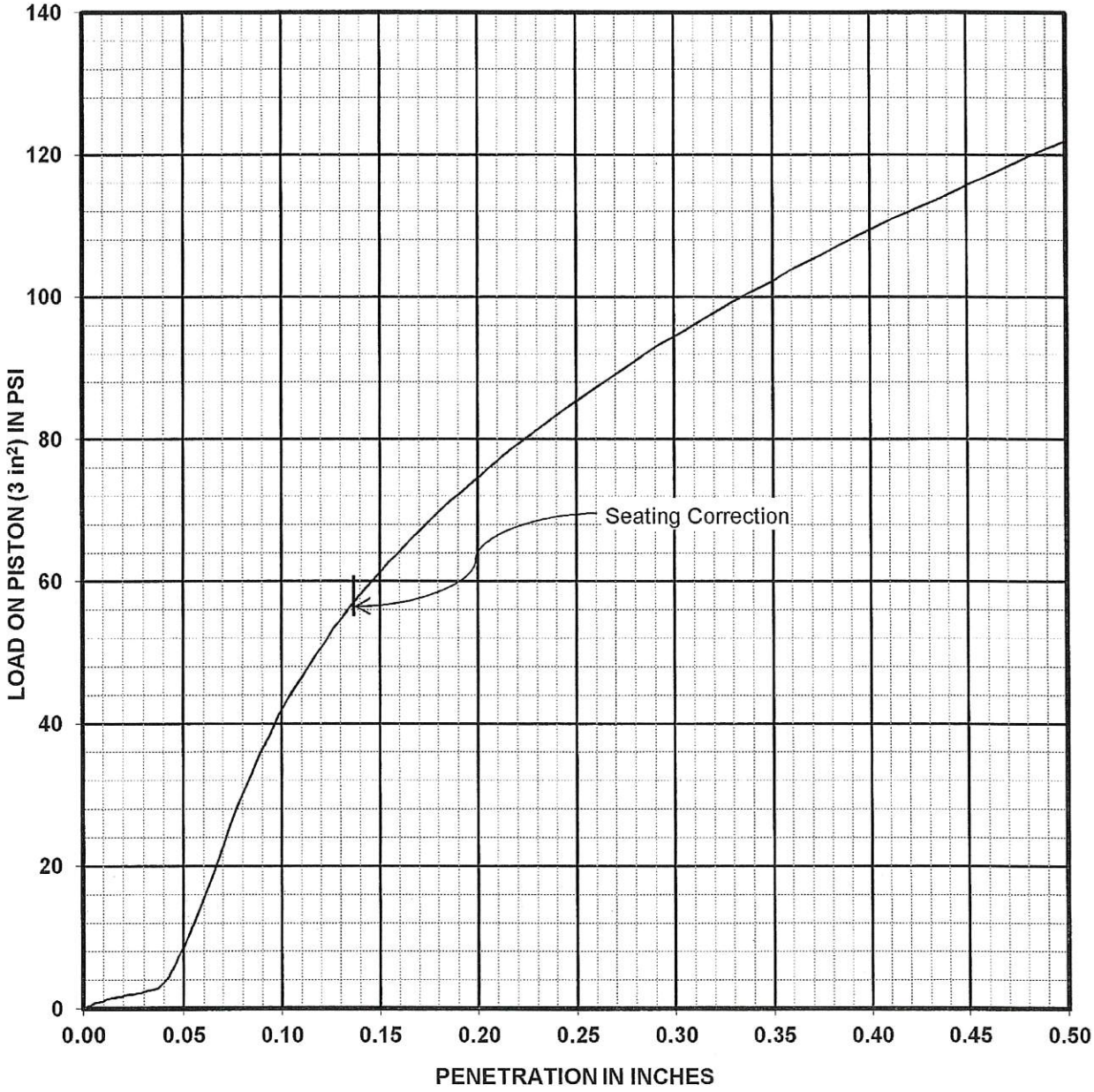
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 2.8*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 130

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 2-13 at 1' to 2' CS#: 13347
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 89 hours

Dry Density:	as molded	99 pcf	Moisture Content:	as molded	24	percent
	after soaking	99 pcf		top 1-inch after soaking	24	percent
Swell:	after soaking	0.2 percent		average after soaking	24	percent

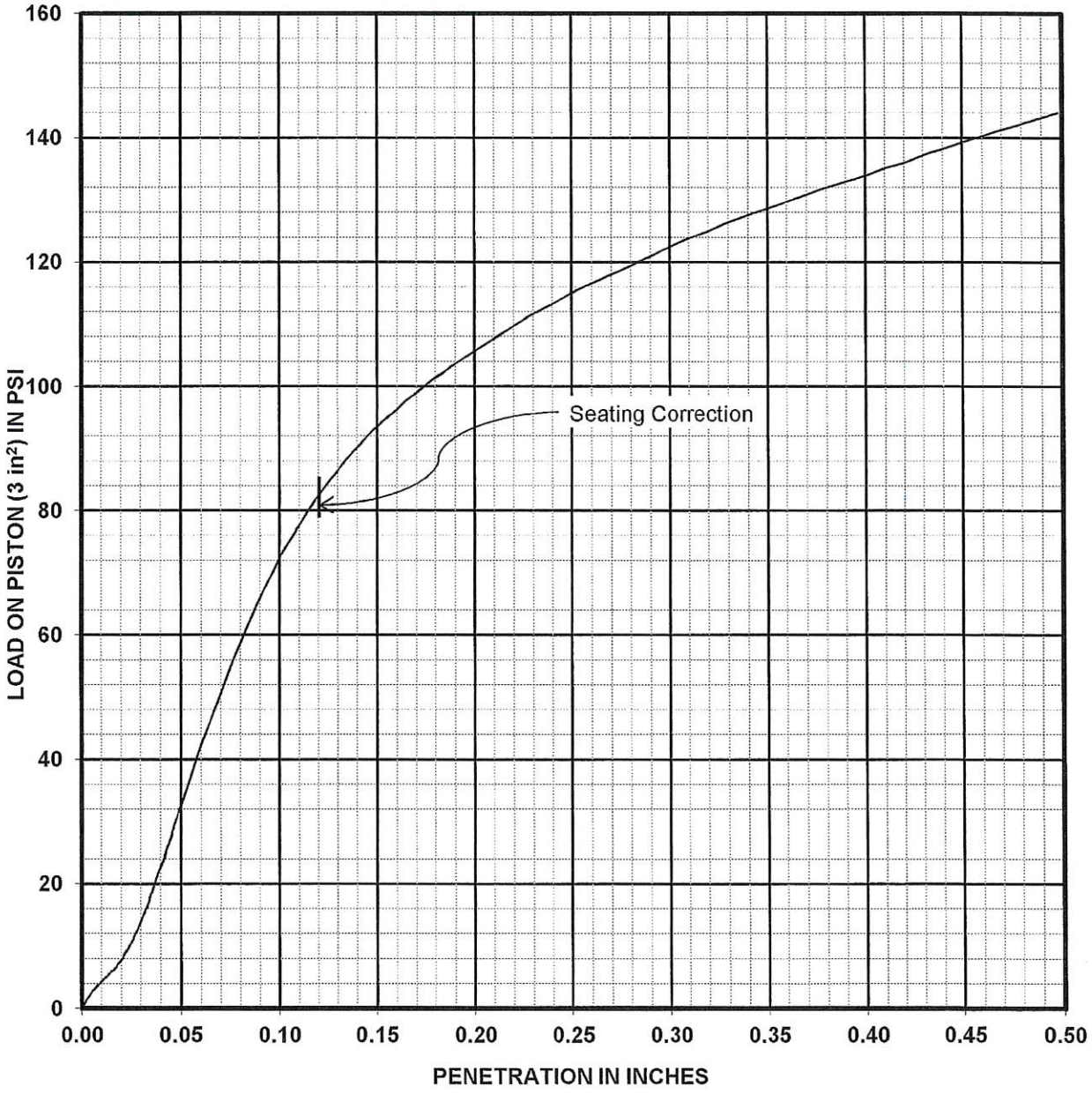
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 2.9* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 131

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 2-14 at 1' to 2' CS#: 13348
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 91 hours

Dry Density:	as molded	97	pcf	Moisture Content:	as molded	22	percent
	after soaking	98	pcf		top 1-inch after soaking	24	percent
Swell:	after soaking	0.5	percent		average after soaking	24	percent

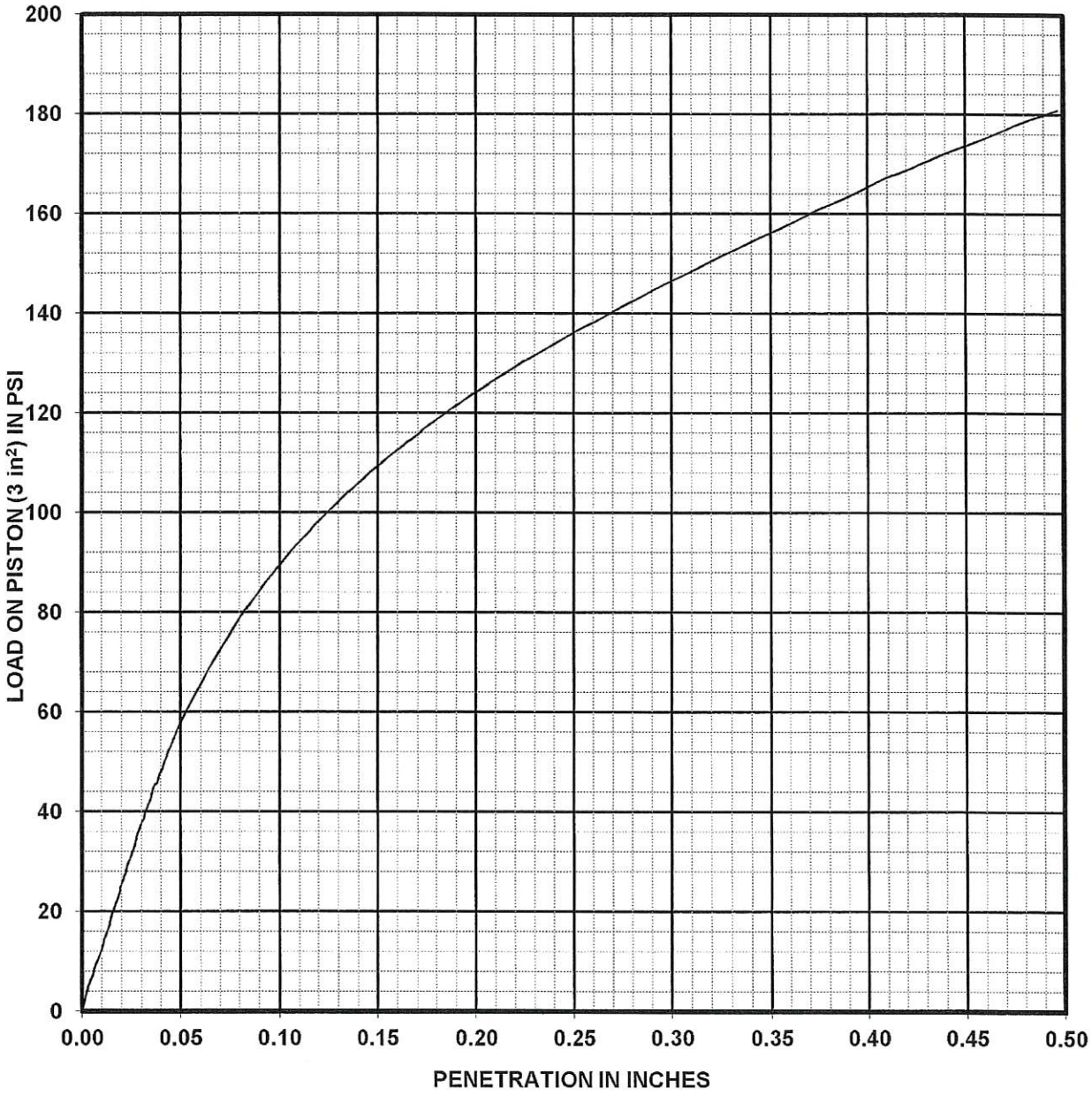
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **4.1*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 132

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 2-15 at 1' to 2' CS#: 13349
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 91 hours

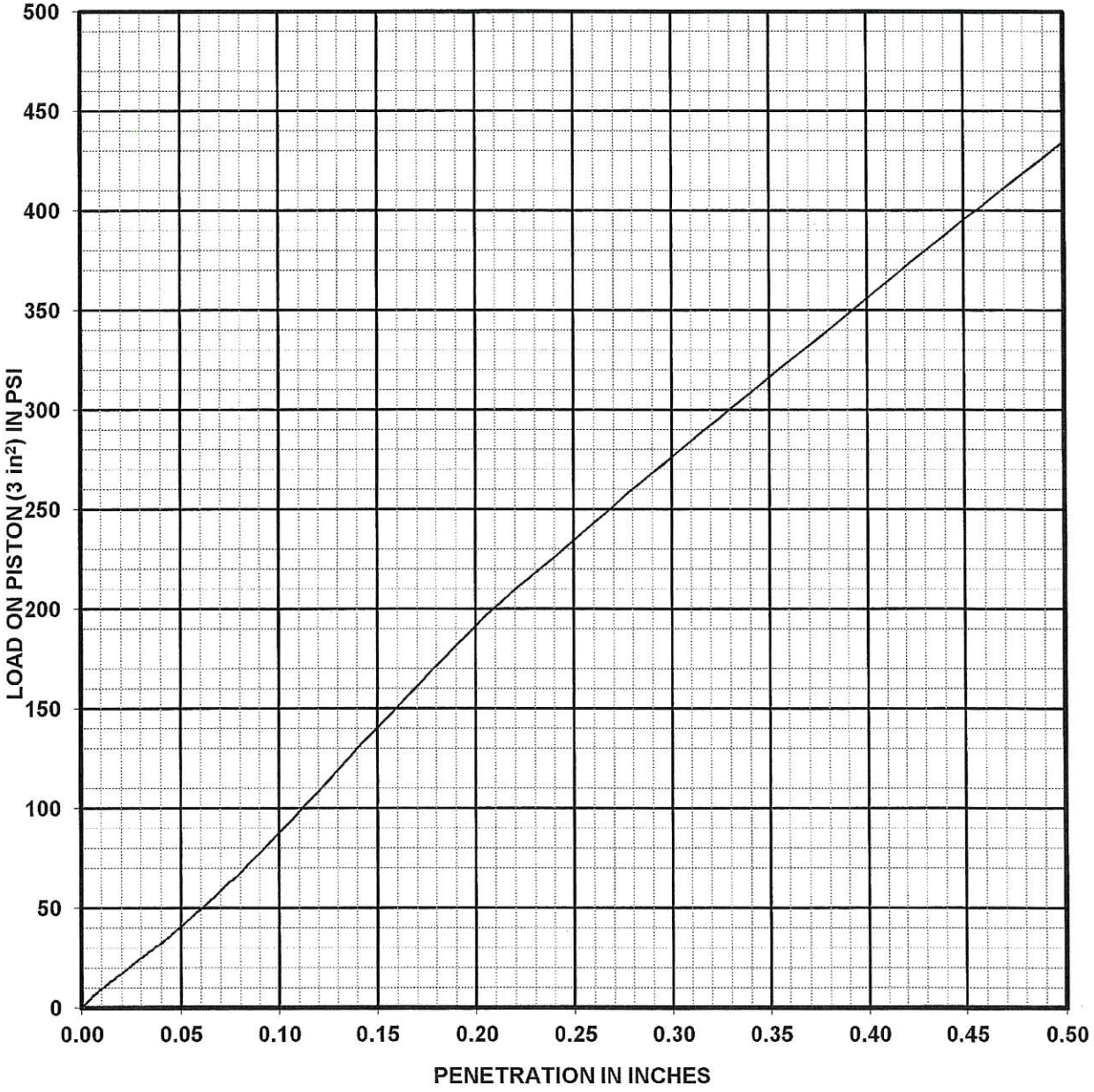
Dry Density: as molded 103 pcf
after soaking 107 pcf
Swell: after soaking -1.8 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Moisture Content: as molded 20 percent
top 1-inch after soaking 21 percent
average after soaking 21 percent

Bearing Ratio of Sample, **CBR =** 4.5* percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 133

Applied Geotechnical Engineering Consultants, Inc.



Sample of Clayey Sand (SC)
Location: TP 2-16 at 1' to 2' CS#: 13350
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 91 hours

Dry Density:	as molded	114	pcf	Moisture Content:	as molded	14	percent
	after soaking	115	pcf		top 1-inch after soaking	14	percent
Swell:	after soaking	-0.2	percent		average after soaking	14	percent

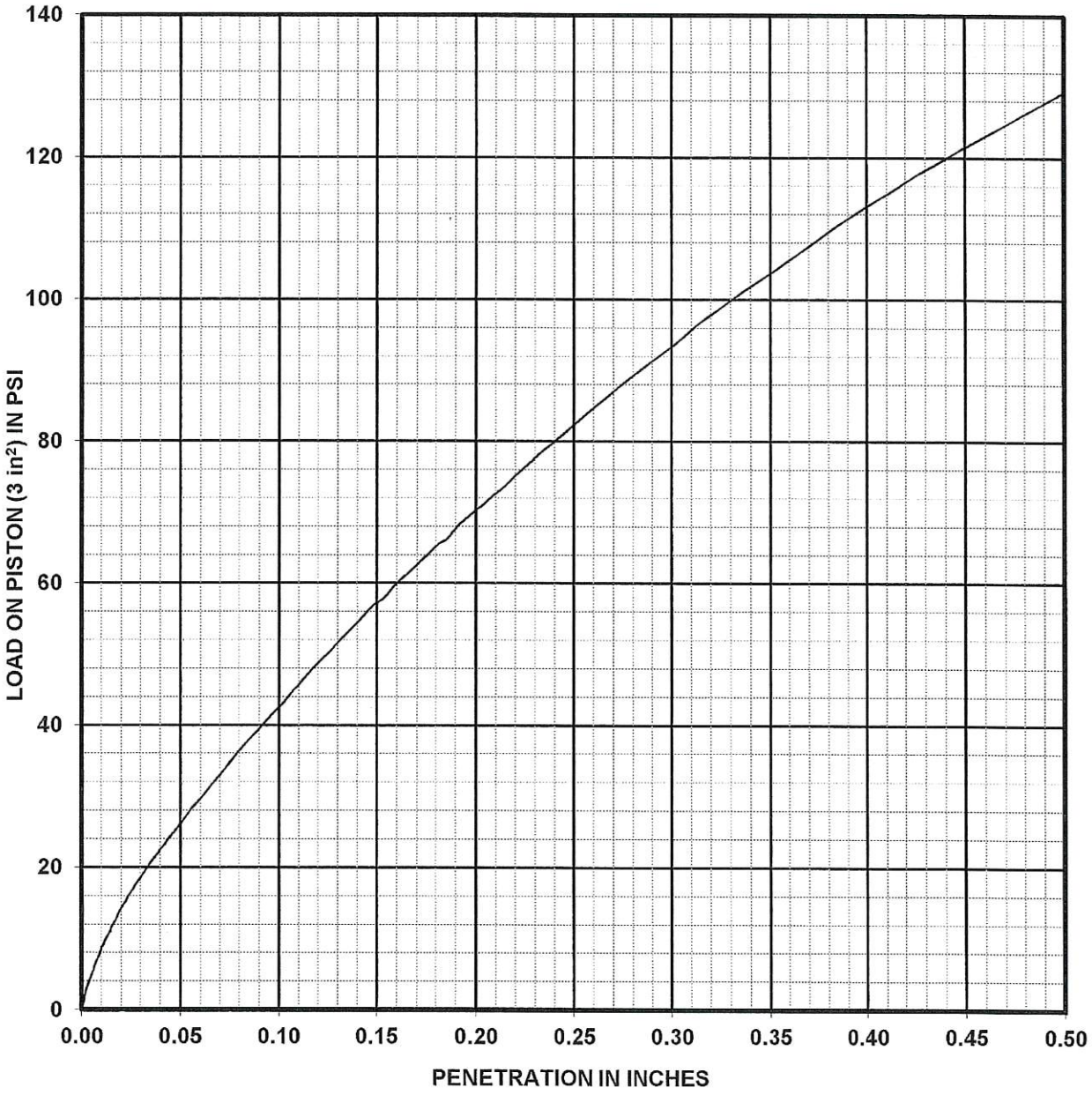
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **9.5*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 134

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 2-17 at 1' to 2' CS#: 13351
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 93 hours

Dry Density:	as molded	110 pcf	Moisture Content:	as molded	18 percent
	after soaking	111 pcf		top 1-inch after soaking	18 percent
Swell:	after soaking	-0.1 percent		average after soaking	18 percent

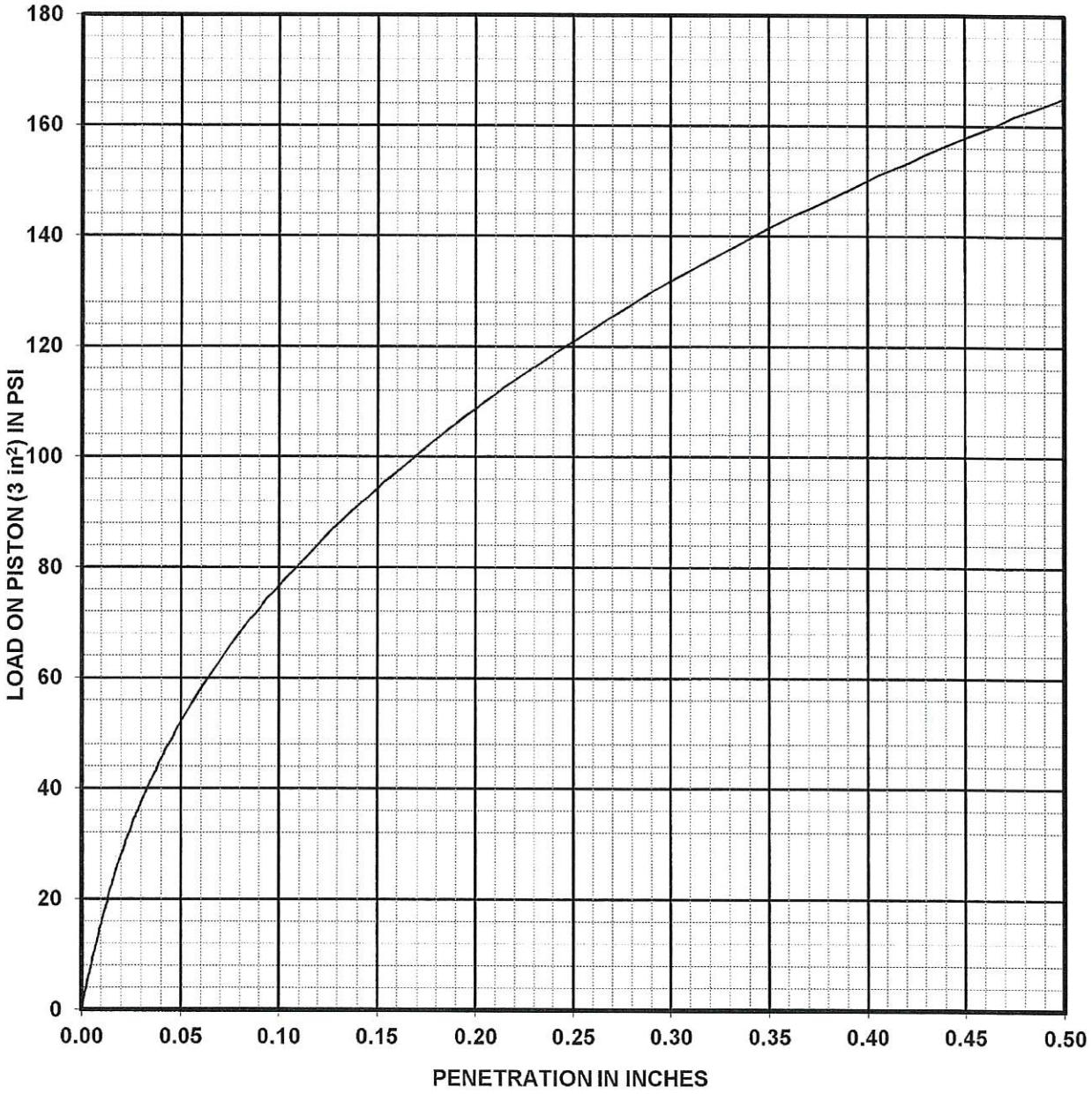
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 2.8*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 135

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-18 at 1' to 2' CS#: 13352
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 94 hours

Dry Density:	as molded	107 pcf	Moisture Content:	as molded	18	percent
	after soaking	109 pcf		top 1-inch after soaking	18	percent
Swell:	after soaking	0.0 percent		average after soaking	18	percent

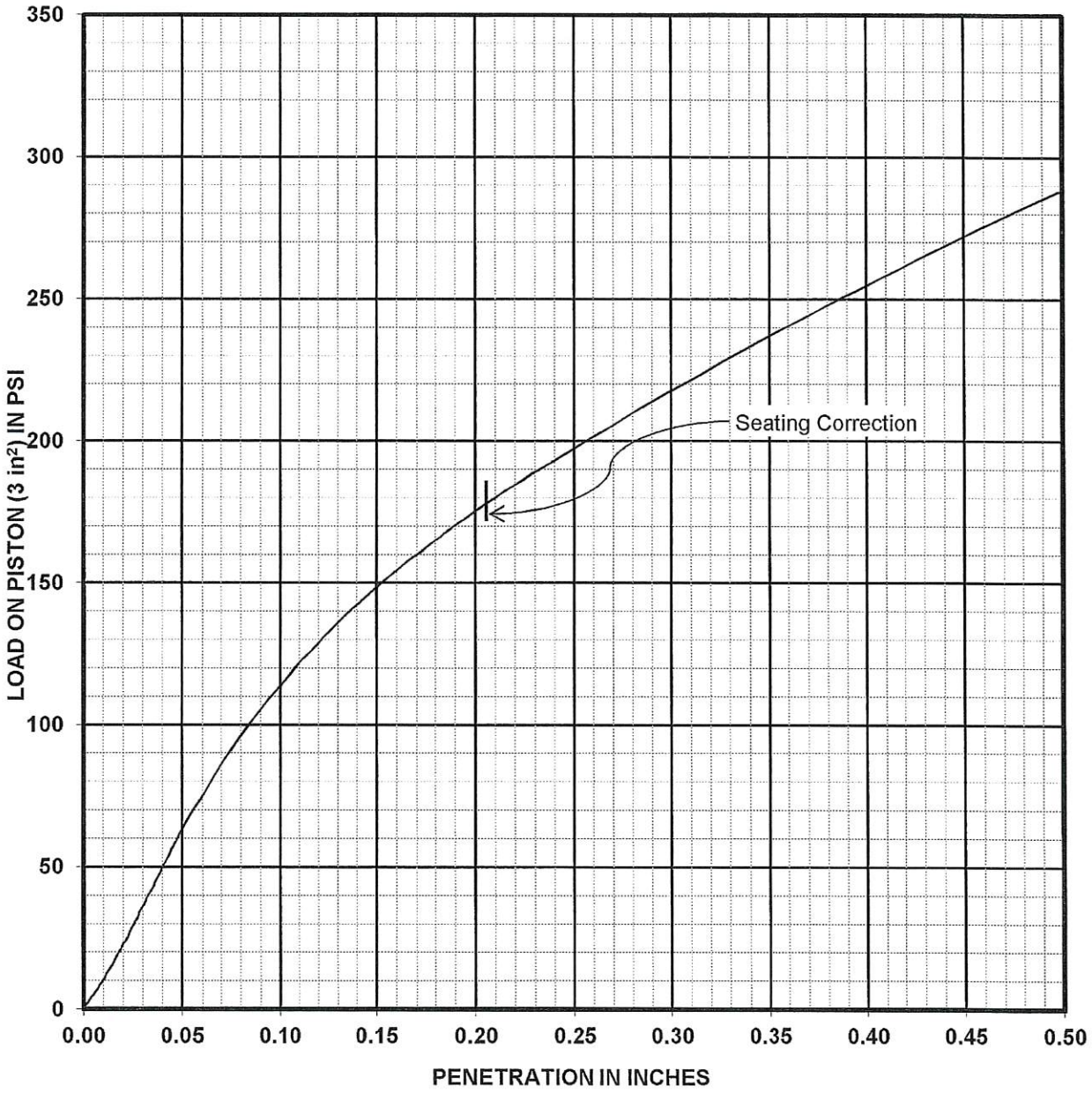
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **3.8*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 136

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 2-19 at 1' to 2' CS#: 13353
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 93 hours

Dry Density:	as molded	102 pcf	Moisture Content:	as molded	19	percent
	after soaking	103 pcf		top 1-inch after soaking	21	percent
Swell:	after soaking	0.3 percent		average after soaking	21	percent

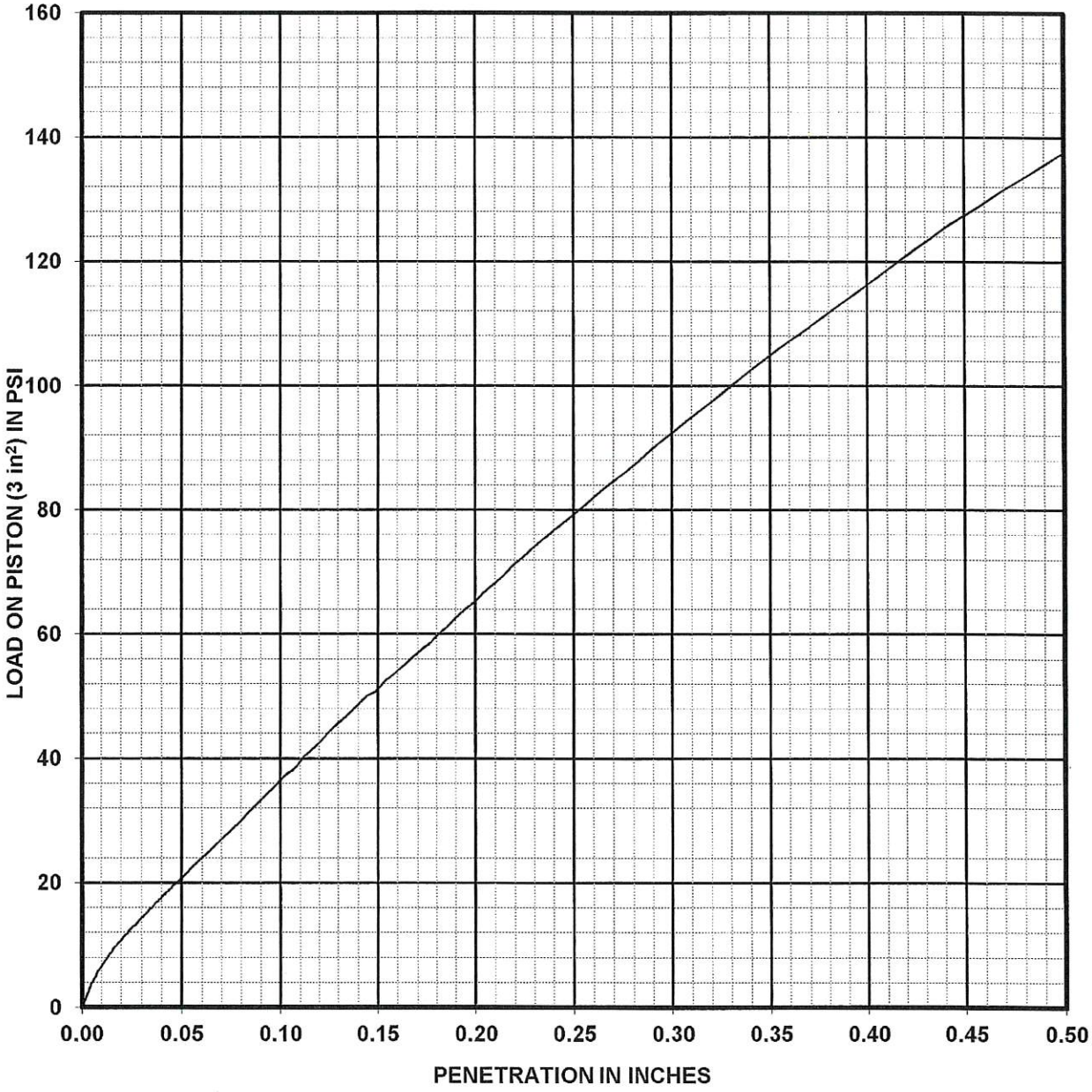
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 5.9*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 137

