Braun & Associates Inc.

SOILS INVESTIGATION

PREPARED FOR:

SBCAST
Mr. Alan Macy
Macy Cornerstone, LLC.
1423 Kenwood Road
Santa Barbara, CA 93109

Proposed Multi-Story Commercial Building,
513 Garden Street, Santa Barbara CA

March 24, 2011

W.O. #2406

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INTRODUCTION

This report presents the findings and recommendations for the proposed demolition and new construction of a multi-story commercial building located at 513 Garden Street in the City of Santa Barbara, California. A plot plan of the site is shown on Plate A-1.1.

SCOPE OF WORK

This investigation was requested by Mr. Barry Winnick, architect for the project, and is based on our written agreement dated September 24, 2010. This investigation was conducted in order to determine the physical characteristics of the soils on the development site and to provide recommendations intended to comply with the considerations for the current California Building Code 2010 Edition and ASCE/SEI 7-10 Minimum Design Loads for Buildings & Other Structures. The recommendations are intended to comply with portions of Chapter 16 & 18, Appendix J of the CBC 2010 Edition and Chapters 12, 16 & 21 of the ASCE/SEI 7-10. More specifically the scope of our investigation includes the following objectives:
objectives:

- To evaluate the existing surface and subsurface conditions, including soil and ground water within the area of the construction.
- Grading recommendations for the demolition of the existing structures in preparation for the proposed new structure.
- Foundation recommendations for the proposed multi-story commercial building.
- Liquefaction analysis and recommendations for mitigation of induced settlement from liquefaction.
- To present general recommendations concerning construction procedures and quality control measures related to this project.

SITE CONDITIONS

This parcel is located at 513 Garden Street, in the City of Santa Barbara, California. Structures in this area vary from older multi-story commercial structures to multi-story apartment structures with some newer multi-story commercial buildings. Foundations range from shallow footings with slab on grade to deep pile or caisson systems with engineered floors.

The site is presently developed with a shop structure and has been used as an equipment storage yard. All existing structures will be demolished in preparation for the new construction which is to consist of a multi-story commercial building to be used as the Santa Barbara Center for Arts & Sciences. Drainage is generally sheet flow to Garden Street.

The scope of this investigation does not include geologic or seismic studies for the site. Also, the assessment of general site environmental conditions or the presence of pollutants in the soils of the site is beyond the scope of this investigation.

Our recommendations are based on the results of our field exploration, laboratory tests, and appropriate engineering analysis. The results of both field and laboratory work are presented in the Appendix. The recommendations provided herein are preliminary until they are confirmed in the field by the soil engineer during construction. It is the intent of this report that it be used by the design engineer in preparation of the plans and specifications. Application beyond the intent of this request is strictly at the user's risk.

To verify that all pertinent issues here have been addressed and to ensure conformance with the intent of this report, it is requested that final plans be submitted to this office for review and comment.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in this locale. This firm's basic assumption is the soils encountered during drilling and presented herein, are representative of the entire footprint of the structures, however no warranty is implied. If during the course of construction soil conditions are encountered which varies from those represented herein, please contact this firm immediately so that appropriate field modifications may be proposed.

FIELD INVESTIGATION

Subsurface soil conditions were explored with two hollow stem auger boring extending up to a depth of 50 feet below present ground surface. Drilling equipment utilized was a truck mounted CME 85 rig. Samples were obtained using the Standard Penetration Test method. The borings were supplemented with one field density test. Further details of our field exploration are presented in the Appendix.

LABORATORY TESTING

Laboratory tests were performed on selected soil samples to aid in the classification and determination of the engineering properties of the project soils. The following tests were performed:

- Moisture Content
- Dry Density Determination
- Consolidation Characteristics
- Grain Size Distribution
- Expansion Soil Index
- Maximum Density-Optimum Moisture Curve

Laboratory test results are presented in the Appendix.

LIQUEFACTION POTENTIAL

Liquefaction is the loss of strength of cohesionless soils (sandy soils) when the pore water pressure induced in the soil due to earthquake motions become equal to the confining pressure. The primary factors influencing liquefaction potential include depth of ground water, soil type, relative density of sandy soils, overburden pressure, fines content, and intensity and duration of ground shaking. Liquefaction potential is the greatest in saturated, loose, poorly graded, fine sands with grain size (D50) in the range of 0.1 to 0.5 millimeters. Generally, the potential for liquefaction is not critical at depths greater than 40 feet. A review of the boring logs reveals that the bulk of the alluvial deposits encountered are cohesive in nature.

The liquefaction analysis was based on the evaluation method by Stark/Olsen Method. The liquefaction Analysis and Summary are presented in Enclosure A. The computation was performed utilizing the computer program LiquefyPro. The last column in the "Liquefaction Analysis Summary" indicates the Factor of Safety for liquefaction to occur. It should be noted, the potential for liquefaction to occur is considered low to non-existent for Factors of Safety at and above 1.2. The results of the analysis indicates the presence of soil layers having a Liquefaction Factor of Safety under 1.2 occur between 15 and 40 feet below ground surface. Total settlement of approximately 8.5 inches is estimated. The enclosure provides a graphical representation of the soil and its liquefaction potential.

LATERAL SPREADING

Lateral spreading or flow slides are the lateral movement of soil to the unrestrained downhill side. This phenomenon known as flow slide or lateral spreading develops in areas subject to liquefaction. Flow slides occur in the same areas as those which are liquefiable. Lateral spreading requires saturated, uncompacted or slightly compacted artificial fills or loose saturated granular soils. The minimum slope angle for lateral spreading to occur has been recorded at approximately 2.3 degrees which is 25H to 1V with peak ground accelerations greater than .1g.

Conclusions as presented in the liquefaction portion of this report indicate the potential for lateral spreading shall be considered low due to the level nature of this area.

SOIL CONDITIONS

The geotechnical engineering investigation for this project consisted of a program of field exploration, laboratory testing and engineering evaluation. The field and laboratory data generated for our evaluations are presented in the Appendix. Our description of the supporting soil and groundwater conditions is based on the results of the field and laboratory testing program. A summary of the soil conditions encountered within the area of the proposed project is as follows:

- **Alluvial deposits** were encountered in both borings to the depth of 50 feet below ground surface. This material generally consisted of very dark brown/black to rsut-brown silts, fine sands and some clay. Blow counts ranged between 5 and 22 blows per foot while relative densities ranged between 106.9 pcf to 1113.3 pcf with moisture contents ranging between 5.1% and 19.8%. In general these soils were found to have a low potential for expansion and are moderately compressible in nature.

- **Static Ground Water** was noted at approximately 20 feet below present ground surface. It should be expected that this water table will fluctuate due to inclement weather. It was assumed during the liquefaction analysis the ground water could rise to within 15 feet of ground surface.

CONCLUSIONS

Based on our field investigation and laboratory testing development of the proposed commercial structure is geotechnically feasible.

RECOMMENDATIONS

The understanding of this firm is that the proposed development will be demolishing the existing structures and constructing a new commercial structure which will serve as the Santa Barbara Center for Arts & Sciences. Based on conceptual plans and conversations with the architect the foundation system will consist of a slab on grade mat foundation system. Based upon this information the following is recommended:

Grading

1. The area upon which grading is to be performed shall be cleared of surface vegetation including roots and root structures.

2. In areas which will ultimately support the proposed structures, the top 48 inches of existing surface soils shall be removed.

3. Fill pads shall extend, as a compacted fill, a minimum distance of 5 feet beyond the exterior perimeter of the foundation system. Reinforcing fabric shall be used beneath the new structures to help mitigate differential settlement due to liquefaction.

4. Reinforcing fabric for the use on this project shall be Mirafi 600X or equivalent. The fabric shall be placed per manufacturers recommendations. Care should be taken to ensure the fabric is stretched tightly in order to prevent wrinkling or excess fabric being placed at the base of the excavation.

5. All other areas shall be prepared by removing the top 12 inches of existing surface soils.

6. The exposed ground surface under the structures shall be prepared for placement of reinforcing fabric by leveling and smoothing the ground surface.

7. During the excavation process, a thorough search shall be made, under the direction of this firm, to locate and remove any man-made buried structures and utilities.

8. The first layer of backfill material shall be placed in loose lifts of approximately 12 inches moistened or dried to near optimum moisture content and compacted to minimum of 95% relative compaction.

9. Fill material shall be placed to a depth of approximately 6 inches after which the ground surface shall be smoothed in preparation for a second layer of the geotextile reinforcing fabric. The second layer of geotextile fabric shall be placed perpendicular to the first layer and shall be installed as per the recommendations above.

10. Fill material shall be placed in loose lifts of approximately 6 inches moistened or dried to near optimum moisture content and compacted to minimum of 95% relative compaction.

11. Fill pads shall extend as a compacted reinforced fill, a minimum distance of 5 feet beyond the exterior perimeter of the foundation system and to within 1 foot of the existing footings.

12. Due to the estimated settlement projection it is recommended the building pad be raised 9-inches above existing grade to compensate for the potential of seismic induced settlement.

13. Compaction standard shall be ASTM D-1557 Method of Compaction, most current edition.

14. All cut and fill slopes created during the grading operation shall be properly shaped to a maximum slope angle of 2^{H} to 1^{V}.

15. Fill slopes shall be compacted by a rolling sheep-foot roller or similar compaction equipment device over the slope face at vertical lift intervals of 30 inches or less.

16. Import soils shall be granular, well-graded sands or silty sands. All import material shall be inspected by a representative of this firm prior to importation to the site.

Building Foundations

Due to the potential for liquefaction the structures will need to be supported on a mat foundation system. Based upon our understanding of the project the following is recommended.

1. Design of the mat foundation system shall be by a professional engineer familiar with this type of design.

2. The foundation shall be designed assuming a static dead load soil bearing value of 500 psf and a total load of 1000 psf. The sub grade modulus shall be assumed to be 250 pci.

3. Minimum exterior footing depths for all structures shall be 18 inches and shall have a minimum reinforcement of four #5 placed two in the base and two in the stem of the footing.

4. Concrete slab on grade shall be a minimum of 6 inches in thickness. Reinforcing for slab on grade shall consist of #3 rebar spaced at 18nch on center each way. Reinforcing steel shall be doweled into all exterior footings with a minimum of one #3 rebar spaced at 18 inches on center.

5. A vapor barrier consisting of clean coarse sand and 12 mil or heavier visqueen shall be used. Sand gradation shall conform to Green Book Standards 300-3.5.2 for pervious backfill. Construction shall consist of two inches of sand overlain by the visqueen membrane and an additional 2 inches of sand.

6. Concrete placement shall conform to all present Uniform Building Code requirements.

7. Should post tension slab design be utilized it shall be based on the "Post Tensioning Institutes, Design and Construction of Post Tension Slabs on Ground, Third Edition"

8. The design of a mat foundation system would consist of exterior perimeter footings extending 24 inches below surface grade and interior cross-tie footings extending approximately 12 inches below surface grade. The cross-tie footings would be spaced at approximately 10 feet on center and tied into the exterior foundation footing. The concrete slab shall be doweled into both the exterior and interior cross footing with a minimum of one #4 rebar spaced at 12 inches on center. Design of the mat foundation system shall conducted by a professional engineer familiar with this type of design.

9. Due to the potential of post liquefaction settlement gas, electric and water utilities should utilize flexible connections to prevent rupture of the lines.

10. Based on site analysis and laboratory testing the soil profile shall be assumed to be a Site Class E.

11. Prior to submittal for building permit, this firm shall be requested to review the foundation and grading plans for the project. Comments and revisions if necessary will be provided at that time.

12. A representative of this firm shall be requested to inspect all excavations prior to backfilling, steel reinforcement and concrete or soil placement.

GENERAL NOTES

Underground Facilities Construction

All contractors shall be familiar with the State of California Construction Safety Orders for "Excavations, Trenches, Earthwork". Trenches or excavations greater than 4 feet in depth should be shored or sloped back in accordance with OSHA Regulations prior to entry.

Sand bedding should be used below and above all utility pipes. Bedding is designed as material placed in the trench both above and below the designated utility pipe while backfill is all material placed in the trench above the bedding. Bedding material should be free draining sand and should be compacted by mechanical means to achieve at least 90% relative compaction based on ASTM Test D-1557-91, most current edition.

Proper compaction of all trenches is necessary under and adjacent to structural fill, building foundations, concrete slabs and vehicle pavement areas.

Temporary Shoring

1. The contractor shall be responsible for job site safety and for the design of temporary slopes and shoring. Based on soil conditions encountered in our boring we are recommending a temporary shoring system be designed for a sandy soil condition using uniform soil pressure distribution.

2. Soil pressure acting on braced or shored excavations in pounds per square foot can be estimated as 22H + 75 psf, where H is the depth of the excavation and 75 psf is the surcharge load for the excavation equipment as given in the OSHA guidelines.

Excavating material where possible shall be stockpiled away from the excavation or transported off-site so as not to provide additional surcharge from the stockpiled material.

Trenches

1. Import shall be non-expansive sands or silty sands with an expansion index less than 20 and less than 10% passing the #200 sieve.

2. Trenching for all below grade utilities including water lines, sewer lines, electric, irrigation shall be properly bedded to prevent damage to the pipes from rocks and other protuberences.

3. Multiple pipes in a common trench shall be properly spaced to prevent bridging of backfill. Piping shall be spaced a minimum of 1 inch apart based on utility requirements.

4. Backfill beneath, around and above the pipes within the pipe zone shall be clean coarse sand complying with Greenbook specifications for clean sand backfill.

Trench Backfill Requirements

1. No jetting of trenching is allowed.

2. Minimum compaction standards shall be 90% within the pipe zone and 95% above the pipe zone. The pipe zone shall be a minimum of 12 inches above the highest conduit. Native soils may be used above this pipe zone. All fill of native soils shall be placed in loose lifts of approximately 6 inches moistened or dried to near optimum moisture content, mixed as necessary in order to obtain a homogenous uniform soil mixture and compacted to a minimum of 95% relative compaction.

Surface and Subsurface Drainage

1. Concentrated surface water runoff within or immediately adjacent to the project should be conveyed in pipes or in lined channels to discharge areas that are relatively level or into an approved storm drain system.

2. Water from downspouts should be conveyed in pipes that discharge in areas away from structures. Surface drainage gradients should be planned to prevent ponding and promote drainage of surface water away from building foundations, edges of pavements and sidewalks. In general it is recommended a minimum of 5% slope be maintained for the first 10 feet adjacent to these structures.

3. Drainage should be established at the time of fine grading and once all landscaping has been installed. This drainage shall be maintained throughout the life of the structure and only altered to increase the effectiveness of the drainage. Property owners should be aware that altering drainage patterns, landscaping, the addition of patios, planters, and other improvements may affect not only the performance of the existing drainage but the structural performance of all permanent structures.

4. Routine maintenance of the drainage system including roof gutters, downspouts and discharge pipes should be implemented at least twice a year for clogging, debris and proper slope. Any debris shall be removed and properly disposed of.

5. Sprinkler systems should be routinely checked and visible signs of leakage shall be immediately repaired. Watering schedules should be varied and adjusted according to the season and types of landscaping.

6. Site maintenance for residences, which have both or either cut and fill slopes it, is crucial to prevent concentrated erosion and potential for slope slippage. Water shall not be allowed to pond or overflow these slopes at any point along their way.

7. All slopes shall be planted with deep-rooted drought resistant vegetation. Ideas for these types of plants can be obtained from your local nursery. Control of burrowing animals is important to prevent water from being collected in these underground holes and possibly being discharged onto slopes. Control of burrowing animals should be conducted in a safe manner in accordance with animal control organizations.

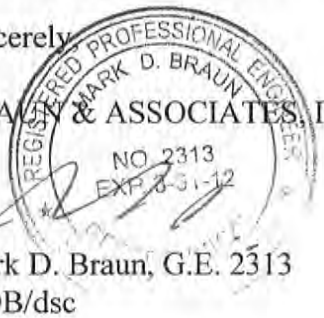
LIMITATIONS

The recommendations provided in this report are based upon this firm's understanding of the described project information and our interpretations of data collected during the subsurface exploration. Conclusions and professional opinions presented here were developed by Braun & Associates, Inc., in accordance with generally accepted geotechnical engineering principles and practices for this area. No other warranty is either expressed or implied.

This report has been prepared for use only by Macy Cornerstone, LLc., and their appointed representatives. This report may not contain sufficient information for use on other projects. If any changes are made to the project as outlined in this report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions and recommendations of the report are modified and approved in writing by Braun & Associates, Inc.

This report is based on the assumption that the necessary reviews technical observation and testing, during construction, will be provided by a representative of this firm. Field observation service is a continuation of the geotechnical investigation and intended to verify that the actual conditions are as anticipated. This also provides the client the means of dealing with unanticipated changes to existing conditions, which may require modification of the original recommendations. If another firm is obtained for the geotechnical observation of this project, the responsibility and liability of Braun & Associates, Inc., will be limited to the analytic results obtained during laboratory testing.

Sincerely,



BRAUN & ASSOCIATES, INC.

Mark D. Braun, G.E. 2313
MDB/dsc

APPENDIX

EXPLORATIONS

Exploratory boring was conducted for the purpose of logging the subsurface profile and obtaining relatively undisturbed samples of the underlying soils. Drilling was conducted using a truck mounted CME 85 Mobile Drill with 4-1/4 inch ID hollow stem auger drills and a stand-up hydraulic drill.

Soils encountered were logged by our field technician and relatively undisturbed samples were collected for laboratory inspection and testing. The samples were obtained using a Shelby tube sampler. The Shelby tube sampler is used to obtain relatively undisturbed samples in the backhoe excavation and shallow flight auger borings. The sampler is a solid tube with the same inside and outside dimensions as the California split tube sampler. Relatively undisturbed samples are obtained by driving the sampler four to six inches into the bottom of the excavation using a 30-lb. slide hammer.

Recovered samples are identified, tagged and sealed into plastic tubes. All samples were placed in transport containers and returned to our laboratory for testing.

The logs of borings are presented on Plates A-2.1 thru A-2.2. The depth and description of soils encountered are indicated on the right of the boring log. Stratification lines on the logs represent the approximate boundary between predominant soil types. Minor layers of differing material types may be contained within the strata and a gradual transition should be expected between strata. Engineering description and material classification used on the boring logs are in accordance with the Unified Soil Classification System.

LABORATORY

The results of laboratory testing are presented on the enclosed plates. The following laboratory tests were conducted on representative samples in accordance with the latest applicable ASTM standards.

The field moisture content and dry density of the soils encountered were determined by performing tests on the undisturbed samples. The results of the tests are shown to the left of the boring logs.

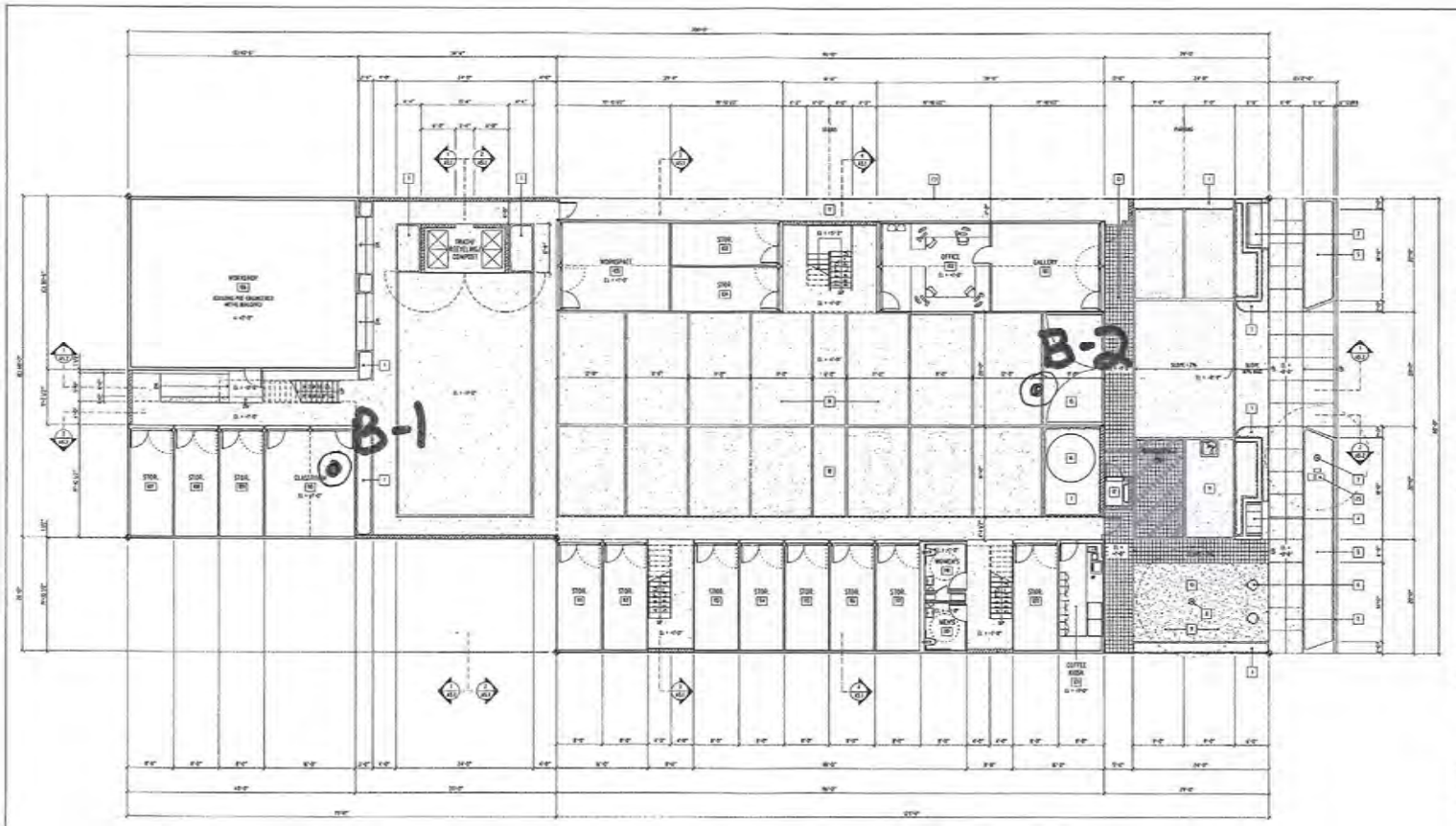
In place relative density of the native soils was determined at the main residence. Testing was performed by ASTM D-1556 the Sand Cone Method. Results are shown on Plate A- 3.1, SUMMARY OF COMPACTION TEST RESULTS.

The optimum moisture content and maximum dry density of the upper soils were determined by performing a maximum density test on the sample obtained from the field density test. The testing was performed in accordance with the ASTM Designation D-1557 Method of Compaction. The results of the test are presented on Plate A- 3.1, SUMMARY OF COMPACTION TEST RESULTS.

