DRAFT INITIAL STUDY/NEGATIVE DECLARATION
AGRICULTURAL TRANSFER STATION
OLD SAN JUAN HOLLISTER ROAD
FEBRUARY 2018

PREPARED FOR:
CITY OF SAN JUAN BAUTISTA
COMMUNITY DEVELOPMENT DEPARTMENT
311 SECOND STREET
SAN JUAN BAUTISTA, CA 95045

Midnight Express Agricultural Transfer Warehouse

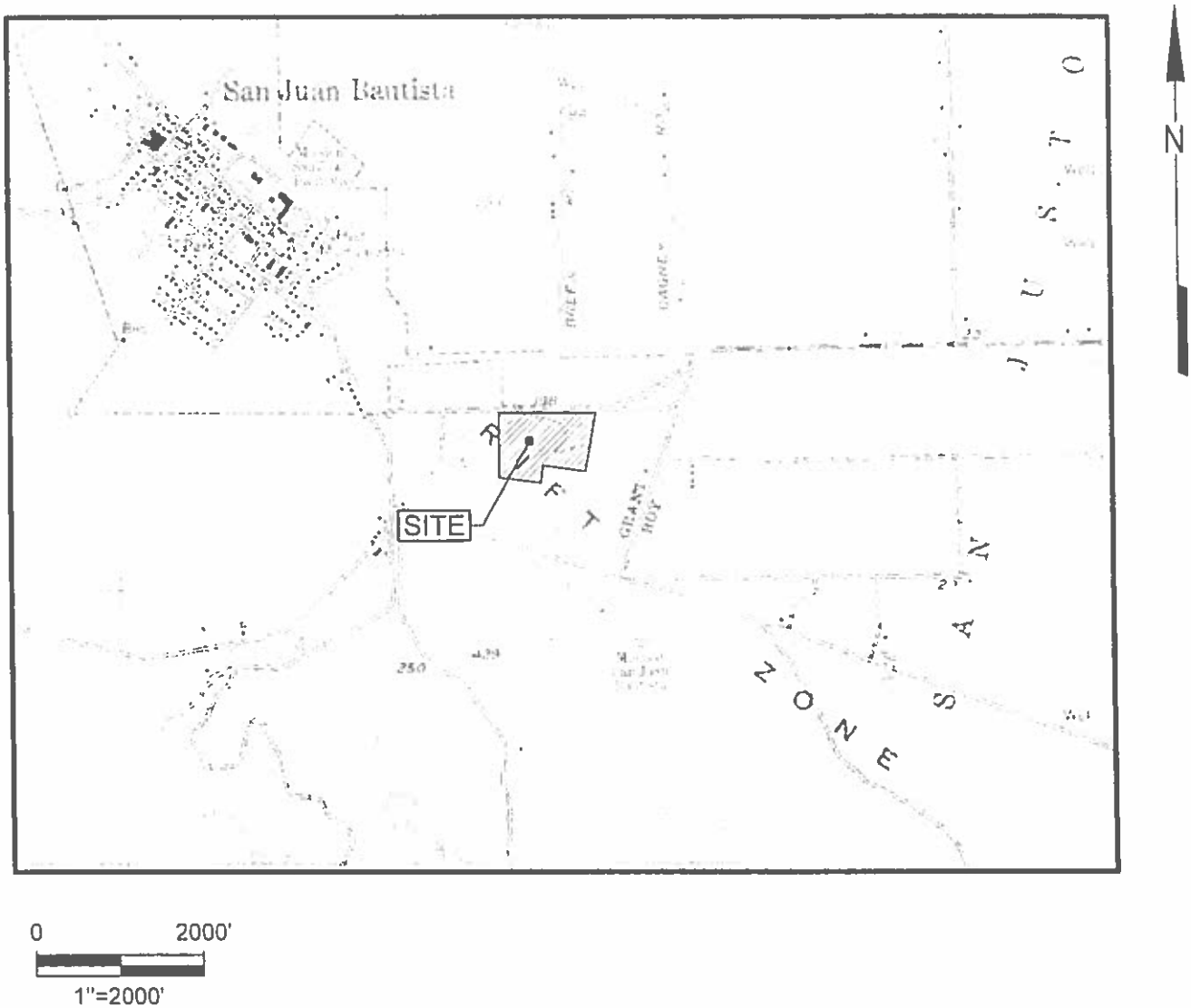
PROJECT DESCRIPTION

The City of San Juan Bautista is processing an application to construct an agricultural transfer warehouse station on Old San Juan Hollister Road. The subject property is zoned Industrial and is 18.08 acres. The proposal would include a 14,560 sq. ft. warehouse and have up to 5 small trucks providing deliveries throughout the day, 4 larger trucks to distribute the product, and 5 employees. Anticipated operation hours are 9 a.m. to 10 p.m.

The application includes requests for Site Plan and Design Review and Conditional Use Permit.

Project Summary

Project Title:	Midnight Express Agricultural Transfer Station
Lead agency name and address:	City of San Juan Bautista Community Development Department 311 Second Street San Juan Bautista, CA 9504595037
Contact person and phone number:	James Walgren, AICP Interim Community Development Director (831) 623-4661
Project Location:	Old San Juan Hollister Road (APN 002-550-008)
Project sponsor's name and address:	Ramon and Cynthia Orozco Midnight Express Trucking P.O. Box 17212 Hollister, California 95024
General plan description:	Industrial
Zoning:	Industrial
Surrounding land uses and setting:	The project is proposed on vacant land on Old San Juan Hollister Road adjacent to Hwy 156 and across from Downtown San Juan Bautista. Nearby uses include agricultural production, a mobile home park, and 55 new homes to be built in the near future.
Other public agencies whose approval may be required have received project notification	▪ Monterey Bay Air Resources District ▪ Regional Water Quality Control Board ▪ Hollister Contract Fire Department ▪ Hollister Contract Building Department ▪ Council of Governments



0 2000'

1"=2000'

VICINITY MAP

MIDNIGHT EXPRESS

OLD SAN JUAN HOLLISTER ROAD

SAN JUAN BAUTISTA, CALIFORNIA

FOR

MIDNIGHT EXPRESS

SITE AERIAL VIEW

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

☒	Aesthetics	☐	Agriculture and Forestry	☐	Air Quality
☐	Biological Resources	☐	Cultural Resources	☒	Geology/Soils
☐	Greenhouse Gas Emissions	☒	Hazards and Hazardous Materials	☒	Hydrology/Water Quality
☐	Land Use/Planning	☐	Mineral Resources	☒	Noise
☐	Population/Housing	☐	Public Services	☐	Recreation
☐	Transportation/Traffic	☐	Utilities/Service Systems	☐	Mandatory Findings of Significance

DETERMINATION:

On the basis of this initial evaluation:

☒	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☐	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature:	**Date: February 8, 2018**
James Walgren, AICP	**City of San Juan Bautista**

Project Description

The City of San Juan Bautista is processing an application to construct an agricultural transfer warehouse station on Old San Juan Hollister Road. The existing access point will be retained. The subject property is zoned Industrial and is 18.08 acres. The proposal would include a 14,560 sq. ft. warehouse and have up to 5 small trucks providing deliveries throughout the day, 4 larger trucks to distribute the product, and 5 employees. Anticipated operation hours are 9 a.m. to 10 p.m. The application includes a request for Major Project Design Review and Conditional Use Permit

Access and Parking

The project site would maintain the access along Old San Juan Hollister Road and provide on-site parking and storage.

Site Preparation

The project consists of minimal grading in order to locate the building pad above the flood plain. Existing trees along the frontage remain and benefit in screening the project from view to adjacent properties and from U.S. Highway 156. Fill on the site would include utility trench backfill, slab sub-grade materials and finished drainage and landscaping grading. No agricultural activities would be eliminated.

Project Construction Access

During construction, the project site would be accessed from the Old San Juan Hollister Road driveway that currently serves the site. Any construction traffic, lane closures, or street staging would require approved traffic control plans and an encroachment permit from the City.

Staging

The project sponsors intend to stage the project on-site. The staging areas would be used for construction equipment set up.

Schedule

Construction will be limited to the hours of 7:30 a.m. and 5; 00 p.m., Monday through Saturday, and prohibited on Sunday and National Holidays. Construction is expected to take less than one year.

Construction Equipment

The project would require the use of heavy equipment at various stages of construction such as excavation and concrete installation. Equipment anticipated on site would include excavators, rubber tired dozers, dump trucks and scrapers during grading; forklift, rough terrain forklifts, skid steer loaders, concrete pump and screeds for concrete installation and tractors/loaders/backhoes during construction. A water tank and dewatering pumps would also be utilized, when necessary.

Landscaping

The site contains remnants of former agricultural functions, though the majority of the site is within a non-native grasses and shrubs covered floodplain. Existing screening trees front the property.

City's Standard Conditions of Approval

Appropriate City Standard Conditions of Approval are incorporated into the project as conditions of approval regardless of a project's environmental determination. As applicable, the Standard Conditions of Approval will be adopted for this project.

CEQA ENVIRONMENTAL CHECKLIST

This checklist identifies physical and biological factors that might be affected by the proposed project. Background studies, particularly geologic and earthquake fault studies, performed in connection with the projects indicate no impacts. A No Impact answer in the last column reflects this determination.

Where there is a need for clarifying discussion, the discussion is included following the applicable section of the checklist.

I. AESTHETICS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Resources:

- Project Plans dated November 2017
- Site Visit
- City of San Juan Bautista 2035 General Plan

Environmental Setting

The study area for the analysis of aesthetic resources includes areas with views of the project site. In general, the site is not visible from U.S. Highway 156. It is separated by Old San Juan Hollister Road, and adjacent parcels from the Highway. The frontage of the property is also planted with screening trees.

The surrounding areas consist of agricultural uses, a recreational RV camp, and 45 single family homes currently under construction.

Cumulative Impacts

Less than Significant: Operation of the proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not result in a significant cumulative impact on aesthetic resources due to increases in light and glare. The geographic scope of potential cumulative impacts on aesthetics includes the project site vicinity and nearby vicinities. The cumulative impact of adjacent land uses would be less than significant.

II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

The subject property is not currently used for agricultural or forest resources that would be lost or disturbed by this development.

The proposed project would be located within the boundaries of developed City of San Juan Bautista near U.S. Highway 156 and across from San Juan's downtown area. The property is zoned for Industrial use that supports agricultural production and that is what this project is. The land is not under a Williamson Act agricultural preserve contract or zoned as Timberland. The Williamson Act is a program that allows land used for farming or ranching to be taxed at a rate based on the actual use of the land for agricultural purposes as opposed to its unrestricted market value.

III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Environmental Setting

The proposed project is located adjacent to U.S. Highway 156, a significant agricultural transportation route. The region is known for its high agricultural value and truck transport trips.

The Monterey Bay Air Resources District is the regional air pollution control board, and is responsible for air monitoring, permitting, and enforcement. Their construction recommendations are incorporated as Standard Conditions of Approval.

Federal and state ambient air quality standards have also been established by the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) for certain air pollutants. The proposed project is compliant with the Monterey Bay Air Resources District *Air Quality Guidelines*. If a project meets the screening criteria and is consistent with the methodology used to develop the screening criteria, then its air quality impacts may be considered less than significant

Standard Conditions of Approval

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by the Monterey Bay Air Resources District and listed below to reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:

1. The following Monterey Bay Air Resources District standard requirements shall apply:
   a. Mitigation measures pursuant to the Air District's 2008 CEQA Guidelines shall be incorporated in the project plans prior to the issuance of Building Permits.

b. Air District permits may be required for engine generator sets and boilers. Applicant shall contact the Air District for applicable permits prior to the issuance of Building Permits.
c. If underground piping or other asbestos containing construction materials are encountered, the Monterey Bay Air Resources Board shall be contacted.

2. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered daily during non-rain seasons.
3. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered daily during non-rain seasons.
4. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
5. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers. The use of dry power sweeping is prohibited.
6. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
7. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five (5) minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
8. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

Cumulative Impacts

Less than Significant: As stated above, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards for regional criteria pollutants in the Monterey Bay area. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Due to the small number of truck trips, and the State of California vehicle emissions standards in place, this project would result in less than significant air quality impacts.

IV. BIOLOGICAL RESOURCES: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

References:

- San Juan Bautista 2035 General Plan EIR

Environmental Setting

The proposed project site is undeveloped with former agricultural land. The project site contains frontage trees and non-native grasses and brush. The project site is surrounded by agricultural and existing urban development and U.S. Highway 156.

V. CULTURAL RESOURCES: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

References:

- City of San Juan Bautista 2035 General Plan EIR

Environmental Setting

Historically, tribes in the area were hunter gatherers and relied on local terrestrial and marine flora and fauna. Waterfowl, including Canadian geese and mallards, were captured in nets using decoys to attract them. Native peoples constructed watercraft from Tule reeds and possessed bow and arrow technology, fashioned blankets from sea otter pelts, and fabricated basketry from twined reeds of various types. They also assembled a variety of stone and bone tools in their assemblages. The historic Mission of San Juan Bautista, established in 1797, is relatively contained to the current Mission property where agricultural use and livestock were maintained to provide for the Mission inhabitants.

The project site is not an operating agricultural use and does not contain any structures. Therefore, it has no historical resources. There is no indication from the archival research results that any part of the project site has been used for human burial purposes in the recent or distant past. It is unlikely that human remains would be encountered during construction of the proposed project. However, the possibility of inadvertent discovery cannot be entirely discounted. In the event of the discovery of human remains during project construction activities, the project Conditions of Approval would reduce potential impacts on human remains to a less than significant level:

Standard Conditions

Implementation of the following measures will reduce potentially significant impacts to less than significant levels.

1. This project could impact undocumented human remains or unintentionally discover significant historic or archaeological materials. The following policies and procedures for treatment and disposition of inadvertently discovered human remains or archaeological materials shall apply:
   a. If human remains are encountered they shall be treated with dignity and respect as due to them. Discovery of Native American remains is a very sensitive issue and serious concern. Information about such a discovery shall be held in confidence by all project personnel on a need to know basis. The rights of Native Americans to practice ceremonial observances on sites, in labs and around artifacts shall be upheld.
   b. Remains should not be held by human hands. Surgical gloves should be worn if remains need to be handled.
2. In the event that known or suspected Native American remains are encountered or significant historic or archaeological materials are discovered, ground-disturbing activities shall be immediately stopped. Examples of significant historic or archaeological materials include, but are not limited to, concentrations of historic artifacts (e.g., bottles, ceramics) or prehistoric artifacts (chipped arrow points, groundstone mortars, or pestles, for example), culturally altered ash-stained soils associated with pre-contact Native American habitation sites, concentrations of fire-altered rock and/or burned or charred organic materials and historic structure remains such as stone-lined building foundations, wells or privy pits. Ground-disturbing project activities may continue in other areas that are outside the exclusion zone as defined below,
3. The exclusion zone shall be secured (e.g., twenty-four hour surveillance) as directed by the city or county if considered prudent to avoid further disturbances,
4. The contractor foreman or authorized representative, or party who made the discovery and initiated these protocols shall be responsible for immediately contacting by telephone the parties listed below to report the find and initiate the consultation process for treatment and disposition:
   a. The City of San Juan Bautista City Manager,
   b. The contractor's point(s) of contact,

c. The coroner of the county of Santa Clara (if human remains found), and
d. The Native American Heritage Commission (NAHC) in Sacramento.

Cumulative Impacts

Less than Significant: Construction of the proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, and the Standard Conditions of Approval will not result in a significant cumulative impact on cultural resources.

VI. GEOLOGY AND SOILS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
I) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

References:

- CE&G Geotechnical Investigation Peer Review, with Attachments, dated November 7, 2017 (Attached)
- City of San Juan Bautista 2035 General Plan EIR

Environmental Setting

The Geotechnical report includes a geotechnical investigation and a Surface fault-Rupture investigation. The site, as is the entire San Francisco Bay area, is located within a seismically active region between and San Andreas Fault and the Calaveras Fault.

Regulatory Framework

California Building Code

The 2015 International Building Code is published by the International Conference of Building Officials, and is the widely adopted model building code in the United States. The 2016 California Building Code is another name for the body of regulations known as the California Code of Regulations. The California Building Code incorporates by reference the International Building Code requirements with necessary California amendments.

Compliance with the 2016 California Building Code requires that (with very limited exceptions) structures for human occupancy be designed and constructed to resist the effects of earthquake motions. The Seismic Design Category for a structure is determined in accordance with either California Building Code Section 1613 - Earthquake Loads: or, American Society of Civil Engineers Standard No. 7-05, Minimum Design Loads for Buildings and Other Structures.

Cumulative Impacts

Less Than Significant Impact. The project site is located in a seismically active area, and the proposed project, along with past, present and reasonably foreseeable future projects, could expose people and structures to potentially adverse effects associated with earthquakes, including seismic ground-shaking and seismic-related ground failure. The Geotechnical Report recommended appropriate building setbacks from the identified trace faults and the development plans have incorporated these setbacks and the project will be constructed in accordance with the most recent version of the California Building Code seismic safety requirements, as well as in accordance with the recommendations contained in project specific geotechnical reports that address site-specific hazards. Therefore, cumulative impacts related to geology and soils would be less than significant.

VII. GREENHOUSE GAS EMISSIONS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

References:

- City of San Juan Bautista 2035 General Plan EIR

Environmental Setting

Climate studies indicate that California is likely to see an increase of three to four degrees Fahrenheit (ºF) over the next century. Methane is also an important GHG that potentially contributes to global climate change. GHGs are global in their effect, which is to increase the earth's ability to absorb heat in the atmosphere. As primary GHGs have a long lifetime in the atmosphere, accumulate over time, and are generally well mixed, their impact on the atmosphere is independent of the point of emission.

Regulations and Significance Criteria

State of California

Under the California Global Warming Solution Act, also known as Assembly Bill 32 (AB 32), CARB has established a statewide GHG emissions cap for 2020 equivalent to 1990 statewide emissions, adopted mandatory reporting rules for significant sources of GHG, and adopted a comprehensive plan, known as the Climate Change Scoping Plan, that identifies how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms and other actions.

On September 8, 2016, Governor Brown signed Senate Bill (SB) 32 into law, amending the California Global Warming Solution Act. SB 32 requires the California Air Resources Board to ensure that statewide greenhouse gas emissions are reduced to 40 percent below the 1990 level by 2030. As a part of this effort, CARB is required to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent. CARB has initiated the public process to update the state's Climate Change Scoping Plan. The updated plan will provide a framework for achieving the 2030 target and is anticipated to be completed and adopted by CARB in 2017.

Senate Bill 375 – Redesigning Communities to Reduce Greenhouse Gases

SB 375, known as the Sustainable Communities Strategy and Climate Protection Act, was signed into law in September 2008. SB 375 builds upon AB 32 by requiring CARB to develop regional GHG reduction targets for automobile and light truck sectors for 2020 and 2035, as compared to 2005 emissions levels. The per-capita GHG emissions reduction targets for passenger vehicles in the San Francisco Bay Area include a seven percent reduction by 2020 and a 15 percent reduction by 2035[1].

Regional and Local Plans

Monterey Air Quality Board

AMBAG is the regional, government agency that regulates sources of air pollution within the County of San Benito via the Monterey Air Quality Board. CEQA Air Quality Guidelines are also intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. As discussed in the CEQA Guidelines, the determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the lead agency and must be based to the extent possible on scientific and factual data.

The subject property is zoned Industrial and is 18.08 acres. The project is limited to a 14,560 sq. ft. warehouse and have up to 5 small trucks providing deliveries throughout the day, 4 larger trucks to distribute the product, and 5 employees. Anticipated operation hours are 9 a.m. to 10 p.m. As a result of the small number of truck trips, and the State of California vehicle emissions standards in place, this project would result in less than significant air quality impacts.

Mitigation Measures:
No mitigation required.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Environmental Setting
The City of San Juan Bautista is processing an application to construct an agricultural transfer warehouse station on Old San Juan Hollister Road. The subject property is zoned Industrial and is 18.08 acres. The proposal would include a 14,560 sq. ft. warehouse and have up to 5 small trucks providing deliveries throughout the day, 4 larger trucks to distribute the product, and 5 employees. Anticipated operation hours are 9 a.m. to 10 p.m. The application includes a request for Major Project Design Review and Conditional Use Permit

Regulatory Setting

The Santa Clara County Environmental Health Department, Regional Water Control Board, State Department of Toxic Substances Control, Bay Area Air Quality Management District and US Environmental Protection Agency provide regulations regarding hazards and hazardous materials.

Environmental Impacts and Mitigation

Project construction would involve the routine transportation, storage, use, and disposal of small quantities of hazardous materials such as construction equipment fuels and lubricants, hydraulic fluid, and solvents. The storage and handling of these materials would be managed in accordance with applicable state and federal laws for safe handling of hazardous substances, which include developing project-specific hazardous materials management and spill control plans, storing incompatible hazardous materials separately, using secondary containment for hazardous materials storage, requiring the contractor to use trained personnel for hazardous materials handling, and keeping spill clean-up kits available on-site. Adherence to existing regulatory requirements will reduce the potential impact during construction to less than significance.

Cumulative Impacts

Less Than Significant Impact with Mitigation Incorporated: During construction, the project would have the potential to release hazardous substances and materials that would adversely affect the environment or public. With implementation of existing regulatory requirements, both the construction and operation of the project would minimize the potential for any unauthorized releases. Hazards and hazardous material impacts typically occur in a local or site-specific context (versus a cumulative context) because of variances with site-specific use and for localized effects associated with most land uses. Implementation of regulatory requirements of the Regional Water Quality Control Board (RWQCB), Caltrans, and San Benito County Environmental Health would similarly address site-specific hazards and emergency access and operation for present and reasonably foreseeable future projects.

Mitigation Measures:

No mitigation required.

IX. HYDROLOGY AND WATER QUALITY: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seethe, tsunami, or mudflow	☐	☐	☐	☒

Environmental Setting

The project site is relatively level and is approximately six-acres in size. The site is bordered to the north by Old San Juan Hollister Road and then U.S. Highway 156, and to the west by a drainage channel and then further out U.S. Highway 101. The drainage channel is man-made and drains into a culvert and ultimately the public storm drain system.

Regulations and Agencies

The Federal Clean Water Act and California's Porter-Cologne Water Quality Control Act are the primary laws regulating water quality. Regulations set forth by the U.S. Environmental Protection Agency (EPA) and the State Water Resources Control Board (SWRCB) have been developed to fulfill the requirements of this legislation. The EPA's regulations include the National Pollutant Discharge Elimination System permit program, which controls sources that discharge pollutants into waters of the United States.

NPDES Municipal Stormwater Permit

The required NPDES permit includes provisions for new development and redevelopment. Provision C.3 requires appropriate source control, site design, and stormwater treatment measures to address both soluble and insoluble stormwater runoff pollutant discharges and to prevent increases in runoff flow from new development and redevelopment projects. This includes the permit for the discharge of stormwater runoff from the municipal separate storm sewer systems.

Statewide Construction General Permit

The SWRCB has adopted the statewide General Permit for stormwater discharges associated with construction activity that apply to projects resulting in one (1) or more acres of soil disturbance. For projects disturbing more than one (1) acre of soil, a construction Stormwater Pollution Prevention Plan (SWPPP) is required that specifies site management activities to be implemented during site development. These management activities include construction stormwater BMPs, erosion and sedimentation controls, dewatering (nuisance-water removal), runoff controls, and construction equipment maintenance.

The project's construction activities may disturb more than one acre of soil. A Standard Condition of Approval will require, if applicable, a SWPPP for construction activities that disturb more than one (1) acre in adherence with the General Permit.

Mitigation Measures

No mitigation required.

X. LAND USE AND PLANNING: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

References:

- City of San Juan Bautista Zoning Ordinance
- City of San Juan Bautista Design Guidelines
- City of San Juan Bautista 2035 General Plan

Environmental Setting

The study area for the analysis of land use and planning encompasses the project site and nearby land uses that would be potentially affected by construction or operation of the proposed project.

The Project Site and Surrounding

The City of San Juan Bautista is processing an application to construct an agricultural transfer warehouse station on Old San Juan Hollister Road. The subject property is zoned Industrial and is 18.08 acres. The proposal would include a 14,560 sq. ft. warehouse and have up to 5 small trucks providing deliveries throughout the day, 4 larger trucks to distribute the product, and 5 employees. Anticipated operation hours are 9 a.m. to 10 p.m. The application includes a request for Major Project Design Review and Conditional Use Permit.

Site and Site Design Review

In accordance with Chapter 11.18 - Site Plan and Design Review of the San Juan Bautista zoning code, certain projects require site and design review. The review requires the project to be consistent with the City's Design Guidelines for commercial uses. Findings for approval are necessary to determine consistency with the Design Guidelines and compliance with the City's Zoning Ordinance and General Plan. The project is subject to the Planning Commission Site Plan and Design Review process.

Mitigation Measures:

No mitigation required.

XI. MINERAL RESOURCES: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Environmental Setting

The project site is mapped by the California Geologic Survey as indicating "no significant mineral deposits are present or where it is judged that little likelihood exists for their presence" (California Department of Conservation, Division of Mines and Geology).

Mitigation Measures:

No mitigation required.

XII. NOISE: Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Reference:

- Project Plans
- Site Visit
- City of San Juan Bautista 2035 General Plan

Cumulative Impacts

Less Than Significant Impact: The geographic context for changes in the noise and vibration environment due to development of the proposed project would be localized in mainly an urban area of the City of San Juan Bautista. Construction noise will be a short term event and the daily truck routing will be a minor contribution to a primary regional agricultural transport route - i.e. the U.S. Highway 157 and 101 corridors.

Mitigation Measures:

No mitigation required.

XIII. POPULATION AND HOUSING: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

The project would not result in substantial adverse physical impacts associated with population or housing. Therefore, impacts to public services would be less than significant.

Mitigation Measures:
No mitigation required.

XIV. PUBLIC SERVICES:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

The project would not result in substantial adverse physical impacts associated with the provision of public services. Therefore, impacts to public services would be less than significant.

Mitigation Measures:
No mitigation required.

XV. RECREATION:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

The project would not result in substantial adverse physical impacts to recreational facilities. Therefore, impacts to public services would be less than significant.

Mitigation Measures:
No mitigation required.

XVI. TRANSPORTATION/TRAFFIC: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Reference:

- Project Plans
- Site Visit
- 2035 City of San Juan Bautista General Plan EIR

Environmental Setting
The subject property is zoned Industrial and is 18.08 acres. The proposal would include a 14,560 sq. ft. warehouse and have up to 5 small trucks providing deliveries throughout the day, 4 larger trucks to distribute the product, and 5 employees. Anticipated operation hours are 9 a.m. to 10 p.m. The application includes a request for major project Site and Design Review and Conditional Use Permit.

Westbound trucks will be required as a Standard Condition of Approval to use the U.S Highway 156 intersection. With this requirement, and the relatively small number of truck trips, the project would not result in substantial adverse physical impacts to transportation facilities or regional traffic. Therefore, impacts to public services would be less than significant.

Mitigation Measures:
None required.

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental Setting
The project site is served by Municipal Utilities. Water connections will not be allowed until the City's well water system is corrected and the construction water-connection moratorium is lifted. Based on the above, the project would have less than significant impacts to water and wastewater facilities.

Mitigation Measures:
No mitigation required.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

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07 November 2017

City of San Juan Bautista
Attn: Roger Grimsley
P.O. Box 1420
San Juan Bautista, CA 95045

RE: **Geologic Peer Review – Fault Investigation**
Proposed Midnight Express Shipping Facility Development
Old San Juan Hollister Road
APN 012-190-022-000
San Juan Bautista, California

Dear Mr. Grimsley:

INTRODUCTION

At your request, we have completed our geologic peer review of a geologic fault investigation report prepared by Berlogar-Stevens & Associates (BSA) in support of the proposed Midnight Express development, located on Old San Juan Hollister Road, in San Juan Bautista, California.

This review considers two documents provided to us for review:

1. Plan Sheet, Conditional Use Permit, Midnight Express, APN 012-120-022, City of San Juan Bautista, San Benito County, California; Sheet 1 of X, prepared by San Benito Engineering & Surveying, Inc., dated 10 October, 2017.

2. Surface Fault-Rupture Hazard Investigation, Assessor Parcel Number 012-190-022-000, Old San Juan Hollister Road, San Juan Bautista, California, prepared by Berlogar Stevens & Associates, dated 2 November, 2017.

BACKGROUND

Based on the documents provided, the proposed project entails construction of a warehouse, and an office building.

As summarized in Reference 2, the property is located within a State of California Earthquake Fault Hazard Zone. For certain classes of projects, a fault investigation is required, in order to avoid the construction of structures for human occupancy across an active earthquake fault. Under State law, it is up to the local jurisdiction (City of San Juan Bautista, in this case) to confirm that an applicant's geologic/geotechnical consultant performs a fault investigation. Once this investigation, and peer review of the investigation, are complete, the local jurisdiction must file the investigation and peer review documents with the California Geological Survey's Alquist-Priolo Fault Rupture Hazard Program.

The scope of our review services has included review of published and unpublished mapping and fault investigation files; consultation with BSA; aerial imagery interpretation; multiple site visits during test pit and trench investigation stages; field review of trench and test pit logs; evaluation of BSA's findings as presented in draft report versions; discussion with BSA regarding preliminary comments we made; and preparation of this letter.

Our review scope did not include geotechnical review of findings and recommendations relating to liquefaction or lateral spreading, or relating to general geotechnical design criteria.

INVESTIGATION FINDINGS

As described above, the property is located within a California Earthquake Fault Hazard Zone, as mapped by the California Geological Survey (CGS). CGS maps show two fault traces as crossing the property: a relatively well-located trace shown with a solid line, and a "concealed" trace shown with a dotted line. The US Geological Survey's Fault and Fold Database shows the same two traces, with the second one considered to be Holocene or latest Pleistocene in age.

BSA's investigation included, among other tasks, evaluation of aerial imagery (including high-resolution Lidar imagery); evaluation of previous fault investigation findings from properties to the northwest along structural trend; excavation of pilot test pits; excavation and logging of a single long and several short trenches; consultation with an expert in soil development; and execution of a program of Cone Penetrometer Testing (CPT) to evaluate depth to groundwater.

Notable findings and conclusions reported by BSA include:

The area has experienced relatively rapid sedimentation, with several paleosols (buried soil horizons) visible in trenches and test pits up to about 25 feet deep.

Although groundwater in general was on the order of tens of feet below ground surface in the northeastern part of the site (see additional discussion below), perched groundwater locally made trenching below depths of about 15 feet impractical for areas in the northeast part of the site. The oldest paleosol feasible to expose and log at these depths was interpreted to be approximately 3,000 years in age, based on soil development. BSA notes that fault rupture events with recurrence

interval of hundreds of years would be expected to result in several episodes of offset inside of that time window.

Offset of geologically very young soil horizons was observed in several of BSA's trenches, along a highly linear trend on the site. Offset was apparent at depths as shallow as about 3.5 ft below ground surface.

The fault trend established by the observed soil horizon offsets is mirrored by a striking groundwater barrier, with depth to groundwater on the order of 2 feet for areas southwest of the fault trend, and on the order of 21 to 46 feet for areas northeast of the fault trend.

Trenches near the northern property boundary locally encountered peat, appearing to indicate an area interpreted as a "sag pond" along the fault.

The locations at which BSA exposed soil horizon offsets are inferred to represent an active fault trace. This trace is significantly northeast of the inferred active/historic fault trace shown on California Geological Survey Earthquake Fault Hazard Zone (Alquist-Priolo) Maps, and shown on the US Geological Survey Fault and Fold Database.

The "concealed" trace shown on CGS and USGS maps is mapped northeast of the trace encountered by BSA. No evidence supporting the presence of this trace was reported by BSA, either in trench exposures, or in their CPT program.

On the basis of these observations, BSA's report recommends establishment of two "building exclusion zones." One of these includes the far northeastern corner of the property; this setback is intended to address the possibility that a fault trace could pass just northeast of their trench T-1's end.

The second proposed building exclusion zone includes BSA's inferred fault trend, and a zone east of it that is 75 feet wide in the southern part of the site, flaring out to 100 feet wide for the northern part of the site. The building exclusion zone extends southwestward all the way to the western and southern property boundaries. As noted by BSA, these zones are intended to convey BSA's recommendations regarding development based on the currently available and analyzed information, and do not necessarily preclude future consideration.

CONCLUSIONS AND RECOMMENDATIONS

Based on our review, we conclude that BSA's investigation acceptably addresses the potential for fault ground rupture for the proposed project, and that their recommended building exclusion zones are appropriately prudent.

BSA's building exclusion zone should be incorporated into the project plans; the setback zone(s) shown on the referenced plan sheet (Reference 1) will therefore require revision. BSA should

review the revised plan and subsequent plans, and provide plan review letter(s) confirming that the project layout is in substantial conformance with their recommendations.

The City of San Juan Bautista should submit to the California Geological Survey (via their report upload page online at www.conservation.ca.gov/cgs/shzp): copies of BSA's fault investigation report (Reference 2); this review letter and any subsequent geologic peer review letters; and any subsequent plan review letters by BSA.

Please do not hesitate to contact us if you have any questions regarding this project.

Sincerely,

CAL ENGINEERING & GEOLOGY, INC.

G. Reid Fisher C.E.G. 1858
Principal Geologist

Daniel J. Peluso, G.E. 2367
Principal Engineer

Via E-Mail and Mail

BERLOGAR
STEVENS &
ASSOCIATES

November 6, 2017
Job No. 3869.200

Midnight Express Transportation, Inc.
Post Office Box 1712
Hollister, California 95023

Subject: Design Level Geotechnical Investigation
Proposed Commercial Building
Assessor Parcel Number 012-190-022-000
Old San Juan Hollister Road
San Juan Bautista, California

Dear Ms. Orozco:

Berlogar Stevens & Associates (BSA) is pleased to present this Design Level Geotechnical Investigation report for the proposed commercial development located south of the Old San Juan Hollister Road in San Juan Bautista, California, as shown on the Vicinity Map, Plate 1. In addition to our geotechnical investigation, we conducted a Surface Fault-Rupture Investigation to evaluate ground-rupture potential from active fault displacement in the vicinity of planned site improvements. The data collected and the results of that investigation are presented in our Surface Fault-Rupture Hazard Investigation Report of November 2, 2017, and were considered in the development of the recommendations presented in this report. The scope of services for this geotechnical investigation, the results of our investigations of the site, and our geotechnical engineering conclusions and recommendations related to the geologic hazards identified in the area and on the site, site grading, underground utilities, building foundations and pavements are presented below.

PURPOSE AND SCOPE

The purpose of this investigation was to evaluate the site soil and groundwater conditions, as well as geologic hazards, and to provide geotechnical conclusions and recommendations based on those conditions for use in the design and construction of the proposed project. The scope of our services included the following:

1. Review of readily available published and unpublished geologic maps and documents relating to the site and vicinity.
2. Examination of historical topographic maps, aerial photographs, and FEMA Flood Maps of the site and vicinity.
3. Conducting a reconnaissance of the site to observe surface conditions.

4. Exploration of subsurface conditions by drilling soil-test borings and the performance of cone penetration tests (CPTs).
5. Geotechnical laboratory testing to assess the physical properties of selected soil samples.
6. Analysis of data collected in the field and the laboratory to develop conclusions and recommendations regarding the soil and groundwater, as well as geologic conditions, as they related to the proposed development.
7. Preparation of this report presenting our findings and recommendations.

PROJECT DESCRIPTION

It is our understanding that the current plan for the site is development of a warehouse building with a plan area of about 14,500 square feet and a future office building with a plan area of about 10,000 square feet for Midnight Express, a local trucking company. The warehouse building will be constructed with an elevated, dock-high concrete slab-on-grade floor. The warehouse structure is anticipated to be a single-story building, likely to be a steel framed, metal-sided pre-engineered building. Structural loads are expected to be light, typical for this type of construction. The proposed building locations are shown on the Site Plan, Plate 2. Site development will include construction of underground utilities, roadways and improved parking areas. Preliminary grading plans have not yet been developed for the proposed project. With consideration of future site drainage and site flooding potential, we expect that site, or at least the planned building area, may need to be raised with 3 to 4 feet of fill. There is also a possibility that additional development will occur in the future though the scope is not presently defined.

SITE DESCRIPTION

The approximately 18-acre Midnight Express site encompasses an area south of Old San Juan Hollister Road, beginning about 1,600 feet east of the intersection of The Alameda and Old San Juan Hollister Road. The irregular polygonal-shaped site consists of Assessor Parcel Number (APN) 012-190-022-000. The Site Plan, Plate 2, shows the general layout of the project site and the building setback established through our Surface Fault-Rupture Investigation. The site was previously cultivated with row-crops as evidenced by the surface of the site and review of aerial photographs. The property is bordered on the east and west by fields of row-crops, and on the south by undeveloped grazing land and a working farm. The property is accessed about 270 feet east of the property's northwest corner by a concrete bridge across a shallow drainage ditch along Old San Juan Hollister Road. A channelized ditch that drains properties southwest of the subject property is directed north along the property's west tree-lined border to the ditch along Old San Juan Hollister Road.

The surface of the site is relatively flat and slopes gently down to the north-northeast. The United States Geologic Survey (USGS) 7.5-Minute San Juan Bautista Quadrangle (revised 1997) shows the ground-surface elevations within the project site ranges from about 210 feet above mean sea level in its southwest corner to about 198 feet in its northeast corner.

FIELD EXPLORATION

The first phase of subsurface exploration at the site consisted of exploratory test pits and trenches excavated during our Surface Fault-Rupture Hazard Investigation. Two test pits were excavated on August 7, 2017, to depths of up to about 25 feet. At completion of logging the two test pits were backfilled and compacted under engineering observation and testing. Six exploratory trenches, totaling about 700 lineal feet were excavated during the period of August 26 and September 1, 2017, with a Caterpillar excavator using a three-foot bucket. The trenches were examined and logged by our Certified Engineering Geologist. At completion of logging, the trenches were backfilled and compacted under engineering observation and testing. Trench locations were surveyed by San Benito Engineering and Surveying, Inc. The locations are shown on the Site Plan, Plate 2.

Field exploration for this investigation consisted of conducting eight Cone Penetration Tests (CPTs). The CPTs were conducted by California Push Technologies, Inc. using a 30-ton rig to advance the cone penetrometer on September 14, 2017. The CPTs were advanced to depths of between 48 and 50 feet below the ground surface (bgs). After review of the CPT data, we drilled five borings on September 18, 2017, to further explore the subsurface conditions. This allowed for the collection of soil samples at targeted locations. The borings were drilled by Exploration Geoservices, Inc., using a truck-mounted drill rig equipped with hollow-stem augers. Borings were drilled to depths of between 20 and 30 bgs. A member of our staff visually classified the soils in the field as the drilling progressed and recorded a log of each boring. Visual classification of the soils was made in general accordance with the Unified Soil Classification System (ASTM D2487). Sampling was conducted using a 2.5-inch inside diameter Modified California sampler with brass liners or a 2.0" outside diameter, 1.5" inside diameter standard Split-spoon / SPT Sampler without liners. The samplers were driven 18 inches with a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler the last 12 inches of the 18-inch drive are shown as blows per foot on the boring logs. Bag samples were also obtained from the drill cuttings for possible laboratory testing.

The locations of the CPT and borings are shown on Plate 2, Site Plan. The logs of the borings are presented in Appendix A. The soil classifications shown on the logs are based on field classifications as well as the results of laboratory tests. The CPT interpretation plots are presented in Appendix B. The locations of the CPTs were determined using a hand-held GPS device. Borings B-1 and B-2 were drilled adjacent to CPTs 8 and 6, respectively. Borings 3, 4 and 5 were located by referencing and pacing from the established CPT locations. These locations are shown on the Site Plan, Plate 2.

LABORATORY TESTING

Soil samples from the borings were transported to our laboratory for testing. Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. Laboratory testing, including moisture, density, Atterberg Limits, passing the #200 sieve, direct shear and R-Value tests were performed on selected samples. Results of the

laboratory tests are presented in Appendix C; some of the test results are presented on the boring logs.

SUBSURFACE SOIL CONDITIONS

The surface soils within the upper 1 to 2 feet of the site consist of clayey sands to silty sands with clay. These soils are relatively loose due to disturbance associated with agriculture use of the site. Below the surface soil within the area of the planned warehouse and extending to the northeast corner of the site, the underling soils are predominately silty sands with layers of relatively clean sands within the upper 15 to 25 feet of the site. These soils are loose to medium dense. Caving sands were encountered with the exploratory Test Pit TP-1 and portions of Trench T-1. Clays and silt mixtures are present below the near-surface sand deposits, as shown on the plots for CPT-06, CPT-07 and CPT-08. Sandy clay/clayey sands were logged at a depth of about 13 feet bgs and extended to about 18-1/2 feet bgs in boring B-4. Clayey silt was logged between 14-1/2 and 19 feet bgs, with sandy clay/clayey sand present below 19 feet at boring B-2, which was terminated at a depth of 20 feet. The plots for CPT-01 through CPT-04, which are located northwest of the planned development area, show medium dense sands to depths of about 5 feet, with clays and silts the predominate deposits below. There are interbedded layers of sands within the clay and silt deposits.

GROUNDWATER

Test Pit TP-1 was located near the northeast corner of the property. Groundwater entered Test Pit TP-1 at a depth of about 24 feet. Test Pit TP-2 was located about 350 feet southwest of TP-1. Groundwater entered Test Pit TP-2 at a depth of about 21 feet. Trench T-1 extended about 515 feet across the site in a southwesterly direction from the northeast corner. The trench depth was generally about 11 to 12 feet with increasing depth toward the southwest end. Groundwater was not encountered until we were about 465 feet from the northeast end of our trench. Groundwater became evident at a depth of about 15-1/2 feet where seepage was encountered. The San Andreas fault was exposed at Station 5+00 in our trench. As we excavated to the southwest of the fault, groundwater first became evident at about 5-1/2 feet bgs.

To further investigate groundwater conditions on the site, pore pressure dissipation tests were conducted as the CPTs were advanced. The depth to groundwater on the southwest side of the fault was determined to be between 1 and 2 feet bgs, with groundwater recorded at depths varying from 21 to 46 bgs northeast of the fault. The auger borings were monitored for visible signs of free groundwater during and immediately after completion of drilling each boring. Borings B-1 through B-4 were drilled to depths of 20 feet, with B-5 extending to a depth of 30 feet bgs. Groundwater was present in B-1 at a depth of 17 feet. Free groundwater was not encountered in the remaining four borings.

The depth to groundwater can be expected to fluctuate both seasonally and from year to year, particularly when drought conditions exist as experienced in the 5 years leading up to the winter of 2016, a record year for rainfall. During our site reconnaissance, we observed ponded surface

water in the southwest portion of the property (southwest of the fault) even though this area is higher than the northeast portion of the property that was dry. According to discussions with neighbors to the south of the project property, trees on their property have died presumably due to the presence of high groundwater. They expressed concern that since the rains of the last winter, that groundwater in the area southwest of the project property is higher than previously known and that standing water is present in their fields. Fluctuations in the groundwater level may occur due to variations in precipitation, irrigation practices at the site and surrounding areas, climatic conditions, pumping from wells and other factors not evident at the time of our investigation.

SEISMIC HAZARDS

FAULTING

The site is located within the Earthquake Fault Zone (formerly the Special Studies Zone) designated for the San Andreas fault. The San Andreas fault trace is shown crossing the site in a northwest-southeast direction. The fault is depicted by a solid line on the A-P Earthquake Fault Zone map for the San Juan Bautista Quadrangle, which indicates that the CGS considers this trace to be accurately located. In addition to the solid line trace, CGS has mapped a concealed trace of the fault, shown on the A-P Earthquake Fault Zone map as a dotted line. The A-P fault trace depicted on the map is labeled with a "C" indicating displacement caused by fault creep. The A-P Earthquake Fault Zone encompasses the entire site, as shown on Plate 5.

As noted above, Berlogar Stevens & Associates conducted a surface fault-rupture hazard investigation of the site. That investigation was conducted in accordance with the provisions of the Alquist-Priolo (A-P) Earthquake Fault Zoning Act. The details of our investigation along with the findings, conclusions and recommendations regarding limitations on the area to be developed at the site were presented in our Surface Fault-Rupture Hazard Investigation Report of November 2, 2017. A trace of the San Andreas fault was exposed in some of the exploratory excavations. Building exclusions zones are recommended in our Fault-Rupture Investigation Report and are shown on Plate 2.

SEISMIC SHAKING AND SEISMIC DESIGN PARAMETERS

The site will likely be subject to at least one moderate to severe earthquake and associated seismic shaking during the useful life of the planned development, as well as periodic slight to moderate earthquakes. Some degree of structural damage due to strong seismic shaking should be expected at the site, but the risk can be reduced through adherence to seismic design codes. The U.S. Geological Survey Earthquake Hazards Program maintains a website with an application for U.S. Seismic Design Maps. The United States Geologic Survey 7.5-Minute San Juan Bautista Quadrangle topographic map (USGS, revised 1981) shows the coordinates of a point near the approximate center of the property are latitude: 36.8381 N and longitude: 121.5254 W. Based on this location, site soil classification D and risk category I/II/III, the design level peak ground acceleration (PGA) is 1.0 g according to the USGS website. We are providing the following 2016 California Building Code seismic design criteria from the U.S. Seismic Design Maps program.

Site Coefficients and Risk-Targeted Maximum Considered Earthquake (MCE_R) Spectral Response Acceleration Parameters	
Mapped Spectral Acceleration for Short Periods, S_s	2.603 g
Mapped Spectral Acceleration for 1-Second Period, S_1	1.250 g
Site Class	D
Site Coefficient F_a (for Site Class D)	1.0
Site Coefficient F_v (for Site Class D)	1.5
Acceleration Parameter S_{MS} (adjusted for Site Class D)	2.603 g
Acceleration Parameter, S_{M1} (adjusted for Site Class D)	1.875 g
Acceleration Parameter, S_{DS} (adjusted for Site Class D)	1.735 g
Acceleration Parameter, S_{D1} (adjusted for Site Class D)	1.250 g
Long-Period Transition Period, T_L	12 seconds
Seismic Design Category	E

Additional Parameters for Sites with Site Design Categories D through F	
Risk Coefficient at 0.2 s Spectral Response Period, C_{RS}	1.015
Risk Coefficient at 1.0 s Spectral Response Period, C_{R1}	0.912
PGA_M	1.0

LIQUEFACTION

Liquefaction is a temporary transformation of saturated soil into a viscous liquid during strong to violent ground shaking from a major earthquake. Historically, the potential for liquefaction has been associated with cohesionless soil, such as sands and silty sands. Current practices in liquefaction evaluations now include sands, silty sands and gravels, as well as silts and even some clay soils. While fine-grained soil (clays and silts) may not undergo complete liquefaction, these soils can be susceptible to cyclic softening. Liquefaction and cyclic softening both result in reduced soil shear strength. The loss of strength in both granular and fine-grained soils is a result of cyclically induced stresses which cause increased pore pressures within the soil matrix. Primary factors affecting the potential for a soil to undergo liquefaction include: depth to groundwater, soil type, relative density of granular soils, moisture content of fine-grained soils, initial confining (overburden) pressure, and intensity and duration of ground shaking. Current practice is to evaluate the potential for occurrence of liquefaction to soils within about 50 feet of the ground surface.

Seismic-induced liquefaction or softening of fine-grained soils can cause loss of or reduced support for foundations, significant ground deformation due to settlement within sandy liquefiable layers as pore pressures dissipate, and/or flow failures (lateral spreading) in sloping ground or where open faces (such as a canal, creek, or lake) are present (NCEER 1998).

POTENTIAL

The liquefaction potential of the site was investigated with cone penetration tests as discussed in more detail below. The potential for liquefaction and associated liquefaction-induced settlement and lateral spreading were assessed based on the CPTs. Liquefaction analyses based on blow count data from the hollow-stem auger borings was not performed since blow counts for saturated samples from hollow-stem auger borings are not reliable. CPT data was analyzed using the software CLiq (version 1.7.4.34). CLiq was developed by GeoLogismiki specifically for use in analyzing CPT data in accordance with the recognized procedures based on the current state of practice for liquefaction analysis. The software was developed to address advanced issues such as cyclic softening in clay-like soils. Our analyses were based on guidelines provided in Special Publication 117A (2008) using the CPT-based evaluation methods developed by Idriss and Boulanger (2008). A design basis earthquake moment magnitude (M_W) of 8.0 and a peak ground acceleration of 1.0 g were used in the analysis. We used a depth to groundwater of 15 feet for analysis of the site northeast of the fault, consistent with the highest groundwater encountered in our subsurface investigation in close proximity to the fault. Depths to groundwater increase with increasing distance from the fault in the northeasterly direction. The loose to medium dense sands within the upper 50 feet of the site have a moderate potential to undergo liquefaction. The calculated potential seismic-induced settlement associated with liquefaction is between 1 and 2 inches in the planned building area as well as in the area northwest of the planned building. The calculated seismic-induced settlement at CPT-05, located southwest of the fault trace is 4 inches.

GROUND-SURFACE DISRUPTION POTENTIAL

Liquefaction-induced ground-surface disruption or sand boils can occur when the sudden increase in pore water pressure in a layer of saturated, clean, loose sand or silty sand results in sufficient pressure to rupture up through the upper soil mantle to the ground surface. When this occurs, the liquefied sand blows out through the rupture, which is referred to as ejecta, resulting in the momentary loss or diminished support for shallow foundations and increased settlement of structures on shallow foundations. Given the depth to groundwater and the presence of silty sands and sands above the groundwater, as well as the absence of a confining layer of cohesive soils, the likelihood that round surface disruption will occur is judged to be low.

LATERAL SPREADING

Lateral spreading is a potential hazard commonly associated with liquefaction. This phenomenon typically occurs where the subject site is sloping, or is adjacent to a descending slope or an open channel. With the relatively flat and level topography of the site and the absence of an open channel or descending slope in proximity to the site, it is our professional opinion that the potential for lateral spreading to occur at this site is low.

SEISMIC-INDUCED SETTLEMENT OF LOOSE SAND

As discussed above, seismic shaking can result in liquefaction of loose sands present below the groundwater level, resulting in settlement of those sands. Seismic shaking also has the potential to induce settlement of loose sands above the groundwater. The settlement potential of the loose sands above the groundwater was evaluated in conjunction with our liquefaction analysis using the software CLiq. Our analysis of the loose sands in the upper 15 to 20 feet of the site indicates that the loose sands in the planned building area have the potential to settle on the order of 7 to 9 inches. The combined settlement due to liquefaction as well as densification of the dry sands above the groundwater for each of the soil profiles analyzed are shown on the CPT plots in Appendix B.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

Based on the information collected during our geotechnical and fault-rupture investigations, and the results of our analyses, it is our opinion that development of the site is feasible from a geotechnical engineering perspective, provided that the conclusions and recommendations contained in this report are incorporated into the design and construction of the project.

As noted above, the San Andreas fault crosses the site. Based on the physical evidence observed and the data collected during the course of our fault-rupture investigation, we recommended the establishment of two building exclusion zones. Construction of habitable structures should be limited to the area between the two building exclusion zones. Additional details regarding the development of the two building exclusion zones are presented in our Fault-Rupture Hazard Investigation Report.

The primary geotechnical concern with the site is the potential for site settlement and settlement of structures founded on shallow foundations as a result of strong to violent ground shaking and the presence of loose sand deposits below the site. Seismic-induced settlement has the potential to impact buildings as well as site improvements including roads and underground utilities. Mitigation of the loose soil condition through ground improvement is recommended, as discussed in detail below.

The presence of disturbed surface soils will need to be considered in the development of the site. It is our understanding that agricultural practices often include periodic tilling of sites to depths of about 2 feet. Evidence of soil disturbance was observed to depths of about 2 feet in the exploratory test pits and trenches excavated during our fault ground-rupture investigation at the site. Over-excavation of the upper 1 foot of the surface soils in areas where excavation is not required as part of the planned grading operation to achieve design grades, followed by compaction of the subgrade soils exposed by the excavation and the subsequent replacement of the excavated soils as engineered fill.

Our opinions, conclusions and recommendations are based on our field and office studies, the properties of soils encountered in our borings and CPTs, the results of the laboratory testing program and our understanding of the proposed project. Our detailed design and construction recommendations pertaining to site clearing and preparation, ground improvement, site earthwork, foundations, retaining walls and pavements are presented below.

SEISMIC-INDUCED SETTLEMENT MITIGATION

As discussed above, loose soils have been identified at the site. Based on our analysis, we estimate that potential seismic-induced settlement could range from 8 to 11 inches. Differential settlement could be as much as 2/3 of the maximum estimated settlement or about 7 inches across the proposed warehouse building. At this magnitude of total and differential settlement, mitigation of seismic-induced settlement through ground improvement is recommended.

With liquefaction limited to the sands below a depth of 15 feet or greater and with liquefaction-induced settlement potential calculated at 2 inches or less, it is our opinion that mitigation of the liquefaction potential is not needed, provided that structure is designed to accommodate this level of settlement. Thus, ground improvement should be focused on densification of the loose sands in the upper 15 to 20 feet of the site. There are several methods of densifying loose soils. For this site we recommend consideration of vibro compaction, or rapid impaction compaction. An alternate method of ground improvement is the Geopier Rampact® system.

Vibro compaction densifies granular soils with a downhole vibrator. The vibrator is lowered into the soil under its own weight and vibrations. Water jets are usually used to aid in penetration of the site by the vibrator. The loose soils are densified as the vibrator is raised in lifts. During vibro compaction, clean sand backfill is typically added at the ground surface to compensate for the decrease in soil volume from the densification process. Compaction or densification of the soils can be achieved both above and below groundwater using this process. "Rapid Impact Compaction densifies shallow, granular soils, using a hydraulic hammer, which repeatedly strikes an impact plate on the ground surface"[1]. Both processes are performed on a design-build basis where the specialty contractor determines the spacing and pattern of the vibro compaction or rapid impact points.

The Geopier process consists of insertion of a patented tapered displacement mandrel into the site displacing loose soils laterally and creating a hole. Crushed gravel is placed into the displacement mandrel and the Geopier is constructed by applying direct vertical ramming energy to densely compact successive lifts of high quality crushed rock which improves the matrix soil significantly reducing the settlement potential. Geopier is a proprietary process; rapid impact compaction is not. Geopier ground improvement is also performed on a design-build basis where the specialty contractor determines the spacing and pattern and depth of the Geopiers.

[1] http://www.haywardbaker.com/solutions/techniques/rapid-impact-compaction

Ground improvement should be designed to limit seismic-induced settlement to that associated with the soils below a depth of 20 feet from the current ground surface. The area of ground improvement should extend a minimum of 15 feet beyond the building perimeter. For preliminary planning purposes, the surface of the site should be over-excavated to a depth of no less than 3 feet after ground improvement has been completed, followed by replacement of the excavated soils as engineered fill, as discussed in more detail below. The actual requirements for reworking of the surface of the site should be determined by the geotechnical engineer in conjunction with the specialty contractor during their design work.

GROUNDWATER INFLUENCE ON STRUCTURES/CONSTRUCTION

During our field investigation, groundwater was encountered at depths of 15 feet and greater below the ground surface northeast of the San Andreas fault trace. Groundwater was encountered at about 5-1/2 feet bgs southwest of the fault. Artesian conditions were reported on the adjacent site to the southwest of the subject property. Groundwater levels northeast of the fault are not expected to rise to a level where they would impact building foundation or site surface improvements. At the present depth the groundwater level is not expected to impact underground utility construction on the site.

SITE PREPARATION AND GRADING

Our general site preparation and grading recommendations are as follows:

1. Vegetation on the site at the time of our subsurface investigation consisted of sparse weeds and grasses, with trees along the Old San Juan Hollister Road frontage. Where minor vegetation is present it can be mixed into the site as part of the site grading operation. Should dense vegetation cover develop, it may require stripping prior to the start of earth moving activities. The determination of the need for stripping should be made by the geotechnical engineer once site grading activities have been scheduled. Any tree removal required at the frontage should include removal of the root ball and roots larger than ¾-inch in diameter. In the absence of dense vegetation, we recommend that ground improvement operations be performed prior to mass grading of the site. Over-excavation and construction of an engineered fill will be needed in the area of ground improvement.

2. Following of stripping operations, if required, and completion of ground improvement operations, the surface soils in the area of ground improvement should be excavated, the exposed subgrade processed and compacted and the excavated soils replaced as engineered fill. The preliminary recommendation for depth of excavation and replacement of the excavated surface soils as engineered is 3 feet. The actual depth should be determined by the geotechnical engineer working with the specialty ground improvement contractor during the design phase of their work. For areas of the site outside of the ground improvement area, the top 1 foot of the site outside of the ground improvement area should be removed (excavated) to allow for processing and

compaction of the newly exposed subgrade, followed by the placement of engineered fill to design grades.

3. Exposed subgrade soils in over-excavated areas and in cut areas that will support structures or pavement should be scarified to a depth of about 12 inches, properly moisture conditioned and compacted. If zones of soft or saturated soils or existing fills are encountered, deeper excavations may be required to expose firm soils. This should be determined in the field by the geotechnical engineer. After the soil subgrades have been properly prepared, the areas may be raised to design grades by placement of engineered fill. In areas that are over-excavated, the excavated soils can be replaced as engineered fill.

4. Subgrade soils that will receive fill and fill soils should be compacted to no less than 90 percent relative compaction at a moisture content at least 3 percent over optimum moisture content. Care should be exercised to avoid over-wetting of the soils.

5. Fill and backfill should be placed in thin lifts (normally 6 to 8 inches in loose lift thickness depending on the compaction equipment), properly moisture conditioned, and compacted as specified above.

6. Relative compaction refers to the in-place dry density of the soil expressed as a percentage of the maximum dry density determined by ASTM D1557 laboratory compaction test procedure. Optimum moisture is the water content (percentage by dry weight) corresponding to the maximum dry density.

7. The on-site soil is generally suitable for engineered fill, provided it is free of debris, significant vegetation, rocks greater than 4 inches in largest dimension and other deleterious matter.

8. Where import fill is required for mass grading of the site, the soil should have a Plasticity Index of 15 or less. Where gravelly soil is to be imported, the material should have sufficient sand and fine-grained soils content to prevent nesting or pockets of open graded gravel. The import soil should not contain particles greater than 4 inches in largest dimension.

9. The geotechnical engineer should be notified at least 48 hours prior to site clearing, ground improvement operations, grading and backfill operations. The procedure and methods of grading may then be discussed between the contractors and the geotechnical engineer.

10. Observations and soil density tests should be carried out by a representative of the geotechnical engineer during grading and backfill operations to assist the contractor in obtaining the required degree of compaction and proper moisture content. Where the compaction and/or soil moisture content are outside the range required, additional compaction effort and/or adjustment of moisture content should be made until the specified compaction and moisture conditioning is achieved.

UTILITY TRENCH EXCAVATION AND BACKFILL

Excavations should conform to applicable State and Federal industrial safety requirements. Safety in and around utility trenches is the responsibility of the underground contractors. The contractor should be prepared to shore or slope back all trench walls. We encountered loose sands that were free flowing in our exploratory excavations. Trench sidewalls may need to be sloped no steeper than 1.5 Horizontal to 1 Vertical (1H:1V) in granular soils. If trench side slopes cannot be excavated due to site constraints, shoring should be provided to ensure trench stability and safety. Heavy construction equipment, building materials, excavated soil, and vehicular traffic should not be allowed within 5 feet of the top (edge) of the excavation.

Materials type and quality, placement procedures and compaction operations for utility bedding and shading materials should meet local agency and/or other applicable utility providers' requirements. From a geotechnical perspective, utility trench backfill above the shading materials may consist of native soils that have been processed to remove rock fragments over 4 inches in largest dimension, rubbish, vegetation and other undesirable substances. Backfill materials should be placed in level lifts about 4 to 12 inches in loose thickness, moisture conditioned and mechanically compacted. Lift thickness will be a function of the type of compaction equipment in use with thinner lifts required for manually operated equipment, such as wackers or vibratory plates, and thicker lifts where a sheepsfoot wheel is used on the stick of an excavator. No jetting is permissible on this project.

Trench backfill should be moisture conditioned to 3 percent above optimum moisture content and compacted to at least 90 percent relative compaction; where clean sand is used as backfill, it should be moisture conditioned to slightly above the optimum moisture content and compacted to at least 93 percent relative compaction. Trenches in pavement areas should be capped with at least 12 inches of compacted, on-site soil similar to that of the adjoining subgrade. Should trench backfill be placed and compacted after the adjacent roadway subgrade has been completed, the upper 12 inches of trench backfill in areas to be paved should be compacted to at least 95 percent relative compaction.

PAVEMENT AREA SUBGRADE AND AGGREGATE BASE

Prior to subgrade preparation, utility trench backfill in the pavement areas should be properly placed and compacted as previously recommended. The top 12 inches of soils for pavement subgrade should be scarified and compacted to at least 95 percent relative compaction to provide a smooth, unyielding surface. The compacted subgrade should be non-yielding when proof-rolled with a loaded ten-wheel truck, such as a water truck or dump truck, prior to pavement construction. Subgrade soils should be maintained in a moist and compacted condition until covered with the complete pavement section.

Class 2 aggregate base should conform to the requirements found in Caltrans Standard Specifications Section 26. The aggregate base should be placed in thin lifts in a manner to prevent

segregation, uniformly moisture conditioned, and compacted to at least 95 percent relative compaction to provide a smooth, unyielding surface.

SURFACE DRAINAGE

Surface water should not be allowed to collect on or adjacent to structures or pavements. Final site grading should provide surface drainage away from structures, pavements and slabs-on-grade to reduce the percolation of water into the underlying soils. Pavements should be designed and constructed to drain toward the perimeter of the site. Inward sloping pavements with drop inlets within the pavement area should be avoided if possible. A surface gradient of 2 percent is recommended for flexible pavements.

BUILDING FOUNDATIONS

The proposed warehouse building and future office building may be supported by conventional, relatively shallow continuous strip footings along the building perimeter and at interior load bearing walls, with isolated spread footings for columns. All footings should be founded on engineered fill. The footings may be designed using an allowable soil bearing pressure of 3,000 pounds per square foot (psf) for dead plus live loads. The allowable bearing pressure may be increased by one-third when considering the effects of short-term wind or seismic loads. Continuous footings should have a minimum width of 18 inches and should be embedded a minimum of 18 inches below the lowest adjacent exterior finish grade or pad grade for interior column footings. Continuous strip footings should be reinforced with a minimum of two number 5 deformed reinforcing steel bars at the top and two at the bottom to provide structural continuity, to permit spanning of local irregularities in soil conditions and to aid in reducing the potential for abrupt differential settlement. A Structural Engineer should determine the actual width and reinforcement of the foundations.

Lateral loads may be resisted by friction between the base of the slab and the supporting subgrade, or by passive resistance acting against the vertical faces of the foundations. An allowable friction coefficient of 0.35 between the foundation and supporting subgrade may be used. Where a vapor retarder (membrane) is placed below the slab the allowable friction coefficient between the foundation and vapor retarder or sand layer should be reduced to 0.2. For passive resistance, an allowable equivalent fluid weight of 250 pounds per cubic foot (pcf) acting against the perimeter of the foundation can be used for design purposes. The passive pressure can be assumed to act, starting at the top of the lowest adjacent finish grade in paved areas and at a depth of 1 foot below finish grade in unpaved areas. The passive lateral load resistance value discussed above is only applicable where the concrete for the foundation is either placed directly against undisturbed soils or so that the voids created from the use of forming are backfilled with soil compacted to a minimum of 90 percent compaction, or with lean or structural concrete.

We estimate that total post-construction settlement under static building loads will be less than 3/4-inch with differential settlement along perimeter walls estimated to be 1/2-inch in 40 feet. Should the bearing pressures exceed those discussed herein, there may be an impact on the

estimated settlement. This settlement estimate is based on the assumption that the building area is properly compacted and that the foundation is designed and constructed in accordance with our recommendations. However, additional post-construction settlement may occur should seismic-induced settlement occur in the deeper sand deposits present below the site. The potential settlement associated with very strong seismic shaking and liquefaction of soils below a depth of 15 feet below the current ground surface is on the order of 1 to 2 inches. Differential settlement is estimated at 1 inch.

We recommend that the footing excavations be observed by the Geotechnical Engineer prior to placement of rebar in the footings. This will allow for confirmation of compliance with minimum width and embedment recommendations, appropriate moisture control and to confirm that the bearing level soils are consistent with those contemplated in our preparation of this report. The soil in the footings should not be permitted to dry out during construction. The foundation excavations may need to be watered regularly during the hot summer months to prevent drying of the exposed soils in the footing excavation. Concrete for footings should be placed against undisturbed engineered fill soils.

LOADING DOCK RETAINING WALLS

Retaining walls that are incapable of deflection or walls that are fully constrained against deflection may be designed for an equivalent fluid at-rest pressure of 65 pounds per square foot per foot per depth. This design pressure does not include surcharge pressures associated with loads placed behind and above the walls or hydrostatic pressure. The surcharge effect from loads placed above the walls should be included in the wall design. The surcharge load for restrained walls should be based on one-half of the applied load placed above and within 4 feet of the back of the wall. The surcharge load should be distributed over the full height of the wall. The stated lateral earth pressures do not include the effects of hydrostatic water pressures generated by infiltrating surface water that may accumulate behind the retaining walls. With the walls designed to retain fill that will be fully enclosed, it is very unlikely that that hydrostatic pressures will develop. However, if this is a concern, the Structural Engineer should consider a hydrostatic component, or a drain should be constructed behind the wall.

Backfill should consist of granular soils with a fines content of no more than 25 percent, a sand equivalent of 21 or higher and a Plasticity Index of 15 or less. Backfill should be compacted to between 90 and 95 percent relative compaction. Over-compaction should be avoided because increased compactive effort can result in lateral pressures significantly higher than those recommended above. During grading and backfilling operations adjacent to any walls, heavy equipment should not be allowed to operate within a lateral distance of 4 feet from the wall to avoid developing excessive lateral pressures. Only hand-operated equipment ("wackers," vibratory plates, or trench roller compactors) should be used to compact the backfill soils within this zone.

CONCRETE FLOOR SLABS

Warehouse Concrete Floor Slabs

Warehouse concrete floor slabs should be supported by at least 4 inches of Class 2 aggregate base (Caltrans Standard Specifications Section 26) compacted to a minimum of 95 percent relative compaction. Warehouse concrete floor slabs should be designed for both static and rolling loads. The designers should consider punching shear at point loads where pallet racks will be installed and flexural stresses associated with moving loads. Forklift traffic results in highly concentrated loads and stress reversals in the slab as the forklift moves across the slabs. The slabs may be designed using a modulus of subgrade reaction, *k*, of 120 pounds per cubic inch (pci). Warehouse floor slab failure frequently occurs at joints. Joint design should incorporate keyed and reinforced joints, doweled joints or thickened concrete sections at panel edges. Joint spacing should be developed with consideration of concrete shrinkage and slab reinforcement.

Office Space Concrete Floor Slabs

Interior concrete slabs can, from a geotechnical engineering standpoint, be supported on properly prepared subgrade. During foundation and/or utility trench excavation, previously compacted subgrade soils may become disturbed. Before placement of concrete slabs, the disturbed subgrade soils should be moisture conditioned and re-compacted according to the requirements outlined under the section heading "Site Preparation and Grading" in this report.

As a minimum, we recommend that floor slab reinforcement consist of No. 3 steel reinforcing bars (rebar) at 18 inches on center each way. The minimum recommended steel will not prevent the development of slab cracks but will aid in keeping the construction joints and minor cracks associated with concrete shrinkage relatively tight and will reduced the potential for differential vertical movement between adjacent panels. The actual required steel reinforcement, joint frequency and positioning or placement of the reinforcing steel should be determined by the project Structural Engineer.

Moisture Vapor Transmission Through Interior Slabs-On-Grade

A vapor retarder should be installed immediately below the concrete in accordance with Section 1907 of the California Building Code. Sand should not be placed over the vapor retarder. Guidelines for capillary break installation and for installation of the vapor retarder are provided in ASTM E1745. A standard specification for the vapor retarder material is presented in ASTM E1643. The details of the materials and installation of a vapor retarder and capillary break should be determined by the project designers. To further reduce the potential for soil moisture to migrate through the slabs-on-grade as a vapor, and to reduce concrete shrinkage, consideration should be given to the use of a low water/cement ratio concrete mix. Consolidation of the concrete will also reduce the degree of vapor that can pass through the slab.

Slab control joints should be spaced in accordance with the recommendations presented in the ACI Manual of Concrete Practice. In the event that control or contraction joints are to be constructed by saw cutting of the slabs, saw cuts should be made by soff-cut sawing within 4 to 12 hours after the initial hardening (not curing) of the concrete, as required by atmospheric conditions. The contractor should be responsible for monitoring of the concrete during initial set or hardening for determination of the optimal timing for cutting of the slabs.

STRUCTURAL PAVEMENT SECTIONS

The Caltrans flexible pavement design method was used to develop the recommended pavement sections presented below. The pavement section recommendations presented below are based on a subgrade R-value of 16, which was determined based on a representative soil sample collected from the surface of the site.

FLEXIBLE PAVEMENT SECTIONS Subgrade R-Value = 16			
Traffic Index	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)	Total Section Thickness (inches)
4.0	2.5	6.0	8.5
5.0	3.0	8.0	11.0
6.0	3.5	10.5	14.0
6.5	4.0	11.5	15.5
7.0	4.0	13.0	17.0
7.5	4.5	14.0	18.5
8.0	5.0	14.5	19.5

ADDITIONAL GEOTECHNICAL ENGINEERING SERVICES

The details of site grading were not fully developed at the time this report was prepared. With the possibility of significant import to raise the site, modification to the foundation design recommendations and pavement structural sections may be required.

Prior to construction, our firm should be provided the opportunity to review the grading and foundation plans and specifications to determine if the recommendations of this report have been implemented in those documents. We would appreciate the opportunity to meet with the contractors prior to the start of site grading, underground utility installation and pavement construction to discuss the procedures and methods of construction. This can facilitate the performance of the construction operation and minimize possible misunderstanding and construction delays.

To a degree, the performance of the proposed project is dependent on the procedures and quality of the construction. Therefore, we should provide observations of the contractor's procedures and

the exposed soil conditions, and field and laboratory testing during site preparation and grading, placement and compaction of fill, underground utility installation, and foundation and pavement construction. These observations will allow us to check the contractor's work for conformance with the intent of our recommendations and to observe unanticipated soil conditions that could require modification of our recommendations.

LIMITATIONS

The conclusions and recommendations presented in this report are based upon the project information provided to us by Midnight Express, information obtained from published geologic reports, subsurface conditions encountered at the boring CPT and exploratory trench locations, the results of geotechnical laboratory testing, the results of our fault ground-rupture investigation and professional judgment.

Site conditions described in this report are those existing at the times of our field explorations, most recently in September 2017, and are not necessarily representative of such conditions at other locations or times. The CPT logs and boring logs show subsurface conditions at the locations and on the dates indicated. It is not warranted that they are representative of such conditions elsewhere or at other times. This geotechnical investigation has been conducted in accordance with professional geotechnical engineering standards current at the time of service and in the geographic area of the site; no other warranty, expressed or implied, is offered or made.

The information provided herein was developed for use by Midnight Express for the project as described herein. In the event that changes in the nature, design or location of the proposed project are planned, or if it is found during construction that subsurface conditions differ from those described herein, then the conclusions and recommendations in this report shall be considered invalid, unless the changes are reviewed and the conclusions and recommendations are modified or approved in writing.

We trust that this report provides the information that you require at this time. If you have any questions, please contact the undersigned at (925) 484-0220. We appreciate the opportunity to provide professional services to Midnight Express, Inc. and look forward to continuing on with this project through design and construction.

Respectfully Submitted,
BERLOGAR STEVENS & ASSOCIATES

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Attachments:

- Selected References
- Plate 1 – Vicinity Map
- Plate 2 – Site Plan
- Appendix A – Boring Logs and Key to Boring Logs
- Appendix B – CPT Logs
- Appendix C – Laboratory Test Results

Copies: Addressee (3)

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SELECTED REFERENCES

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PLATES

SITE PLAN

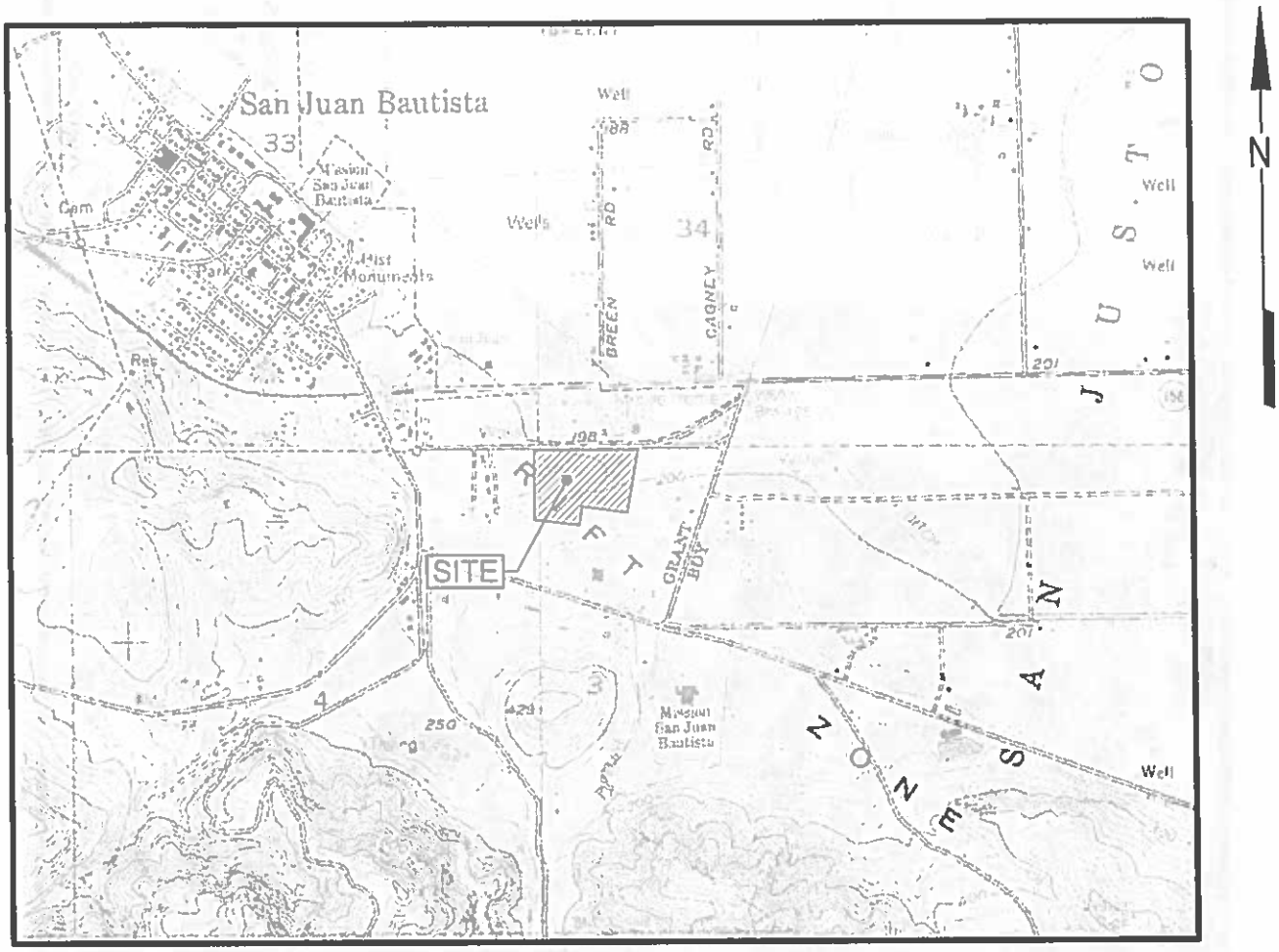
MIDNIGHT EXPRESS

OLD SAN JUAN HOLLISTER ROAD
SAN JUAN BAUTISTA, CALIFORNIA
FOR
MIDNIGHT EXPRESS

Berlogar Stevens & Associates
SOIL ENGINEERS • ENGINEERING GEOLOGISTS

DRAWN BY: CC
DATE: 11-2-17
JOB NUMBER: 3869.200

BASE: GOOGLE EARTH AERIAL



0 2000'

1"=2000'

VICINITY MAP

MIDNIGHT EXPRESS

OLD SAN JUAN HOLLISTER ROAD

SAN JUAN BAUTISTA, CALIFORNIA

FOR

MIDNIGHT EXPRESS

BASE: PORTION OF U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, SAN JUAN BAUTISTA, CALIFORNIA, AT A SCALE OF 1:24,000.

APPENDIX A

BORING LOGS

Berlogar Stevens & Associates
5587 Sunol Boulevard
Pleasanton, CA 94566

BORING NUMBER B-1

CLIENT Midnight Express
PROJECT NAME Midnight Express
PROJECT NUMBER 3869.200
PROJECT LOCATION San Juan Bautista, CA
DATE STARTED 9/18/17 COMPLETED 9/18/17
GROUND ELEVATION 198 ft
DRILLING CONTRACTOR EGI
GROUNDWATER: No Groundwater Encountered
DRILLING METHOD Hollow Stem Auger 2.5" I.D. Split Barrel
LOGGED BY MG
NOTES

Modified California Sampler
Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION (ft)	DEPTH (ft)	SAMPLER	BLOW COUNT	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT PASSING #200
SM	SILTY SAND, brown, dry to moist, medium dense, medium-grained sand, trace to some clay		0							
					27					
		195			15					
	Peak Friction Angle = 37°		5		23					15
	below 6-1/2 feet, light to medium brown, fine-to medium-grained sand, trace clay									
SP	SAND, medium tan-brown, dry to moist, loose, fine-to medium-grained sand, trace silt	190								
			10		10					14
		185								
	below 13-1/2 feet, dark brown, moist, dense, medium-to coarse-grained sand, some clay, some silt		15		33	119	13.0			
SP	SAND, light tan and light brown, saturated, dense, coarse-grained sand, some fine gravel	180								
			20		35	118	12.0			5

Bottom of borehole at 20.0 feet.

BERLOGAR NO GROUNDWATER - GINT STD US.GDT - 11/6/17 14:12 - S:\PROJECTS\3869.200\3869.200.GPJ

Berlogar Stevens & Associates
5587 Sunol Boulevard
Pleasanton, CA 94566

BORING NUMBER B-2

CLIENT Midnight Express
PROJECT NAME Midnight Express
PROJECT NUMBER 3869.200
PROJECT LOCATION San Juan Bautista, CA
DATE STARTED 9/18/17 COMPLETED 9/18/17
GROUND ELEVATION 200 ft
DRILLING CONTRACTOR EGI
GROUNDWATER: No Groundwater Encountered
DRILLING METHOD Hollow Stem Auger 2.5" I.D. Split Barrel
LOGGED BY MG
NOTES

Standard Penetration Test
Modified California Sampler

USCS	MATERIAL DESCRIPTION	ELEVATION (ft)	DEPTH (ft)	SAMPLER	BLOW COUNT	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT PASSING #200
		200	0							
SM	SILTY SAND, brown, dry to moist, medium dense, fine-to medium-grained sand, trace clay									
				Standard Penetration Test	12					
	below 3 feet, loose			Modified California Sampler	11					
		195	5	Standard Penetration Test	10					
SP	SAND, medium brown, moist, loose, medium-to coarse-grained sand, some silt, trace clay									
		190	10	Standard Penetration Test	7		6.5			13
	below 13-1/2 feet, trace fine gravel			Standard Penetration Test	8					17
ML	CLAYEY SILT, dark brown, moist, medium stiff, some fine-grained sand	185	15							
SC/CL	SANDY CLAY/CLAYEY SAND, brown, moist, stiff, medium grained sand, some silt	180	20	Modified California Sampler	15					

Bottom of borehole at 20.0 feet.