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-20 at 1' to 2' CS#: 13354
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 89 hours

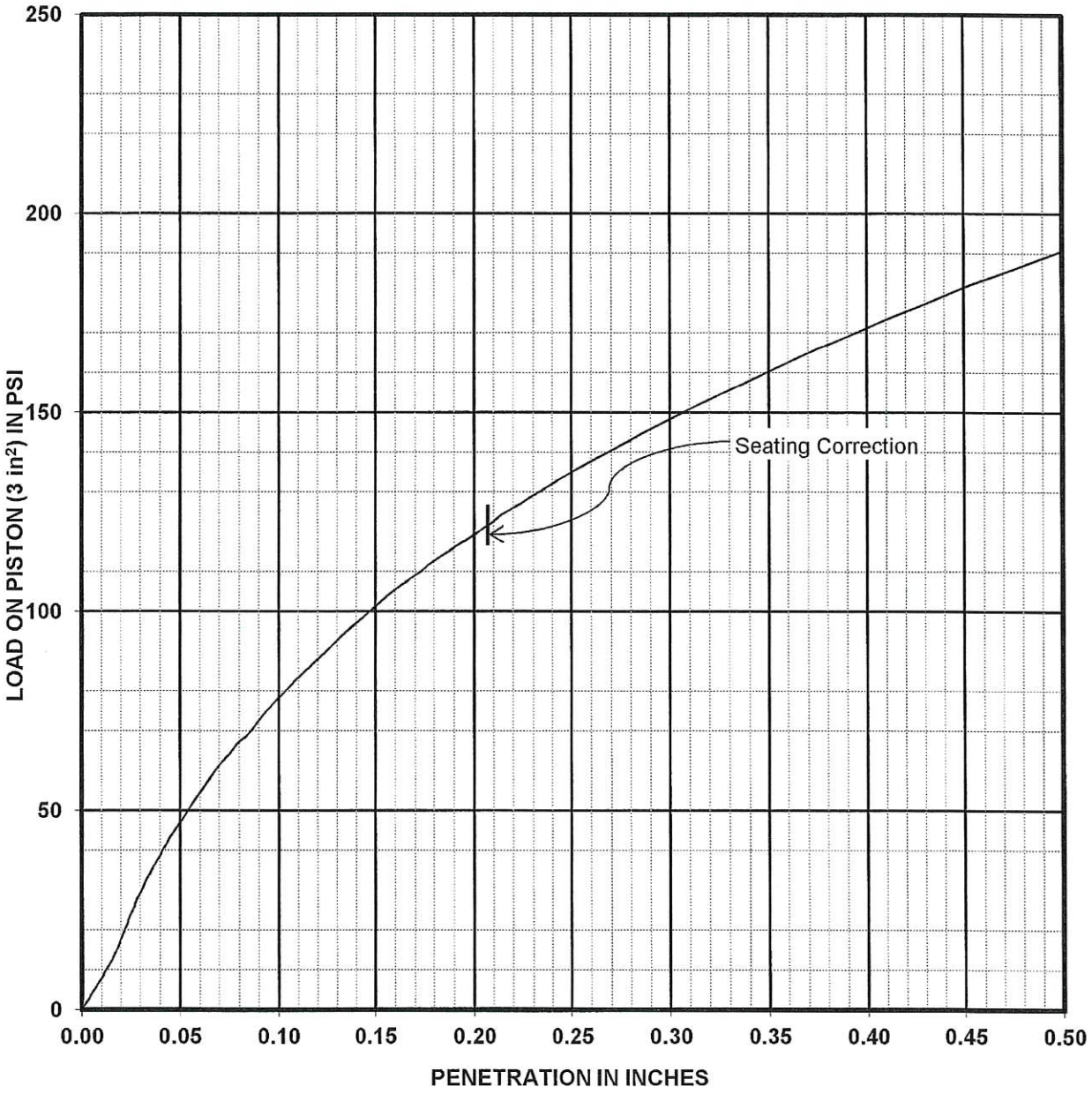
Dry Density: as molded 104 pcf
after soaking 105 pcf
Swell: after soaking -0.1 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Moisture Content: as molded 20 percent
top 1-inch after soaking 20 percent
average after soaking 20 percent

Bearing Ratio of Sample, **CBR = 2.1*** percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 138

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 2-21 at 1' to 2' CS#: 13355
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 93 hours

Dry Density:	as molded	108 pcf	Moisture Content:	as molded	18 percent
	after soaking	110 pcf		top 1-inch after soaking	17 percent
Swell:	after soaking	0.1 percent		average after soaking	17 percent

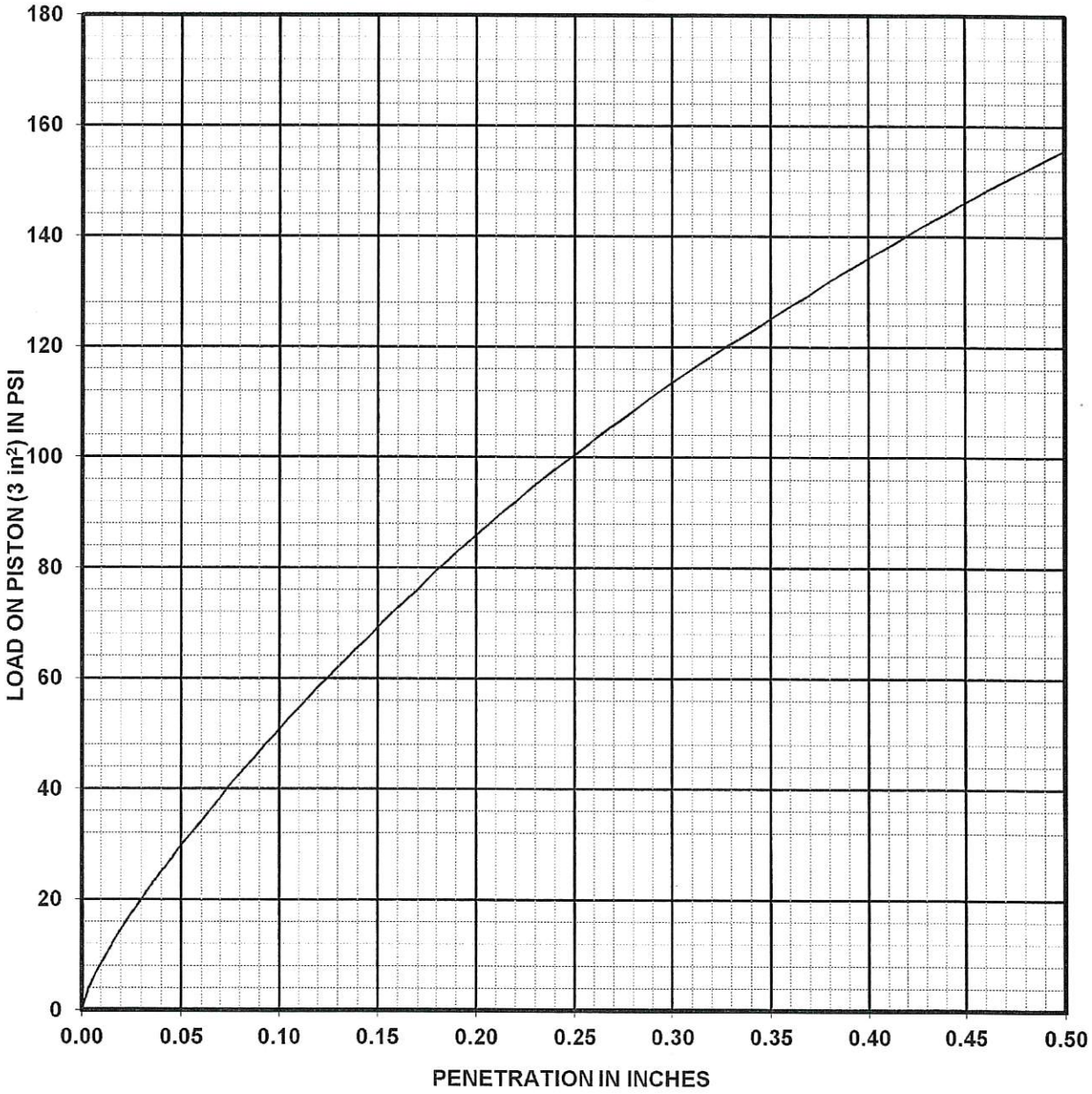
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 4.7* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 139

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay
Location: TP 2-22 at 1' to 2' CS#: 13356
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for -8664 hours

Dry Density: as molded 102 pcf
after soaking 104 pcf
Swell: after soaking 0.0 percent

Moisture Content: as molded 21 percent
top 1-inch after soaking 21 percent
average after soaking 21 percent

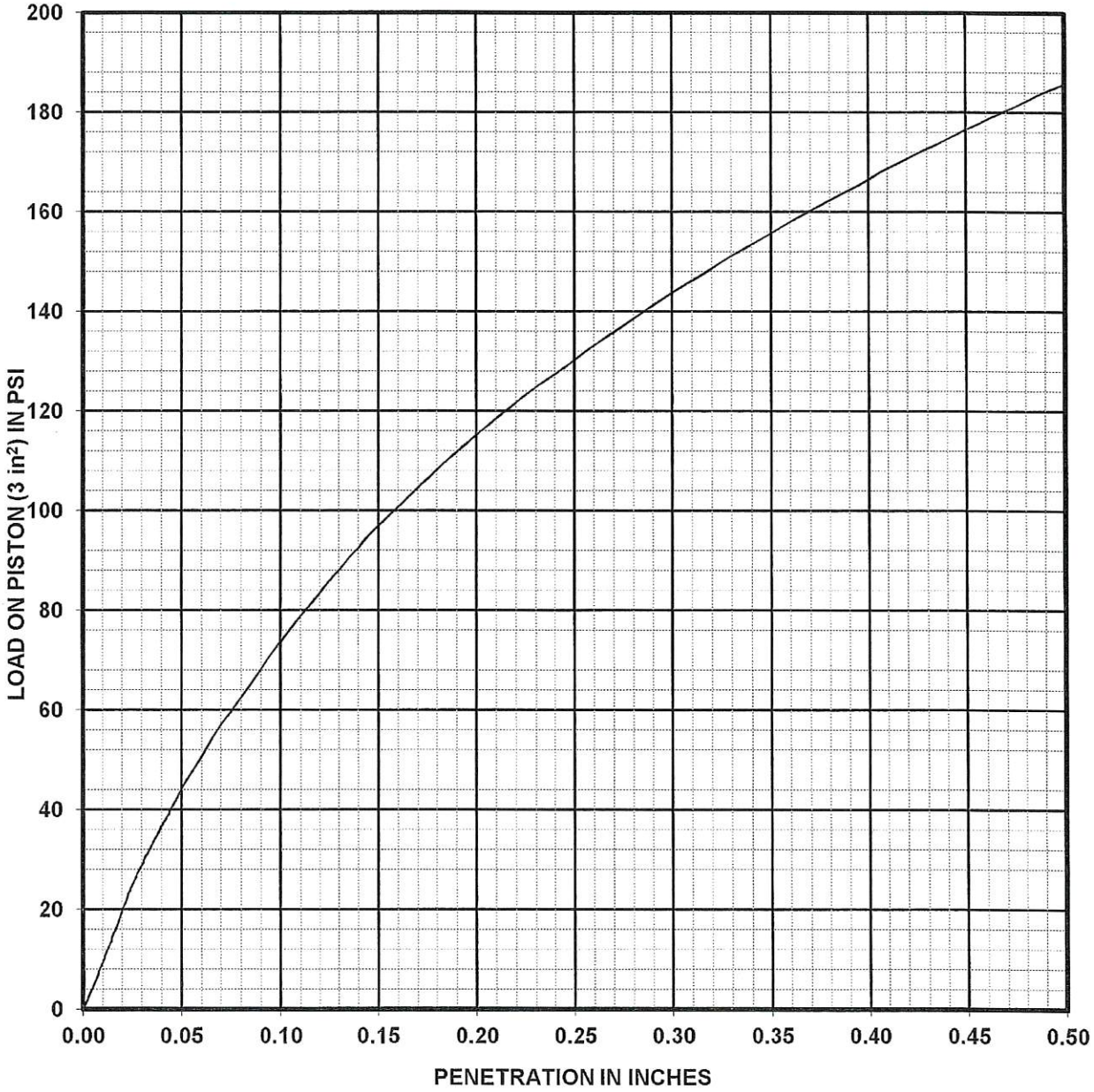
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **3.0*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 140

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-23 at 1' to 2' CS#: 13357
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 98 hours

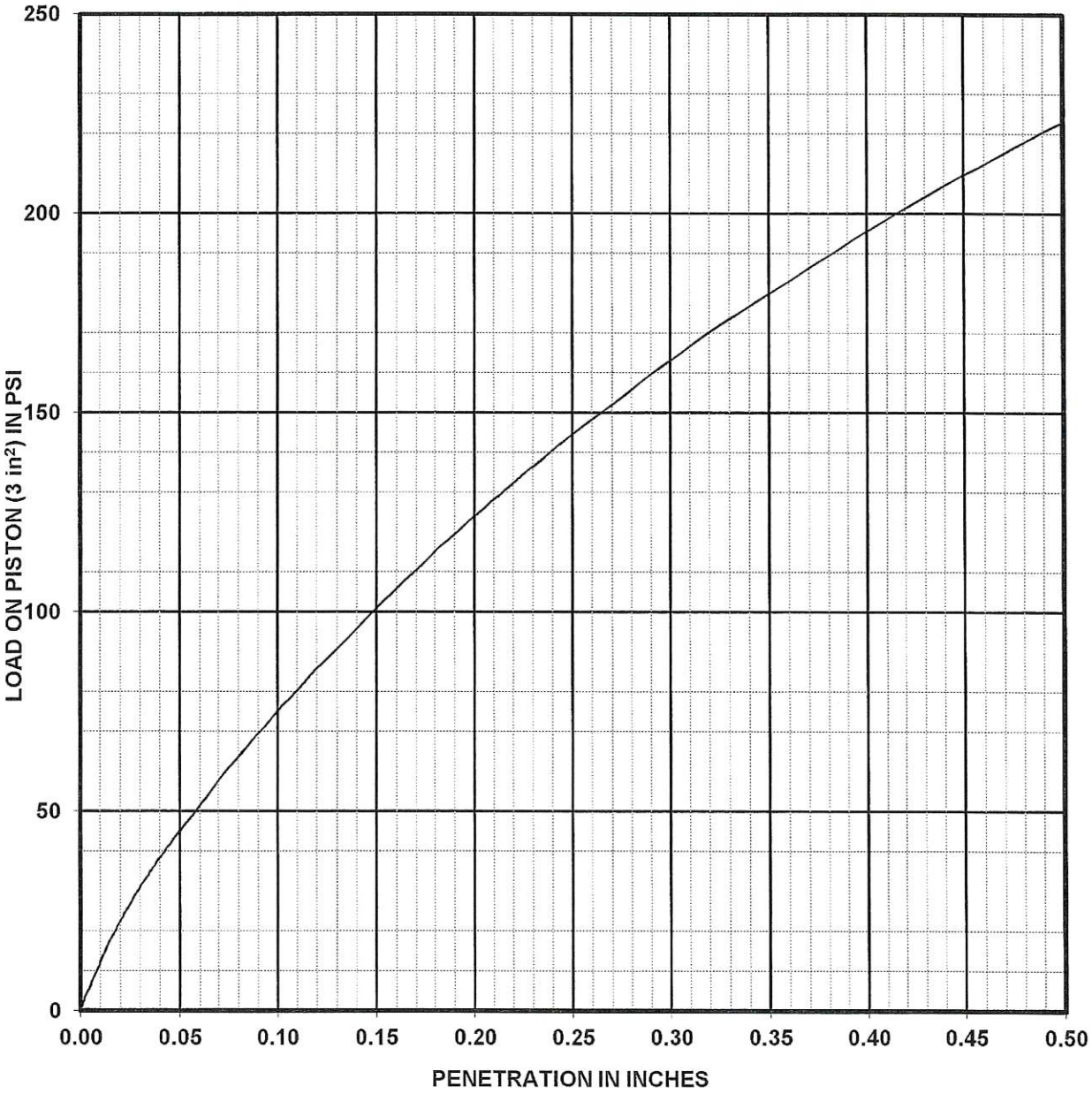
Dry Density: as molded 109 pcf
after soaking 111 pcf
Swell: after soaking 0.1 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Moisture Content: as molded 17 percent
top 1-inch after soaking 17 percent
average after soaking 17 percent

Bearing Ratio of Sample, **CBR = 3.9*** percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 141

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 2-24 at 1' to 2' CS#: 13358
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 90 hours

Dry Density:	as molded 109 pcf		Moisture Content:	as molded 18	percent
	after soaking 110 pcf			top 1-inch after soaking 18	percent
Swell:	after soaking 0.0	percent		average after soaking 18	percent

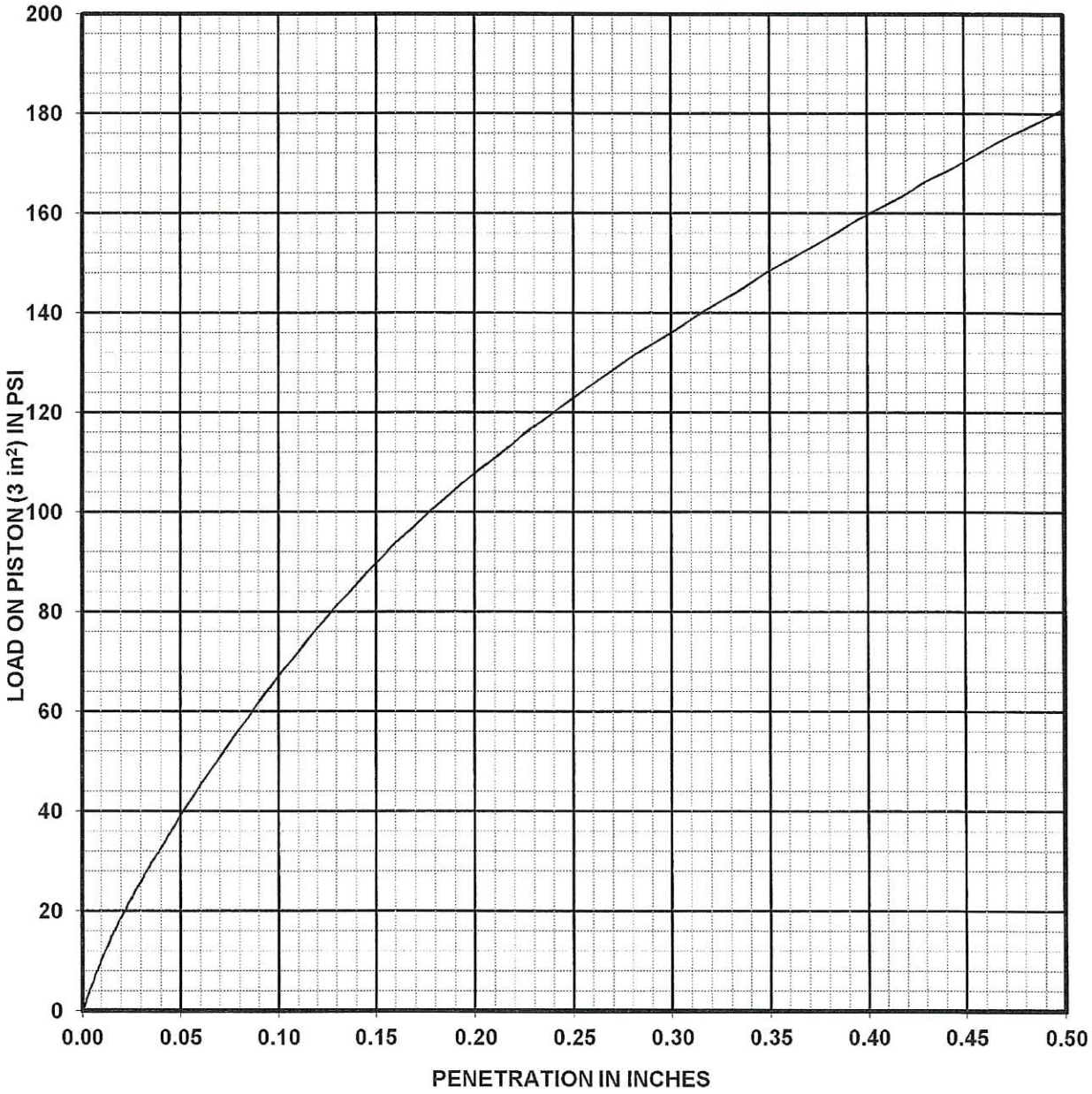
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 4.2*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 142

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 2-25 at 1' to 2' CS#: 13359
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 97 hours

Dry Density:	as molded	100	pcf	Moisture Content:	as molded	20	percent
	after soaking	102	pcf		top 1-inch after soaking	21	percent
Swell:	after soaking	0.1	percent		average after soaking	21	percent

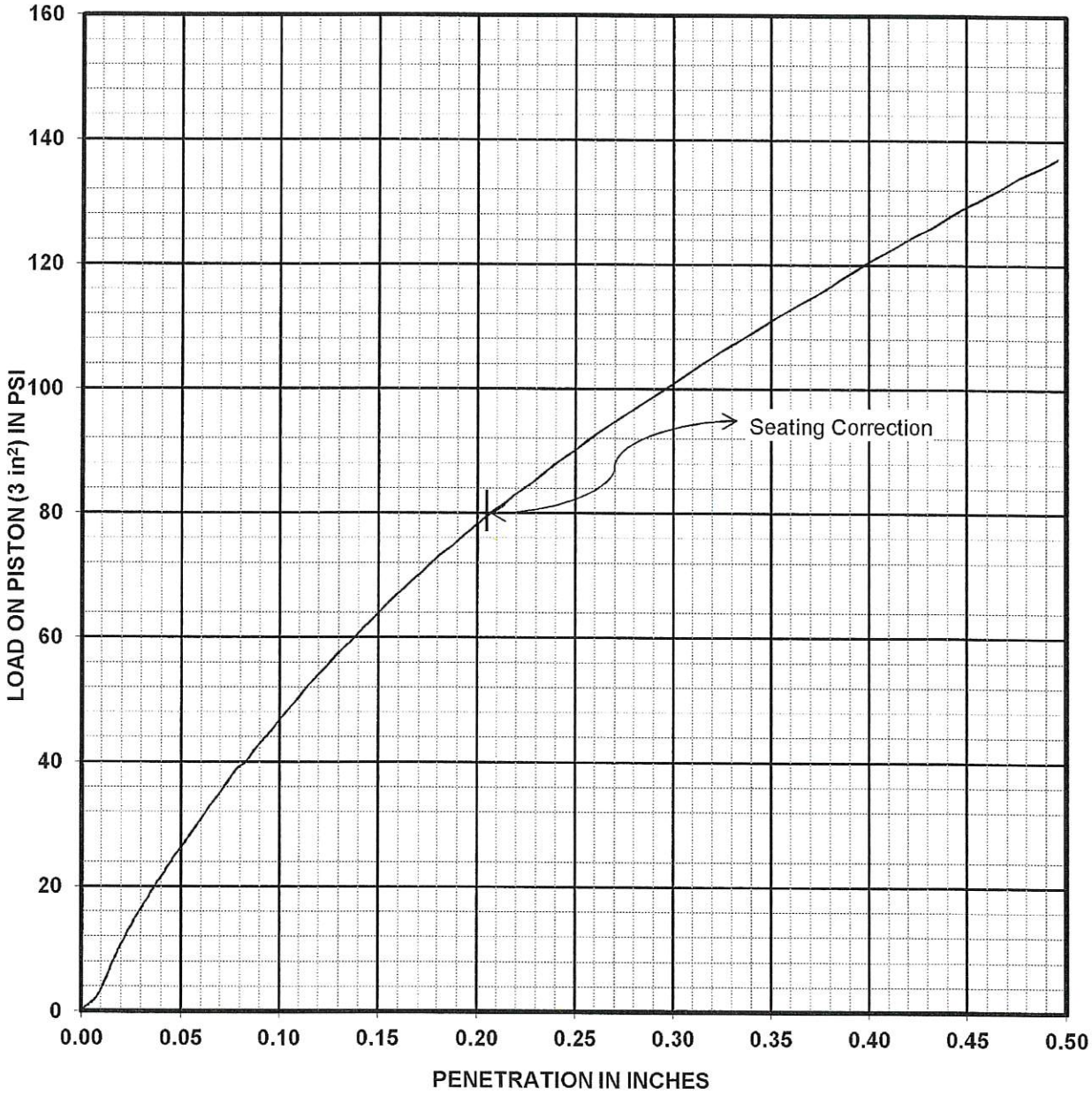
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **3.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 143

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-26 at 1' to 2' CS#: 13360
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 101 hours

Dry Density:	as molded	102 pcf	Moisture Content:	as molded	20	percent
	after soaking	106 pcf		top 1-inch after soaking	20	percent
Swell:	after soaking	-2.1 percent		average after soaking	20	percent

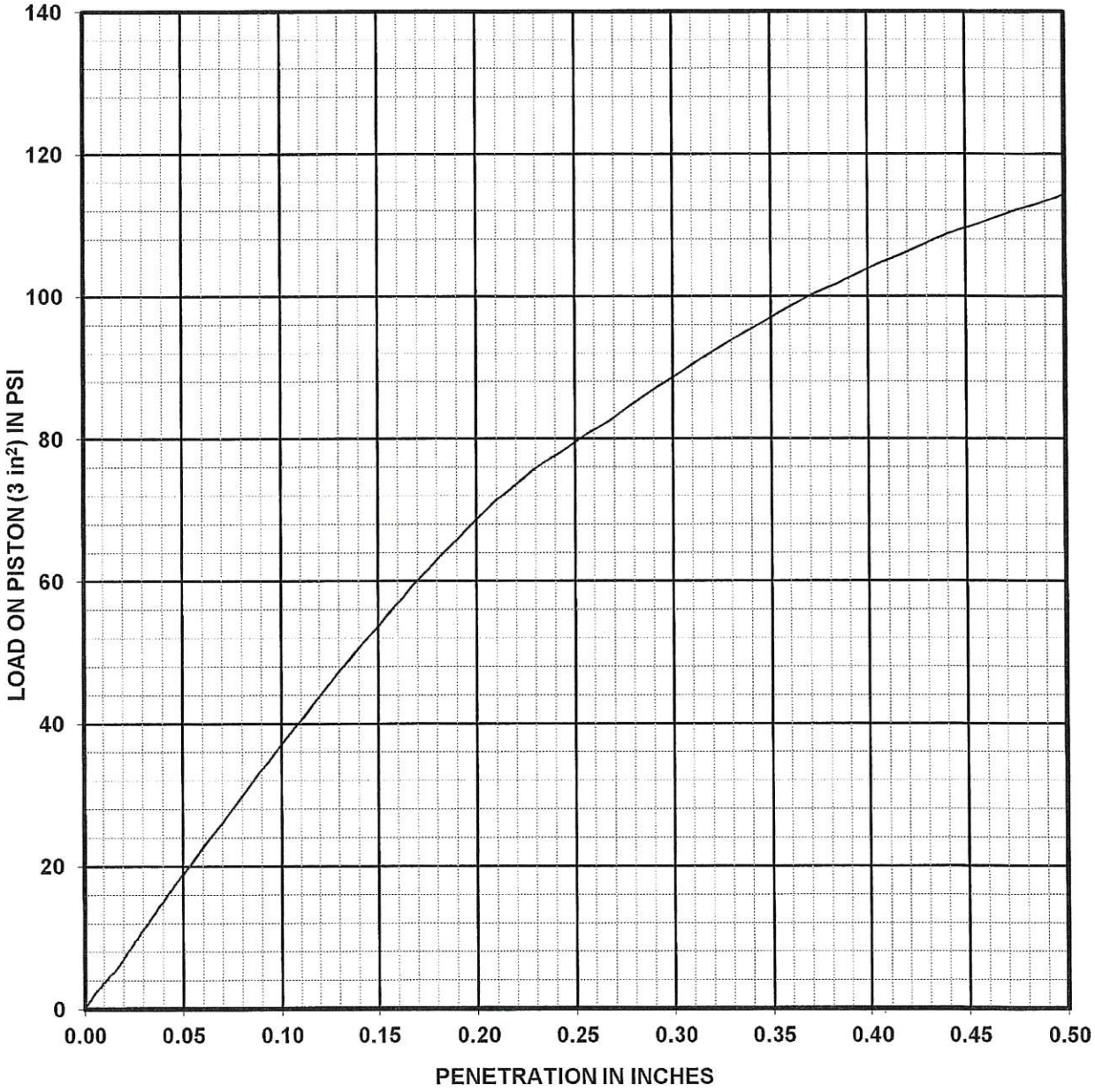
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 2.7* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 144

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-27 at 1' to 2' CS#: 13361
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 92 hours

Dry Density: as molded 109 pcf
after soaking 110 pcf
Swell: after soaking 0.0 percent

Moisture Content: as molded 17 percent
top 1-inch after soaking 17 percent
average after soaking 18 percent

