

INFORMATION HANDOUT

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Project ID 0618000065

MATERIALS INFORMATION

Foundation Report for An Office and Maintenance Building at The West Avenue Maintenance Station Upgrade, April 14, 2023

Asbestos Containing Materials and Lead-Based Paint Survey Report Dated January 28, 2021.

Form OCR-SBE03

Fire Service Install Fee

SFM Building Permits

Memorandum

To: SEAN SAMUEL
Structural Design
Office of Transportation Architecture

Date: April 14, 2023

File: 06-FRE-099-PM 23.3
0618000065
West Avenue Maintenance
Station Upgrade

Attention: Gang Hong

From: GEOTECHNICAL SERVICES – MS 5
Office of Geotechnical Design North
Branch C

Subject: **FOUNDATION REPORT FOR AN OFFICE AND MAINTENANCE BUILDING AT THE WEST AVENUE MAINTENANCE STATION UPGRADE**

Introduction

This Foundation Report is based on the project information provided by the Office of Transportation Architecture and Structure Design preliminary plans for the West Avenue Fresno Maintenance Station Upgrade. Per your request dated September 19, 2022, this Foundation Report (FR) has been prepared for the new maintenance building at the West Ave Maintenance Station (MS) facility in Fresno, California. The purpose of this report is to provide foundation recommendations for the proposed building. The recommendations presented in this report are based on the General Plans attached to the FR request, our desktop review, a review of a previous foundation report, review of available geologic literature, and proposed foundation configurations and load demand information provided by the Office of Transportation Architecture, Structural Design.

Project Description

The project proposes to construct a new office and maintenance building at the existing West Ave Maintenance Station in Fresno, California. A vicinity map of the site location is presented on Figure 1. The new building will be constructed north side of the maintenance station where offices and maintenance bays exist and is approximately 200 feet to the north of the Caltrans District 6 offices.

The project site is currently used for Caltrans District 6 offices and storage facilities and equipment maintenance shop that services equipment for work on State Route (SR) 99 and the immediate area. The location of the new office building is currently being used as a parking lot for employee vehicles. The parking lot surface is paved with asphaltic concrete and is generally sloping to the west at a gentle gradient.



According to the preliminary project plans dated August 30, 2022, and revised September 8, 2022, the proposed building will be constructed with a 3½ to 5½ inch slab-on-grade with a two-foot-wide continuous strip footing supporting a single-story.

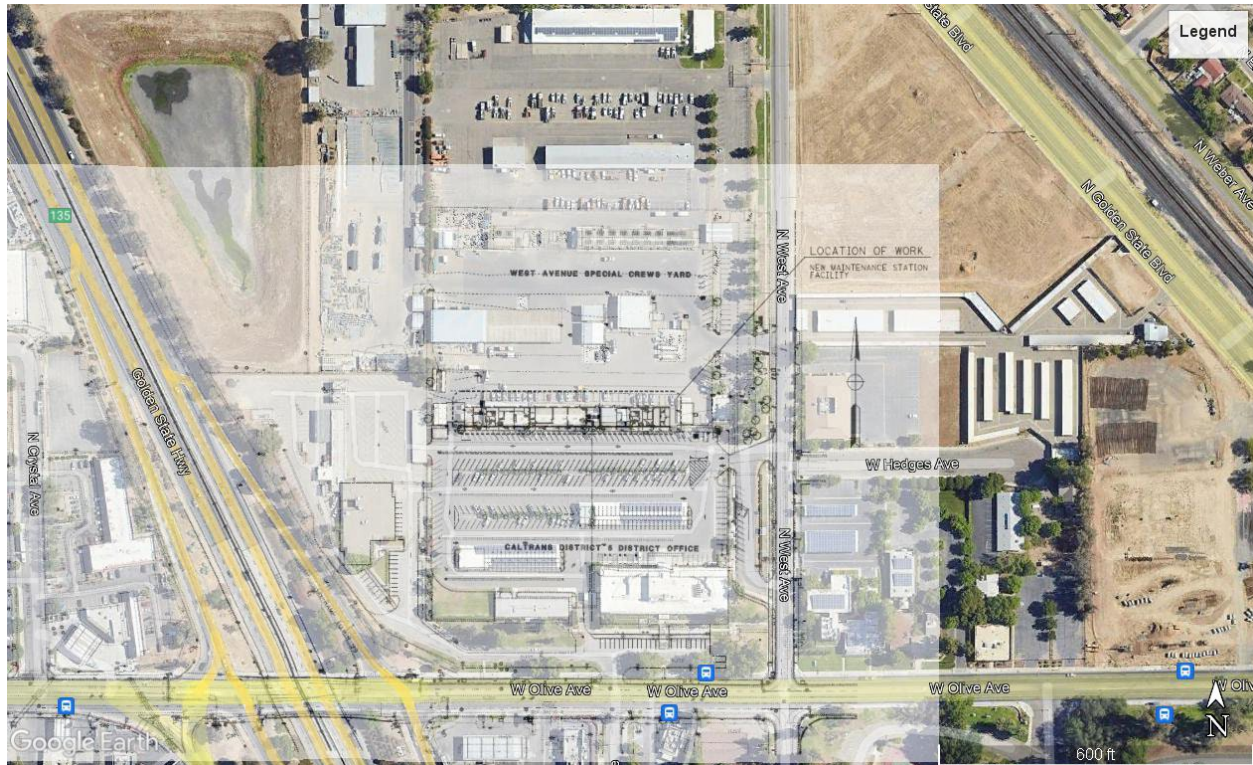


Figure 2: West Avenue Maintenance Station site map.

Field Investigation and Field-Testing Program

Our Geotechnical Investigation included a review of the boring records from a Kleinfelder Inc. 1993 geotechnical investigation for a Maintenance Station Building. The investigation consisted of drilling ten borings to collect geotechnical data and samples to a depth of approximately 21½ below the ground surface. The soils logged in the borings were visually classified, and a continuous field log was recorded. Relatively undisturbed and disturbed samples were collected for further geotechnical testing. Appendix A contains the details of the previous geotechnical investigation.

Laboratory Testing Program

During the July 1993 field investigation, soil samples were collected from borings B-1, B-2, B-4, B-5, B-8, and B-10 for soil classification, direct shear, resistance value (R-Value) proctor, and corrosion evaluation. The following paragraphs describe our procedures associated with each type of test.

Soil Strength Determination: The strength parameters of the foundation soils were based on a direct shear test (ASTM D3080) performed on a representative remolded sample of the near-surface soils.

Maximum Density Determination: A maximum soil density proctor test (ASTM D1557) was conducted to provide the optimum moisture and maximum dry density on the near surface soil. Typically, maximum soil density is reported in pounds per cubic foot at a maximum moisture content.

Corrosion: Corrosion testing typically comprises individual measurements of pH, electrical resistivity, sulfate content, and chloride content, which together indicate the corrosiveness of the soil.

Resistance Value: Resistance Value (R-Value) test measures the response of a compacted sample of soil or aggregate to a vertically applied pressure under generally 300 pounds per square inch or specific conditions. This test is used for pavement design of roads a parking area.

Table 1: Summary of Geotechnical Testing.

Boring ID	Elevation (feet;)	Sample Depth (feet)	Dry Unit Weight (lbs/ft ³)	Moisture Content (%)	R-Value	Angle of Internal Friction (φ)	Cohesion (lbs./ft ²)	Soil Description
B-1	288	2	105	9				Red Brown Silty Sand (SM)
B-1	285	5	108	10		34	0	Red Brown Silty Sand (SM)
B-2	290-287	3			62			Red Brown Silty Sand (SM)
B-4	287	3	119	9				Red Brown Silty Sand (SM)
B-5	288	2	111	8				Yellow Brown Silty Sand (SM)
B-5	285	5	105	7				Yellow Brown Silt (ML)
B-8	284	6	109	7				Yellow Brown Silty Sand (SM)
B-10	290-287	0-3			57			Red Brown Silty Sand (SM)

*Assuming 290 feet elevation for ground surface

Site Geology and Subsurface Conditions

Site Geology

The project site lies within the Great Valley geomorphic province of California. This province is bordered to the west by the structurally complex sedimentary and volcanic rock units of the Coast Ranges, to the north and south by the sedimentary deposits of the Great Valley, and to the east by the volcanic rocks of the Sierra Nevada Ranges. The regional geologic features pertaining to the site were evaluated by consulting the Geologic Map of California, Fresno (1:250,000 scale) Quadrangle, published by the California Division of Mines and Geology (CDMG), dated 1965. According to the CDMG Geologic Map of the Fresno Quadrangle, the site is underlain by Quaternary-aged alluvial deposits (Qc): *“Riverbank Formation – granitic sand, silt, and clay older alluvium and dissected fan deposits in the San Joaquin Valley.*

Surface Conditions

The topography of the proposed building site is relatively flat and located on the north side of an existing parking lot in the south portion of the Special Crews Yard of West Avenue Maintenance Station. Several buildings and parking areas surround the proposed location of the new building (Figure 2).

Subsurface Conditions

The summary of the project subsurface conditions is based on a review of Kleinfelder’s July 1993 geotechnical investigation and our desktop review for the proposed new building location. Since the same geologic and soil units underly the new building encountered in the previous exploration, we rely upon Kleinfelder’s geotechnical report to describe anticipated subsurface conditions. As such, we expect the subsurface soils to generally consist of silty sand (SM), poorly graded sand (SP), and partially cemented silt (ML) known as “hardpan”. The upper 5 to 8 feet below the ground surface should be medium dense silty sand with interbedded hardpan layers. At depths greater than 8 feet to approximately 21 feet below the ground surface, layers of silt (ML), poorly graded sand (SP) silt with gravel, and silty gravels to the maximum depth explored. The subsurface condition details are found in Kleinfelder’s July 1993 Report in Appendix A.

Groundwater

Groundwater data was determined based on a review of Kleinfelder’s 1993 geotechnical report and well logs from California Water Resources Board online database (geotracker.ca.gov). No groundwater was found in the relatively shallow borings less than 25 feet below the ground surface, completed by Kleinfelder. A private well located approximately blank feet to the southwest at approximately 290 feet elevation above sea level indicated water at approximately 90 feet below ground surface or 200 feet elevation above sea level. Well data from Fresno Irrigation District east side indicates an average groundwater depth of approximately 56.4 feet below ground surface in October 2022 and

a decline of approximately 15.25 feet over the past ten years. OGDN is assuming that groundwater is at least 50 feet below ground surface for analyses and design.

Shallow or perched groundwater might be encountered during the construction and can be expected to fluctuate in response to seasons, storm events, and other factors. Localized saturated conditions or perched groundwater conditions near the ground surface should be anticipated during and following periods of heavy precipitation.

As-built Foundation Data

Details of the current building's foundation within the footprint of the new building were not available at the time of this writing.

Corrosion Evaluation

During July 1993, Kleinfelder subsurface investigation soil samples were collected for corrosion testing. The corrosion test result for the sample collected from boring B-10 is shown in the following table. The sample test results show that the site is not considered corrosive based on Caltrans' standards; therefore, corrosion mitigation is not required. A summary of the corrosion testing is found in Table 2.

Table 2. Soil Corrosion Test Summary

Boring ID	Elevation (feet)	Sample Depth (feet)	pH	Minimum Resistivity (Ohm-cm)	Chloride Content (ppm)	Sulfate Content (ppm)	Corrosive
B-10	291	0 - 3	7.62	3039	176	80.1	No

Caltrans currently defines a corrosive environment as an area where the soil has either a chloride concentration of 500 ppm or greater, a sulfate concentration of 1500 ppm or greater or has a pH of 5.5 or less. Soil is not tested for chlorides and sulfates if the minimum resistivity is greater than 1,500 ohm-cm.

Seismic Design Information and Recommendations

According to the 2019 California Building Codes (CBC) table 1806.2, the site is classified as Site Class C and Risk Category II based on the average blow counts of borings performed near the site and proposed engineered fill to be placed during site grading. The mapped spectral accelerations recommended for the project site are presented in the following Table 3. The seismic parameters in the table are obtained from the Structural Engineers of California (SEAO) and California's Office Statewide Health Planning and Development (OSHPD) Seismic Design Maps Tool and the USGS seismic hazard data.

Table 3: Maximum Considered Earthquake Response Spectral Parameters

S_s	S_1	S_{MS}	S_{M1}	S_{DS}	S_{D1}
0.613g	0.235g	0.769g	0.352g	0.513g	0.235g

Other Seismic Hazards

The project site is not located in an Alquist-Priolo Regulatory Review Zone, according to information reviewed from the California Department of Conservation. No known active faults are located at the project site, but the Clovis Fault (No. 242) is approximately 12.3 miles to the northeast. Special construction design requirements for faulting are not required.

Surface Fault Rupture

The fault activity map by the California Geological Survey (CGS), by C.W. Jennings and W.A. Bryant, updated in 2010 and located on the CGS website <http://maps.conservation.ca.gov/cgs/fam/> shows there is no active fault within 1,000 feet of the site. The nearest historically active fault to the proposed improvements is the Quaternary-aged (1.6 million years) Clovis Fault (Class A, Fault ID 242), which, at its closest point, is located approximately 12.3 miles to the northeast.

According to *Memo-To-Designers 20-10*, fault rupture analyses will be performed for infrastructure where any portion of the structure falls within an Alquist-Priolo Earthquake Fault Zone (EFZ) or where any part of a structure falls within 1,000 feet of an "unzoned" fault (not in an EFZ) that is Holocene or younger in age (ruptured in last 11,000 years). Per EFZ map, Jennings 2010 Fault Activity Map and Geologic Map of California, Fresno (1:250,000 scale) Quadrangle, published by the California Division of Mines and Geology (CDMG), dated 1965, the proposed building locations are not located in an EFZ. Therefore, fault rupture analyses do not appear necessary.

Liquefaction and Lateral Spreading Potential

Soil liquefaction is a phenomenon where saturated granular soil substantially loses its strength in response to cyclic loading from ground shaking during an earthquake. Due to the presence of medium to dense alluvial soil and the relatively dense nature of the deeper bedrock, the potential for liquefaction and its impact on the proposed new buildings is negligible.

Foundation Recommendations

The foundation configuration for the proposed building, as shown on the preliminary plans, is adequate to support anticipated building loads, provided that the earthwork for the site follows the recommendations of stripping and densification of native or engineered fills to a minimum of 95% relative density in accordance with California Test Method 216 and that any imported soils meet the guidelines contained Caltrans Standard specifications. Drainage from foundations should slope at 2% for a minimum of 10 feet. Soils encountered during the demolition of any existing structures should be over-excavated, scarified, moisture conditioned, and recompact. The excavation should be backfilled with engineered fill to the proposed foundation design depth (~18 inches below the existing grade).

Spread Footings and Continuous Footings

Based on review of a previous geotechnical report and review of the site plan provided by the office of Transportation Architecture, the new building may be supported on spread footing foundation using an allowable bearing capacity of 2,000 psf. The proposed building foundation shall be placed on uniformly compacted soil for the top 2 feet compacted to 95% relative compaction. The compacted soil beneath the footing should be extended a minimum of one (1) foot horizontally from the face of the footing.

The ultimate bearing capacity of the proposed foundation was determined using the Terzaghi equation with a friction angle of 34°, a cohesion of 0, a unit weight of 113 pcf, and a factor of safety of three (3). The footing should have a minimum width of 24 inches and a minimum embedment depth of 18 inches below the lowest adjacent grade. The following table shows the foundation footing design recommendations for the building.

Table 4: Footing Design Recommendations for Proposed Buildings in West Avenue Maintenance Station.

Footing Type	Footing Width (feet)	Minimum footing embedment below grade (feet)	Approximate Footing Elevation (feet)	Ultimate Soil Pressure (psf)	Allowable Soil Pressure (psf)
Continuous	2.0	1.5	TBD	6000	2,000
Square	2.0	1.5	TBD	7500	2,500

The permitted allowable bearing pressure may be increased by 33% per 2019 CBC section 1806.1 for load combinations that include short-term or transient loads. The coefficient of friction for sliding the foundation along subgrade soils of 0.40, and a lateral passive bearing pressure of 175 psf per foot of depth may be used per the 2019 CBC table 1806.2.

Slab on Grade

The soil supported slab can be designed using a subgrade reaction modulus, k , of 250 psi per inch. The coefficient of lateral earth pressure at rest is K_0 is 0.44.

Floor Slab Moisture Barrier

A vinyl membrane or Visqueen with a minimum thickness of 10 mils should be placed over 4 inches of clean sand. The membrane should be covered by 3 inches of sand.

Slope Instability

Based on the proposed Building's Site Plans and proposed finished grade elevations, there are no slopes greater than 2H:1V, proposed or existing, at the project site as it appears relatively flat. In addition, considering the results of geotechnical testing of the underlying soils, the potential for slope instability is low.

Total and Differential Settlements

The native foundation material encountered consists of varying dense soils below the bottom of the proposed footing embedment depth; the total settlement is less than 0.5 inches.

Frost Depth Elevation

The frost depth for the foundation is 12 inches below finished grade.

Notes to the Structure Designer

At the proposed Buildings, it is recommended that two feet of the soil below the bottom of footings be removed and recompact to 95% relative compaction as structure backfill. The removal and recompaction of soil should extend horizontally 1 foot beyond the edge of all footings.

The limits of the sub-excavation and recompaction must conform to the limits specified in Standard Specification 19-5.

Construction Considerations

1. Groundwater is not anticipated during construction excavations; however, in light of the amount of rainfall received during the past few months, we recommend performing earthwork activities during the dry seasons to avoid potential perched groundwater conditions.
2. If any different or unforeseen geotechnical conditions are encountered during foundation construction, this office should be contacted for evaluation and additional recommendations.

Any questions or comments regarding this report, please contact Abdikarim Ali at 916-869-7561, or Kenneth Williams at 209-418-8020, or Qiang (John) Huang at 916-227-1037.

Report by:



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Kenneth Williams

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Supervised by:



Qiang Huang

QIANG (JOHN) HUANG, PE
Chief, Branch C
Office of Geotechnical Design – North
Division of Engineering Services

Appendix A – Geotechnical Investigation Report for the Fresno Maintenance Facility, prepared by Kleinfelder, Inc., dated September 9, 1993.

