C. W. La Monte Company Inc.

Soil and Foundation Engineers

UPDATED GEOTECHNICAL INVESTIGATION REPORT
Tentative Parcel Map No. 37121
Northeast Corner of Haun Road and Holland Road
Menifee, CA 92584

JOB NO. 16 6754

January 17, 2017

Prepared for:

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January 7, 2017 Job No. 16 6754

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SUBJECT: UPDATED GEOTECHNICAL INVESTIGATION REPORT
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Reference: *Geotechnical Due Diligence Study, 37-Acre Site Located at the Northeast Corner of Haun Road and Holland Road, Menifee Area of Riverside County, California,* by Lawson & Associates, dated September 2002

Preliminary Evaluation Report for Infiltration evaluation infiltration Lid Improvements Tentative Parcel Map No. 37121, Northeast Corner of Haun Road and Holland Road, Menifee, CA 92584, by C.W. La Monte Company, Inc., dated September 28, 2016

In accordance with your request we have performed an updated geotechnical investigation for the proposed restaurant project. A soils report for the development of the site was previously prepared by Lawson & Associates in 2002 and is referenced above. We have reviewed the referenced report by CW Soils. Generally, we concur with the conclusions and recommendations presented in the report. However, based on reinterpretation of the findings we have updated select recommendations based on the current building code and project under review. As of the date of this report C.W. La Monte Company, Inc. is the new Geotechnical Consultant of record and will be providing all necessary geotechnical consultation, plan review, design recommendations, inspection and testing services for this project.

A preliminary infiltration evaluation was conducted at the site by our firm (referenced above). Refer to this document for recommendations regarding stormwater improvements.

The accompanying report presents the findings of our study, and our conclusions and recommendations pertaining to the geotechnical aspects of construction of the proposed development. Based on the results of our investigation, it is our opinion that the development can be constructed as proposed, provided the recommendations of this report are followed and implemented during construction. Remedial grading is required to mitigate the presence of loose, surficial alluvial deposits. The site is underlain at depth with competent older alluvium.

If you should have any questions after reviewing this report, please do not hesitate to contact our office. This opportunity to be of professional service is sincerely appreciated.

Respectfully submitted,

C.W. La Monte Company Inc.

Jerry Redolfi, Project Geologist

Clifford W. La Monte,
R.C.E. 25241, G.E. 0495

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INRODUCTION AND PROJECT DESCRIPTION

The following report presents the results of an updated geotechnical report performed for the above residential project. The project site is a vacant and rectangular-shaped parcel of land, approximately 35 acres in size, and located at the northeast corner of Haun Road and Holland Road, in the City of Menifee, Riverside County, California. Figure Number 1 (attached) provides a vicinity map showing the approximate location of the property and area topography. An oblique aerial photograph is provided below.

Oblique Aerial Photograph of Project Site
View looking northeast.

This report updates the recommendations of the previously referenced report by Lawson & Associates (2002). We accept the findings of their field investigation and laboratory test results. However, the recommendations for site preparation have been somewhat modified, as necessary, based on our additional analysis and interpretation of the data. Recommendations dictated by current building code/s have been updated where appropriate.

The project is still in the planning phase; however, we understand the site will be developed to receive high density residential development with associated parking and street improvements and common area facilities. The proposed attached residential structures will be a maximum of three-stories in height and founded on conventional shallow foundations with slab-on-grade floors. Proposed grading will include cuts and fills of less than 5 feet.

To aid in the preparation of this report, we were provided with an untitled topographic map, by Albert A. Webb Associates, dated July 12, 2016. This plan from was used to prepare our Plot Plan and Geotechnical Map, attached as Figure No. 2A.

This report has been prepared for the exclusive use of the stated client and his design consultants for specific application to the project described herein. Should the project be changed in any way, the modified plans should be submitted to **C. W. La Monte Company, Inc.** for review to determine their conformance with our recommendations and to determine if any additional subsurface investigation, laboratory testing and/or recommendations are necessary. Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, expressed or implied.

SCOPE OF WORK

The scope of this investigation was limited to: surface reconnaissance, research of readily available geotechnical literature pertinent to the site, subsurface exploration, laboratory testing, engineering and geologic analysis of the field and laboratory data and preparation of this report. More specifically, the intent of this investigation was to:

- Review available engineering geotechnical reports and maps pertinent to the subject site.

- Identify the subsurface conditions of the site to the depths influenced by the proposed construction.

- Based on laboratory testing and our experience with similar sites in the area, identify the engineering properties of the various strata that may influence the proposed construction, including the allowable soil bearing pressures, expansive characteristics and settlement potential.

- Describe possible geotechnical factors that could have an effect on the site development.

- Provide mapped spectral acceleration parameters.

- Address potential construction difficulties that may be encountered due to soil conditions and groundwater, and provide recommendations concerning these problems.

- Recommend an appropriate foundation system for the proposed structure and develop soil engineering design criteria for the recommended foundation designs.

- Present our opinions in this written report, which includes in addition to our findings and recommendations, a site plan showing the location of our subsurface explorations, logs of the test trenches and a summary of our laboratory test results.

It was not within our scope of work to evaluate the site for hazardous materials contamination. Further, we did not perform laboratory tests to evaluate the chemical characteristics of the on-site soils in regard to their potentially corrosive impact to on-grade concrete and below grade improvements.

SITE DESCRIPTION

The project site is a nearly rectangular-shaped parcel of land approximately 35 acres in size and located at the northeast corner of Haun Road and Holland Road, Menifee, Riverside County, California. Figure Number 1 (attached) provides a vicinity map showing the approximate location of the property and boundary layout. The property is also bounded by a vacant land to the north, Interstate 215 to the east, and by a commercial storage facility and construction yard to the south. Vegetation on the site consists of a light growth of wild grasses, weeds and shrubs.

Topographically the property is relatively level with generally a northeast slope of less than 1 Percent. Elevations on the site range from a high of 1443 feet above mean sea level near the southwest corner of the property to a low of approximately 1435 at the northeast corner of the site.

An earthen drainage ditch enters the near the northwest portion of the property and forms a "loop" that crosses the southern end of the property. A steep embankment ascends from the north side of the "loop", which is up to 8 feet in height. This portion appears to conform to the original drainage alignment. The drainage alignment turns sharply to the north near the southeast property corner and then drains to the north in a linear direction parallel to the east property line and within the Interstate 215 easement. Based on review of historical topographic maps, it appears the original drainage alignment meandered to the east somewhere within the I-215 easement. The existing linear feature was constructed prior to 1942 (as determined by historic USGS topographic maps) to accommodate road construction. USGS maps older than 1942 do not provide any useful details on the drainage alignment.

FINDINGS

LOCAL GEOLOGY AND SUBSURFACE CONDITIONS

The site is overlain with a veneer recent alluvial valley deposits overlying Quaternary-aged older alluvial fan deposits. The site is underlain at depth with Mesozoic-aged granitic bedrock. Also, localized portions of the site may have been capped with minor amounts of fill soils. The encountered soil types are described individually below in order of increasing age.

Recent subsurface exploration included the placement of 12 backhoe excavated test pits with the logs attached as Figure 3A through 3F. Prior exploration by Lawson & Associates included 3 drilled test borings; logs of these borings are attached as Appendix C. Lawson & Associates advanced the borings on August 30, 2002. A

hollow-stem auger drill rig was utilized to drill the borings to depths ranging from 25 to 50 feet.

The exploratory test pit and boring locations are located on the Plot Plan and Geotechnical Map, attached as Figure No. 2A. A regional geologic map excerpt and local geologic map are is included as Figures No. 4A and 4B respectively.

Young Alluvial Valley Deposits (Qyv): The site is overlain with a veneer Young Alluvial Valley Deposits indicated to be aged Holocene to late Pleistocene. The recent alluvial materials generally consists of dark reddish brown , loose to medium dense, silty sands and soft to firm sandy silt. The alluvium is approximately 2 to 3 feet in thickness. The recent alluvial materials are potential compressible and should be removed and recompacted as discussed in the *Site Preparation* section of this report.

Old Alluvial Fan Deposits (Qof): According to the Preliminary Digital Geologic Map Of The Santa Ana 30' X 60' Quadrangle, Southern California (2004), the site is underlain with old alluvial fan deposits described as "late to middle Pleistocene, sandy alluvium; reddish brown, indurated, surface of most fans slightly dissected".

The encountered Qof underlie the young alluvium and consists primarily of dark reddish brown, medium dense to dense, clayey sands and stiff, clayey silt and sandy clay. The Qof materials are generally considered competent for the support of proposed improvements and/or additional fill. However, the upper portion of this soil profile **at localized areas** can be highly desiccated, which may require additional processing.

Granitic Bedrock: Decomposed granitic bedrock was encountered in Lawson & Associates, Test boring B-1 at a depth of 40 feet below the existing grade. The encountered granitics consisted of gray-black, very dense, poorly sorted sand.

Ground Water: The Lawson & Associates boring exploration encountered groundwater at a depth approximately 47 feet below the existing grade. The stabilized water level in the boring was at 42 feet. No groundwater was encountered in our shallow test pit excavations. However, localized areas of near-surface saturated soils were encountered while traversing the site with the excavating equipment. The saturation is attributed to recent abundant rainfall.

Please note that temporary perched water may develop locally within the low-lying areas of the site if grading is performed during winter months or early spring months and/or after periods of prolonged significant precipitation.

REGIONAL GEOLOGY

Menifee lies in the northern part of the Peninsular Ranges Geomorphic Province, which is characterized by northwest-trending mountains and valleys extending from the Los Angeles Basin on the north southeast into Baja California. The province is bounded by the San Andreas Fault Zone on the east and extends offshore to the west. The northern, onshore part of the province is divided into three major fault-bounded blocks that are, from west to east, the Santa Ana Mountains block, the Perris block, and the San Jacinto Mountains block. The Perris block, where Menifee is located, is bounded by the Elsinore fault zone on the southwest and the San Jacinto fault zone on the northeast. In spite of being surrounded by active fault systems and growing mountain ranges, the Perris block is an area of lower relief that has remained relatively stable and undeformed for thousands of years.

Movements along the San Andreas, San Jacinto, and Elsinore Faults have elevated the San Jacinto and Santa Ana Mountains blocks and down-dropped the Perris block. In response, the uplifted mountains and hills are rapidly eroding (in geologic time), shedding sand, silt, and gravel and forming fans that are filling the valleys. The alluvial fans of the Menifee area have a range of ages coincident with the rise of the nearby mountains (early Pleistocene to Holocene, approximately 1 million years to less than 11,000 years old).' Deposition is still ongoing, with the youngest sediments filling the active drainage channels and floodplains. At depth, this sequence of alluvial sediments is underlain by crystalline rock similar to that exposed in the surrounding hills and mountains.

The City encompasses numerous brush-covered hills and low mountains surrounded by a series of interconnected, broad, nearly flat-bottomed valleys. The steepest slope and largest cluster of hillsides can be found north of Menifee Lakes, traveling northward across McCall Boulevard. Quail Valley also has a significant number of steep hillsides that influence development patterns in the area. Elevations in the City range from about 1,400 feet above mean sea level (amsl) for the valley floor to approximately 2,600 feet amsl for the local hills; Bell Mountain is 1,850 amsl. Menifee includes parts of three valleys: the Perris Valley in the north end of the City, the Menifee Valley in the central part of the City, and the Paloma Valley in the southeast area.

FAULTING AND SEISMICITY

No major faults are known to traverse the subject site but it should be noted that much of Southern California, including the Riverside County area, is characterized by a series of Quaternary-age fault zones, which typically consist of several individual, en echelon faults that generally strike in a south easterly – northwesterly direction. Some of these fault zones (and the individual faults within the zones) are classified as active.

According to the criteria of the California Division of Mines and Geology, active fault zones are those, which have shown conclusive evidence of faulting during the Holocene Epoch (the most recent 11,000 years). An excerpt from the *2010 Fault Activity Map of California* is attached as Figure No. 5A.

Significant ground shaking will likely impact the site within the design life of the proposed project, due to the project being located in a seismically active region. The geologic structure of the entire southern California area is dominated by northwest-trending faults associated with the San Andreas Fault system. The San Andreas Fault system accommodates for most of the right lateral movement associated with the relative motion between the Pacific and North American tectonic plates.