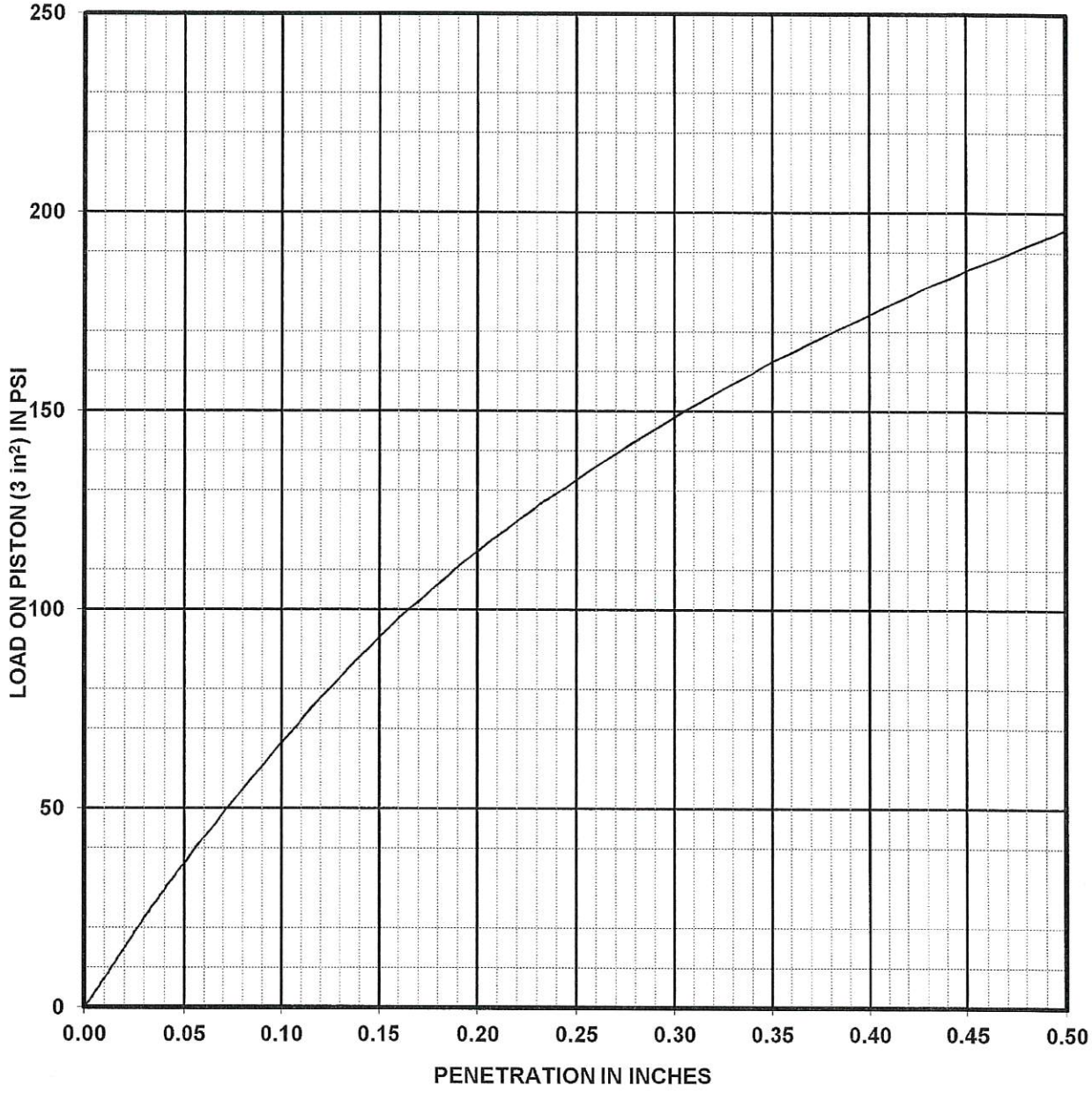
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 2.3*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 145

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 2-28 at 1' to 2' CS#: 13362
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 95 hours

Dry Density:	as molded	107 pcf	Moisture Content:	as molded	18	percent
	after soaking	108 pcf		top 1-inch after soaking	19	percent
Swell:	after soaking	0.0 percent		average after soaking	18	percent

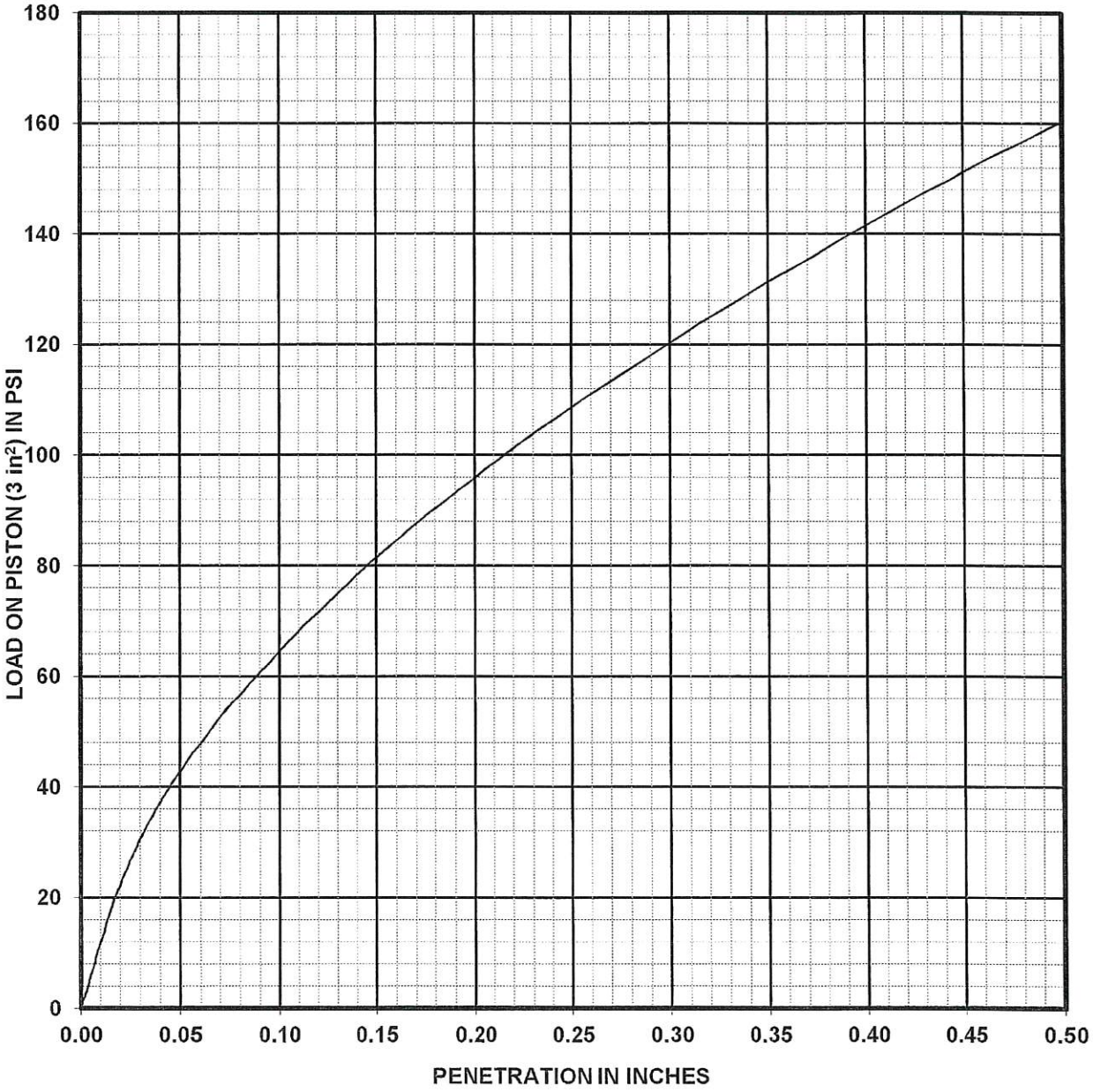
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **4.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 146

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 2-29 at 1' to 2' CS#: 13363
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 102 hours

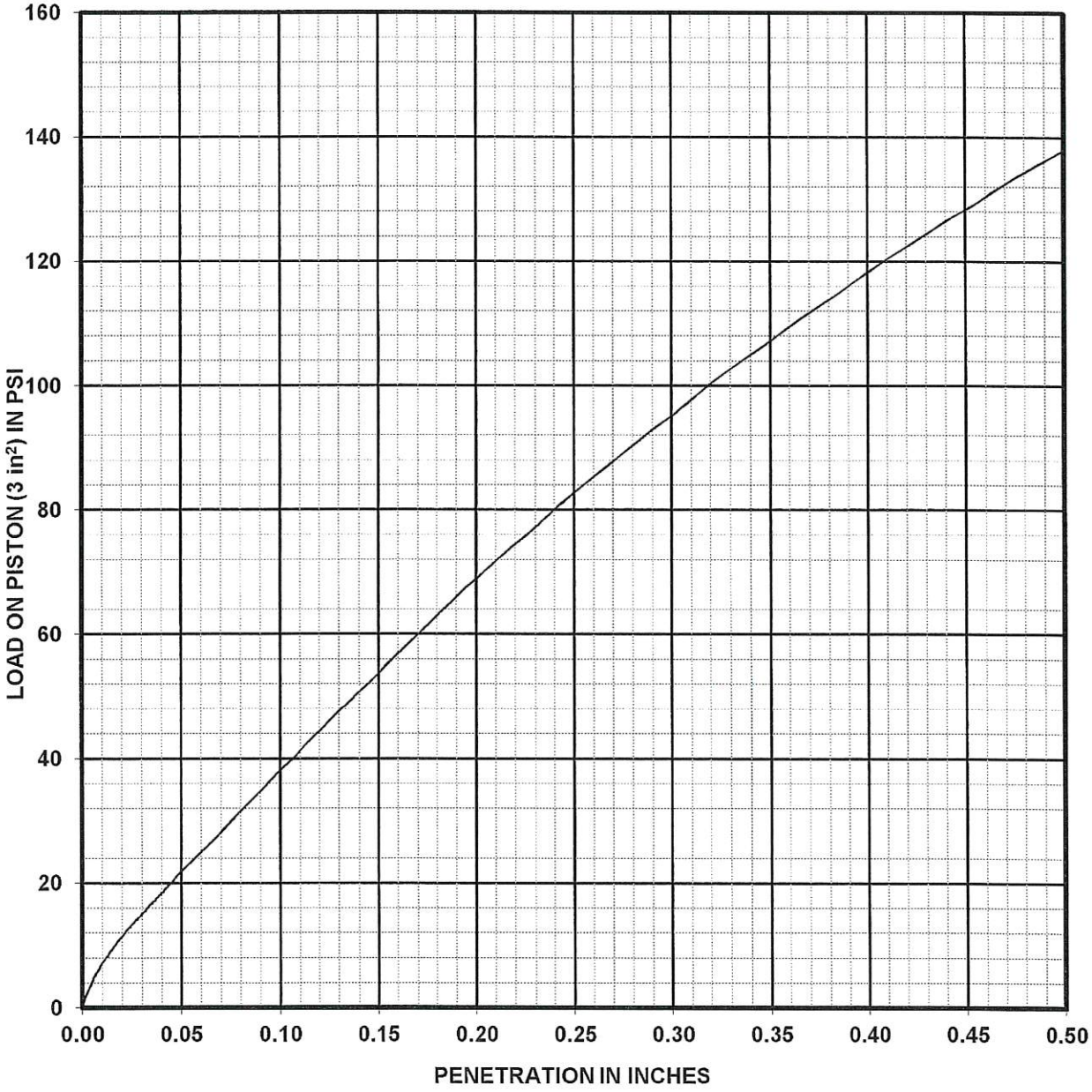
Dry Density: as molded 104 pcf
after soaking 105 pcf
Swell: after soaking 0.5 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Moisture Content: as molded 20 percent
top 1-inch after soaking 22 percent
average after soaking 21 percent

Bearing Ratio of Sample, **CBR =** **3.2*** percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 147

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-30 at 1' to 2' CS#: 13364
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 102 hours

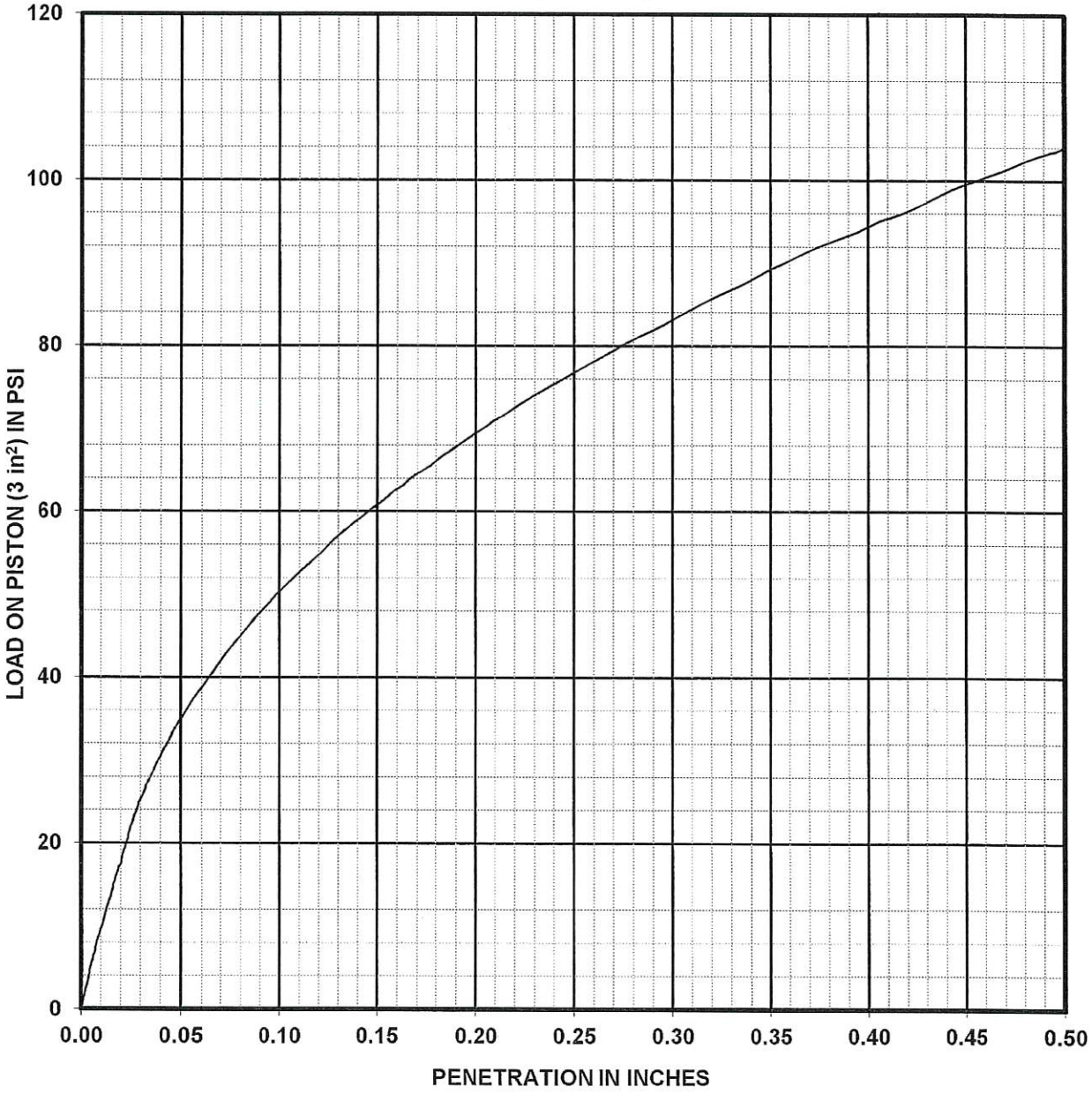
Dry Density: as molded 108 pcf
after soaking 110 pcf
Swell: after soaking -0.1 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Moisture Content: as molded 18 percent
top 1-inch after soaking 18 percent
average after soaking 18 percent

Bearing Ratio of Sample, **CBR = 2.3*** percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 148

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 2-31 at 1' to 2' CS#: 13366
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 89 hours

Dry Density:	as molded	100 pcf	Moisture Content:	as molded	23	percent
	after soaking	101 pcf		top 1-inch after soaking	24	percent
Swell:	after soaking	0.0 percent		average after soaking	23	percent

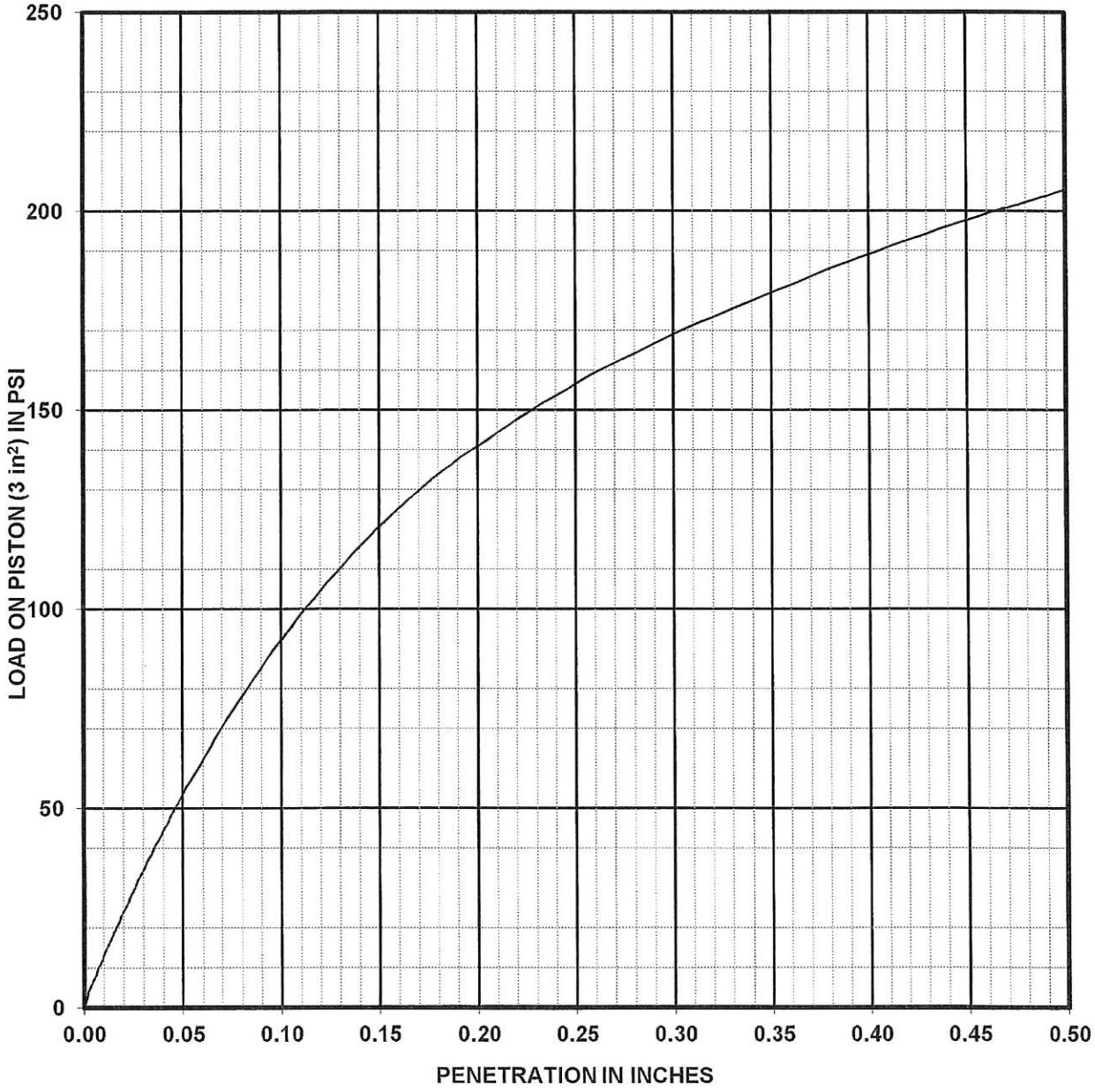
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 2.5* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 149

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-32 at 1' to 2' CS#: 13367
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 89 hours

Dry Density:	as molded	106 pcf	Moisture Content:	as molded	18 percent
	after soaking	106 pcf		top 1-inch after soaking	19 percent
Swell:	after soaking	0.3 percent		average after soaking	19 percent

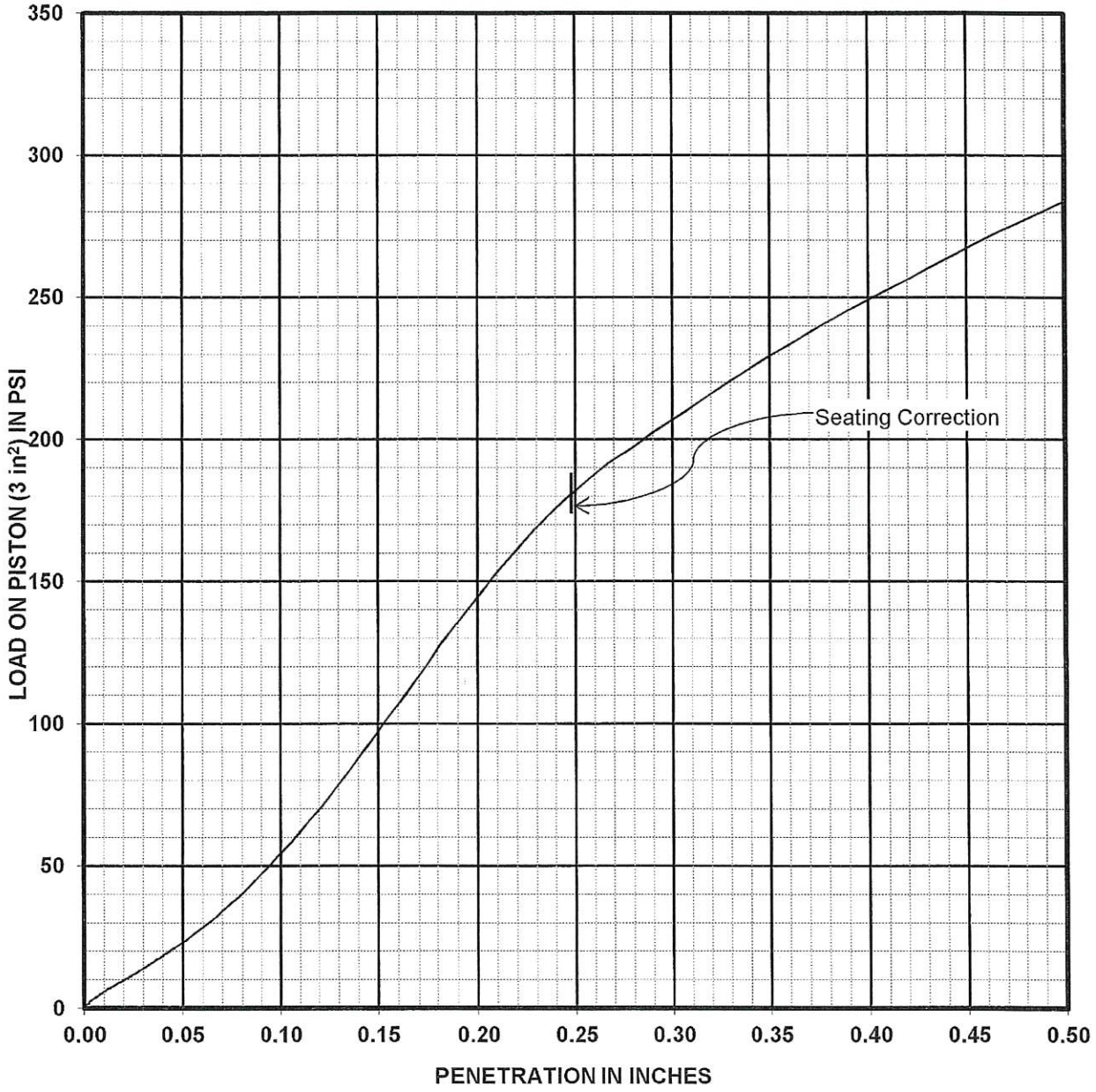
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **4.2*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 150

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-33 at 1' to 2' CS#: 13368
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 91 hours

Dry Density:	as molded	106	pcf	Moisture Content:	as molded	16	percent
	after soaking	107	pcf		top 1-inch after soaking	18	percent
Swell:	after soaking	0.3	percent		average after soaking	18	percent

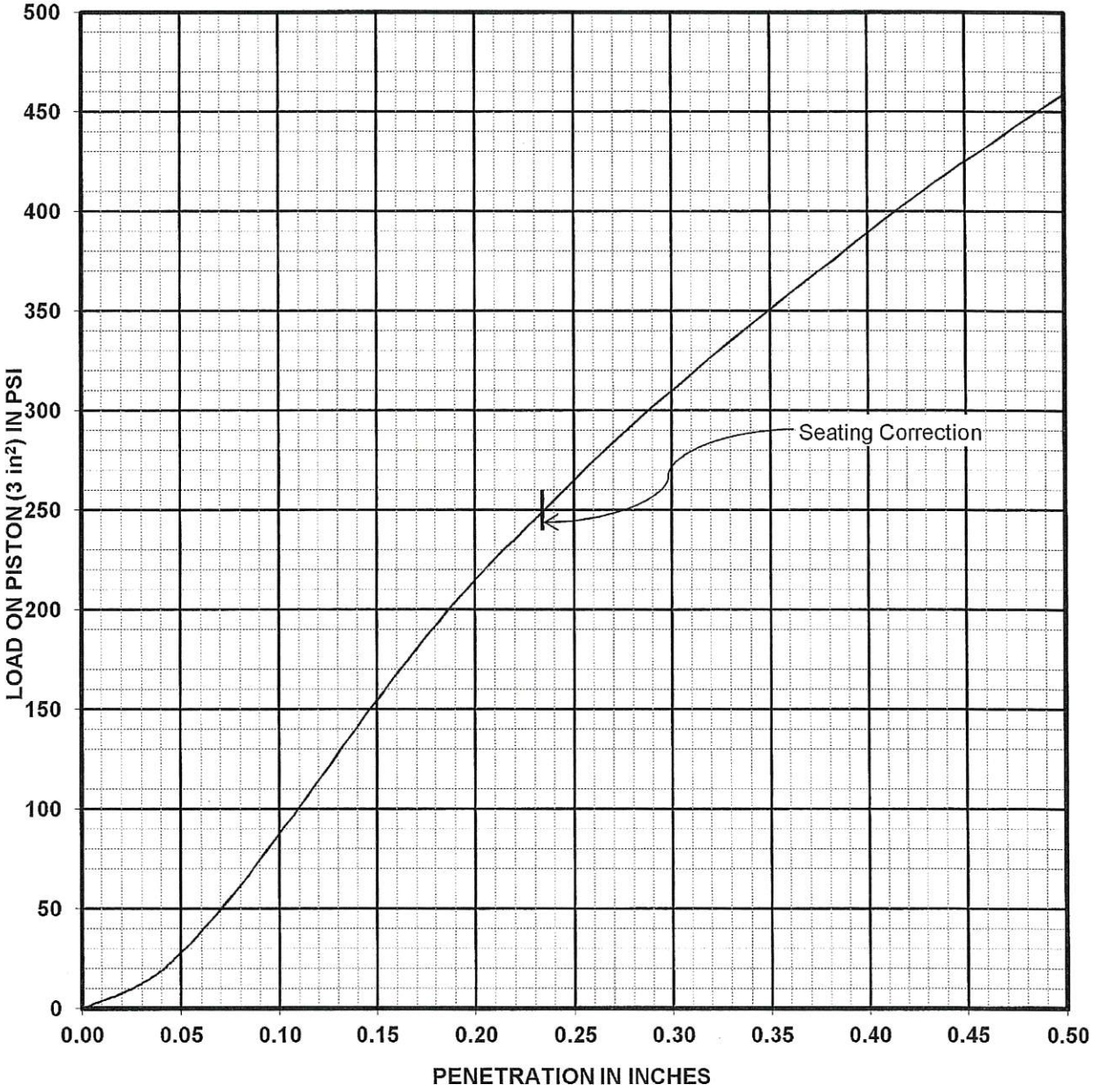
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **6.0*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 151

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: TP 2-34 at 1' to 2' CS#: 13369
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 92 hours

Dry Density:	as molded	111 pcf	Moisture Content:	as molded	15	percent
	after soaking	112 pcf		top 1-inch after soaking	16	percent
Swell:	after soaking	0.0 percent		average after soaking	16	percent

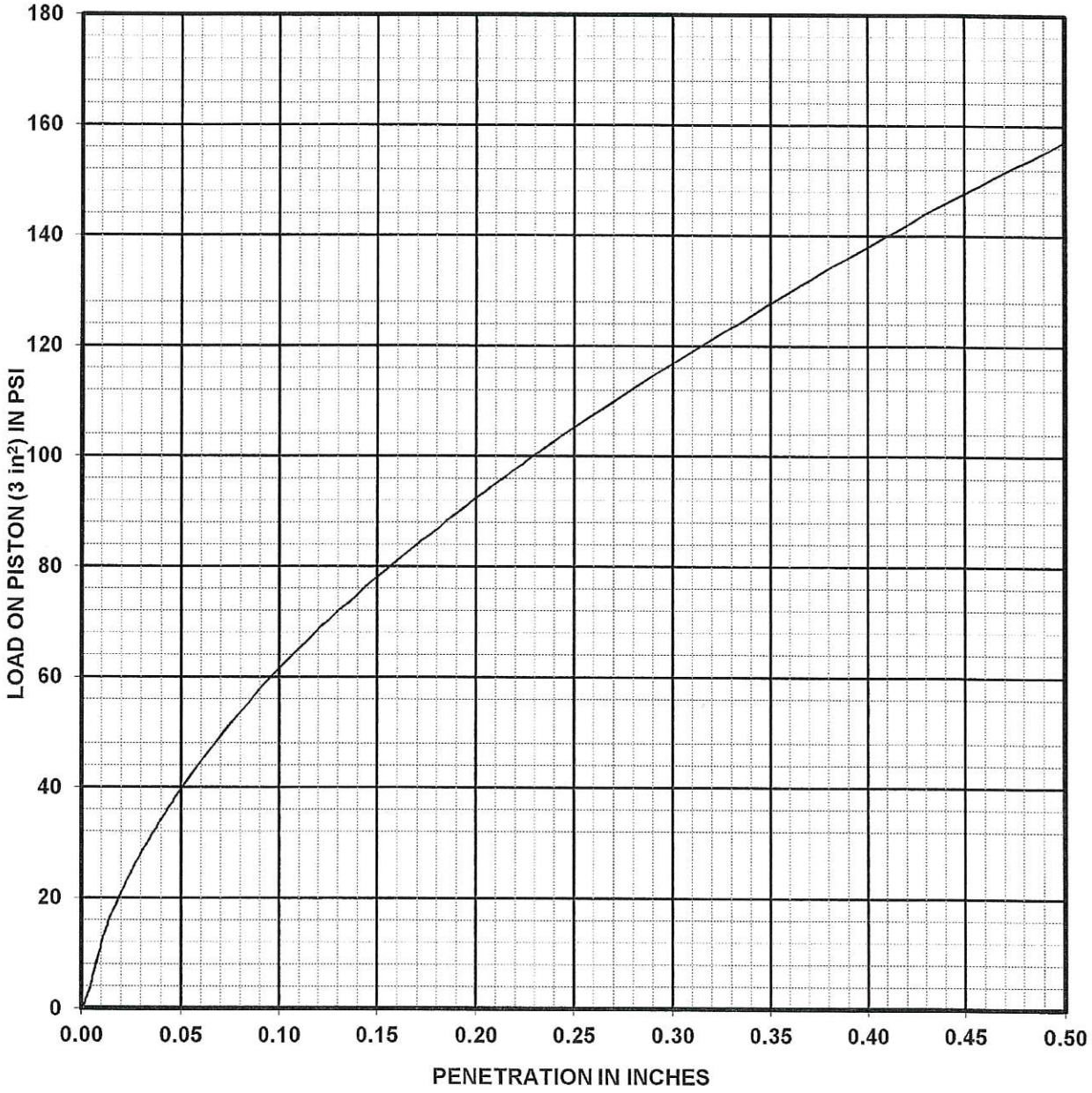
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, CBR = 10* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 152

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 2-35 at 1' to 2' CS#: 13370
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 92 hours

Dry Density: as molded 106 pcf
after soaking 107 pcf
Swell: after soaking 0.0 percent

Moisture Content: as molded 18 percent
top 1-inch after soaking 18 percent
average after soaking 19 percent

