PREPARED FOR: ARCHITECTURAL INVOLUTION, INC.

GEOTECHNICAL REPORT

PROPOSED EAST BRIDGEWATER HIGH SCHOOL
NATICK, MASSACHUSETTS

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FINAL GEOTECHNICAL DESIGN BASIS REPORT

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1.0 BACKGROUND/SITE LOCATION

This report presents the results of geotechnical investigations and evaluations undertaken for the proposed East Bridgewater High School Facility located at 11 Plymouth Street in East Bridgewater, Massachusetts undertaken by Pare Corporation (PARE). The project site is depicted on Figure 1, Locus Plan. This report has been prepared in general accordance with our proposal and is subject to the geotechnical limitations presented in Appendix C.

1.1 Purpose and Scope

The purpose of this study is to identify the existing subsurface conditions; evaluate potential implications the observed conditions may have upon the proposed structure; and provide geotechnical parameters and recommendations for use during the design of the foundations, buildings, and other site improvements associated with the proposed project. The scope of work includes the following:

- Reviewing available subsurface information
- Drilling forty (40) borings within the proposed building footprint, pavement areas, and site improvement areas.
- Sampling and performing Standard Penetration Testing (SPT).
- Logging of drilling information and classifying soil samples.
- Performing laboratory tests on soil samples.
- Preparing a geotechnical report summarizing the exploration findings, data evaluations, geotechnical design recommendations, and construction recommendations.

The scope of this evaluation did not include an evaluation of the site for the presence of contamination or other environmental concerns, as those tasks are outside of PARE's proposed scope of services.

1.2 Background

It is PARE's understanding that the proposed high school building footprint is approximately 129,000 square feet with 2 to 3 stories and no basement. Also included in the project are the following:

- 3 parking areas,
- 1 bus drop off area,
- 2 softball fields,
- 1 baseball field,
- 2 soccer fields,
- 1 track/football field with bleachers and a field house structure,
- Waste water treatment plant,
- Five tennis courts, and
- Associated access roads throughout the property.

As shown on Figure 2, there are several existing structures and features on the site (and within the footprint) of the proposed building. The existing East Bridgewater High School site (the Site) is

located on 47 Acres of land owned by the Town of East Bridgewater. The Site is bordered by Bedford Street (Rt. 18) to the west, Central Street to the north, Plymouth Street to the east, and woodlands to the South. Access to the Site is available from Bedford Street, Central Street and Plymouth Street; with the main entrance to the existing school from Plymouth Street. The Site is located on one parcel of land, shown on East Bridgewater Assessors Map 51, Parcel 13.

Located on the same parcel of land as the High School is the East Bridgewater Town Hall west of the existing school on Central Street. Also on-site is the East Bridgewater Fire Department Headquarters, which is located on the southeast portion of the Site along Bedford Street. Other land uses on site include: parking areas, two baseball field, two softball fields, one football field, an athletic track, open space, and other athletic features.

It is PARE's understanding that the existing East Bridgewater High School structure, located approximately 100 feet northeast of the proposed structure, is founded on existing-grade-level spread footings. Exposed exterior foundation walls appeared in fair to poor condition with cracking along exposed foundation walls and cracking along the brickwork mortar.

1.3 Surface Conditions

The steepest grade changes on site are located around the existing school. The entrance from Central Street is at elevation 96 and grades drop gradually to the back of the school, which is at elevation 60. The front (toward Central Street) and rear entrances to the existing school are at different elevations; with the front entrance at approximately elevation 90 and the rear entrance approximately at elevation 60. South of the school athletic fields are generally flat but overall land slopes down towards Bedford Street and the woodlands south of the Site.

The surface of parking and travel areas appear in poor condition with several areas observed with longitudinal cracks, ruts, and sunken pavement.

1.4 Proposed Grading

It is PARE's understanding that approximately 5 feet of backfilling to raise grade is proposed at the southern half of the proposed high school building area.

2.0 SUBSURFACE EXPLORATIONS

A subsurface exploration program was undertaken to determine soil conditions at the site to provide geotechnical guidelines for the design of foundations and pavement for the proposed structures. Logs of the soil borings are included in Appendix A and their locations are shown on Figure 2: Exploration Location Plan.

The subsurface investigation program was performed by New Hampshire Boring of Brockton, Massachusetts and observed by PARE personnel from September 20 thru October 8, 2010. The soil borings were advanced from a truck-mounted drill rig for most of the borings and from a track mounted drill rig to access soft areas at borings B-1 and D-1. PARE personnel provided field observation and coordination for the subsurface exploration program. Field personnel observed the drilling conditions; and visually identified the SPT soil samples during the advancement of the explorations.

2.1 Sampling Methodology

All soil borings were advanced using drive and wash techniques. The sampling methodology consisted of obtaining disturbed samples of the granular material at 5-foot intervals or change in stratum by advancing a thick walled, split-spoon sampler during the performance of the Standard Penetration Test (SPT) in accordance with ASTM D-1586. The SPT test is used to obtain an indication of the characteristics, relative density and consistency of the underlying soils. The test consists of driving a 1-3/8-inch inside diameter standard split spoon sampler at least 18 inches with a 140-pound hammer dropping from a height of 30 inches. The SPT value used in analysis is the number of blows (N) required to drive the sampler from 6 to 18 inches of penetration.

2.2 Field Measurement and Methodology

The actual locations of the soil borings were recorded in the field by measuring distances from existing structures. The surface elevations at each boring were interpreted from a drawing entitled “Topographic Plan of Land, East Bridgewater High School, East Bridgewater, MA”, by Heritage Design Group, which was not finalized at the time this report was developed.

2.3 Locations

The subsurface exploration program included a total of forty (40) soil borings. Boring locations are shown on Figure 2 and the boring logs are attached in Appendix A.

Proposed High School Building Footprint – The borings performed within the proposed building footprint (Boring Nos. B-1, B-3 through B-8, B-10, and B-12 through B-24) were advanced to depths ranging from 35 to 85 feet below the existing ground surface. Proposed Boring Nos. B-2, B-9, and B-11 were eliminated from the program.

Proposed Main Parking Area and Access Road – The borings performed within the proposed main parking area and access road on the eastern side of the site (Boring Nos. A-1 through A-7) were advanced to depths of about 15 feet.

Proposed Wastewater Treatment Plant, Soccer Field, Baseball Field, and Parking Area – The borings performed within the proposed wastewater treatment plant, soccer field, baseball field, and parking area located on the northeast side of the site (Boring Nos. C-1 through C-4, C-6, and C-7) were advanced to depths ranging from 10 to 16 feet below the existing ground surface. Proposed Boring No. C-5 was eliminated from the program.

Proposed Soccer Field, Softball Fields, and Parking Area – The borings performed within the proposed soccer field, two softball fields, and parking area located on the northwest side of the site (Boring Nos. D-1 through D-4) were advanced to depths of about 15 feet below the existing ground surface.

Proposed Track and Football Field, Bleachers, Field House, and Tennis Courts – The borings performed within the proposed track and football field, bleachers, field house, and tennis courts located on the south side of the site (Boring Nos. E-1 and E-2) were advanced to depths of about 10 feet below the existing ground surface.

3.0 SUBSURFACE CONDITIONS

The following subsurface descriptions are broken down by area as listed in Section 2.3.

3.1 Soil Strata

Proposed High School Building – As illustrated in attached Figures 3A, 3B, 4A, 4B, 5A, and 5B, the subsurface profile in the area of the proposed building generally consists of 6-inches of topsoil overlying the following strata, listed from the surface down:

Stratum 1A – SAND with ORGANIC SILT was encountered from directly below the topsoil to depths of about 5 feet below the existing ground surface. This stratum was encountered at Borings B-15, and B-21 through B-23, located in the northeast areas of the proposed building. ***Due to the organic content, Stratum 1A is not considered to be an acceptable bearing stratum.***

Stratum 1B – SAND with SILT was encountered from directly below the topsoil to depths ranging from 3 to 7 feet below the existing ground surface. This stratum is described as fine to coarse SAND with varying amounts of silt and "trace" to "little" amounts of clay. Standard penetration tests in this stratum indicate a density ranging from medium dense to very dense. This stratum was encountered in almost ½ of the borings performed for the proposed building with no specific areas of concentration within the proposed building area.

Stratum 2A – SILT with SAND and CLAY was encountered from directly below the SAND with ORGANIC SILT (Stratum 1A) or SAND with SILT (Stratum 1B) to depths ranging from approximately 30 to at least 38 feet below the existing ground surface. This stratum is described as SILT with varying amounts of sand and clay, with pockets of clay. Trace amounts of peat were encountered at B-15 from approximately 24 to 29 feet below the existing ground surface. Standard penetration tests in this stratum indicate a density ranging from loose to very dense. Loose soils were limited to samples retrieved from 24 to 26 feet at B-6, B-15, and B-16, from 19 to 21 feet at B-23, and from 14 to 16 feet at B-24.

Stratum 2B – CLAY was found interlayered within the SILT with SAND and CLAY (Stratum 2A) starting from 9 to 13 feet below the existing ground surface to depths ranging from about 18 to 23 feet. Stratum 2B appears to be thicker on the southwestern side of the proposed building area and becoming thinner to almost nonexistent towards the northeastern side of the proposed building area. This Stratum is described as CLAY with "trace" to "and" amounts of sand and silt. Standard penetration tests in this stratum indicate a density ranging from medium stiff to very stiff.

Stratum 3 – SAND was encountered from directly below the SILT with SAND and CLAY (Stratum 2A) to depths ranging from approximately 32 to 47 feet below the existing ground surface. This stratum is described as fine to coarse SAND with "trace to "and" amounts of silt and "trace" amounts of gravel. Standard penetration tests in this stratum indicate a density ranging from medium dense to dense with loose zones encountered at samples retrieved from 39 to 41 feet at both B-16 and B-24.

Stratum 4 – CLAY with SAND was encountered from directly below the SAND (Stratum 3) to depths ranging from 63 to 81 feet below the existing ground surface. This stratum is described as CLAY with "trace" to "little" amounts of silt and "trace" amounts of fine sand, and occasional sand pockets. In general, standard penetration tests in this stratum indicate a density ranging from medium stiff to stiff. A very soft density was indicated at one sample retrieved from 69 to 71 feet at B-4.

Stratum 5 – GLACIAL TILL was encountered from directly below the CLAY (Stratum 5) to refusal at B-1 (84 feet), B-4 (79 feet), B-16 (85 feet), and B-24 (71 feet). This stratum is described as compact fine to coarse SAND and SILT with varying amounts of gravel. Standard penetration tests in this stratum indicate a very dense consistency.

Proposed Main Parking Area and Access Road

The borings performed in the area of the proposed main parking area and access road encountered approximately 6 inches of TOPSOIL underlain by loose to medium dense SAND with varying amounts of silt within the western areas transitioning to predominantly SILT with varying amounts of clay in the eastern areas. Boring No. A-4 located on the far eastern side of this area encountered an approximate 7-foot thick layer of SAND and ORGANIC SILT starting at the existing ground surface. Below the SAND or SILT, stiff CLAY was encountered from approximately 7 to 13 feet below the existing ground surface to boring terminations at Boring Nos. A-2 through A-5.

Proposed Wastewater Treatment Plant, Soccer Field, Baseball Field, and Parking Area

The borings performed in the area of the proposed wastewater treatment plant, soccer field, baseball field, and parking area encountered medium dense to very dense SAND with varying amounts of silt and gravel under approximately 6 inches of topsoil and/or 2 foot pockets of subsoil or granular fill (only at C-4 and C-6). The SAND stratum was encountered to boring termination at C-1 through C-4 at approximately 16 feet below the ground surface. Split spoon refusal was encountered at about 11 feet at C-7.

Proposed Soccer Field, Softball Fields, and Parking Area

The borings performed in the area of the proposed soccer field, two softball fields, and parking area encountered approximately 1 to 3 feet of TOPSOIL; underlain by medium dense to dense SILT with varying amounts of sand and clay becoming sandier and looser (i.e., loose to medium dense) on the eastern side of this area.

Proposed Track and Football Field, Bleachers, Field House, and Tennis Courts

Boring No. E-1, located near the southwestern side of this area encountered approximately 6 inches of TOPSOIL; underlain by approximately 2 feet of medium dense SAND; underlain by approximately 4 feet of very dense SILT; underlain by very dense SILT and SAND to boring termination at 10 feet below the existing ground surface. Boring No. E-2, located near the eastern side of this area encountered approximately 6 inches of TOPSOIL; underlain by approximately 2 feet of loose GRANULAR FILL; underlain by dense SILT to boring termination at 10 feet below the existing ground surface.

3.2 Rock

Split spoon refusals (i.e., 100 blows of the 140 pound hammer for less than 6 inches penetration) were encountered at Boring Nos. B-1 (OW), B-4, and B-24 at 84, 77, and 71 feet below the existing ground surface, respectively. This most likely indicates the presence of bedrock and/or boulders; however, since no rock cores were completed, this could not be confirmed.

3.3 Groundwater

Based on visual observations of soil samples and field readings, groundwater was encountered at approximately 8 to 13 feet below the existing ground surface. To monitor groundwater for potential seasonal fluctuations, groundwater-monitoring wells were installed at B-1, A-2, and D-4. One well held water at the ground surface, but appears to represent a fouled well screen, and may represent anomalous conditions. It should be noted that groundwater levels may fluctuate over time due to variations in rainfall and other factors different from those prevailing at the time the explorations were performed.

4.0 LABORATORY TESTING

The laboratory and on-site testing program included mechanical grain size determinations, a triaxial CIU testing, and a consolidation test. The laboratory testing data forms for the grain size, triaxial, and consolidation tests are included in Appendix B.

4.1 Procedures

Grain Size Analysis

Three (3) grain size analyses were completed by PARE on materials recovered during the subsurface investigation with descriptions and results presented as follows:

SAND with SILT (Stratum 1B) – typical for the northern 1/3rd of the proposed building area.

- Sample S-2 extracted from a depth of 4 to 6 feet at soil boring B-24 (Test 1);

SILT with CLAY and SAND (Stratum 2A)

- Sample S-3 extracted from a depth of 9 to 11 feet at soil boring B-6 (Test 2)

SAND with SILT (Stratum 1B) – typical for the southern 2/3rds of the proposed building area.

- Sample S-2 extracted from a depth of 4 to 6 feet at soil boring B-8 (Test 3)

Triaxial (CIU) Test

An undisturbed sample of the clay deposit from soil boring B-4, sample U-1, extracted from a depth of 49 to 51 feet, was subjected to testing in accordance with ASTM procedures by GeoTesting Express Inc. of Boxborough, MA. The triaxial test was undertaken as a consolidated-isotropically undrained test with three data points set to represent existing and possible future loading conditions.

Consolidation Test

An undisturbed sample of the clay deposit from soil boring B-4, sample U-1, extracted from a depth of 49 to 51 feet, was subjected to testing in accordance with ASTM procedures by GeoTesting Express Inc. of Boxborough, MA. The test was completed through one load and unload sequence

4.2 Results

Grain Size Analysis

- The results of Test 1 indicated the gradation to be poorly graded SAND with "trace" (0-10%) amounts of silt.
- The results of Test 2 indicated the gradation to be SILT with "little" (10-20%) amounts of fine to coarse sand.
- The results of Test 3 indicated the gradation to be SILT with "some" (20-35%) amounts of fine to coarse sand.

Triaxial (CIU) Test

The results of the triaxial (CIU) test on the undisturbed sample collected at B-4 from 49 to 51 feet (U-1) indicated an undrained shear strength (C_u) of 781 lb/ft^2 and an angle of internal friction (ϕ) of 22.3 degrees.

Consolidation Test

The results of the consolidation test on the undisturbed sample collected at B-4 from 49 to 51 feet (U-1) indicated a compression index (C_c) of approximately 0.25; a coefficient of consolidation (C_v) of approximately 6.85 x 10^{-3} in^2/sec; and a secondary compression index (C_α) of approximately 0.12.

5.0 IMPLICATIONS OF SUBSURFACE CONDITIONS

Based on the subsurface investigation program and observations made during the fieldwork, the following are the geotechnical issues identified that could potentially impact the development of the site as proposed:

- TOPSOIL, observed across the surface of the site, is not a suitable bearing stratum for footings or suitable for reuse as backfill materials in the building or parking areas and is recommended to be removed and replaced with suitable material as stated herein.

- SAND with ORGANIC SILT (Stratum 1A), observed throughout the site, is not a suitable bearing stratum for spread footings due to its heavy organic content and is recommended to be removed and replaced with suitable material as stated herein.

- Due to the presence of the underlying CLAYS combined with variable depths of filling (i.e., additional surcharge), the proposed building site is subject to excessive total and differential settlements if shallow foundations are utilized.

- Reuse of the onsite soils is not anticipated for "Granular Fill" or "Sand Gravel Fill" under buildings and pavements (See Section 6.11 for more information).

- The fine-grained nature of some of the soils may create the potential for frost to damage pavements.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Foundations and Slabs for the Proposed High School Building

FOUNDATIONS

Based on current site grading and configurations, approximately 5 feet of backfilling is proposed at the southern half of the building area. Due to the presence of the compressible clays that underlie the site, long-term consolidation of these layers is expected due to the permanent fill surcharge. Using the results of the laboratory compression tests, the southern half of the building area is estimated to settle up to 1.5 inches under the surcharge load from the fill without the additional building loads. Since the northern half of the site is not expected to undergo long-term settlements (i.e., no backfilling), a total differential settlement due to the varying fill across the site could be as much as 1.5 inches once the site has undergone pre-consolidation. Note this does not take into account the settlement due to the foundation loads. This magnitude of differential settlement exceeds the recommended maximum of 0.5 inches between foundation elements. As a remedy to this issue, PARE has evaluated several cases as presented herein.

ALTERNATIVE NO. 1: Backfill as Planned and Utilize Deep Foundations –To adequately support the building under Alternative No. 1, a deep foundation system consisting of driven pipe pile or pre-cast pre-stressed concrete piles is considered suitable, although conservative, for the anticipated development. The piles would be a combination of friction and end bearing with total lengths up to 80 feet depending upon actual load bearing requirements. This alternative is considered costly and has not been evaluated further until other approaches have been considered.

ALTERNATIVE NO. 2: Backfill as Planned and Allow the Site to Settle – Under Alternative No. 2, the site would be backfilled with compacted fill as planned to the anticipated subgrade elevations; however, construction of the foundations in the backfilled area would not commence until the site has undergone adequate consolidation due to the application of the additional soil load. Based on the laboratory consolidation test results and considering a minimum gross allowable bearing capacity of approximately 2,000 pounds per square foot, a total estimated pre-consolidation time of approximately 100 days (i.e., 3 months +) would be required before foundations could be constructed. ***Before backfilling takes place, the unsuitable SAND with ORGANIC SILT (Stratum 1A) should be overexcavated from within the influence area[1] of the building footprint and replaced with compacted Granular Fill.*** Table 6-1 provides recommended gross allowable bearing capacities for Alternative No. 2.

[1] "Influence area" is defined as the area under building footprint to a respective distance and depth of 1 away and 2 down from the footing edges.

TABLE 6-1: ALTERNATIVE NO. 2 – RECOMMENDED GROSS ALLOWABLE* BEARING CAPACITIES			
Structure Location	**Footing Type**	**Footing Width (ft)**	**Gross Allowable Bearing Capacity (psf)**
High School	Column	4	3300
		6	2800
		8	2300
		10	2100
	Wall	2	4200
		4	2600
		6	2000

*Gross allowable bearing pressure is the total pressure including overburden pressure that can be safely carried at the footing depth (i.e., 4-feet), D (based on settlement limitations).

ALTERNATIVE NO. 3 (RECOMMNEDED): Backfill as Planned with an added Temporary Surcharge and Allow the Site to Pre-consolidate – As discussed under Alternative No. 2, if the site were allowed to "settle out", then shallow foundations would be an option to consider. If the estimated 100 days of pre-consolidation time for Alternative No. 2 does not fit within the desired construction time frame, the pre-consolidation time could be accelerated with the addition of a temporary surcharge. If a 3-foot thickness of dumped noncompacted fill were placed over the permanent surcharge, the estimated pre-consolidation time would be reduced from 100 days to 45 days (i.e., 1.5 months). If this decreased time frame was still unacceptable, then the temporary surcharge could be increased from 3 to 5-feet, further reducing the pre-consolidation time to about 30 days (i.e., 1 month). In either case, the temporary surcharge should be placed within and to about 20 feet beyond the proposed building footprint. Monitoring platforms and a monitoring program would also be included to determine when adequate consolidations have occurred. ***Similar to Alternative No. 2, before backfilling takes place, the unsuitable SAND with ORGANIC SILT (Stratum 1A) should be overexcavated from within the influence area of the building footprint and replaced with compacted Granular Fill.*** The recommended gross allowable bearing capacities presented in Table 6-1 would still apply for Alternative No. 3.

ALTERNATIVE NO. 4: Eliminate Backfilling – If the existing site was not filled, then surcharge loading would be eliminated and therefore would enable foundations to be supported by shallow foundations without remedial measures as discussed in the previous alternatives.

Backfilling within and to about 20 feet beyond the building footprint is not recommended for Alternative No. 4 to reduce surcharge and to reduce differential settlements. Under Alternative No. 4, it is anticipated that additional retaining walls may be required with a revised grading plan as well as special site and foundation drainage considerations. ***After the SAND with ORGANIC SILT (Stratum 1A) has been overexcavated from within the influence area of the building footprint and replaced with compacted Granular Fill, shallow foundations can be placed***. Table 6-2 provides recommended gross allowable bearing capacities for Alternative No. 4.

TABLE 6-2:
ALTERNATIVE NO. 4 – RECOMMENDED GROSS ALLOWABLE* BEARING CAPACITIES

Structure Location	Footing Type	Footing Width (ft)	Gross Allowable Bearing Capacity (psf)
High School	Column	4	4500
		6	4000
		8	3300
		10	2900
	Wall	2	5000
		4	3600
		6	2700

*Gross allowable bearing pressure is the pressure including the existing overburden pressure that can be safely carried at the footing depth (i.e., 4-feet), D (based on settlement limitations).

The allowable bearing pressures presented in Tables 6-1 and 6-2 were developed assuming a factor of safety of 3.0 against bearing capacity failure, a minimum embedment of 48-inches for exterior footings, a minimum embedment of 18-inches for interior footings, a maximum total settlement of 1-inch, and a maximum differential settlement of 0.5-inch between foundation elements.

Footings should be proportioned to apply no more than the gross allowable bearing pressures presented in Tables 6-1 and 6-2. For footings less than two feet wide, the allowable bearing pressure should be reduced proportionately and in no case should a continuous footing be less than 18 inches wide, nor isolated footings less than 24 inches wide.

SLABS

The structural engineer will need to design the floor slab for anticipated live and dead loads in accordance with the State Building Code. Should any of the building, mechanical, electrical, or other equipment require independent foundations, additional foundations and/or modifications to the floor slab may be required depending upon the actual load requirements. ***As recommended for the foundations, the SAND with ORGANIC SILT (Stratum 1A) under proposed slabs should be***

overexcavated and replaced with compacted Granular Fill. A subgrade modulus (K) of 150 pounds per cubic inch may be used for design of slab on grade placed over 12 inches of compacted "Sand Gravel Fill".

6.2 Foundations and Slabs for the Proposed Wastewater Treatment Plant, Bleachers, and Field House

FOUNDATIONS

For the wastewater treatment plant, bleachers, and field house structures, a shallow foundation system composed of column and wall footings bearing on a minimum 12 inch layer of compacted "Sand-Gravel Fill" over the natural SAND or SILT is recommended for effectively transferring the building loads to the ground. ***If the footprints of the proposed building structures extend within areas that contain FILL, ORGANIC SILT, AND SAND WITH ORGANIC SILT, it is recommended that these soils within the influence area[2] of footings be excavated and replaced with compacted "Granular Fill".*** Recommended gross allowable soil bearing pressures for the proposed waste water treatment plant are similar to that presented under Alternative No. 4 (Table 6-2). Recommended gross allowable soil bearing pressures for the proposed bleachers and field house are similar to that presented under Alternative Nos. 2 and 3 above (Table 6-1).

SLABS

The structural engineer will need to design the floor slab for anticipated live and dead loads in accordance with the State Building Code. Should any of the building, mechanical, electrical, or other equipment require independent foundations, additional foundations and/or modifications to the floor slab may be required depending upon the actual load requirements. ***As recommended for the foundations, the onsite FILL under proposed slabs should be overexcavated and replaced with compacted Granular Fill.*** A subgrade modulus (K) of 150 pounds per cubic inch may be used for design of slab on grade placed over 12 inches of compacted "Sand Gravel Fill".

6.3 Fill Directly Below Footings and Slabs

The perimeter wall footings, column footings, and the structural slabs should bear on a minimum of 12 inches of compacted "Sand Gravel Fill". If existing ground levels require cutting, the excavations for the footings and the slabs should be over-excavated to permit the placement of this layer.

6.4 Lateral Earth Pressures and Retaining Wall Design

For the design of retaining walls with level backfill, recommended lateral earth pressure coefficients are indicated in Table 6-3. A unit weight of 125 pounds per cubic foot (pcf) and an internal friction angle (ϕ) of 35° for imported free draining "Granular Fill" are recommended. The lateral earth pressure coefficient should be increased where the ground surface slopes up behind the wall. The retaining walls should be designed to withstand surcharge loading which

[2] "Influence area" is defined as the area under footings to a respective distance and depth of 1 away and 2 down from the footing edges.

may be present over the life of the structure. These would include traffic loads, as well as loads from storage, fill or construction equipment which may be placed adjacent to the wall. The influence zone behind the wall can be defined by a one horizontal to one vertical line extending upward from the outside edge of the wall footing.

The magnitude of lateral earth pressure against retaining walls is dependent upon the type of backfill, method of fill placement, drainage provisions, and the amount of yielding the wall is permitted to undergo after the placement of the backfill. PARE recommends that the retaining walls be backfilled with a free draining "Granular Fill", as defined herein.

The lateral earth pressure distribution against retaining walls should be computed using the appropriate value of K, the coefficient of lateral earth pressure. Recommended values of K are presented in the table below. Friction factors are also presented for use in checking resistance to unbalanced forces on walls.

TABLE 6-3: RECOMMENDED EARTH PRESSURE AND FRICTION COEFFICIENTS			
Material	**At-Rest Coefficient (K_o)**	**Active Coefficient (K_a)**	**Passive Coefficient (K_p)**
Imported Granular Fill	0.43	0.27	3.69
FRICTION COEFFICIENTS			
Concrete Poured on Imported Sand Gravel fill			tan δ = 0.45
Precast Concrete on Imported Sand Gravel Fill			tan δ = 0.30

Traffic loads and other anticipated loadings that could occur behind the walls should be considered. In addition, the effect of adjacent footings on lateral walls should be accounted for during design.

6.5 Settlement

Settlement of the proposed structures should be limited to 1-inch total settlement of the proposed foundations and 0.5-inch differential settlement. Since partial backfilling will be required to raise the grade in the proposed high school building area, long-term consolidation of the underlying CLAY strata presents the potential for significant total and differential settlement concerns. Also, due to the high organic content of the SAND with ORGANIC SILT (Stratum 1A), excessive long term settlements due to degradation is a concern. As such the SAND with ORGANIC SILT shall be removed as per Section 6.1 and 6.2 and the area preloaded as per Section 6.1.

Shallow foundations are not recommended to be founded over the existing FILL in the area of the bleachers and field house. It is unknown if the existing FILL was placed and compacted in a controlled fashion and therefore presents the potential for significant total and differential settlement concerns as well as a concern regarding adequate density for direct foundation support of the proposed structures.

Ground modifications (i.e., over excavation, pre-loading) are recommended to address potential settlement and bearing capacity concerns (See Sections 6.1 and 6.2).

6.6 Seismic Design and Liquefaction Evaluations

PARE recommends the following seismic design criteria based on the Massachusetts State Building Code (MSBC 2009).

SITE CRITERIA

For purposes of MSBC 2009 seismic, PARE recommends the following seismic design criteria for the determination of maximum considered earthquake and design spectral response accelerations.

From MSBC 2009, the soil profile of the project site is generally characterized as Site Class Profile E (i.e., N[3]<15). Based upon MSBC 2009, Table 9.4.1.2.4a, the maximum considered earthquake spectral response acceleration at short periods, S_S, and at 1-second periods, S_1, are 25% and 6.3%, respectively, based upon a site classification Profile B. Correcting the accelerations for the observed site profile based upon average Standard Penetrations Test N values, the following parameters are recommended by the general procedure:

- Occupancy Category III
- Seismic Use Group II
- Adjusted maximum considered earthquake spectral response acceleration parameters
  - $S_{MS} = 0.63$
  - $S_{M1} = 0.22$
- For calculating the design spectral response accelerations, utilize:
  - $S_{DS} = 0.42$
  - $S_{D1} = 0.15$
- Seismic Design Category (short period response) – Category C
- Seismic Design Category (1-second period response) – Category C

LIQUEFACTION EVALUATION

Liquefaction is the tendency for a soil type, particularly fine sands, to lose a significant amount of strength and behave more similar to a liquid in the event of an earthquake, or sufficient vibrations. Liquefaction analyses generally relate Standard Penetration Test (SPT) N values, corrected for overburden, and measured groundwater levels to the liquefaction potential of the materials in question. In general, in order for liquefaction to occur three conditions have to be met simultaneously. These are: 1.) loose sandy soils susceptible to liquefaction, 2.) saturated soil conditions, and 3.) vibration.

Based upon the material type, the overall soil profile does not appear to be susceptible to liquefaction, at this time.

[3] "N" denotes the average Standard Penetration test N-value weighted against depth.

6.7 Frost Depth Recommendations

In conformance with the MSBC 2009, exterior footings founded over soils should be placed a minimum depth of 48-inches below the finished grade in order to provide for frost protection. Foundation elements should be founded at or below this frost depth to reduce the chance for uplift due to frost action. However, preparation for pavements and slabs should consider the frost heave susceptibility of subgrade soils. See pavement design recommendations (Section 6.10) for more information.

6.8 Drainage

Groundwater was encountered during the subsurface investigation, within the building footprint at depths ranging from 8 to 13-feet below existing ground surface. One well held water at the ground surface, but appears to represent a fouled well screen, and may represent anomalous conditions. It should be noted that groundwater levels may fluctuate over time due to variations in rainfall, water levels within the adjacent pond, and other factors different from those prevailing at the time the explorations were performed. ***Given the observed groundwater at the time of the explorations, and the understanding of the proposed building geometry, underdrains to control groundwater are not considered necessary***; however, roof drainage and surface water runoff should be directed away from the structures.

Based upon the schematic building layout, the proposed building includes a courtyard within a portion of the building. Construction of foundations for the building surrounding the courtyard may result in an area of poor drainage and create a “bathtub effect”. As such, a drainage system to allow for proper drainage of the courtyard is recommended to be designed and installed.

6.9 Underground Utilities

Underground pipes and utilities should be placed on bedding in accordance with the manufacturer's specifications. "Granular Fill" should be placed in lifts on the sides and above the utilities. The lift thickness should be sized appropriately for the hand operated compaction equipment used; vibratory plate compactor, 6-inch lift; vibratory drum roller, 12-inch lift.

6.10 Flexible and Rigid Pavement Recommendations

All asphalt, topsoil, subsoil, organic soil, and loose fill should be stripped prior to filling. The subgrade should be proof rolled with a minimum 4-6 passes of a vibratory roller with a static weight of 10,000 pounds and a dynamic weight of 20,000 pounds. Caution should be used when compacting the subgrade, if wet, to avoid weaving and disturbance from vibrations.

Table 6-4 presents recommended pavement layer thickness based upon standard AASHTO design procedures for both "Standard Duty" and "Heavy Duty" pavement. "Standard Duty" pavement is applicable for up to 50,000 Equivalent 18-kip Axle Loads (EAL's) while "Heavy Duty" pavement is applicable up to 350,000 EAL's. The recommended base and subbase courses for both "Standard Duty" and "Heavy Duty" areas are as listed below:

TABLE 6-4: RECOMMENDED STANDARD AND HEAVY DUTY FLEXIBLE PAVEMENT LAYER THICKNESS		
Pavement Section	**STD. DUTY**	**HEAVY DUTY**
Finish Course	1-1/2 inches	1-1/2 inches
Binder Course	1-1/2 inches	2-inches
Base Course	6-inches	6-inches
Subbase Course	8-inches	12-inches

Should the actual loading conditions be greater than those assumed, the pavement sections will need to be re-analyzed for the actual conditions. This may result in a thicker pavement section being required.

In areas were concrete and asphalt paving meet, it would be advantageous to provide a strip of free draining soil below the concrete and bituminous interface. The free draining strip should consist of a twenty-four (24) inch layer of "Sand Gravel Fill" extending a minimum of 3 feet laterally below the concrete apron. This should control any minor frost heaving that may occur if water enters the subgrade through this joint.

