APPENDIX F

Cultural Resources Evaluation

CULTURAL RESOURCES INVENTORY REPORT
for the
DORSEY MARKETPLACE PROJECT, GRASS VALLEY, NEVADA COUNTY, CALIFORNIA

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NATIONAL ARCHAEOLOGICAL DATABASE (NADB) INFORMATION

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Project Proponent: City of Grass Valley

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Type of Study: Archaeological Inventory

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USGS Quads: Grass Valley, California 1:24,000; T 16N, R 8E; Section 23

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TABLE OF CONTENTS

Section **Page No.**

TABLE OF CONTENTS (CONTINUED)

Page No.

FIGURES

TABLES

APPENDICES

MANAGEMENT SUMMARY

The Dorsey Marketplace Project (project) is located in the community of Grass Valley, Nevada County, California (Figure 1). The project area is bordered by State Route 49 to the west, Dorsey Drive to the north, the Old Barn and Ernie's Storage to the south and the Grass Valley Terrace Apartments to the east. The project area is 27 acres in size. The project area occurs within Section 23 of Township 16 North, Range 8 East on the Rough and Ready 7.5-minute USGS topographic quadrangle (Figure 2).

The City of Grass Valley proposed project at Dorsey Marketplace involves developing the entire 27-acre parcel of land. Proposed developments include commercial, residential, and recreational facilities.

The City of Grass Valley is the Lead Agency for compliance with the California Environmental Quality Act (CEQA). The City contracted Dudek to perform a Phase I cultural resource inventory for the project, in compliance with CEQA.

A records search was completed for the current project for a one-mile radius around the project area by staff at the North Central Information Center (NCIC) at California State University Sacramento. The records search identified one previously recorded cultural resource, Spring Hill Mine (P-29-002455), in the project area. A 2001 Caltrans study determined this resource to be not eligible for listing in the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). A Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search did not indicate the presence of any Native American cultural resources in or near the project area. Subsequent Native American outreach letters were sent to the NAHC-listed Tribal representatives. No responses have been received to date.

Based on available information, and in consideration of the topography and the presence of recorded cultural resource located within the project area, Dudek recommends that a qualified archaeologist should be present at the Dorsey Marketplace Project preconstruction meeting to discuss archaeological sensitivity within the project area and to work with the construction project manager and/or foreman to determine the duration and extent of monitoring for historical archaeological deposits that may be uncovered during project implementation.

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1 INTRODUCTION

1.1 Project Location and Description

The Dorsey Marketplace Project (project) is located in the City of Grass Valley, which is located along State Route (SR) 49 between Nevada City and Alta Sierra. The project site is bordered by SR 49 to the west, Dorsey Drive to the north, the Old Barn and Ernie's Storage to the south and the Grass Valley Terrace Apartments to the east. The project area is 27 acres in size. The project area occurs within Section 34 of Township 16 North, Range 7 East on the Rough and Ready 7.5-minute USGS topographic quadrangle.

The proposed project is requesting a General Plan Amendment and rezone to change the land use designation on the site from Business Park to Commercial (21.2 acres) and Residential Urban High Density (5.7 acres). This 26.9 acre direct impact footprint constitutes the area of potential effects (APE). The vertical APE is represented by the by the maximum depth of excavation, which is anticipated to be less than approximately 20 feet below the surface. The project is also requesting a rezone from Corporate Business Park to Commercial (C-2) and residential (R-3). This would facilitate the proposed development of 181,900 square feet of commercial building space and 90 multi-family dwelling units. Within the commercial component of the project, there are four major shops (with sizes ranging between 20,00 and 40,000 square feet), six smaller shops (with sizes ranging between 3,800 and 7,200 square feet), and four pads for drive-through restaurants (with sizes ranging between 3,000 and 4,000 square feet). The proposed dwelling units would be offered as market-rate rental units and are expected to include 50 2-bedroom units and 20 each of the 1- and 3-bedroom layouts. The units would range in size from 1,013 to 1,600 square feet. They would be constructed as two-story buildings in the southeast corner of the project site. This area would include an apartment clubhouse and pool. A small dog park is also proposed to be placed along the eastern site boundary, south of proposed Pad 4.

The City of Grass Valley is the Lead Agency for compliance with the California Environmental Quality Act (CEQA). The City contracted Dudek to perform a Phase I cultural resource inventory for the project, in compliance with CEQA.

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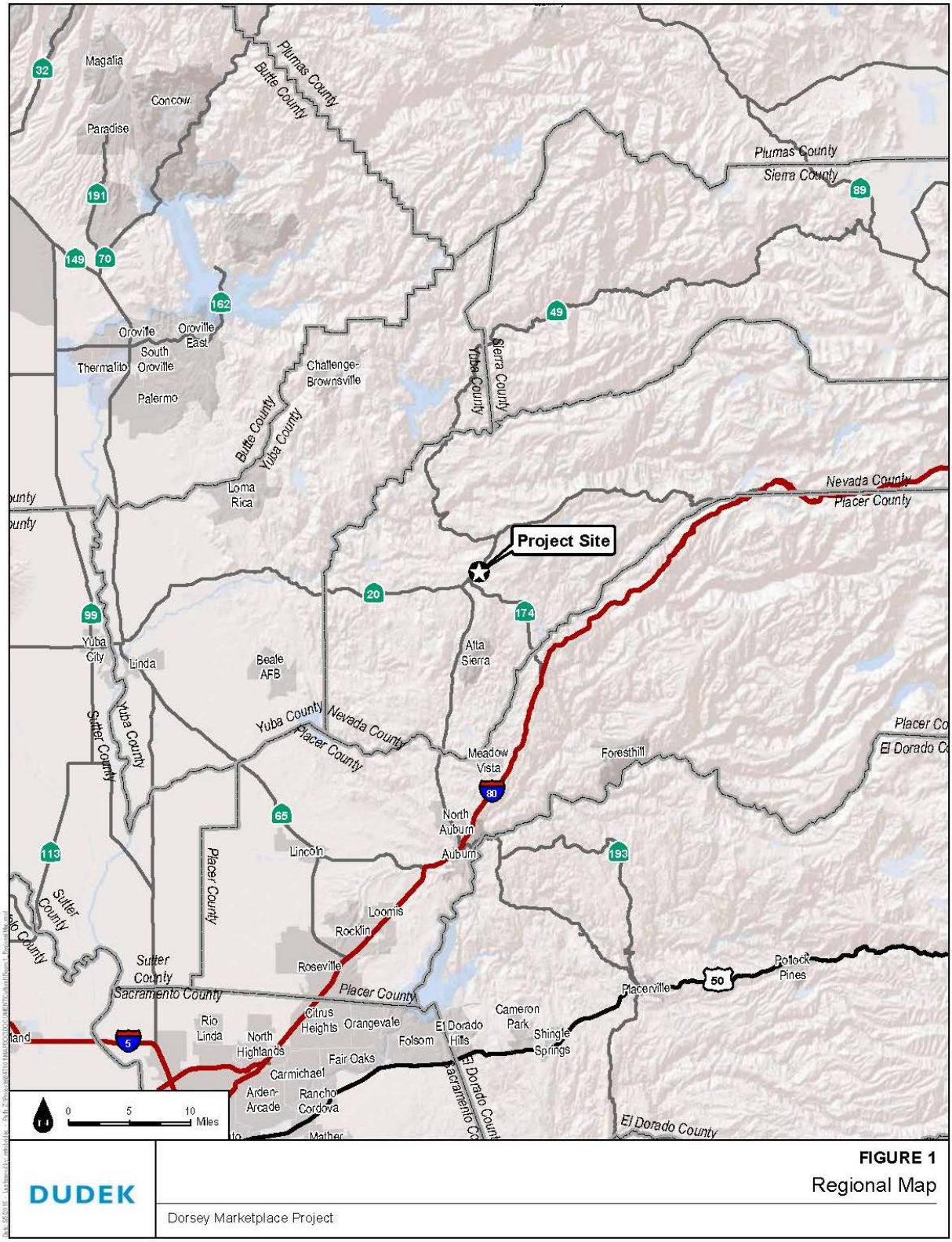
Project Site
Magalia
Concow
Paradise
Oroville
Oroville East
South Oroville
Thermalito
Palermo
Challenge-Brownsville
Loma Rica
Yuba City
Linda
Beale AFB
Atta Sierra
Meadow Vista
Foresthill
North Auburn
Auburn
Lincoln
Loomis
Rocklin
Roseville
Sacramento County
Placer County
Nevada County
Yuba County
Sutter County
Butte County
Plumas County
Sierra County
El Dorado County
Rio Linda
Citrus Heights
Orangevale
North Highlands
Folsom
El Dorado Hills
Cameron Park
Shingle Springs
Fair Oaks
Carmichael
Arden-Arcade
Rancho Cordova
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FIGURE 1
Regional Map
Dorsey Marketplace Project

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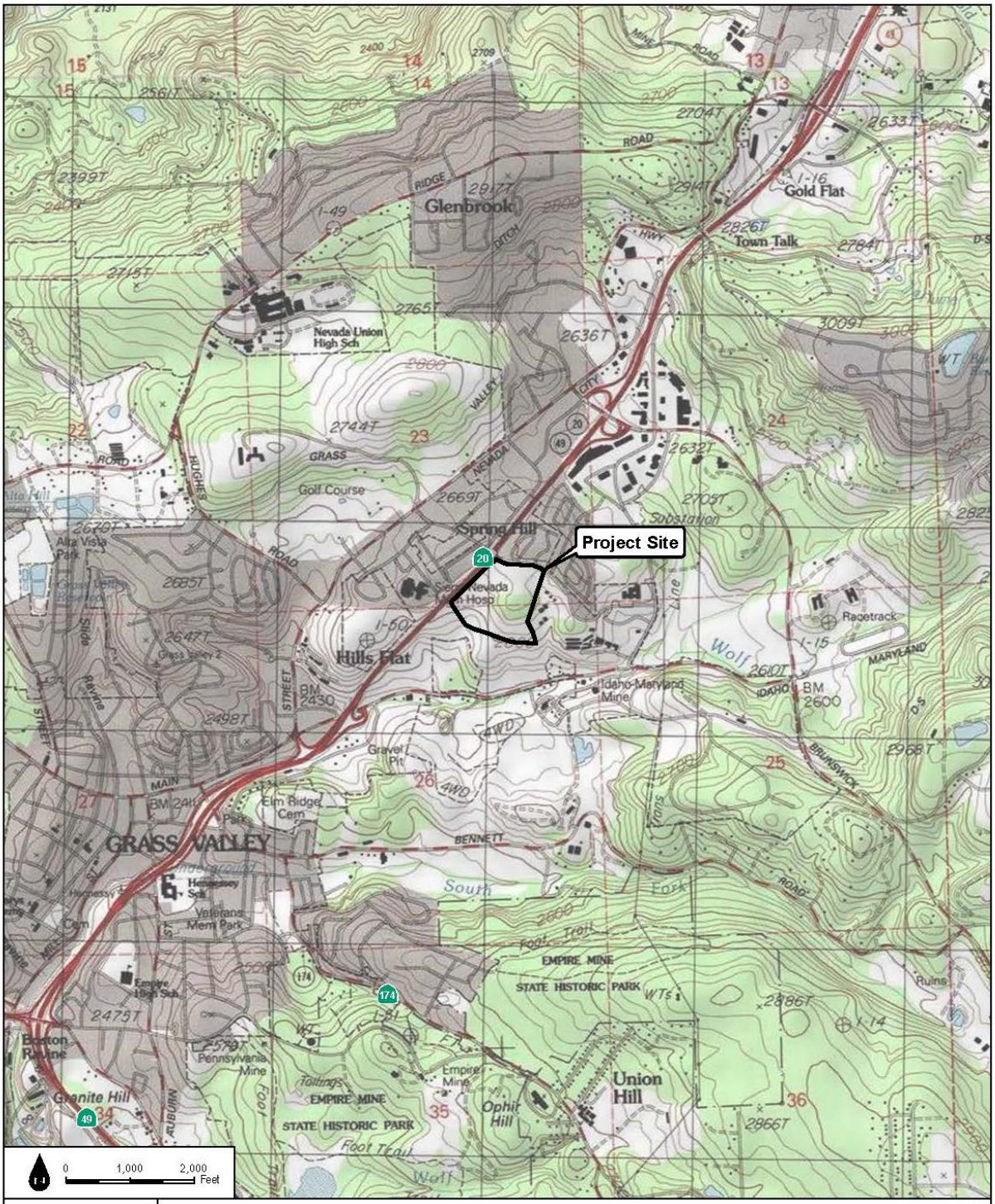

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SOURCE: USGS 7.5-Minute Series Grass Valley Quadrangle

FIGURE 2
Vicinity Map

Dorsey Marketplace Project

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1.3 Regulatory Context

The current cultural resources investigation was completed to satisfy CEQA.

1.3.1 California Register of Historic Resources (CRHR) and CEQA

In California, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." (PRC section 5020.1(j).) In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." (PRC section 5024.1(a).) The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP), enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than fifty years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see Cal. Code Regs., tit. 14, section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC section 21083.2(g) defines "unique archaeological resource."
- PRC section 21084.1 and CEQA Guidelines section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource;" it also defines the circumstances when a project would materially impair the significance of an historical resource.

- PRC section 21074(a) defines "tribal cultural resources."

- PRC section 5097.98 and CEQA Guidelines section 15064.5(e): Set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.

PRC sections 21083.2(b)-(c) and CEQA Guidelines section 15126.4: Provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource." (PRC section 21084.1; CEQA Guidelines section 15064.5(b).) If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA. (PRC section 21084.1; CEQA Guidelines section 15064.5(a).) The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption. (PRC section 21084.1; CEQA Guidelines section 15064.5(a).)

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." (CEQA Guidelines section 15064.5(b)(1); PR Code section 5020.1(q).) In turn, the significance of an historical resource is materially impaired when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

(CEQA Guidelines section 15064.5(b)(2).) Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2[a], [b], and [c]).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC section 21083.2(a); CEQA Guidelines section 15064.5(c)(4).) However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC 21074(c); 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC section 5097.98.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (section 7050.5b). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California Native American Heritage Commission (NAHC) within 24 hours (section 7050.5c). The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

2 PROJECT CONTEXT

2.1 Environmental Context

Average annual temperatures in the area range between 30 and 95 degrees Fahrenheit (Storer and Usinger 1963). Winter rains are substantial, with annual precipitation varying from 15 inches, in relatively dry years, to 40 inches in wet years.

Vegetation within this area is consistent with transitional Foothill and Yellow Pine communities. Tree varieties within this environment commonly include grey pine (*Pinus sabiniana*), interior live oak (*Quercus wislizenii*), blue oak (*Quercus douglasii*), California buckeye (*Aesculus californica*), yellow pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*), Douglas fir (Pseudotsuga menziesii), white fir (Abies concolor), incense cedar (Libocedrus decurrens), black cottonwood (*Populus trichocarpa*), black oak (*Quercus kelloggii*), broadleaf maple (*Acer macrophyllum*), and California dogwood (*Cornus nuttallii*). Common shrubs include redbud (*Cercis occidentalis*), chamise (*Adenostoma fasciculatum*), ceanothus (*Ceonothus leucodermis*), mountain misery (*Chamaebatia foliolosa*), prostrate ceanothus (*Ceanothus prostratus*), and western azalea (*Rhododendron occidentale*; Selverston 2008; Storer and Usinger 1963). Common mammals include squirrel (*Sciurus sp*.), striped skunk (*Mephitis mephitis*), mule and whitetail deer (*Odocoileus sp*.), cottontail rabbit (*Sylvilagus sp*.), black-tailed jackrabbit (*Lepus californicus*), opossum, black bear (*Ursus americanus*), gray fox (*Urocyon cinereoargenteus*), mountain lion (*Puma concolor*), raccoon (*Procyon lotor*), among others. Birds include California quail (*Callipepla californica*), bushtit (*Psaltriparus minimus*), wild turkey (*Meleagris gallopavo*), woodpecker (*Melanerpes*), stellar jay (*Cyanocitta stelleri*), owl (*Megascops*), turkey vulture (*Cathartes aura*), warbler, and others. Additional animals include a variety of reptiles and amphibians, as well as insects.

2.2 Cultural Context

Various attempts to parse out information provided through recorded archaeological assemblages from throughout California for the past 12,000 years have led to the development of several cultural chronologies. Some of these are based on geologic time, most are interpreted through temporal trends derived from archaeological assemblages, and others are interpretive reconstructions. Each of these chronologies describe essentially similar trends in assemblage composition in more or less detail. California's archaeological assemblage composition is generally accepted as falling within the following overarching patterns: Paleoindian (pre-5500 BC), Archaic (8000 BC – AD 500), Late Prehistoric (AD 500–1750), and Ethnohistoric (post-AD 1769).

Occupation of the Sierra is likely to have occurred at least 9,000 years ago, however, only a handful of Paleoindian Period lithic bifacial points have been recorded. The nearest of these fluted points were found in Sierra Valley (west of Reno, Nevada; Foster and Betts 1995), Ebbett's Pass (south of Lake Tahoe; Dillon 2002), and at the Sailor Flat site (in the Tahoe National Forest; Wohlgemuth 1984). Fluted points from this area have generally been recorded as isolated finds, or recovered from contexts of mixed provenience. The primary examples of the PaleoIndian pattern, to which such fluted and stemmed points are generally assigned, have been recorded east of the Sierra Nevada. The typical assemblage includes large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of groundstone tools. Some of the most pertinent of such sites were studied by Emma Lou Davis (1978) on China Lake Naval Air Weapons Station, near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multicomponent fluted point site, and MNO-680—a single component Great Basined Stemmed point site (Basgall et al. 2002). At MNO-679 and MNO-680, groundstone tools were rare while finely made projectile points were common.

While the limited available data relating to the earliest occupation in the region has provided for a relatively broad and consistent interpretation of the Paleoindian Period, subsequent prehistoric temporal sequences are much more geographically defined and variable due to the greater amount of available data. The Tahoe Reach is currently the most commonly applied cultural temporal sequence within the region. This draws from regional syntheses primarily developed by both Heizer and Elsasser (1953) and Elston, Davis, and Townsend (1977). The sequence includes the Washoe Lake Phase, Tahoe Reach Phase, Spooner Phase, Martis Complex, and Kings Beach Complex (Hull 2007; Moratto 1984, 1999). Of these, the Martis Complex and the Kings Beach Complex are most applicable to the current project area.