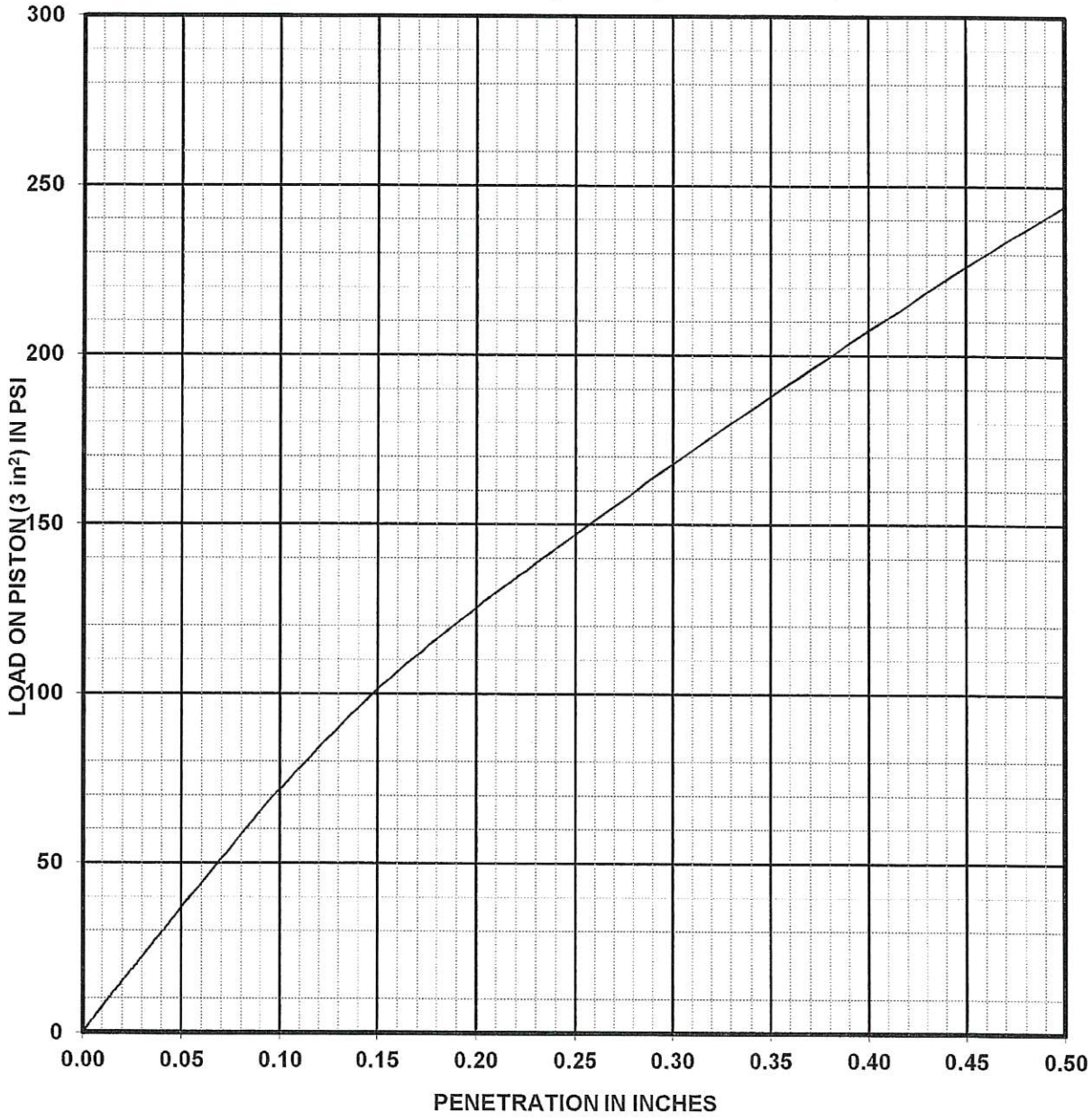
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **3.1*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 153

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: CBR 2-1 1' to 3' CS#: 13173
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per AASHTO T-99 B

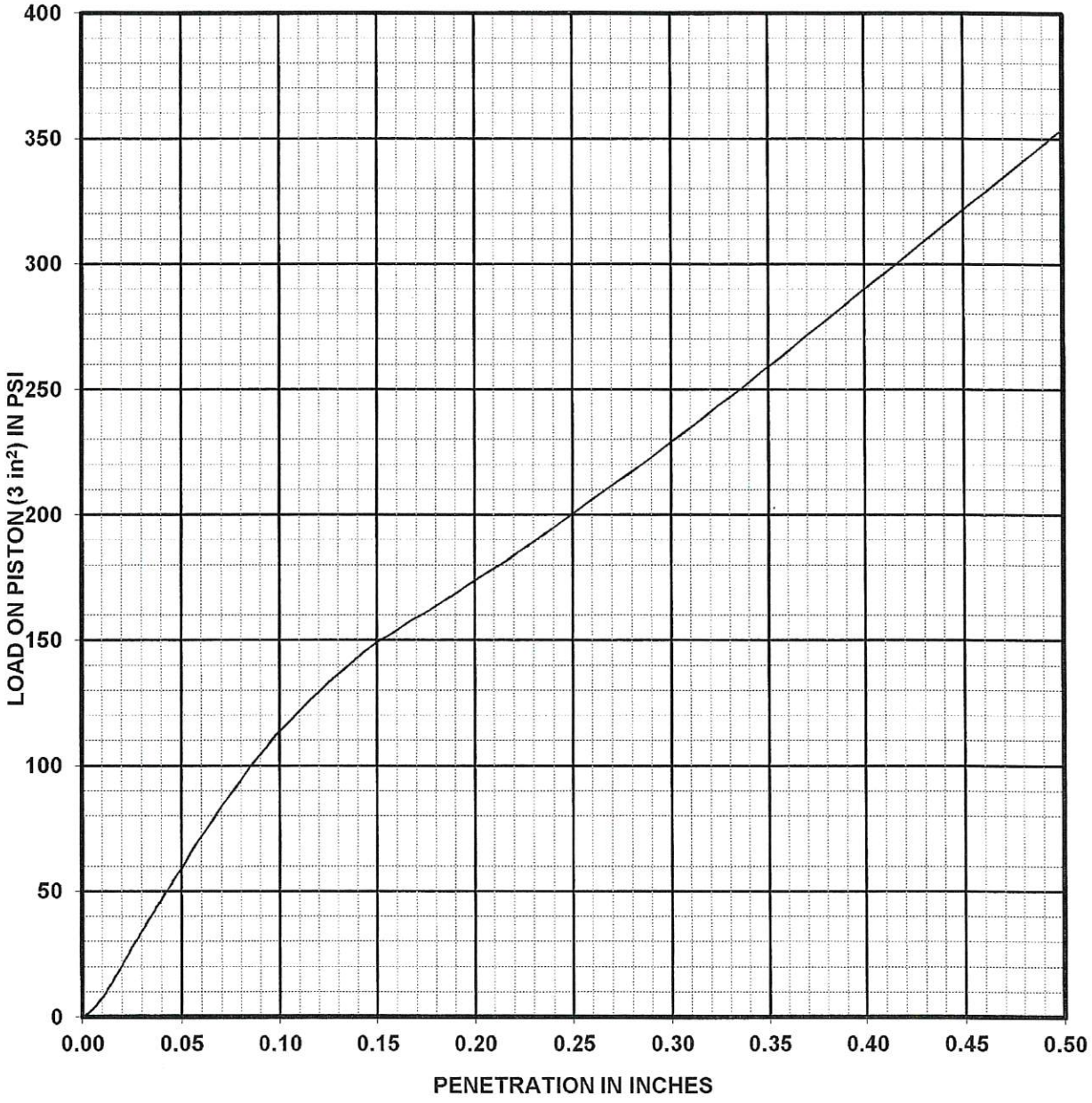
Sample penetration after soaking for 88 hours

Dry Density:	as molded	105 pcf	Moisture Content:	as molded	17	percent
	after soaking	95 pcf		top 1-inch after soaking	18	percent
Swell:	after soaking	0.2 percent		average after soaking	19	percent

Bearing Ratio of Sample, **CBR = 4.2*** percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 154

Applied Geotechnical Engineering Consultants, Inc.



Sample of Silty Sand (SM)
Location: CBR 2-2 at 1' to 3' CS #: 13174
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 84 hours

Dry Density:	as molded 104 pcf		Moisture Content:	as molded 16	percent
	after soaking 106 pcf			top 1-inch after soaking 17	percent
Swell:	after soaking 0.0	percent		average after soaking 17	percent

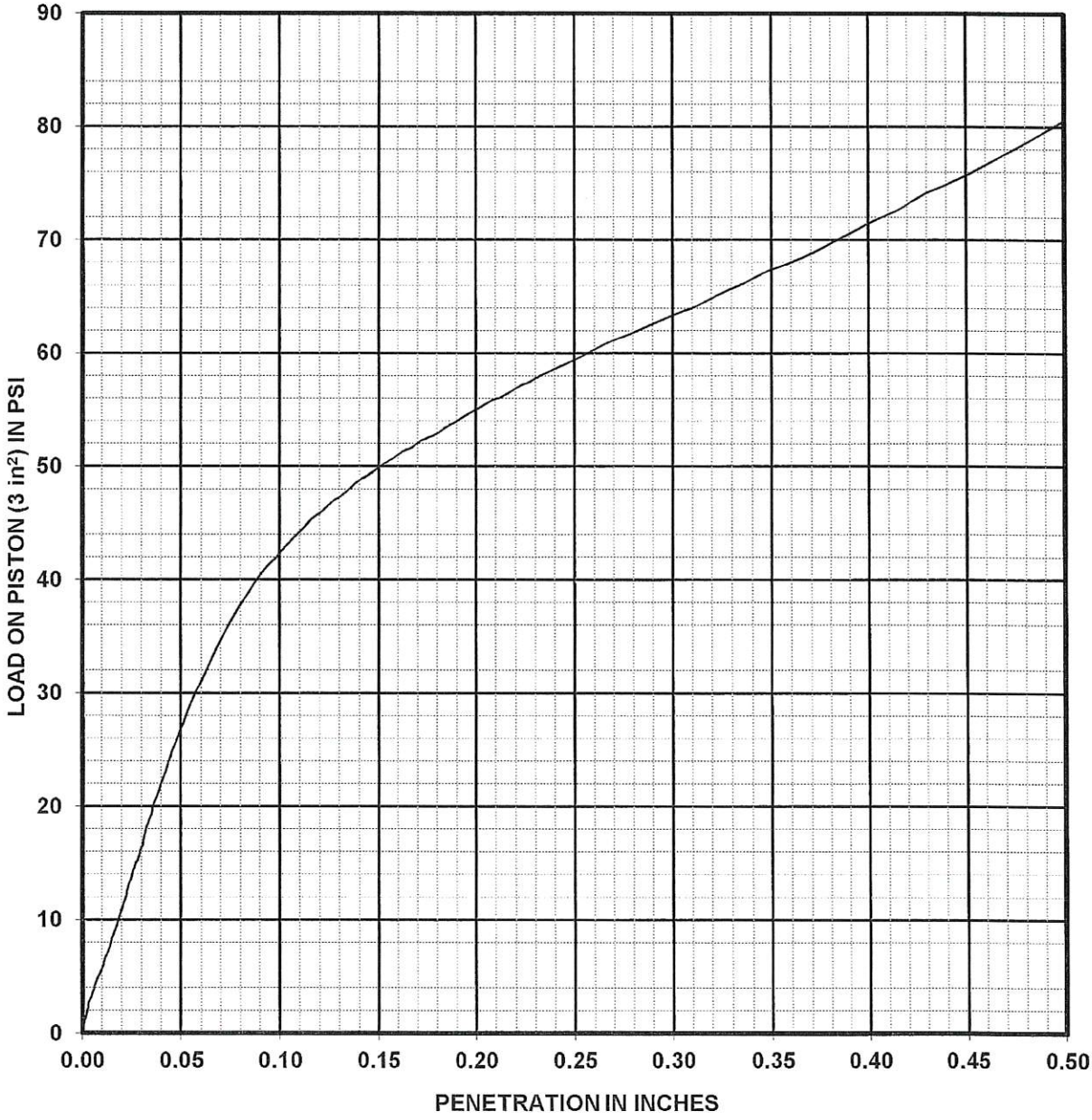
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **8.7*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 155

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: CBR 2-3 1' to 3' CS#: 13144
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per AASHTO T-99 B

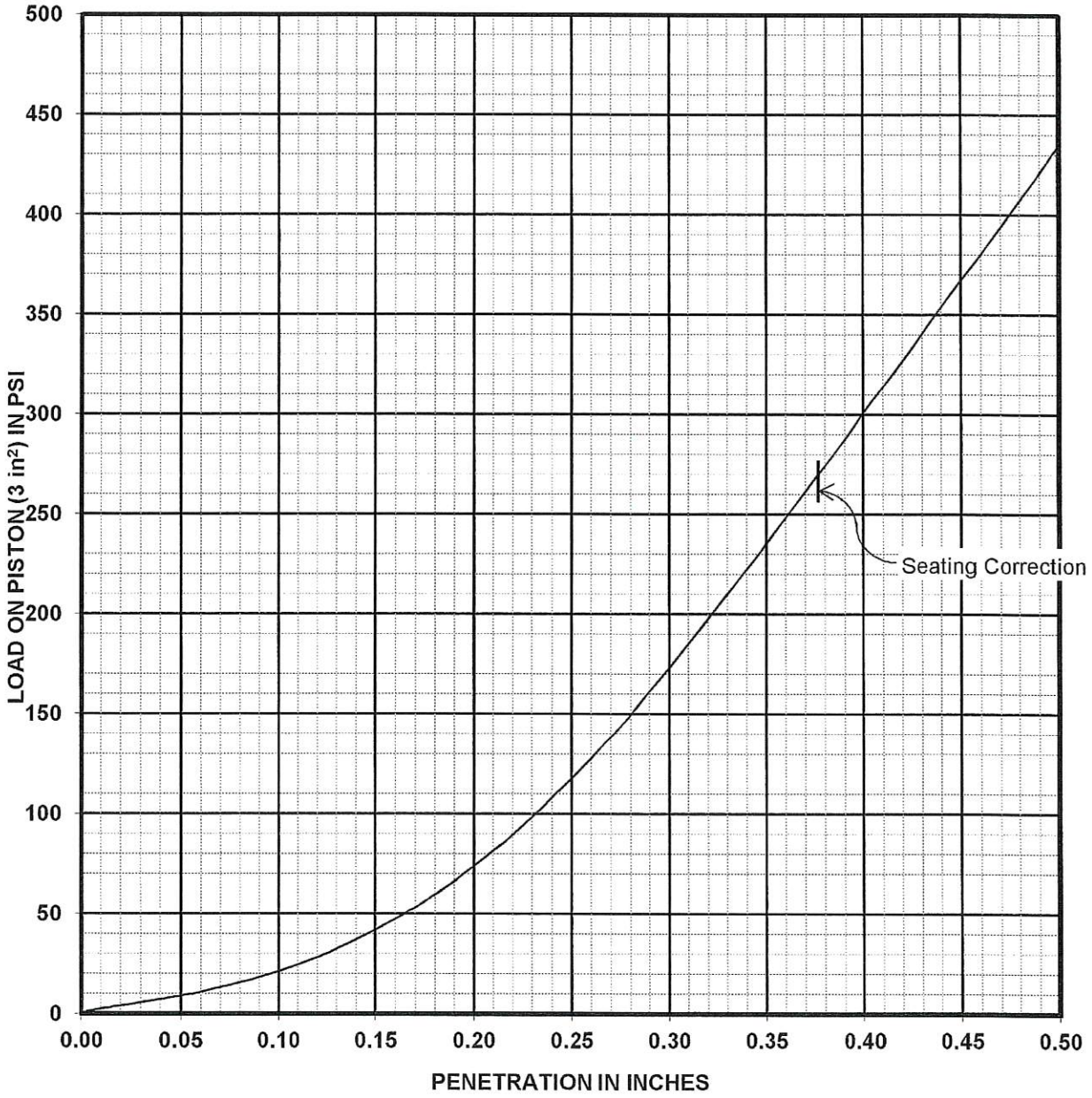
Sample penetration after soaking for 89 hours

Dry Density:	as molded	106 pcf	Moisture Content:	as molded	18	percent
	after soaking	109 pcf		top 1-inch after soaking	21	percent
Swell:	after soaking	-0.8 percent		average after soaking	21	percent

Bearing Ratio of Sample, **CBR =** **2.2*** percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 156

Applied Geotechnical Engineering Consultants, Inc.



Sample of Silty Sand (SM)
Location: CBR 2-4 at 1' to 2' CS #: 13175
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 90 hours

Dry Density:	as molded	109 pcf	Moisture Content:	as molded	14 percent
	after soaking	112 pcf		top 1-inch after soaking	14 percent
Swell:	after soaking	-0.1 percent		average after soaking	14 percent

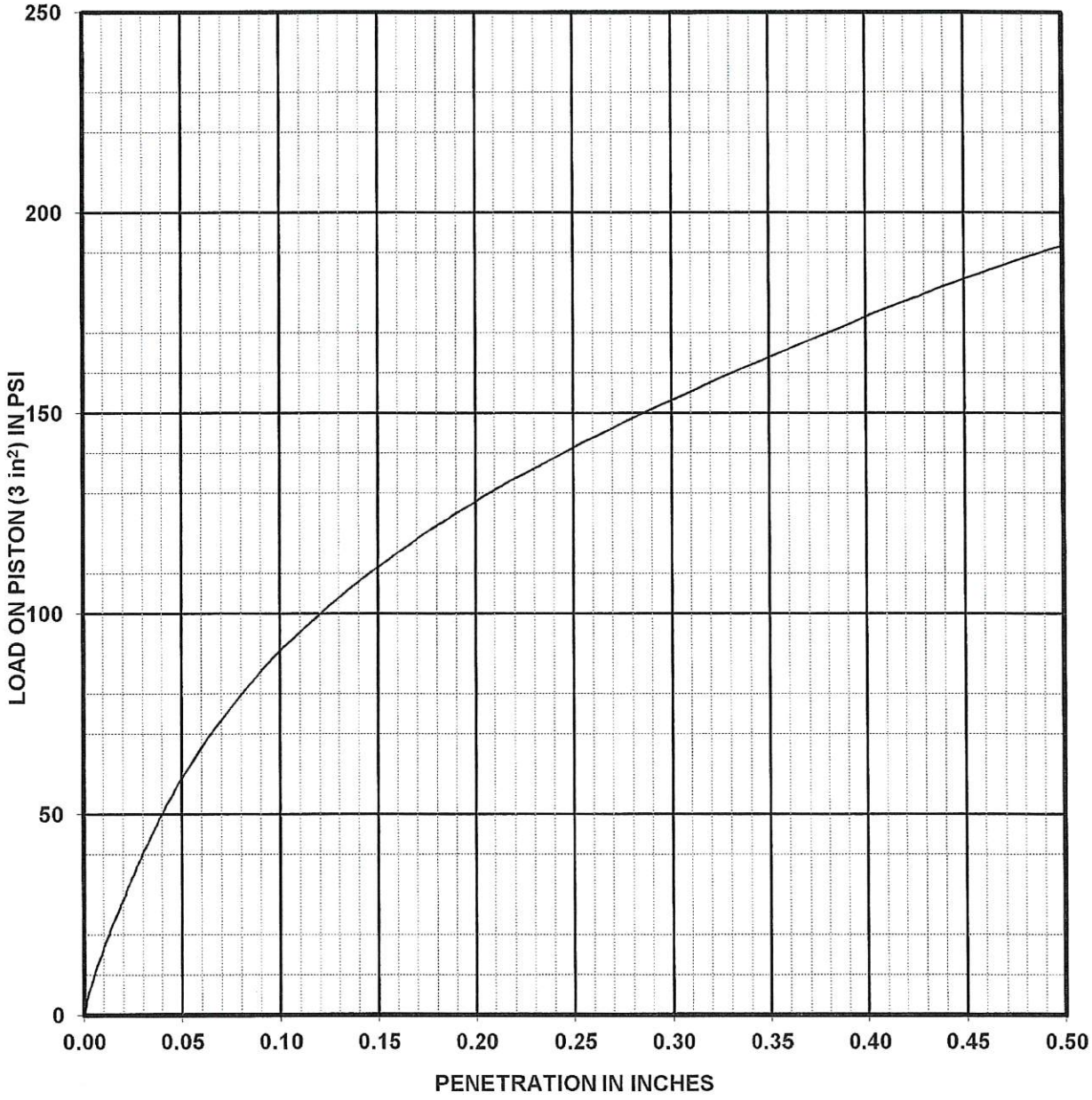
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 14*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 157

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: CBR 2-5 at 1' to 2' CS #: 13176
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 91 hours

Dry Density: as molded 103 pcf
after soaking 104 pcf
Swell: after soaking 0.7 percent

Moisture Content: as molded 19 percent
top 1-inch after soaking 19 percent
average after soaking 20 percent

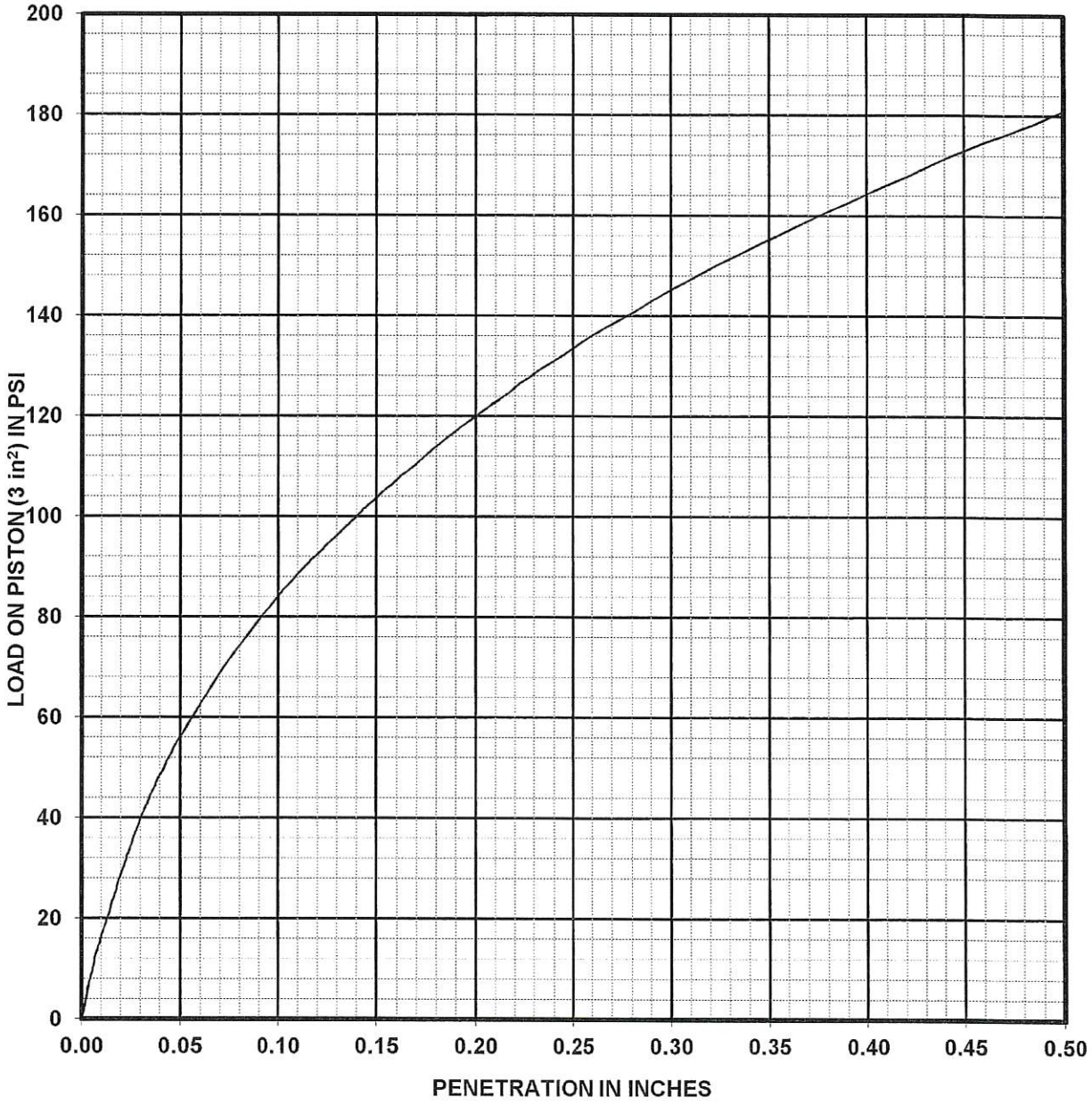
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 5.4*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 158

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: CBR 2-6 at 1' to 3' CS #: 13177
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 89 hours

Dry Density:	as molded	101 pcf	Moisture Content:	as molded	22 percent
	after soaking	102 pcf		top 1-inch after soaking	22 percent
Swell:	after soaking	0.3 percent		average after soaking	22 percent

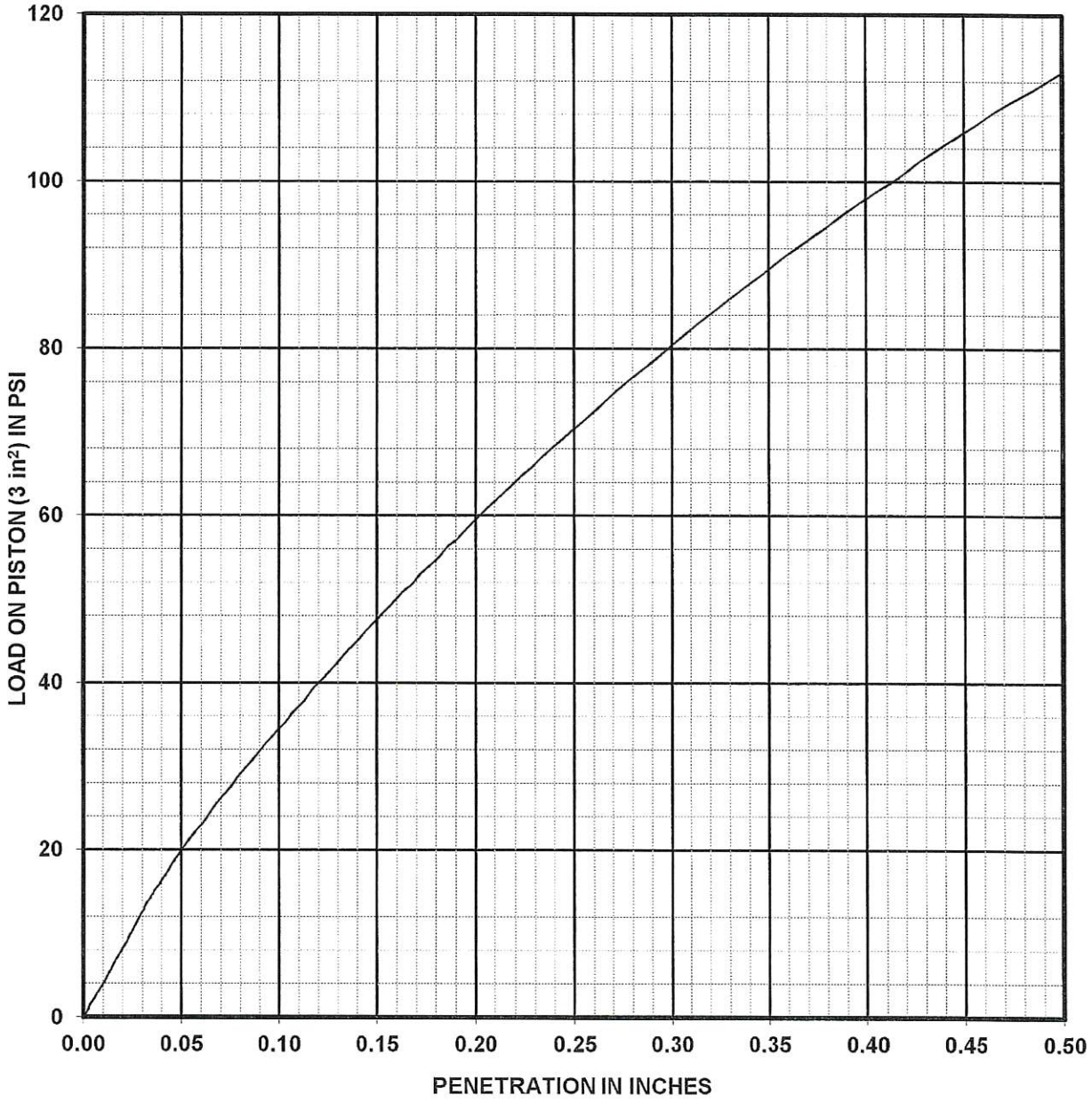
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 4.2*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 159

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: CBR 2-7 at 1' to 3' CS #: 13178
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 66 hours

Dry Density:	as molded	105 pcf	Moisture Content:	as molded	20	percent
	after soaking	106 pcf		top 1-inch after soaking	21	percent
Swell:	after soaking	-0.1 percent		average after soaking	21	percent

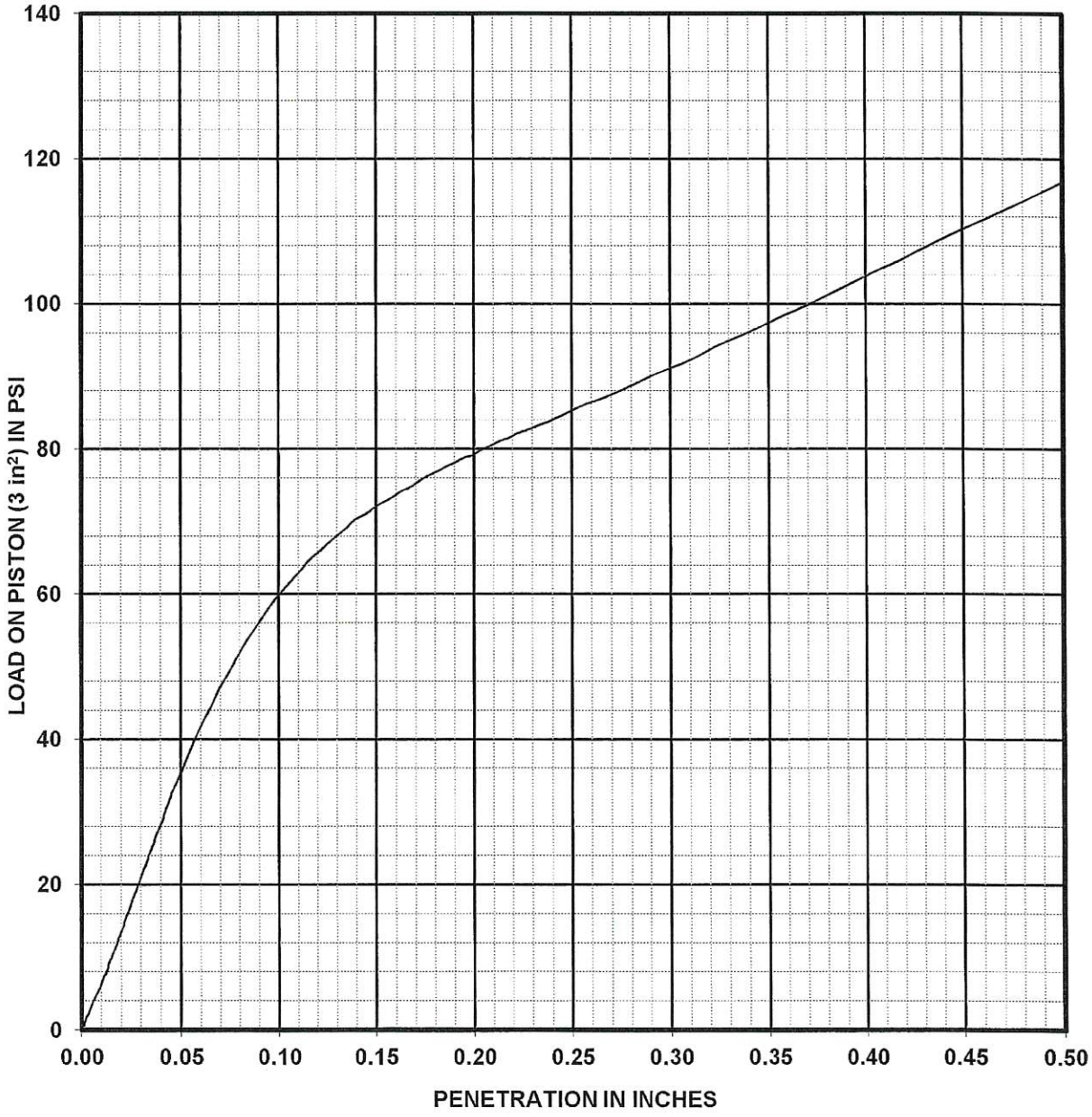
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 2.0*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 160