Report Copy List

District Project Manager Mary J Wiley
District Materials Engineer – Mandeep Dhesi
Geotechnical Archive (GeoDOG) – <http://geodog.dot.ca.gov>

References

- 1) Caltrans “ Caltrans ARS Online (V 3.0.2) Response Spectrum Web-based Tools” accessed 5/2/21: <https://arsonline.dot.ca.gov/>
- 2) Caltrans “Postmile Query Tool”, based on Google Maps, provided by Caltrans GIS Services Branch accessed 5/03/21:
<https://postmile.dot.ca.gov/PMQT/PostmileQueryTool.html>
- 3) [USGS Ground Water levels located at
http://nwis.waterdata.usgs.gov/ca/nwis/gwlevels](http://nwis.waterdata.usgs.gov/ca/nwis/gwlevels)
- 4) [DWR Ground Water levels located at http://www.water.ca.gov/waterdatalibrary/](http://www.water.ca.gov/waterdatalibrary/)
- 5) Regional Geologic Map of the Fresno Quadrangle 1:250,000, California Geological Survey, 1965.
https://www.conservation.ca.gov/cgs/Documents/Publications/Regional-Geologic-Maps/RGM_004A/RGM_004A_Weed_1987_Sheet1of4.pdf
- 6) “California Geomorphic Provinces” Note 36, California Geologic Survey 2002.
<https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf>
- 7) USGS, Latest Quaternary fault and fold database for the United States.
<http://earthquake.usgs.gov/hazards/qfaults/>
- 8) CGS, 2010 Fault Activity Map of California, (Jennings, W.W., Bryant, W.A.) at
<http://maps.conservation.ca.gov/cgs/fam/>
- 9) CGS, Alquist-Priolo Fault Zone maps at
http://www.quake.ca.gov/gmaps/ap/ap_maps.htm
- 10) Architectural Plans for West Avenue Maintenance Station Upgrade, prepared by Sean Samuel, Office of Transportation Architecture and Infrastructures & Engineering Services, dated September 19, 2022, Project No. 0618000065.
- 11) <http://seismicmaps.org>

APPENDIX A

**GEOTECHNICAL INVESTIGATION REPORT
MAINTENANCE FACILITY
FRESNO, CALIFORNIA**

September 9, 1993

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September 9, 1993
File No.: 21-1968-02

Mr. Chuck Donley
Office of State Architect
400 P Street, 5th Floor
Sacramento, CA 95814

**SUBJECT: Geotechnical Engineering Investigation Report
Proposed Maintenance Facility
Fresno, California**

Dear Mr. Donley:

Kleinfelder is pleased to present the attached report presenting the results of our geotechnical investigation for the proposed Maintenance Facility to be located in Fresno, California. The report describes our study, findings, conclusions and recommendations for use in project design and construction.

In summary, the surface and near-surface soils at the site consist of medium dense to dense silty sand and poorly graded sand and very stiff to hard sandy silt and silt. Free groundwater was not observed in our test borings.

In our opinion significant geotechnical factors that will affect site development include the medium dense surface and near surface silty sand soils and the presence of existing structures. Successful development of the site will require that the native soils beneath foundations and concrete slabs-on-grade be over-excavated and reconstructed to the standards for engineered fill. Areas supporting asphalt concrete pavements will require somewhat less improvement than the building foundations and slabs.

Detailed recommendations for site preparation, foundations, and concrete slab-on-grade, as well as other items affecting this development are presented in detail in this report.

We appreciate the opportunity to provide geotechnical engineering services to Office of State Architect. We trust this information meets your current needs. If there are any questions concerning the information presented in this report, please contact this office at your

convenience. We have also included an information sheet from ASFE regarding geotechnical engineering reports.

Respectfully submitted,

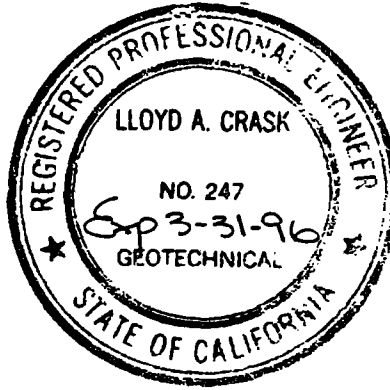
KLEINFELDER, INC.



Lloyd A. Crask, PE
Regional Manager

LAC:hs

Attachment



IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

More construction problems are caused by site subsurface conditions than any other factor. As troublesome as subsurface problems can be, their frequency and extent have been lessened considerably in recent years, due in large measure to programs and publications of ASFE/ The Association of Engineering Firms Practicing in the Geosciences.

The following suggestions and observations are offered to help you reduce the geotechnical-related delays, cost-overruns and other costly headaches that can occur during a construction project.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

A geotechnical engineering report is based on a subsurface exploration plan designed to incorporate a unique set of project-specific factors. These typically include: the general nature of the structure involved, its size and configuration, the location of the structure on the site and its orientation; physical concomitants such as access roads, parking lots, and underground utilities, and the level of additional risk which the client assumed by virtue of limitations imposed upon the exploratory program. To help avoid costly problems, consult the geotechnical engineer to determine how any factors which change subsequent to the date of the report may affect its recommendations.

Unless your consulting geotechnical engineer indicates otherwise, *your geotechnical engineering report should not be used:*

- When the nature of the proposed structure is changed, for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one.
- when the size or configuration of the proposed structure is altered;
- when the location or orientation of the proposed structure is modified.
- when there is a change of ownership, or
- for application to an adjacent site.

Geotechnical engineers cannot accept responsibility for problems which may develop if they are not consulted after factors considered in their report's development have changed.

MOST GEOTECHNICAL "FINDINGS" ARE PROFESSIONAL ESTIMATES

Site exploration identifies actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing are extrapolated by geo-

technical engineers who then render an opinion about overall subsurface conditions, their likely reaction to proposed construction activity, and appropriate foundation design. Even under optimal circumstances actual conditions may differ from those inferred to exist, because no geotechnical engineer, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. *Nothing can be done to prevent the unanticipated, but steps can be taken to help minimize their impact.* For this reason, *most experienced owners retain their geotechnical consultants through the construction stage*, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

SUBSURFACE CONDITIONS CAN CHANGE

Subsurface conditions may be modified by constantly-changing natural forces. Because a geotechnical engineering report is based on conditions which existed at the time of subsurface exploration, *construction decisions should not be based on a geotechnical engineering report whose adequacy may have been affected by time.* Speak with the geotechnical consultant to learn if additional tests are advisable before construction starts.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes or ground-water fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical report. The geotechnical engineer should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS

Geotechnical engineers' reports are prepared to meet the specific needs of specific individuals. A report prepared for a consulting civil engineer may not be adequate for a construction contractor, or even some other consulting civil engineer. Unless indicated otherwise, this report was prepared expressly for the client involved and expressly for purposes indicated by the client. Use by any other persons for any purpose, or by the client for a different purpose, may result in problems. *No individual other than the client should apply this report for its intended purpose without first conferring with the geotechnical engineer. No person should apply this report for any purpose other than that originally contemplated without first conferring with the geotechnical engineer.*

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GEOTECHNICAL INVESTIGATION REPORT
MAINTENANCE FACILITY
FRESNO, CALIFORNIA
SEPTEMBER 9, 1993

INTRODUCTION

This report presents the results of our geotechnical investigation for the proposed Maintenance Facility to be located in Fresno, California. The Vicinity Map, Plate No. 1, shows the location of the site. The Site Plan presented on Plate No. 2 shows the dimensions of the site and the approximate location of our test boring.

This investigation was initiated by authorization of Mr. Chuck Donley.

Purpose and Scope of Services

The purpose of this investigation was to explore the site soil and groundwater conditions, and provide recommendations and opinions regarding the following:

- o Site preparation and earthwork;
- o Foundation design, including estimated structural settlements;
- o Concrete slabs-on-grade;
- o Lateral earth pressures;
- o Soil corrosivity;
- o Site geology and geologic hazards;
- o Asphalt concrete design; and,
- o Site drainage.

Our scope of services consisted of a field exploration program, laboratory testing, design analysis, and preparation of this written report, as outlined in our proposal to you dated July 8, 1993 (reference file No. 21-YP2-225).



PROJECT DESCRIPTION

We understand the proposed project will involve construction of two single-story wood frame structures with concrete slab-on-grade on an approximately 6+ acre site. The New Equipment Building will encompass approximately 7600 square feet, and the New Crew Building will encompass approximately 5600 square feet. The remainder of the project site will be paved with asphalt concrete pavement. The existing site is presently occupied by a variety of residential structures and improvements, a bus shop, and existing asphalt concrete pavements. The site plan indicates that some existing fill is present on the southern portion of the parcel. The southern side of the site borders a Fresno Municipal Flood Control District holding pond.

Maximum anticipated wall and column loads will be about 2 kips per lineal foot and 50 kips, respectively. Appurtenant construction will include asphalt concrete pavements, underground utilities, and landscaping.

Grading plans were not available at the time this proposal was prepared; however, as the site is essentially level, earthwork cuts and fills up to 2 to 3 feet thick are expected to reconstruct the site after demolition of the existing improvements and provide level building pads, and provide positive site drainage.

FIELD EXPLORATIONS

The field exploration was conducted on July 22, 1993, and consisted of drilling 10 exploratory test borings and a site reconnaissance by our staff engineer. The test borings were drilled with a CME 55 truck-mounted drill rig using 6-inch diameter hollow-stem flight auger to depths of 21-1/2 feet below the existing ground surface. The approximate locations of the test borings are indicated on the Site Plan, Plate No. 2.

The soils encountered in the testing borings were visually classified in the field and a continuous log was recorded. Plates A-1 through A-10 graphically illustrate the materials encountered at the boring locations. Relatively undisturbed core samples were collected from the test borings at selected depths by driving a two and one-half inch I.D. solid barrel sampler containing three six-inch long brass liners into the undisturbed soil with a 140-pound hammer free falling a distance of 30 inches. A one and three-eighths inch I.D. sampler was also used to obtain disturbed samples; this sampler was also driven as described above. Resistance to



sampler penetration was noted as the number of blows per foot of sampler penetration, and is noted on the boring logs.

LABORATORY TESTS

The laboratory testing program was designed to evaluate the index, compressibility and strength properties of the soil at this site. These tests included water content, dry density determinations, direct shear and chemical. In addition, two resistance value (R-value) tests were performed for use in asphalt concrete pavement design. The results of laboratory testing are summarized on Plate B-1 through B-5.

SITE DESCRIPTION

The proposed site, encompassing approximately 7 acres, is located south of Pine Avenue and east of State Highway 99 in the city of Fresno, California. It adjoins the existing CalTrans District 6 maintenance yard and a Fresno Municipal Flood Control District holding pond to the south. It is bordered by commercial property on the east. The property is currently developed with several residential and commercial structures. It appears that other, previously demolished structures may have existed on the site, though no exposed foundations were observed. There are several mature trees over 40 feet tall on the site. There are also poultry shacks housing several dozen chickens located behind one of the residences.

SUBSURFACE CONDITIONS ENCOUNTERED

In summary, the soil materials encountered in our test borings consist of silty sand, poorly graded sand, partially cemented silt ("hardpan"). The upper 5 to 8 feet revealed a medium dense to dense silty sand overlying variable cemented zones of silt. Beneath the 5 to 8 foot area, interbedded silt, poorly graded sands, and silty sands were encountered to the full depth of exploration at 21½ feet. Poorly graded sands were noted to be loose.

No groundwater was encountered during our field exploration. It is possible, however, that groundwater conditions at the site could change at some time in the future due to variations in rainfall, groundwater withdrawal, construction activities, or other factors not apparent at the time our test borings were made.



The above is a general summary of the soil and groundwater conditions encountered in the borings drilled for this investigation. More detailed description of the soils encountered in each boring are noted on the boring logs. All soils have been classified according to the Unified Soil Classification System described on Plate A.

SITE GEOLOGY AND GEOLOGIC HAZARDS

Geologic Setting

The project site lies on the east-central margin of the Great Valley Geomorphic Province in Central California. This province of California was formed by the filling of a large structural trough or downwarp in the underlying bedrock. The trough is situated between the Sierra Nevada Mountains on the east and the Coast Range Mountains on the west. Both of these mountain ranges were initially formed by uplifts which occurred during the Jurassic and Cretaceous periods of geologic time (greater than 65 million years ago). Renewed uplift began in the Sierra Nevada during late Tertiary time, and is continuing today. The trough which underlies the valley is asymmetrical, with the greatest depth of sediments near the western margin. The sediments which fill the trough originated as erosional debris from the adjacent mountains and foothills.

The majority of the native sediments in the project area consist of either Holocene alluvial fan deposits and/or Pleistocene non-marine deposits. The older Pleistocene sediments are principally located in the north eastern quarter of the Fresno area. According to the Five County Seismic Safety Element (April 1974), the approximate depth at bedrock beneath the site is 1,500 to 2,000 feet.

Tectonic Setting and Seismicity

Faulting and seismic ground shaking are usually associated with known fault systems. There are no known faults which cut through the valley soils in or near the site, and the site is not located in an Alquist-Priolo special study zone as defined by Special Publication 42 (revised 1988) published by the California Division of Mines and Geology (CDMG). However, during the formation of the Coast Range and the Sierra Nevada Mountains, numerous faults and shear zones developed in the mountain ranges bordering the Central Valley. Most of these fault zones have not moved during the last 2 million years and are currently considered inactive. A



few have been the source of ground shaking and are now classified as active or potentially active, Slemmons (1979). These faults are discussed in the following paragraphs.

Coast Ranges

The site is located about 40 miles northeast of the boundary between the Coast Ranges and Great Valley geomorphic provinces of California. The Coast Ranges are characterized by alternating ridges and valleys which generally parallel the northwest trend of the San Andreas fault. Due to the complex compressional and translational tectonic regime responsible for the development of the Coast Ranges, the rocks (mostly Franciscan Complex and Great Valley Sequence) in the province are typically extensively sheared and deformed. The Great Valley geomorphic province lies immediately east of the Coast Ranges. Its thick sequence of predominantly Tertiary sediments is underlain by rocks of the older Great Valley sequence which are, in turn, underlain by mafic basement rocks on the west side of the valley (Wentworth, et al, 1983). The basement rocks become increasingly siliceous to the east, closer to the Sierra Nevada geomorphic province.

Due to the presumed structural continuity of the basement rocks underlying the Great Valley with those of the Sierra Nevada to the east, these geomorphic provinces are commonly combined and considered as a single tectonic unit, the Sierran Block. The boundary between the Coast Ranges and the Great Valley geomorphic provinces essentially coincides with the tectonic boundary between the Coast Ranges and Sierran tectonic blocks (the Coast Ranges - Sierran Block Boundary Zone). The nature of this boundary at depth is not well-understood, since it is concealed by relatively young sedimentary deposits. At the surface, the boundary is expressed as an "abrupt, east-facing synclinal bend in Pliocene and Pleistocene deposits" (Wong and Ely, 1983). Deep refraction and reflection seismic profiles indicate that intense folding expressed in sedimentary units along the boundary zone is most likely the result of apparently ongoing movement on southwest-dipping thrust faults and/or northeast-dipping reverse faults which have not broken the surface (Wentworth, et al, 1983). The Coalinga Earthquake of May 2, 1983 (M_L 6.5) is thought to be the result of this type of movement. Fault-plane solutions and other evidence indicate that the earthquake occurred on a steeply northeast-dipping reverse fault (Stein, 1983).

Given the tectonic stress regime, and historic seismicity of a similar nature within the region, it would be reasonable to expect that activity of this type and magnitude will continue to occur along the boundary zone. It is difficult to estimate maximum probable event (MPE) and



maximum credible event (MCE) for the Coast Ranges - Sierran Block Boundary Zone due to concealment of most of the faults believed to be associated with it, however, by criteria of the CDMG, the maximum probable event can be no smaller than the maximum historical event, or M_L 6.5 in this case. Using that value as the MPE for the zone, and an assumed value of M_L 7.0 for the MCE, we have calculated the corresponding anticipated peak ground accelerations for the site.

San Andreas Fault

The San Andreas fault zone has been the source of many historically recorded earthquakes and is considered active as categorized by Slemmons (1979). This fault zone is characterized by predominate strike-slip offset along the Pacific and Continental plate boundaries.

The main trace of the San Andreas Fault extends from Humboldt County at its northern terminus to Imperial Valley, and possibly to the Gulf of California, to the south. The fault parallels the coast near the central coast of California. The closest mapped trace of the San Andreas Fault to the site is approximately 60 miles to the west. The section of the fault closest to the site ruptured during the Fort Tejon earthquake of 1857.

Owens Valley Fault

Relatively recent activity has occurred along the Owens Valley fault zone on the east side of the Sierra Nevada. This fault zone was the source of the "great" Owens Valley earthquake which was approximated to be on the order of $M8.2$. This fault zone is also characterized by predominate dip-slip (normal fault) motion. The largest historical earthquake along the Owens Valley Fault Zone was in 1872, which reportedly produced surface displacements in excess of 20 miles.

Faults Local to the Project Site

Page and LeBlanc (1969) discuss the potential presence of a fault in the vicinity of Clovis. Their conclusions are based on observed surface lineaments and a steeply dipping west-sloping basement surface. According to Barlow (1987) no fault offsets have been convincingly demonstrated.



Based on a review of the Five Counties Seismic Safety Element (1974), and current understanding of the geologic framework and tectonic setting of the proposed Maintenance Facility location, the primary sources of seismic shaking are anticipated to be the San Andreas, Owens Valley and Coast Ranges Fault zones. Table 1 presents a list of active and potentially active faults within 100 kilometers, direction from the site and estimated maximum credible and maximum probable earthquake magnitudes for each fault.

TABLE 1
Active Faults within 100 km of the Project Site

<u>Fault</u>	<u>Approximate Distance from Site(km)</u>	<u>Maximum Credible Earthquake (Richter Mag.)</u>	<u>Peak Site Acc.g</u>	<u>Maximum Probable Earthquake (Moment Mag.)</u>	<u>Peak Site Acc.g</u>
Coast Ranges	65	7.00	0.01	6.5	0.01
Ortigalita	85	6.75	0.05	4.50	0.01
San Andreas (Creeping)	99	7.00	0.06	6.00	0.02

In the Five Counties Seismic Safety Element Zones, the Fresno area is in what is classified Micro Zone VI. According to the Seismic Safety Element (part II, page 15, 1974) "Zone VI includes most of the eastern San Joaquin Valley, and is characterized by a relatively thin section of sedimentary rock overlying a granitic basement. Amplification of shaking that would affect low to medium rise structures is relatively high, but the distance to either of the faults that are the expected sources of the shaking is sufficiently great that the effects should be minimal. The requirements of Zone 2 of the Uniform Building Code should be adequate for normal facilities.

The Uniform Building Code has been updated, however, since the issue of the Seismic Safety Element. The 1991 edition of the Uniform Building Code indicates this area falls under the requirements of Zone 3. We recommend this zoning criteria be used for the proposed facilities.



Groundwater

A review of records for water wells maintained by the Fresno Irrigation District indicates the depth to groundwater in the Fresno area varies between 25 and 130 feet. These depths are based on measurements taken in January 1993 at more than 30 different well locations.

Liquefaction

In order for liquefaction or settlement of soils due to ground shaking to occur, it is generally accepted that four conditions will exist:

- o The subsurface soils should be in a loose state
- o The soils should be saturated
- o The soils should be fine, granular, and uniform
- o Ground shaking of sufficient intensity should occur to act as a triggering mechanism

Based on the ground shaking which may be expected from the faults discussed our experience with subsurface conditions in the Fresno area, including the relatively long depths to the water table, settlement resulting from liquefaction is considered unlikely.

Flooding

Based on the Flood Insurance Rate Maps distributed by the Federal Emergency Management Agency, the site is located in Zone AH. Zone AH denotes areas of 100 year shallow flooding where depths are between one (1) and three (3) feet. Base flood elevation is 285 and the approximate site elevation is 285.

Landslides

Due to the inland location and relatively flat relief of the project site, the potential for hazards due to landslides is nil.

Seiches and Tsunamis

A seiche is a wave generated by the periodic oscillation of a body of water whose period is a function of the resonant characteristics of the containing basin as controlled by its physical



dimensions. These periods generally range from a few minutes to an hour or more. According to the Five County Seismic Safety Element (April 1974), seiches are not considered as constituting a significant hazard in the project site.

Tsunamis are waves generated in oceans from seismic activity. Due to the inland location of the site potential hazard from tsunamis is nil.