Mechanical and Hydrometer analyses were performed on various samples to determine the particle size distribution of the soils. Testing was performed in accordance with ASTM D422. The results are presented on Plates A- 4.1 thru A- 4.16, GRAIN SIZE DISTRIBUTION.

Soil expansion characteristics of the existing surface soils were determined by Uniform Building Code Standard No. 29-2. Results are shown on Plate A- 5.1, EXPANSION INDEX DETERMINATION.

Confined consolidation tests were performed on three (3) relatively undisturbed samples to determine the compressibility of the soils. Water was added to the samples during the tests to illustrate the effect of moisture on the compressibility. The results of the tests are presented on Plate A- 6.1 , CONSOLIDATION TEST DATA.



FIRST FLOOR PLAN

MACY ARCHITECTURE
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PROJECT
SANTA BARBARA CENTER FOR ART, SCIENCE & TECHNOLOGY
59 LADERA STREET
SANTA BARBARA, CA 93101

SHEET TITLE
FIRST FLOOR PLAN

DATE
PHASE
SCHEMATIC DESIGN
SCALE
1/8" = 1'-0"

SHEET
A2.1

A-1.1

Major Divisions			Graphic Symbols	Letter Symbols	Typical Descriptions
More than 50% of material retained on No. 200 sieve — Coarse Grained Soils	Gravel & Gravelly Soils	Clean Gravels (Little or no fines)		GW	Well graded gravels, gravel-sand mixtures, little or no fines
				GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
	More than 50% of coarse fraction retained on No. 4 sieve	Gravels with Fines (Appreciable amount of fines)		GM	Silty gravels, gravel-sand-silt mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
	Sand & Sandy Soils	Clean Sands (Little or no fines)		SW	Well graded sands, gravelly sands, little or no fines
				SP	Poorly graded sands, gravelly sands, little or no fines
	50% or more of coarse fraction passing No. 4 sieve	Sands with Fines (Appreciable amount of fines)		SM	Silty sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
Less than 50% of material retained on No. — Fine Grained Soils	Silts & Clays	Liquid limit less than 50		ML	Inorganic silts, rock flour or clayey silt with low plasticity
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and clayey silts of low plasticity
	Silts & Clays	Liquid limit less than 50		MH	Inorganic plastic silts, micaceous or diatamaceous silts
				CH	Inorganic clays of high plasticity, fat clays
				OH	Organic clays of medium to high plasticity, organic silty clays
Highly Organic Soils				PT	Peat, humus, swamp soils with high organic contents, fiberous

NOTE: Dual symbols are used to indicate borderline soil classifications.

UNIFIED SOIL CLASSIFICATION SYSTEM

BORING LOG

BORING NUMBER: 1

Date Drilled: January 24, 2011

Equipment Used: CME 75 Latitude: 34.420082

Elevation at Surface Grade: 36' Longitude:-119.692934

Elevation (ft.)	Std. Pen. Test	Moisture Content	Dry Density	Depth (ft.)	Sample Location		
				1		ML	Dark brown-black SILT with fine SAND and slight GRAVEL, moist, moderately firm well graded
34	8	7.8	112.7	2	R		
				3		ML	Very dark brown fine SANDY SILT some CLAY, moist, moderatley firm, graded
				4			
31	18	14.9	113.3	5	R		
				6		ML	Rust brown fine SANDY SILT, moist, moderately firm, graded
				7			
				8			
				9			
26	5	19.8	106.9	10	R		
				11		SM	Brown SILTY SAND, very moist, loose, poorly graded
				12			
				13			
				14			
21	4	18.4	115.2	15	R		
				16		ML	Brown SANDY SILT, saturated, loose, poorly graded
				17			
				18			
				19	▽		
16	10	17.9	100.2	20	SPT		GROUND WATER
				21		ML	Brownish gray fine SANDY SILT, very moist, moderately firm, poorly graded

Note: The log of subsurface conditions shown hereon applies only at specific boring location and at date indicated.

2406\SOILS\PLATES\BL1.XLS

PLATE A-2.1

BORING LOG

BORING NUMBER: 1 Cont'd

Date Drilled: January 24, 2011

Equipment Used: CME 75 Latitude: 34.420082

Elevation at Surface Grade: 36' Longitude:-119.692934

Elevation (ft.)	Std. Pen. Test	Moisture Content	Dry Density	Depth (ft.)	Sample Location		
				22		ML	Gray SANDY SILT, very moist, moderately firm, poorly graded
				23			
				24			
11	9	23.1	103.9	25	SPT		
				26		SM	Gray SILTY SAND with slight CLAY, moist, moderately firm, poorly graded
				27			
				28			
				29			
6	12	18.1	114.8	30	SPT		
				31		ML	Rust-brown-gray SANDY SILT with slight CLAY, moist, moderately firm, poorly graded
				32			
				33			
				34			
1	18	19	113.7	35	SPT		
				36		ML	Rust-gray SANDY SILT with slight CLAY, moist, moderately firm, poorly graded
				37			
				38			
				39			
-4	20	22.2	107.2	40	SPT		
				41		SM	Rust-light gray SILTY SAND with slight CLAY, moist, moderately firm, poorly graded
				42			

Note: The log of subsurface conditions shown hereon applies only at specific boring location and at date indicated.

\SOILS\PLATES\BL1.XLS

PLATE A-2.1 Cont'd

BORING LOG

BORING NUMBER: 1 Cont'd

Date Drilled: January 24, 2011

Equipment Used: CME 75 Latitude: 34.420082

Elevation at Surface Grade: 36' Longitude:-119.692934

Elevation (ft.)	Std. Pen. Test	Moisture Content	Dry Density	Depth (ft.)	Sample Location		
				43		SM	Rust-light gray SILTY SAND with slight CLAY, moist, moderately firm, poorly graded
				44			
-9	62	17.8	110.9	45	SPT		
				46			
				47		ML	Orangish brown SILT & coarse SAND slight GRAVEL moist, moderatley firm
				48			
				49			
-14	44	15.2	112.7	50	SPT		Total depth 50 ft

Note: The log of subsurface conditions shown hereon applies only at specific boring location and at date indicated.

\SOILS\PLATES\BL1.XLS

PLATE A-2.1 Cont'd

BORING LOG

BORING NUMBER: 2

Date Drilled: January 24, 2011

Equipment Used: CME 75 Latitude: 34.420082

Elevation at Surface Grade: 36' Longitude:-119.692934

Elevation (ft.)	Std. Pen. Test	Moisture Content	Dry Density	Depth (ft.)	Sample Location		
				1		ML	Very dark brown SANDY SILT, moist, moderately firm, well graded
34	16	5.1		2	B		
				3		SM	Black-dark brown SILTY SAND with slight CLAY, moist, moderatley firm, graded
				4			
31	15	10.4	120.2	5	B		
				6			
				7		ML	Black-dark brown SANDY SILT, very moist, moderately firm, poorly graded
				8			
				9			
26	10	19.7	110.3	10	B		
				11			
				12		ML	Brown SANDY SILT, very moist, loose, poorly graded
				13			
				14			
21	14	21.7	104.9	15	SPT		
				16			
				17		ML	Gray-rust brown SANDY SILT, saturated, loose poorly graded
				18			
				19	▽		
16	15	62.7	66.1	20	SPT		GROUND WATER
				21		SM	Rust and gray SANDY SILT with slight CLAY, moist, moderately firm, poorly graded

Note: The log of subsurface conditions shown hereon applies only at specific boring location and at date indicated.

2406\SOILS\PLATES\BL1.XLS

PLATE A-2.2

BORING LOG

BORING NUMBER: 2 Cont'd

Date Drilled: January 24, 2011

Equipment Used: CME 75 Latitude: 34.420082

Elevation at Surface Grade: 36' Longitude:-119.692934

Elevation (ft.)	Std. Pen. Test	Moisture Content	Dry Density	Depth (ft.)	Sample Location		
				22		SM	Rust and gray SANDY SILT with slight CLAY, moist, moderately firm, poorly graded
				23			
				24			
11	17	21.7	103.2	25	SPT		
				26		ML	Gray SANDY SILT with some CLAY, moist, moderately firm, poorly graded
				27			
				28			
				29			
6	2	26.8	106.1	30	SPT		Total depth 30 ft

Note: The log of subsurface conditions shown hereon applies only at specific boring location and at date indicated.

\SOILS\PLATES\BL1.XLS

PLATE A-2.2 Cont'd

SUMMARY OF COMPACTION TEST RESULTS

PROJECT: 513 Garden Street
SBCAST

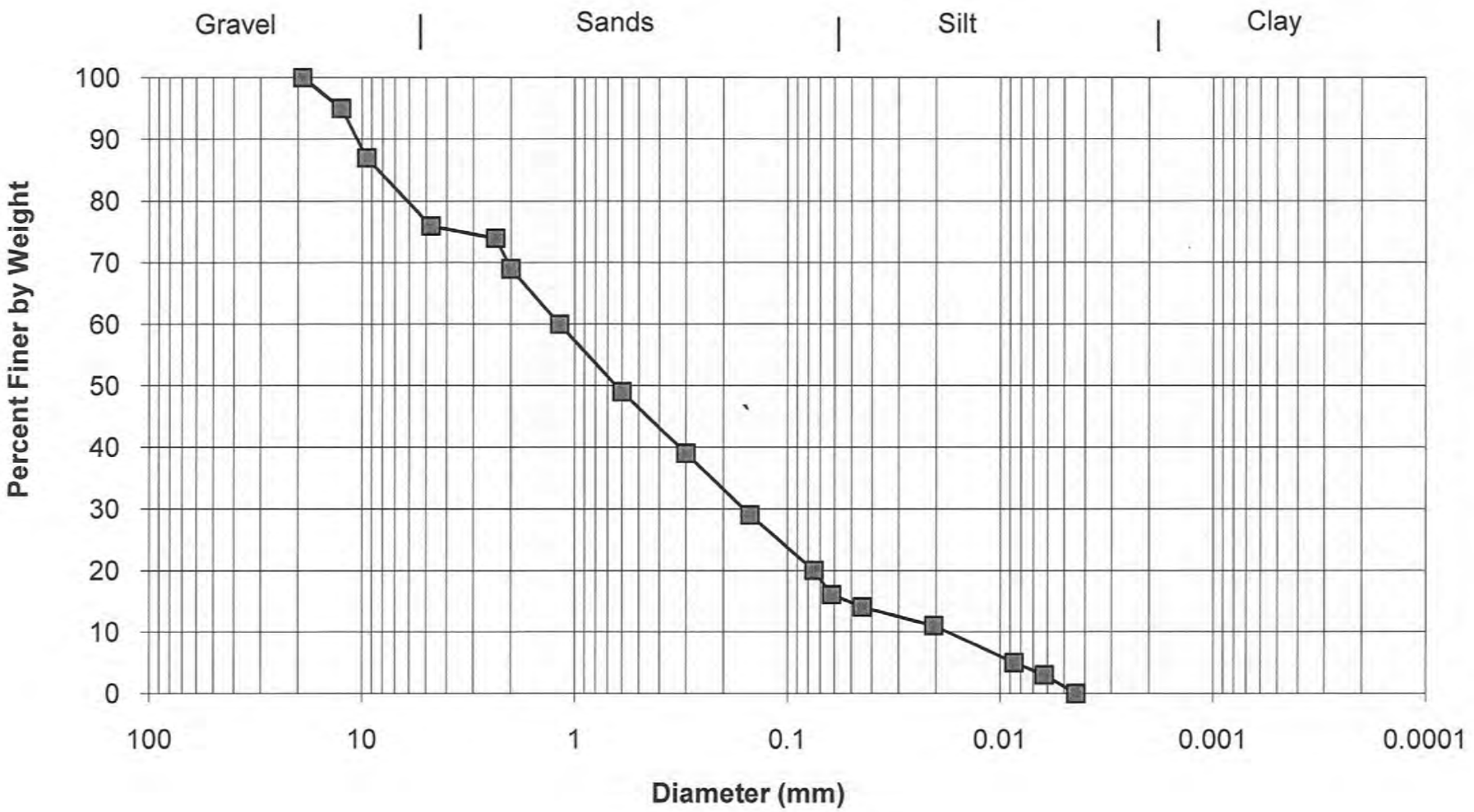
Test No	Date	Depth of test from F.G. (ft.)	Soil Type	Moisture Content (%)	Dry Density (pcf)	Max. Dry Density (pcf)	% of Max. Density	Remarks
1	2/7/11	2.0	I	10.1	96.5	116.0	83.1	

MAXIMUM DENSITY - OPTIMUM MOISTURE RESULTS

Soil Type	Description		Maximum Density (pcf)	Optimum Moisture (%)
I	Dark brown SILTY SAND with GRAVEL		116.0	13.3
	Curve Points	(100.1@7.5)	(115.6@10.0)	(109.2@14.8)

