L&L ENVIRONMENTAL, INC.
REGULATORY SERVICES
BIOLOGICAL & CULTURAL INVESTIGATIONS & MONITORING

A PHASE I PALEONTOLOGICAL RESOURCES INVENTORY FOR THE ISLAMIC COMMUNITY CENTER OF REDLANDS, SAN BERNARDINO COUNTY, CALIFORNIA

±5.54 Acre Property, ±5.54 Acres Surveyed

APN 0293-111-15-0000, Project # P201300231, Redlands/Loma Linda Area, Section 32, Township 1 South, Range 3 West, USGS Redlands 7.5' Topographic Quadrangle Map

Prepared For:

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Report Summary:

Topographically, the site is relatively flat with a gradual downward trending slope to the northwest. The project area is underlain by Quaternary alluvial sand, gravel, and clay of valley areas covered with thick soil from the Holocene. A comprehensive museum collection records search of the Vertebrate Paleontology Section collections of the Natural History Museum of Los Angeles County did not identify any previously recorded paleontological localities on or near the project area. There is low potential for locating significant paleontological resources during grading and trenching within the project area near the soil surface, but potential increases at greater depth below the surface. Because of this potential, any excavation below 5 feet in depth should be monitored by a qualified paleontologist.

Report Date: October 24, 2016

Celebrating 20 Years of Service to Southern CA and the Great Basin, WBE Certified (Caltrans, CPUC, WBENC)
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MANAGEMENT SUMMARY

The site is located adjacent to San Timoteo Creek near the community of Bryn Mawr, just northwest of the intersection of Nevada Street and Beaumont Avenue, with the boundary of the City of Redlands just east and the City of Loma Linda just west. Topographically, the site is relatively flat with a gradual downward trending slope to the northwest. The site is approximately 1,315 feet above mean sea level. Surrounding topographic features in the project vicinity include the excavated San Timoteo Creek Channel, Terrace escarpments, rounded to the rolling hills with shallow to steep canyons, and ridgelines. A comprehensive literature search was conducted. The project area is underlain by Quaternary alluvial sand, gravel, and clay of valley areas covered with thick soil from the Holocene.

The primary vegetation community within the parcel can be characterized as disturbed/non-native grassland/ruderal. This highly disturbed site contains low-growing non-native plant species. The most common plants observed at the time of a previous survey by L&L (in June) include Mediterranean grass, filaree, and Russian thistle. Disturbance at the site includes off-road vehicle activity and periodic disking and/or mowing. Evidence of recent weed abatement was observed during the field survey.

A comprehensive museum collection records search of the Vertebrate Paleontology Section collections of the Natural History Museum of Los Angeles County did not identify any previously recorded paleontological localities on or near the project area. There is low potential for locating significant paleontological resources during grading and trenching within the project area near the soil surface, but potential increases at greater depth below the surface. Because of this potential, any excavation below five (5) feet in depth should be monitored by a qualified paleontologist.

1.0) INTRODUCTION AND SETTING

1.1) Introduction

This report provides the results of the paleontological resources inventory for the proposed development of ±5.54 acres of a ±5.54 acre parcel with a community worship center and school on county land immediately adjacent to the cities of Redlands and Loma Linda in the County of San Bernardino, California. State law, as set forth in the California Environmental Quality Act (CEQA) of 1970, requires public agencies not approve projects as proposed unless there are feasible alternatives or mitigation measures available that would substantially lessen significant environmental effects of such projects (Chapter 1, Section 21002). The California Public Resources Code 5097 protects vertebrate fossil sites, including fossilized footprints or any other paleontologic feature, situated on public land. Typical California requirements for paleontologic resource investigations and impact mitigation are outlined in Chapter 12.5, California Business and Professions Code, and Title 20, California Code of Regulations, Section 2012 et seq.

In compliance with CEQA and other regulations, L & L Environmental, Inc. (L&L) was retained to perform a records/literature review of paleontologic resources known to exist on or near the project area. The paleontologic resources inventory, presented herein, consists of the results of the paleontological record/literature review and the results of the paleontological field survey of the project parcel.

1.2) Project Goals

The goal of this study was to identify potential for presence of paleontological resources within the boundaries of the project area. This information is required, since construction of the project could adversely affect such resources.

The paleontological resource study consisted of:

(1) A literature review, conducted to determine what geologic formations underlie the subject parcel.

(2) A paleontological records search, conducted to determine whether any previously recorded significant fossil bearing formations underlie the subject parcel.

1.3) Location

The site is located adjacent to San Timoteo Creek near the community of Bryn Mawr, just northwest of the intersection of Nevada Street and Beaumont Avenue, with the boundary of the City of Redlands just east and the City of Loma Linda just west (Figure 1). Specifically, the site is located approximately 1.9 miles south of Interstate 10, 1.52 miles east of Mountain View Avenue, and 0.54 miles west of San Timoteo Canyon Road. The site is situated within Section 32 of Township 1 south, Range 3 west, within the USGS Redlands 7.5' series quadrangle map (Figure 2).

The site is generally bounded as follows: to the west by San Timoteo Creek, with a residential development in the City of Loma Linda beyond; to the north by fallow agricultural lands; to the east by active agricultural lands and the city of Redlands; and to the south by residences, San Timoteo Creek, and agricultural lands, with open habitat and badlands beyond (Figure 3).

1.4) Soils and Topography

Topographically, the site is relatively flat with a gradual downward trending slope to the northwest. The site is approximately 1,315 feet above mean sea level. Surrounding topographic features in the project vicinity include the excavated San Timoteo Creek Channel, Terrace escarpments, rounded to the rolling hills with shallow to steep canyons, and ridgelines.

Soils on the project site are mapped by the Natural Resources Conservation Service SSURGO as San Emigdio fine sandy loam (ScA) and San Emigdio fine sandy loam (ScC).

Soils observed on the site are mostly sandy-loam. Clay soils were not observed.

1.5) Vegetation

The primary vegetation community within the parcel can be characterized as disturbed/non-native grassland/ruderal. This highly disturbed site contains low-growing non-native plant species. The most common plants observed at the time of a previous survey by L&L (in June) include Mediterranean grass, filaree, and Russian thistle. Disturbance at the site includes off-road vehicle activity and periodic disking and/or mowing. Evidence of recent weed abatement was observed during the field survey.

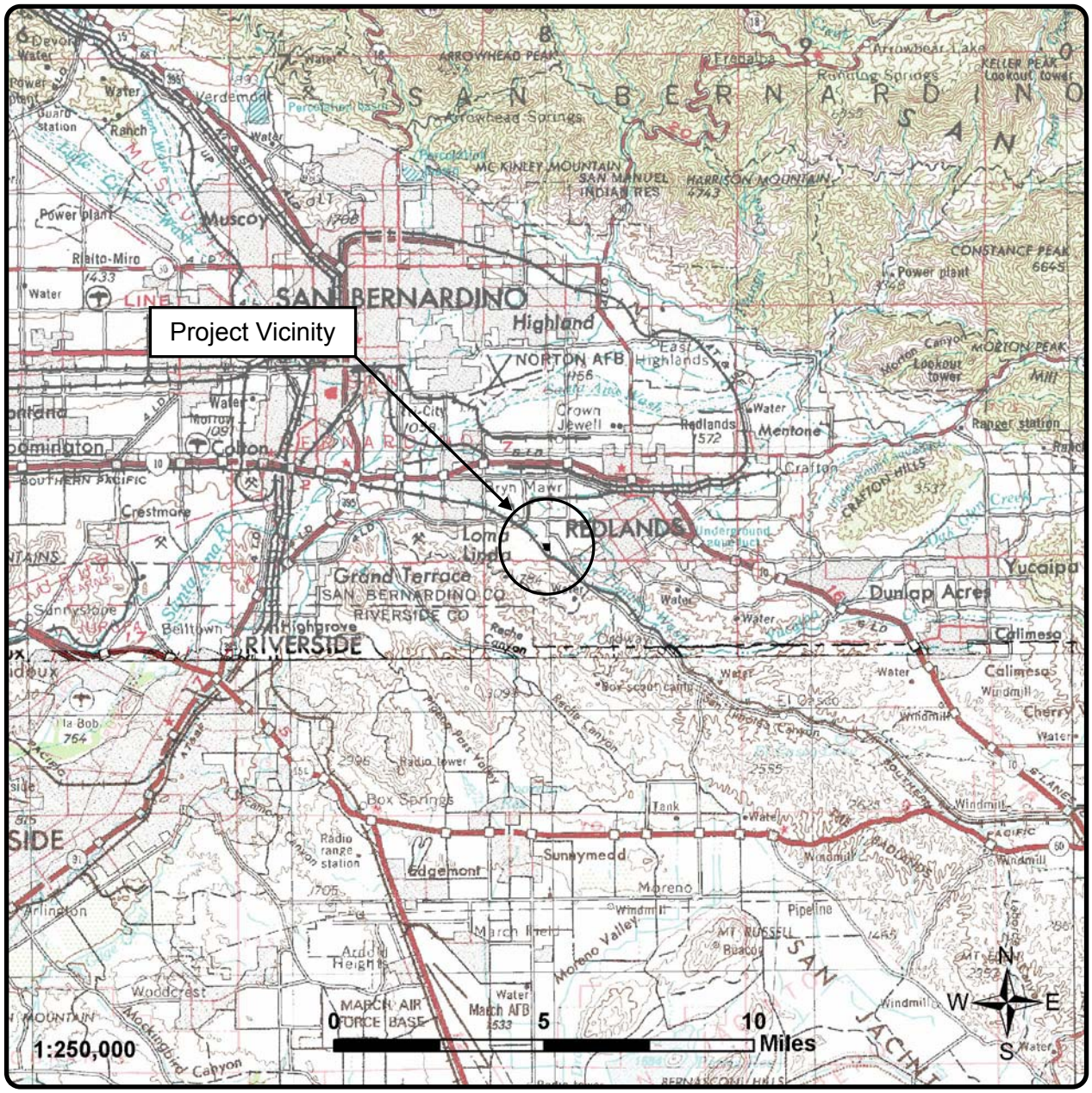

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Figure 1

Project Vicinity Map

lslamic Community Center of Redlands, County of San Bernardino, California

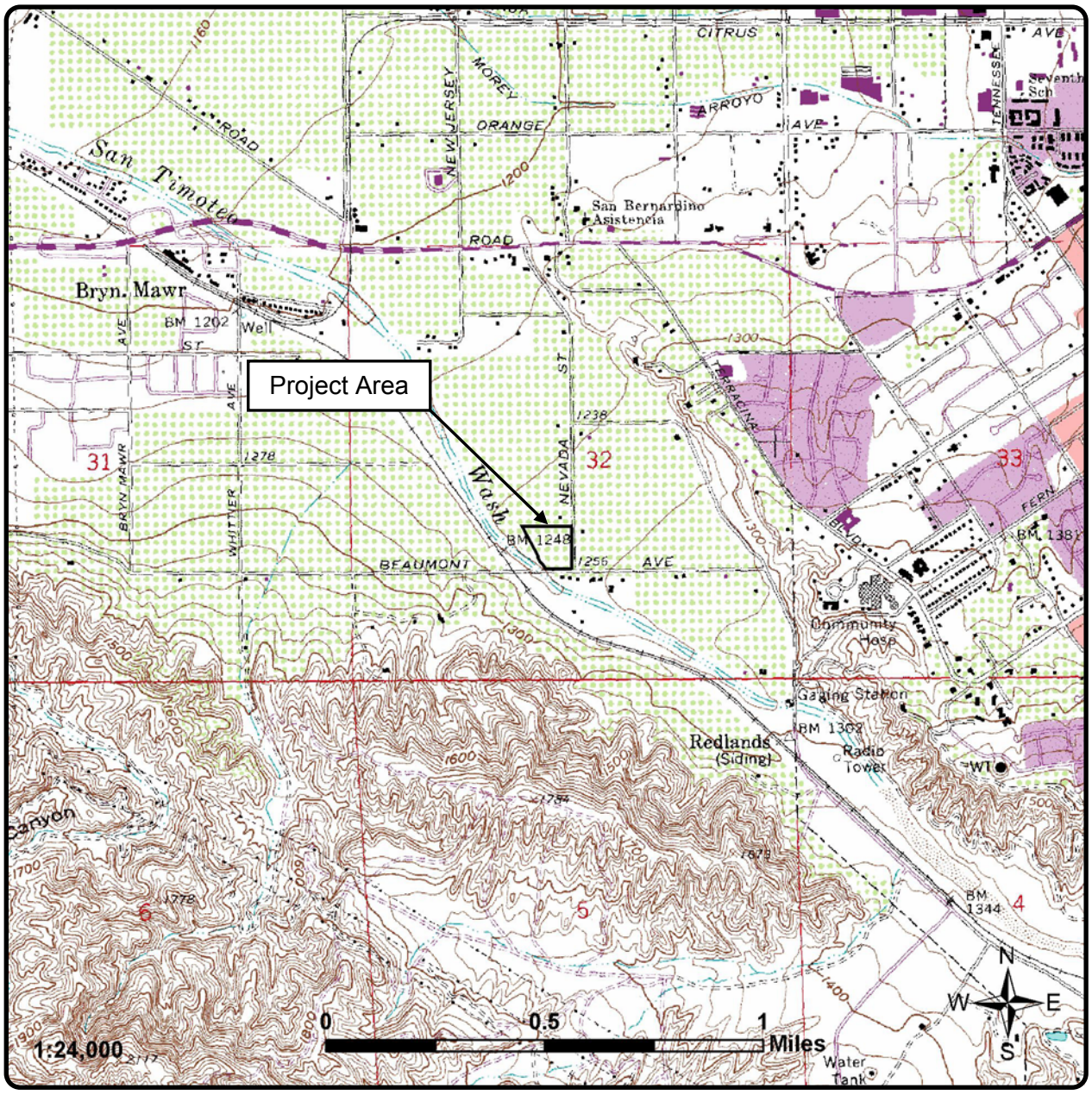

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Figure 2

Project Location Map
(USGS Redlands [1988] quadrangle,
Section 32, Township 1 South, Range 3 West)

lslamic Community Center of Redlands, County of San Bernardino, California

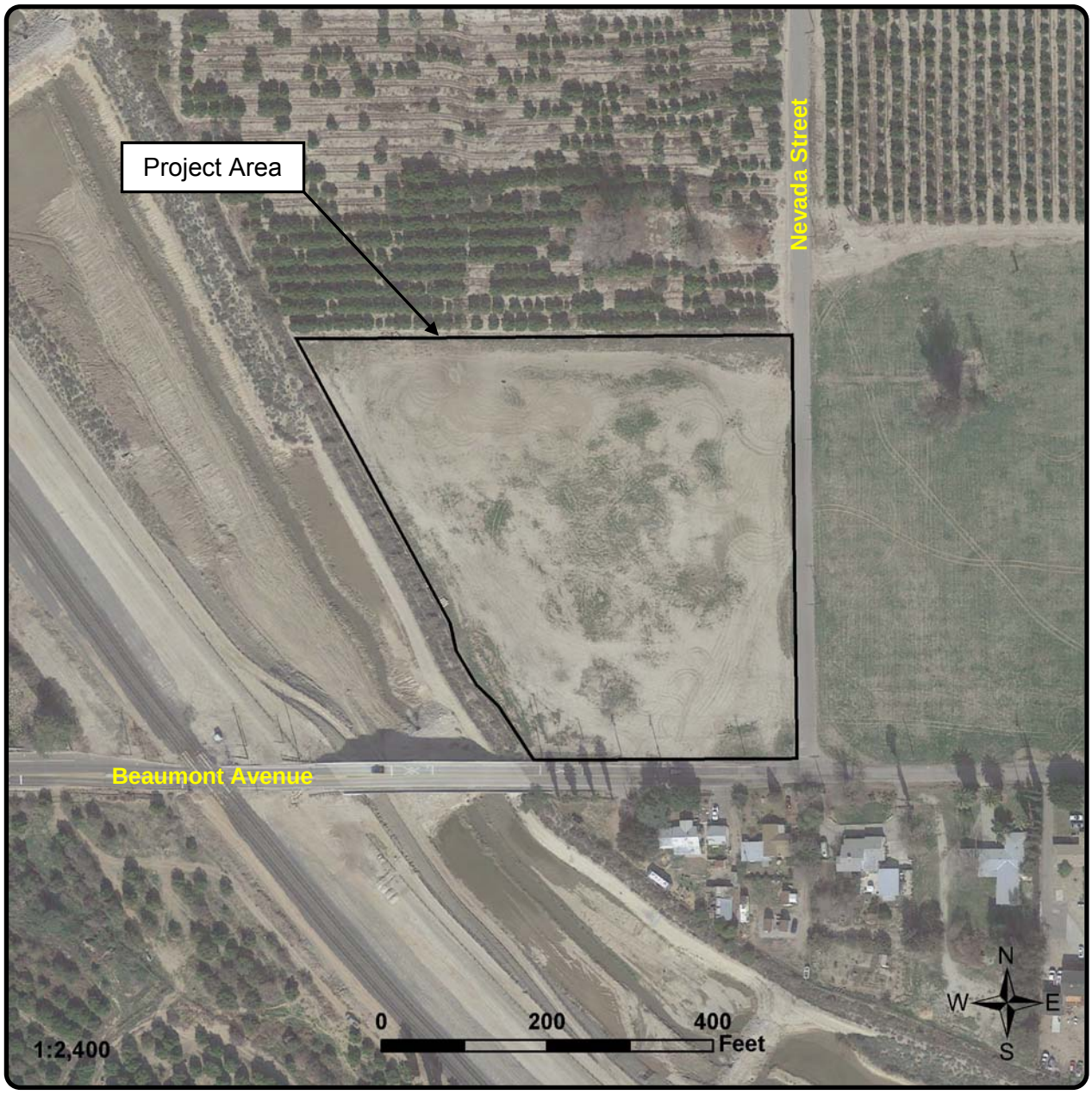

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Figure 3

Aerial Photograph

(Photo obtained from Google Earth, February 2016)

lslamic Community Center of Redlands, County of San Bernardino, California

Local climatic conditions in the project area are characterized by hot summers, mild winters, infrequent rainfall, and low humidity. The average annual temperature is 62° F, ranging between 39° to 112° F. The rainy season begins in November and continues through March, with the quantity and frequency of rain varying annually. The average annual rainfall is approximately 4.5 inches with a range of 1.1 to 11.2 inches. Rivers and streams are dry most of the year.

1.6) Water Resources

No mapped blueline streams are located within the property boundaries. No springs or seeps appear on the topographic map. The closest source of water is immediately offsite to the west, where the ephemeral San Timoteo Wash is located.

2.0) REGULATORY BACKGROUND

The paleontological resource of a rock encompasses any evidence preserved in the rock of once living organisms. As recognized here, this pertains to fossils preserved either as impressions of soft or hard parts, mineralized remains of hard parts, tracks, burrows, or other trace fossils, coprolites, seeds or pollen, and other microfossils. These organisms may have been terrestrial, aquatic, or aerial in life habit.

Fossils are an important resource to science, as they are useful in demonstrating and documenting the evolution of particular groups of organisms. Fossil remains enable geologists to reconstruct the environment in which the organisms lived and hence the environment during deposition of the rock. Fossils are also extremely useful in determining the age of the rock in which they are preserved. Paleontological resources include fossil remains, fossil localities, and formations that have produced fossil material in other nearby areas. The paleontological resource is a limited, nonrenewable, sensitive scientific and educational resource afforded protection under federal, state, and local legislation and policies.

2.1) Paleontologic Resource Requirements Under CEQA

The California Environmental Quality Act (CEQA) requires a lead agency to determine whether a project may have a significant effect on paleontological resources. State of California environmental regulations (California Environmental Quality Act [CEQA], Section 15064.5, Appendix G) address construction activities that may impact paleontological resources. Appendix G provides a checklist of questions that a lead agency should normally address if relevant to a project's environmental impacts. A relevant section of Appendix G that addresses an analysis of Geology and Paleontology is Section (V) (c), which asks if the project will directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

2.2) San Bernardino County Development Code

Obtained from: sbcounty.gov/Uploads/lus/DevelopmentCode/DCWebsite.pdf

The County of San Bernardino (Development Code §82.20.040) defines a qualified vertebrate paleontologist as meeting the following criteria:

> **Education:** An advanced degree (Masters or higher) in geology, paleontology, biology or related disciplines (exclusive of archaeology).

Professional experience: At least five years professional experience with paleontologic (not including cultural) resources, including the collection, identification and curation of the resources.

The County of San Bernardino (Development Code §82.20.030) requires that paleontologic mitigation programs include, but not be limited to:

(a) Field survey before grading. In areas of potential but unknown sensitivity, field surveys before grading shall be required to establish the need for paleontologic monitoring.

(b) Monitoring during grading. A project that requires grading plans and is located in an area of known fossil occurrence, or that has been demonstrated to have fossils present in a field survey, shall have all grading monitored by trained paleontologic crews working under the direction of a qualified professional, so that fossils exposed during grading can be recovered and preserved. Paleontologic monitors shall be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors shall be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Monitoring is not necessary if the potentially-fossiliferous units described for the property in question are not present, or if present are determined upon exposure and examination by qualified paleontologic personnel to have low potential to contain fossil resources.

(c) Recovered specimens. Qualified paleontologic personnel shall prepare recovered specimens to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Preparation and stabilization of all recovered fossils is essential in order to fully mitigate adverse impacts to the resources.

(d) Identification and curation of specimens. Qualified paleontologic personnel shall identify and curate specimens into the collections of the Division of Geological Sciences, San Bernardino County Museum, an established, accredited museum repository with permanent retrievable paleontologic storage. These procedures are also essential steps in effective paleontologic mitigation and CEQA compliance. The paleontologist must have a written repository agreement in hand prior to the initiation of mitigation activities. Mitigation of adverse impacts to significant paleontologic resources is not considered complete until curation into an established museum repository has been fully completed and documented.

(e) Report of findings. Qualified paleontologic personnel shall prepare a report of findings with an appended itemized of specimens. A preliminary report shall be submitted and approved before granting of building permits, and a final report shall be submitted and approved before granting of occupancy permits. The report and inventory, when submitted to the appropriate Lead Agency along with confirmation of the curation of recovered specimens into the collections of the San Bernardino County Museum, will signify completion of the program to mitigate impacts to paleontologic resources.

(f) Mitigation financial limits. In no event shall the County require the applicant to pay more for mitigation as required by Subsections (b), (c), and (d), above within the site of the project than the following amounts:

(1) One-half of one percent of the projected cost of the project, if the project is a commercial or industrial project;

(2) Three-fourths of one percent of the projected cost of the project for a housing project consisting of one unit; and

(3) If a housing project consists of more than one unit, three-fourths of one percent of the projected cost of the first unit plus the sum of the following:

(A) $200 per unit for any of the next 99 units;

(B) $150 per unit for any of the next 400 units; and

(C) $100 per unit for units in excess of 500.

2.3) Professional Standards

Within the Society of Vertebrate Paleontology (SVP) are guidelines titled, "The Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontologic Resources." They are a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources (SVP 2010).

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In "Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources" the SVP (2010) defines three categories of paleontological sensitivity (potential) for sedimentary rock units: high, low, and undetermined:

- **High Potential:** Rock units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered and are considered to have a high potential for containing significant nonrenewable fossiliferous resources. These units include, but are not limited to, sedimentary formations and some volcanic formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical, and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas that contain potentially datable organic remains older than Recent, including deposits

associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways are also classified as significant.

- **Low Potential:** Reports in the paleontologic literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils. Such units will be poorly represented by specimens in institutional collections.

- **Undetermined Potential:** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.

Note that highly metamorphosed rocks and granitic rock units generally do not yield fossils and therefore have low potential to yield significant nonrenewable fossiliferous resources.

In general terms, for geologic units with high potential, full-time monitoring typically is recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts typically are not required. For geologic units with undetermined potential, field surveys by a qualified paleontologist are usually recommended to specifically determine the paleontologic potential of the rock units present within the study area.

3.0) RESEARCH DESIGN AND METHODS

3.1) Paleontological Research Design and Goals

The paleontologic resource of a rock encompasses any evidence preserved of once living organisms in the rock. As recognized here, this pertains to fossils preserved either as impressions of soft or hard parts, mineralized remains of hard parts, tracks, burrows, or other trace fossils, coprolites, seeds or pollen and other microfossils. These organisms may have been terrestrial, aquatic, or aerial in life habit.

Fossils are an important resource to science as they are useful in demonstrating and documenting the evolution of particular groups of organisms. Fossils also enable geologists to reconstruct the environment in which the organisms lived and the environment during deposition of the rock, and are also extremely useful in determining the age of the rock in which they are preserved. Paleontologic resources include fossil remains, fossil localities, and formations that have produced fossil material in other nearby areas. The paleontologic resource is a limited, nonrenewable, sensitive scientific educational resource afforded protection under federal laws and regulations designed to preserve environmental quality. In California, the paleontologic resource is offered protection under CEQA.

Potential adverse environmental impacts that could result from excavation on the parcel and that might affect paleontologic resources (unrecorded fossil sites and remains) were assessed. Mitigation measures were then developed to reduce these impacts to an insignificant level. The assessment and mitigation measures are in compliance with 1995 Society of Vertebrate Paleontology (SVP) standard guidelines for reducing the potential adverse impact of construction on paleontologic resources.

3.2) Assessment Criteria

The paleontological sensitivity of a formation or unnamed sedimentary unit-described as high, low, unknown, or none, is the measurement most conducive to assessing the sensitivity of the paleontologic resources and reflects the potential productivity and importance of the fossils produced within a study area. The procedures utilized in this study to evaluate the paleontologic resource of a rock unit are similar to those utilized by the Society of Vertebrate Paleontology guidelines (2010).

The potential productivity of a formation is measured as high, low, unknown, or none, based upon the densities of fossil specimens or localities within or near the study area. Exposures of a particular formation within a study area most likely will yield fossils similar in number and kind to those previously recorded from the formation in the surrounding area, and may contain a similar density of fossil sites. The criteria for establishing the potential productivity of a formation exposed within the study area are described in the table below:

Table 1. Potential Paleontological Sensitivity Criteria

Paleontological Sensitivity	Criteria
High potential	Formation contains a high density of fossil sites and/or has produced numerous remains locally and is very likely to yield additional remains.
Low potential	Poorly exposed or studied formation that contains a very low density of recorded fossil localities and has produced little remains locally.
Unknown potential	Formations for which no data, or insufficient data is available from the immediate vicinity to allow an accurate assessment of its potential for yielding important fossil remains within the study area.
No potential	Unfossiliferous igneous and metamorphic rock units with no potential for yielding any fossil remains or Recent to sub-Recent sedimentary deposits that are too young to yield organic remains greater than 10,000 years old.

3.3) Literature Review

The literature review for this study included an examination of geologic maps for the Project area and encompassed the entire Project footprint and a one-mile buffer. The review included previous geologic mapping of the area. In addition to the reviewed published geologic maps, technical reports provided the basis from which the regional and Project-specific geology was derived for this Project.

Pertinent published literature and unpublished manuscripts with regard to the geology and paleontology of southwestern San Bernardino County were also reviewed for this project. In the process of conducting the background literature review, existing paleontological resource data—including such published resources as books, journals, and geologic maps, as well as information available via the internet on government websites—were consulted. Furthermore, an online database search was conducted to identify previous paleontological resource assessments conducted within the Project boundaries and in the surrounding area.

3.4) Paleontological Records and Collections Search

Due to the random nature of the fossil record, paleontologists cannot ascertain either the quality or the quantity of fossils present in a given geologic unit prior to exposure by natural erosion or

human-caused disturbance. Therefore, in the absence of surface fossils it is necessary to assess the sensitivity of the rock units based on their known potential to yield scientifically significant paleontological resources elsewhere in the same geologic units (both within and outside of the study area) or a unit representative of the same depositional environment.

The paleontology impacts of the proposed project are discussed below under subheadings corresponding to each of the significance criterion presented in the preceding section. The analysis describes the impacts of the proposed project related to paleontological resources for each criterion and determines whether implementation of the proposed project would result in significant impacts by evaluating effects of earthmoving by the proposed project against the affected environment.

To evaluate potential paleontological impacts due to earthmoving associated with construction, a paleontological records and literature search was conducted at institutions and museums (LACM) that house paleontological collections from the study area. Pertinent published literature and unpublished manuscripts on the geology and paleontology of Redlands/San Bernardino and surrounding areas were reviewed.

The geologic rock unit in the proposed project area was rated for paleontological resources that may be present on the surface or would be exposed during ground disturbing construction activities based on the SVP Guidelines (SVP 2010).

4.0) RESULTS

4.1) Literature Review

A comprehensive literature search was conducted.

Quaternary alluvium (Qa) The project area is underlain by Quaternary alluvial sand, gravel, and clay of valley areas which are fluvial deposits in the San Timoteo Creek drainage of Holocene age. These sediments are covered with thick soil (Dibblee & Minch 2003, Figure 4).

4.2) Paleontological Records Search

A comprehensive museum collection records search of the Vertebrate Paleontology Section collections of the Natural History Museum of Los Angeles County (McLeod 2016) and an online search of the Museum of Paleontology, University of California, Berkeley (Museum of Paleontology, University of California, Berkeley 2016) indicated no previously recorded sites on or immediately adjacent to the property. The record search received states:

> "The entire proposed project area has surface deposits composed of soil on top of younger Quaternary Alluvium, derived primarily as fluvial deposits via San Timoteo Creek that currently flows adjacent to the southwestern border of the proposed project area. Typically these types of deposits do not contain significant vertebrate fossils in the uppermost layers and we have no vertebrate fossil localities very nearby from these deposits. At varying depths, however, these deposits always have the potential to contain significant fossil vertebrate remains. Our closest vertebrate fossil locality from somewhat similar deposits is LACM 4540, south-southeast of the proposed project area on the northeastern side of the San Jacinto Valley just west of Jack Rabbit Trail, that produced a specimen of fossil horse, *Equus*. Our next closest fossil vertebrate locality from similar deposits is LACM 7811, west-southwest of the proposed project area in the Jurupa Valley north of Norco and west of Mira Loma, that produced a fossil specimen of coachwhip, *Masticophis flagellum*.
>
> Shallow excavations in the younger Quaternary Alluvium found at the surface throughout the proposed project area probably will not uncover any significant vertebrate fossils. Deeper excavations that extend down into the older sedimentary deposits, however, may well encounter significant fossil vertebrate remains. Any substantial excavations in the proposed project area, therefore, should be closely monitored to quickly and professionally collect any fossils discovered without impeding development. Sediment samples should also be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations." (McLeod 2016)

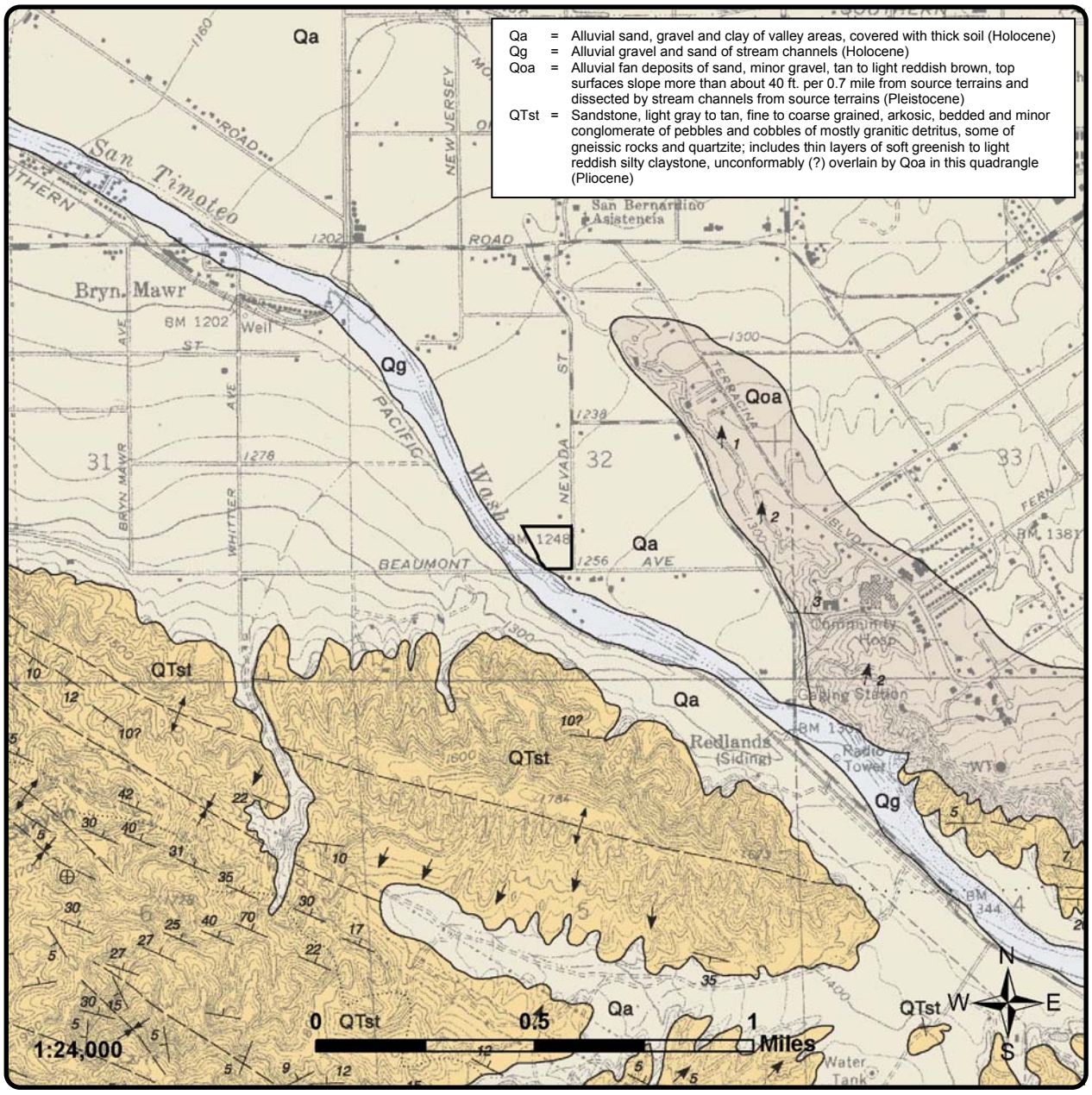

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Figure 4

Geologic Map

(USGS Redlands [1988] quadrangle,
Section 32, Township 1 South, Range 3 West,
Dibblee, T. W. and J. A. Minch [2003])

lslamic Community Center of Redlands, County of San Bernardino, California

5.0) PROJECT SUMMARY WITH MITIGATION RECOMMENDATIONS

5.1) Paleontological Summary

The paleontologic resources record searches did not identify any previously recorded paleontological localities on or near the project area. The potential for destruction of paleontological resources by surficial earthmoving during construction is considered to be low for soil near the surface, but potential increases at depth (Table 2).

Table 2. Paleontological sensitivity potential of lithologic unit(s) present.

Lithologic Unit	Paleontological Sensitivity
Alluvial sand, gravel and clay of valley areas, covered with thick soil (Holocene)	Low Surficial Potential, but Greater at Depth
Alluvial gravel and sand of stream channels (Holocene)	Low Surficial Potential, but Greater at Depth

5.2) Paleontological Mitigation Recommendations

There is low potential for locating significant paleontological resources during grading and trenching within the project area near the soil surface, but potential increases at greater depth below the surface. Because of this potential, any excavation below five (5) feet in depth should be monitored by a qualified paleontologist.

6.0) REFERENCES

Dibblee, T. W., and Minch, J. A. 2003. Geologic map of the Sunnymead/south 1/2 of Redlands quadrangles, San Bernardino and Riverside County, California. Dibblee Geological Foundation, Dibblee Foundation Map DF-110, scale 1:24,000.

McLeod, S. A. 2016. Paleontological Resources Records Check for the proposed Islamic Community Center of Redlands Project, Project SBJX-16-517.PRS, near Redlands, San Bernardino County, project area. Natural History Museum of Los Angeles County.

Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology, 11 pp.

University of California Museum of Paleontology. 2016. UCMP Specimen Search.

7.0) CERTIFICATION

Certification: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

DATE: October 24, 2016 SIGNED: _____

Leslie Irish, Principal, L&L Environmental, Inc.
909-335-9897

DATE: October 24, 2016 SIGNED: _____

Mark Roeder, Sr. Paleontologist, L&L Environmental, Inc.
909-335-9897

APPENDICES

Appendix A – Record Search Results

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Vertebrate Paleontology Section
Telephone: (213) 763-3325
Fax: (213) 746-7431
e-mail: smcleod@nhm.org

21 October 2016

L&L Environmental, Inc.
721 Nevada Street, Suite 307
Redlands, CA 92373

Attn: Jeffrey Sonnentag, Ph.D., Senior Biologist

re: Paleontological Resources Records Check for the proposed Islamic Community Center of Redlands Project, Project SBJX-16-517.PRS, near Redlands, San Bernardino County, project area

Dear Jeffrey:

I have thoroughly searched our paleontology collection records for the locality and specimen data for the proposed Islamic Community Center of Redlands Project, Project SBJX-16-517.PRS, near Redlands, San Bernardino County, project area as outlined on the portion of the Redlands USGS topographic quadrangle map that you sent to me via e-mail on 10 October 2016. We do not have any vertebrate fossil localities that lie directly within the proposed project boundaries, but we do have a localities at some distance from sedimentary deposits similar to those that may occur subsurface in the proposed project area.

The entire proposed project area has surface deposits composed of soil on top of younger Quaternary Alluvium, derived primarily as fluvial deposits via San Timoteo Creek that currently flows adjacent to the southwestern border of the proposed project area. Typically these types of deposits do not contain significant vertebrate fossils in the uppermost layers and we have no vertebrate fossil localities very nearby from these deposits. At varying depths, however, these deposits always have the potential to contain significant fossil vertebrate remains. Our closest vertebrate fossil locality from somewhat similar deposits is LACM 4540, south-southeast of the proposed project area on the northeastern side of the San Jacinto Valley just west of Jack Rabbit Trail, that produced a specimen of fossil horse, *Equus*. Our next closest fossil vertebrate locality

from similar deposits is LACM 7811, west-southwest of the proposed project area in the Jurupa Valley north of Norco and west of Mira Loma, that produced a fossil specimen of coachwhip, *Masticophis flagellum*.

Shallow excavations in the younger Quaternary Alluvium found at the surface throughout the proposed project area probably will not uncover any significant vertebrate fossils. Deeper excavations that extend down into the older sedimentary deposits, however, may well encounter significant fossil vertebrate remains. Any substantial excavations in the proposed project area, therefore, should be closely monitored to quickly and professionally collect any fossils discovered without impeding development. Sediment samples should also be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

Appendix B – Photos

View looking south

View looking southeast

View looking east mid point in the parcel

View looking east along south boarder

View looking northwest along north boundary of the adjacent irrigation ditch

View of adjacent CSS habitat