CONCLUSIONS

Our investigation indicates that the surface and near-surface silty sand were found to be medium dense to dense. However, because of inability to provide borings within the proposed footprint of the structures due to the presence of existing structures, we have presented recommendations for improving the characteristics of the native soils beneath proposed foundations, concrete slabs-on-grade, and pavement areas. It is our opinion that these recommendations should reduce the magnitude of future settlements and related structural distress to acceptable levels, and minimize the cost of construction.

Detailed recommendations for these and other items affecting site development are presented in this report.

RECOMMENDATIONS

Earthwork

The following recommendations and requirements may be used in preparation of plans and specifications. Suggested specifications for earthwork are presented at the end of this report. All references to relative compaction and optimum moisture content are based upon the ASTM D-1557 test procedure. In general, these earthwork requirements should be applied to building pad, and concrete flatwork paved areas, extending at least 5 feet beyond the perimeters.

We have assumed for the purposes of this report that cuts or fills on the order of 2 to 3 feet will be required to develop the site as presently planned. The following items are recommended for preparation of the site:

1. All demolition debris and construction materials should be removed from the site. The site should be stripped of all vegetation. An average stripping depth of 6-inches is anticipated. Stripped material should be either removed from the site or used as topsoil



in the top one foot of landscape areas, if appropriate. Strippings should not be incorporated into any structural fill.

If any areas or pockets of soft or saturated soils are encountered, they should be over-excavated to firm native material and replaced with engineered fill constructed as recommended in this report.

2. All areas to receive engineered fill, or to support project features, should be over-excavated to a depth of 6 inches after stripping the site. The exposed subgrade soil should be scarified to a minimum depth of 6 inches, uniformly moisture conditioned to between optimum and 2 percent above optimum moisture content, and compacted to the requirements for engineered fill.

Non to low-plasticity silty sand, sandy silt, and silt should be uniformly moisture conditioned to optimum to 2 percent above optimum moisture content at the time of compaction, and recompacted to at least 95 percent relative compaction.

The silt soils tend to be moisture sensitive when wetted beyond the above recommendation. Excessive moisture will result in unstable material that is susceptible to "pumping", a condition unsuitable for engineered fill construction.

3. The native soil, exclusive of debris, may be used as engineered fill when at the proper moisture range. The native silt and sandy silt soils are predominantly fine grained and sensitive to excess moisture during earthwork.
4. Any imported fill material should consist of predominantly granular soil with low expansion potential, and should be reviewed by the geotechnical engineer prior to importing to the site. Import fill should meet the following guidelines:
 - a. Plasticity index should be 12 or less.
 - b. All materials should be less than 3 inches in size and free of organics or debris.
 - c. Between 20 to 40 percent should pass the No. 200 sieve.
5. Engineered fill (also referred to as structural fill) should be placed in loose lifts no thicker than 8 inches, and uniformly moisture conditioned prior to compaction.



Native non to low-plasticity poorly graded sand, silty sand, sandy silt, and silt should be uniformly moisture conditioned to optimum to 2 percent above optimum moisture content at the time of compaction, and compacted to at least 95 percent relative compaction.

Compaction should be increased to at least 95 percent relative compaction in the upper 6 inches of all areas to receive asphalt or rigid concrete pavements.

The compaction specifications recommended above are not the only criteria for proper fill placement. In addition to the degree of compaction and percentage moisture content, the stability of the fill is also an important factor to the performance of a fill. A fill can be unsuitable even if the material meets the required compaction specifications. Therefore, a fill should not be considered suitable, regardless of the degree of relative compaction, if the material is unstable.

7. Structural and trench backfill should be placed in the same manner as engineered fill.
8. The site should be graded to direct surface runoff away from structures, foundations,, and pavement systems.

We recommend that final grading plans be reviewed by Kleinfelder, Inc., for conformance to our design recommendations prior to construction bidding. All site demolition, tree root grubbing, site preparation, fill placement, and moisture conditioning should be observed and tested by a representative of our firm.

Foundation Design

It is our opinion that the proposed structures may be based on isolated spread or continuous shallow spread foundation systems bearing upon properly prepared native soil or properly constructed engineered fill. Because of the inability to gain access to the proposed footprint due to the presence of the existing structures at the east end of the Equipment Building, we recommend that the soils exposed in the bottom of the foundation excavation be overexcavated, the subgrade scarified, moisture conditioned and recompacted, and the excavation backfilled with engineered fill to the foundation design embedment depth.



We recommend that the native soil subgrade exposed in the base of the foundation excavation be overexcavated to a depth of at least 12 inches below bottom of footing. The exposed subgrade should then be scarified to a depth of 6 inches, uniformly moistened to optimum moisture content to 2 percent above optimum, and recompacted to at least 95 percent relative compaction. The excavation should then be backfilled with native soils, moisture conditioned between optimum to 2 percent above optimum, and compacted to at least 95 percent relative compaction.

We recommend that foundations be based at least 15 inches below the lowest adjacent interior or exterior finished soil subgrade. The recommended minimum width of footings is 12 inches.

With these provisions, we recommend an allowable bearing pressure of 2000 pounds per square foot for dead plus live load be used in design. This value can be increased by one-third for a total of all loads, including wind or seismic forces. The anticipated total settlement is less than 1 inch. The majority of this settlement should occur during construction as structural loads are placed.

We recommend that the reinforcing design of the footings be provided by the structural engineer. We note that the above-stated bearing value is a net value and the weight of concrete in the portion of the foundation which extends below grade can be neglected in proportioning the foundation.

It is recommended that all foundation excavations on this project be observed and tested by a representative of our firm prior to placement of reinforcing steel. The purpose of these observations is to check that the bearing soils actually encountered in the foundation excavations are similar to those on which our recommendations are based, and to test the compaction of the subgrade soil.

Lateral Soil Parameters

The following lateral load soil parameters are provided for concrete foundations and slabs that are cast against firm undisturbed soil or engineered fill. Frictional resistance to lateral loads will be provided along the bases of footings, mats, and slabs and may be computed by using a coefficient of friction of 0.35 times the normal dead load. For computing passive pressure resistance of soil against the vertical faces of spread footings and for assessing earth pressure behind retaining walls the following design earth pressure parameters may be used provided



free draining backfill is used. Free draining backfill material should contain less than 10 percent passing the #200 sieve and extend to a 30 degree angle from the vertical face. Also, a drainage system behind the retaining wall should be provided to remove accumulated seepage.

<u>Soil State</u>	<u>Equivalent Fluid Density (Drained Condition)</u>
Active Pressure Condition	35 pcf
At-Rest Pressure Condition	50 pcf
Passive Pressure Condition	300 pcf

If the on-site sandy silt or silt are used as backfill or the foundation walls are cast against firm undisturbed native soils, the following design earth pressure parameters may be used.

<u>Soil State</u>	<u>Equivalent Fluid Density (Undrained Condition)</u>
Active Pressure Condition	100 pcf
At-Rest Pressure Condition	120 pcf
Passive Pressure Condition	165 pcf

The above earth pressures are to be utilized using an equivalent fluid pressure triangular distribution. These values represent ultimate soil values and the values for undrained conditions include the hydrostatic pressure. A safety factor consistent with the design conditions should be included in their usage. We recommend that the at-rest pressure condition be utilized in retaining wall design when the walls are fixed and not allowed to deflect or rotate a distance at the top of the wall equal to 0.1 percent of the wall height. Foundation backfill should be placed in accordance with the recommendations for engineered fill presented under the Earthwork Section.

Concrete Slabs-on-Grade

All concrete slabs-on-grade should be underlain by a minimum of 12 inches of compacted native soil or engineered fill. The recommended degree of compaction is 95 percent of the maximum dry density as obtained from the ASTM D-1557 test procedure at a moisture content near optimum. Due to the silty nature of the surface soils, we recommend floor slabs be underlain by a capillary moisture break such as provided by a minimum 4-inch layer of free-



draining crushed gravel (100 percent passing the 3/4-inch screen, 100 percent retained on the No. 4 sieve), or coarse sand with less than 10 percent passing the #200 sieve.

In areas to receive moisture-sensitive floor coverings, we recommend that the gravel or sand be covered by a moistureproofing membrane such as "Moiststop," or equivalent, to act as a vapor barrier. Care should be exercised to avoid tearing, ripping, or displacing the membrane during construction. If the membrane becomes torn or disturbed, it should be removed or patched, or thoroughly replaced. The membrane should, in turn, be covered with approximately 1 inch of moist sand to protect it during construction and aid in curing the concrete.

The moisture content should be checked prior to placement of concrete. If there is a delay between placing fill and constructing slabs, it may be necessary to re-establish proper moisture by sprinkling, covering the surface with a layer of sand, or some other means. Sufficient field tests should be performed immediately prior to placement of slabs in order to verify that the soil moisture is within the recommended limits.

Asphalt Concrete Pavement

The pavement design should consider both the structural loadings, as well as the environmental induced factors. The structural loading will depend on the amount and type of traffic. Environmental influence will be the potential for future moisture variations in the soil subgrade below the pavement section.

Structural vehicle loadings were based on typical traffic loadings for this type and size facility. Traffic indexes of 5.0 and 6.0 were used for parking and travelway for automobiles and light trucks, and aisleways for heavy trucks, respectively. The flexible pavement design recommendations provided herein are based upon the design procedures of the California Department of Transportation (Caltrans). This type of design criteria was applied to this situation and a normal 10 year design period was used.

The anticipated subgrade soils are silty sands sandy silt, and silt. Their subgrade Resistance-value (R-value) was evaluated in the laboratory on two samples of near surface soil taken nearby Boring Nos. B-2 and 10. The laboratory test conformed to the specifications of the Caltrans test method 301. The materials had measured R-value of 57 and 62. For design purposes, a design R-value of 50 was selected based on Caltrans design procedures.



The flexible pavement section requirements were determined and are listed as follows.

RECOMMENDED PAVEMENT SECTION

<u>Traffic Index</u>	<u>Asphalt Concrete (inches)</u>	<u>Aggregate Base (Min. R-value: 78) (inches)</u>	<u>Compacted Native Subgrade (inches)</u>
TI=5.0	2.5	4.0	12
TI=6.0	2.5	5.0	12

The flexible pavement should conform to current Caltrans Standard Specifications. The asphalt concrete should comply with type "B" asphalt concrete in Section 39, and the aggregate base should comply with the specifications in Section 26. Both aggregate base and native soil subgrade should be compacted to a minimum of 95 percent of the maximum dry density ASTM D-1557-78 test procedure. The slope of flexible pavement areas should be a minimum of one percent to assure positive drainage.

In addition, it is recommended that all pavements conform to the following criteria:

1. All trench backfills, including utility and sprinkler lines, should be properly placed and adequately compacted to provide a stable subgrade.
2. An adequate drainage system should be provided to prevent surface water or subsurface seepage from saturating the subgrade soil.
3. A periodic maintenance program should be incorporated to include sealing of cracks and other measures.
4. All curbs surrounding landscape areas should be embedded at least 8 inches below subgrade to minimize the movement of moisture beneath pavements.

Soil Corrosivity

Resistivity tests indicate that the minimum resistivity of the soil is greater than 1000 OHM-CM, and the quantity of sulfate is less than 2000 ppm and quantity of chlorides is less than 500



ppm in the soils. Therefore, it appears that the on-site soils are non-corrosive with respect to concrete.

Site Drainage

Final elevations at the site should be planned so that drainage is directed away from all foundations. Parking areas should be sloped and drainage gradients maintained to carry all surface water off the site. Ponding of water or concentrated seepage should not be permitted under buildings, adjacent to foundation systems or under paved areas.

ADDITIONAL SERVICES

The review of plans and specifications, field observations, and testing by Kleinfelder are an integral part of the conclusions and recommendations made in this report. If Kleinfelder is not retained for these services, the client agrees to assume responsibility for any potential claims that may arise during construction. The required tests, observations, and consultation by Kleinfelder during construction includes, but is not necessarily limited to:

1. Review of plans and specifications for site grading, foundation, and pavement design;
2. Continuous observations and testing during earthwork excavations, compaction and placement of engineered fill, and pavement construction;
3. Review of foundation excavations for proper bearing material and required compaction prior to placement of concrete; and,
4. Other consultation as required during construction.

LIMITATIONS

1. The conclusions and recommendations of this report are for design purposes for the Maintenance Facility to be located in Fresno, California as described in the text of this report. The conclusions and recommendations in this report are invalid if:
 - a. The structure type changes;
 - b. The design loads change;
 - c. The structures are relocated;
 - d. The report is used for adjacent or other property;
 - e. The Additional Services section of this report is not followed;



- f. Changes of grades and/or ground water occur between the issuance of this report and construction other than those anticipated in this report; or,
 - g. Any other change is implemented which materially alters the project from that proposed at the time this report is prepared.
- 2. The conclusions and recommendations in this report are based upon:
 - a. The 16 exploratory borings performed at the site;
 - b. The observations of our field personnel;
 - c. The results of our laboratory tests; and,
 - d. Our experience in the area of this project.
 - 3. It is possible that variations in soil or ground water conditions may exist between or beyond the points of exploration or that the ground water elevations may change. Either of these conditions may require additional studies, consultation, and possible design revisions.
 - 4. This report was prepared in accordance with the generally accepted standard of practice which existed in Fresno County at the time the report was written. No warranty, expressed or implied, is made.
 - 5. It is the CLIENT'S responsibility to see that all parties to the project, including the designer, contractor, subcontractors, etc., are made aware of this report in its entirety, including the Additional Services and Limitations sections.



BIBLIOGRAPHY

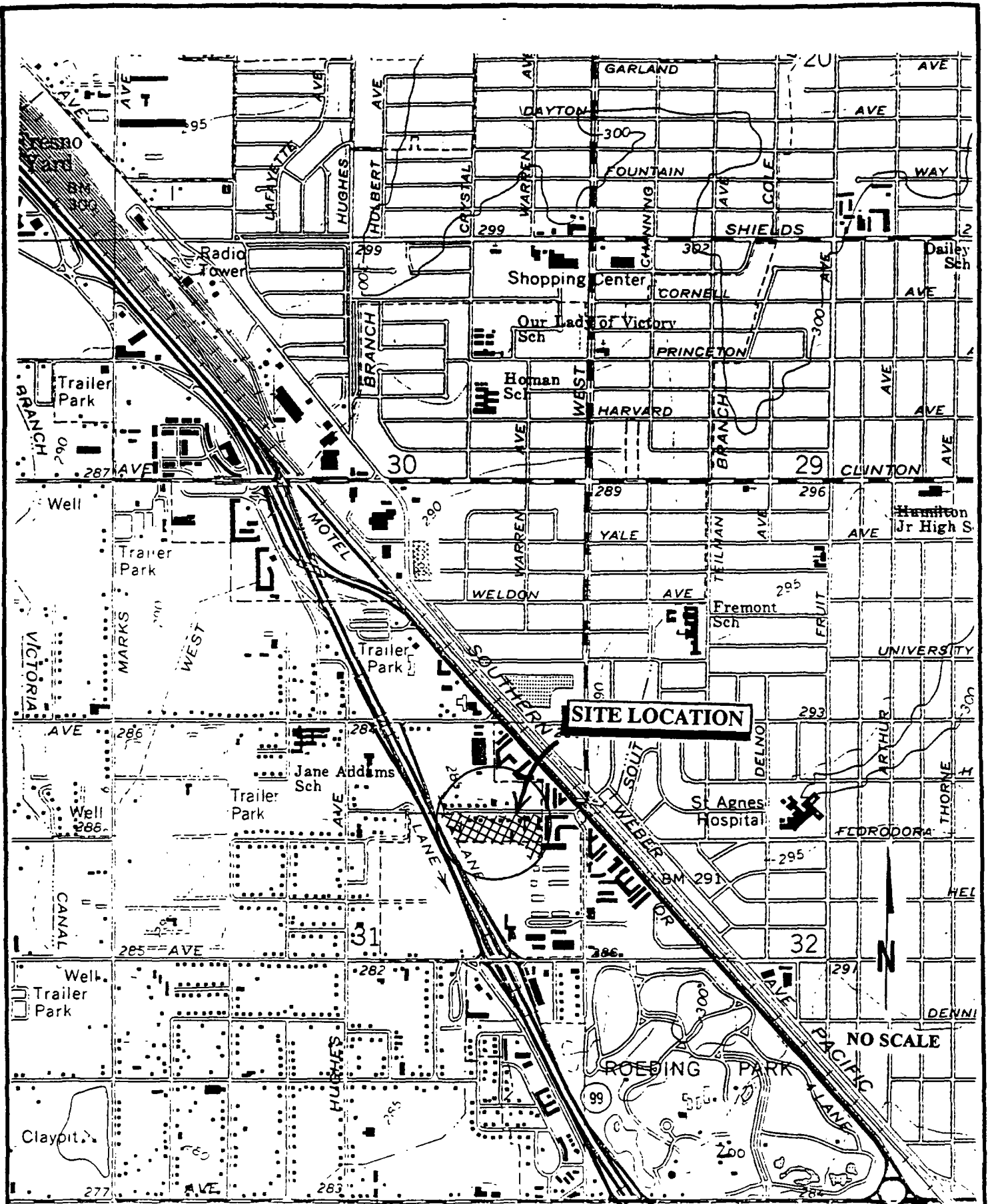
- Bartow, Alan, J., 1987 The Cenozoic Evolution of the San Joaquin Valley, California. Open File Report 87-851. United States Department of the Interior, Geologic Survey.
- Bonilla, M.G., 1970, Surface faulting and related effects, in Earthquake Engineering, Robert L. Wiegel, editor, Prentice-Hall, Pgs. 47 - 74.
- Campbell, K.W., 1981, Near-Source Attenuation of Peak Horizontal Acceleration: Bulletin of the Seismological Society of America, v.71, no.6, p.2039-2070.
- Five County Seismic Safety Element, 1974 For the General Plans of Fresno, Kings, Madera, Mariposa and Tulare Counties and their respective Incorporated Cities. Envicom Corporation, Sherman Oaks, California.
- Greensfelder, Roger W., 1974, Maximum Credible Rock Accelerations from Earthquakes in California. Map Sheet 23, California Division of Mines and Geology.
- Hart, Earl W., 1988 Fault Evaluation Report-160, Nunez Fault, Fresno County, California, California Division of Mines and Geology.
- Hart, Earl W., Revised 1985 Fault Rupture Hazard Zones in California. Special Publication 42. California Division of Mines and Geology.
- Jennings, Charles W., 1975 Fault Map of California, Geologic Data Map Series, Map No. 1, California Division of Mines and Geology.
- Joyner, W.B. and Boore, D.M., 1981, Peak Horizontal Acceleration and Velocity from Strong-Motion Records Including Records from the 1979 Imperial Valley, California Earthquake: Bulletin of the Seismological Society of America, v.71, no.6, p.2011-2038.
- Krinitzsky, E.L., Chang, Frank K, and Nuttli, Otto W, 1988 Magnitude-Related Earthquake Ground Motions, Bulletin of the Association of Engineering Geologists Vol. XXV, No. 4, Pgs. 399 - 423.
- Matthews, R.A. and J.L. Burnett, 1965, Geologic Map of California, Fresno Sheet, California Division of Mines and Geology.
- Namson, J.S. and Davis, T.L., 1988 Seismically Active Fold and Thrust Belt in the San Joaquin Valley, Central California, Geological Society of American Bulletin. Pgs. 257 - 273.
- Schnabel, Per B., and H. Bolton Seed, 1973 Accelerations in Rock for Earthquakes in the Western United States, Bulletin of the Seismological Society of America. Pgs. 501 - 516.