PLATE A-3.1

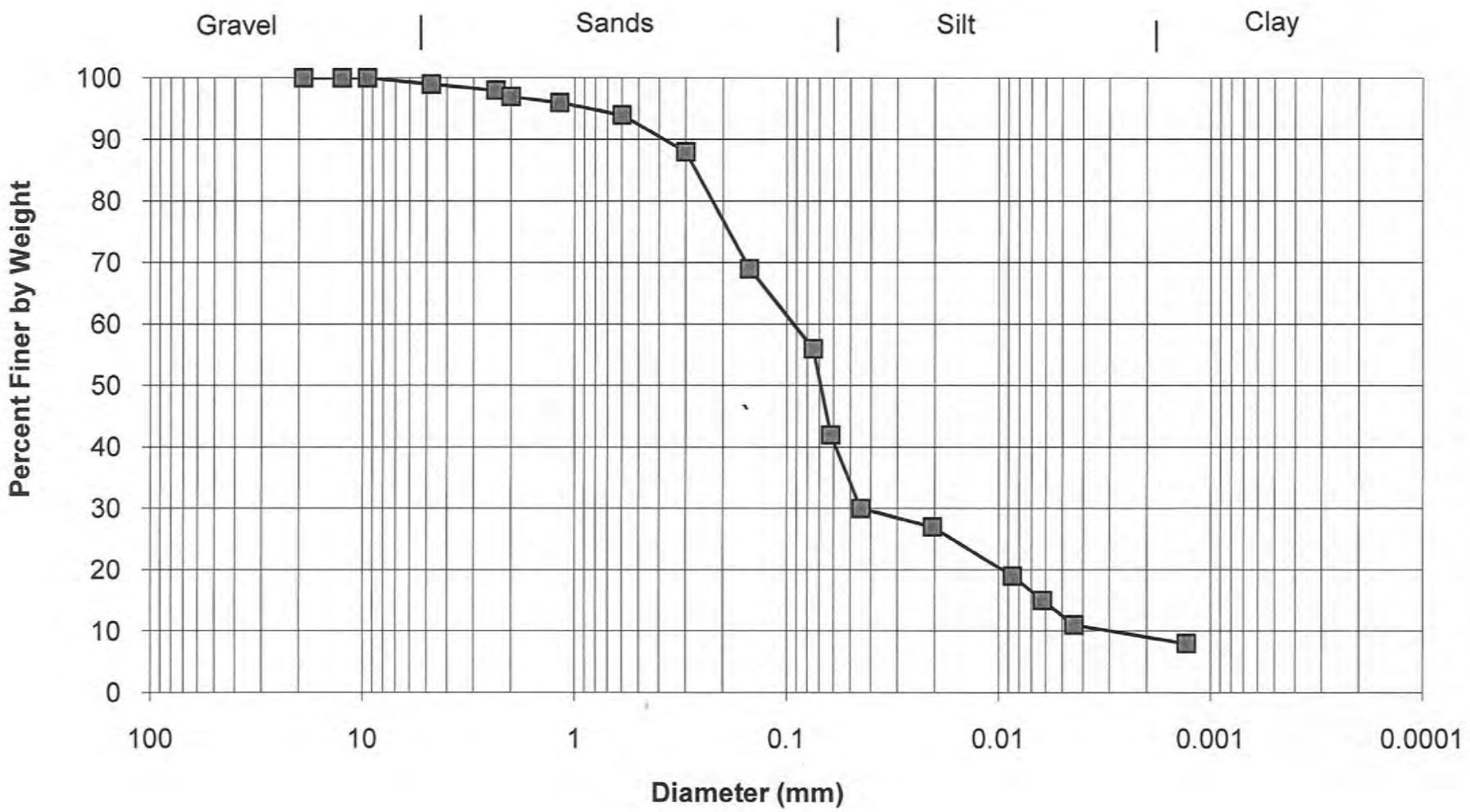
Grain Size Distribution



Location B-1
Depth:2 ft

Plate A-4.1

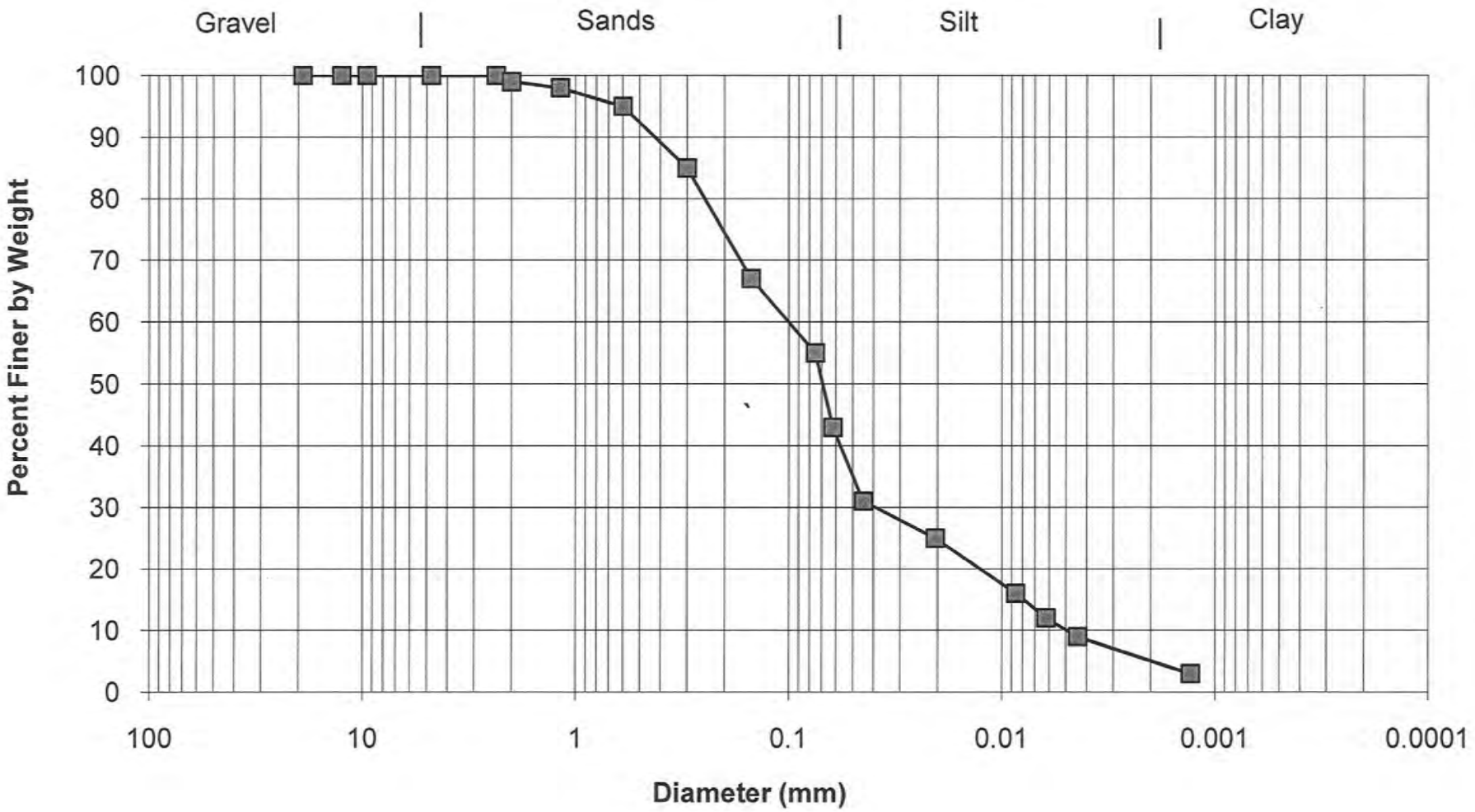
Grain Size Distribution



Location B-1
Depth:5 ft

Plate A-4.2

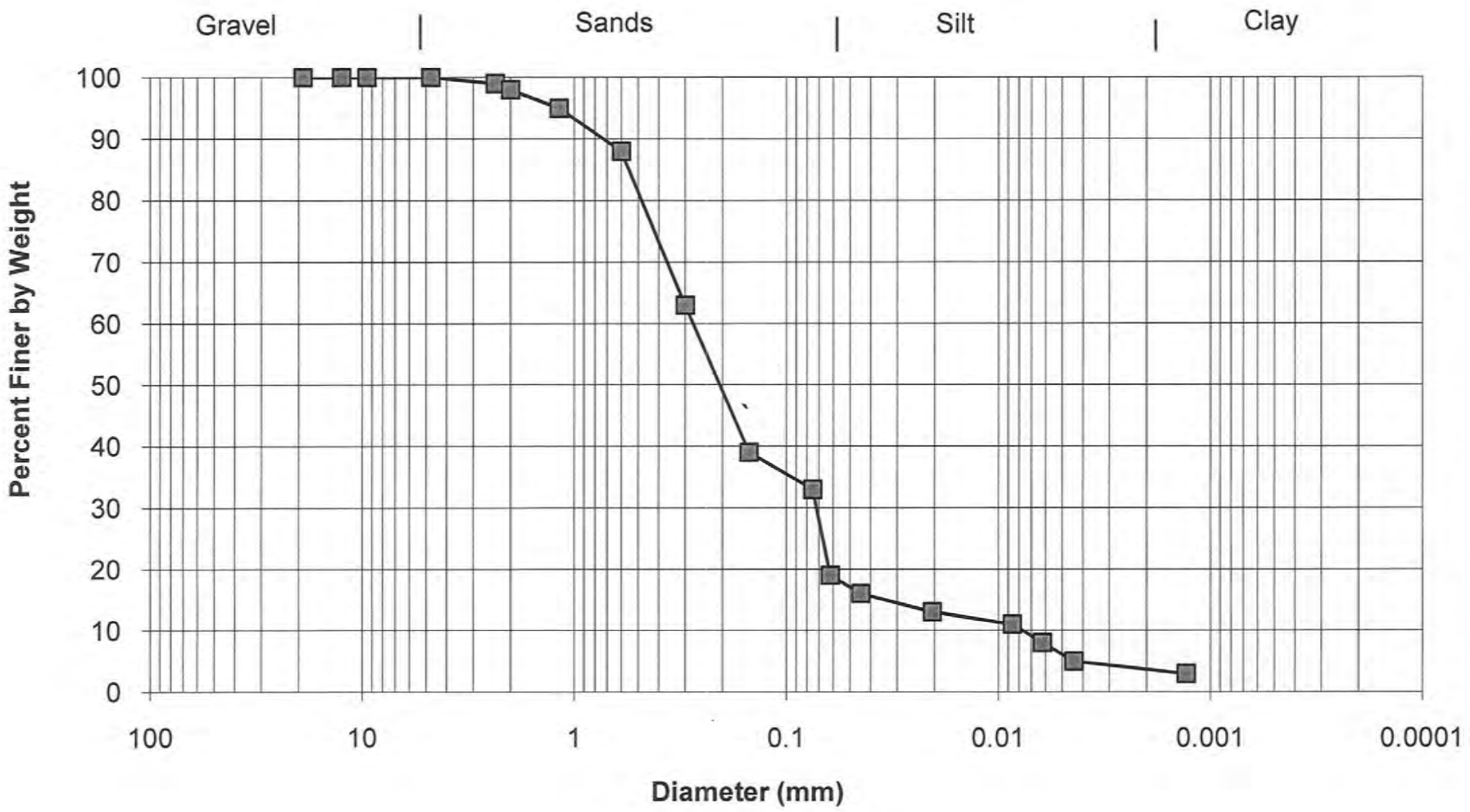
Grain Size Distribution



Location B-1
Depth:10 ft

Plate A-4.3

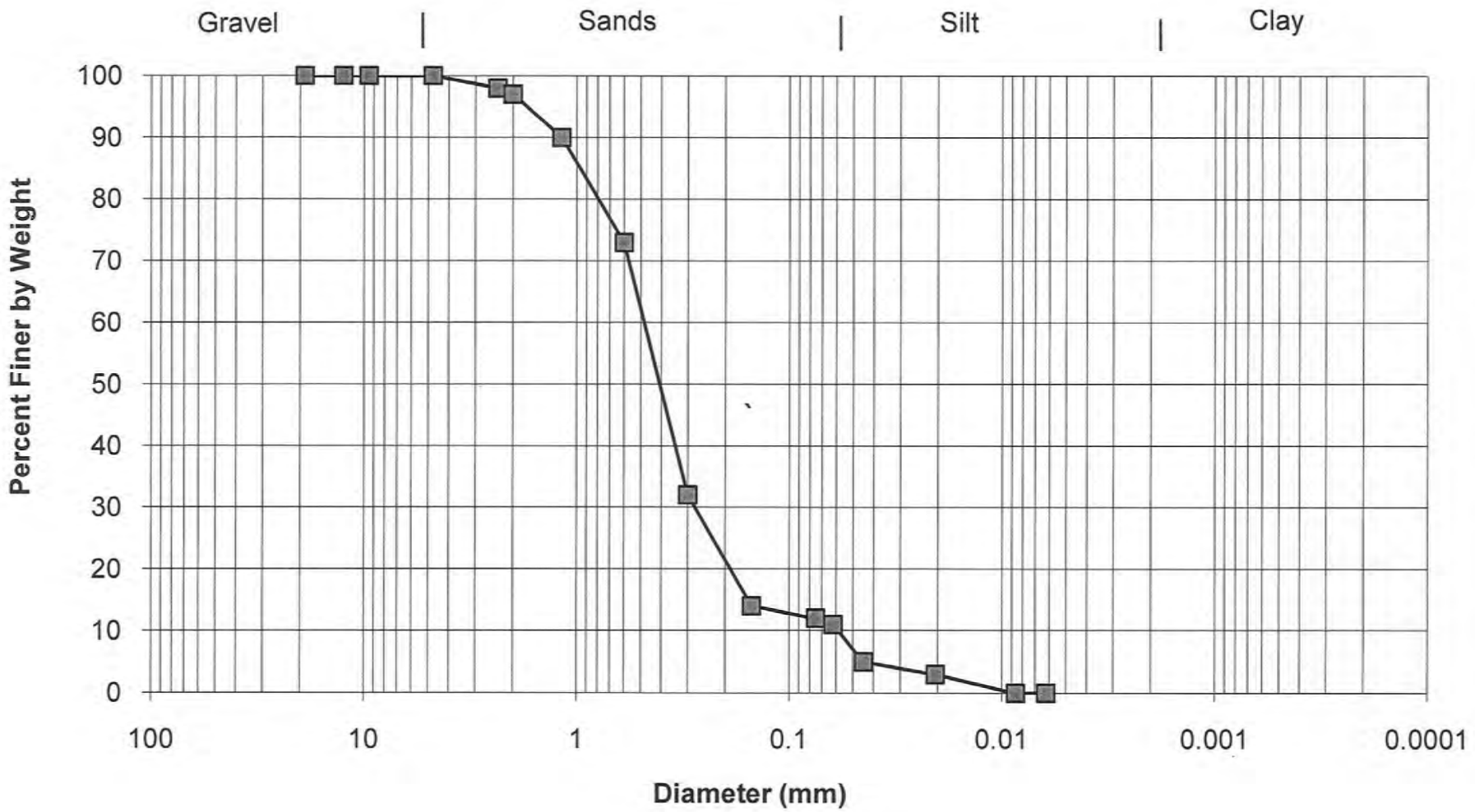
Grain Size Distribution



Location B-1
Depth:15 ft

Plate A-4.4

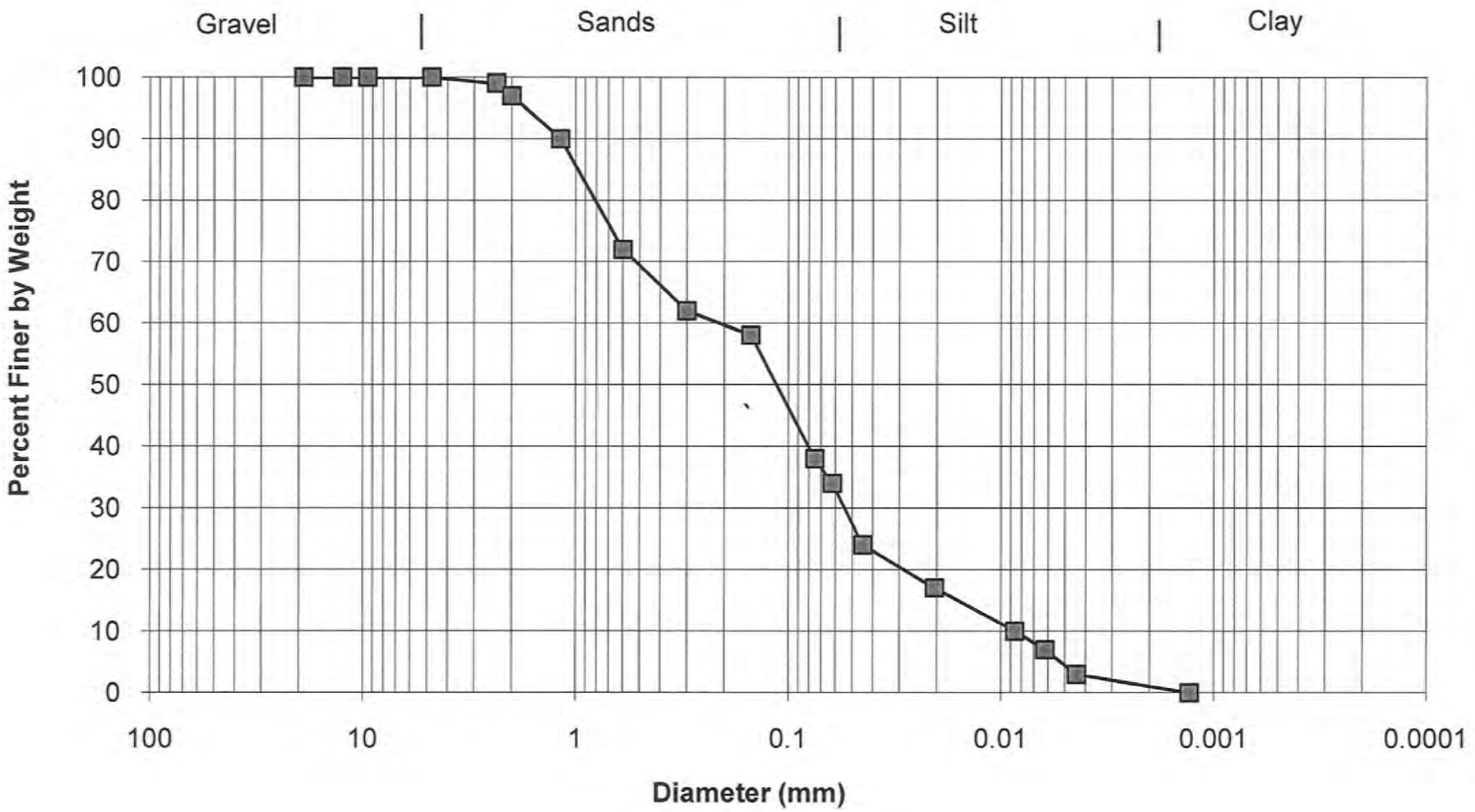
Grain Size Distribution



Location B-1
Depth:20 ft

Plate A-4.5

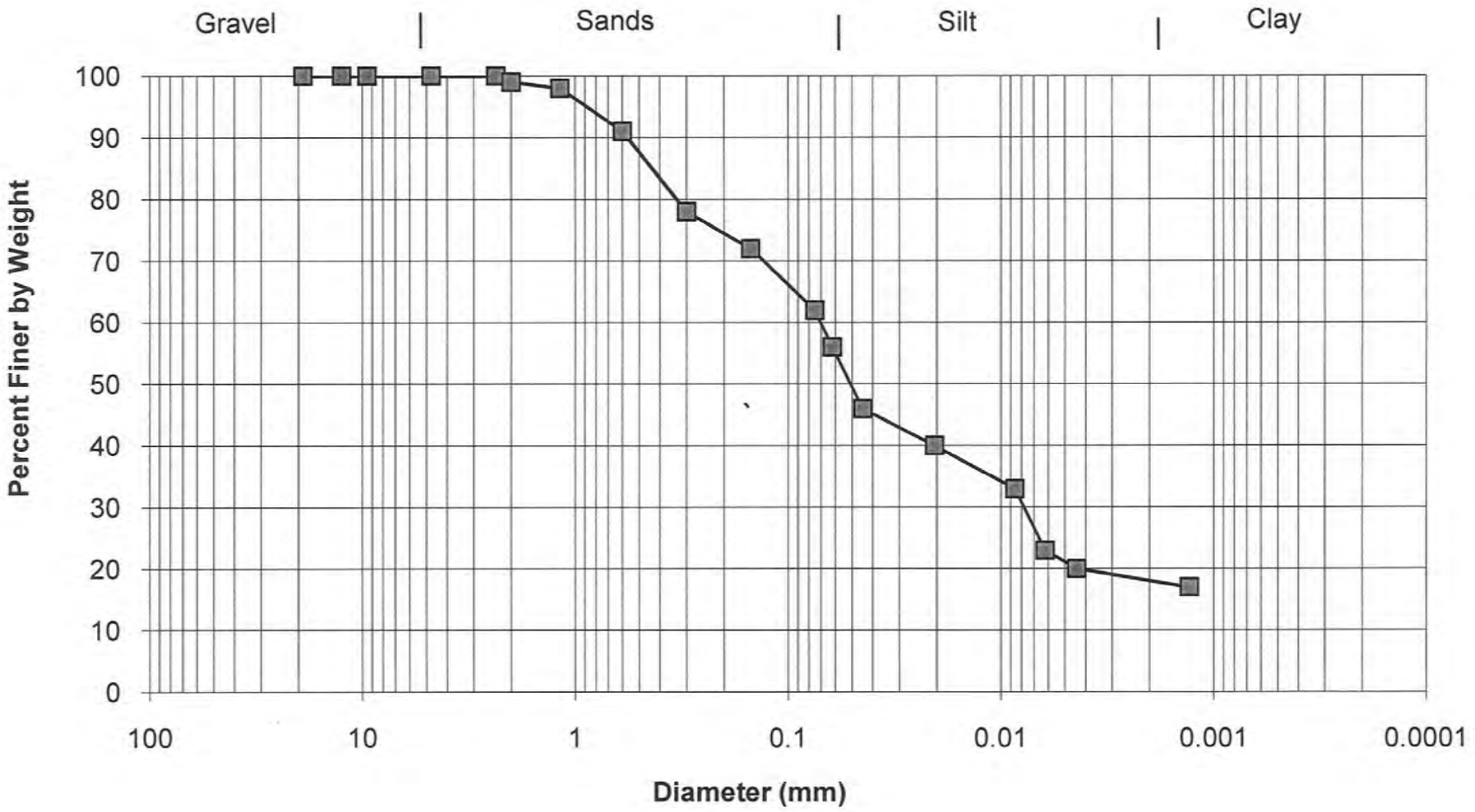
Grain Size Distribution



Location B-1
Depth:25 ft

Plate A-4.6

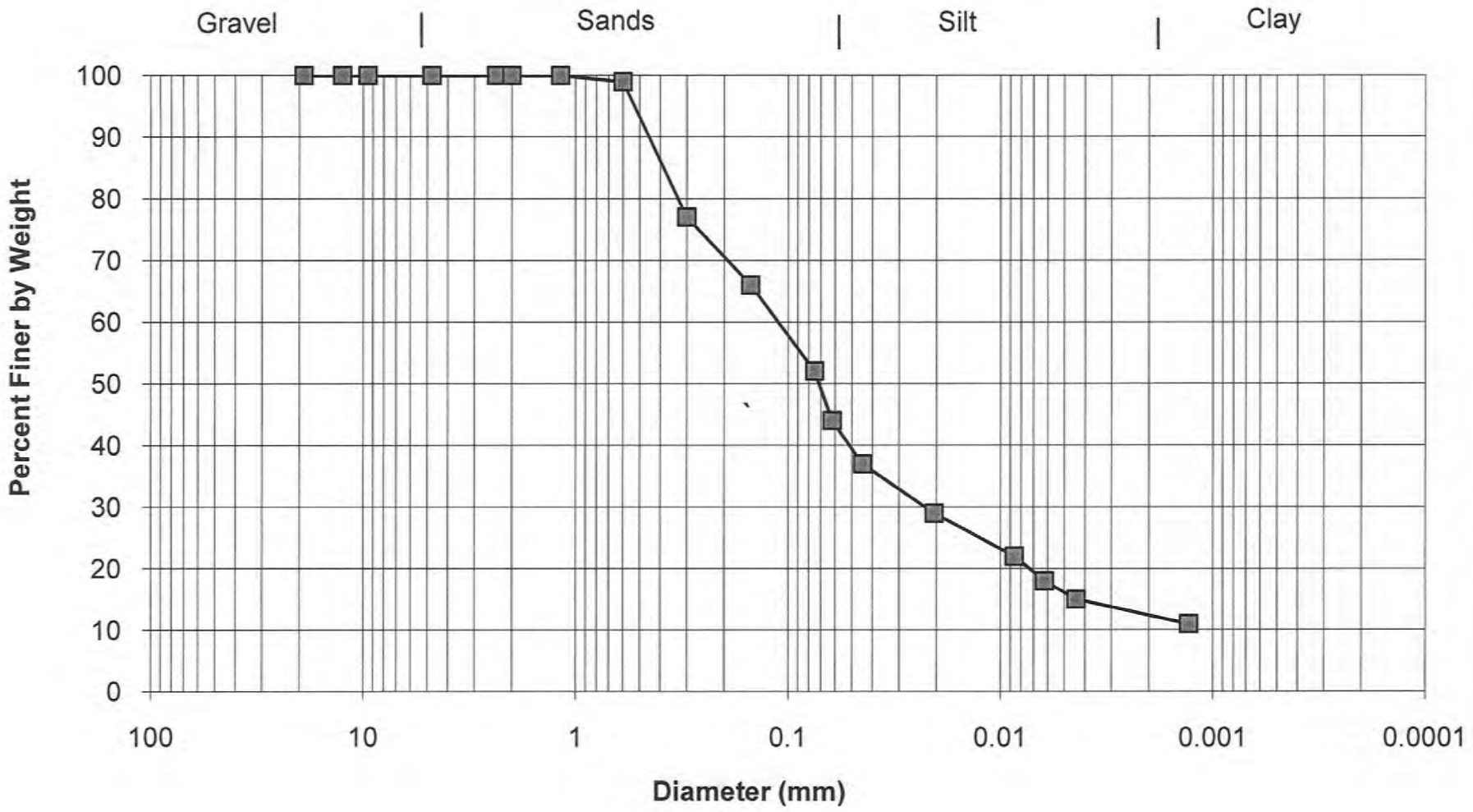
Grain Size Distribution



Location B-1
Depth:30 ft

Plate A-4.7

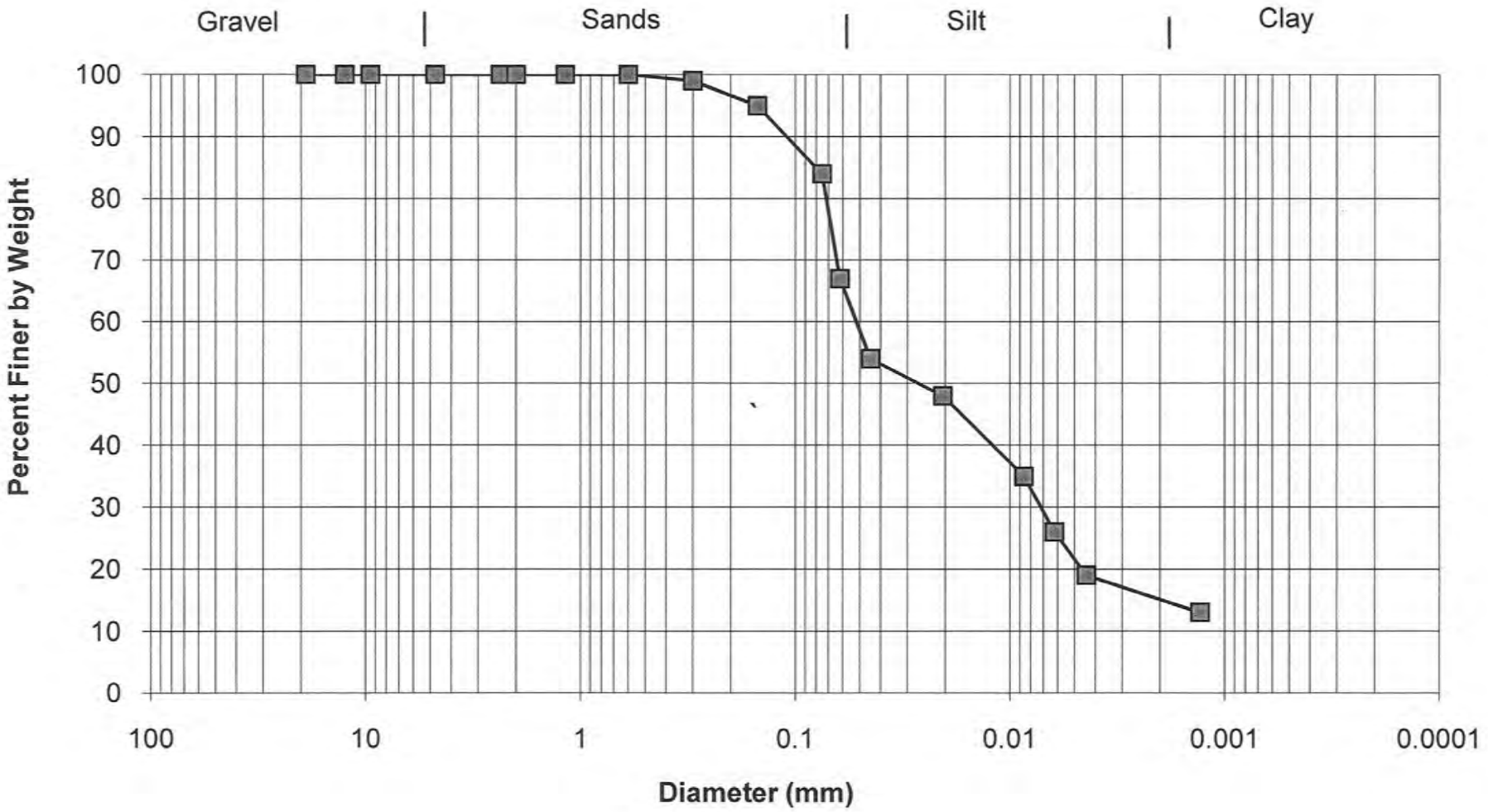
Grain Size Distribution



Location B-1
Depth:35 ft

Plate A-4.8

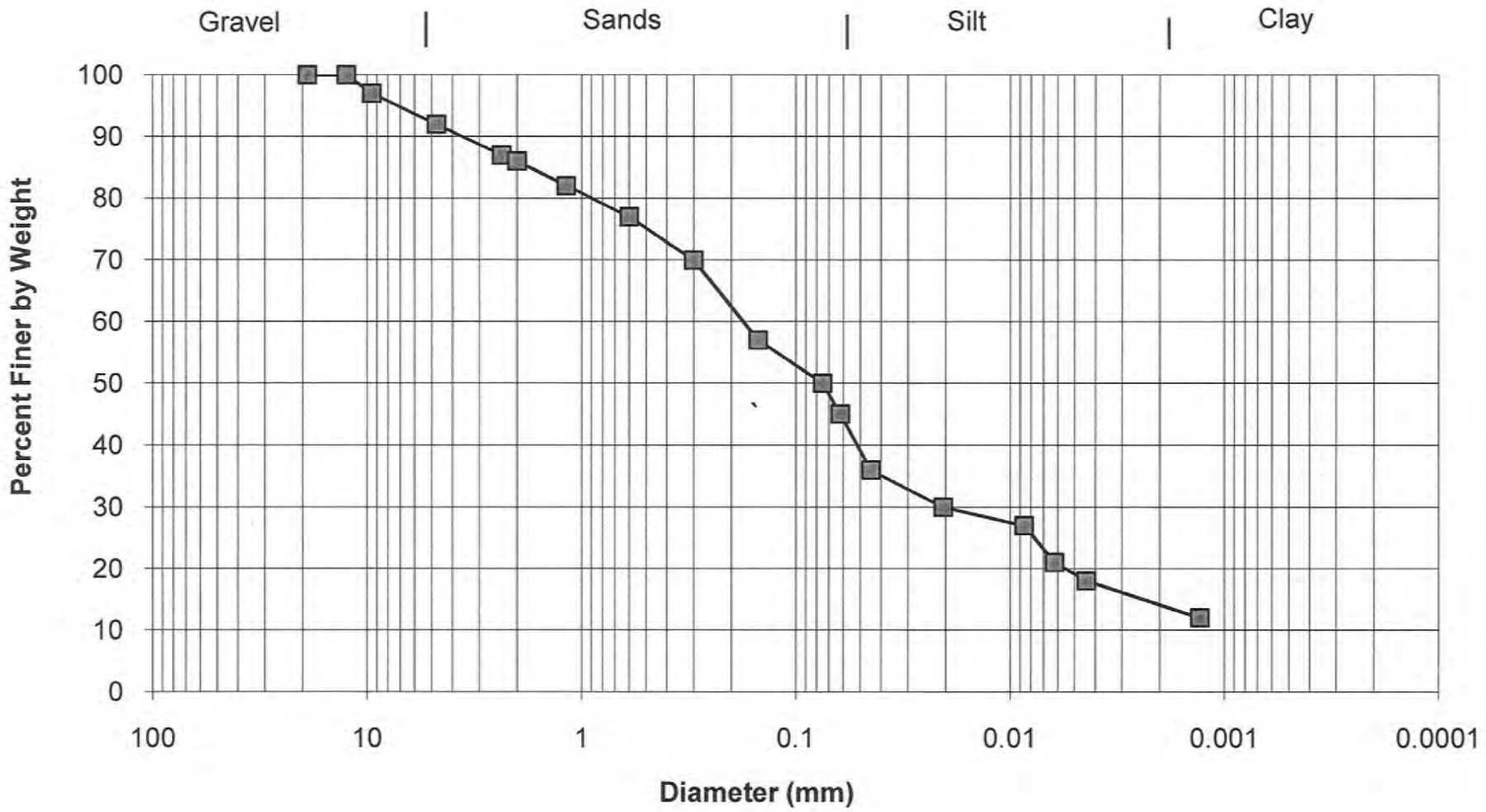
Grain Size Distribution



Location B-1
Depth:40 ft

Plate A-4.9