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: CBR 2-8 at 1' to 3' CS#: 13145
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per AASHTO T-99 B

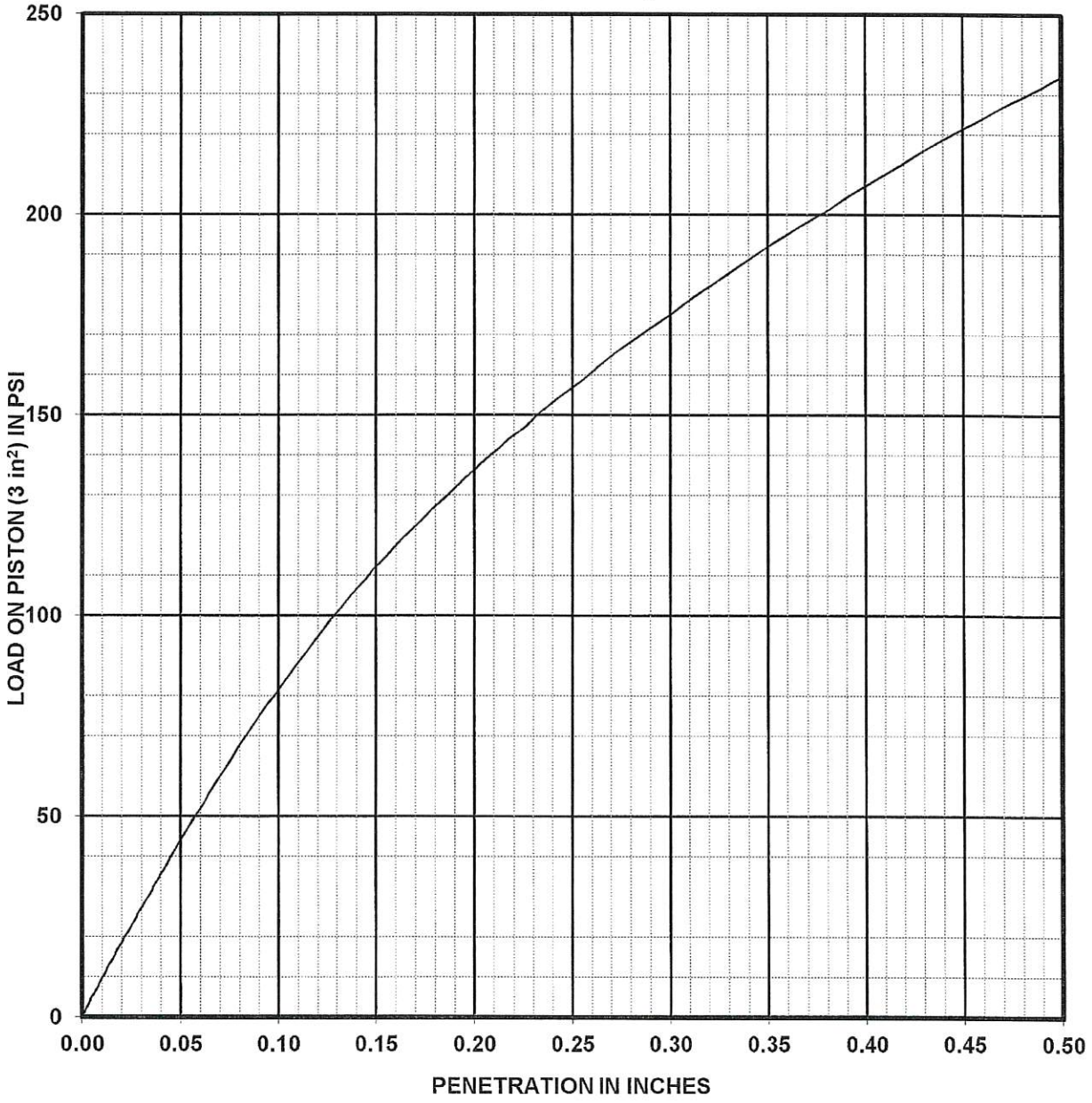
Sample penetration after soaking for 93 hours

Dry Density:	as molded	97	pcf	Moisture Content:	as molded	21	percent
	after soaking	98	pcf		top 1-inch after soaking	21	percent
Swell:	after soaking	1.0	percent		average after soaking	23	percent

Bearing Ratio of Sample, **CBR =** 3.0* percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 161

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: CBR 2-9 at 1' to 2' CS #: 13179
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 91 hours

Dry Density:	as molded	107 pcf	Moisture Content:	as molded	17 percent
	after soaking	109 pcf		top 1-inch after soaking	18 percent
Swell:	after soaking	0.0 percent		average after soaking	17 percent

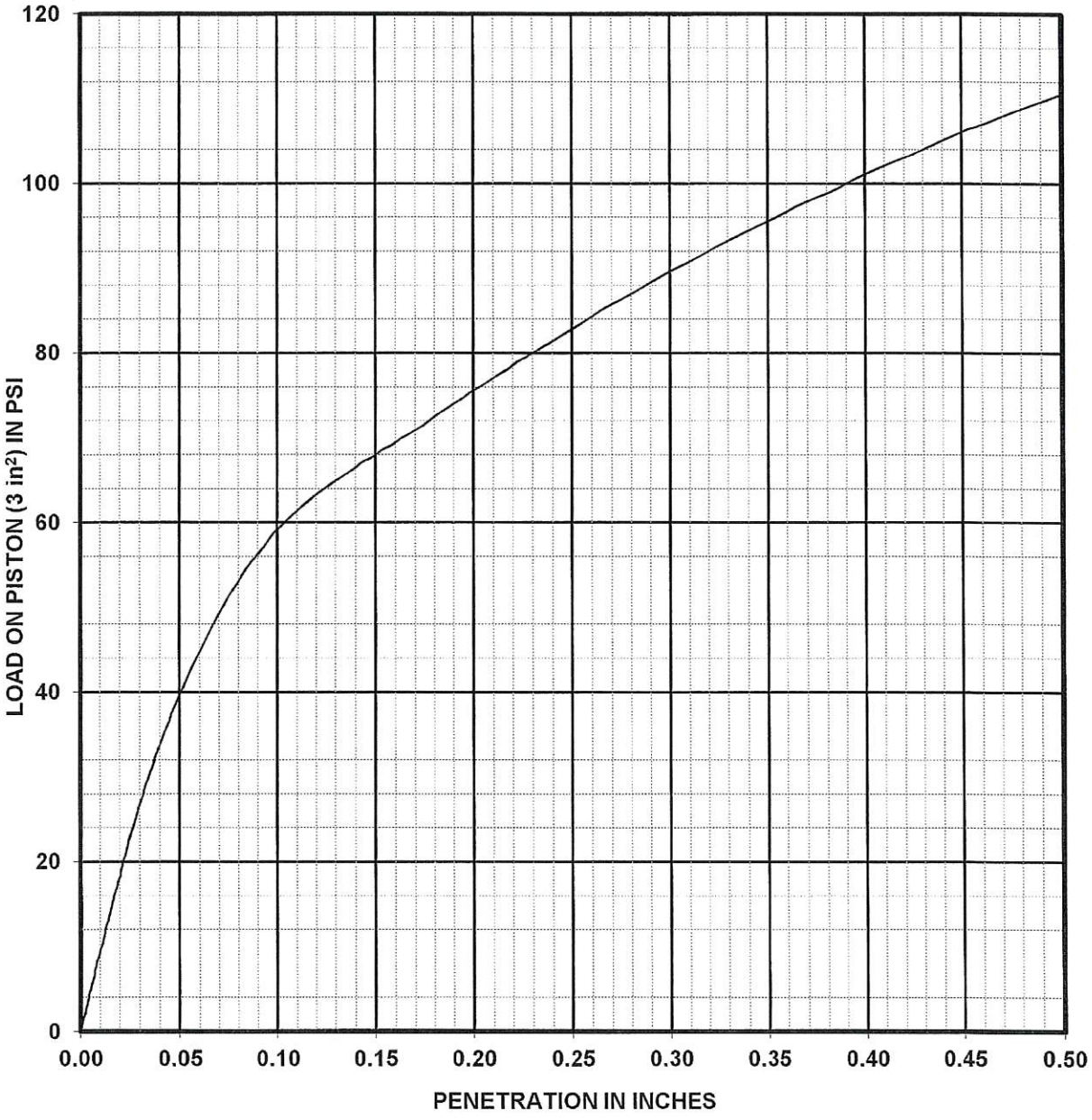
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 4.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 162

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: CBR 2-10 at 1' to 3' CS#: 13146
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per AASHTO T-99 B

Sample penetration after soaking for 87 hours

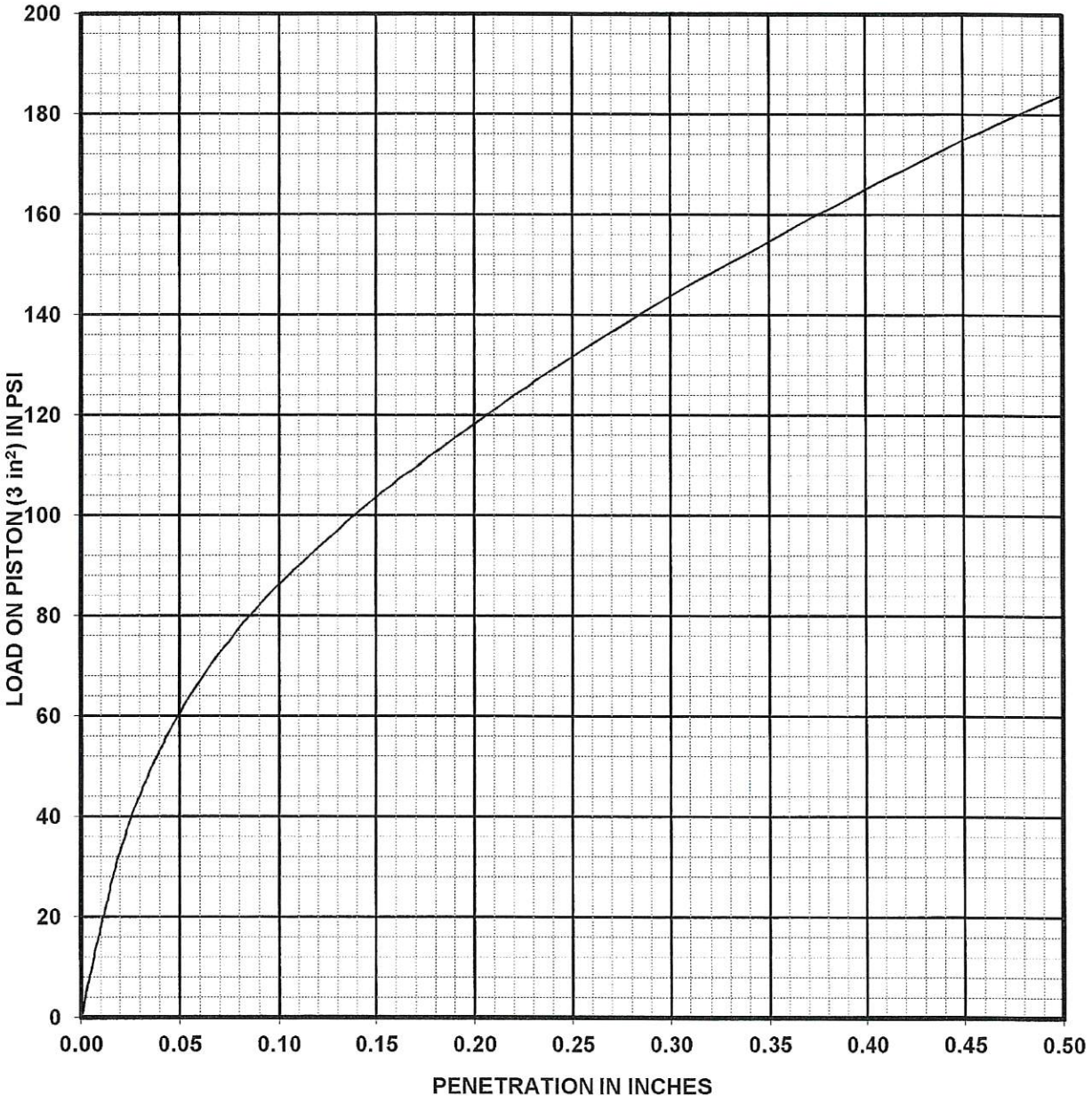
Dry Density:	as molded	97 pcf	Moisture Content:	as molded	22	percent
	after soaking	100 pcf		top 1-inch after soaking	24	percent
Swell:	after soaking	0.6 percent		average after soaking	23	percent

Bearing Ratio of Sample, **CBR =** 3.0* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 163

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: CBR 2-11 at 1' to 3' CS #: 13147
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 84 hours

Dry Density:	as molded	106	pcf	Moisture Content:	as molded	18	percent
	after soaking	106	pcf		top 1-inch after soaking	23	percent
Swell:	after soaking	0.0	percent		average after soaking	21	percent

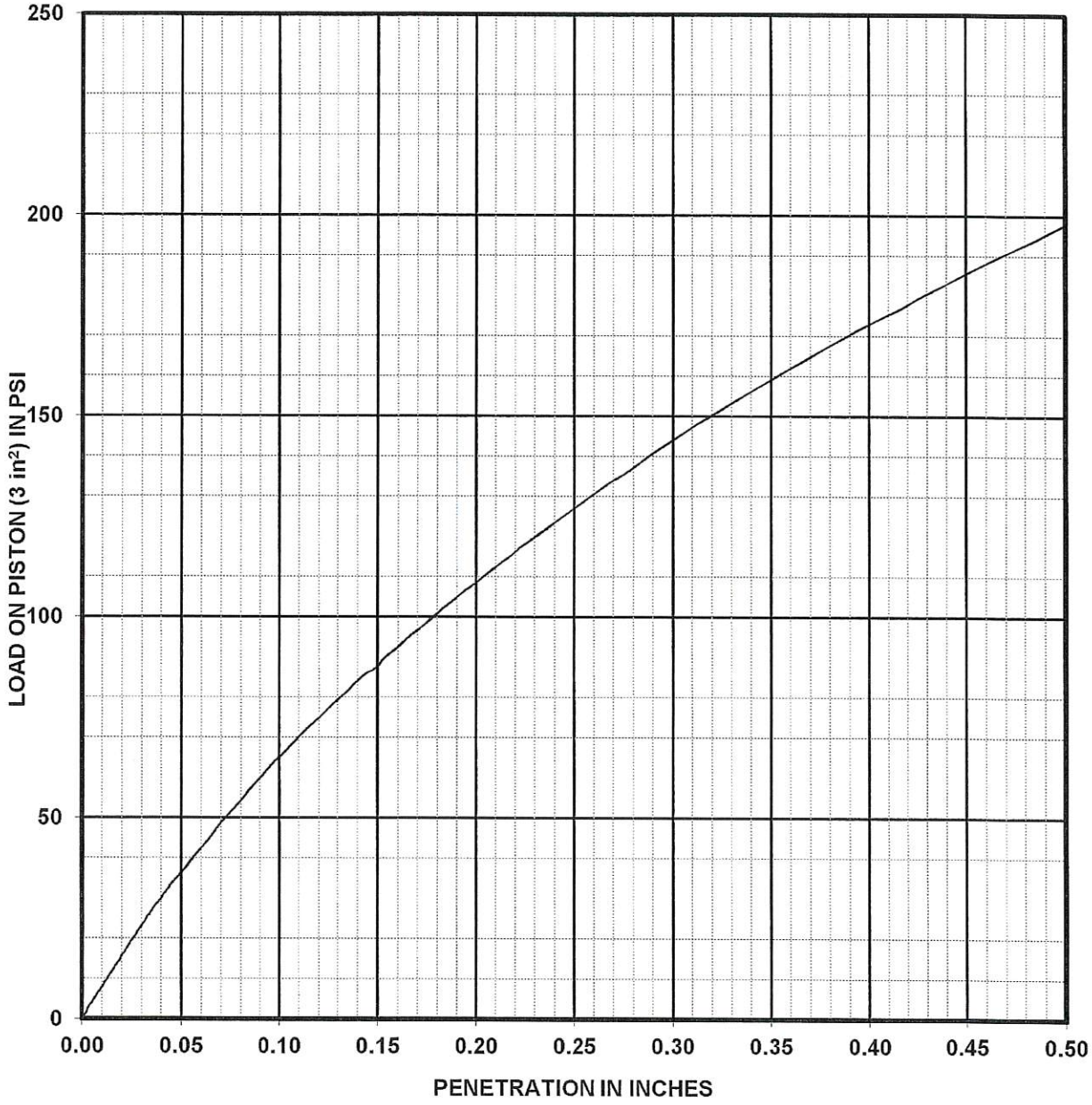
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **4.3*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 164

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: CBR 2-12 at 1' to 2' CS #: 13186
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 91 hours

Dry Density:	as molded	112 pcf	Moisture Content:	as molded	15 percent
	after soaking	113 pcf		top 1-inch after soaking	16 percent
Swell:	after soaking	-0.1 percent		average after soaking	16 percent

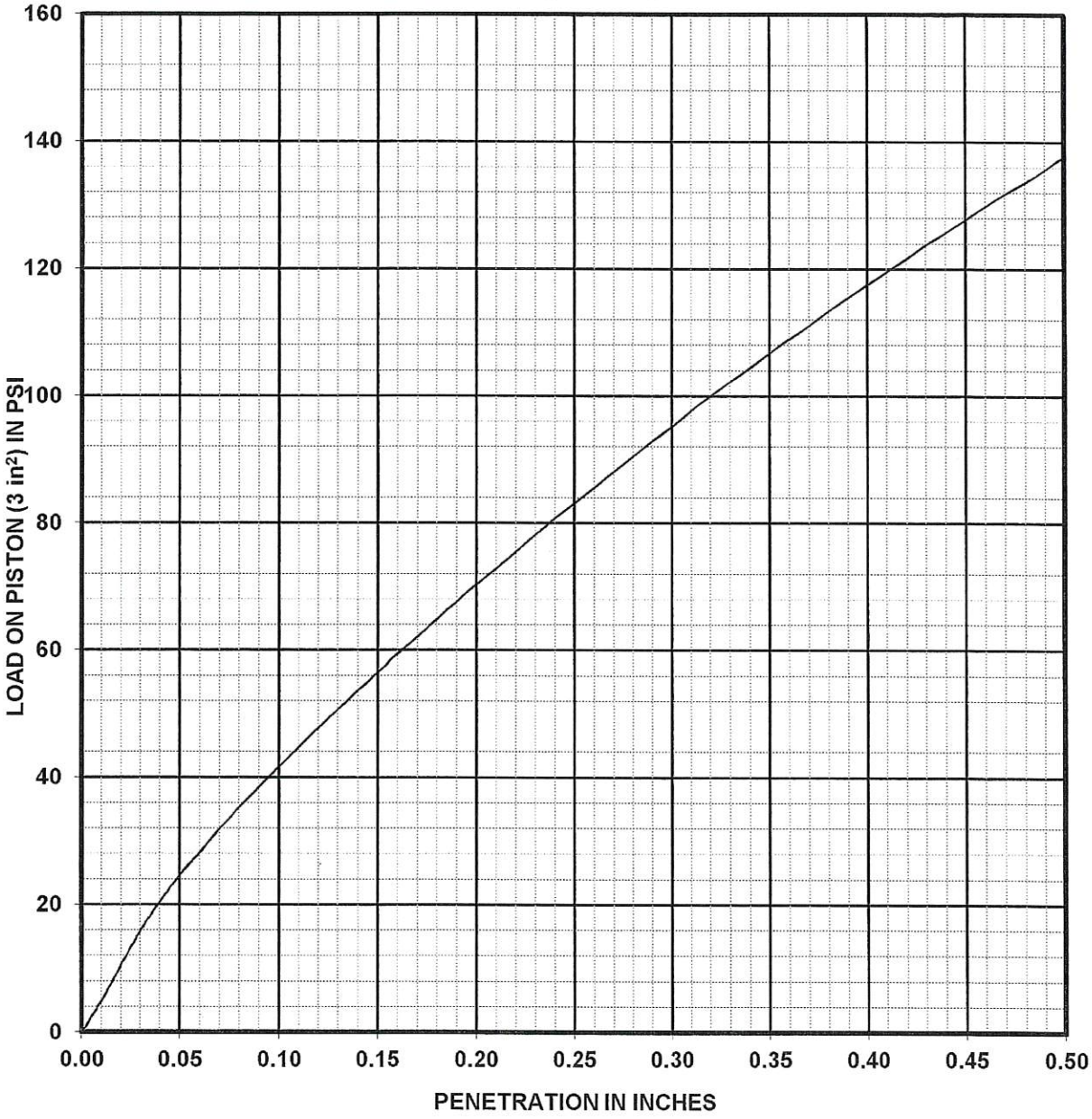
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **3.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 165

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: CBR 2-13 at 1' to 3' CS#: 13148
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per AASHTO T-99 B

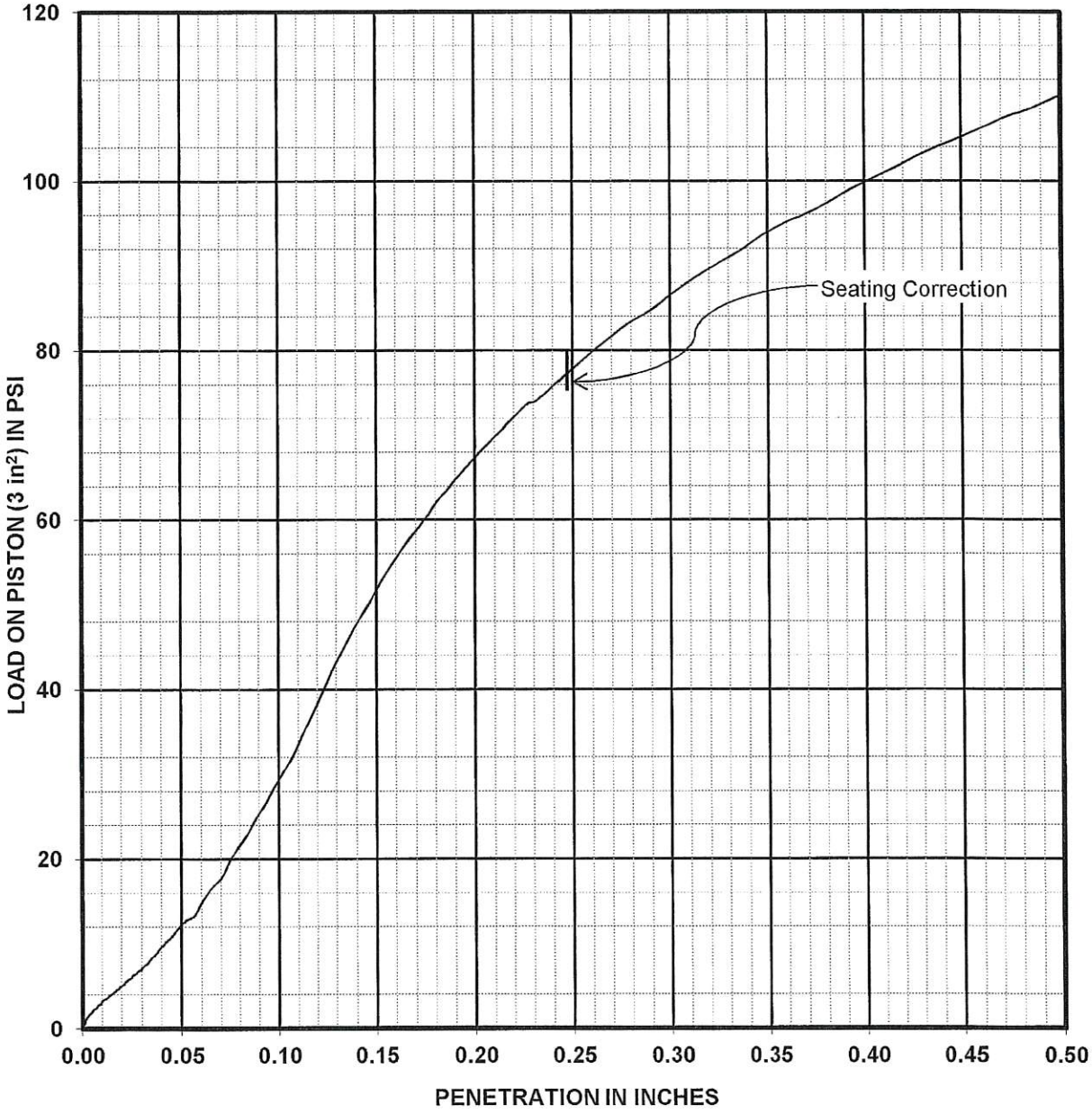
Sample penetration after soaking for 90 hours

Dry Density:	as molded	102 pcf	Moisture Content:	as molded	21	percent
	after soaking	102 pcf		top 1-inch after soaking	21	percent
Swell:	after soaking	0.1 percent		average after soaking	21	percent

Bearing Ratio of Sample, **CBR =** 2.4* percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 166

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: CBR 2-14 at 1' to 3' CS#: 13149
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per AASHTO T-99 B

Sample penetration after soaking for 90 hours

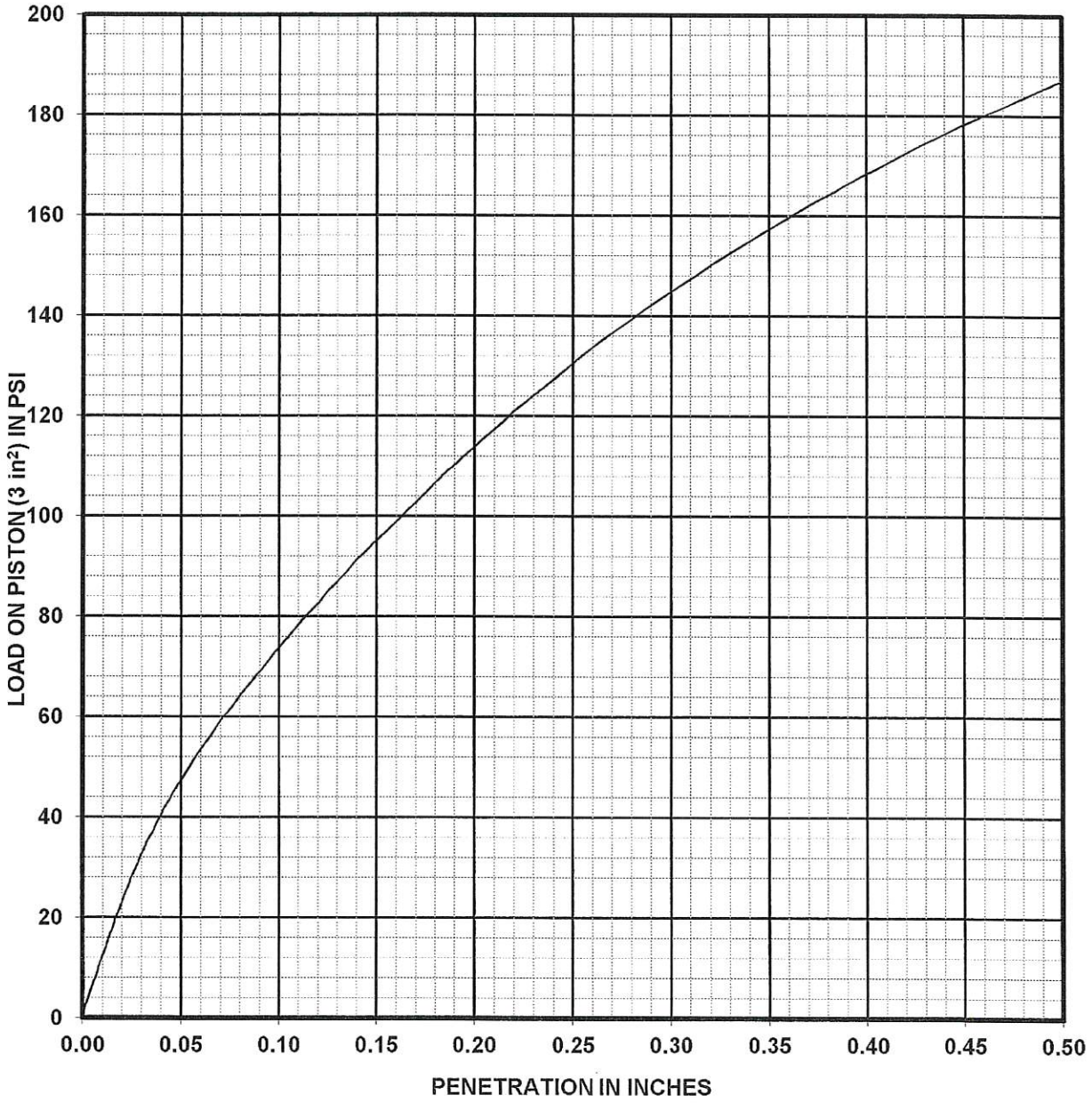
Dry Density:	as molded	101	pcf	Moisture Content:	as molded	19	percent
	after soaking	98	pcf		top 1-inch after soaking	20	percent
Swell:	after soaking	5.5	percent		average after soaking	20	percent

Bearing Ratio of Sample, **CBR =** **2.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 167

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: CBR 2-15 at 1' to 2' CS #: 13187
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 89 hours

Dry Density: as molded 109 pcf
after soaking 106 pcf
Swell: after soaking 0.0 percent

Moisture Content: as molded 17 percent
top 1-inch after soaking 17 percent
average after soaking 17 percent

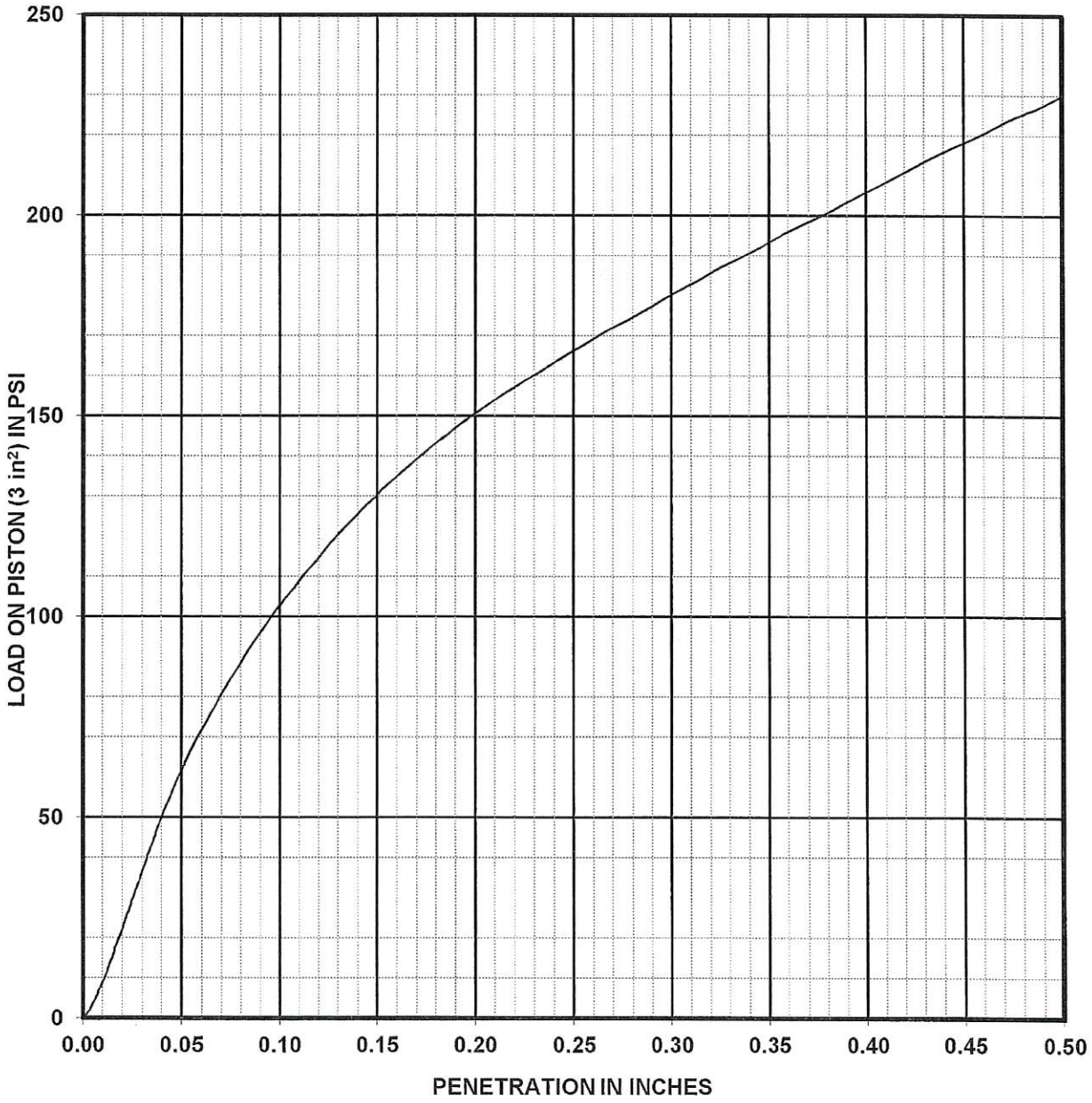
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR** = **4.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 168

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: CBR 2-16 at 1' to 2' CS #: 13188
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 91 hours

Dry Density:	as molded	108 pcf	Moisture Content:	as molded	15 percent
	after soaking	110 pcf		top 1-inch after soaking	16 percent
Swell:	after soaking	0.1 percent		average after soaking	17 percent

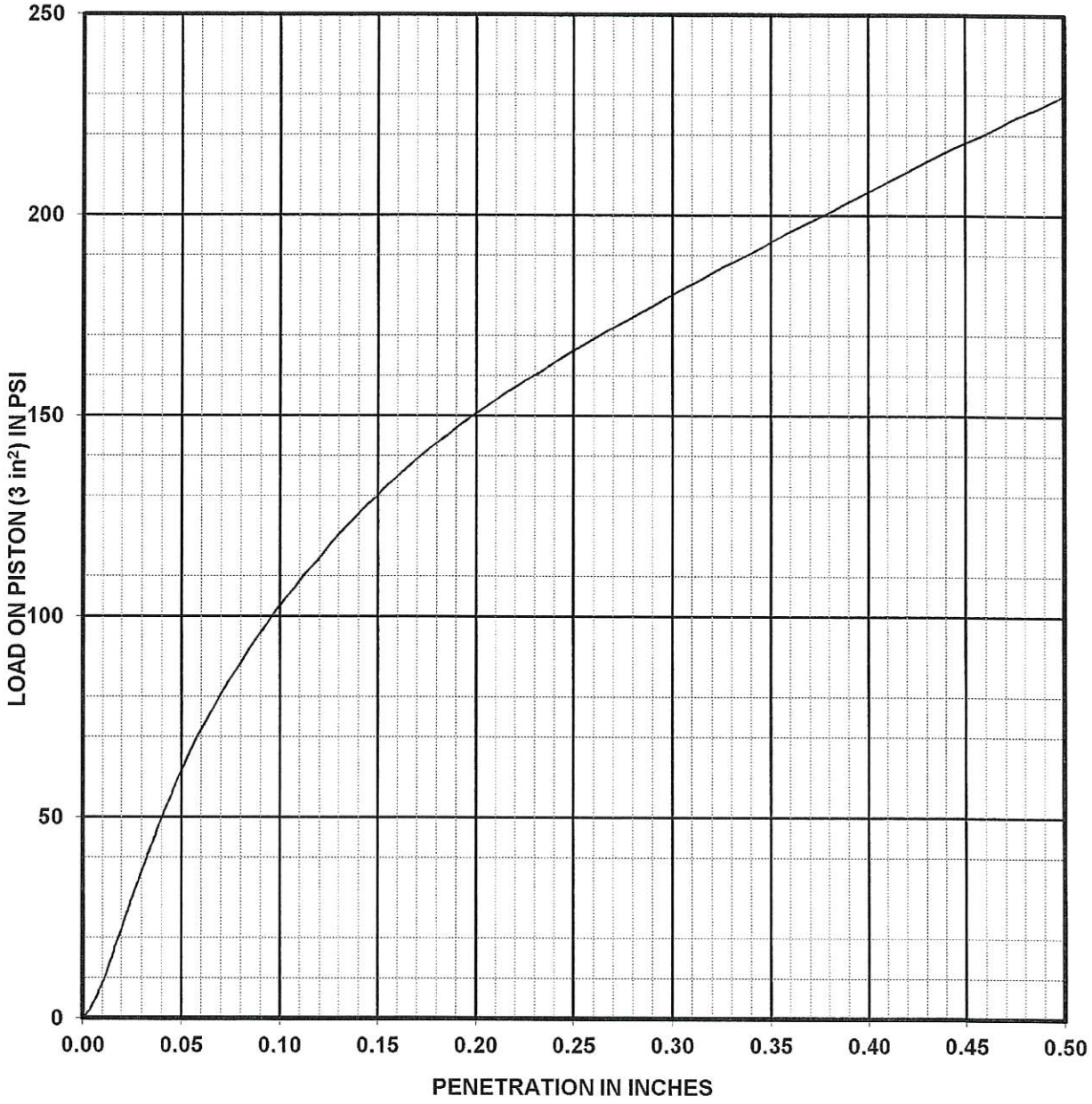
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **6.2*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 169

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: CBR 2-17 at 1' to 2' CS #: 13189
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 92 hours

Dry Density:	as molded	106 pcf	Moisture Content:	as molded	17 percent
	after soaking	106 pcf		top 1-inch after soaking	19 percent
Swell:	after soaking	-0.1 percent		average after soaking	18 percent

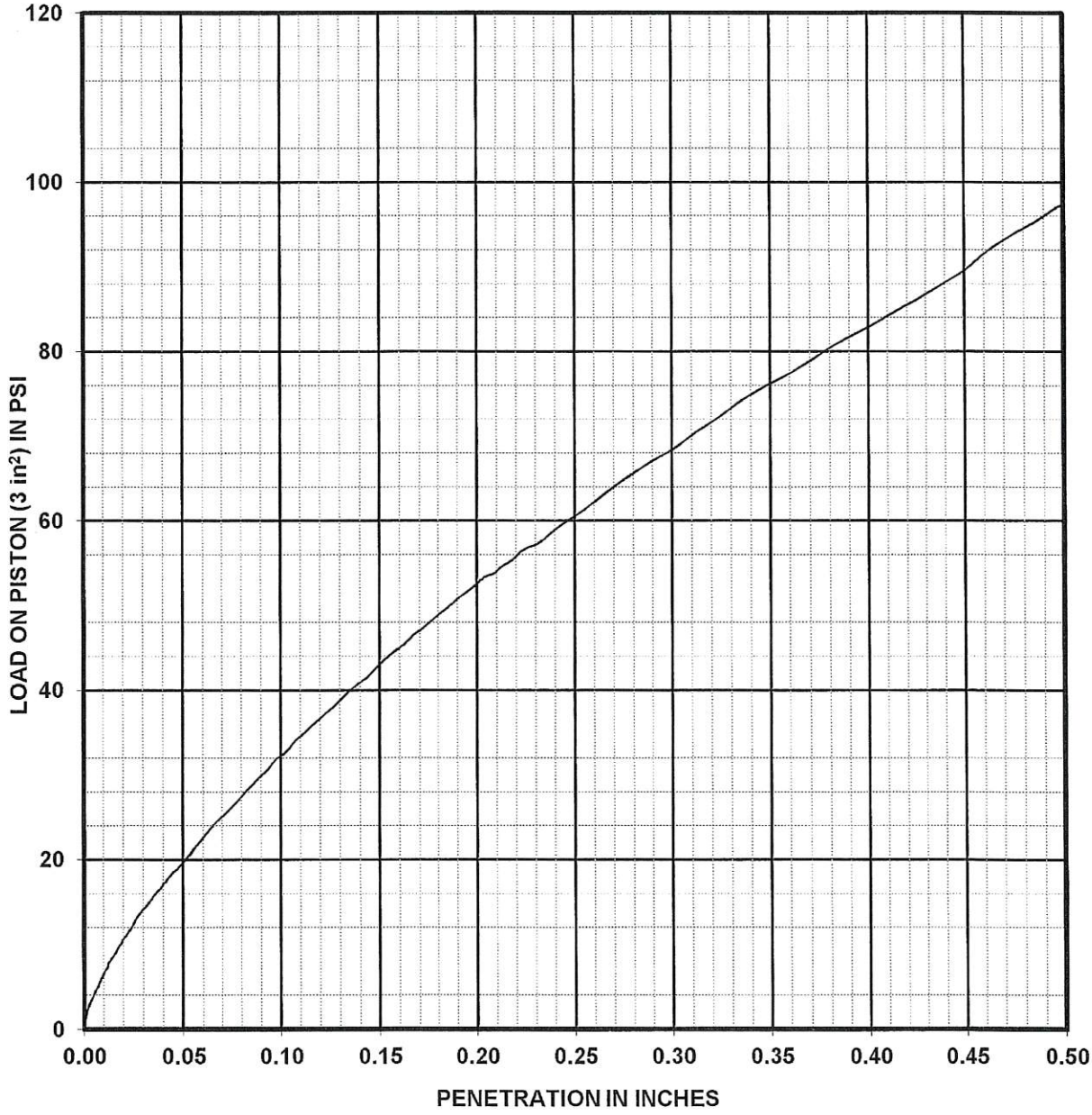
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 6.2*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 170

Applied Geotechnical Engineering Consultants, Inc.



Sample of Clayey Gravel with Sand (GC)
Location: CBR 2-18 at 1' to 3' CS#: 13150
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per AASHTO T-99 D, Scalp & Replace

Sample penetration after soaking for 85 hours

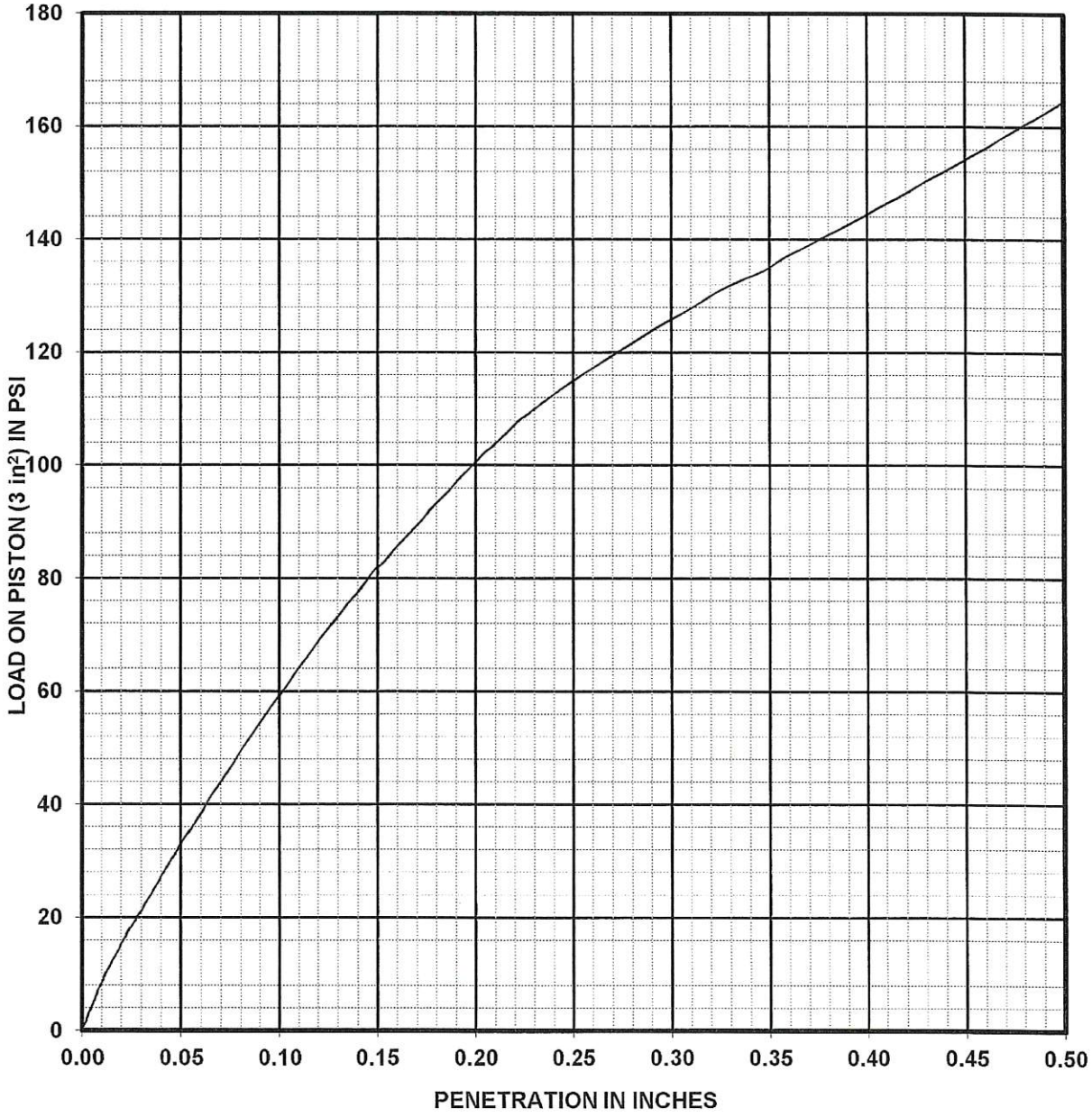
Dry Density:	as molded	121 pcf	Moisture Content:	as molded	12	percent
	after soaking	122 pcf		top 1-inch after soaking	12	percent
Swell:	after soaking	-0.3 percent		average after soaking	12	percent

Bearing Ratio of Sample, **CBR =** **2.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 171

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: CBR 2-19 at 1' to 3' CS#: 13151
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per AASHTO T-99 B

Sample penetration after soaking for 84 hours

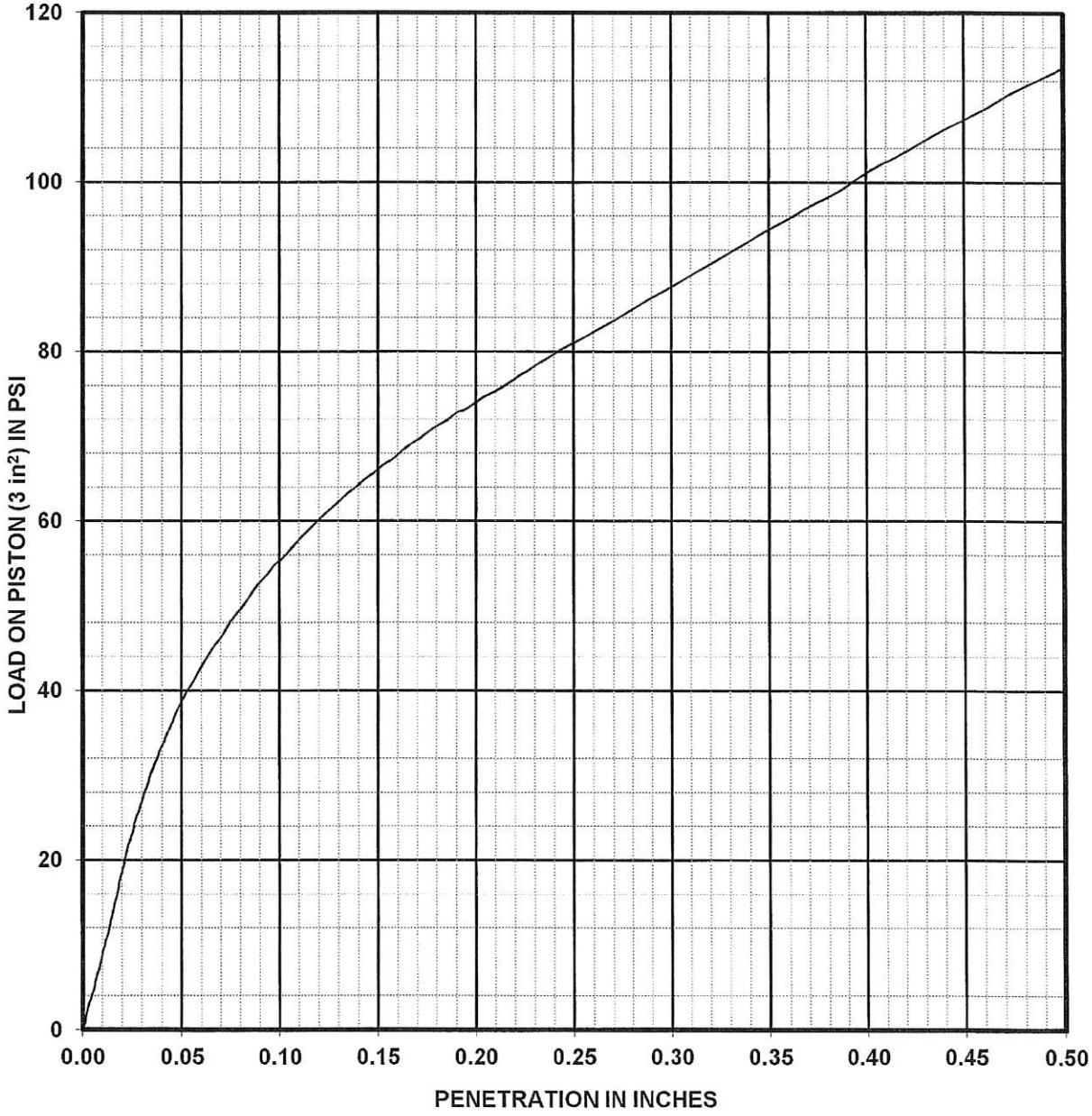
Dry Density:	as molded	107	pcf	Moisture Content:	as molded	16	percent
	after soaking	108	pcf		top 1-inch after soaking	16	percent
Swell:	after soaking	0.1	percent		average after soaking	17	percent

Bearing Ratio of Sample, **CBR =** 3.4* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 172

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: CBR 2-20 at 1' to 3' CS#: 13152
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per AASHTO T-99 B

Sample penetration after soaking for 91 hours

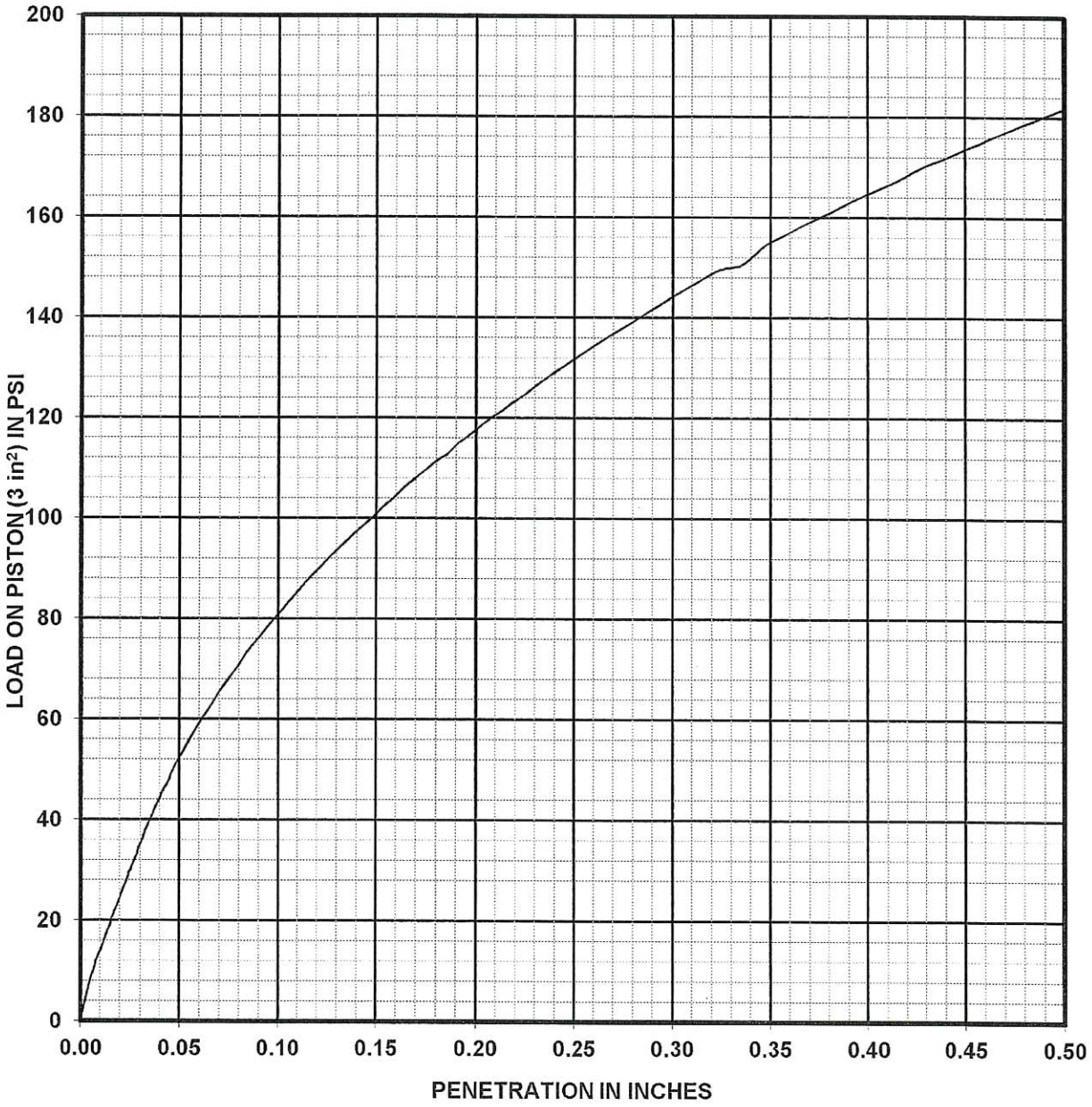
Dry Density:	as molded	101	pcf	Moisture Content:	as molded	20	percent
	after soaking	103	pcf		top 1-inch after soaking	21	percent
Swell:	after soaking	0.5	percent		average after soaking	21	percent

Bearing Ratio of Sample, **CBR =** **2.8*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 173

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: CBR 2-21 at 1' to 2' CS #: 13221
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 89 hours

Dry Density:	as molded	104 pcf	Moisture Content:	as molded	20	percent
	after soaking	105 pcf		top 1-inch after soaking	21	percent
Swell:	after soaking	0.5 percent		average after soaking	21	percent

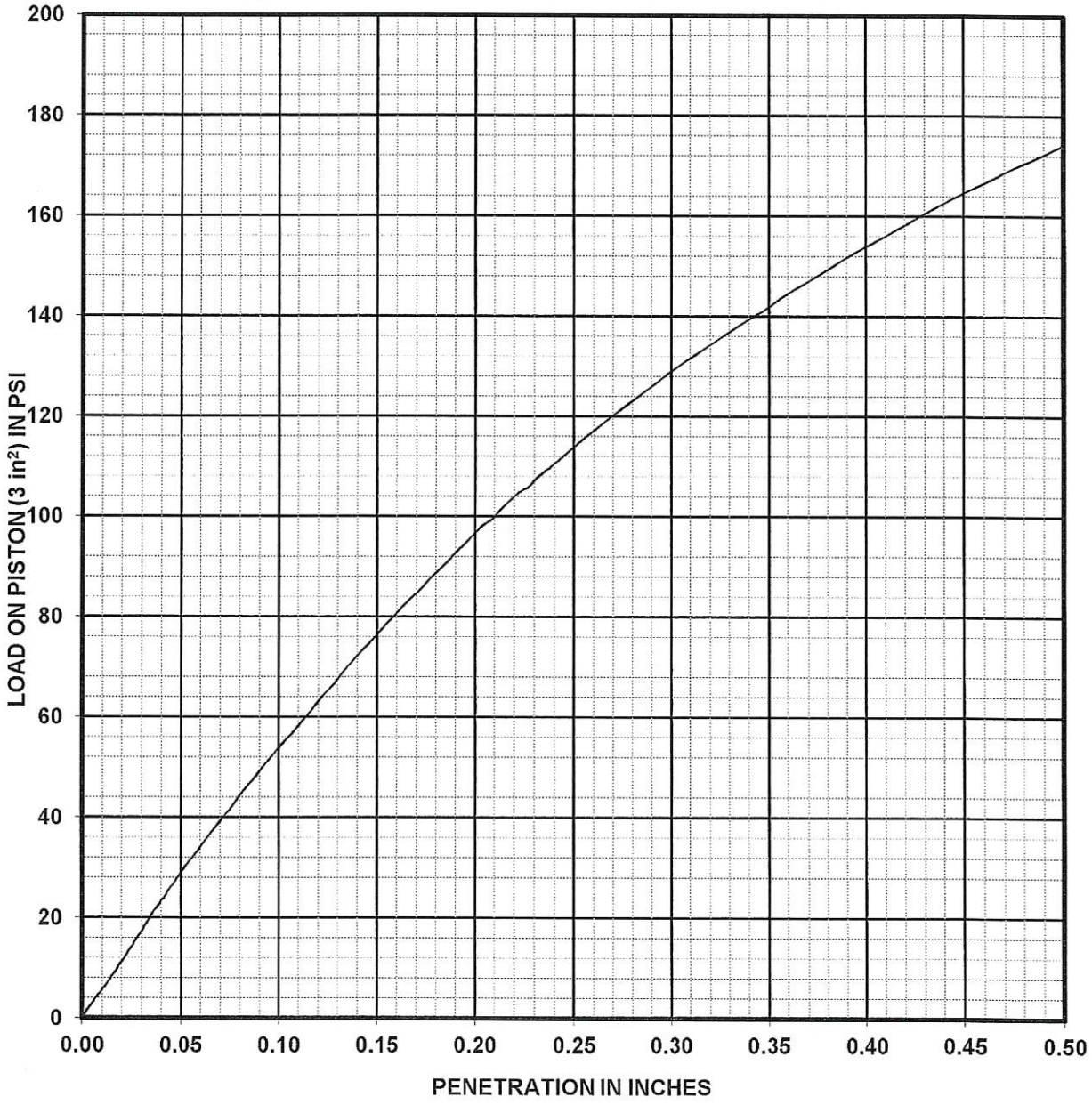
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 4.8*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 174

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: CBR 2-22 at 1' to 2' CS #: 13222
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 89 hours

Dry Density:	as molded	110 pcf	Moisture Content:	as molded	17 percent
	after soaking	110 pcf		top 1-inch after soaking	17 percent
Swell:	after soaking	0.0 percent		average after soaking	18 percent

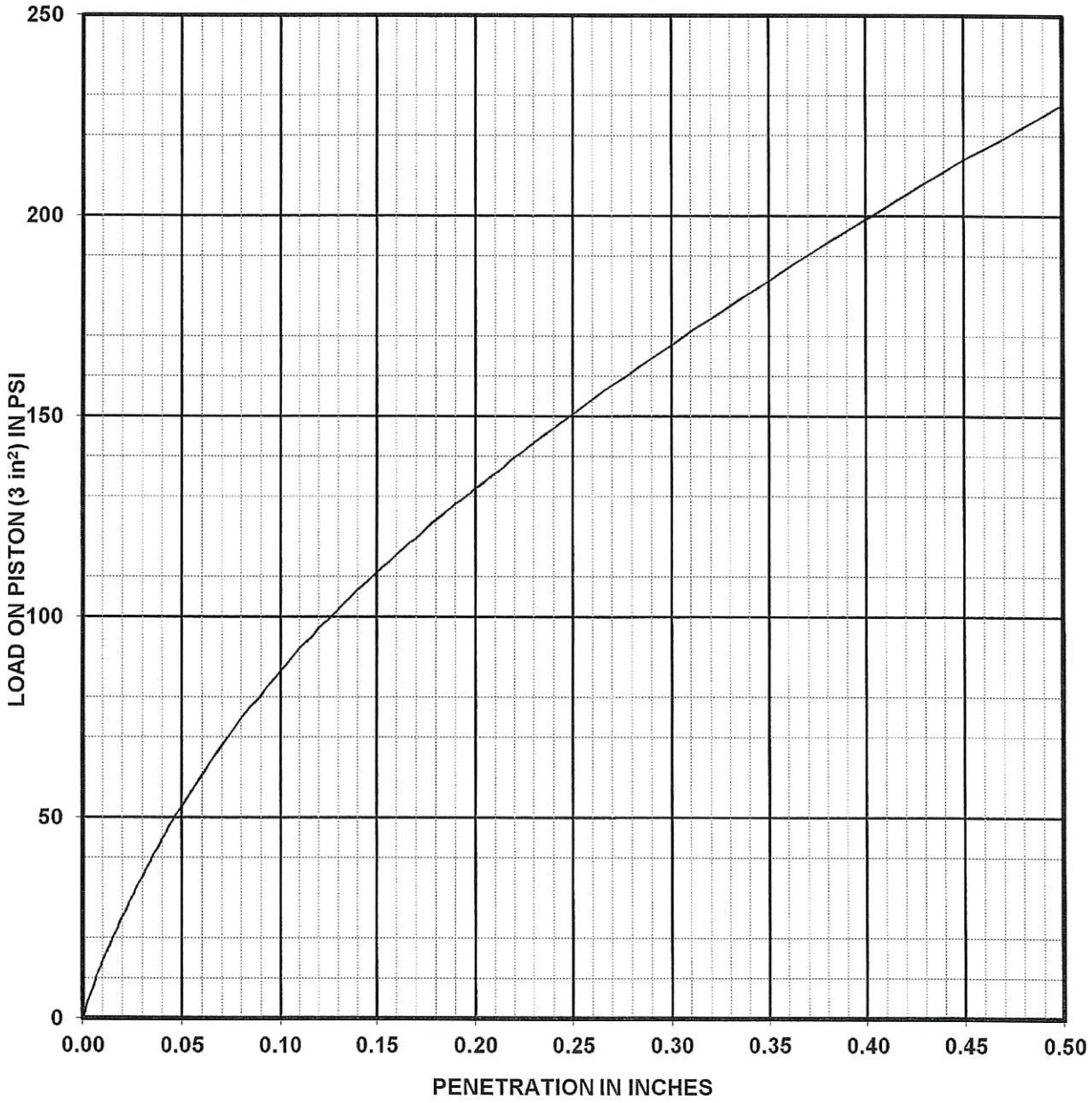
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **3.2*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 175