Based on our review of published and unpublished geotechnical maps and literature pertaining to site and regional geology, the closest active fault to the site is the Elsinore fault located approximately 13 kilometers to the southwest. A reproduction of Exhibit S-1 from the City of Menifee Safety Element is attached as Figure No. 5B and shows the location of the site relative to the Elsinore Fault Zone. The San Jacinto fault is located approximately 19 kilometers to the northeast. Both of these faults are capable of producing a large magnitude earthquake. Table 1 below lists most of the major active faults within 30 miles that are likely to affect the project site.

Several short, unnamed and inactive fault breaks are located within a 5 mile radius of the site (as shown Figure No. 5A). The subject property is not located within an Alquist-Priolo Earthquake Fault Zone, established by the State of California to restrict the construction of habitable structures across identifiable traces of known active. No Alquist-Priolo maps cover the project location.

TABLE 1
Summary of Major Active Faults

Fault Name	Approximate Distance From Site miles	Maximum Moment Magnitude
ELSINORE - (TEMECULA)	7	6.8
SAN JACINTO - SAN JACINTO	13	6.9
ELSINORE - (GLEN IVY)	8	6.8
SAN JACINTO—ANZA	14	7.2
ELSINORE—(JULIAN)	20	7.1
SAN JACINTO - SAN BERNARDINO	26	6.7
CHINO—CENTRAL AVE. (Elsinore)	28	6.7
SAN ANDREAS—Whole M-la	29	8.0
SAN ANDREAS - SB-Coach. M-lb-2	29	7.7
SAN ANDREAS - SB-Coach. M-2b	29	7.7

The County of Riverside Environmental Impact Report No. 521 (2014) provides estimates of several key groundshaking parameters near the fault rupture zones for the Riverside MCE, expressed as a percentage of gravity, are presented in their

Table 4.12-A (Probable Earthquake Scenarios for Riverside County. Peak ground acceleration, which is the maximum acceleration achieved at a site, often turns out to be the earthquake effect that predicates the most damage to buildings. Wave periods of *03* second and 1.0 second are the lengths of seismic waves that commonly damage structures. All of these values are well above the threshold for heavy damage. Table 4.12-A is reproduced below:

Table 4.12-A: Probable Earthquake Scenarios for Riverside County

Event		Maximum Magnitude (M_w)	Chance of Occurring in 30 Years	Comments
Fault	Segment			
San Andreas	San Bernardino	7.3	28%	Very high intensity groundshaking throughout the San Bernardino Valley, including north central Riverside County.
San Andreas	Coachella	7.1	22%	Very high intensity groundshaking throughout the Coachella Valley, affecting desert resort communities and agriculture.
San Jacinto	San Jacinto Valley	6.9	43%	Highest probability of occurrence of any Southern California fault. Brought closer to failure as a result of stress field changes caused by the 1992 Landers earthquake.
San Jacinto	Anza Segment	7.2	17%	This event would be very destructive within the communities of Hemet and San Jacinto.
Elsinore	Temecula Segment	6.8	16%	Has not produced any significant earthquakes in historic time.
Elsinore	Glen Ivy Segment	6.8	16%	Would be very destructive in the communities of Lake Elsinore, Murrieta and Temecula.
Whittier	Whittier	6.8	5%	Has not broken in over 1,600 years (WGCEP, 1995). Would cause significant landslide and lifeline damage in the Chino Hills - Corona area.

Notes: Maximum Magnitude: the magnitude of an earthquake event based on the amount of energy released. This measurement is more accurate for large earthquake events.
Source: Riverside County General Plan, Appendix H - Natural Hazard Mapping, Analysis and Mitigation: A Technical Background Report in Support of the Riverside County General Plan, 2000.

SEISMIC DESIGN PARAMETERS

We have re-determined the mapped spectral acceleration values for the site utilizing U.S. Seismic Design Maps, Version 3.1.0 (July 11, 2013) from the USGS website. The seismic design parameters are specific to the site and provide a solution for Section 1613 of the 2012 IBC (which uses USGS hazard data available in 2008).

The analysis included the following input parameters:

Design Code Reference Document: ASCE 7-10 Standard

Site Soil Classification: Site Class D

Risk Category: I or II or III

Site Coordinates: 33.6704°N, 117.17452°W

The values generated by the *Design Map Report* are provided in the following table:

TABLE II
Site Coefficients and Spectral Response Acceleration Parameters

S_s	S_1	F_a	F_v	S_{ms}	S_{m1}	S_{ds}	S_{d1}
1.5	0.60	1.0	1.5	1.5	0.90	1.0	0.60

The values are not significantly different than was provided in the referenced report. Application to the criteria in Table I for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if ever seismic shaking occurs. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

GEOLOGIC HAZARDS

No geologic hazards of sufficient magnitude to preclude development of the site as we presently contemplate it are known to exist. In our professional opinion and to the best of our knowledge, the site is suitable for the proposed development.

Ground Shaking

A likely geologic hazard to affect the site is ground shaking as a result of movement along one of the major active fault zones mentioned above. Probable ground shaking levels at the site could range from slight to severe, depending on such factors as the magnitude of the seismic event and the distance to the epicenter. It is likely that the site will experience the effects of at least one moderate to large earthquake during the life of the proposed structure. Construction in accordance with the minimum requirements of the California Building Code, the Structural Engineers Association of California lateral force design requirements, and local governing agencies should minimize potential damage due to seismic activity.

Landslide Potential

According to the City of Menifee General Plan, Exhibit S-3 (Liquefaction and Landslides) the site **is not** located in areas where local topographic and geological conditions suggest the potential for earthquake-induced landslides. Due to the sites level topography, landsliding does not present a significant hazard.

Liquefaction

According to Exhibit S-3 from the City of Menifee, Safety Element (Liquefaction and Landslides) the site is not located in an area where local geological and groundwater conditions suggest a potential for liquefaction. Our site specific geotechnical investigation indicates that the materials at the site are not subject to significant liquefaction due to such factors as soil density, grain-size distribution, and groundwater conditions.

Flooding

According to Exhibit S-5 from the City of Menifee, Safety Element (Flood Hazards) the site is located within Flood Zone AE. Zone AE corresponds to the 100-year flood areas, as determined by detailed hydraulic analyses (See FEMA Flood Insurance Rate Maps and FEMA Flood Insurance Study for Riverside County for Base Flood Elevations). In most cases, base flood elevations are shown at selected intervals.

Tsunamis and Seiches

Tsunamis are great sea waves produced by submarine earthquakes or volcanic eruptions. Based on the project's inland and elevated location, the site is considered to possess a very low risk potential from tsunamis.

Seiches are periodic oscillations in large bodies of water such as lakes, harbors, bays or reservoirs. The site is considered to have a very low risk potential for damage caused by seiches.

CONCLUSIONS AND DICUSSIONS

In general, we found the subject property suitable for the proposed construction, provided the recommendations provided herein are followed. The most significant findings and geotechnical conditions that will influence site development are summarized below. Detailed recommendations for precede this section of the report.

- The building site is overlain with about 3 to 5 feet poorly consolidated, young alluvium and surficially desiccated older alluvium. These surficial materials are considered unsuitable in their present condition to support structural fill and/or settlement sensitive improvements. As such, all recent alluvium and any desiccated materials not removed by planned site grading will need to be removed from areas to support fills and/or settlement sensitive improvements and, where necessary to achieve planned site grades, be replaced as properly compacted fill.

- The soils underlying the site are considered to possess a very low to moderate expansive potential as determined by ASTM D4829. The foundation

recommendations provided in this report reflect this potentially expansive condition.

- Since the recommended grading includes a generally uniform compacted fill mat under the proposed structures, transition conditions will not impact the proposed development.

- Please note that the young alluvial soils mantling site can be saturated during periods of prolonged precipitation. Therefore, it would be optimal to avoid performing the remedial grading operations during such wet conditions. Once the surficial material is recompacted by remedial grading, the infiltration characteristics will be reduced sufficiently so as not to recreate such saturated conditions after site development.

RECOMMENDATIONS

Earth Work and Grading

Specification Guidelines
All grading should conform to the guidelines presented in this report, Sections 1804 and Appendix "J" of the current California Building Code, the minimum requirements of the City of Menifee, and the Standard Grading and Construction Specifications, Appendix "A", attached hereto, except where specifically superseded in the text of this report. Prior to grading, a representative of C.W. La Monte Company Inc. should be present at the preconstruction meeting to provide additional grading guidelines, if necessary, and to review the earthwork schedule.

Observation and testing by the soil engineer is essential during the grading operations. This allows the soil engineer to confirm the conditions anticipated by our investigation, to allow adjustments in design criteria to reflect the actual field conditions exposed, and to determine that the grading proceeds in general accordance with the recommendations contained herein

Fill Suitability
On-site excavated materials may be used as compacted fill material or backfill. The on-site materials are anticipated to posses a very low- to low-expansion potential. Any potential import soil sites should be evaluated and approved by the Geotechnical Consultant prior to importation. At least two working days notice of a potential import source should be given to the Geotechnical Consultant so that appropriate testing can be accomplished. The type of material considered most desirable for import is a non-detrimentally expansive granular material with some silt or clay binder.

Site Preparation
Site preparation should begin with the removal of all vegetation and other deleterious materials from the portion of lot that will be graded and that will receive improvements. This should include all root balls from the shrubs removed and all significant root material. The resulting materials should be disposed of off-site.

After clearing and grubbing, site preparation should continue with the removal all existing loose alluvium and desiccated materials from areas that will be graded or that will support settlement-sensitive improvements. As the project is presently planned, topsoil removals are, generally, expected to vary from about 3 to 5 feet. **Please note the estimated removal depths may be thicker in localized areas.** Where possible, the removals should extend laterally a minimum of 5 feet beyond the structure perimeter or to a distance equal to the depth of removals (whichever is greater). Lateral removals shall also comply with attached Figure No. 6. The loose soil shall be removed to expose firm natural ground as determined by our field representative during grading.

Where existing grade is at a slope steeper than five units horizontal to one unit vertical (20-percent slope) and the depth of the fill exceeds 5 feet (1524 mm) benching shall be provided in accordance with Figure J107.3 (reproduced below) of the 2010 California Building Code (A copy is attached to the back of Appendix A). A key shall be provided which is at least 10 feet (3048 mm) in width and 2 feet (610 mm) in depth. All removal areas should be approved by a representative of our office prior to the placement of fill or improvements.

Figure J107.3 from the 2010 California Building Code

Prior to placing any fill soils or constructing any new improvements in areas that have been cleaned out to receive fill, the exposed soils should be scarified to a depth of approximately 6 to 12 inches, be moisture conditioned, and compacted to at least 90 percent relative compaction.

Excavation Characteristics
The on-site topsoil materials will excavate with easy to moderate effort using typical heavy equipment. No significant amounts of oversize materials (greater than 8 inches) are anticipated.

Compaction and Method of Filling
All structural fill placed at the site should be compacted to a relative compaction of at least 90 percent of its maximum dry density as determined by ASTM Laboratory Test D1557-91 guidelines. Fills should be placed at or slightly above optimum moisture content, in lifts six to eight inches thick, with each lift compacted by mechanical means. Fills should consist of approved earth material, free of trash or debris, roots, vegetation, or other materials determined to be unsuitable by our soil technicians or project geologist. All material should be free of rocks or lumps of soil in excess of twelve inches in maximum width. However, in the upper two feet of pad grade, no rocks or lumps of soil in excess of six inches should be allowed.

Utility trench backfill within five feet of the proposed structure and beneath all pavements and concrete flatwork should be compacted to a minimum of 90 percent of its maximum dry density. The upper one-foot of pavement subgrade and base material should be compacted to at least 95 percent relative density. All grading and fill placement should be performed in accordance with the local Grading Ordinance, the 2010 California Building Code, and the *Standard Grading and Construction Specifications,* attached hereto as Appendix A.

Surface Drainage
Per Section 1804 of the California Building Code, in general, the ground immediately adjacent to foundations shall be sloped away from the building at a slope of not less than one unit vertical in 20 units horizontal (5-percent slope) for a minimum distance of 10 feet (3048 mm) measured perpendicular to the face of the wall. If physical obstructions or lot lines prohibit 10 feet (3048 mm) of horizontal distance, a 5-percent slope shall be provided to an approved alternative method of diverting water away from the foundation. Swales used for this purpose shall be sloped a minimum of 2 percent where located within 10 feet (3048 mm) of the building foundation. Impervious surfaces within 10 feet (3048 mm) of the building foundation shall be sloped a minimum of 2 percent away from the building.

Exceptions are allowed where climatic or soil conditions warrant, the slope of the ground away from the building foundation shall be permitted to be reduced to not less than one unit vertical in 48 units horizontal (2-percent slope). The procedure used to establish the final ground level adjacent to the foundation shall account for additional settlement of the backfill.

Erosion Control

In addition, appropriate erosion-control measures shall be taken at all times during construction to prevent surface runoff waters from entering footing excavations, ponding on finished building pad or pavement areas, or running uncontrolled over the tops of newly-constructed cut or fill slopes. Appropriate Best Management Practice (BMP) erosion control devices should be provided in accordance with local and federal governing agencies.

Temporary Cut Slopes

No "long term" temporary excavations over 5 feet in height are anticipated during site grading. However, it should be noted that the contractor is solely responsible for designing and constructing stable, temporary excavations and may need to shore, slope, or bench the sides of trench excavations as required to maintain the stability of the excavation sides where friable sands or loose soils are exposed. The contractor's "responsible person", as defined in the OSHA Construction Standards for Excavations, 29 CFR, Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety process. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

Foundations

General

Dimensions and Embedment

Conventional shallow and/or deepened foundations may be utilized in the support of the proposed structures. Foundations should be constructed in accordance with the recommendations of the project structural engineer and the minimum requirements of the California Building Code. The following table provides suggested foundation dimensions:

TABLE II - FOUNDATION DIMENSIONS

Number of Floors Supported by The Foundation	Width of Footing (Inches)	Embedment Depth Below Undisturbed Soil*
1	12	18
2	15	18
3	18	24

* Assumes moderately expansive as-graded condition

Isolated pad footings should have a minimum width of 24 inches. Isolated footings and wide door openings should be provided with a tie beam.

Soil Bearing Value
A bearing capacity of 2000 psf may be assumed for said footings when founded a minimum of 12 inches into properly compacted fill. This bearing capacity may be increased by one-third, when considering wind and/or seismic loading.

Lateral Load Resistance
Lateral loads against foundations may be resisted by friction between the bottom of the footing and the supporting soil, and by the passive pressure against the footing. The coefficient of friction between concrete and soil may be considered to be 0.35. The passive resistance may be considered to be equal to an equivalent fluid weight of 300 pounds per cubic foot. This assumes the footings are poured tight against undisturbed soil. If a combination of the passive pressure and friction is used, the friction value should be reduced by one-third.

Foundation Reinforcement
It is recommended that continuous footings be reinforced with at least four No. 5 steel bar; two reinforcing bars shall be located near the top of the foundation, and two bars near the bottom.

The steel reinforcement will help prevent damage due to normal, post construction settlement or heaving, resulting from variations in the subsurface soil conditions. The minimum reinforcement recommended herein is based on soil characteristics only and is not intended to replace reinforcement required for structural considerations).

Anticipated Settlements
Based on our experience with the soil types on the subject site, the soils should experience settlement in the magnitude of less than 0.5 inch under proposed structural loads.

It should be recognized that minor hairline cracks normally occur in concrete slabs and foundations due to shrinkage during curing and/or redistribution of stresses and some cracks may be anticipated. Such cracks are not necessarily an indication of excessive vertical movements.

Horizontal Distance of Footings from Slopes

According to Section 1808.7 (Foundation on or adjacent to slopes), of the 2013 California Building Code foundations on or adjacent to slope surfaces shall be founded in firm material with an embedment and set back from the slope surface sufficient to provide vertical and lateral support for the foundation without detrimental

settlement. Generally, setbacks should conform to Figure 1808A.7.1, which is reproduced below. Where the slope is steeper than 1 unit vertical in 1 unit horizontal (100-percent slope), the required setback shall be measured from an imaginary plane 45 degrees to the horizontal, projected upward from the toe of the slope.

Figure 1808.7.1 from the 2013 CBC

Foundation Excavation Observation

The general contractor is responsible for implementing the foundation recommendations in this report. All foundation excavations should be observed by the Geotechnical Consultant prior to placing reinforcing steel and formwork in order to verify compliance with the foundation recommendations presented herein. All footing excavations should be excavated neat, level and square. All loose or unsuitable material should be removed prior to the placement of concrete.

Foundation Plans Review

The finalized, foundation plans should be submitted to this office for review to ascertain that the recommendations provided in this report have been followed and that the assumptions utilized in its preparation are still valid. Additional or amended recommendations may be issued based on this review.

Post Tensioned Foundation Systems

In lieu of the proceeding foundation recommendations, post tensioned slabs are also appropriate for the proposed structures. Post tension foundations are generally considered to be a superior foundation system, but may be slightly higher in overall cost. Parameters for the design of a post tensioned foundation system can be provided on request.

CONCRETE SLABS-ON-GRADE

It is our understanding that the floor system of the proposed structure will consist of concrete slab-on-grade floors. We anticipate that the concrete slabs-on-grade will be supported by non-detrimentally expansive, competent formation and/or properly compacted fill material. The following recommendations assume that the subgrade soils have been prepared in accordance with the recommendations presented in the

"Grading and Earthwork" section of this report. In addition, the following recommendations are considered the minimum slab requirements based on the soil conditions and are not intended in lieu of structural considerations.

Interior Floor Slabs
It is our opinion that the minimum floor slab thickness should be five inches (actual). The floor slab should be reinforced with at least No. 4 bars placed at 18 inches on center each way. The slab reinforcing bars should extend at least six inches into the perimeter footings and be integrally tied to the foundation steel. Slab reinforcing should be supported by chairs and be positioned at mid-height in the floor slab.

Exterior Concrete Flatwork
On-grade exterior concrete slabs for walks and patios should have a thickness of four inches and should be reinforced with at least No. 3 reinforcing bars placed at 24 inches on center each way. Exterior slab reinforcement should be placed approximately at mid-height of the slab. Reinforcement and control joints should be constructed in exterior concrete flatwork to reduce the potential for cracking and movement. Joints should be placed in exterior concrete flatwork to help control the location of shrinkage cracks. Spacing of control joints should be in accordance with the American Concrete Institute specifications. Foundations they should be doweled into the footings.

Subgrade Preparation

At least the upper two feet of subgrade soils underlying concrete flatwork should be compacted at near optimum moisture to a minimum of 90 percent of the maximum dry density as determined by ASTM test method D1557-00. Prior to placing concrete, the subgrade soils should be moistened to at least optimum or slightly above optimum moisture content

SLAB MOISTURE BARRIERS

A moisture barrier system is recommended beneath any new interior slab-on-grade floors with moisture sensitive floor coverings or coatings to help reduce the upward migration of moisture vapor from the underlying subgrade soil. A properly selected and installed vapor retarder is essential for long-term moisture resistance and can minimize the potential for flooring problems related to excessive moisture.

Interior floor slabs should be underlain by a minimum 10-mil thick moisture retarder product over a two-inch thick layer of clean sand (Please note, additional moisture reduction and/or prevention measures may be needed, depending on the performance requirements for future floor covering products). The moisture retarder product used should meet or exceed the performance standards dictated by ASTM E

1745 Class A material and be properly installed in accordance with ACI publication 302 (*Guide to Concrete Floor and Slab Construction*) and ASTM E1643 (*Standard Practice for Installation of Water Vapor Retarder Used in Contact with Earth or Granular Fill Under Concrete Slabs).* Ultimately, the design of the moisture retarder system and recommendations for concrete placement and curing are purview of the structural engineer, in consideration of the project requirements provided by the project architect and developer.

Moisture Retarders and Installation

Vapor retarder joints must have at least 6-inch-wide overlaps and be sealed with mastic or the manufacturer's recommended tape or compound. No heavy equipment, stakes or other puncturing instruments should be used on top of the liner before or during concrete placement. In actual practice, stakes are often driven through the retarder material, equipment is dragged or rolled across the retarder, overlapping or jointing is not properly implemented, etc. All these construction deficiencies reduce the retarders' effectiveness. It is the responsibility of the contractor to ensure that the moisture retarder is properly placed in accordance with the project plans and specifications and that the moisture retarder material is free of tears and punctures and is properly sealed prior to the placement of concrete.

Interior Slab Curing Time

Following placement of concrete floor slabs, sufficient drying time must be allowed prior to placement of floor coverings. Premature placement of floor coverings may result in degradation of adhesive materials and loosening of the finish floor materials. Prior to installation, standardized testing (calcium chloride test and/or relative humidity) should be performed to determine if the slab moisture emissions are within the limits recommended by the manufacturer of the specified floor-covering product.

DESIGN PARAMETERS FOR EARTH RETAINING STRUCTURES

Lateral Pressure: Refer to the *FOUNDATIONS* section of this report for lateral pressure values.

Active Pressure for Retaining Walls: Lateral pressures acting against masonry and cast-in-place concrete retaining walls can be calculated using soil equivalent fluid weight. The equivalent fluid weight value used for design depends on allowable wall movement. Walls that are free to rotate at least 0.5 percent of the wall height can be designed for the active equivalent fluid weight. Retaining walls that are restrained at the top (such as basement walls), or are sensitive to movement and tilting should be designed for the at-rest equivalent fluid weight.

Values given in the table below are in terms of equivalent fluid weight and assume a triangular distribution. The provided equivalent fluid weight values assume that either on-site on imported granular soils consisting of sand, or gravel (SP, SW, SM, and GP) will be used as backfill. Clay soils (CL-CH) **may not** be used as retaining wall backfill.

Table III
Equivalent Fluid Weights (efw) For Calculating Lateral Earth Pressures (Using Non-detrimentally Expansive Backfill)

Conditions	Level Backfill (pcf) Backfill-SM/SC Soil
Active	30
At-Rest	60

Vehicular Loads: In the case of vehicular loads coming closer than one-half the height of the wall, we recommend a live load surcharge pressure equal to not less than 2 feet of soil surcharge with an average unit weight of 125 pcf.

Retaining Wall Foundations: Retaining wall foundations shall be designed by the structural engineer based on the appropriate parameters provided in this report.

Waterproofing and Drainage: In general, retaining walls should be provided with a drainage system adequate to prevent the buildup of hydrostatic forces and be waterproofed as specified by the project architect. Also refer to American Concrete Institute ACI 515.R (A Guide to the Use of Waterproofing, Damp Proofing, Protective and Decorative Barriers Systems for Concrete).

Positive drainage for retaining walls should consist of a vertical layer of permeable material positioned between the retaining wall and the soil backfill. Such permeable material may be composed of a composite drainage geosynthetic or a natural permeable material such as crushed rock or clean sand at least 12 inches thick and capped with at least 12 inches of backfill soil. The gravel should be wrapped in a geosynthetic filter fabric. Provisions should be made for the discharge of any accumulated groundwater. The selected drainage system should be provided with a perforated collection and discharge pipe placed along the bottom of the permeable material near the base of the wall. The drain pipe should discharge to a suitable drainage facility. If lateral space (due to property line constraints) is insufficient to allow installation of the gravel-wrapped "burrito" drain, a geocomposite system may be used in lieu of the typical gravel and pipe subdrain system. TenCate's MiraDrain (and similar products) provide a "low-profile" drainage system that requires minimal lateral clearance for installation. MiraDRAIN and similar products may also be incorporated into a waterproofing system and provide a slab drainage system (Please note that supplemental manufacturer's details will be required to provide a

waterproofed system).

Backfill: All backfill soils should be compacted to at least 90% relative compaction. Imported or on-site sands, gravels, silty sand materials are suitable for retaining wall backfill. The wall should not be backfilled until the masonry has reached an adequate strength. Soil with an expansion index (EI) of greater than 50 should not be used as backfill material behind retaining walls, which includes the predominant on-site material.