Base and Subbase course materials should meet the criteria for "Sand Gravel Fill" and "Granular Fill", respectively, as listed below. Subbase and base courses should be compacted in 1-foot (maximum) lifts to 95% of the maximum dry density as determined in accordance with ASTM D1557 (modified Proctor test). Fill below the subbase should be compacted to at least 92% of the maximum dry density as determined in accordance with ASTM D1557 (modified Proctor test). ***Heave of silty material identified during the subsurface investigation is a possibility unless all silty material is removed from within the pavement footprint for the full-recommended frost depth. To reduce the chance of pavement damage due to potential frost heaving, subgrade soils founded below the pavement section to frost depths (i.e., 4 feet) should ideally be free draining. However, in lieu of removing and replacing the existing subgrade soils with drainable material, it may be more feasible to accept a reduced pavement service life.***

For areas to be paved with Portland cement-based concrete, a six-inch thick slab on grade is recommended. The concrete should have a minimum unconfined compressive strength of 4,000 pounds per square inch, with air entrainment of 4 to 6 percent. The thickness is based upon the AASHTO Low Volume Road Design procedure and a modulus of subgrade reaction of 150 pounds per cubic inch. Welded wire fabric reinforcement (6x6W2.0xW2.0) is recommended to minimize crack opening.

The concrete paving should be graded to induce runoff. All joints and cracks should be sealed and/or filled on a regular basis as part of a routine maintenance item. If the joints and cracks are not kept sealed, significant frost heaving can be expected during the winter months.

Concrete pavement should have expansion joints at a spacing of 80 feet with a joint filler thickness based on the thermal expansion. All expansion joints should be sealed with an AASHTO-approved elastomeric joint sealer. Contraction (crack control) joints should be constructed at a spacing of 15 feet. Load transfer between slabs should be provided by epoxy coated #6 dowels, 18-inches long at

a spacing of 12-inches. Concrete pavement base and subbase courses should consist of 6-inches of "Sand Gravel Fill".

6.10 Construction Materials

Fill materials should be friable soil, free from trash, ice, snow, tree stumps, roots, and other organic matter and deleterious materials. PARE recommends the following soil gradations for imported fill, conforming to the Massachusetts Highway Department Standard Specifications for Roads and Bridges (State Standards):

- Gravel Borrow utilized as “Sand Gravel Fill” below structures and under pavement should conform to M1.03.0, Type B of the State Standards.
- All other Gravel Borrow material utilized as “Granular Fill” below structures and for material utilized in regrading areas, trench backfill, backfill against below-grade walls as “Granular Fill” should conform to M1.03.0 Type A of the State Standards.
- Crushed Stone Bedding Material should be imported material conforming to Item M2.01.3 of the State Standards.
- A maximum of 10% of recycled asphalt pavement (RAP) may be included in the pavement mixture, as specified in section M.04 of the State Standard Specifications.

6.11 Reuse of On-Site Soils

From a geotechnical perspective, asphalt material stripped from the site and crushed to a maximum ¾-inch size may be reused as "Granular Fill" material below the pavement subbase. The material should be placed in lifts with a maximum thickness of 12-inches and be compacted to required densities by vibratory equipment. State regulatory requirements should be investigated, however, to determine if the material is environmentally acceptable for use on this site.

ONSITE SOILS

Based on the visual classifications and limited laboratory testing, the reuse of the onsite soils as backfill below pavement or under the buildings <u>is not</u> anticipated at this site due to the heavy amounts (i.e., >35%) of silts and/or clay. The silty/clayey nature of these materials are vulnerable to disturbance, difficult to compact, and are prone to frost heave. Reuse in landscaped areas or other non-critical earth fills may be possible.

6.12 Soils Prone to Disturbance

The silty and clayey soils encountered on site, when saturated from rainfall events, will be easily disturbed by construction equipment making traversing the site difficult. If the construction is performed during the winter or spring months, wet conditions should be expected to prevail. Delays caused by wet soil conditions may be a factor that affects the construction schedule. Should the subgrade become disturbed, the disturbed material should be over-excavated and replaced with compacted structural fill as recommended in Section 7.

6.13 Compaction

The subgrade to accept backfill should be compacted by proof rolling with at least six (6) passes of a 10-ton vibratory roller performed in perpendicular directions.

The fill materials should be compacted as outlined in Table 6-5 below.

TABLE 6-5: RECOMMENDED MINIMUM COMPACTION REQUIREMENTS

Location	Percent of Maximum Dry Density [1]
Backfill below footings, within the building area and below slabs [2]	95
Backfill for foundation walls	95
Backfill within pavement base and sub base layers	95
Backfill below pavement sub base layers	92
Around and above utilities within the building area	95
Around and above utilities in paved areas	92
Backfill behind retaining walls	95 [3]
Backfill within landscaped areas	85

[1] Maximum dry density as determined by the Modified Proctor test (ASTM D 1557)
[2] Building area is described as an area extending downward and outward from the outside edge of the footing at a 1H:1V slope.
[3] During compaction of fill placed behind retaining walls, care shall be taken so as to maintain uniform elevation along both sides within the embedded areas, and to not overstress the wall by applying too much compactive energy at the top of the wall.

A schematic drawing presenting influence zones beneath interior and exterior footings, recommended base and subbase materials, and recommended fill materials for varying areas of the site development is attached as Figures 7 and 8.

7.0 CONSTRUCTION CONSIDERATIONS/RECOMMENDATIONS

This section presents construction considerations and recommendations, which include excavation, backfilling, utility installation, dewatering, lateral earth support, protection of adjacent structures, and construction monitoring.

7.1 Excavation

SITE PREPARATION

After rough grades have been established, but before placement of compacted “Granular Fill”, exposed surfaces should be visually inspected and probed. Frozen, wet, or loose soils and other undesirable materials should be removed. The exposed subgrade should be further tested by proof rolling with a minimum 10,000-pound static weight roller to identify loose or soft pockets that may be present.

The area of the proposed structures will need to be stripped of all asphalt, and grubbed of all vegetation and topsoil. Construction debris from demolished structures and roadways should be removed and properly disposed of. Should the material contain solid wastes, such material should be segregated and disposed of in a manner consistent with local and state regulations. Any existing SAND with ORGANIC SILT (Stratum 1A) and any existing FILL underlying proposed footing locations should be excavated and removed. Care should be taken so as not to combine or mix organic material with the granular material to be reused as fill in other portions of the site.

Parking and Paved Roadway Surfaces: All topsoil, organic soil, existing asphalt paving, and loose fill should be stripped prior to filling. The subgrade should be proof rolled with a minimum 4-6 passes of a vibrator roller with a static weight of 10,000 pounds and a dynamic weight of 20,000 pounds. Caution should be used when compacting the subgrade, if wet, to avoid weaving and disturbance from vibrations.

In areas of observed demolition, all debris should be removed from the site and disposed of in accordance with applicable regulations. Any buried debris should be chased to its full extent and replaced with compacted “Granular Fill”.

All existing drainage pipes and structures should be removed to the full extent and the resulting excavations backfilled with properly compacted “Granular Fill”. Alternately the pipes can be filled with concrete. Care should be taken during this procedure to ensure complete filling of the pipe and structure.

Existing utilities on the site, including gas, electric, drainage, and sewer pipes, and structures encountered during the progression of the work should be removed to the full extent and the resulting excavations backfilled with compacted "Granular Fill". Alternately the pipes and structures can be filled with concrete. Care should be taken during the procedure to ensure complete filling of the pipes and/or structures.

Should the subgrade become disturbed during excavation and/or construction, all disturbed material should be over-excavated to firm or native soil and replaced with a minimum of one foot of compacted "Granular Fill".

7.2 Backfilling (Permanent Fill)

GRAVEL BORROW

PARE recommends that footings, foundation walls, and areas requiring fill below the floor slab be backfilled to within 12 inches of the footings and slabs with compacted "Granular Fill". Compacted "Granular Fill" should be free draining friable soil free from trash, ice, snow, tree stumps, roots, other organic matter, and deleterious materials. (See Figures 7 and 8)

In general, compaction should be accomplished by placing fill in 8 to 12 inch loose lifts and mechanically compacting each lift to the specified dry density. Thinner lifts may be required in certain instances depending on the type of mechanical compaction equipment utilized Recommended minimum compaction requirements are described in Section 6.13.

SAND GRAVEL FILL

Sand Gravel Fill should be placed for the final 12 inches below pile caps, slabs and as pavement base course layers. This material should be placed in 8 to 12 inch thick layers and compacted to the minimum requirements described in Section 6.13. (See Figures 7 and 8)

7.3 Pre-Load Recommendations in the Area of the Proposed High School Building

The following are recommendations regarding the recommended foundation preparation alternative (Alternative No. 3), which includes **Backfilling as Planned with an added Temporary Surcharge and Allowing the Site to Pre-consolidate.**

BACKFILLING (PRE-LOAD FILL)

Install a 5-foot thick layer of a dumped noncompacted fill over the permanent fill to act as a temporary surcharge. Based on the laboratory consolidation test results and considering the minimum gross allowable bearing capacities recommended in Table 6-1, a total estimated pre-consolidation time of approximately 30 days (i.e., 1 month) would be required before foundations could be constructed. The temporary surcharge should be placed to a full 5-feet above the permanent fill within and to about 20 feet beyond the proposed building footprint. Outside of this area the surcharge should be graded to a stable slope. Monitoring platforms and a monitoring program would also be included to determine when adequate consolidations have occurred.

SETTLEMENT MONITORING

Following or during the placement of the pre-load backfill above the permanent backfill, settlement monitoring platform devices should be installed at selected locations within the limits of the ground treatment to monitor settlement of the subgrade soils under the load of the new fill. A settlement platform detail is attached to this report as Figure 6.

After the temporary fill has been placed, these settlement monitoring devices should be monitored three times per week using optical surveys to measure settlement of each platform and to verify that settlement has been completed. Survey data should be provided to the project Geotechnical Engineer of record who should review, plot and evaluate the data and determine when settlement has been completed. Once settlement has been completed, the temporary backfill can be removed and the construction of foundation elements and the floor slab may begin.

7.4 Utility Installations

Excavations for installation of underground utilities should be made to comply with all OSHA, federal, state, and local regulations. At a minimum, excavations should be wide enough to accommodate the utility to be installed with clearance on each side of the utility to provide space for operating compaction equipment for backfilling of the utility in lifts without damaging the utility. The base of the excavation and bedding layer should be formed to properly support all components of the utility, including pipe bells, manholes, etc., to prevent damage during installation. During backfilling operations, care should be taken to provide properly compacted fill along the length of the utility being installed. All fill material in excess of 3-inches should be removed from the fill within 12-inches of the utility to prevent damage to the utility during compaction.

7.5 Dewatering

During construction, temporary dewatering will likely be required to control ponded water resulting from rain and surface runoff. Based on observations taken during the subsurface investigation, groundwater was encountered in the footprint of the proposed building at depths ranging from 8 to 13 feet; it should be noted that wells held water at the ground surface. This anticipates to be an anomalous condition due to fouled well screens. Therefore, dewatering due to groundwater is not expected to be a construction issue. However, the Contractor should provide for proper drainage of surface water away from any excavations. All excavations should be conducted in the dry.

7.6 Lateral Support

Excavation support is solely the Contractor's responsibility. Several excavations are expected within the footprint of the proposed structure for installation of footings, utilities and below-grade walls. Temporary support systems may be required at some locations to retain the surrounding soil and maintain a near-vertical excavation face where it will be necessary to protect the adjacent building walls, pavement, or underground utilities. Design of cantilever and braced support systems is beyond the scope of this report, and should be performed by the Contractor.

In areas where an open cut is possible without a temporary support system, the final side slopes should conform to Local, State, and Federal safety requirements.

7.7 Protection of Adjacent Structures

PARE recommends that prior to the start of construction, a video and/or photo pre-construction survey should be performed at any buildings which are located near the work area which may be affected. This should also include adjacent utilities that may be affected by the construction. This survey would record "before-construction-conditions" of existing structures and utilities that are expected to remain through construction. These surveys are invaluable in resolving potential project claim disputes.

PARE recommends that crack gauges be installed to monitor movement of existing cracks and on any cracks that develop in new or existing concrete foundation walls.

7.8 Construction Monitoring

The site preparation, excavation and backfill, compaction, and foundation installations should be monitored and observed by our geotechnical field engineer(s) under the direction of one of our registered professional engineers experienced in geotechnical engineering. While onsite, our engineer(s) would provide field density testing, verification of bearing layers, and assistance in general interpretation of the geotechnical requirements during construction. This would provide an accurate record of construction, alert the designer to changed conditions, and make useful data available for upcoming construction.

Foundation excavations should be observed to confirm that all loose, soft, and undesirable material is removed and that the foundations will bear on a satisfactory material. Excavation subgrade observations should include hand auger borings or hand probing.

As mentioned, compaction criteria for the various imported materials should be developed and included in the specifications. Field density testing should be performed using a nuclear density gauge to confirm that adequate compaction is being achieved. During construction, representative samples of all materials to be used as backfill should also be tested for conformance with the specified material properties.

8.0 SUMMARY

8.1 Subsurface Conditions

- The surface of the site generally consists of grassed topsoil overlying several different soil types ranging from poorly graded sands to silts to clays. Section 3.1 provides an in depth description of the subsurface conditions at the proposed high school area and in the area of other proposed site features. Typical subsurface profiles in the area of the proposed high school are shown on Figures 3A, 3B, 4A, 4B, 5A, and 5B. Groundwater was encountered at depths ranging from approximately 8 to 13 feet below the existing ground surface, although apparent anomalous readings of water at the ground surface were noted.

8.2 Conclusions and Recommendations

- Based on current site grading and configurations, approximately 5 feet of backfilling is proposed at the southern half of the building area. Due to the presence of the compressible clay that underlie the site, long-term consolidation of this layer is expected due to the permanent fill surcharge. Using the results of the laboratory compression tests, the southern half of the building area is estimated to settle up to 1.5 inches under the surcharge load from the fill without the additional building loads. Since the northern half of the site is not expected to undergo long-term settlements (i.e., no backfilling), a total differential settlement due to the varying fill across the site could be as much as 1.5 inches once the site has undergone pre-consolidation.

  Under PARE's recommended approach (Alternative 3, discussed in Section 6.1), if the site were allowed to "settle out", then shallow foundations would be an option to consider. If a 3-foot thickness of dumped noncompacted fill were placed over the permanent surcharge, the estimated pre-consolidation time would be reduced from 100 days to 45 days (i.e., 1.5 months). If this decreased time frame was still unacceptable, then the temporary surcharge could be increased from 3 to 5-feet, further reducing the pre-consolidation time to about 30 days (i.e., 1 month). Monitoring platforms and a monitoring program would also be included to determine when adequate consolidations have occurred. ***Before backfilling takes place, the unsuitable SAND with ORGANIC SILT (Stratum 1A) should be overexcavated from within the influence area of the building footprint and replaced with compacted Granular Fill.*** The recommended gross allowable bearing capacities are presented in Table 6-1.

- For the bleachers, field house structures and waste water treatment buildings, a shallow foundation system composed of column and wall footings bearing on a minimum 12-inch layer of compacted "Sand-Gravel Fill" over the natural SILT is recommended for effectively transferring the building loads to the ground. ***If the footprints of the proposed building structures extend within areas that contain FILL, it is recommended that the onsite FILL within the influence area[4] of footings be excavated and replaced***

[4] "Influence area" is defined as the area under footings to a respective distance and depth of 1 away and 2 down from the footing edges.

with compacted "Granular Fill". Recommended net allowable soil bearing pressures are presented in Table 6-1 and 6-2.

- The SAND with ORGANIC SILT (Stratum 1A), observed throughout the site, is not a suitable bearing stratum for spread footings due to its heavy organic content and is recommended to be removed and replaced with suitable material as stated herein.

- The perimeter wall footings, column footings, and the structural slabs should bear on a minimum of 12 inches of compacted "Sand Gravel Fill".

- A subgrade modulus (K) of 150 pounds per cubic inch may be used for design of slab on grade placed over 12 inches of compacted "Sand Gravel Fill".

- Heave of silty material identified during the subsurface investigation is a possibility unless all silty material is removed from within the pavement footprint for the full recommended frost depth. To reduce the chance of pavement damage due to potential frost heaving, subgrade soils founded below the pavement section to frost depths (i.e., 4 feet) should ideally be free draining. However, in lieu of removing and replacing the existing subgrade soils with drainable material, it may be more feasible to accept a reduced pavement service life.

- For the design of retaining walls with level backfill, recommended lateral earth pressure coefficients are indicated in Table 6-3. A unit weight of 125 pounds per cubic foot (pcf) and an internal friction angle (ϕ) of 35° for imported "Granular Fill" are recommended.

- Based upon the material type, the overall soil profile does not appear to be susceptible to liquefaction, at this time.

- Recommendations for flexible and rigid pavement design, including "Standard Duty" and "Heavy Duty" pavement are presented in Table 6-4.

- Based on the visual classifications and limited laboratory testing, the reuse of the onsite soils as backfill below pavement or under the buildings are <u>not</u> anticipated at this site due to the heavy amounts (i.e., >35%) of silts and/or clay. The silty/clayey nature of these materials are vulnerable to disturbance, difficult to compact, and are prone to frost heave. Reuse in landscaped areas or other non-critical earth fills may be possible.

- The silty and clayey soils encountered on site, when saturated from rainfall events, will be easily disturbed by construction equipment making traversing the site difficult, and will be difficult to compact.

- The fill materials should be compacted as outlined in Table 6-5.

8.3 Construction Considerations/Recommendations

- Temporary support systems may be required at some locations to retain the surrounding soil and maintain a near-vertical excavation face where it will be necessary to protect the adjacent building walls, pavement, or underground utilities. Design of cantilever and braced support systems is beyond the scope of this report, and should be performed by the Contractor.

- PARE recommends that prior to the start of construction, a video and/or photo pre-construction survey should be performed at any buildings which are located near the work area which may be affected.

- PARE recommends that crack gauges be installed to monitor movement of existing cracks and on any cracks that develop in new or existing concrete foundation walls.

- The site preparation, excavation and backfill, compaction, dewatering, and foundations installation should be monitored and observed by our geotechnical field engineer(s) under the direction of one of our registered professional engineers experienced in geotechnical engineering.

REFERENCES

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2. NAVY 1986. Naval Facilities Engineering Command. "*Foundation and Earth Structures, Design Manual 7.1 and 7.2"*. 1982. Revalidated by change 9/1/1986.

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6. MASS 2008. "*The Commonwealth of Massachusetts State Building Code*", 780 CMR 7th Edition, October 2008.

FIGURES

USGS ORTHOPHOTO FROM OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

PARE CORPORATION

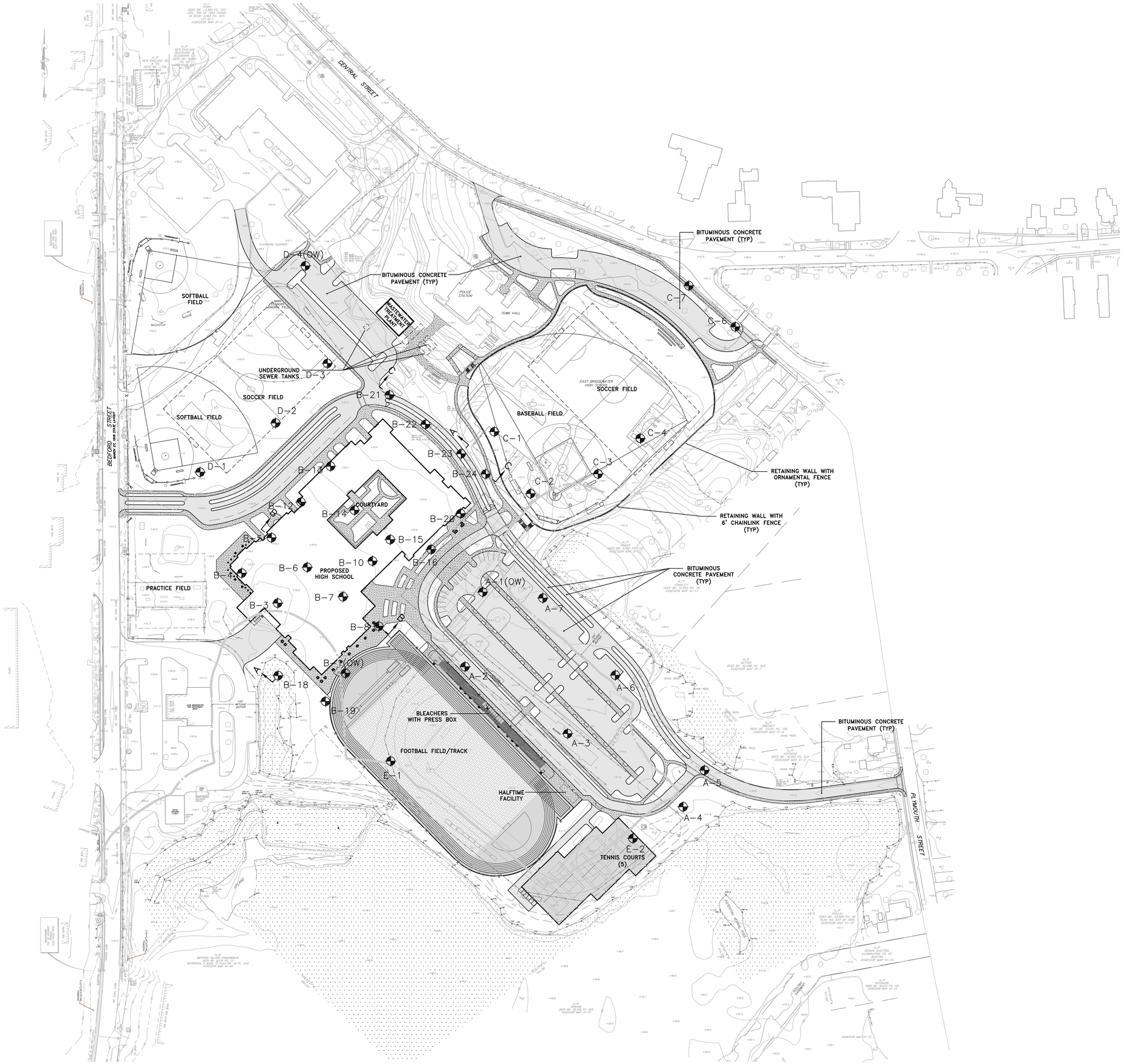
EAST BRIDGEWATER HIGH SCHOOL

EAST BRIDGEWATER, MASSACHUSETTS

LOCUS PLAN

OCTOBER 2010

FIGURE 1



LEGEND AND NOTE

B–2 GEOTECHNICAL BORINGS COMPLETED BY NEW HAMPSHIRE BORING BETWEEN THE DATES OF SEPTEMBER 20 AND OCTOBER 08, 2010. BORINGS WERE OBSERVED BY PARE CORPORATION PERSONNEL.

BASE SURVEY PROVIDED BY HERITAGE DESIGN GROUP, TITLED "TOPOGRAPHIC PLAN OF LAND, EAST BRIDGEWATER HIGH SCHOOL, EAST BRIDGEWATER MA" WHICH WAS NOT FINALIZED AT TIME OF REPORT.

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EAST BRIDGEWATER HIGH SCHOOL

CENTRAL STREET
EAST BRIDGEWATER, MA

SCHEMATIC SUBMISSION

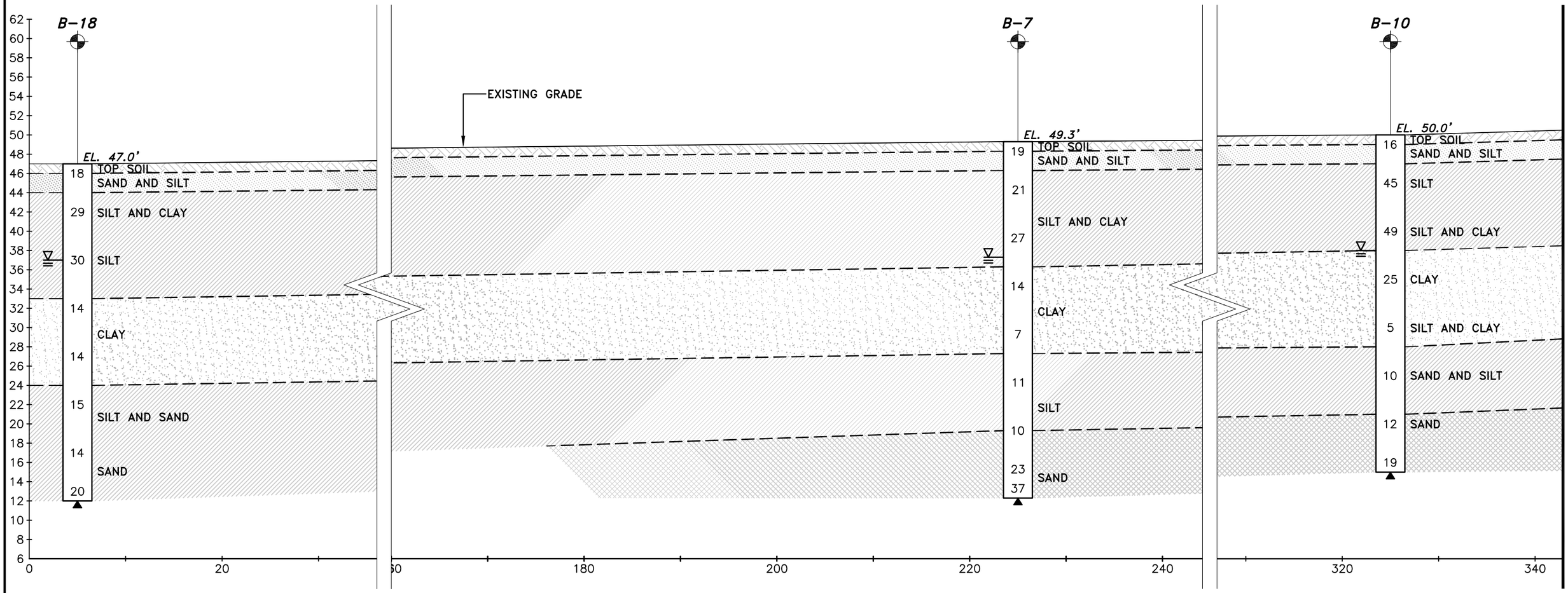
North Arrow

Keyplan

Drawing Name:

EXPLORATION LOCATION

Drawn by:	LMC / JHG
Reviewed by:	DMM / JMB
Scale:	1"=80'
Job No:	1019101
Date:	NOVEMBER 2010
FIGURE No.	2



A/2 SITE SOIL PROFILE

SCALE: 1"=10'

LEGEND

B-2	GEOTECHNICAL BORINGS COMPLETED BY NEW HAMPSHIRE BORING BETWEEN THE DATES OF SEPTEMBER 20 AND OCTOBER 08, 2010. BORINGS WERE OBSERVED BY PARE CORPORATION PERSONNEL.
22	STANDARD PENETRATION TEST (SPT) N VALUES
▲	BOTTOM OF EXPLORATION
EL. 50.2'	APPROXIMATE SURFACE ELEVATION AT BORING
▽	GROUNDWATER LEVEL OBSERVED AT TIME OF BORING

SOIL TYPES

- TOP SOIL
- 1A: SAND WITH ORGANIC SILT
- 1B: SAND WITH SILT
- 2A: SILT WITH CLAY AND SAND
- 2B: CLAY
- 3: SAND
- 4: CLAY WITH SAND
- 5: GLACIAL TILL

GRAPHIC SCALE

1"=10'

10' 5' 0 10' 20'

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508-543-1755

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE:	NOVEMBER 2010
PROJECT NO.:	10191.00
DRAWN BY:	JHG
CHECKED BY:	DMM

EXPLORATION PROFILE

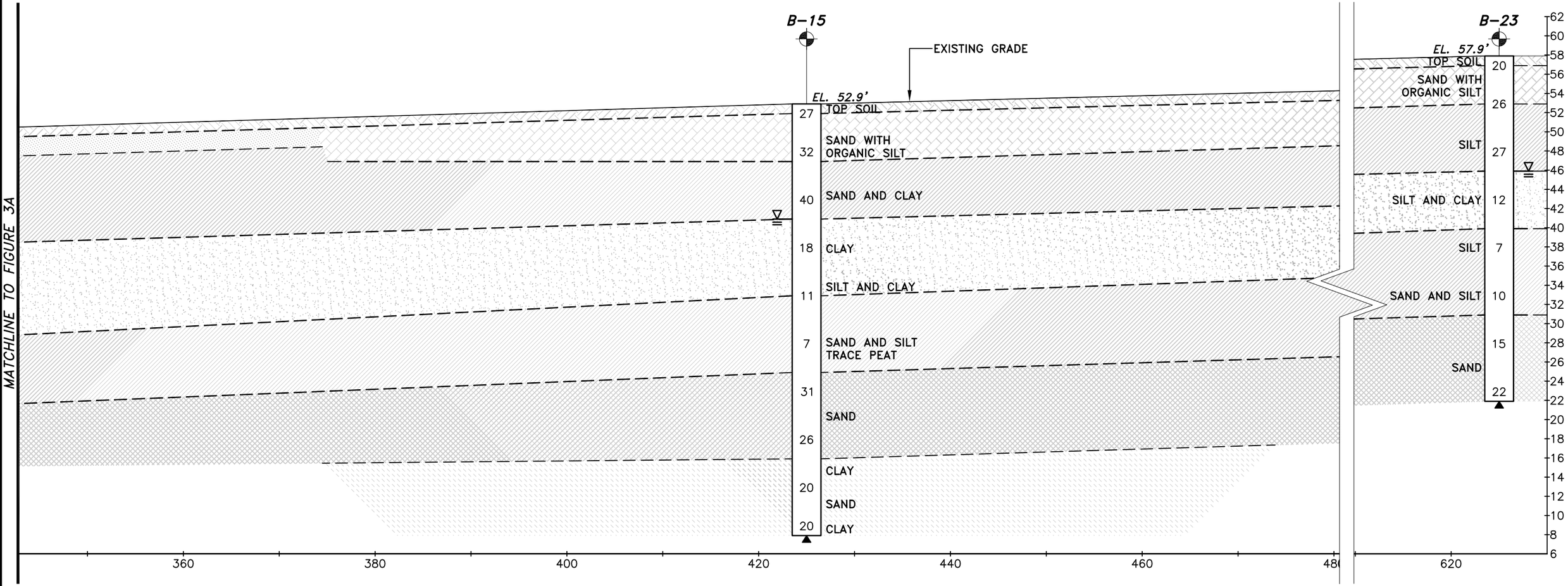
PROPOSED EAST BRIDGEWATER HIGH SCHOOL

EAST BRIDGEWATER, MASSACHUSETTS

FIGURE NO.

3A

SCALE: AS NOTED



A/2 SITE SOIL PROFILE

SCALE: 1"=10'

LEGEND

B-2	GEOTECHNICAL BORINGS COMPLETED BY NEW HAMPSHIRE BORING BETWEEN THE DATES OF SEPTEMBER 20 AND OCTOBER 08, 2010. BORINGS WERE OBSERVED BY PARE CORPORATION PERSONNEL.
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▲	BOTTOM OF EXPLORATION
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GRAPHIC SCALE

1"=10'

10' 5' 0 10' 20'

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SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE:	NOVEMBER 2010
PROJECT NO.:	10191.00
DRAWN BY:	JHG
CHECKED BY:	DMM

EXPLORATION PROFILE

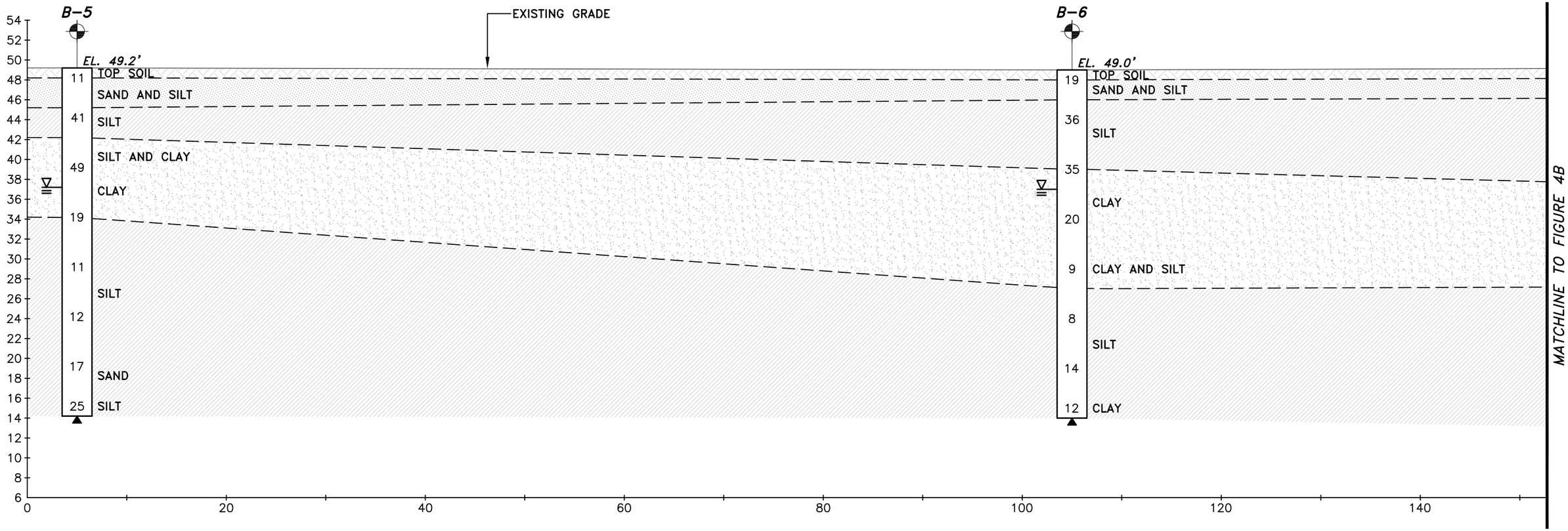
PROPOSED EAST BRIDGEWATER HIGH SCHOOL

EAST BRIDGEWATER, MASSACHUSETTS

FIGURE NO.