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: CBR 2-23 at 1' to 2' CS #: 13223
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 89 hours

Dry Density:	as molded	110 pcf	Moisture Content:	as molded	15	percent
	after soaking	110 pcf		top 1-inch after soaking	16	percent
Swell:	after soaking	0.0 percent		average after soaking	16	percent

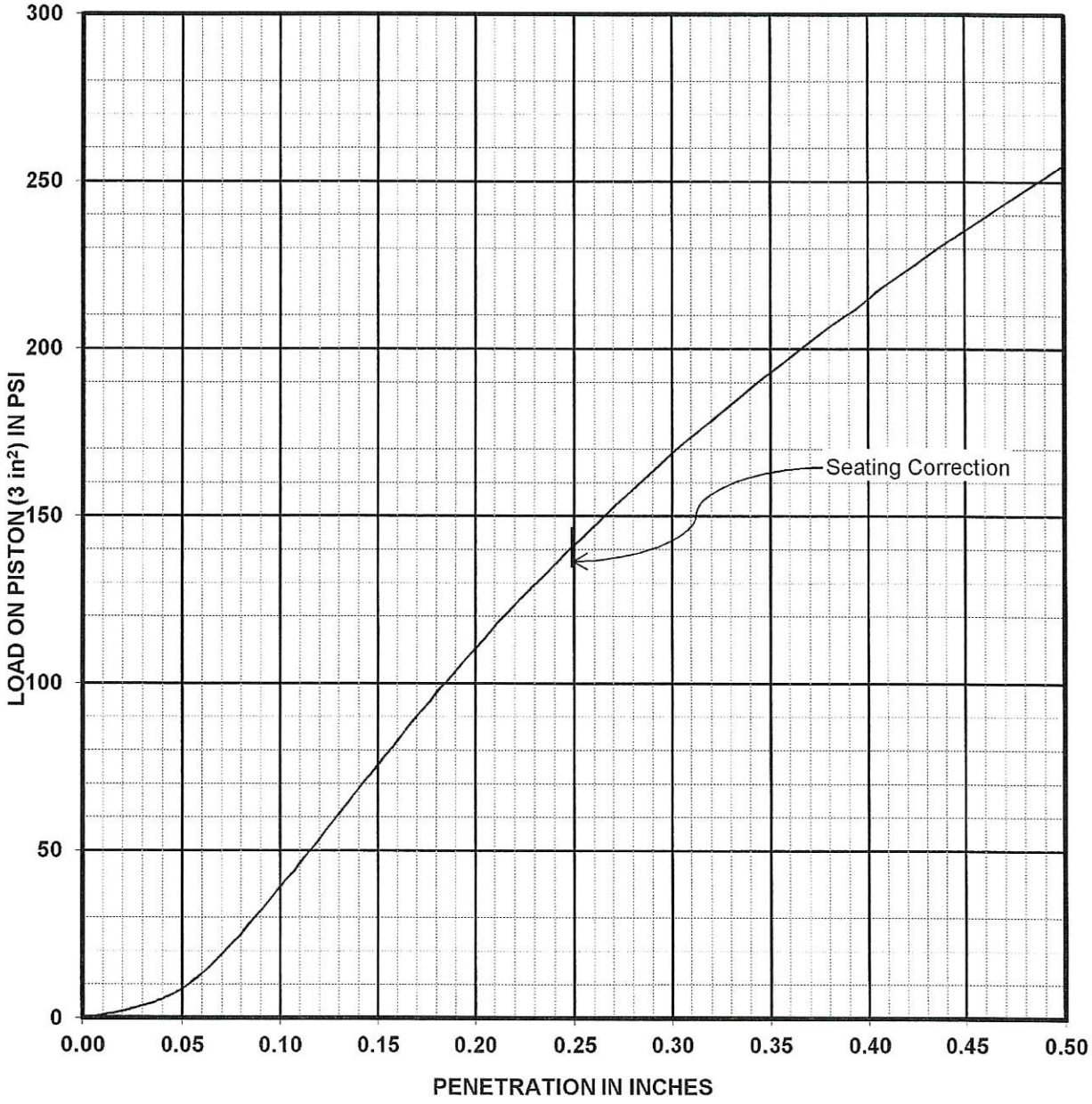
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 4.3*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 176

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: CBR 2-24 at 1' to 2' CS #: 13224
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 86 hours

Dry Density:	as molded	108 pcf	Moisture Content:	as molded	16 percent
	after soaking	108 pcf		top 1-inch after soaking	17 percent
Swell:	after soaking	-0.1 percent		average after soaking	18 percent

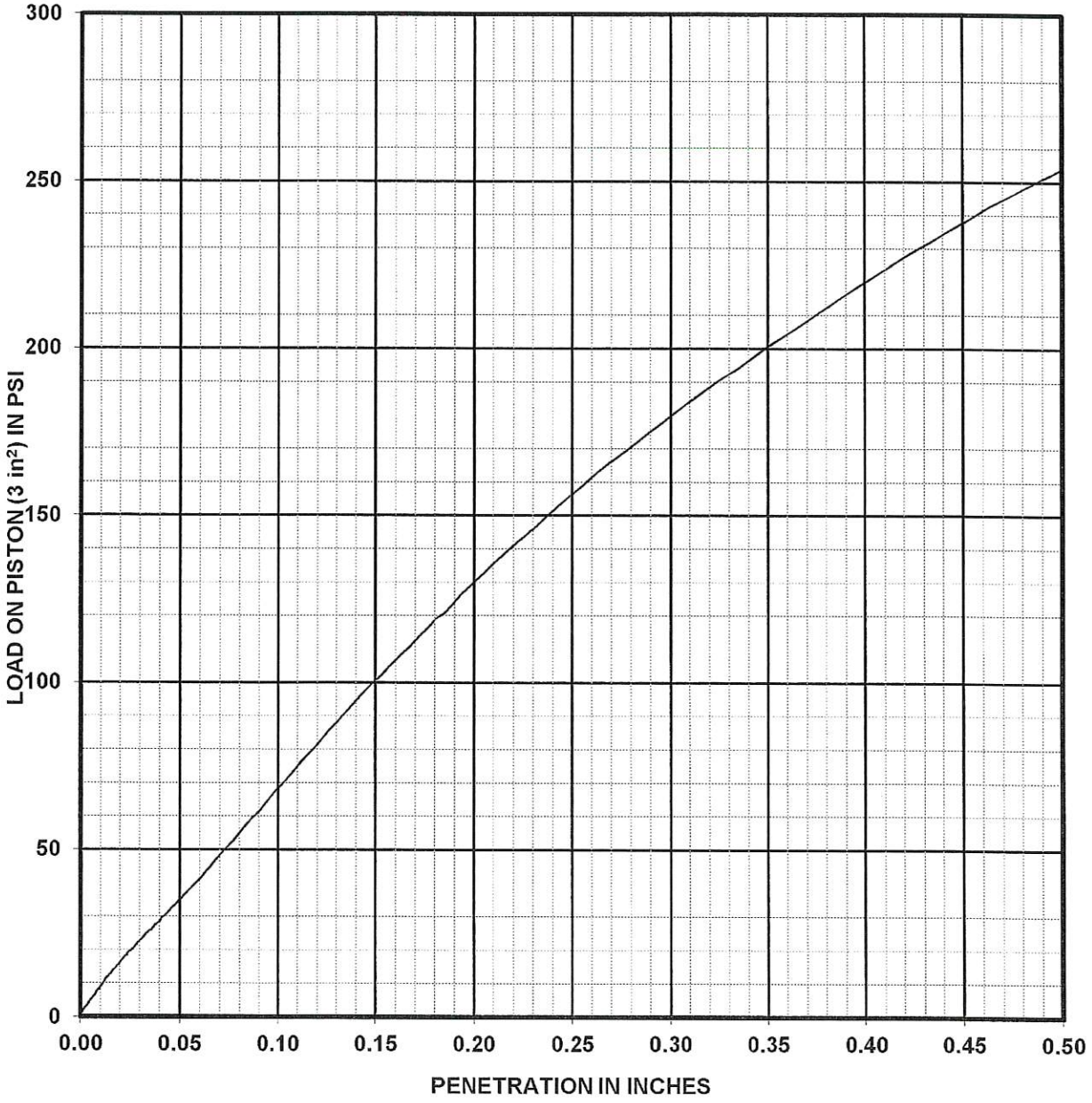
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 5.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 177

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: CBR 2-25 at 1' to 2' CS #: 13225
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 90 hours

Dry Density:	as molded	110 pcf	Moisture Content:	as molded	16	percent
	after soaking	111 pcf		top 1-inch after soaking	16	percent
Swell:	after soaking	0.1 percent		average after soaking	16	percent

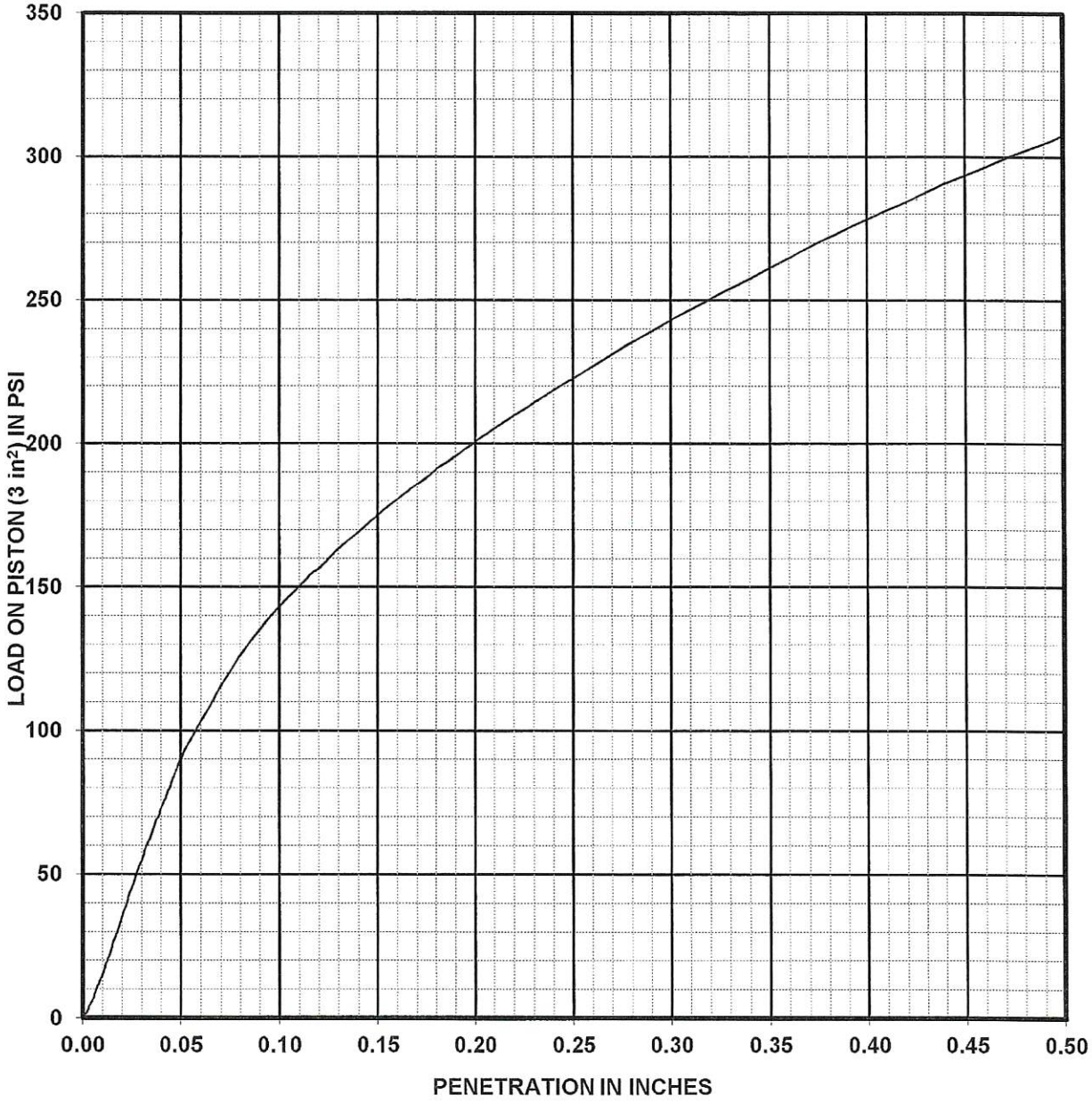
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **5.2*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 178

Applied Geotechnical Engineering Consultants, Inc.



Sample of Sandy Lean Clay (CL)
Location: B 2-1 at 3' to 5' CS #: 13246
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 90 hours

Dry Density:	as molded	114 pcf	Moisture Content:	as molded	14	percent
	after soaking	116 pcf		top 1-inch after soaking	15	percent
Swell:	after soaking	0.1 percent		average after soaking	15	percent

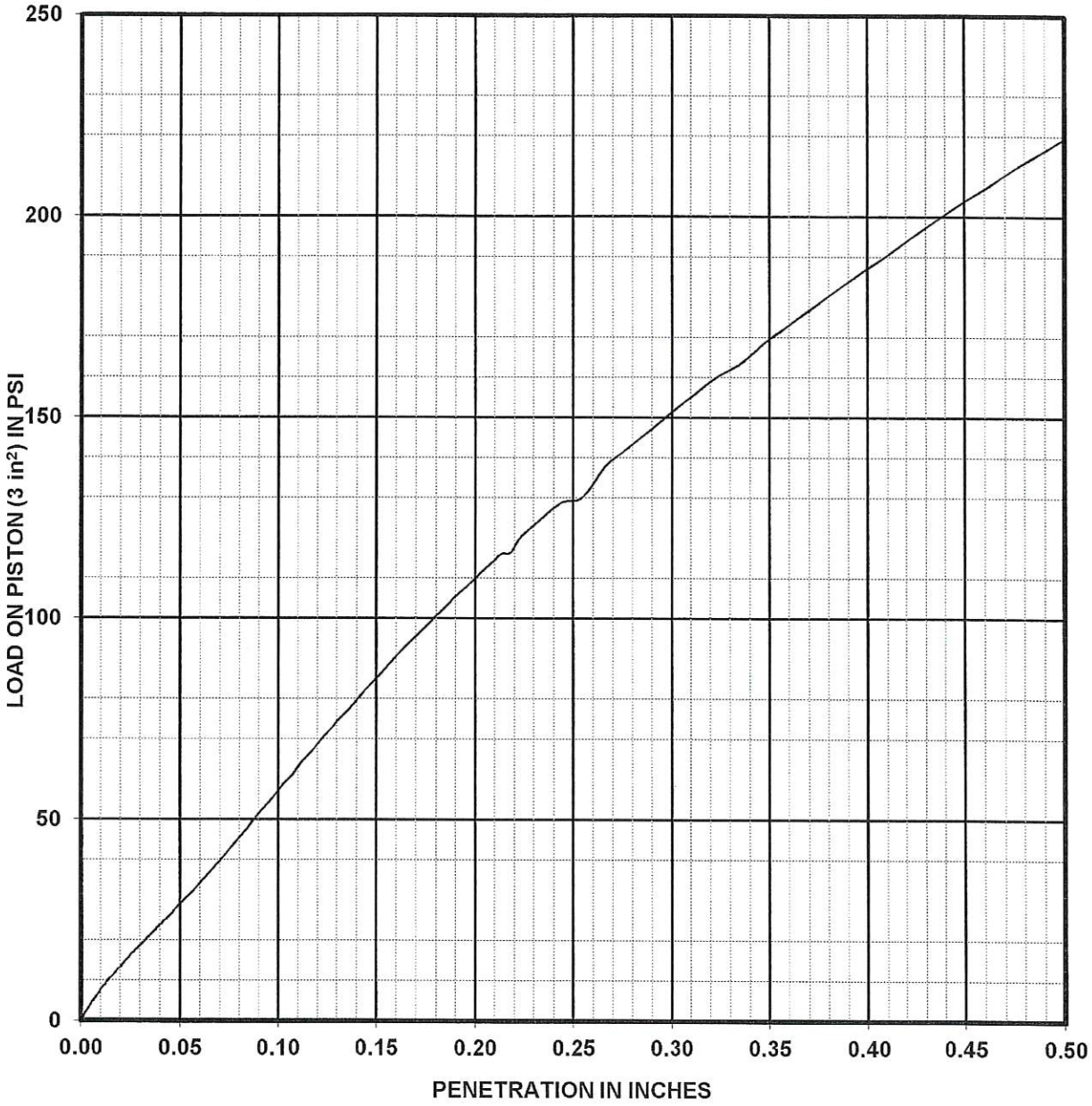
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **8.6*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 179

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: B 2-2 at 2' to 4' CS #: 13247
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 91 hours

Dry Density:	as molded	101 pcf	Moisture Content:	as molded	21	percent
	after soaking	101 pcf		top 1-inch after soaking	21	percent
Swell:	after soaking	0.2 percent		average after soaking	22	percent

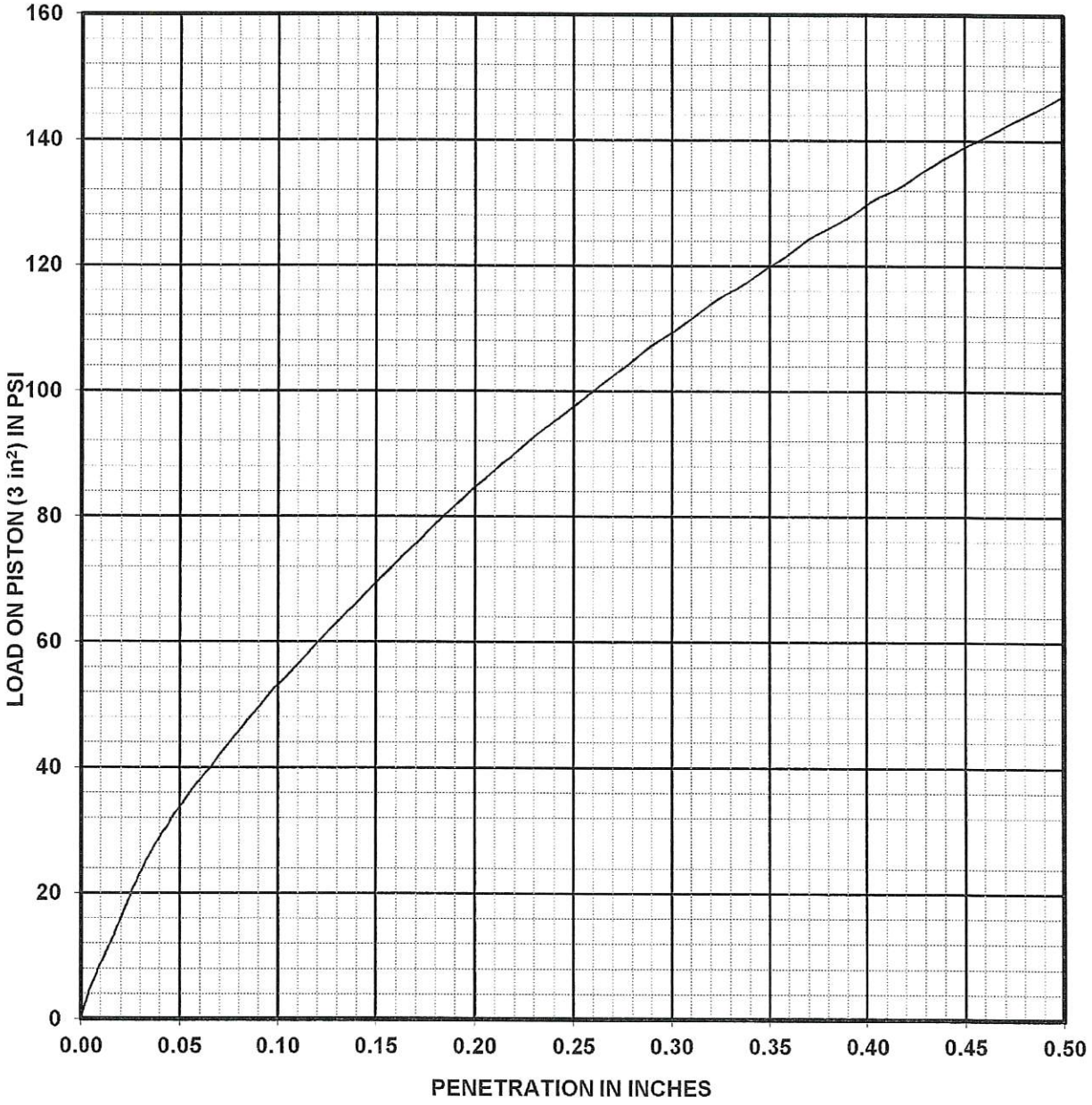
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, CBR = 3.7* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 180

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: B 2-3 at 3' to 5' CS #: 13248
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 92 hours

Dry Density:	as molded	110 pcf	Moisture Content:	as molded	17 percent
	after soaking	111 pcf		top 1-inch after soaking	17 percent
Swell:	after soaking	0.0 percent		average after soaking	17 percent

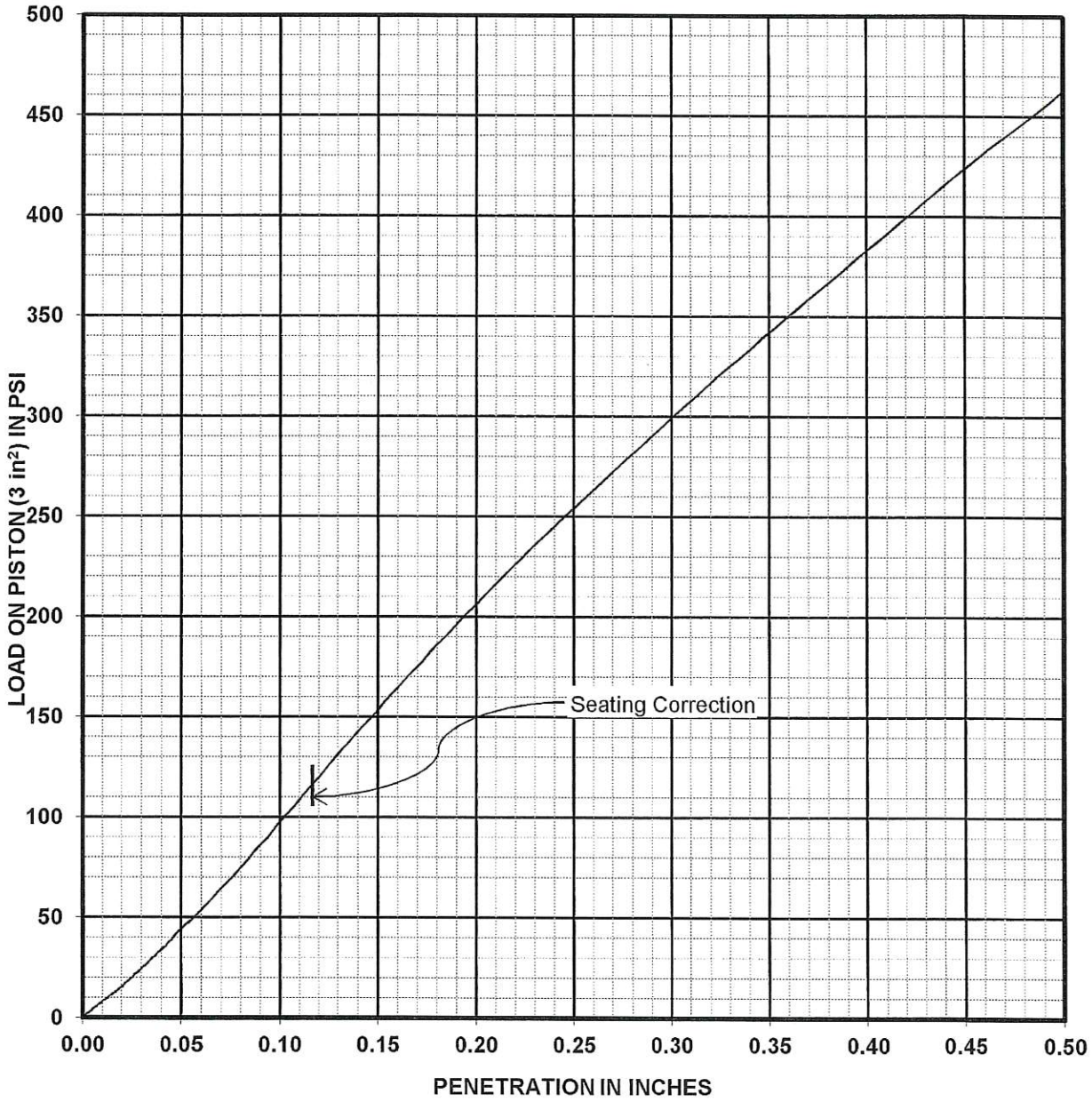
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 2.8*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 181

Applied Geotechnical Engineering Consultants, Inc.



Sample of Clayey Sand (SC)
Location: B 2-4 at 2' to 4' CS #: 13249
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 89 hours

Dry Density: as molded 120 pcf
after soaking 120 pcf
Swell: after soaking -0.1 percent

Moisture Content: as molded 11 percent
top 1-inch after soaking 11 percent
average after soaking 11 percent

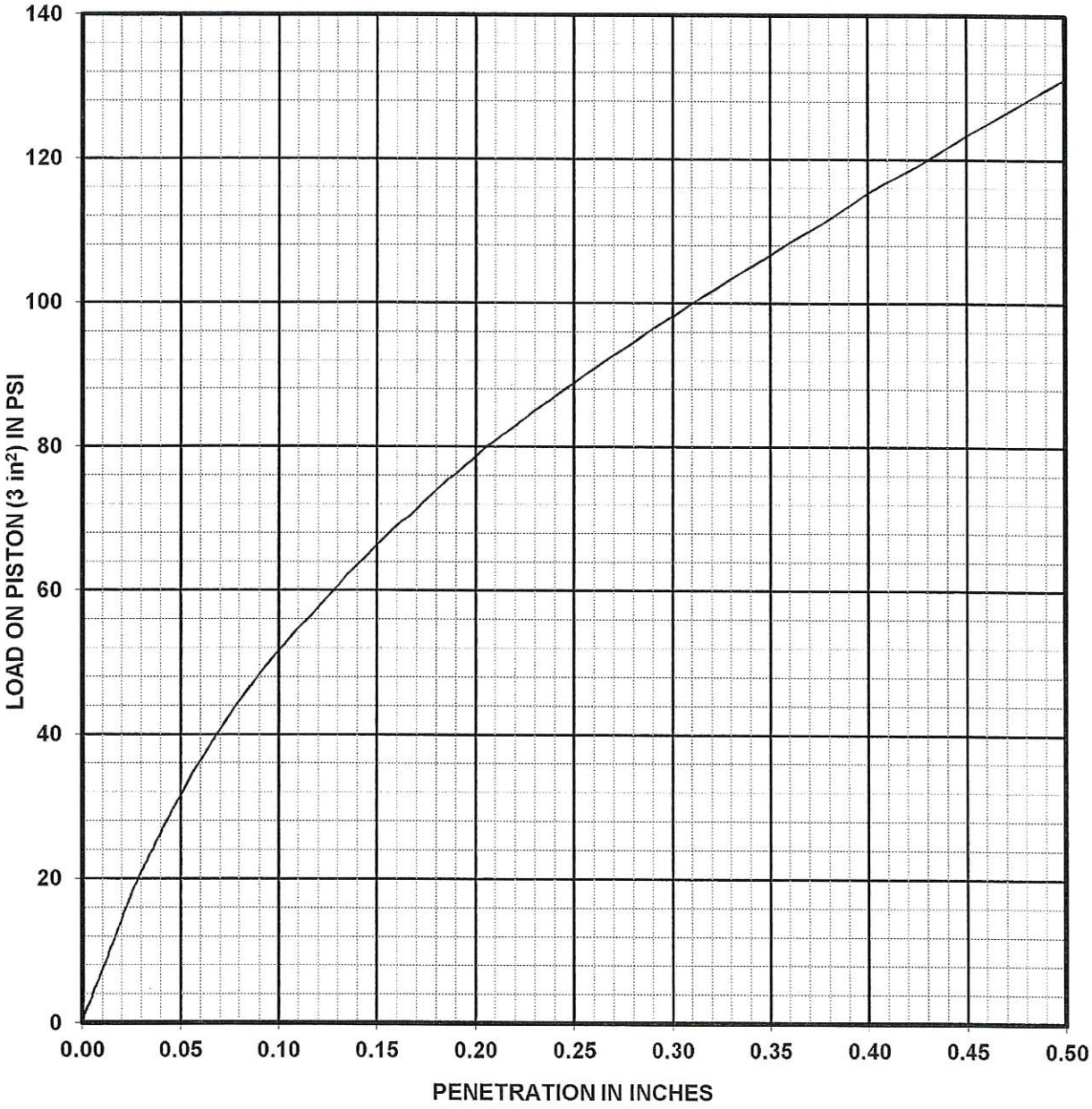
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** 7.0* percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 182

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: B 2-5 at 3' to 5' CS #: 13250
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content per T-99B