PAVEMENT RECOMMENDATIONS

Asphalt Pavement Section

Final pavement design should be based upon sampling and testing of post graded conditions. For preliminary design and estimating purposes, the following pavement structural sections can be used for the range of likely Traffic Index wheel loads. The preliminary sections are based on an assumed R-Value of 30, which in our opinion is a conservative estimate for local material.

TABLE IV

Preliminary Pavement Design			
R-Value*	Traffic Index	Asphaltic Concrete Thickness (Inches)	Aggregate Base Thickness (Inches)
35	4	3	4
	6	3.5	8.5
	7	4	10.5

* Estimated value-testing required during site grading.

Site Preparation for Pavement Areas

Prior to receiving the pavement section the upper 8 to 12 inches of existing subgrade should be scarified, moisture conditioned to above optimum moisture requirements and compacted to at least 95 percent of the maximum dry density. The aggregate base material should also be compacted to at least 95 percent of its maximum dry density. All materials and methods of construction should conform to good engineering practices and the minimum standards set forth by the City of Temecula.

FIELD INVESTIGATION

Twelve exploratory test excavations were placed on the site using a tractor-mounted backhoe. Previously three test boring was placed on the site using a small diameter, hollow-stem, flight auger (Lawson & Associates, 2002). The explorations were placed specifically in areas where representative soil conditions were expected and the structure will be located. Our investigation also included a visual site reconnaissance.

The excavation was visually inspected and logged by our field geologist, and samples were taken of the predominant soils throughout the field operation. The logs of the exploratory excavations are presented on Figure Numbers 3A and 3F. The exploratory boring logs are presented in Appendix C. The soils are described in accordance with the Unified Soils Classification (See Appendix D). In addition, a verbal textural description, the wet color, the apparent moisture and the density or consistency are provided. The density of granular soils is given as very loose, loose, medium dense, dense or very dense. The consistency of cohesive soils is described as very soft, soft, firm, stiff and hard.

Bulk samples of disturbed soil were collected in bags from the boring excavation. Representative undisturbed ring samples were obtained by means of a split tube, 2-3/8-inch (interior diameter) sampler driven into the soils ahead of the auger by a 140-pound weight free falling a distance of 30 inches. Standard penetration test are performed by driving a 1-5/8 inch ID split-tube sampler (Standard Pin) ahead of the auger using a 140-pound weight free falling a distance of 30 inches. The number of blows to drive the samplers twelve inches was recorded, and this number is presented on the boring log as "Penetration Resistance". The number of blows to drive the Standard Pin sampler can be correlated to soil density as indicated by the below tables:

STANDARD PENETRATION TEST
Table V

FINE GRAINED SOILS
(predominantly silt or clay)

Apparent Density	Blows per Foot
Very Soft	<2
Soft	2-4
Firm	5-8
Stiff	9-15
Very Stiff	16-30
Hard	>30

COARSE GRAINED SOILS
(predominantly sand)

Apparent Density	Blows per Foot
Very Loose	<4
Loose	4-10
Medium Dense	11-30
Dense	31-50
Very Dense	>50

LABORATORY TESTS AND SOIL INFORMATION

CLASSIFICATION: Field classifications were verified in the laboratory by visual examination. The final soil classifications are in accordance with the Unified Soil Classification System.

MOISTURE-DENSITY: In-place moisture contents and dry densities were determined for representative soil samples. This information was an aid to classification and permitted recognition of variations in material consistency with depth. The dry unit weight is determined in pounds per cubic foot, and the in-place moisture content is determined as a percentage of the soil's dry weight. The results are summarized in the test excavation logs.

MAXIMUM DENSITY/OPTIMUM MOISTURE CONTENT: The maximum dry density and optimum moisture content of a typical on-site soil samples was determined in the laboratory in accordance with ASTM Standard Test D-1557. The results of these tests are presented below:

Sample Location:	Boring B-1 @ 3'
Description	Dark reddish brown, clayey sand (SC)
Maximum Density	114.5 pcf
Optimum Moisture Content	9.0 percent

Sample Location:	Boring TE-3 @ 2-3'
Description	Dark reddish brown, silty sand (SM)
Maximum Density	128 pcf
Optimum Moisture Content	9.0 percent

EXPANSION INDEX: Expansion Index testing was performed in accordance with ASTM D4929 as a guideline. The results of the testing are presented below:

EXPANSION INDEX TEST

Sample Location:	B 1, 3'	TE-6, 2'-3'
Initial Moisture Content:	-	12.3%
Initial Dry Density:	114.0	110.0
Final Moisture Content:	-	23%
Expansion Index:	7	65
CBC Classification:	Very Low	Medium

GRAIN SIZE DISTRUBUTION: Grain size testing was performed by Lawson & Associates. Their representative samples were dried, weighed, and soaked in Water

until individual soil Particles were separated (per ASTM 1)421) and then washed on a No. 200 sieve. The portion retained on the No. 200 sieve was dried and then sieved on a U.S. Standard brass sleeve set in accordance with ASTM D422 (CTM 202). Where an appreciable amount of fines were encountered (greater than 20 percent passing the No. 200 sieve) a hydrorneter analysis was done to determine the distribution of soil particles passing the No. 200 sieve.

Sample Location	Description	% Passing 200 Sieve
B-9, 15'	Clayey SAND	46
B-1 35'	Clayey SAND	46

DIRECT SHEAR TEST: A direct shear test was performed in accordance with ASTM D3080 as a guideline. The results are presented below.

Sample Number:	TE -1 @ 3.5' – 4.5'
Description:	Remold to Natural Density
Angle of Internal Friction:	31 ^{0}
Apparent Cohesion:	150 psf

LIMITATIONS

The recommendations presented in this report are contingent upon our review of final plans and specifications. Such plans and specifications should be made available to the Geotechnical Engineer and Engineering Geologist so that they may review and verify their compliance with this report and with Appendix Chapter 33 of the Uniform Building Code.

It is recommended that C.W. La Monte Company Inc. be retained to provide continuous soil engineering services during the earthwork operations. This is to verify compliance with the design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

The recommendations and opinions expressed in this report reflect our best estimate of the project requirements based on an evaluation of the subsurface soil conditions encountered at the subsurface exploration locations and on the assumption that the soil conditions do not deviate appreciably from those encountered. It should be recognized that the performance of the foundations and/or cut and fill slopes may be influenced by undisclosed or unforeseen variations in the soil conditions that may occur in the intermediate and unexplored areas. Any unusual conditions not covered

in this report that may be encountered during site development should be brought to the attention of the Geotechnical Engineer so that he may make modifications if necessary.

This office should be advised of any changes in the project scope or proposed site grading so that we may determine if the recommendations contained herein are appropriate. It should be verified in writing if the recommendations are found to be appropriate for the proposed changes or our recommendations should be modified by a written addendum.

The findings of this report are valid as of this date. Changes in the condition of a property can, however, occur with the passage of time, whether they are due to natural processes or the work of man on this or adjacent properties. In addition, changes in the Standards-of-Practice and/or Government Codes may occur. Due to such changes, the findings of this report may be invalidated wholly or in part by changes beyond our control. Therefore, this report should not be relied upon after a period of two years without a review by us verifying the suitability of the conclusions and recommendations.

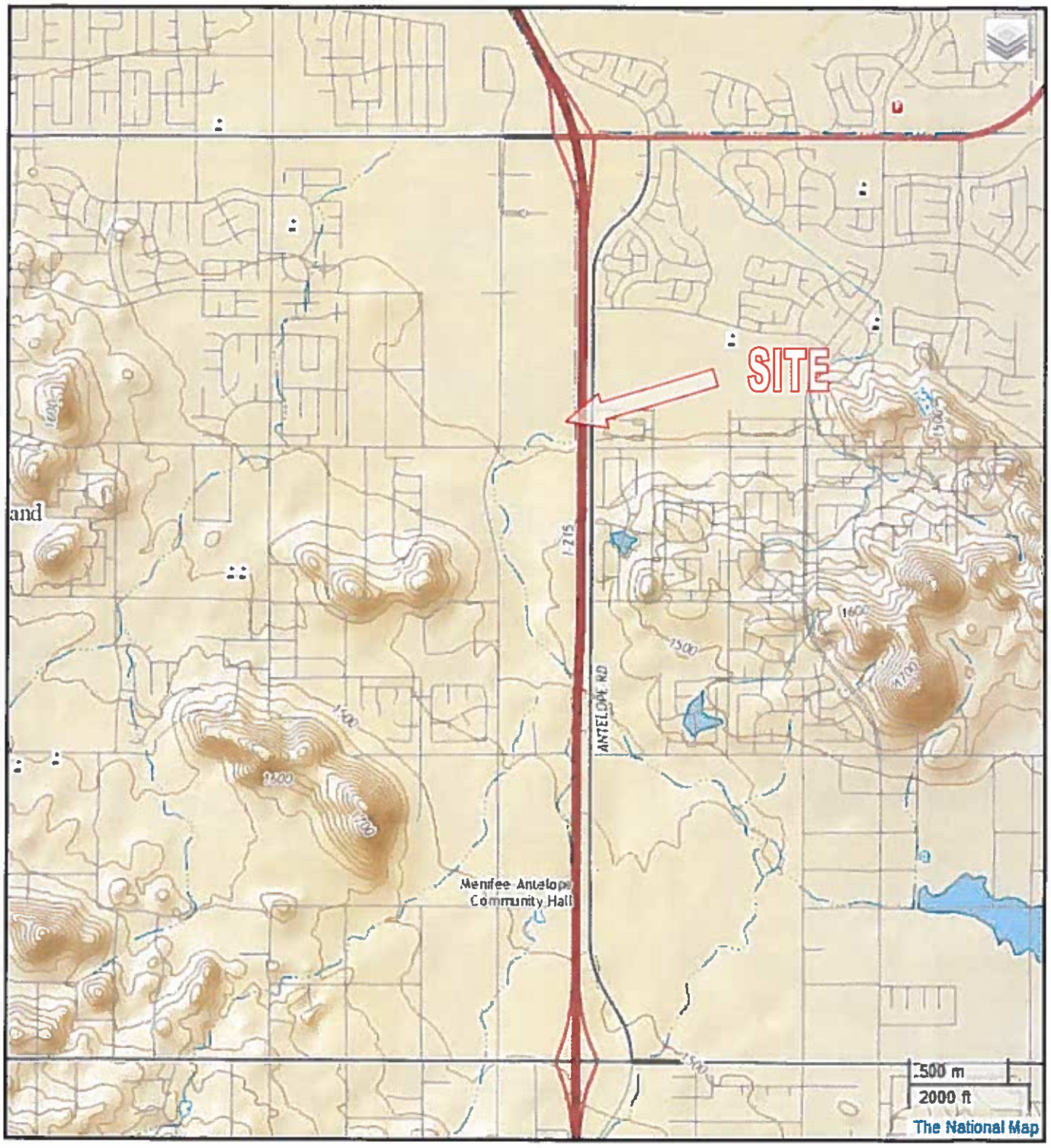
In the performance of our professional services, we comply with that level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions and in the same locality. The client recognizes that subsurface conditions may vary from those encountered at the locations where our borings, surveys, and explorations are made, and that our data, interpretations, and recommendations are based solely on the information obtained by us. We will be responsible for those data, interpretations, and recommendations, but shall not be responsible for the interpretations by others of the information developed. Our services consist of professional consultation and observation only, and no warranty of any kind whatsoever, express or implied, is made or intended in connection with the work performed or to be performed by us, or by our proposal for consulting or other services, or by our furnishing of oral or written reports or findings.

It is the responsibility of the stated client or their representatives to ensure that the information and recommendations contained herein are brought to the attention of the structural engineer and architect for the project and incorporated into the project's plans and specifications. It is further their responsibility to take the necessary measures to insure that the contractor and his subcontractors carry out such recommendations during construction. The firm of C.W. La Monte Co. Inc. shall not be held responsible for changes to the physical condition of the property, such as addition of fill soils or changing drainage patterns, which occur subsequent to the issuance of this report.

We do not direct the Contractor's operations, and we cannot be responsible for the safety of Personnel other than our own on the site; the safety of other is the responsibility of the Contractor. The Contractor should notify the Owner if he

considers any of the recommended actions presented herein to be unsafe.

SITE LOCATION AND TOPOGRAPHIC MAP



USGS National Maps Website, 7.5-Minute Series, US Topo Current

C.W. La Monte Company Inc.
Soil and Foundation Engineers

Figure No. 1

PLOT PLAN AND GEOTECHNICAL MAP

LEGEND

Approximate Test Boring Location- (Lawson & Associates (2002)

B-2

Approximate Test Excvation Location

TE-2

Geologic Units
(Surficial deposits not mapped)

Qyv = Young Alluvial Valley Deposits
Qof = Old Alluvial fan deposits

Existing Contours

1442

Proposed Contours

(1442)

Proposed LID Location and Grades

1434.6

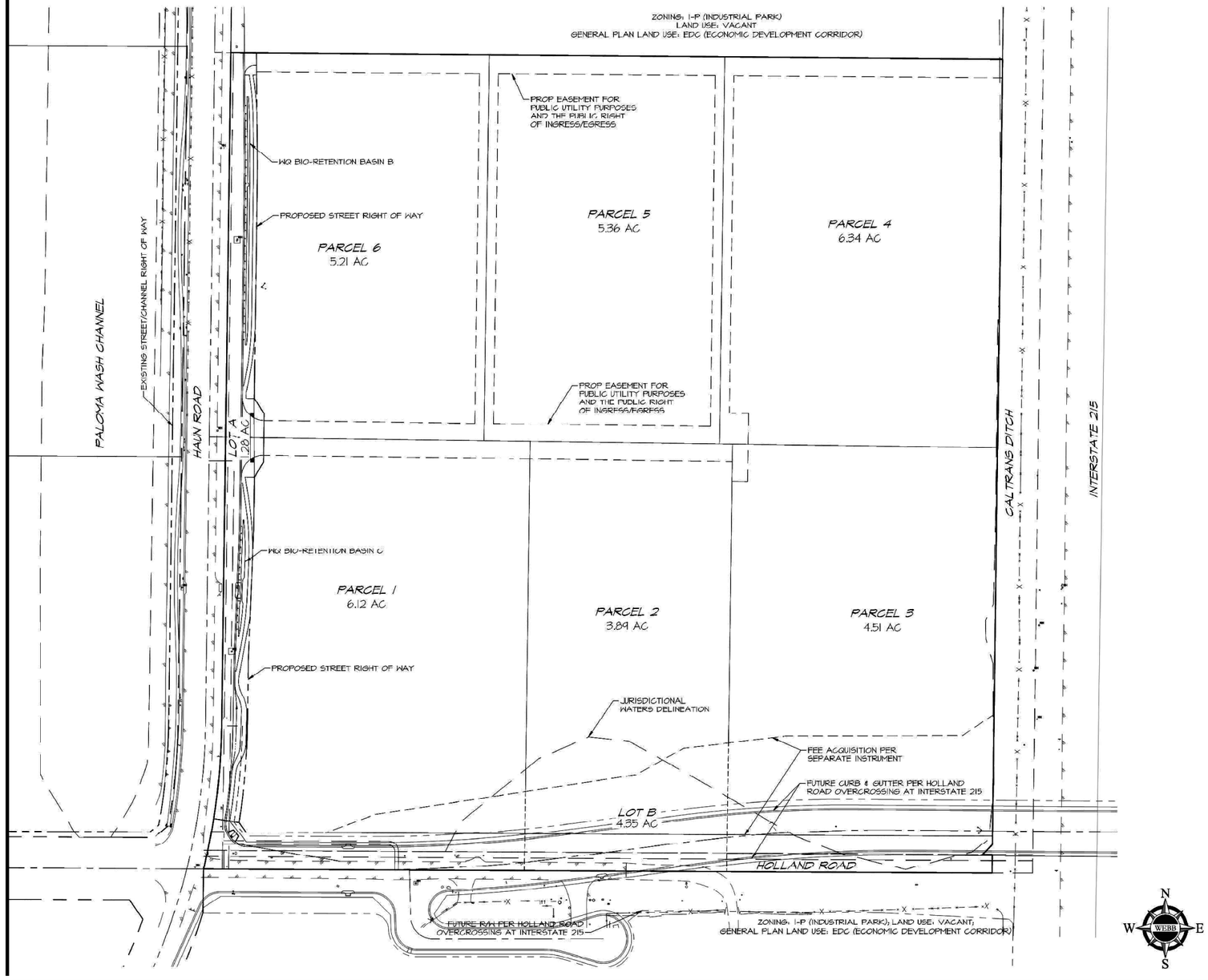
N
W WEBB E
S

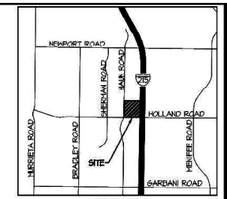
1" = 150'

150 75 0 150 300 450

JPN Corporation
NE Corner Haun & Holland Roads
Menifee, CA

FIGURE NO. 2A





VICINITY MAP
NTS

PARCEL USE SUMMARY
ZONE: EDC-CC (COMMUNITY CORE)

PARCEL 1	RETAIL	
	SITE AREA	6.12 ACRES
	TOTAL BUILDING AREA	28,600 SF
PARCEL 2	INDUSTRIAL	
	SITE AREA	3.89 ACRES
	TOTAL BUILDING AREA	47,200 SF
PARCEL 3	AUTOMOBILE SALES	
	SITE AREA	4.51 ACRES
	TOTAL BUILDING AREA	40,000 SF
PARCEL 4	AUTOMOBILE SALES	
	SITE AREA	6.34 ACRES
	TOTAL BUILDING AREA	65,000 SF
PARCEL 5	OFFICE	
	SITE AREA	5.36 ACRES
	TOTAL BUILDING AREA	79,000 SF
PARCEL 6	RETAIL	
	SITE AREA	5.21 ACRES
	TOTAL BUILDING AREA	44,500 SF
LOT A	DEDICATION OF HAUN ROAD	
LOT B	DEDICATION OF HOLLAND ROAD AND FEE ACQUISITION AREA PER SEPARATE INSTRUMENT	

G:\2017\17-0196\GIS\ConceptualSitePlan.mxd; Map revised 17 Sep 2019

Not to Scale

Figure 2B - Site Plan - Proposed Development

Haun and Holland Mixed Use Center

ALBERT A. WEBB ASSOCIATES

TEST EXCAVATION NO. TE-1

Elevation: 172' Date: 01/10/2017 Logged By: JBR Excavation Method: BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					SM	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, very moist, loose to medium dense, silty sand
2					ML	Brown, very moist, firm, sandy silt
3						@ 2.5' becomes slightly moist
4					SC	**Old Alluvial Fan Deposits (Qof)** Dark reddish brown, slightly moist, medium dense, clayey sand
5						
6					CL	Dark reddish brown, slightly moist, stiff, very sandy clay
7						

EXCAVATION BOTTOM

TEST EXCAVATION NO. TE-2

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method: BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					ML	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, very moist, firm, clayey, sandy silt
2						
3						**Old Alluvial Fan Deposits (Qof)**
4					SC CL	Dark reddish brown, slightly moist, medium dense/ stiff, clayey sand/sandy clay
5						
6						EXCAVATION BOTTOM
7						

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TPM No. 37121
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Menifee, CA 92584

FIGURE NO. 3 A

TEST EXCAVATION NO. TE-3

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method: BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					SC CL	**Fill (Qaf)** Dark brown and brown, very moist, loose, clayey sand and sandy clay
2						
3					SM	**Young Alluvial Valley Deposits (Qyv)** Dark brown, very moist, loose to medium dense, silty sand
4						
5					CL	**Old Alluvial Fan Deposits (Qof)** Dark reddish brown, slightly moist, stiff, sandy, silty, clay
6						
7						EXCAVATION BOTTOM

TEST EXCAVATION NO. TE-4

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method: BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					ML	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, very moist, firm, clayey, sandy silt @ 1' becomes slightly moist
2						
3					CL	**Old Alluvial Fan Deposits (Qof)** Dark reddish brown, dry to slightly moist, stiff to hard, sandy clay
4						
5						EXCAVATION BOTTOM
6						
7						

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FIGURE NO. 3B

TEST EXCAVATION NO. TE-5

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method : BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					ML	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, wet, soft to firm, sandy silt
2						
3					ML	**Old Alluvial Fan Deposits (Qof)** Dark reddish brown, moist, stiff, clayey silt
4						
5						EXCAVATION BOTTOM
6						
7						

TEST EXCAVATION NO. TE-6

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method : BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					SM ML	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, very moist, loose/firm, silty sand/sandy silt
2						
3					ML	**Old Alluvial Fan Deposits (Qof)** Dark reddish brown, slightly moist, stiff sandy clayey silt (Upper one-foot desiccated)
4						
5						EXCAVATION BOTTOM
6						
7						

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TPM No. 37121
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Menifee, CA 92584

FIGURE NO. 3C

TEST EXCAVATION NO. TE-7

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method : BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					SM ML	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, very moist, loose/firm, silty sand/sandy silt
2						
3						**Old Alluvial Fan Deposits (Qof)** Dark reddish brown, moist, stiff, sandy, clayey silt
4					ML	@1.5' to 3' moderately pourous
5						EXCAVATION BOTTOM
6						
7						

TEST EXCAVATION NO. TE-8

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method : BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					SM ML	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, very moist, loose/firm, silty sand/sandy silt
2						
3						**Old Alluvial Fan Deposits (Qof)** Dark reddish brown, moist, stiff, sandy, clayey silt
4					ML	@1.5' to 2.5' moderately pourous
5						EXCAVATION BOTTOM
6						
7						

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TPM No. 37121
Haun Road and Holland Road
Menifee, CA 92584

FIGURE NO. 3 D

TEST EXCAVATION NO. TE-9

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method : BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					ML	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, very moist, firm, sandy silt
2						
3						
4						**Old Alluvial Fan Deposits (Qof)**
5					ML	Dark reddish brown, moist, stiff, sandy, clayey silt @3.5' to 4' layer of silty sand
6						EXCAVATION BOTTOM
7						

TEST EXCAVATION NO. TE-10

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method : BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					ML	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, very moist, firm, sandy silt
2						
3					SC	**Old Alluvial Fan Deposits (Qof)** Dark reddish brown, slightly moist, dense, clayey sand
4						
5						EXCAVATION BOTTOM
6						
7						

C. W. La Monte Company Inc.

Soil and Foundation Engineers

TPM No. 37121
Haun Road and Holland Road
Menifee, CA 92584

FIGURE NO. 3 E

TEST EXCAVATION NO. TE-11

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method : BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					ML	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, very moist, firm, sandy silt
2						
3						
4						**Old Alluvial Fan Deposits (Qof)**
5					ML	Dark reddish brown, moist, hard, sandy, clayey silt
6						EXCAVATION BOTTOM
7						

TEST EXCAVATION NO. TE-12

Elevation: Date: 01/10/2017 Logged By: JBR Excavation Method : BACKHOE

DEPTH (FEET)	SAMPLE TYPE: BULK	SAMPLE TYPE: UNDISTURBED	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	U.S.C.S.	SOIL DESCRIPTION
1					ML	**Young Alluvial Valley Deposits (Qyv)** Dark reddish brown, very moist, firm, sandy silt
2						
3					ML	**Old Alluvial Fan Deposits (Qof)** Dark reddish brown, moist, hard, sandy, clayey silt
4						
5						EXCAVATION BOTTOM
6						
7						

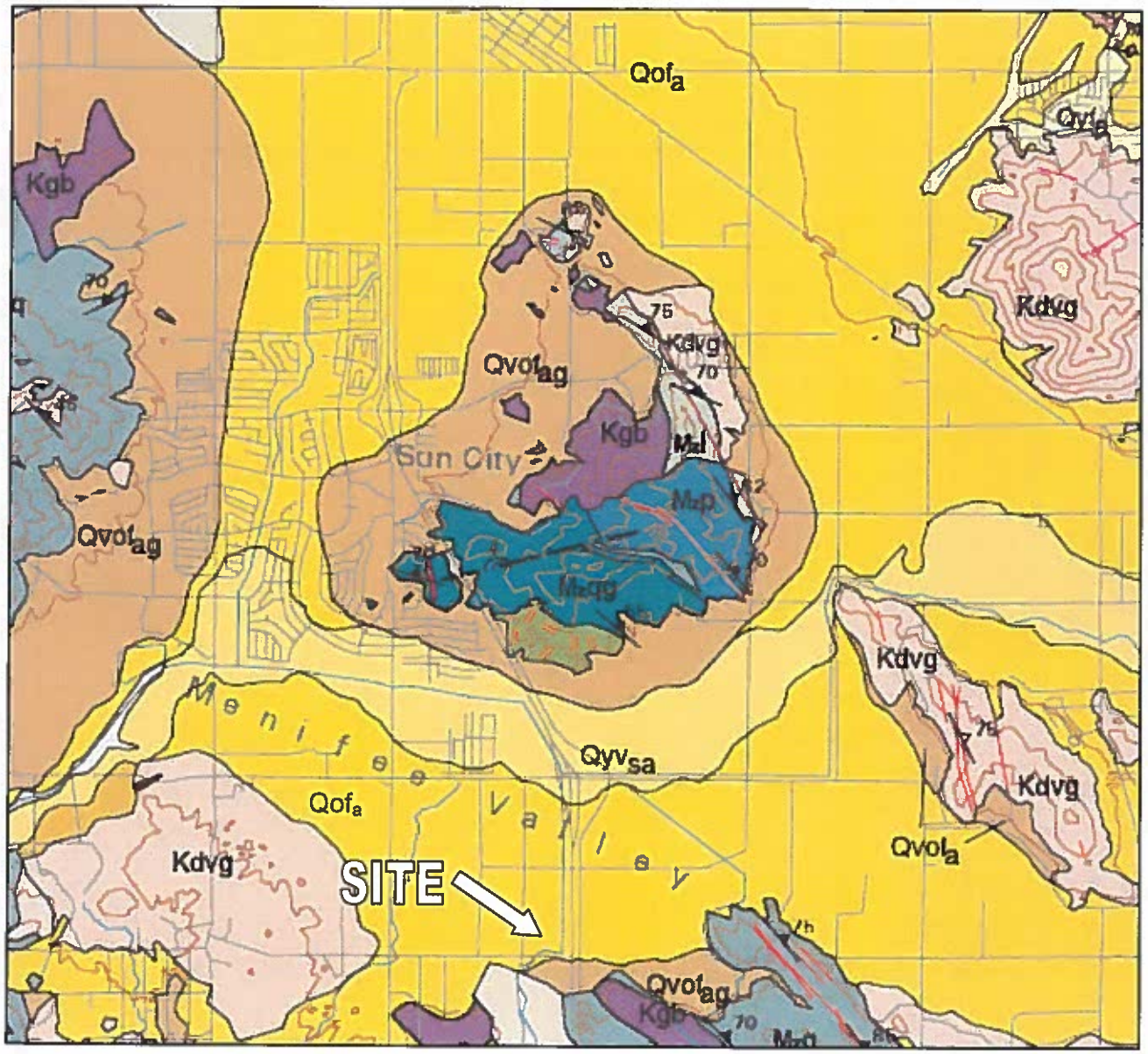
C. W. La Monte Company Inc.

Soil and Foundation Engineers

TPM No. 37121
Haun Road and Holland Road
Menifee, CA 92584

FIGURE NO. 3 F

Excerpt from:
PRELIMINARY DIGITAL GEOLOGIC MAP OF THE SANTA ANA 30' X 60' QUADRANGLE, SOUTHERN CALIFORNIA (2004)



SELECT GEOLOGIC LEGEND

Qyv_{sa} = Young Alluvial Valley Deposits (Holocene and late Pleistocene)—Silty to sandy alluvium on valley floors, unconsolidated

Qof_a = Old Alluvial Fan Deposits (late to middle Pleistocene)—Sandy alluvium; reddish brown, indurated, surface of most fans slightly dissected.

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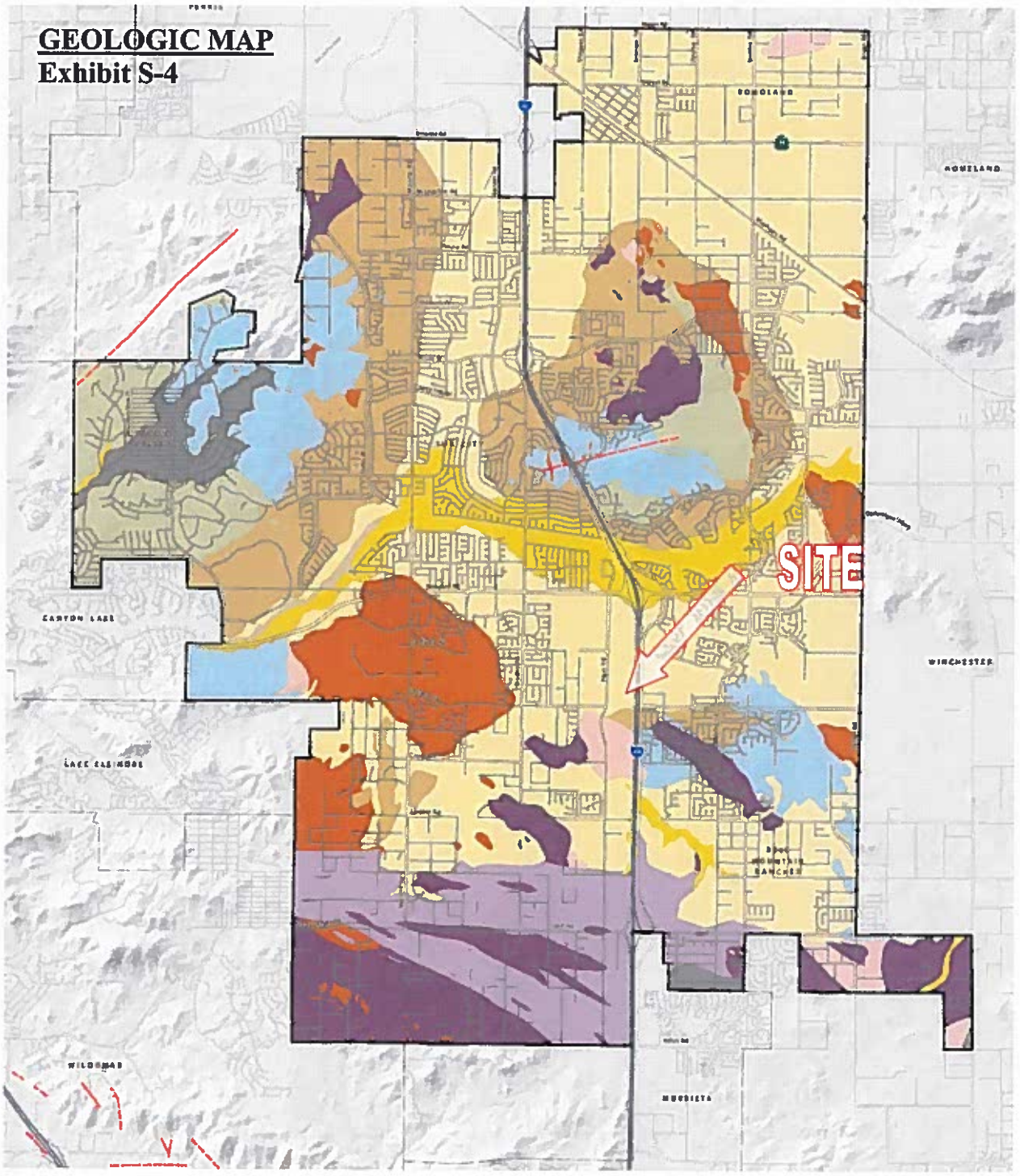
Job No. 16 6754	Figure No. 4A

GEOLOGIC MAP
Exhibit S-4



Source: Earth Consultants International, 2012

GEOLOGIC UNITS

Young Superficial Deposits
- Qw - Very Young Wash Deposits
- Qv - Very Young Alluvial Valley
- Qyf - Young Alluvial Fan
- Qya - Young Alluvial Valley and Channel

Plutonic Rocks
- Kt - Tonalite
- Kg -Granodiorite
- Km - Monzogranite
- Kgb - Gabbro

Old Superficial Deposits
- Qof - Old Alluvial Fan Deposits
- Qvof - Very Old Alluvial Fan Deposits
- Qvoa - Very Old Channel Deposits

Faults
- Known Location
- Approximate Location
- Concealed

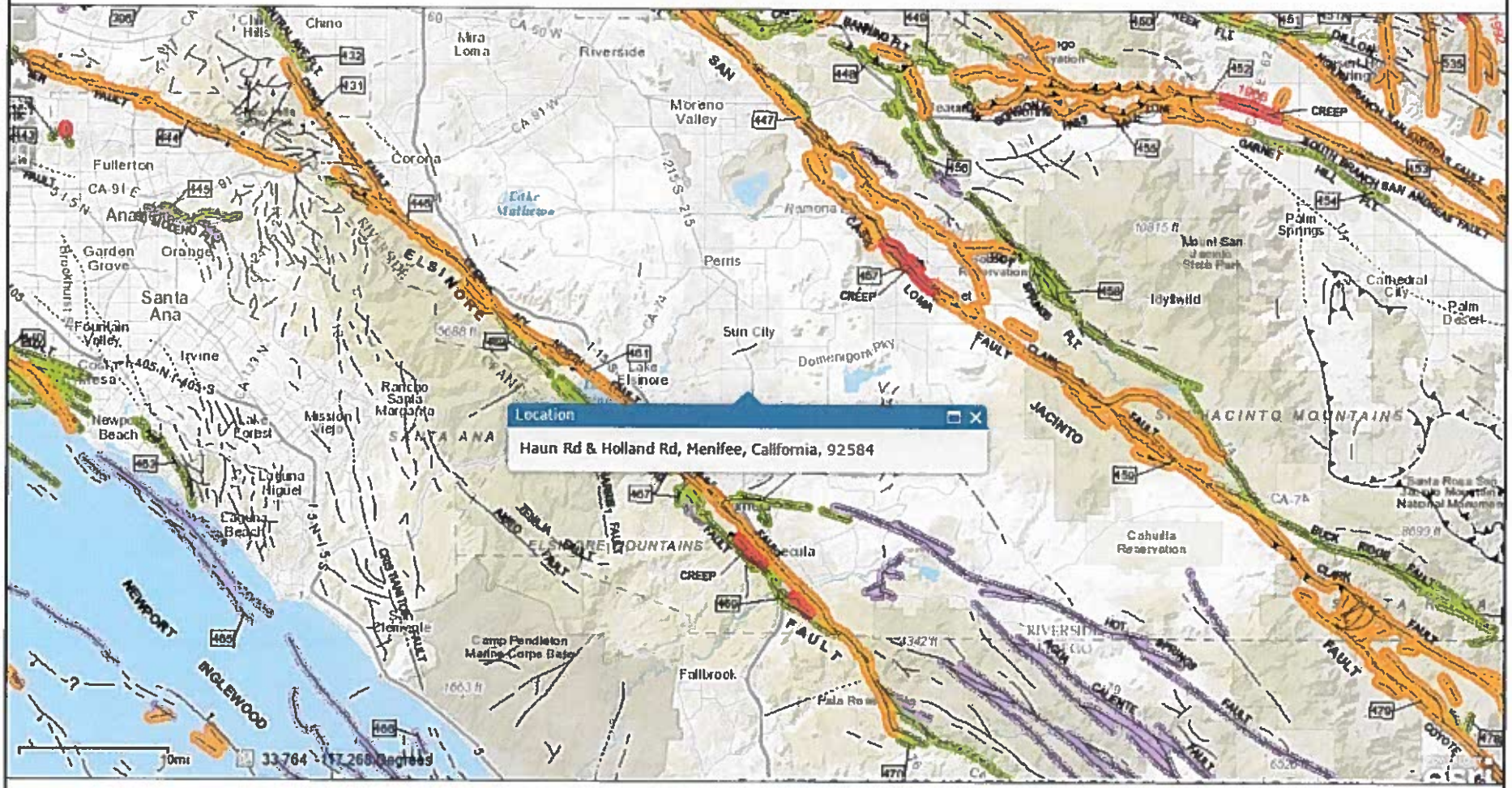
Metasedimentary Rocks
- Trq Quartz-rich Rocks
- Trps - Phyllite and Schist

MENIFEE GENERAL PLAN

THE PLANNING CENTER | DC&E

Figure No. 4B

FIGURE 5A - Excerpt from: 2010 Fault Activity Map of California, Geologic Data Map No.



SUMMARY EXPLANATION

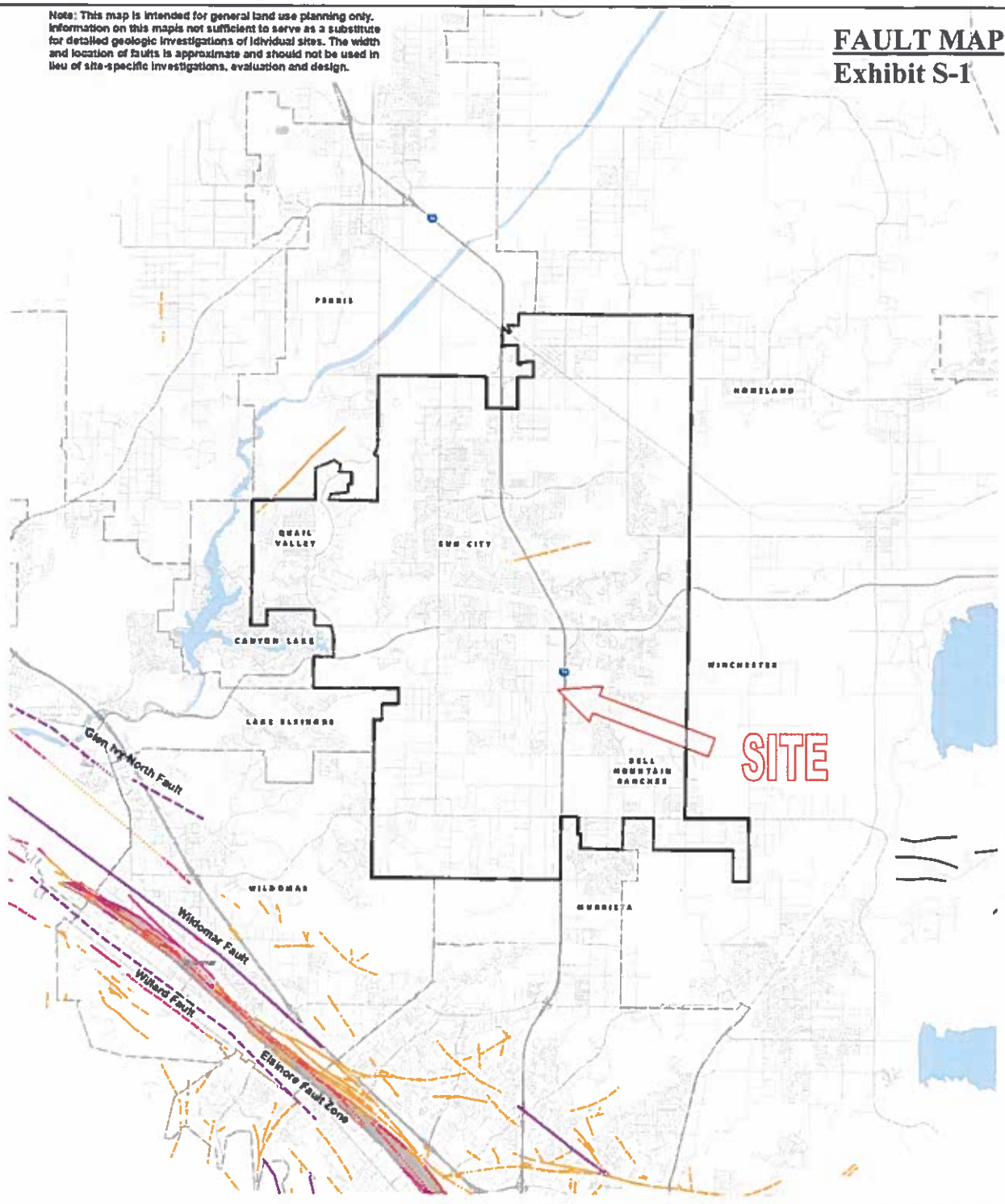
Fault traces on land are indicated by solid lines where well located, by dashed lines where approximately located or inferred, and by dotted lines where concealed by younger rocks or by lakes or bays. Fault traces are queried where continuation or existence is uncertain.

FAULT CLASSIFICATION COLOR CODE (Indicating Recency of Movement)

- Historic Fault (last 200 years)
- Holocene fault (during past 11,700 years) without historic record.
- Quaternary fault (age undifferentiated)
- Late Quaternary fault (during past 700,000 years).
- Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement.

Note: This map is intended for general land use planning only. Information on this maps not sufficient to serve as a substitute for detailed geologic investigations of individual sites. The width and location of faults is approximate and should not be used in lieu of site-specific investigations, evaluation and design.

FAULT MAP
Exhibit S-1



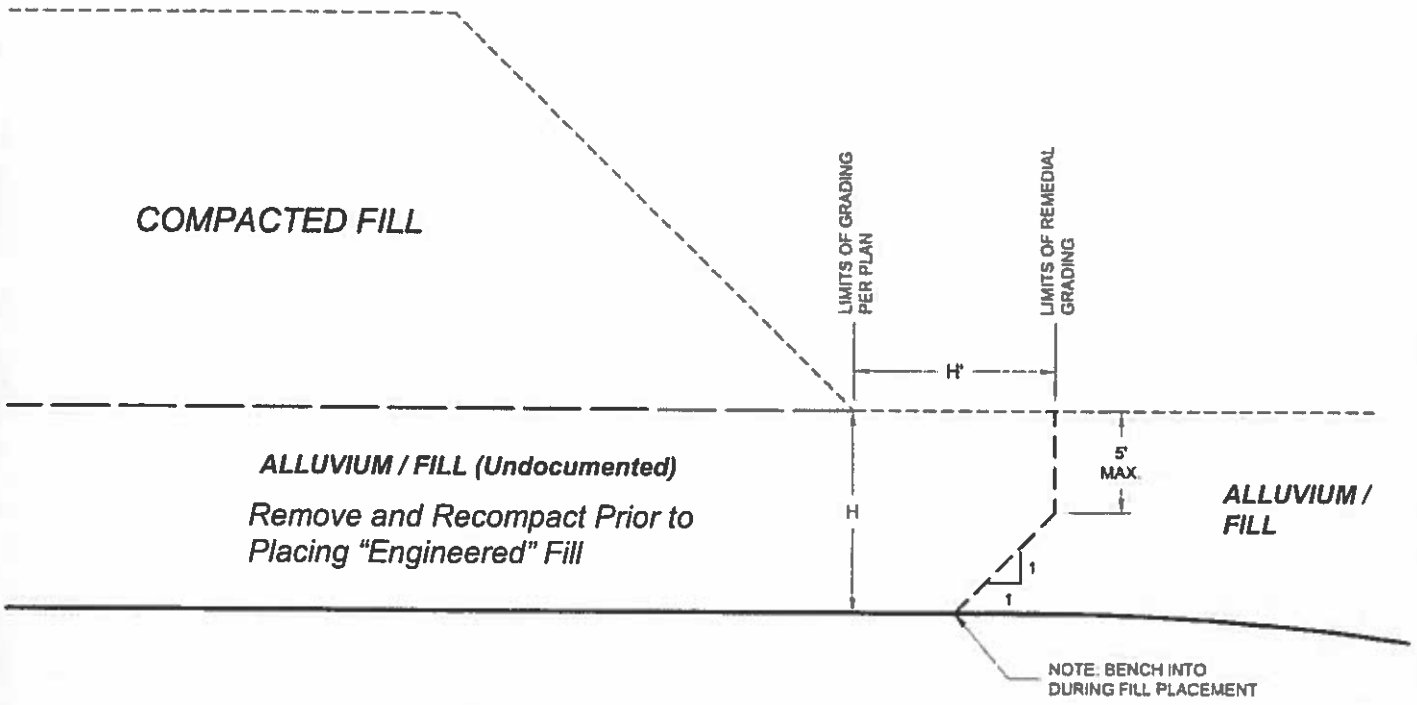
Source: Earth Consultants International, 2012

Active fault zoned under the Alquist-Priolo Earthquake Fault Zone Act. (CGS; 2002)	Fault that has not moved in the Holocene or late Pleistocene. (Morton & Miller; 2006)	Fault that has moved in the Holocene or late Pleistocene. (Morton & Miller; 2006)	Faults that has moved in the Quanternary (Jennings, 1994)	Faults that predates the Quaternary (Jennings,1994)	Alquist-Priolo Earthquake Fault Zone
Inferred Location	Inferred Location	Inferred Location	Inferred Location	Inferred Location	
Approximate Location	Approximate Location	Approximate Location	Approximate Location	Approximate Location	
Known Location	Known Location	Known Location	Known Location	Known Location	

MENIFEE GENERAL PLAN

Figure No. 5B

TYPICAL DETAIL FOR LATERAL LIMITS OF REMEDIAL GRADING



H = THICHNESS OF REMOVAL

H' = HORIZONTAL DISTANCE BEYOND GRADING PER PLAN FOR REMEDIAL GRADING
H = H'

NOTE: Where H' is limited by property boundaries or other restrictions a setback equal to the distance of the restrictions to H' may be required.

Alternately, the setback can be reduced by designing a geogrid reinforced fill. The design of a reinforced fill is not included in our scope of work and would require additional analysis.

Figure No. 6

Appendix "A"

STANDARD GRADING AND CONSTRUCTION SPECIFICATIONS

Appendix "A"

STANDARD GRADING AND CONSTRUCTION SPECIFICATIONS

These specifications present the usual and minimum requirements for projects on which C.W. La Monte Company is the geotechnical consultant. No deviation from these specifications will be allowed, except where specifically superseded in the preliminary geology and soils report or in other written communication signed by the Soils Engineer or Engineering Geologist of record.

GENERAL

A. The Soils Engineer and Engineering Geologist is the Owner's or Builders' representative on the Project. For the purpose of these specifications, participation by the Soils Engineer includes that observation performed by any person or persons employed by, and responsible to, the licensed Civil Engineer signing the soils reports.

B. All clearing, site preparation, or earthwork performed on the project shall be conducted by the Contractor under the supervision of the Soils Engineer.

C. It is the Contractor's responsibility to prepare the ground surface to receive the fills to the satisfaction of the Soils Engineer and to place, spread, mix, water, and compact the fill in accordance with the specifications of the Soils Engineer. The Contractor shall also remove all material considered unsatisfactory by the Soils Engineer.

D. It is also the Contractor's responsibility to have suitable and sufficient compaction equipment on the job site to handle the amount of fill being placed. If necessary, excavation equipment will be shut down to permit completion of compaction. Sufficient watering apparatus will also be provided by the Contractor, with due consideration for the fill material, rate of placement, and time of year.

E. A final report shall be issued by the Soils Engineer attesting to the Contractor's conformance with these specifications.

SITE PREPARATION

A. All vegetation and deleterious material shall be disposed of off site. This removal shall be concluded prior to placing fill.

B. Soil, alluvium, or bedrock materials determined by the Soils Engineer, as being unsuitable for placement in compacted fills shall be removed from the site. The Soils Engineer must approve any material incorporated as a part of a compacted fill.

C. After the ground surface to receive fill has been cleared, it shall be scarified, disced, or bladed by the Contractor until it is uniform and free from ruts, hollows, hummocks, or other uneven features which may prevent uniform compaction.

The scarified ground surface shall then be brought to optimum moisture, mixed as required, and compacted as specified. If the scarified zone is greater than 12 inches in depth, the excess shall be removed and placed in lifts restricted to 6 inches.

Prior to placing fill, the ground surface to receive fill shall be inspected, tested as necessary, and approved by the Soils Engineer.

D. Any underground structures such as cesspools, cisterns, mining shafts, tunnels, septic tanks, wells, pipe lines, or others are to be removed or treated in a manner prescribed by the Soils Engineer and /or governing agency.

E. In order to provide uniform bearing conditions in cut-fill transition lots and where cut lots are partially in soil, colluvium, or un-weathered bedrock materials, the bedrock portion of the lot extending a minimum of 3 feet outside of building lines shall be over excavated a minimum of 3 feet and replaced with compacted fill.

COMPACTED FILLS

A. Any material imported or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable by the Soils Engineer. Roots, tree branches, and other matter missed during clearing shall be removed from the fill as directed by the Soils Engineer.

B. Rock fragments less than 6 inches in diameter may be utilized in the fill, provided:

1. They are not placed in concentrated pockets.
2. There is a sufficient percentage of fine-grained material to surround the rocks.
3. The Soils Engineer shall supervise the distribution of rocks.

C. Rocks greater than 6 inches in diameter shall be taken off site, or placed in accordance with the recommendations of the Soils Engineer in areas designated as suitable for rock disposal.

D. Material that is spongy, subject to decay or otherwise considered unsuitable should not be used in the compacted fill.

E. Representative samples of material to be utilized as compacted fill shall be analyzed by the laboratory of the Soils Engineer to determine their physical properties. If any material other than that previously tested is encountered during grading, the appropriate analysis of this material shall be conducted by the Soils Engineer as soon as possible.

F. Material used in the compaction process shall be evenly spread, watered processed, and compacted in thin lifts not to exceed 6 inches in thickness to obtain a uniformly dense layer. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Soils Engineer.

G. If the moisture content or relative density varies from that required by the Soils Engineer, the Contractor should re-work the fill until the Soils Engineer approves it.

H. Each layer shall be compacted to 90 percent of the maximum density in compliance with the testing method specified by the controlling governmental agency. (In general, ASTM D-1557-91, the five-layer method will be used.)

If compaction to a lesser percentage is authorized by the controlling governmental agency because of a specific land use or expansive soils condition, the area to receive fill compacted to less than 90 percent shall either be delineated on the grading plan or appropriate reference made to the area in the soils report.

H. All fills shall be keyed and benched through all topsoil, colluvium, alluvium or creep material, into sound bedrock or firm material except where the slope receiving fill exceeds a ratio of five horizontal to one vertical, in accordance with the recommendations of the Soils Engineer.

I. The key for hillside fills should be a minimum of 15 feet in width and within bedrock or similar materials, unless otherwise specified in the soil report.

K. Subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency, or with the recommendations of the Soils Engineer or Engineering Geologist.

L. The contractor will be required to obtain a minimum relative compaction of 90 percent out to the finish slope face of fill slopes, buttresses, and stabilization fills. This may be achieved by either overbuilding the slope and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment, or by any other procedure which produces the required compaction.

M. All fill slopes should be planted or protected from erosion or by other methods specified in the soils report.

N. Fill-over-cut slopes shall be properly keyed through topsoil, colluvium or creep material into rock or firm materials, and the transition shall be stripped of all soil prior to placing fill.

CUT SLOPES

A. The Engineering Geologist shall inspect all cut slopes at vertical intervals not exceeding 10 feet.

B. If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or fault planes are encountered during grading, these conditions shall be analyzed by the Engineering Geologist and Soils Engineer, and recommendations shall be made to treat these problems.

C. Cut slopes that face in the same direction as the prevailing drainage shall be protected from slope wash by a non-erodible interceptor swale placed at the top of the slope.

Unless otherwise specified in the soils and geological report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies.

Drainage terraces shall be constructed in compliance with the ordinances of controlling governmental agencies, or with the recommendations of the Soils Engineer or Engineering Geologist.

GRADING CONTROL

A. Observation of the fill placement shall be provided by the Soils Engineer during the progress of grading.

B. In general, density tests should be made at intervals not exceeding 2 feet of fill height or every 500 cubic yards of fill placement. This criteria will vary, depending on soil conditions and the size of the job. In any event, an adequate number of field density tests shall be made to verily that the required compaction is being achieved.

C. Density tests may also be conducted on the surface material to receive fills as determined by the Soils Engineer.

D. All clean-outs, processed ground to receive fill, key excavations, subdrains, and rock disposals must be inspected and approved by the Soils Engineer or Engineering Geologist prior to placing any fill. It shall be the Contractor's responsibility to notify the Soils Engineer when such areas are ready for inspection.

CONSTRUCTION CONSIDERATIONS

A. The Contractor shall provide necessary erosion control measures, during grading and prior to the completion and construction of permanent drainage controls.

B. Upon completion of grading and termination of inspections by the Soils Engineer, no further filling or excavating, including that necessary for footings, foundations, large tree wells, retaining walls, or other features shall be performed without the approval of the Soils Engineer or Engineering Geologist.

C. Care shall be taken by the Contractor during final grading to preserve any berms, drainage terraces, interceptor swales, or other devices of permanent nature on or adjacent to the property.

D. In the event that temporary ramps or pads are constructed of uncontrolled fill soils during a future grading operation, the location and extent of the loose fill soils shall be noted by the on-site representative of a qualified soil engineering firm. These materials shall be removed and properly recompacted prior to completion of grading operations.

E. Where not superseded by specific recommendations presented in this report, trenches, excavations, and temporary slopes at the subject site shall be constructed in accordance with section 1541 of Title 8, Construction Safety Orders, issued by OSHA.

APPENDIX " B"
UNIFIED SOIL CLASSIFICATION CHART

SOI L DESC RI PTI ON

I. COARSE GRAINED: More than half of material is larger than No. 200 sieve size.

GRAVELS: More than half of coarse fraction is larger than No. 4 sieve size but smaller than 3".

	GROUP SYMBOL	TYPICAL NAMES
CLEAN GRAVELS	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
	GP	Poorly graded gravels, gravel sand mixtures, little or no fines
GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, poorly graded gravel- sand-silt mixtures
	GC	Clayey gravels, poorly graded gravel sand, clay mixtures.

SANDS: More than half of coarse fraction is smaller than No. 4 sieve size

CLEAN SANDS	SW	Well graded sand, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
SANDS WITH FINES (Appreciable amount of fines	SM	Silty sands, poorly graded sand and silty mixtures.
	SC	Clayey sands, poorly graded sand and clay **mixtures**

II. FINE GRAINED: More than half of material is smaller than No. 200 sieve size

SILTS AND CLAYS	ML	Inorganic silts and very fine sands, rock flour, sandy silt - or clayey-silt with slight plasticity.
Liquid Limit Less than 50	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silt
Liquid Limit greater than 50	CH	Inorganic clays of high plasticity, fat clays.
	OH	Organic clays of medium to high plasticity.
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils.

APPENDIX C

Test Borings
Lawson & Associates (2002)

Geotechnical Boring Log B-1

Date:	8/30/02		Page: 1 of 1
Project Name:	Meyer Asset Management	**Project Number:**	PN022113-10
Drilling Company:	2R Drilling	**Type of Rig:**	CME55
Drive Weight:	140	**Drop:** 30	**Hole Dia:** 6"
Elevation of Top of Hole:		**Hole Location:**	

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION Logged By: GU Sampled By: GU	Type of Test
100	0						Qal (SM)	@0' - Silty SAND: Yellow-brown to red-brown, f to med grained; dry in upper 1'	
			R-1	15 18 20	118.4	7.3	(SC)	@2' - Clayey SAND: Reddish-brown, f to med grained. cemented, caliche stringers, medium dense, moist	
95	5		R-2	16 15 26	117.0	6.9	(SC)	@5' - same: cemented, caliche stringers, moist	
90	10		SPT-1	19 28 28			(SC)	@10' - Clayey SAND: Reddish-brown, f to co grained, cemented, w/caliche stringers, dry, dense	
85	15		SPT-2	9 12 20	na	13.4	(SC)	@15' - Clayey SAND: Dark reddish-brown, f to med grained, cemented, very moist, medium dense	
80	20		SPT-3	10 15 28			(SC)	@20' - same: cemented, caliche stringers, damp to moist	
75	25		SPT-4	7 14 22	na	16.2	(SC)	@25' - same: slightly cemented, very moist; medium dense	
70	30								

LGC

LAWSON & ASSOCIATES
GEOTECHNICAL CONSULTING INC.

Geotechnical Boring Log B-1

Date: 8/30/02 **Page:** 2 of 2

Project Name: Meyer Asset Management **Project Number:** PN022113-10

Drilling Company: 2R Drilling **Type of Rig:** CME55

Drive Weight: 140 **Drop:** 30 **Hole Dia:** 6"

Elevation of Top of Hole: **Hole Location:**

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION Logged By: GU Sampled By: GU	Type of Test
70	30		SPT-5	7 14 22			Qal (SC)	@30' - Clayey SAND: Yellow-brown to red-brown mottling; slighty cemented; moist; medium dense	
65	35		SPT-6	11 15 11	na	18.1	(ML)	@35' - Sandy SILT: Grey-black; f to med grained w/interbedded thin sand lenses; very moist, medium dense	
60	40		SPT-7	28 50	na	9.0	Kgr	@40' - Granitic Bedrock: Grey-black, f to med grained w/tr co grained; weathered; moist	
55	45		SPT-8	50			Kgr	@45' - same: saturated	
50	50		SPT-9	50			Kgr	@50' -same: saturated EOB Groundwater encountered @47'; rose to 42'	
45	55								
40	60								

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GEOTECHNICAL CONSULTING INC.

Geotechnical Boring Log B-2

Date:	8/30/02		**Page:** 1 of 1
Project Name:	Meyer Asset Management	**Project Number:**	PN022113-10
Drilling Company:	2R Drilling	**Type of Rig:**	CME55
Drive Weight:	140	**Drop:** 30	**Hole Dia:** 6"
Elevation of Top of Hole:		**Hole Location:**	

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION Logged By: GU Sampled By: GU	Type of Test
100	0						Qal (SM)	@0' - Silty SAND: Lt. yellow-brown, f to med grained, dry	
			R-3	14 16 22	117.9	11.1	(SC)	@2' - Clayey SAND: Reddish-brown, f to med grained, cemented, moist, medium dense	
95	5		R-4	14 28 28	115.0	12.4	(SC)	@5' - same: cemented, some caliche stringers moist, medium dense	
90	10		SPT-10	8 14 21	na	17.0	(SC)	@10' - same: cemented; some caliche stringers, very moist, medium dense	
85	15		SPT-11	12 14 17	na	6.9	(SP)	@15' - SAND w/Clay: Reddish-brown to grey-brown, f to co grained, moist; medium dense	
80	20		SPT-12	5 11 14	na	17.5	(ML)	@20' - Sandy SILT: Grey-brown, mottled with rust staining; f to med grained; very moist; medium dense	
75	25		SPT-13	5 5 7	na	23.5	(ML)	@25' - same, very moist; medium dense EOB no groundwater encountered	
70	30								

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GEOTECHNICAL CONSULTING INC.

Geotechnical Boring Log B-3

Date: 8/30/02 Page: 1 of 1

Project Name: Meyer Asset Management Project Number: PN022113-10

Drilling Company: 2R Drilling Type of Rig: CME55

Drive Weight: 140 Drop: 30 Hole Dia: 6"

Elevation of Top of Hole: Hole Location:

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION Logged By: GU Sampled By: GU	Type of Test
100	0						Qal (SM)	@0' - Silty SAND: Lt. yellow-brown to red-brown, f to med grained; dry	
			R-5	33 40 50	113.8	12.1	(SC)	@2' - Clayey SAND: Reddish-brown to light brown, mottled, f to med grained; cemented; moist, very dense	
95	5		R-6	12 14 16	101.7	11.7	(SP)	@5' - SAND w/Clay: Reddish-brown, f to med grained w/tr co grained; moist; medium dense	
90	10		SPT-13	17 10 13	na	15.6	(ML)	@10' - Sandy SILT: Grey, f to med grained; w/abundant caliche; very moist; medium dense	
85	15		SPT-14	7 9 9	na	8.2	(ML)	@15' - same: slight color change to grey-brown; v. f. grained; moist; firm	
80	20		SPT-15	5 10 18	na	6.0	(ML)	@20' - same: firm, moist	
75	25		SPT-16	7 13 18	na	17.5	(ML)	@25' - same: very firm; very moist	
70	30								

LGC

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GEOTECHNICAL CONSULTING INC.