2.2.1 Martis Complex (3000 B.C.–A.D. 500)

The Martis complex has been identified to extend from Lassen County to Alpine County (Elsasser 1960). The date range, 3000 B.C. to approximately 500 A.D. has been substantiated by obsidian hydration and radiocarbon dates provided by Elsasser and Gortner (1991). Subsistence during the Martis Complex was based on hunting and seed collecting economy, with highly mobile populations that exploited both upper and lower regions based on the relative seasonal abundance of resources. Projectile points are variable during this period, and were most commonly heavy with low formality, providing some resemblance to those identified in the Great Basin regions. Temporally representative tools include finger-held drills or punches, retouched volcanic flake scrapers, spokeshave-notched tools, and large biface blades and cores

(Hull 2007). During this period there is a more intensive exploitation of local materials, rather than non-local cherts and obsidian, for the manufacture of formed flaked tools.

2.2.2 Kings Beach Complex (A.D. 500–Historic Contact)

Similar to the Martis Complex, the Kings Beach Complex was characterized by populations that migrated between upper areas in the warmer months and lower elevations during the fall and winter. Subsistence during this period shifted toward a focus on fishing and gathering. A reduction in size and weight of projectile points corresponded with adoption of bow and arrow technology. Typical point forms within this region included Desert Side-notched, Cottonwood, and Rosegate series (CRM 2011). Obsidian and chert replaced volcanic materials such as basalt as the preferred materials for the manufacture of lithic tools. As both high quality cherts and obsidian are not local, the greater presence of such exotic materials suggests that there was an increase in trade with neighboring tribes during this period.

The Kings Beach Complex additional included a greater reliance on exploitation of acorns. This trend is exemplified by the increased presence of bedrock mortars and pestles formed from local cobbles. It should be noted that while bedrock mortars were predominantly used for crushing and grinding acorns, they were also employed for the processing of a variety of other foods, including deer meat, camas roots and seeds (CRM 2011). While the creation of mortars indicated a relatively high investment of time and energy, such bedrock milling features are just as frequently found at sites with limited-to-no subsurface cultural deposits as at intensive use occupation areas with well-developed midden soils.

2.2.3 Ethnohistoric (post-AD 1750)

The region surrounding the project area would have been in Hill Nisenan (also known as the southern Maidu) tribal territory during the ethnohistoric period (Wilson and Towne 1978). This group inhabited the Yuba, Bear, and American river watersheds, extending from the Sierra Nevada summit to the Sacramento River. Ethnographic work, most prominently conducted by Stephen Powers in the 1870s, writes of a relatively high population of indigenous inhabitance in this region (1877). Notably, Powers identified 18 named villages alone along the Bear River, further suggesting that there may have been a larger portion of villages that he had no knowledge of. This was substantiated by interviews conducted by Hugh Littlejohn in 1928, who recorded a number of additional named habitation areas (Carlson 1986).

Nisenan habitation areas were most commonly situated near primary drainages, along ridgelines with mild slopes and south-facing exposures (Wilson and Towne 1978). Traditional village features included bedrock milling stations, granaries, conical house structures, as well as sweat

and ceremonial houses. The dead were typically cremated and buried within the boundaries of the habitation area. Tribal groups included extended and unmarried relatives. Groups of Hill Nisenan did have defined chiefs, however, these individuals were chosen based on wealth and popularity rather than hereditary decent (Kroeber 1925). Intra-tribal boundaries overlapped, with natural resources being shared relatively freely between triblets (Carlson 1986). Inter-tribal conflict did occur over resources, and the Hill Nisenan would attack small hunting parties of Washoe that encroached too far into their territory.

The Nisenan subsistence strategy was centered on fishing, hunting, and collecting vegetative resources. This group was highly mobile, with larger central habitation areas and surrounding satellite sites used during hunting excursions and for pre-processing of collected plant resources such as acorns. Common food items included deer, rabbits, birds, bear, rodents, other mammals of small and moderate size, as well as various insects. Deer were sometimes partially processed using mortar and pestle (Kroeber 1925). A ceremony among the Hill Nisenan involved the hunting of a bear during hibernation season. Common tools included the bows and arrow, traps, harpoons, hooks, nets, portable and stationary grinding implements, and pestles and handstones. A number of goods were made using fibrous plants, including canoes constructed tule balsa or logs. Imported items included shell ornaments and beads (particularly disk beads as a monetary unit), green pigment, tobacco, steatite items, and obsidian (Wilson and Towne 1978). Exported items included bows and arrows, animal skins, pine nuts, and other local resources (Kroeber 1925).

Central California indigenous populations derived their linguistic roots from a common Penution stock. The degree of internal variation among these three decedent language groups (Yokution, Maiduan, and Wintuan) is similar to Indo-European, suggesting a time depth of approximately 6,500 years (Golla 2007). The Nisenan spoke one of four closely related Maiduan languages, including Konkow, Chico Maidu, Mountain Maidu, and Nisenan. Shared Hokan phonological and morphological substratal components identified within all Miduan languages indicate past interactions between these two language populations (Hokan time depth is approximately 8,000 years). Miduan language structure suggests that all four Miduan languages were descended from the same proto-Maiduan speaking population to the north. The most likely scenario is that these populations spread southward in the last last1,200 years, with the Nisenan encroaching into area previously occupied by Miwok tribal groups sometime in the past few centuries (Golla 2007). This later population movement is further substantiated by the high frequency of Miwok loan words found within Nisenan vocabulary, a trait that is not shared with the other three Maiduan languages.

2.2.4 The Historic Period

Spanish Period (1769–1822)

Gaspar de Portolá entered the San Francisco bay in 1769. Additional explorations of the san Francisco bay and the plains to the east were conducted by father Pedro Fages in 1772 and Juan Bautista De Anza in 1776 (Grunsky 1989). In 1808, Lieutenant Gabriel Moragain led the first Spanish expedition into the Sacramento Valley. This group traveled explored areas along the American, Calaveras, Cosumnes, Feather, Merced, Mokelumne, Sacramento, and Stanislaus river watersheds. The most recent Spanish expedition into this region was conducted by Luis Arguello in 1817. This group traveled up the Sacramento River to the mouth of the Feather River (Grunsky 1989).

Spanish missionization of Alta California was initiated in San Diego (1769). A total of 21 missions were constructed by the Dominican and Franciscan orders between 1769 and 1823. Missions in the region included San Francisco de Asís (1776), Santa Clara de Asís (1776), San José de Guadalupe (1797 in Alameda County), San Rafael Arcángel (1817 in Marin County), and San Francisco Solano (1823 in Sonoma County; Grunsky 1989)). While missionization had a detrimental effect on tribes throughout the region, there is no record of forcible transport of Nisenan communities by the Spanish to the missions (Wilson and Towne 1978).

Mexican Period (1822–1848)

Mexico's separation from the Spanish empire in 1821 and the secularization of the California missions in the 1830s caused further disruptions to native populations. Following the establishment of the Mexican republic, the government seized many of the lands belonging to Native Americans, providing them as parts of larger Land Grants to affluent Mexican citizens and rancheros. Captain John Sutter was granted the two largest areas of land in the Sacramento Valley area. Sutter founded New Helvetia, a trading and agricultural empire, in 1839. The headquarters was located within Valley Nisenan territory at the confluence of the Sacramento and American rivers. The 1833 Secularization Act passed by the Mexican Congress ordered half of all mission lands to be transferred to the Indians, and the other half to remain in trust and managed by an appointed administrator. These orders were never implemented due to several factors that conspired to prevent the Indians from regaining their patrimony.

American fur trappers and traders conducted a number of exploratory intrusions into west Sierra Nevada Mexican territory. Notably, in 1826, Jedediah Smith led a small party of trappers in an expedition along the Sierra Nevada range, eventually entering the Sacramento Valley in 1827. This group covered the area along the American and Cosumnes rivers. From these travels, maps

of this inhospitable terrain were created and disseminated, providing for the waves of European prospectors, ranchers and settlers that would come in the following decades (Grunsky 1989).

American Period (Post 1848)

The following section has been borrowed with permission from the BOR from *Cultural Resources Survey for the Closure of Eight Abandoned Mines in the Oregon Hill Area of Auburn State Recreation Area, Placer County, California* (2010):

California has been inexorably shaped by the mining of precious metals and other minerals. The discovery of gold in January of 1848 at Sutter's Mill in Coloma, on the South Fork of the American River, led to extensive and enduring changes to California's physical and cultural landscapes. A comprehensive discussion of the history and context of mining activities at the statewide level can be found in *A Historical Context and Archaeological Research Design for Mining Properties in California* (Caltrans 2008) and the references therein. The following historic context is restricted to the origins and effects of mining in the American River Basin, with a particular focus on the Auburn area where the current project is located.

The California gold rush prompted by news of the find at Sutter's Mill led to what has been characterized as "the greatest mass migration in American history" (Costello and Marvin 2002:16). Within months of the initial discovery, gold was being collected in the gravel bars of the North, Middle, and South Forks of the American River, and extensive placer mining was occurring in nearly every adjacent gulch and ravine. The effects of these activities are still evident in the form of tailings, ditches, and other mining features scattered throughout these areas. Mining can also be credited for the location and names of most of the towns and communities in the region, the placement of early transportation and communication corridors between the western Sierra Nevada, Sacramento, and San Francisco, and the subsequent development of agriculture and ranching throughout the foothills (Costello and Marvin 2002; Homer 1988).

Gold was first encountered in the Auburn area on May 16, 1848, when Claude Chana, en route to the mining camp at Sutter's Mill in Coloma with a company of three fellow Frenchmen and 25 Nisenan, made his initial discovery in Auburn Ravine. For the remainder of May, Chana and his group continued to pan for gold just south of what is today the city of Auburn (Davis 1975; Homer 1988). A lack of experience, and word of greater gold discoveries on the Yuba River, resulted in the abandonment of the Auburn area by Chana's group. Other miners, however, soon arrived to take their place. By the summer of 1949, what had been unblazed territory was transformed into a small community of wood and fabric buildings, originally known as North Fork Dry Diggings. Sometime between the summer and fall of 1849, the

rapidly growing settlement was given the "more euphonious name" of Auburn (Davis 1975:6). In 1851, the California legislature carved Placer County from portions of Sutter and Yuba Counties, and named Auburn as the new county's seat (Homer 1988).

Oxcart and stagecoach routes were soon established in the area, providing for the transport of people, supplies, and gold between Auburn, Sacramento and San Francisco. Situated at "the crossroads of the mother lode" (Homer 1988:28), Auburn came to serve as a financial center as well. In 1860, Auburn residents voted to provide a $50,000 subsidy to bring the Sacramento, Placer and Nevada Railroad to the town. The railroad was built to within five miles of Auburn when construction was suspended as the push to build Central Pacific's segment of the transcontinental railroad through the Sierras took precedence. Despite the termination of the Sacramento, Placer and Nevada line, Auburn's position as a supply and transportation center continued to grow (Davis 1975).

As the allure of gold mining declined, agriculture and ranching in the foothills, and the timber industry at higher elevations, became more prominent and productive economic pursuits in the region (Davis 1975). During the Great Depression, however, small scale placer mining, using Gold Rush era techniques and technologies, made a brief reappearance. Depression-era miners either reworked old diggings in formerly mined area or moved into previously unmined locations, often on public lands (Averill 1946; Caltrans 2008). According to Clark (1992), the second all-time high of gold production in California, totaling some $50.9 million, occurred during this period.

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3 RESULTS

This section presents the results of the records search and the field survey of the current study.

3.1 Records Search Results

A records search was completed for the current project for a one-mile radius around the project area by staff at the North Central Information Center (NCIC) at California State University Sacramento on April 11, 2016. The records search identified 49 previous studies which have been performed with the records search area; of these, three studies (000557, 002907, 006706) have covered a least a portion of the project area; discussed below (Table 2). The records search also identified one cultural resource, 29-002455 (Spring Hill Mine), within the project area and an additional 26 cultural resources within the records search area (Table 2; Confidential Appendix A). Of the 27 previously recorded resources, one is a multi-component site consisting of a bedrock milling feature and the Olympia Creek spillway; a single bedrock milling isolate; a segment of the Nevada County Narrow gauge Railroad grade; six water conveyance systems; three mines; one single family residence; two highways; three historic refuse piles; one tailings pile; two fence structures; one utility power pole; and five historic isolates. Four (29-000839, 29-000840, 29-001447 and 29-002455) of the 27 cultural resources have been evaluated for NRHP and CRHP listing. Of the four evaluated resources, one, 29-000840, was determined to be possibility eligible for listing on the NRHP and CRHP; however, it further evaluation is required.

Table 1
Previous Cultural Resource Studies

Report Number	Year	Title	Author
Studies Covering Portions of the Record Search Area			
000198	1984	Archeological Reconnaissance of the Proposed Wolf Creek Plaza Project, Grass Valley, Nevada County, California.	Clark, Matthew R.
000358	1987	Cultural Resource Assessment of the Proposed Grass Valley Senior Citizens and Family Apartments, Nevada County, California.	Peak & Associates, Inc.
000365	1985	Negative Archeological Survey Report for Proposed Widening of Existing Brunswick Road Overcrossing (Br. No. 17-48) Nevada County, (3-NEV-20 PM R14.5/R15.1).	Bass, Henry O.
000375	1985	Archeological Reconnaissance of the Proposed Valley Terrace Subdivision, Nevada County, California.	Jensen, Peter M.
000548	2001	Archaeological Inventory Survey: Amaral Development Project Involving 13.68 acres at Lake Olympia, Grass Valley, Nevada County	Jensen, Peter
000863	1984	An Archeolgical Survey of the Litton Property, Grass Valley, Nevada County, California.	Ernest H.L. Decater
001148	1998	Archaeological Survey, 11.71-Acre Canon Ranch Property.	Jensen, Sean M.
001156	1998	Archaeological Survey, c. 5.43-Acre Wedgewood Project.	Jensen, Peter M.

Table 1
Previous Cultural Resource Studies

Report Number	Year	Title	Author
001684	1997	Archaeological Inventory Survey, c. 5.5-Acre Grass Valley Oak Ridge Apartments Development Project, Grass Valley, Nevada County, California.	Jensen, Peter
002245	1997	Archaeological Inventory Survey Of The Proposed Don Fultz Subdivision of 16.29 Acres, Penn Valley Drive, Nevada County, CaliforniaArchaeological Inventory Survey, 1.61-Acre Brunswick Inn Development Project, Grass Valley, Nevada County, California.	Jensen, Sean
002247	1993	Archaeological Inventory Survey, Proposed Smith's Development Project, Store #820 on c. 12 ac Site Adjacent to East Main Street and Dorsey Drive, Grass Valley, Nevada County, California.	Jensen and Associates
002249	1992	Archaeological Inventory Survey, North Star Rock Products, LTD., Proposed Expansion to Existing Facility, c. 11 AC, Near Idaho-Maryland Road, Grass Valley, Nevada County, California.	Jensen and Associates
002252	1992	Archaeological Inventory Survey, approx. 1.5-acres, Northeast Portion of Parcel 9-191-24 (Nevada County), Owned by Sierra Nevada Memorial Miners Hospitals, Inc., Proposed Project: Parking Area Expansion.	Jensen, Peter
002253	1992	Archaeological Inventory Survey, Proposed Developments on AP#s 35-411-81 and 82, Adjacent to Sutton Road, Grass Valley, Nevada County, California.	Jensen and Associates
002637	2000	Archaeological Inventory Survey for East Main Street Development Project , 14.6 Acres along East Main Street, Grass Valley, Nevada County, California	Jensen, Peter
002666	2001	Confidential Archaeological Addendum for Timber Operations on Non-Federal Lands for Ranchview Court THP Amendment	Whittlesey
002888	1995	Arch. Survey of the DeMartini Development	Markley, Richard
002892	1988	AN Arch. Survey of the Proposed Nevada Meadown Development, Grass Valley, Nevada Co., CA.	Werner, Roger H.
002895	1998	Confidnetial Arch. Addendum for Timber Operations on Non-Federal Lands in CA.	Funk, Andrew D.
002898	1990	Cultural Resources Survey of the Proposed Nevada Meadows Senior Apartments Project, Valley Springs, Nevada County, CA.	Werner, Roger H.
002922	1988	Cultural Resource Assessment of the Pine Ridge Apartments, Nevada County, CA.	Peak, Anne
004602	2001	Archaeological Survey, Chapa-De Indian Health Program Development Project	Jensen, Peter M.
004603	2003	Cultural Resources Analysis for Cingular Wireless' SN-051-02 Spring Hill Mine Site	Losee, Carolyn
004610	1995	Archaeological Inventory Survey Polcynmeyers Subdivision and Residential Development Project, C. 7.5 Acres South of Wolf Creek in Grass Valley, Nevada County, California	Jensen, Peter M.
004630	1994	Supplemental Archaeological Investigation at the Loma Rica Ranch, Grass Valley, Nevada County, California	Napton, Kyle
004632	1998	Environmental Impact Report Loma Rica Ranch	Roberts, William N.
004639	1981	An Archaeological Survey of the Wolf Creek Industrial Park, Grass Valley, California	Derr, Eleanor

Table 1
Previous Cultural Resource Studies

Report Number	Year	Title	Author
004641	2002	Archaeological Survey, 0.3-Acre Cooper Development Site, Grass Valley, Nevada County, California	Jensen, Peter M.
004646	1983	An Archaeological of the Proposed Whispering Pines Park Annexation to the City of Grass Valley, Nevada County, California	Decater, Ernest
004648	2000	Archaeological Addendum to the Ranchview Court Timber Harvest Plan	Whittlesey, Nicholas
004654	1993	Archaeological and Historical Resources Survey and Impact Assessment for the Ghidotti Property Timber Harvest Plan	Ferrier, Douglas C.
004666	2002	Addendum to Archaeological Inventory Survey, Amaral Valley, Nevada County, California	Jensen, Peter M.
005556	2004	Cultural Resources Assessment for the Spring Hill Mine Cell Tower.	St. Clair, Michelle C.
005557	2004	Archaeological Survey of c. 1-Acre Moule Property.	Jensen, Peter M.
006205	2004	Delineation of Clean Water Act Jurisdiction, Moule Paint & Glass Project Site, Northwest Corner of East Main Street and Berryhill Drive.	Bole, Marcus H.
006690	2005	Archaeological Survey, c. 14 acre Hills Flat Project, Nevada County, CA	Jensen, Peter
006718	2004	Archaeological Survey, c. 1 acre DeMartini Bridge Replacement Project, Idaho-Maryland Road, Nevada County, CA	Jensen, Peter
006719	2004	Archaeological Survey, 9.25 acre Brunswick One Development Project, Brunswick Road, Nevada County, CA	Jensen, Peter
007003	2006	Archaeological Survey, 3.12 acre Fisher Project, Nevada County, CA	Jensen, Sean
008033	2006	Archaeological Survey, c. 100-acre Sierra College Development Project, Nevada County, California	Jensen, Sean
008428	2007	Archaeological Survey, 32-acre Ranchview Development Project, Grass Valley, Nevada County, California	Jensen, Sean
008763	2007	Cultural Resources Study of APN 35:320:05, 35:320:67, 35:250:07, and 35:260:70, 11426 Nevada City Highway, Grass Valley, Nevada County, California 95945	Dana E. Supernowicz
009835	2008	Proposed MILCO Development Project	Jensen, Sean M.
010234	2006	Archaeological Survey report ffor Sierra College Grass Valley Campus Extension THP	Larry Rieger
010355	2009	CoRR Center for Hope, Cultural Resources Inventory and Evaluation, Grass Valley, Nevada County, California	Ric Windmiller
Studies Covering a Portion of the Project Area			
000557	2001	Archaeological Survey, DeSena 6.5 acre Development Project	Jensen, Peter
002907	1989	An Archaeological Survey of the Proposed Nevada Terraces Development, Grasss Valley, Nevada Co. CA	Werner, Roger H.
006706	2005	Historic Property Survey Report Dorsey Drive	Medin, Anmarie

Jensen 2001

This report documents the results of an archaeological inventory for the DeSena 6.5 acre Development Project. Jensen & Associates conducted an intensive pedestrian survey in 2001. The project site is located close to Highway 49/20; north Empire Mine Road. The project is located within Sections 26 and 23, Township 16 N, Range 8 E on the Grass Valley USGS 7.5 minute topographic quadrangle. Prior to the survey, a records search conducted at the NCIC indicated that the project area had not been previously surveyed and no cultural resources have been identified within or immediately adjacent to the project area. No prehistoric or historic cultural resources or materials were observed during the survey. Archaeologists observed that the project site has been impacted by various activities, especially from past mining operations associated with Spring Hill, located north on an adjacent parcel, and Idaho-Maryland. The negative results of the records search and field survey concluded that development of the property would not affect archaeological or built environment resources. No further mitigation was required.

Werner 1989

This report presents the results of an archaeological pedestrian survey conducted for the Nevada Terraces Development Project in 1989. This project area consists of approximately 5.6 acres located generally south of the currently proposed Dorsey Marketplace APE. Archaeologist John Pryor of Archaeological Services noted that no cultural resources had been recorded within the project boundaries, and no previous studies conducted. During the pedestrian survey, no archeological sites or material were identified. The negative results of the records search and field survey concluded that development of the property would not affect archaeological or built environment resources. No further mitigation was recommended (Werner 1989).

Medin 2005

The report documents the results of the archaeological pedestrian survey conducted for the Dorsey Drive Interchange Project by Caltrans in 2005. An initial archaeological survey was conducted in August 2001, and a follow-up survey was conducted November 2005. The survey identified two properties within the project area; the Spring Hill Mine and the Stone Ditch. Caltrans archaeologists noted that neither of these properties appears to be important under NRHP criteria. The Spring Hill Mine consists of five concrete foundation features that correspond to buildings documented in the county assessor's building records. All buildings and mine equipment have been removed from the area. Archaeologists noted modern sheet refuse scattered throughout the project area, indicating that the site is being used as an illicit recreation

area. Stone Ditch has been destroyed by development and no remains of the site were present during the recent Dudek survey. No further study was recommended by the Caltrans study.

Table 2
Previously Recorded Cultural Resources

Primary # (P-)	Period	Type	NRHP/CRHP Status	Description
Resources within the Project Area				
29-002455	Historic	Mine	Not Eligible	Spring Hill Mine
Resources within the One- Mile Records Search Area				
29-000839	Historic	Railroad grade segment	Not Eligible	Nevada County Narrow gauge railroad grade
29-000840	Historic	Single Family Residence	Appears to be eligible/ NRHP status Code 3	Hill/Shaw House/Ranch
29-000859	Historic	Water Conveyance System segment	No Formal Recommendation	Ditch
29-000880	Multi-component	Bedrock milling; Dam	No Formal Recommendation	Bedrock milling; Olympia Creek concrete spillway
29-001447	Historic	Water Conveyance System	Not Eligible	Idaho-Maryland Water Conveyance Canal/Ditch
29-001462	Historic	Tailing pile	No Formal Recommendation	Tailing pile and possible mine shaft
29-001463	Historic	Mine	No Formal Recommendation	Mine shaft
29-001464	Historic	Water Conveyance System	No Formal Recommendation	Stone ditch
29-001465	Historic	Mine	No Formal Recommendation	Mine shaft with associated retaining walls and tailings
29-001514	Historic	Highway	No Formal Recommendation	Idaho-Maryland Road
29-001515	Historic	Highway	No Formal Recommendation	East Main Road
29-001520	Historic	Water Conveyance System	No Formal Recommendation	Nevada Irrigation District Earthen Canal/Ditch
29-003133	Prehistoric	Isolate	No Formal Recommendation	Bedrock milling
29-003134	Historic	Isolate	No Formal Recommendation	Glory hole; excavated pit with associated refuse
29-003836	Historic	Refuse	No Formal Recommendation	Refuse Pile
29-003837	Historic	Water Conveyance System	No Formal Recommendation	Earthen Canal/Ditch

Primary # (P-)	Period	Type	NRHP/CRHP Status	Description
29-003838	Historic	Refuse	No Formal Recommendation	Refuse Pile
29-003839	Historic	Water Conveyance System	No Formal Recommendation	Earthen Canal/Ditch
29-003840	Historic	Utility Infrastructure	No Formal Recommendation	Power pole
29-003841	Historic	Structure	No Formal Recommendation	Wooden fence line
29-003842	Historic	Refuse	No Formal Recommendation	Refuse pile
29-003843	Historic	Structure	No Formal Recommendation	Wooden fence line
29-003859	Historic	Isolate	No Formal Recommendation	Pipeline fragment
29-003860	Historic	Isolate	No Formal Recommendation	Milk glass jar fragment
29-003861	Historic	Isolate	No Formal Recommendation	Pipeline fragment
29-003862	Historic	Isolate	No Formal Recommendation	Pipeline fragment

29-002455

This historic Spring Hill Mine site was recorded by Caltrans archaeologists Medin and Schinke in 2001 as part of the Proposed Dorsey Drive Interchange Project. The site consists of five mine features comprising of concrete foundations (a concrete foundation, warehouse and shower, head frame foundation, hoist house, and the former mill location) that correspond to buildings documented in the county assessor's building records. The mine was claimed in 1871 and operated until approximately the 1970s. No exact date was determined as to when mining operations were ceased at Spring Hill. It was evident that the mine had undergone improvements in the 1930s. The 1930s improvements have most likely destroyed any archaeological deposits or features that remained from the 1870s era of operations. All equipment has since been removed from the site, leaving concrete foundations on site. Caltrans determined that Spring Hill Mine does not appear eligible for NRHP or CRHR listing in 2001.

Historical Map Review

Historic aerial photographs of the project area were available for the years 1947, 1998, 2005, 2009, 2010, and 2012 (Historicaerials 2016). Based on the 1947 photograph, Spring Hill Mine and associated structures are located in the central portion hill, with evidence of grading/clearing activities located to the west of the project area. The surrounding area is vegetated with pine,

oak, and cotton tress. In 1998, the central portion of Spring Hill is surrounded by development (north, south, east and west). Spring Hill Mine and the associated structures are no longer visible; obscured by pine, oak, and cotton tress. A couple of dirt trails bisect the project area, running north-south. Photographs from 2005, 2009, 2010, and 2012 do not reveal any changes to the project area or surrounding area and represent what the current property looks like to date.

Geoarchaeological Information

Native soils within area has been substantially disturbed through an extended history of mining. For this reason there is a very low potential for intact prehistoric cultural resources to be present. However, in consideration of this history, there is a potential that this past mining activity resulted in the deposition of historical deposits and/or features. Holdrege & Kull (H&K) conducted survey and geotechnical investigation of the project area between July and August, 2007. This work consisted of a review of the geologic and soil survey literature of the project area and a surface reconnaissance of the site. Sediment within the Grass Valley is derived from continuous uplift and erosion of the Sierra Nevada. H&K noted that the western and central portions of the property contained abandoned mine features; the eastern portion was disturbed, but undeveloped. The topography of the property slopes toward the south and southwest from a flat lying area in the northern portion and a knoll in the northern central portion of the area. The Spring Hill shaft located within the central portion of the property, just as it is depicted on the historical Spring Hill Mine map. The shaft has been capped with concrete. H&K also observed the several concrete foundations that correspond with the locations of mining features recorded as CA-29-002455 and depicted on the 1942 Uren map. No structures remain on the foundations. Mine waste (waste rock composed of mineralized serpentine and diabase rock with quartz) was noted on approximately 6.5 acres of the 27 acre project area. The existing fill is comprised of waste rock, which is not considered suitable to support structural improvements. This type of soil will have to be removed from the site and replaced with compacted fill (Holdrege & Kull 2015). While the subsurface soils in the APE appear to be largely comprised of waste rock fill, it is possible that subsurface historical material or deposits could be present based on the extended history of use of this area.

3.2 NAHC Search

The Native American Heritage Commission (NAHC) was contacted by Dudek on March 14, 2016 to request a search of the Sacred Lands File (Appendix B). The NAHC responded on March 24, 2016 indicating that the search failed to identify any Native American resources in the vicinity of the project and provided a list of individuals and organizations to contact that may have additional information.

3.3 Tribal Correspondence

Following the NAHC response, letters were sent on April 5, 2016 to the listed tribal representatives with the intent of requesting information, opinions or concerns relating to the proposed project impacts (Appendix B). These letters contained a brief description of the planned Project, reference maps, and a summary of the NAHC SLF and NCIC search results. No response to these outreach attempts have been received to date. The lead agency will be provided with any responses should they be received from tribal representatives.

3.4 Methods

Dudek Archaeologist Kurt Lambert conducted an intensive pedestrian cultural survey of the of the project area on April 28, 2016. All field practices met the Secretary of Interior's standards and guidelines for a cultural resources inventory. The intensive-level survey methods consisted of a pedestrian survey conducted in parallel transects spaced no more than 10 meters apart over the entire project area. Within each transect, the ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. The previously recorded historic Spring Hill Mine Site, P-29-2455 (CA-NEV-1538), was relocated during the pedestrian survey.

Mr. Lambert took detailed notes and photographs of the Spring Hill Mine site and the surroundings. All fieldwork was documented using field notes, digital photography, a Global Positioning System (GPS) receiver with sub-meter accuracy, iPad technology with close-scale field maps, and aerial photographs. Location-specific photographs were taken using an Apple 3rd Generation IPAD equipped with 8 MP resolution and georeferenced PDF maps of the project site. Accuracy of this device ranged between 3 meters and 10 meters.

Documentation of the Spring Hill Mine complied with the Office of Historic Preservation (OHP) and Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44740) and the California Office of Historic Preservation Planning Bulletin Number 4(a). Spring Hill Mine, P-29-2455 (CA-NEV-1538), was recorded on California Department of Parks and Recreation Form DPR 523L (Series 1/95) Continuation Sheet, using the *Instructions for Recording Historical Resources* (Office of Historic Preservation 1995). The DPR Form will be submitted to the NCIC and included in Confidential Appendix A.

3.5 Field Survey Results

Dudek Archaeologist Kurt Lamburt conducted the intensive-level pedestrian survey of the entire project area on April 28, 2016 using standard archaeological procedures and techniques. Mr. Lamburt relocated the Spring Hill Mine site (P-29-2455) during the field survey (Figure 3).

Figure 3 Feature 5 "basement" area current condition

The abandoned Spring Hill Mine concrete foundations, machinery anchors features, and shaft location were identified within the western portion of the project at their recorded location. As previously reported, the eastern portion is disturbed but no mining or other features are present. The distribution and number of features at P-29-2455 was noted to be consistent with the 2001 recordation, and the boundary as previously defined remains appropriate. The features have been subject to additional graffiti and illicit dumping of modern refuse. An updated DPR Continuation form for the Spring Hill Mine site was prepared for with the results of this survey, and is included in Confidential Appendix A. No historical debris or other cultural constituents were observed on the surface.

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4 SUMMARY AND MANAGEMENT CONSIDERATIONS

The current cultural resources inventory was completed to satisfy the requirements of CEQA. A NAHC Sacred Lands File search did not identify cultural resources within the project area. Subsequent outreach to NAHC-listed Native American representatives has failed to receive any responses to date. The NCIC records search identified one previously recorded resource, the Spring Hill Mine site (P-29-002455), located within the project area. This resource was previously determined to be not significant (i.e., not eligible for CHRH or NRHP listing). The Spring Hill mine was relocated by Dudek during the current pedestrian survey. The distribution of mining features associated with this resource was observed to be as previously recorded; though this area has since been since subject to evident vandalism and illicit dumping of garbage. Dudek's Phase I cultural resources inventory of the project area suggests that there is some potential for the inadvertent discovery of intact historical mining deposits during earth moving activities.

The Spring Hill Mine was evaluated by Caltrans in 2001 and 2005 as not being eligible for on the NRHP or CRHR. As noted in the Caltrans studies, the integrity of this site was compromised through removal of the Spring Hill mining equipment and associated buildings. The remaining concrete features provide limited data potential beyond descriptive recordation previously completed. The findings of the Caltrans study appears to be appropriate. However, in consideration of the extended historical use in this location, there is some potential for yet-identified historical deposits in this area. Dudek recommends that a qualified archaeologist should be present at least one Dorsey Marketplace Project preconstruction meeting to discuss archaeological sensitivity within the project area, and to outline stop-work procedures should historical archaeological deposits be encountered by construction personnel.

In the event that archaeological resources are exposed during construction, ground-disturbing work in the immediate vicinity of the find should be halted until a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards can evaluate the significance of the find for CRHR/NRHP listing. Ground-disturbing activities may continue a elsewhere, but should be redirected a safe distance from the find. If the new discovery is evaluated and found to be significant under CEQA, and avoidance is not feasible, additional work such as data recovery may be warranted.

In the event of the discovery of human remains during ground disturbing activities, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur in areas which could contain human remains until the County coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The County coroner must be notified

of the find immediately. If the human remains are determined to be of Native American origin, the coroner will notify the NAHC within 24 hours. The NAHC will then determine and notify a MLD. The MLD shall complete the inspection of the site within 48 hours of notification and may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

6 REFERENCES

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APPENDIX A (CONFIDENTIAL)

NCIC Results and DPR Forms

APPENDIX B (CONFIDENTIAL)

NAHC and Tribal Correspondence

APPENDIX C

Archaeological and Geotechnical Report

(557)

GRASS VALLEY-7.5'
NEV-01-47

Peter M. Jensen

Archaeological • Historical • Cultural Resource Management Studies

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Wednesday, June 6, 2001

Nevada City Engineering, Inc.
Attention: Andrew R. Cassano
505 Coyote Street, Suite B
Nevada City, California 95959

Subject: ***Archaeological Survey, DeSena 6.5-acre Development Project.***

Dear Mr. Cassano:

Per your request, Jensen & Associates conducted a high intensity, complete coverage archaeological inventory survey of the above referenced property, which consists of three separate parcels totaling approximately 6.5 acres and located close to Highway 49/20, north of Empire Mine Road, and accessed via Spring Hill Drive. The parcel will affect lands located within a portion of Sections 26 and 23 of Township 16 North, Range 8 East, as shown on the USGS Grass Valley, California, 7.5′ series quad (see attached *Project Location and Archaeological Survey Area Map*).

According to agency definitions, proposed further development of this property constitutes an "undertaking" which could adversely affect various types of resources located within the Area of Potential Effect (APE), which consists of the 6.5 acre property itself. Evaluation of effects to such resources must be undertaken in conformity with Nevada County rules and regulations, in compliance with requirements of the California Environmental Quality Act of 1970, Public Resources Code, Section 21000, et seq. (CEQA), and The California Environmental Quality Act Guidelines, California Administrative Code, Section 15000 et seq. (Guidelines, as amended October 1998), prepared by the Office of Planning and Research.

As part of the CEQA requirements, an archaeological Records Search has been requested from the North Central Information Center at CSU-Sacramento (Preliminary results acquired from a previous search involving adjacent lands, written results pending). These records indicate the following existing conditions for the project area:

- None of the project area has been formally surveyed for cultural resources. Several surveys have been undertaken in the immediate vicinity, although there appears to have been only minimal overlap of these previous surveys into the present project area boundaries.

- No sites are currently formally recorded within or immediately adjacent to the project area, although both prehistoric and historic-period sites have been recorded within the vicinity.

- In view of at least moderate archaeological sensitivity of this area for cultural resources, combined with the lack of previous survey involving this property, the Information Center recommended a pedestrian survey prior to approval of ground disturbing impacts.

In addition to the official Nevada County archaeological records maintained by the North Central Information Center of the California Historical Resources Information System, the following documents were reviewed in an effort to recover additional cultural data:

- The National Register of Historic Places (1986, Supplements to 12/00).
- The California Inventory of Historic Resources (State of California 1976).
- The California Historical Landmarks (State of California 1990).

With this information in hand, the author proceeded to the project site on Monday, June 4, 2001, and completed a pedestrian field survey by walking non-systematic transects back and forth across the project area, with transect spacing maintained at c. 20- to 30-meter intervals. Property boundaries were easily determined on the basis of adjacent fully developed properties, fencing, and the Golden Center Freeway (Highway 20 and 49) located a short distance northwest.

The project area has been substantially impacted by a variety of activities, including especially past mining associated with both the Spring Hill and Idaho-Maryland operations. As well, portions of the property appear to have been the recipient of imported demolition and other debris, as well as limited grading, excavation, and other impacts.

Specific findings from the intensive-level pedestrian field survey are as follows:

Prehistoric Resources: No evidence of prehistoric activity or occupation was observed during the survey. These negative results may be at least partially explained by the lack of a permanent surface water source within or immediately adjacent to the property, combined with extensive prior disturbance to which all of the property has been subjected.

Historic Resources: No clear evidence of historic-period occupation, refuse disposal, or homesteading was observed. These negative results may be explained in part by disturbances to which the property has been subjected.

Impacts to the land surface and surface contours appear to have accompanied the intensive mining operations in the immediate vicinity. These impacts are evident in the form of boulders and rubble which have been pushed down onto the property from the Spring Hill Mine to the north, on an adjacent parcel. Several large excavated holes are also present within the project area, although it is not at all clear that these relate to historic mining operations – they may represent debris from clean-up following abandonment of the Spring Hill operation. No built environment exists within this property, which may itself be at least partially explained by the generally steep slopes which characterize most of the area.

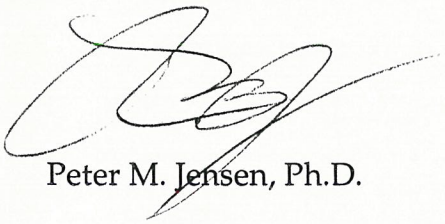
In view of the negative results achieved during both the records search and pedestrian survey, it seems reasonable to conclude that further development of this property will not affect archaeological or historic sites deemed significant per CEQA.

Despite these negative findings, the following general provision remains appropriate:

> The present evaluation and recommendations are based on the findings of an inventory-level surface survey only. There is always the possibility that significant unidentified cultural materials could be encountered on or below the surface during the course of future development or construction activities. In such a situation, archaeological consultation should be sought immediately.

In view of the negative findings of the present project, the present letter is intended as a Final Report. If you or any of the review agencies have any questions concerning our survey findings or recommendations, please don't hesitate to contact me at your earliest convenience.

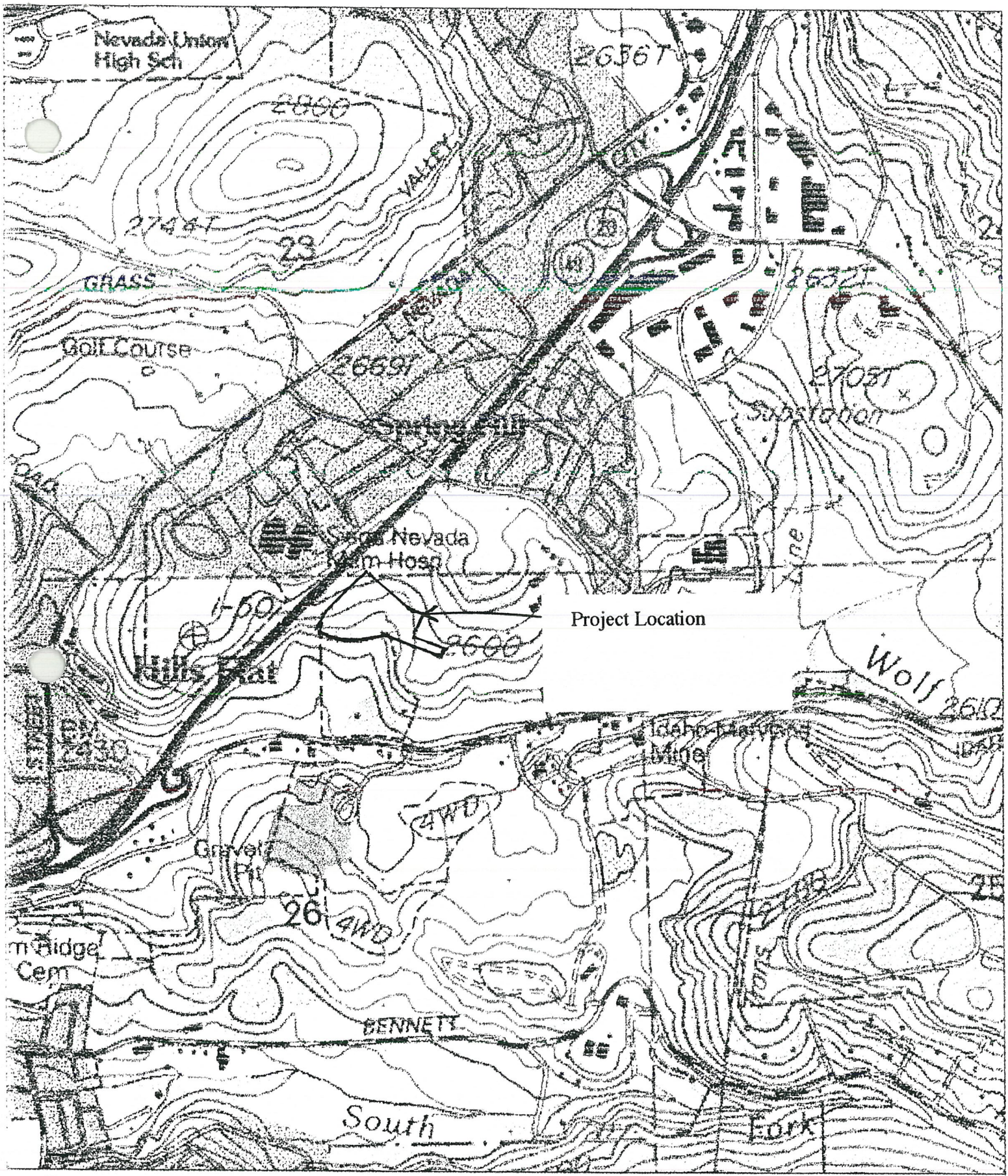
Sincerely Yours,



Peter M. Jensen, Ph.D.

***KEYWORDS** for Information Center Use:*

Inventory Survey, Nevada County, approx. 6.5-acres, USGS Grass Valley, California, 7.5' Series Quad., CEQA. No Prehistoric or Historic Resources Recorded.



Title: GRASS VALLEY
Date: 5/23/101
Scale: 1 inch equals 1000 feet

Location: 039° 13' 36.9" N 121° 02' 24.4" W
Caption: Stephen DeSena

(2907) #2907

Archaeological Services Inc.

(209) 474-7185 1117 Aberdeen Avenue • Stockton, California 95209

March 20, 1989

Anda O'Connell
Rooftree, Inc.
P.O. Box 406
Rockton, Il 61072

AN ARCHAEOLOGICAL SURVEY OF THE PROPOSED NEVADA TERRACES DEVELOPMENT, GRASS VALLEY, NEVADA COUNTY, CALIFORNIA

INTRODUCTION

This report presents the results of an archaeological survey conducted on 17 March 1989 by John H. Pryor, Research Archaeologist for Archaeological Services, Inc., Stockton, California. No archaeological resources were discovered within the project boundaries. The survey area consisted of approximately 5.6 acres located in Nevada County, California. The investigation was authorized by Anda O'Connel, representing Rooftree, Inc. The survey was required by the Farmers Home Administration (FmHA), pursuant to the National Historic Preservation Act and related federal regulations.

The purposes of the survey were: (1) to identify and record any archaeological resources, prehistoric or historic, that might be situated within the Area of Potential Effect (APE); (2) to make preliminary evaluations regarding the significance and National Register eligibility of identified archaeological resources; and (3) to propose recommendations for mitigation of potential impacts to identified archaeological resources.

PROJECT LOCATION AND DESCRIPTION

The APE was situated within the NE quarter of Section 26 and the SE quarter of Section 23, T16N, R8E, MDB&M, as depicted on the Grass Valley, California 7.5' USGS topographic quadrangle (1949, pr. 1973). Boundaries were determined by the use of a road map, USGS topographic map, and a parcel map. The southern and western boundaries of the APE were readily determined by the extent of adjacent property developments. The northern and western boundaries were unmarked but could be identified by nearby roads, prominent hills, and adjacent property lines. The project area is depicted on maps 1 and 2.

(209) 224-9077
Fresno, California

(707) 277-9533
9467 Chippewa Trail • Kelseyville, CA 95451

The survey area consisted of a roughly square parcel with a slight to moderate southerly slope. The entire parcel has been recently graded and lacks buildings or other related developments. The majority of the parcel consisted of open hillside that lacked vegetation except for sparse low grass.

Field work was carried out by John H. Pryor. Mr. Pryor has a Ph.D. in Anthropology and has 15 years of archaeological field experience in California. The report was prepared by Roger H. Werner. Mr. Werner has a Master of Arts Degree in Anthropology and 14 years of California archaeological field experience.

METHODS

The method employed in the archaeological investigation consisted of three steps. Initially, the ethnographic literature, archaeological base maps, site records, prior survey reports, and historical documents on file at the North Central Information Center of the California Archaeological Inventory (housed at California State University, Sacramento) were reviewed by Center staff (see Appendix 1) to determined whether recorded archaeological historical, or ethnographic sites were situated within the project area.

The second part of the investigation consisted of a intensive on-foot survey of the project (conducted in accordance with the specifications proposed in 36 CFR Part 64 Appendices A and B). Ground visibility was excellent throughout the parcel. Small outcrops of bedrock were carefully inspected for bedrock mortars.

RESULTS AND RECOMMENDATIONS

As a result of the record search, it was determined that no cultural resources had been recorded within the boundaries of the project. The archaeological data base revealed that several prehistoric archaeological sites have been recorded within a mile of the APE. Further, the APE is situated within the Nevada City Mining District, adjacent to the Spring Hill Mine. Other historic sites or features nearby include the Nevada Narrow Gauge Railway and Stone Ditch. While numerous mining related sites and features are known to exist in the vicinity of the project area, none of these are situated within the APE.

The records search indicated that the project area (1) had not been subjected to previous archaeological study, and (2) was located in an area of moderate to high archaeological sensitivity. Information Center staff recommended an archaeological survey because it appeared possible that the lack of cultural resources, particular historic-period sites and features, may have been a result of a lack of systematic survey.

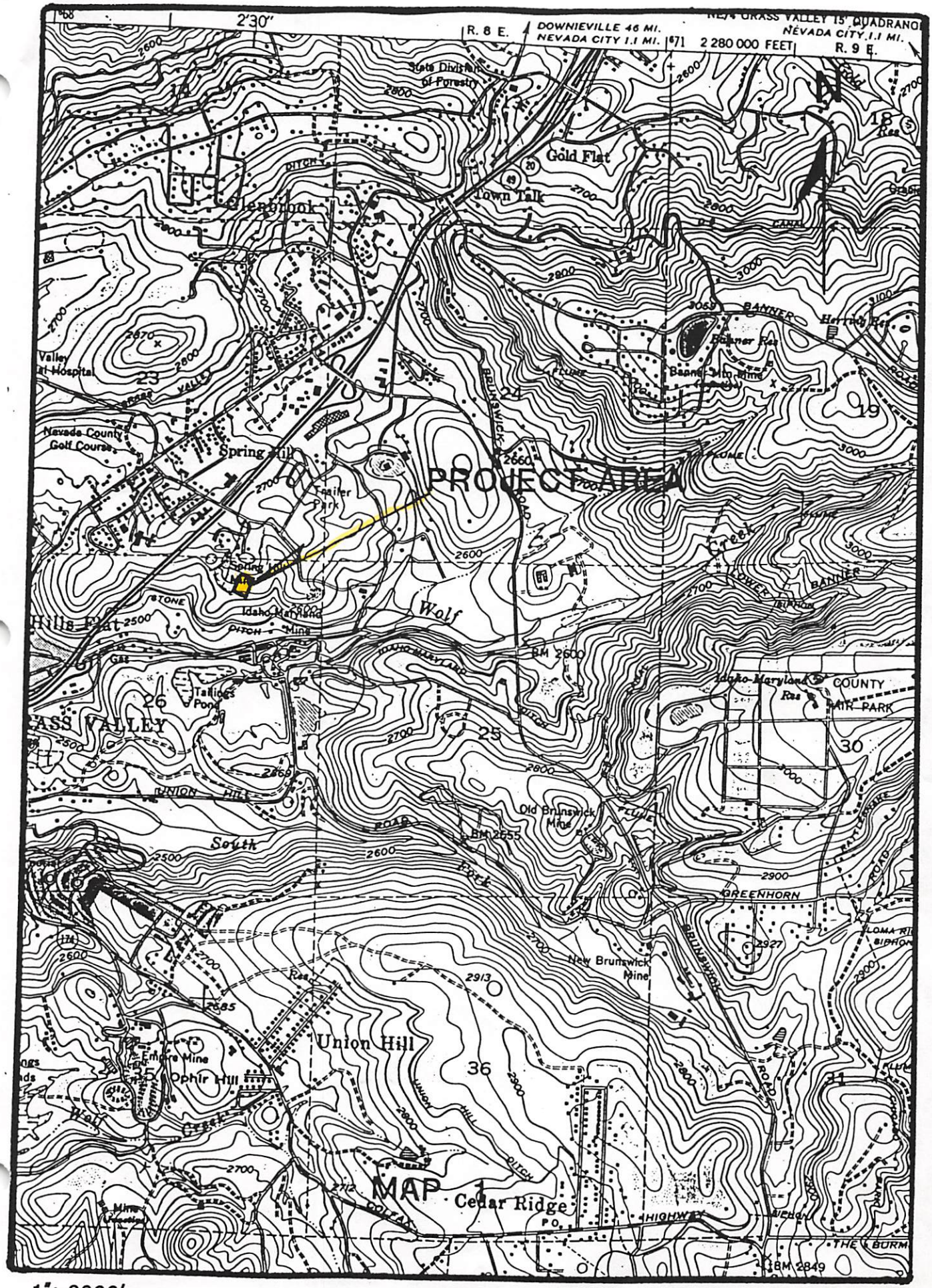
No archaeological sites were discovered as a result of the survey. Remains of the Spring Hill Mine were noted to the north of the APE and should not be effected by project development.

In that no cultural resources were noted within the project area, site-specific recommendations are unnecessary. It is unlikely that buried archaeological remains will be uncovered as the project area has been extensively graded and disturbed. However, should archaeological materials such as obsidian, bone, glass and ceramic fragments, or square nails be uncovered during project development, it is recommended that a qualified archaeologist be retained to evaluate the finds and propose recommendations as appropriate.

Roger H. Werner

President
Archaeological Services
1308 West Robinhood Drive, Suite 4B
Stockton, California 95209
(209) 474-3121

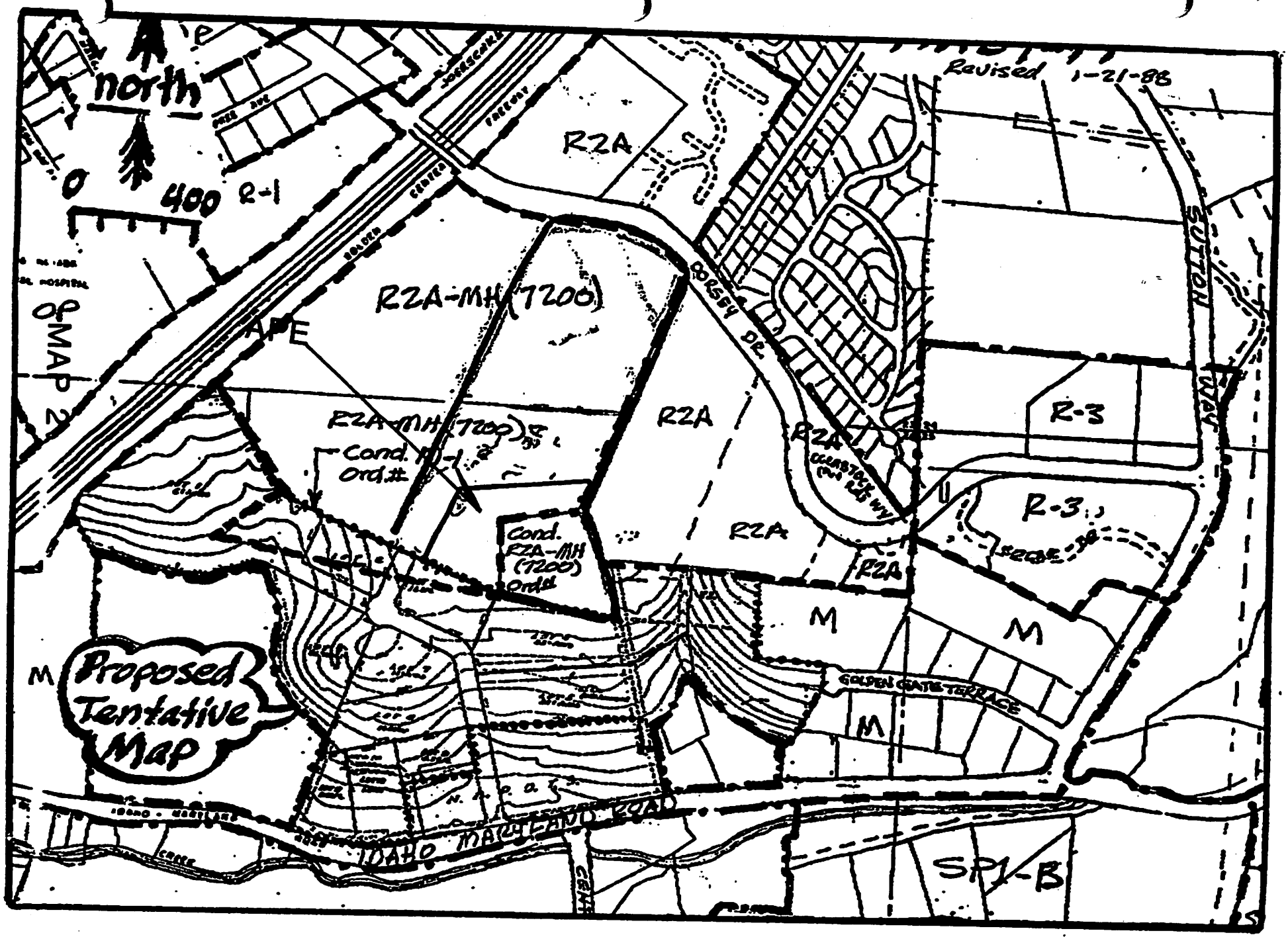
cc: Farmers Home Administration



1": 2000'

GRASS VALLEY 7.5 MINUTE

T16N/R8E/SEC 26


north
0
400
Revised 1-21-88
R2A
R-1
R2A-MH(7200)
R2A-MH(7200)
Cond. #1
Ord. #
Cond. R2A-MH (7200) Ord. #
R2A
R2A
R2A
R-3
R-3
M
M
M
M
SP-1-B
SUTTON WAY
GOLDEN GATE TERRACE
IDAHO MAINLAND ROAD
Proposed Tentative Map

NEV-05-114
1-3-06

HISTORIC PROPERTY SURVEY REPORT

(0706)

California Department of Transportation

1. UNDERTAKING DESCRIPTION AND LOCATION						
District	County	Route *(Local Agency)*	Kilo Posts *(Project prefix)*	Post Miles *(Project No.)*	Charge Unit *(Agreement)*	Expenditure Authorization *(Location)*
03	NEV	20	21.9/23.8	13.6/14.8		412400

(Both kilometer posts and post miles must be completed above. For Local Assistance projects off the highway system, use headers in italics)

Project Description: *(Insert project description below; refer reader to location and vicinity maps in HPSR)*

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), in cooperation with the Nevada County Transportation Commission (NCTC) propose to convert Dorsey Drive Overcrossing to an interchange and connect with Route 20/49 to improve transportation and access for the region. The proposed project is situated at the interchange of Dorsey Drive and SR 20, Grass Valley, Nevada County, California (Figures 1 and 2). This project proposes to construct a tight-diamond interchange at the existing Dorsey Drive overcrossing on Route 20/49 in Nevada County. Improvements include replacing the existing 2-lane structure with a 5-lane structure, constructing on- and off-ramps, the construction of auxiliary lanes between existing ramps and proposed ramps, and the realignment of Joerschke Drive. Three soundwalls are proposed for the project. These improvements will:

- Provide direct access to specific high use sites (Sierra Nevada Memorial Hospital and Sierra College
- Relieve operational problems at the existing interchanges of Idaho-Maryland/East Main Street (to the south) and Brunswick Road (to the north).
- Provide additional capacity on Dorsey Drive for future development in accordance with adopted city and county general plans

The proposed project will require approximately 2.33 hectares (ha) (5.75 acres) of new right of way (R/W) consisting of purchase or easements, along the highway and Dorsey Drive from private landowners. Utilities will be affected.

2. AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) was approved by Caltrans staff archaeologist Anmarie Medin, architectural historian Gail St. John, and Project Manager Winder Bajwa on November 30, 2005. See Appendix A for project location, vicinity, and APE maps (Figures 1, 2, and 3, respectively).

The APE for the proposed project includes the existing state right-of-way and proposed right of way along Highway 20 between KP 21.9 (PM 13.6) and KP 23.8 (PM 14.8) in Nevada County. The maximum horizontal extent of the APE is 23 meters (75 feet) or less from the edge of the traveled way for the new structural section, shoulder, and slope work. The vertical extent of the APE varies from a maximum of 3 meters (9.8 feet) or less for the new structural section;

For the federal undertaking described in Part 1: To minimize redundancy and paperwork for the California Department of Transportation and the State Historic Preservation Officer, and in the spirit intended under the federal Paperwork Reduction Act (U.S.C. 44 Chapter 35), this document also satisfies consideration under California Environmental Quality Act Guidelines Section §15064.5(a) and, as appropriate, Public Resources Code §5024 (a)(b) and (d).

1.5meters (4.9 feet) for the light standard foundations; 7.6 meters (24.9 feet) for the overhead sign foundations; and 0.8 meters (2.6 feet) for the trench for electrical (see Map 3). New right of way will be required for this project.

The archaeological APE was established as including all area of potential direct impact (ground disturbance, construction easements, utility relocations, etc.) and includes the full extent of the horizontal and vertical limits of construction impacts in discussion with Design and Construction Engineers.

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

(For the following, check the appropriate line, list names, dates, and locations and results of contacts, as appropriate. List organizations/persons contacted and attach correspondence and summarize verbal comments received as appropriate.)

_ Local Government *(Head of local government, Preservation Office / Planning Department)*

-

X Native American Tribes, Groups and Individuals

- Initial consultation was conducted in 2001. Second consultation was conducted in 2005. Caltrans archaeologist Erick Wulf sent letters on November 7,2005 and placed follow-up telephone calls on November 17, 2005. To date no replies have been received. Consultation letters are in Appendix B of the attached Archaeological Survey and Evaluation Report.

X Native American Heritage Commission

- Initial consultation in 2000 indicated there were no sacred sites within the project APE. The list of groups and individuals for direct contact was updated in 2005.

X Local Historical Society / Historic Preservation Group *(also if applicable, city archives, etc.)*

-

_ Public Information Meetings *(list locations, dates below and attach copies of notices)*

-

_ Other

-

4. SUMMARY OF IDENTIFICATION EFFORTS

X	National Register of Historic Places	Month & Year: 1979-2002 & supplements
X	California Register of Historical Resources	Year: 1992 & supplemental information to date
X	California Inventory of Historic Resources	Year: 1976
X	California Historical Landmarks	Year: 1995 & supplemental information to date
X	California Points of Historical Interest	Year: 1992 & supplemental information to date
_	State Historic Resources Commission	Year: 1980-present, minutes from quarterly meetings
X	Caltrans Historic Highway Bridge Inventory	Year: 2003 & supplemental information to date

X Archaeological Site Records [*List names of Institutions & date below*]

- North Central Information Center, March 17, 2000 with follow-up on November 15, 2005

x Other sources consulted *[e.g., historical societies, city archives, etc. List names and dates below]*

- See Historic Resources Evaluation Report (HRER) and Archaeological Survey and Evaluation report for specific repositories visited and research conducted to evaluate the historic-era properties.

_ **Results:** *(provide a brief summary of records search and research results, as well as inventory findings)*

- Small portions of the project APE had been previously surveyed and no cultural resources were previously identified within the project APE. One Point of Historic Interest (Nev-033, the Idaho-Maryland Mine) lies a short distance south of the project, but is well outside of the APE and the project will have no effect upon it.
- The present effort surveyed the entire APE, finding no properties that required evaluation.

5. PROPERTIES IDENTIFIED

(Check the appropriate category, list properties, or refer reader to appropriate technical study attached, according to their National Register status. Provide, as appropriate, complete address, period and level of significance, criteria, map reference, and any existing state or local designation. Do not include properties that are not within the APE. Attach previous SHPO determinations, as applicable.)

X **No cultural resources** in project APE.

X Anmarie Medin, who meets the Professionally Qualified Staff Standards in Section 106 Programmatic Agreement (Section 106 PA) Attachment 1 as a PI – Historical Archaeology, and Frank Lortie, Principal Architectural Historian, both determined that the only other properties present within the APE meet the criteria for Section 106 PA Attachment 4 (**Properties Exempt from Evaluation**).

_ **Bridges listed as Category 5** in the Caltrans Historic Highway Bridge Inventory. Appropriate pages from the Caltrans Historic Bridge Inventory are attached.

- The Dorsey Drive Overcrossing (Bridge # 17-081) was built in 1969, and consequently was rated a 5 (does not appear to be eligible) in the 1985-86 Caltrans historic highway bridge inventory. This structure has not attained an exceptional level of significance that is required for the evaluation of buildings and structures less than fifty years of age. Therefore, this structure was not formally evaluated and shall retain its rating of 5.
-

6. LIST OF ATTACHED DOCUMENTATION

(Provide the author/date and peer reviewer/date of the technical report)

X Project Vicinity, Location, and APE Maps (Appendix A of this HPSR)
X California Historic Bridge Inventory sheet
X Other *(Specify below)*

- Medin, Anmarie. Archaeological Survey Report. December 2005. Peer reviewed by Kendall Schinke and Erick Wulf, December 2005. (Attachment A to this HPSR)

7. FINDINGS – HPSR to File

(Check all that apply. Do not transmit to SHPO; file copy to CCSO)

X **No properties requiring evaluation** are present within the project's APE.

X Under the authority of FHWA, Caltrans has determined a Finding of **No Historic Properties Affected**, according to Section 106 PA Stipulation IX.A and 36 CFR 800.4(d)(1), is appropriate for this undertaking.

8. FINDINGS – HPSR to SHPO

(Check all that apply. Transmit to SHPO, copy to FHWA and CCSO)

9. HPSR PREPARATION AND DEPARTMENT APPROVAL

Prepared by *(sign on line)*: Anmarie Medin — 12-12-05 Date
District 3
Caltrans PQS discipline/level: PI- Historical Archaeology; Co-PI – Prehistoric Archaeology

Reviewed for approval by: *(sign on line)* Erick Wulf — 12/12/05 Date
District 3
Caltrans PQS discipline/level: Co-PI – Prehistoric Archaeology

Approved by: *(sign on line)* Japtej Gill — 12/13/05 Date
District 3,
EBC: Chief, S4 Branch

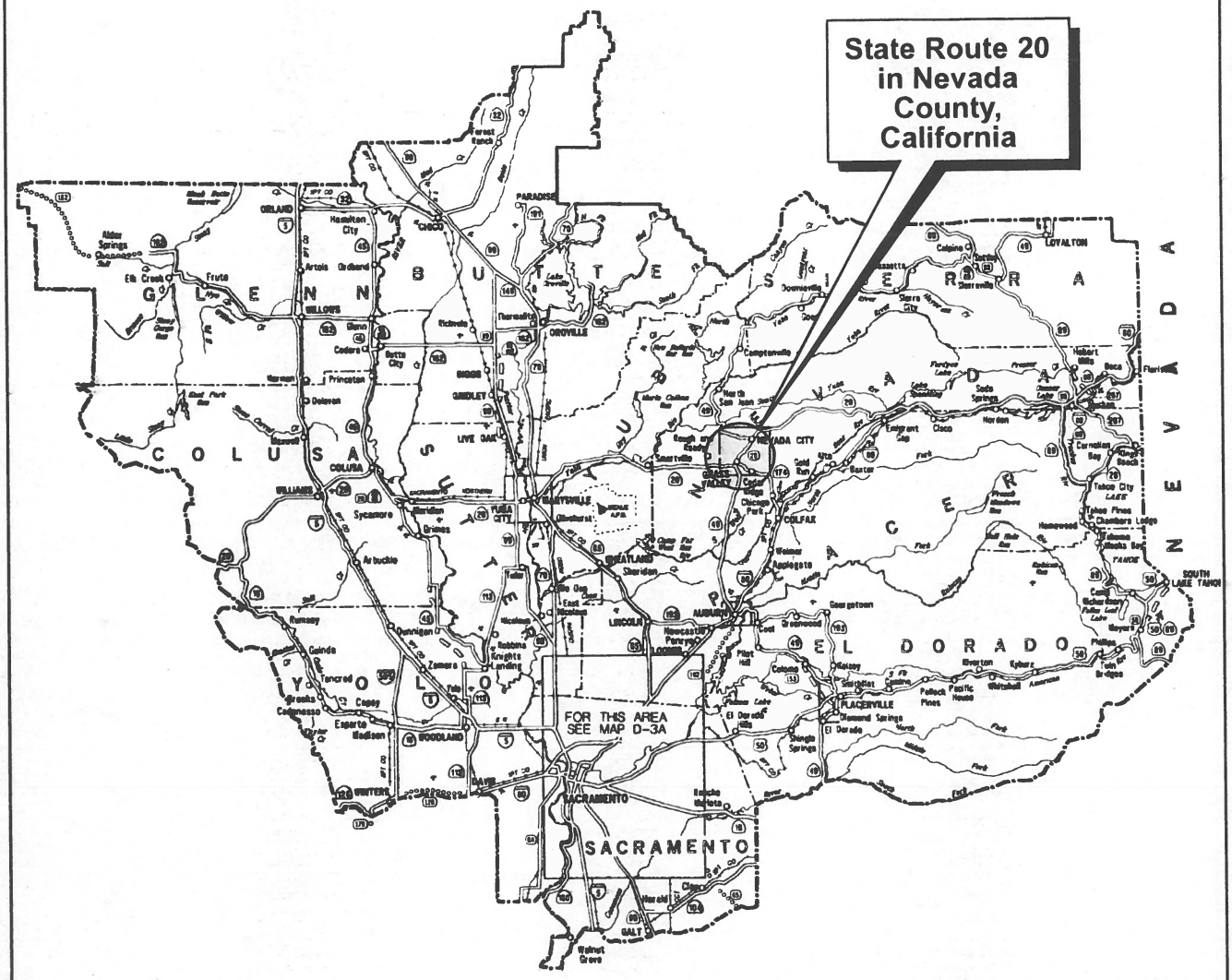


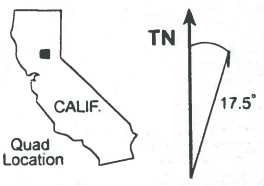
EXHIBIT 1
Project Vicinity Map

State of California
Department of Transportation

03-NEV-20
KP 21.8/23.6
(PM 13.6/14.7)
EA 03-412400

TN

Source: USGS 7.5' Quadrangle, Grassvalley, CA 1949 (rev.1973); T16N/R8E



State of California
Department of Transportation

0 0.5 1 mile
0 0.5 1 kilometer

Scale: 1:24,000
Contour Interval 40 Feet

Exhibit 2
PROJECT LOCATION

Dorsey Drive
03-NEV-20
KP 21.8/23.6
(PM 13.6/14.7)
EA 03-412400

Shrinkdot 4-6-01

ARCHAEOLOGICAL SURVEY REPORT
FOR THE PROPOSED DORSEY DRIVE INTERCHANGE PROJECT AT STATE ROUTE 20 IN NEVADA COUNTY, CALIFORNIA

03-NEV-20
K.P. 21.9/23.8 (P.M. 13.6/14.8)
EA 03-412400

Prepared by:

Anmarie Medin
Associate Environmental Planner (Archaeology)
Caltrans District 03

Prepared for:

Japtej Gill
Chief, Environmental Management, S4 Branch
Caltrans District 03
Sacramento, CA

Archaeological Survey and Evaluation Report, State Route 20

USGS Quadrangles: Grass Valley, Calif. 7.5 minute 1949 (pr 1995)

Keywords: Grass Valley, Stone Ditch, Spring Hill Mine, Nevada County.

December 2005

SUMMARY OF FINDINGS

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), in cooperation with the Nevada County Transportation Commission (NCTC) propose to improve the Dorsey Drive Overcrossing of State Route (SR) 20 in Grass Valley, Nevada County. The project will convert Dorsey Drive Overcrossing to an interchange and connect with Route 20/49 to improve access to specific high-use sites, relieve operations at adjacent interchanges and provide additional capacity on Dorsey Drive for future development in accordance with adopted city and county general plans.

An initial archaeological survey was conducted in August 2001, and follow-up survey was conducted November 10, 2005. The final APE, which is approximately 59.33 hectares (146.60 acres) in size, encompasses all land that could potentially be included in the final project.

The survey identified two properties within the initial study area: the Spring Hill Mine and the Stone Ditch, neither of which appears to be particularly important when judged against National Register criteria. The final APE for this undertaking does not include the Spring Hill Mine. In the intervening time-period between the initial survey and completion of this documentation, the Stone Ditch segment was destroyed by industrial development. Thus, the final APE for the undertaking contains no known cultural properties.

It is Caltrans policy to avoid impacts to cultural resources whenever possible and it may be necessary to make special provisions to avoid impacts to sites that are adjacent to project limits. Further investigations may be needed for sites that cannot be avoided by the proposed project. It is possible that unidentified subsurface archaeological remains exist within the right-of-way and could be encountered during ground-disturbing activities. If buried cultural materials are encountered during construction, it is Caltrans policy that work in the immediate vicinity of the find halt until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include unsurveyed areas.

TABLE OF CONTENTS

INTRODUCTION

The proposed project, involving alternative designs for improvement of the Dorsey Drive Interchange at SR 20 in Nevada County (Figures 1 and 2), represents a federal undertaking and is, therefore, subject to review under the January 2004 *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA). The PA is the FHWA's approach for taking into account the affects of the Federal Aid Transportation Program on historic properties in California and for meeting compliance with Section 106 of the National Historic Preservation Act (36 CFR 800). The initial archaeological survey was conducted in August 2001, and follow-up survey was conducted November 10, 2005.

PROJECT PERSONNEL

The survey involved the following Caltrans archaeologists:

Caltrans Staff	**PQS Status**	**Project Position**
Anmarie Medin	PI- Historical Archaeology, Co-PI, Prehistoric Archaeology	Principal Investigator, Report Author
Kendall Schinke	Lead Archaeological Surveyor	Lead Surveyor, Peer Reviewer
Erick Wulf	Co-PI – Prehistoric Archaeology	Surveyor, Native American consultation, Peer Reviewer
Jeff Haney	PI – Prehistoric Archaeology	Co-Author (context)

HIGHWAY PROJECT LOCATION AND DESCRIPTION

The proposed project is situated at the interchange of Dorsey Drive and SR 20, Grass Valley, Nevada County, California (Figures 1 and 2). This project proposes to construct a tight-diamond interchange at the existing Dorsey Drive overcrossing on Route 20/49 in Nevada County. The project will improve access to specific high-use sites, relieve operations at adjacent interchanges and provide additional capacity on Dorsey Drive for future development in accordance with adopted city and county general plans.

Specific improvements include replacing the existing 2-lane structure with a 5-lane structure, constructing on- and off-ramps, the construction of northbound and southbound auxiliary lanes between existing ramps and proposed ramps, constructing sound walls and retaining walls, and the realignment of Joerschke Drive at approximately KP R21.9 (PM R13.6) State Route (SR) 20 within the City of Grass Valley.

The project's potential to affect historic properties derives primarily from the construction of the new interchange, auxiliary lanes, ramp lighting, signals, and the new overhead road signs, as well as the excavation for these and the electrical connections.

The initial Study Area, as depicted on the Grass Valley, Calif. 7.5-minute U.S.G.S. quadrangles (Figure 2), was delineated to encompass all land that could potentially be included in the final project. The initial Study Area included the existing and maximum proposed right-of-way, as well as identified possible construction easements or staging areas. The project is located in a rural setting on the Grass Valley USGS Topographic Quad, T16N R8E Section 23, Mount Diablo Base Meridian (MDBM).

The Area of Potential Effects (APE) for the proposed project includes the existing and state right-of-way and proposed right of way along Highway 20 between KP 21.9 (PM 13.6) and KP 23.8 (PM 14.8) in Nevada County (please see Map 3, APE, in the Historic Properties Survey Report to which this report is attached). The archaeological APE was established as including all area of potential direct impact (ground disturbance, construction easements, utility relocations, etc.) and includes the full extent of the horizontal and vertical limits of construction impacts in discussion with Design and Construction Engineers.

The Spring Hill Mine was included in the initial Study Area because there was a possibility the area would be needed for equipment staging and storage. After design development and finalization, Caltrans project engineers and archaeologists determined that the project has no potential to affect Spring Hill Mine, thus the APE does not include that property.

SOURCES CONSULTED

A records search and literature review were conducted before the field study to identify prior archaeological investigations and previously recorded sites within and adjacent to the survey area. No properties listed within the National Register of Historic Places (United States Government 1979 and supplements to date), California Historical Landmarks (State of California 1990 and supplemental information to date), California Points of Historical Interest (State of California 1992 and supplemental information to date), California Register of Historical Resources (State of California 1997), or California Inventory of Historic Resources (State of California 1976 and supplemental information to date) occur within record search area. One Point of Historic Interest (Nev-033, the Idaho-Maryland Mine) lies a short distance south of the project, but is well outside of the APE and the project will have no effect upon it.

A records search was conducted at the North Central Information Center of the California Historical Resources Information System at the California State University, Sacramento on March 17, 2000. An updated records search was conducted on November 15, 2005. The records search area (1/4 mile) was delineated to identify all recorded archaeological sites and previous studies conducted in the vicinity. This area is representative of the APE in terms of vegetation, elevation, and landforms, and provides an indication of the sensitivity for cultural resources in the project vicinity. Previous cultural resources studies within the project area are discussed below.

In addition to the standard archaeological record search, archival research was conducted at the Nevada County Assessor's Office in Nevada City, the California State Library in Sacramento, the California Division of Mines and Geology in Sacramento, and Caltrans records in District 3 and at Headquarters.

NATIVE AMERICAN AND INTERESTED PARTIES CONSULTATION

A review of the sacred lands file of the Native American Heritage Commission did not identify any Native American cultural resources in the vicinity. Representatives of local Native American groups were contacted in 2001 regarding any heritage values associated with the project location. Initially, one tribe requested to be kept informed when construction commenced. Given the time lapse between initial consultation and preparation of this report, follow up consultation was deemed necessary. These contacts were based on an updated list of Native American contacts provided by the Native American Heritage Commission in 2005. Caltrans archaeologist Erick Wulf sent new letters with the latest project information on November 7, 2005(Appendix A). Wulf placed follow-up telephone calls to contacts on November 17, 2005 leaving messages to verify receipt of the information and requesting any interested parties contact him for further information. Similarly, local historical societies were contacted regarding any information or concerns related to potential historic resources within the project area (Appendix A). No replies were received in response to these inquiries.

PREVIOUS CULTURAL RESOURCES STUDIES

Some small portions of the project APE have been previously surveyed for cultural resources. None of the previous studies identified cultural properties within the current project's APE. Henry Bass surveyed the northern extent of SR 20 portion of the APE in 1985 (Bass 1985). Pete Jensen surveyed a small portion of Dorsey Drive for a subdivision development in 1985 (Jensen 1985) and Peak and Associates surveyed an adjacent area off of Dorsey drive in 1987 (Peak & Associates 1987). Given that a considerable amount of time has passed since these initial surveys and it was unclear whether the studies considered historic-era properties, it was deemed necessary to survey the entire APE for this particular undertaking.

The follow-up records search determined that, while surveys had occurred in the immediate vicinity in the intervening years, no additional portions of the project APE had been surveyed. The follow-up records search also determined that a segment of the Stone Ditch had been recorded by Eleanor Derr in 1981 (Derr 1981). It has been assigned primary number P-29-1464-H (see archaeological site survey record in Appendix B).

BACKGROUND

The following background sections are taken largely from "Archaeological Survey Report for a Proposed Safety Improvement Project Along State Route 20 in Nevada County, California (03-NEV-20, K.P. 0.00-6.60 (P.M. 0.00-4.10), EA 03-1A5300)" prepared by Jeff Haney, Associate Environmental Planner, Archaeologist, District 3, Marysville. August 2003.

ENVIRONMENT

The Project is within lower foothills between the Central Valley and the Sierra Nevada in western Nevada County, California (Figures 1 and 2). This upland area is characterized by rolling hills with gentle to steep slopes above numerous ephemeral streams. Elevations within

the APE range from 792.5 to 823 m (2600-2700ft) above mean sea level (amsl). Soils within this area are part of the Auburn, Argonaut, Boomer, and Sobrante Series (Brittan 1975). Most of these soils are shallow loams, which occur on undulating to steep uplands and contain areas of exposed rock outcrops. The underlying geology consists of folded and faulted meta-sedimentary rock, which contains intrusions of granitic rock and some areas of overlying volcanic conglomerate rock.

Nevada County is characterized by warm, dry summers and mild, wet winters. The annual average temperature ranges between 12.78° and 15.56° C (55.00°-60.00° F). Average annual precipitation in the western half of the county ranges from 66.04 to 152.40 cm (26.00-60.00 inches). The natural environment within the APE is altered as a result of historic and modern uses of the land, such as grazing, mining, and development associated with the town of Grass Valley. Lower elevations are mostly covered with scattered oak-grasslands, while the higher elevations contain conifer and hardwood forests. The grassland is dominated by mostly annual grasses and includes wild oats (*Avena fatua*), slender wild oats (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), perennial ryegrass (*Lolium multiflorum*), and Medusa-head (*Taeniatherum caput-medusae*). Tree species present within the area consist of black oak (*Quercus kelloggii*), blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizenii)*, Ponderosa pine (*Pinus ponderosa*), and gray pine (*Pinus sabiniana*).

Based on an examination of the above information (including old topographic maps, soils maps, geology maps, etc, as well as examining the area during the field review), there is a low potential for buried archaeological deposits in the project area.

ETHNOGRAPHIC BACKGROUND

The project is within land inhabited by the Nisenan at the time of European contact (Wilson and Towne 1978). The Nisenan spoke a number of dialects belonging to the Maiduan language family, which is part of the larger Penutian linguistic phylum. The latter consists of four families of languages spoken by various populations throughout California. Ethnographic sources for the Nisenan include: Kroeber (1925, 1929, 1932), Faye (1923), Beals (1933), Littlejohn (1928), Gifford (1927), Loeb (1933), and Ritter and Schulz (1972).

The area inhabited by the Nisenan stretched between the American and Yuba Rivers from the Sierra Crest to the Feather and Sacramento Rivers in the Central Valley. The ethnographic village documented to be nearest to the project, *Hi'et*, was at the headwaters of Bear River (Wilson and Towne 1978:388). Each local group or tribelet occupied a main village or a cluster of small settlements surrounding a main village within a territory that was habitually used for hunting, fishing, and gathering. Main villages were permanently occupied, while seasonal camps were established to exploit particular resources, such for acorn harvesting in oak groves during the fall. Within the commonly held land of a village community, families could lay claim to specific fishing sites, oak groves, and trees. Each tribelet had a chief or headman who provided guidance and organized communal activities, such as deer drives, the fall acorn harvest, and ceremonies. Each extended family had a leader who assisted the headman.

Subsistence resources were available year-round within the habitat occupied by the Nisenan, although the types of ripening or otherwise available resources varied throughout the year. Groups were most active during the late summer and early fall. Subsistence tasks conducted by tribelet members consisted of hunting and gathering wild plants, fish, and game. The mainstay of their diet was the acorn, which was supplemented with a variety of fresh meat from large and small mammals, fish, and waterfowl. Exploited plants resources included roots, bulbs, berries, and fruits.

ARCHAEOLOGICAL BACKGROUND

As described above, the project lies within the lower foothills between the Central Valley and higher elevations of the Sierra. Archaeological research in this zone within Nevada County consists of a number of small surveys and few excavations. Additional archaeological excavations in proximity to the project area were conducted within the Tahoe National Forest to the east and in valley floor near Marysville to the west. More extensive archaeological investigations were conducted in conjunction with the Oroville Dam in Butte County. These studies and others provided information that permitted refinement of the region's prehistoric cultural sequence, as found in Kowta (1988) and outlined below.

Mesilla Complex (+1000 B.C. to A.D. 1): The Mesilla Complex is possibly related to the widespread Milling Stone Horizon in northern California and may represent Hokan-speaking groups, which are among the earliest populations in California. Meager information exists regarding settlement and subsistence patterns, although it is suggested that populations engaged in generalized hunting and gathering with an emphasis on deer hunting and collecting small seeds. Settlement systems probably involved some variation of seasonal camps and special use locations tied to a winter village.

Bidwell Complex (A.D. 1 to A.D. 800): The Bidwell Complex represents a continuation of Mesilla Complex, but with intensified subsistence practices and the addition of Central Valley traits in artifact inventory. This period possibly coincides with a warming trend when oak woodland spread into the foothill zone. Subsistence practices show both intensification and diversification. Settlement systems involved relatively permanent villages, although small groups made short-term movements away from main settlements to exploit specific resources during different seasons.

Sweetwater Complex (A.D. 800 to A.D. 1600): This period may mark the emergence of the acorn as a staple resource as reflected by milling assemblages that contain bedrock, hopper, and bowl mortars. This complex possibly marks the intrusion of Penutian-speaking populations (Maidu) from the south. The use of acorns, which requires intensive processing, marks a shift in of subsistence activities that is possibly in response to a growing population.

Oroville Complex (A.D. 1600 to A.D. 1850): This complex, which represents the protohistoric Maidu, is marked by complex forms of social organization, including variation in social status, and more formal exchange relationships. Subsistence practices of this complex were dominated by intensive processing of acorns.

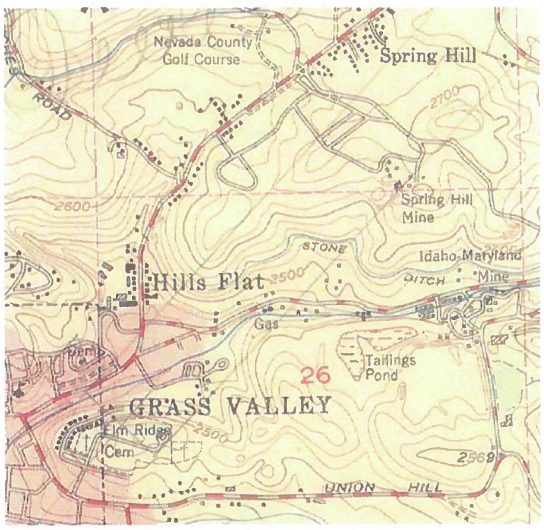
HISTORY

Nevada County became one of the most populous counties in northern California when an influx of prospectors poured into the region following the discovery of gold in 1848. Grass Valley became one of the world's richest mining districts during this period and dozens of mining camps were established along Yuba River. Nevada County was created in 1851 with Nevada City as its county seat. Ranching activities, including livestock and orchards, became increasingly important in western part of county in the late 1800s. The Nevada Irrigation District was established in 1921 to provide water to this area. Widespread unemployment the 1930s resulted in a second gold boom in the region that was followed by a real estate boom in the late 1950s when the area attracted retirees and recreationalists.

Spring Hill Mine

The Spring Hill Mine was first mentioned in the journal Mining and Scientific Press in 1865 as "in the course of being thoroughly opened" [Mining and Scientific Press II(19):290]. It was mapped on the 1867 GLO plat, but the mine was not formally claimed until 1871 (Mineral Survey 1557). Additional mines were claimed nearby and by 1887 a new plat was filed that corrected some locational information that conflicted with these other claims (Mineral Survey 2629). The 1887 plat indicates the mine comprised three shafts and a mill site. The mine remained idle for some time until the 1930s when new owners acquired an option on the property. In 1936, the Engineering and Mining Journal included a two-page article describing improvements, including a 100-ton flotation mill, shafts and veins excavated, various structures, and gold recovery equipment. The article mentions that "the mill is run in three shifts, with one man employed on each shift, and is now treating about 110 tons of ore a day" [Engineering and Mining Journal 137(3):146]. The State Mineralogists report of 1941 mentions that Spring Hill Mine shaft had reached a depth of 1,900 ft., but noted that results were not satisfactory.

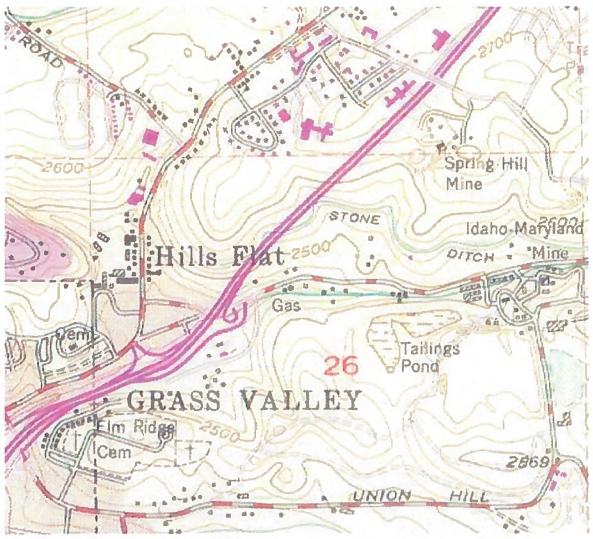
It is unclear at this time when mining operations ceased at the Spring Hill Mine. County assessment records indicate the buildings were in good condition in 1954. Subsequent notes indicate the buildings were reduced to abandoned shells, but there is no date on those notes. When the appraiser revisited the site in 1975, all the buildings had been removed. The 1973 photorevised topographic quadrangle depicts several structures and the mine shaft.



1949 Grass Valley topographic quadrangle depicting Spring Hill Mine and Stone Ditch.

Stone Ditch

"Stone's Ditch" is depicted on the survey plat for the Roannaise Quartz Mine (Mineral Survey 2083) filed in 1883, however the Smartville topographic quadrangle, surveyed in 1885 but published in 1895, does not depict the ditch. It appears on the



1973 Grass Valley quadrangle depicting new freeway alignment and Spring Hill Mine and Stone Ditch.

1949 Grass Valley quadrangle, as well as the 1973 update, as "Stone Ditch." The 1967 SR 20 as-built depicts "Stone Ditch" (see continuation sheet on DPR forms in Appendix A). The 1995 photorevised topographic quadrangle, based on 1985 aerial photographs, does not depict the ditch.

FIELD METHODS

An intensive pedestrian survey of the APE was conducted on August 9, 2001. As described above, this APE was designed to encompass all land that could potentially be included in the final project alternatives.

Field methods consisted of an intensive pedestrian survey whereby the ground surface was inspected while walking a series of linear transects over the entire APE. Kendall Schinke and Anmarie Medin conducted the initial survey. The interval between transects varied from 5 to 15 meters, depending on terrain and project area width. Ground surface visibility varied from poor to fair (10-50%), since most of the area is paved over or is covered by grasslands or brush. To compensate for poor visibility, survey crew members deviated from transects to locate and focus on areas with improved ground surface visibility, such as rodent burrows, and systematically used trowels to periodically clear small areas of vegetation every to observe mineral soils. All bedrock exposures were also examined for milling features. California Department of Parks and Recreation Primary Record, Archaeological Site Record, and Linear Feature forms were used to record the newly discovered properties. Sites were mapped using a Trimble GPS datalogger.

Given the time that elapsed between the initial survey and writing this report, Anmarie Medin and Erick Wulf conducted a second phase of fieldwork on November 10, 2005. Their field effort involved spot checking of selected locations to assess the relationship of cultural properties to the project's final APE. During this survey Medin and Wulf noticed that recent industrial development had destroyed the short segment of Stone Ditch that had been identified within the initial study area in 2001. No remains of Stone Ditch are present within the current project's APE. During the second field reconnaissance, Medin and Wulf were also able to compare aerial photographs, engineering drawings, and actual ground conditions. With this information they were able to determine with certainty that the Spring Hill Mine will not be affected by the undertaking.

SURVEY RESULTS AND PROPERTY DESCRIPTIONS

The initial survey identified two properties within the initial Study Area: the Spring Hill Mine and Stone Ditch. As noted above, both properties are not within the final APE for the federal undertaking. Appendix B contains copies of the site record forms.

SPRING HILL MINE

The Spring Hill Mine archaeological site consists of five concrete foundation features that correspond to buildings documented in the county assessor's building records. All buildings and mine equipment have been removed from the site. Modern sheet refuse is strewn about the site indicating it is used as an illicit recreation area.

Feature 1 is a concrete foundation near the crest of the hill. It measures 45 ft. long by 26 ft. wide. It is unclear what this foundation supported since the residence described in assessment information is indicated as having a wood foundation. Feature 2 was the warehouse and shower. The warehouse portion measures 50 ft. long by 30 ft. wide while the shower portion (on the south side of the building) measures 12 ft. by 36 ft. This corresponds to the assessors building record. Feature 3 is the head frame foundation. This irregularly shaped concrete foundation is built into the hillside with concrete piers adjacent. It measures 8 ½ ft. tall in front and 5 ft. tall in back. Overall length is 12 ½ ft. while overall width is 10 ½ ft. Feature 4 was likely the hoist house. The "E" shaped foundation measures 13 ½ ft. on the long side with 8 ft. long top and bottom extensions and a 10 ft. long middle segment. Metal bolts stick up from the foundation. Feature 5 is the former mill location. The foundation is in two levels: a basement measuring 42 by 15 ft with a 10 foot square additional area, and the main mill platform measuring 42 ft by 30 ft with a 22 ft. wide addition in the rear. These dimensions match the assessor's building record that also mentions "all machinery removed, nothing but a shell remains" however there is no date. Inside the foundation are several concrete platforms that must have served to anchor machinery.

STONE DITCH

Stone Ditch appears on maps as early as 1883. The 1973 Grass Valley topographic quadrangle depicts it contouring generally east west along the 2550-ft. elevation. The segment identified in 2001 was an approximately 300 ft. long segment on the southeast side of SR 20. Eleanor Derr recorded a segment of the Stone Ditch in 1981 (Derr 1981). It has since been assigned Primary Number 29-1464H. Appendix B contains a copy of Derr's site record form.

The following description documents this segment as it appeared in 2001. As mentioned above, recent construction has obliterated this segment. The ditch was excavated into the slightly sloping hillside with earth mounded on the southern side to create a berm. The earthen berm is approximately 1 foot higher than the uphill side of the ditch. Stones are piled on both sides of the ditch suggesting it was named for the terrain rather than a person. The ditch ran east to west, carrying water diverted from Wolf Creek. The western terminus is unclear as the line depicted on the topographic quad simply ends in the middle of a gradually sloping hillside where there are no other features. It is unclear if the ditch continued to the west at some time in the past.

A concrete box is present on the southern or downslope side of the ditch. It measures 8 ft. long by 6 ft. wide and is 4 ft. deep. A concrete and wood gate has been constructed into the ditch, allowing control of water flow. The box is currently partially filled with rocks and wood planks. The historical function of this box is unclear. A fence runs along the southern or downslope

edge of the ditch. It consists of wood posts connected with barbed wire. The posts are rotten and falling over. Stone Ditch retains very poor integrity. It is breached in several locations where cattle have eroded the ditch walls. Construction of SR 20 severely impacted its integrity by burying the alignment. Modern development has further damaged the alignment.

CONCLUSION

While the initial field survey identified two cultural properties, the final project APE includes no cultural properties. The Stone Ditch has been destroyed and the Spring Hill Mine is outside the refined, final APE. Given the absence of cultural resources, no further study is recommended. However, additional survey will be required if the project changes to include unsurveyed areas.

It is Caltrans policy to avoid impacts to cultural resources whenever possible. It is possible that unidentified subsurface archaeological remains exist within the project limits and could be encountered during ground-disturbing activities. If the site cannot be avoided by the proposed project, testing to determine its potential National Register eligibility will be necessary. If buried cultural materials are encountered during construction, it is Caltrans policy that work in the immediate vicinity of the find halt until a qualified archaeologist can evaluate the nature and significance of the find.

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PRELIMINARY GEOTECHNICAL ENGINEERING REPORT for FORMER SPRING HILL MINE PROPERTY APNs 35-260-62, 63 and 64 Grass Valley, California

Prepared for:
Gallelli & Sons, LLC
4240 Rocklin Road, Suite 9
Rocklin, California 95677

Prepared by:
Holdrege & Kull
792 Searls Avenue
Nevada City, California 95959

Project No. 3292-03
September 7, 2007

HOLDREGE & KULL
CONSULTING ENGINEERS • GEOLOGISTS

Project No. 3292-03
September 7, 2007

Gallelli & Sons, LLC
4240 Rocklin Road, Suite 9
Rocklin, California 95677

Attention: Warren Hughes

Reference: ***Former Spring Hill Mine Property***
APNs 35-260-62, 63, and 64
Grass Valley, California

Subject: ***Preliminary Geotechnical Engineering Report***

Dear Mr. Hughes:

This report presents the results of our preliminary geotechnical engineering investigation for the former Spring Hill Mine property located southeast of Dorsey Drive and east of Highway 20/49 in Grass Valley, California. The site includes three parcels with a total area of approximately 26.7 acres. The Nevada County Assessor's Parcel Numbers (APNs) are 35-260-62, 63, and 64. As proposed, the project will include significant cut and fill grading to create building pads for commercial development and associated roads, parking areas, and underground utilities.

The preliminary findings presented in this report are based on a cursory surface reconnaissance at the site, review of selected geologic references and reports previously prepared for the site by Holdrege and Kull, and our experience with subsurface conditions in the area. Based on our preliminary findings, our opinion is the project as currently proposed appears to be feasible from a geotechnical engineering standpoint. We should be retained to perform a design-level investigation prior to construction to confirm the preliminary recommendations presented in this report and provide alternate recommendations, if appropriate, based on the subsurface conditions encountered. Furthermore, we should be allowed to perform testing and observation services during grading to confirm our design-level recommendations.

Please contact us if you have any questions regarding our observations or the preliminary recommendations presented in this report.

Sincerely,

HOLDREGE & KULL

Prepared by:

Zack Washburn, P.G. 8254
Staff Geologist

Reviewed by:

Rob Fingerson, G.E. 2699
Senior Engineer

copies: 4 to Gallelli & Sons / Attn: Warren Hughes

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TABLE OF CONTENTS

1 INTRODUCTION

At the request of Warren Hughes of Gallelli & Sons, LLC, Holdrege & Kull (H&K) performed a preliminary geotechnical engineering investigation of the former Spring Hill Mine Property in Grass Valley, California. The preliminary geotechnical investigation was performed in general accordance with the scope of services presented in our July 17, 2007 proposal for the project, a copy of which is included as Appendix A of this report. For your review, Appendix B contains a document prepared by ASFE entitled *Important Information About Your Geotechnical Engineering Report*, which summarizes the general limitations, responsibilities, and use of geotechnical reports.

1.1 SITE DESCRIPTION

The site is comprised of three contiguous parcels, an eastern parcel (Assessor's Parcel Number (APN) 35-260-64, 11.37 acres), a northern parcel (APN 35-260-62, 1.7 acres), and a western parcel (APN 35-260-63, 13.67 acres). Figure 2 shows the approximate site boundary.

Surface topography at the site generally slopes toward the south and southwest from a relatively flat-lying area in the northern portion of the site and a knoll in the north central portion of the site. The site elevation ranges from approximately 2550 feet above mean sea level (MSL) in the southwestern portion of the site to approximately 2690 feet above MSL in the northern portion of the site. The site is generally vegetated by pine, manzanita, oak, and cottonwood trees in the southwestern portion of the site. Rock outcrop is present at several locations in the western, northern and eastern portions of the property.

1.2 PROPOSED IMPROVEMENTS

Our understanding of the project is based on our recent conversations with Warren Hughes and review of an August 2007 preliminary site plan prepared by Genesis Engineering. The preliminary site plan shows that up to 40 feet of cut is proposed in the central portion of the property and up to 60 feet of fill in the southwestern portion of the property. The plan also shows 6 smaller buildings proposed in the northern and eastern portions of the site, a large parking lot in the central and western portions of the site, and a large structure in the southwestern portion of the site.

1.3 SCOPE OF SERVICES

To prepare this report, we performed the following scope of services:

- We reviewed selected geologic and soil survey literature, as well as previous reports prepared for the site by H&K.
- We performed a cursory surface reconnaissance of the site.
- Based on observations made during our site reconnaissance, the results of our literature review, and our experience with soil conditions in the area, we prepared this report to provide preliminary geotechnical engineering recommendations for the proposed improvements.

2 SITE INVESTIGATION

The following sections summarize our literature review and field reconnaissance.

2.1 LITERATURE REVIEW

We performed a limited review of geologic literature pertaining to the project site. The following sections summarize our findings.

2.1.1 Soil Survey

The Soil Survey of Nevada County, California, Western Part (United States Department of Agriculture, Soil Conservation Service, August 1993) indicates that soil conditions across the majority of the site are mapped as Dubakella-rock outcrop complex, 5 to 50 percent slopes. Runoff is medium to rapid, based on degree of slope, and the erosion hazard is low to moderate. The central portion of the site is mapped as "Placer Diggings", although this classification appears to be incorrect based on the identification of past hard rock gold mining in this area. A limited area in the eastern portion of the site is mapped as Sites loam, 9 to 15 percent slopes. Runoff is medium on this soil and erosion hazard is moderate.

A typical profile of the Dubakella soil consists of an approximate 10-inch-thick surface layer of brown, gravelly heavy loam to gravelly clay loam. The surface layer is underlain by dark yellowish brown and brown, very cobbly clay to a depth of approximately 21 inches below the ground surface (bgs). Weathered ultrabasic rock is encountered below the cobbly clay loam.

A representative profile of the Sites Loam consists of brown and yellowish red heavy loam from the ground surface to an approximate depth of 12 inches bgs. The heavy loam is underlain by yellowish red loam and red clay, and light clay to an approximate depth of 78 inches bgs. The loam, clay, and light clay are underlain by weathered metasedimentary and basic rock.

2.1.2 Geology

The property is located in the Sierra Nevada Foothills, on the western side of the Sierra Nevada geomorphic province. The Sierra Nevada province is an elongate, north-west trending structural block that is tilted upward to form a steep scarp above the adjacent Basin and Range province to the east. The western slope of the Sierra Nevada dips gently westward, and extends beneath sediment of the Great Valley province. Sediment within the Great Valley is derived from continual uplift and erosion of the Sierra Nevada.

The Geologic Map of the Grass Valley - Colfax Area (A. Tuminas, 1983), shows that the site is underlain by serpentine rocks of the Early Mesozoic aged Ultramafic-Mafic "Basement" Unit of the Lake Combie Complex. According to the Mineral Land Classification of Nevada County (Special Report 164, California Department of Conservation Division of Mines and Geology, 1990), the site geology is mapped as the ultramafic unit of the Jurassic-aged Lake Combie Complex. The Mesozoic era occurred from approximately 245 to 65 million years ago. The Jurassic period occurred from approximately 206 to 144 million years ago.

The Map of the Spring Hill Mine (Uren, 1942) depicts buildings, mine shafts, tailing piles, and waste dumps comprising the western and central portion of the property.

The Nevada City Special Folio, California (United States Geologic Survey; 1896), depicts an east-west trending quartz vein passing through the central portion of the site. The vein apparently dips to the north.

We reviewed California Geological Survey Open File Report 96-08, Probabilistic Seismic Hazard Assessment for the State of California, and the 2002 update entitled California Fault Parameters. The documents indicate the property is located within the Foothills Fault System. The Foothills Fault System is designated as a Type C fault zone, with low seismicity and a low rate of recurrence. The 1997 edition of California Geological Survey Special Publication 43, Fault Rupture Hazard Zones in California, describes active faults and fault zones (activity within 11,000 years), as part of the Alquist-Priolo Earthquake Fault Zoning Act. The map

and documents indicate the site is not located within an Alquist-Priolo active fault zone.

2.1.3 Previous Site Investigations

H&K performed a Preliminary Endangerment Assessment (PEA) for the site dated July 6, 2007. The draft PEA has been reviewed by the California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) and we are currently addressing their review comments. Additional information pertaining to mining features and associated waste rock is presented in the draft PEA.

2.2 FIELD INVESTIGATION

We performed our site reconnaissance on August 28, 2007 to observe existing surface conditions at the project site.

2.2.1 Surface Conditions

At the time of our site visit, the western and central portions of the property contained significant abandoned mine features, while the eastern portion appeared to be generally undeveloped. However, dense manzanita generally obscured the surface conditions in the south-central and eastern portions of the site. The topography of the property generally slopes toward the south and southwest from a relatively flat lying area in the northern portion of the site and a knoll in the northern central portion of the site.

We observed the location of the Spring Hill shaft in the central portion of the property as depicted in the Map of the Spring Hill Mine (Uren, 1942). The Spring Hill shaft appeared to have been capped with concrete. Approximately 500 feet northeast of the Spring Hill shaft, we observed mounded soil, rock, and wood debris that appeared to be a shaft that was backfilled or capped. An apparent shaft, approximately 10 to 15 feet wide and open to a depth of 15 feet or greater, was observed approximately 400 feet southwest of the Spring Hill shaft. Our investigation did not include assessing the method or adequacy of physical shaft closure.

Several relic concrete foundations and concrete slabs were identified at the approximate locations of historic mining features depicted on the 1942 Uren map (bin, hoist, compressor, mill, machine shop, carpenter shop, dry, furnace, superintendent residence). No structures remain in these locations. The "bin"

foundation (assumed to be for an ore bin), approximately 10 feet by 15 feet by 8 feet high, apparently served as an ore storage area between the Spring Hill shaft and the mill located to the southeast of the shaft. The mill foundation, located approximately 100 feet to the east of the bin foundation, was approximately 50 feet by 75 feet with concrete wall remnants up to 6 feet high.

Extensive surface exposures of mine waste rock were identified in the central and western portions of the site. Mine waste rock generally consisted of slightly to moderately weathered, mineralized serpentine and diabase rock with abundant quartz. The waste rock was coarse material with variable amounts of sand and gravel. The waste rock was present in several benches extending down slope to the south and southwest of the knoll-top, the location of the former mill and superintendent's residence. There was some evidence of disturbance or removal of waste rock in the area of the bin foundation. Smaller mine waste rock stockpiles of similar consistency were observed in the area between the bin and compressor foundations. Scattered waste rock was observed at the perimeter of the larger, main stockpiles of mine waste rock in the central and western portion of the site.

Mill tailings, consisting of light grey, grayish green and olive-brown silt with fine sand, were observed in the central and western portions of the site. The areas of observed tailings are down slope of the mill foundation. Two former "tailing ponds" were identified in this area.

Apparent glory holes with associated small volumes of apparent excavation spoils were observed in the eastern portion of the site.

H&K observed mine waste on approximately 6.5 acres of the 26.7-acre site, during their investigation for the PEA for the site.

2.2.2 Surface Water and Ground Water Conditions

Although we did not observe areas of saturated ground or seeps, our experience has shown that seepage will likely be encountered in excavations that reveal the contact between relatively permeable surface soil and resistant volcanic rock.

3 LABORATORY TESTING

Laboratory testing was not included in the scope of our preliminary geotechnical engineering investigation. Laboratory testing would be required as part of a design-level geotechnical engineering investigation for the project.

4 CONCLUSIONS

The following conclusions are based on our field observations and our experience in the area.

- Based on the results of our preliminary geotechnical investigation, our opinion is that the project is feasible from a geotechnical standpoint.

- Our primary concerns, from a geotechnical standpoint, are the presence of relic mine features and existing fill consisting of waste rock. In general, existing fill is not suitable to support structural improvements and we anticipate that areas of relatively shallow fill would be removed and replaced as compacted fill during site preparation and grading. Deeper areas of existing fill, particularly in the southern portion of the property will need to be evaluated as part of a design-level geotechnical investigation to determine what mitigation approaches, such as fill replacement or the use of deep foundation systems, are appropriate.

- The most notable historic mining features documented on the site were the Spring Hill shaft and the other two shafts located east and southwest of the Spring Hill shaft. If improvements are planned in the immediate vicinity of these mining features, the features should be closed per the recommendations of H&K or another qualified engineer. We would be able to provide closure recommendations as part of a design-level geotechnical engineering report.

- The July 6, 2007 draft PEA prepared by H&K recommended that the estimated 2,300 tons of waste and affected soil at the Former Mill Area should be excavated, transported offsite, and disposed at an appropriate solid waste facility. Additional characterization of the waste may be required by the landfill during the remedial action to meet their acceptance criteria.

- Based on the ultramafic and serpentine rock observed onsite and our past experience with serpentine rock in the area, we anticipate naturally-occurring asbestiform minerals may be encountered during grading. California Geological Survey Special Publication 124 (2002) states that an asbestos dust mitigation plan (ADMP) is required for grading in areas where naturally occurring asbestos (NOA) or asbestiform minerals are expected (areas where ultramafic, schistose, or serpentine rock is encountered), unless a comprehensive program of sampling and testing indicates the absence of asbestiform minerals. The ADMP is to be developed in accordance with

Section 93105 of the CalEPA's Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying and Surface Mining Operations.

- Based on the site geology and the presence of rock outcrop we anticipate that relatively shallow, resistant rock may be encountered, particularly in the northern and eastern portions of the site, during grading or excavation for utilities. Preliminary recommendations for resistant rock are presented in the following sections. Fill material resulting from excavation onsite may contain significant gravel and oversized rock that may require specific recommendations for use as fill. General recommendations for placement of rock fill and oversized material are presented in the following sections.

- Although we did not observe saturated surface soil and daylighting seepage during our field reconnaissance, areas of seepage will likely be encountered during grading onsite, particularly during the rainy season and/or in excavations which reveal the surface soil/weathered rock contact. Preliminary recommendations regarding subsurface drainage are presented in this report.

5 PRELIMINARY RECOMMENDATIONS

The following preliminary geotechnical engineering recommendations are based on our understanding of the project as currently proposed, our literature review, our field observations during surface reconnaissance, and our experience in the area. The recommendations are preliminary, and are provided for planning purposes. The preliminary conclusions and recommendations in this report should be verified by a design-level geotechnical engineering investigation and/or observation during grading.

5.1 GRADING

The following preliminary grading recommendations address clearing and grubbing, soil preparation, fill placement, cut and fill slope grading, erosion control, subsurface drainage, surface drainage, and construction monitoring.

5.1.1 Clearing and Grubbing

Areas proposed for fill placement, paved areas, and building pads should be cleared and grubbed of vegetation and other deleterious materials as described below.

1. Strip and remove organic surface soil containing shallow vegetation and any other deleterious materials. This organic soil can be stockpiled onsite and used in landscape areas, but is not suitable for use as fill. The actual depth of stripping may vary across the site. Areas of deeper organic surface soil may be encountered in drainage swales and low lying areas.

2. Overexcavate any existing fill, waste rock piles less than 10 feet in depth, debris and/or other onsite excavations to underlying, competent material. Possible excavations include exploratory trenches excavated by others, mantles or soil test pits, and tree stump holes. The waste rock piles consisting of coarse-grained material in the southwestern portion of the site will need to be evaluated to determine appropriate mitigation of the fill to support structures.

3. Remove all rocks greater than 8 inches in greatest dimension (oversized rock) by scarifying to a depth of 12 inches in proposed building pads and areas to support pavement, slabs-on-grade, and other flatwork. Oversized rock should be placed in deep fill per the recommendations of the project geotechnical engineer, stockpiled for later use in landscape areas or stacked rock walls, or removed from the site.

4. Vegetation, tree stumps and exposed root systems, and any other deleterious materials and oversized rocks not used in landscape areas should be removed from the site.

5.1.2 Preparation for Fill Placement

Upon completion of site clearing, grubbing and overexcavation, the exposed native soil should be observed by a representative of our firm prior to placement of fill at the project site. Fill placed on slopes steeper than 5:1, horizontal:vertical (H:V), should be benched into the existing slope to allow placement of fill in horizontal lifts.

5.1.3 Fill Placement

Fill should be placed according to the following guidelines:

1. Material used for fill construction should consist of uncontaminated, predominantly granular, non-expansive native soil or approved import soil. Rock used in fill should be no larger than 8 inches in diameter. Rocks larger than 8 inches are considered oversized material and should be placed in deep

fill per the recommendations of the project geotechnical engineer, stockpiled for use in landscape areas or rock walls, or removed from the site.

2. Oversized material may be windrowed in deeper fill under the observation of the project geotechnical engineer. The windrows should be separated by at least one equipment width. Compacted fill should be worked into the sides of each windrow, and remaining voids should be filled with smaller rock. If the oversized material is to be incorporated into a rock fill that does not permit density testing by nuclear methods, the contractor should prepare a test fill during initial fill placement to facilitate establishing a procedural specification for fill placement. The means and methods of subsequent fill placement will be evaluated for conformance with the approved test fill.

3. Imported fill material should be predominantly granular, non-expansive and free of deleterious or organic material. If imported material is required to grade the site, it should be submitted to H&K for approval and laboratory analysis at least 72 hours prior to import to the site.

4. Clay soil, if encountered, may be used as fill if mixed with granular soil at a ratio determined by the project geotechnical engineer.

5. Fill should be uniformly moisture conditioned and placed in maximum 8-inch thick loose lifts (layers) prior to compacting.

6. The moisture content, density and relative compaction of all fill should be evaluated by our firm during construction.

7. Our observation of rock outcrop in western, northern, and eastern portions of the property and our experience in the area has shown that areas of moderately or slightly weathered rock that is difficult to trench with conventional trenching equipment may be encountered during grading or trenching. Pre-ripping, blasting, or splitting may be required in these areas. The scope of a future design-level investigation should include excavation of exploratory trenches along proposed road and utility trench alignments to allow observation of subsurface soil and rock conditions.

5.1.4 Differential Fill Depth

To reduce the magnitude of differential settlement associated with variable fill depth beneath structures, we recommend that differential fill depths beneath structures should not exceed 5 feet. For example, if the maximum fill depth is 8

feet across a building pad, the minimum fill depth beneath that pad should not be less than 3 feet. If a cut-fill building pad is used in this example, the cut portion would need to be overexcavated 3 feet and replaced with compacted fill.

5.1.5 Cut/Fill Slope Grading

1. Cut and fill slopes should generally be no steeper than 2:1, H:V. Based on our experience in the area, steeper cut slope gradients may be feasible in areas that have significant rock structure. Steeper slope gradients must be verified based on the results of laboratory testing and observation of slope conditions.

2. Fill slopes should be constructed by overbuilding the slope face and then cutting it back to the design slope gradient. Fill slopes should not be constructed or extended horizontally by placing soil on an existing slope face and/or compacted by track walking.

3. Benching during placement of fill on an existing slope must extend through loose surface soil into firm material, and be performed at intervals such that no loose soil is left beneath the fill.

5.1.6 Erosion Control

Graded portions of the site should be seeded following grading to allow vegetation to become established prior to and during the rainy season. In addition, grading that results in greater than one acre of soil disturbance or in sensitive areas may require the preparation of a storm water pollution prevention plan. As a minimum, the following controls should be installed prior to and during grading to reduce erosion.

1. Prior to commencement of site work, fiber rolls should be installed down slope of the proposed area of disturbance to reduce migration of sediment and small rocks from the site.

2. Soil exposed in permanent slope faces should be hydroseeded or hand seeded/strawed with an appropriate seed mixture compatible with the soil and climate conditions of the site as recommended by the local Resource Conservation District.

3. Following seeding, jute netting or erosion control blankets should be placed and secured over graded slopes steeper than 2:1, H:V, to keep seeds and

straw from being washed or blown away. Tackifiers or binding agents may be used in lieu of jute netting.

4. Surface water drainage ditches should be established as necessary to intercept and redirect concentrated surface water away from cut and fill slope faces. Under no circumstances should surface water be directed over slope faces. The intercepted water should be discharged into natural drainage courses or into other collection and disposal structures.

5.1.7 Subsurface Drainage

If grading is performed during or immediately following the rainy season, seepage will likely be encountered. If groundwater or saturated soil conditions are encountered during grading, we anticipate that dewatering may be possible by gravity or by installation of sump pumps in excavations.

Control of subsurface seepage at the base of fill areas can typically be accomplished by placement of an area drain. Underlying, saturated soil is typically removed and replaced with free draining, granular drain rock enveloped in geotextile fabric. Fill soil can be placed over the granular rock. H&K should review proposed drainage improvements with regard to the site conditions prior to construction.

5.1.8 Surface Water Drainage

Proper surface water drainage is important to the successful development of the project. We recommend the following measures to help mitigate surface water drainage problems:

1. Slope final grade adjacent to structural areas so that surface water drains away from building pad finish subgrades at a minimum 2 percent slope for a minimum distance of 10 feet.

2. Compact and slope all soil placed adjacent to building foundations such that water is not retained to pond or infiltrate. Backfill should be free of deleterious material.

3. Direct downspouts to a solid collector pipe which discharges flow to positive drainage.

5.1.9 Construction Monitoring

Construction monitoring includes review of plans and specifications and observation of onsite activities during construction as described below.

1. We should be retained to review the final grading plans prior to construction to determine whether our recommendations have been implemented, and if necessary, to provide additional and/or modified recommendations.

2. We should be retained to perform construction monitoring during grading performed by the contractor to determine whether our recommendations have been implemented, and if necessary, provide additional and/or modified recommendations.

5.2 FOUNDATION SYSTEMS

Our preliminary opinion is that conventional shallow spread footings will be suitable for support of structures across much of the property. Footings should be founded on native, undisturbed soil, weathered rock or compacted and tested fill. Foundation design criteria and construction recommendations are typically provided as part of a design-level geotechnical engineering report.

Footings should be deepened through expansive clay soil, if encountered at the base of the footing excavations. Expansive clay soil is typically encountered in relatively thin layers near the soil/weathered rock interface.

Shallow, resistant rock which limits footing excavation may be encountered during construction in the northern and eastern portions of the property. The presence of shallow rock within building footprints may require the use of rock anchors or dowels to provide uplift and sliding resistance. H&K can provide site specific anchor recommendations during construction, if requested.

Existing deep fill is probably not suitable to support structures without mitigation. The mitigation options should be determined during the course of a design-level investigation.

6 LIMITATIONS

The following limitations apply to the findings, conclusions and recommendations presented in this report:

1. Our professional services were performed consistent with the generally accepted geotechnical engineering principles and practices employed in northern California. This warranty is in lieu of all other warranties, either expressed or implied.

2. These services were performed consistent with our agreement with our client. We are not responsible for the impacts of any changes in environmental standards, practices or regulations subsequent to performance of our services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report. This report is solely for the use of our client. Any reliance on this report by a third party is at the risk of that party.

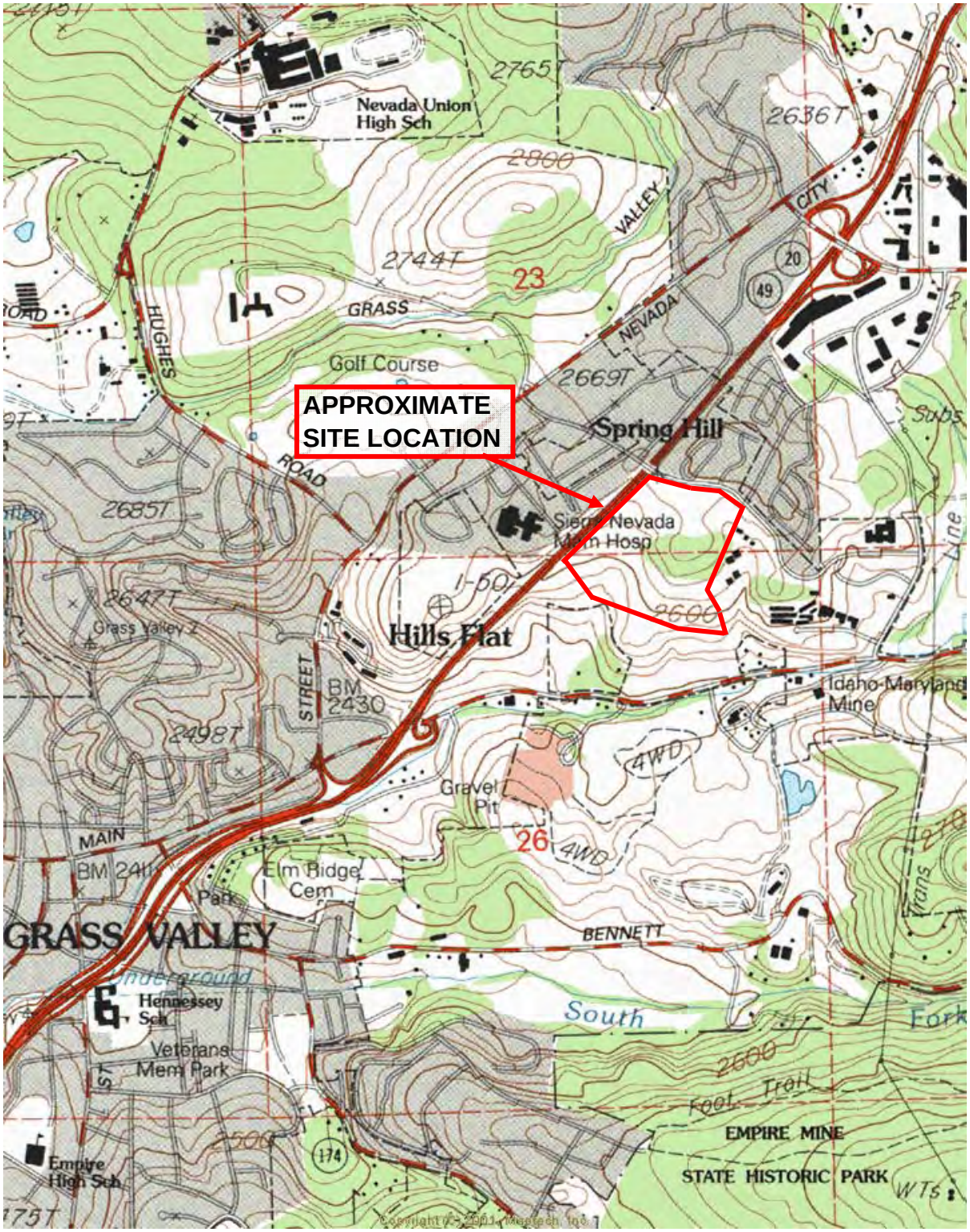
3. If changes are made to the nature or design of the project as described in this report, then the conclusions and recommendations presented in this report should be considered invalid by all parties. Only our firm can determine the validity of the conclusions and recommendations presented in this report. Therefore, we should be retained to review all project changes and prepare written responses with regards to their impacts on our conclusions and recommendations. Subsurface investigation and laboratory testing will be required to develop design-level recommendations.

4. The analyses, conclusions and recommendations presented in this report are preliminary, based on site conditions as they existed at the time we performed our surface observations. The subsurface conditions should be confirmed by a design-level geotechnical investigation prior to construction.

5. Our scope of services for the preliminary geotechnical investigation did not include evaluating the project site for the presence of hazardous materials. Please review the July 6, 2007 draft PEA for information regarding hazardous materials. Project personnel should be careful and take the necessary precautions when working with hazardous materials during construction.

6. The findings of this report are valid as of the present date. Changes in the conditions of the property can occur with the passage of time. The changes may be due to natural processes or to the works of man, on the project site or adjacent properties. In addition, changes in applicable or appropriate standards can occur, whether they result from legislation or the broadening of knowledge. Therefore, the recommendations presented in this report should not be relied upon after a period of two years from the issue date without our review.

FIGURES



NO SCALE SOURCE: GRASS VALLEY QUADRANGLE MAP (USGS, PROVISIONAL EDITION 1995)

HOLDREGE & KULL
CONSULTING ENGINEERS • GEOLOGISTS
792 Searls Avenue • Nevada City, CA 95959
(530) 478-1305 • FAX (530) 478-1019

SITE LOCATION MAP

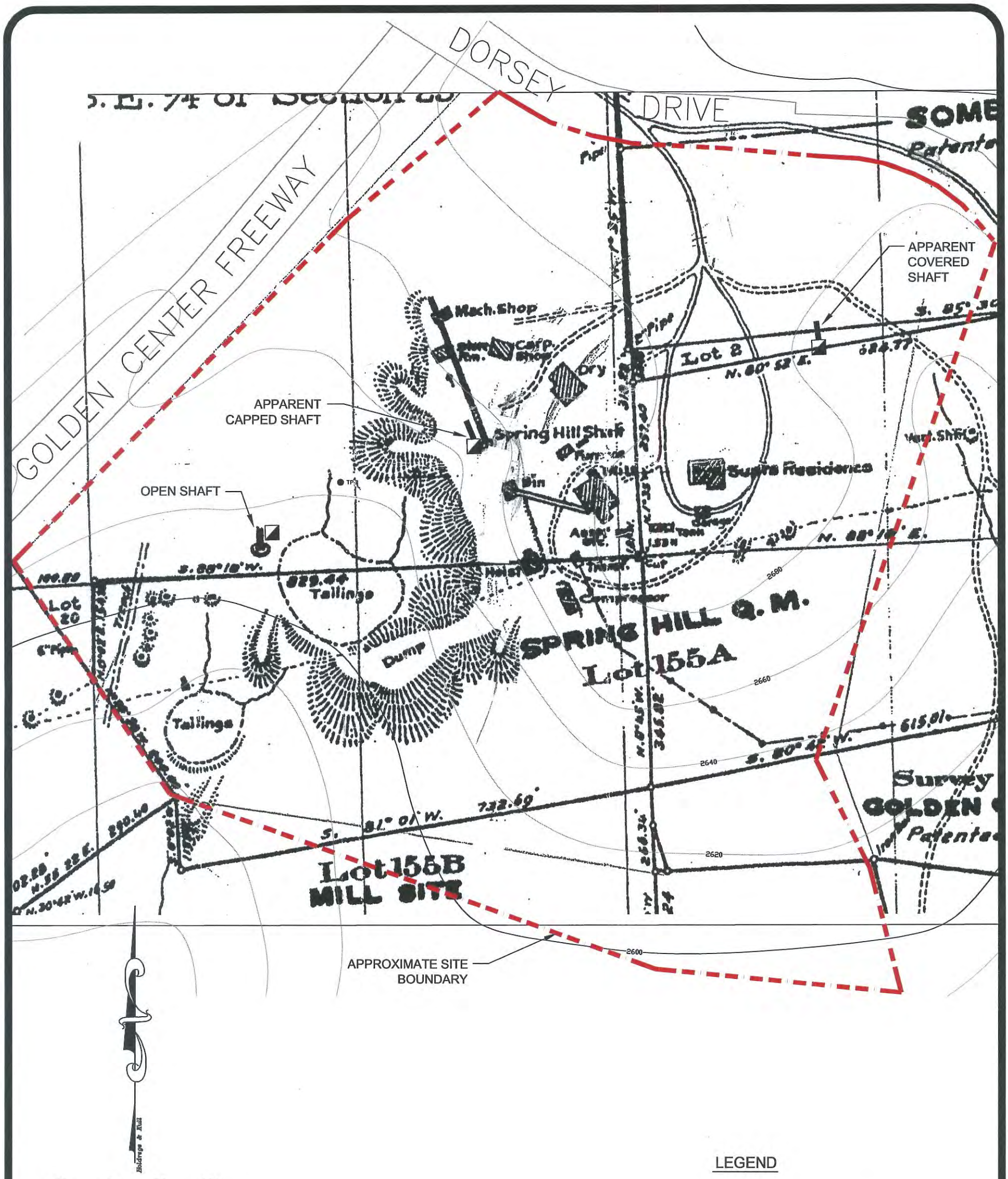
SPRING HILL MINE PROPERTY

GRASS VALLEY, CALIFORNIA

PROJECT NO. 3292-03

SEPTEMBER 2007

FIGURE 1



SITE MAP

FORMER SPRING HILL MINE PROPERTY

GRASS VALLEY, CALIFORNIA

3292–03–FIG2

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DRAWN BY: DFD	*CHECKED BY:* ZW
PROJECT NO.: 3292–03	
DATE: SEPTEMBER 2007	
FIGURE NO.: 2	

APPENDIX A PROPOSAL

Proposal No. PN07219
July 17, 2007

Gallelli & Sons, LLC
4240 Rocklin Road, Suite 9
Rocklin, California 95677
fax: 916 415 0360

Attention: Mr. Warren Hughes

Reference: ***Former Spring Hill Mine Property***
APNs 35-260-62, 63, and 64
Nevada County, California

Subject: ***Contract Extension for Preliminary Geotechnical investigation***

Dear Mr. Hughes:

At your request, we are providing this proposal for preliminary geotechnical engineering services at the former Spring Hill Mine property located immediately southeast of Dorsey Drive and east of Highway 20/49 in Grass Valley, California. The site includes three parcels with a total area of approximately 26.7 acres. The Nevada County Assessor's Parcel Numbers (APNs) are 35-260-62, 63, and 64. The purpose of our services will be to evaluate the feasibility of the proposed development from a geotechnical/geological standpoint.

As currently proposed, the project will include commercial development of the property, with associated grading for access roads, building pads, and subsurface utilities.

SCOPE OF SERVICES

Based on our current understanding of the project, we propose to perform the following scope of services:

Field Investigation

We will perform a literature review of pertinent geologic and soil survey documents and previous reports prepared by H&K. Our field investigation will also involve a cursory site
visit to observe the existing condition of the subject property, noting existing fill, standing water and drainage, past mining features and other geotechnical or geologic features that may impact the development, as well as rock/soil types observed at the ground surface.

Preliminary Geotechnical Report

Following completion of the above tasks, we will compile a report which will include:

- Site plan showing approximate locations of geologic features;
- Description of soil and rock conditions;
- Preliminary grading and drainage recommendations;
- General conclusions regarding feasibility of the proposed improvements from a geotechnical engineering standpoint;
- Recommended foundation systems; and
- Preliminary recommendations to mitigate the presence of expansive soil, if encountered.

FEES

Our fee to provide the outlined services will be $2,400. Progress billing will be monthly on a percent complete basis. If this proposal meets your approval, please sign the enclosed terms and conditions and return one copy as our authorization to proceed.

TIMING

We will be able to start our field investigation for the project within one weeks of receiving authorization to proceed. Our report will be submitted within three weeks of completing our field investigation.

If you have any questions, please do not hesitate to contact us. Thank you for considering our firm to provide services for your project.

Sincerely,

HOLDREGE & KULL

Zack Washburn, P.G.
Staff Geologist

Authorization of Contract Extension

I hereby authorize Holdrege & Kull to implement the above scope of services for the fee outlined in this proposal. This authorization extends the existing signed contract between Gallelli & Sons, LLC and Holdrege & Kull dated March 5, 2007 to apply to the services and fees outlined in this proposal.

_____
Name

_____
Signature

_____
Date

F:\1 Projects\3292 Spring Hill Mine\3292-03\3292-03 pro.wpd

APPENDIX B ***IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT (Included with permission of ASFE, Copyright 2004)***

Important Information About Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you —* should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.

ASFE
The Best People on Earth

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