Sample penetration after soaking for 92 hours

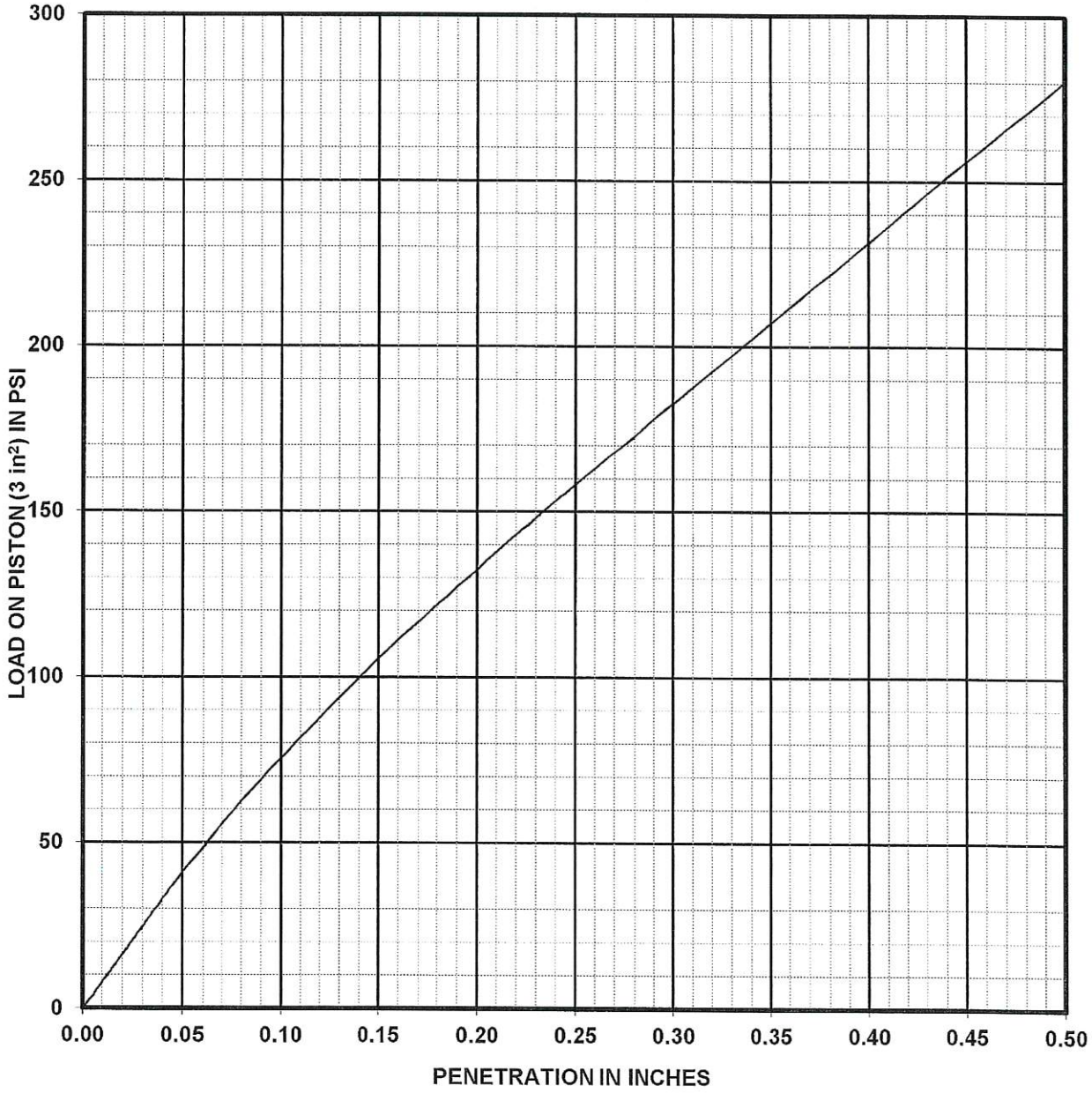
Dry Density: as molded 103 pcf
after soaking 103 pcf
Swell: after soaking 1.3 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Moisture Content: as molded 19 percent
top 1-inch after soaking 22 percent
average after soaking 21 percent

Bearing Ratio of Sample, **CBR = 2.6*** percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 183

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay with Sand (CL)
Location: TP 3-1 at 1' to 2' CS#: 13373
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 96 hours

Dry Density: as molded 109 pcf
after soaking 110 pcf
Swell: after soaking 0.1 percent

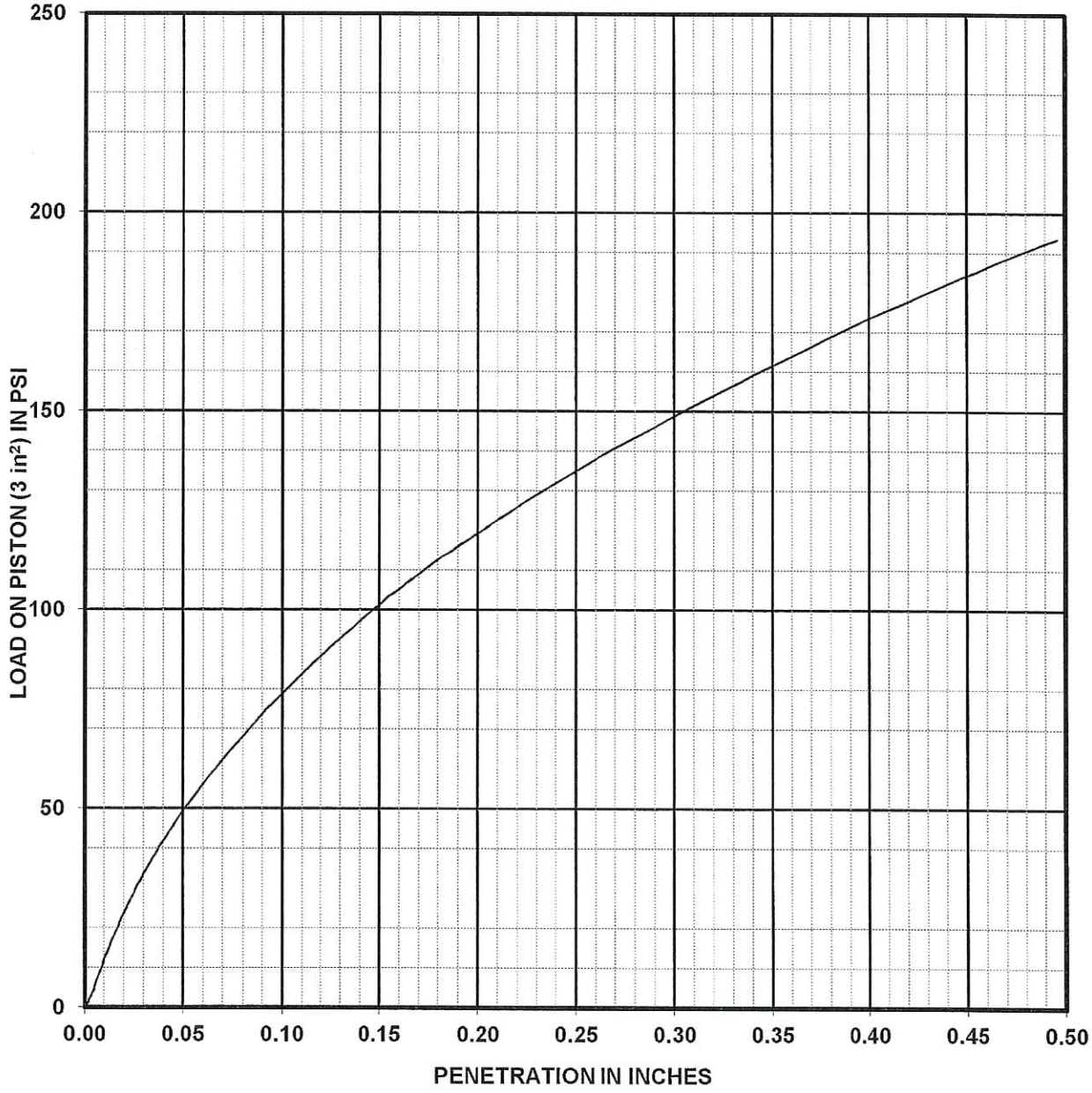
Moisture Content: as molded 16 percent
top 1-inch after soaking 18 percent
average after soaking 17 percent

(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR =** **4.5*** percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 184

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 3-2 at 1' to 2' CS#: 13374
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 88 hours

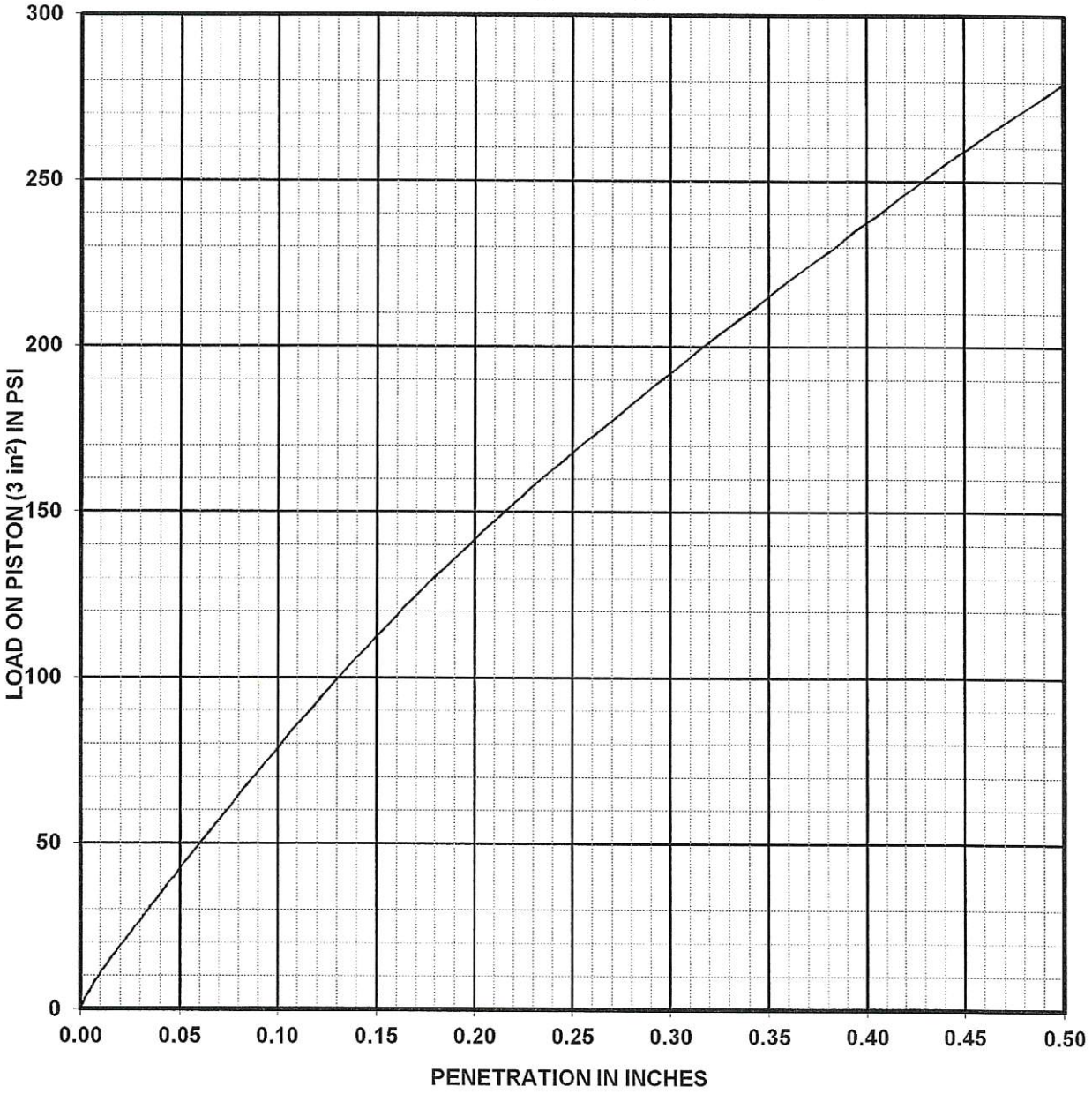
Dry Density: as molded 106 pcf
after soaking 106 pcf
Swell: after soaking 1.1 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Moisture Content: as molded 19 percent
top 1-inch after soaking 19 percent
average after soaking 19 percent

Bearing Ratio of Sample, **CBR = 4.3*** percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 185

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: TP 3-3 at 1' to 2' CS#: 13375
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 88 hours

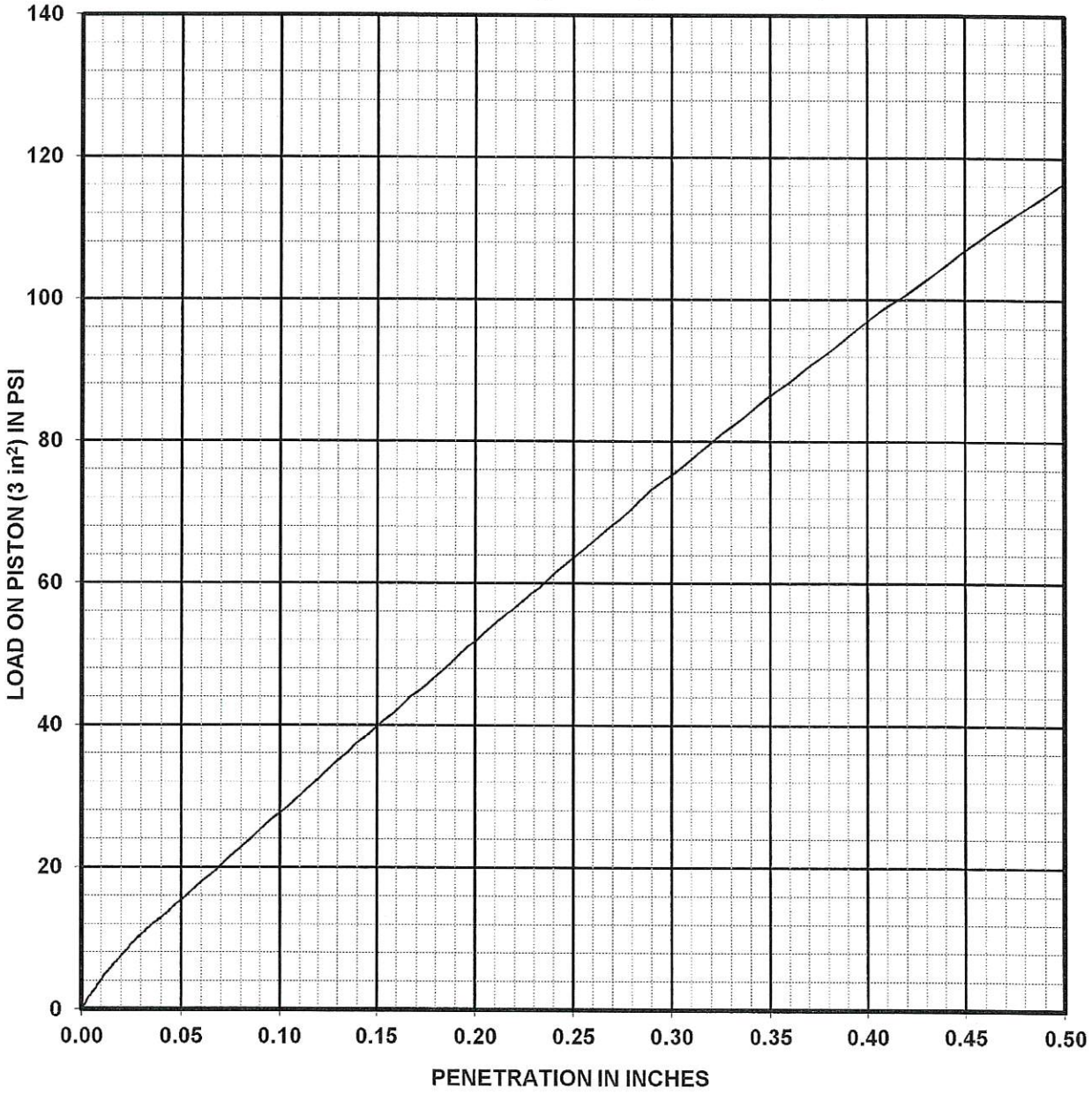
Dry Density: as molded 107 pcf
after soaking 109 pcf
Swell: after soaking 0.0 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Moisture Content: as molded 17 percent
top 1-inch after soaking 18 percent
average after soaking 18 percent

Bearing Ratio of Sample, **CBR =** 4.8* percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 186

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: CBR 3-1 at 1' to 2' CS#: 13372
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 93 hours

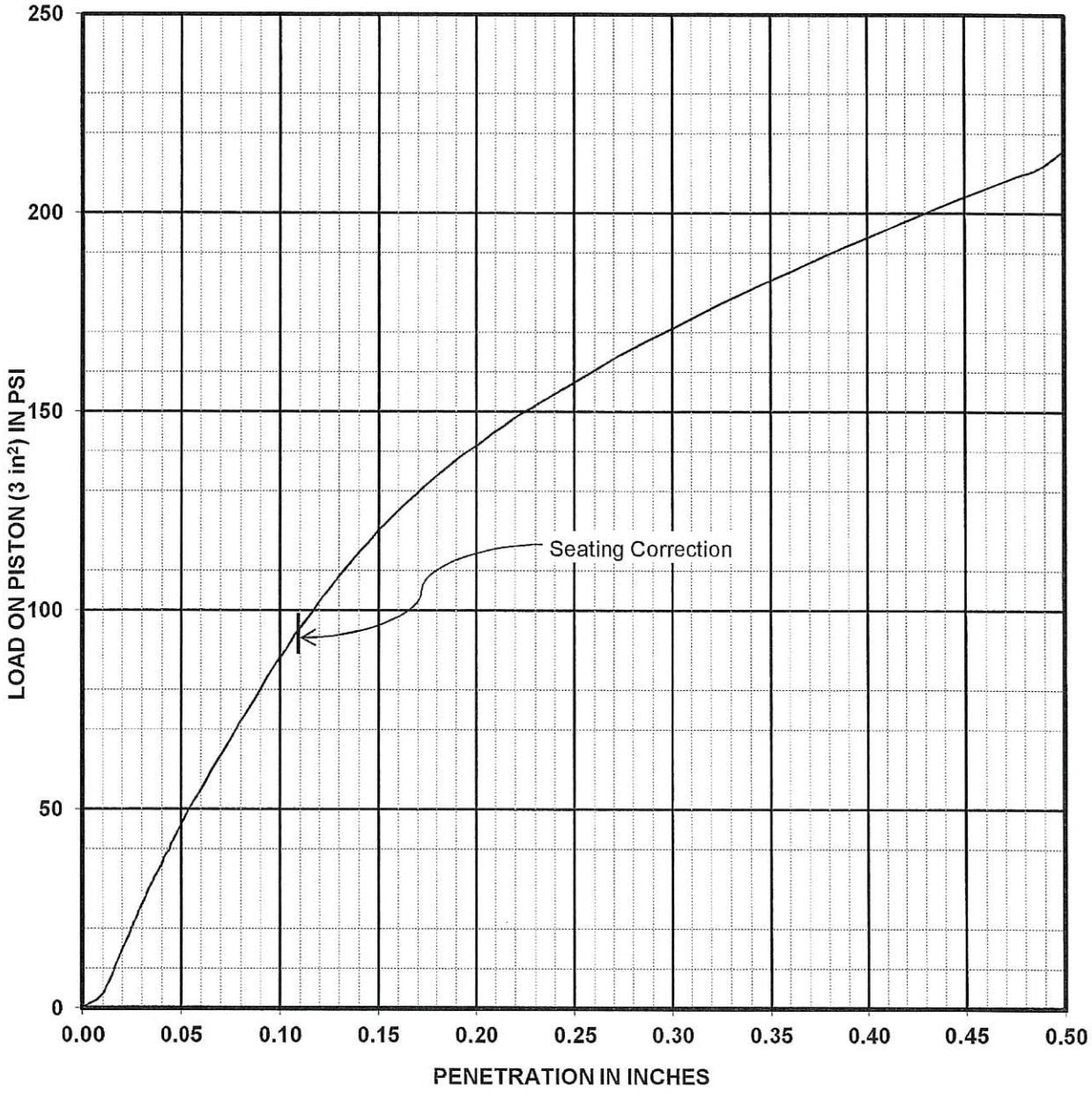
Dry Density: as molded 105 pcf
after soaking 107 pcf
Swell: after soaking -0.2 percent
(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Moisture Content: as molded 20 percent
top 1-inch after soaking 20 percent
average after soaking 20 percent

Bearing Ratio of Sample, **CBR = 1.8*** percent with a surcharge of 20 lb
* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 187

Applied Geotechnical Engineering Consultants, Inc.



Sample of Lean Clay (CL)
Location: B 3-1 at 2' to 5' CS#: 13376
Method of sample preparation: Sample remolded to approximately 100% Maximum Dry Density at approximate Optimum Moisture Content using AASHTO T-99B

Sample penetration after soaking for 87 hours

Dry Density:	as molded	104 pcf	Moisture Content:	as molded	19	percent
	after soaking	105 pcf		top 1-inch after soaking	23	percent
Swell:	after soaking	0.2 percent		average after soaking	22	percent

(Swell Expressed as Positive Value, Compression Expressed as Negative Value)

Bearing Ratio of Sample, **CBR = 4.8*** percent with a surcharge of 20 lb

* Adjusted to represent 95% compaction

Proj. No. 1140850 **CALIFORNIA BEARING RATIO TEST RESULTS** Figure 188

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

PROJECT NUMBER 1140850

SAMPLE LOCATION		GRADATION			ATTERBERG LIMITS		STANDARD PROCTOR		CALIFORNIA BEARING RATIO (%)	SAMPLE CLASSIFICATION
BORING OR TEST PIT	DEPTH (FEET)	GRAVEL (%)	SAND (%)	SILT/ CLAY (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)		
TP 1-1	1-2	34	29	37			103.5	20	5.9	Clayey Gravel with Sand (GC)
TP 1-2	1-2	23	46	31			116.7	10.4	14	Clayey Sand with Gravel (SC)
TP 1-3	1-2	0	13	87			93.5	23.1	3.2	Silt (ML)
TP 1-4	1-2	4	44	52			109	15.5	5.8	Sandy Lean Clay (CL)
TP 1-5	1-2	4	29	67			106.8	15.9	5.6	Sandy Lean Clay (CL)
TP 1-6	1-2	7	53	40			110	13.9	9.7	Silty Sand (SM)
TP 1-7	1-2	0	12	88			90.8	25.5	3.5	Lean Clay (CL)
TP 1-8	1-2	7	36	57			107.5	14.5	7.6	Sandy Lean Clay (CL)
TP 1-9	1-2	0	15	85			105.2	17.5	2.4	Lean Clay with Sand (CL)
TP 1-10	1-2	0	67	33			109.2	16.3	7.3	Silty Sand (SM)
TP 1-11	1-2	4	53	43			110.2	14.5	6.3	Clayey Sand (SC)
TP 1-12	1-2	0	13	87			102.7	17.9	4.8	Lean Clay (CL)
TP 1-13	1-2	3	28	69			105.6	17	6.4	Sandy Lean Clay (CL)
TP 1-14	1-2	0	6	94			101.3	19.8	4.3	Lean Clay (CL)
TP 1-15	1-2	5	38	57			111.2	15	7.1	Sandy Lean Clay (CL)
TP 1-16	1-2	29	19	52			109.7	15	4.5	Gravelly Lean Clay with Sand (CL)
TP 1-17	1-2	1	15	84			102.7	20	3.0	Lean Clay with Sand (CL)
TP 1-18	1-2	0	5	95			95	22.1	3.2	Lean Clay (CL)
CBR 1-1	1-2	32	56	12	34	13	117.7	13.2	7.9	Poorly-graded Sand with Clay and Gravel (SP-SC)
CBR 1-2	1-2	4	49	47	40	23	110	15.3	5.9	Clayey Sand (SC)

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

PROJECT NUMBER 1140850

SAMPLE LOCATION		GRADATION			ATTERBERG LIMITS		STANDARD PROCTOR		CALIFORNIA BEARING RATIO (%)	SAMPLE CLASSIFICATION
BORING OR TEST PIT	DEPTH (FEET)	GRAVEL (%)	SAND (%)	SILT/ CLAY (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)		
CBR 1-3	1-3	1	32	67	33	19	101.9	19.2	4.1	Sandy Lean Clay (CL)
CBR 1-4	1-3	1	32	67	38	20	101	21	4.9	Sandy Lean Clay (CL)
CBR 1-5	1-3	0	30	70	40	21	99.5	19.8	4.6	Sandy Lean Clay (CL)
CBR 1-6	1-3	1	24	75	43	26	100	19.8	3.1	Lean Clay with Sand (CL)
TP 2-1	1-2	2	23	75			108.8	17.2	4.3	Lean Clay with Sand (CL)
TP 2-2	1-2	0	48	52			106.7	17	3.5	Sandy Silt (ML)
TP 2-3	1-2	0	47	53			109.1	14.3	16	Sandy Silt (ML)
TP 2-4	1-2	0	6	94			106.5	18.3	3.1	Lean Clay (CL)
TP 2-5	1-2	0	50	50			111.2	15.5	4.6	Sandy Lean Clay (CL)
TP 2-6	1-2	0	22	78	31	15	103.1	18.9	3.7	Lean Clay with Sand (CL)
TP 2-7	1-2	8	33	59			109.9	16.4	3.6	Sandy Lean Clay (CL)
TP 2-8	1-2	0	45	55	37	17	109.4	15	7.6	Sandy Lean Clay (CL)
TP 2-9	1-2	34	32	34			120.7	12.4	2.9	Clayey Gravel with Sand (GC)
TP 2-10	1-2	0	17	83			97.2	23.1	2.3	Lean Clay with Sand (CL)
TP 2-11	1-2	0	12	88			102	20.8	2.7	Lean Clay (CL)
TP 2-12	1-2	1	22	77			107.6	16.9	2.8	Lean Clay with Sand (CL)
TP 2-13	1-2	0	6	94			99	23	2.9	Lean Clay (CL)
TP 2-14	1-2	0	12	88			96.1	22.5	4.1	Lean Clay (CL)
TP 2-15	1-2	0	10	90			103.2	20.4	4.5	Lean Clay (CL)
TP 2-16	1-2	2	50	48			113.6	13.8	9.5	Clayey Sand (SC)

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

PROJECT NUMBER 1140850

SAMPLE LOCATION		GRADATION			ATTERBERG LIMITS		STANDARD PROCTOR		CALIFORNIA BEARING RATIO (%)	SAMPLE CLASSIFICATION
BORING OR TEST PIT	DEPTH (FEET)	GRAVEL (%)	SAND (%)	SILT/ CLAY (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)		
TP 2-17	1-2	0	30	70			109.9	17.2	2.8	Sandy Lean Clay (CL)
TP 2-18	1-2	0	28	72			107.4	17.7	3.8	Lean Clay with Sand (CL)
TP 2-19	1-2	0	7	93			102.4	19.1	5.9	Lean Clay (CL)
TP 2-20	1-2	4	12	84			103.6	20	2.1	Lean Clay with Sand (CL)
TP 2-21	1-2	0	35	65			108.4	17.6	4.7	Sandy Lean Clay (CL)
TP 2-22	1-2	0	8	92			102.4	21.4	3.0	Lean Clay (CL)
TP 2-23	1-2	0	26	74			109.3	16.5	3.9	Lean Clay with Sand (CL)
TP 2-24	1-2	0	9	91			108.5	17.9	4.2	Lean Clay (CL)
TP 2-25	1-2	0	9	91			100.4	20.5	3.6	Lean Clay (CL)
TP 2-26	1-2	0	18	82			102.8	20.1	2.7	Lean Clay with Sand (CL)
TP 2-27	1-2	0	24	76			109	17	2.3	Lean Clay with Sand (CL)
TP 2-28	1-2	0	36	64			107.3	17.5	4.6	Sandy Lean Clay (CL)
TP 2-29	1-2	0	6	94			104.2	19.3	3.2	Lean Clay (CL)
TP 2-30	1-2	0	25	75			107.8	17.9	2.3	Lean Clay with Sand (CL)
TP 2-31	1-2	0	8	92			100.5	23	2.5	Lean Clay (CL)
TP 2-32	1-2	0	20	80			106.5	18.1	4.2	Lean Clay with Sand (CL)
TP 2-33	1-2	0	27	73			106.2	16.2	6.0	Lean Clay with Sand (CL)
TP 2-34	1-2	0	35	65			111.2	14.5	10	Sandy Lean Clay (CL)
TP 2-35	1-2	0	17	83			106.3	18.2	3.1	Lean Clay with Sand (CL)
CBR 2-1	1-3	0	24	76	29	12	104.8	17.5	4.2	Lean Clay with Sand (CL)

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

PROJECT NUMBER 1140850

SAMPLE LOCATION		GRADATION			ATTERBERG LIMITS		STANDARD PROCTOR		CALIFORNIA BEARING RATIO (%)	SAMPLE CLASSIFICATION
BORING OR TEST PIT	DEPTH (FEET)	GRAVEL (%)	SAND (%)	SILT/ CLAY (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)		
CBR 2-2	1-3	0	56	44			104	16	8.7	Silty Sand (SM)
CBR 2-3	1-3	0	15	85	31	15	102	19.1	2.2	Lean Clay with Sand (CL)
CBR 2-4	1-2	0	73	27			109	14	14	Silty Sand (SM)
CBR 2-5	1-2	0	32	68			102.4	19.5	5.4	Sandy Lean Clay (CL)
CBR 2-6	1-3	1	10	89			99.6	22.5	4.2	Lean Clay (CL)
CBR 2-7	1-3	0	18	82			104.6	20.4	2.0	Lean Clay with Sand (CL)
CBR 2-8	1-3	0	8	92	33	15	96.8	21	3.0	Lean Clay (CL)
CBR 2-9	1-2	0	21	79			106.7	16.5	4.6	Lean Clay with Sand (CL)
CBR 2-10	1-3	0	13	87	37	17	97.2	22.8	3.0	Lean Clay (CL)
CBR 2-11	1-3	0	26	74			106.3	18.2	4.3	Lean Clay with Sand (CL)
CBR 2-12	1-2	0	28	72			111.4	15.2	3.6	Lean Clay with Sand (CL)
CBR 2-13	1-3	0	6	94	35	16	101	20.5	2.4	Lean Clay (CL)
CBR 2-14	1-3	0	18	82			101.4	19.5	2.6	Lean Clay with Sand (CL)
CBR 2-15	1-2	0	30	70			108.2	16.1	4.6	Sandy Lean Clay (CL)
CBR 2-16	1-2	3	37	60	28	12	109.2	15.2	6.2	Sandy Lean Clay (CL)
CBR 2-17	1-2	0	33	67			106.3	17	6.2	Sandy Lean Clay (CL)
CBR 2-18	1-3	50	21	29			119.8	12.9	2.6	Clayey Gravel with Sand (GC)
CBR 2-19	1-3	1	39	60			106.8	16.5	3.4	Sandy Lean Clay (CL)
CBR 2-20	1-3	0	6	94	36	18	100.8	19.4	2.8	Lean Clay (CL)
CBR 2-21	1-2	0	8	92			103.6	19	4.8	Lean Clay (CL)

APPLIED GEOTECHNICAL ENGINEERING CONSULTANTS, INC.

TABLE I

SHEET 5 OF 5

SUMMARY OF LABORATORY TEST RESULTS

PROJECT NUMBER 1140850

SAMPLE LOCATION		GRADATION			ATTERBERG LIMITS		STANDARD PROCTOR		CALIFORNIA BEARING RATIO (%)	SAMPLE CLASSIFICATION
BORING OR TEST PIT	DEPTH (FEET)	GRAVEL (%)	SAND (%)	SILT/ CLAY (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)		
CBR 2-22	1-2	1	24	75			109.4	16.1	3.2	Lean Clay with Sand (CL)
CBR 2-23	1-2	0	20	80	30	15	110	15.2	4.3	Lean Clay with Sand (CL)
CBR 2-24	1-2	0	30	70			108.1	17.4	5.6	Sandy Lean Clay (CL)
CBR 2-25	1-2	0	32	68			109.9	16	5.2	Sandy Lean Clay (CL)
B 2-1	3-5	1	35	64			113.8	13.9	8.6	Sandy Lean Clay (CL)
B 2-2	2-4	0	8	92			101	20	3.7	Lean Clay (CL)
B 2-3	3-5	3	23	74			109.7	17.2	2.8	Lean Clay with Sand (CL)
B 2-4	2-4	8	58	34			120.7	10.5	7.0	Clayey Sand (SC)
B 2-5	3-5	0	5	95	42	25	102.8	20.1	2.6	Lean Clay (CL)
TP 3-1	1-2	0	20	80	26	10	109	16.3	4.5	Lean Clay with Sand (CL)
TP 3-2	1-2	0	6	94			105.8	19.5	4.3	Lean Clay (CL)
TP 3-3	1-2	0	13	87			106.9	17.2	4.8	Lean Clay (CL)
CBR 3-1	1-2	0	12	88			105.8	18.1	1.8	Lean Clay (CL)
B 3-1	2-5	0	1	99	40	21	103.9	18.8	4.8	Lean Clay (CL)