3B

SCALE: AS NOTED



B/2 SITE SOIL PROFILE

SCALE: 1"=10'

LEGEND

B–2	GEOTECHNICAL BORINGS COMPLETED BY NEW HAMPSHIRE BORING BETWEEN THE DATES OF SEPTEMBER 20 AND OCTOBER 08, 2010. BORINGS WERE OBSERVED BY PARE CORPORATION PERSONNEL.
22	STANDARD PENETRATION TEST (SPT) N VALUES
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GRAPHIC SCALE

1"=10'

10' 5' 0 10' 20'

PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
10 LINCOLN ROAD, SUITE 103
FOXBORO, MA 02035
508-543-1755

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE:	NOVEMBER 2010
PROJECT NO.:	10191.00
DRAWN BY:	JHG
CHECKED BY:	DMM

EXPLORATION PROFILE

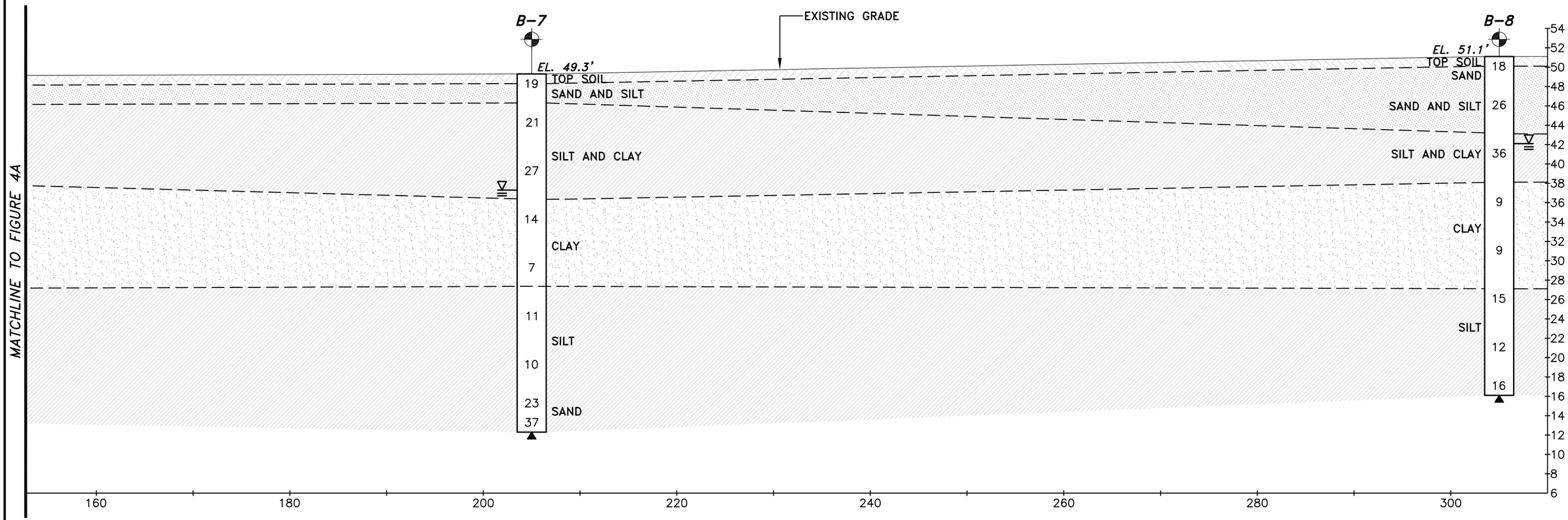
PROPOSED EAST BRIDGEWATER HIGH SCHOOL

EAST BRIDGEWATER, MASSACHUSETTS

FIGURE NO.

4A

SCALE: AS NOTED



B/2 SITE SOIL PROFILE

SCALE: 1"=10'

LEGEND

B-2	GEOTECHNICAL BORINGS COMPLETED BY NEW HAMPSHIRE BORING BETWEEN THE DATES OF SEPTEMBER 20 AND OCTOBER 08, 2010. BORINGS WERE OBSERVED BY PARE CORPORATION PERSONNEL.
22	STANDARD PENETRATION TEST (SPT) N VALUES
▲	BOTTOM OF EXPLORATION
EL. 50.2'	APPROXIMATE SURFACE ELEVATION AT BORING
▽	GROUNDWATER LEVEL OBSERVED AT TIME OF BORING

SOIL TYPES

- TOP SOIL
- 1A: SAND WITH ORGANIC SILT
- 1B: SAND WITH SILT
- 2A: SILT WITH CLAY AND SAND
- 2B: CLAY
- 3: SAND
- 4: CLAY WITH SAND
- 5: GLACIAL TILL

GRAPHIC SCALE

1"=10'

10' 5' 0 10' 20'

PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
10 LINCOLN ROAD, SUITE 103
FOXBORO, MA 02035
508-543-1755

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE:	NOVEMBER 2010
PROJECT NO.:	10191.00
DRAWN BY:	JHG
CHECKED BY:	DMM

EXPLORATION PROFILE

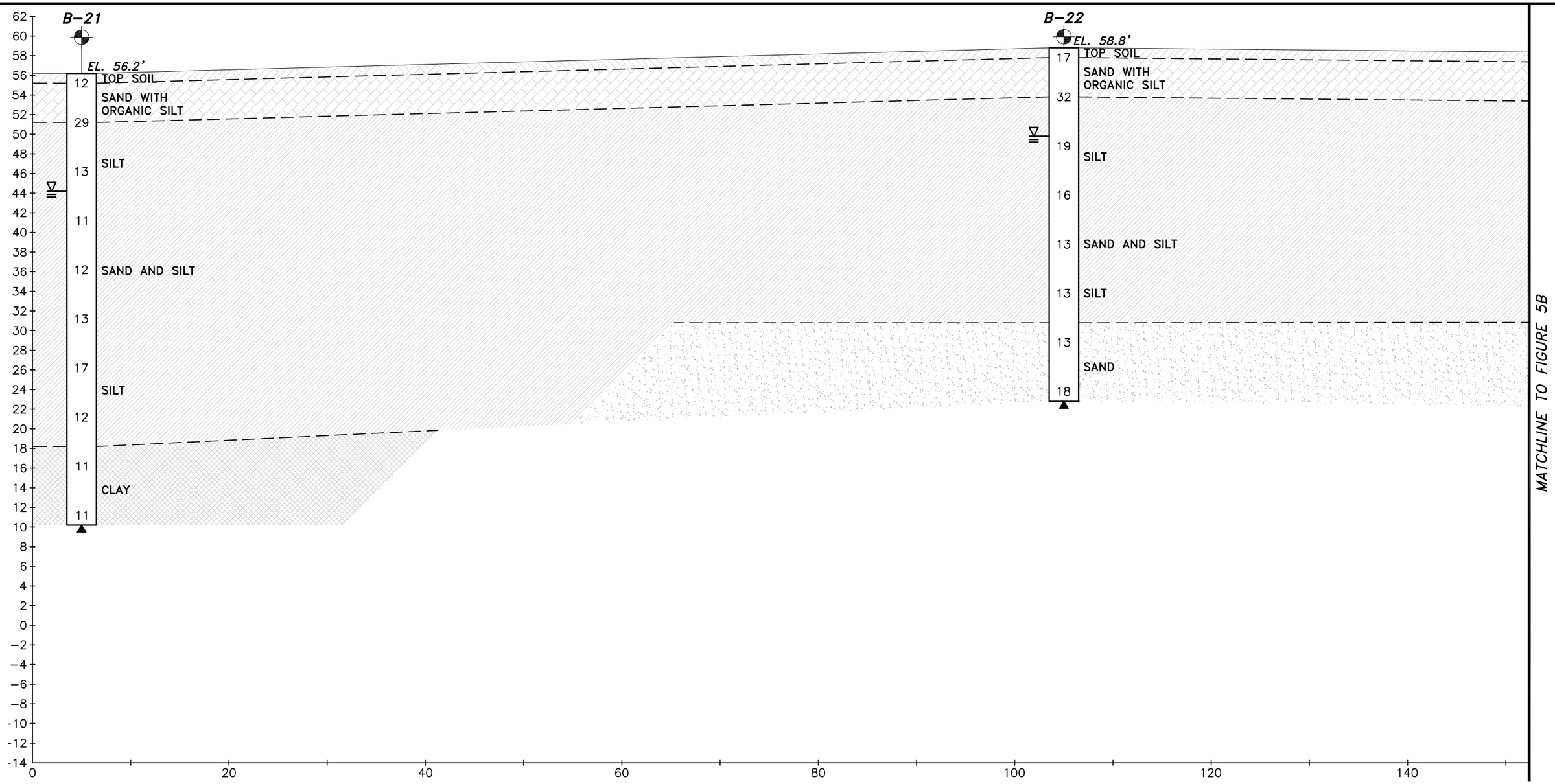
PROPOSED EAST BRIDGEWATER HIGH SCHOOL

EAST BRIDGEWATER, MASSACHUSETTS

FIGURE NO.

4B

SCALE: AS NOTED



C/2 SITE SOIL PROFILE

SCALE: 1"=10'

LEGEND

B-2	GEOTECHNICAL BORINGS COMPLETED BY NEW HAMPSHIRE BORING BETWEEN THE DATES OF SEPTEMBER 20 AND OCTOBER 08, 2010. BORINGS WERE OBSERVED BY PARE CORPORATION PERSONNEL.
22	STANDARD PENETRATION TEST (SPT) N VALUES
▲	BOTTOM OF EXPLORATION
EL. 50.2'	APPROXIMATE SURFACE ELEVATION AT BORING
▽	GROUNDWATER LEVEL OBSERVED AT TIME OF BORING

SOIL TYPES

- TOP SOIL
- 1A: SAND WITH ORGANIC SILT
- 1B: SAND WITH SILT
- 2A: SILT WITH CLAY AND SAND
- 2B: CLAY
- 3: SAND
- 4: CLAY WITH SAND
- 5: GLACIAL TILL

GRAPHIC SCALE

1"=10'

10' 5' 0 10' 20'

PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
10 LINCOLN ROAD, SUITE 103
FOXBORO, MA 02035
508-543-1755

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE:	NOVEMBER 2010
PROJECT NO.:	10191.00
DRAWN BY:	JHG
CHECKED BY:	DMM

EXPLORATION PROFILE

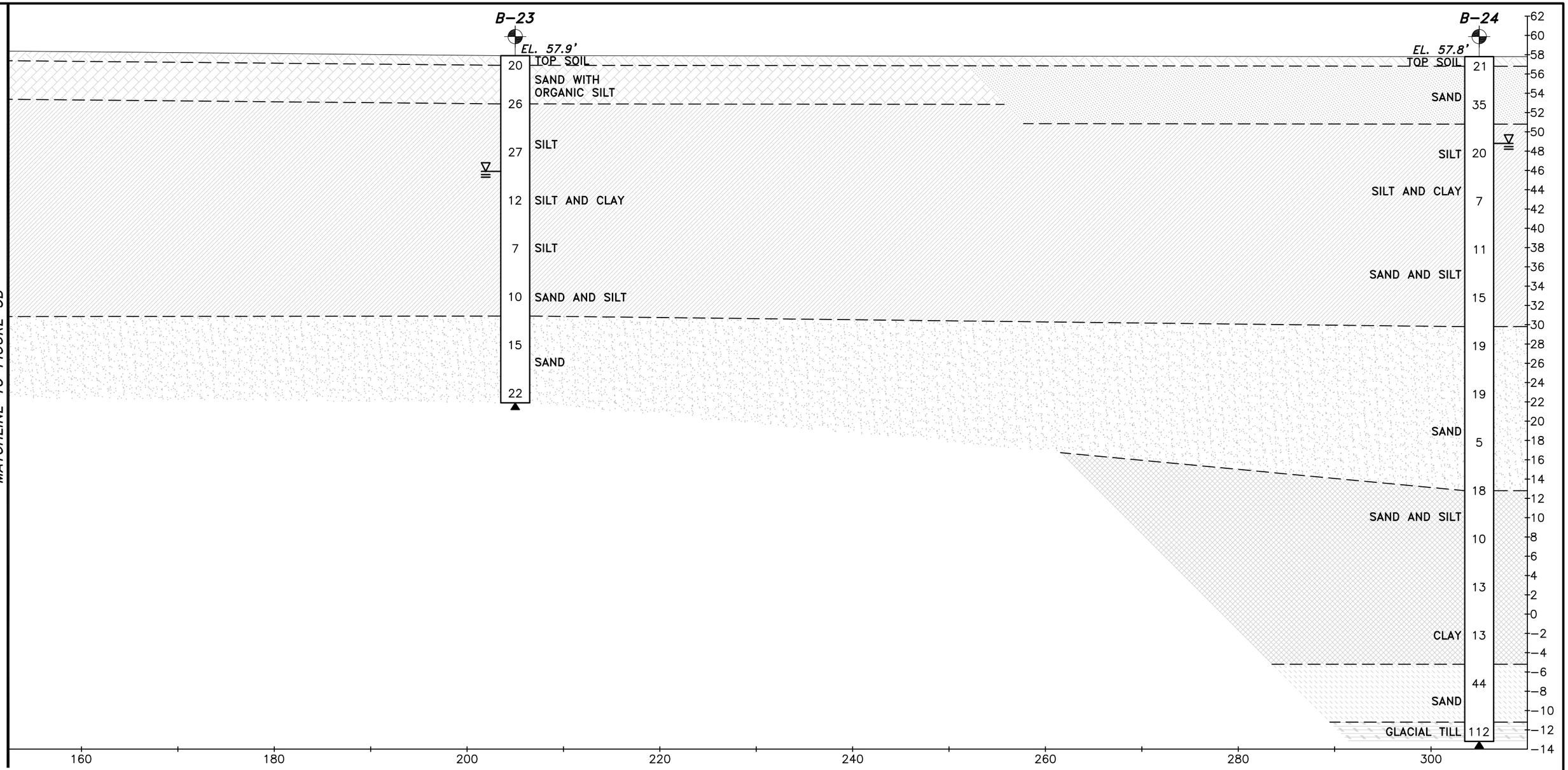
PROPOSED EAST BRIDGEWATER HIGH SCHOOL

EAST BRIDGEWATER, MASSACHUSETTS

FIGURE NO.

5A

SCALE: AS NOTED



C/2 SITE SOIL PROFILE

SCALE: 1"=10'

LEGEND

B-2	GEOTECHNICAL BORINGS COMPLETED BY NEW HAMPSHIRE BORING BETWEEN THE DATES OF SEPTEMBER 20 AND OCTOBER 08, 2010. BORINGS WERE OBSERVED BY PARE CORPORATION PERSONNEL.
22	STANDARD PENETRATION TEST (SPT) N VALUES
▲	BOTTOM OF EXPLORATION
EL. 50.2'	APPROXIMATE SURFACE ELEVATION AT BORING
▽	GROUNDWATER LEVEL OBSERVED AT TIME OF BORING

SOIL TYPES

- TOP SOIL
- 1A: SAND WITH ORGANIC SILT
- 1B: SAND WITH SILT
- 2A: SILT WITH CLAY AND SAND
- 2B: CLAY
- 3: SAND
- 4: CLAY WITH SAND
- 5: GLACIAL TILL

GRAPHIC SCALE

1"=10'

10' 5' 0 10' 20'

PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
10 LINCOLN ROAD, SUITE 103
FOXBORO, MA 02035
508-543-1755

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE:	NOVEMBER 2010
PROJECT NO.:	10191.00
DRAWN BY:	JHG
CHECKED BY:	DMM

EXPLORATION PROFILE

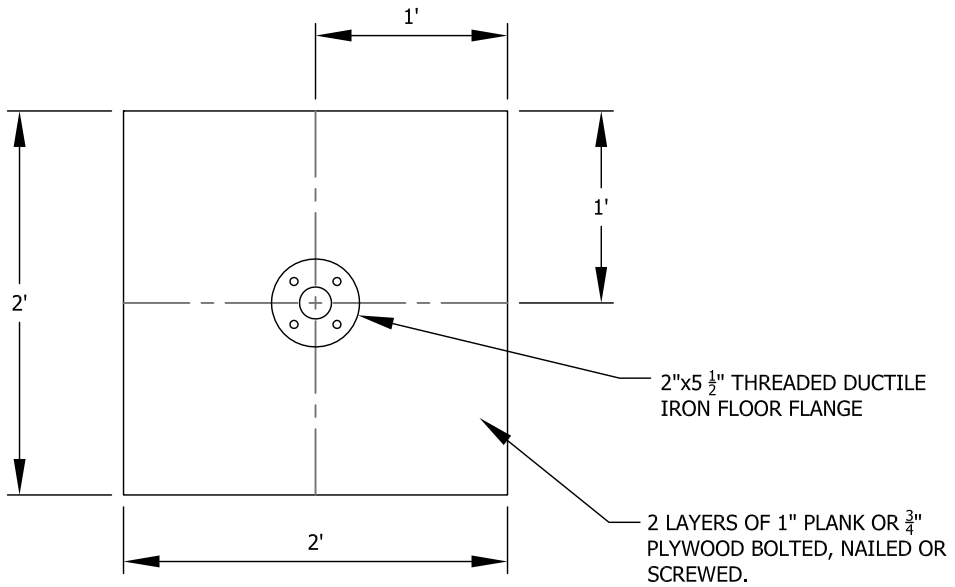
PROPOSED EAST BRIDGEWATER HIGH SCHOOL

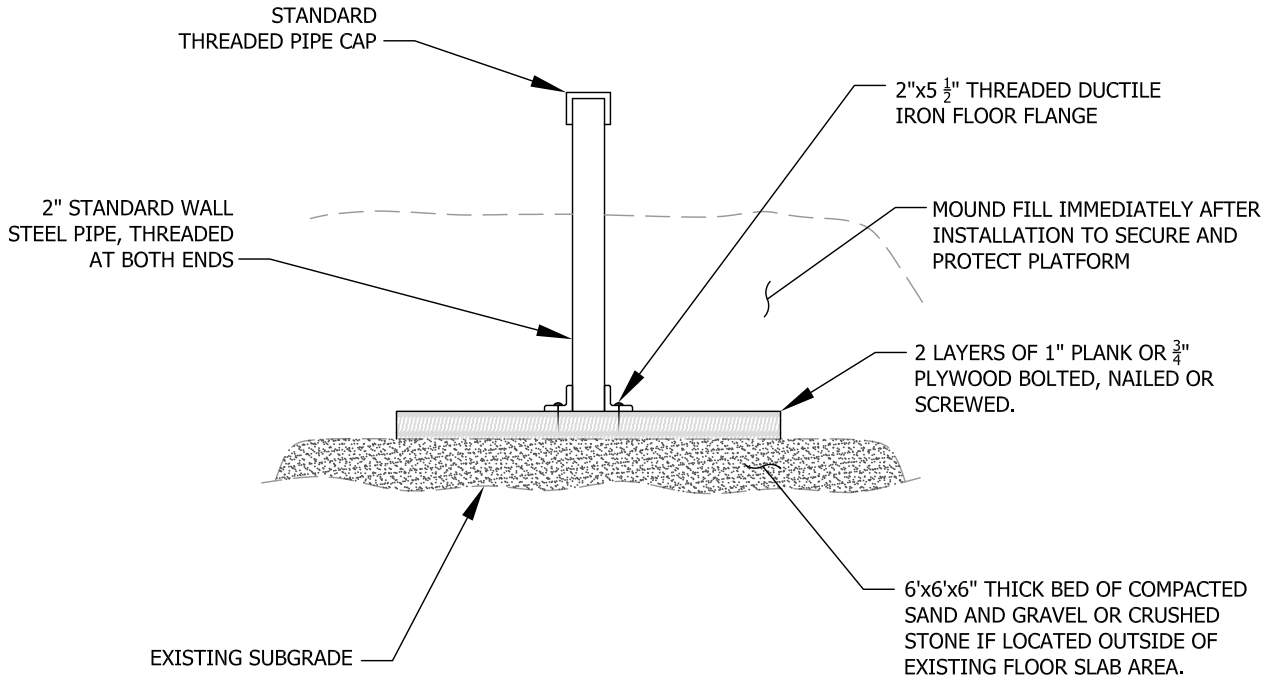
EAST BRIDGEWATER, MASSACHUSETTS

FIGURE NO.

5B

SCALE: AS NOTED





NOT TO SCALE

PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
10 LINCOLN ROAD, SUITE 103
FOXBORO, MA 02035
508-543-1755

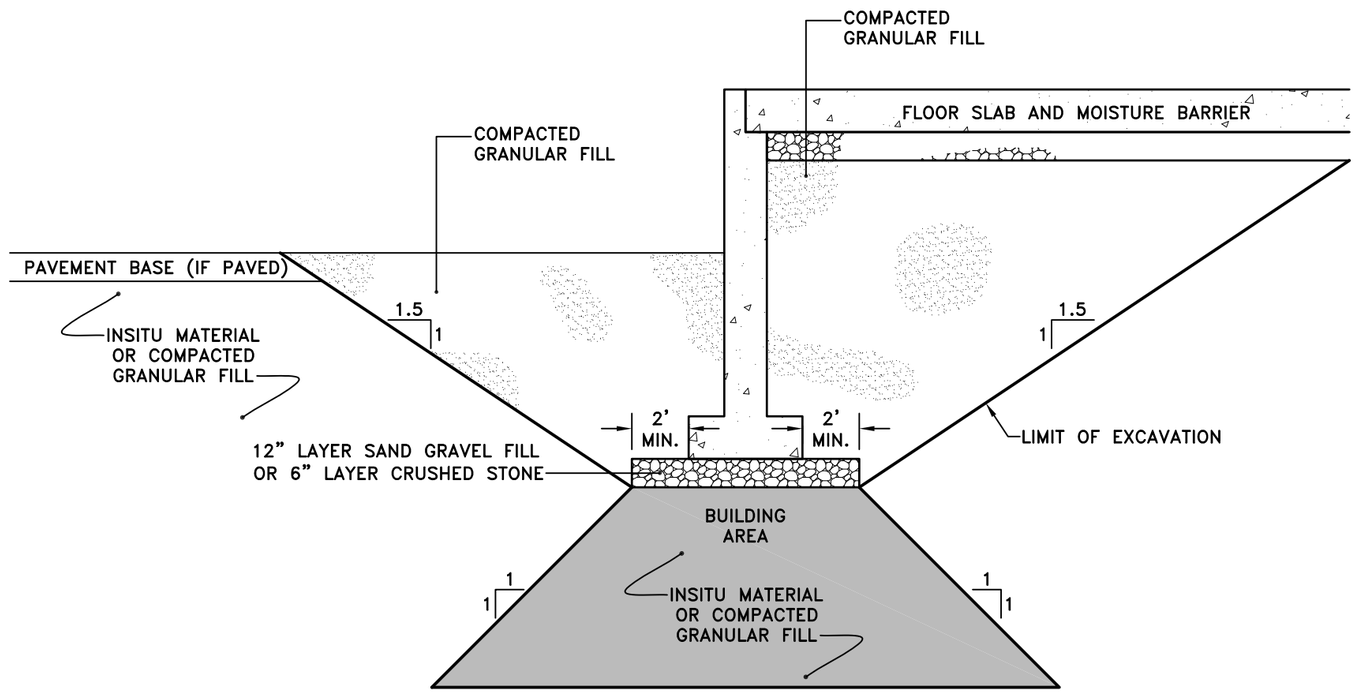
PROJECT NO. 10191.00

DATE: NOVEMBER 2010

FIGURE 6

SETLLEMENT PLATFORM SCHEMATIC

EAST BRIDGWATER HIGH SCHOOL
EAST BRIDGE WATER, MASSACHUSETTS



TYPICAL PROFILE BELOW EXTERIOR FOOTINGS

SCALE: 3/16" =1'-0"

PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
10 LINCOLN ROAD, SUITE 103
FOXBORO, MA 02035
508-543-1755

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE:	NOVEMBER 2010
PROJECT NO.:	10191.00
DRAWN BY:	JHG
CHECKED BY:	DMM

TYPICAL PROFILE BELOW EXTERIOR FOOTINGS

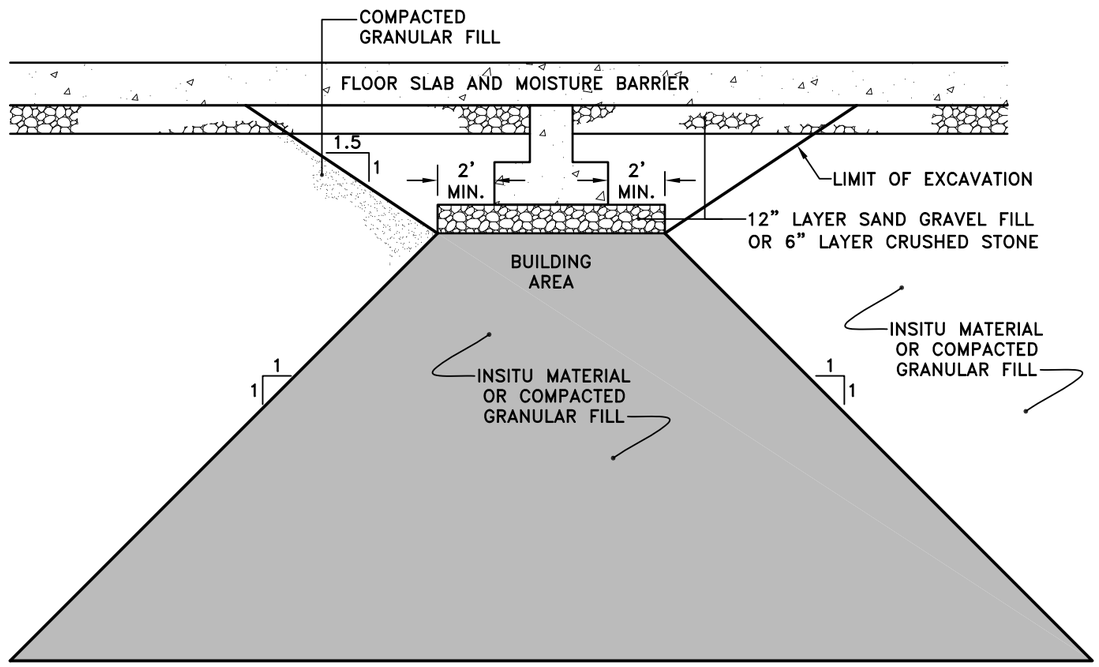
PROPOSED EAST BRIDGEWATER HIGH SCHOOL

EAST BRIDGEWATER, MASSACHUSETTS

FIGURE NO.

7

SCALE: AS NOTED



TYPICAL PROFILE BELOW INTERIOR FOOTINGS

SCALE: 3/16" =1'-0"

PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
10 LINCOLN ROAD, SUITE 103
FOXBORO, MA 02035
508-543-1755

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE:	NOVEMBER 2010
PROJECT NO.:	10191.00
DRAWN BY:	JHG
CHECKED BY:	DMM

TYPICAL PROFILE BELOW INTERIOR FOOTINGS

PROPOSED EAST BRIDGEWATER HIGH SCHOOL

EAST BRIDGEWATER, MASSACHUSETTS

FIGURE NO.

8

SCALE: AS NOTED

APPENDIX A
Boring Logs

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. A-1 (OW)

SHEET 1 OF 1

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/5/2010	DATE END 10/5/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
10/8/10	2:30	2'1"	13'	72 Hrs.
10/12/10	11:00	2'-5.5"	13'	168 Hrs.

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/12	0-2	2 4		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					5 40		1B: Moist, medium dense, tan, fine to coarse SAND, some silt, trace gravel.		SAND
5		S-2	24/0	4-6	9 5		No recovery.	1.	
					4 2				
10		S-3	24/14	9-11	13 10		Wet, medium dense, tan SILT and CLAY, little fine to medium sand, trace coarse sand, trace gravel.		SILT AND CLAY
					9 11				
		S-4	24/20	13-15	6 7		Wet, medium dense, tan/gray SILT, some clay, trace fine to medium sand.	2.	SILT
15					9 10				
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Gravel in wash.
2. 2-inch diameter observation well installed with 10 feet of screen and 3 feet of riser with a road box cemented in place.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. A-2

SHEET 1 OF 1

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/1/2010	DATE END 10/1/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/16	0-2	2 8		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					18 18				
							1B: Moist, medium dense, tan, fine to coarse SAND, trace silt, trace gravel.		
5		S-2	24/18	4-6	13 5		Moist, loose, tan, fine to coarse SAND, some silt, trace gravel.		SAND
					5 3				
							Moist, loose, gray/brown, fine to coarse SAND, some silt, trace clay, trace gravel.		
10		S-3	24/16	6-11	37 21		3A: Wet, dense, tan/gray, fine to coarse SAND, some silt, little gravel.		
					16 23				
							3B: Wet, dense, tan SILT, some clay, trace fine to medium sand.		SILT
		S-4	24/22	13-15	3 3		Wet, medium stiff, gray CLAY, trace silt.		CLAY
15					4 4				
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. A-3

SHEET 1 OF 1

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/27/2010	DATE END 9/27/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
									TOP SOIL
		S-1	24/12	1-3	10 13		1A: Moist, medium dense, fine to coarse SAND, little silt, trace gravel.		SAND
					9 7				
							1B: Moist, stiff, gray SILT, little clay, trace fine to coarse*		
5		S-2	24/18	4-6	14 13		2A: Moist, dense, gray/tan, SILT, little clay, trace fine to medium sand.	1.	SILT
					20 23				
							2B: Moist, dense, tan SILT, little clay, trace fine to medium sand.		
10		S-3	24/14	9-11	6 6		Wet, stiff, gray CLAY, little silt, trace fine to medium sand.	2.	CLAY
					5 5			3.	
		S-4	24/16	13-15	8 8		Wet, very stiff, gray CLAY, trace silt, trace fine to medium sand.		
15					9 8				
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Trace color in sand.
2. Rust color in sand. (Mottling)
3. Sand lenses.

*sand.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. A-4

SHEET 1 OF 1

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/27/2010	DATE END 9/27/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/15	0-2	6 10		1A: Moist, medium desne, tan, fine to coarse SAND and organic SILT, trace gravel, trace roots.	1.	SAND AND ORGANIC SILT
					15 12				
							1B: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace gravel.		
5		S-2	24/12	4-6	16 6		Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace roots, trace roots.		
					5 4				
10		S-3	24/18	9-11	10 10		Wet, very stiff, tan SILT and CLAY, trace fine sand.		SILT AND CLAY
					15 14				
		S-4	24/20	13-15	6 7		Wet, stiff, gray CLAY, some silt.		CLAY
15					8 7				
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Iron rust color.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. A-5

SHEET 1 OF 1

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/28/2010	DATE END 9/28/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/18	0-2	3 5		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace roots.	1.	TOPSOIL
					10 9				
							1B: Moist, medium dense, tan, fine to coarse SILT, little sand, trace clay, trace iron.		
5		S-2	24/20	4-6	13 20		Moist, dense, tan SILT, trace clay, trace fine to coarse sand, trace gravel, trace iron.		SILT
					28 24				
10		S-3	24/18	9-11	11 9		Wet, medium dense, tan SILT, some clay, trace iron.		
					10 9		Wet, very stiff, gray CLAY, little silt, trace iron.		CLAY
		S-4	24/14	13-15	5 6		Wet, stiff, gray CLAY, some silt, trace iron.		
15					6 7				
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Sample 1A was encountered in top 6".

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. A-6

SHEET 1 OF 1

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/27/2010	DATE END 9/27/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
									SAND
		S-1	24/14	1-3	10 9		Moist, medium dense, brown, fine to coarse SAND, little silt, trace gravel.		SILT
					9 9				
							2A: Moist, medium dense, tan SILT, some clay, trace fine*	1.	
5		S-2	24/10	4-6	10 6		2b: Moist, medium dense, tan SILT and CLAY, trace fine to medium sand.	2.	
					6 6				
									SILT AND CLAY
10		S-3	24/15	9-11	5 5		Wet, stiff, gray/tan SILT and CLAY, trace fine sand.	3.	
					5 4				
		S-4	24/20	13-15	3 2		Wet, medium stiff, tan SILT and CLAY, trace fine to coarse sand.		
15					3 4			4.	
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Bottom 3"-4" of sample.
2. Brown sand lense near tip.
3. 1" tan (iron) material at top of spoon.
4. Lenses of fine to coarse sand.

*sand.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. A-7

SHEET 1 OF 1

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/27/2010	DATE END 9/27/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
									BITUMINOUS CONCRETE
		S-1	24/14	1-3	10 20		1A: Moist, dense, brown, fine to coarse SAND, little gravel, trace silt.	1.	
					26 31				
							1B: Moist, dense, tan/brown, fine to coarse SAND, little*		SAND
5		S-2	24/12	4-6	13 11		Moist, medium dense, brown, fine to coarse SAND, little silt, trace gravel.		
					13 11				
10		S-3	24/12	9-11	15 16		Wet, very stiff, tan SILT and CLAY, some fine to medium sand.	2.	
					15 15				SILT AND CLAY
		S-4	24/22	13-15	14 10		Wet, very stiff, tan SILT and CLAY, trace fine to medium sand.		
15					9 8				
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Wash.
2. Reddish (iron) thin lenses of sand.

*silt, trace gravel.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-1 (OW)

SHEET 1 OF 3

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/6/2010	DATE END 10/6/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
10/8/10	12:00	0	13'	24 Hrs.
10/12/10	10:00	0	13'	120 Hrs.

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister / CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/12	0-2	3 4		1A: Moist, loose, brown, fine to coarse SAND and organic SILT, trace roots.		TOPSOIL
					5 7				
							1B: Moist, loose, tan/brown, SILT, little fine to coarse sand, trace clay, littl roots.		ORGANIC SILT
5		S-2	24/20	4-6	10 18		2A: Wet, dense, tan/gray, fine to coarse SAND and SILT, trace clay, trace iron.		SAND AND SILT
					17 12				
							2B: Wet, hard, tan/gray SILT, little clay, little fine to medium sand, trace iron.		SILT
10		S-3	24/20	9-11	17 21		Wet, dense, tan SILT, some clay, trace fine sand.		
					26 22				
15		S-4	20/12	14-16	3 5		Wet, stiff, gray CLAY, trace silt, trace fine sand.		CLAY
					6 9				
20		S-5	24/20	19-21	5 5		Wet, stiff, gray CLAY and SILT, trace fine sand.		CLAY AND SILT
					6 9				
25		S-6	24/20	24-26	5 5		Wet, dense, tan, fine SAND and SILT, trace clay, trace iron.	1.	SAND AND SILT
					9 8				
30		S-7	24/18	29-31	5 8		Wet, medium dense, tan SILT, little fine sand, trace clay.	2.	SILT
					9 11				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Top 1" similar to above layer.
2. Strange layers within sample.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%
PERCENT BY WEIGHT	

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-1 (OW)

SHEET 2 OF 3

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO: 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (b/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/16	34-36	8 10		Wet, medium dense, fine SAND, little silt, trace medium sand.		SAND
					16 17				
40		S-9	24/18	34/41	6 7		Wet, very stiff, gray CLAY and SILT, trace fine sand.		CLAY AND SILT
					15 11				
45		S-10	24/20	44-46	12 9		Wet, medium dense, gray SILT, some little fine sand.	3.	SILT
					9 11				
50		S-11	24/22	49-51	4 4		Wet, stiff, gray CLAY, trace silt.		CLAY
					7 8				
55		S-12	24/22	54-56	4 6		Wet, stiff, gray CLAY, trace silt.		
					7 8				
60		S-13	24/24	55-61	6 6		Wet, stiff, gray CLAY, trace silt.		
					9 10				
65		S-14	24/22	64-66	8 7		Wet, very stiff, gray CLAY, trace silt, trace fine sand.		
					9 10				
70		S-15	24/		6 7		Wet, stiff, gray CLAY, trace silt.	4.	
					8 8				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

3. Clay layers.
4. Hydraulic mechanical, resume 1 hour later.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-1 (OW)

SHEET 3 OF 3

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
75		S-16	24/22	74-76	6 7		Wet, gray/tan CLAY, trace silt.		
					8 10				
									CLAY
80		S-17	24/16	79-81	4 6		17A: Wet, stiff, gray/tan CLAY, trace silt, trace fine sand.		
					9 21		17B: Wet, medium dense, gray, fine SAND and SILT, trace clay.		
									SAND AND SILT
85		S-18	0/0	84-84	100/0"			5.	
							END OF EXPLORATION, SPOON REFUSAL @ 84'.		
90									
95									
100									
105									
110									
115									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

5. 2-inch diameter observation well installed with 10 feet of screen and 3 feet of riser with a road box cemented in place.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%
PERCENT BY WEIGHT	

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-3

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/1/2010	DATE END 10/1/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (b/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/14	0-2	3 4		1A: Moist, loose, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					5 8				
							1B: Moist, loose, tan/brown, fine to coarse SAND and SILT, trace gravel.	1.	SAND
5		S-2	24/16	4-6	8 9		Moist, very stiff, tan/gray, SILT, some clay, trace sand, trace iron, trace peat.	2.	
					18 25				
10		S-3	24/18	9-11	18 28		Moist, very dense, tan/gray SILT, little clay.		
					31 32				
15		S-4	24/20	14-16	13 21		Wet, dense, gray SILT, little clay, trace fine to medium sand.		
					18 19				
									SILT
20		S-5	24/22	19-21	7 8		Wet, medium dense, gray SILT, trace clay, trace fine to medium sand.		
					8 6				
25		S-6	24/14	24-26	8 6		Wet, medium dense, tan/gray SILT, little clay, little fine sand.		
					5 5				
30		S-7	20/12	29-31	12 11		Wet, medium dense, tan, fine SAND, some silt.		
					13 14				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Bottom 1" of same.
2. Gray wash @ 4'.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-3

SHEET 2 OF 2

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/20	34-36	3 5		Wet, stiff, gray CLAY, trace silt.	3.	CLAY
					6 7				
							END OF EXPLORATION @ 36'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

3. Silty section.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-4

SHEET 1 OF 3

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/4/2010	DATE END 10/4/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/8	0-2	6 20		Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace roots, trace gravel.	1.	TOPSOIL
					30 25			2.	SILT
5		S-2	24/20	4-6	24 37		Moist, hard, tan/gray SILT, little clay, little fine to coarse sand, trace iron.		
					49 50				
10		S-3	24/18	9-11	15 21		Wet, hard, tan SILT and CLAY, trace iron.		SILT AND CLAY
					22 20				
15		S-4	24/16	14-16	6 7		Wet, very stiff, gray CLAY, some silt.	3.	CLAY
					11 11				
20		S-5	24/18	19-21	4 4		Wet, medium stiff, gray, varved CLAY, trace silt, trace fine to medium sand.		
					4 5				
25		S-6	24/20	24-26	4 8		Wet, medium dense, tan, SILT, little fine sand, trace clay.	4.	SILT
					6 6				
30		S-7	24/14	29-31	5 6		Wet, medium dense, tan, fine SAND, little silt.		SAND
					7 7				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Pushing a cobble only 8" of recovery, all topsoil.
2. Gravel in wash.
3. Wash change.
4. Trace tan clay near top.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. **B-4**

SHEET 2 OF 3

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO.: 10191.00

CHKD. BY: DMM

DEPTH (ft)	CASING (b/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
									SILT AND SAND
35		S-8	24/2	34-36	8 4		8A: Wet, stiff, tan/red SILT and fine SAND, trace clay.	5.	
					6 6		8B: Wet, stiff, gray CLAY, little silt.		
40		S-9	24/22	39-41	3 4		Wet, medium stiff, gray CLAY, some silt, trace fine sand.		
					3 5				
45		S-10	24/22	44-46	4 3		Wet, medium stiff, gray CLAY, trace silt.		
					4 6				
50		S-11	24/24	47-49	4 3		Wet, medium stiff, gray CLAY.		CLAY
					5 6				
		U-1	24/24	49-51	PUSH				
55		S-12	24/24	54-56	4 4		Wet, stiff, gray CLAY.		
					5 7				
60		S-13	24/24	59-61	3 4		Wet, stiff, gray CLAY.		
					6 9				
65		S-14	24/23	64-66	2 3		Wet, stiff, gray CLAY, trace silt.		
					5 8				
70		S-15	24/23	69-71	WOH WOH		15A: Wet, very loose, tan, CLAY, little silt.		
					6 6		15B: Wet, loose, gray CLAY, trace silt.		

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

5. Sample 8A encountered in top 1".

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-4

SHEET 3 OF 3

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
75		S-16	24/18	74-76	24 45		Wet, very dense, gray, fine to coarse SAND, trace silt, trace clay, trace gravel.		SAND (TILL)
					26 18				
80		S-17	24/0.5	77-77'2"	100/2"		Wet, very dense, gray, fine to coarse SAND, trace silt,*		
							END OF EXPLORATION @ 77'2".		
85									
90									
95									
100									
105									
110									
115									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

*trace clay, trace gravel.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-5

SHEET 1 OF 2

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/1/2010	DATE END 10/1/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/18	0-2	5 6		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					10 16				
							1B: Moist, medium dense, tan/brown, fine to coarse SAND and SILT, trace clay, trace gravel, trace iron.		SAND AND SILT
5		S-2	24/14	4-6	15 18		Moist, hard, tan/gray, SILT, some clay, trace iron, trace fine sand.	1.	SILT
					23 32				
									SILT AND CLAY
10		S-3	24/20	9-11	17 21		Wet, dense, tan SILT and CLAY, trace fine sand.	2.	
					28 32				CLAY
15		S-4	24/22	14-16	3 8		Wet, very stiff, gray CLAY, some silt.	3.	
					11 13			4.	
20		S-5	24/16	19-21	5 5		Wet,dense, gray SILT, some clay, little fine sand.		SILT
					6 7				
25		S-6	24/16	24-26	6 5		Wet, medium dense, tan, SILT, some fine sand, trace clay.		
					7 7				
30		S-7	24/14	29-31	7 6		Wet, medium dense, tan, fine SAND, some silt, trace clay, trace peat.		SAND
					11 14				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Tip of sand all tan.
2. Gray wash.
3. Artesian conditions encountered.
4. Dark gray clay 1" thick in samples recoverd near top.
5. Silty near tip.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-5

SHEET 2 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-8	24/14	33-35	10 10 15 15		Wet, medium dense, tan, SILT and fine SAND, trace clay, trace iron.		SILT
35							END OF EXPLORATION @ 35'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-6

SHEET 1 OF 2

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/29/2010	DATE END 9/29/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/12	0-2	4 6		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					13 17				SAND AND SILT
							1B: Moist, medium dense, tan, fine to medium SAND and SILT, trace clay.		
5		S-2	24/20	4-6	8 11		Moist,dense, SILT, some clay, trace fine to coarse sand, trace iron.	1.	
					25 27				SILT
10		S-3	24/22	9-11	16 18		Moist, dense, tan, SILT, some clay.		
					17 15		Wet, hard, gray/tan CLAY, little silt, little fine to coarse sand.	2.	CLAY
15		S-4	24/18	14-16	6 7		Wet, very stiff, gray CLAY, some silt.		
					13 13				
20		S-5	24/16	19-21	4 5		Wet, stiff, tan CLAY and SILT, trace fine sand, trace iron, trace iron.	3.	CLAY AND SILT
					4 6				
25		S-6	24/18	24-26	4 5		Wet, loose, tan SILT, little fine sand, trace clay, trace iron.		
					3 4				SILT
30		S-7	24/18	29-31	4 7		Wet, medium dense, tan/red, SILT, little fine sand, trace iron, trace clay.		
					7 5				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Casing bouncing on assumed cobble/boulder, gravel in wash.
2. Fine to medium brown sand lense.
3. Fine sand lense.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-6

SHEET 2 OF 2

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-8	24/16	33-35	10 6		Wet, stiff, gray CLAY, some silt, trace fine sand.	4.	CLAY
35					6 7				
							END OF EXPLORATION @ 35'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

4. Silty near top.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-7

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/29/2010	DATE END 9/29/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT^2 OR KG/CM^2	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/16	0-2	3 4		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace roots, trace gravel.		TOPSOIL
					15 14				SAND AND SILT
							1B: Moist, medium dense, tan/gray, fine to coarse SAND and SILT, trace clay.		
5		S-2	24/14	4-6	4 5		Moist, very stiff, tan/gray SILT and CLAY, some fine sand, trace iron, trace medium to fine sand.	1.	SILT AND CLAY
					16 16				
10		S-3	24/18	9-11	9 13		Moist, very stiff, tan/gray SILT and CLAY, trace fine to medium sand, trace iron.	2..	
					14 13				
15		S-4	24/16	14-16	5 6		Wet, very stiff, gray CLAY, some silt.		CLAY
					8 10				
20		S-5	24/18	19-21	3 3		Wet, medium stiff, gray CLAY, little silt.		
					4 2				
25		S-6	24/14	24-26	5 5		Wet, medium dense, tan, SILT, some fine sand , trace clay, trace medium sand.		SILT
					6 6				
30		S-7	24/16	29-31	4 6		Wet, loose, tan, SILT, little fine sand, trace clay, trace iron.	3.	
					4 9				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. More clay near top, more silt near the bottom.
2. Fine to medium sand lense.
3. One 1" section of sandy silt.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-7

SHEET 2 OF 2

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-8	24/14	33-35	8 11		8A: Wet, medium dense, tan, fine SAND, little silt.	4.	SAND
					12 21		8B: Wet, medium dense, tan, fine to medium SAND, trace*		
35		S-9	24/14	35-37	15 18		9A: Wet, dense, brown, fine to medium SAND, trace silt, trace iron, trace coarse sand.		
					19 22				
							9B: Wet, dense, tan, fine SAND, little silt trace.		
							END OF EXPLORATION @ 37'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

4. Sample 8B was encountered in bottom 4".

*silt, trace coarse sand.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-8

SHEET 1 OF 2

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/28/2010	DATE END 9/28/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/16	0-2	3 7		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace roots.		TOPSOIL
					11 8				SAND
							1B: Moist, medium dense, tan, fine to coarse SAND, trace silt, trace gravel.	1.	
5		S-2	24/18	4-6	10 10		Moist, medium dense, gray/tan, fine to coarse SAND and SILT, little clay.		SAND AND SILT
					16 17				
10		S-3	24/16	9-11	11 16		Wet, hard, tan SILT and CLAY.		SILT AND CLAY
					20 17				
15		S-4	24/24	14-16	5 4		Wet, stiff, gray CLAY, trace silt, trace fine to coarse sand.	2.	CLAY
					5 4				
20		S-5	24/16	19-21	4 4		Wet, stiff, gray CLAY, trace silt, trace fine sand.		
					5 6				
25		S-6	24/16	24-26	8 7		Wet, medium dense, gray, SILT, little fine to medium sand, little clay.		SILT
					8 5		Wet, medium dense, tan, SILT, little fine sand, trace iron.		
30		S-7	24/16	29-31	3 8		Wet, medium dense, tan, SILT, trace fine SAND, trace iron, trace clay.		
					4 9				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Brown to tan color change in wash.
2. Fine to coarse sand lense.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-8

SHEET 2 OF 2

PROJECT East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-8	24/16	33-35	6 8		Wet, medium dense, tan/gray, SILT, some fine to medium sand, trace clay, trace iron.	3.	SILT
35					8 8			4.	
							END OF EXPLORATION @ 35'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

3. 1" pocket of clay near tip.
4. Heavy iron content in slit.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-10

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/30/2010	DATE END 9/30/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/15	0-2	4 7		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace roots.		TOPSOIL
					8 9				SAND AND SILT
							1B: Moist, medium dense, tan, fine to coarse SAND and SILT, trace clay.		
5		S-2	24/16	4-6	11 23		Moist, dense, tan/gray, SILT, some clay, little fine to coarse sand, trace roots.		SILT
					22 27				
10		S-3	24/20	9-11	16 24		Moist, hard, tan SILT and CLAY, trace roots.		SILT AND CLAY
					25 17				
15		S-4	24/15	14-16	6 11		Wet, very stiff, gray CLAY, some silt, trace fine to medium sand.		CLAY
					13 16				
20		S-5	24/16	19-21	3 2		Wet, medium stiff, tan SILT and CLAY, trace fine sand.		SILT AND CLAY
					3 6				
25		S-6	24/18	24-26	4 6		Wet, loose, fine SAND and SILT, trace clay.		SAND AND SILT
					4 7				
30		S-7	24/12	29-31	4 6		Wet, medium dense, fine SAND, little silt, trace medium to coarse sand, trace gravel.		SAND
					6 8				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-10

SHEET 2 OF 2

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT^2 OR KG/CM^2	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-8	24/12	33-35	6 8		Wet, medium dense, tan, fine to medium SAND, trace silt.		SAND
35					11 16				
							END OF EXPLORATION @ 35'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

BORING NO. B-10

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-12

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/8/2010	DATE END 10/8/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/12	0-2	3 3		1A: Moist, loose, brown, fine to coarse SAND and organic SILT, trace roots.		TOPSOIL
					4 4				
							1B: Moist, loose, tan, organic SILT and little fine to medium SAND, trace clay, trace iron.		ORGANIC SILT
5		S-2	24/16	4-6	8 8		Moist, medium dense, tan SILT, trace gravel, trace fine to coarse sand, trace clay, trace peat.		SILT
					10 14				
10		S-3	24/16	9-11	13 19		3A: Wet, medium dense, tan SILT, trace fine sand, trace clay.	1.	
					24 21		3B: Wet, stiff, gray/tan CLAY, little silt.		SILT AND CLAY
15		S-4	24/18	14-16	7 11		Wet, medium dense, gray/tan SILT and CLAY, trace fine sand.		
					13 13				
20		S-5	24/16	19-21	2 4		Wet, loose, tan SILT, little fine sand, trace clay.	2.	SILT
					6 7				
25		S-6	24/16	24-26	4 5		Wet, medium dense, tan, fine SAND, some silt.		SAND
					7 9				
30		S-7	24/20	29-31	7 9		Wet, medium dense, tan, fine SAND, little silt.		
					10 12				

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Bottom 2" of sample.
2. More sand in tip.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. **B-12**

SHEET 2 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/20	34-36	5 6		Wet, stiff, gray CLAY and SILT, trace fine sand.		CLAY AND SILT
					5 9				
40		S-9	24/24	34-41	4 4		Wet, stiff, gray CLAY, trace silt.		CLAY
					7 7				
45		S-10	24/20	44-46	5 13		10A: Wet, hard, gray CLAY, little silt.	3.	
					23 25		10B: Wet, dense, fine SAND, some silt, trace clay.		SAND
50		S-11	24/22	49-51	4 6		Wet, stiff, gray CLAY, trace silt.		CLAY
					5 8				
55		S-12	24/24	54-56	5 6		Wet, stiff, gray CLAY, trace silt.		
					8 8				
		U-1	24/24	56-58	PUSH		Undisturbed sample.		
60		S-13	24/24	59-61	5 6		Wet, stiff, gray CLAY, trace silt.		
					7 9				
65		S-14	24/12	64-66	15 18		14A: Wet, dense, tan, fine SAND, trace silt.	4.	SAND
					26 48		14B: Wet, dense, gray, fine to coarse SAND and GRAVEL*		SAND AND GRAVEL
							END OF EXPLORATION @ 66'.		
70									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

3. Sample 10B was encountered in bottom 10".
4. Drilling stopped due to closing of open hole from sand layer.

*some silt, trace clay.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-13

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/23/2010	DATE END 9/23/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
9/23/10	-	15 +/-	14'	At Time of Boring

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/16	0-2	8 10		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					14 19				SAND
							1B: Moist, medium dense, tan, fine to coarse SAND, little silt, trace gravel.		
5		S-2	24/14	4-6	5 7		Moist, stiff, gray, SILT and CLAY.		SILT AND CLAY
					5 10				
									SILT
10		S-3	24/18	9-11	10 11		3A: Moist, medium dense, tan, SILT, little clay.		
					11 13		3B: Moist, medium dense, brown SAND, some silt.		SAND
15		S-4	24/16	14-16	6 7		4A: Moist, very stiff, gray, CLAY, trace silt, trace fine*		CLAY
					8 8		4B: Wet, stiff, gray CLAY, trace silt, trace fine sand.		
20		S-5	24/20	19-21	6 5		Wet, medium dense, tan, fine to medium SAND and SILT.		SAND AND SILT
					6 6				
25		S-6	24/15	24-26	4 5		Wet, medium dense, tan, fine to medium SAND, little silt.		SAND
					9 9				
30		S-7	24/12	29-31	7 8		Wet, medium dense, tan, fine to coarse SAND, little silt.		
					9 11				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

*sand.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-13

SHEET 2 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION: Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-8	24/24	33-35	4 4		Wet, stiff, gray CLAY, trace silt.		CLAY
35					6 8				
							END OF EXPLORATION @ 35'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-14

SHEET 1 OF 2

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/28/2010	DATE END 9/28/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/15	0-2	4 7		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.	1.	TOPSOIL
					12 12				SAND
							1B: Moist, medium dense, tan, fine to coarse SAND, some silt, trace gravel.		
5		S-2	24/18	4-6	9 15		2A: Moist, dense, brown, SILT, little fine to coarse sand, trace gravel.	2.	SILT
					20 40				
							2B: Moist, dense, gray, fine to coarse SAND, some silt, trace clay, trace gravel, trace cobble, trace roots.	3.	
10		S-3	24/20	9-11	8 9		Moist, very stiff, gray CLAY, trace silt, trace fine to coarse sand, staining at bottom.	4.	CLAY
					12 12				
15		S-4	24/18	14-16	7 6		Wet, stiff, tan SILT and CLAY, little fine to medium sand, trace iron.		SILT AND CLAY
					8 10				
20		S-5	24/20	19-21	4 4		5A: Wet, stiff, tan SILT and CLAY, little fine sand, trace iron.		
					7 7		5B: Wet, loose, tan, fine SAND, little silt, trace clay, trace iron.	5.	
25		S-6	24/16	24-26	6 7		Wet, medium dense, tan, SILT, little fine sand, trace clay, trace iron.		SILT
					6 4				
30		S-7	24/14	29-31	6 6		Wet, medium dense, tan, fine to medium SAND, little silt, trace iron.		SAND
					8 8				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Sample 1A was encountered in top 6".
2. Color change in wash tan/dark brown to tan.
3. Pieces broken cobble in tip.
4. Tan/black sand lense.
5. Sample 5B was encountered in bottom 8" of sample.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%
PERCENT BY WEIGHT	

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-14

SHEET 2 OF 2

PROJECT East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/18	34-36	10 5		8A: Wet, loose, tan, CLAY and SILT, little fine sand, trace medium sand, trace iron.	6.	CLAY AND SILT
					5 8		8B: Wet, stiff gray CLAY, trace silt, trace fine sand.		
40		S-9	24/28	39-41	4 5		Wet, stiff, gray CLAY, trace silt, trace fine sand.	7.	CLAY
					6 5				
		S-10	24/20	43-45	4 4		10A: Wet, stiff, gray CLAY, trace silt, trace coarse sand.		
45					10 11		10B: Wet, medium dense, gray, fine SAND and SILT,*		
		S-11	24/12	45-47	19 18		Wet, medium dense, gray, fine SAND and SILT, little clay.	8.	SAND AND SILT
					19 18				
		S-12	24/12	47-49	7 6		Wet, stiff, gray CLAY, trace silt, trace fine sand.		CLAY
					7 6				
50							END OF EXPLORATION @ 49'.		
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

6. Sample 8B was encountered in bottom 4" of sample.
7. Small lense of fine sand.
8. Sample 10B was encountered in bottom 5".

*trace clay.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

BORING NO. B-14

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. **B-15**

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/30/2010	DATE END 9/30/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/12	0-2	4 14		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					13 11				
							1B: Moist, medium dense, tan/gray, fine to coarse SAND and SILT, trace clay, trace gravel, trace iron.	1.	
								2.	SAND WITH ORGANIC SILT
5		S-2	24/18	4-6	19 12		Moist, medium dense, gray/brown, fine to medium SAND and organic SILT, little clay, trace iron, trace blue clay, trace wood.		
					20 30				
									SILT AND CLAY
10		S-3	24/18	9-11	15 20		Moist, hard, tan SILT and CLAY, little fine to medium sand.	3.	
					20 19				
									CLAY
15		S-4	24/16	14-16	8 9		Wet, very stiff, gray CLAY, little silt.		
					9 10				
									SILT AND CLAY
20		S-5	24/20	19-21	4 5		5A: Wet, medium dense, tan SILT and CLAY, trace fine sand. 5B: Wet, medium dense, tan, fine SAND and SILT.		
					6 7				
									SAND AND SILT
25		S-6	24/14	24-26	5 3		Wet, loose, tan, fine SAND and SILT, trace iron, trace clay.		
					4 7				
									SAND
30		S-7	24/14	29-31	8 14		7A: Wet, dense, tan, fine to medium SAND, little silt, trace iron. 7B: Wet, dense, brown, fine to coarse SAND, little silt,*	4.	
					17 16				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Brown to tan wash.
2. Gray wash.
3. Very sandy near tip. Layer of gravel near top (possible broken cobble).
5. Cobble in tip.

*trace gravel, heavy iron staining, trace peat.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-15

SHEET 2 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
35		S-8	24/10	34-36	11 12 14 16		Wet, medium dense, tan/red, fine to medium SAND, little silt, trace iron staining, trace peat.		SAND
40		S-9	24/22	39-41	5 6 14 16		9A: Wet, very stiff, gray CLAY, trace silt. 9B: Wet, medium dense, gray, fine to coarse SAND, some clay, trace silt, trace gravel.		CLAY / SAND
45		S-10	24/20	43-45	7 7 13 16		Wet, very stiff, gray CLAY, little silt, trace fine sand.	5.	CLAY
							END OF EXPLORATION @ 45'.		

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

5. Silty clay near tip, same as B-14 @ 45'.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-16

SHEET 1 OF 3

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

BORING CO. New Hampshire Boring

FOREMAN Jay, Gary Jr.

ENGINEER Josh Rosenburg

BORING LOCATION SEE EXPLORATION LOCATION PLAN

GROUND SURFACE ELEVATION See Plan DATUM

DATE START 9/24/2010 DATE END 9/24/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/6	0-2	8 7		Moist, medium dense, brown/tan, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					8 7				
5		S-2	24/18	4-6	29 41		Moist, very dense, gray, fine to coarse SAND and SILT.	1.	SAND WITH SILT
					48 40				
							Moist, very dense, tan/brown, fine to coarse SAND, little silt, trace gravel.	2.	
10		S-3	24/14	9-11	14 13		Moist, hard, gray CLAY, some silt, trace fine to coarse sand.	3.	CLAY
					20 27				
15		S-4	24/18	14-16	9 10		Wet, very stiff, tan SILT and CLAY, trace coarse sand.		SILT AND CLAY
					14 19				
20		S-5	24/18	19-21	7 8		Wet, very stiff, tan SILT and CLAY, trace fine to medium sand.	4.	
					10 12				
25		S-6	24/20	24-26	3 3		6A: Wet, medium stiff, tan SILT and CLAY, trace fine to medium sand.		
					5 8				
							6B: Wet, loose, tan, fine to medium SAND and SILT, trace clay.	5.	SAND WITH SILT
30		S-7	24/18	29-31	6 3		Wet, loose, tan SAND and some SILT, trace clay.	6.	
					7 10				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. 4" gray layer on top.
2. Lost slury through hole.
3. Fine to coarse sand near top.
4. Rust colored silty sand.
5. Bottom 5".
6. 4" layer of sandy silt in middle.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-16

SHEET 2 OF 3

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/14	34-36	6 8		Wet, medium dense, tan, fine to coarse SAND, trace silt.		
					9 12				
40		S-9	24/14	39-41	3 4		9A: Wet, loose, tan, fine to coarse SAND, trace silt staining.		SAND
					5 9		9B: Wet, loose, tan, fine to medium SAND, some silt.	7.	
45		S-10	24/18	44-46	5 9		10A: Wet, medium dense, tan, fine to coarse SAND, trace silt.	8.	
					6 7		10B: Wet, medium dense, gray, fine SAND, little clay, trace silt.		
50		S-11	24/22	46-51	9 6		Wet, stiff, gray CLAY, trace silt.		
					4 5				
55		S-12	24/24	54-56	3 3		Wet, medium stiff, gray CLAY, trace silt.		
					4 5				
60		S-13	24/23	59-61	2 3		Wet, medium stiff, gray CLAY, trace silt.		CLAY
					3 4				
65		S-14	24/23	64-66	4 4		Wet, medium stiff, gray CLAY, trace silt.		
					4 6				
70		S-15	24/22	68-70	6 6		Wet, stiff, gray CLAY, trace silt.		
					8 8				

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

7. Sample 9B encountered in bottom 3".
8. Sample 10B encountered in top 4".

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-16

SHEET 3 OF 3

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
75		S-16	24/20	74-76	3 3		Wet, medium stiff, light gray CLAY, trace silt.		CLAY
					4 5				
									SAND AND CLAY
80		S-17	24/10	79-81	24 15		17A: Wet, dense, gray, fine SAND and CLAY, trace silt, trace gravel.	9.	
					19 26				
							17B: Wet, dense, dark gray, fine to coarse SAND, little clay, trace silt, little gravel.		SAND (TILL)
		S-18	24/15	83-85	44 44		Wet, very dense, gray, fine to coarse SAND, little gravel, little clay, trace silt.		
85					72 75				
							END OF EXPLORATION @ 85'.		
90									
95									
100									
105									
110									
115									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

9. Coarse material in wash.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-17

SHEET 1 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

BORING CO. New Hampshire Boring

FOREMAN Jay, Gary Jr.

ENGINEER Josh Rosenburg

BORING LOCATION SEE EXPLORATION LOCATION PLAN

GROUND SURFACE ELEVATION See Plan DATUM

DATE START 9/23/2010 DATE END 9/23/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (b/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/14	0-2	5 11		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace roots, trace gravel.		TOPSOIL
					19 16				
							1B: Moist, medium dense, tan, fine to coarse SILT, little sand, trace gravel.		
5		S-2	24/20	4-6	12 16		Moist, dense, gray, SILT, little fine to coarse sand, trace clay.		SILT
					18 18				
							Moist, dense, tan, SILT, some fine to coarse sand, trace clay.		
10		S-3	24/16	9-11	10 11		Wet, medium dense, tan, SILT, trace fine sand, trace clay.		
					12 11				
15		S-4	24/22	14-16	3 4		Wet, medium dense, tan, SILT, trace fine to coarse sand, trace clay.	1.	
					7 8				
20		S-5	24/18	19-21	7 5		Wet, medium dense, tan, SILT, little fine to medium sand, trace clay.		
					7 6				
25		S-6	24/16	24-26	6 5		Wet, medium dense, tan, fine to medium SAND and SILT.		SAND AND SILT
					7 8				
30		S-7	24/20	29-31	6 6		Wet, medium dense, tan, fine to medium SAND and SILT.		
					8 8				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Very silty near top of sample.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-17

SHEET 2 OF 2

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY

DEPTH (ft)	CASING (b/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/20	34-36	4 6		Wet, stiff, gray, CLAY, trace fine sand.	2.	CLAY
					4 4				
							END OF EXPLORATION @ 36'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

2. Appears to be small layer of wet, gray clay, little fine sand at very top of sample (small sample recovered).

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

BORING NO. B-17

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. **B-18**

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/29/2010	DATE END 9/29/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/18	0-2	3 7		1A: Moist, medium dense, brown, fine to coarse SAND and organic silt, trace roots, trace iron.		TOPSOIL
					11 14				SAND AND SILT
							1B: Moist, medium dense, gray/tan, fine to coarse SAND and SILT, trace iron, trace gravel, trace clay.		
5		S-2	20/20	4-6	14 14		Moist, very stiff, SILT and CLAY, some fine to coarse sand, trace iron.	1.	SILT AND CLAY
					15 16				
10		S-3	24/16	9-11	14 13		Wet, dense, tan, SILT, some clay.		SILT
					17 17				
15		S-4	24/22	14-16	3 4		Wet, stiff, gray CLAY, little silt.		CLAY
					10 10				
20		S-5	24/18	19-21	5 7		Wet, stiff, gray CLAY, trace silt, trace fine sand.	2.	
					7 7				
25		S-6	24/18	24-26	7 6		Wet, medium dense, tan, SILT and fine SAND, little clay.	3.	SILT AND SAND
					9 11				
30		S-7	24/12	29-31	6 8		Wet, medium dense, tan, fine SAND, some silt, trace coarse sand.		SAND
					6 5				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Lenses of fine to coarse sand (5/24).
2. Fine sand lense.
3. Top 1/2 gray clay and 1 pocket of gray clay.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-18

SHEET 2 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-8	24/12	33-35	12 8		Wet, medium dense, tan, fine SAND, some silt, trace sand, trace iron.		SAND
					12 13				
35							END OF EXPLORATION @ 35'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-19

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/7/2010	DATE END 10/7/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister / CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/16	0-2	2 3		1A: Moist, loose, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					7 8				
							1B: Moist, medium dense, brown SILT, little clay, trace fine sand, trace roots.		
5		S-2	24/0	4-6	23 28		No recovery.		SILT
					40 35				
10		S-3	24/20	9-11	12 15		Moist, dense, tran SILT, some clay, trace fine sand.		
					21 23				
15		S-4	24/18	14-16	10 11		Wet, very stiff, gray CLAY, some silt.	1.	CLAY
					13 11				
20		S-5	24/20	19-21	7 6		Wet, stiff, gray CLAY and SILT.		CLAY AND SILT
					8 10				
25		S-6	24/24	24-26	3 4		Wet, medium stiff, gray CLAY, little silt, trace fine sand.		CLAY
					4 4				
30		S-7	24/22	29-31	2 3		Wet, loose, tan SILT, some fine sand, trace clay.		SILT
					3 9				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Silt layers.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-19

SHEET 2 OF 2

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-8	24/18	33-35	7 11		Wet, medium dense, fine SAND and SILT, trace iron, trace clay.		SAND AND SILT
35					14 15				
							END OF EXPLORATION @ 35'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-20

SHEET 1 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

BORING CO. New Hampshire Boring

FOREMAN Jay, Gary Jr.

ENGINEER Josh Rosenburg

BORING LOCATION SEE EXPLORATION LOCATION PLAN

GROUND SURFACE ELEVATION See Plan DATUM

DATE START 9/23/2010 DATE END 9/23/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (b/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/10	0-2	5 10		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					7 5				
							1B: Moist, medium dense, tan, fine to coarse SAND, trace silt, trace gravel.		SAND
5		S-2	24/18	4-6	13 12		2A: Moist, medium dense, gray, fine to coarse SAND and SILT, trace gravel.		SAND AND SILT
					13 14				
							2B: Moist, medium dense, tan, fine to coarse SAND, trace silt, trace gravel.		SAND
10		S-3	24/16	9-11	14 13		Moist, medium dense, gray SILT, some fine sand, trace clay.		SILT
					12 14				
15		S-4	24/18	14-16	9 8		Wet, medium dense, gray SILT, little fine sand, trace clay.		
					10 11				
20		S-5	24/20	19-21	4 4		Wet, loose, SILT, little fine to coarse sand, trace clay.		
					6 7				
25		S-6	24/15	24-26	7 10		Wet, medium dense, tan, fine to coarse SAND, some silt.		SAND
					9 7				
30		S-7	24/12	29-31	9 7		Wet, medium dense, tan, fine to coarse SAND, trace gravel.		
					9 9				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-20

SHEET 2 OF 2

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/16	34-36	12 10		Wet, medum dense, tan, fine to coarse SAND, trace silt.		SAND
					12 13				
							END OF EXPLORATION @ 36'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES: 1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-21

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/22/2010	DATE END 9/22/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister / CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/10	0-2	4 5		Moist, medium dense, brown, fine to coarse SAND and GRAVEL, organic silt, trace roots, trace gravel.		TOPSOIL
					7 8				
									SAND WITH ORGANIC SILT
5		S-2	24/16	4-6	9 16		2A: Moist, medium dense, brown, fine to coarse SAND, some organic silt, trace gravel.		
					13 13				
							2B: Moist, medium dense, gray, SILT, some fine to coarse sand, trace gravel.	1.	
10		S-3	24/16	9-11	5 6		Moist, medium dense,tan, SILT, some fine to medium sand, trace clay.	2.	SILT
					7 8				
15		S-4	24/14	14-16	8 6		Wet, medium dense, tan, fine to medium SAND and SILT.		SAND AND SILT
					5 3				
20		S-5	24/15	19-21	5 5		Wet, medium dense, tan, fine to medium SAND and SILT.		
					7 5				
25		S-6	24/18	24-26	3 5		Wet, medium dense, tan, fine to medium SAND and SILT.		
					8 7				
30		S-7	24/20	29-31	2 8		Wet, medium dense, tan, SILT, some fine to medium sand, trace clay.	3.	SILT
					9 9			4.	

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Orange water observed in wash.
2. Tan wash.
3. Trace staining.
4. Clayey silt near top.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-21

SHEET 2 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/20	34-36	4 8		8A: Wet, medium dense, tan, SILT, some fine to medium sand.	5.	SILT
					4 10		8B: Wet, medium dense, gray, fine SAND, some clay, little silt.		
40		S-9	24/16	39-41	3 5		Wet, stiff, gray CLAY, trace silt.		CLAY
					6 9				
45		S-10	24/23	44-46	5 5		Wet, stiff, gray CLAY, trace silt.		
					6 7				
							END OF EXPLORATION @ 46'.		
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Gray near spoon tip.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-22

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/22/2010	DATE END 9/22/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/8	0-2	3 5		Moist, medium dense, brown, fine to coarse SAN and organic SILT, trace gravel, trace roots.		TOPSOIL
					12 14				
									SAND AND ORGANIC SILT
5		S-2	24/8	4-6	8 15		Moist, dense, brown/gray/tan, fine to coarse SAND and organic SILT, trace clay, trace gravel.	1.	
					17 28				
10		S-3	24/14	9-11	10 11		Wet, medium dense, tan, SILT, little fine to coarse sand, trace gravel, trace clay.	2.	SILT
					8 10				
15		S-4	24/16	14-16	4 7		Wet, medium dense, tan, SILT, little fine to coarse sand, some clay, trace gravel.		
					9 9				
20		S-5	24/20	19-21	7 5		Wet, medium dense, tan, fine to coarse SAND and SILT, trace gravel.		SAND AND SILT
					8 8				
25		S-6	24/20	24-26	4 6		Wet, medium dense, tan, SILT, little fine to coarse sand, trace clay.		SILT
					7 5				
30		S-7	24/20	29-30	3 5		Wet, medium dense, tan, fine to coarse SAND, trace silt.		SAND
					8 8				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Slight color change in wash from brown to tan.
2. Tip of spoon same but "and silt".

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-22

SHEET 2 OF 2

PROJECT East Bridgewater High School
East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/20	34-36	9 9		Wet, medium dense, tan, fine to coarse SAND, trace silt.	3.	SAND
					9 12				
							END OF EXPLORATION @ 36'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

3. Some red in tip.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-23

SHEET 1 OF 2

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/21/2010	DATE END 9/21/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/12	0-2	5 10		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace roots, trace gravel.		TOP SOIL
					10 8				
							1B: Medium dense, tan, fine to coarse SAND, trace gravel, trace silt.	1.	SAND WITH ORGANICS
5		S-2	24/16	4-6	16 13		Moist, medium dense, tan/orange, fine to medium SAND, trace silt, trace organics.	2.	
					13 16				
10		S-3	24/18	9-11	9 11		Moist, medium dense, tan SILT, some clay, trace fine sand.	3.	SILT
					16 11				
15		S-4	24/16	14-16	4 5		Wet, medium dense, tan, SILT and CLAY, some fine to medium sand.		SILT AND CLAY
					7 9				
20		S-5	24/10	19-21	3 4		Wet, loose, tan, SILT, some fine to medium sand.		SILT
					3 3				
25		S-6	24/14	24-26	5 5		Wet, loose, tan, fine to medium SAND and SILT.		SAND AND SILT
					5 6				
30		S-7	24/8	29-31	6 6		Wet, medium dense, brown, fine to coarse SAND, trace silt.		SAND
					9 9				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. S-2: Drill rig needed to move over 6 inches due to roots.
2. Rusty color in sand.
3. Some rust color.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-23

SHEET 2 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/16	34-36	14 10 12 15		Wet, medium dense, brown, fine to coarse SAND, trace silt.		SAND
							END OF EXPLORATION @ 36'.		
40									
45									
50									
55									
60									
65									
70									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-24

SHEET 1 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY

BORING CO. New Hampshire Boring

FOREMAN Jay, Gary Jr.

ENGINEER Josh Rosenburg

BORING LOCATION SEE EXPLORATION LOCATION PLAN

GROUND SURFACE ELEVATION See Plan DATUM

DATE START 9/20/2010 DATE END 9/20/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/20	0-2	4 11		1A: Moist, medium dense, brown, fine to medium SAND and organic SILT, trace roots.		TOP SOIL
					10 30				
							1B: Moist, medium dense, tan, fine to medium SAND, some silt, little gravel.		SAND
5		S-2	24/8	4-6	24 19		Moist, dense, brown, fine to medium SAND, trace silt.		
					16 19				
									SILT
10		S-3	24/20	9-11	10 9		Wet, medium dense, brown, SILT, little fine sand, little gray clay. Changing yo "and CLAY".	1.	
					11 11				SILT AND CLAY
15		S-4	24/18	14-16	4 3		Wet, loose, brown, SILT, trace fine to medium sand, trace clay.		SILT
					4 3				
20		S-5	24/17	19-21	7 5		Wet, medium dense, brown, fine to medium SAND and SILT.		SAND AND SILT
					6 5				
25		S-6	24/12	24-26	5 7		Wet, medium dense, brown, fine to medium SAND and SILT.		
					8 7				
30		S-7	24/8	29-31	7 9		Wet, medium dense, brown, fine to coarse SAND, trace silt.		SAND
					10 13				

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Color change in wash, clay in wash.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. B-24

SHEET 2 OF 2

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO.: 10191.00

CHKD. BY: DMM

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
35		S-8	24/22	34-36	9 8		Wet, medium dense, brown, fine to coarse SAND, trace silt.		SAND
					11 12				
40		S-9	24/12	39-41	2 2		Wet, loose, brown, fine to coarse SAND, trace silt.		
					3 2				
45		S-10	24/24	44-46	5 6		10A: Wet, medium dense, brown, fine to coarse SAND. 10B: Wet, medium dense, gray, fine SAND and SILT, trace clay.		SAND AND SILT
					12 14				
50		S-11	24/24	49-51	5 4		Wet, stiff, gray CLAY, trace silt.		CLAY
					6 7				
55		S-12	24/24	54-56	5 5		Wet, stiff, gray CLAY.		
					8 11				
60		S-13	24/22	59-61	4 6		Wet, stiff, gray CLAY.		
					7 11				
65		S-14	24/8	64-66	33 20		Wet, dense, dark GRAY, fine to coarse SAND, some silt, some clay, trace gravel.		SAND
					24 22				
70		S-15	23/12	69-70'11"	40 56		Wet, very dense, dark gray, fine to coarse SAND and SILT, some clay, trace gravel. (Compact)		TILL
					66 100/5"				
							END OF EXPLORATION @ 71'.		

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. C-1

SHEET 1 OF 1

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

BORING CO. New Hampshire Boring

FOREMAN Jay, Gary Jr.

ENGINEER Josh Rosenburg

BORING LOCATION SEE EXPLORATION LOCATION PLAN

GROUND SURFACE ELEVATION See Plan DATUM

DATE START 9/21/2010 DATE END 9/21/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/10	0-2	6 7		1A: Medium dense, brown, fine to medium SAND and organic SILT, trace coarse sand.		TOP SOIL
					19 15				
							1B: Moist, medium dense, tan, fine to medium SAND, some silt, trace gravel.		SAND
5		S-2	24/10	4-6	12 19		Wet, dense, brown, fine to coarse SAND, trace gravel.		
					16 16				
							Wet, dense, gray SILT, some fine sand, trace clay.		SILT
10		S-3	24/18	9-11	12 11		Wet, medium dense, gray SILT and fine SAND, trace clay.	1.	
					10 11				SILT AND SAND
15		S-4	24/18	14-16	6 6		Wet, medium dense, gray SILT and fine SAND, trace clay.		
					9 10				
							END OF EXPLORATION @ 16'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Tan/dark brown wash.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. C-2

SHEET 1 OF 1

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/21/2010	DATE END 9/21/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
									TOP SOIL
		S-1	24/6	1-3	15 18		Moist, dense, brown, fine to coarse SAND, some gravel, trace silt.		
					21 22				
5		S-2	24/18	4-6	47 55		Moist, very dense, brown, fine to coarse SAND, trace silt, trace gravel.		SAND
					44 35				
10		S-3	24/12	9-11	16 15		Wet, medium dense, brown, fine to coarse SAND.	1.	
					15 13				
									SAND AND SILT
15		S-4	24/12	14-16	5 7		Wet, medium dense, brown, fine to coarse SAND and SILT.		
					8 8				
							END OF EXPLORATION @ 16'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Redish brown at bottom of spoon.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

BORING NO. C-2

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. C-3

SHEET 1 OF 1

PROJECT: East Bridgewater High School, East Bridgewater, MA

PROJECT NO. 10191.00

CHKD. BY DMM

BORING CO. New Hampshire Boring

FOREMAN Jay, Gary Jr.

ENGINEER Josh Rosenburg

BORING LOCATION SEE EXPLORATION LOCATION PLAN

GROUND SURFACE ELEVATION See Plan DATUM

DATE START 9/27/2010 DATE END 9/27/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
							1A: Moist, medum dense, brown, fine to coarse SAND, trace silt, trace gravel.		
		S-1	24/8	1-3	10 16				
					14 12		1B: Moist, medium dense, tan/brown, fine to coarse SAND, little organic silt, trace silt, trace gravel.		
5		S-2	24/10	4-6	12 14		Moist, dense, tan, fine to coarse SAND, little silt, trace gravel.		
					19 33				
									SAND
10		S-3	24/0	9-11	21 31		No recovery (possibly pushing a boulder).		
					28 18				
		S-4	24/12	13-15	10 9		Wet, medium dense, tan, fine to coarse SAND, little silt, trace gravel, trace clay.	1.	
15					13 12				
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Trace clay near top; possibly from wash.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. C-4

SHEET 1 OF 1

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/5/2010	DATE END 10/5/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/10	0-2	5 7		1A: Moist, medium dense, brown, fine to coarse SAND and organic silt, trace gravel, trace roots.	1.	TOPSOIL
					11 11				GRANULAR FILL
							medium dense, tan, fine to medium SAND, little coarse sand, trace silt, trace gravel.		
5		S-2	24/5	4-6	7 8		Moise, medium dense, medium to coarse SAND, little gravel, trace silt	2.	SAND
					8 8				
10		S-3	24/12	9-11	7 14		Moist, dense, medium to coarse SAND and GRAVEL, trace silt.	3.	SAND AND GRAVEL
					20 20			4.	
		S-4	24/10	13-15	15 23		4A: Moist, dense, fine to medium SAND, some coarse sand, little gravel, trace silt. **	5.	SAND
15					27 30		4B: Moist, very dense, fine to medium SAND, little silt, trace coarse sand, trace gravel.		
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. 1" topsoil encountered.
2. Entire smaple recovered.
3. Possible cobble.
4. More gravel near tip.
5. Sample 4B encountered in bottom 1" of sample.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. C-6

SHEET 1 OF 1

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/5/2010	DATE END 10/5/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/16	0-2	1 3		1A: Moist, loose, brown, fine to coarse SAND and organic SILT, trace roots, trace wood.	1.	TOPSOIL
					4 4				SUBSOIL
							1B: Moist, loose, tan/brown, fine to medium SAND, some silt, little coarse sand.		
5		S-2	24/10	4-6	22 26		Moist, dense, tan, fine to coarse SAND, little silt, little gravel.	2.	SAND
					23 24				
10		S-3	24/0	9-11	17 23		No recovery.	3.	SAND AND GRAVEL
					16 13				
		S-4	24/12	13-15	19 18		4A: Wet, dense, fine to coarse SAND and GRAVEL, trace silt, trace cobble.**	4.	
15					24 24				
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Very difficult to penetrate casing.
2. Gravel in wash.
3. Very difficult to penetrate casing.
4. Cobble over tip.

**4B: Wet, dense, fine to coarse SAND, trace silt, trace gravel, trace cobble.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. C-7

SHEET 1 OF 1

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/7/2010	DATE END 10/7/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/6	0-2	2 2		Moist, very loose, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					1 2				
5		S-2	24/6	4-6	56 100/5"		Wet, medium dense, medium to coarse SAND and GRAVEL, trace silt.	1.	SAND AND GRAVEL
					NA			2.	
		S-3	22/4	9-10'10"	53 30		Wet, very dense, tan GRAVEL and medium to coarse SAND, trace silt.	3.	GRAVEL AND SAND
10					40 100/4"		END OF EXPLORATION, SPOON REFUSAL @ 10'10".		
15									
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Sand and gravel in wash.
2. 2-inch stone in tip.
3. Refusal (possible boulder).

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. D-1

SHEET 1 OF 1

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/7/2010	DATE END 10/7/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/8	0-2	2 3		Moist, loose, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					4 6				
5		S-2	24/10	4-6	18 16		Moist, medium dense, tan/gray SILT, little fine to coarse sand, little clay, trace gravel, trace iron.		SILT
					10 14				
10		S-3	24/14	9-11	13 22		Wet, medium dense, tan/gray SILT and CLAY.	1.	SILT AND CLAY
					28 16				
		S-4	24/14	13-15	8 12		Wet, medium dense, gray SILT and CLAY, trace fine sand.		
15					12 15				
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Piece of gray clay in tip.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. D-2

SHEET 1 OF 2

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/22/2010	DATE END 9/22/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION Burmister CLASSIFICATION	REMARKS	STRATUM DESCRIPTION
		S-1	24/14	0-2	7 7		Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace roots.		TOPSOIL
					9 7				
5		S-2	24/18	4-6	16 14		Moist, dense, tan, little SILT and fine to medium SAND, trace gravel.		SILT
					17 19				
10		S-3	24/10	9-11	15 10		3A: Moist, very stiff, gray, CLAY, little silt.		CLAY
					13 15		3B: Moist, very stiff, tan, SILT, some clay, little fine sand.	1.	SILT
15		S-4	24/18	14-16	3 4		Wet, medium stiff, top SILT, some clay.		
					4 6				
							END OF EXPLORATION @ 16'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Sample 5A was encountered in top 5".

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. D-3

SHEET 1 OF 1

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 9/30/2010	DATE END 9/30/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister / CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/12	0-2	4 5		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace roots, trace gravel.		TOPSOIL
					6 5				
							1B: Moist, medium dense, tan/gray, fine to coarse SAND and trace CLAY.		
5		S-2	24/4	4-6	8 6		Moist, medium dense, tan, fine to coarse SAND, some silt, trace gravel.		SAND
					7 9				
								1.	
10		S-3	24/0	9-11	7 5		No recovery.		SAND AND SILT
					3 1				
		S-4	24/16	11-13	5 4		4A: Wet, loose, fine SAND and SILT, trace medium sand.		
					5 6		4B: Wet, stiff SILT and CLAY, little fine to medium sand.		
		S-4	24/16	13-15	3 3		Wet, loose, fine SAND, little silt, little iron.		SAND
15					5 7			2.	
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Sample through bottom of spoon.
2. No segment of iron in tip of spoon.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. D-4 (OW)

SHEET 1 OF 1

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/6/2010	DATE END 10/6/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
10/8/10	7:06	1'6"	14'	24 Hrs.
10/12/10	10:50	1-7.5"	14'	120 Hrs.

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/8	0-2	14 15		Moist, medium dense, fine to coarse SAND, some organic silt, some gravel.		TOPSOIL
					12 8				
5		S-2	24/16	4-6	9 23		Moist, dense, SILT, some fine to medium sand, trace clay, trace coarse sand, trace gravel.		SILT
					21 22				
10		S-3	24/18	9-11	7 8		Wet, medium dense, tan SILT, some clay, little fine sand, trace iron.		
					7 9				
		S-4	24/12	13-15	6 8		Wet, medium dense, tan/brown, fine SAND, little silt, trace coarse sand.		SAND
15					7 11			1.	
							END OF EXPLORATION @ 15'.		
20									
25									
30									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. 2-inch diameter observation well installed with 10 feet of screen and 3 feet of riser with a road box cemented in place.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:

1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. E-1

SHEET 1 OF 1

PROJECT	East Bridgewater High School East Bridgewater, MA	PROJECT NO.	10191.00
		CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/7/2010	DATE END 10/7/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. SAFETY HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (blf/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT² OR KG/CM²	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/12	0-2	1 5		1A: Moist, medium dense, brown, fine to coarse SAND and organic SILT, trace gravel, trace roots.		TOPSOIL
					12 20				SAND
							1B: Moist, medium dense, fine to coarse SAND, little silt, trace gravel.		
5		S-2	24/8	4-6	10 21		Moist, medium dense, gray/brown SILT, little fine sand, little clay, trace iron.	1.	SILT
					44 33				
		S-3	24/	8-10	25 30		Wet, very dense, tan SILT and fine SAND, trace medium sand, trace clay, trace gravel.	2.	SILT AND SAND
10					24 24				
							END OF EXPLORATION @ 10'.		
15									
20									
25									
30									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

REMARKS:

1. Possible cobble, small recovery.
2. Spoon need to be pushed to depth, possible crooked hole; therfore, blow count may not be respresentative of the actual condition.

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PARE CORPORATION

10 LINCOLN ROAD, SUITE 103, FOXBORO, MASSACHUSETTS

ENGINEERS *** PLANNERS *** CONSULTANTS

BORING NO. E-2

SHEET 1 OF 1

PROJECT	East Bridgewater High School	PROJECT NO.	10191.00
	East Bridgewater, MA	CHKD. BY	DMM

BORING CO.	New Hampshire Boring	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	Jay, Gary Jr.	GROUND SURFACE ELEVATION	See Plan DATUM
ENGINEER	Josh Rosenburg	DATE START 10/7/2010	DATE END 10/7/2010

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. **SAFETY** HAMMER FALLING 30 in.

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING 300 lb. HAMMER FALLING 24 IN.

CASING SIZE: 4" Casing OTHER:

GROUNDWATER READINGS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME

DEPTH (ft)	CASING (bl/ft)	SAMPLE NO.	PEN. (in.)/ REC.	DEPTH (FT)	BLOWS/6"	TONS/FT^2 OR KG/CM^2	SAMPLE DESCRIPTION (Burmister CLASSIFICATION)	REMARKS	STRATUM DESCRIPTION
		S-1	24/13	0-2	3 3		1A: Moist, loose, brown, fine to coarse SAND and organic SILT, trace roots.		TOPSOIL
					4 8				GRANULAR FILL
							1B: Moist, loose, tan, fine to coarse SAND, little silt, trace gravel.		
5		S-2	24/21	4-6	1 24		Moist, dense, tan SILT, some fine sand, trace medium sand, trace clay, trace iron.		SILT
					21 17				
		S-3	24/	8-10	15 22		Wet, dense, tan SILT, some clay, trace fine sand.		
10					27 32				
							END OF EXPLORATION @ 10'.		
15									
20									
25									
30									

GRANULAR SOILS BLOWS/FT	DENSITY	COHESIVE SOILS BLOWS/FT	DENSITY
0 - 4	V. LOOSE	<2	V.SOFT
4 - 10	LOOSE	2 - 4	SOFT
10 - 30	M.DENSE	4 - 8	M.STIFF
30 - 50	DENSE	8 - 15	STIFF
>50	V.DENSE	15 - 30	V.STIFF
		>30	HARD

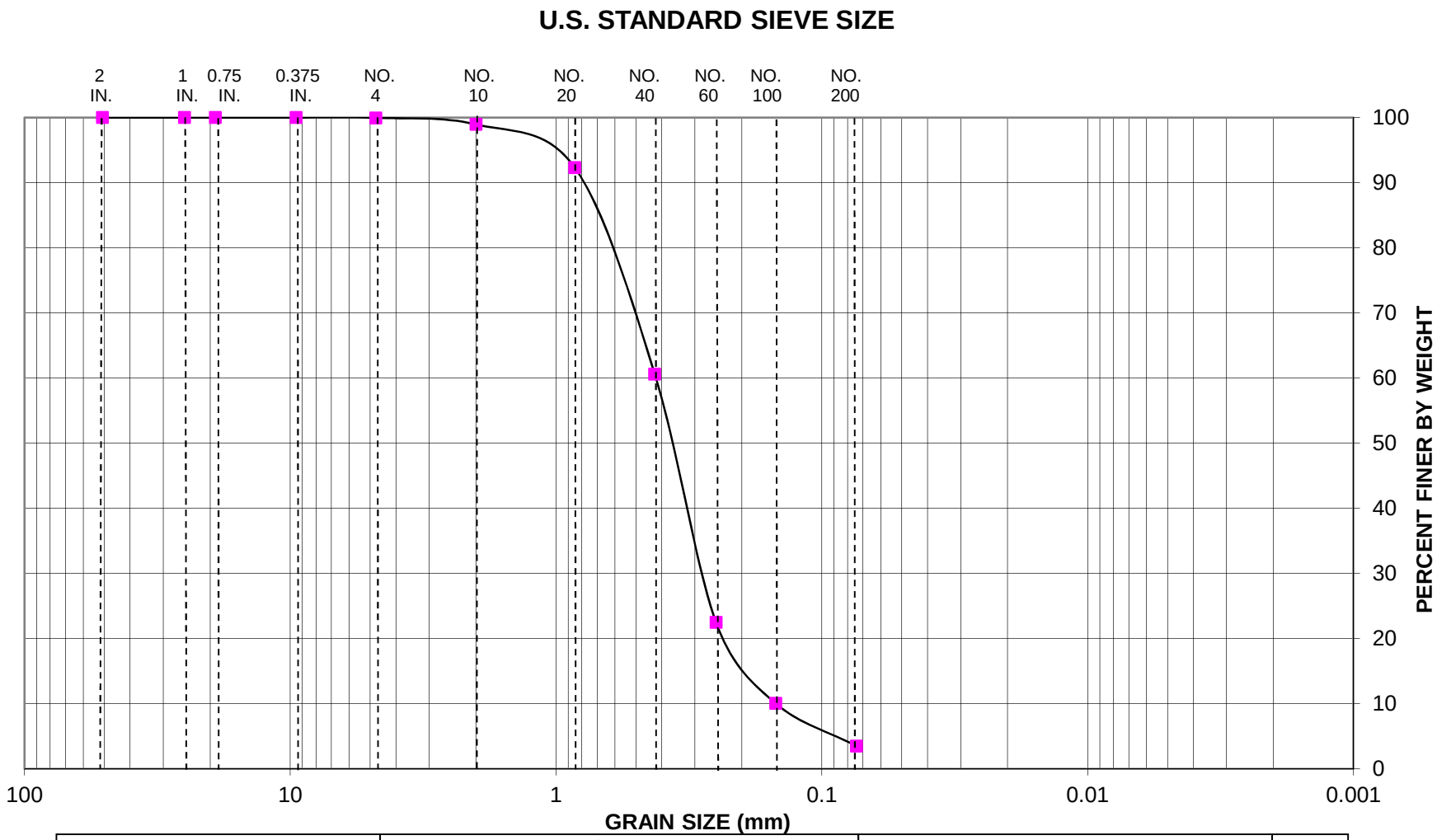
REMARKS:

BURMISTER CLASSIFICATION	
TRACE	0 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

PERCENT BY WEIGHT

NOTES:
1) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THE BORING LOGS. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

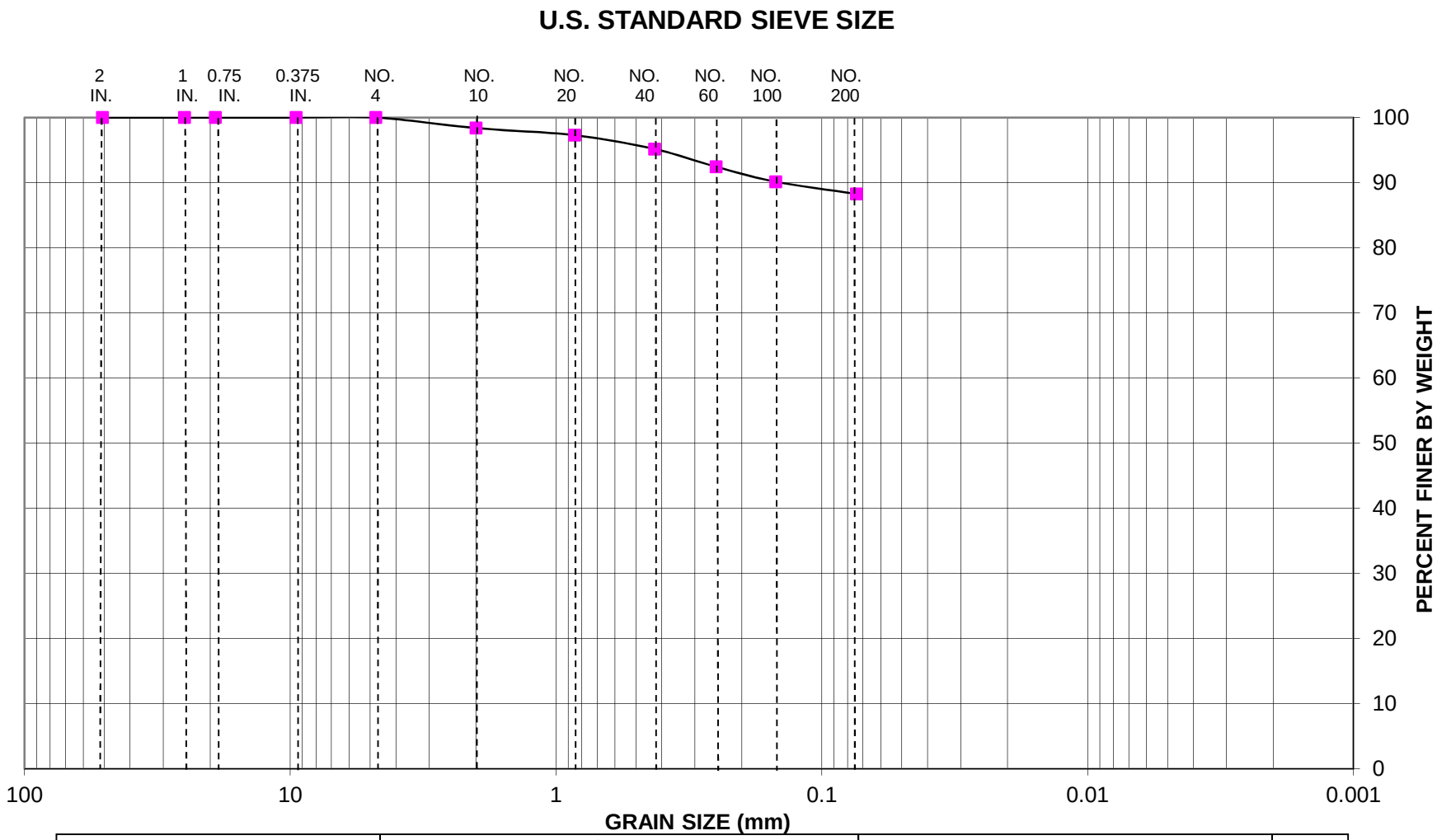
APPENDIX B
Laboratory Testing Data



GRAVEL		SAND			SILT	CLAY
COARSE	FINE	COARSE	MEDIUM	FINE		

TEST NO.	MATERIAL SOURCE	REMARKS
1	**East Bridgewater, MA** **East Bridgewater High School** **B-24, S-2** **Depth: 4'0"-6'0"**	**Burmister - (Brown fine to medium SAND, trace Silt)** **Unified Soil Classification System - (SP-Brown Poorly Graded Sand)** TESTED BY: JER DATE: 10/13/10 CHECK BY: _____ DATE: _____

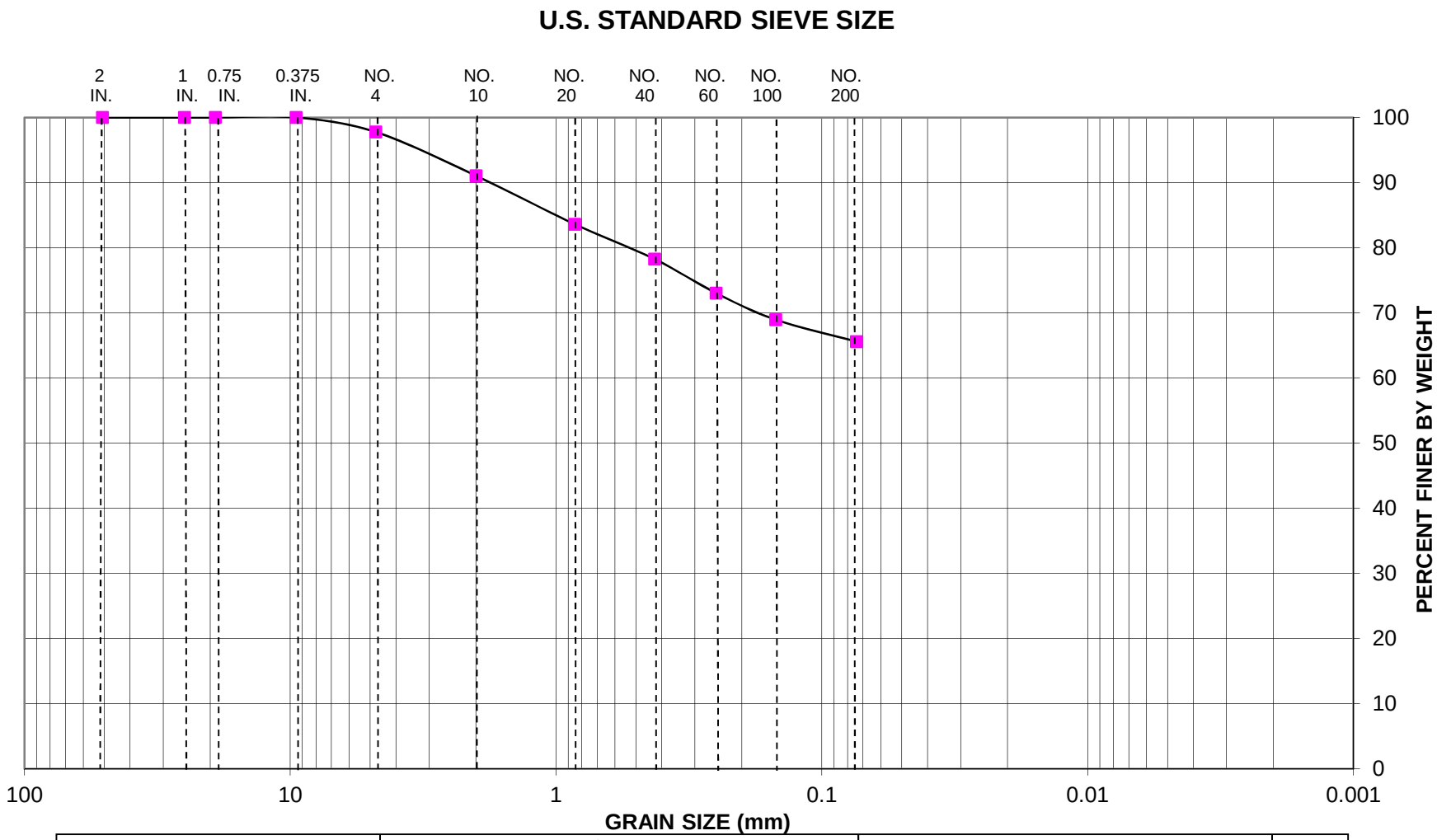
PARE CORPORATION



GRAVEL		SAND			SILT	CLAY
COARSE	FINE	COARSE	MEDIUM	FINE		

TEST NO.	MATERIAL SOURCE	REMARKS
2	**East Bridgewater, MA** **East Bridgewater High School** **B-6, S-3** **Depth: 9'0"-11'0"**	**Burmister - (Gray/tan SILT (or CLAY), little fine to coarse Sand)** **Unified Soil Classification System - (ML-Gray/tan Silt)** TESTED BY: JER DATE: 10/13/10 CHECK BY: _____ DATE: _____

PARE CORPORATION



GRAVEL		SAND			SILT	CLAY
COARSE	FINE	COARSE	MEDIUM	FINE		

TEST NO.	MATERIAL SOURCE	REMARKS
3	**East Bridgewater, MA** **East Bridgewater High School** **B-8, S-2** **Depth: 4'0"-6'0"**	**Burmister - (Gray/tan fine to Coarse SAND and SILT, little Clay)** **Unified Soil Classification System - (SM-Gray/tan Silty Sand)** TESTED BY: JER DATE: 10/13/10 CHECK BY: _____ DATE: _____

PARE CORPORATION

GeoTesting
EXPRESS

1145 Massachusetts Avenue
Boxborough, MA 01719
978 635 0424 Tel
978 635 0266 Fax

Geotechnical Test Report

10/18/2010

GTX-10289
East Bridgewater High School

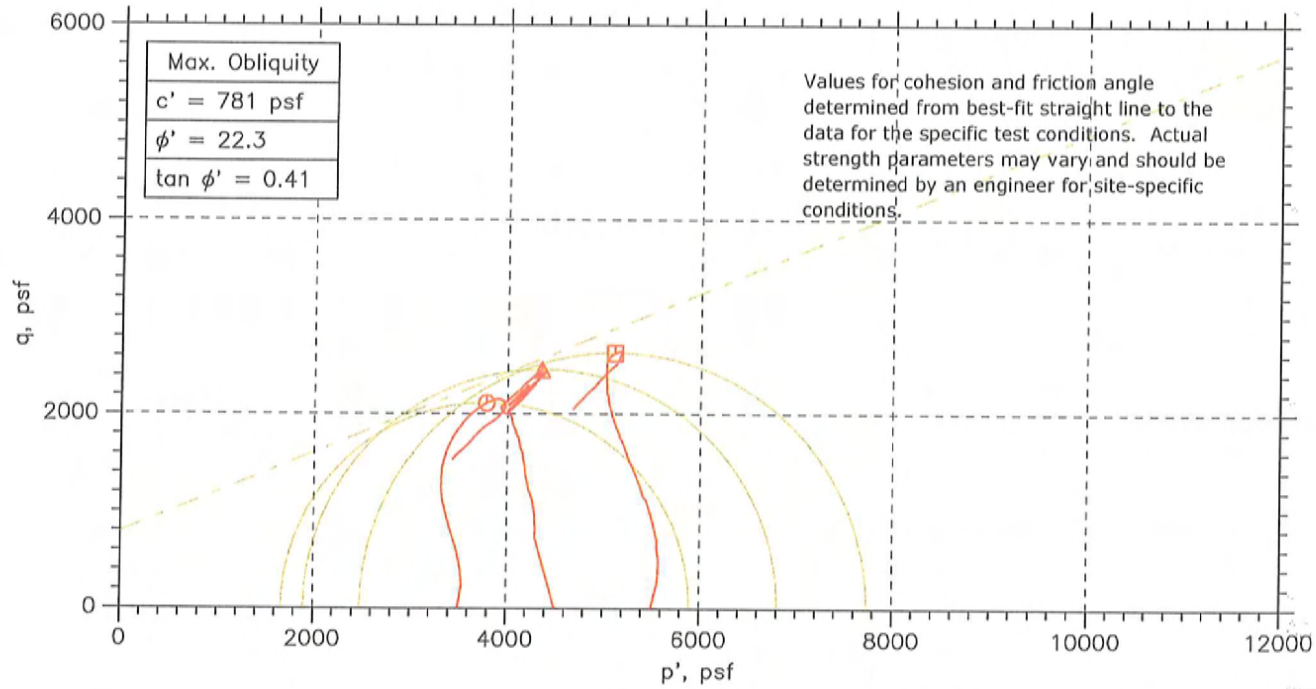
East Bridgewater, MA

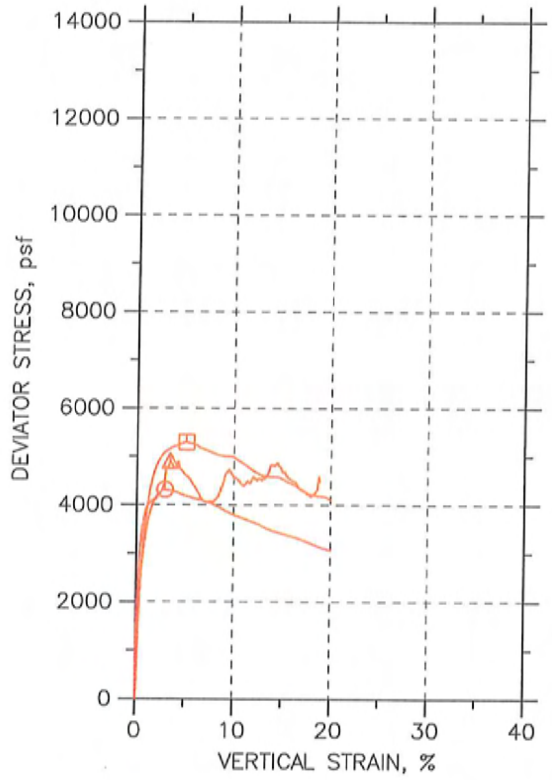
Client Project No.: 10191.00/001

Prepared for:

Pare Engineering

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

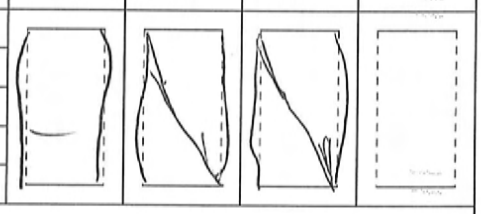




Symbol		⊙	△	⊡	
Sample No.		U-1	U-1	U-1	
Test No.		CU-1-1	CU-1-2	CU-1-3	
Depth		49-51ft	49-51ft	49-51ft	
Initial	Diameter, in	2.01	2.01	2.01	
	Height, in	4.08	4.18	4.14	
	Water Content, %	33.8	38.9	31.2	
	Dry Density, pcf	89.42	82.51	93.28	
	Saturation, %	99.1	97.4	100.0	
	Void Ratio	0.955	1.12	0.874	
Before Shear	Water Content, %	33.6	38.3	30.8	
	Dry Density, pcf	90.11	84.38	93.79	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.94	1.07	0.864	
	Back Press., psf	7918	13100	10220	
Ver. Eff. Cons. Stress, psf		3501	4501	5504	
Shear Strength, psf		2157	2454	2648	
Strain at Failure, %		2.88	3.4	5.08	
Strain Rate, %/min		0.016	0.016	0.016	
B-Value		0.95	0.95	0.95	
Estimated Specific Gravity		2.8	2.8	2.8	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

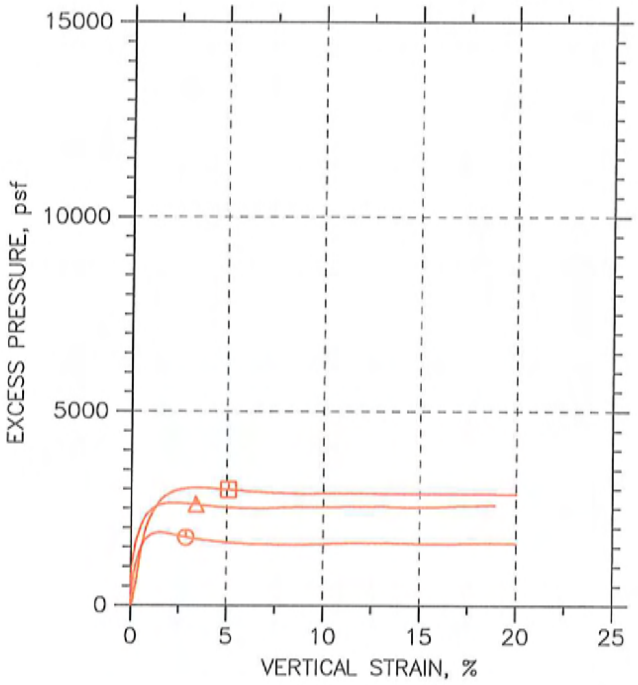
GeoTesting EXPRESS

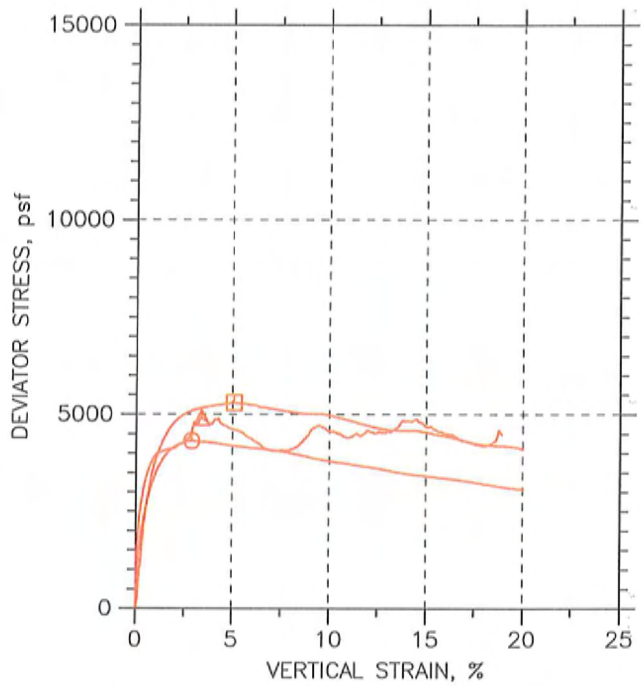
Project: E.Bridgewater H.S.
Location: E.Bridgewater, MA
Project No.: GTX-10289
Boring No.: B-4
Sample Type: tube
Description: Moist, gray clay
Remarks: System E

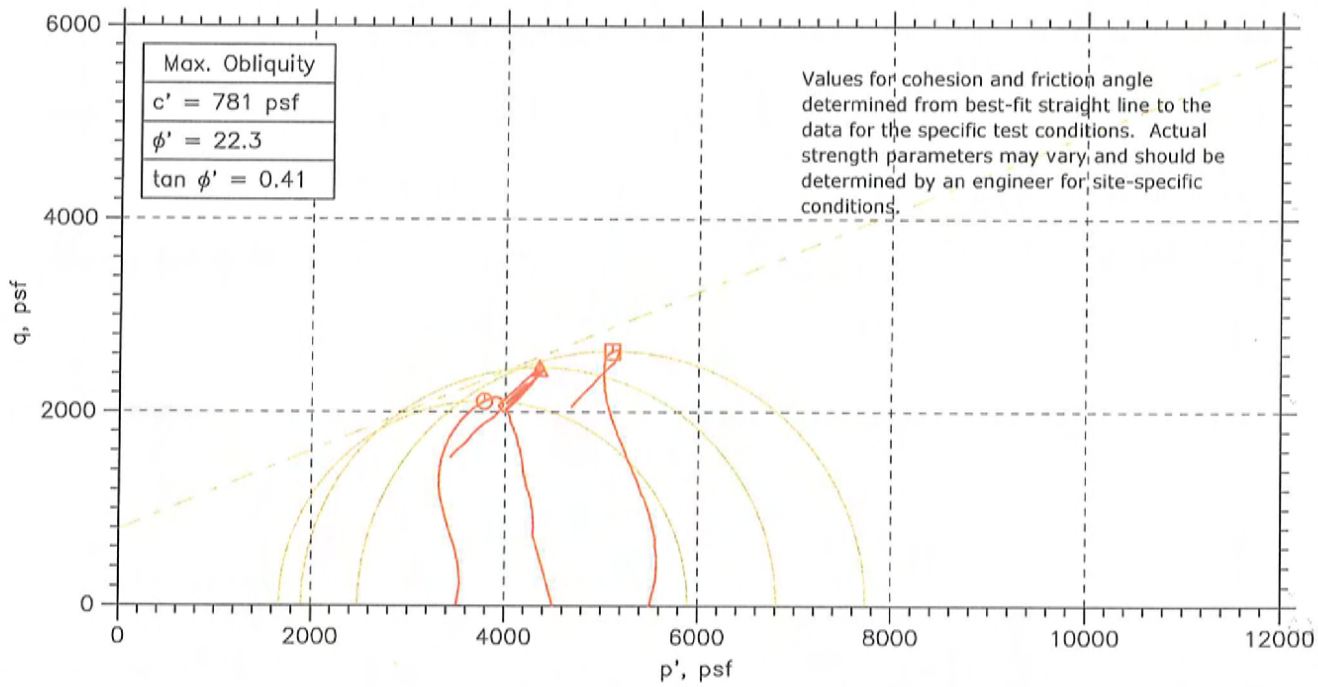


Phase calculations based on start and end of test.
* Saturation is set to 100% for phase calculations.

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	U-1	CU-1-1	49-51ft	md	10/11/10	jdt		10289-CU-1-1n.dat
△	U-1	CU-1-2	49-51ft	md	10/11/10	jdt		10289-CU-1-2n.dat
⊡	U-1	CU-1-3	49-51ft	md	10/11/10	jdt		10289-CU-1-3n.dat

GeoTesting EXPRESS

Project: E.Bridgewater H.S.	Location: E.Bridgewater, MA	Project No.: GTX-10289
Boring No.: B-4	Sample Type: tube	
Description: Moist, gray clay		
Remarks: System E		

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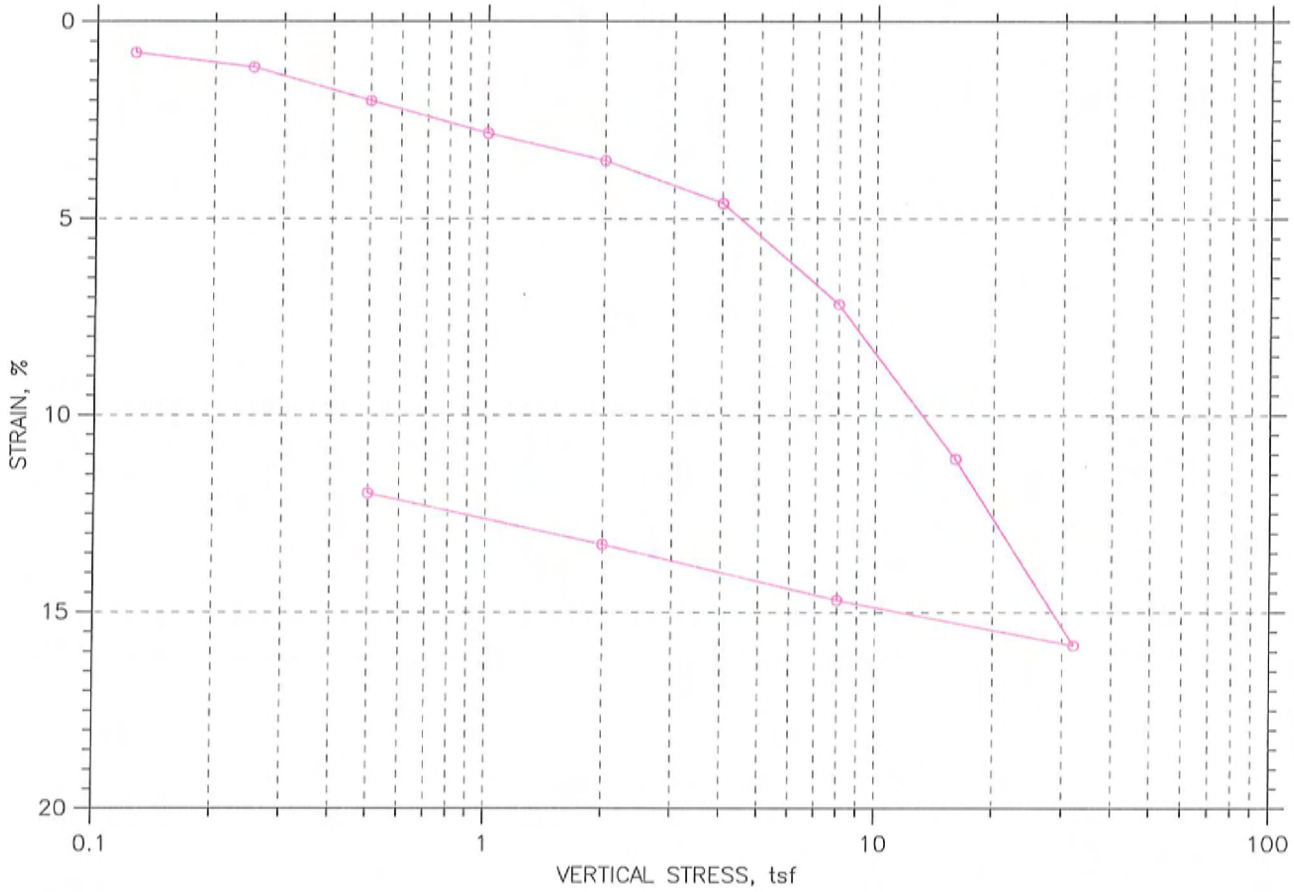
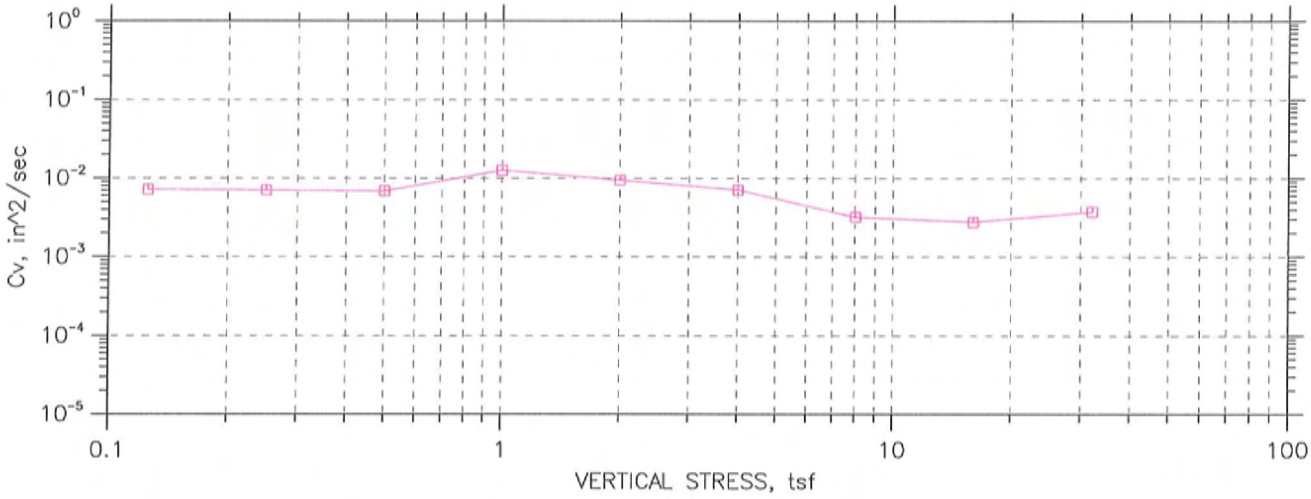
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

CONSOLIDATION TEST DATA

SUMMARY REPORT





	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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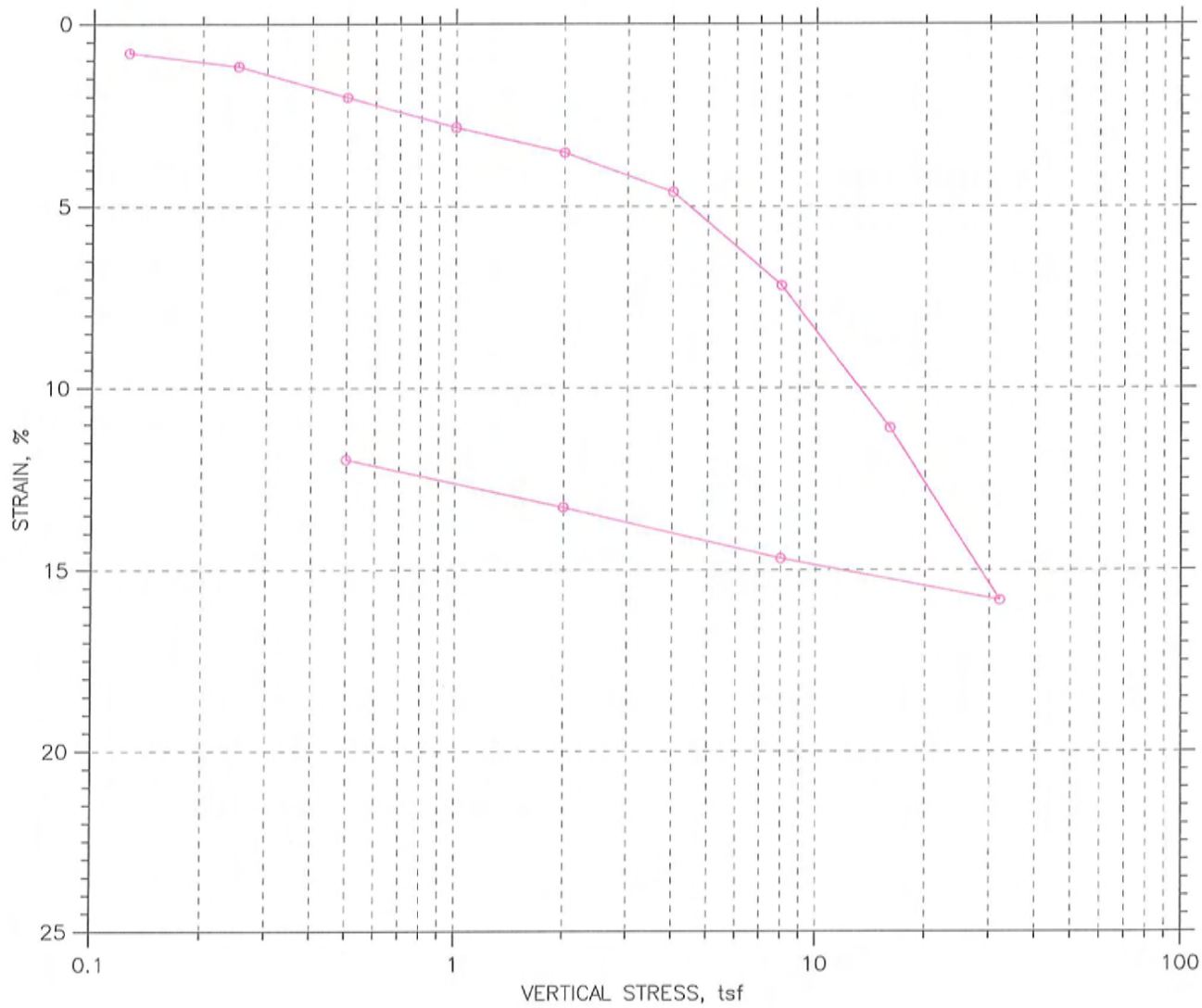
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

CONSOLIDATION TEST DATA

SUMMARY REPORT



					Before Test	After Test
Overburden Pressure: ---				Water Content, %	29.79	22.40
Preconsolidation Pressure: ---				Dry Unit Weight, pcf	94.54	107.4
Compression Index: ---				Saturation, %	98.25	100.00
Diameter: 2.5 in		Height: 1 in		Void Ratio	0.85	0.63
LL: ---	PL: ---	PI: ---	GS: 2.80			

GeoTesting EXPRESS	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

CONSOLIDATION TEST DATA

Project: E. Bridgewater H.S.
Boring No.: B-4
Sample No.: U-1
Test No.: C-1

Location: E. Bridgewater, MA
Tested By: md
Test Date: 10/11/10
Sample Type: tube

Project No.: GTX-10289
Checked By: jdt
Depth: 49-51 ft
Elevation: ---

Soil Description: Moist, gray clay
Remarks: System T

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting Sq.Rt. min	T50 Fitting Log min	Coefficient of Consolidation Sq.Rt. in^2/sec	Coefficient of Consolidation Log in^2/sec	Coefficient of Consolidation Ave. in^2/sec
1	0.125	0.008022	0.834	0.80	0.1	0.0	6.92e-003	0.00e+000	6.92e-003
2	0.25	0.01176	0.827	1.18	0.1	0.0	6.80e-003	0.00e+000	6.80e-003
3	0.5	0.02024	0.811	2.02	0.1	0.1	6.07e-003	7.31e-003	6.63e-003
4	1	0.02856	0.796	2.86	0.1	0.0	1.21e-002	0.00e+000	1.21e-002
5	2	0.03551	0.783	3.55	0.1	0.1	7.71e-003	1.11e-002	9.11e-003
6	4	0.04633	0.763	4.63	0.1	0.1	5.18e-003	1.01e-002	6.85e-003
7	8	0.07198	0.716	7.20	0.3	0.2	2.33e-003	4.62e-003	3.10e-003
8	16	0.1112	0.643	11.12	0.3	0.2	2.18e-003	3.46e-003	2.68e-003
9	32	0.1588	0.555	15.88	0.2	0.1	2.91e-003	4.84e-003	3.64e-003
10	8	0.1472	0.577	14.72	0.0	0.0	2.71e-002	0.00e+000	2.71e-002
11	2	0.1331	0.603	13.31	0.2	0.2	2.60e-003	2.98e-003	2.78e-003
12	0.5	0.1199	0.627	11.99	1.4	1.4	4.56e-004	4.43e-004	4.49e-004

ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

CONSOLIDATION TEST DATA

Project: E. Bridgewater H.S.
Boring No.: B-4
Sample No.: U-1
Test No.: C-1

Location: E. Bridgewater, MA
Tested By: md
Test Date: 10/11/10
Sample Type: tube

Project No.: GTX-10289
Checked By: jdt
Depth: 49-51 ft
Elevation: ---

Soil Description: Moist, gray clay
Remarks: System T

Estimated Specific Gravity: 2.80
Initial Void Ratio: 0.85
Final Void Ratio: 0.63

Liquid Limit: ---
Plastic Limit: ---
Plasticity Index: ---

Initial Height: 1.00 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	6060	RING		601
Wt. Container + Wet Soil, gm	216.93	266.34	257.34	162.36
Wt. Container + Dry Soil, gm	169.42	230.05	230.05	134.16
Wt. Container, gm	8.39	108.23	108.23	8.26
Wt. Dry Soil, gm	161.03	121.82	121.82	125.9
Water Content, %	29.50	29.79	22.40	22.40
Void Ratio	---	0.85	0.63	---
Degree of Saturation, %	---	98.25	100.00	---
Dry Unit Weight, pcf	---	94.545	107.42	---

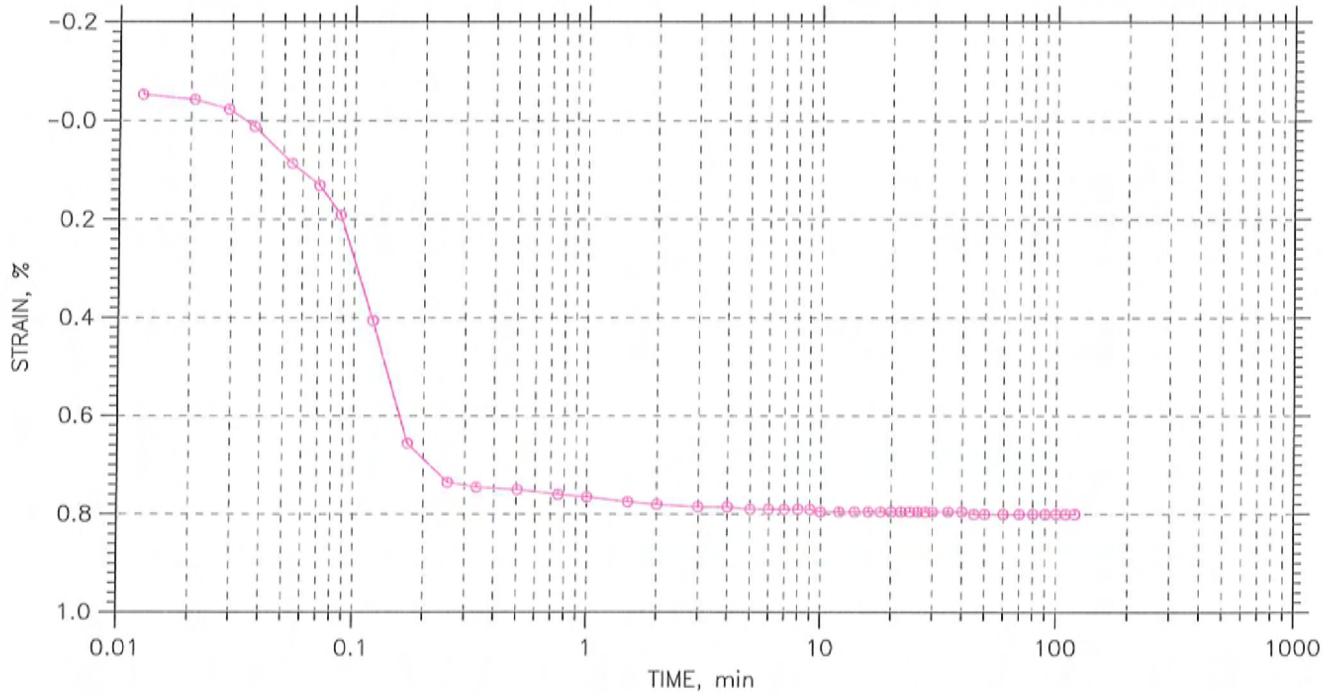
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

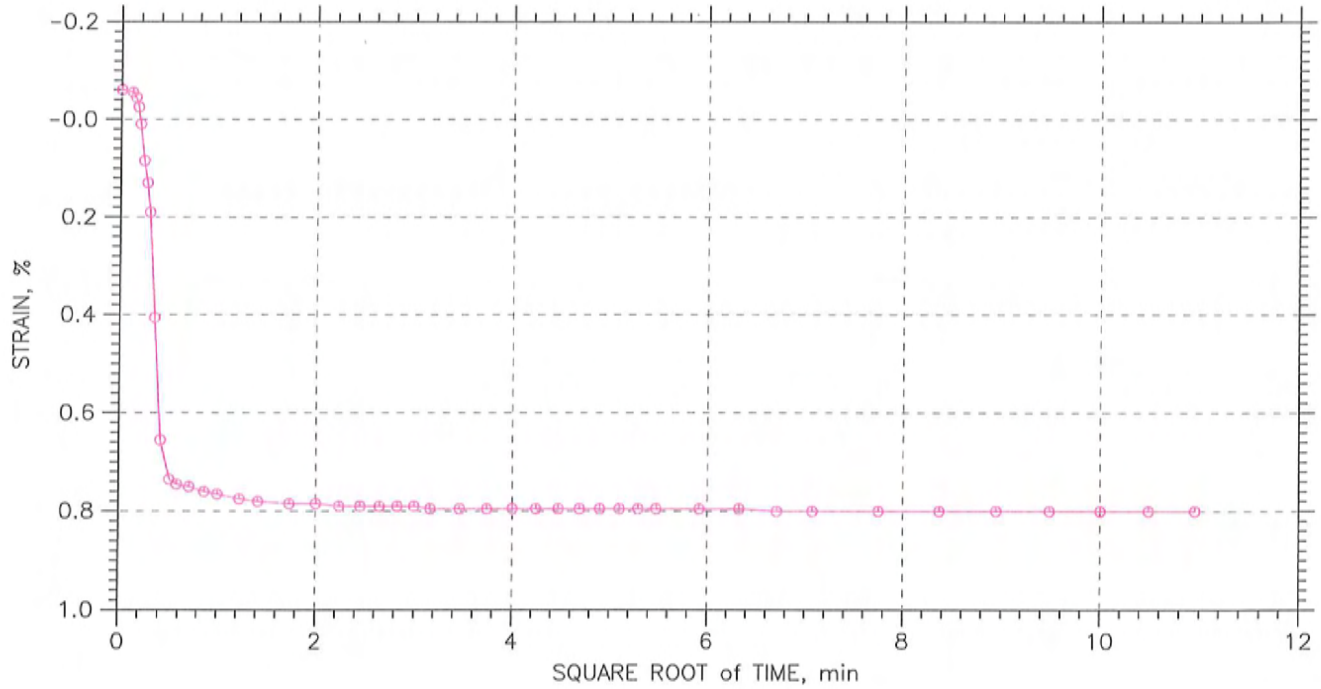
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 12

Stress: 0.125 tsf





	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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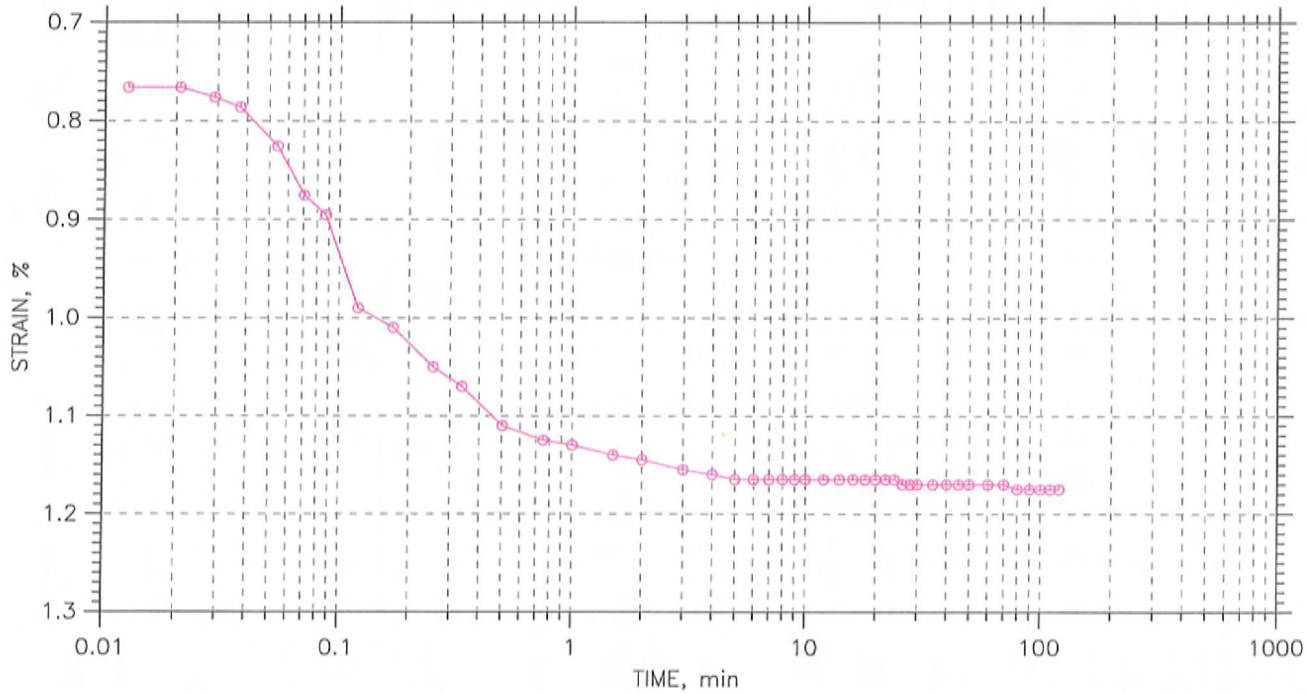
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

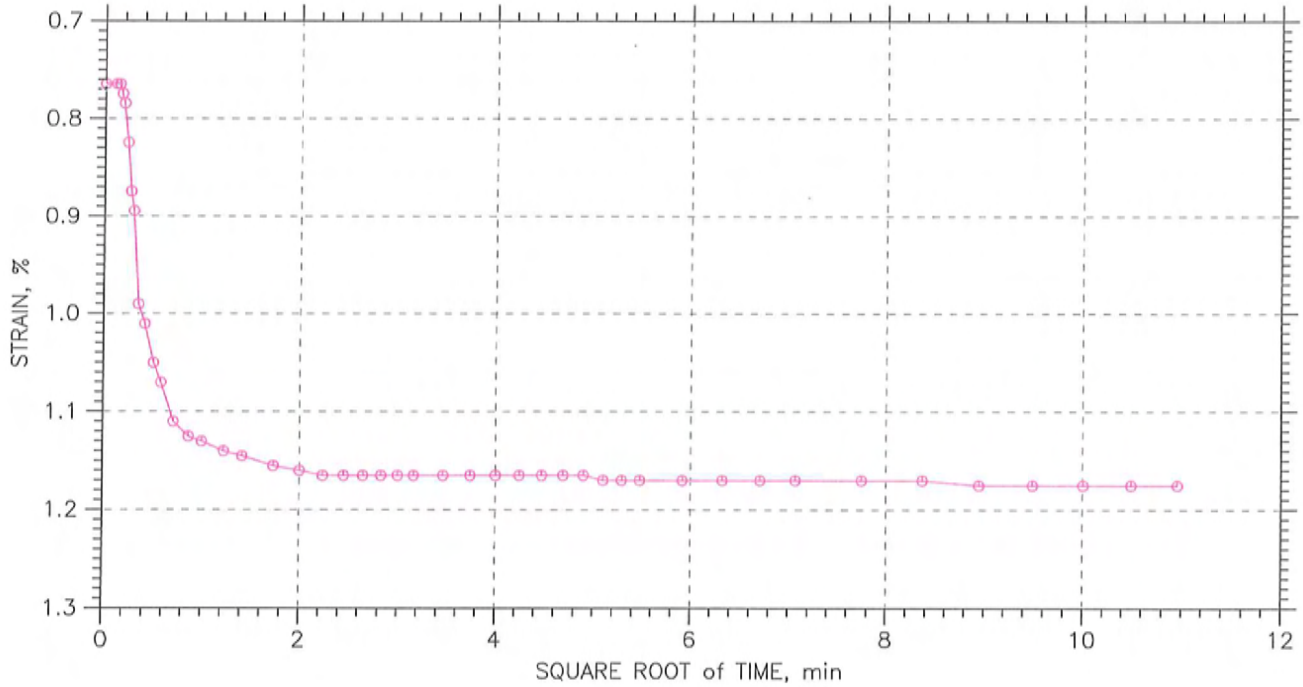
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 12

Stress: 0.25 tsf





GeoTesting EXPRESS	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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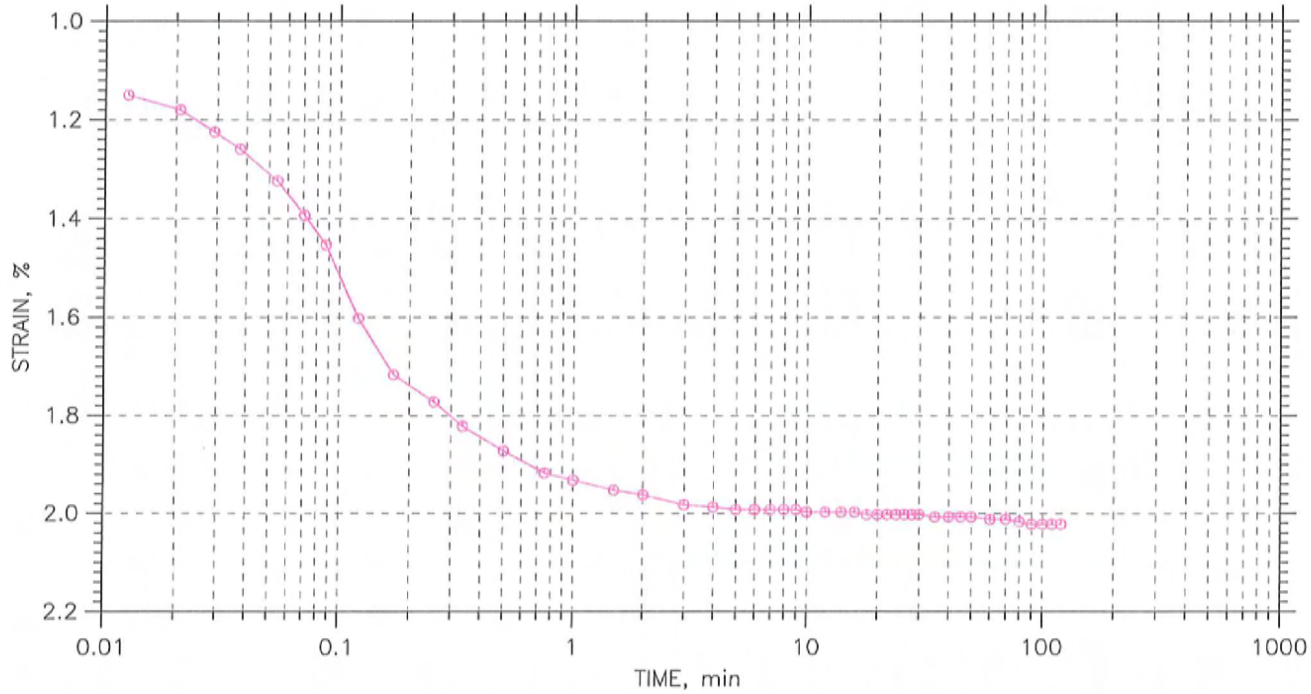
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

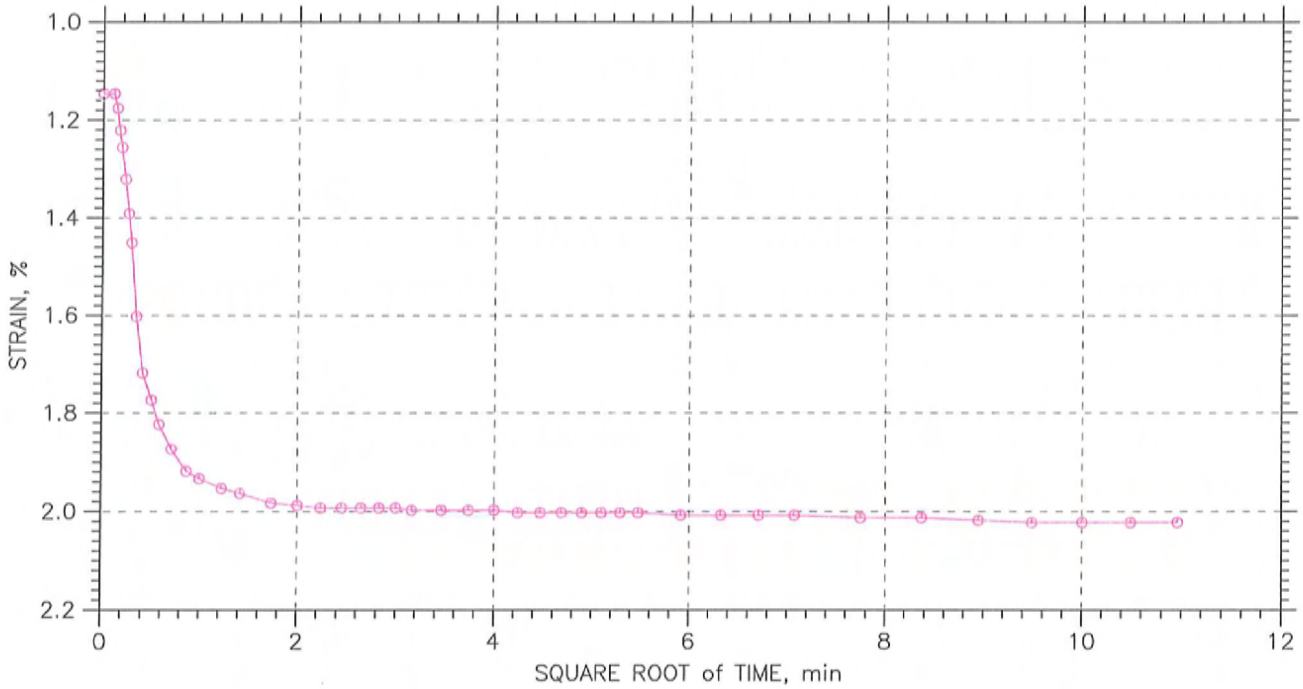
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 12

Stress: 0.5 tsf





	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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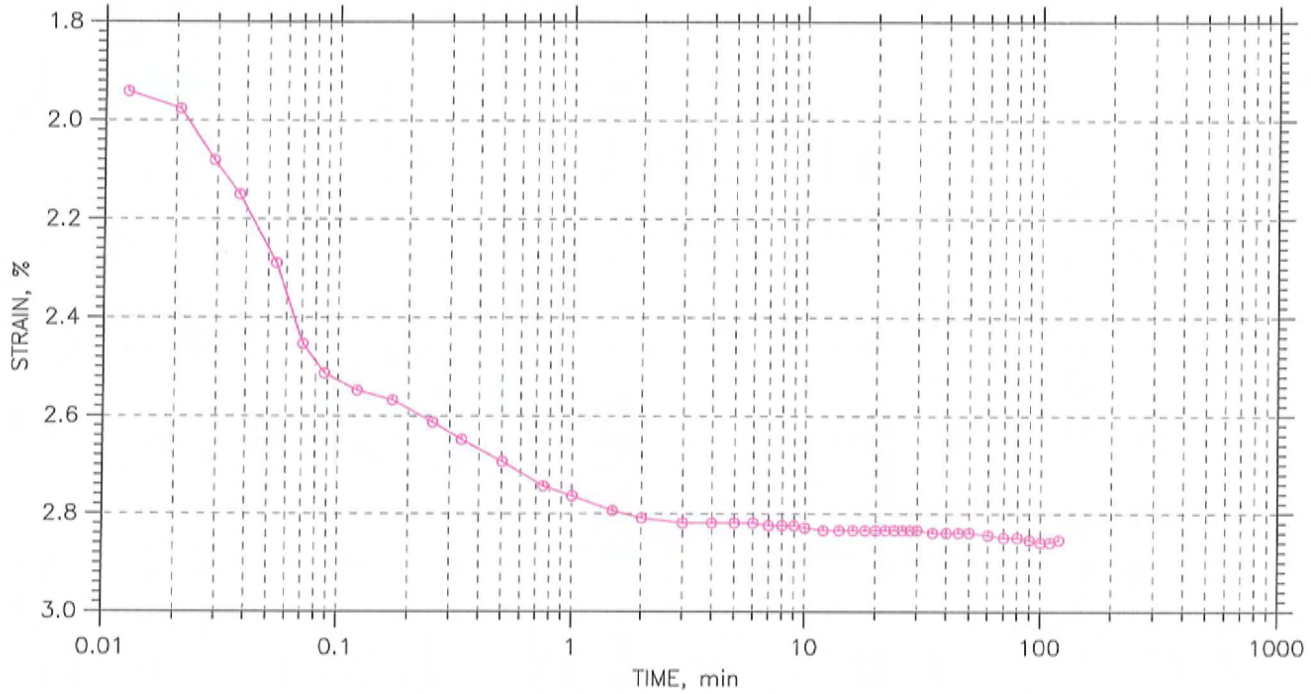
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

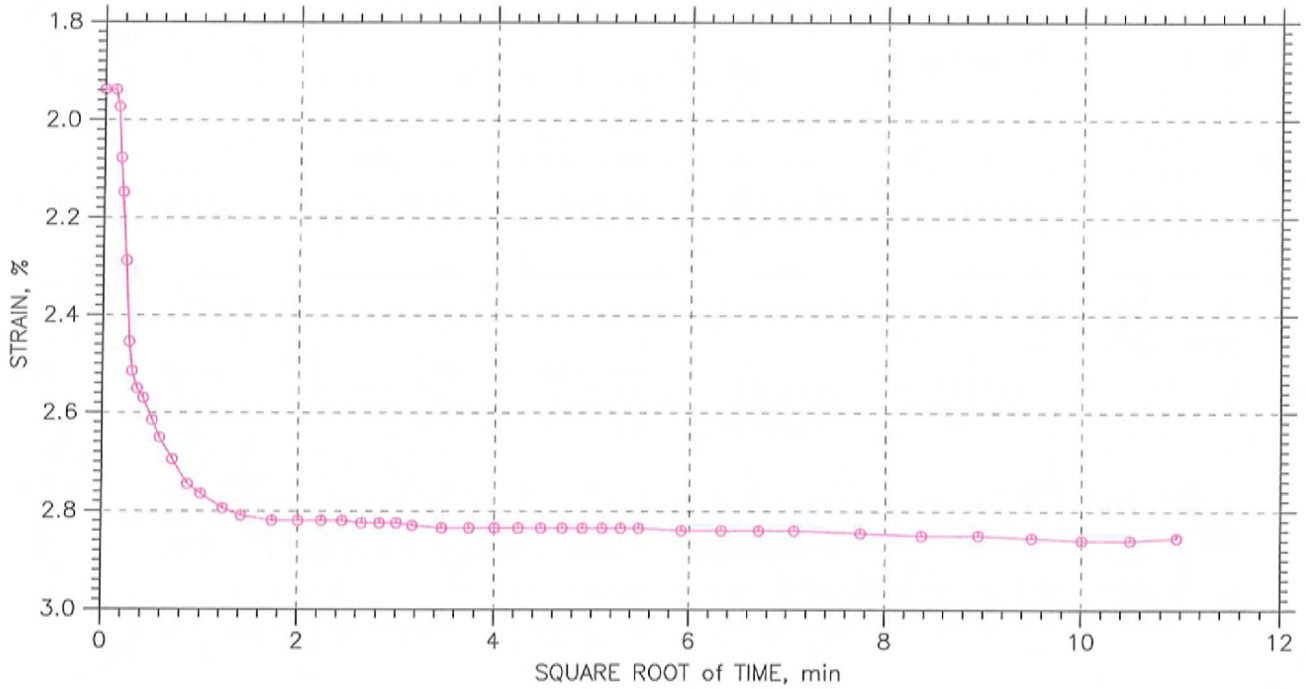
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 12

Stress: 1. tsf





GeoTesting EXPRESS	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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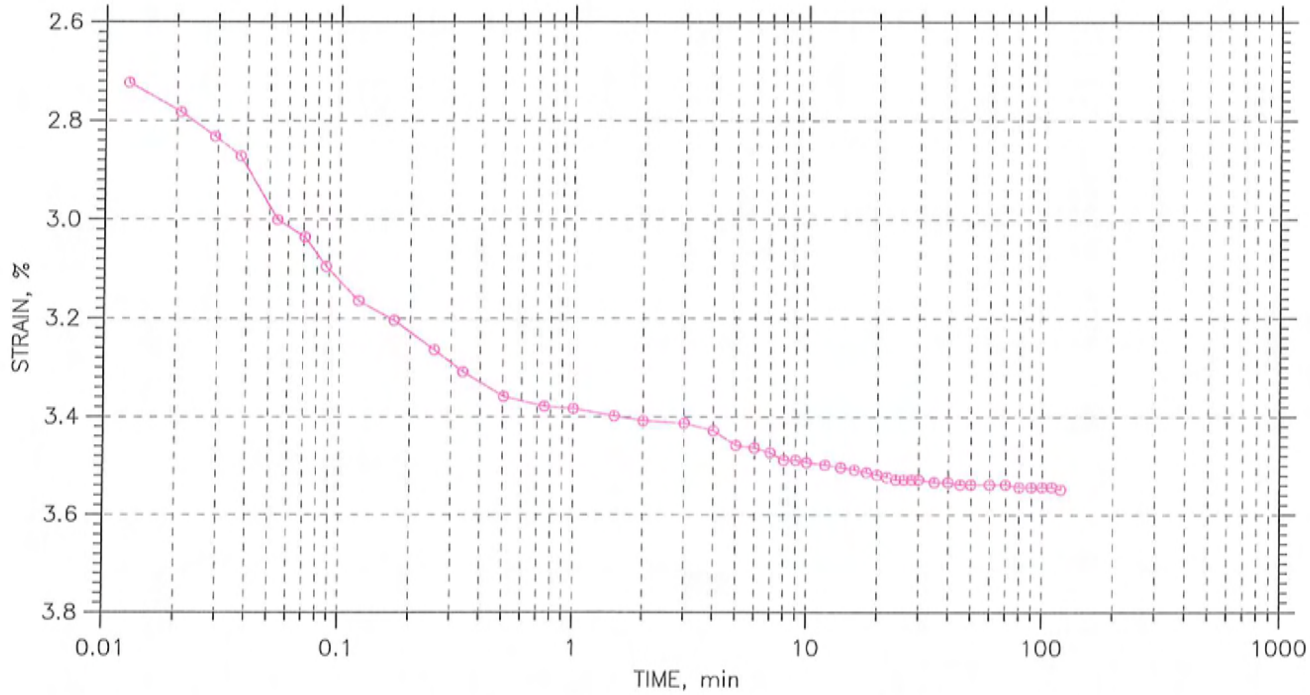
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

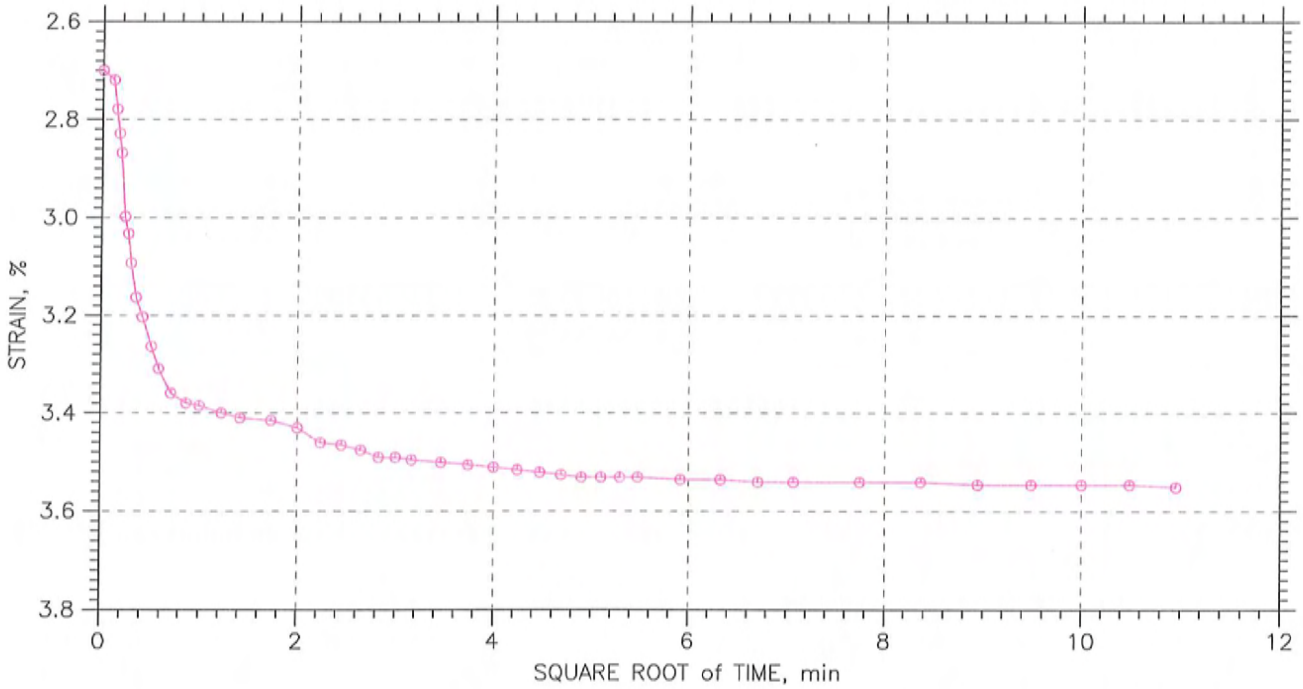
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 12

Stress: 2. tsf





	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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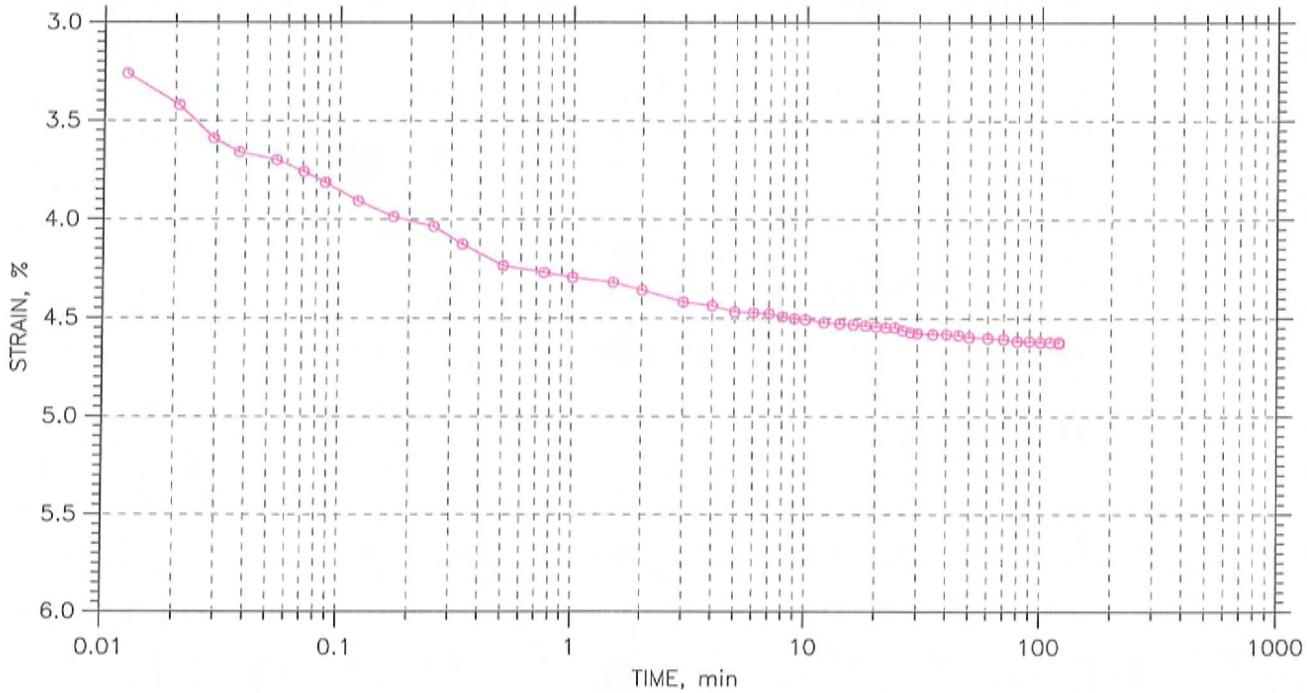
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

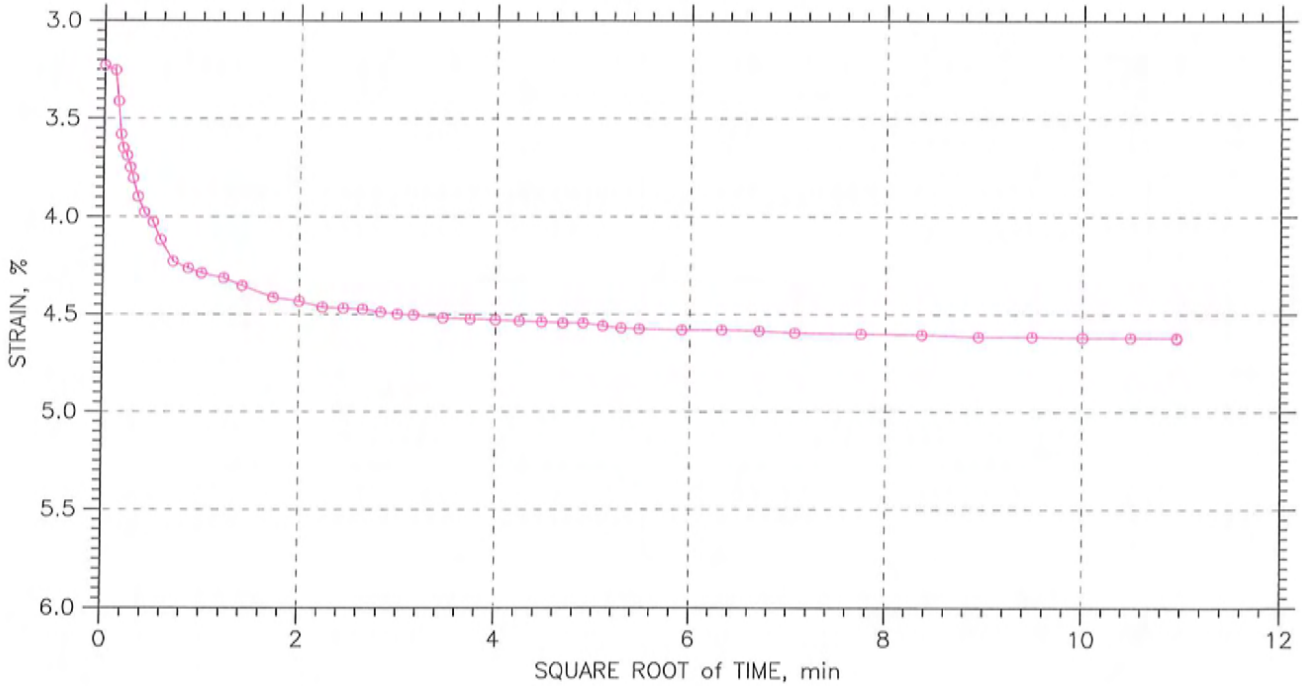
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 12

Stress: 4. tsf





GeoTesting EXPRESS	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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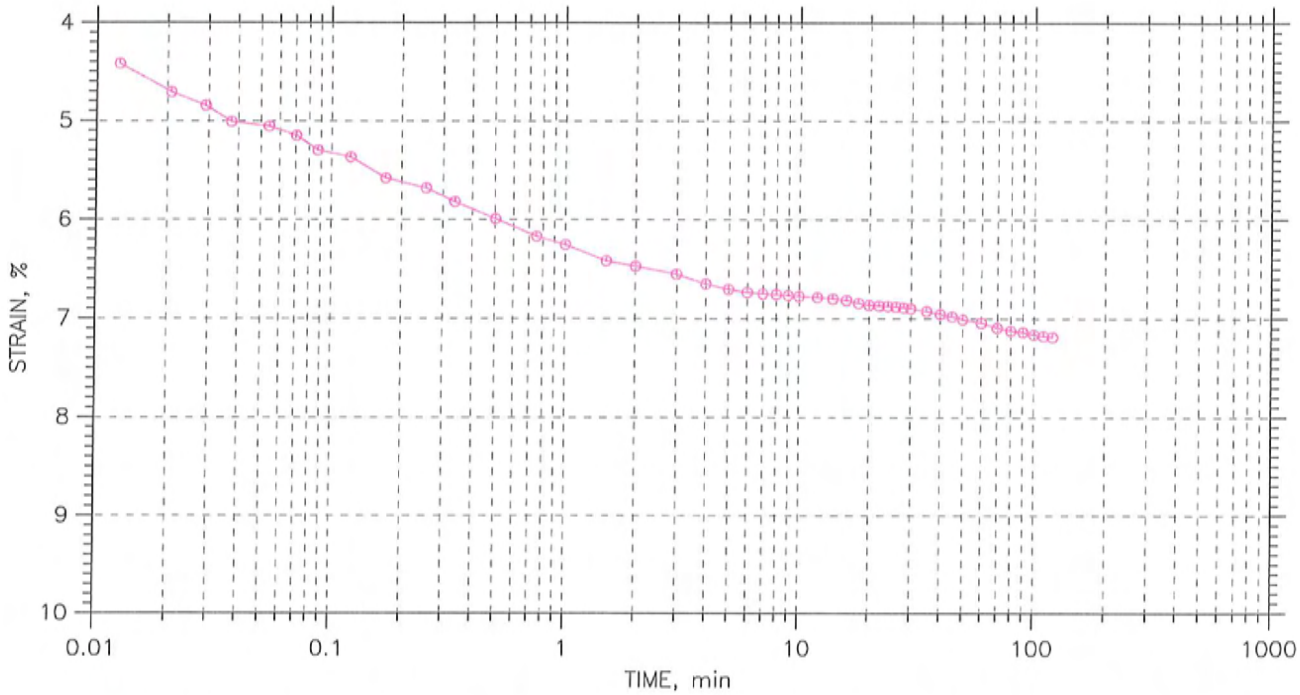
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

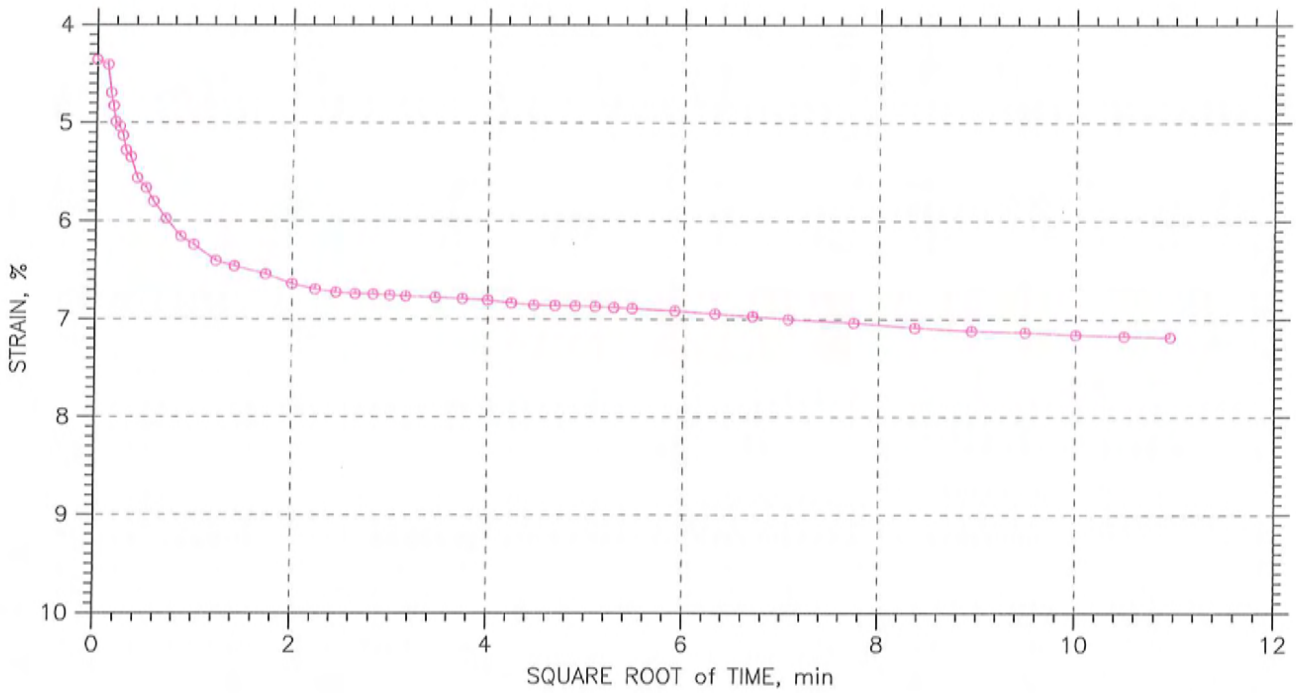
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 12

Stress: 8. tsf





	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

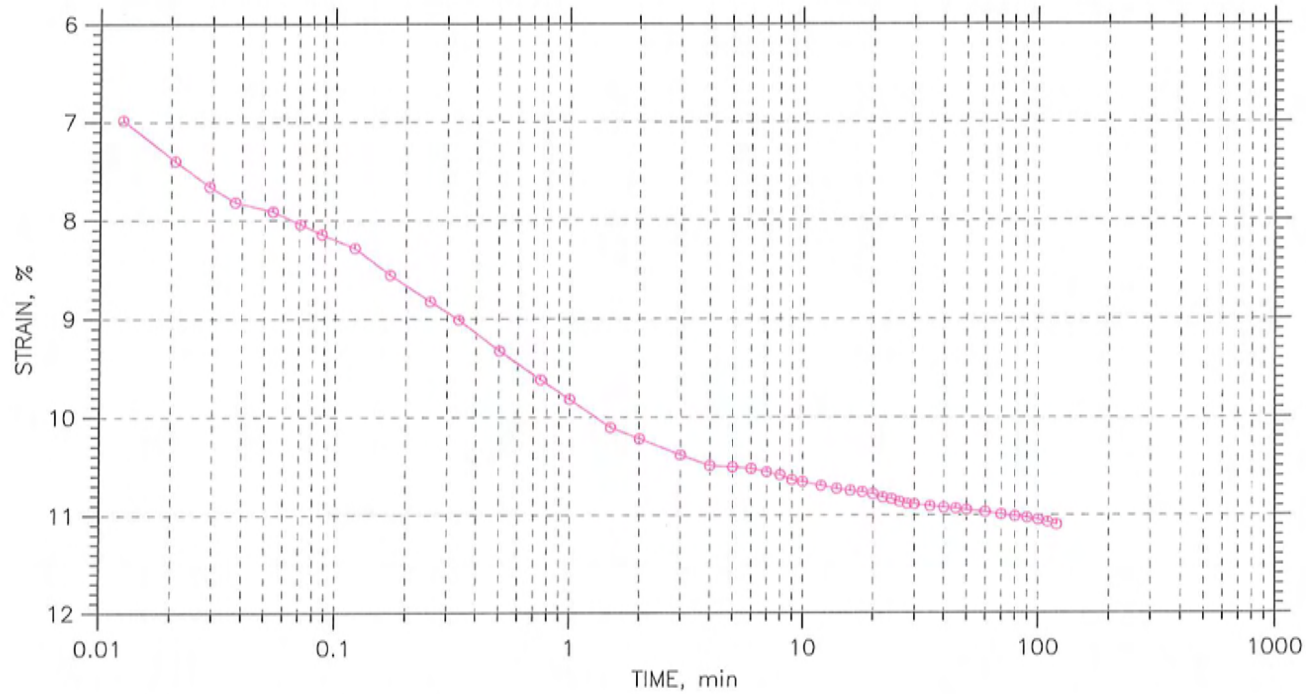
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

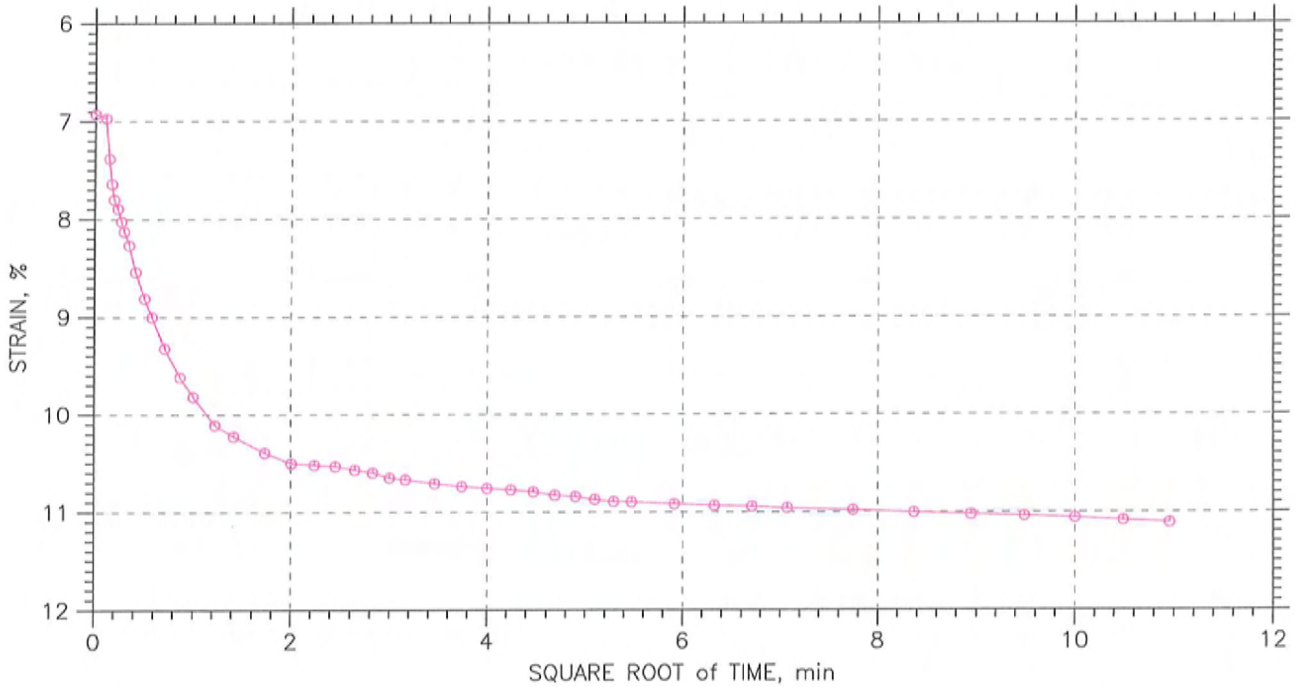
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 12

Stress: 16. tsf





GeoTesting EXPRESS	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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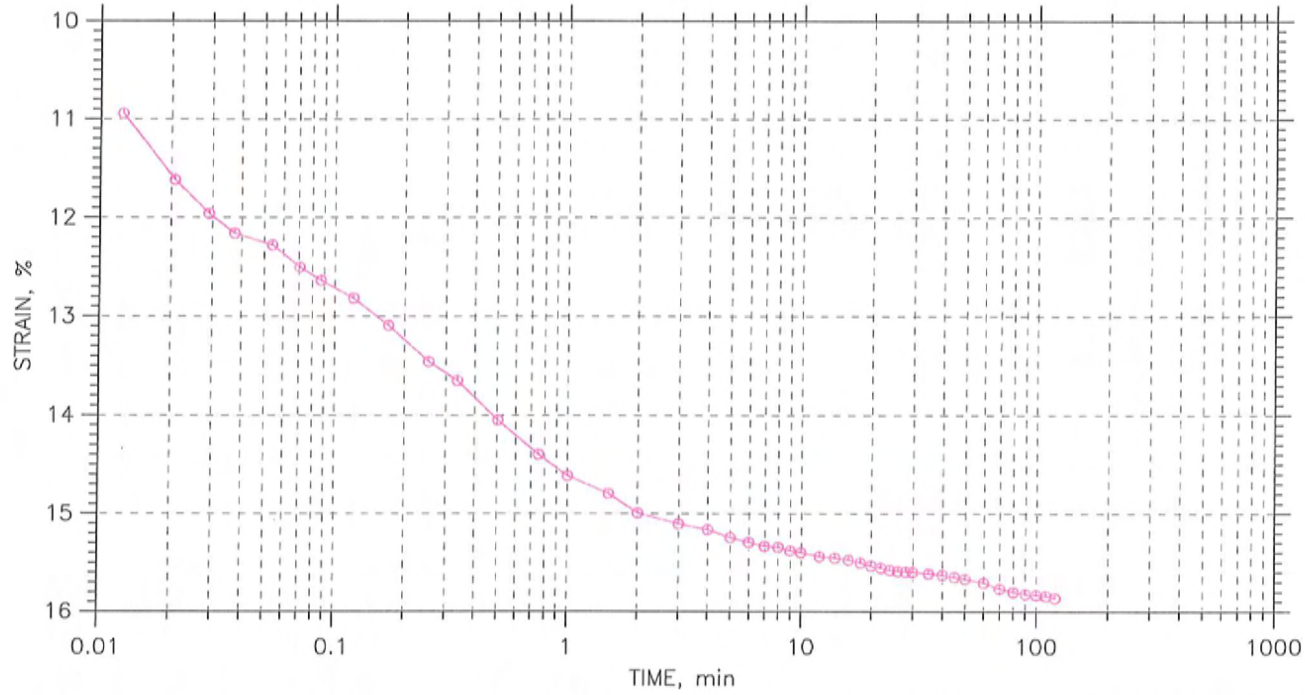
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

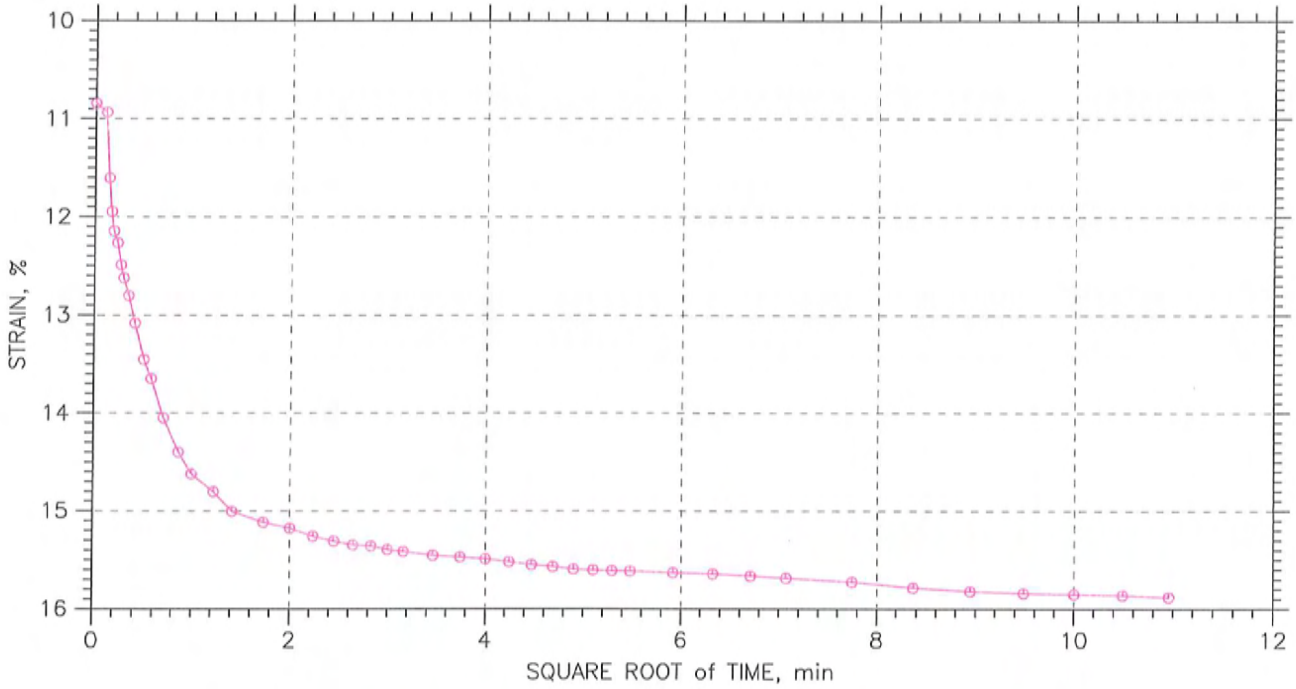
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 12

Stress: 32. tsf





	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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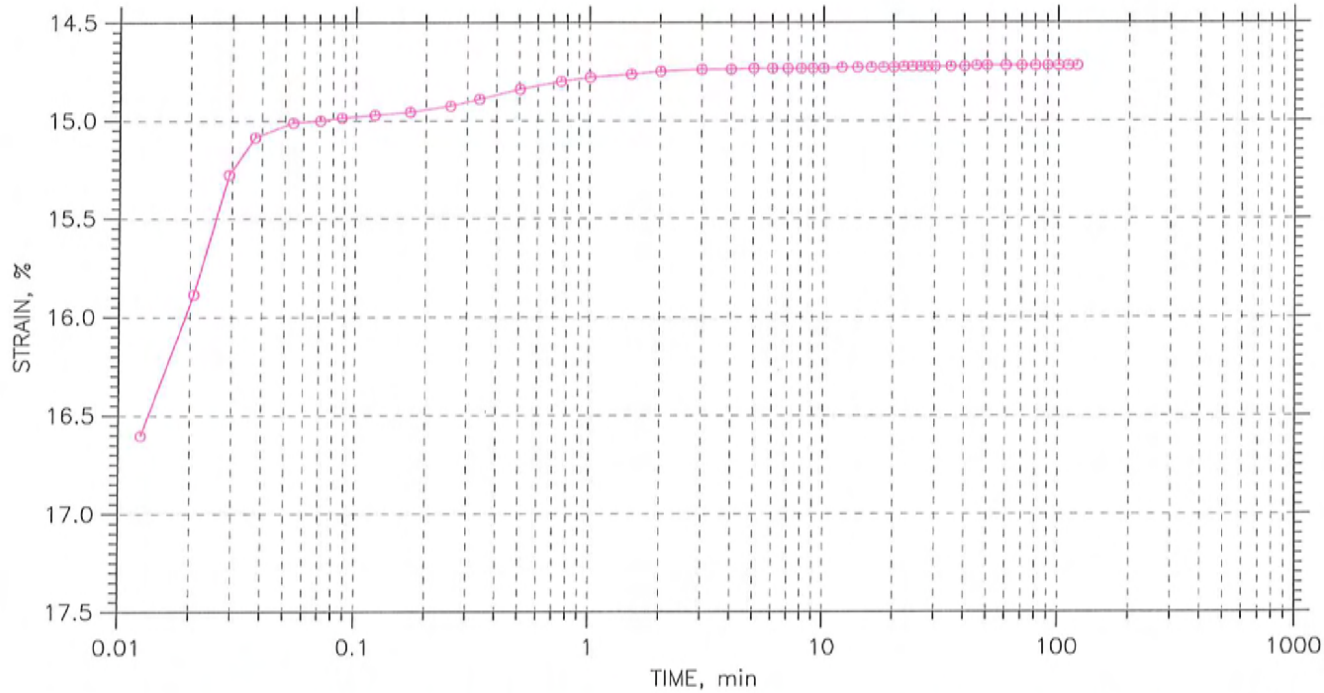
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

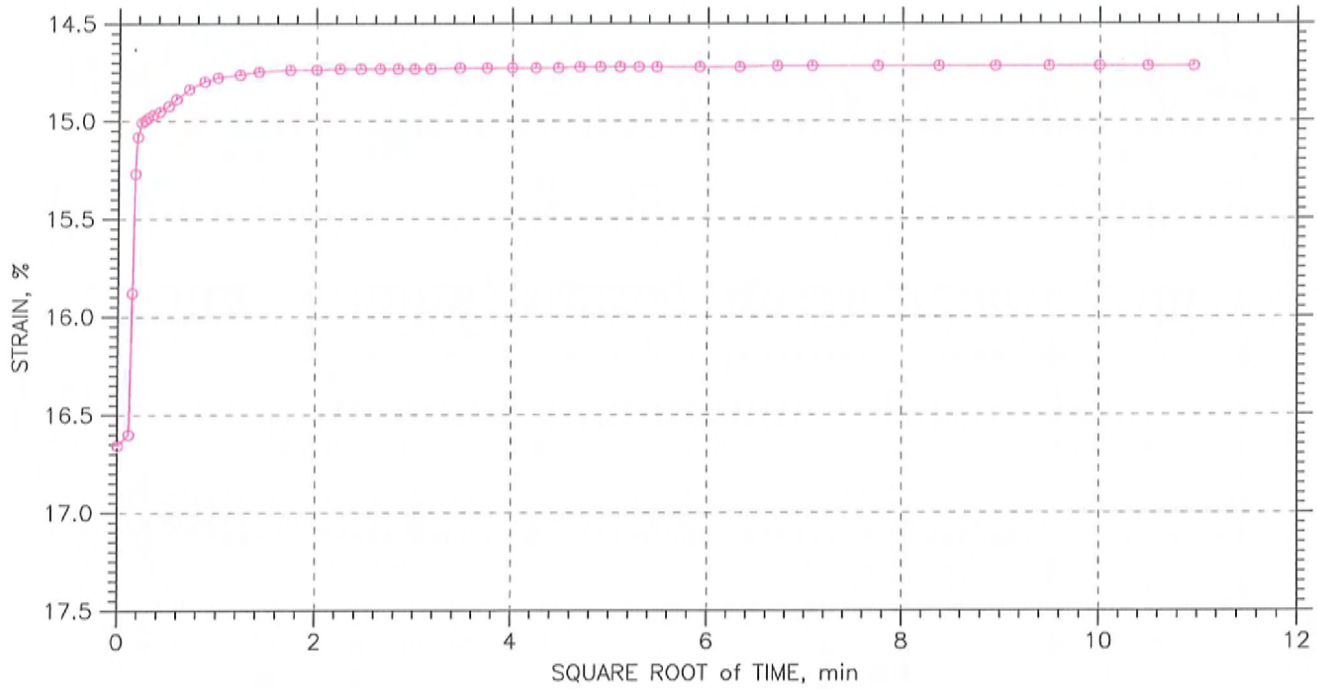
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 12

Stress: 8. tsf





GeoTesting EXPRESS	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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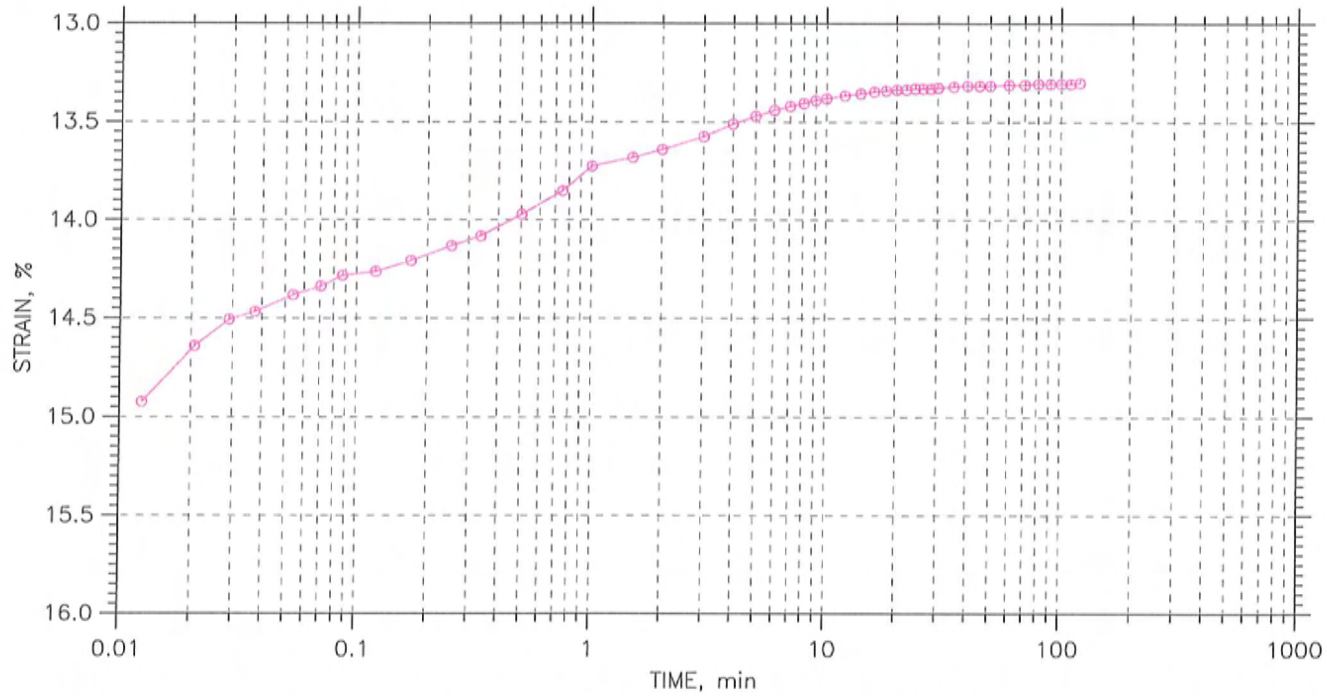
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

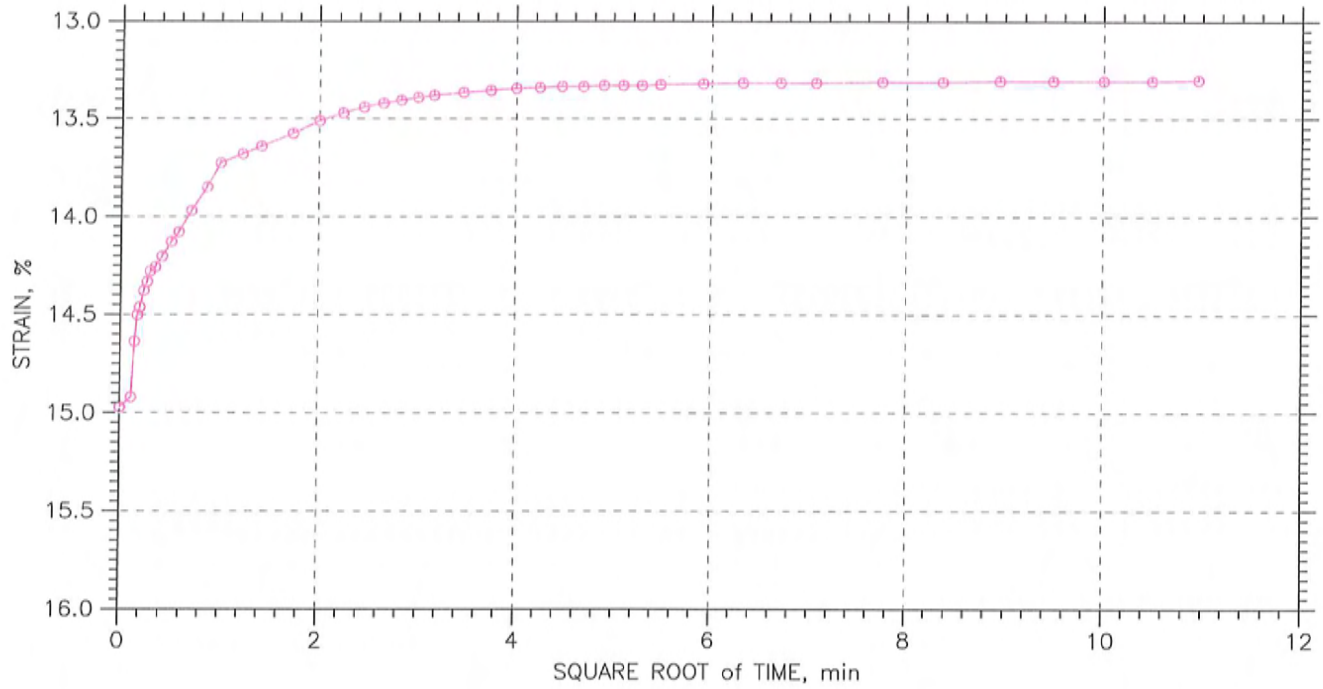
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 12

Stress: 2. tsf





	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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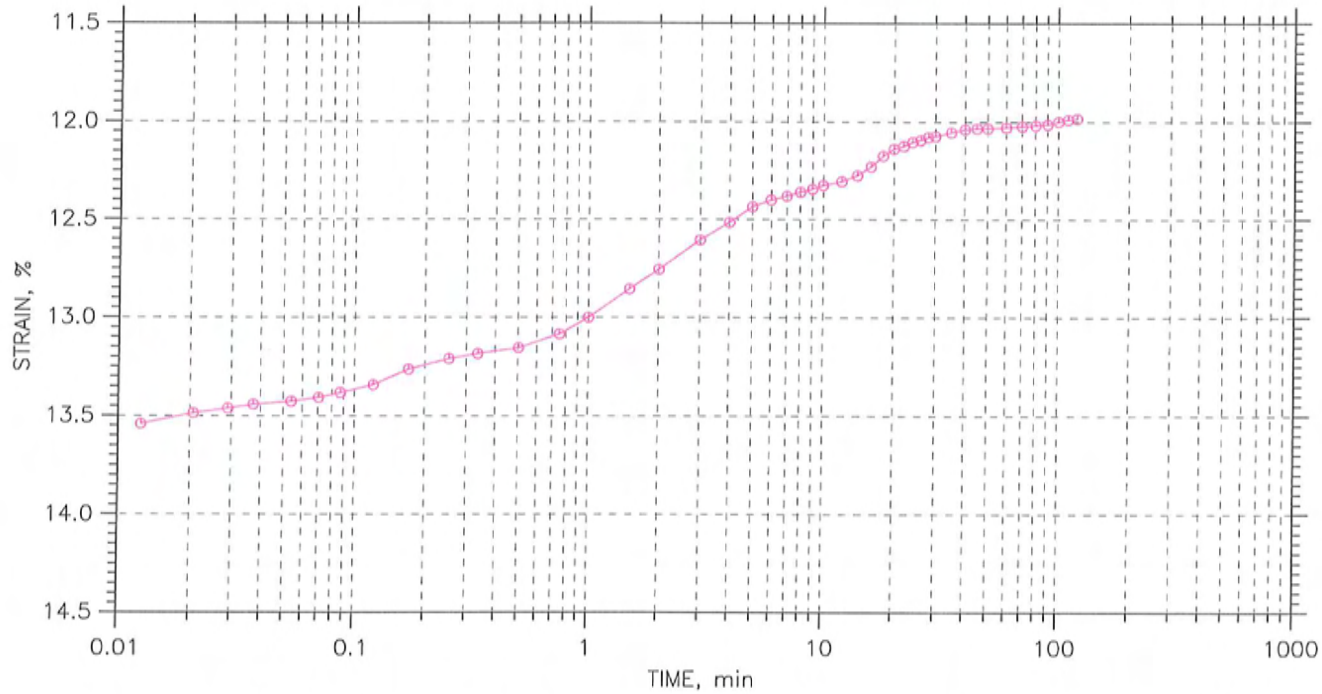
ONE-DIMENSIONAL CONSOLIDATION by ASTM D 2435-04 - Method B

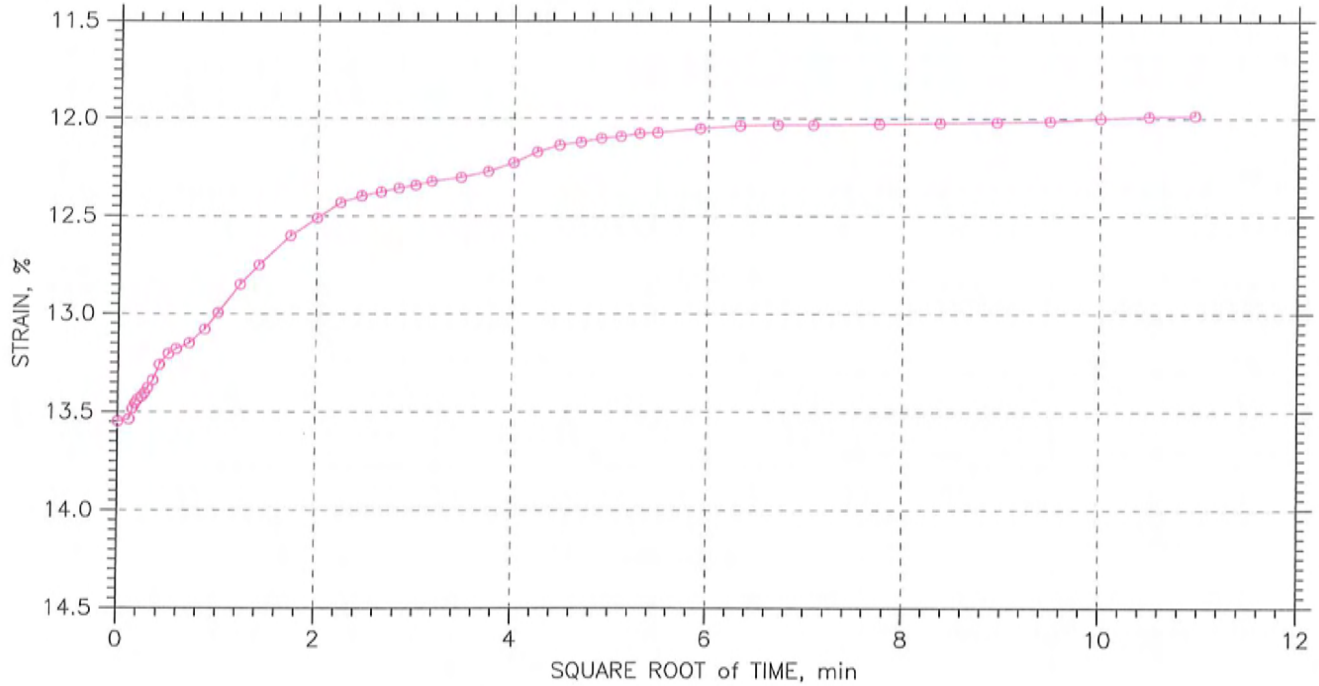
CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 12

Stress: 0.5 tsf





GeoTesting EXPRESS	Project: E. Bridgewater H.S.	Location: E. Bridgewater, MA	Project No.: GTX-10289
	Boring No.: B-4	Tested By: md	Checked By: jdt
	Sample No.: U-1	Test Date: 10/11/10	Depth: 49-51 ft
	Test No.: C-1	Sample Type: tube	Elevation: ---
	Description: Moist, gray clay		
	Remarks: System T		

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APPENDIX C
Geotechnical Limitations

GEOTECHNICAL LIMITATIONS

Explorations

1. The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, Pare Corporation (PARE) should be asked to reevaluate the recommendations of this report.

2. The generalized soil profile described in the text is intended to convey trends in the subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the boring logs.

3. Water level readings have been made in the drill holes at the times and under the conditions stated on the boring logs. These data have been reviewed and interpretations have been made in the text of this report. However, fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, and other factors occurring since the time the measurements were made.

Review

4. In the event that any changes in the nature or location of the proposed building are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report are verified in writing by PARE. PARE should also be provided with the opportunity for a general review of the final design and specifications in order that the earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

Construction

5. PARE should be retained to provide soil engineering services during construction of the excavation and foundation phases of work in order to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that subsurface conditions differ from those indicated prior to the start of construction.

Use of Report

6. This report has been prepared for the exclusive use of Architectural Involution, Inc. for specific application to the to the Eat Bridgewater High School located in East Bridgewater, Massachusetts in accordance with generally accepted engineering practices. No other warranty, expressed or implied, is made.

7. This engineering report has been prepared for this project by PARE. This report is for design purposes only and is not necessarily sufficient to prepare an accurate bid. Contractors wishing a copy of this report may secure it with the understanding that its scope is limited to design considerations only.