Grain Size Distribution

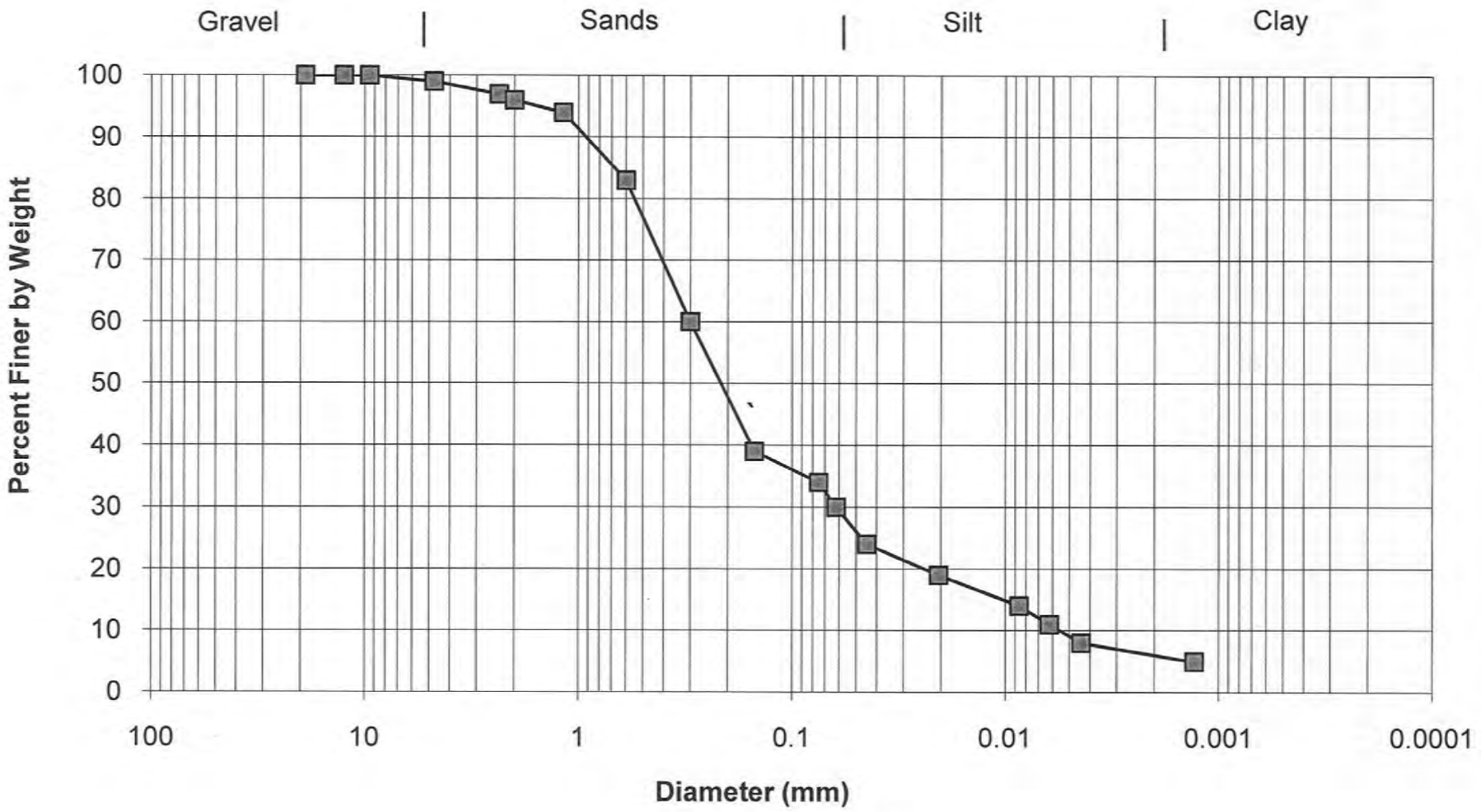


Location B-1
Depth:45 ft

Plate A-4.10

2406/GRIN SIZE DIST FOR SOIL REPORT

Grain Size Distribution

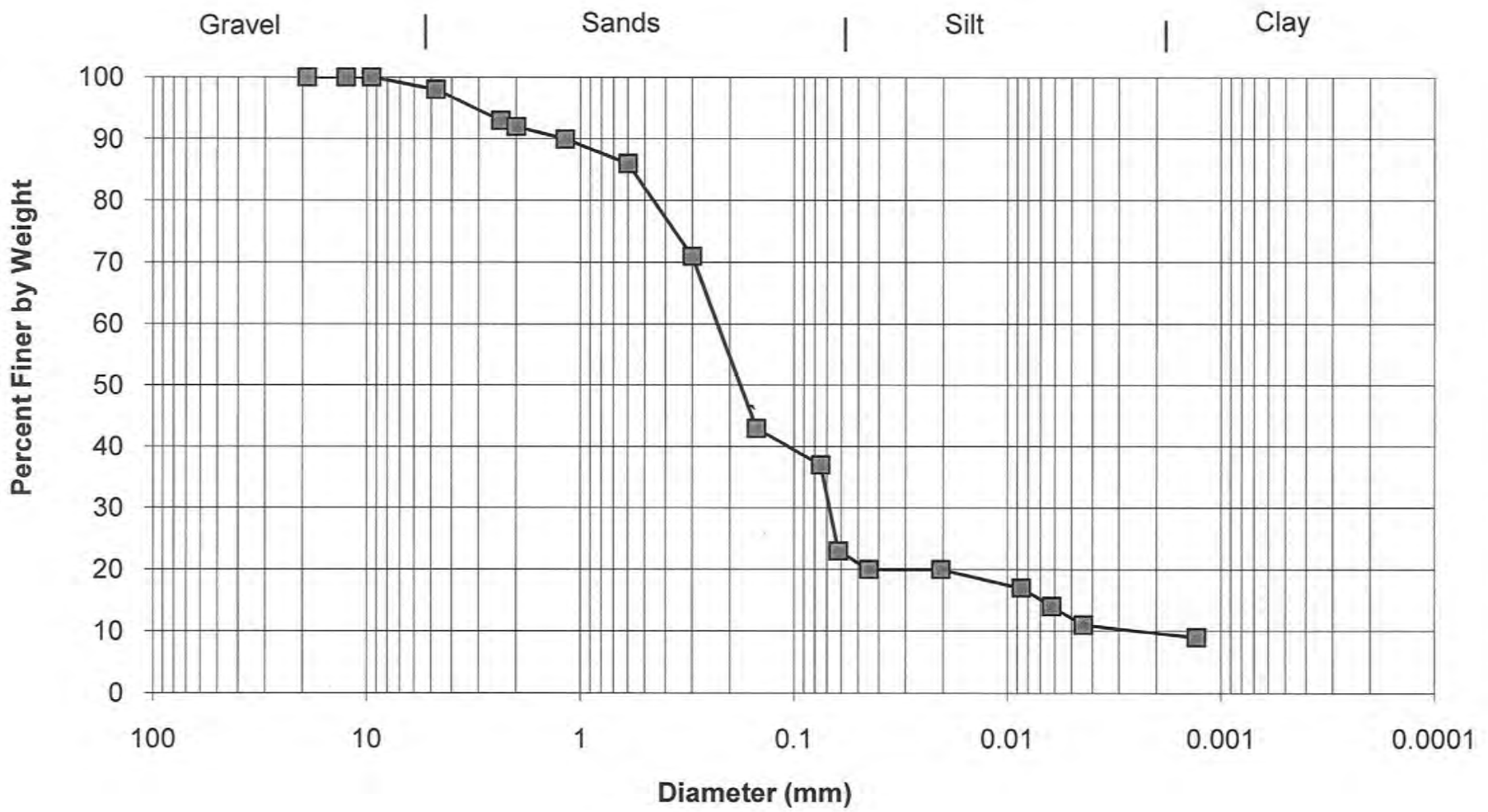


Location B-1
Depth:50 ft

2406/GRIN SIZE DIST FOR SOIL REPORT

Plate A-4.11

Grain Size Distribution

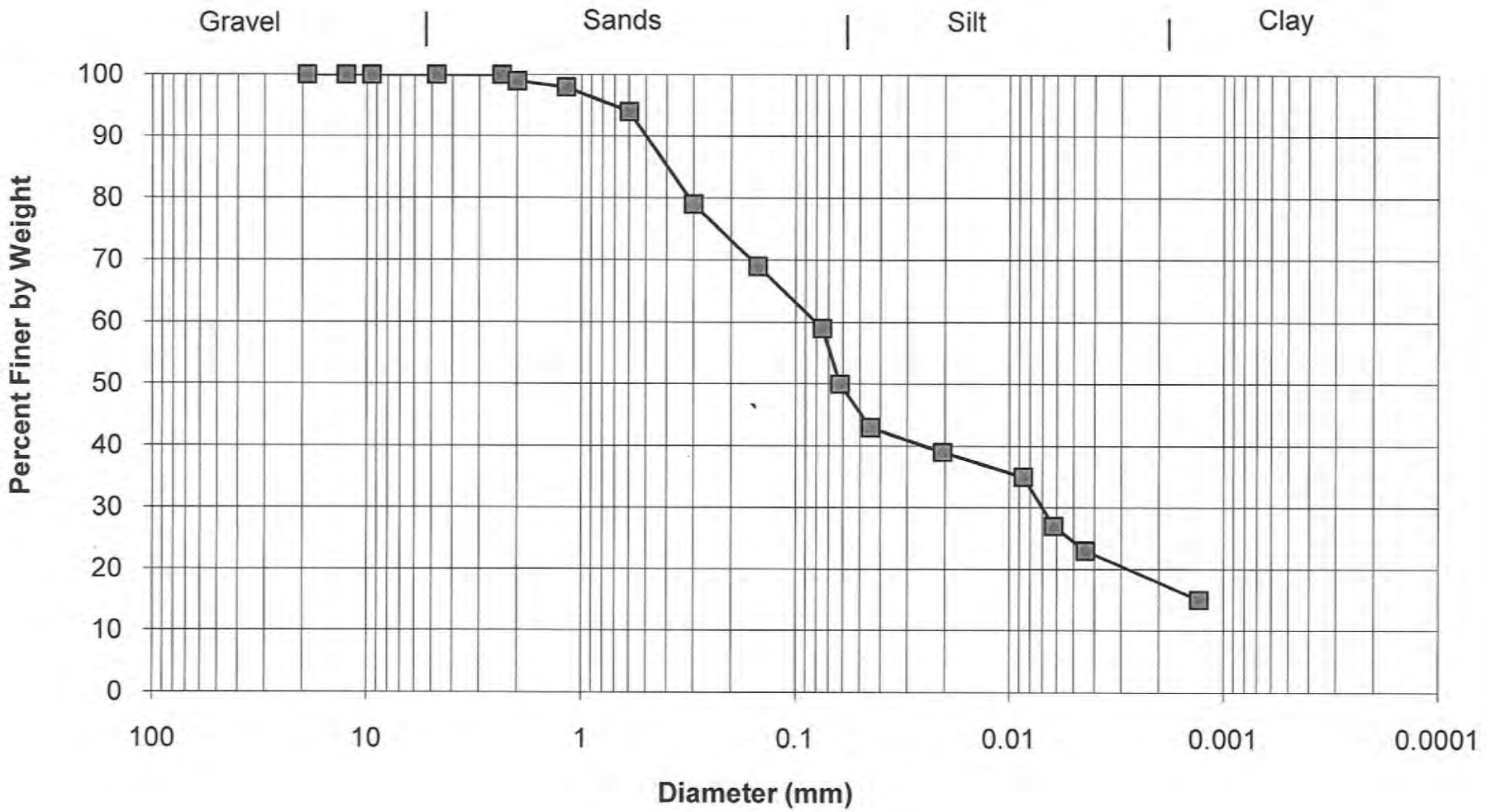


Location B-2
Depth:2 ft

Plate A-4.12

2406/GRIN SIZE DIST FOR SOIL REPORT

Grain Size Distribution

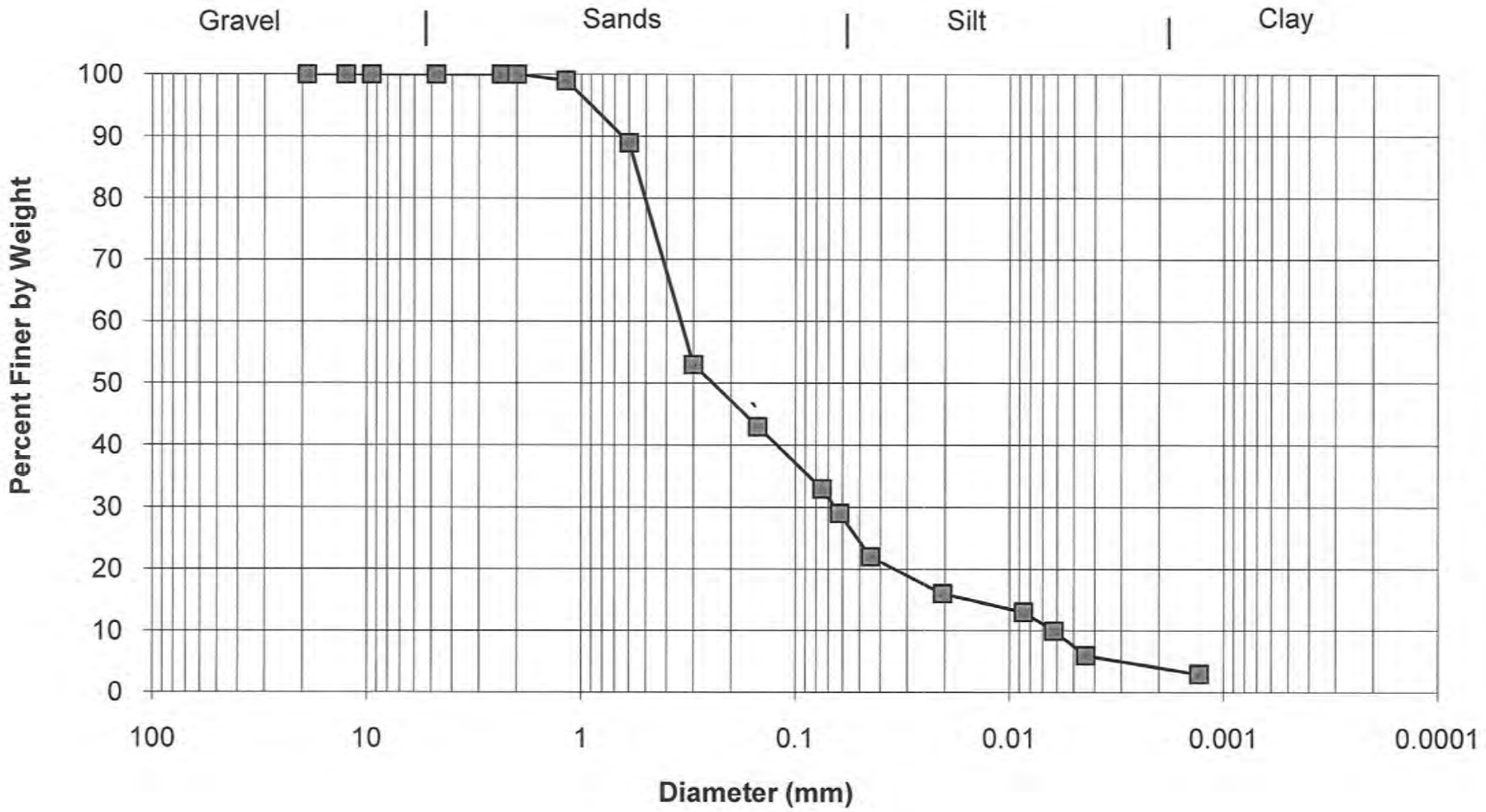


Location B-2
Depth:5 ft

2406/GRIN SIZE DIST FOR SOIL REPORT

Plate A-4.13

Grain Size Distribution

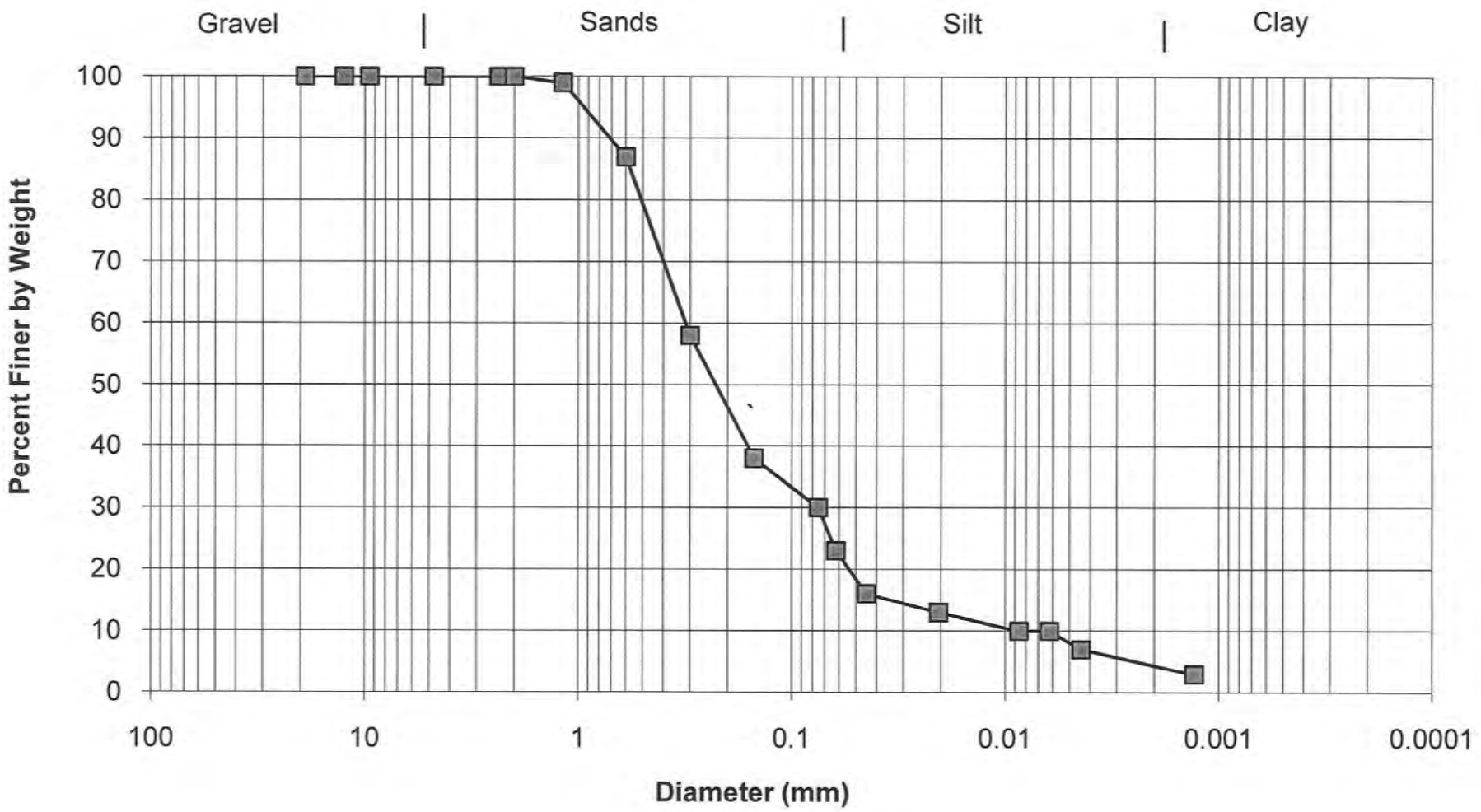


Location B-2
Depth:20 ft

Plate A-4.14

2406/GRIN SIZE DIST FOR SOIL REPORT

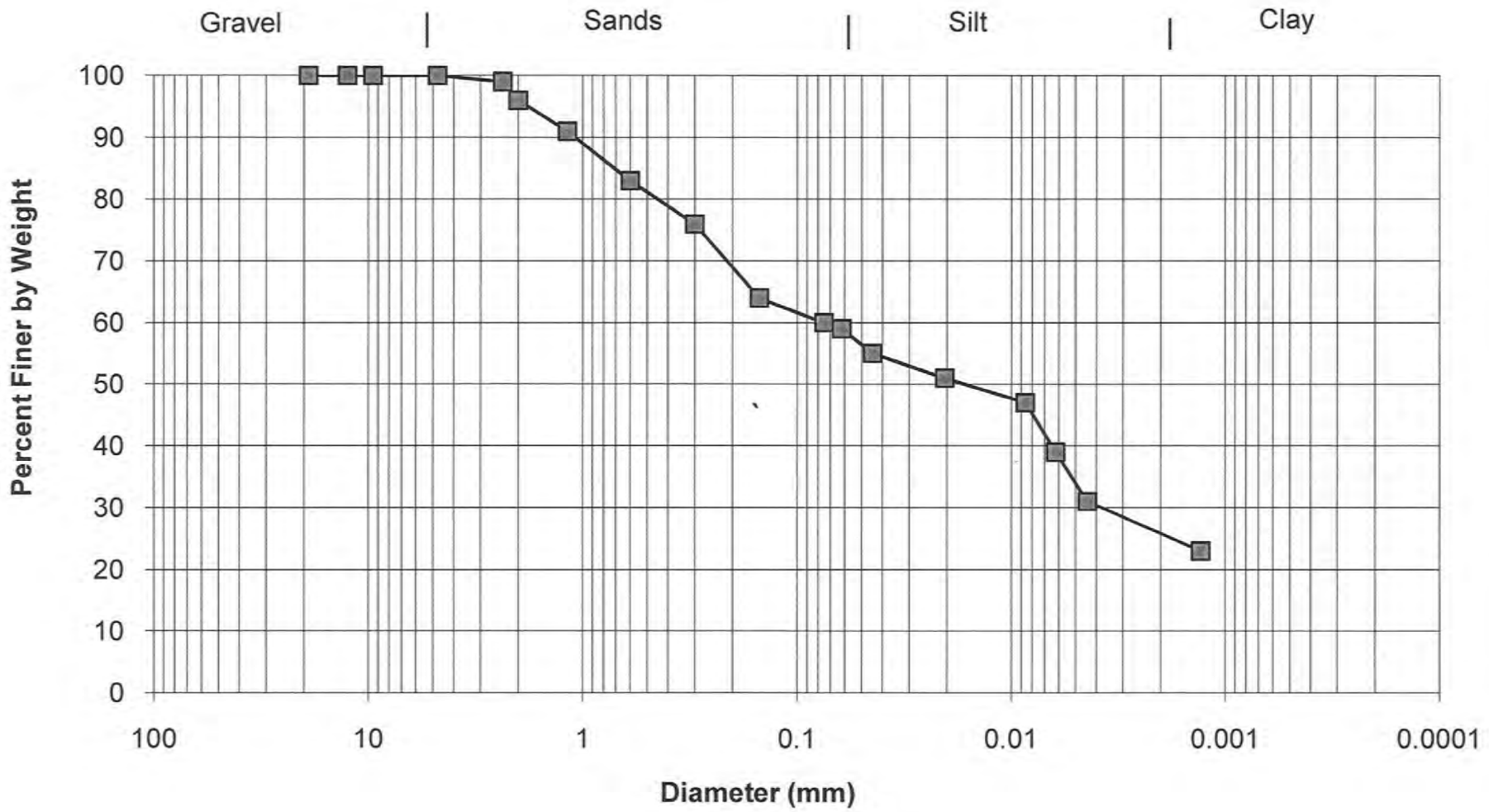
Grain Size Distribution



Location B-2
Depth:25 ft

Plate A-4.15

Grain Size Distribution



Location B-2
Depth:30 ft

Plate A-4.16

2406/GRIN SIZE DIST FOR SOIL REPORT

EXPANSION INDEX DETERMINATION

UBC STANDARD 29-2

Location:

Sample No.	:	1
Boring	:	B-1
Depth, feet	:	2 ft
Soil Description	:	Dark brown SILTY SAND with GRAVEL

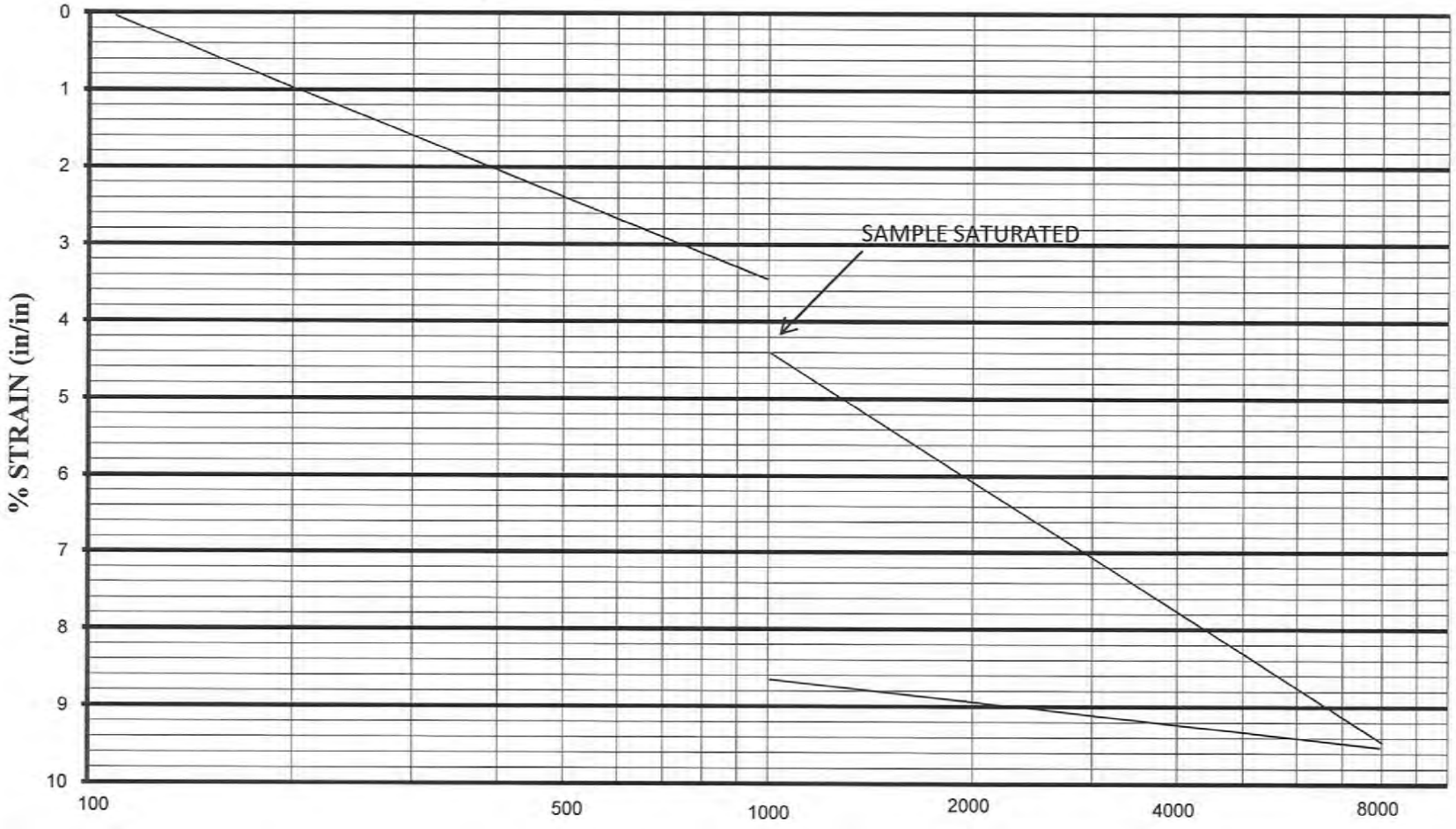
Unit Weight and Moisture:

Dry Density, pcf	:	112.5
Moisture, % at 50% saturation	:	11.9
Moisture, % at 100% saturation	:	17.9

Swell Test Results:

Swell at 144 psf	:	4.4%
Expansion Index	:	44
Expansive Potential	:	Low

CONSOLIDATION TEST DATA



LOCATION B-1
DEPTH: 2 ft

2406ONSOLIDATION TEST RESULTS #1

PLATE A-6.1

Seismic Design Criteria

2001 California Building Code Seismic Design Data

Fault Name:	Mission Ridge-Arroyo Parido Fault-Santa Ana Fault
Fault Type:	B
Distance:	2 Kilometers
Magnitude:	6.7 Earthquake

	10% PE in 50 yr
Peak Ground Acceleration (PGA):	0.491%
0.2 sec SA:	1.144%
1.0 sec SA:	0.506%

Seismic Zone – Figure 16-2	4
Seismic Zone Factor Z – Table 16A-I	0.40
Soil Profile Type – Table 16A-I	S_c
Seismic Coefficient C_a – Table 16A-Q	0.40 N_a
Seismic Coefficient C_v – Table 16A-R	0.56 N_v
Near Source Factor N_a – Table 16A-S	1.3
Near Source Factor N_v – Table 16A-T	1.6
Seismic Source Type – Table 16A-U	B

2007 California Building Code Seismic Design Data

2003 NEHRP Seismic Design Provisions

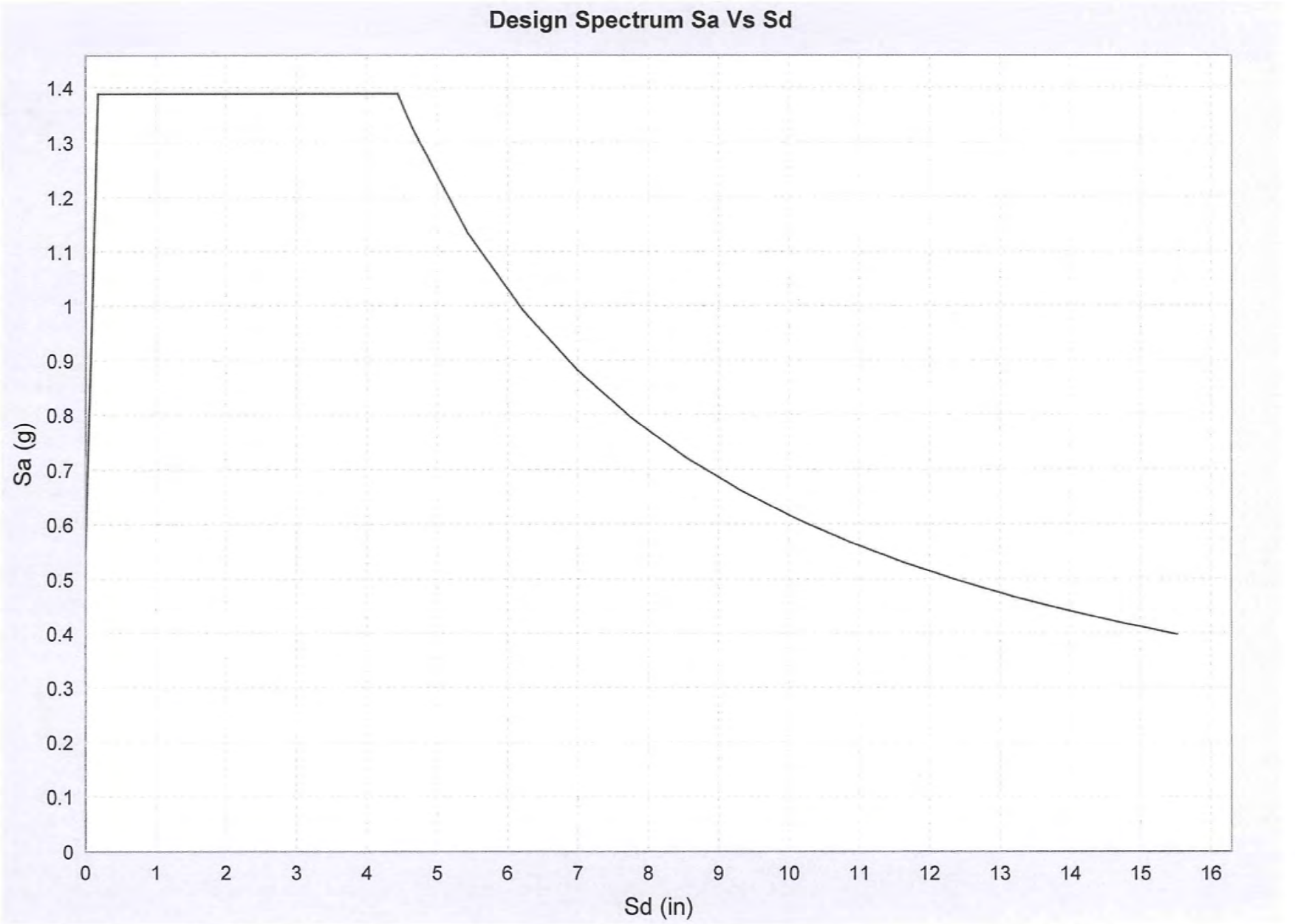
0.2 sec Spectral Response Acceleration / 5% Critical Damping	S_s =	2.082
1.0 sec Spectral Response Acceleration / 5% Critical Damping	S_1 =	0.794
Peak Ground Acceleration (PGA) S_{DS} / 2.5 =		.555%

Site Class = D

F_a = 1.00 F_v = 1.5

$S_{ms} = S_s \times F_a$ = 2.082 $S_{m1} = S_1 \times F_v$ = 1.191

$S_{ds} = 2/3\ S_{ms}$ = 1.388 $S_{d1} = 2/3\ S_{m1}$ =0.794


Design Spectrum Sa Vs Sd
Sa (g)
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Sd (in)

Conterminous 48 States
2003 NEHRP Seismic Design Provisions
Latitude = 34.420082
Longitude = -119.69293400000001
Spectral Response Accelerations Ss and S1
Ss and S1 = Mapped Spectral Acceleration Values
Site Class B - Fa = 1.0 ,Fv = 1.0
Data are based on a 0.01 deg grid spacing

Period (sec)	Sa (g)	
0.2	2.082	(Ss, Site Class B)
1.0	0.794	(S1, Site Class B)

Conterminous 48 States
2003 NEHRP Seismic Design Provisions
Latitude = 34.420082
Longitude = -119.69293400000001
Spectral Response Accelerations SMs and SM1
SMs = Fa x Ss and SM1 = Fv x S1
Site Class D - Fa = 1.0 ,Fv = 1.5

Period (sec)	Sa (g)	
0.2	2.082	(SMs, Site Class D)
1.0	1.191	(SM1, Site Class D)

Conterminous 48 States
2003 NEHRP Seismic Design Provisions
Latitude = 34.420082
Longitude = -119.69293400000001
Design Spectral Response Accelerations SDs and SD1
SDs = 2/3 x SMs and SD1 = 2/3 x SM1
Site Class D - Fa = 1.0 ,Fv = 1.5

Period (sec)	Sa (g)	
0.2	1.388	(SDs, Site Class D)
1.0	0.794	(SD1, Site Class D)

Welcome to California

California Geological Survey

Probabilistic Seismic Hazards Mapping Ground Motion Page

User Selected Site

Longitude	-119.6929
Latitude	34.4201

Ground Motions for User Selected Site

Ground motions (10% probability of being exceeded in 50 years) are expressed as a fraction of the acceleration due to gravity (g). Three values of ground motion are shown, peak ground acceleration (Pga), spectral acceleration(Sa) at short (0.2 second) and moderately long (1.0 second) periods. Ground motion values are also modified by the local site soil conditions. Each ground motion value is shown for 3 different site conditions: firm rock (conditions on the boundary between site categories B and C as defined by the building code), soft rock (site category C) and alluvium (site category D).

Ground Motion	Firm Rock	Soft Rock	Alluvium
Pga	0.491	0.491	0.495
Sa 0.2 sec	1.144	1.144	1.193
Sa 1.0 sec	0.416	0.506	0.594

NEHRP Soil Corrections were used to calculate Soft Rock and Alluvium.
Ground Motion values were interpolated from a grid (0.05 degree spacing) of calculated values. Interpolated ground motion may not equal values calculated for a specific site, therefore these values are not intended for design or analysis.

Liquefaction Analysis

LIQUEFACTION ANALYSIS

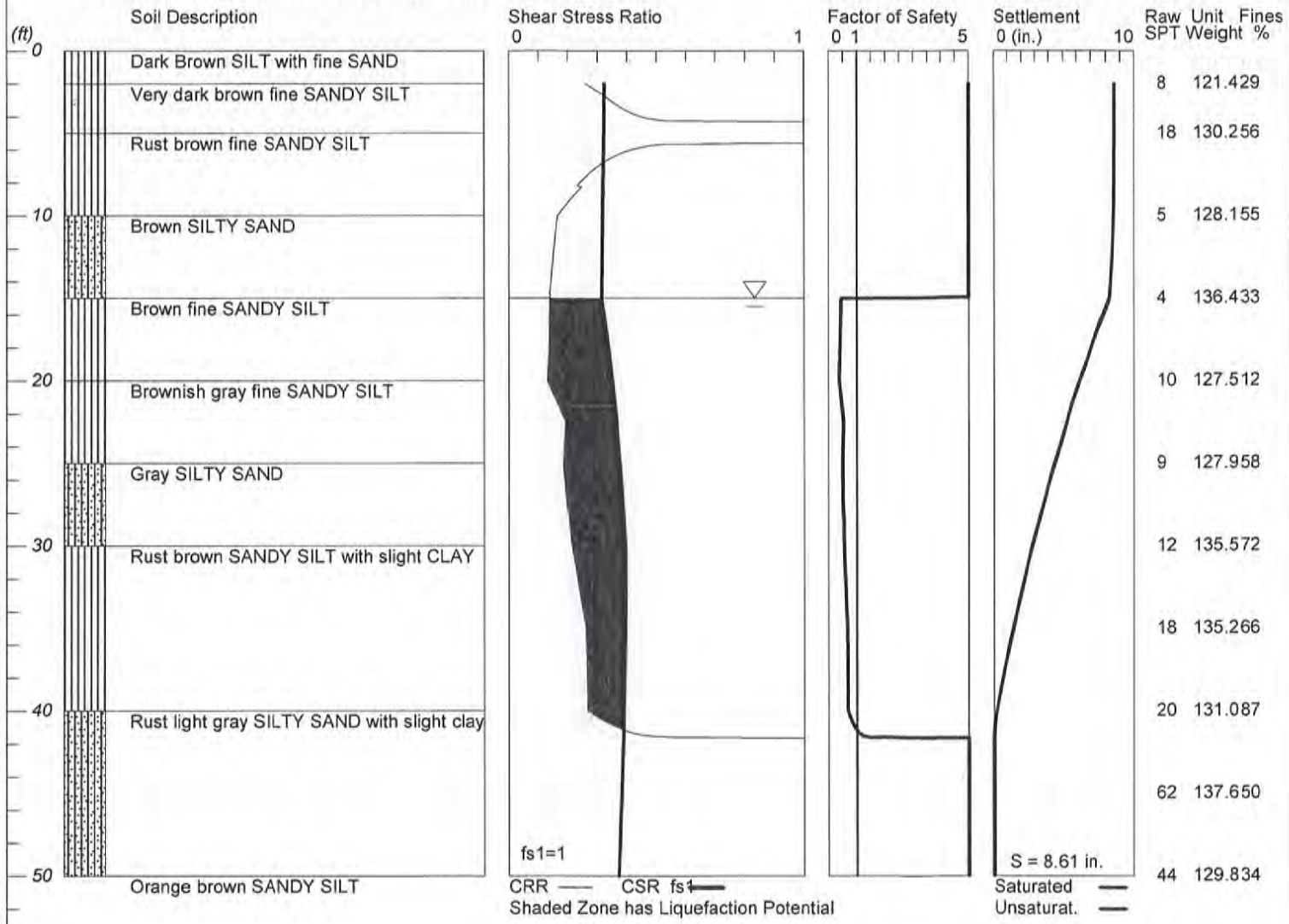
SBCAST

Hole No.=B-1 Water Depth=15 ft Surface Elev.=36

Magnitude=7

Ground Improvement of Fill=1 ft

Acceleration=.501g



LIQUEFACTION ANALYSIS

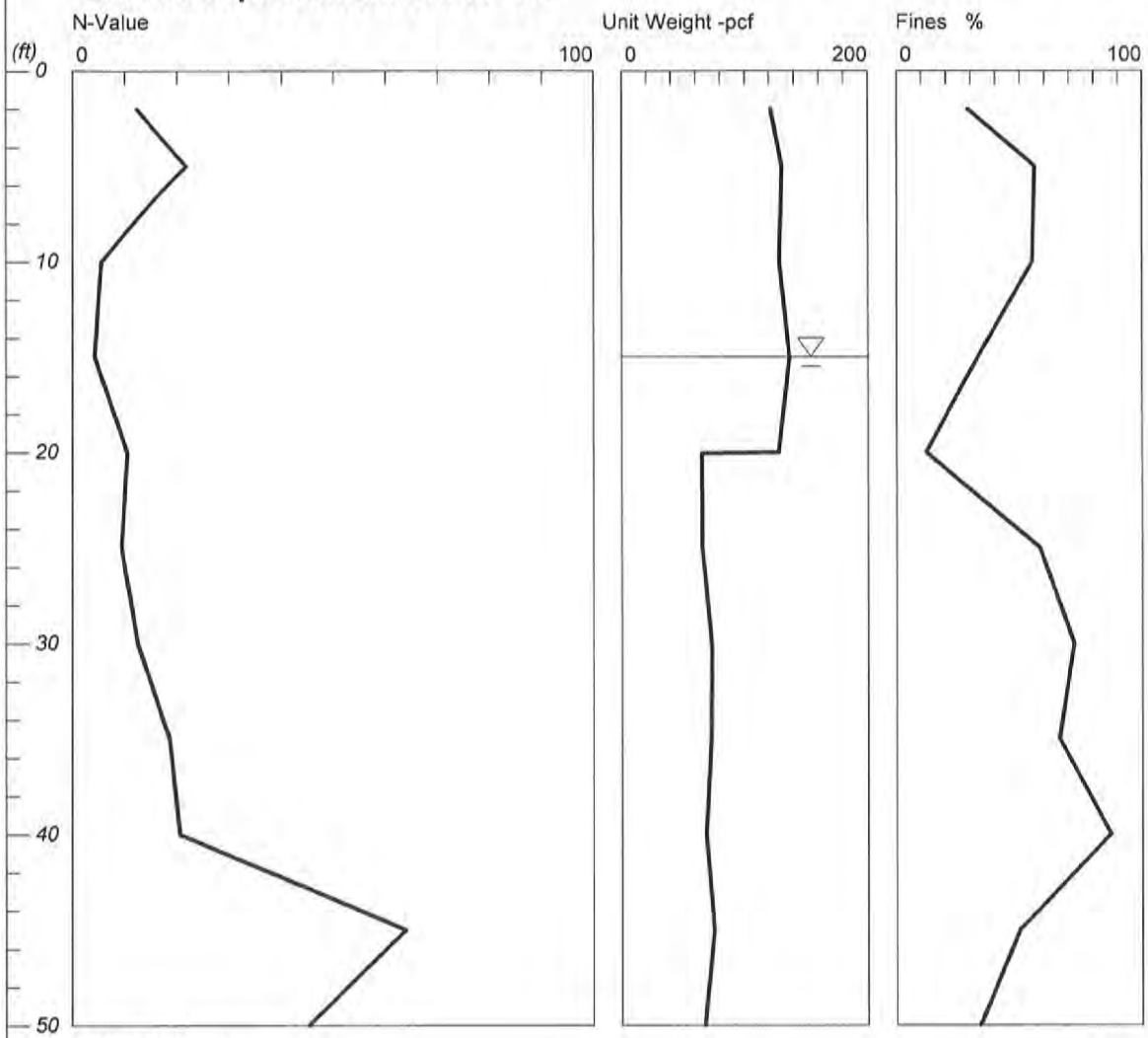
SBCAST

Hole No.=B-1 Water Depth=15 ft Surface Elev.=36

Magnitude=7

Ground Improvement of Fill=1 ft

Acceleration=.501g



SPT N	Unit Weight	Fines %
8	121.4	29
18	130.2	56
5	128.1	55
4	136.4	33
10	127.5	12
9	127.9	58
12	135.5	72
18	135.2	66
20	131.0	87
62	137.6	50
44	129.8	34

LIQUEFACTION ANALYSIS SUMMARY

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Title: SBCAST
Subtitle: Alan Macy LLC

Surface Elev.=36
Hole No.=B-1
Depth of Hole= 50.00 ft
Water Table during Earthquake= 15.00 ft
Water Table during In-Situ Testing= 20.00 ft
Max. Acceleration= 0.5 g
Earthquake Magnitude= 7.00

Input Data:

Surface Elev.=36
Hole No.=B-1
Depth of Hole=50.00 ft
Water Table during Earthquake= 15.00 ft
Water Table during In-Situ Testing= 20.00 ft
Max. Acceleration=0.5 g
Earthquake Magnitude=7.00
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 0.88
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR), User= 1
   Plot one CSR curve (fs1=1)
10. Use Curve Smoothing: Yes*

* Recommended Options

Fill on Top= 1 ft Fill Unit Weight= 130 pcf
Depth of this report is based on original ground surface, not based on fill
1 atm (atmosphere) = 1 tsf (ton/ft2)

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.00	8.00	121.40	29.00
5.00	18.00	130.20	56.00
10.00	5.00	128.10	55.00
15.00	4.00	136.40	33.00
20.00	10.00	127.50	12.00
25.00	9.00	127.90	58.00
30.00	12.00	135.50	72.00
35.00	18.00	135.20	66.00
40.00	20.00	131.00	87.00
45.00	62.00	137.60	50.00
50.00	44.00	129.80	34.00

Output Results:

Settlement of Saturated Sands=8.24 in.
Settlement of Unsaturated Sands=0.37 in.
Total Settlement of Saturated and Unsaturated Sands=8.61 in.
Differential Settlement=4.306 to 5.684 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
2.00	0.26	0.32	5.00	8.24	0.37	8.61
2.05	0.26	0.32	5.00	8.24	0.37	8.61
2.10	0.27	0.32	5.00	8.24	0.37	8.61
2.15	0.27	0.32	5.00	8.24	0.37	8.61
2.20	0.28	0.32	5.00	8.24	0.37	8.61
2.25	0.28	0.32	5.00	8.24	0.37	8.61
2.30	0.29	0.32	5.00	8.24	0.37	8.61
2.35	0.29	0.32	5.00	8.24	0.37	8.61
2.40	0.29	0.32	5.00	8.24	0.37	8.61
2.45	0.30	0.32	5.00	8.24	0.37	8.61
2.50	0.30	0.32	5.00	8.24	0.37	8.61
2.55	0.31	0.32	5.00	8.24	0.37	8.61
2.60	0.31	0.32	5.00	8.24	0.37	8.61
2.65	0.32	0.32	5.00	8.24	0.37	8.61
2.70	0.32	0.32	5.00	8.24	0.37	8.61
2.75	0.33	0.32	5.00	8.24	0.37	8.61
2.80	0.33	0.32	5.00	8.24	0.37	8.61
2.85	0.33	0.32	5.00	8.24	0.37	8.61
2.90	0.34	0.32	5.00	8.24	0.37	8.61
2.95	0.34	0.32	5.00	8.24	0.37	8.61
3.00	0.34	0.32	5.00	8.24	0.37	8.61
3.05	0.35	0.32	5.00	8.24	0.37	8.61
3.10	0.35	0.32	5.00	8.24	0.37	8.61
3.15	0.35	0.32	5.00	8.24	0.37	8.61
3.20	0.36	0.32	5.00	8.24	0.37	8.61
3.25	0.36	0.32	5.00	8.24	0.37	8.61
3.30	0.37	0.32	5.00	8.24	0.37	8.61
3.35	0.37	0.32	5.00	8.24	0.37	8.61
3.40	0.38	0.32	5.00	8.24	0.37	8.61
3.45	0.38	0.32	5.00	8.24	0.37	8.61

3.50	0.39	0.32	5.00	8.24	0.37	8.61
3.55	0.39	0.32	5.00	8.24	0.37	8.61
3.60	0.40	0.32	5.00	8.24	0.37	8.61
3.65	0.40	0.32	5.00	8.24	0.37	8.61
3.70	0.41	0.32	5.00	8.24	0.37	8.61
3.75	0.41	0.32	5.00	8.24	0.36	8.61
3.80	0.42	0.32	5.00	8.24	0.36	8.61
3.85	0.43	0.32	5.00	8.24	0.36	8.60
3.90	0.43	0.32	5.00	8.24	0.36	8.60
3.95	0.44	0.32	5.00	8.24	0.36	8.60
4.00	0.45	0.32	5.00	8.24	0.36	8.60
4.05	0.46	0.32	5.00	8.24	0.36	8.60
4.10	0.47	0.32	5.00	8.24	0.36	8.60
4.15	0.49	0.32	5.00	8.24	0.36	8.60
4.20	0.51	0.32	5.00	8.24	0.36	8.60
4.25	0.55	0.32	5.00	8.24	0.36	8.60
4.30	2.39	0.32	5.00	8.24	0.36	8.60
4.35	2.39	0.32	5.00	8.24	0.36	8.60
4.40	2.39	0.32	5.00	8.24	0.36	8.60
4.45	2.39	0.32	5.00	8.24	0.36	8.60
4.50	2.39	0.32	5.00	8.24	0.36	8.60
4.55	2.39	0.32	5.00	8.24	0.36	8.60
4.60	2.39	0.32	5.00	8.24	0.36	8.60
4.65	2.39	0.32	5.00	8.24	0.36	8.60
4.70	2.39	0.32	5.00	8.24	0.36	8.60
4.75	2.39	0.32	5.00	8.24	0.36	8.60
4.80	2.39	0.32	5.00	8.24	0.36	8.60
4.85	2.39	0.32	5.00	8.24	0.36	8.60
4.90	2.39	0.32	5.00	8.24	0.36	8.60
4.95	2.39	0.32	5.00	8.24	0.36	8.60
5.00	2.39	0.32	5.00	8.24	0.36	8.60
5.05	2.39	0.32	5.00	8.24	0.36	8.60
5.10	2.39	0.32	5.00	8.24	0.36	8.60
5.15	2.39	0.32	5.00	8.24	0.36	8.60
5.20	2.39	0.32	5.00	8.24	0.36	8.60
5.25	2.39	0.32	5.00	8.24	0.36	8.60
5.30	2.39	0.32	5.00	8.24	0.36	8.60
5.35	2.39	0.32	5.00	8.24	0.36	8.60
5.40	2.39	0.32	5.00	8.24	0.36	8.60
5.45	2.39	0.32	5.00	8.24	0.36	8.60
5.50	2.39	0.32	5.00	8.24	0.36	8.60
5.55	2.39	0.32	5.00	8.24	0.36	8.60
5.60	2.39	0.32	5.00	8.24	0.36	8.60
5.65	0.54	0.32	5.00	8.24	0.36	8.60
5.70	0.50	0.32	5.00	8.24	0.36	8.60
5.75	0.48	0.32	5.00	8.24	0.36	8.60
5.80	0.46	0.32	5.00	8.24	0.36	8.60
5.85	0.45	0.32	5.00	8.24	0.36	8.60
5.90	0.44	0.32	5.00	8.24	0.36	8.60
5.95	0.43	0.32	5.00	8.24	0.36	8.60
6.00	0.42	0.32	5.00	8.24	0.36	8.60
6.05	0.41	0.32	5.00	8.24	0.36	8.60
6.10	0.40	0.32	5.00	8.24	0.36	8.60
6.15	0.39	0.32	5.00	8.24	0.36	8.60
6.20	0.38	0.32	5.00	8.24	0.36	8.60
6.25	0.38	0.32	5.00	8.24	0.36	8.60

6.30	0.37	0.32	5.00	8.24	0.36	8.60
6.35	0.36	0.32	5.00	8.24	0.36	8.60
6.40	0.36	0.32	5.00	8.24	0.36	8.60
6.45	0.35	0.32	5.00	8.24	0.36	8.60
6.50	0.35	0.32	5.00	8.24	0.35	8.60
6.55	0.34	0.32	5.00	8.24	0.35	8.59
6.60	0.34	0.32	5.00	8.24	0.35	8.59
6.65	0.33	0.32	5.00	8.24	0.35	8.59
6.70	0.33	0.32	5.00	8.24	0.35	8.59
6.75	0.32	0.32	5.00	8.24	0.35	8.59
6.80	0.32	0.32	5.00	8.24	0.35	8.59
6.85	0.31	0.32	5.00	8.24	0.35	8.59
6.90	0.31	0.32	5.00	8.24	0.35	8.59
6.95	0.31	0.32	5.00	8.24	0.35	8.59
7.00	0.30	0.32	5.00	8.24	0.35	8.59
7.05	0.30	0.32	5.00	8.24	0.35	8.59
7.10	0.29	0.32	5.00	8.24	0.35	8.59
7.15	0.29	0.32	5.00	8.24	0.35	8.59
7.20	0.29	0.32	5.00	8.24	0.35	8.59
7.25	0.28	0.32	5.00	8.24	0.35	8.59
7.30	0.28	0.32	5.00	8.24	0.35	8.59
7.35	0.28	0.32	5.00	8.24	0.35	8.59
7.40	0.27	0.32	5.00	8.24	0.35	8.59
7.45	0.27	0.32	5.00	8.24	0.35	8.59
7.50	0.27	0.32	5.00	8.24	0.35	8.59
7.55	0.27	0.32	5.00	8.24	0.35	8.59
7.60	0.26	0.32	5.00	8.24	0.35	8.59
7.65	0.26	0.32	5.00	8.24	0.35	8.59
7.70	0.26	0.32	5.00	8.24	0.35	8.59
7.75	0.25	0.32	5.00	8.24	0.35	8.59
7.80	0.25	0.32	5.00	8.24	0.34	8.58
7.85	0.25	0.32	5.00	8.24	0.34	8.58
7.90	0.25	0.32	5.00	8.24	0.34	8.58
7.95	0.24	0.32	5.00	8.24	0.34	8.58
8.00	0.24	0.32	5.00	8.24	0.34	8.58
8.05	0.24	0.32	5.00	8.24	0.34	8.58
8.10	0.24	0.32	5.00	8.24	0.34	8.58
8.15	0.23	0.32	5.00	8.24	0.34	8.58
8.20	0.23	0.32	5.00	8.24	0.34	8.58
8.25	0.25	0.32	5.00	8.24	0.34	8.58
8.30	0.24	0.32	5.00	8.24	0.34	8.58
8.35	0.24	0.32	5.00	8.24	0.34	8.58
8.40	0.24	0.32	5.00	8.24	0.34	8.58
8.45	0.24	0.32	5.00	8.24	0.34	8.58
8.50	0.23	0.32	5.00	8.24	0.34	8.58
8.55	0.23	0.32	5.00	8.24	0.33	8.57
8.60	0.23	0.32	5.00	8.24	0.33	8.57
8.65	0.23	0.32	5.00	8.24	0.33	8.57
8.70	0.22	0.32	5.00	8.24	0.33	8.57
8.75	0.22	0.32	5.00	8.24	0.33	8.57
8.80	0.22	0.32	5.00	8.24	0.33	8.57
8.85	0.22	0.32	5.00	8.24	0.33	8.57
8.90	0.21	0.32	5.00	8.24	0.33	8.57
8.95	0.21	0.32	5.00	8.24	0.33	8.57
9.00	0.21	0.32	5.00	8.24	0.33	8.57
9.05	0.21	0.32	5.00	8.24	0.32	8.56

9.10	0.20	0.32	5.00	8.24	0.32	8.56
9.15	0.20	0.32	5.00	8.24	0.32	8.56
9.20	0.20	0.32	5.00	8.24	0.32	8.56
9.25	0.20	0.32	5.00	8.24	0.32	8.56
9.30	0.20	0.32	5.00	8.24	0.32	8.56
9.35	0.19	0.32	5.00	8.24	0.32	8.56
9.40	0.19	0.32	5.00	8.24	0.32	8.56
9.45	0.19	0.32	5.00	8.24	0.32	8.56
9.50	0.19	0.32	5.00	8.24	0.32	8.56
9.55	0.18	0.32	5.00	8.24	0.32	8.56
9.60	0.18	0.32	5.00	8.24	0.31	8.55
9.65	0.18	0.32	5.00	8.24	0.31	8.55
9.70	0.18	0.32	5.00	8.24	0.31	8.55
9.75	0.18	0.32	5.00	8.24	0.31	8.55
9.80	0.17	0.32	5.00	8.24	0.31	8.55
9.85	0.17	0.32	5.00	8.24	0.31	8.55
9.90	0.17	0.32	5.00	8.24	0.31	8.55
9.95	0.17	0.32	5.00	8.24	0.30	8.54
10.00	0.17	0.32	5.00	8.24	0.30	8.54
10.05	0.16	0.32	5.00	8.24	0.30	8.54
10.10	0.16	0.32	5.00	8.24	0.30	8.54
10.15	0.16	0.32	5.00	8.24	0.30	8.54
10.20	0.16	0.32	5.00	8.24	0.30	8.54
10.25	0.16	0.32	5.00	8.24	0.30	8.54
10.30	0.16	0.32	5.00	8.24	0.29	8.53
10.35	0.16	0.32	5.00	8.24	0.29	8.53
10.40	0.16	0.32	5.00	8.24	0.29	8.53
10.45	0.16	0.32	5.00	8.24	0.29	8.53
10.50	0.16	0.32	5.00	8.24	0.29	8.53
10.55	0.16	0.32	5.00	8.24	0.28	8.53
10.60	0.16	0.32	5.00	8.24	0.28	8.52
10.65	0.16	0.32	5.00	8.24	0.28	8.52
10.70	0.16	0.32	5.00	8.24	0.28	8.52
10.75	0.16	0.32	5.00	8.24	0.28	8.52
10.80	0.16	0.32	5.00	8.24	0.28	8.52
10.85	0.16	0.32	5.00	8.24	0.27	8.51
10.90	0.16	0.32	5.00	8.24	0.27	8.51
10.95	0.16	0.32	5.00	8.24	0.27	8.51
11.00	0.16	0.32	5.00	8.24	0.27	8.51
11.05	0.16	0.32	5.00	8.24	0.27	8.51
11.10	0.16	0.32	5.00	8.24	0.26	8.50
11.15	0.16	0.32	5.00	8.24	0.26	8.50
11.20	0.16	0.32	5.00	8.24	0.26	8.50
11.25	0.16	0.32	5.00	8.24	0.26	8.50
11.30	0.16	0.32	5.00	8.24	0.26	8.50
11.35	0.16	0.32	5.00	8.24	0.25	8.49
11.40	0.16	0.32	5.00	8.24	0.25	8.49
11.45	0.16	0.32	5.00	8.24	0.25	8.49
11.50	0.16	0.32	5.00	8.24	0.25	8.49
11.55	0.16	0.32	5.00	8.24	0.24	8.48
11.60	0.15	0.32	5.00	8.24	0.24	8.48
11.65	0.15	0.32	5.00	8.24	0.24	8.48
11.70	0.15	0.32	5.00	8.24	0.24	8.48
11.75	0.15	0.32	5.00	8.24	0.23	8.48
11.80	0.15	0.32	5.00	8.24	0.23	8.47
11.85	0.15	0.32	5.00	8.24	0.23	8.47

11.90	0.15	0.32	5.00	8.24	0.23	8.47
11.95	0.15	0.32	5.00	8.24	0.23	8.47
12.00	0.15	0.32	5.00	8.24	0.22	8.46
12.05	0.15	0.32	5.00	8.24	0.22	8.46
12.10	0.15	0.32	5.00	8.24	0.22	8.46
12.15	0.15	0.32	5.00	8.24	0.21	8.46
12.20	0.15	0.32	5.00	8.24	0.21	8.45
12.25	0.15	0.32	5.00	8.24	0.21	8.45
12.30	0.15	0.32	5.00	8.24	0.21	8.45
12.35	0.15	0.32	5.00	8.24	0.20	8.44
12.40	0.15	0.32	5.00	8.24	0.20	8.44
12.45	0.15	0.32	5.00	8.24	0.20	8.44
12.50	0.15	0.32	5.00	8.24	0.20	8.44
12.55	0.15	0.32	5.00	8.24	0.19	8.43
12.60	0.15	0.32	5.00	8.24	0.19	8.43
12.65	0.15	0.32	5.00	8.24	0.19	8.43
12.70	0.15	0.32	5.00	8.24	0.18	8.42
12.75	0.15	0.32	5.00	8.24	0.18	8.42
12.80	0.15	0.32	5.00	8.24	0.18	8.42
12.85	0.15	0.32	5.00	8.24	0.17	8.41
12.90	0.15	0.32	5.00	8.24	0.17	8.41
12.95	0.15	0.32	5.00	8.24	0.17	8.41
13.00	0.15	0.32	5.00	8.24	0.17	8.41
13.05	0.15	0.32	5.00	8.24	0.16	8.40
13.10	0.15	0.32	5.00	8.24	0.16	8.40
13.15	0.15	0.32	5.00	8.24	0.16	8.40
13.20	0.15	0.32	5.00	8.24	0.15	8.39
13.25	0.15	0.32	5.00	8.24	0.15	8.39
13.30	0.15	0.32	5.00	8.24	0.15	8.39
13.35	0.15	0.32	5.00	8.24	0.14	8.38
13.40	0.15	0.32	5.00	8.24	0.14	8.38
13.45	0.15	0.32	5.00	8.24	0.13	8.37
13.50	0.14	0.32	5.00	8.24	0.13	8.37
13.55	0.14	0.32	5.00	8.24	0.13	8.37
13.60	0.14	0.32	5.00	8.24	0.12	8.36
13.65	0.14	0.32	5.00	8.24	0.12	8.36
13.70	0.14	0.32	5.00	8.24	0.12	8.36
13.75	0.14	0.32	5.00	8.24	0.11	8.35
13.80	0.14	0.32	5.00	8.24	0.11	8.35
13.85	0.14	0.32	5.00	8.24	0.10	8.34
13.90	0.14	0.32	5.00	8.24	0.10	8.34
13.95	0.14	0.32	5.00	8.24	0.10	8.34
14.00	0.14	0.32	5.00	8.24	0.09	8.33
14.05	0.14	0.31	5.00	8.24	0.09	8.33
14.10	0.14	0.31	5.00	8.24	0.08	8.32
14.15	0.14	0.31	5.00	8.24	0.08	8.32
14.20	0.14	0.31	5.00	8.24	0.08	8.32
14.25	0.14	0.31	5.00	8.24	0.07	8.31
14.30	0.14	0.31	5.00	8.24	0.07	8.31
14.35	0.14	0.31	5.00	8.24	0.06	8.30
14.40	0.14	0.31	5.00	8.24	0.06	8.30
14.45	0.14	0.31	5.00	8.24	0.05	8.29
14.50	0.14	0.31	5.00	8.24	0.05	8.29
14.55	0.14	0.31	5.00	8.24	0.04	8.28
14.60	0.14	0.31	5.00	8.24	0.04	8.28
14.65	0.14	0.31	5.00	8.24	0.03	8.28

14.70	0.14	0.31	5.00	8.24	0.03	8.27
14.75	0.14	0.31	5.00	8.24	0.02	8.27
14.80	0.14	0.31	5.00	8.24	0.02	8.26
14.85	0.14	0.31	5.00	8.24	0.02	8.26
14.90	0.14	0.31	5.00	8.24	0.01	8.25
14.95	0.14	0.31	5.00	8.24	0.01	8.25
15.00	0.14	0.31	0.44*	8.24	0.00	8.24
15.05	0.14	0.31	0.44*	8.22	0.00	8.22
15.10	0.14	0.32	0.44*	8.20	0.00	8.20
15.15	0.14	0.32	0.44*	8.18	0.00	8.18
15.20	0.14	0.32	0.44*	8.16	0.00	8.16
15.25	0.14	0.32	0.43*	8.14	0.00	8.14
15.30	0.14	0.32	0.43*	8.12	0.00	8.12
15.35	0.14	0.32	0.43*	8.10	0.00	8.10
15.40	0.14	0.32	0.43*	8.08	0.00	8.08
15.45	0.14	0.32	0.43*	8.06	0.00	8.06
15.50	0.14	0.32	0.43*	8.04	0.00	8.04
15.55	0.14	0.32	0.43*	8.02	0.00	8.02
15.60	0.14	0.32	0.43*	8.00	0.00	8.00
15.65	0.14	0.32	0.43*	7.98	0.00	7.98
15.70	0.14	0.32	0.43*	7.96	0.00	7.96
15.75	0.14	0.32	0.43*	7.94	0.00	7.94
15.80	0.14	0.32	0.43*	7.92	0.00	7.92
15.85	0.14	0.32	0.43*	7.90	0.00	7.90
15.90	0.14	0.32	0.43*	7.88	0.00	7.88
15.95	0.14	0.32	0.43*	7.86	0.00	7.86
16.00	0.14	0.32	0.43*	7.84	0.00	7.84
16.05	0.14	0.32	0.43*	7.82	0.00	7.82
16.10	0.14	0.32	0.42*	7.80	0.00	7.80
16.15	0.14	0.32	0.42*	7.77	0.00	7.77
16.20	0.14	0.32	0.42*	7.75	0.00	7.75
16.25	0.14	0.32	0.42*	7.73	0.00	7.73
16.30	0.14	0.33	0.42*	7.71	0.00	7.71
16.35	0.14	0.33	0.42*	7.69	0.00	7.69
16.40	0.14	0.33	0.42*	7.67	0.00	7.67
16.45	0.14	0.33	0.42*	7.65	0.00	7.65
16.50	0.14	0.33	0.42*	7.63	0.00	7.63
16.55	0.14	0.33	0.42*	7.61	0.00	7.61
16.60	0.14	0.33	0.42*	7.59	0.00	7.59
16.65	0.14	0.33	0.42*	7.57	0.00	7.57
16.70	0.14	0.33	0.42*	7.55	0.00	7.55
16.75	0.14	0.33	0.42*	7.53	0.00	7.53
16.80	0.14	0.33	0.42*	7.51	0.00	7.51
16.85	0.14	0.33	0.41*	7.49	0.00	7.49
16.90	0.14	0.33	0.41*	7.47	0.00	7.47
16.95	0.14	0.33	0.41*	7.45	0.00	7.45
17.00	0.14	0.33	0.41*	7.43	0.00	7.43
17.05	0.14	0.33	0.41*	7.41	0.00	7.41
17.10	0.14	0.33	0.41*	7.39	0.00	7.39
17.15	0.14	0.33	0.41*	7.37	0.00	7.37
17.20	0.14	0.33	0.41*	7.35	0.00	7.35
17.25	0.14	0.33	0.41*	7.33	0.00	7.33
17.30	0.14	0.33	0.41*	7.31	0.00	7.31
17.35	0.14	0.33	0.41*	7.29	0.00	7.29
17.40	0.14	0.33	0.41*	7.27	0.00	7.27
17.45	0.14	0.33	0.41*	7.25	0.00	7.25

17.50	0.14	0.33	0.41*	7.23	0.00	7.23
17.55	0.14	0.33	0.40*	7.21	0.00	7.21
17.60	0.14	0.33	0.40*	7.19	0.00	7.19
17.65	0.14	0.34	0.40*	7.17	0.00	7.17
17.70	0.14	0.34	0.40*	7.14	0.00	7.14
17.75	0.14	0.34	0.40*	7.12	0.00	7.12
17.80	0.14	0.34	0.40*	7.10	0.00	7.10
17.85	0.13	0.34	0.40*	7.08	0.00	7.08
17.90	0.13	0.34	0.40*	7.06	0.00	7.06
17.95	0.13	0.34	0.40*	7.04	0.00	7.04
18.00	0.13	0.34	0.40*	7.02	0.00	7.02
18.05	0.13	0.34	0.40*	7.00	0.00	7.00
18.10	0.13	0.34	0.40*	6.98	0.00	6.98
18.15	0.13	0.34	0.40*	6.96	0.00	6.96
18.20	0.13	0.34	0.40*	6.94	0.00	6.94
18.25	0.13	0.34	0.40*	6.92	0.00	6.92
18.30	0.13	0.34	0.39*	6.90	0.00	6.90
18.35	0.13	0.34	0.39*	6.88	0.00	6.88
18.40	0.13	0.34	0.39*	6.86	0.00	6.86
18.45	0.13	0.34	0.39*	6.84	0.00	6.84
18.50	0.13	0.34	0.39*	6.82	0.00	6.82
18.55	0.13	0.34	0.39*	6.80	0.00	6.80
18.60	0.13	0.34	0.39*	6.78	0.00	6.78
18.65	0.13	0.34	0.39*	6.76	0.00	6.76
18.70	0.13	0.34	0.39*	6.74	0.00	6.74
18.75	0.13	0.34	0.39*	6.71	0.00	6.71
18.80	0.13	0.34	0.39*	6.69	0.00	6.69
18.85	0.13	0.34	0.39*	6.67	0.00	6.67
18.90	0.13	0.34	0.39*	6.65	0.00	6.65
18.95	0.13	0.34	0.39*	6.63	0.00	6.63
19.00	0.13	0.34	0.38*	6.61	0.00	6.61
19.05	0.13	0.34	0.38*	6.59	0.00	6.59
19.10	0.13	0.35	0.38*	6.57	0.00	6.57
19.15	0.13	0.35	0.38*	6.55	0.00	6.55
19.20	0.13	0.35	0.38*	6.53	0.00	6.53
19.25	0.13	0.35	0.38*	6.51	0.00	6.51
19.30	0.13	0.35	0.38*	6.49	0.00	6.49
19.35	0.13	0.35	0.38*	6.47	0.00	6.47
19.40	0.13	0.35	0.38*	6.45	0.00	6.45
19.45	0.13	0.35	0.38*	6.43	0.00	6.43
19.50	0.13	0.35	0.38*	6.40	0.00	6.40
19.55	0.13	0.35	0.38*	6.38	0.00	6.38
19.60	0.13	0.35	0.38*	6.36	0.00	6.36
19.65	0.13	0.35	0.37*	6.34	0.00	6.34
19.70	0.13	0.35	0.37*	6.32	0.00	6.32
19.75	0.13	0.35	0.37*	6.30	0.00	6.30
19.80	0.13	0.35	0.37*	6.28	0.00	6.28
19.85	0.13	0.35	0.37*	6.26	0.00	6.26
19.90	0.13	0.35	0.37*	6.24	0.00	6.24
19.95	0.13	0.35	0.37*	6.22	0.00	6.22
20.00	0.13	0.35	0.37*	6.20	0.00	6.20
20.05	0.13	0.35	0.37*	6.18	0.00	6.18
20.10	0.13	0.35	0.38*	6.15	0.00	6.15
20.15	0.13	0.35	0.38*	6.13	0.00	6.13
20.20	0.13	0.35	0.38*	6.11	0.00	6.11
20.25	0.14	0.35	0.39*	6.09	0.00	6.09

20.30	0.14	0.35	0.39*	6.07	0.00	6.07
20.35	0.14	0.35	0.39*	6.05	0.00	6.05
20.40	0.14	0.35	0.39*	6.03	0.00	6.03
20.45	0.14	0.35	0.40*	6.01	0.00	6.01
20.50	0.14	0.35	0.40*	5.99	0.00	5.99
20.55	0.14	0.35	0.40*	5.97	0.00	5.97
20.60	0.14	0.35	0.41*	5.95	0.00	5.95
20.65	0.15	0.35	0.41*	5.93	0.00	5.93
20.70	0.15	0.35	0.41*	5.91	0.00	5.91
20.75	0.15	0.36	0.42*	5.89	0.00	5.89
20.80	0.15	0.36	0.42*	5.87	0.00	5.87
20.85	0.15	0.36	0.42*	5.85	0.00	5.85
20.90	0.15	0.36	0.43*	5.84	0.00	5.84
20.95	0.15	0.36	0.43*	5.82	0.00	5.82
21.00	0.15	0.36	0.43*	5.80	0.00	5.80
21.05	0.16	0.36	0.44*	5.78	0.00	5.78
21.10	0.16	0.36	0.44*	5.76	0.00	5.76
21.15	0.16	0.36	0.44*	5.74	0.00	5.74
21.20	0.16	0.36	0.45*	5.72	0.00	5.72
21.25	0.16	0.36	0.45*	5.70	0.00	5.70
21.30	0.16	0.36	0.45*	5.69	0.00	5.69
21.35	0.16	0.36	0.45*	5.67	0.00	5.67
21.40	0.16	0.36	0.46*	5.65	0.00	5.65
21.45	0.17	0.36	0.46*	5.63	0.00	5.63
21.50	0.17	0.36	0.46*	5.61	0.00	5.61
21.55	0.17	0.36	0.47*	5.59	0.00	5.59
21.60	0.17	0.36	0.47*	5.58	0.00	5.58
21.65	0.17	0.36	0.47*	5.56	0.00	5.56
21.70	0.17	0.36	0.48*	5.54	0.00	5.54
21.75	0.17	0.36	0.48*	5.52	0.00	5.52
21.80	0.17	0.36	0.48*	5.50	0.00	5.50
21.85	0.18	0.36	0.49*	5.49	0.00	5.49
21.90	0.18	0.36	0.49*	5.47	0.00	5.47
21.95	0.18	0.36	0.49*	5.45	0.00	5.45
22.00	0.18	0.36	0.49*	5.43	0.00	5.43
22.05	0.18	0.36	0.50*	5.42	0.00	5.42
22.10	0.18	0.36	0.50*	5.40	0.00	5.40
22.15	0.18	0.36	0.50*	5.38	0.00	5.38
22.20	0.18	0.36	0.51*	5.37	0.00	5.37
22.25	0.19	0.36	0.51*	5.35	0.00	5.35
22.30	0.19	0.36	0.51*	5.33	0.00	5.33
22.35	0.19	0.36	0.52*	5.32	0.00	5.32
22.40	0.19	0.36	0.52*	5.30	0.00	5.30
22.45	0.19	0.36	0.52*	5.28	0.00	5.28
22.50	0.19	0.36	0.53*	5.27	0.00	5.27
22.55	0.19	0.37	0.52*	5.25	0.00	5.25
22.60	0.19	0.37	0.52*	5.23	0.00	5.23
22.65	0.19	0.37	0.52*	5.22	0.00	5.22
22.70	0.19	0.37	0.52*	5.20	0.00	5.20
22.75	0.19	0.37	0.52*	5.18	0.00	5.18
22.80	0.19	0.37	0.52*	5.17	0.00	5.17
22.85	0.19	0.37	0.52*	5.15	0.00	5.15
22.90	0.19	0.37	0.52*	5.13	0.00	5.13
22.95	0.19	0.37	0.52*	5.12	0.00	5.12
23.00	0.19	0.37	0.52*	5.10	0.00	5.10
23.05	0.19	0.37	0.52*	5.08	0.00	5.08

23.10	0.19	0.37	0.52*	5.07	0.00	5.07
23.15	0.19	0.37	0.51*	5.05	0.00	5.05
23.20	0.19	0.37	0.51*	5.03	0.00	5.03
23.25	0.19	0.37	0.51*	5.02	0.00	5.02
23.30	0.19	0.37	0.51*	5.00	0.00	5.00
23.35	0.19	0.37	0.51*	4.99	0.00	4.99
23.40	0.19	0.37	0.51*	4.97	0.00	4.97
23.45	0.19	0.37	0.51*	4.95	0.00	4.95
23.50	0.19	0.37	0.51*	4.94	0.00	4.94
23.55	0.19	0.37	0.51*	4.92	0.00	4.92
23.60	0.19	0.37	0.51*	4.90	0.00	4.90
23.65	0.19	0.37	0.51*	4.89	0.00	4.89
23.70	0.19	0.37	0.51*	4.87	0.00	4.87
23.75	0.19	0.37	0.51*	4.85	0.00	4.85
23.80	0.19	0.37	0.50*	4.84	0.00	4.84
23.85	0.19	0.37	0.50*	4.82	0.00	4.82
23.90	0.19	0.37	0.50*	4.80	0.00	4.80
23.95	0.19	0.37	0.50*	4.79	0.00	4.79
24.00	0.19	0.37	0.50*	4.77	0.00	4.77
24.05	0.19	0.37	0.50*	4.75	0.00	4.75
24.10	0.19	0.37	0.50*	4.73	0.00	4.73
24.15	0.19	0.37	0.50*	4.72	0.00	4.72
24.20	0.19	0.37	0.50*	4.70	0.00	4.70
24.25	0.19	0.37	0.50*	4.68	0.00	4.68
24.30	0.19	0.37	0.50*	4.67	0.00	4.67
24.35	0.19	0.37	0.50*	4.65	0.00	4.65
24.40	0.19	0.37	0.50*	4.63	0.00	4.63
24.45	0.19	0.37	0.50*	4.62	0.00	4.62
24.50	0.19	0.37	0.49*	4.60	0.00	4.60
24.55	0.19	0.37	0.49*	4.58	0.00	4.58
24.60	0.18	0.37	0.49*	4.57	0.00	4.57
24.65	0.18	0.38	0.49*	4.55	0.00	4.55
24.70	0.18	0.38	0.49*	4.53	0.00	4.53
24.75	0.18	0.38	0.49*	4.52	0.00	4.52
24.80	0.18	0.38	0.49*	4.50	0.00	4.50
24.85	0.18	0.38	0.49*	4.48	0.00	4.48
24.90	0.18	0.38	0.49*	4.47	0.00	4.47
24.95	0.18	0.38	0.49*	4.45	0.00	4.45
25.00	0.18	0.38	0.49*	4.43	0.00	4.43
25.05	0.18	0.38	0.49*	4.41	0.00	4.41
25.10	0.18	0.38	0.49*	4.40	0.00	4.40
25.15	0.18	0.38	0.49*	4.38	0.00	4.38
25.20	0.18	0.38	0.49*	4.36	0.00	4.36
25.25	0.18	0.38	0.49*	4.35	0.00	4.35
25.30	0.19	0.38	0.49*	4.33	0.00	4.33
25.35	0.19	0.38	0.49*	4.31	0.00	4.31
25.40	0.19	0.38	0.49*	4.30	0.00	4.30
25.45	0.19	0.38	0.49*	4.28	0.00	4.28
25.50	0.19	0.38	0.49*	4.26	0.00	4.26
25.55	0.19	0.38	0.49*	4.25	0.00	4.25
25.60	0.19	0.38	0.49*	4.23	0.00	4.23
25.65	0.19	0.38	0.49*	4.21	0.00	4.21
25.70	0.19	0.38	0.49*	4.20	0.00	4.20
25.75	0.19	0.38	0.49*	4.18	0.00	4.18
25.80	0.19	0.38	0.49*	4.16	0.00	4.16
25.85	0.19	0.38	0.49*	4.15	0.00	4.15

25.90	0.19	0.38	0.49*	4.13	0.00	4.13
25.95	0.19	0.38	0.49*	4.11	0.00	4.11
26.00	0.19	0.38	0.49*	4.10	0.00	4.10
26.05	0.19	0.38	0.50*	4.08	0.00	4.08
26.10	0.19	0.38	0.50*	4.06	0.00	4.06
26.15	0.19	0.38	0.50*	4.05	0.00	4.05
26.20	0.19	0.38	0.50*	4.03	0.00	4.03
26.25	0.19	0.38	0.50*	4.01	0.00	4.01
26.30	0.19	0.38	0.50*	4.00	0.00	4.00
26.35	0.19	0.38	0.50*	3.98	0.00	3.98
26.40	0.19	0.38	0.50*	3.96	0.00	3.96
26.45	0.19	0.38	0.50*	3.95	0.00	3.95
26.50	0.19	0.38	0.50*	3.93	0.00	3.93
26.55	0.19	0.38	0.50*	3.91	0.00	3.91
26.60	0.19	0.38	0.50*	3.90	0.00	3.90
26.65	0.19	0.38	0.50*	3.88	0.00	3.88
26.70	0.19	0.38	0.50*	3.86	0.00	3.86
26.75	0.19	0.38	0.50*	3.85	0.00	3.85
26.80	0.19	0.38	0.50*	3.83	0.00	3.83
26.85	0.19	0.38	0.50*	3.82	0.00	3.82
26.90	0.19	0.38	0.50*	3.80	0.00	3.80
26.95	0.19	0.38	0.50*	3.78	0.00	3.78
27.00	0.19	0.38	0.50*	3.77	0.00	3.77
27.05	0.19	0.39	0.50*	3.75	0.00	3.75
27.10	0.19	0.39	0.50*	3.73	0.00	3.73
27.15	0.19	0.39	0.50*	3.72	0.00	3.72
27.20	0.19	0.39	0.50*	3.70	0.00	3.70
27.25	0.19	0.39	0.50*	3.68	0.00	3.68
27.30	0.19	0.39	0.50*	3.67	0.00	3.67
27.35	0.19	0.39	0.50*	3.65	0.00	3.65
27.40	0.19	0.39	0.50*	3.64	0.00	3.64
27.45	0.20	0.39	0.51*	3.62	0.00	3.62
27.50	0.20	0.39	0.51*	3.60	0.00	3.60
27.55	0.20	0.39	0.51*	3.59	0.00	3.59
27.60	0.20	0.39	0.51*	3.57	0.00	3.57
27.65	0.20	0.39	0.51*	3.55	0.00	3.55
27.70	0.20	0.39	0.51*	3.54	0.00	3.54
27.75	0.20	0.39	0.51*	3.52	0.00	3.52
27.80	0.20	0.39	0.51*	3.51	0.00	3.51
27.85	0.20	0.39	0.51*	3.49	0.00	3.49
27.90	0.20	0.39	0.52*	3.47	0.00	3.47
27.95	0.20	0.39	0.52*	3.46	0.00	3.46
28.00	0.20	0.39	0.52*	3.44	0.00	3.44
28.05	0.20	0.39	0.52*	3.43	0.00	3.43
28.10	0.20	0.39	0.52*	3.41	0.00	3.41
28.15	0.20	0.39	0.52*	3.39	0.00	3.39
28.20	0.20	0.39	0.52*	3.38	0.00	3.38
28.25	0.20	0.39	0.52*	3.36	0.00	3.36
28.30	0.20	0.39	0.53*	3.35	0.00	3.35
28.35	0.20	0.39	0.53*	3.33	0.00	3.33
28.40	0.21	0.39	0.53*	3.32	0.00	3.32
28.45	0.21	0.39	0.53*	3.30	0.00	3.30
28.50	0.21	0.39	0.53*	3.28	0.00	3.28
28.55	0.21	0.39	0.53*	3.27	0.00	3.27
28.60	0.21	0.39	0.53*	3.25	0.00	3.25
28.65	0.21	0.39	0.53*	3.24	0.00	3.24

28.70	0.21	0.39	0.53*	3.22	0.00	3.22
28.75	0.21	0.39	0.53*	3.21	0.00	3.21
28.80	0.21	0.39	0.53*	3.19	0.00	3.19
28.85	0.21	0.39	0.53*	3.17	0.00	3.17
28.90	0.21	0.39	0.53*	3.16	0.00	3.16
28.95	0.21	0.39	0.53*	3.14	0.00	3.14
29.00	0.21	0.39	0.53*	3.13	0.00	3.13
29.05	0.21	0.39	0.53*	3.11	0.00	3.11
29.10	0.21	0.39	0.53*	3.10	0.00	3.10
29.15	0.21	0.39	0.53*	3.08	0.00	3.08
29.20	0.21	0.39	0.53*	3.07	0.00	3.07
29.25	0.21	0.39	0.53*	3.05	0.00	3.05
29.30	0.21	0.39	0.53*	3.03	0.00	3.03
29.35	0.21	0.39	0.53*	3.02	0.00	3.02
29.40	0.21	0.39	0.53*	3.00	0.00	3.00
29.45	0.21	0.39	0.53*	2.99	0.00	2.99
29.50	0.21	0.39	0.53*	2.97	0.00	2.97
29.55	0.21	0.39	0.53*	2.96	0.00	2.96
29.60	0.21	0.39	0.53*	2.94	0.00	2.94
29.65	0.21	0.39	0.53*	2.93	0.00	2.93
29.70	0.21	0.39	0.54*	2.91	0.00	2.91
29.75	0.21	0.39	0.54*	2.90	0.00	2.90
29.80	0.21	0.39	0.54*	2.88	0.00	2.88
29.85	0.21	0.39	0.54*	2.86	0.00	2.86
29.90	0.21	0.39	0.54*	2.85	0.00	2.85
29.95	0.21	0.39	0.54*	2.83	0.00	2.83
30.00	0.21	0.39	0.54*	2.82	0.00	2.82
30.05	0.21	0.39	0.54*	2.80	0.00	2.80
30.10	0.21	0.39	0.54*	2.79	0.00	2.79
30.15	0.22	0.39	0.54*	2.77	0.00	2.77
30.20	0.22	0.40	0.55*	2.76	0.00	2.76
30.25	0.22	0.40	0.55*	2.74	0.00	2.74
30.30	0.22	0.40	0.55*	2.73	0.00	2.73
30.35	0.22	0.40	0.55*	2.71	0.00	2.71
30.40	0.22	0.40	0.55*	2.70	0.00	2.70
30.45	0.22	0.40	0.55*	2.68	0.00	2.68
30.50	0.22	0.40	0.55*	2.67	0.00	2.67
30.55	0.22	0.40	0.55*	2.65	0.00	2.65
30.60	0.22	0.40	0.55*	2.64	0.00	2.64
30.65	0.22	0.40	0.56*	2.62	0.00	2.62
30.70	0.22	0.40	0.56*	2.61	0.00	2.61
30.75	0.22	0.40	0.56*	2.59	0.00	2.59
30.80	0.22	0.40	0.56*	2.58	0.00	2.58
30.85	0.22	0.40	0.56*	2.56	0.00	2.56
30.90	0.22	0.40	0.56*	2.55	0.00	2.55
30.95	0.22	0.40	0.56*	2.53	0.00	2.53
31.00	0.22	0.40	0.56*	2.52	0.00	2.52
31.05	0.22	0.40	0.57*	2.50	0.00	2.50
31.10	0.22	0.40	0.57*	2.49	0.00	2.49
31.15	0.22	0.40	0.57*	2.47	0.00	2.47
31.20	0.22	0.40	0.57*	2.46	0.00	2.46
31.25	0.23	0.40	0.57*	2.44	0.00	2.44
31.30	0.23	0.40	0.57*	2.43	0.00	2.43
31.35	0.23	0.40	0.57*	2.41	0.00	2.41
31.40	0.23	0.40	0.57*	2.40	0.00	2.40
31.45	0.23	0.40	0.57*	2.39	0.00	2.39

31.50	0.23	0.40	0.58*	2.37	0.00	2.37
31.55	0.23	0.40	0.58*	2.36	0.00	2.36
31.60	0.23	0.40	0.58*	2.34	0.00	2.34
31.65	0.23	0.40	0.58*	2.33	0.00	2.33
31.70	0.23	0.40	0.58*	2.31	0.00	2.31
31.75	0.23	0.40	0.58*	2.30	0.00	2.30
31.80	0.23	0.40	0.58*	2.28	0.00	2.28
31.85	0.23	0.40	0.58*	2.27	0.00	2.27
31.90	0.23	0.40	0.59*	2.26	0.00	2.26
31.95	0.23	0.40	0.59*	2.24	0.00	2.24
32.00	0.23	0.40	0.59*	2.23	0.00	2.23
32.05	0.23	0.40	0.59*	2.21	0.00	2.21
32.10	0.23	0.40	0.59*	2.20	0.00	2.20
32.15	0.23	0.40	0.59*	2.18	0.00	2.18
32.20	0.23	0.40	0.59*	2.17	0.00	2.17
32.25	0.23	0.40	0.59*	2.16	0.00	2.16
32.30	0.24	0.40	0.59*	2.14	0.00	2.14
32.35	0.24	0.40	0.60*	2.13	0.00	2.13
32.40	0.24	0.40	0.60*	2.11	0.00	2.11
32.45	0.24	0.40	0.60*	2.10	0.00	2.10
32.50	0.24	0.40	0.60*	2.09	0.00	2.09
32.55	0.24	0.40	0.60*	2.07	0.00	2.07
32.60	0.24	0.40	0.60*	2.06	0.00	2.06
32.65	0.24	0.40	0.60*	2.04	0.00	2.04
32.70	0.24	0.40	0.60*	2.03	0.00	2.03
32.75	0.24	0.40	0.61*	2.02	0.00	2.02
32.80	0.24	0.40	0.61*	2.00	0.00	2.00
32.85	0.24	0.40	0.61*	1.99	0.00	1.99
32.90	0.24	0.40	0.61*	1.97	0.00	1.97
32.95	0.24	0.40	0.61*	1.96	0.00	1.96
33.00	0.24	0.40	0.61*	1.95	0.00	1.95
33.05	0.24	0.40	0.61*	1.93	0.00	1.93
33.10	0.24	0.40	0.61*	1.92	0.00	1.92
33.15	0.24	0.40	0.61*	1.91	0.00	1.91
33.20	0.24	0.40	0.62*	1.89	0.00	1.89
33.25	0.24	0.40	0.62*	1.88	0.00	1.88
33.30	0.24	0.40	0.62*	1.87	0.00	1.87
33.35	0.24	0.40	0.62*	1.85	0.00	1.85
33.40	0.25	0.40	0.62*	1.84	0.00	1.84
33.45	0.25	0.40	0.62*	1.82	0.00	1.82
33.50	0.25	0.40	0.62*	1.81	0.00	1.81
33.55	0.25	0.40	0.62*	1.80	0.00	1.80
33.60	0.25	0.40	0.63*	1.78	0.00	1.78
33.65	0.25	0.40	0.63*	1.77	0.00	1.77
33.70	0.25	0.40	0.63*	1.76	0.00	1.76
33.75	0.25	0.40	0.63*	1.74	0.00	1.74
33.80	0.25	0.40	0.63*	1.73	0.00	1.73
33.85	0.25	0.40	0.63*	1.72	0.00	1.72
33.90	0.25	0.40	0.63*	1.70	0.00	1.70
33.95	0.25	0.40	0.63*	1.69	0.00	1.69
34.00	0.25	0.40	0.63*	1.68	0.00	1.68
34.05	0.25	0.40	0.64*	1.67	0.00	1.67
34.10	0.25	0.39	0.64*	1.65	0.00	1.65
34.15	0.25	0.39	0.64*	1.64	0.00	1.64
34.20	0.25	0.39	0.64*	1.63	0.00	1.63
34.25	0.25	0.39	0.64*	1.61	0.00	1.61

34.30	0.25	0.39	0.64*	1.60	0.00	1.60
34.35	0.25	0.39	0.64*	1.59	0.00	1.59
34.40	0.25	0.39	0.64*	1.57	0.00	1.57
34.45	0.25	0.39	0.65*	1.56	0.00	1.56
34.50	0.26	0.39	0.65*	1.55	0.00	1.55
34.55	0.26	0.39	0.65*	1.54	0.00	1.54
34.60	0.26	0.39	0.65*	1.52	0.00	1.52
34.65	0.26	0.39	0.65*	1.51	0.00	1.51
34.70	0.26	0.39	0.65*	1.50	0.00	1.50
34.75	0.26	0.39	0.65*	1.48	0.00	1.48
34.80	0.26	0.39	0.65*	1.47	0.00	1.47
34.85	0.26	0.39	0.65*	1.46	0.00	1.46
34.90	0.26	0.39	0.66*	1.45	0.00	1.45
34.95	0.26	0.39	0.66*	1.43	0.00	1.43
35.00	0.26	0.39	0.66*	1.42	0.00	1.42
35.05	0.26	0.39	0.66*	1.41	0.00	1.41
35.10	0.26	0.39	0.66*	1.40	0.00	1.40
35.15	0.26	0.39	0.66*	1.38	0.00	1.38
35.20	0.26	0.39	0.66*	1.37	0.00	1.37
35.25	0.26	0.39	0.66*	1.36	0.00	1.36
35.30	0.26	0.39	0.66*	1.35	0.00	1.35
35.35	0.26	0.39	0.66*	1.33	0.00	1.33
35.40	0.26	0.39	0.66*	1.32	0.00	1.32
35.45	0.26	0.39	0.66*	1.31	0.00	1.31
35.50	0.26	0.39	0.66*	1.30	0.00	1.30
35.55	0.26	0.39	0.66*	1.28	0.00	1.28
35.60	0.26	0.39	0.66*	1.27	0.00	1.27
35.65	0.26	0.39	0.66*	1.26	0.00	1.26
35.70	0.26	0.39	0.66*	1.25	0.00	1.25
35.75	0.26	0.39	0.66*	1.23	0.00	1.23
35.80	0.26	0.39	0.66*	1.22	0.00	1.22
35.85	0.26	0.39	0.66*	1.21	0.00	1.21
35.90	0.26	0.39	0.66*	1.20	0.00	1.20
35.95	0.26	0.39	0.66*	1.18	0.00	1.18
36.00	0.26	0.39	0.66*	1.17	0.00	1.17
36.05	0.26	0.39	0.66*	1.16	0.00	1.16
36.10	0.26	0.39	0.66*	1.15	0.00	1.15
36.15	0.26	0.39	0.66*	1.13	0.00	1.13
36.20	0.26	0.39	0.66*	1.12	0.00	1.12
36.25	0.26	0.39	0.66*	1.11	0.00	1.11
36.30	0.26	0.39	0.66*	1.10	0.00	1.10
36.35	0.26	0.39	0.66*	1.08	0.00	1.08
36.40	0.26	0.39	0.66*	1.07	0.00	1.07
36.45	0.26	0.39	0.66*	1.06	0.00	1.06
36.50	0.26	0.39	0.66*	1.05	0.00	1.05
36.55	0.26	0.39	0.66*	1.04	0.00	1.04
36.60	0.26	0.39	0.66*	1.02	0.00	1.02
36.65	0.26	0.39	0.67*	1.01	0.00	1.01
36.70	0.26	0.39	0.67*	1.00	0.00	1.00
36.75	0.26	0.39	0.67*	0.99	0.00	0.99
36.80	0.26	0.39	0.67*	0.97	0.00	0.97
36.85	0.26	0.39	0.67*	0.96	0.00	0.96
36.90	0.26	0.39	0.67*	0.95	0.00	0.95
36.95	0.26	0.39	0.67*	0.94	0.00	0.94
37.00	0.26	0.39	0.67*	0.92	0.00	0.92
37.05	0.26	0.39	0.67*	0.91	0.00	0.91

37.10	0.26	0.39	0.67*	0.90	0.00	0.90
37.15	0.26	0.39	0.67*	0.89	0.00	0.89
37.20	0.26	0.39	0.67*	0.88	0.00	0.88
37.25	0.26	0.39	0.67*	0.86	0.00	0.86
37.30	0.26	0.39	0.67*	0.85	0.00	0.85
37.35	0.26	0.39	0.67*	0.84	0.00	0.84
37.40	0.26	0.39	0.67*	0.83	0.00	0.83
37.45	0.26	0.39	0.67*	0.81	0.00	0.81
37.50	0.26	0.39	0.67*	0.80	0.00	0.80
37.55	0.26	0.39	0.67*	0.79	0.00	0.79
37.60	0.26	0.39	0.67*	0.78	0.00	0.78
37.65	0.26	0.39	0.67*	0.77	0.00	0.77
37.70	0.26	0.39	0.67*	0.75	0.00	0.75
37.75	0.26	0.39	0.67*	0.74	0.00	0.74
37.80	0.26	0.39	0.67*	0.73	0.00	0.73
37.85	0.26	0.39	0.67*	0.72	0.00	0.72
37.90	0.26	0.39	0.67*	0.70	0.00	0.70
37.95	0.26	0.39	0.67*	0.69	0.00	0.69
38.00	0.26	0.39	0.67*	0.68	0.00	0.68
38.05	0.26	0.39	0.67*	0.67	0.00	0.67
38.10	0.26	0.39	0.67*	0.66	0.00	0.66
38.15	0.26	0.39	0.67*	0.64	0.00	0.64
38.20	0.26	0.39	0.67*	0.63	0.00	0.63
38.25	0.26	0.39	0.67*	0.62	0.00	0.62
38.30	0.26	0.39	0.67*	0.61	0.00	0.61
38.35	0.26	0.39	0.67*	0.60	0.00	0.60
38.40	0.26	0.39	0.67*	0.58	0.00	0.58
38.45	0.26	0.39	0.67*	0.57	0.00	0.57
38.50	0.26	0.39	0.67*	0.56	0.00	0.56
38.55	0.26	0.39	0.67*	0.55	0.00	0.55
38.60	0.26	0.39	0.67*	0.53	0.00	0.53
38.65	0.26	0.39	0.67*	0.52	0.00	0.52
38.70	0.26	0.39	0.67*	0.51	0.00	0.51
38.75	0.26	0.39	0.68*	0.50	0.00	0.50
38.80	0.26	0.39	0.68*	0.49	0.00	0.49
38.85	0.26	0.39	0.68*	0.47	0.00	0.47
38.90	0.26	0.39	0.68*	0.46	0.00	0.46
38.95	0.26	0.39	0.68*	0.45	0.00	0.45
39.00	0.26	0.39	0.68*	0.44	0.00	0.44
39.05	0.26	0.39	0.68*	0.43	0.00	0.43
39.10	0.26	0.39	0.68*	0.41	0.00	0.41
39.15	0.26	0.39	0.68*	0.40	0.00	0.40
39.20	0.26	0.39	0.68*	0.39	0.00	0.39
39.25	0.26	0.39	0.68*	0.38	0.00	0.38
39.30	0.26	0.39	0.68*	0.37	0.00	0.37
39.35	0.26	0.39	0.68*	0.35	0.00	0.35
39.40	0.26	0.39	0.68*	0.34	0.00	0.34
39.45	0.27	0.39	0.68*	0.33	0.00	0.33
39.50	0.27	0.39	0.68*	0.32	0.00	0.32
39.55	0.27	0.39	0.68*	0.31	0.00	0.31
39.60	0.27	0.39	0.68*	0.29	0.00	0.29
39.65	0.27	0.39	0.68*	0.28	0.00	0.28
39.70	0.27	0.39	0.68*	0.27	0.00	0.27
39.75	0.27	0.39	0.68*	0.26	0.00	0.26
39.80	0.27	0.39	0.68*	0.25	0.00	0.25
39.85	0.27	0.39	0.68*	0.23	0.00	0.23

39.90	0.27	0.39	0.68*	0.22	0.00	0.22
39.95	0.27	0.39	0.68*	0.21	0.00	0.21
40.00	0.27	0.39	0.68*	0.20	0.00	0.20
40.05	0.27	0.39	0.69*	0.19	0.00	0.19
40.10	0.27	0.39	0.70*	0.18	0.00	0.18
40.15	0.28	0.39	0.71*	0.16	0.00	0.16
40.20	0.28	0.39	0.72*	0.15	0.00	0.15
40.25	0.29	0.39	0.73*	0.14	0.00	0.14
40.30	0.29	0.39	0.75*	0.13	0.00	0.13
40.35	0.29	0.39	0.76*	0.12	0.00	0.12
40.40	0.30	0.39	0.77*	0.11	0.00	0.11
40.45	0.30	0.39	0.78*	0.11	0.00	0.11
40.50	0.31	0.39	0.79*	0.10	0.00	0.10
40.55	0.31	0.39	0.81*	0.09	0.00	0.09
40.60	0.32	0.39	0.82*	0.08	0.00	0.08
40.65	0.32	0.39	0.83*	0.07	0.00	0.07
40.70	0.33	0.39	0.84*	0.07	0.00	0.07
40.75	0.33	0.39	0.86*	0.06	0.00	0.06
40.80	0.34	0.39	0.87*	0.06	0.00	0.06
40.85	0.35	0.39	0.89*	0.05	0.00	0.05
40.90	0.35	0.39	0.90*	0.04	0.00	0.04
40.95	0.36	0.39	0.92*	0.04	0.00	0.04
41.00	0.36	0.39	0.94*	0.03	0.00	0.03
41.05	0.37	0.39	0.95*	0.03	0.00	0.03
41.10	0.38	0.39	0.97*	0.03	0.00	0.03
41.15	0.38	0.39	0.99*	0.02	0.00	0.02
41.20	0.39	0.39	1.01	0.02	0.00	0.02
41.25	0.40	0.39	1.03	0.02	0.00	0.02
41.30	0.41	0.39	1.06	0.01	0.00	0.01
41.35	0.42	0.39	1.09	0.01	0.00	0.01
41.40	0.43	0.39	1.12	0.01	0.00	0.01
41.45	0.45	0.39	1.15	0.01	0.00	0.01
41.50	0.47	0.39	1.20	0.00	0.00	0.00
41.55	0.50	0.39	1.29	0.00	0.00	0.00
41.60	0.57	0.39	1.48	0.00	0.00	0.00
41.65	2.31	0.39	5.00	0.00	0.00	0.00
41.70	2.31	0.39	5.00	0.00	0.00	0.00
41.75	2.31	0.39	5.00	0.00	0.00	0.00
41.80	2.30	0.39	5.00	0.00	0.00	0.00
41.85	2.30	0.39	5.00	0.00	0.00	0.00
41.90	2.30	0.39	5.00	0.00	0.00	0.00
41.95	2.30	0.39	5.00	0.00	0.00	0.00
42.00	2.30	0.39	5.00	0.00	0.00	0.00
42.05	2.30	0.39	5.00	0.00	0.00	0.00
42.10	2.30	0.39	5.00	0.00	0.00	0.00
42.15	2.30	0.39	5.00	0.00	0.00	0.00
42.20	2.30	0.39	5.00	0.00	0.00	0.00
42.25	2.30	0.39	5.00	0.00	0.00	0.00
42.30	2.30	0.39	5.00	0.00	0.00	0.00
42.35	2.30	0.39	5.00	0.00	0.00	0.00
42.40	2.30	0.39	5.00	0.00	0.00	0.00
42.45	2.30	0.39	5.00	0.00	0.00	0.00
42.50	2.30	0.39	5.00	0.00	0.00	0.00
42.55	2.30	0.39	5.00	0.00	0.00	0.00
42.60	2.30	0.39	5.00	0.00	0.00	0.00
42.65	2.30	0.39	5.00	0.00	0.00	0.00

42.70	2.30	0.39	5.00	0.00	0.00	0.00
42.75	2.30	0.39	5.00	0.00	0.00	0.00
42.80	2.30	0.39	5.00	0.00	0.00	0.00
42.85	2.30	0.39	5.00	0.00	0.00	0.00
42.90	2.30	0.39	5.00	0.00	0.00	0.00
42.95	2.30	0.39	5.00	0.00	0.00	0.00
43.00	2.30	0.39	5.00	0.00	0.00	0.00
43.05	2.30	0.39	5.00	0.00	0.00	0.00
43.10	2.29	0.39	5.00	0.00	0.00	0.00
43.15	2.29	0.39	5.00	0.00	0.00	0.00
43.20	2.29	0.39	5.00	0.00	0.00	0.00
43.25	2.29	0.38	5.00	0.00	0.00	0.00
43.30	2.29	0.38	5.00	0.00	0.00	0.00
43.35	2.29	0.38	5.00	0.00	0.00	0.00
43.40	2.29	0.38	5.00	0.00	0.00	0.00
43.45	2.29	0.38	5.00	0.00	0.00	0.00
43.50	2.29	0.38	5.00	0.00	0.00	0.00
43.55	2.29	0.38	5.00	0.00	0.00	0.00
43.60	2.29	0.38	5.00	0.00	0.00	0.00
43.65	2.29	0.38	5.00	0.00	0.00	0.00
43.70	2.29	0.38	5.00	0.00	0.00	0.00
43.75	2.29	0.38	5.00	0.00	0.00	0.00
43.80	2.29	0.38	5.00	0.00	0.00	0.00
43.85	2.29	0.38	5.00	0.00	0.00	0.00
43.90	2.29	0.38	5.00	0.00	0.00	0.00
43.95	2.29	0.38	5.00	0.00	0.00	0.00
44.00	2.29	0.38	5.00	0.00	0.00	0.00
44.05	2.29	0.38	5.00	0.00	0.00	0.00
44.10	2.29	0.38	5.00	0.00	0.00	0.00
44.15	2.29	0.38	5.00	0.00	0.00	0.00
44.20	2.29	0.38	5.00	0.00	0.00	0.00
44.25	2.29	0.38	5.00	0.00	0.00	0.00
44.30	2.29	0.38	5.00	0.00	0.00	0.00
44.35	2.29	0.38	5.00	0.00	0.00	0.00
44.40	2.28	0.38	5.00	0.00	0.00	0.00
44.45	2.28	0.38	5.00	0.00	0.00	0.00
44.50	2.28	0.38	5.00	0.00	0.00	0.00
44.55	2.28	0.38	5.00	0.00	0.00	0.00
44.60	2.28	0.38	5.00	0.00	0.00	0.00
44.65	2.28	0.38	5.00	0.00	0.00	0.00
44.70	2.28	0.38	5.00	0.00	0.00	0.00
44.75	2.28	0.38	5.00	0.00	0.00	0.00
44.80	2.28	0.38	5.00	0.00	0.00	0.00
44.85	2.28	0.38	5.00	0.00	0.00	0.00
44.90	2.28	0.38	5.00	0.00	0.00	0.00
44.95	2.28	0.38	5.00	0.00	0.00	0.00
45.00	2.28	0.38	5.00	0.00	0.00	0.00
45.05	2.28	0.38	5.00	0.00	0.00	0.00
45.10	2.28	0.38	5.00	0.00	0.00	0.00
45.15	2.28	0.38	5.00	0.00	0.00	0.00
45.20	2.28	0.38	5.00	0.00	0.00	0.00
45.25	2.28	0.38	5.00	0.00	0.00	0.00
45.30	2.28	0.38	5.00	0.00	0.00	0.00
45.35	2.28	0.38	5.00	0.00	0.00	0.00
45.40	2.28	0.38	5.00	0.00	0.00	0.00
45.45	2.28	0.38	5.00	0.00	0.00	0.00

45.50	2.28	0.38	5.00	0.00	0.00	0.00
45.55	2.28	0.38	5.00	0.00	0.00	0.00
45.60	2.28	0.38	5.00	0.00	0.00	0.00
45.65	2.28	0.38	5.00	0.00	0.00	0.00
45.70	2.27	0.38	5.00	0.00	0.00	0.00
45.75	2.27	0.38	5.00	0.00	0.00	0.00
45.80	2.27	0.38	5.00	0.00	0.00	0.00
45.85	2.27	0.38	5.00	0.00	0.00	0.00
45.90	2.27	0.38	5.00	0.00	0.00	0.00
45.95	2.27	0.38	5.00	0.00	0.00	0.00
46.00	2.27	0.38	5.00	0.00	0.00	0.00
46.05	2.27	0.38	5.00	0.00	0.00	0.00
46.10	2.27	0.38	5.00	0.00	0.00	0.00
46.15	2.27	0.38	5.00	0.00	0.00	0.00
46.20	2.27	0.38	5.00	0.00	0.00	0.00
46.25	2.27	0.38	5.00	0.00	0.00	0.00
46.30	2.27	0.38	5.00	0.00	0.00	0.00
46.35	2.27	0.38	5.00	0.00	0.00	0.00
46.40	2.27	0.38	5.00	0.00	0.00	0.00
46.45	2.27	0.38	5.00	0.00	0.00	0.00
46.50	2.27	0.38	5.00	0.00	0.00	0.00
46.55	2.27	0.38	5.00	0.00	0.00	0.00
46.60	2.27	0.38	5.00	0.00	0.00	0.00
46.65	2.27	0.38	5.00	0.00	0.00	0.00
46.70	2.27	0.38	5.00	0.00	0.00	0.00
46.75	2.27	0.38	5.00	0.00	0.00	0.00
46.80	2.27	0.38	5.00	0.00	0.00	0.00
46.85	2.27	0.38	5.00	0.00	0.00	0.00
46.90	2.27	0.38	5.00	0.00	0.00	0.00
46.95	2.27	0.38	5.00	0.00	0.00	0.00
47.00	2.26	0.38	5.00	0.00	0.00	0.00
47.05	2.26	0.38	5.00	0.00	0.00	0.00
47.10	2.26	0.38	5.00	0.00	0.00	0.00
47.15	2.26	0.38	5.00	0.00	0.00	0.00
47.20	2.26	0.38	5.00	0.00	0.00	0.00
47.25	2.26	0.38	5.00	0.00	0.00	0.00
47.30	2.26	0.38	5.00	0.00	0.00	0.00
47.35	2.26	0.38	5.00	0.00	0.00	0.00
47.40	2.26	0.38	5.00	0.00	0.00	0.00
47.45	2.26	0.38	5.00	0.00	0.00	0.00
47.50	2.26	0.38	5.00	0.00	0.00	0.00
47.55	2.26	0.38	5.00	0.00	0.00	0.00
47.60	2.26	0.38	5.00	0.00	0.00	0.00
47.65	2.26	0.38	5.00	0.00	0.00	0.00
47.70	2.26	0.38	5.00	0.00	0.00	0.00
47.75	2.26	0.38	5.00	0.00	0.00	0.00
47.80	2.26	0.38	5.00	0.00	0.00	0.00
47.85	2.26	0.38	5.00	0.00	0.00	0.00
47.90	2.26	0.38	5.00	0.00	0.00	0.00
47.95	2.26	0.38	5.00	0.00	0.00	0.00
48.00	2.26	0.38	5.00	0.00	0.00	0.00
48.05	2.26	0.38	5.00	0.00	0.00	0.00
48.10	2.26	0.37	5.00	0.00	0.00	0.00
48.15	2.26	0.37	5.00	0.00	0.00	0.00
48.20	2.26	0.37	5.00	0.00	0.00	0.00
48.25	2.26	0.37	5.00	0.00	0.00	0.00

48.30	2.26	0.37	5.00	0.00	0.00	0.00
48.35	2.26	0.37	5.00	0.00	0.00	0.00
48.40	2.25	0.37	5.00	0.00	0.00	0.00
48.45	2.25	0.37	5.00	0.00	0.00	0.00
48.50	2.25	0.37	5.00	0.00	0.00	0.00
48.55	2.25	0.37	5.00	0.00	0.00	0.00
48.60	2.25	0.37	5.00	0.00	0.00	0.00
48.65	2.25	0.37	5.00	0.00	0.00	0.00
48.70	2.25	0.37	5.00	0.00	0.00	0.00
48.75	2.25	0.37	5.00	0.00	0.00	0.00
48.80	2.25	0.37	5.00	0.00	0.00	0.00
48.85	2.25	0.37	5.00	0.00	0.00	0.00
48.90	2.25	0.37	5.00	0.00	0.00	0.00
48.95	2.25	0.37	5.00	0.00	0.00	0.00
49.00	2.25	0.37	5.00	0.00	0.00	0.00
49.05	2.25	0.37	5.00	0.00	0.00	0.00
49.10	2.25	0.37	5.00	0.00	0.00	0.00
49.15	2.25	0.37	5.00	0.00	0.00	0.00
49.20	2.25	0.37	5.00	0.00	0.00	0.00
49.25	2.25	0.37	5.00	0.00	0.00	0.00
49.30	2.25	0.37	5.00	0.00	0.00	0.00
49.35	2.25	0.37	5.00	0.00	0.00	0.00
49.40	2.25	0.37	5.00	0.00	0.00	0.00
49.45	2.25	0.37	5.00	0.00	0.00	0.00
49.50	2.25	0.37	5.00	0.00	0.00	0.00
49.55	2.25	0.37	5.00	0.00	0.00	0.00
49.60	2.25	0.37	5.00	0.00	0.00	0.00
49.65	2.25	0.37	5.00	0.00	0.00	0.00
49.70	2.25	0.37	5.00	0.00	0.00	0.00
49.75	2.25	0.37	5.00	0.00	0.00	0.00
49.80	2.25	0.37	5.00	0.00	0.00	0.00
49.85	2.24	0.37	5.00	0.00	0.00	0.00
49.90	2.24	0.37	5.00	0.00	0.00	0.00
49.95	2.24	0.37	5.00	0.00	0.00	0.00
50.00	2.24	0.37	5.00	0.00	0.00	0.00

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* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

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1 atm (atmosphere) = 1 tsf (ton/ft2)

CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

LIQUEFACTION ANALYSIS

SBCAST

Hole No.=B-1 Water Depth=15 ft Surface Elev.=36

Magnitude=7

Ground Improvement of Fill=1 ft

Acceleration=.501g