BIBLIOGRAPHY (cont.)

- Seed, H. Bolton and Idriss, I.M., 1982, Ground Motions and Soil Liquefaction During Earthquakes; Earthquake Engineering Research Institute Monograph 5, Berkeley, California.
- Stein, Ross S., 1983, Reverse Slip on a Buried Fault During the 2 May 1983 Coalinga Earthquake; Evidence from Geodetic Elevation Changes. The 1983 Coalinga, California Earthquakes, California Division of Mines and Geology, Special Publication 66, p. 151 - 163.
- Wentworth, Carl M., Walter, Allan W., Bartow, J. Alan, and Zoback, Mark D., 1983, Evidence on the Tectonic Setting of the 1983 Coalinga Earthquakes from Deep Reflection and Refraction Profiles Across the Southeastern End of Kettleman Hills. The 1983 Coalinga, California Earthquakes, California Division of Mines and Geology, Special Publication 66, p. 113 - 126.
- Wesnousky, Steven G., 1986 Earthquakes, Quaternary Faults, and Seismic Hazard in California Journal of Geophysical Research, Vol. 91, No. B12, Pgs. 12587 - 12631.
- Wong, Ivan G. and Ely, Richard W., 1983, Historical Seismicity and Tectonics of the Coast Ranges - Sierran Block Boundary; Implications to the 1983 Coalinga, California Earthquakes. The 1983 Coalinga Earthquakes, California Division of Mines and Geology; Special Publication 66, p. 89 - 104.





KLEINFELDER

VICINITY MAP

CALTRANS MAINTENANCE BLDG.
FRESNO, CALIFORNIA

PLATE

1

PROJECT NO. 21-1968-02

W. PINE AVE.

HWY. 99

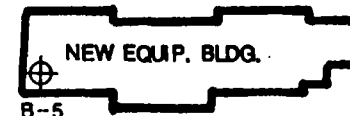


NO SCALE



B-1

DENOTES BORING NUMBER
AND APPROXIMATE LOCATION



EXISTING BUS SHOP



B-3



B-2



B-6



B-8



B-9



B-7



B-10

EXISTING DISTRICT 6 YARD

Prepared from undated plans by CALTRANS



KLEINFELDER

Project Number 21-1968-02

SITE PLAN

CALTRANS MAINTENANCE BLDG.
FRESNO, CALIFORNIA

PLATE

2

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		Symb.	DESCRIPTION	MAJOR DIVISIONS		Symb.	DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	G W	Well-graded gravels or gravel sand modures, little or no fines.	FINE GRAINED SOILS	SILTS AND CLAYS LL < 50	M L	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		G P	Poorly-graded gravels or gravel sand mixture, little or no fines.			C L	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		G M	Silty gravels, gravel-sand-silt mixtures.			O L	Organic silts and organic silt-clays of low plasticity.
		G C	Clayey gravels, gravel-sand-clay modures.				
	SAND AND SANDY SOILS	S W	Well-graded sands or gravelly sands, little or no fines.		SILTS AND CLAYS LL > 50	M H	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts.
		S P	Poorly-graded sands or gravelly sands, little or no fines.			C H	Inorganic clays of high plasticity, fat clays.
		S M	Silty sands, sands with silt.			O H	Organic clays of medium to high plasticity.
		S C	Clayey sands, sands with clay.			HIGHLY ORGANIC SOILS	



Standard Penetration Split Spoon Sampler
(1.375-inch I.D., 2.0-inch O.D.)



Modified California Split Spoon Sampler
(1.92-inch I.D., 2.42-inch O.D.)



California Split Spoon Sampler
(2.50-inch I.D., 3.00-inch O.D.)



Water Level Observed in Boring

NFWE No Free Water Encountered

* No Recovery

Note 1. The lines separating strata on the logs represent approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

Note 2. Split spoon samples driven by 140-pound weight free falling a distance of 30 inches.



KLEINFELDER

BORING LOG LEGEND

PROPOSED MAINTENANCE FACILITY
FRESNO, CALIFORNIA

PLATE

A

PROJECT NO 21-1968-02

Date Completed: 7/22/93

Surface Conditions: 2" Asphalt Concrete

Logged By: Stephen Tracey

Groundwater: NFWE

Total Depth: 21.5 feet

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength ksf	Other Tests		Approximate Surface Elevation (ft): 291	
22		105	9						
5		15				c = 0 = psf;			<u>SILTY SAND (SM)</u> - Red-brown, moist, medium dense.
10		6							<u>POORLY GRADED SAND (SP)</u> - Yellow-brown, moist, loose, medium to coarse.
15		17							<u>SILT (ML)</u> - Grey, slightly moist, very stiff.
20		21							<u>POORLY GRADED SAND (SP)</u> - Brown, moist, medium dense.
25									
30									
35									



KLEINFELDER

LOG OF BORING B- 1
CALTRANS MAINTENANCE
FACILITY
FRESNO

PLATE
1 of 1

A-1

PROJECT NO. 21-1968-02

Date Completed: 7/22/93Surfac Condi ti ns: 2" Asphalt ConcreteL gged By: Stephen TraceyGroundwater: NFWETotal Depth: 5 feet

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength ksf	Other Tests		Approximate Surface Elevation (ft): 291	
5						R-value = 62			<u>SILTY SAND (SM)</u> - Red-brown, moist.
10									
15									
20									
25									
30									
35									



KLEINFELDER

LOG OF BORING B- 2
CALTRANS MAINTENANCE
FACILITY
FRESNO

PROJECT NO. 21-1968-02

PLATE
1 of 1

A-2

Date Completed: 7/22/93Surface Conditions: 2" Asphalt ConcreteLogged By: Stephen Tracy

Groundwater: _____

Total Depth: 5 feet

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength ksf	Other Tests		Approximate Surface Elevation (ft): 291	
5									<u>SILTY SAND (SM)</u> - Red-brown, moist.
10									
15									
20									
25									
30									
35									



KLEINFELDER

LOG OF BORING B- 3
CALTRANS MAINTENANCE
FACILITY
FRESNOPLATE
1 of 1

A-3

PROJECT NO. 21-1968-02

Date Completed: 7/22/93

Surface Conditions: 2" Asphalt Concrete

Logged By: Stephen Tracy

Groundwater: NFWE

Total Depth: 16.5 feet

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength ksf	Other Tests		
								Approximate Surface Elevation (ft): 291
5		65	119	9				<u>SILTY SAND (SM)</u> - Red-brown, moist, very dense.
		23						<u>SILT (ML)</u> - Grey, moist.
10		10						<u>POOLRY GRADED SAND (SP)</u> - Yellow-brown, slightly moist, loose.
15		19						<u>SILT (ML)</u> - Grey, moist, very stiff.
20								
25								
30								
35								



KLEINFELDER

LOG OF BORING B- 4
CALTRANS MAINTENANCE
FACILITY
FRESNO

PLATE
1 of 1

A-4

PROJECT NO: 21-1968-02

Date Completed: 7/22/93

Surface Conditions: Vacant Lot

Logged By: Stephen Tracey

Groundwater: NFWE

Total Depth: 16.5 feet

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength ksf	Other	Tests		Approximate Surface Elevation (ft): 291	
5	100+	111	8						<u>SILTY SAND (SM)</u> - Yellow-brown, slightly moist, very dense.	
	18	105	7						<u>SILT (ML)</u> - Grey, moist, stiff.	
10	10								<u>SILTY SAND (SM)</u> - Yellow-brown, slightly moist, medium dense.	
									<u>POORLY GRADED SAND (SP)</u> - Yellow-brown, dry, loose.	
15	100+								<u>SILT (ML)</u> - Grey, moist, hard.	
20										
25										
30										
35										



KLEINFELDER

PROJECT NO. 21-1968-02

LOG OF BORING B- 5
 CALTRANS MAINTENANCE
 FACILITY
 FRESNO

 PLATE
 1 of 1

A-5

Date Completed: 7/22/93Surface Conditions: Vacant LotLogged By: Stephen Tracey

Groundwater: _____

Total Depth: 5 feet

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength ksf	Other	Tests		Approximate Surface Elevation (ft): 291	
5									SILTY SAND (SM) - Yellow-brown, moist.	
10										
15										
20										
25										
30										
35										



KLEINFELDER

PROJECT NO. 21-1968-02

LOG OF BORING B- 6
CALTRANS MAINTENANCE
FACILITY
FRESNOPLATE
1 of 1

A-6

Date Completed: 7/22/93Surface Conditions: Vacant LotLogged By: Stephen TraceyGroundwater: NFWETotal Depth: 5 feet

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength ksf	Other	Tests		Approximate Surface Elevation (ft): 291	
5										<u>SILTY SAND (SM)</u> - Yellow-brown, moist.
10										
15										
20										
25										
30										
35										



KLEINFELDER

PROJECT NO. 21-1968-02

LOG OF BORING B- 7
CALTRANS MAINTENANCE
FACILITY
FRESNOPLATE
1 of 1

A-7

Date Completed: 7/22/93

Logged By: Stephen Tracey

Total Depth: 21.5 feet

Surface Conditions: Vacant Lot

Groundwater: NFWE

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength ksf	Other Tests		Approximate Surface Elevation (ft): 291	
5	100+	22	109	7				<u>SILTY SAND (SM)</u> - Yellow-brown, slightly moist, very dense to medium dense.	
10	12							<u>POORLY GRADED SAND (SP)</u> - Grey-brown, moist, loose.	
15	39							<u>SILT (ML)</u> - Grey, moist.	
								<u>SILTY SAND (SM)</u> - Red-brown, moist, dense.	
20	49							<u>SILT (ML)</u> - Grey, moist, hard.	
25									
30									
35									



PROJECT NO. 21-1968-02

LOG OF BORING B- 8
CALTRANS MAINTENANCE
FACILITY
FRESNO

PLATE
1 of 1

A-8

Date Completed: 7/22/93Surface Conditions: Vacant LotLogged By: Stephen TraceyGroundwater: NFWETotal Depth: 5 feet

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength ksf	Other	Tests		Approximate Surface Elevation (ft): 291	
5										<u>SILTY SAND (SM)</u> - Red-brown, moist.
10										
15										
20										
25										
30										
35										



KLEINFELDER

LOG OF BORING B- 9
CALTRANS MAINTENANCE
FACILITY
FRESNOPLATE
1 of 1

A-9

PROJECT NO. 21-1968-02

Date Completed: 7/22/93Surface Conditions: Vacant LotLogged By: Stephen TraceyGroundwater: NFWETotal Depth: 5 feet

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION	
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength ksf	Other Tests		Approximate Surface Elevation (ft): 291	
5						R-value = 52			<u>SILTY SAND (SM)</u> - Red-brown, moist.
10									
15									
20									
25									
30									
35									

 KLEINFELDERLOG OF BORING B-10
CALTRANS MAINTENANCE
FACILITY
FRESNOPLATE
1 of 1

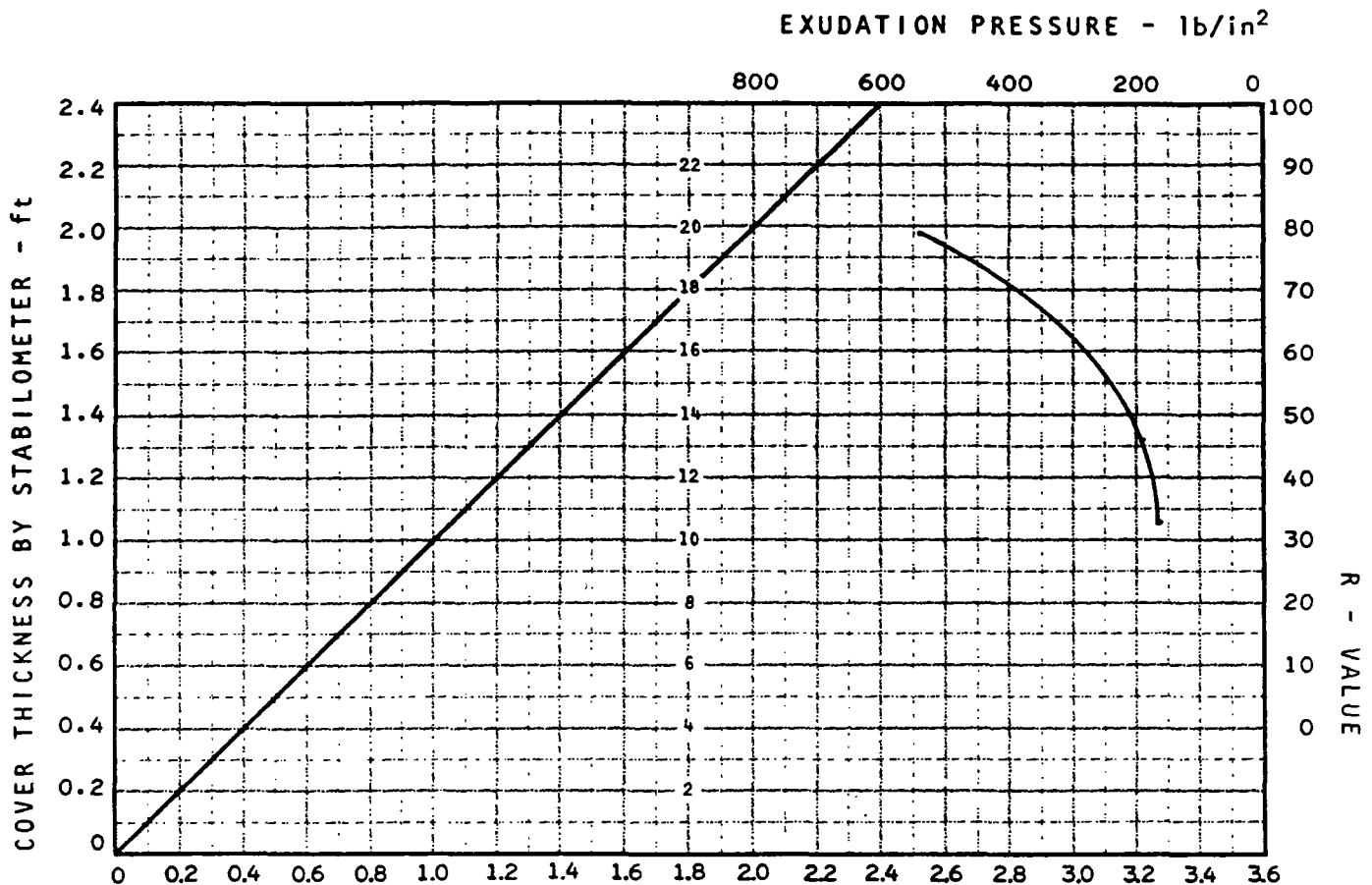
A-10

PROJECT NO. 21-1968-02

SAMPLE LOCATION: Boring No. 2 @ 0-3 feet

SAMPLE DESCRIPTION: Silty Sand (SM)

DATE SAMPLED: July 22, 1993



COVER THICKNESS BY EXPANSION PRESSURE - ft

SPECIMEN	A	B	C
EXUDATION PRESSURE, lb/in ²	160	180	540
EXPANSION DIAL (.0001")	0	0	0
EXPANSION PRESSURE, lb/ft ²	0	0	0
RESISTANCE VALUE, R	33	46	79
% MOISTURE AT TEST	9.5	8.6	7.3
DRY DENSITY AT TEST, lb/ft ³	125.9	128.2	128.8
R VALUE AT 300 lb/in ² EXUDATION PRESSURE	62		
R VALUE BY EXPANSION PRESSURE (TI =)	---		

KLEINFELDER

RESISTANCE VALUE
CALTRANS MAINTENANCE
FACILITY
FRESNO, CALIFORNIA

PLATE

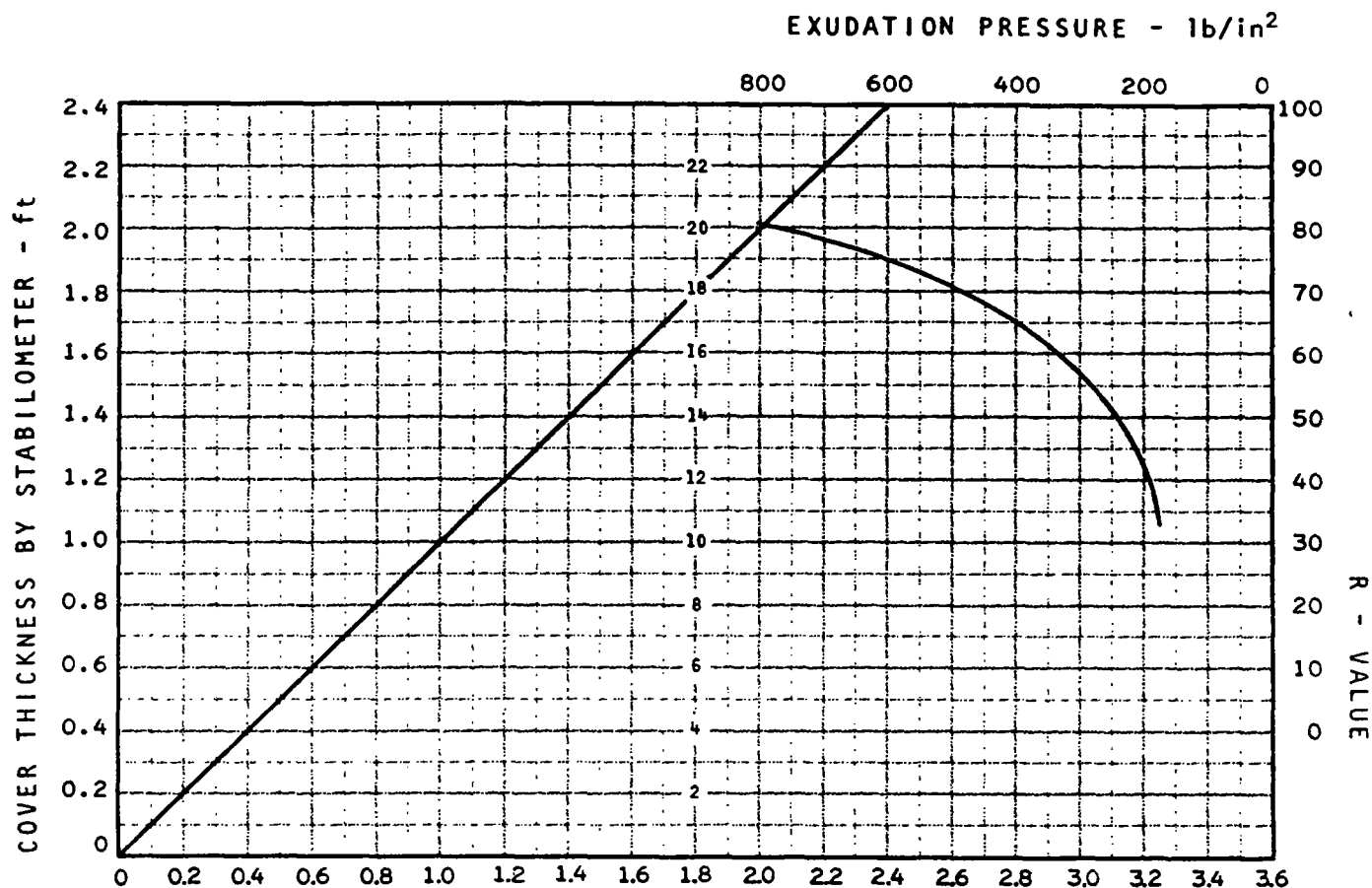
B-2

PROJECT NO. 21-1968-02

SAMPLE LOCATION: Boring No. B-10 @ 0-3 feet

SAMPLE DESCRIPTION: Silty Sand (SM)

DATE SAMPLED: July 22, 1993



COVER THICKNESS BY EXPANSION PRESSURE - ft

SPECIMEN	A	B	C
EXUDATION PRESSURE, lb/in ²	170	370	800
EXPANSION DIAL (.0001")	0	0	11
EXPANSION PRESSURE, lb/ft ²	0	0	48
RESISTANCE VALUE, R	34	61	81
% MOISTURE AT TEST	10.7	9.4	8.6
DRY DENSITY AT TEST, lb/ft ³	126.8	126.1	129.3
R VALUE AT 300 lb/in ² EXUDATION PRESSURE	57		
R VALUE BY EXPANSION PRESSURE (TI =)	---		

KLEINFELDER

RESISTANCE VALUE
CALTRANS MAINTENANCE
FACILITY
FRESNO, CALIFORNIA

PLATE

B-3

PROJECT NO. 21-1968-02

Kleinfelder
1975 E Street
Fresno, California 93706
Attn: Lloyd Crask

Sample Date: NA
Report Date: 08/13/93

Page 1 of 1

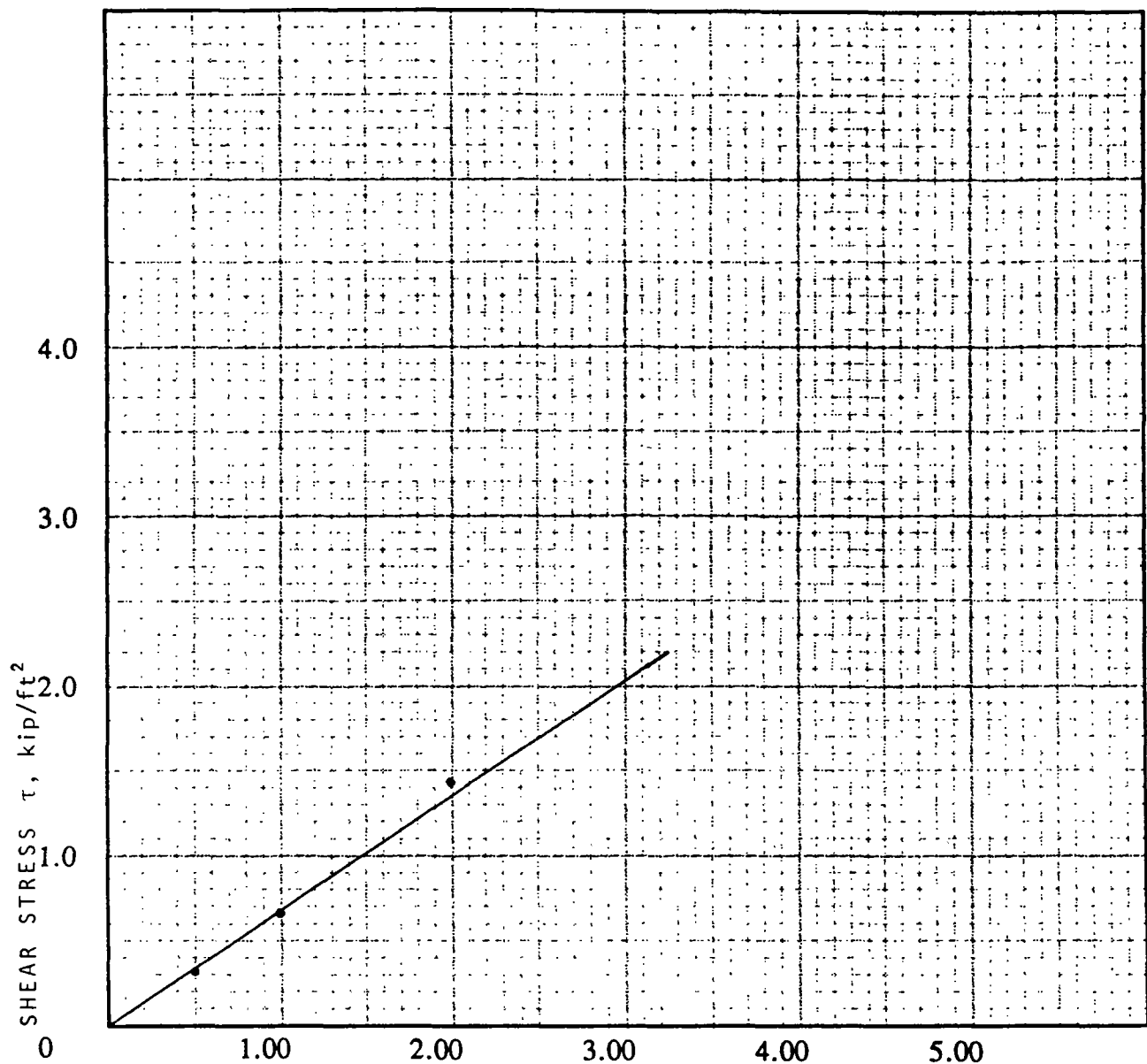
Sample I.D. No: Cal Trans Maint Yard Date Received: 08/06/93
B-10
APPL Sample No: R15020-94648S

General Mineral Analysis

	<u>Results</u>	<u>Quantitation Limit</u>	<u>Method Number</u>
Chloride (Cl) mg/L	176	2	EPA 300.0
Sulfate (SO ₄) mg/L	80.1	0.50	EPA 300.0
pH @ 23.7°C	7.62	NA	EPA 150.1
Specific Conductivity (EC) μmhos/cm @ 25°C	329	0.10	EPA 120.1

Tested By

Checked By



NORMAL STRESS σ , kip/ft²
 BORING NO. B-1 SAMPLE NO. - DEPTH, ft 5'
 DESCRIPTION Silty Sand: Red-brown

SYMBOL			
DRY DENSITY lb/ft ³	<u>108.8</u>	<u>107.3</u>	<u>107.3</u>
INITIAL WATER CONTENT %	<u>9.5</u>	<u>9.5</u>	<u>9.5</u>
FINAL WATER CONTENT %	<u>19.3</u>	<u>17.8</u>	<u>18.6</u>
NORMAL STRESS σ , kip/ft ²	<u>0.5</u>	<u>1.0</u>	<u>2.0</u>
SHEAR STRESS τ , kip/ft ²	<u>0.31</u>	<u>0.67</u>	<u>1.45</u>

ANGLE OF INTERNAL FRICTION, ϕ 34
 COHESION, kip/ft² 0



DIRECT SHEAR TEST
 PROPOSED MAINTENANCE FACILITY
 FRESNO, CALIFORNIA

PLATE

B-5

PROJECT NO. 21-1968-02

SUGGESTED SPECIFICATIONS FOR EARTHWORK

1.0 GENERAL

- 1.1 Scope - This item shall include all clearing and grubbing, preparation of land to be filled, filling, spreading, compaction and control of the fill, and all with the lines, grades and slopes as shown on the accepted plans.
- 1.2 Existing Conditions - The contractor shall carefully inspect the site prior to the start of work and shall determine all site conditions which affect the performance of the work under contract. It shall be assumed under this contract that the contractor has full knowledge of all conditions of this site, both surface and subsurface, and shall not be relieved of responsibility for any loss occurred by virtue of unknown conditions or difficulties of performing work under this contract.
- 1.3 Geotechnical Investigation Report - A geotechnical investigation has been made at the site by the geotechnical engineering firm of Kleinfelder, Inc. in Fresno, California. This document, dated September 9, 1993 is available only for the general information of bidders. Any interpretation and use of this report is at the sole risk of the bidder. The owner assumes no responsibility for the accuracy or completeness of this information.
- 1.4 Engineered Fill - Engineered fill is compacted soil which has been subject to sufficient tests and observations by the geotechnical engineer or his representative to enable same to prepare a written report that, in his opinion, the fill has been constructed in accordance with the project specifications.
- 1.5 Testing Methods - ASTM specifications refer to the latest edition of the Standard Specifications of the American Society for Testing and Materials.

2.0 DEMOLITION

- 2.1 Demolish and remove all existing obstructions, both natural and man-made, within the limits of the work, excepting those required to be preserved. Such demolition and removal includes, but is not necessarily limited to, old structures, fences, concrete and brick work, and trash.



2.2 All buried structures encountered within the limits of the work shall be opened and the shell removed to 3 feet below finished subgrade. All organic or soft materials shall be removed, and the cavity shall be filled with engineered fill following breaking out the bottom to assure drainage.

2.3 All extraneous material shall be removed to undisturbed natural soil. Any resulting hole shall be backfilled in accordance with Section 6.0 of these specifications. Extraneous materials so removed may be used as fill when cleaned of deleterious materials and approved by the Geotechnical Engineer.

2.4 Rubble obtained from demolition of concrete, brickwork and asphalt surfacing with maximum dimension greater than 3-inches shall be hauled from the site or as directed by the engineer. Rubble with maximum dimensions of 3-inches or less may be incorporated into the fill with the approval of the geotechnical engineer. The rubble shall be pulverized and mixed with soil such that all voids are completely filled after compaction of the section.

3.0 CLEARING, GRUBBING AND STRIPPING, PREPARING AREAS TO BE FILLED

3.1 All surface vegetation, brush and rubbish shall be removed from the site by burning or hauling so as to leave the area that have been disturbed with a neat appearance, free from debris. All uncontrolled fill shall be removed by overexcavation.

3.2 The surface upon which the fill is to be placed shall then be prepared by such moistening and compacting procedures as needed to meet the specifications for engineered fill specified by the Geotechnical Engineer.

4.0 EXCAVATION

4.1 Extent - Excavations shall be performed to the lines and grades indicated on the plans.

4.2 Materials - The data presented in the geotechnical investigation report is available to the bidders for information only, and the contractor shall make his own interpretation with regard to the methods and equipment necessary to perform the excavation and to obtain material suitable for fill.



All oversize rocks and boulders that cannot be incorporated into the work by placing in embankments or used as rip-rap or for other purposes shall be removed from the site by the contractor or placed elsewhere within the site if directed by the Geotechnical Engineer.

5.0 RECOMPACTION

- 5.1 **Ground Surface** - The ground surface exposed by stripping and excavation shall be prepared by such moistening and compacting procedures as necessary to meet the recommendations specified by the Geotechnical Engineer. Recomposition shall be reviewed by the geotechnical engineer prior to placement of fill.

6.0 ENGINEERED FILL

- 6.1 **Materials** - Fill material shall consist of suitable on-site materials or imported fill. All materials used for engineered fill shall have a maximum size of 3-inches. Additional qualifications may be set forth by the Geotechnical Engineer. The fill shall possess sufficient fine sizes such that no nesting or voids result in the recompacted mass. Blending of excavated materials may be necessary to satisfy this requirement. All materials used as engineered fill shall be continuously monitored and tested by the Geotechnical Engineer.
- 6.2 **Placement** - All engineered fill material shall be placed in layers of 8" or less in loose thickness, uniformly moisture conditioned and compacted to the requirements for engineered fill as recommended by the Geotechnical Engineer.
- 6.3 **Compaction Equipment** - The contractor shall provide and use sufficient equipment of a type and weight suitable for the conditions encountered in the field. The equipment shall be capable of obtaining the required compactions in all areas, including those that are inaccessible to ordinary rolling equipment.
- 6.4 **Recompaction** - When, in the judgment of the Geotechnical Engineer, sufficient compaction effort has not been used, or where the field density tests indicate that the required compaction or moisture content has not been obtained, or if "pumping" or other indications of instability are noted, the fill shall be reworked and recompacted as needed to obtain a stable fill at the required density and moisture content prior to placing additional fill materials.



- 6.5 The contractor shall be responsible for the maintenance and protection of all embankments and fills made during the contract period and shall bear the expense of replacing any portion which has been displaced due to carelessness, negligent work, or failure to take proper precautions.





**ASBESTOS CONTAINING MATERIALS
AND LEAD-BASED PAINT SURVEY REPORT
TASK ORDER NO. 44**

**Project Title: West Avenue Maintenance
Station Upgrade**

Locations:

**West Avenue Maintenance Station,
Buildings B, C, and D-F**

Fresno County, California

EA: 06-0X4300

PN: 10-1700-0022-1

Contract 06A2542

Prepared for:
California Department of Transportation,
District 6
2015 E. Shields Ave., Suite 100
Fresno, California 93726
Contract No. 06A2542

Prepared by:
Stantec Consulting Services Inc.
3875 Atherton Road
Rocklin, CA 95765

Stantec Project No.: 185733044.144

January 28, 2021

EXECUTIVE SUMMARY

This Asbestos-Containing Materials (ACM) and Lead-Based Paint (LBP) Survey Report was prepared at the request of California Department of Transportation District 6 (Caltrans) and describes the results of ACM and LBP surveys performed on existing buildings located in Fresno County in California (the Project Area; Figure 1).

- West Avenue Maintenance Station, Buildings B, C, and D-F

The surveys were performed on December 3 and 4, 2020, pursuant to the provisions of Task Order NO. 44 and Contract 06A2542.

The ACM and LBP surveys were conducted to support Caltrans planned replacement of existing buildings with new and upgraded facilities. Caltrans will provide this report to the contractor for waste profiling and disposition, worker health and safety, and compliance with federal, state and local regulations.

Asbestos Containing Materials

Bulk samples of suspect ACM materials were collected from safely accessible materials. The following is a summary of the structural materials sampled as part of the survey described herein:

- | | |
|---------------------|-------------------------|
| • Ceiling tile, | • Roof material, |
| • Adhesive, | • Sealant, |
| • Gypsum board, | • Stucco, |
| • Joint compound, | • Sink undercoat, |
| • Wall texture, | • Paint, |
| • Window putty, | • Vinyl floor sheeting, |
| • Vinyl floor tile, | • Transite |
| • Insulation, | • Concrete |
| • Insulation wrap. | |

Samples of potential ACM were analyzed by Polarized Light Microscopy (PLM). The United States Environmental Protection Agency (USEPA) and State of California, Division of Occupational Safety and Health (DOSH) define an ACM as any material containing more than one percent asbestos (>1%). The laboratory results are summarized in Table 1.



In California, potential asbestos exposure in construction is regulated when construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof contain asbestos [8 CCR § 1529 (a)(1)(C)]. Additionally, in California, materials containing greater than one-tenth of one percent (>0.1%) asbestos are regulated as Asbestos-Containing Construction Materials (ACCMs). For the purpose of this report, materials with any detectable concentration of asbestos are considered positive.

Based on analytical results, asbestos was not detected in any of the samples collected during this survey (refer to Table 1 for a complete list of sample results).

General recommendations are provided below to address ACMs should they be disturbed during demolition, renovation, and/or construction. The following materials were identified as asbestos containing materials (ACMs):

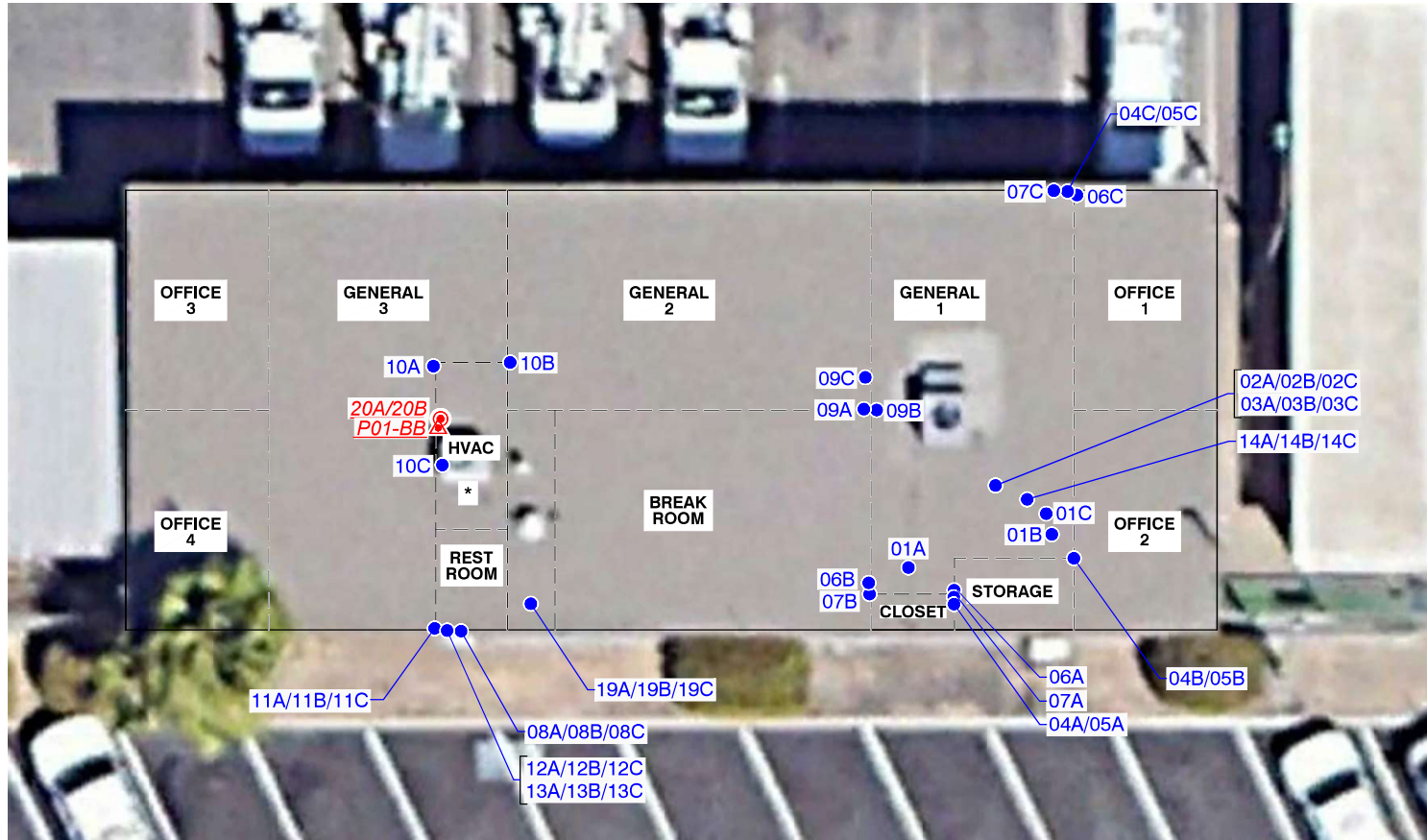
FIELD SAMPLE ID	MATERIAL LOCATION / SAMPLE LOCATION ON BRIDGE	MATERIAL DESCRIPTION	ANALYSIS RESULTS/ ASBESTOS TYPE	ASBESTOS PERCENTAGE (%)	IF ACM, ESTIMATED SQUARE FOOTAGE
West Avenue Maintenance Station - Building B					
18A to 18C	Roof Penetrations	Sealant, Black	Positive, Chrysotile	5%	10 SF
20A to 20B	HVAC Ducting	Paint, Tan	Positive, Chrysotile	2.2%	100 SF
West Avenue Maintenance Station - Building D-F					
01A to 01C	Exterior Wall/Roof	Transite, Gray	Positive, Chrysotile	15%	12,000 SF
03A to 03C	Exterior Panel Joints / Penetrations	Sealant, White	Positive, Chrysotile	10%	120 SF

Notification to the San Joaquin Valley Air Pollution Control District (SJVAPCD) is required for all renovation and demolition activities unless exempt from notification requirements based on surface area to be disturbed. The contractor is required to comply with all other SJVAPCD and other agency notifications and requirements for demolition and construction.

All renovation and demolition work should be conducted in accordance with local, state and federal permit requirements and regulations, including those of the local air quality management district.

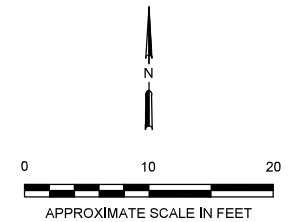
It is noted that the asbestos survey was limited to the accessible materials specified herein. If during the course of renovation/demolition suspect ACMs are discovered that are not included within this report, those materials are to be assumed positive for asbestos unless additional sampling, analysis and/or assessment indicates otherwise. Demolition, management and disposal of any encountered ACMs or assumed ACMs shall be conducted in accordance with federal, state and local regulations.





LEGEND:

- NON-ASBESTOS CONTAINING MATERIAL SAMPLE
- ▲ LEAD CONTAINING PAINT SAMPLE
- ASBESTOS CONTAINING MATERIAL SAMPLE
- * HVAC DUCT NOT SAMPLED



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REFERENCE: GOOGLE EARTH PRO AND STANTEC FIELD NOTES.



3875 ATHERTON ROAD
ROCKLIN, CALIFORNIA 95765-3716
PHONE: (916) 773-8100 FAX: (916) 773-8448

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ASBESTOS CONTAINING MATERIAL AND
LEAD-BASED PAINT SURVEYS
WEST AVENUE MAINTENANCE STATION UPGRADE
CONTRACT No. 06A2542; Task Order No. 44
Fresno County, California
PN: 06-1800-0065 (EA: 06-0X4300)

JOB NUMBER:
185733044

DRAWN BY:
STA

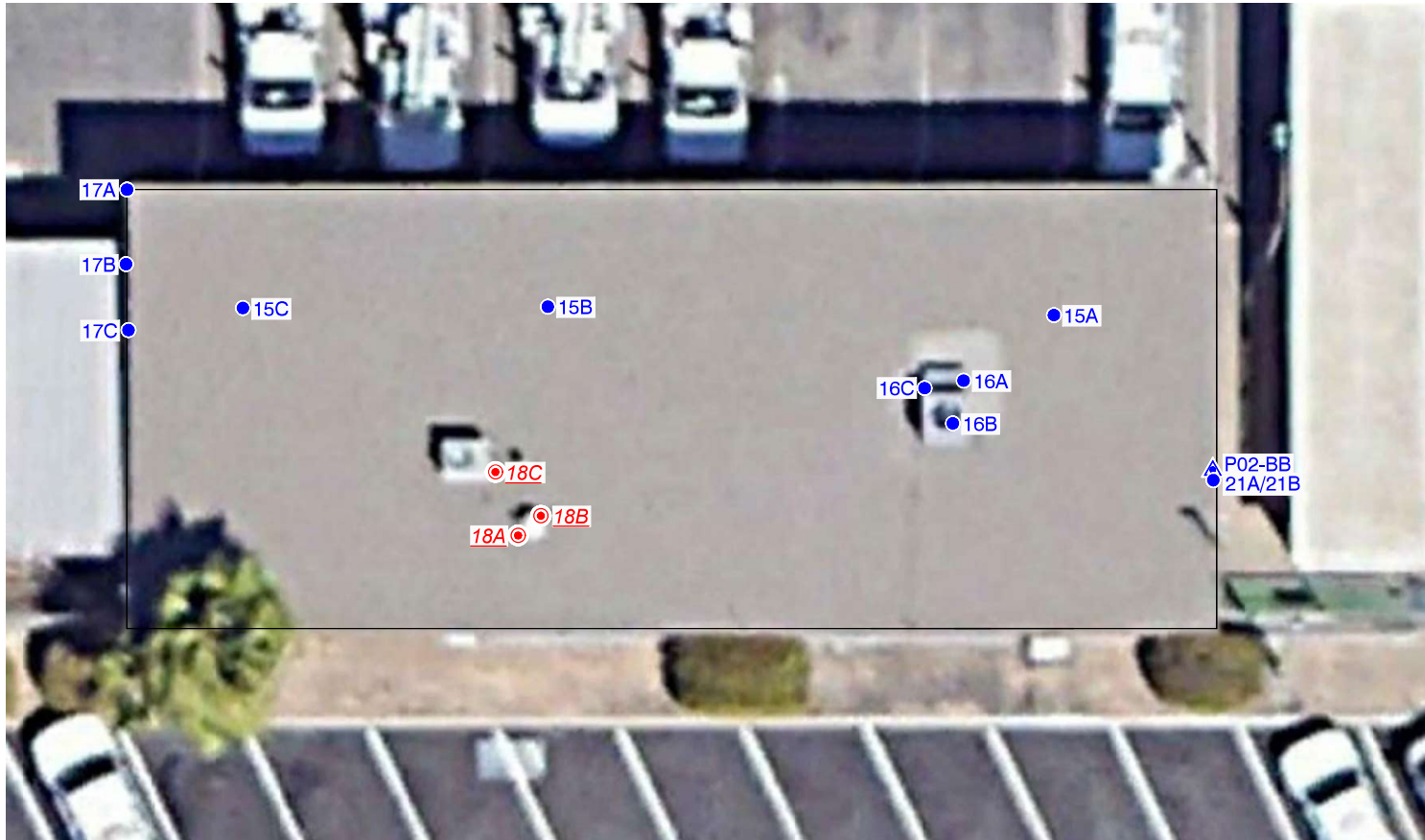
**ACM/LBP SAMPLE LOCATION MAP
BUILDING B (INTERIORS)**

CHECKED BY:
AL

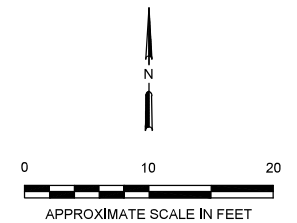
APPROVED BY:
DM

FIGURE:
2

DATE:
12/31/20



- LEGEND:**
- NON-ASBESTOS CONTAINING MATERIAL SAMPLE
 - ▲ NON-LEAD CONTAINING PAINT SAMPLE
 - ASBESTOS CONTAINING MATERIAL SAMPLE



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CALIFORNIA DEPARTMENT OF TRANSPORTATION
ASBESTOS CONTAINING MATERIAL AND
LEAD-BASED PAINT SURVEYS
WEST AVENUE MAINTENANCE STATION UPGRADE
CONTRACT No. 06A2542; Task Order No. 44
Fresno County, California
PN: 06-1800-0065 (EA: 06-0X4300)

JOB NUMBER:
185733044

DRAWN BY:
STA

ACM/LBP SAMPLE LOCATION MAP BUILDING B (EXTERIORS)

CHECKED BY:
AL

APPROVED BY:
DM

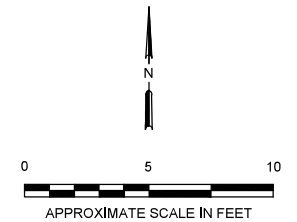
FIGURE:
3

DATE:
12/31/20



LEGEND:

- NON-ASBESTOS CONTAINING MATERIAL SAMPLE



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PHONE: (916) 773-8100 FAX: (916) 773-8448

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ASBESTOS CONTAINING MATERIAL AND
LEAD-BASED PAINT SURVEYS
WEST AVENUE MAINTENANCE STATION UPGRADE
CONTRACT No. 06A2542; Task Order No. 44
Fresno County, California
PN: 06-1800-0065 (EA: 06-0X4300)

JOB NUMBER:
185733044

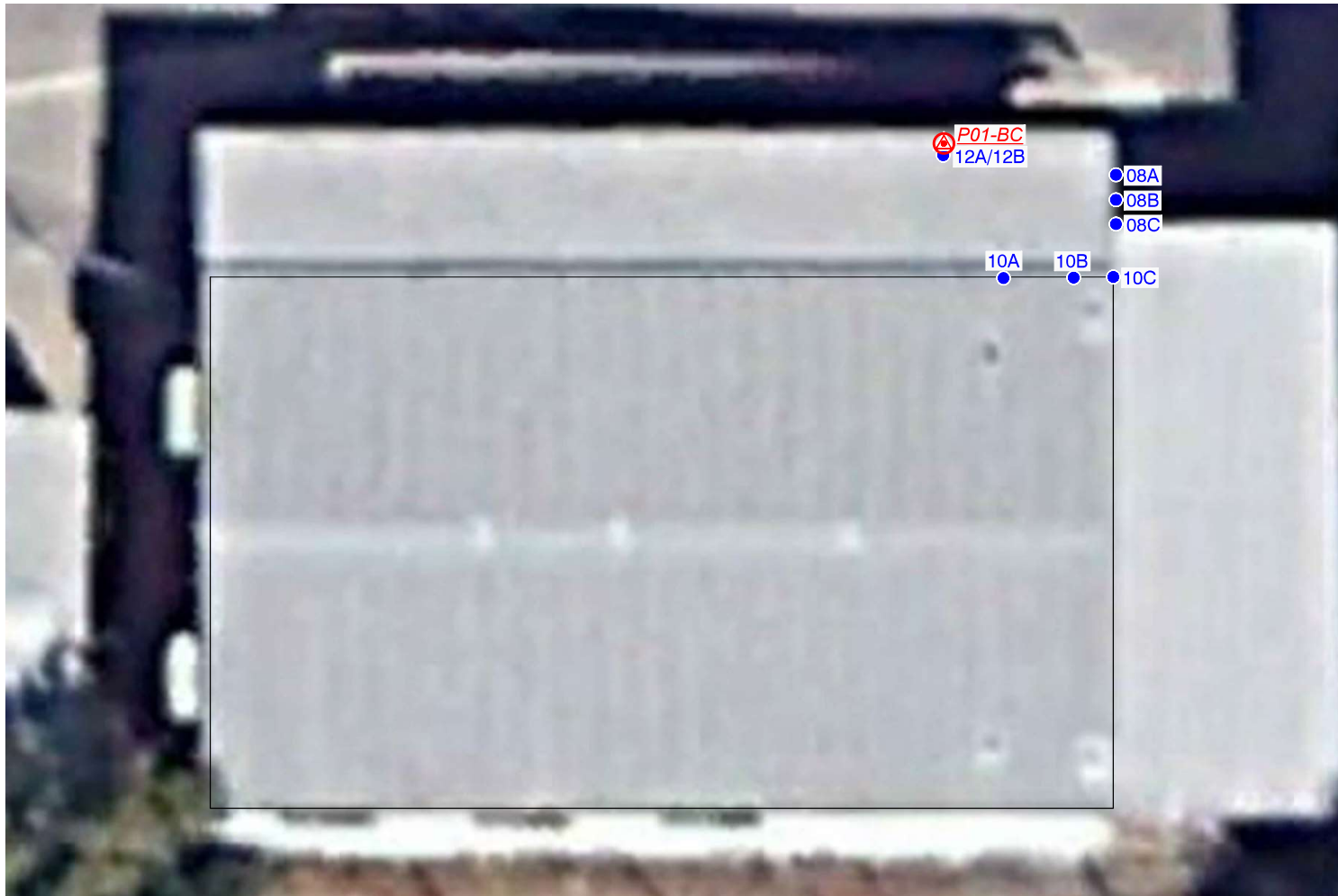
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DM

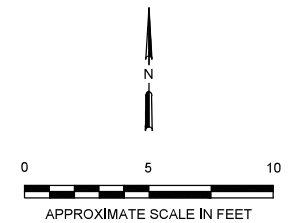
FIGURE:
4

DATE:
12/31/20



LEGEND:

- NON-ASBESTOS CONTAINING MATERIAL SAMPLE
- LEAD CONTAINING PAINT SAMPLE



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REFERENCE: GOOGLE EARTH PRO AND STANTEC FIELD NOTES.



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3875 ATHERTON ROAD
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CALIFORNIA DEPARTMENT OF TRANSPORTATION
ASBESTOS CONTAINING MATERIAL AND
LEAD-BASED PAINT SURVEYS
WEST AVENUE MAINTENANCE STATION UPGRADE
CONTRACT No. 06A2542; Task Order No. 44
Fresno County, California
PN: 06-1800-0065 (EA: 06-0X4300)

JOB NUMBER:
185733044

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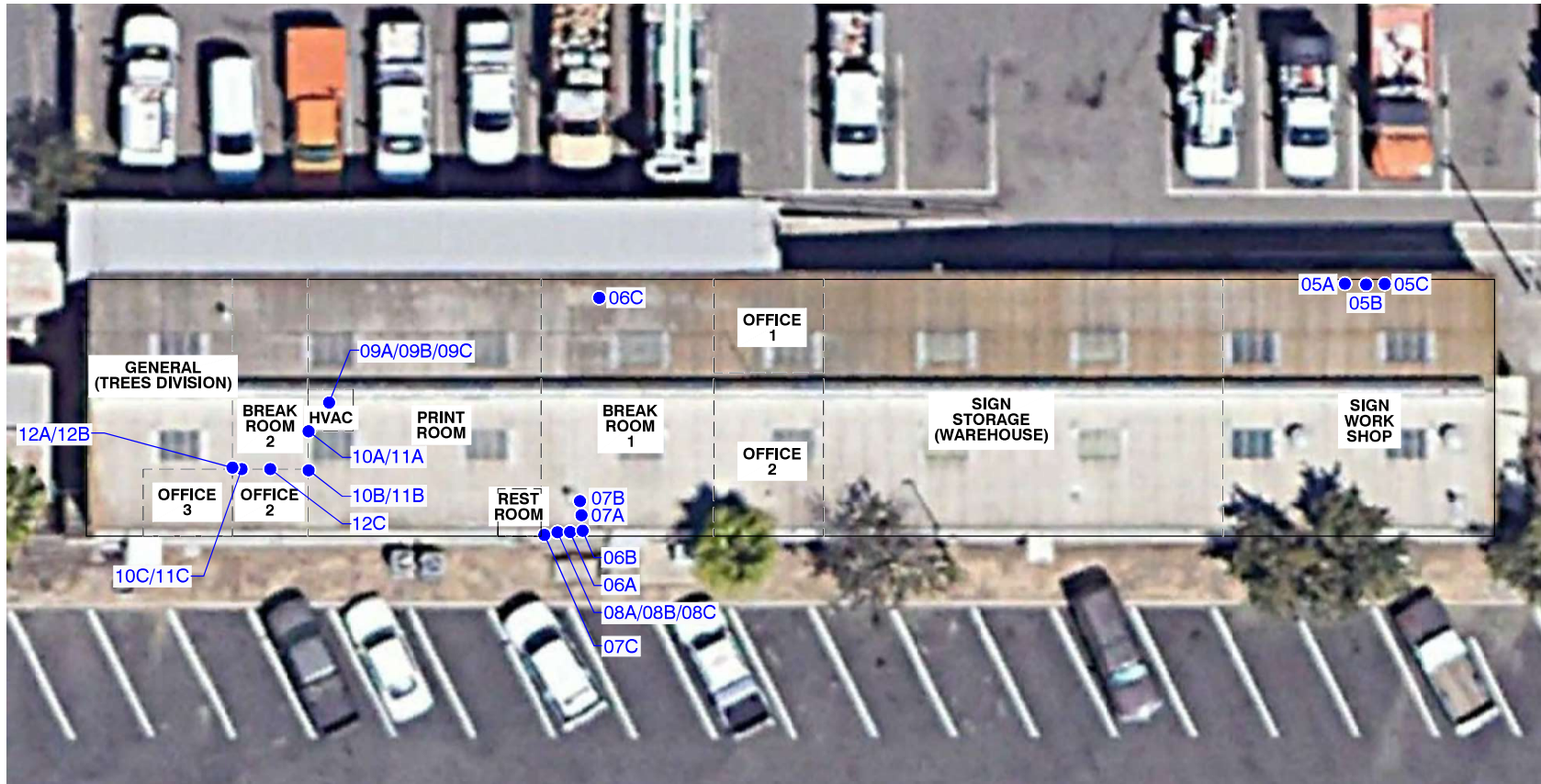
**ACM/LBP SAMPLE LOCATION MAP
BUILDING C (EXTERIORS)**

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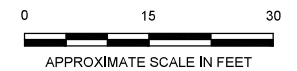
FIGURE:
5

DATE:
12/31/20



LEGEND:

- NON-ASBESTOS CONTAINING MATERIAL SAMPLE



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WEST AVENUE MAINTENANCE STATION UPGRADE
CONTRACT No. 06A2542; Task Order No. 44
Fresno County, California
PN: 06-1800-0065 (EA: 06-0X4300)

**ACM/LBP SAMPLE LOCATION MAP
BUILDING D-F (INTERIORS)**

FIGURE:
6

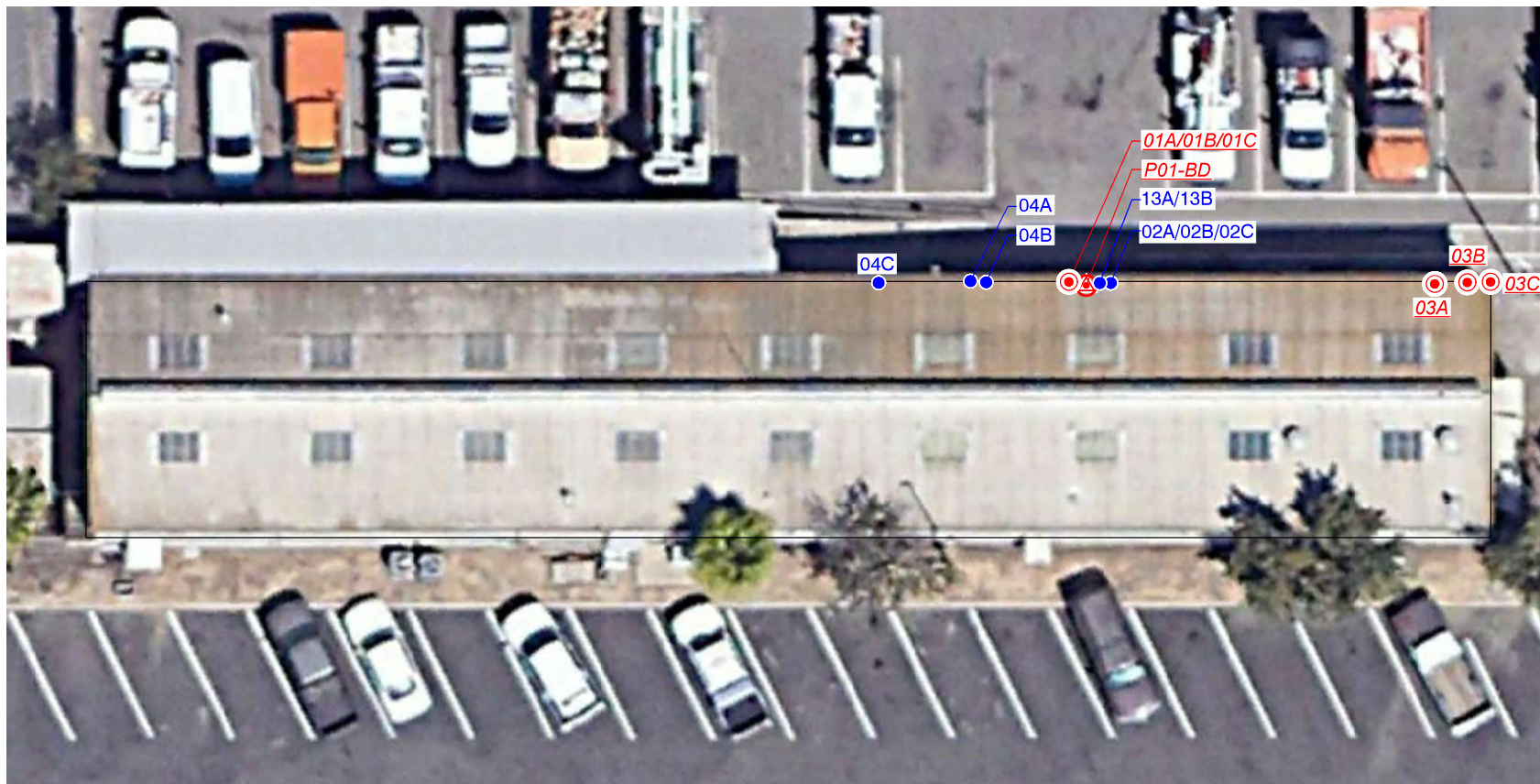
JOB NUMBER:
185733044

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AL

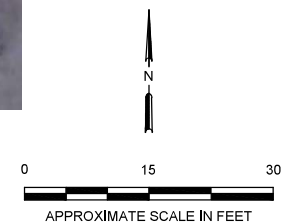
APPROVED BY:
DM

DATE:
12/31/20



LEGEND:

- NON-ASBESTOS CONTAINING MATERIAL SAMPLE
- LEAD CONTAINING PAINT SAMPLE
- ASBESTOS CONTAINING MATERIAL SAMPLE



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WEST AVENUE MAINTENANCE STATION UPGRADE
CONTRACT No. 06A2542; Task Order No. 44
Fresno County, California
PN: 06-1800-0065 (EA: 06-0X4300)

JOB NUMBER:
185733044

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**ACM/LBP SAMPLE LOCATION MAP
BUILDING D-F (EXTERIORS)**

CHECKED BY:
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FIGURE:

7

DATE:
12/31/20

TABLE 1
ACM SAMPLE LOG AND ANALYTICAL RESULTS
West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
TO44; Contract: 06A2542

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	MATERIAL LOCATION / SAMPLE LOCATION	SAMPLE LAYER	MATERIAL DESCRIPTION	ANALYSIS RESULTS/ ASBESTOS TYPE	ASBESTOS PERCENTAGE (%)	EPA CATEGORY	IF ACM, ESTIMATED SQUARE FOOTAGE
West Avenue Maintenance Station - Building B									
01A	12/3/2020	246467001	GENERAL CEILING	1	Ceiling Tile, 2'x4', White/Beige	None Detected	NA	NA	NA
01B	12/3/2020	246467002	GENERAL CEILING	1	Ceiling Tile, 2'x4', White/Beige	None Detected	NA	NA	NA
01C	12/3/2020	246467003	GENERAL CEILING	1	Ceiling Tile, 2'x4', White/Beige	None Detected	NA	NA	NA
02A	12/3/2020	246467004	GENERAL CEILING	1	Ceiling Tile, 1'x1', White/Brown	None Detected	NA	NA	NA
02B	12/3/2020	246467005	GENERAL CEILING	1	Ceiling Tile, 1'x1', White/Brown	None Detected	NA	NA	NA
02C	12/3/2020	246467006	GENERAL CEILING	1	Ceiling Tile, 1'x1', White/Brown	None Detected	NA	NA	NA
03A	12/3/2020	246467007	GENERAL CEILING	1	Ceiling Tile Adhesive, Brown (Associated with HA#2)	None Detected	NA	NA	NA
03B	12/3/2020	246467008	GENERAL CEILING	1	Ceiling Tile Adhesive, Brown (Associated with HA#2)	None Detected	NA	NA	NA
03C	12/3/2020	246467009	GENERAL CEILING	1	Ceiling Tile Adhesive, Brown (Associated with HA#2)	None Detected	NA	NA	NA

TABLE 1
ACM SAMPLE LOG AND ANALYTICAL RESULTS
West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
TO44; Contract: 06A2542

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	MATERIAL LOCATION / SAMPLE LOCATION	SAMPLE LAYER	MATERIAL DESCRIPTION	ANALYSIS RESULTS/ ASBESTOS TYPE	ASBESTOS PERCENTAGE (%)	EPA CATEGORY	IF ACM, ESTIMATED SQUARE FOOTAGE
04A	12/3/2020	246467010	THROUGHOUT	1	Gypsum Board, White/Brown (Associated with HA#5)	None Detected	NA	NA	NA
04B	12/3/2020	246467011	THROUGHOUT	1	Gypsum Board, White/Brown (Associated with HA#5)	None Detected	NA	NA	NA
04C	12/3/2020	246467012	THROUGHOUT	1	Gypsum Board, White/Brown (Associated with HA#5)	None Detected	NA	NA	NA
05A	12/3/2020	246467013	THROUGHOUT	1	Joint Compound, White (Associated with HA#4)	None Detected	NA	NA	NA
05B	12/3/2020	246467014	THROUGHOUT	1	Joint Compound, White (Associated with HA#4)	None Detected	NA	NA	NA
05C	12/3/2020	246467015	THROUGHOUT	1	Joint Compound, White (Associated with HA#4)	None Detected	NA	NA	NA
06A	12/3/2020	246467016	THROUGHOUT	1	Wall Texture, White (Associated with HA#4 and HA#5)	None Detected	NA	NA	NA
06B	12/3/2020	246467017	THROUGHOUT	1	Wall Texture, White (Associated with HA#4 and HA#5)	None Detected	NA	NA	NA
06C	12/3/2020	246467018	THROUGHOUT	1	Wall Texture, White (Associated with HA#4 and HA#5)	None Detected	NA	NA	NA

TABLE 1
ACM SAMPLE LOG AND ANALYTICAL RESULTS
West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
TO44; Contract: 06A2542

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	MATERIAL LOCATION / SAMPLE LOCATION	SAMPLE LAYER	MATERIAL DESCRIPTION	ANALYSIS RESULTS/ ASBESTOS TYPE	ASBESTOS PERCENTAGE (%)	EPA CATEGORY	IF ACM, ESTIMATED SQUARE FOOTAGE
07A	12/3/2020	246467019	COVEBASE THROUGHOUT	1	Adhesive, Yellow	None Detected	NA	NA	NA
07B	12/3/2020	246467020	COVEBASE THROUGHOUT	1	Adhesive, Yellow	None Detected	NA	NA	NA
07C	12/3/2020	246467021	COVEBASE THROUGHOUT	1	Adhesive, Yellow	None Detected	NA	NA	NA
08A	12/3/2020	246467022	RESTROOM WINDOW	1	Window Putty, Gray	None Detected	NA	NA	NA
08B	12/3/2020	246467023	RESTROOM WINDOW	1	Window Putty, Gray	None Detected	NA	NA	NA
08C	12/3/2020	246467024	RESTROOM WINDOW	1	Window Putty, Gray	None Detected	NA	NA	NA
09A	12/3/2020	246467025	BENEATH ROLLED CARPET (TAN)	1	Adhesive, Tan	None Detected	NA	NA	NA
09B	12/3/2020	246467026	BENEATH ROLLED CARPET (TAN)	1	Adhesive, Tan	None Detected	NA	NA	NA
09C	12/3/2020	246467027	BENEATH ROLLED CARPET (TAN)	1	Adhesive, Tan	None Detected	NA	NA	NA
10A	12/3/2020	246467028	BENEATH CARPET TILE (18"x18", GRAY)	1	Adhesive, Tan	None Detected	NA	NA	NA
10B	12/3/2020	246467029	BENEATH CARPET TILE (18"x18", GRAY)	1	Adhesive, Tan	None Detected	NA	NA	NA
10C	12/3/2020	246467030	BENEATH CARPET TILE (18"x18", GRAY)	1	Adhesive, Tan	None Detected	NA	NA	NA
11A	12/3/2020	246467031	RESTROOM COVEBASE	1	Adhesive, Yellow	None Detected	NA	NA	NA
11B	12/3/2020	246467032	RESTROOM COVEBASE	1	Adhesive, Yellow	None Detected	NA	NA	NA
11C	12/3/2020	246467033	RESTROOM COVEBASE	1	Adhesive, Yellow	None Detected	NA	NA	NA
12A	12/3/2020	246467034	RESTROOM FLOOR	1	Vinyl Floor Tile (VFT), White Mottled	None Detected	NA	NA	NA
12B	12/3/2020	246467035	RESTROOM FLOOR	1	VFT, White Mottled	None Detected	NA	NA	NA
12C	12/3/2020	246467036	RESTROOM FLOOR	1	VFT, White Mottled	None Detected	NA	NA	NA

TABLE 1
ACM SAMPLE LOG AND ANALYTICAL RESULTS
West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
TO44; Contract: 06A2542

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	MATERIAL LOCATION / SAMPLE LOCATION	SAMPLE LAYER	MATERIAL DESCRIPTION	ANALYSIS RESULTS/ ASBESTOS TYPE	ASBESTOS PERCENTAGE (%)	EPA CATEGORY	IF ACM, ESTIMATED SQUARE FOOTAGE
13A	12/3/2020	246467037	RESTROOM FLOOR	1	Adhesive, Orange (Associated with HA#12)	None Detected	NA	NA	NA
13B	12/3/2020	246467038	RESTROOM FLOOR	1	Adhesive, Orange (Associated with HA#12)	None Detected	NA	NA	NA
13C	12/3/2020	246467039	RESTROOM FLOOR	1	Adhesive, Orange (Associated with HA#12)	None Detected	NA	NA	NA
14A	12/3/2020	246467040	ABOVE 2'X4' CEILING TILE	1	Insulation, White/Black	None Detected	NA	NA	NA
14B	12/3/2020	246467041	ABOVE 2'X4' CEILING TILE	1	Insulation, White/Black	None Detected	NA	NA	NA
14C	12/3/2020	246467042	ABOVE 2'X4' CEILING TILE	1	Insulation, White/Black	None Detected	NA	NA	NA
15A	12/3/2020	246467043	ROOF	1	Roof Membrane, Black	None Detected	NA	NA	NA
				2	Roof Membrane, Black	None Detected	NA	NA	NA
				3	Roof Membrane, Orange	None Detected	NA	NA	NA
15B	12/3/2020	246467044	ROOF	1	Roof Membrane, Black	None Detected	NA	NA	NA
				2	Roof Membrane, Black	None Detected	NA	NA	NA
				3	Roof Membrane, Orange	None Detected	NA	NA	NA
15C	12/3/2020	246467045	ROOF	1	Roof Membrane, Black	None Detected	NA	NA	NA
				2	Roof Membrane, Black	None Detected	NA	NA	NA
				3	Roof Membrane, Orange	None Detected	NA	NA	NA
16A	12/3/2020	246467046	ROOF	1	Sealant, Gray	None Detected	NA	NA	NA
16B	12/3/2020	246467047	ROOF	1	Sealant, Gray	None Detected	NA	NA	NA
16C	12/3/2020	246467048	ROOF	1	Sealant, Gray	None Detected	NA	NA	NA

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ACM SAMPLE LOG AND ANALYTICAL RESULTS
West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
TO44; Contract: 06A2542

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17A	12/3/2020	246467049	EXTERIOR	1	Stucco, Multi-Color/ Beige	None Detected	NA	NA	NA
17B	12/3/2020	246467050	EXTERIOR	1	Stucco, Multi-Color/ Beige	None Detected	NA	NA	NA
17C	12/3/2020	246467051	EXTERIOR	1	Stucco, Multi-Color/ Beige	None Detected	NA	NA	NA
18A	12/3/2020	246467052	ROOF PENETRATIONS	1	Sealant, Black	Positive, Chrysotile	5%	ACM	10 SF
18B	12/3/2020	246467053	ROOF PENETRATIONS	1	Sealant, Black	Positive, Chrysotile	5%		
18C	12/3/2020	246467054	ROOF PENETRATIONS	1	Sealant, Black	Positive, Chrysotile	5%		
19A	12/4/2020	246467055	BREAK ROOM	1	Sink Undercoat, White	None Detected	NA	NA	NA
19B	12/4/2020	246467056	BREAK ROOM	1	Sink Undercoat, White	None Detected	NA	NA	NA
19C	12/4/2020	246467057	BREAK ROOM	1	Sink Undercoat, White	None Detected	NA	NA	NA
20A	12/4/2020	246467058	HVAC Ducting/Ceiling	1	Paint, Tan	Positive, Chrysotile	2.20%	ACM	>100 SF
20B	12/4/2020	246467059	HVAC Ducting/Ceiling	1	Paint, Tan	Positive, Chrysotile	1.50%		
21A	12/4/2020	246467060	EAST WINDOW FRAME	1	Paint, Pink/Brown	None Detected	NA	NA	NA
21B	12/4/2020	246467061	EAST WINDOW FRAME	1	Paint, Pink/Brown	None Detected	NA	NA	NA

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ACM SAMPLE LOG AND ANALYTICAL RESULTS
West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
TO44; Contract: 06A2542

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West Avenue Maintenance Station - Building C									
01A	12/3/2020	246466001	CEILING THROUGHOUT	1	Ceiling Tile, 2'x4', White/Gray	None Detected	NA	NA	NA
01B	12/3/2020	246466002	CEILING THROUGHOUT	1	Ceiling Tile, 2'x4', White/Gray	None Detected	NA	NA	NA
01C	12/3/2020	246466003	CEILING THROUGHOUT	1	Ceiling Tile, 2'x4', White/Gray	None Detected	NA	NA	NA
02A	12/3/2020	246466004	RESTROOMS	1	Adhesive, Orange (Associated with FRP)	None Detected	NA	NA	NA
				2	FRP, Off White	None Detected	NA	NA	NA
02B	12/3/2020	246466005	RESTROOMS	1	Adhesive, Orange (Associated with FRP)	None Detected	NA	NA	NA
				2	FRP, Off White	None Detected	NA	NA	NA
02C	12/3/2020	246466006	RESTROOMS	1	Adhesive, Orange (Associated with FRP)	None Detected	NA	NA	NA
				2	FRP, Off White	None Detected	NA	NA	NA
03A	12/3/2020	246466007	RESTROOM COVEBASE	1	Adhesive, White	None Detected	NA	NA	NA
03B	12/3/2020	246466008	RESTROOM COVEBASE	1	Adhesive, White	None Detected	NA	NA	NA
03C	12/3/2020	246466009	RESTROOM COVEBASE	1	Adhesive, White	None Detected	NA	NA	NA
04A	12/3/2020	246466010	COVEBASE THROUGHOUT	1	Adhesive, Cream	None Detected	NA	NA	NA
				2	Fiberboard, White/Brown	None Detected	NA	NA	NA
04B	12/3/2020	246466011	COVEBASE THROUGHOUT	1	Adhesive, Cream	None Detected	NA	NA	NA
				2	Fiberboard, White/Brown	None Detected	NA	NA	NA
04C	12/3/2020	246466012	COVEBASE THROUGHOUT	1	Adhesive, Cream	None Detected	NA	NA	NA
				2	Fiberboard, White/Brown	None Detected	NA	NA	NA

TABLE 1
ACM SAMPLE LOG AND ANALYTICAL RESULTS
West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
TO44; Contract: 06A2542

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	MATERIAL LOCATION / SAMPLE LOCATION	SAMPLE LAYER	MATERIAL DESCRIPTION	ANALYSIS RESULTS/ ASBESTOS TYPE	ASBESTOS PERCENTAGE (%)	EPA CATEGORY	IF ACM, ESTIMATED SQUARE FOOTAGE
05A	12/3/2020	246466013	BENEATH CARPET, GRAY	1	Adhesive, Tan	None Detected	NA	NA	NA
05B	12/3/2020	246466014	BENEATH CARPET, GRAY	1	Adhesive, Tan	None Detected	NA	NA	NA
05C	12/3/2020	246466015	BENEATH CARPET, GRAY	1	Adhesive, Tan	None Detected	NA	NA	NA
06A	12/3/2020	246466016	RESTROOMS	1	Vinyl Floor Sheetting (VFS), Brown Tile Pattern	None Detected	NA	NA	NA
06B	12/3/2020	246466017	RESTROOMS	1	VFS, Brown Tile Pattern	None Detected	NA	NA	NA
06C	12/3/2020	246466018	RESTROOMS	1	VFS, Brown Tile Pattern	None Detected	NA	NA	NA
07A	12/3/2020	246466019	RESTROOMS	1	VFS Adhesive, Yellow (Associated with HA#6)	None Detected	NA	NA	NA
07B	12/3/2020	246466020	RESTROOMS	1	VFS Adhesive, Yellow (Associated with HA#6)	None Detected	NA	NA	NA
07C	12/3/2020	246466021	RESTROOMS	1	VFS Adhesive, Yellow (Associated with HA#6)	None Detected	NA	NA	NA
08A	12/3/2020	246466022	ROOF	1	Roof Shingle, Gray/Black	None Detected	NA	NA	NA
				2	Felt Paper, Black	None Detected	NA	NA	NA
08B	12/3/2020	246466023	ROOF	1	Roof Shingle, Gray/Black	None Detected	NA	NA	NA
				2	Felt Paper, Black	None Detected	NA	NA	NA
08C	12/3/2020	246466024	ROOF	1	Roof Shingle, Gray/Black	None Detected	NA	NA	NA
				2	Felt Paper, Black	None Detected	NA	NA	NA

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West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
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09A	12/3/2020	246466025	THROUGHOUT	1	Gypsum Board, White/Brown	None Detected	NA	NA	NA
				2	Wall Panel, Light Brown	None Detected	NA	NA	NA
09B	12/3/2020	246466026	THROUGHOUT	1	Gypsum Board, White/Brown	None Detected	NA	NA	NA
				2	Wall Panel, Light Brown/Light Blue	None Detected	NA	NA	NA
09C	12/3/2020	246466027	THROUGHOUT	1	Gypsum Board, White/Brown	None Detected	NA	NA	NA
				2	Wall Panel, Light Brown	None Detected	NA	NA	NA
10A	12/3/2020	246466028	ROOF	1	Sealant, Gray/Black	None Detected	NA	NA	NA
10B	12/3/2020	246466029	ROOF	1	Sealant, Gray/Black	None Detected	NA	NA	NA
10C	12/3/2020	246466030	ROOF	1	Sealant, Gray/Black	None Detected	NA	NA	NA
11A	12/4/2020	246466031	BENEATH CARPET TILE (18"x18", BLUE)	1	Adhesive, Cream/Transparent	None Detected	NA	NA	NA
11B	12/4/2020	246466032	BENEATH CARPET TILE (18"x18", BLUE)	1	Adhesive, Cream/Transparent	None Detected	NA	NA	NA
11C	12/4/2020	246466033	BENEATH CARPET TILE (18"x18", BLUE)	1	Adhesive, Cream/Transparent	None Detected	NA	NA	NA
12A	12/4/2020	246466034	DECK AWNING/FRAME	1	Paint/Wood Stain, Brown	None Detected	NA	NA	NA
12B	12/4/2020	246466035	DECK AWNING/FRAME	1	Paint/Wood Stain, Brown	None Detected	NA	NA	NA

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West Avenue Maintenance Station Upgrade

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West Avenue Maintenance Station - Building D-F									
01A	12/3/2020	246468001	EXTERIOR WALL/ROOF	1	Transite, Gray	Positive, Chrysotile	15%	ACM	12,000 SF
01B	12/3/2020	246468002	EXTERIOR WALL/ROOF	1	Transite, Gray	Positive, Chrysotile	15%		
01C	12/3/2020	246468003	EXTERIOR WALL/ROOF	1	Transite, Gray	Positive, Chrysotile	15%		
02A	12/3/2020	246468004	EXTERIOR SEALANT	1	Panel Sealant, Black	None Detected	NA	NA	NA
02B	12/3/2020	246468005	EXTERIOR SEALANT	1	Panel Sealant, Black	None Detected	NA	NA	NA
02C	12/3/2020	246468006	EXTERIOR SEALANT	1	Panel Sealant, Black	None Detected	NA	NA	NA
03A	12/3/2020	246468007	EXTERIOR PANEL JOINTS / PENETRATIONS	1	Sealant, White	Positive, Chrysotile	10%	ACM	120 SF
03B	12/3/2020	246468008	EXTERIOR PANEL JOINTS / PENETRATIONS	1	Sealant, White	Positive, Chrysotile	10%		
03C	12/3/2020	246468009	EXTERIOR PANEL JOINTS / PENETRATIONS	1	Sealant, White	Positive, Chrysotile	10%		
04A	12/3/2020	246468010	EXTERIOR CONCRETE	1	Concrete, Gray	None Detected	NA	NA	NA
04B	12/3/2020	246468011	EXTERIOR CONCRETE	1	Concrete, Gray	None Detected	NA	NA	NA
04C	12/3/2020	246468012	EXTERIOR CONCRETE	1	Concrete, Gray	None Detected	NA	NA	NA
05A	12/3/2020	246468013	EXTERIOR WINDOWS	1	Window Putty, Gray	None Detected	NA	NA	NA
05B	12/3/2020	246468014	EXTERIOR WINDOWS	1	Window Putty, Gray	None Detected	NA	NA	NA
05C	12/3/2020	246468015	EXTERIOR WINDOWS	1	Window Putty, Gray	None Detected	NA	NA	NA
06A	12/3/2020	246468016	THROUGHOUT	1	Ceiling Tile, 2'x4', White/Gray	None Detected	NA	NA	NA
06B	12/3/2020	246468017	THROUGHOUT	1	Ceiling Tile, 2'x4', White/Gray	None Detected	NA	NA	NA
06C	12/3/2020	246468018	THROUGHOUT	1	Ceiling Tile, 2'x4', White/Gray	None Detected	NA	NA	NA

TABLE 1
ACM SAMPLE LOG AND ANALYTICAL RESULTS
West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
TO44; Contract: 06A2542

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	MATERIAL LOCATION / SAMPLE LOCATION	SAMPLE LAYER	MATERIAL DESCRIPTION	ANALYSIS RESULTS/ ASBESTOS TYPE	ASBESTOS PERCENTAGE (%)	EPA CATEGORY	IF ACM, ESTIMATED SQUARE FOOTAGE
07A	12/3/2020	246468019	ABOVE CEILING TILE	1	Insulation, White	None Detected	NA	NA	NA
				2	Insulation Wrap, Black/Brown	None Detected	NA	NA	NA
07B	12/3/2020	246468020	ABOVE CEILING TILE	1	Insulation, White	None Detected	NA	NA	NA
				2	Insulation Wrap, Black/Brown	None Detected	NA	NA	NA
07C	12/3/2020	246468021	ABOVE CEILING TILE	1	Insulation, White	None Detected	NA	NA	NA
				2	Insulation Wrap, Black/Brown	None Detected	NA	NA	NA
08A	12/3/2020	246468022	BREAK ROOM	1	Sink Undercoat, White	None Detected	NA	NA	NA
08B	12/3/2020	246468023	BREAK ROOM	1	Sink Undercoat, White	None Detected	NA	NA	NA
08C	12/3/2020	246468024	BREAK ROOM	1	Sink Undercoat, White	None Detected	NA	NA	NA
09A	12/3/2020	246468025	HVAC DUCTS	1	Sealant, White	None Detected	NA	NA	NA
09B	12/3/2020	246468026	HVAC DUCTS	1	Sealant, White	None Detected	NA	NA	NA
09C	12/3/2020	246468027	HVAC DUCTS	1	Sealant, White	None Detected	NA	NA	NA
10A	12/3/2020	246468028	THROUGHOUT	1	Gypsum Board, White/Brown (Associated with HA#11)	None Detected	NA	NA	NA
10B	12/3/2020	246468029	THROUGHOUT	1	Gypsum Board, White/Brown (Associated with HA#11)	None Detected	NA	NA	NA
10C	12/3/2020	246468030	THROUGHOUT	1	Gypsum Board, White/Brown (Associated with HA#11)	None Detected	NA	NA	NA

TABLE 1
ACM SAMPLE LOG AND ANALYTICAL RESULTS
West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
TO44; Contract: 06A2542

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	MATERIAL LOCATION / SAMPLE LOCATION	SAMPLE LAYER	MATERIAL DESCRIPTION	ANALYSIS RESULTS/ ASBESTOS TYPE	ASBESTOS PERCENTAGE (%)	EPA CATEGORY	IF ACM, ESTIMATED SQUARE FOOTAGE
11A	12/3/2020	246468031	THROUGHOUT	1	Joint Compound, White (Associated with HA#10)	None Detected	NA	NA	NA
11B	12/3/2020	246468032	THROUGHOUT	1	Joint Compound, White (Associated with HA#10)	None Detected	NA	NA	NA
11C	12/3/2020	246468033	THROUGHOUT	1	Joint Compound, White (Associated with HA#10)	None Detected	NA	NA	NA
12A	12/3/2020	246468034	THROUGHOUT	1	Wall Texture, White (Associated with HA#10 and HA#11)	None Detected	NA	NA	NA
12B	12/3/2020	246468035	THROUGHOUT	1	Wall Texture, White (Associated with HA#10 and HA#11)	None Detected	NA	NA	NA
12C	12/3/2020	246468036	THROUGHOUT	1	Wall Texture, White (Associated with HA#10 and HA#11)	None Detected	NA	NA	NA

TABLE 1
ACM SAMPLE LOG AND ANALYTICAL RESULTS
West Avenue Maintenance Station Upgrade

EA: 06-0X4300; PN: 06-1800-0065
TO44; Contract: 06A2542

FIELD SAMPLE ID	SAMPLE DATE	LABORATORY SAMPLE ID	MATERIAL LOCATION / SAMPLE LOCATION	SAMPLE LAYER	MATERIAL DESCRIPTION	ANALYSIS RESULTS/ ASBESTOS TYPE	ASBESTOS PERCENTAGE (%)	EPA CATEGORY	IF ACM, ESTIMATED SQUARE FOOTAGE
13A	12/4/2020	246468037	EXTERIOR	1	Paint, White	None Detected	NA	NA	NA
13B	12/4/2020	246468038	EXTERIOR	1	Paint, White	None Detected	NA	NA	NA

NOTES:

NA = Not Applicable or Not Applicable since no asbestos detected

Asbestos sample locations are depicted on the attached Figure.

Bulk sample analyses completed by polarized light microscopy (PLM).

Analytical documentation is in Appendix C

The laboratory provides a unique description of the sampled material based upon their observations under a microscope or interpretation of the chain of custody (COC).

For additional descriptions of the materials sampled, please refer to the field sample logs included in Appendix C.

RACM - Regulated Asbestos Containing Material

FINAL REPORT – UTILIZATION OF SMALL BUSINESS ENTERPRISES

OCR-SB03 (NEW 11/2021)

CONTRACT NUMBER	COUNTY	ROUTE	POST MILES	ESTIMATED CONTRACT AMOUNT	CONTRACT COMPLETION DATE
PRIME CONTRACTOR		BUSINESS ADDRESS		DEPARTMENT OF INDUSTRIAL RELATIONS REGISTRATION NO.	CONTRACTORS STATE LICENSE BOARD NO.

CONTRACT ITEM NO.	DESCRIPTION OF WORK PERFORMED OR MATERIALS PROVIDED	BUSINESS NAME AND ADDRESS	SMALL BUSINESS ENTERPRISE CERTIFICATION NUMBER	CONTRACT PAYMENTS			
				PAYMENT AMOUNT	DATE WORK COMPLETED	DATE OF FINAL PAYMENT	COMMENTS

ORIGINAL SMALL BUSINESS ENTERPRISES COMMITMENT: \$ _____

TOTAL:

List all Small Business Enterprises (SBE) regardless of tier, whether the firms were originally listed for contract participation. If actual SBE utilization (or item of work) was different than that approved at time of award, provide an explanation in the comments section. List actual amount paid to each SBE, even if different than originally listed for contract participation. If original SBE was substituted with another SBE, provide the date it was approved in the comments section.

I CERTIFY THAT THE ABOVE INFORMATION IS COMPLETE AND CORRECT

CONTRACTOR REPRESENTATIVE'S SIGNATURE	BUSINESS PHONE NUMBER	DATE
---------------------------------------	-----------------------	------

TO THE BEST OF MY KNOWLEDGE, THE ABOVE INFORMATION IS COMPLETE AND CORRECT

RESIDENT ENGINEER'S SIGNATURE	BUSINESS PHONE NUMBER	DATE
-------------------------------	-----------------------	------

Copy Distribution: **Original** – District Contract File **Copy** – Contractor **Copy** – Resident Engineer **Copy** – OBEO – email business.support.unit@dot.ca.gov

FINAL REPORT – UTILIZATION OF SMALL BUSINESS ENTERPRISES**INSTRUCTIONS**

OCR-SB03 (NEW 11/2021)

The intent of this form is for the prime contractor to certify payments made to Small Business Enterprises (SBE) participating in execution of the contract. The contractor must include information on all SBEs performing work or supplying materials even if the SBE firms were not listed at bid time.

The form has columns for entering specific contract items, descriptions of the services provided, the SBE business information and certification number, the dollar value of the work performed by the SBE, when the work of the SBE was completed, the date of the final payment to the SBE, and the original SBE commitment amount. The comments section of the form is for providing Caltrans with any additional information related to the SBE payments or substitutions.

If the original listed SBE was substituted with a small business, include in the comments section the date of the substitution approval.

Contractors must complete all columns for acceptance of the form. The contractor and the resident engineer sign and date the form indicating the information provided is complete and correct.



Invoice Detail Report

Record Number: B22-14656

Record Information: Miscellaneous Public Works-Fire Service Installation - Time & Materials

Address: 1283 N WEST AVE
FRESNO, CA 93728

APN: 44907003T

Invoice Number	Fee Item	Invoice Date	Transaction Amount	Status	Amount Paid	Balance Due
734932	Time & Materials - Fire Service - 8" short-side	09/29/2022	\$ 8300.00	INVOICED	\$ 0.00	\$8,300.00
TOTAL			\$8,300.00		\$0.00	\$8,300.00

The contractor is to contact Robert Vasquez at the City of Fresno 559-621-5356 to coordinate and schedule the work associated with the new 8" fire service connection allowing adequate time for the City's crew to mobilize and construct the service line from the main line to Caltrans right of way. Caltrans' contractor will be responsible for connection from the property line to the new building. This coordination and the work performed by the city should be accounted for in the projects proposed delayed start.



DEPARTMENT OF FORESTRY AND FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
Fire and Life Safety Division
602 E Huntington Dr, Suite A, Monrovia, CA 91016
(626) 305-1908

Application #
24-S-4733-C-PI

Alternate Application #

Permit Type
Construction (C)

PERMIT

HOW TO SCHEDULE AN INSPECTION

Contact Rebecca Lefor via email rebecca.lefor@fire.ca.gov

PERMIT #: 24-S-4733-C-PI **DATE ISSUED:** 03/26/2025

MASTER PERMIT #: **TYPE:** Construction (C)

APPLICANT: Reece Miller **AGENCY:** Transportation Dept. (CalTrans)

CONTRACTOR: **SFM #:** 89173-01-10-11-0281-10001

PROJECT ADDRESS: 1283 N West Ave, Fresno, CA 93778

PROJECT NAME: West Ave Maintenance Station Replacement (Building B Demolition)

EXPIRATION DATE: 03/26/2026

PERMIT NOTICE

THIS CARD MUST BE POSTED ON SITE. WEATHER PROTECTED AND VISIBLE FROM THE STREET. REQUESTED INSPECTIONS WILL NOT BE CONDUCTED IF THIS BUILDING PERMIT CARD IS NOT POSTED

PERMIT ISSUED BY:

Rebecca Lefor, Code Official

INSPECTION REQUIREMENTS

Nr.	INSPECTION TYPE	STATUS	SCHEDULE DATE	INSPECTOR
1	Other-Demolition			

EXPIRATION:

This Permit is valid from the date of issuance shown above and will be voided if the work described does not begin within 1 year of issuance of this Permit. If work on the above project ceases for longer than 1 year, this Permit is void and the applicant/owner will have to re-apply for a second permit.

All construction work on the project and any previous inspections may be re-inspected at any given time by the inspector to verify construction items stay in compliance after the original inspection and that damage has not occurred to any portion of the work previously inspected.

Permits for a Special Event are valid for the duration of the event, subject to a field inspection at the discretion of the Office of the State Fire Marshal. The Office of the State Fire Marshal reserves the right to change or cancel the event due to any unforeseen conditions.



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Fire and Life Safety Division
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Application #
24-S-4746-C-PI

Alternate Application #

Permit Type
Construction (C)

PERMIT

HOW TO SCHEDULE AN INSPECTION

Contact Rebecca Lefor via email rebecca.lefor@fire.ca.gov

PERMIT #: 24-S-4746-C-PI **DATE ISSUED:** 03/26/2025

MASTER PERMIT #: **TYPE:** Construction (C)

APPLICANT: Reece Miller **AGENCY:** Transportation Dept. (CalTrans)

CONTRACTOR: **SFM #:** 89174-01-10-11-0282-10001

PROJECT ADDRESS: 1283 N West Ave, Fresno, CA 93778

PROJECT NAME: West Ave Maintenance Station Replacement (Building C Demolition)

EXPIRATION DATE: 03/26/2026

PERMIT NOTICE

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PERMIT ISSUED BY:

Rebecca Lefor, Code Official

INSPECTION REQUIREMENTS

Nr.	INSPECTION TYPE	STATUS	SCHEDULE DATE	INSPECTOR
1	Other-Demoliton			

EXPIRATION:

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OFFICE OF THE STATE FIRE MARSHAL
Fire and Life Safety Division
602 E Huntington Dr, Suite A, Monrovia, CA 91016
(626) 305-1908

Application #
24-S-4747-C-PI

Alternate Application #

Permit Type
Construction (C)

PERMIT

HOW TO SCHEDULE AN INSPECTION

Contact Rebecca Lefor via email rebecca.lefor@fire.ca.gov

PERMIT #: 24-S-4747-C-PI **DATE ISSUED:** 03/26/2025

MASTER PERMIT #: _____ **TYPE:** Construction (C)

APPLICANT: Reece Miller **AGENCY:** Transportation Dept. (CalTrans)

CONTRACTOR: _____ **SFM #:** 89176-01-10-91-0283-10001

PROJECT ADDRESS: 1283 N West Ave, Fresno, CA 93778

PROJECT NAME: West Ave Maintenance Station Replacement (Tuff Shad Demolition)

EXPIRATION DATE: 03/26/2026

PERMIT NOTICE

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PERMIT ISSUED BY:

Rebecca Lefor, Code Official

Rebecca Lefor

INSPECTION REQUIREMENTS

Nr.	INSPECTION TYPE	STATUS	SCHEDULE DATE	INSPECTOR
1	Other-Demolition			

EXPIRATION:

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OFFICE OF THE STATE FIRE MARSHAL
Fire and Life Safety Division
602 E Huntington Dr, Suite A, Monrovia, CA 91016
(626) 305-1908

Application #
24-S-4748-C-PI

Alternate Application #

Permit Type
Construction (C)

PERMIT

HOW TO SCHEDULE AN INSPECTION

Contact Rebecca Lefor via email rebecca.lefor@fire.ca.gov

PERMIT #: 24-S-4748-C-PI **DATE ISSUED:** 03/26/2025

MASTER PERMIT #: _____ **TYPE:** Construction (C)

APPLICANT: Reece Miller **AGENCY:** Transportation Dept. (CalTrans)

CONTRACTOR: _____ **SFM #:** 89177-01-10-81-0284-10001

PROJECT ADDRESS: 1283 N West Ave, Fresno, CA 93778

PROJECT NAME: West Ave Maintenance Station Replacement (Building D,E,F Demolition)

EXPIRATION DATE: 03/26/2026

PERMIT NOTICE

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PERMIT ISSUED BY:

Rebecca Lefor, Code Official

Rebecca Lefor

INSPECTION REQUIREMENTS

Nr.	INSPECTION TYPE	STATUS	SCHEDULE DATE	INSPECTOR
1	Other-Demolition			

EXPIRATION:

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Fire and Life Safety Division
602 E Huntington Dr, Suite A, Monrovia, CA 91016
(626) 305-1908

Application #
22-S-4160-C-PI

Alternate Application #

Permit Type
Construction (C)

PERMIT

HOW TO SCHEDULE AN INSPECTION

Contact Rebecca Lefor via email rebecca.lefor@fire.ca.gov

PERMIT #: 22-S-4160-C-PI **DATE ISSUED:** 04/14/2025

MASTER PERMIT #: _____ **TYPE:** Construction (C)

APPLICANT: Reece Miller **AGENCY:** Transportation Dept. (CalTrans)

CONTRACTOR: _____ **SFM #:** 127717-01-10-11-0283-10002

PROJECT ADDRESS: 1283 N West Ave, Fresno, CA 93778

PROJECT NAME: West Ave Maintenance Station Replacement

EXPIRATION DATE: 04/14/2026

PERMIT NOTICE

THIS CARD MUST BE POSTED ON SITE. WEATHER PROTECTED AND VISIBLE FROM THE STREET. REQUESTED INSPECTIONS WILL NOT BE CONDUCTED IF THIS BUILDING PERMIT CARD IS NOT POSTED

PERMIT ISSUED BY:

Rebecca Lefor, Code Official

Rebecca Lefor

INSPECTION REQUIREMENTS

Nr.	INSPECTION TYPE	STATUS	SCHEDULE DATE	INSPECTOR
1	Underground Piping			
2	Underground Hydro Test			
3	Underground Flush			
4	Flow Test			
5	Exit Signs			
6	Lighting			
7	Ramps Landings			
8	Doors Hardware			
9	Water Supply Acceptance			



DEPARTMENT OF FORESTRY AND FIRE PROTECTION

OFFICE OF THE STATE FIRE MARSHAL

Fire and Life Safety Division

602 E Huntington Dr, Suite A, Monrovia, CA 91016
(626) 305-1908

Application #

22-S-4160-C-PI

Alternate Application #

Permit Type

Construction (C)

PERMIT

HOW TO SCHEDULE AN INSPECTION

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