BERLOGAR NO GROUNDWATER - GINT STD US.GDT - 11/6/17 14:12 - S:\PROJECTS\3869.200\3869.200.GPJ

Berlogar Stevens & Associates
5587 Sunol Boulevard
Pleasanton, CA 94566

BORING NUMBER B-3

CLIENT Midnight Express
PROJECT NAME Midnight Express
PROJECT NUMBER 3869.200
PROJECT LOCATION San Juan Bautista, CA
DATE STARTED 9/18/17 COMPLETED 9/18/17
GROUND ELEVATION 199 ft
DRILLING CONTRACTOR EGI
GROUNDWATER: No Groundwater Encountered
DRILLING METHOD Hollow Stem Auger 2.5" I.D. Split Barrel
LOGGED BY MG
NOTES

Modified California Sampler
Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION (ft)	DEPTH (ft)	SAMPLER	BLOW COUNT	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT PASSING #200
SM	SILTY SAND, dark to medium brown, dry to moist, medium dense, medium-to coarse-grained sand, trace clay		0							
					13					
	Peak Friction Angle = 35°				8					
		195								
			5							
		190			13					
			10							
		185								
SM	SILTY SAND with CLAY, medium brown, moist, dense, fine-to coarse-grained sand, occasional fine gravel pockets				26		8.0			
			15							
SP	SAND, tan-light brown, dry to moist, medium dense, fine-to medium-grained sand									
		180			28					
SM	SILTY SAND with CLAY, dark brown, moist, medium dense, fine-to coarse-grained sand		20							

Bottom of borehole at 20.0 feet.

BERLOGAR NO GROUNDWATER - GINT STD US.GDT - 11/6/17 14:12 - S:\PROJECTS\3869.200\3869.200.GPJ

Berlogar Stevens & Associates
5587 Sunol Boulevard
Pleasanton, CA 94566

BORING NUMBER B-4

CLIENT Midnight Express
PROJECT NAME Midnight Express
PROJECT NUMBER 3869.200
PROJECT LOCATION San Juan Bautista, CA
DATE STARTED 9/18/17 COMPLETED 9/18/17
GROUND ELEVATION 200 ft
DRILLING CONTRACTOR EGI
GROUNDWATER: No Groundwater Encountered
DRILLING METHOD Hollow Stem Auger 2.5" I.D. Split Barrel
LOGGED BY MG
NOTES

Standard Penetration Test
Modified California Sampler

USCS	MATERIAL DESCRIPTION	ELEVATION (ft)	DEPTH (ft)	SAMPLER	BLOW COUNT	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT PASSING #200
		200	0							
SM	SILTY SAND, brown, dry to moist, loose, fine-to coarse-grained sand, trace clay, trace fine gravel				8					
					16	102	6.6			
SP	SAND, medium brown, dry to moist, loose, fine-to medium-grained sand, trace fine gravel, trace silt	195	5		10					
	below 8-1/2 feet, trace clay	190	10		9					
SC/CL	CLAYEY SAND / SANDY CLAY, brown, moist, loose/stiff, medium-to coarse-grained sand, some silt	185	15		10			32	12	
CL	SANDY CLAY, brown, moist									
SM	SILTY SAND, medium brown, moist, medium dense, some clay	180	20		17					

Bottom of borehole at 20.0 feet.

BERLOGAR NO GROUNDWATER - GINT STD US.GDT - 11/6/17 14:12 - S:\PROJECTS\3869.200\3869.200.GPJ

Berlogar Stevens & Associates
5587 Sunol Boulevard
Pleasanton, CA 94566

BORING NUMBER B-5

CLIENT Midnight Express
PROJECT NAME Midnight Express
PROJECT NUMBER 3869.200
PROJECT LOCATION San Juan Bautista, CA
DATE STARTED 9/18/17 COMPLETED 9/18/17
GROUND ELEVATION 199 ft
DRILLING CONTRACTOR EGI
GROUNDWATER: No Groundwater Encountered
DRILLING METHOD Hollow Stem Auger 2.5" I.D. Split Barrel
LOGGED BY MG
NOTES

Bulk Sample | Modified California Sampler | Standard Penetration Test

USCS	MATERIAL DESCRIPTION	ELEVATION (ft)	DEPTH (ft)	SAMPLER	BLOW COUNT	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT PASSING #200
SM	SILTY SAND, medium gray-brown, dry to moist, medium dense, fine-to coarse-grained sand, trace clay		0	Bulk Sample						
	Peak Friction Angle = 31.5°	195	5	Modified California Sampler	15					
SP	SAND, medium tan-brown, dry to moist, loose, coarse-grained sand	190		Standard Penetration Test	7					
SM	SILTY SAND, medium brown, moist, loose, trace clay, fine-to medium-grained sand		10							
	below 13-1/2 feet, brown, moist, medium dense, medium-to coarse-grained sand, some clay	185	15	Standard Penetration Test	22		12.2			24
SM	SILTY SAND, dark gray-brown, moist, medium dense, trace clay, fine-to coarse-grained sand	180	20	Modified California Sampler	27					

(Continued Next Page)

BERLOGAR NO GROUNDWATER - GINT STD US.GDT - 11/6/17 14:12 - S:\PROJECTS\3869.200\3869.200.GPJ

Berlogar Stevens & Associates
5587 Sunol Boulevard
Pleasanton, CA 94566

BORING NUMBER B-5

CLIENT Midnight Express **PROJECT NAME** Midnight Express

PROJECT NUMBER 3869.200 **PROJECT LOCATION** San Juan Bautista, CA

USCS	MATERIAL DESCRIPTION	ELEVATION (ft)	DEPTH (ft)	SAMPLER	BLOW COUNT	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT PASSING #200
			20							
SM	SILTY SAND, dark gray-brown, moist, medium dense, trace clay, fine-to coarse-grained sand *(continued)*									
SC	CLAYEY SAND with SILT, medium brown, moist, medium dense, some fine-to medium-grained sand									
ML/CL	CLAYEY SILT to SILTY CLAY with SAND, gray-brown, moist, medium dense to dense, very stiff, fine-grained sand	175	25		30					
SC/CL	SANDY CLAY to CLAYEY SAND, light to medium brown, moist, hard, fine-to medium-grained sand, some silt	170			55					
SW	SAND, tan, moist, very dense, fine-grained sand		30							
SM	SILTY SAND, tan-brown, moist, very dense, fine-to medium-grained sand									

Bottom of borehole at 30.0 feet.

BERLOGAR NO GROUNDWATER - GINT STD US.GDT - 11/6/17 14:12 - S:\PROJECTS\3869.200\3869.200.GPJ

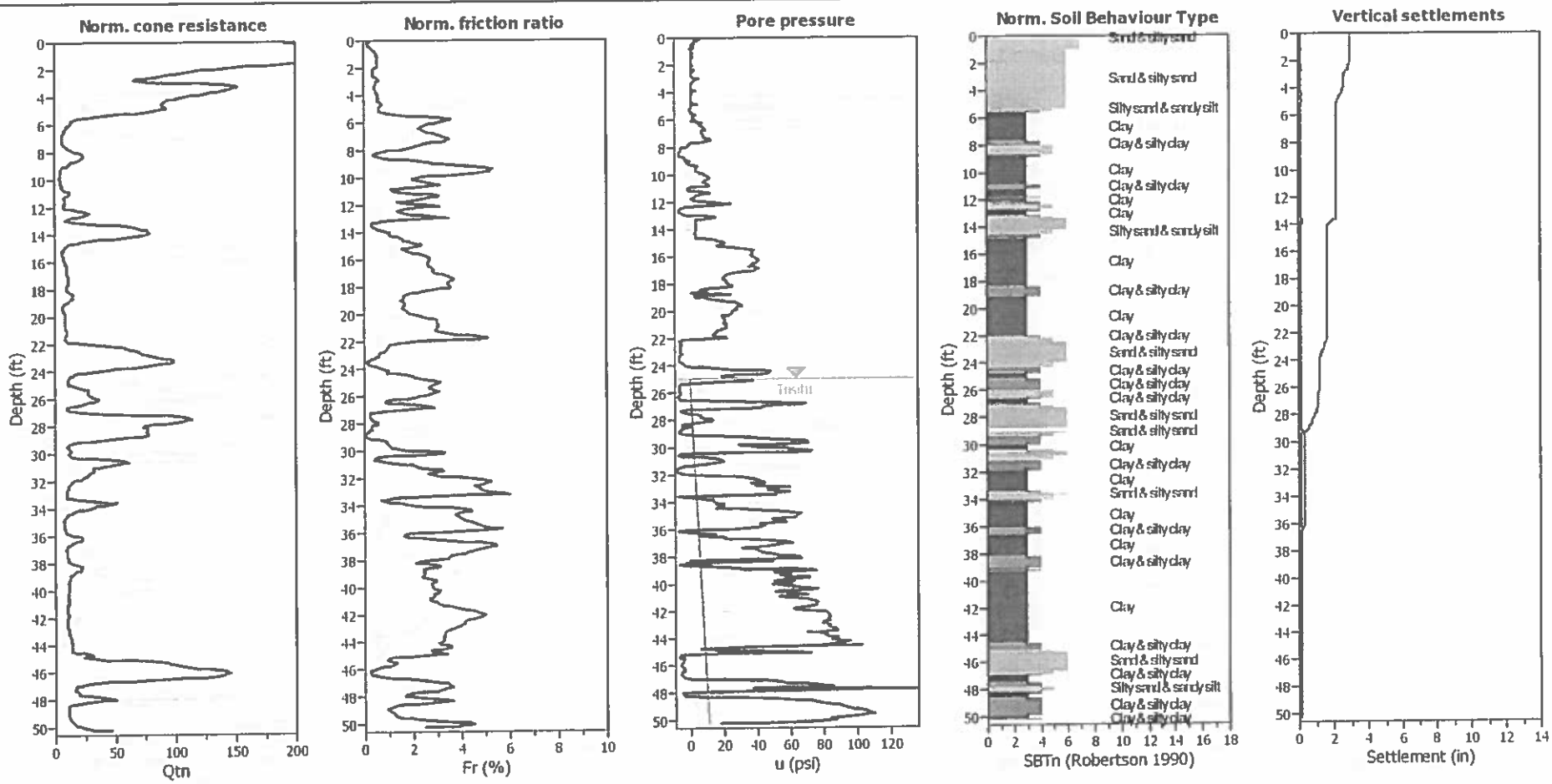
APPENDIX B

CPT PLOTS

Berlogar, Stevens & Associates
5587 Sunol Boulevard
Pleasanton, California

Project: Midnight Express
Location: San Juan Bautista

CPT: CPT-01
Total depth: 50.20 ft



Analysis method:	I&B (2008)	G.W.T. (in-situ):	25.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	I&B (2008)	G.W.T. (earthq.):	15.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	8.00	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.00	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CPeT-IT v.1.7.4.34 - CPTU data presentation & interpretation software - Report created on: 11/3/2017, 2:16:24 PM
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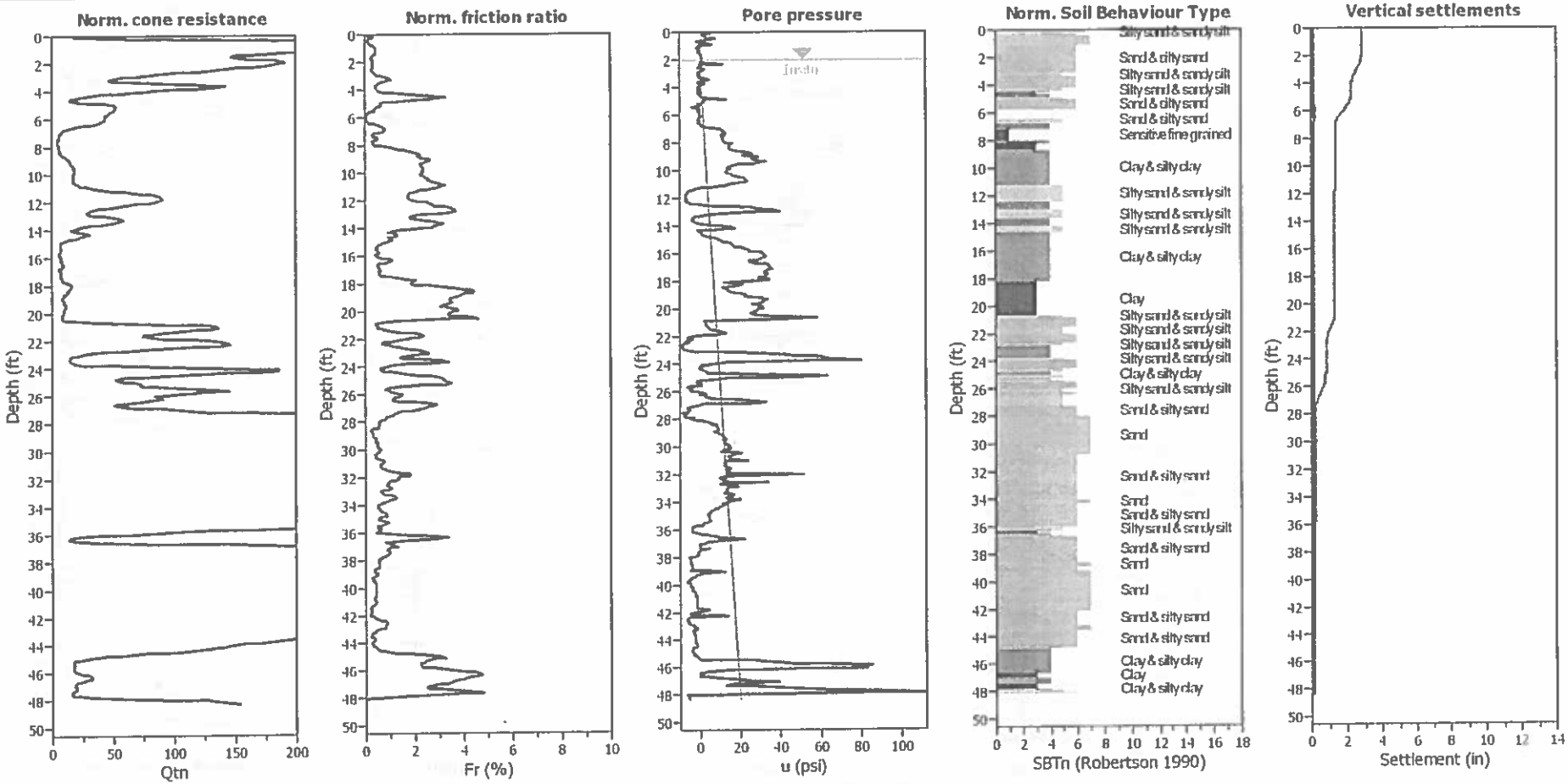
Berlogar, Stevens & Associates
5587 Sunol Boulevard
Pleasanton, California

Project: Midnight Express
Location: San Juan Bautista

CPT: CPT-02
Total depth: 48.23 ft



Analysis method:	I&B (2008)	G.W.T. (in-situ):	2.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	I&B (2008)	G.W.T. (earthq.):	2.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	8.00	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.00	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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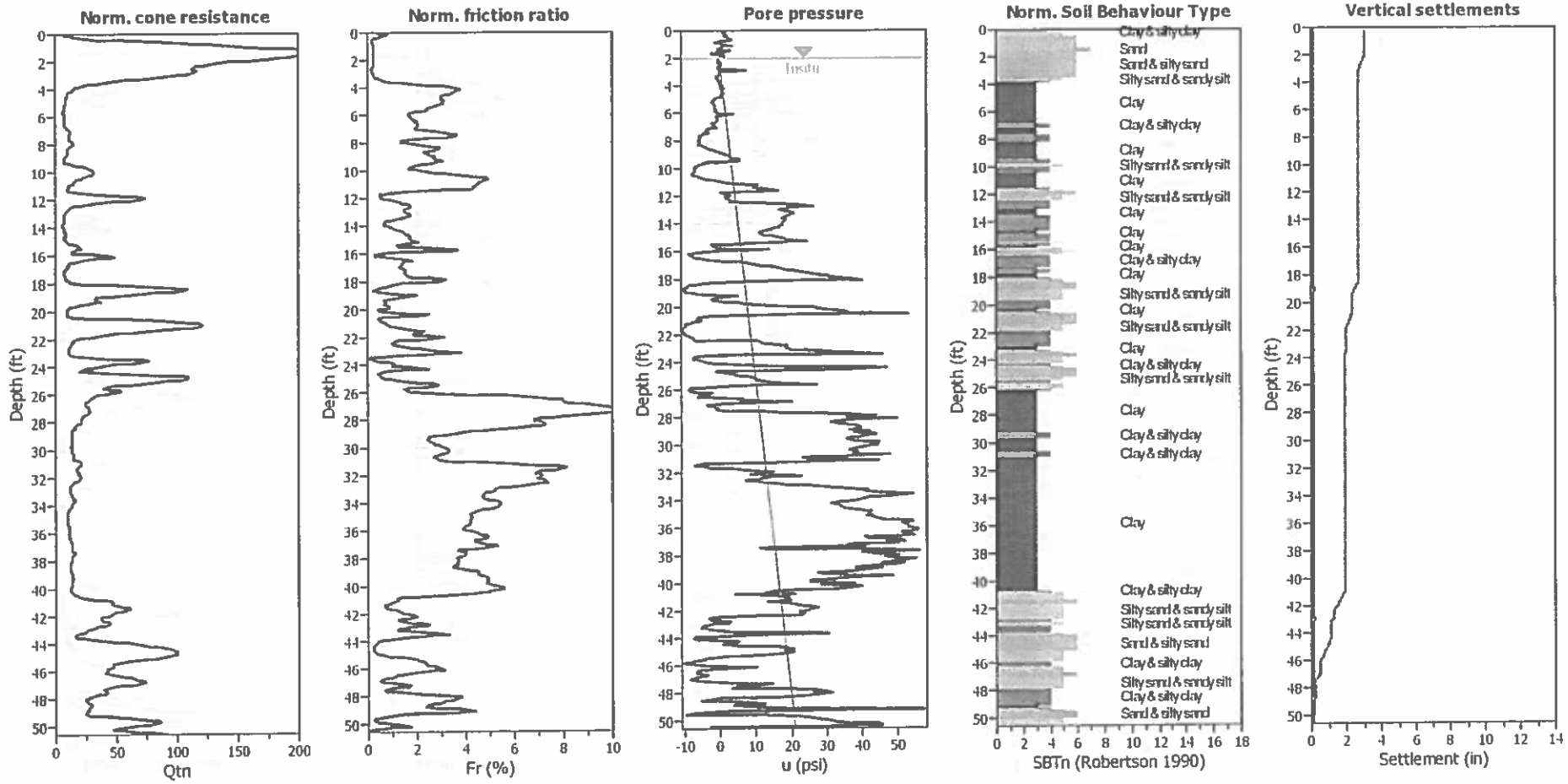
Berlogar, Stevens & Associates
5587 Sunol Boulevard
Pleasanton, California

Project: Midnight Express
Location: San Juan Bautista

CPT: CPT-03
Total depth: 50.52 ft

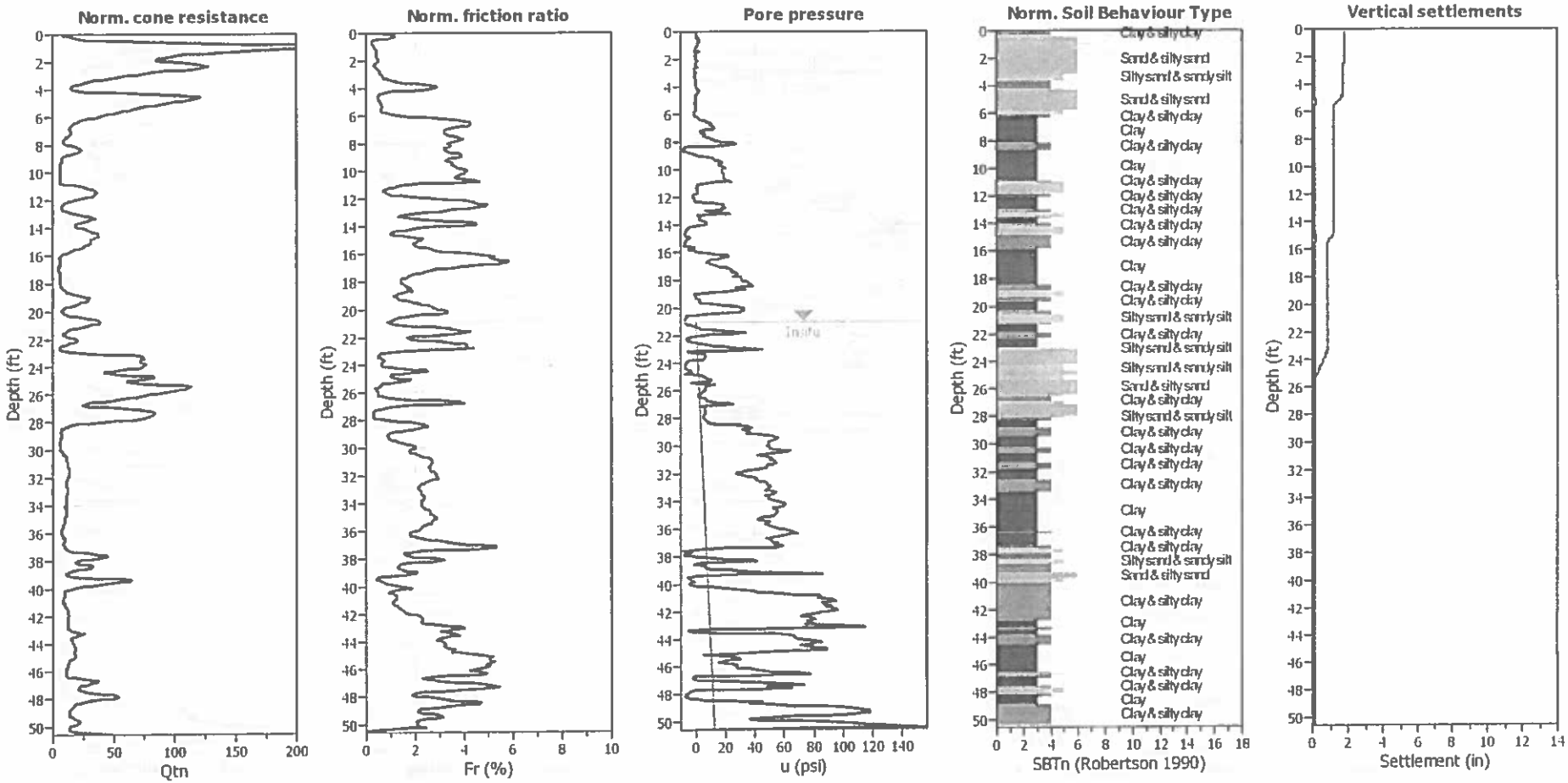


Analysis method:	I&B (2008)	G.W.T. (in-situ):	2.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	I&B (2008)	G.W.T. (earthq.):	2.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	8.00	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.00	Unit weight calculation:	Based on SBT	K_o applied:	Yes		

Berlogar, Stevens & Associates
5587 Sunol Boulevard
Pleasanton, California

Project: Midnight Express
Location: San Juan Bautista

CPT: CPT-04
Total depth: 50.52 ft



Analysis method:	I&B (2008)	G.W.T. (in-situ):	21.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	I&B (2008)	G.W.T. (earthq.):	15.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	8.00	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.00	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CPeT-IT v.1.7.4.34 - CPTU data presentation & interpretation software - Report created on: 11/3/2017, 2:16:30 PM
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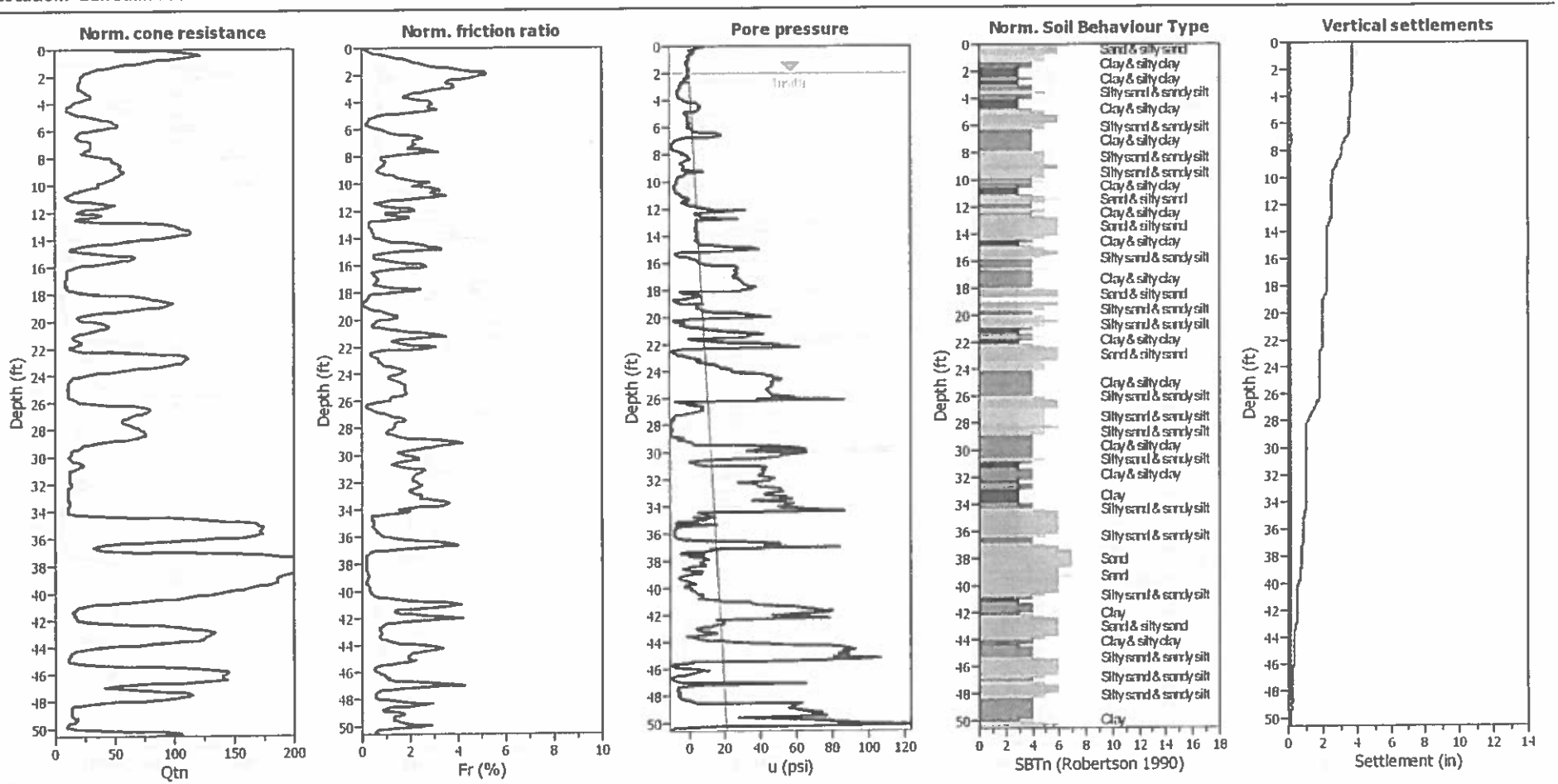
Berlogar, Stevens & Associates
5587 Sunol Boulevard
Pleasanton, California

Project: Midnight Express
Location: San Juan Bautista

CPT: CPT-05
Total depth: 50.93 ft



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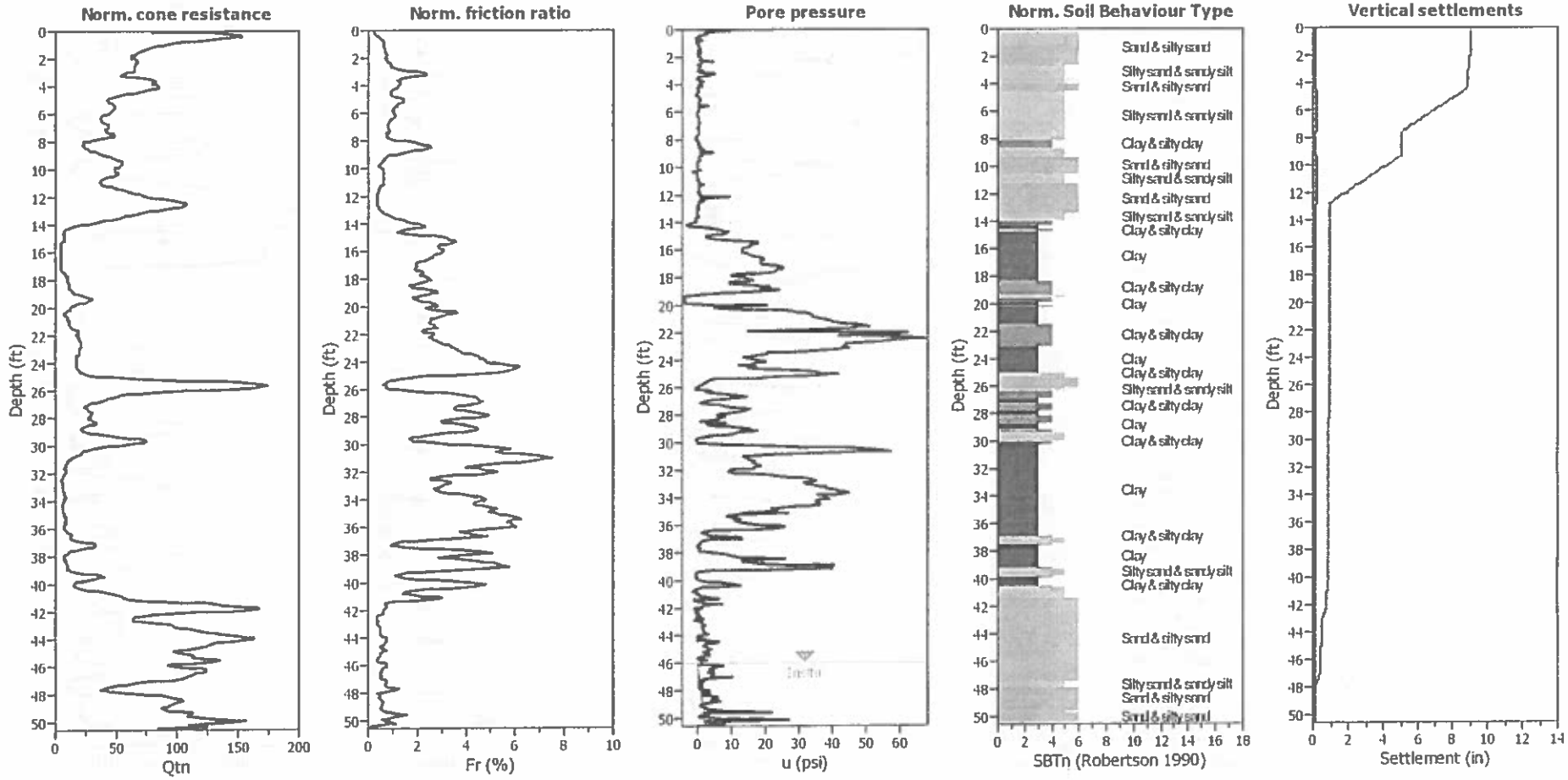
Fines correction method:	I&B (2008)	G.W.T. (earthq.):	2.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	8.00	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.00	Unit weight calculation:	Based on SBT	K_o applied:	Yes		

Berlogar, Stevens & Associates
5587 Sunol Boulevard
Pleasanton, California

Project: Midnight Express
Location: San Juan Bautista

CPT: CPT-06
Total depth: 50.52 ft



Analysis method:	I&B (2008)	G.W.T. (in-situ):	46.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	I&B (2008)	G.W.T. (earthq.):	15.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	8.00	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.00	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CPeT-IT v.1.7.4.34 - CPTU data presentation & interpretation software - Report created on: 11/3/2017, 2:16:36 PM
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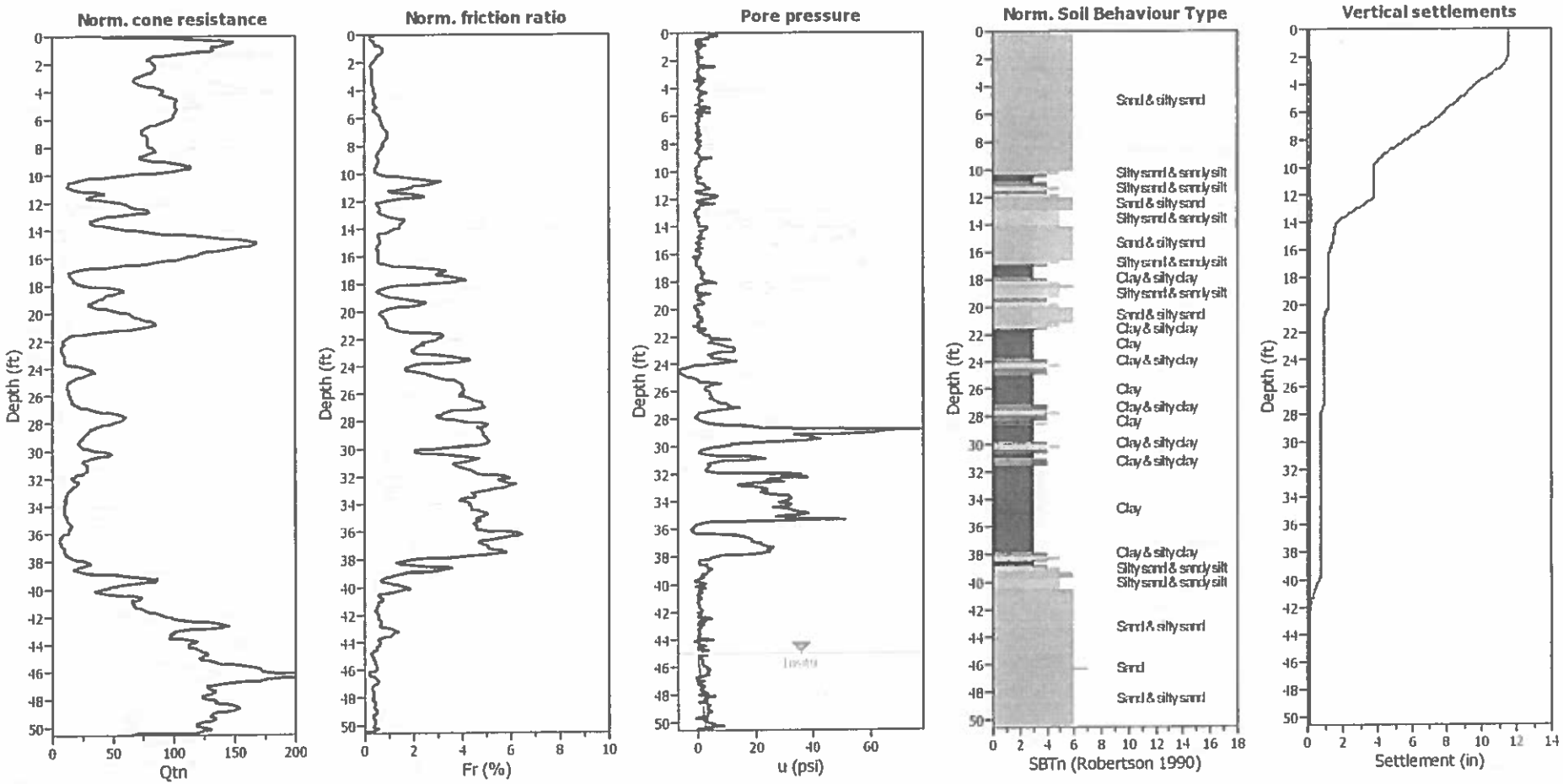
Berlogar, Stevens & Associates
5587 Sunol Boulevard
Pleasanton, California

Project: Midnight Express
Location: San Juan Bautista

CPT: CPT-07
Total depth: 50.61 ft



Analysis method:	I&B (2008)	G.W.T. (in-situ):	45.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	I&B (2008)	G.W.T. (earthq.):	15.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	8.00	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.00	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CPeT-IT v.1.7.4.34 - CPTU data presentation & interpretation software - Report created on: 11/3/2017, 2:16:38 PM
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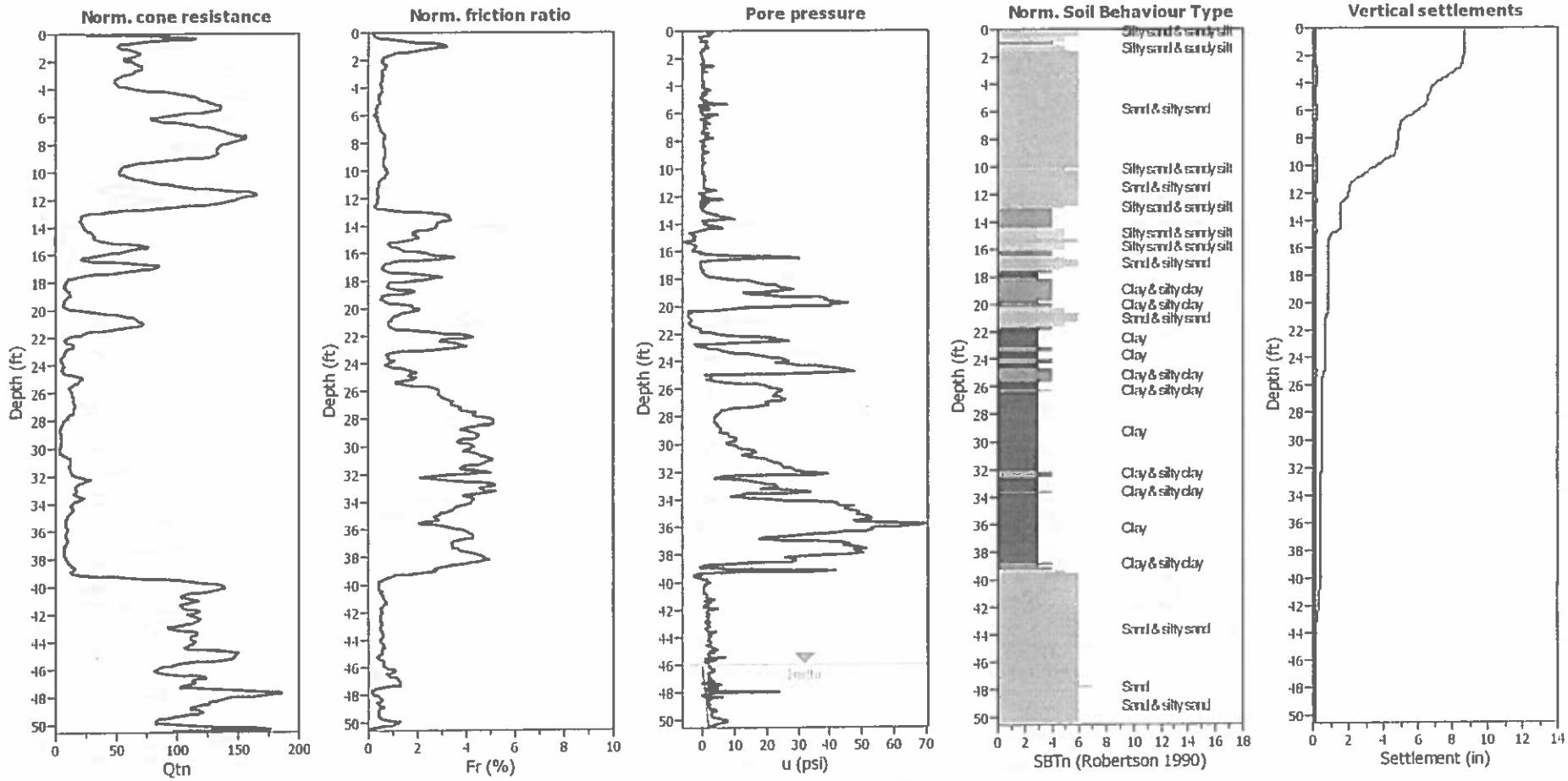
Berlogar, Stevens & Associates
5587 Sunol Boulevard
Pleasanton, California

Project: Midnight Express
Location: San Juan Bautista

CPT: CPT-08
Total depth: 50.52 ft



Analysis method:	I&B (2008)	G.W.T. (in-situ):	46.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	I&B (2008)	G.W.T. (earthq.):	15.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	8.00	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	1.00	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

CPeT-IT v.1.7.4.34 - CPTU data presentation & interpretation software - Report created on: 11/3/2017, 2:16:42 PM
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APPENDIX C

LABORATORY TEST REPORTS

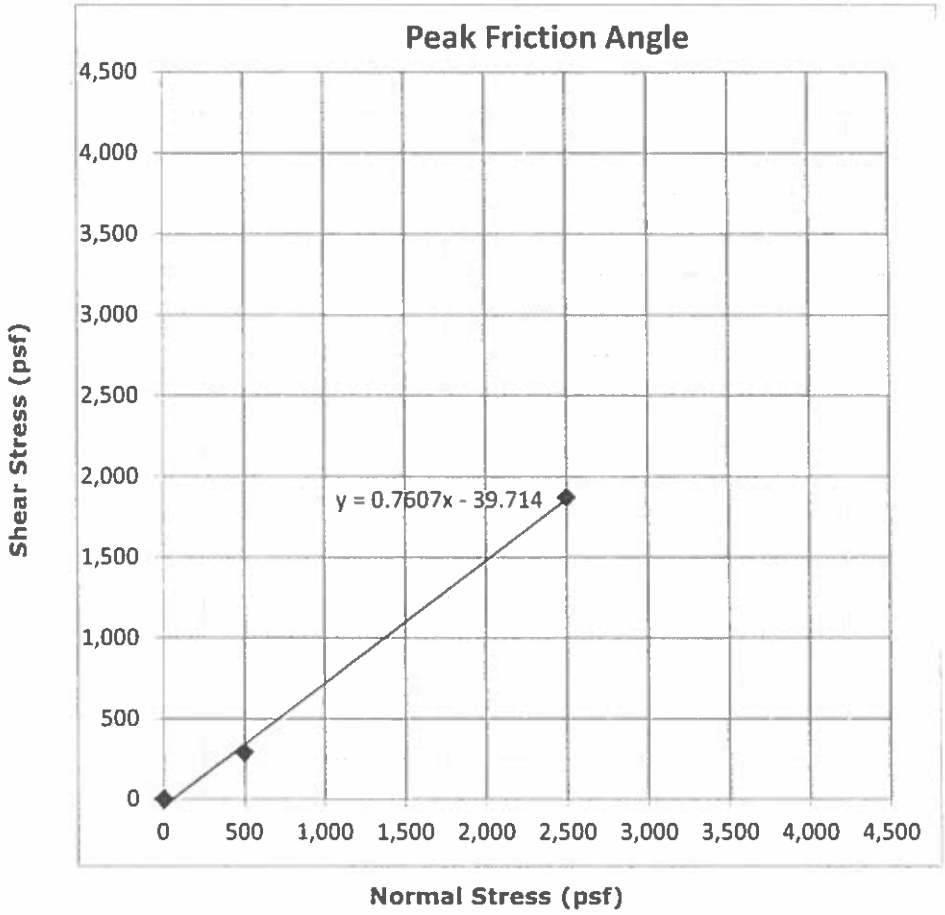
Direct Shear Worksheet ASTM D-3080

Project Name: Midnight Express		**Project Number: 3869.200**
Sample ID: B1 at 5ft		Date Tested: 10/27/17
Material Description: SM Silty Sand Dark Gray Brown		Invoice Number: 15516
Sample Type: undisturbed	Test Type: CD	Shear Rate, inches/min.: 0.00100
Maximum Dry Density, pcf: 0.0	Minimum Required Compaction, %: 0.0	
Optimum Moisture Content, %: 0.0	Minimum Compacted Moisture Content, %: 0.0	

Summary of Results

Normal Stress, psf:	**500**	**2,500**	**0**	
Peak Shear Stress, psf:	**291**	**1,872**		
Initial Dry Density, pcf:	**88.7**	**91.2**		
Initial Moisture Content, %:	**4.3**	**4.3**		
Final Moisture Content, %:	**23.8**	**21.4**		
Peak Cohesion, **(C')**, psf:	**0.0**	Peak Friction Angle, **(Φ'_{peak})**, Degrees:		**37.0**

Graph of Shear Stress vs Normal Stress

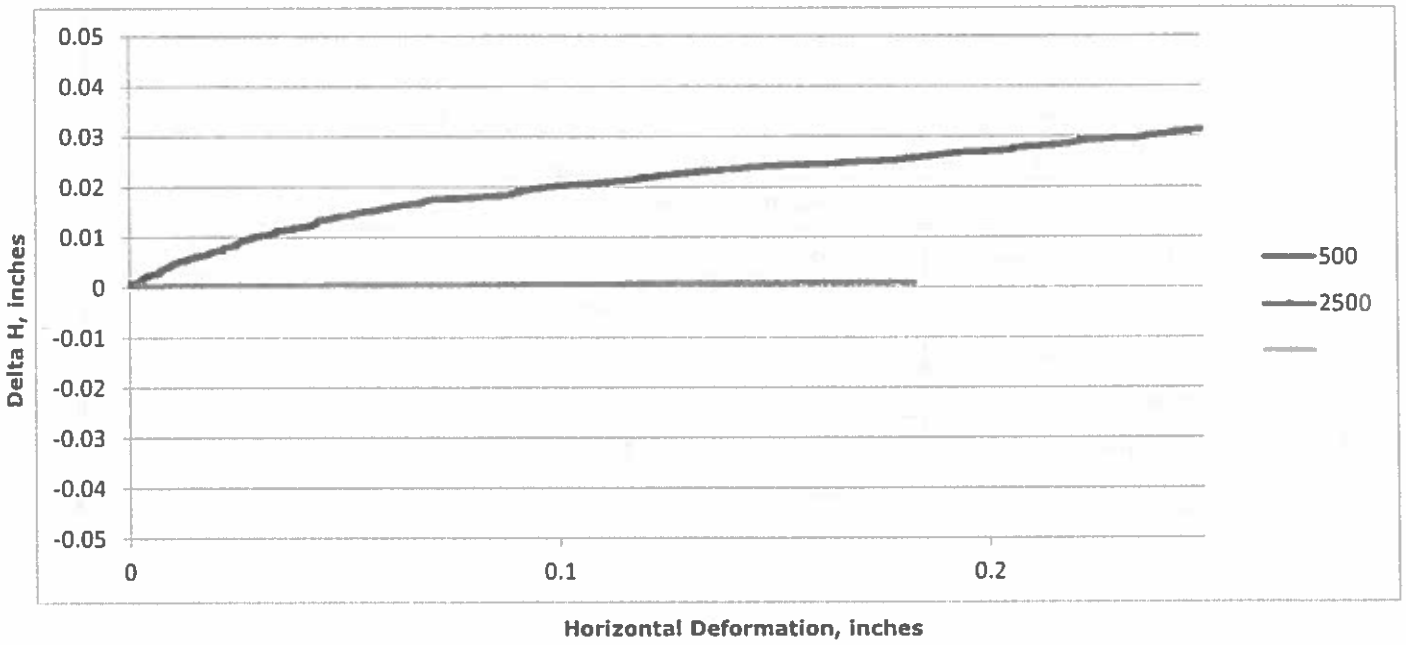


Berlogar Stevens & Associates Pleasanton, CA

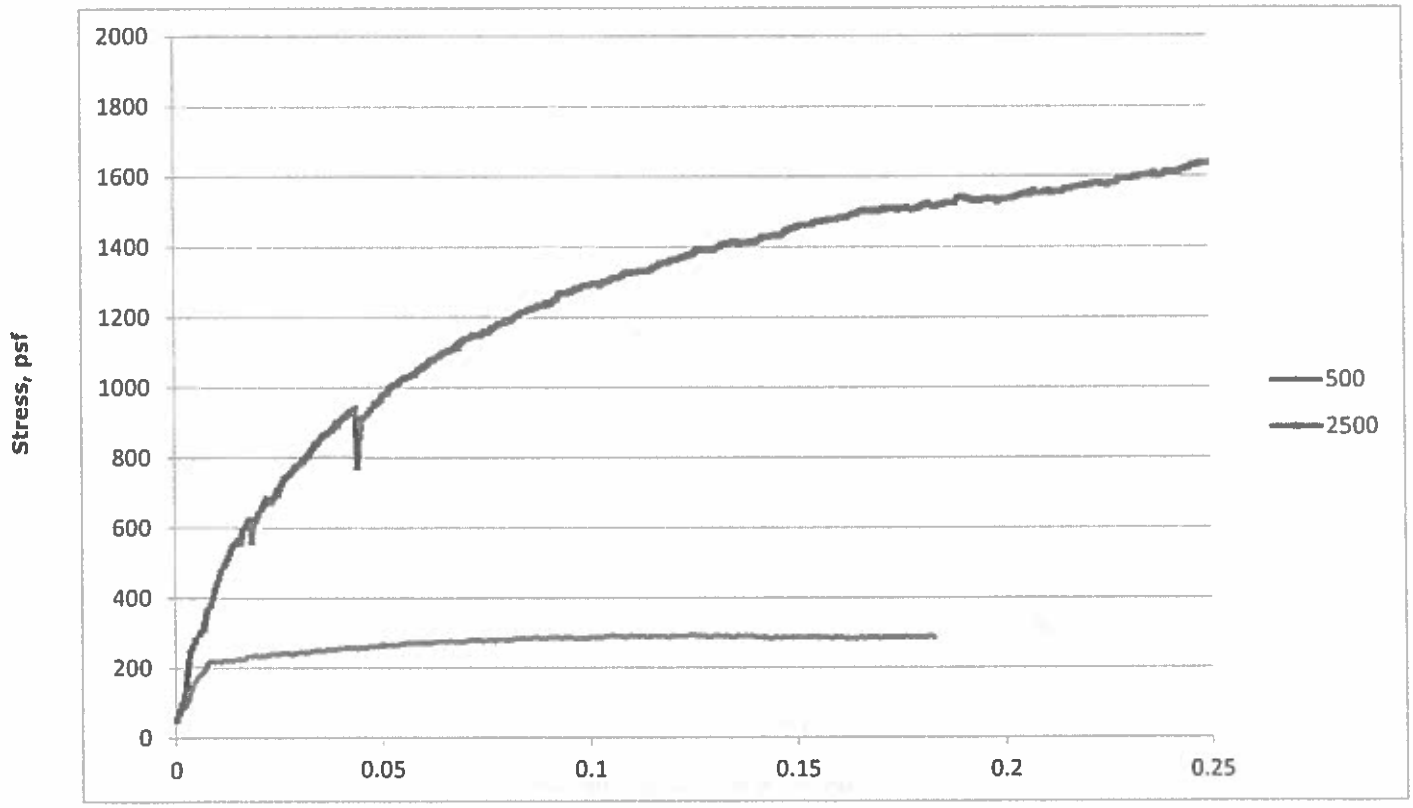
Direct Shear Graphs ASTM D-3080

Project Name: Midnight Express	**Project Number: 3869.200**
Sample ID: B1 at 5ft	Date Tested: 10/27/17
Material Description: SM Silty Sand Dark Gray Brown	Invoice Number: 15516

Delta H



Stress Deformation



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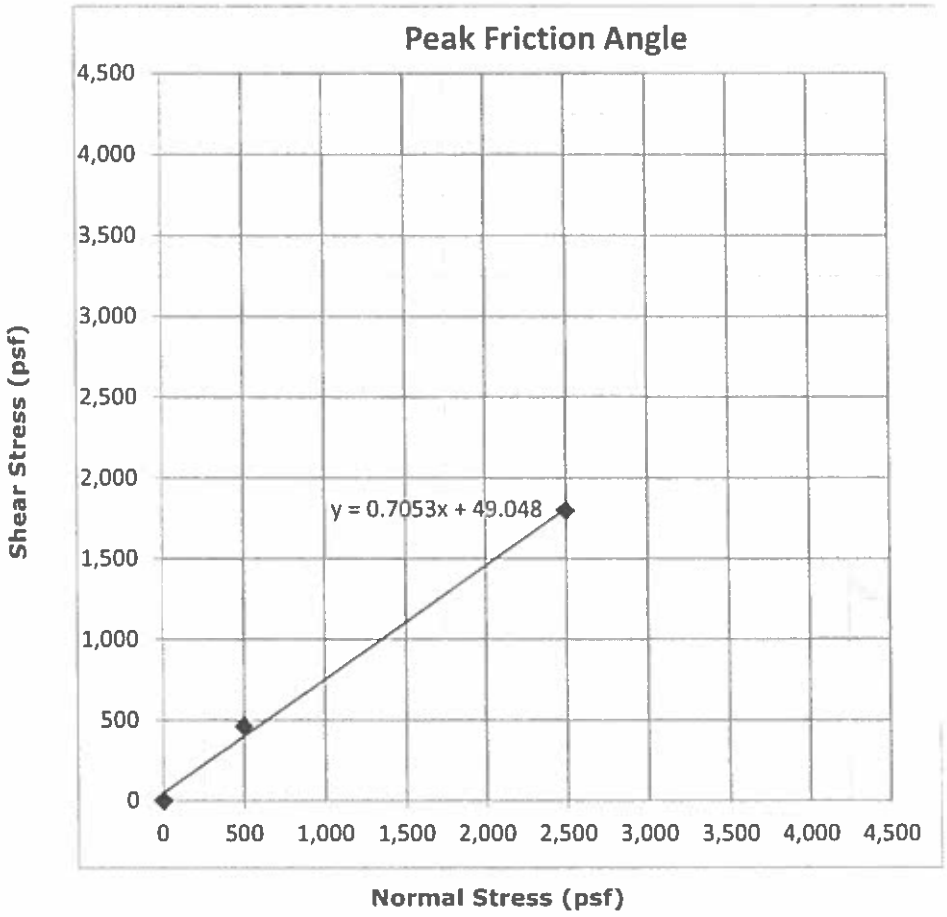
Direct Shear Worksheet ASTM D-3080

Project Name: Midnight Express		**Project Number: 3869.200**
Sample ID: B3 at 5ft		Date Tested: 10/27/17
Material Description: SM Silty Sand Dark Gray Brown		Invoice Number: 15516
Sample Type: undisturbed	Test Type: CD	Shear Rate, Inches/min.: 0.00100
Maximum Dry Density, pcf: 0.0	Minimum Required Compaction, %: 0.0	
Optimum Moisture Content, %: 0.0	Minimum Compacted Moisture Content, %: 0.0	

Summary of Results

Normal Stress, psf:	**500**	**2,500**	**0**	
Peak Shear Stress, psf:	**463**	**1,800**		
Initial Dry Density, pcf:	**93.1**	**91.2**		
Initial Moisture Content, %:	**5.9**	**5.9**		
Final Moisture Content, %:	**16.5**	**16.1**		
Peak Cohesion, **(C')**, psf:	**50.0**	Peak Friction Angle, **(Φ'_{peak})**, Degrees:		**35.2**

Graph of Shear Stress vs Normal Stress



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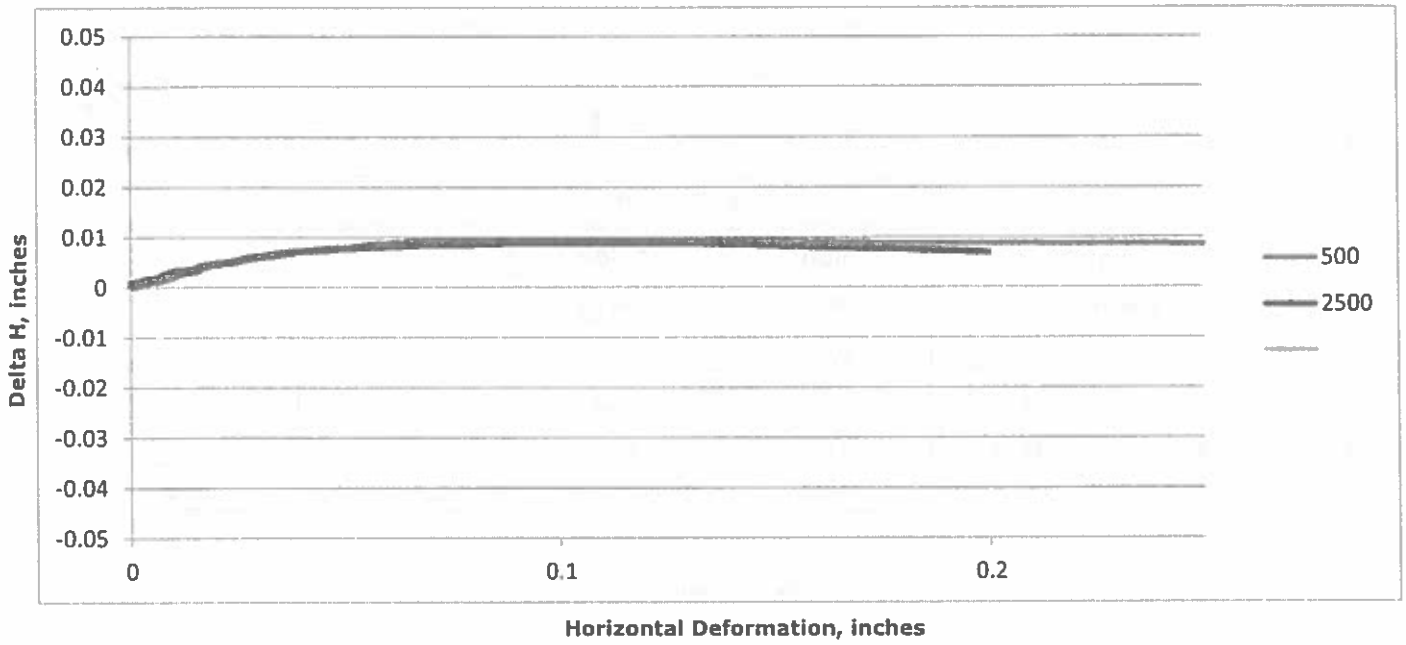
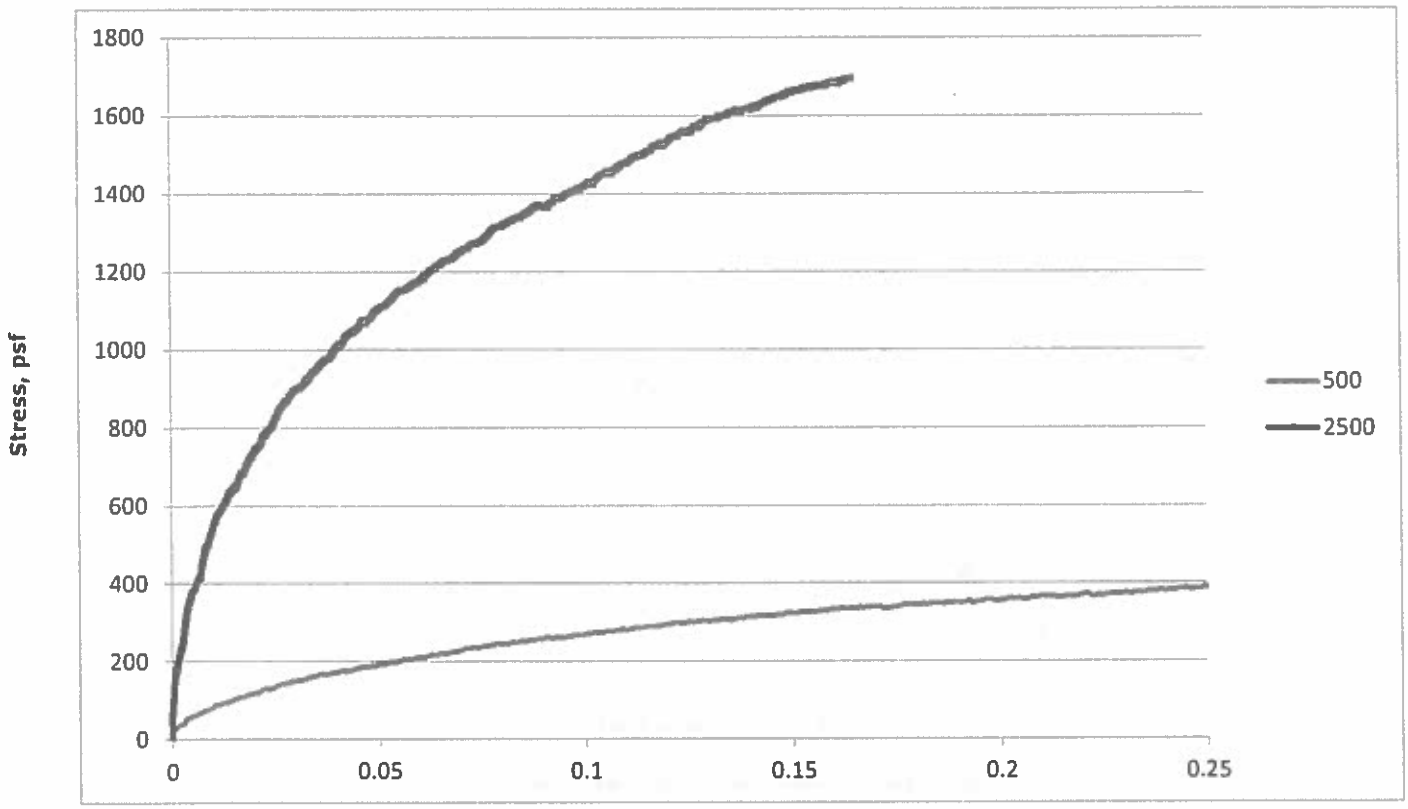
Direct Shear Graphs ASTM D-3080

Project Name: Midnight Express	**Project Number: 3869.200**
Sample ID: B3 at 5ft	Date Tested: 10/27/17
Material Description: SM Silty Sand Dark Gray Brown	Invoice Number: 15516

Delta H



Stress Deformation



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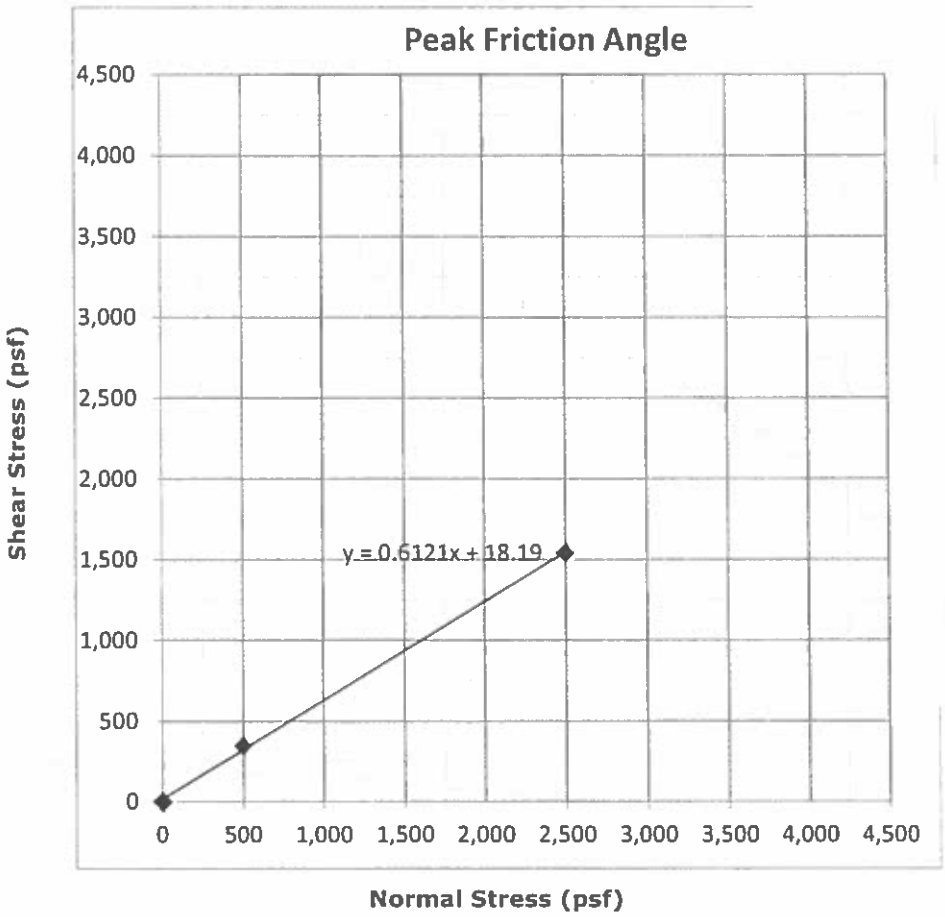
Direct Shear Worksheet ASTM D-3080

Project Name: Midnight Express		**Project Number: 3869.200**
Sample ID: B5 at 4-1/2ft		Date Tested: 01/00/00
Material Description: Dark Gray Brown Silty Sand		Invoice Number: 15516
Sample Type: undisturbed	Test Type: CD	Shear Rate, inches/min.: 0.00100
Maximum Dry Density, pcf: 0.0	Minimum Required Compaction, %: 0.0	
Optimum Moisture Content, %: 0.0	Minimum Compacted Moisture Content, %: 0.0	

Summary of Results

Normal Stress, psf:	**500**	**2,500**	**0**	
Peak Shear Stress, psf:	**347**	**1,544**		
Initial Dry Density, pcf:	**95.2**	**94.0**		
Initial Moisture Content, %:	**5.2**	**5.2**		
Final Moisture Content, %:	**19.1**	**16.6**		
Peak Cohesion, **(C')**, psf:	**18.0**	Peak Friction Angle, **(Φ'_{peak})**, Degrees:		**31.5**

Graph of Shear Stress vs Normal Stress



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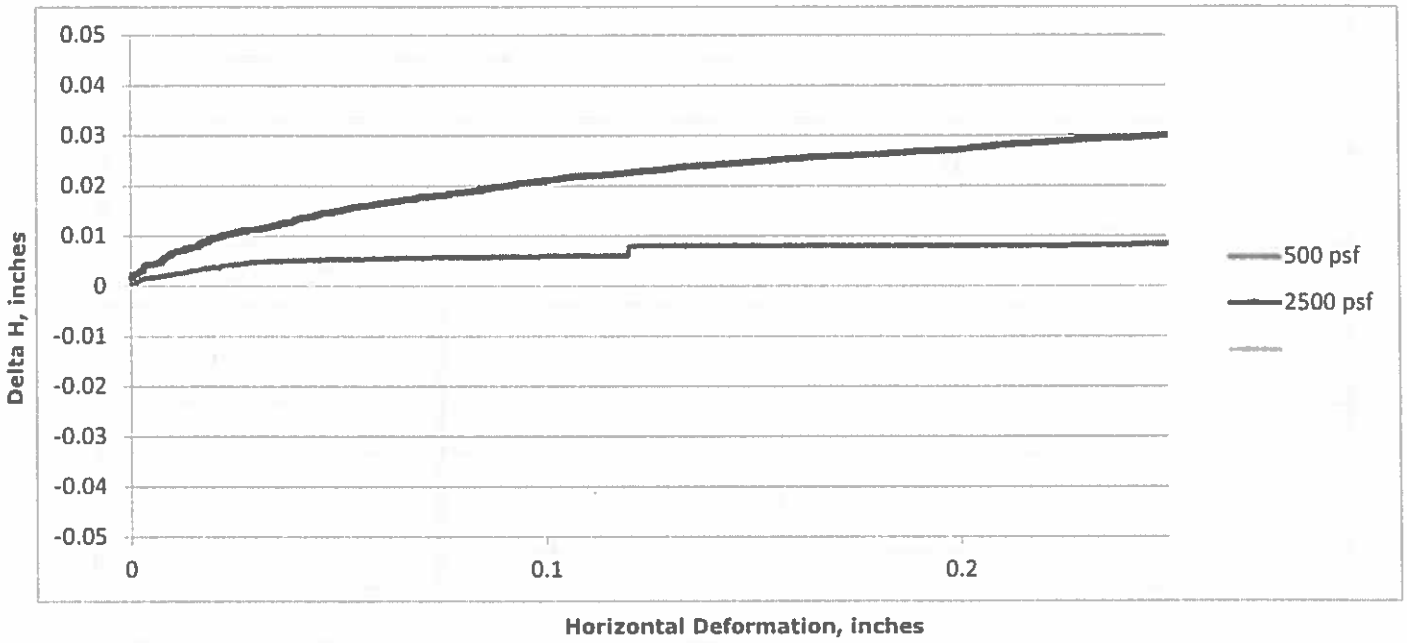
Direct Shear Graphs ASTM D-3080

Project Name: Midnight Express	**Project Number: 3869.200**
Sample ID: B5 at 4-1/2ft	Date Tested: 01/00/00
Material Description: Dark Gray Brown Silty Sand	Invoice Number: 15516

Delta H



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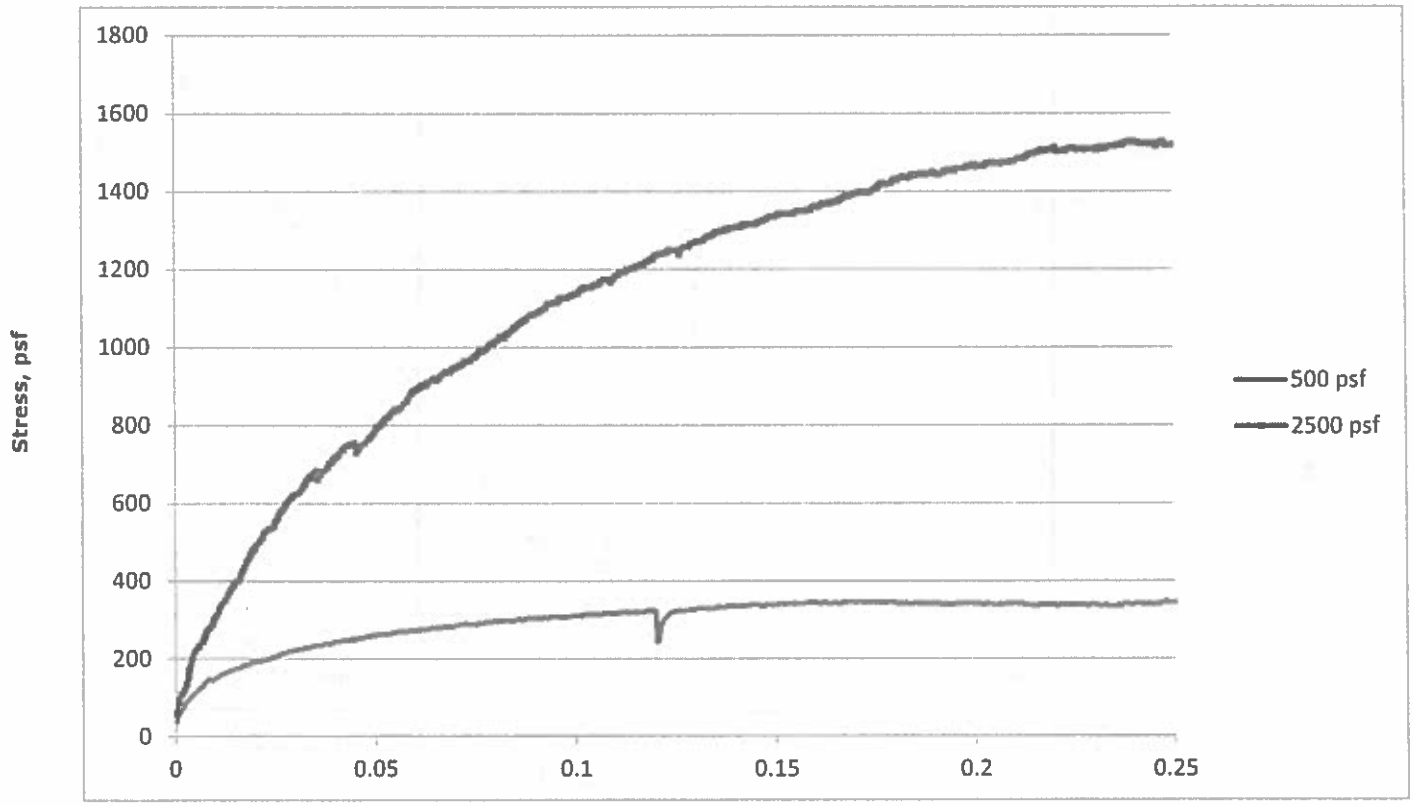

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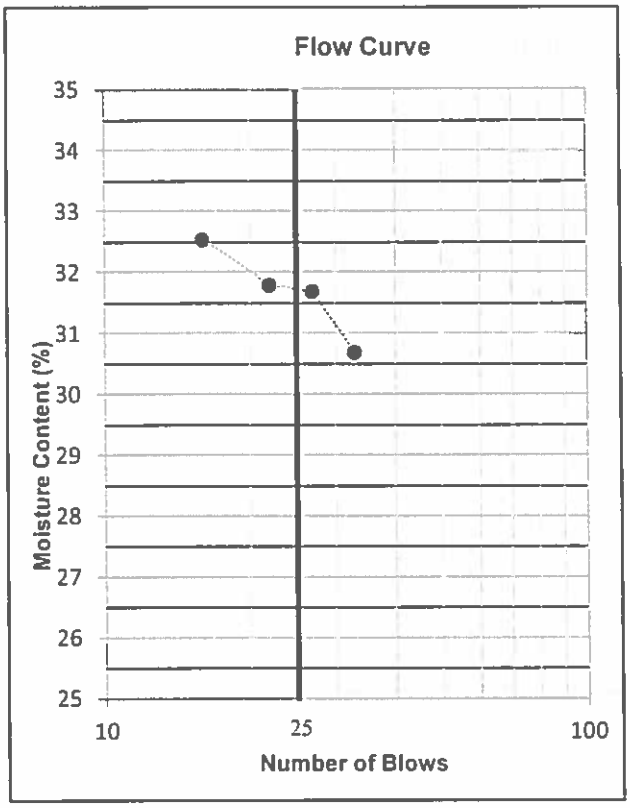
Atterberg Limits Test Data ASTM D 4318

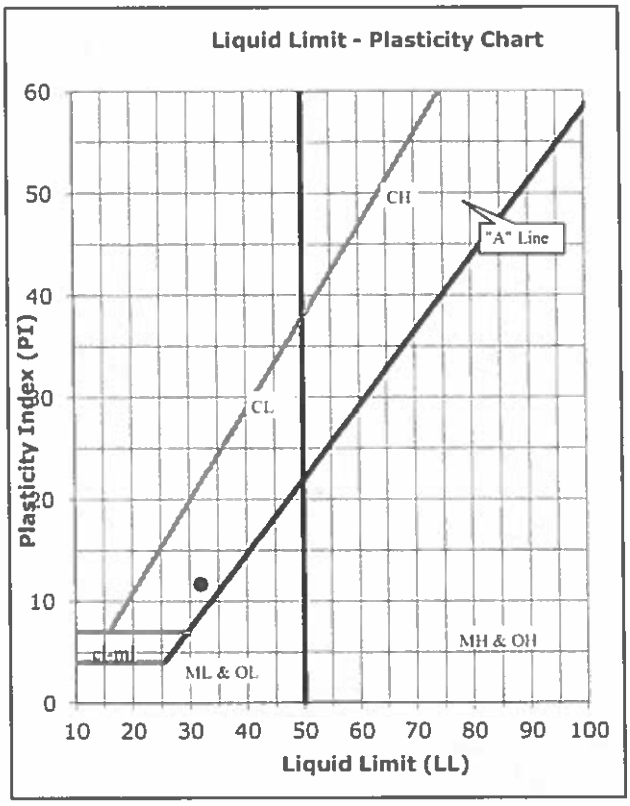
Project Name: Midnight Express	Project Number: 3869.200
Sample ID: B4 at 13-1/2 to 15ft	Date Tested: 10/26/17
Material Description: SC Dark Gray Clayey Sand	Invoice Number: 15516

Summary of Test Results

Liquid Limit:	32	Plastic Limit:	20	Plasticity Index:	12
Classification:	CL Lean Clay				

	Liquid Limit					Plastic Limit		
Tare ID:	1a	az	wa	ra		w9	05	
Number Of Blows:	33	27	22	16				
Tare Mass, (g):	14.78	21.11	15.94	15.08		14.05	13.69	
Wet Soil + Tare Mass, (g):	26.79	36.03	29.08	26.77		22.78	24.84	
Dry Soil + Tare Mass, (g):	23.97	32.44	25.91	23.90		21.31	22.95	
Moisture Content, %:	30.7	31.7	31.8	32.5		20.2	20.4	





Tested By: gs

Reported By: G Suckow

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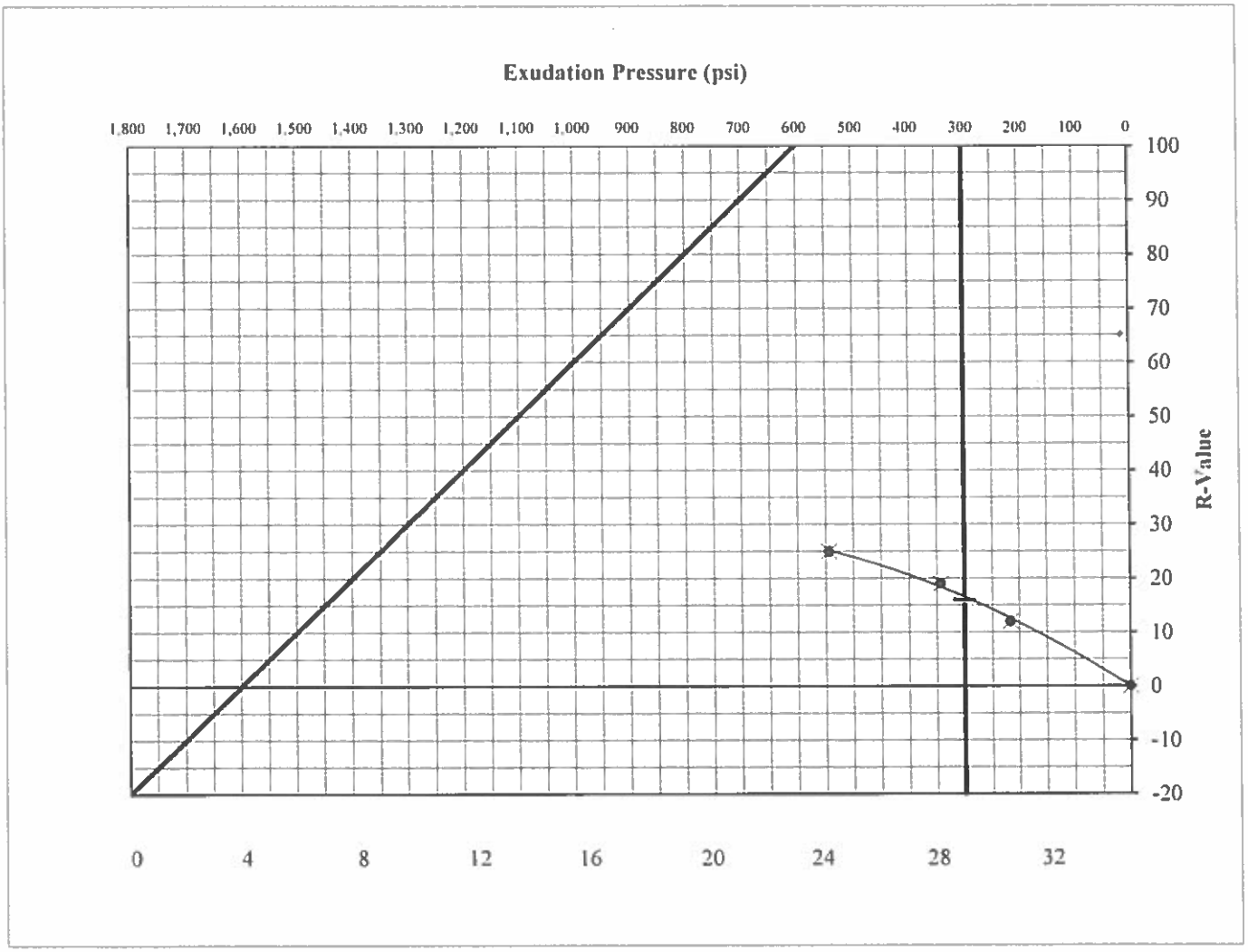
Resistance Value (R) Value Test

ASTM D2844 and CalTrans CTM 301

Project Name: Midnight Express	Project Number: 3869.200
Sample ID: Bulk Sample	Date Tested: 11/01/17
Area Sample Represents:	Invoice Number: 15516
Material Description: Silty Sand with Clay Dark Gray	Reported By: G Suckow
Comments:	

Specimen Data

Specimen	A	B	C	D
Exudation Pressure, psi	217	344	544	0
Resistance Value (R):	12	19	25	0
% Moisture at Test:	12.7	11.9	11.0	
Dry Density at Test, pcf:	116.3	119.5	119.3	
Expansion Dial, (0.0001"):	6	20	34	0
Expansion Pressure, psf:	26.6	88.6	150.6	
Expansion Pressure at 300 psi:	67.1 psf			
R-Value at 300 psi Exudation Pressure: 16	Specification: