APPENDIX L

GEOTECHNICAL REPORT

GEOTECHNICAL AND GEOLOGIC HAZARDS INVESTIGATION
STADIUM LIGHTING PROJECT
CARMEL HIGH SCHOOL
3600 CARMEL AVENUE
CARMEL, CALIFORNIA

for

Carmel Unified School District
Attn: Mr. Dan Paul, Facilities and Transportation Manager
4380 Carmel Valley Road
Carmel, California 93923

by

Cleary Consultants, Inc.
560 Division Street
Campbell, California 95088

July 2021

CLEARY CONSULTANTS, INC.
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July 30, 2021
Project No. 1346.1B
Ser. 6905

Carmel Unified School District
Attn: Mr. Dan Paul, Facilities and Transportation Manager
4380 Carmel Valley Road
Carmel, California 93923

**RE: GEOTECHNICAL AND GEOLOGIC HAZARDS INVESTIGATION
STADIUM LIGHTING PROJECT
CARMEL HIGH SCHOOL
3600 OCEAN AVENUE
CARMEL, CALIFORNIA**

Dear Mr. Paul:

As requested, we have performed a geotechnical and geologic hazards investigation for the planned Stadium Lighting project at Carmel High School in Carmel, California. The accompanying report presents the results of our field investigation, laboratory testing and engineering analyses. The site and subsurface conditions are discussed, recommendations for the soil and foundation engineering aspects of the project design are presented and potential geologic hazards are evaluated. The recommendations presented in this report are contingent upon our review of the grading and foundation plans for the proposed new construction and observation/testing of the earthwork and foundation installation phases of the project.

We refer you to the text of the report for detailed findings and recommendations. If you have any questions regarding the report, please call.

Very truly yours,
CLEARY CONSULTANTS, INC.

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INTRODUCTION

This report presents the results of our geotechnical and geologic hazards investigation for the planned Stadium Lighting project at Carmel High School in Carmel, California (see Drawing 1, Site Vicinity Map for location). The purpose of this investigation was to explore the soil and foundation conditions in the general locations of the planned light standards and develop recommendations for the geotechnical engineering aspects of the project design. We have also performed an evaluation of potential geologic and seismic hazards at the site.

Based on our review of the provided site plan (see Drawing 5, Site Plan) prepared by HGHB Architects, dated May 2021, and the project Illumination Summary prepared by Musco Lighting, dated October 24, 2013, we understand that the project will include the installation of two 70-foot-tall light standards along the asphalt-paved driveway on the north side of the stadium and two 80-foot-tall light standards at the top of the slope on the south side of the stadium. Structure loads are expected to be typical for this type of construction. The project will also include the installation of associated underground utilities.

We previously performed geotechnical and geologic hazards investigations, including associated construction observation and testing services, for the Administration Building (2013), Synthetic Turf Sports Field (2013), and Press Box (2014) projects at Carmel High School. Relevant information from our prior investigations was used in the current study.

SCOPE

As presented in our proposal letter dated May 28, 2021, the scope of our services for this investigation has included:

A. <u>Geotechnical Investigation</u>

1. A review of relevant published and unpublished and readily available geologic literature, maps and geotechnical information for the area.

2. Three reconnaissance visits to the site by our staff.

3. A subsurface investigation including the drilling of one (1) exploratory boring at the project site and recovering representative samples of the earth materials encountered.

4. Laboratory testing of samples obtained from the boring.

5. Engineering analysis of the field and laboratory data.

6. Preparation of this geotechnical investigation and geologic and seismic hazards assessment report for use in the project design and construction. The report includes findings, conclusions and recommendations for the following:

    a. Geologic and seismic setting of the site and surrounding area, including literature research and review of available geologic/seismic reports and maps.

    b. 2019 CBC seismic design criteria.

    c. Site preparation and grading.

    d. Recommendations for the foundation type and geotechnical engineering design parameters for the proposed 70-to-80-foot tall light standards.

    e. Estimated foundation settlements.

f. Backfilling and compaction of utility trenches.

g. Surface and subsurface drainage control.

h. Unusual design or construction conditions encountered in the investigation.

B. Geologic and Seismic Hazards Evaluation

1. Review of geologic and seismic conditions and data on the nature of the site and potential earthquake damage including:

   a. Regional geology and seismic conditions.

   b. Historical information on the seismicity of the local and regional area.

   c. Location of known active and potentially active faults in the vicinity of the site, as well as nearby known or judged inactive faults.

2. Earthquake ground motion acceleration design parameters and geologic site classification in accordance with the 2019 California Building Code study requirements.

3. Potential site impacts related to faulting, liquefaction, lateral spreading, seismic settlement and differential compaction, landsliding, flooding and dam failure inundation, with recommended mitigation measures, where appropriate.

This report has been prepared for the specific use of the Carmel Unified School District and their consultants in accordance with generally accepted geologic and geotechnical engineering principles and practices. No other warranty, either expressed or implied, is made. In the event that any substantial changes in the nature, design or location of the project are planned, the conclusions and recommendations of this report shall not be considered valid unless such changes are reviewed and the conclusions of this report modified or verified in writing. Any use or reliance of this report or the information herein by a third party shall be at such party's sole risk.

It should also be recognized that the passage of time may result in significant changes in technology, building code requirements, state of the practice, economic conditions or site variations which would render the report inaccurate. Accordingly, neither the owner, nor any other party, should rely on the information or conclusions contained in this report after three years from its date of issuance without the express written consent of Cleary Consultants, Inc.

METHOD OF INVESTIGATION

A. Subsurface Exploration

The subsurface investigation was performed on June 24, 2021, under the guidance of our Staff Geotechnical Engineer, Mr. Dustin Lettenberger, using track-mounted hollow stem auger drilling equipment. One (1) exploratory boring was drilled to an approximate depth of 21.5 feet at the location shown on Drawing 5, Site Plan.

A key describing the soil classification system and soil consistency terms used in this report is presented on Drawing 6 and the soil sampling procedures are described in Drawing 7. The log of the boring is presented on Drawings 9 and 10.

The boring was located in the field by surveyor's wheel measurements and interpolation of the features shown on the site plan provided us. These locations should be considered accurate only to the degree implied by the method used.

B. Laboratory Testing

Samples of the soil materials from the boring were returned to our laboratory for classification and testing. The results of moisture content, dry density, percent finer than No. 4 and No. 200 sieves, plasticity index, and free swell testing are shown on the boring log. The laboratory testing procedures followed during this investigation are summarized on Drawing 8. Drawing 11 summarizes the results of the plasticity index testing. Drawing 12 presents the results of soil corrosivity testing performed on a sample of the surficial soils collected from the boring.

A list of references consulted during the investigation is included at the end of the text.

SITE CONDITIONS

A. Surface

The track and field stadium is located in the south portion of the gently south-facing sloping Carmel High School campus. The north side of the stadium is occupied by the home bleachers and press box on an approximately 10-foot-high, 3:1 (Horizontal:Vertical) south-facing graded slope which borders the north side of the relatively level synthetic athletic field. An asphalt-paved access road borders the top of the slope at the north side of the stadium. The east and south sides of the athletic field border an approximately 40-to-50-foot-high, 2:1 southeast-facing graded slope densely populated by shrubs and small to large-sized trees, which borders a lower valley to the east and a baseball field and parking lot to the south. The southwest side of the athletic field borders an approximately 10-foot-high, 4:1 southwest-facing slope with several small to medium-sized trees leading to a relatively level terrace occupied by tennis courts. The west side of the stadium is relatively level and separated from Highway 1 by several large trees.

Two 70-foot-tall light standards are planned to be installed on the asphalt-paved driveway behind the home bleachers, at an approximate elevation of 345 feet above Mean Sea Level, and two 80-foot-tall light standards are planned to be installed at the top of the slope along the south side of the stadium, at an approximate elevation of 335 feet above Mean Sea Level. Evidence of slope instability was not observed on the slopes bordering the north and south sides of the athletic field, planned for light standard construction. A detailed slope stability analysis was not within our scope of work. The overall regional topographic gradient is approximately six percent to the south in the site vicinity.

B. Subsurface

EB-1 of this investigation encountered approximately 10 feet of fill consisting of medium dense gravelly clayey sand to clayey sand, underlain by native earth materials composed of very dense clayey sand soil to an approximate depth of 13 feet, further underlain by hard sandy siltstone bedrock of the Monterey Formation to the maximum depth explored due to practical drilling refusal, 21.5 feet.

EB-3 (2013), drilled for the Synthetic Turf Sports Field project, encountered approximately nine and one-half (9½) feet of fill consisting of loose to medium dense clayey sand, underlain by native earth materials composed of hard silty clay and sandy clay soil to the maximum depth explored of 19.5 feet.

EB-4 (2013) encountered native earth materials composed of very dense clayey sand soil in the upper 12 feet, underlain by very stiff silty clay to a depth of 16.5 feet, further underlain by very dense clayey sand to the maximum depth explored of 20 feet.

EB-5 (2013) encountered native earth materials composed of medium dense to very dense clayey sand in the upper six feet, underlain by hard sandy clay to the maximum depth explored, nine and one half (9½) feet.

EB-1 (2014), drilled for the Press Box project, encountered three and one-half (3½) feet of fill consisting of very stiff to hard silty clay, underlain by very dense clayey to silty sand to a depth of 11.5 feet, further underlain by hard sandy clay to a depth of 16.5 feet. These layers were in turn underlain by dense to very dense clayey sand, silty sand and gravelly clayey sand to a depth of 36.5 feet, further underlain by hard claystone/siltstone bedrock of the Monterey Formation to the maximum depth explored of 45 feet.

The logs of EB-3, EB-4 and EB-5 (2013) are included in Appendix A and the log of EB-1 (2014) is presented in Appendix B.

The upper soils encountered in the borings are considered to have a moderate to critically high expansion potential based on their plasticity characteristics (Plasticity Indices of 12 to 45 percent) and the free swell test data (Free Swells of 20 to 60 percent).

The attached boring logs and related information depict subsurface conditions only at the specific locations shown on Drawing 5 and on the particular dates designated on the logs. Soil conditions at other locations may differ from conditions occurring at the boring locations. Also, the passage of time may result in a change of soil conditions at these boring locations due to environmental changes.

C. <u>Groundwater</u>

Free groundwater was not encountered in the exploratory borings during drilling for this investigation or during our previous investigations at Carmel High School. It should be noted that the borings were only open for a period of a few hours, and this may not have been sufficiently long to allow local piezometric pressure to make a stabilized water table condition to become evident. Fluctuations of localized perched groundwater and the regional groundwater level can occur due to such factors as variations in rainfall, temperature, runoff, irrigation, and other factors not evident at the time our measurements were made and reported herein.

The State of California had not as of the date of this report prepared a seismic hazard zone report for the Monterey Quadrangle and information typically provided in such a report on the historically high ground water table was therefore not available.

The California State Water Resources Control Board GeoTracker website, which performs a search for groundwater well records based on the site address and search radius input, did not provide relevant groundwater data in the vicinity of Carmel High School.

Based on our review of the above information, we have conservatively assumed a groundwater depth of 45 feet, the maximum depth explored, for our liquefaction analysis.

GEOLOGY AND SEISMICITY

The Carmel High School campus is situated within the low hills immediately southeast of the Monterey Peninsula and west of Hatton Canyon, a tributary valley of Carmel Valley which is located approximately 4,000 feet south of the campus. Published geologic mapping (Clark, et al, 1997) indicates that the west portion of the site is underlain by Pleistocene-age Monte Vista Coastal Terrace deposits (Qctm) and the east portion of the site is underlain by Holocene-age Artificial Fill (Qaf) overlying Miocene-age semi-siliceous mudstone of the Monterey Formation (Tml). Mapping by Dibblee (2007) alternatively shows that the site is underlain by Quaternary-age dissected older alluvium (Qoa), which is bounded to the east and west by Miocene-age marine shale of the Monterey Formation. In our opinion, the materials encountered in our exploratory borings are characteristic of coastal terrace deposits and artificial fill underlain by claystone and siltstone of the Monterey Formation. A geologic map of the site vicinity, as prepared by Clark, et al (1997) is presented on Drawing 2, Local Geologic Map.

The Monterey Bay area is within a region recognized by geologists and seismologists as one of the most active seismic regions in the United States. The major fault zones which pass through this area in a northwest direction have produced approximately a dozen earthquakes per century strong enough to cause structural damage. The faults causing these earthquakes are part of the San Andreas fault system, a major rift in the earth's crust that extends for at least 450 miles along the California Coast. The Monterey Bay - Tularcitos, San Gregorio-Palo Colorado, San Andreas and Calaveras faults, all of which are considered active, are located approximately 3.2 miles northeast, 4.7 miles northwest, 29 miles northeast and 34 miles northeast of the site, respectively. In addition, the Hatton Canyon, Sylvan Thrust, Navy, Rinconada and Zayante-Vergeles faults, which exhibit late Quaternary displacement and are considered potentially active, are located approximately 1,800 feet northeast, 2.0 miles northeast, 3.0 miles northeast, 12 miles southeast and 24 miles northeast of the site, respectively (California Geological Survey, 2010). A regional fault map (Jennings & Bryant, 2010) is presented on Drawing 3.

The distances between the site and the capable segments of the above faults, as well as other significant faults within a radius of 60 miles from the site, were determined using the USGS Earthquake Hazards Program 2008 USGS National Seismic Hazard Maps – Fault Parameters, as presented below in Table 1.

TABLE 1 - Summary of Significant Earthquake Faults Capable of Generating Strong Ground Shaking at the Carmel High School Stadium Lighting Project Site[(1), (2)]

Earthquake Generating Fault	Approximate Distance and Direction to Generating Fault (Miles)	Maximum Earthquake (Moment Magnitude)
Monterey Bay-Tularcitos	3.2 NE	7.3
San Gregorio Connected	4.7 SW	7.5
Rinconada	11.9 SE	7.5
Zayante-Vergeles	24.4 NE	7.0
Northern San Andreas SAO+SAN+SAP+SAS	29.0 NE	8.1
Hosgri	29.9 SE	7.3
Calaveras CN+CC+CS	34.1 NE	7.0
Quien Sabe	39.5 NE	6.6
Monte Vista - Shannon	45.4 N	6.5
Ortigalita	54.7 NE	7.1

(1) USGS Earthquake Hazards Program 2008 USGS National Seismic Hazard Maps – Fault Parameters, run July 21, 2021
(2) Site Latitude: 36.5537˚N; Site Longitude: 121.9096˚W

Since the early 1800s, a number of major regional earthquakes have occurred along the San Andreas, Hayward, Calaveras and other fault zones in the vicinity of the San Francisco Bay Area and the surrounding region, as shown on Drawing 4, Regional Earthquake Epicenter Map (Toppozada, et al, 2000). A discussion of significant regional historic earthquakes within a radius of 60 miles from the site is presented below.

Several major 19th century earthquakes have occurred on the San Andreas fault, including earthquakes having estimated magnitudes ranging from 6.3 to 7.4 in 1838, 1840, 1865, and 1890, the presumed epicenters of which are located about 53 miles northwest, 40 miles northeast, 45 miles north, and 29 miles northeast of the project site, respectively. The San Francisco Earthquake of 1906 had a Richter Magnitude of approximately 8.3, the epicenter of which was located approximately 86 miles northwest of the site. Other 20th century earthquakes include earthquakes of magnitude 5.8, 5.3, and 5.5 occurred in 1910, 1957, and 1961 with epicenters located approximately 30 miles southeast, 83 miles northwest, and 35 miles southeast of the site; the 1957 Daly City earthquake caused approximately one million dollars (approximately eight million 2018 dollars) in damage. On October 17, 1989, the Loma Prieta Earthquake, which had its epicenter 34 miles north of the site and a recorded Moment Magnitude of 6.9, produced widespread damage throughout the greater San Francisco Bay Area. Most of the liquefaction-related damage caused by the Loma Prieta Earthquake was in areas of shallow water table (10 feet or less) underlain by unconsolidated fill and loose soil deposits, such as the Marina District of San Francisco, the westerly portion of Oakland, and downtown Santa Cruz.

Historical earthquakes along the Calaveras fault include events in 1861, 1897, 1899, 1979, 1984 and 2007 with estimated or recorded magnitudes ranging from 5.6 to 6.5. These earthquakes had epicenters located approximately 83 miles north, 38 miles northeast, 37 miles northeast, 44 miles northeast, 54 miles northeast and 61 miles northeast of the project site, respectively.

In 1868, an earthquake having an estimated Richter Magnitude of 7.0 occurred along the Hayward fault at a location approximately 80 miles northwest of the project site. This earthquake opened fissures at unexplained locations along the fault from San Pablo to Mission San Jose.

In 1836, an earthquake with an estimated magnitude 6.4 was reported along the Sargent fault, the epicenter of which was located approximately 33 miles northeast of the project site. An earthquake of estimated magnitude 5.5 occurred on the Quien Sabe fault in 1889, with an epicenter located approximately 39 miles northeast of the site. Earthquakes of magnitude 5.7 and 6.1 occurred on the Monterey Bay Complex in 1910 and 1926, at locations approximately 20 miles northwest and 15 miles west of the site, respectively. The San Gregorio fault produced an earthquake of magnitude 5.8 with an epicenter approximately 36 miles northwest of the site in 1926. An earthquake with Richter Magnitude 5.4 experienced on the Concord fault in 1955 had its epicenter approximately 98 miles north of the site. Two earthquakes in 1980, along traces of the Greenville fault, had their epicenters approximately 89 miles northeast of the site; these earthquakes had Richter magnitudes of 5.5 and 5.8. On August 24, 2014, a branch of the West Napa fault produced a magnitude 6.0 earthquake, the epicenter of which is located approximately 117 miles northwest of the site. In addition, numerous earthquakes of magnitudes 4.0 or greater have been recorded throughout the San Francisco Bay Area along the San Andreas, Hayward, Calaveras and other faults.

Table 2 presents a summary of the regional historic earthquakes discussed above.

TABLE 2 - Summary of Significant Regional Historic Earthquakes in the Vicinity of the Carmel High School Stadium Lighting Project Site[(1), (2), (3)]

Fault	Year (Name)	Magnitude (Richter)	Approximate Distance (Miles) and Direction to Earthquake Epicenter
San Andreas	1838[(1)]	7.4	53 NW
	1840[(1)]	6.5	31 NE
	1865[(1)]	6.6	45 N
	1882[(1)]	5.9	45 E
	1890[(1)]	6.3	29 NE
	1906 (San Francisco) [(1)]	7.8 (8.3)	86 NW
	1910[(1)]	5.8	30 NE
	1957 (Daly City) [(1)]	5.3	83 NW
	1961[(1)]	5.5	35 NE
	1989 (Loma Prieta) [(1)]	6.9	34 N
Calaveras	1861[(1)]	5.8 (6.5)	83 N
	1897[(1)]	5.8 (6.5)	38 NE
	1899[(1)]	5.8 (6.5)	37 NE
	1979[(1)]	5.8 (6.5)	44 NE
	1984[(1)] (Morgan Hill)	6.1	54 NE
	2007[(2)] (Alum Rock)	5.6	61 NE
Hayward	1868[(1)]	7.0	80 NW
Concord	1955[(1)]	5.4	98 N
Greenville	1980[(1)] (Two Earthquakes)	5.5 & 5.8	89 NE
Monterey Bay Complex	1910[(1)]	5.7	20 NW
	1926[(1)]	6.1	15 W
Quien Sabe	1889[(1)]	5.5	39 NE
San Gregorio	1926[(1)]	5.8	36 NW
Sargent	1836[(1)]	6.4	33 NE
West Napa	2014[(2)]	6.0	117 NW

(1) USGS OFR 2007-1437H
(2) USGS Earthquakes Hazards Program Website
(3) Site Latitude: 36.5537˚ N; Site Longitude: 121.9096˚ W

Modeling of earthquake occurrence probabilities over the 30-year period of 2014 to 2043 on both a statewide and regional basis was performed by the 2014 Working Group on California Earthquake Probabilities. The results of the study are presented in the Long-Term Time-Dependent Probabilities for the Third Uniform California Earthquake Forecast (Field, E.H., et. al., 2015). The report indicates a 72 percent probability that one or more earthquakes of magnitude 6.7 or greater will occur in the San Francisco Bay region between 2014 and 2043. Additionally, the probability of one or more regional earthquakes of magnitude 6.0 or greater over the same time period is indicated to be 98 percent. Likewise, the occurrence of at least one regional earthquake of magnitude 5.0 or greater over this time period is evaluated as being a near certainty.

Therefore, similar to most of the San Francisco Bay Area, it is reasonable to assume that the proposed light standards and other site improvements will be subjected to a moderate to large earthquake from one of the above-mentioned faults during their design lifetime. During such an earthquake, strong ground shaking is likely to occur at the site.

GEOLOGIC AND SEISMIC HAZARDS EVALUATION

A. Fault Offset Hazards

Alquist-Priolo earthquake fault zones are state mandated regulatory zones surrounding the surface traces of active faults (faults that have ruptured in the last 11,000 years) in California. According to the California Alquist-Priolo Act of 1973, structures for human occupancy cannot be placed over active faults with the potential for surface rupture, and must be located more than a minimum distance from the fault (generally 50 feet).

Based on our site reconnaissance, field exploration and review of available geologic information, we conclude that there are no known active or potentially active faults crossing the project site. The site is also not located within an Earthquake Fault Zone as defined by the updated State of California Alquist-Priolo Earthquake Fault Zoning Act. Therefore, the hazard resulting from ground surface fault rupture or fault offset at the site is considered to be low.

B. Ground Shaking Hazards

1. Strong Ground Shaking

Strong ground shaking is likely to occur during the design lifetime of the planned new light standards and other site improvements as a result of movement along one or more of the regional active faults discussed above. The light standards and other proposed improvements will need to be designed and constructed in accordance with current standards of earthquake-resistant construction.

2. Seismically-Induced Liquefaction and Dry Soil Settlement

The Monterey County Geologic Hazards Map indicates that the site is generally within an area of variable liquefaction susceptibility except for the west/northwest portion of the stadium, which is mapped within an area of low liquefaction susceptibility.

Liquefaction is a phenomenon in which saturated cohesionless soils lose strength during strong shaking and experience horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained, clay-free sands and sandy silts that lie within 50 feet of the ground surface. Seismically-induced dry soil settlement can occur in non-saturated soils, and is considered most applicable to non-cohesive clean, loose sands with less than five percent fines (Day, 2002).

As discussed above, our investigation found that the project site is generally underlain by approximately 13 to 36.5 feet of soil comprised of clay-gravel-sand mixtures of varying consistency, interlayered by very stiff to hard sandy clay and silty clay, overlying hard siltstone and claystone bedrock of the Monterey Formation to the maximum depth explored of 45 feet.

The fine-grained soil layers were additionally analyzed for liquefaction susceptibility using criteria from Bray, J.D. and Sancio, R.B. in their 2006 paper "Assessment of the Liquefaction Susceptibility of Fine-Grained Soils". The study by Bray and Sancio found that fine-grained soils with a plasticity index of less than 12 and water content to liquid limit ratio of less than 0.85, or a plasticity index of 12 to 18 and water content to liquid limit ratio of less than 0.8, are not susceptible to liquefaction. Based on these criteria, the silty clay layer encountered in the upper three and one-half feet of EB-1 (2014) was not found to be susceptible to liquefaction. The bedrock of the Monterey Formation, in our opinion, is also considered to be non-liquefiable.

Soil characterizations from EB-1 from the Press Box project (2014) investigation were then analyzed for seismically-induced liquefaction and dry soil settlement using the LiquefyPro (Version 5.0) computer program, which evaluates liquefaction potential and calculates settlements using the SPT blowcount obtained during soil sampling and total unit weight and fines content data obtained from the samples during laboratory testing. The program is based on the most recent publications of the NCEER Workshop and SP117 Implementation, and the analysis was performed using the Tokimatsu and Seed calculation method with earthquake magnitude scaling correction. The parameters used to analyze the boring were a maximum Peak Ground Acceleration (PGA_M) of 0.661g, earthquake Moment Magnitude of 8.50M_w and factor of safety (FS) of 1.3, per California Geological Survey Special Publication 117A (2008) and Note 48 (2019). The assumed groundwater depth used in the analysis was 45 feet below the ground surface, as discussed above.

Our analysis indicates that the predicted seismically-induced liquefaction settlement at the site is nil. The predicted seismically-induced dry soil settlement is approximately one-half (½) of an inch, with approximately one-quarter (¼) of an inch of differential settlement predicted over a horizontal distance of 50 feet. Based on the above findings, the likelihood that the planned light standards and other site improvements will significantly be damaged by seismically-induced ground settlement is considered low, provided that they are designed to tolerate the predicted settlements. The results and supporting data for the seismically-induced liquefaction and dry soil settlement analyses of the boring are included in Appendix C of this report.

3. <u>Other Seismic Hazards</u>

We have also considered the possibility of other seismically induced hazards that could potentially impact the planned building and other site improvements, such as lateral spreading, landsliding and ground cracking.

Because of the site's gentle topography, and the absence of a shallow groundwater table, the potential for lateral spreading is considered to be remote.

The predicted seismically-induced settlements at the project site are also below the threshold likely to result in ground cracking.

The Monterey County Geologic Hazards Map application indicates that the site is within an area of low landslide susceptibility. However, based on geologic mapping by Clark, et al (1997) and the findings of our investigations, we understand that original grading for the track and field stadium resulted in fill slopes, which are potentially more susceptible to landslides than natural or cut slopes, at the planned light standard locations. Accordingly, we considered the hazard potential of failure of these graded slopes. In our opinion, due to the absence of observed evidence of slope instability, the presence of trees and vegetation, and the relatively dense soil conditions encountered at the site, the likelihood of landsliding is considered very unlikely.

C. Flooding

F.E.M.A. Flood Insurance Rate Mapping (2017) indicates that the project site is located within an area described as ‘Other Areas, Zone X,’ “Areas of Minimal Flood Hazard.”

Dam failure inundation mapping prepared by the Monterey County Water Resources Agency indicates that the project site is not located within the dam failure inundation zones for the reservoirs within Monterey and San Luis Obispo Counties, including San Antonio Dam (2017) and Nacimiento Dam (2018).

The site is outside of the runup zone resulting from a seismically generated tsunami (California Geological Survey; 2009, 2021). The site is also not within the immediate vicinity of any large lakes or reservoirs, and therefore there is not a hazard at the site from a seiche.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our investigation, we judge that there are no geologic or seismic hazards that would preclude the construction of the planned stadium lighting project at Carmel High School. From a soil and foundation engineering standpoint, we also conclude that the light standards and other improvements can be constructed as planned provided the recommendations of this report are incorporated into the design and construction of the project.

Our analysis indicates that the theoretical seismically-induced dry soil settlement at the site is approximately one-half (½) of an inch, with approximately one-quarter (¼) of an inch of differential settlement predicted over a distance of 50 feet.

The recommendations presented in the remainder of this report are contingent on our review of the earthwork and foundation plans for the project and our observation of the grading and foundation installation phases of the construction.

A. <u>Earthwork</u>

1. <u>Fill Placement and Compaction</u>

Existing soils having an organic content of less than three percent by volume, and which are free of construction debris, can be used as fill. Fill material should not, however, contain rocks or lumps greater than six inches in greatest dimension with not more than 15 percent larger than 2.5 inches.

Engineered fill should be compacted to at least 90 percent relative compaction as determined by ASTM Test Designation D1557. Fill material should be spread and compacted in lifts not exceeding eight inches in uncompacted thickness. The moisture content of both on-site and imported soils utilized as fill should be adjusted at least two percent above their optimum moisture content.

In order to achieve satisfactory compaction in the subgrade and fill soils, it may be necessary to adjust the soil moisture content at the time of soil reworking. This may require that water be added and thoroughly mixed into any soils which are too dry or that scarification and aeration be performed in any soils which are too wet. The subgrade will require rescarification and recompaction if it is allowed to dry out and crack prior to placing the required non-expansive material section.

2. <u>Utility Trenches</u>

The presently available subsurface information indicates that the required utility trenches can be excavated with conventional backhoe equipment. Trenches deeper than five feet should be properly braced or sloped in accordance with the current requirements of CAL-OSHA or the local governmental agency, whichever is more stringent.

Utility trenches should be backfilled with engineered fill placed in lifts not exceeding eight inches in uncompacted thickness, except thicker lifts can be used with the approval of our representative provided satisfactory compaction is achieved. If on-site soil is used, the material should be compacted to at least 90 percent relative compaction by mechanical means only. Imported clean sand also can be used for backfilling trenches provided it is compacted to at least 90 percent relative compaction.

Water jetting to achieve the required level of backfill compaction should not be permitted.

3. Surface Drainage

Positive surface gradients of at least two percent on porous surfaces and one percent on paved surfaces should be maintained adjacent to the light standards so that water does not collect in the vicinity of the foundations or flow uncontrolled onto the graded slopes immediately adjacent to the light standards. Stormwater infiltration areas should be located at least ten feet from the foundations.

4. Construction Observation

Grading and earthwork should be observed and tested by our representative for conformance with the project plans/specifications and our recommendations. This work includes site preparation, selection of satisfactory fill materials, and placement and compaction of the subgrades and fills. Sufficient notification prior to commencement of earthwork is essential to make certain that the work will be properly observed.

B. Stadium Lighting Drilled Pier Foundations

The new light standards at the stadium, planned to be 70-to-80-feet in height, can be supported on drilled cast-in-place, straight shaft friction piers.

The piers should extend through any existing fill and loose soil to a minimum depth of 25 feet below the lowest adjacent grade or practical drilling refusal, obtaining support in the underlying medium dense to very dense clayey sand, and very stiff to hard sandy clay and bedrock materials, and have a minimum diameter of 36 inches. The actual pier depths and diameters for vertical and lateral support requirements should be determined by the project structural engineer.

The portion of the drilled piers within the approximately 10 feet of fill soil encountered in the vicinity of the planned northeast and southeast light standards can be designed on the basis of 150 psf skin friction for vertical loads with a 50 percent increase for wind and seismic conditions. Our exploratory borings did not encounter fill soil in the vicinity of the planned northwest and southwest light standard locations. The portion of the drilled piers within the native soils and bedrock can be designed on the basis of 350 psf skin friction for vertical loads with a 50 percent increase for wind and seismic conditions. Point bearing resistance should be neglected. For resistance to lateral loads, uniform passive equivalent fluid pressures of 200 pcf up to 2000 psf maximum in fill soils, and 350 pcf up to 3500 psf maximum in native soils can be assumed to act over 1.5 times the projected area of the individual pier shaft. The skin friction and passive pressure can be assumed to start three feet below the ground surface and below a 1.5:1 influence zone projecting up from any adjacent excavations such as utility trenches. Passive resistance should be neglected in the upper five feet on the downhill side of piers drilled on or at the top of the stadium side slopes. Allowable negative skin friction values of 115 psf within fill soil and 265 psf within native soil can be used on the pier sidewall to resist uplift forces.

Groundwater was not encountered in the borings during our investigations at the Carmel High School campus; however, the exploratory borings encountered locally loose soils, which may be susceptible to sloughing. Therefore, it is recommended that reinforcing steel and concrete be placed as soon as practical after drilling to minimize fall-in of the sidewall soils and possible caving. Any loose soil or accumulated water in the pier holes should be removed prior to concrete placement. Casing of the piers may be required where zones of loose soil are encountered during drilling.

The bottom of the pier excavations should be free of loose soil or fall-in prior to installing reinforcing steel and placing concrete. Heavy-duty drilling equipment in good working condition should be used to drill the pier holes. This work should be performed under the observation of our representative.

Reinforcement of the piers should be provided for their full length as determined by the structural engineer's analysis.

Settlements under the anticipated loads are expected to be within tolerable limits for the proposed construction.

C. <u>Seismic Design Parameters</u>

The OSHPD U.S. Seismic Design Maps online application was used to determine ASCE 7-16 seismic design values. The application analyzed the project site using the site latitude and longitude (36.5537° N, -121.9096° W) and the site classification, which was determined using subsurface information obtained from the exploratory borings.

A site-specific ground motion hazard analysis is also required per ASCE 7-16 (Chapter 11.4.8) for the project site (S_1>0.2), and site-specific design parameters should be used for structural design, unless the project structural engineer determines that "the value of the seismic response coefficient C_S is determined by Eq. (12.8-2) for values of $T \leq 1.5T_S$" and elects to use that exception. Site-specific design parameters, including one-second period values, can be provided in a supplemental letter, if required.

Based on the results of our investigation, CBC 2019 (Section 1613A), ASCE 7-16 (Chapter 11), and the OSHPD U.S. Seismic Design Maps online application, the following seismic design parameters can be used in lateral force analyses at this site:

Site Class C – Very Dense Soil and Soft Rock Profile (SPT Values of >50 blows/foot)

ASCE 7-16 Values (OSHPD U.S. Seismic Design Maps):

Site Coefficient F_a = 1.2
Site Coefficient F_v = 1.5
Mapped Spectral Acceleration Values; S_S = 1.256, S_1 = 0.472
Spectral Response Accelerations; SM_S = 1.507, SM_1 = 0.708
Design Spectral Response Accelerations; SD_S = 1.005, SD_1 = 0.472

D. Soil Corrosivity

Laboratory resistivity, pH, chloride and sulfate testing was performed on a soil sample obtained from the upper three feet of the boring during our geotechnical investigation for this project. The testing was performed by Cooper Testing Laboratory for the purpose of evaluating the soils' corrosion potential for use in the design of underground utilities and embedded concrete on this project.

In summary, the test results indicated a minimum resistivity of 2,096 Ohm-Cm, a pH of 7.1, a chloride content of 65 ppm, and water-soluble sulfate content of 207 ppm. Soils with chloride contents of less than 500 ppm and sulfate contents of less than 1500 ppm are considered to be of low corrosivity. However, based on the resistivity testing, the soils are considered to be "mildly corrosive."

Table 3 below shows the general correlation between resistivity and corrosion potential.

Table 3 - Correlation Between Resistivity and Corrosion Potential (c)

Soil Resistivity (ohm-cm)	Soil Classification
Below 500	Very Corrosive
500 to 1,000	Corrosive
1,000 to 2,000	Moderately Corrosive
2,000 to 10,000	Mildly Corrosive
Above 10,000	Progressively Less Corrosive

(c) National Association of Corrosion Engineers.

This condition combined with the slightly basic soil condition encountered at the site could result in reduced life span of buried steel piping and culverts for this project. Thicker gauge pipelines would have greater life spans. For example, the life spans for 18, 16 and 14-gauge steel culverts with a soil resistivity of 2,096 ohm-cm and a pH of 7.1 are estimated to be roughly 24, 31 and 38 years, respectively (California Department of Transportation, 2019).

Based on the resistivity and sulfate testing, for the purposes of design of concrete in contact with the soil against acid and sulfate exposure conditions, there are no cementitious material or water content restrictions (Portland Cement Association, 2002).

PLAN REVIEW AND CONSTRUCTION OBSERVATION

We should be provided the opportunity to review the foundation plans and the specifications for the project when they are available. We should also be retained to provide soil engineering observation and testing services during the foundation installation phases of the project. This will provide the opportunity for correlation of the soil conditions found in our investigation with those actually encountered in the field, and thus permit any necessary modifications in our recommendations resulting from changes in anticipated conditions.

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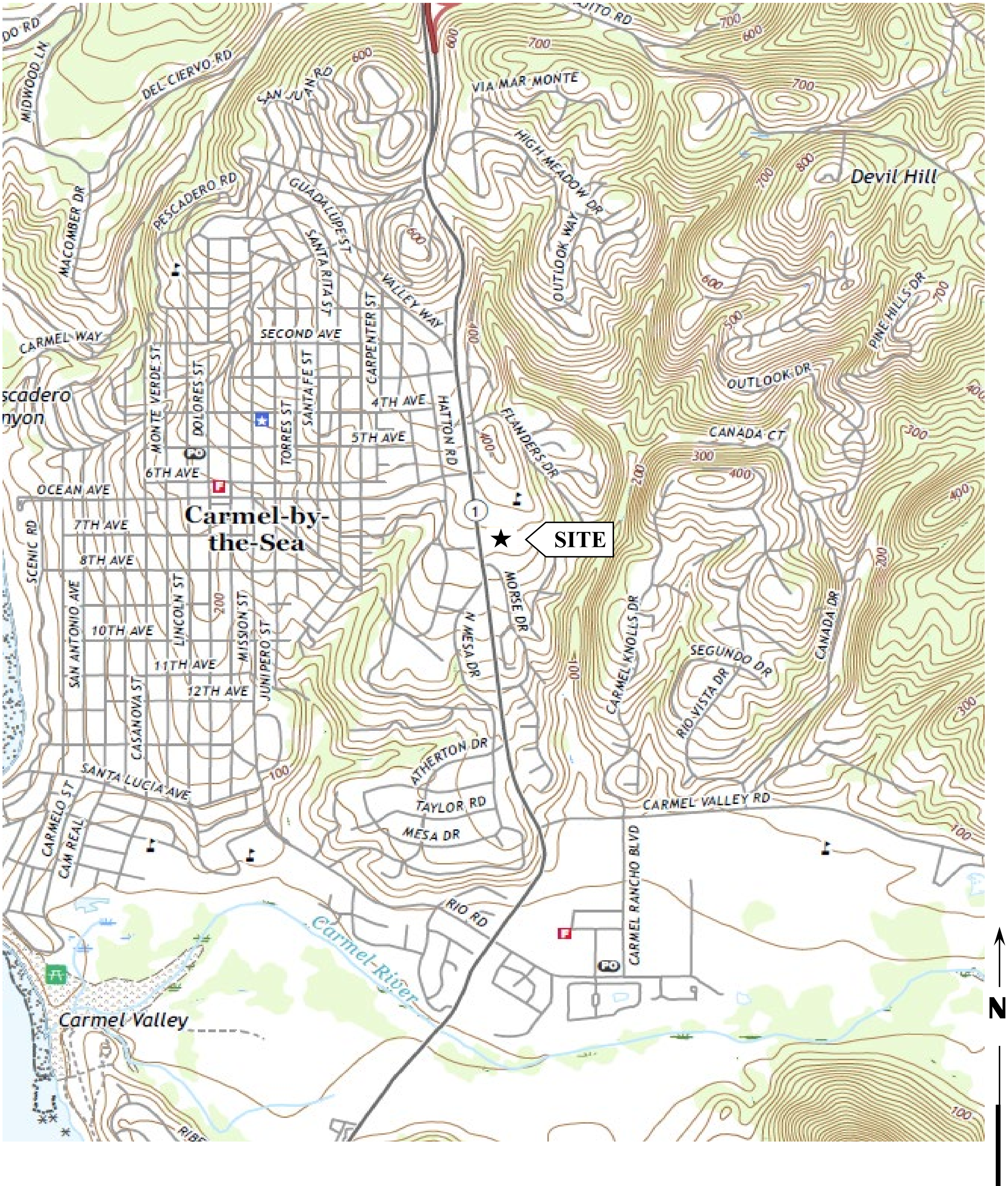

BASE: U.S. Geological Survey, 2018, Monterey 7.5' Quadrangle, Monterey County, California

SITE VICINITY MAP

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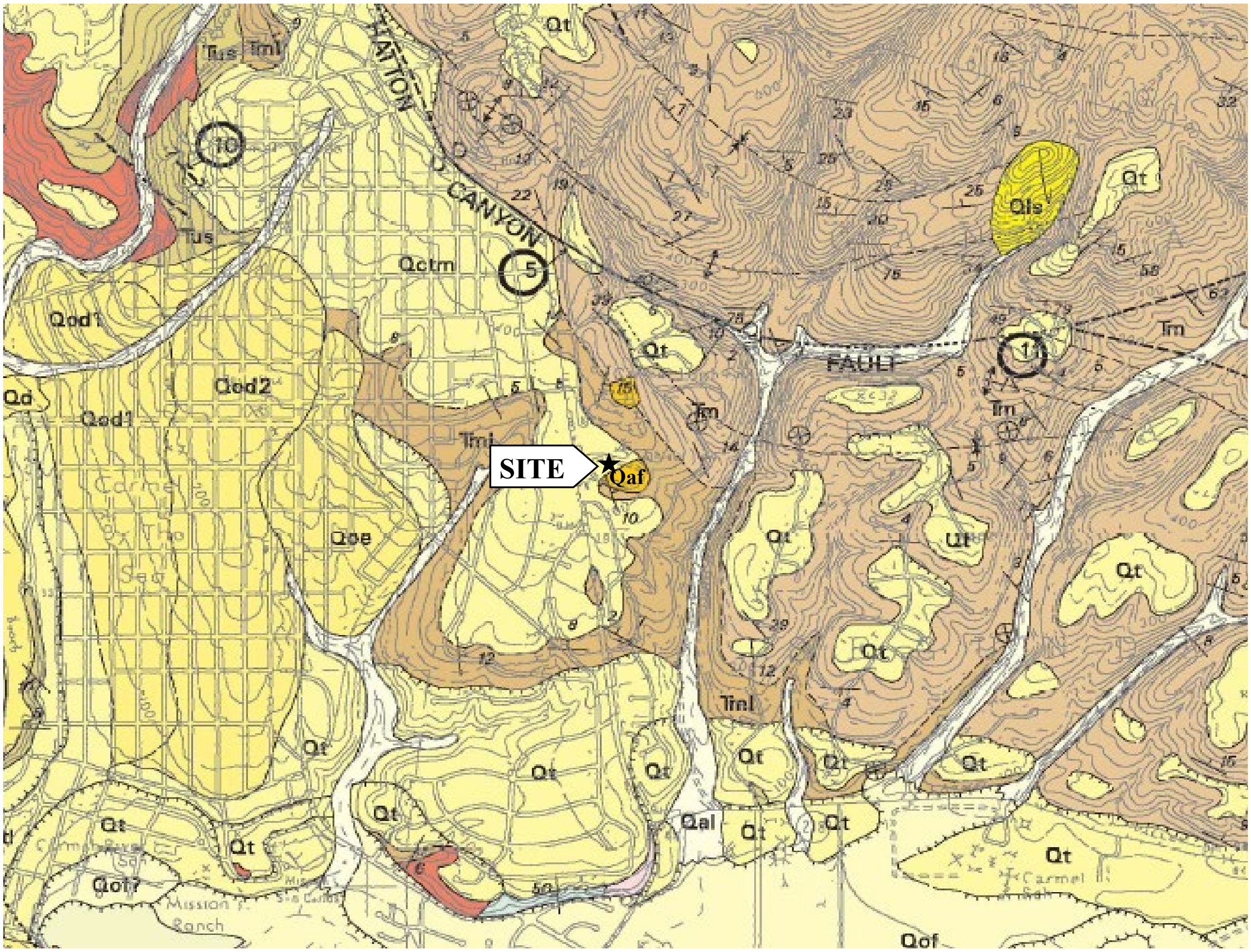
Geotechnical Engineers and Geologists

STADIUM LIGHTING PROJECT
Carmel High School
Carmel, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 2000'	1346.1B	July 2021	1



EXPLANATION

Qaf	Artificial Fill
Qd	Dune Sand Deposits
Qb	Basin Deposits
Qal	Alluvial Deposits
Qof	Older Floodplain Deposits
Qls	Landslide Deposits
Qod1/Qod2	Older Coastal Dunes
Qctm	Coastal Terrace Deposits
Qt	Terrace Deposits
Tm/Tml	Monterey Formation
Tus	Sandstone

30 Bedding Strike and Dip

Anticline

Landslide Deposit, arrows show direction of movement

Fault, dashed where inferred, dotted where concealed

N

BASE: Clark, J.C., et al, 1997, Geologic Map of the Monterey and Seaside Quadrangles, Monterey County, California, USGS Open-File Report 97-30

LOCAL GEOLOGIC MAP

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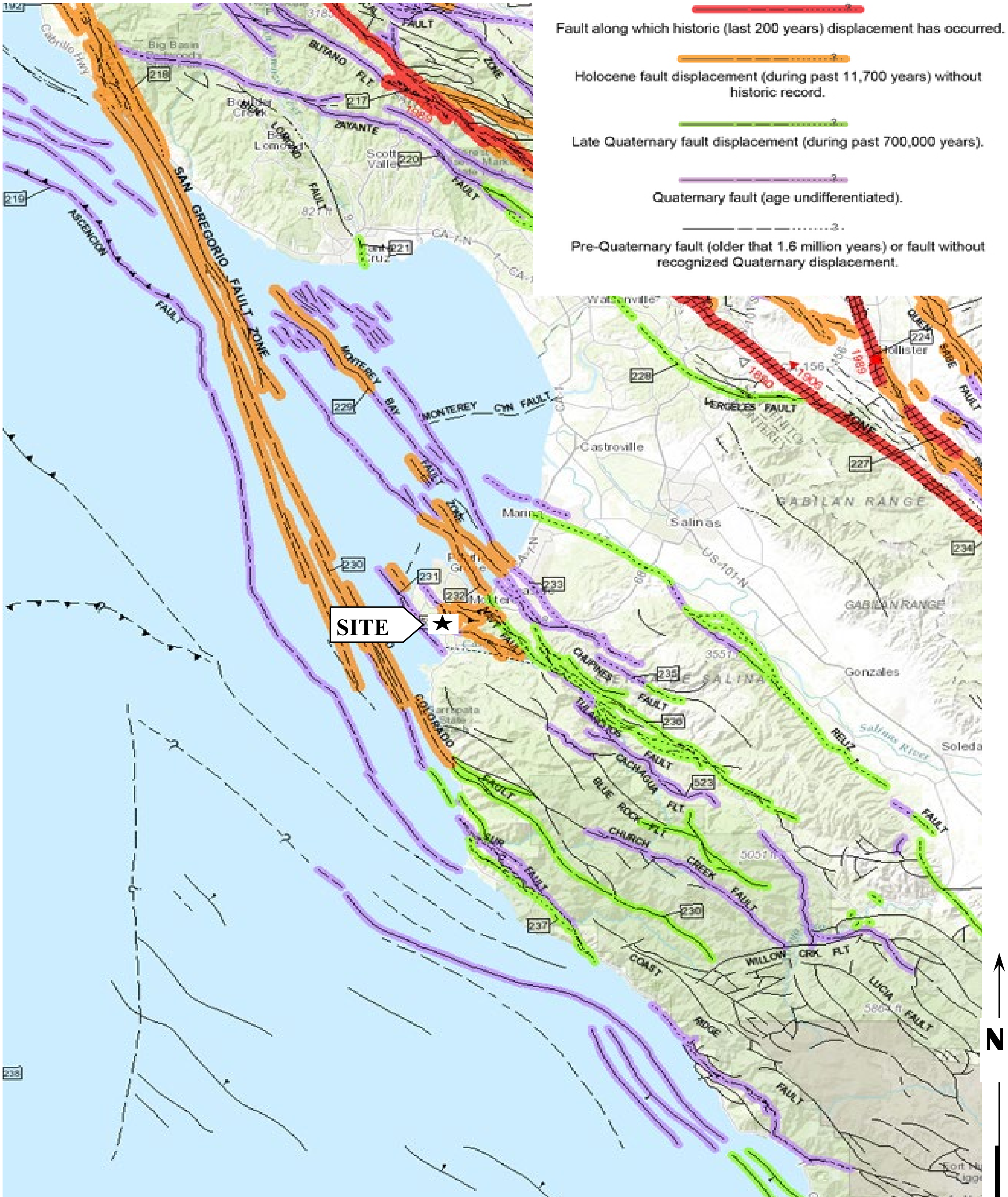
STADIUM LIGHTING PROJECT
Carmel High School
Carmel, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 2000'	1346.1B	July 2021	2

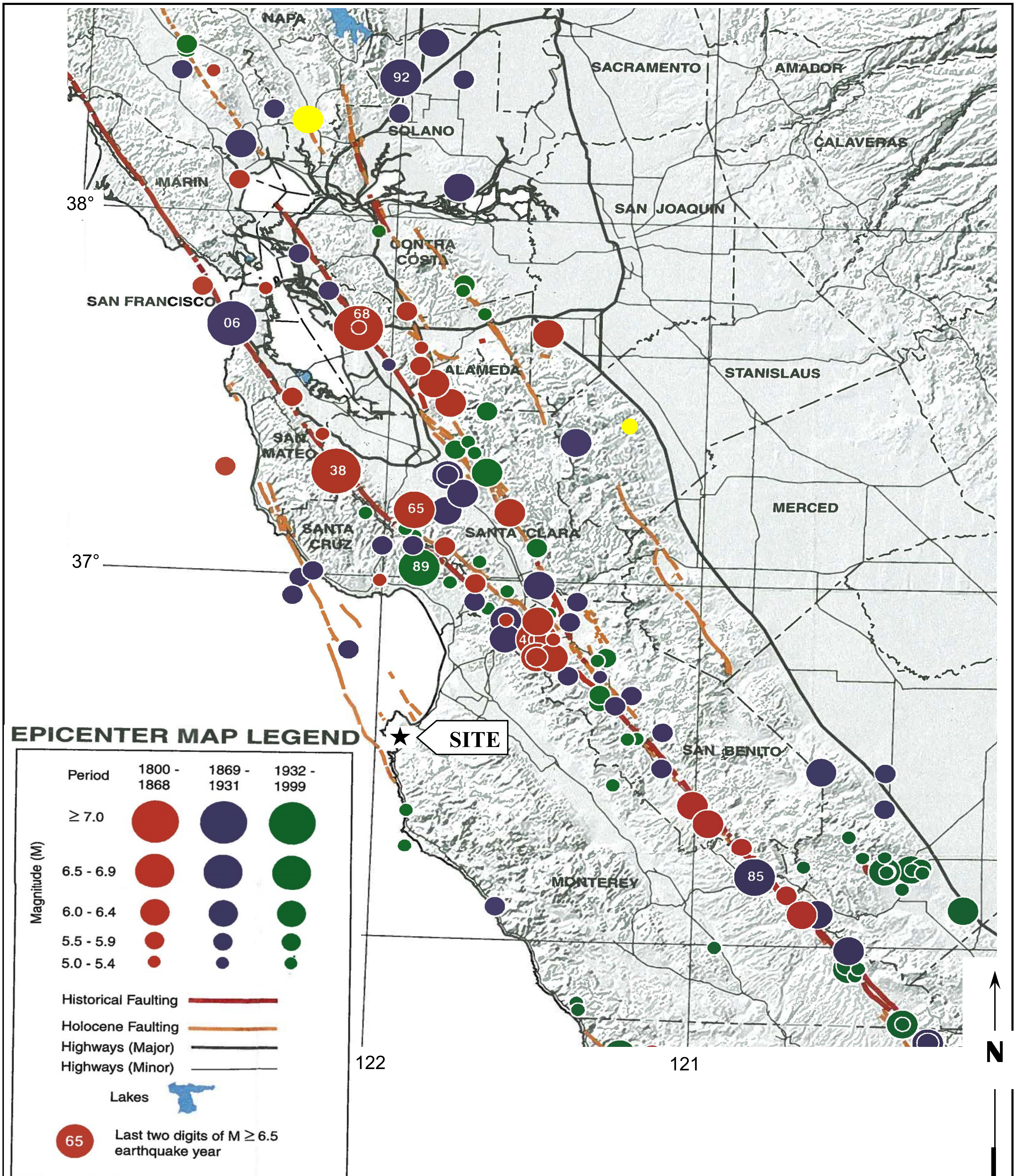


BASE: Jennings, C.W., and Bryant, W.A., 2010, Fault Activity Map of California

REGIONAL FAULT MAP

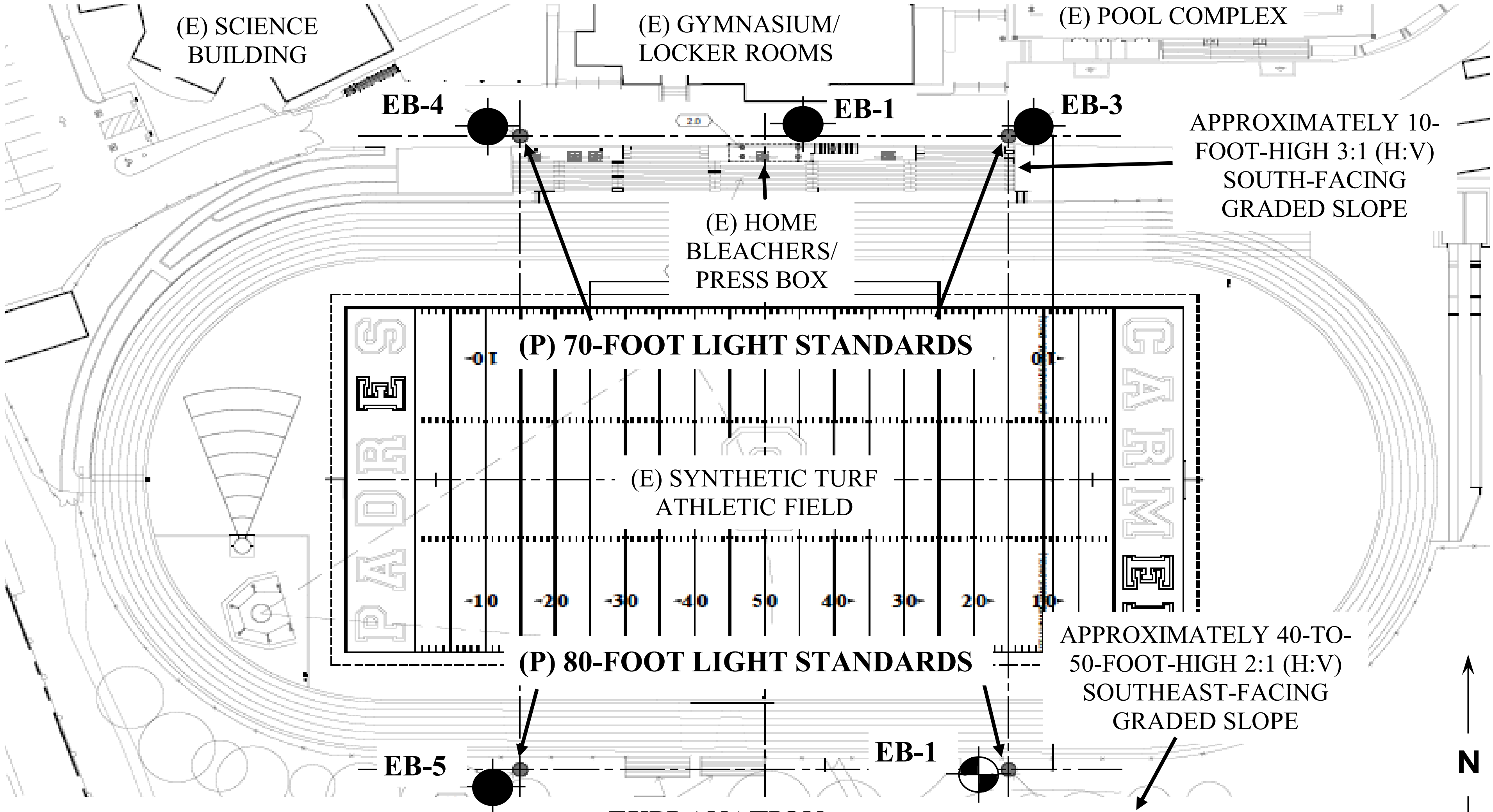
CLEARY CONSULTANTS, INC. *Geotechnical Engineers and Geologists*	STADIUM LIGHTING PROJECT Carmel High School Carmel, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 10 miles ±	1346.1B	July 2021	3



BASE: CDMG Map Sheet 49; Toppozada et al, 2000. Magnitude 5.0 and Greater Earthquakes Plotted Through 1999; Subsequent Earthquakes through August 2014 plotted in yellow.

REGIONAL EARTHQUAKE EPICENTER MAP				
CLEARY CONSULTANTS, INC. *Geotechnical Engineers and Geologists*		STADIUM LIGHTING PROJECT Carmel High School Carmel, California		
APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF/CC	1" = 25 miles ±	1346.1B	July 2021	4



EXPLANATION

EB-1 Approximate Location of Exploratory Boring, This Investigation

EB-1 Approximate Location of Exploratory Boring, 2013 and 2014 Investigations

Base: Prepared by HGHB Architects, Dated May 2021

SITE PLAN

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

STADIUM LIGHTING PROJECT
Carmel High School
Carmel, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 60' ±	1346.1B	July 2021	5

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISION
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands or gravelly sands, little or no fines
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines
			SC	Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

U.S. STANDARD SERIES SIEVE — CLEAR SQUARE SIEVE OPENINGS

	200		40	10	4	3/4"	3"	12"
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

GRAIN SIZES

SANDS AND GRAVELS	BLOWS/FOOT✧
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

RELATIVE DENSITY

SILTS AND CLAYS	STRENGTH ☆	BLOWS/FOOT ✧
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

CONSISTENCY

✧Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split barrel (ASTM D-1586).

☆Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

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KEY TO EXPLORATORY BORING LOGS

STADIUM LIGHTING PROJECT
Carmel High School
Carmel, California

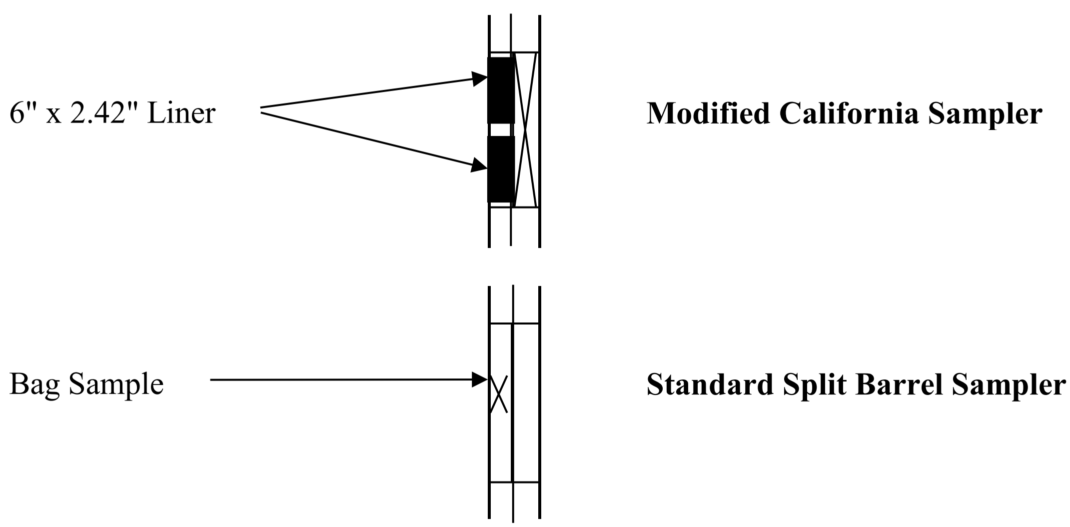
PROJECT NO.	DATE	DRAWING NO.
1346.1B	July 2021	6

FIELD SAMPLING PROCEDURES

The soils encountered in the borings were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D-2487).

Representative soil samples were obtained from the borings at selected depths appropriate to the soil investigation. All samples were returned to our laboratory for classification and testing.

In accordance with the ASTM D1586 procedure, the standard penetration resistance was obtained by dropping a 140 pound hammer through a 30-inch free fall. The 2-inch O.D. Standard split barrel sampler was driven 18 inches or to practical refusal and the number of blows were recorded for each 6-inch penetration interval. The blows per foot recorded on the boring logs represent the accumulated number of blows, or N-value, required to drive the penetration sampler the final 12 inches. In addition, 3-inch O.D. x 2.42-inch I.D. drive samples were obtained using a Modified California Sampler and 140 pound hammer. Blow counts for the Modified California Sampler were converted to standard penetration resistance by multiplying by 0.6. The sampler type is shown on the boring logs in accordance with the designation below.



Where obtained, the shear strength of the soil samples using either Torvane (TV) or Pocket Penetrometer (PP) devices is shown on the boring logs in the far right hand column.

LABORATORY TESTING PROCEDURES

The laboratory testing program was directed toward a quantitative and qualitative evaluation of the physical and mechanical properties of the soils underlying the site.

The natural water content was determined on 11 samples of the materials recovered from the boring in accordance with the ASTM D2216 Test Procedure. These water contents are recorded on the boring log at the appropriate sample depths.

Dry density determinations were performed on seven samples to measure the unit weight of the subsurface soils in accordance with the ASTM D2937 Test Procedure. The results of these tests are shown on the boring log at the appropriate sample depths.

Atterberg Limit determinations were performed on two samples of the subsurface soils in accordance with the ASTM D4318 Test Procedure to determine the range of water contents over which the materials exhibited plasticity. The Atterberg Limits are used to classify the soils in accordance with the Unified Soil Classification System and to evaluate the soil's expansion potential. The results of these tests are presented on Drawing 11, and on the boring log at the appropriate sample depths.

The percent soil fraction passing the #4 sieve and #200 sieves were determined on four samples of the subsurface soils in accordance with the ASTM D1140 Test Procedure to aid in the classification of the soils. The results of these tests are shown on the boring log at the appropriate sample depths.

Free swell tests were performed on five samples of the soil materials to evaluate the swelling potential of the soil. The free swell tests were performed by slowly pouring 10 ml of air dried soil passing the No. 40 sieve into a 100 ml graduated cylinder filled with approximately 90 ml of distilled water. The suspension was stirred repeatedly to ensure thorough wetting of the soil specimen. The graduated cylinder was then filled with distilled water to the 100 ml mark and allowed to settle until equilibrium was reached (approximately 24 hours). The free swell volume of the soil was then noted. The percent free swell was calculated by subtracting the initial soil volume from the free swell volume, dividing the difference by the initial volume, and multiplying the result by 100 percent. The results of these tests are presented on the boring log.

Corrosion testing was performed by Cooper Testing Laboratory on a sample of the surficial soil materials from the upper three feet of the exploratory boring. Testing included resistivity, pH, chloride and sulfate testing performed in accordance with ASTM G57, ASTM G51, Caltrans 422 (modified) and Caltrans 417 (modified), respectively. The results of this test are presented on Drawing 12 and discussed in Section D. Soil Corrosivity.

EQUIPMENT 7" Diameter Hollow Stem Auger*	ELEVATION ---	LOGGED BY DL
DEPTH TO GROUNDWATER Not Enc.	DEPTH TO BEDROCK ±13.0'	DATE DRILLED 6/24/2021

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE
Soil Landscape GRAVELLY CLAYEY SAND TO CLAYEY SAND, moist, fine to coarse grained sand, fine subangular gravel, severely weathered sandstone fragments, iron staining @1.5': Liquid Limit = 32% Plasticity Index = 12% Finer Than #4 = 81% Finer Than #200 = 44% Free Swell = 40% @4.5': Finer Than #4 = 92% Finer Than #200 = 40% Free Swell = 70%	Yellowish Brown (to ±5.0'); Yellowish Brown to Grayish Brown	Medium Dense	SC; SC-SM (at ±8')
@9.5': Finer Than #4 = 83% Finer Than #200 = 28% Free Swell = 30% Fill ↑			
CLAYEY SAND, moist, fine to coarse grained sand, fine subangular gravel, severely weathered sandstone fragments @11.0': Finer Than #4 = 90% Finer Than #200 = 44% Free Swell = 70%	Yellowish Brown to Grayish Brown	Very Dense	SC
SANDY SILTSTONE, very moist, weathered to fine grained sand, friable, iron staining at fractures (Monterey Formation) @15.5': Liquid Limit = 75% Plasticity Index = 21% Free Swell = 40%	Brown	(Hard)	(MH)

DEPTH (FEET)	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
1–2	16	13		
3	13	14		
4		12	89	
4.5	19	11	100	
6	12	17		
9		9	108	
9.5	24	11	90	
11	75/10"	18		
15.5	30/3"	54	58	

* Drilled with Geoprobe 7822DT Track Mounted Rig

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 1

STADIUM LIGHTING PROJECT
Carmel High School
Carmel, California

PROJECT NO.	DATE	DRAWING NO.
1346.1B	July 2021	9

EQUIPMENT 7" Diameter Hollow Stem Auger*	ELEVATION ---	LOGGED BY DL
DEPTH TO GROUNDWATER Not Enc.	DEPTH TO BEDROCK ±13.0'	DATE DRILLED 6/24/2021

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
SANDY SILTSTONE, very moist, continued... (Monterey Formation)	Brown	(Hard)	(MH)	21		50/11"	33 31	85 90	
Bottom of Boring = 21.5' (Practical Drilling Refusal)				22					
				23					
				24					
				25					
				26					
				27					
				28					
				29					
				30					
				31					
				32					
				33					
				34					
				35					
				36					
				37					
				38					
				39					
* Drilled with Geoprobe 7822DT Track Mounted Rig				40					

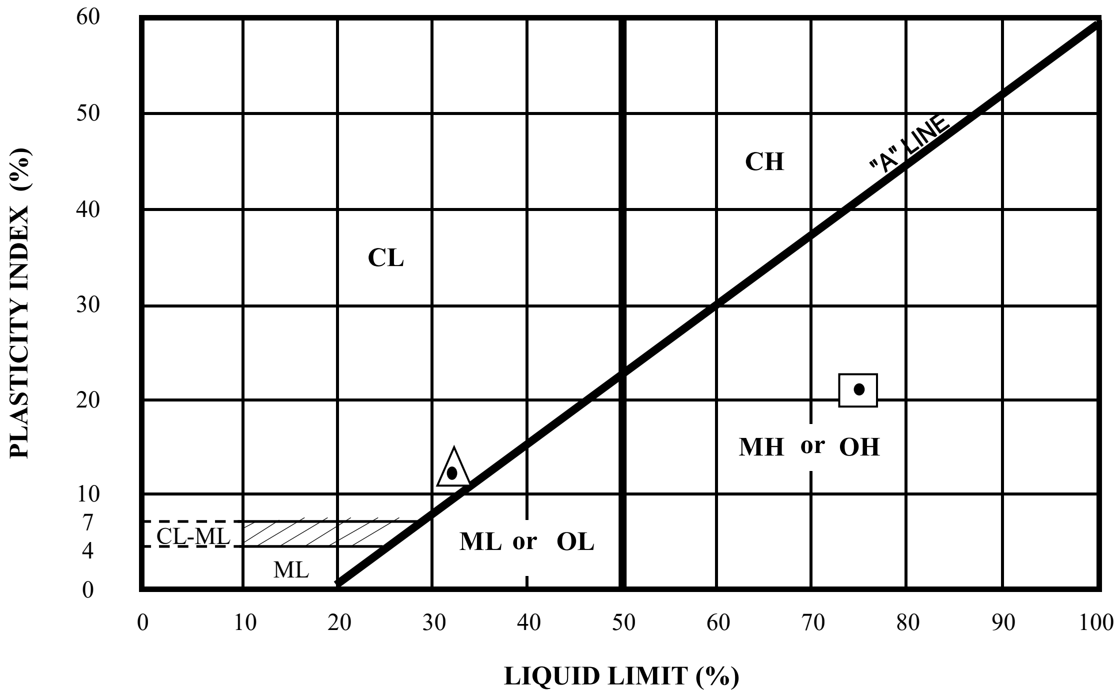
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 1

STADIUM LIGHTING PROJECT
Carmel High School
Carmel, California

PROJECT NO.	DATE	DRAWING NO.
1346.1B	July 2021	10



KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %	PASSING NO. 200 SIEVE %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
△ (triangle with dot)	1	1.5	13	32	12	44	-0.6	SC*
□ (square with dot)	1	15.5	54	75	21	-	0.0	(MH)

*Classified as coarse-grained soil since less than 50% passes #200 sieve

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Geotechnical Engineers and Geologists

PLASTICITY CHART

STADIUM LIGHTING PROJECT
Carmel High School
Carmel, California

PROJECT NO.	DATE	DRAWING NO.
1346.1B	July 2021	11

APPENDIX A

Carmel High School
New Synthetic Turf Sports Field Project (2013)
Logs of Exploratory Borings EB-3, EB-4 and EB-5
Drilled May 2, 2013

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	MAA
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	---	DATE DRILLED	5/2/2013

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
Landscape: (Top of slope, east side of home bleachers), ±1" unlandscaped native grass	Light Yellowish Brown	Medium Dense	SC						
CLAYEY SAND, slightly moist, fine to coarse grained sand, subangular to subrounded fine gravel up to 1/2" diameter, some silt, rootlets up to 1/8" diameter				1		11	9 / 7	90	
@1.5': Finer than #4 = 93% Finer than #200 = 21% Free Swell = 30%	Yellowish Brown	Loose		2					
				3		5	14		
@3.0': moist Liquid Limit = 40% Plasticity Index = 17% Finer than #4 = 92% Finer than #200 = 21% Free Swell = 40%				4–5		9	13	93	
@5.0': large weathered granitic inclusions up to 4" diameter				6		8	16		
@6.0': some subrounded gravels up to 3/4" diameter		Loose to Medium Dense		7–8		10	19	106	
@8.5': increasing clay content Finer than #200 = 30% Free Swell = 40%	Dark Grayish Brown	Loose		9			24 / 14		
@9.0': Finer than #200 = 40% Free Swell = 30% ↑ Fill						8	31		
SILTY CLAY, very moist, occasional fine sand and subangular gravel up to 1/4" diameter	Dark Grayish Brown	Hard	CH	10					
@9.5': Liquid Limit = 67% Plasticity Index = 41% Finer than #200 = 94% Free Swell = 80%				11		47/8"	32 / 27	84	PP=1.75 TV=1.5
@10.0': hard drilling		Hard	CH	12					
SANDY CLAY, slightly moist, occasional fine to coarse grained sand and subrounded friable gravels up to 1 1/2" diameter, iron staining	Yellowish Brown			13					
@10.5': Finer than #200 = 89% Free Swell = 80%				14		30/3"			
@13.5': occasional highly weathered granitic gravel inclusions				15–18					
@19.5': highly weathered granitic gravel inclusions				19		30/6"			
* Drilled with a B53 Truck Mounted Rig PP = Pocket Penetrometer TV = Torvane									
Bottom of Boring = 19.5'				20					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 3
SYNTHETIC TURF SPORTS FIELD
Carmel High School
Carmel, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
CC	----	1346.1	October 2013	9

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION ---	LOGGED BY MAA
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK ---	DATE DRILLED 5/2/2013

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
Existing Driveway: 5" AC, no observed baserock	Yellowish Brown	Very Dense	SC						
CLAYEY SAND, moist, fine to coarse grained sand, occasional friable fine subangular to subrounded gravel up to 3/8" diameter				1		30/5"	7 13	 108	
@1.0': some quartz Finer than #4 = 98% Finer than #200 = 23% Free Swell = 30%				2					
@3.0': iron staining, increased coarse grained sand, hard drilling				3		77	11 10		
@3.5': increased gravel content Finer than #4 = 80% Finer than #200 = 16% Free Swell = 40%				4		30/6"	14	107	
				5					
@6.0': friable weathered sandstone and granitic inclusions up to 1/2" diameter, driller began adding water to hole				6		56	12		
				7					
				8					
@9.0': reduced gravel content, fine to medium grained sand Finer than #4 = 100% Finer than #200 = 23% Free Swell = 30%				9		50/9"	17	95	
				10					
				11					
SILTY CLAY, moist, trace fine grained sand, iron staining	Dark Yellowish Brown	Very Stiff	CH	12					
				13					
@13.5': Finer than #4 = 100% Finer than #200 = 96% Free Swell = 50%				14			34	78	
@14.5': Liquid Limit = 53% Plasticity Index = 25% Finer than #4 = 100% Finer than #200 = 93% Free Swell = 50%	Grayish Brown			15		17	37	82	PP=2.75 TV=1.0
				16					
CLAYEY SAND, moist, fine grained and occasional coarse grained sand, occasional subangular quartz and chert fragments up to 3/8" diameter, iron staining	Brown	Very Dense	SC	17					
				18					
* Drilled with a B53 Truck Mounted Rig PP = Pocket Penetrometer TV = Torvane Bottom of Boring = 20.0'				19 20		48/10"			

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 4
SYNTHETIC TURF SPORTS FIELD
Carmel High School
Carmel, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
CC	----	1346.1	October 2013	10

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	MAA
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	---	DATE DRILLED	5/2/2013

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
Gravelly Pavement Area: ± 2" Yellowish Brown Gravelly Silty Sand	Dark Grayish Brown	Medium Dense	SC						
CLAYEY SAND, moist, fine to coarse grained sand, subangular gravels up to 3/4" diameter, iron staining @1.0': Finer than #4 = 96% Finer than #200 = 31% Free Swell = 20%	Brown		CL	1–2		17	12 9	106 113	
CLAYEY SAND, moist, fine to coarse grained sand, friable fine gravel sized chert and quartz inclusions, iron staining @1.5': Finer than #4 = 95% Finer than #200 = 13% Free Swell = 30%	Yellowish Brown	Medium Dense		3		59	21		
		Very Dense	SC	4–5		47/11"	17	98	
@4.5: Finer than #4 = 94% Finer than #200 = 24% Free Swell = 40%		Dense		5–6					
SANDY CLAY, moist, fine to medium grained sand, occasional fine friable gravels @6.0': Finer than #4 = 98% Finer than #200 = 57% Free Swell = 40%	Grayish Brown	Hard	CL	6–8		47	18 25		
@8.5': inclusions of fine weathered granite, quartz and chert up to 1/2" diameter Finer than #4 = 97% Finer than #200 = 50% Free Swell = 40%	Mottled Yellowish Brown and Dark Gray		CL-SC	9		30/6"	22 4	93	
Bottom of Boring = 9.5'				10–20					

* Drilled with a B53 Truck Mounted Rig

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 5

SYNTHETIC TURF SPORTS FIELD
Carmel High School
Carmel, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
CC	----	1346.1	October 2013	11

APPENDIX B

Carmel High School
New Press Box Project (2014)
Log of Exploratory Boring EB-1
Drilled October 29, 2014

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	343'	LOGGED BY	CMc
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	36.5'	DATE DRILLED	10/29/2014

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
Bus Access Road (4" AC/8" AB) SILTY CLAY, moist, fine to medium grained sand	Yellowish Brown	Very Stiff	CH	1				
@2.0': Liquid Limit = 69% Plasticity Index = 45% Finer than #4 = 100% Finer than #200 = 74% Free Swell = 60%				2	18	27	91	PP=4.0
↑ Fill		Hard		3	50/6"	18		
CLAYEY TO SILTY SAND, moist, fine to coarse grained sand, fine subangular to subrounded gravel	Yellowish Brown	Very Dense	SC-SM	4	30/5"			
				5				
@5.5': Liquid Limit = 37% Plasticity Index = 12% Finer than #4 = 90% Finer than #200 = 15% Free Swell = 30%				6	50/5"	9		
	Grayish Brown			7–8				
@9.0': decreased coarse grained sand and gravel content				9	50/6"	15	106	
				10–11				
SANDY CLAY, moist, fine to occasionally coarse grained sand, occasional fine subangular to subrounded gravel	Grayish Brown	Hard	CL	12–13				
@14.5': Finer than #4 = 98% Finer than #200 = 61% Free Swell = 40%				14–15	66	24		
				16				
CLAYEY TO SILTY SAND, moist, fine to coarse grained sand, fine to coarse subangular to subrounded gravel	Yellowish Brown	Very Dense	SC-SM	17–18				
@18.5': Finer than #4 = 88% Finer than #200 = 10% Free Swell = 35%				19	50/5"	4	106	
* Drilled with a B56 Truck Mounted Rig PP = Pocket Penetrometer				20				

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 1
NEW PRESS BOX
Carmel High School
Carmel, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	---	1346.1A	November 2014	8

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	343'	LOGGED BY	CMc
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	36.5'	DATE DRILLED	10/29/2014

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
CLAYEY TO SILTY SAND, moist, continued...	Yellowish Brown	Very Dense	SC-SM	21					
		Dense		22					
@24.5': Finer than #4 = 90% Finer than #200 = 11% Free Swell = 40%				24.5	X	31	14		
GRAVELLY CLAYEY SAND, moist, fine to coarse grained sand, fine to coarse subangular gravel	Grayish Brown	Very Dense	SC	27					
@29.0': Finer than #4 = 78% Finer than #200 = 8% Free Swell = 50%				29–30	X	91	8	113	
				31	X	50/1"			
CLAYEY SAND, moist, fine to medium grained sand	Grayish Brown to Yellowish Brown	Dense	SC	33					
@34.5': Finer than #4 = 100% Finer than #200 = 14% Free Swell = 30%				34.5	X	35	16		
CLAYSTONE/SILTSTONE, moist, indurated (Monterey Formation)	Yellowish Brown	(Hard)	(CH-MH)	37					
				39	X	48/7"	46	67	
* Drilled with a B56 Truck Mounted Rig				40					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 1

NEW PRESS BOX
Carmel High School
Carmel, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	---	1346.1A	November 2014	9

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	343'	LOGGED BY	CMc
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	36.5'	DATE DRILLED	10/29/2014

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
CLAYSTONE/SILTSTONE, moist, continued...	Yellowish Brown	(Hard)	(CH-MH)	41					
				42					
				43					
				44	X	65	45		
Bottom of Boring = 45.0'				45					
				46					
				47					
				48					
				49					
				50					
				51					
				52					
				53					
				54					
				55					
				56					
				57					
				58					
				59					
* Drilled with a B56 Truck Mounted Rig				60					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

LOG OF EXPLORATORY BORING NO. 1

NEW PRESS BOX
Carmel High School
Carmel, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	---	1346.1A	November 2014	10

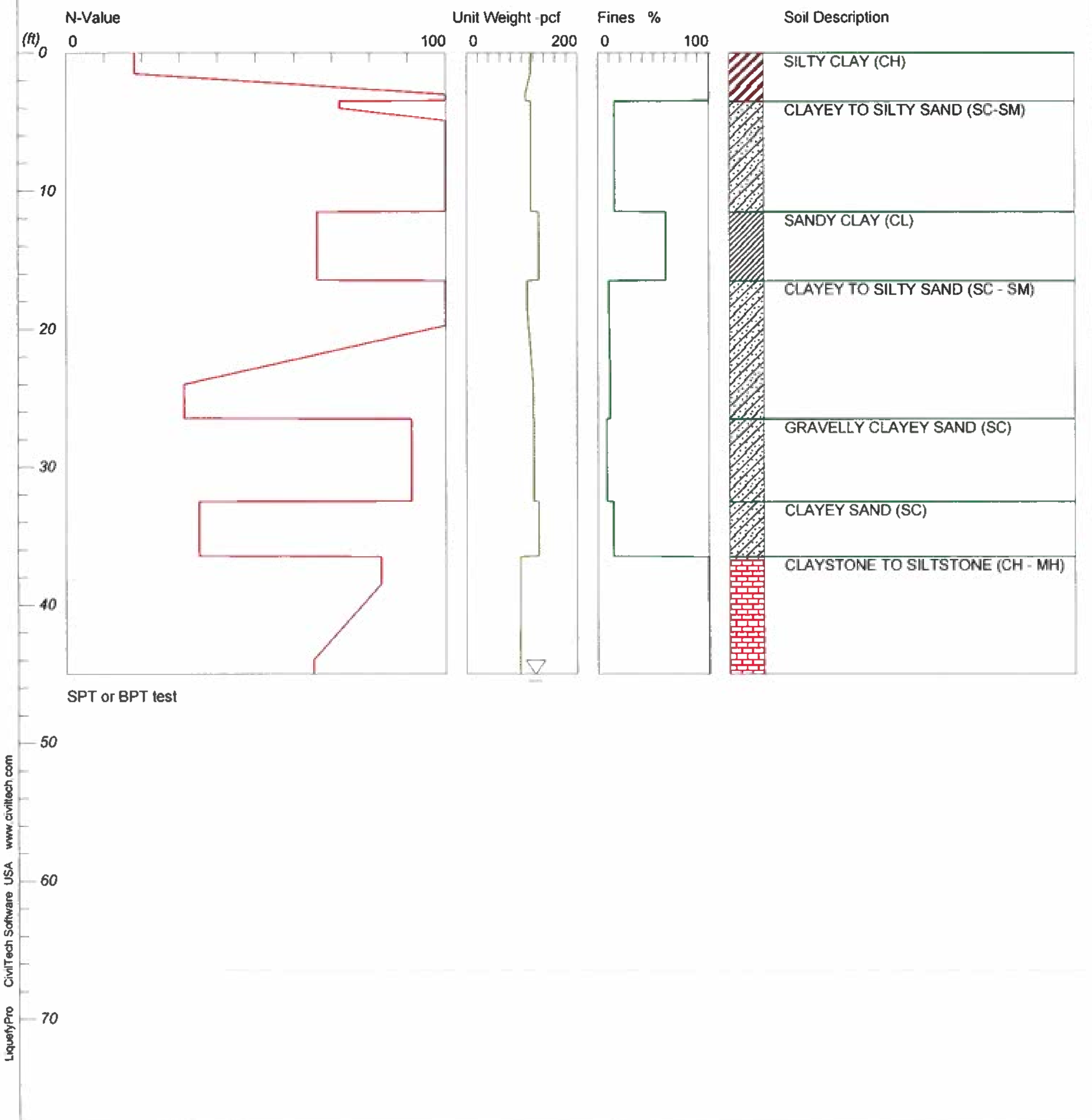
APPENDIX C

Carmel High School
Stadium Lighting Project
Liquefaction and Dry Settlement Analyses Results
EB-1 (2014)

LIQUEFACTION ANALYSIS

STADIUM LIGHTING PROJECT

Hole No.=EB-1 (2014) ***Water Depth=45.0 ft*** ***Magnitude=8.50***
Acceleration=0.661g



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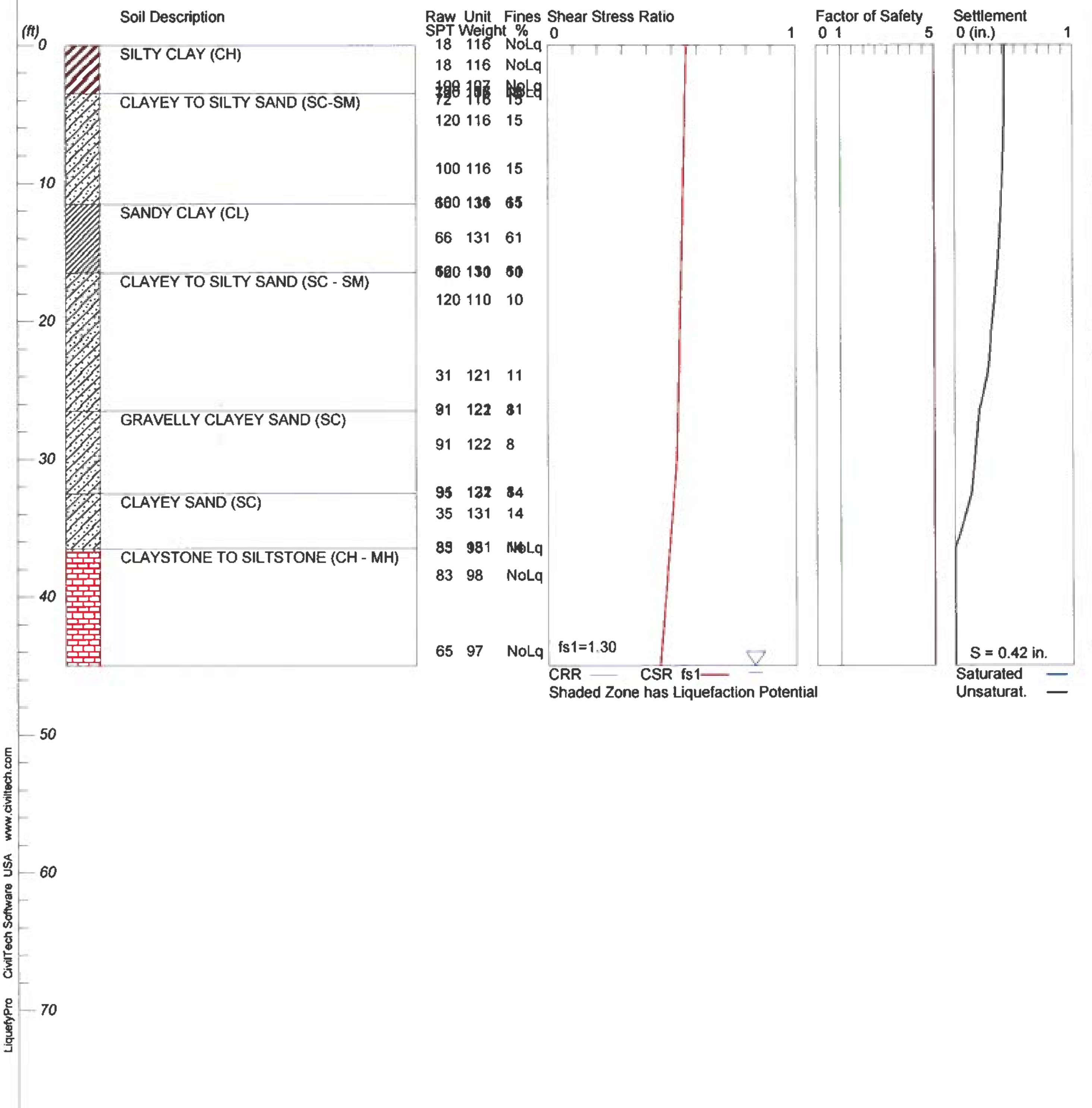
Carmel High School

LIQUEFACTION ANALYSIS

STADIUM LIGHTING PROJECT

Hole No.=EB-1 (2014)   Water Depth=45.0 ft

Magnitude=8.50
Acceleration=0.661g



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Carmel High School

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LIQUEFACTION ANALYSIS SUMMARY

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Title: STADIUM LIGHTING PROJECT

Subtitle: Carmel High School

Surface Elev.=

Hole No.=EB-1 (2014)

Depth of Hole= 45.00 ft

Water Table during Earthquake= 45.00 ft

Water Table during In-Situ Testing= 45.00 ft

Max. Acceleration= 0.66 g

Earthquake Magnitude= 8.50

Input Data:

Surface Elev.=

Hole No.=EB-1 (2014)

Depth of Hole=45.00 ft

Water Table during Earthquake= 45.00 ft

Water Table during In-Situ Testing= 45.00 ft

Max. Acceleration=0.66 g

Earthquake Magnitude=8.50

No-Liquefiable Soils: Based on Analysis

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu, M-correction
3. Fines Correction for Liquefaction: Idriss/Seed
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1.15
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1.3
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: Yes*

* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	18.00	116.00	NoLiq
1.50	18.00	116.00	NoLiq
3.00	100.00	107.00	NoLiq
3.45	100.00	107.00	NoLiq
3.50	72.00	116.00	15.00
4.00	72.00	116.00	15.00
5.50	120.00	116.00	15.00
9.00	100.00	116.00	15.00
11.45	100.00	116.00	15.00
11.50	66.00	131.00	61.00
14.00	66.00	131.00	61.00
16.45	66.00	131.00	61.00
16.50	120.00	110.00	10.00
18.50	120.00	110.00	10.00
24.00	31.00	121.00	11.00
26.45	31.00	121.00	11.00
26.50	91.00	122.00	8.00
29.00	91.00	122.00	8.00
32.45	91.00	122.00	8.00
32.50	35.00	131.00	14.00
34.00	35.00	131.00	14.00
36.45	35.00	131.00	14.00
36.50	83.00	98.00	NoLiq
38.50	83.00	98.00	NoLiq
44.00	65.00	97.00	NoLiq

Output Results:

Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.42 in.
Total Settlement of Saturated and Unsaturated Sands=0.42 in.
Differential Settlement=0.211 to 0.278 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	2.00	0.56	5.00	0.00	0.42	0.42
0.05	2.00	0.56	5.00	0.00	0.42	0.42
0.10	2.00	0.56	5.00	0.00	0.42	0.42
0.15	2.00	0.56	5.00	0.00	0.42	0.42
0.20	2.00	0.56	5.00	0.00	0.42	0.42
0.25	2.00	0.56	5.00	0.00	0.42	0.42
0.30	2.00	0.56	5.00	0.00	0.42	0.42
0.35	2.00	0.56	5.00	0.00	0.42	0.42
0.40	2.00	0.56	5.00	0.00	0.42	0.42
0.45	2.00	0.56	5.00	0.00	0.42	0.42
0.50	2.00	0.56	5.00	0.00	0.42	0.42
0.55	2.00	0.56	5.00	0.00	0.42	0.42
0.60	2.00	0.56	5.00	0.00	0.42	0.42
0.65	2.00	0.56	5.00	0.00	0.42	0.42
0.70	2.00	0.56	5.00	0.00	0.42	0.42
0.75	2.00	0.56	5.00	0.00	0.42	0.42
0.80	2.00	0.56	5.00	0.00	0.42	0.42
0.85	2.00	0.56	5.00	0.00	0.42	0.42
0.90	2.00	0.56	5.00	0.00	0.42	0.42
0.95	2.00	0.56	5.00	0.00	0.42	0.42
1.00	2.00	0.56	5.00	0.00	0.42	0.42
1.05	2.00	0.56	5.00	0.00	0.42	0.42
1.10	2.00	0.56	5.00	0.00	0.42	0.42
1.15	2.00	0.56	5.00	0.00	0.42	0.42
1.20	2.00	0.56	5.00	0.00	0.42	0.42
1.25	2.00	0.56	5.00	0.00	0.42	0.42
1.30	2.00	0.56	5.00	0.00	0.42	0.42
1.35	2.00	0.56	5.00	0.00	0.42	0.42
1.40	2.00	0.56	5.00	0.00	0.42	0.42
1.45	2.00	0.56	5.00	0.00	0.42	0.42
1.50	2.00	0.56	5.00	0.00	0.42	0.42
1.55	2.00	0.56	5.00	0.00	0.42	0.42
1.60	2.00	0.56	5.00	0.00	0.42	0.42
1.65	2.00	0.56	5.00	0.00	0.42	0.42
1.70	2.00	0.56	5.00	0.00	0.42	0.42
1.75	2.00	0.56	5.00	0.00	0.42	0.42
1.80	2.00	0.56	5.00	0.00	0.42	0.42
1.85	2.00	0.56	5.00	0.00	0.42	0.42
1.90	2.00	0.56	5.00	0.00	0.42	0.42
1.95	2.00	0.56	5.00	0.00	0.42	0.42
2.00	2.00	0.56	5.00	0.00	0.42	0.42
2.05	2.00	0.56	5.00	0.00	0.42	0.42
2.10	2.00	0.56	5.00	0.00	0.42	0.42
2.15	2.00	0.56	5.00	0.00	0.42	0.42
2.20	2.00	0.56	5.00	0.00	0.42	0.42
2.25	2.00	0.56	5.00	0.00	0.42	0.42
2.30	2.00	0.56	5.00	0.00	0.42	0.42
2.35	2.00	0.56	5.00	0.00	0.42	0.42
2.40	2.00	0.56	5.00	0.00	0.42	0.42
2.45	2.00	0.56	5.00	0.00	0.42	0.42
2.50	2.00	0.56	5.00	0.00	0.42	0.42
2.55	2.00	0.56	5.00	0.00	0.42	0.42
2.60	2.00	0.56	5.00	0.00	0.42	0.42
2.65	2.00	0.56	5.00	0.00	0.42	0.42
2.70	2.00	0.56	5.00	0.00	0.42	0.42
2.75	2.00	0.55	5.00	0.00	0.42	0.42
2.80	2.00	0.55	5.00	0.00	0.42	0.42
2.85	2.00	0.55	5.00	0.00	0.42	0.42
2.90	2.00	0.55	5.00	0.00	0.42	0.42
2.95	2.00	0.55	5.00	0.00	0.42	0.42
3.00	2.00	0.55	5.00	0.00	0.42	0.42
3.05	2.00	0.55	5.00	0.00	0.42	0.42
3.10	2.00	0.55	5.00	0.00	0.42	0.42
3.15	2.00	0.55	5.00	0.00	0.42	0.42
3.20	2.00	0.55	5.00	0.00	0.42	0.42
3.25	2.00	0.55	5.00	0.00	0.42	0.42

3.30	2.00	0.55	5.00	0.00	0.42	0.42
3.35	2.00	0.55	5.00	0.00	0.42	0.42
3.40	2.00	0.55	5.00	0.00	0.42	0.42
3.45	2.00	0.55	5.00	0.00	0.42	0.42
3.50	1.45	0.55	5.00	0.00	0.42	0.42
3.55	1.45	0.55	5.00	0.00	0.42	0.42
3.60	1.45	0.55	5.00	0.00	0.42	0.42
3.65	1.45	0.55	5.00	0.00	0.42	0.42
3.70	1.45	0.55	5.00	0.00	0.42	0.42
3.75	1.45	0.55	5.00	0.00	0.42	0.42
3.80	1.45	0.55	5.00	0.00	0.42	0.42
3.85	1.45	0.55	5.00	0.00	0.42	0.42
3.90	1.45	0.55	5.00	0.00	0.42	0.42
3.95	1.45	0.55	5.00	0.00	0.42	0.42
4.00	1.45	0.55	5.00	0.00	0.42	0.42
4.05	1.45	0.55	5.00	0.00	0.42	0.42
4.10	1.45	0.55	5.00	0.00	0.42	0.42
4.15	1.45	0.55	5.00	0.00	0.42	0.42
4.20	1.45	0.55	5.00	0.00	0.42	0.42
4.25	1.45	0.55	5.00	0.00	0.42	0.42
4.30	1.45	0.55	5.00	0.00	0.42	0.42
4.35	1.45	0.55	5.00	0.00	0.42	0.42
4.40	1.45	0.55	5.00	0.00	0.42	0.42
4.45	1.45	0.55	5.00	0.00	0.42	0.42
4.50	1.45	0.55	5.00	0.00	0.42	0.42
4.55	1.45	0.55	5.00	0.00	0.42	0.42
4.60	1.45	0.55	5.00	0.00	0.42	0.42
4.65	1.45	0.55	5.00	0.00	0.42	0.42
4.70	1.45	0.55	5.00	0.00	0.42	0.42
4.75	1.45	0.55	5.00	0.00	0.42	0.42
4.80	1.45	0.55	5.00	0.00	0.42	0.42
4.85	1.45	0.55	5.00	0.00	0.42	0.42
4.90	1.45	0.55	5.00	0.00	0.42	0.42
4.95	1.45	0.55	5.00	0.00	0.42	0.42
5.00	1.45	0.55	5.00	0.00	0.42	0.42
5.05	1.45	0.55	5.00	0.00	0.42	0.42
5.10	1.45	0.55	5.00	0.00	0.42	0.42
5.15	1.45	0.55	5.00	0.00	0.42	0.42
5.20	1.45	0.55	5.00	0.00	0.42	0.42
5.25	1.45	0.55	5.00	0.00	0.42	0.42
5.30	1.45	0.55	5.00	0.00	0.42	0.42
5.35	1.45	0.55	5.00	0.00	0.42	0.42
5.40	1.45	0.55	5.00	0.00	0.42	0.42
5.45	1.45	0.55	5.00	0.00	0.42	0.42
5.50	1.45	0.55	5.00	0.00	0.42	0.42
5.55	1.45	0.55	5.00	0.00	0.42	0.42
5.60	1.45	0.55	5.00	0.00	0.42	0.42
5.65	1.45	0.55	5.00	0.00	0.42	0.42
5.70	1.45	0.55	5.00	0.00	0.42	0.42
5.75	1.45	0.55	5.00	0.00	0.41	0.41
5.80	1.45	0.55	5.00	0.00	0.41	0.41
5.85	1.45	0.55	5.00	0.00	0.41	0.41
5.90	1.45	0.55	5.00	0.00	0.41	0.41
5.95	1.45	0.55	5.00	0.00	0.41	0.41
6.00	1.45	0.55	5.00	0.00	0.41	0.41
6.05	1.45	0.55	5.00	0.00	0.41	0.41
6.10	1.45	0.55	5.00	0.00	0.41	0.41
6.15	1.45	0.55	5.00	0.00	0.41	0.41
6.20	1.45	0.55	5.00	0.00	0.41	0.41
6.25	1.45	0.55	5.00	0.00	0.41	0.41
6.30	1.45	0.55	5.00	0.00	0.41	0.41
6.35	1.45	0.55	5.00	0.00	0.41	0.41
6.40	1.45	0.55	5.00	0.00	0.41	0.41
6.45	1.45	0.55	5.00	0.00	0.41	0.41
6.50	1.45	0.55	5.00	0.00	0.41	0.41
6.55	1.45	0.55	5.00	0.00	0.41	0.41
6.60	1.45	0.55	5.00	0.00	0.41	0.41
6.65	1.45	0.55	5.00	0.00	0.41	0.41
6.70	1.45	0.55	5.00	0.00	0.41	0.41
6.75	1.45	0.55	5.00	0.00	0.41	0.41
6.80	1.45	0.55	5.00	0.00	0.41	0.41
6.85	1.45	0.55	5.00	0.00	0.41	0.41
6.90	1.45	0.55	5.00	0.00	0.41	0.41
6.95	1.45	0.55	5.00	0.00	0.41	0.41
7.00	1.45	0.55	5.00	0.00	0.41	0.41
7.05	1.45	0.55	5.00	0.00	0.41	0.41

7.10	1.45	0.55	5.00	0.00	0.41	0.41
7.15	1.45	0.55	5.00	0.00	0.41	0.41
7.20	1.45	0.55	5.00	0.00	0.41	0.41
7.25	1.45	0.55	5.00	0.00	0.41	0.41
7.30	1.45	0.55	5.00	0.00	0.41	0.41
7.35	1.45	0.55	5.00	0.00	0.41	0.41
7.40	1.45	0.55	5.00	0.00	0.41	0.41
7.45	1.45	0.55	5.00	0.00	0.41	0.41
7.50	1.45	0.55	5.00	0.00	0.41	0.41
7.55	1.45	0.55	5.00	0.00	0.41	0.41
7.60	1.45	0.55	5.00	0.00	0.41	0.41
7.65	1.45	0.55	5.00	0.00	0.41	0.41
7.70	1.45	0.55	5.00	0.00	0.41	0.41
7.75	1.45	0.55	5.00	0.00	0.41	0.41
7.80	1.45	0.55	5.00	0.00	0.41	0.41
7.85	1.45	0.55	5.00	0.00	0.41	0.41
7.90	1.45	0.55	5.00	0.00	0.41	0.41
7.95	1.45	0.55	5.00	0.00	0.41	0.41
8.00	1.45	0.55	5.00	0.00	0.41	0.41
8.05	1.45	0.55	5.00	0.00	0.41	0.41
8.10	1.45	0.55	5.00	0.00	0.41	0.41
8.15	1.45	0.55	5.00	0.00	0.41	0.41
8.20	1.45	0.55	5.00	0.00	0.41	0.41
8.25	1.45	0.55	5.00	0.00	0.41	0.41
8.30	1.45	0.55	5.00	0.00	0.41	0.41
8.35	1.45	0.55	5.00	0.00	0.41	0.41
8.40	1.45	0.55	5.00	0.00	0.40	0.40
8.45	1.45	0.55	5.00	0.00	0.40	0.40
8.50	1.45	0.55	5.00	0.00	0.40	0.40
8.55	1.45	0.55	5.00	0.00	0.40	0.40
8.60	1.45	0.55	5.00	0.00	0.40	0.40
8.65	1.45	0.55	5.00	0.00	0.40	0.40
8.70	1.45	0.55	5.00	0.00	0.40	0.40
8.75	1.45	0.55	5.00	0.00	0.40	0.40
8.80	1.45	0.55	5.00	0.00	0.40	0.40
8.85	1.45	0.55	5.00	0.00	0.40	0.40
8.90	1.45	0.55	5.00	0.00	0.40	0.40
8.95	1.45	0.55	5.00	0.00	0.40	0.40
9.00	1.45	0.55	5.00	0.00	0.40	0.40
9.05	1.45	0.55	5.00	0.00	0.40	0.40
9.10	1.45	0.55	5.00	0.00	0.40	0.40
9.15	1.45	0.55	5.00	0.00	0.40	0.40
9.20	1.45	0.55	5.00	0.00	0.40	0.40
9.25	1.45	0.55	5.00	0.00	0.40	0.40
9.30	1.45	0.55	5.00	0.00	0.40	0.40
9.35	1.45	0.55	5.00	0.00	0.40	0.40
9.40	1.45	0.55	5.00	0.00	0.40	0.40
9.45	1.45	0.55	5.00	0.00	0.40	0.40
9.50	1.45	0.55	5.00	0.00	0.40	0.40
9.55	1.45	0.55	5.00	0.00	0.40	0.40
9.60	1.45	0.55	5.00	0.00	0.40	0.40
9.65	1.45	0.55	5.00	0.00	0.40	0.40
9.70	1.45	0.55	5.00	0.00	0.40	0.40
9.75	1.45	0.55	5.00	0.00	0.40	0.40
9.80	1.45	0.55	5.00	0.00	0.40	0.40
9.85	1.45	0.55	5.00	0.00	0.40	0.40
9.90	1.45	0.55	5.00	0.00	0.40	0.40
9.95	1.45	0.55	5.00	0.00	0.40	0.40
10.00	1.45	0.55	5.00	0.00	0.40	0.40
10.05	1.45	0.55	5.00	0.00	0.40	0.40
10.10	1.45	0.55	5.00	0.00	0.40	0.40
10.15	1.45	0.55	5.00	0.00	0.40	0.40
10.20	1.45	0.55	5.00	0.00	0.40	0.40
10.25	1.45	0.55	5.00	0.00	0.40	0.40
10.30	1.45	0.55	5.00	0.00	0.40	0.40
10.35	1.45	0.55	5.00	0.00	0.40	0.40
10.40	1.45	0.55	5.00	0.00	0.39	0.39
10.45	1.45	0.54	5.00	0.00	0.39	0.39
10.50	1.45	0.54	5.00	0.00	0.39	0.39
10.55	1.45	0.54	5.00	0.00	0.39	0.39
10.60	1.45	0.54	5.00	0.00	0.39	0.39
10.65	1.45	0.54	5.00	0.00	0.39	0.39
10.70	1.45	0.54	5.00	0.00	0.39	0.39
10.75	1.45	0.54	5.00	0.00	0.39	0.39
10.80	1.45	0.54	5.00	0.00	0.39	0.39
10.85	1.45	0.54	5.00	0.00	0.39	0.39

10.90	1.45	0.54	5.00	0.00	0.39	0.39
10.95	1.45	0.54	5.00	0.00	0.39	0.39
11.00	1.45	0.54	5.00	0.00	0.39	0.39
11.05	1.45	0.54	5.00	0.00	0.39	0.39
11.10	1.45	0.54	5.00	0.00	0.39	0.39
11.15	1.45	0.54	5.00	0.00	0.39	0.39
11.20	1.45	0.54	5.00	0.00	0.39	0.39
11.25	1.45	0.54	5.00	0.00	0.39	0.39
11.30	1.45	0.54	5.00	0.00	0.39	0.39
11.35	1.45	0.54	5.00	0.00	0.39	0.39
11.40	1.45	0.54	5.00	0.00	0.39	0.39
11.45	1.45	0.54	5.00	0.00	0.39	0.39
11.50	1.45	0.54	5.00	0.00	0.39	0.39
11.55	1.45	0.54	5.00	0.00	0.39	0.39
11.60	1.45	0.54	5.00	0.00	0.39	0.39
11.65	1.45	0.54	5.00	0.00	0.39	0.39
11.70	1.45	0.54	5.00	0.00	0.39	0.39
11.75	1.45	0.54	5.00	0.00	0.39	0.39
11.80	1.45	0.54	5.00	0.00	0.39	0.39
11.85	1.45	0.54	5.00	0.00	0.39	0.39
11.90	1.45	0.54	5.00	0.00	0.39	0.39
11.95	1.45	0.54	5.00	0.00	0.39	0.39
12.00	1.45	0.54	5.00	0.00	0.39	0.39
12.05	1.45	0.54	5.00	0.00	0.39	0.39
12.10	1.45	0.54	5.00	0.00	0.39	0.39
12.15	1.45	0.54	5.00	0.00	0.39	0.39
12.20	1.45	0.54	5.00	0.00	0.39	0.39
12.25	1.45	0.54	5.00	0.00	0.39	0.39
12.30	1.45	0.54	5.00	0.00	0.38	0.38
12.35	1.45	0.54	5.00	0.00	0.38	0.38
12.40	1.45	0.54	5.00	0.00	0.38	0.38
12.45	1.45	0.54	5.00	0.00	0.38	0.38
12.50	1.45	0.54	5.00	0.00	0.38	0.38
12.55	1.45	0.54	5.00	0.00	0.38	0.38
12.60	1.45	0.54	5.00	0.00	0.38	0.38
12.65	1.45	0.54	5.00	0.00	0.38	0.38
12.70	1.45	0.54	5.00	0.00	0.38	0.38
12.75	1.45	0.54	5.00	0.00	0.38	0.38
12.80	1.45	0.54	5.00	0.00	0.38	0.38
12.85	1.45	0.54	5.00	0.00	0.38	0.38
12.90	1.45	0.54	5.00	0.00	0.38	0.38
12.95	1.45	0.54	5.00	0.00	0.38	0.38
13.00	1.45	0.54	5.00	0.00	0.38	0.38
13.05	1.45	0.54	5.00	0.00	0.38	0.38
13.10	1.45	0.54	5.00	0.00	0.38	0.38
13.15	1.45	0.54	5.00	0.00	0.38	0.38
13.20	1.45	0.54	5.00	0.00	0.38	0.38
13.25	1.45	0.54	5.00	0.00	0.38	0.38
13.30	1.45	0.54	5.00	0.00	0.38	0.38
13.35	1.45	0.54	5.00	0.00	0.38	0.38
13.40	1.45	0.54	5.00	0.00	0.38	0.38
13.45	1.45	0.54	5.00	0.00	0.38	0.38
13.50	1.45	0.54	5.00	0.00	0.38	0.38
13.55	1.45	0.54	5.00	0.00	0.38	0.38
13.60	1.45	0.54	5.00	0.00	0.38	0.38
13.65	1.45	0.54	5.00	0.00	0.38	0.38
13.70	1.45	0.54	5.00	0.00	0.38	0.38
13.75	1.45	0.54	5.00	0.00	0.38	0.38
13.80	1.45	0.54	5.00	0.00	0.38	0.38
13.85	1.45	0.54	5.00	0.00	0.37	0.37
13.90	1.45	0.54	5.00	0.00	0.37	0.37
13.95	1.45	0.54	5.00	0.00	0.37	0.37
14.00	1.45	0.54	5.00	0.00	0.37	0.37
14.05	1.45	0.54	5.00	0.00	0.37	0.37
14.10	1.45	0.54	5.00	0.00	0.37	0.37
14.15	1.45	0.54	5.00	0.00	0.37	0.37
14.20	1.45	0.54	5.00	0.00	0.37	0.37
14.25	1.45	0.54	5.00	0.00	0.37	0.37
14.30	1.45	0.54	5.00	0.00	0.37	0.37
14.35	1.45	0.54	5.00	0.00	0.37	0.37
14.40	1.45	0.54	5.00	0.00	0.37	0.37
14.45	1.45	0.54	5.00	0.00	0.37	0.37
14.50	1.45	0.54	5.00	0.00	0.37	0.37
14.55	1.45	0.54	5.00	0.00	0.37	0.37
14.60	1.45	0.54	5.00	0.00	0.37	0.37
14.65	1.45	0.54	5.00	0.00	0.37	0.37

14.70	1.45	0.54	5.00	0.00	0.37	0.37
14.75	1.45	0.54	5.00	0.00	0.37	0.37
14.80	1.45	0.54	5.00	0.00	0.37	0.37
14.85	1.45	0.54	5.00	0.00	0.37	0.37
14.90	1.45	0.54	5.00	0.00	0.37	0.37
14.95	1.45	0.54	5.00	0.00	0.37	0.37
15.00	1.45	0.54	5.00	0.00	0.37	0.37
15.05	1.45	0.54	5.00	0.00	0.37	0.37
15.10	1.45	0.54	5.00	0.00	0.37	0.37
15.15	1.45	0.54	5.00	0.00	0.37	0.37
15.20	1.45	0.54	5.00	0.00	0.36	0.36
15.25	1.45	0.54	5.00	0.00	0.36	0.36
15.30	1.45	0.54	5.00	0.00	0.36	0.36
15.35	1.45	0.54	5.00	0.00	0.36	0.36
15.40	1.45	0.54	5.00	0.00	0.36	0.36
15.45	1.45	0.54	5.00	0.00	0.36	0.36
15.50	1.45	0.54	5.00	0.00	0.36	0.36
15.55	1.45	0.54	5.00	0.00	0.36	0.36
15.60	1.45	0.54	5.00	0.00	0.36	0.36
15.65	1.45	0.54	5.00	0.00	0.36	0.36
15.70	1.45	0.54	5.00	0.00	0.36	0.36
15.75	1.45	0.54	5.00	0.00	0.36	0.36
15.80	1.45	0.54	5.00	0.00	0.36	0.36
15.85	1.45	0.54	5.00	0.00	0.36	0.36
15.90	1.45	0.54	5.00	0.00	0.36	0.36
15.95	1.45	0.54	5.00	0.00	0.36	0.36
16.00	1.45	0.54	5.00	0.00	0.36	0.36
16.05	1.45	0.54	5.00	0.00	0.36	0.36
16.10	1.45	0.54	5.00	0.00	0.36	0.36
16.15	1.45	0.54	5.00	0.00	0.36	0.36
16.20	1.45	0.54	5.00	0.00	0.36	0.36
16.25	1.45	0.54	5.00	0.00	0.36	0.36
16.30	1.45	0.54	5.00	0.00	0.36	0.36
16.35	1.45	0.54	5.00	0.00	0.35	0.35
16.40	1.45	0.54	5.00	0.00	0.35	0.35
16.45	1.45	0.54	5.00	0.00	0.35	0.35
16.50	1.45	0.54	5.00	0.00	0.35	0.35
16.55	1.45	0.54	5.00	0.00	0.35	0.35
16.60	1.45	0.54	5.00	0.00	0.35	0.35
16.65	1.45	0.54	5.00	0.00	0.35	0.35
16.70	1.45	0.54	5.00	0.00	0.35	0.35
16.75	1.45	0.54	5.00	0.00	0.35	0.35
16.80	1.45	0.54	5.00	0.00	0.35	0.35
16.85	1.45	0.54	5.00	0.00	0.35	0.35
16.90	1.45	0.54	5.00	0.00	0.35	0.35
16.95	1.45	0.54	5.00	0.00	0.35	0.35
17.00	1.45	0.54	5.00	0.00	0.35	0.35
17.05	1.45	0.54	5.00	0.00	0.35	0.35
17.10	1.45	0.54	5.00	0.00	0.35	0.35
17.15	1.45	0.54	5.00	0.00	0.35	0.35
17.20	1.45	0.54	5.00	0.00	0.35	0.35
17.25	1.45	0.54	5.00	0.00	0.35	0.35
17.30	1.45	0.54	5.00	0.00	0.35	0.35
17.35	1.45	0.54	5.00	0.00	0.35	0.35
17.40	1.45	0.54	5.00	0.00	0.34	0.34
17.45	1.45	0.54	5.00	0.00	0.34	0.34
17.50	1.45	0.54	5.00	0.00	0.34	0.34
17.55	1.45	0.54	5.00	0.00	0.34	0.34
17.60	1.45	0.54	5.00	0.00	0.34	0.34
17.65	1.45	0.54	5.00	0.00	0.34	0.34
17.70	1.45	0.54	5.00	0.00	0.34	0.34
17.75	1.45	0.54	5.00	0.00	0.34	0.34
17.80	1.45	0.54	5.00	0.00	0.34	0.34
17.85	1.45	0.54	5.00	0.00	0.34	0.34
17.90	1.45	0.54	5.00	0.00	0.34	0.34
17.95	1.45	0.54	5.00	0.00	0.34	0.34
18.00	1.45	0.54	5.00	0.00	0.34	0.34
18.05	1.45	0.54	5.00	0.00	0.34	0.34
18.10	1.45	0.53	5.00	0.00	0.34	0.34
18.15	1.45	0.53	5.00	0.00	0.34	0.34
18.20	1.45	0.53	5.00	0.00	0.34	0.34
18.25	1.45	0.53	5.00	0.00	0.34	0.34
18.30	1.45	0.53	5.00	0.00	0.34	0.34
18.35	1.45	0.53	5.00	0.00	0.33	0.33
18.40	1.45	0.53	5.00	0.00	0.33	0.33
18.45	1.45	0.53	5.00	0.00	0.33	0.33

18.50	1.45	0.53	5.00	0.00	0.33	0.33
18.55	1.45	0.53	5.00	0.00	0.33	0.33
18.60	1.45	0.53	5.00	0.00	0.33	0.33
18.65	1.45	0.53	5.00	0.00	0.33	0.33
18.70	1.45	0.53	5.00	0.00	0.33	0.33
18.75	1.45	0.53	5.00	0.00	0.33	0.33
18.80	1.45	0.53	5.00	0.00	0.33	0.33
18.85	1.45	0.53	5.00	0.00	0.33	0.33
18.90	1.45	0.53	5.00	0.00	0.33	0.33
18.95	1.45	0.53	5.00	0.00	0.33	0.33
19.00	1.45	0.53	5.00	0.00	0.33	0.33
19.05	1.45	0.53	5.00	0.00	0.33	0.33
19.10	1.45	0.53	5.00	0.00	0.33	0.33
19.15	1.45	0.53	5.00	0.00	0.33	0.33
19.20	1.45	0.53	5.00	0.00	0.32	0.32
19.25	1.45	0.53	5.00	0.00	0.32	0.32
19.30	1.45	0.53	5.00	0.00	0.32	0.32
19.35	1.45	0.53	5.00	0.00	0.32	0.32
19.40	1.45	0.53	5.00	0.00	0.32	0.32
19.45	1.45	0.53	5.00	0.00	0.32	0.32
19.50	1.45	0.53	5.00	0.00	0.32	0.32
19.55	1.45	0.53	5.00	0.00	0.32	0.32
19.60	1.45	0.53	5.00	0.00	0.32	0.32
19.65	1.45	0.53	5.00	0.00	0.32	0.32
19.70	1.45	0.53	5.00	0.00	0.32	0.32
19.75	1.45	0.53	5.00	0.00	0.32	0.32
19.80	1.45	0.53	5.00	0.00	0.32	0.32
19.85	1.45	0.53	5.00	0.00	0.32	0.32
19.90	1.45	0.53	5.00	0.00	0.32	0.32
19.95	1.45	0.53	5.00	0.00	0.32	0.32
20.00	1.45	0.53	5.00	0.00	0.32	0.32
20.05	1.45	0.53	5.00	0.00	0.31	0.31
20.10	1.45	0.53	5.00	0.00	0.31	0.31
20.15	1.45	0.53	5.00	0.00	0.31	0.31
20.20	1.45	0.53	5.00	0.00	0.31	0.31
20.25	1.45	0.53	5.00	0.00	0.31	0.31
20.30	1.45	0.53	5.00	0.00	0.31	0.31
20.35	1.45	0.53	5.00	0.00	0.31	0.31
20.40	1.45	0.53	5.00	0.00	0.31	0.31
20.45	1.45	0.53	5.00	0.00	0.31	0.31
20.50	1.45	0.53	5.00	0.00	0.31	0.31
20.55	1.45	0.53	5.00	0.00	0.31	0.31
20.60	1.45	0.53	5.00	0.00	0.31	0.31
20.65	1.45	0.53	5.00	0.00	0.31	0.31
20.70	1.45	0.53	5.00	0.00	0.31	0.31
20.75	1.45	0.53	5.00	0.00	0.31	0.31
20.80	1.45	0.53	5.00	0.00	0.31	0.31
20.85	1.45	0.53	5.00	0.00	0.31	0.31
20.90	1.45	0.53	5.00	0.00	0.30	0.30
20.95	1.45	0.53	5.00	0.00	0.30	0.30
21.00	1.45	0.53	5.00	0.00	0.30	0.30
21.05	1.45	0.53	5.00	0.00	0.30	0.30
21.10	1.45	0.53	5.00	0.00	0.30	0.30
21.15	1.45	0.53	5.00	0.00	0.30	0.30
21.20	1.45	0.53	5.00	0.00	0.30	0.30
21.25	1.45	0.53	5.00	0.00	0.30	0.30
21.30	1.45	0.53	5.00	0.00	0.30	0.30
21.35	1.45	0.53	5.00	0.00	0.30	0.30
21.40	1.45	0.53	5.00	0.00	0.30	0.30
21.45	1.45	0.53	5.00	0.00	0.30	0.30
21.50	1.45	0.53	5.00	0.00	0.30	0.30
21.55	1.45	0.53	5.00	0.00	0.30	0.30
21.60	1.45	0.53	5.00	0.00	0.30	0.30
21.65	1.45	0.53	5.00	0.00	0.30	0.30
21.70	1.45	0.53	5.00	0.00	0.30	0.30
21.75	1.45	0.53	5.00	0.00	0.30	0.30
21.80	1.45	0.53	5.00	0.00	0.30	0.30
21.85	1.45	0.53	5.00	0.00	0.30	0.30
21.90	1.45	0.53	5.00	0.00	0.30	0.30
21.95	1.45	0.53	5.00	0.00	0.30	0.30
22.00	1.45	0.53	5.00	0.00	0.30	0.30
22.05	1.45	0.53	5.00	0.00	0.30	0.30
22.10	1.45	0.53	5.00	0.00	0.30	0.30
22.15	1.45	0.53	5.00	0.00	0.29	0.29
22.20	1.45	0.53	5.00	0.00	0.29	0.29
22.25	1.45	0.53	5.00	0.00	0.29	0.29

22.30	1.45	0.53	5.00	0.00	0.29	0.29
22.35	1.45	0.53	5.00	0.00	0.29	0.29
22.40	1.45	0.53	5.00	0.00	0.29	0.29
22.45	1.45	0.53	5.00	0.00	0.29	0.29
22.50	1.45	0.53	5.00	0.00	0.29	0.29
22.55	1.45	0.53	5.00	0.00	0.29	0.29
22.60	1.45	0.53	5.00	0.00	0.29	0.29
22.65	1.45	0.53	5.00	0.00	0.29	0.29
22.70	1.45	0.53	5.00	0.00	0.29	0.29
22.75	1.45	0.53	5.00	0.00	0.29	0.29
22.80	1.45	0.53	5.00	0.00	0.29	0.29
22.85	1.45	0.53	5.00	0.00	0.29	0.29
22.90	1.45	0.53	5.00	0.00	0.29	0.29
22.95	1.45	0.53	5.00	0.00	0.29	0.29
23.00	1.45	0.53	5.00	0.00	0.29	0.29
23.05	1.45	0.53	5.00	0.00	0.28	0.28
23.10	1.45	0.53	5.00	0.00	0.28	0.28
23.15	1.45	0.53	5.00	0.00	0.28	0.28
23.20	1.45	0.53	5.00	0.00	0.28	0.28
23.25	1.45	0.53	5.00	0.00	0.28	0.28
23.30	1.45	0.53	5.00	0.00	0.28	0.28
23.35	1.45	0.53	5.00	0.00	0.28	0.28
23.40	1.45	0.53	5.00	0.00	0.28	0.28
23.45	1.45	0.53	5.00	0.00	0.28	0.28
23.50	1.45	0.53	5.00	0.00	0.28	0.28
23.55	1.45	0.53	5.00	0.00	0.28	0.28
23.60	1.45	0.53	5.00	0.00	0.28	0.28
23.65	1.45	0.53	5.00	0.00	0.28	0.28
23.70	1.45	0.53	5.00	0.00	0.28	0.28
23.75	1.45	0.53	5.00	0.00	0.27	0.27
23.80	1.45	0.53	5.00	0.00	0.27	0.27
23.85	1.45	0.53	5.00	0.00	0.27	0.27
23.90	1.45	0.53	5.00	0.00	0.27	0.27
23.95	1.45	0.53	5.00	0.00	0.27	0.27
24.00	1.45	0.53	5.00	0.00	0.27	0.27
24.05	1.45	0.53	5.00	0.00	0.27	0.27
24.10	1.45	0.53	5.00	0.00	0.27	0.27
24.15	1.45	0.53	5.00	0.00	0.27	0.27
24.20	1.45	0.53	5.00	0.00	0.26	0.26
24.25	1.45	0.53	5.00	0.00	0.26	0.26
24.30	1.45	0.53	5.00	0.00	0.26	0.26
24.35	1.45	0.53	5.00	0.00	0.26	0.26
24.40	1.45	0.53	5.00	0.00	0.26	0.26
24.45	1.45	0.53	5.00	0.00	0.26	0.26
24.50	1.45	0.53	5.00	0.00	0.26	0.26
24.55	1.45	0.53	5.00	0.00	0.26	0.26
24.60	1.45	0.53	5.00	0.00	0.26	0.26
24.65	1.45	0.53	5.00	0.00	0.25	0.25
24.70	1.45	0.53	5.00	0.00	0.25	0.25
24.75	1.45	0.53	5.00	0.00	0.25	0.25
24.80	1.45	0.53	5.00	0.00	0.25	0.25
24.85	1.45	0.53	5.00	0.00	0.25	0.25
24.90	1.45	0.53	5.00	0.00	0.25	0.25
24.95	1.45	0.53	5.00	0.00	0.25	0.25
25.00	1.45	0.53	5.00	0.00	0.25	0.25
25.05	1.45	0.53	5.00	0.00	0.24	0.24
25.10	1.45	0.53	5.00	0.00	0.24	0.24
25.15	1.45	0.53	5.00	0.00	0.24	0.24
25.20	1.45	0.53	5.00	0.00	0.24	0.24
25.25	1.45	0.53	5.00	0.00	0.24	0.24
25.30	1.45	0.53	5.00	0.00	0.24	0.24
25.35	1.45	0.53	5.00	0.00	0.24	0.24
25.40	1.45	0.53	5.00	0.00	0.23	0.23
25.45	1.45	0.53	5.00	0.00	0.23	0.23
25.50	1.45	0.53	5.00	0.00	0.23	0.23
25.55	1.45	0.53	5.00	0.00	0.23	0.23
25.60	1.45	0.53	5.00	0.00	0.23	0.23
25.65	1.45	0.53	5.00	0.00	0.23	0.23
25.70	1.45	0.53	5.00	0.00	0.23	0.23
25.75	1.45	0.53	5.00	0.00	0.22	0.22
25.80	1.45	0.52	5.00	0.00	0.22	0.22
25.85	1.45	0.52	5.00	0.00	0.22	0.22
25.90	1.45	0.52	5.00	0.00	0.22	0.22
25.95	1.45	0.52	5.00	0.00	0.22	0.22
26.00	1.45	0.52	5.00	0.00	0.22	0.22
26.05	1.45	0.52	5.00	0.00	0.22	0.22

26.10	1.45	0.52	5.00	0.00	0.21	0.21
26.15	1.45	0.52	5.00	0.00	0.21	0.21
26.20	1.45	0.52	5.00	0.00	0.21	0.21
26.25	1.45	0.52	5.00	0.00	0.21	0.21
26.30	1.45	0.52	5.00	0.00	0.21	0.21
26.35	1.45	0.52	5.00	0.00	0.21	0.21
26.40	1.45	0.52	5.00	0.00	0.20	0.20
26.45	1.45	0.52	5.00	0.00	0.20	0.20
26.50	1.45	0.52	5.00	0.00	0.20	0.20
26.55	1.45	0.52	5.00	0.00	0.20	0.20
26.60	1.45	0.52	5.00	0.00	0.20	0.20
26.65	1.45	0.52	5.00	0.00	0.20	0.20
26.70	1.45	0.52	5.00	0.00	0.20	0.20
26.75	1.45	0.52	5.00	0.00	0.20	0.20
26.80	1.45	0.52	5.00	0.00	0.20	0.20
26.85	1.45	0.52	5.00	0.00	0.20	0.20
26.90	1.45	0.52	5.00	0.00	0.20	0.20
26.95	1.45	0.52	5.00	0.00	0.20	0.20
27.00	1.45	0.52	5.00	0.00	0.20	0.20
27.05	1.45	0.52	5.00	0.00	0.20	0.20
27.10	1.45	0.52	5.00	0.00	0.20	0.20
27.15	1.45	0.52	5.00	0.00	0.20	0.20
27.20	1.45	0.52	5.00	0.00	0.20	0.20
27.25	1.45	0.52	5.00	0.00	0.19	0.19
27.30	1.45	0.52	5.00	0.00	0.19	0.19
27.35	1.45	0.52	5.00	0.00	0.19	0.19
27.40	1.45	0.52	5.00	0.00	0.19	0.19
27.45	1.45	0.52	5.00	0.00	0.19	0.19
27.50	1.46	0.52	5.00	0.00	0.19	0.19
27.55	1.46	0.52	5.00	0.00	0.19	0.19
27.60	1.46	0.52	5.00	0.00	0.19	0.19
27.65	1.46	0.52	5.00	0.00	0.19	0.19
27.70	1.46	0.52	5.00	0.00	0.19	0.19
27.75	1.46	0.52	5.00	0.00	0.19	0.19
27.80	1.46	0.52	5.00	0.00	0.19	0.19
27.85	1.46	0.52	5.00	0.00	0.19	0.19
27.90	1.46	0.52	5.00	0.00	0.19	0.19
27.95	1.46	0.52	5.00	0.00	0.19	0.19
28.00	1.46	0.52	5.00	0.00	0.19	0.19
28.05	1.46	0.52	5.00	0.00	0.19	0.19
28.10	1.45	0.52	5.00	0.00	0.19	0.19
28.15	1.45	0.52	5.00	0.00	0.19	0.19
28.20	1.45	0.52	5.00	0.00	0.19	0.19
28.25	1.45	0.52	5.00	0.00	0.18	0.18
28.30	1.45	0.52	5.00	0.00	0.18	0.18
28.35	1.45	0.52	5.00	0.00	0.18	0.18
28.40	1.45	0.52	5.00	0.00	0.18	0.18
28.45	1.45	0.52	5.00	0.00	0.18	0.18
28.50	1.45	0.52	5.00	0.00	0.18	0.18
28.55	1.45	0.52	5.00	0.00	0.18	0.18
28.60	1.45	0.52	5.00	0.00	0.18	0.18
28.65	1.45	0.52	5.00	0.00	0.18	0.18
28.70	1.45	0.52	5.00	0.00	0.18	0.18
28.75	1.45	0.52	5.00	0.00	0.18	0.18
28.80	1.45	0.52	5.00	0.00	0.18	0.18
28.85	1.45	0.52	5.00	0.00	0.18	0.18
28.90	1.45	0.52	5.00	0.00	0.18	0.18
28.95	1.45	0.52	5.00	0.00	0.18	0.18
29.00	1.45	0.52	5.00	0.00	0.18	0.18
29.05	1.45	0.52	5.00	0.00	0.18	0.18
29.10	1.45	0.52	5.00	0.00	0.18	0.18
29.15	1.45	0.52	5.00	0.00	0.18	0.18
29.20	1.45	0.52	5.00	0.00	0.17	0.17
29.25	1.45	0.52	5.00	0.00	0.17	0.17
29.30	1.44	0.52	5.00	0.00	0.17	0.17
29.35	1.44	0.52	5.00	0.00	0.17	0.17
29.40	1.44	0.52	5.00	0.00	0.17	0.17
29.45	1.44	0.52	5.00	0.00	0.17	0.17
29.50	1.44	0.52	5.00	0.00	0.17	0.17
29.55	1.44	0.52	5.00	0.00	0.17	0.17
29.60	1.44	0.52	5.00	0.00	0.17	0.17
29.65	1.44	0.52	5.00	0.00	0.17	0.17
29.70	1.44	0.52	5.00	0.00	0.17	0.17
29.75	1.44	0.52	5.00	0.00	0.17	0.17
29.80	1.44	0.52	5.00	0.00	0.17	0.17
29.85	1.44	0.52	5.00	0.00	0.17	0.17

29.90	1.44	0.52	5.00	0.00	0.17	0.17
29.95	1.44	0.52	5.00	0.00	0.17	0.17
30.00	1.44	0.52	5.00	0.00	0.17	0.17
30.05	1.44	0.52	5.00	0.00	0.17	0.17
30.10	1.44	0.52	5.00	0.00	0.17	0.17
30.15	1.44	0.52	5.00	0.00	0.16	0.16
30.20	1.44	0.52	5.00	0.00	0.16	0.16
30.25	1.44	0.52	5.00	0.00	0.16	0.16
30.30	1.44	0.52	5.00	0.00	0.16	0.16
30.35	1.44	0.52	5.00	0.00	0.16	0.16
30.40	1.44	0.52	5.00	0.00	0.16	0.16
30.45	1.43	0.52	5.00	0.00	0.16	0.16
30.50	1.43	0.52	5.00	0.00	0.16	0.16
30.55	1.43	0.52	5.00	0.00	0.16	0.16
30.60	1.43	0.52	5.00	0.00	0.16	0.16
30.65	1.43	0.52	5.00	0.00	0.16	0.16
30.70	1.43	0.52	5.00	0.00	0.16	0.16
30.75	1.43	0.52	5.00	0.00	0.16	0.16
30.80	1.43	0.52	5.00	0.00	0.16	0.16
30.85	1.43	0.52	5.00	0.00	0.16	0.16
30.90	1.43	0.52	5.00	0.00	0.16	0.16
30.95	1.43	0.52	5.00	0.00	0.16	0.16
31.00	1.43	0.51	5.00	0.00	0.16	0.16
31.05	1.43	0.51	5.00	0.00	0.15	0.15
31.10	1.43	0.51	5.00	0.00	0.15	0.15
31.15	1.43	0.51	5.00	0.00	0.15	0.15
31.20	1.43	0.51	5.00	0.00	0.15	0.15
31.25	1.43	0.51	5.00	0.00	0.15	0.15
31.30	1.43	0.51	5.00	0.00	0.15	0.15
31.35	1.43	0.51	5.00	0.00	0.15	0.15
31.40	1.43	0.51	5.00	0.00	0.15	0.15
31.45	1.43	0.51	5.00	0.00	0.15	0.15
31.50	1.43	0.51	5.00	0.00	0.15	0.15
31.55	1.43	0.51	5.00	0.00	0.15	0.15
31.60	1.43	0.51	5.00	0.00	0.15	0.15
31.65	1.42	0.51	5.00	0.00	0.15	0.15
31.70	1.42	0.51	5.00	0.00	0.15	0.15
31.75	1.42	0.51	5.00	0.00	0.15	0.15
31.80	1.42	0.51	5.00	0.00	0.15	0.15
31.85	1.42	0.51	5.00	0.00	0.15	0.15
31.90	1.42	0.51	5.00	0.00	0.15	0.15
31.95	1.42	0.51	5.00	0.00	0.14	0.14
32.00	1.42	0.51	5.00	0.00	0.14	0.14
32.05	1.42	0.51	5.00	0.00	0.14	0.14
32.10	1.42	0.51	5.00	0.00	0.14	0.14
32.15	1.42	0.51	5.00	0.00	0.14	0.14
32.20	1.42	0.51	5.00	0.00	0.14	0.14
32.25	1.42	0.51	5.00	0.00	0.14	0.14
32.30	1.42	0.51	5.00	0.00	0.14	0.14
32.35	1.42	0.51	5.00	0.00	0.14	0.14
32.40	1.42	0.51	5.00	0.00	0.14	0.14
32.45	1.42	0.51	5.00	0.00	0.14	0.14
32.50	1.42	0.51	5.00	0.00	0.14	0.14
32.55	1.42	0.51	5.00	0.00	0.14	0.14
32.60	1.42	0.51	5.00	0.00	0.14	0.14
32.65	1.42	0.51	5.00	0.00	0.13	0.13
32.70	1.42	0.51	5.00	0.00	0.13	0.13
32.75	1.42	0.51	5.00	0.00	0.13	0.13
32.80	1.42	0.51	5.00	0.00	0.13	0.13
32.85	1.41	0.51	5.00	0.00	0.13	0.13
32.90	1.41	0.51	5.00	0.00	0.13	0.13
32.95	1.41	0.51	5.00	0.00	0.12	0.12
33.00	1.41	0.51	5.00	0.00	0.12	0.12
33.05	1.41	0.51	5.00	0.00	0.12	0.12
33.10	1.41	0.51	5.00	0.00	0.12	0.12
33.15	1.41	0.51	5.00	0.00	0.12	0.12
33.20	1.41	0.50	5.00	0.00	0.12	0.12
33.25	1.41	0.50	5.00	0.00	0.11	0.11
33.30	1.41	0.50	5.00	0.00	0.11	0.11
33.35	1.41	0.50	5.00	0.00	0.11	0.11
33.40	1.41	0.50	5.00	0.00	0.11	0.11
33.45	1.41	0.50	5.00	0.00	0.11	0.11
33.50	1.41	0.50	5.00	0.00	0.11	0.11
33.55	1.41	0.50	5.00	0.00	0.11	0.11
33.60	1.41	0.50	5.00	0.00	0.10	0.10
33.65	1.41	0.50	5.00	0.00	0.10	0.10

33.70	1.41	0.50	5.00	0.00	0.10	0.10
33.75	1.41	0.50	5.00	0.00	0.10	0.10
33.80	1.41	0.50	5.00	0.00	0.10	0.10
33.85	1.41	0.50	5.00	0.00	0.10	0.10
33.90	1.41	0.50	5.00	0.00	0.09	0.09
33.95	1.41	0.50	5.00	0.00	0.09	0.09
34.00	1.40	0.50	5.00	0.00	0.09	0.09
34.05	1.40	0.50	5.00	0.00	0.09	0.09
34.10	1.40	0.50	5.00	0.00	0.09	0.09
34.15	1.40	0.50	5.00	0.00	0.09	0.09
34.20	1.40	0.50	5.00	0.00	0.08	0.08
34.25	1.40	0.50	5.00	0.00	0.08	0.08
34.30	1.40	0.50	5.00	0.00	0.08	0.08
34.35	1.40	0.50	5.00	0.00	0.08	0.08
34.40	1.40	0.50	5.00	0.00	0.08	0.08
34.45	1.40	0.50	5.00	0.00	0.08	0.08
34.50	1.40	0.50	5.00	0.00	0.07	0.07
34.55	1.40	0.50	5.00	0.00	0.07	0.07
34.60	1.40	0.50	5.00	0.00	0.07	0.07
34.65	1.40	0.50	5.00	0.00	0.07	0.07
34.70	1.40	0.50	5.00	0.00	0.07	0.07
34.75	1.40	0.50	5.00	0.00	0.07	0.07
34.80	1.40	0.50	5.00	0.00	0.06	0.06
34.85	1.40	0.50	5.00	0.00	0.06	0.06
34.90	1.40	0.50	5.00	0.00	0.06	0.06
34.95	1.40	0.50	5.00	0.00	0.06	0.06
35.00	1.40	0.50	5.00	0.00	0.06	0.06
35.05	1.40	0.50	5.00	0.00	0.06	0.06
35.10	1.40	0.50	5.00	0.00	0.05	0.05
35.15	1.40	0.50	5.00	0.00	0.05	0.05
35.20	1.39	0.50	5.00	0.00	0.05	0.05
35.25	1.39	0.50	5.00	0.00	0.05	0.05
35.30	1.39	0.50	5.00	0.00	0.05	0.05
35.35	1.39	0.50	5.00	0.00	0.04	0.04
35.40	1.39	0.49	5.00	0.00	0.04	0.04
35.45	1.39	0.49	5.00	0.00	0.04	0.04
35.50	1.39	0.49	5.00	0.00	0.04	0.04
35.55	1.39	0.49	5.00	0.00	0.04	0.04
35.60	1.39	0.49	5.00	0.00	0.04	0.04
35.65	1.39	0.49	5.00	0.00	0.03	0.03
35.70	1.39	0.49	5.00	0.00	0.03	0.03
35.75	1.39	0.49	5.00	0.00	0.03	0.03
35.80	1.39	0.49	5.00	0.00	0.03	0.03
35.85	1.39	0.49	5.00	0.00	0.03	0.03
35.90	1.39	0.49	5.00	0.00	0.02	0.02
35.95	1.39	0.49	5.00	0.00	0.02	0.02
36.00	1.39	0.49	5.00	0.00	0.02	0.02
36.05	1.39	0.49	5.00	0.00	0.02	0.02
36.10	1.39	0.49	5.00	0.00	0.02	0.02
36.15	1.39	0.49	5.00	0.00	0.01	0.01
36.20	1.39	0.49	5.00	0.00	0.01	0.01
36.25	1.39	0.49	5.00	0.00	0.01	0.01
36.30	1.39	0.49	5.00	0.00	0.01	0.01
36.35	1.39	0.49	5.00	0.00	0.01	0.01
36.40	1.38	0.49	5.00	0.00	0.00	0.00
36.45	1.38	0.49	5.00	0.00	0.00	0.00
36.50	1.38	0.49	5.00	0.00	0.00	0.00
36.55	2.00	0.49	5.00	0.00	0.00	0.00
36.60	2.00	0.49	5.00	0.00	0.00	0.00
36.65	2.00	0.49	5.00	0.00	0.00	0.00
36.70	2.00	0.49	5.00	0.00	0.00	0.00
36.75	2.00	0.49	5.00	0.00	0.00	0.00
36.80	2.00	0.49	5.00	0.00	0.00	0.00
36.85	2.00	0.49	5.00	0.00	0.00	0.00
36.90	2.00	0.49	5.00	0.00	0.00	0.00
36.95	2.00	0.49	5.00	0.00	0.00	0.00
37.00	2.00	0.49	5.00	0.00	0.00	0.00
37.05	2.00	0.49	5.00	0.00	0.00	0.00
37.10	2.00	0.49	5.00	0.00	0.00	0.00
37.15	2.00	0.49	5.00	0.00	0.00	0.00
37.20	2.00	0.49	5.00	0.00	0.00	0.00
37.25	2.00	0.49	5.00	0.00	0.00	0.00
37.30	2.00	0.49	5.00	0.00	0.00	0.00
37.35	2.00	0.49	5.00	0.00	0.00	0.00
37.40	2.00	0.49	5.00	0.00	0.00	0.00
37.45	2.00	0.49	5.00	0.00	0.00	0.00

37.50	2.00	0.49	5.00	0.00	0.00	0.00
37.55	2.00	0.49	5.00	0.00	0.00	0.00
37.60	2.00	0.48	5.00	0.00	0.00	0.00
37.65	2.00	0.48	5.00	0.00	0.00	0.00
37.70	2.00	0.48	5.00	0.00	0.00	0.00
37.75	2.00	0.48	5.00	0.00	0.00	0.00
37.80	2.00	0.48	5.00	0.00	0.00	0.00
37.85	2.00	0.48	5.00	0.00	0.00	0.00
37.90	2.00	0.48	5.00	0.00	0.00	0.00
37.95	2.00	0.48	5.00	0.00	0.00	0.00
38.00	2.00	0.48	5.00	0.00	0.00	0.00
38.05	2.00	0.48	5.00	0.00	0.00	0.00
38.10	2.00	0.48	5.00	0.00	0.00	0.00
38.15	2.00	0.48	5.00	0.00	0.00	0.00
38.20	2.00	0.48	5.00	0.00	0.00	0.00
38.25	2.00	0.48	5.00	0.00	0.00	0.00
38.30	2.00	0.48	5.00	0.00	0.00	0.00
38.35	2.00	0.48	5.00	0.00	0.00	0.00
38.40	2.00	0.48	5.00	0.00	0.00	0.00
38.45	2.00	0.48	5.00	0.00	0.00	0.00
38.50	2.00	0.48	5.00	0.00	0.00	0.00
38.55	2.00	0.48	5.00	0.00	0.00	0.00
38.60	2.00	0.48	5.00	0.00	0.00	0.00
38.65	2.00	0.48	5.00	0.00	0.00	0.00
38.70	2.00	0.48	5.00	0.00	0.00	0.00
38.75	2.00	0.48	5.00	0.00	0.00	0.00
38.80	2.00	0.48	5.00	0.00	0.00	0.00
38.85	2.00	0.48	5.00	0.00	0.00	0.00
38.90	2.00	0.48	5.00	0.00	0.00	0.00
38.95	2.00	0.48	5.00	0.00	0.00	0.00
39.00	2.00	0.48	5.00	0.00	0.00	0.00
39.05	2.00	0.48	5.00	0.00	0.00	0.00
39.10	2.00	0.48	5.00	0.00	0.00	0.00
39.15	2.00	0.48	5.00	0.00	0.00	0.00
39.20	2.00	0.48	5.00	0.00	0.00	0.00
39.25	2.00	0.48	5.00	0.00	0.00	0.00
39.30	2.00	0.48	5.00	0.00	0.00	0.00
39.35	2.00	0.48	5.00	0.00	0.00	0.00
39.40	2.00	0.48	5.00	0.00	0.00	0.00
39.45	2.00	0.48	5.00	0.00	0.00	0.00
39.50	2.00	0.48	5.00	0.00	0.00	0.00
39.55	2.00	0.48	5.00	0.00	0.00	0.00
39.60	2.00	0.48	5.00	0.00	0.00	0.00
39.65	2.00	0.48	5.00	0.00	0.00	0.00
39.70	2.00	0.48	5.00	0.00	0.00	0.00
39.75	2.00	0.48	5.00	0.00	0.00	0.00
39.80	2.00	0.47	5.00	0.00	0.00	0.00
39.85	2.00	0.47	5.00	0.00	0.00	0.00
39.90	2.00	0.47	5.00	0.00	0.00	0.00
39.95	2.00	0.47	5.00	0.00	0.00	0.00
40.00	2.00	0.47	5.00	0.00	0.00	0.00
40.05	2.00	0.47	5.00	0.00	0.00	0.00
40.10	2.00	0.47	5.00	0.00	0.00	0.00
40.15	2.00	0.47	5.00	0.00	0.00	0.00
40.20	2.00	0.47	5.00	0.00	0.00	0.00
40.25	2.00	0.47	5.00	0.00	0.00	0.00
40.30	2.00	0.47	5.00	0.00	0.00	0.00
40.35	2.00	0.47	5.00	0.00	0.00	0.00
40.40	2.00	0.47	5.00	0.00	0.00	0.00
40.45	2.00	0.47	5.00	0.00	0.00	0.00
40.50	2.00	0.47	5.00	0.00	0.00	0.00
40.55	2.00	0.47	5.00	0.00	0.00	0.00
40.60	2.00	0.47	5.00	0.00	0.00	0.00
40.65	2.00	0.47	5.00	0.00	0.00	0.00
40.70	2.00	0.47	5.00	0.00	0.00	0.00
40.75	2.00	0.47	5.00	0.00	0.00	0.00
40.80	2.00	0.47	5.00	0.00	0.00	0.00
40.85	2.00	0.47	5.00	0.00	0.00	0.00
40.90	2.00	0.47	5.00	0.00	0.00	0.00
40.95	2.00	0.47	5.00	0.00	0.00	0.00
41.00	2.00	0.47	5.00	0.00	0.00	0.00
41.05	2.00	0.47	5.00	0.00	0.00	0.00
41.10	2.00	0.47	5.00	0.00	0.00	0.00
41.15	2.00	0.47	5.00	0.00	0.00	0.00
41.20	2.00	0.47	5.00	0.00	0.00	0.00
41.25	2.00	0.47	5.00	0.00	0.00	0.00

41.30	2.00	0.47	5.00	0.00	0.00	0.00
41.35	2.00	0.47	5.00	0.00	0.00	0.00
41.40	2.00	0.47	5.00	0.00	0.00	0.00
41.45	2.00	0.47	5.00	0.00	0.00	0.00
41.50	2.00	0.47	5.00	0.00	0.00	0.00
41.55	2.00	0.47	5.00	0.00	0.00	0.00
41.60	2.00	0.47	5.00	0.00	0.00	0.00
41.65	2.00	0.47	5.00	0.00	0.00	0.00
41.70	2.00	0.47	5.00	0.00	0.00	0.00
41.75	2.00	0.47	5.00	0.00	0.00	0.00
41.80	2.00	0.47	5.00	0.00	0.00	0.00
41.85	2.00	0.47	5.00	0.00	0.00	0.00
41.90	2.00	0.47	5.00	0.00	0.00	0.00
41.95	2.00	0.47	5.00	0.00	0.00	0.00
42.00	2.00	0.46	5.00	0.00	0.00	0.00
42.05	2.00	0.46	5.00	0.00	0.00	0.00
42.10	2.00	0.46	5.00	0.00	0.00	0.00
42.15	2.00	0.46	5.00	0.00	0.00	0.00
42.20	2.00	0.46	5.00	0.00	0.00	0.00
42.25	2.00	0.46	5.00	0.00	0.00	0.00
42.30	2.00	0.46	5.00	0.00	0.00	0.00
42.35	2.00	0.46	5.00	0.00	0.00	0.00
42.40	2.00	0.46	5.00	0.00	0.00	0.00
42.45	2.00	0.46	5.00	0.00	0.00	0.00
42.50	2.00	0.46	5.00	0.00	0.00	0.00
42.55	2.00	0.46	5.00	0.00	0.00	0.00
42.60	2.00	0.46	5.00	0.00	0.00	0.00
42.65	2.00	0.46	5.00	0.00	0.00	0.00
42.70	2.00	0.46	5.00	0.00	0.00	0.00
42.75	2.00	0.46	5.00	0.00	0.00	0.00
42.80	2.00	0.46	5.00	0.00	0.00	0.00
42.85	2.00	0.46	5.00	0.00	0.00	0.00
42.90	2.00	0.46	5.00	0.00	0.00	0.00
42.95	2.00	0.46	5.00	0.00	0.00	0.00
43.00	2.00	0.46	5.00	0.00	0.00	0.00
43.05	2.00	0.46	5.00	0.00	0.00	0.00
43.10	2.00	0.46	5.00	0.00	0.00	0.00
43.15	2.00	0.46	5.00	0.00	0.00	0.00
43.20	2.00	0.46	5.00	0.00	0.00	0.00
43.25	2.00	0.46	5.00	0.00	0.00	0.00
43.30	2.00	0.46	5.00	0.00	0.00	0.00
43.35	2.00	0.46	5.00	0.00	0.00	0.00
43.40	2.00	0.46	5.00	0.00	0.00	0.00
43.45	2.00	0.46	5.00	0.00	0.00	0.00
43.50	2.00	0.46	5.00	0.00	0.00	0.00
43.55	2.00	0.46	5.00	0.00	0.00	0.00
43.60	2.00	0.46	5.00	0.00	0.00	0.00
43.65	2.00	0.46	5.00	0.00	0.00	0.00
43.70	2.00	0.46	5.00	0.00	0.00	0.00
43.75	2.00	0.46	5.00	0.00	0.00	0.00
43.80	2.00	0.46	5.00	0.00	0.00	0.00
43.85	2.00	0.46	5.00	0.00	0.00	0.00
43.90	2.00	0.46	5.00	0.00	0.00	0.00
43.95	2.00	0.46	5.00	0.00	0.00	0.00
44.00	2.00	0.46	5.00	0.00	0.00	0.00
44.05	2.00	0.46	5.00	0.00	0.00	0.00
44.10	2.00	0.46	5.00	0.00	0.00	0.00
44.15	2.00	0.46	5.00	0.00	0.00	0.00
44.20	2.00	0.45	5.00	0.00	0.00	0.00
44.25	2.00	0.45	5.00	0.00	0.00	0.00
44.30	2.00	0.45	5.00	0.00	0.00	0.00
44.35	2.00	0.45	5.00	0.00	0.00	0.00
44.40	2.00	0.45	5.00	0.00	0.00	0.00
44.45	2.00	0.45	5.00	0.00	0.00	0.00
44.50	2.00	0.45	5.00	0.00	0.00	0.00
44.55	2.00	0.45	5.00	0.00	0.00	0.00
44.60	2.00	0.45	5.00	0.00	0.00	0.00
44.65	2.00	0.45	5.00	0.00	0.00	0.00
44.70	2.00	0.45	5.00	0.00	0.00	0.00
44.75	2.00	0.45	5.00	0.00	0.00	0.00
44.80	2.00	0.45	5.00	0.00	0.00	0.00
44.85	2.00	0.45	5.00	0.00	0.00	0.00
44.90	2.00	0.45	5.00	0.00	0.00	0.00
44.95	2.00	0.45	5.00	0.00	0.00	0.00
45.00	2.00	0.45	5.00	0.00	0.00	0.00

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

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

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1 atm (atmosphere) = 1 tsf (ton/ft2)	
CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils