PRELIMINARY LAND CAPABILITY REPORT

Piedmont Oak Estates

February 12, 2013

Project Description

Applications for Tentative Subdivision Map and Zone Change with Planned Development on 25.89 ± acres creating the following:

42 Detached Single Residential Parcels
62 Clustered Residential Parcels
2 Commercial Parcels
(106 Re-Sale Parcels Overall)
6 Open Space Parcels

Project Location & Vicinity

Highway 49 & Black Rice Road
(See Vicinity Map- Exhibit E-1, Aerial Photo - Exhibit E-2, and U.S.G.S. Map – Exhibit E-3).

Applicant

Jim Davies and Terri Lang
854 Diablo Road
Danville, CA 94526
Tel: (925) 984-1222

Prepared by

BT Consulting Incorporated

PO Box 304
Shingle Springs, CA 95682
(530) 672-2316
www.gobtc.net

PRELIMINARY LAND CAPABILITY REPORT

Piedmont Oak Estates

February 12, 2013

Project Description

Applications for Tentative Subdivision Map and Zone Change with Planned Development on 25.89 ± acres creating the following:

42 Detached Single Residential Parcels
62 Clustered Residential Parcels
2 Commercial Parcels
(106 Re-Sale Parcels Overall)
6 Open Space Parcels

Project Location & Vicinity

Highway 49 & Black Rice Road
(See Vicinity Map- Exhibit E-1, Aerial Photo - Exhibit E-2, and U.S.G.S. Map – Exhibit E-3).

Applicant

Jim Davies and Terri Lang
854 Diablo Road
Danville, CA 94526
Tel: (925) 984-1222

Prepared by

BT Consulting Incorporated

PO Box 304
Shingle Springs, CA 95682
(530) 672-2316
www.gobtc.net

Table of Contents

Section 1 -Scope of Work

Per Volume I, page I of the County of El Dorado Design and Improvements Standards Manual (DISM) a "*preliminary Land Capability Report*" is to be submitted with the tentative map. The report is to be compiled from "published sources" and "any areas needing further clarification or additional information are to be augmented by the applicant and shall be submitted prior to the filing of the final map." Note that not all issues required for this report per Volume I of the DISM have published data available at this time. However, if additional information is required it will be supplied as necessary.

Section 2-General Project Information

2A-APN	051-550-40	051-550-47	051-550-48	051-550-51
2B-Existing Record Map	PM 36/119/8 & PM 32/6	PPM 3611 19	PPM 36/119 /C RS 22/37 BLA)	PPM 36/ 119 /D RS 22/37 BLA)
2C-Acreage	5.10	13.143	3.34	4.20
2D-Present Zoning	RI-PD	RI-PF-CPO-PD	RI-PD	RI-PD
2E-Proposed Zoning	RI -PD	RI-PD, C	RI-PD	R I-PD
2F-Existing LUD	HDR	HDR, C	HDR	HDR
2G-Proposed LUD	HDR	HDR, C	HDR	HDR

Note: All properties are in the El Dorado-Diamond Springs Community Region.

Legend

APN	Assessor's Parcel Number
C	Commercial District
C PO	Professional Office Commercial District
HDR	High Density Residential
LUD	Land Use Designation (from General Plan)
MFR	Multi-Family Residential
PD	Planned Development
PF	Public Facilities
PM	Parcel Map
PPM	Portion of Parcel Map
RM	Multi-Family Residential
R 1	One-Family Residential District
R 2	Limited Multifamily Residential District

See Assessor's Composite Map - Exhibit E-4

Section 3- Project Overview

a. Product Information

42 Detached Single Family Residential Parcels: These parcels range in size from ±0.11 to ±0.27 acres. These parcels are contained in both phases.

62 Cluster Home Parcels: Cluster homes are single family detached residences typically separated by a distance of only 10 feet or less. These parcels range in size from ±0.05 to ±0.08 acres (±2,111 to ±3,339 square feet). See the Tentative Map sheets in Map Pocket 1 for a detail of a typical residential lot cluster planned for this project. These parcels are contained in Phase 1.

2 Commercial Parcels: These parcels, Lot 1 and Lot 2 are sized at ± 1.13 acre,± 0.90 acre respectively. These parcels are contained in both phases, near Highway 49 along project Road A.

(106 re-sale parcels total)

6 Open Space Parcels: These parcels range in size from ±0.04 to ±3.03 acres.

b. Phasing

Phase 1:	20 Single Family Homes
	62 Clustered Home Lots
	6 Open Space Lots
	12 Driveway Lots
	1 Commercial Lot
	1 Road Lot
Phase 2:	22 Single Family Homes
	1 Commercial Lot

c. Timeline

Initial project submittal was completed during May of 2009. Due to poor economic times, the project was delayed, and modified for re-submittal in September 2012, and was revised for re-submittal in February 2013. The timeline for project phasing and development will be contingent upon project approval. The project is anticipated to be completed within the 3 year allowance for completion of the Final Map, without any extensions.

d. Planned Development Features

The use of the Planned Development Combining Zone District has allowed design of the site to maximize benefits to project and area residents. Residence clustering has helped maximize open space and promoted a better fit with site topography. The total open space area is ±8.02 acres. Therefore ±31% of the overall project area is comprised of open space.

Clustering has helped minimize impacts on site wetlands, drainage channels and cultural features by locating roadways, public water and sewer infrastructure, and future buildings away from these sensitive features. Additionally, project open space provides an important aesthetic and sound buffer between Highway 49 and the project residential areas. These

features provide important project resident and public benefits. Additionally, improved ingress and egress for the project area, reduced fire fuels and increased firefighting resources will enhance public health, safety and welfare.

Section 4 - Existing Site Characteristics

a. Climate

Annual Precipitation: ±38" (per map titled- *Mean Annual Rainfall for El Dorado County, California*)

Form: Rain, with very limited snowfall

Seasonal Distribution: Primarily October through April

Temperature: Annual Average Temperature 55 degrees (F)
January lows in the 30-degree range (F)
July highs in the 100-degree range (F)

b. Geography

Geographic Setting: The Piedmont Oak Estates property is located adjacent to and east of Highway 49 and Happy Lane, just north of Diamond Springs. Racquet Way and April Lane bound the property on the east except for a portion at the northeast comer, closest to Weber Creek. Black Rice Road crosses south of the project lands from Highway 49 and heads easterly. Much of the property is of very gentle slope, nearly flat for the foothill area, and without shading from nearby hills or ridges. The topography could be characterized as northeast trending ridges and valleys of relatively moderate height and depth.

Elevation: The project site ranges in elevation from ± 1770 feet to ± 1835 feet above sea level.

Topography: A slope study for the project site produced the following information:

Slope Range	Project Area
0-10%	32%
10-20%	38%
20-30%	24%
30-40%	4%
>40%	2%

See Map Pocket 2 for a Slope Map of the site.

c. Available Services

The proposed project is within the El Dorado Irrigation District (E.I.D.) service area. A Facility Improvement Letter (FIL) has been obtaine. Both public water and sewer are proposed for this project

d. Geology & Geologic Hazards

Geologic History: The project is within the Placerville Quadrangle of the Public Lands Surveys. The Placerville Quadrangle lies within the central part of a northwest-trending belt of metamorphic rocks that underlies the western slope of the Sierra Nevada Range. These rocks are composed of thick accumulations of Paleozoic and Mesozoic marine sedimentary and volcanic rocks that have been deformed, intruded, and metamorphosed. More specifically, the entire project site is underlain by Mesozoic Plutonic rocks designated as "Mzg- Granitic to Dioritic" on Plate I of the 1983 California Department of Conservation, Division of Mines and Geology, Open-File Report 83-29. (See Geologic Map Overlay, Exhibit E-6)

Seismic Movement: The California Geological Survey Probabilistic Seismic Hazards Mapping

Ground Motion Page indicates that for the project site, based on latitude and longitude, seismic shaking hazards are between 10 and 20% for peak ground acceleration (Pga). Thus, the project area is in the second lowest category for probability of seismic shaking hazards in the state. El Dorado County is not listed as an earthquake fault zone area per the California Geological Survey's list mandated by the Alquist-Priolo Earthquake Fault Zone Act.

Non-Seismic Earth Movement: A geological evaluation has not been performed for the project site. Therefore, professional assessment results are not yet available regarding landslides, rock falls/slides, mud slides/flows, and earth settlement for the project site. Such information typically becomes available from Geotechnical Engineer Reports obtained just prior to improvement plan preparation. Site reconnaissance by BTConsulting, Inc. personnel has not revealed any evidence of such geologic hazards.

Building Foundation Stability: Soil expansion affecting building foundation stability is typically related to a soil expansion index > 20 per U.B.C. Standard No. 29-2. Expansion Index Tests per U.B.C. Standard No. 29-2 have not been performed on the site soils.

As an alternative measure, the National Resource Conservation Service (NRCS) provides Atterberg Limits for the site soils. Atterberg limits, which are comprised of a liquid limit and plasticity index, indicate the plasticity characteristics of a soil. The acceptable limits are a liquid limit less than 50 and a plasticity index less than 20. The Atterberg Limits for site soils are listed in Exhibit E-7 (General Soils & Geology Table) and detailed information regarding Atterberg Limits is given in the appendices. See the appendices for more information.

The NRCS soil reports also provide soil classifications based on the Unified system and AASHTO system. The Unified system classifies soils according to properties that affect their use as construction materials. The AASHTO system classifies soils according to properties that affect roadway construction and maintenance. See the appendices for more detail.

Asbestos: According to the "ASBESTOS REVIEW AREAS Western Slope" map located on the El Dorado County Air Quality Management District (AQMD) website, the project area is not within an area known to contain asbestos nor is it within the quarter-mile buffer for found areas of naturally occurring asbestos.

Groundwater:
Recharge Sources- Per the California Department of Water Resources (CDWR), Groundwater Information Center, surface water and precipitation are typically key recharge sources for groundwater. Rainfall is reported in Section 4.a. and surface water information is contained in Section 4.h.

Groundwater Movement - Per the CDWR, Groundwater Information Center, groundwater movement is a complex process related to elevation and pressure. CDWR reports indicate that water moves in response to the difference in hydraulic head from the point of highest energy toward the lowest. On a regional scale this results in flow of groundwater from recharge areas to discharge areas. Groundwater may naturally exit the subsurface by flowing into a stream, lake, or ocean; by flowing to the surface as a spring or seep; or by being transpired by plants. Groundwater movement information of greater detail is not available for this site.

Groundwater impact on cut/fill slopes-Cut and fill slopes from grading required to complete the anticipated land division per the preliminary grading design range from 0 to 21 feet for cuts and 0 to 17 feet for fills. Stabilization measures will be recommended by Geotechnical Reports and followed.

Site Soils & Water Transmission- A site-specific geological survey and analysis classifying

the site soils as to water transmission has not been performed on this project. The National Resource Conservation Service Web Survey Soil Reports indicate that the Placer Diggings soils on the site are in Hydrologic Group A and the Diamond Springs Series soils are in Hydrologic Group C. The four hydrologic soils groups are:

Group A -Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist of moderately deep or deep, moderately well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission

Group B - Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C- Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils have a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D- Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Geotechnical reports for the project will address groundwater transmission and mitigation, as necessary. For more detail on site soils and water transmission see the appendices.

e. Soils

Site Soils: The project area is comprised of the following soil series:

Diamond Springs Very Fine Sandy Loam, 3-9% s lopes (DfB) - ±0.6% of project
Diamond Springs Very Fine Sandy Loam, 9-15% slopes (DfC)- ±47.5% of project
Diamond Springs Very Rocky Very Fine Sandy Loam, 3-50% slopes (DgE) - ±10.3% of project
Placer Diggings (PrD)- ±41.5% of project

See Exhibit E-5 for a 'Soils Map Overlay'. Soil profiles with USDA texture classes and the Unified and AASHTO Classifications are available in Appendix C.

Tabulated Data:
Volume I, Section 4 of the DI SM requires the following estimated soil properties be presented in tabulated form.

Soil Series	Organic Matter Content
Soil Types	Clay Content Mapping
Symbols	Rock Outcroppings
Soil Types Percentage of Project Area	Unified Classification
Depth to Bedrock	Reaction (pH)
Grain Size Distribution (See append ices)	Potential Geological Hazards

This table is presented in Exhibit E-7, General Geology & Soils Table. Additional detail

and information is available in the appendices.

f. Cultural Resources

The cultural resources reports for this project consist of an "Updated Cultural Resources Study" (February 2006) and an "Addendum to the Updated Cultural Resources Study" (April 2006) both prepared by Historic Resources Associates of El Dorado Hills. The applicant initiated the updated cultural resources study as a result of a request by the El Dorado County Planning Department to revisit cultural resources studies conducted in December of 1988 and May of 1998 by Historic Resource Associates.

The reports indicate that the 1988 initial study resulted in the discovery of 15 features, the oldest of which were associated with placer mining for gold from the 1850's through the 1880's. Furthermore, evidence once existed of one Overseas Chinese occupation area in the project area, presumably a cabin. However, per the reports, due to disturbance of the area since 1988 previously identified features are either non-existent at this time or lack sufficient integrity to warrant them as significant under CEQA.

g. Biological Resources

Biological community boundaries have been updated by Sycamore Environmental since the 2007 report at the alliance level. Much of the understory vegetation in some parts of the site had been removed prior the 2007 report, and the areas were categorized as "partially cleared land." Understory vegetation has re-grown since then. Also, the CA Department of Fish and Wildlife has since updated the recognized natural communities list (CDFW 2010) based on Sawyer et al. (2009). The revised Biological Communities Table below incorporates the changes. Tree-of-heaven woodland is not included on the CDFW list (2010), however CDFW acknowledges that description and classification of the State's vegetation communities is ongoing. Tree-of-heaven is an invasive weed with moderate ecological impacts (Cal-IPC 2006).

Table of Biological Communities

Biological Community	State Rarity Rank [1]	Acreage	Phase 1 Impacts	Phase 2 Impacts
Mixed Oak Forest	S4	13.96	4.78	3.98
Ponderosa Pine Forest	S4	8.56	6.95	0.54
Annual Brome Grassland	--	2.99	1.69	0.59
White Leaf Manzanita Chaparral	S4	1.23	0.89	--
Tree-of-Heaven Woodland	--	0.57	0.49	0.01
Ephemeral Channels	--	0.08	0.008	0.008
Total:		**27.39**	**14.81**	**5.12**

[1] State ranks of S1, S2, or S3 are generally considered rare or imperiled. Communities dominated by nonnative species are not ranked. The list of recognized vegetation associations and their rarity rankings in CDFW (2010) was reviewed, and the communities in the project area would not have an S3 or lower ranking at the association level.

Impacts to mixed oak forest are regulated and mitigated by El Dorado County General Plan Policy 7.4.4.4 and the associated Interim Interpretive Guidelines (amended 12 October 2007). A separate analysis specific to Policy 7.4.4.4 will be prepared. The other biological communities are not considered sensitive at the state or local level. Ponderosa pine, chaparral, and annual

grassland are not identified as sensitive habitat in the General Plan EIR (El Dorado County 2004).

The extent of waters and wetlands at the site has not changed since the 2007 report. There are no wetlands on the current project site. The wetlands were on the parcels that are no longer part of the project. The revised table of wetlands and waters below incorporates the changes. The Project may fill up to 0.016 acre (472 linear feet) of ephemeral channels. The fill could be avoided with the use of bottomless culverts. Fill of the channels would require permitting under Sections 404 and 401 of the federal Clean Water Act if the channels meet criteria for Waters of the U.S. Fill of the channels would require permitting under section 1600 of state Fish and Game Code and the state Porter-Cologne Water Quality Control Act regardless of federal jurisdiction. The existing federal and/or state permitting processes require mitigation for the loss or degradation of channels, including replacement or restoration based on the extent of impact.

Table of Waters

Feature	Hydrology	Length (ft)/ Avg. Width (ft)	Total Acreage	Phase 1 Impacts	Phase 2 Impacts
Channel 1	Ephemeral	977 ft / 2.5 ft	0.056	123 ft / 0.007 ac	--
Channel 1b	Ephemeral	537 ft / 1.0 ft	0.012	--	74 ft / 0.002 ac
Channel 2	Ephemeral	301 ft / 1.5 ft	0.010	--	165 ft / 0.006 ac
Channel 2a	Ephemeral	110 ft / 0.5 ft	0.001	110 ft / 0.001 ac	--
Total:		**1,925 ft / --**	**0.079**	**233 ft / 0.008 ac**	**239 ft / 0.008 ac**

Special-status species considered are those listed (or candidate or proposed) under the federal or state endangered species acts, under the California Native Plant Protection Act, as a California species of special concern or fully protected by CDFW, or that are on List 1 or 2 of the California Native Plant Society's Inventory of Rare and Endangered Plants of California (CNPS 2012). Several special-status species have been added to the lists included in Attachment A since the 2007 report. A brief evaluation of each of these special-status species is below.

- *Winter-run Chinook salmon, Sacramento River*: Once found throughout the upper Sacramento River basin, the winter-run chinook salmon is now confined to the mainstem Sacramento River below Keswick Dam (Moyle 2002). The project site does not provide potential habitat.
- *Conservancy fairy shrimp, vernal pool fairy shrimp, Sacramento orcutt grass*: These species are associated with vernal pools in and around the Central Valley (USFWS 1994, CNPS 2012). There are no vernal pools in the project site and there is no potential habitat.
- *Bank swallow*: This bird is restricted to riparian areas with vertical cliffs and banks with fine-textured or sandy soil (Zeiner et al. 1990). The project site does not provide potential habitat.
- *Great gray owl*: This species occurs between 4,500 and 7,500 feet in the Sierra Nevada from the vicinity of Quincy in Plumas Co. south to the Yosemite Region. It breeds in old-growth red fir, mixed conifer, or lodgepole pine habitats, always in the vicinity of wet meadows (Zeiner et al. 1990). The project site does not provide potential habitat.

The 2007 report identified four special-status plants for which potential habitat occurred: Nissenan manzanita, Pleasant Valley mariposa lily, Brandegee's clarkia, and oval-leaved viburnum. The current project site continues to provide habitat for these species. A floristic botanical survey was conducted in 2009 during the evident and identifiable period of the plants

and none were found. Brandegee's clarkia has since been down-listed from CNPS List 1B to List 4. The 2009 botanical survey met the protocol of the CDFW (2009), although it was released several months after the survey.

The current project site provides potential nesting habitat for birds listed under the federal Migratory Bird Treaty Act (MBTA) and CA Fish and Game Code §3503 and §3503.5. Fish and Game Code §3503 protects the nest or eggs of any bird and §3503.5 protects birds-of-prey (orders Falconiformes and Strigiformes). Construction activities could impact nesting birds listed by the MBTA and CA Fish and Game Code. The project site is not in a County designated Important Biological Corridor (IBC) or Ecological Preserves overlay (El Dorado County 2004). The project site is in County Rare Plant Mitigation Area 2, which is defined as the El Dorado Irrigation District Service Area (El Dorado County Code Chapter 17.71).

Results – Proposed Avoidance and Minimization:
The measure below is proposed for birds listed under the MBTA and CA Fish and Game Code.

Avoidance and Minimization Measure 1:

- If construction begins outside the 1 February to 31 August breeding season, there will be no need to conduct a preconstruction survey for active nests.
- If construction begins between 1 February and 31 August then a qualified biologist shall conduct a preconstruction survey for active nests. The survey will include a 250 foot radius from the work area for nesting birds-of-prey and a 50 foot radius from the work area for other nesting MBTA birds. The survey will be conducted from publicly accessible areas within two weeks prior to construction. If no active nest of a bird-of-prey or MBTA bird is found, then no further action is necessary.
- If an active nest of a bird-of-prey or MBTA bird is found, then the biologist shall recommend a buffer suitable to protect the nest until fledging. The County shall approve the final buffer. The size and shape of suitable buffers depends on the species of bird, the location of the nest relative to the Project, Project activities during the time the nest is active, and other Project specific conditions.
- No construction activity shall be allowed in the buffer until the biologist determines that the nest is no longer active, or unless monitoring determines that a smaller buffer will protect the active nest. The buffer may be reduced, with the County's concurrence, if the biologist monitors the construction activities and determines that no disturbance to the active nest is occurring.

Impacts to channels on the project site are regulated under the permitting programs of CDFW (1600 Lake and Streambed Alteration Agreements), the Regional Water Quality Control Board (Waste Discharge Requirements and Section 401 Certification), and possibly the U.S. Army Corps of Engineers (Clean Water Act Section 404). These permitting programs as a whole consider physical impacts to the bed, banks, and riparian area of channels, as well as potential impacts to water quality, and require mitigation. The state and federal permitting programs reduce potential impacts to the ephemeral channels.

h. Existing Drainage Patterns

The project site is currently unimproved excepting the road improvements associated with Black Rice Road. Oak wood land, grassland and chaparral are the dominant surface vegetation. Two existing trapezoidal channels drain the site. The project site and its water channels drain into Weber Creek to the north and east of the project. The Tentative Map and Preliminary Grading and Drainage Plan show the existing channels of the project site. The Pre- Development Drainage Shed Map (Pre-DDSM) in Map Pocket 6 delineates and quantifies existing drainage shed areas and release points as well.

Section 5- Development Plan

a. Climate

Climate factors pose no significant constraint on development for this project.

b. Geography

Location Impacts: Key impacts due to geographic location and geographic features on development consist of the noise related issues connected with Highway 49 adjacency and industrial zoned land adjacency, the constraints on the project imposed by site wetlands and channels, and the necessity of providing a through road connection or secondary means of ingress and egress. These issues are discussed in the related sections of this report.

Solar Exposure: South or southwest facing alignment of a solar PV array is the most ideal. Much of the project property can provide this general exposure depending on how residence roofs are designed. Since no residences are proposed as a part of the project, a detailed assessment of the solar potential of future residences cannot be provided at this time.

c. Preliminary Grading Plan

Cuts & Fills: Depths of cuts and fills: Cuts up to 21 feet, Fills up to 17 feet
Earthwork Volumes: Grading volumes for the project have been estimated at 48,000 cubic yards to balance. (A copy of the Preliminary Grading and Drainage Plan is contained in Map Pocket 4.)

d. Paving Coverage

Paving area of roadways at project completion will be approximately 3 acres.

e. Preliminary Drainage Plan

Documentation: A copy of the Preliminary Grading & Drainage Plan is contained in Map Pocket 4. Pre- development drainage shed areas are delineated and quantified on the Pre-Development Drainage Shed Map (Pre- DDSM) in Map Pocket 6. Post-development drainage shed areas are delineated and quantified on the Post- Development Drainage Shed Map (Post-DDSM) in Map Pocket 7. The drainage study by Gene E. Thorne & Associates, Inc. considers additional development to the south of this project. A final Drainage Study will be completed during Final Engineering Design and Improvement Plan Generation.

While Volume I of the DISM discusses drainage calculations related to the Rational Method, the drainage study and plan for this project are based on the Unit Hydrograph Method. The Unit Hydrograph Method is allowed per the County Drainage Manual.

Procedure:

1. Watershed areas were calculated.
2. Mean annual precipitation was determined.
3. Soil types were documented using data from the El Dorado Area Soil Survey of I 974 (USDA) in order to determine the hydrological group of each of the site soils.
4. Time of concentration was determined per Section 2.4 of the EDC Drainage Manual.
5. The mean annual precipitation and the El Dorado County Design Rainfall Tables were utilized to determine the 10 year and 100 year event rainfall depths. This data was entered into Civil Storm software to produce a cumulative rainfall model for the 10 and 100 year events. From the cumulative rainfall model, excess and

incremental excess rainfall was estimated per guidelines in the EDC Drainage Manual. Then a runoff hydrograph was computed per the Drainage Manual.

6. Storm drain pipe sizes were then determined per Drainage Manual guidelines.

7. On-Site drainage detention facilities were established that would maintain post-project flows at levels comparable to pre-project flows.

Pre & Post-Development Flows: Table 1 below provides a summary of results for the three key release points.

	Pre-Development		Post-Development	
Release Point	10-yr Peak Flow (cfs)	100-yr Peak Flow (cfs)	10-yr Peak Flow (cfs)	100-yr Peak Flow (cfs)
A	15.95	28.44	19.17	31.53
B	21.01	38.98	22.32	32.03
C	2.60	4.90	3.61	4.95
Total	**39.5**	**72.32**	**45.10**	**68.51**

Impact Mitigation: The on-site detention facilities slow water flow from the site and reduce sediment travel from the project. Additionally, a Storm Water Pollution Prevention Plan (SWPPP) will be required and will delineate where hydro seeding and other permanent erosion control measures will be located. Drainage channels will be designed to prevent erosion through the use of fabric liners, rock, concrete and grouted rock, depending on slope and water velocity.

Hydrological Calculations: Calculations were performed utilizing Civil Storm software and the Unit Hydrograph Method which computes the flow rate and analyzes the existing a proposed storm drain system. For quantity of flow and hydraulic grade line (HGL) in each proposed storm drain pipe, see Future and Existing Storm Drain Pipes in Appendix A and B respectively of the Drainage Study. Storm drain pipe profiles are also contained within the Drainage Study.

f. Domestic Water and Sewer

Facility Improvement Letter: The Facility Improvement Letter (FIL) dated August 28, 2008, while not a commitment to serve, indicated as of the date of the FIL that more than enough equivalent dwelling units were available and that fire flow could be provided with a water line extension along Black Rice Road. Additionally, for sewer service, the project is proposing to provide two new permanent lift stations to serve the area. A new FIL has been requested with application submitted to EID September 17, 2012.

Facility Plan Report: According to the FIL, a FPR will be required during Final Engineering Design.

g. Traffic Study

Traffic Report: A traffic study is currently under review at DOT.

Access: Access to the project will be provided from 2 routes: Highway 49 and proposed Road A and an emergency access road connected to Black Rice Road.

Traffic Circulation Map: If required, a Traffic Circulation Map with be provided following completion of the project Traffic Study.

h. Fire Safety

Fire Safe Report: A Fire Safe Report for this project is available.

Fire Safe Regulations Compliance: This project will comply with required Fire Safe Regulations and Fire Code Regulations regarding access issues such as signage, turnarounds and secondary roadway connections as well as fire hydrant locations and fuel modification. Deed restrictions will be imposed as required by the Fire Safe Plan to be obtained prior to project completion

i. **Protection of Important Resources**

Cultural Resources: Given the site's previous importance to Gold Rush Era surface gold mining in Diamond Springs, Historic Resource Associates has indicated that features along the drainage cut described in the cultural report as within the project area should be preserved as a reminder of the important role played by Diamond Springs within the Mother Lode Region. The report indicated that this feature should be highlighted by placement of an interpretive sign indicating that Overseas Chinese gold miners worked the gold placer mining area along the drainage cut in the nineteenth century. However, this feature is located within open space Lot F and will be protected by inclusion therein.

Biological Resources:

Oak canopy:

The project study area (PSA) is approximately 27.39 ac. Existing oak canopy comprises approximately 8.21 ac, or 30% of the project site. Option A of Policy 7.4.4.4 requires 85% retention of existing oak canopy on sites with 20 to 39% existing oak canopy cover. The project can remove up to 1.23 ac of oak canopy under Option A. Phase 1 of the project would remove an estimated 1.20 ac of oak canopy. The Phase 1 oak canopy retention rate is 85%. The Phase 1 design meets the oak canopy retention standard in Option A of policy 7.4.4.4. Phase 2 of the project would remove an estimated 2.00 ac of additional oak canopy. The Phase 1 and 2 oak canopy retention rate is 61%. The combined Phase 1 and 2 design does not meet the oak canopy retention standard in Option A of policy 7.4.4.4, however, Phase 2 will not be completed until a revised Option B is available.

Special Status Plants and Animals: None observed.

Regarding special status animals, per the Biological Evaluation conducted by Sycamore Environmental Consultants, Inc. literature searches and field studies revealed that the California red-legged frog, migratory birds, and birds of prey could occur in the project area. However, while the project area does provide breeding habitat for the mentioned birds, it does not provide breeding habitat for the mentioned amphibian. In addition, the project area is outside the dispersal range of the nearest known breeding population of California red-legged frogs.

Surface Waters (Water Resources): Water resources are delineated upon the Tentative Subdivision Maps located in Map Pocket 1 and specific data are presented in a more detailed tabular form in Section 4.h. All locations are south of this project, but were included as part of a larger Project Study Area. These site features will be protected through the use of appropriate erosion control measures, dust control provisions and required setbacks. All water features have been located within proposed open space except for portions of channels 1a1, 1b, 2a, and 2a1. Note that a portion of channel 1 is to be crossed by Road A and that seasonal wetland 5 is located within lot 230. Also note that since this project will use public sewer, no septic systems or related setbacks are delineated upon the tentative map.

j. Noise Sources and Mitigation

An Environmental Noise Assessment has been conducted by J.C. Brennan & Associates. A summary of the conclusions follows:

1) The project will not be exposed to roadway traffic noise levels which exceeds the exterior and interior noise level criteria of 60 dBA Ldn and 45 dBA Ldn, respectively;
2) The project will not be exposed to noise levels from nearby light industrial and commercial uses which will exceed the noise level standards;
3) The project will not result in a significant increase in roadway traffic noise levels;
4) The proposed commercial uses on the project site may result in noise levels which exceed the El Dorado County stationary noise level criteria.

The following mitigation measures are recommended:

1) When site plans and specific uses are proposed on Lots A and B, the applicants shall provide a noise analysis to ensure compliance with the El Dorado County noise level criteria. The noise analyses shall evaluate any potential loading dock operations, truck circulation, parking lot activity and HVAC noise levels. If additional noise sources are identified, they must also be reviewed.

k. Air Quality Impacts and Mitigation

The quantitative analysis included an evaluation of reactive organic gases (ROG), nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter 10 microns and smaller (PM10), and other pollutants including toxic air contaminants (TAC) such as naturally occurring asbestos (NOA) for the construction and operation of a residential and commercial development. Air quality impacts resulting from the project independently and cumulatively were evaluated as less than significant with the implementation of the following measures:

- The bid specifications and construction contract should stipulate compliance with applicable El Dorado County AQMD Rules, including the preparation and implementation of a Fugitive Dust Control Plan.
- To reduce potential construction-related impacts resulting from ROG, NO_x, and Diesel PM, the bid specifications and construction contract should stipulate implementation of Avoidance Measures 1 and 2 in the Air Quality Impacts Evaluation.

Section 6- Certification

I hereby certify, to the best of my knowledge, the subdivision known as Piedmont Oak Estates has been designed in accordance with the current specifications and guidelines established by the County of El Dorado and the information provided in this Land Capability Report was collected and presented under my direction.

PETER THORNE

Name of Responsible Party

Certification No. 58279

Date: 2/14/13

Section 7-Bibliography

2004 El Dorado County General Plan: A Plan for managed Growth and Open Roads; A Plan for Quality Neighborhoods and Traffic Relief (Adopted 19 July 2004)

Asbestos Review Areas Map, Western Slope, County of El Dorado, State of California; http://co.el-dorado.ca.us/emd/apcd/PDF/Map.pdf

Biological Resources Evaluation and Preliminary Jurisdictional Delineation Report for Piedmont Oak Estates, El Dorado County, California, Sycamore Environmental Consultants, Inc., April 9, 2007.

California Department of Conservation, California Geological Survey, *Probabilistic Seismic Hazards Assessment* website, http://www.consrv.ca.gov/cgs/rghn/pshamap/pshamain.html

California Department of Conservation, Division of Mines and Geology, *Open File Report 83-29, Mineral Land Classification of the Placerville I 5 ' Quadrangle, El Dorado and Amador Counties, California*, 1983.

County of El Dorado Design and Improvement Standards Manual (Adopted May 27, 1986).

County of El Dorado Drainage Manual (Adopted March 14, 1995).

County of El Dorado Geographical Information System Database

California Dept. of Water Resources, *Groundwater Information Center*, http://www.groundwater.water.ca.gov/

El Dorado County Weather Station, www.eldoradocountyweather.com

El Dorado County Environmental Health Department, 2850 Fairlane Court, Bldg. C, Placerville, California 95667

National Resources Conservation Service, *Web Soil Survey 2.0*, National Cooperative Soil Survey, http://websoilsurvey.nrcs.usda.gov/app/ WebSoilSurvey.aspx

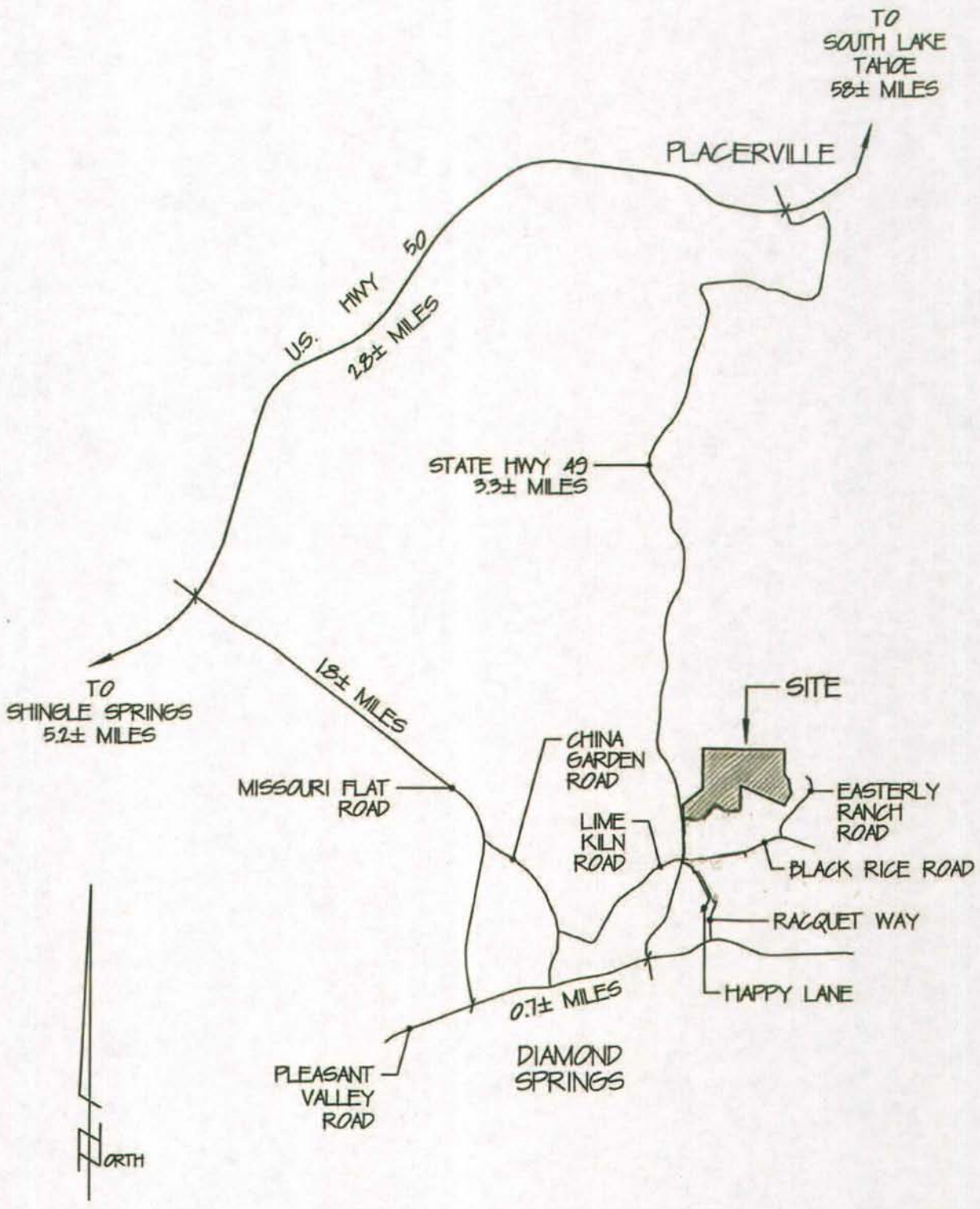
Soil Survey of El Dorado Area, California, United States Department of Agriculture, Soil Conservation Service and Forest Service (Issued April, 1974)

USGS, Placerville Quadrangle Map

Section 8

Exhibits and Maps

BT Consulting Incorporated



PIEDMONT OAK ESTATES

VICINITY MAP

APN: 051-461-37, 54; 051-550-40, 47, 48, 51

GENE E. THORNE & ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS
4080 Plaza Goldorado Circle, Cameron Park, California 95682
TEL: 530-677-1747 OR 916-985-7745 FAX: 530-676-4205
EMAIL: mapping@thornecivil.com

Exhibit
E-1

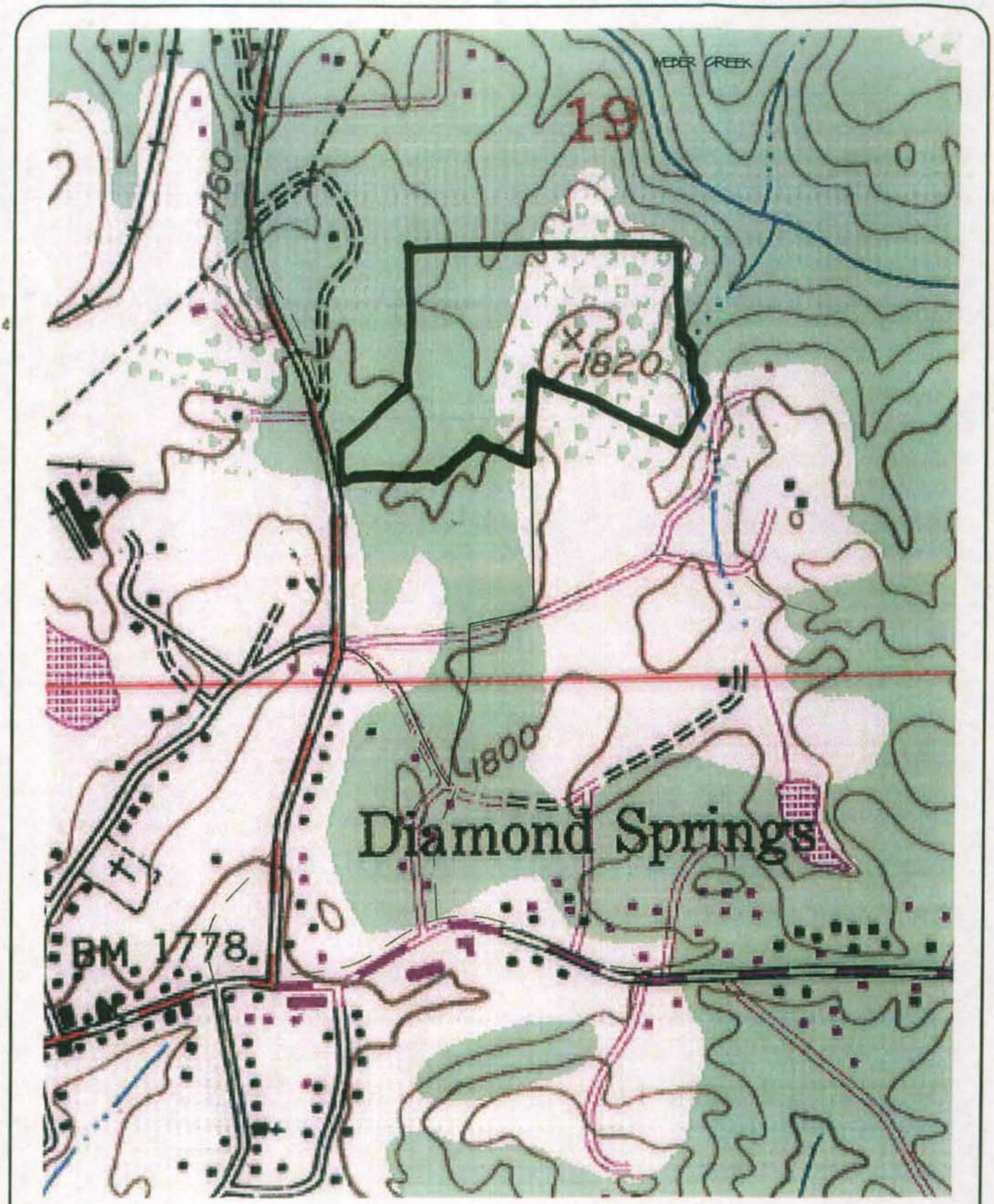
PIEDMONT OAK ESTATES

AERIAL PHOTOGRAPH

APN: 051-461-37, 54; 051-550-40, 47, 48, 51

GENE E. THORNE & ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS
4080 Plaza Goldorado Circle, Cameron Park, California 95682
TEL: 530-677-1747 OR 916-985-7745 FAX: 530-676-4205
EMAIL: mapping@thornecivil.com

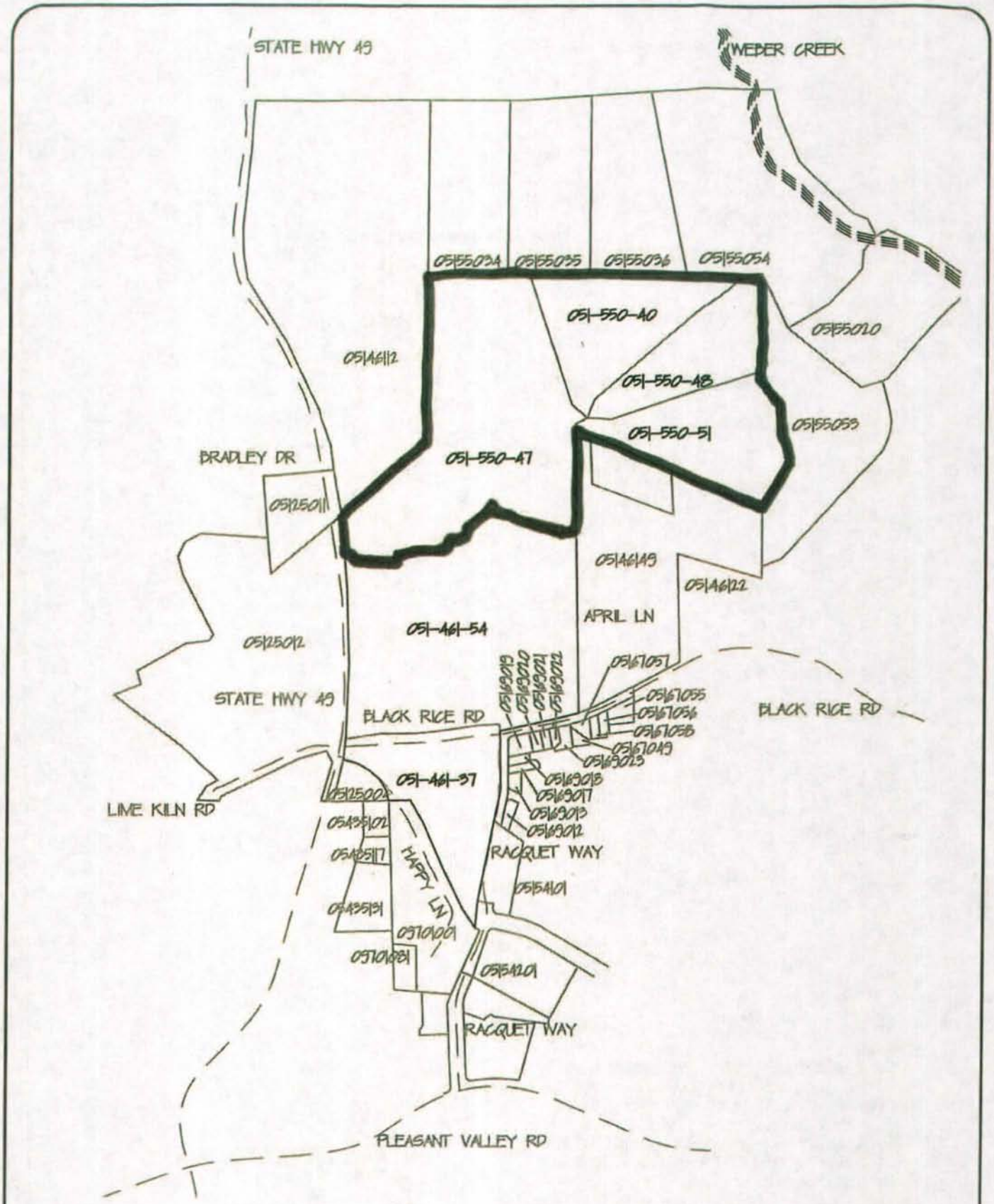
Exhibit
E-2



PIEDMONT OAK ESTATES
U.S.G.S. MAP
APN: 051-461-37, 54; 051-550-40, 47, 48, 51

GENE E. THORNE & ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS
4080 Plaza Goldorado Circle, Cameron Park, California 95682
TEL: 530-677-1747 OR 916-985-7745 FAX: 530-676-4205
EMAIL: mapping@thornecivil.com

Exhibit
E-3



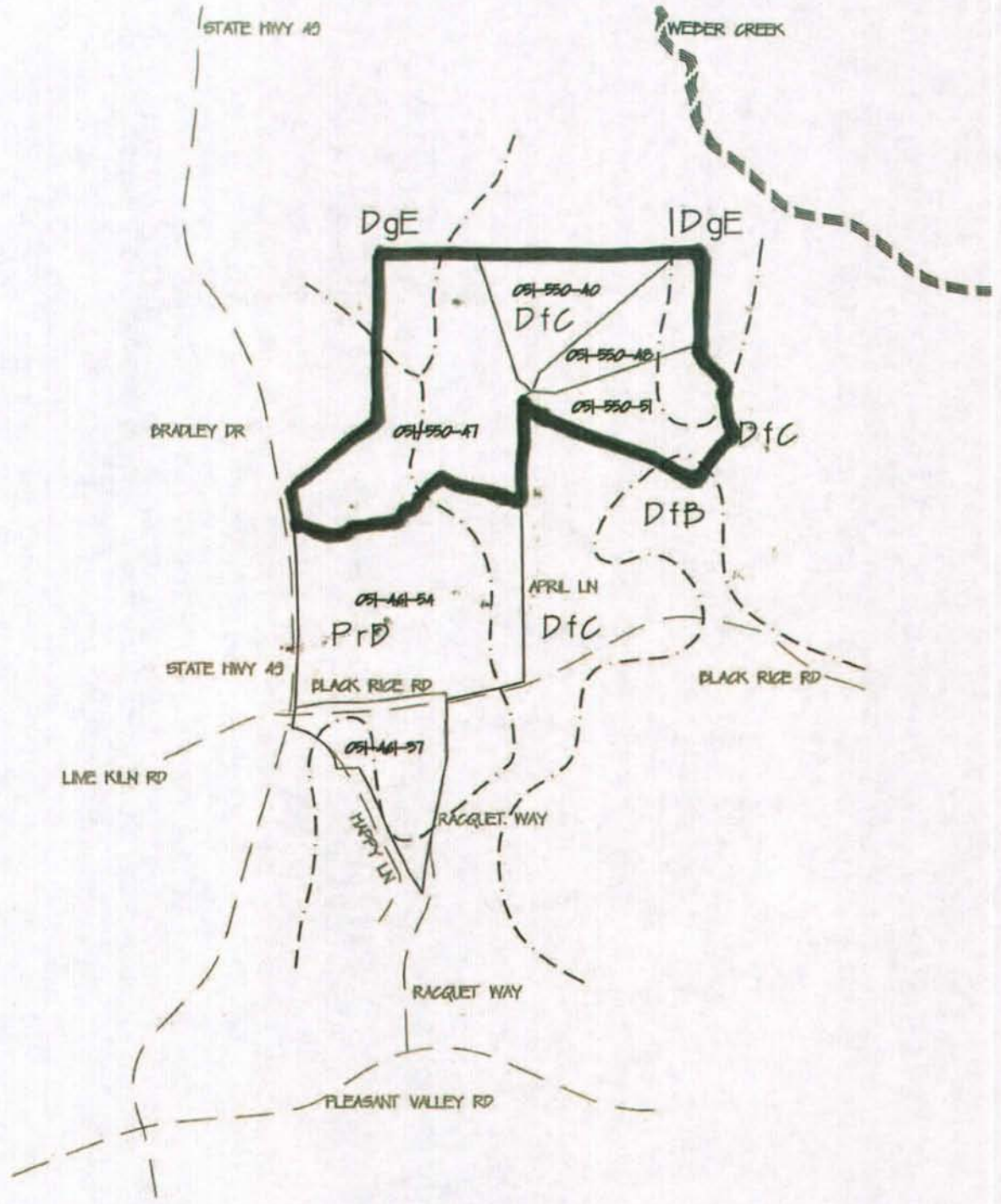
PIEDMONT OAK ESTATES

ASSESSOR'S COMPOSITE MAP

APN: 051-461-37, 54; 051-550-40, 47, 48, 51

GENE E. THORNE & ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS
4080 Plaza Goldorado Circle, Cameron Park, California 95682
TEL: 530-677-1747 OR 916-985-7745 FAX: 530-676-4205
EMAIL: mapping@thornecivil.com

Exhibit E-4



LEGEND

DfB – DIAMOND SPRINGS VERY FINE SANDY LOAM, 3 TO 9 PERCENT SLOPES

DfC – DIAMOND SPRINGS VERY FINE SANDY LOAM, 9 TO 15 PERCENT SLOPES

DfE – DIAMOND SPRINGS VERY ROCKY VERY FINE SANDY LOAM, 3 TO 50 PERCENT SLOPES

PrD – PLACER DIGGINGS

SOURCE:
UNITED STATES DEPARTMENT OF AGRICULTURE
NATIONAL RESOURCE CONSERVATION SERVICE
WEB SOIL SURVEY

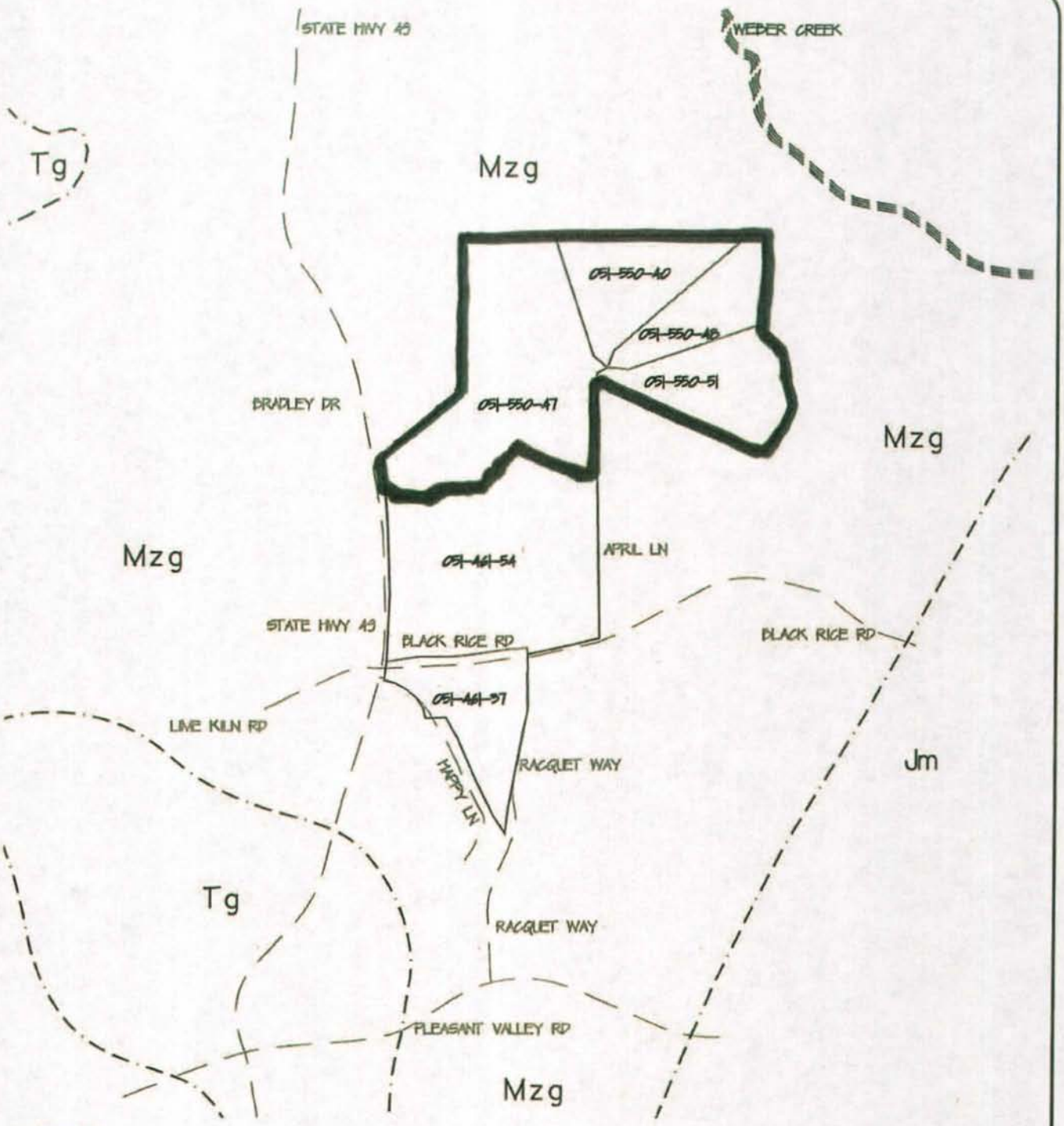
PIEDMONT OAK ESTATES

SOIL MAP OVERLAY

APN: 051-461-37, 54; 051-550-40, 47, 48, 51

GENE E. THORNE & ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS
4080 Plaza Goldorado Circle, Cameron Park, California 95682
TEL: 530-677-1747 OR 918-985-7745 FAX: 530-676-4205
EMAIL: mapping@thornecivil.com

Exhibit E-5



LEGEND

Mzg – GRANITIC TO DIORITIC (MESOZOIC PLUTONIC ROCKS)

Jm – MARIPOSA FORMATION (MESOZOIC SEDIMENTARY/METASEDIMENTARY ROCKS)

Tg – AURIFEROUS GRAVELS (CENOZOIC SEDIMENTARY/METASEDIMENTARY ROCKS)

SOURCE:
CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF MINES AND GEOLOGY
DMG OPEN-FILE REPORT 89-89
MINERAL LAND CLASSIFICATION OF THE PLACERVILLE 15' QUADRANGLE
EL DORADO AND AMADOR COUNTIES, CALIFORNIA

PIEDMONT OAK ESTATES

GEOLOGIC MAP OVERLAY

APN: 051-461-37, 54; 051-550-40, 47, 48, 51

GENE E. THORNE & ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS
4080 Plaza Goldorado Circle, Cameron Park, California 95682
TEL: 530-677-1747 OR 916-985-7745 FAX: 530-676-4205
EMAIL: mapping@thornecivil.com

Exhibit E-6

GENERAL SOILS AND GEOLOGY TABLE

PIEDMONT OAKS ESTATES SUBDIVISION

SOIL SERIES & NAME: / SOIL FEATURE:	DIAMOND SPRINGS SERIES DIAMOND SPRINGS VERY FINE SANDY LOAM, 3-9% SLOPES	DIAMOND SPRINGS SERIES DIAMOND SPRINGS VERY FINE SANDY LOAM, 9-15% SLOPES	DIAMOND SPRINGS SERIES DIAMOND SPRINGS VERY ROCKY VERY FINE SANDY LOAM, 3-50% SLOPES	PLACER DIGGINGS
MAPPING SYMBOL	DfD	DfC	DgE	PrD
PERCENT PROJECT AREA	~0.6%	~47.5%	~40.3%	~11.5%
TYPICAL PROFILE: (NRCS)				
0-9"	VERY FINE SANDY LOAM	VERY FINE SANDY LOAM	VERY FINE SANDY LOAM	
9-36"	CLAY LOAM	CLAY LOAM	CLAY LOAM	0-60" FINE SANDY LOAM & COBBLES
36-40"	SANDY CLAY LOAM	SANDY CLAY LOAM	SANDY CLAY LOAM	
40-44"	WEATHERED BEDROCK	WEATHERED BEDROCK	WEATHERED BEDROCK	
ATTERBERG LIMITS:				
LIQUID LIMITS	25 TO 40	25 TO 40	25 TO 40	—
PLASTICITY INDEX (DEPENDING ON LAYER)	NP-20	NP-20	NP-20	NP
ORGANIC CONTENT (DEPENDING ON LAYER)	0.0 TO 2.0%	0.0 TO 2.0%	0.0 TO 2.0%	0.0 TO 0.5%
CLAY CONTENT (DEPENDING ON LAYER)	15 TO 35%	15 TO 35%	15 TO 35%	0.0 TO 1.0%
ROCK OUTCROPS	- - -	- - -	5 TO 25%	- - -
SOIL CLASSIFICATION (UNIFIED-ASTM D-2487)	0-9" ML 9-36" CL 36-40" SC 40-44" WEATHERED BEDROCK	0-9" ML 9-36" CL 36-40" SC 40-44" WEATHERED BEDROCK	0-9" ML 9-36" CL 36-40" SC 40-44" WEATHERED BEDROCK	0-60" GP
REACTION (pH) (DEPENDING ON LAYER)	4.5-6.0	4.5-6.0	4.5-6.0	- - -
POTENTIAL LIMITATIONS &/OR HAZARDS	BEDROCK AT ~40" LOW STRENGTH FOR ROADS POTENTIAL CORROSION TO UNCOATED STEEL, CONCRETE	BEDROCK AT ~40" LOW STRENGTH FOR ROADS POTENTIAL CORROSION TO UNCOATED STEEL, CONCRETE	BEDROCK AT ~40" LOW STRENGTH FOR ROADS MODERATE SHRINK-SWELL POTENTIAL CORROSION TO UNCOATED STEEL, CONCRETE ROCK OUTCROPS	ROCK FRAGMENTS OCCASIONAL FLOODING HIGH PERMEABILITY
GRAIN SIZE DISTRIBUTION	SEE APPENDIX D	SEE APPENDIX D	SEE APPENDIX D	SEE APPENDIX D

DATA OBTAINED FROM NCRS WEB SOIL SURVEY AND THE 1974 SOIL SURVEY OF EL DORADO AREA, CALIFORNIA

NOTES:

(1) SOIL PLASTICITY MAY WARRANT GEOTECHNICAL EVALUATION REGARDING FOUNDATION DESIGN.
(2) BEDROCK FOR SITE SOILS IS CLASSIFIED AS MODERATELY CEMENTED IN NRCS REPORTS.
(3) LOW SOIL STRENGTH FOR ROADWAYS WILL BE CORRECTED FOR IN PAVEMENT DESIGN BASED ON GEOTECHNICAL REPORT RECOMMENDATIONS.
(4) NRCS SOIL REPORTS ARE NOT NECESSARILY BASED ON A SITE-SPECIFIC EVALUATION OF THE PROJECT SOILS. THE INFORMATION OFFERED IS GENERAL IN NATURE AND MORE ACCURATE, SITE-SPECIFIC INVESTIGATIONS MAY REVEAL THAT NRCS DATA DOES NOT REPRESENT SITE SOIL PROPERTIES.

PIEDMONT OAK ESTATES
GENERAL GEOLOGY & SOILS TABLE
APN: 051-461-37, 54; 051-550-40, 47, 48, 51

GENE E. THORNE & ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS
4080 Plaza Goldorado Circle, Cameron Park, California 95682
TEL: 530-677-1747 OR 916-985-7745 FAX: 530-676-4205
EMAIL: mapping@thornecivil.com

Exhibit E-7

Section 9

Appendices

Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

Report—Chemical Soil Properties

Chemical Soil Properties– El Dorado Area, California								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	*meq/100g*	*meq/100g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
DfB—Diamond Springs very fine sandy loam, 3 to 9 percent slopes								
Diamond springs	0-9	—	10-20	4.5-6.0	0	0	0	0
	9-36	—	10-20	4.5-5.5	0	0	0	0
	36-40	—	10-20	4.5-5.5	0	0	0	0
	40-44	—	—	—	—	—	—	—
DfC—Diamond Springs very fine sandy loam, 9 to 15 percent slopes								
Diamond springs	0-9	—	10-20	4.5-6.0	0	0	0	0
	9-36	—	10-20	4.5-5.5	0	0	0	0
	36-40	—	10-20	4.5-5.5	0	0	0	0
	40-44	—	—	—	—	—	—	—
DgE—Diamond Springs very rocky very fine sandy loam, 3 to 50 percent slopes								
Diamond springs	0-9	—	10-20	4.5-6.0	0	0	0	0
	9-36	—	10-20	4.5-5.5	0	0	0	0
	36-40	—	10-20	4.5-5.5	0	0	0	0
	40-44	—	—	—	—	—	—	—
Rock outcrop	—	—	—	—	—	—	—	—

Chemical Soil Properties– El Dorado Area, California								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	*meq/100g*	*meq/100g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
PrD—Placer diggings								
Placer diggings	0-60	—	0.0-0.0	—	0	0	0	0
Unnamed	—	—	—	—	—	—	—	—

Data Source Information

Soil Survey Area: El Dorado Area, California
Survey Area Data: Version 4, Dec 14, 2007

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "*" denotes the representative texture; other possible textures follow the dash.

Engineering Properties– El Dorado Area, California												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
DfB—Diamond Springs very fine sandy loam, 3 to 9 percent slopes												
Diamond springs	0-9	*Very fine sandy loam	ML	*A-4 -	0	0-5	90-100	85-100	70-95	50-70	25-35	NP-10
	9-36	*Clay loam - Silty clay loam	CL	*A-6 -	0	0-5	90-100	85-100	75-95	65-80	30-40	10-20
	36-40	*Sandy clay loam	SC	*A-6 -	0	0-5	90-100	85-100	65-85	35-50	30-40	10-20
	40-44	*Weathered bedrock	—	—	—	—	—	—	—	—	—	—
DfC—Diamond Springs very fine sandy loam, 9 to 15 percent slopes												
Diamond springs	0-9	*Very fine sandy loam	ML	*A-4 -	0	0-5	90-100	85-100	70-95	50-70	25-35	NP-10
	9-36	*Clay loam - Silty clay loam	CL	*A-6 -	0	0-5	90-100	85-100	75-95	65-80	30-40	10-20
	36-40	*Sandy clay loam	SC	*A-6 -	0	0-5	90-100	85-100	65-85	35-50	30-40	10-20
	40-44	*Weathered bedrock	—	—	—	—	—	—	—	—	—	—

Engineering Properties– El Dorado Area, California												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
DgE—Diamond Springs very rocky very fine sandy loam, 3 to 50 percent slopes												
Diamond springs	0-9	*Very fine sandy loam	ML	*A-4 -	0	0-5	90-100	85-100	70-95	50-70	25-35	NP-10
	9-36	*Clay loam - Silty clay loam	CL	*A-6 -	0	0-5	90-100	85-100	75-95	65-80	30-40	10-20
	36-40	*Sandy clay loam	SC	*A-6 -	0	0-5	90-100	85-100	65-85	35-50	30-40	10-20
	40-44	*Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Rock outcrop	—	—	—	—	—	—	—	—	—	—	—	—
PrD—Placer diggings												
Placer diggings	0-60	*Fine sandy loam, cobbles	GP	*A-1 -	0-10	50-90	10-30	5-15	0-5	0	—	NP
Unnamed	—	—	—	—	—	—	—	—	—	—	—	—

Data Source Information

Soil Survey Area: El Dorado Area, California
Survey Area Data: Version 4, Dec 14, 2007

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (http://soils.usda.gov)

Report—Physical Soil Properties

Physical Soil Properties– El Dorado Area, California														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
DfB—Diamond Springs very fine sandy loam, 3 to 9 percent slopes														
Diamond springs	0-9	-60-	-20-	15-20- 25	1.40-1.50	4.00-14.00	0.13-0.16	0.0-2.9	1.0-2.0	.37	.43	3	5	56
	9-36	-35-	-34-	27-31- 35	1.35-1.45	1.40-4.00	0.16-0.19	3.0-5.9	0.0-0.5	.37	.43			
	36-40	-56-	-15-	25-30- 35	1.45-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5	.32	.37			
	40-44	—	—	—	—	0.01-0.42	0.00	—	—					
DfC—Diamond Springs very fine sandy loam, 9 to 15 percent slopes														
Diamond springs	0-9	-60-	-20-	15-20- 25	1.40-1.50	4.00-14.00	0.13-0.16	0.0-2.9	1.0-2.0	.37	.43	3	5	56
	9-36	-35-	-34-	27-31- 35	1.35-1.45	1.40-4.00	0.16-0.19	3.0-5.9	0.0-0.5	.37	.43			
	36-40	-56-	-15-	25-30- 35	1.45-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5	.32	.37			
	40-44	—	—	—	—	0.01-0.42	0.00	—	—					

Physical Soil Properties– El Dorado Area, California														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
DgE—Diamond Springs very rocky very fine sandy loam, 3 to 50 percent slopes														
Diamond springs	0-9	-60-	-20-	15-20- 25	1.40-1.50	4.00-14.00	0.13-0.16	0.0-2.9	1.0-2.0	.37	.43	3	5	56
	9-36	-35-	-34-	27-31- 35	1.35-1.45	1.40-4.00	0.16-0.19	3.0-5.9	0.0-0.5	.37	.43			
	36-40	-56-	-15-	25-30- 35	1.45-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.5	.32	.37			
	40-44	—	—	—	—	0.01-0.42	0.00	—	—					
Rock outcrop	—	—	—	—	—	—	—	—	—					
PrD—Placer diggings														
Placer diggings	0-60	-64-	-36-	0- 1- 1	1.30-1.60	42.00-141.00	0.01-0.02	0.0-2.9	0.0-0.5	.02	.32		8	0
Unnamed	—	—	—	—	—	—	—	—	—					

Data Source Information

Soil Survey Area: El Dorado Area, California
Survey Area Data: Version 4, Dec 14, 2007

Soil Features

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Report—Soil Features

Soil Features– El Dorado Area, California									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
DfB—Diamond Springs very fine sandy loam, 3 to 9 percent slopes									
Diamond springs	Paralithic bedrock	40-44	—	Moderately cemented	—	—	None	High	High
DfC—Diamond Springs very fine sandy loam, 9 to 15 percent slopes									
Diamond springs	Paralithic bedrock	40-44	—	Moderately cemented	—	—	None	High	High
DgE—Diamond Springs very rocky very fine sandy loam, 3 to 50 percent slopes									
Diamond springs	Paralithic bedrock	40-44	—	Moderately cemented	—	—	None	High	High
Rock outcrop		—	—		—	—	None		
PrD—Placer diggings									
Placer diggings		—	—		—	—	None		
Unnamed		—	—		—	—			

Data Source Information

Soil Survey Area: El Dorado Area, California
Survey Area Data: Version 4, Dec 14, 2007

Water Features

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which a water table, ponding, and/or flooding is most likely to be a concern.

Water table refers to a saturated zone in the soil. The water features table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Report—Water Features

Water Features– El Dorado Area, California										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*	*Ft*				
DfB—Diamond Springs very fine sandy loam, 3 to 9 percent slopes										
Diamond springs	C	Medium	Jan-Dec	—	—	—	—	None	—	—
DfC—Diamond Springs very fine sandy loam, 9 to 15 percent slopes										
Diamond springs	C	Medium	Jan-Dec	—	—	—	—	None	—	—
DgE—Diamond Springs very rocky very fine sandy loam, 3 to 50 percent slopes										
Diamond springs	C	High	Jan-Dec	—	—	—	—	None	—	—
Rock outcrop	—	—	Jan-Dec	—	—	—	—	None	—	—
PrD—Placer diggings										
Placer diggings	A	Low	January	—	—	—	—	None	Brief	Occasional
	A	Low	February	—	—	—	—	None	Brief	Occasional
	A	Low	March	—	—	—	—	None	Brief	Occasional
	A	Low	November	—	—	—	—	None	Brief	Occasional
	A	Low	December	—	—	—	—	None	Brief	Occasional
Unnamed	—	—	Jan-Dec	—	—	—	—	None	—	—

Data Source Information

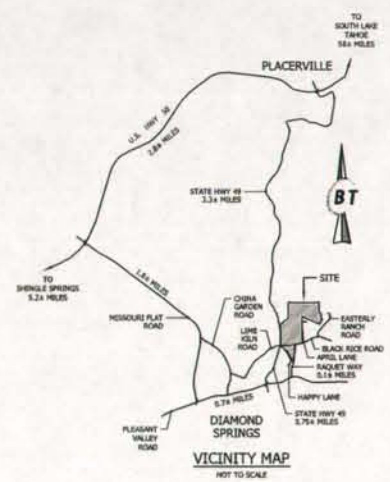
Soil Survey Area: El Dorado Area, California
Survey Area Data: Version 4, Dec 14, 2007

Section 10

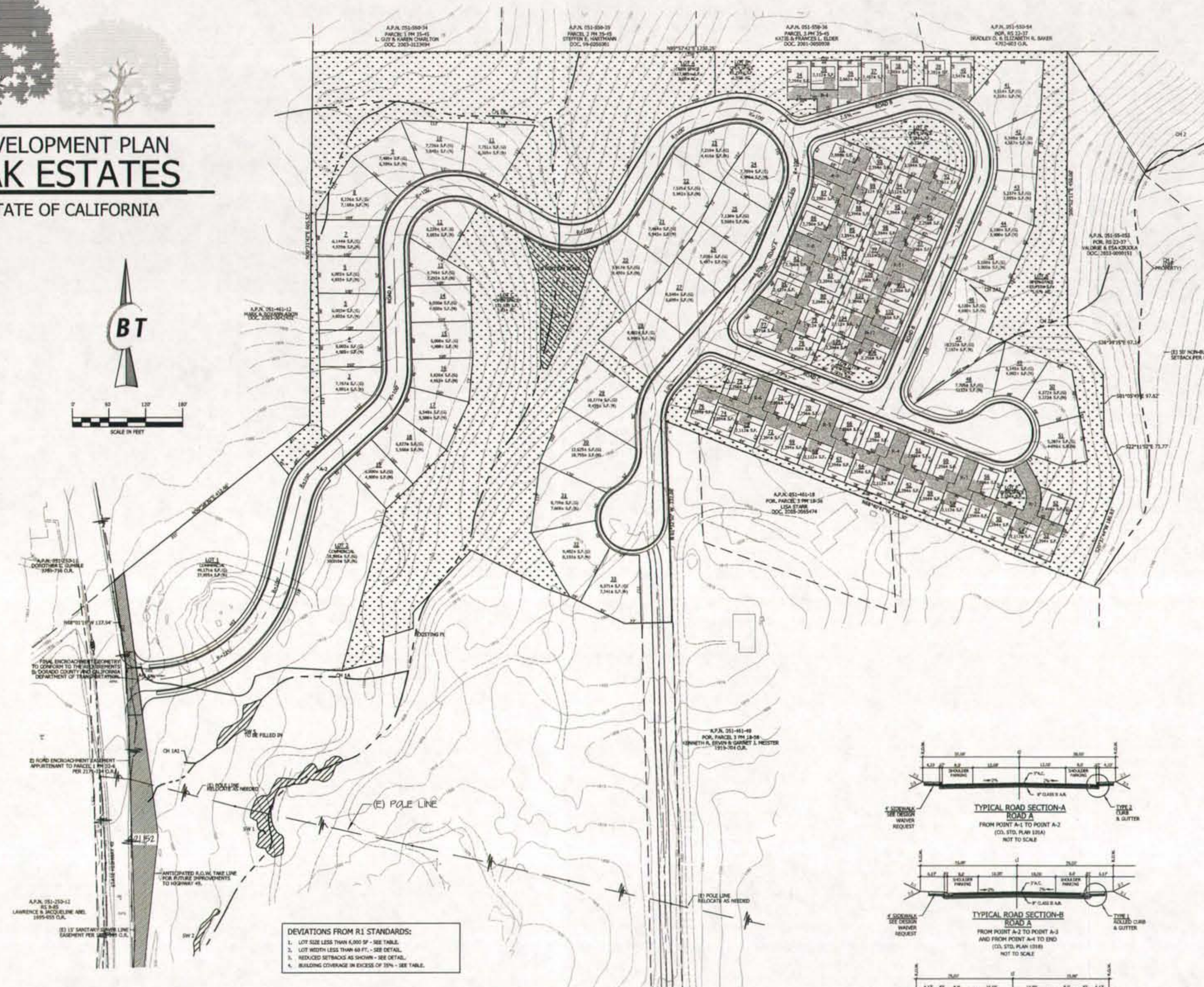
Project Maps and Plans

BT Consulting Incorporated

TENTATIVE MAP & DEVELOPMENT PLAN
PIEDMONT OAK ESTATES
COUNTY OF EL DORADO, STATE OF CALIFORNIA



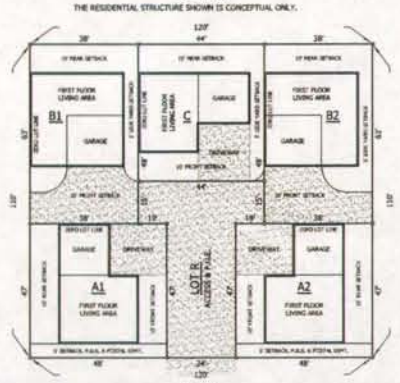
VICINITY MAP
NOT TO SCALE



TYPICAL LOT DATA					
LOT	LOT SIZE	STORIES	LIVING SPACE	BUILDING COVERAGE	IMPERVIOUS SURFACE
A1	2,256 SF	2	1,668 SF	996 SF/44%	1,356 SF/60%
A2	2,256 SF	2	1,668 SF	996 SF/44%	1,356 SF/60%
B1	2,394 SF	2	1,618 SF	1,089 SF/45%	1,733 SF/72%
B2	2,394 SF	2	1,618 SF	1,089 SF/45%	1,704 SF/71%
C	2,112 SF	2	1,500 SF	912 SF/61%	1,272 SF/60%
R	1,788 SF	-	-	-	1,788 SF/100%
TOTAL	13,200 SF	-	-	5,082 SF/39%	9,206 SF/70%

DETAIL
TYPICAL CUSTOM LOTS
SCALE: 1"=20'

DETAIL
TYPICAL CLUSTERED RESIDENCES
SCALE: 1"=20'
THE RESIDENTIAL STRUCTURE SHOWN IS CONCEPTUAL ONLY.



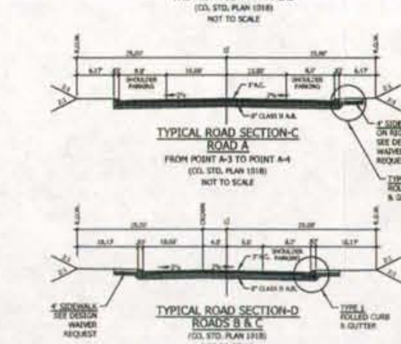
DEVIATIONS FROM R1 STANDARDS:

1. LOT SIZE LESS THAN 6,000 SF - SEE TABLE.
2. LOT WIDTH LESS THAN 60 FT. - SEE DETAIL.
3. REDUCED SETBACKS AS SHOWN - SEE DETAIL.
4. BUILDING COVERAGE IN EXCESS OF 35% - SEE TABLE.

DESIGN WAIVER REQUEST:
DESIGN WAIVERS HAVE BEEN REQUESTED PURSUANT TO SECTION 16.08.020 OF THE MAJOR LAND DIVISION ORDINANCE TO ALLOW FOUR (4') FOOT WIDE SIDEWALK IN LIEU OF THE SIX (6') FOOT WIDE STANDARD.

REQUEST FOR ROAD WIDTH RELIEF WITH ON-STREET PARKING:
A REQUEST IS HEREBY MADE FOR RELIEF FROM APPROVING AGENCIES REGARDING REQUIRED ROAD WIDTH FOR ROADWAYS THAT INCLUDE ON-STREET PARKING AS FOLLOWS: ROAD SECTION C & D - 2 LANES OF ON-STREET PARKING ARE REQUESTED TO BE ALLOWED ON A 36- FOOT WIDE ROADWAY. ROAD SECTION E - 1 LANE OF ON-STREET PARKING IS REQUESTED TO BE ALLOWED ON A 28 FOOT WIDE ROADWAY.

NOTES:
1. EASEMENTS WILL BE PROVIDED AS FOLLOWS:
   A. THE FRONT 20' OF ALL CUSTOM RESIDENTIAL LOTS AS PUBLIC UTILITIES EASEMENTS.
   B. THE 5' ADJACENT TO ALL STREET RIGHT-OF-WAYS AS POSTAL EASEMENTS.
   C. DRAINAGE EASEMENTS AS SHOWN AND/OR NEEDED.
   D. OTHER AS SHOWN OR NOTED.
2. THE SUBDIVIDER WILL MAKE ALL REQUIRED IMPROVEMENTS BASED ON PLANS AND SPECIFICATIONS APPROVED BY THE COUNTY OF EL DORADO DEPARTMENT OF TRANSPORTATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   A. CONSTRUCT ALL ROADS AS SHOWN IN CONFORMANCE WITH THE TYPICAL ROAD SECTIONS, WITH CUTS AND FILLS BEING NO STEEPER THAN 2:1, EXCEPT IN ROCK MATERIAL.
   B. DISTURBED AREAS WILL BE SEEDED IN CONFORMANCE WITH THE EL DORADO COUNTY RESOURCE CONSERVATION DISTRICT SPECIFICATIONS.
   C. DRAINAGE CHANNELS SUBJECT TO EROSION WILL BE RIPRAPPED OR ASPHALT LINED.
   D. EXTEND E.I.D. WATER AND SEWER SERVICE TO ALL RESIDENTIAL LOTS.
   E. A REDUCTION IN WETLAND SETBACKS FROM 50' TO 25' HAVE BEEN REQUESTED.



OWNERS OF RECORD:
JIM DAVIES AND TERRI CHANG
CONTACT: JIM DAVIES
854 DIABLO ROAD
DANVILLE, CA 94526
TEL: 925-820-8444 FAX: 925-820-7917

NAME OF APPLICANT:
JIM DAVIES AND TERRI CHANG
CONTACT: JIM DAVIES
854 DIABLO ROAD
DANVILLE, CA 94526
TEL: 925-820-8444 FAX: 925-820-7917

MAP PREPARED BY:
BTCONSULTING, INC.
CONTACT: PETER THORNE
PO BOX 304
SHINGLE SPRINGS, CA 95682
TEL: 530-672-2316 FAX: 530-405-4722
E-MAIL: pthorne@gobtc.net

SCALE:
1"=100'

CONTOUR INTERVAL:
ONE (1') FOOT

SOURCE OF TOPOGRAPHY:
AERIAL SURVEY

SECTION, TOWNSHIP & RANGE:
SECTIONS 19 & 20, T.10 N., R.11 E., M.D.M. (BEING PORTIONS OF PM 25-46, PM 32-6, PM 36-115 AND RS 29-113)

ASSESSOR'S PARCEL NUMBERS:
051-550-40, 47, 48 & 51

PRESENT/PROPOSED ZONING:
051-550-40: R1/R1-PD
051-550-47: R1-PF-CPO/R1-PD, C-PD
051-550-48: R1/R1-PD
051-550-51: R1/R1-PD

TOTAL AREA:
25.89± ACRES

TOTAL NUMBER OF PARCELS:
42 CUSTOM RESIDENTIAL LOTS
62 CLUSTERED RESIDENTIAL LOTS
2 COMMERCIAL LOTS
6 OPEN SPACE LOTS
12 ACCESS LOTS
1 ROAD LOT
125 TOTAL

MINIMUM PARCEL AREA:
1,000 S.F.

WATER SUPPLY:
EL DORADO IRRIGATION DISTRICT

SEWAGE DISPOSAL:
EL DORADO IRRIGATION DISTRICT

PROPOSED STRUCTURAL FIRE PROTECTION:
DIAMOND SPRINGS/EL DORADO F.P.D.

DATE:
APRIL 24, 2009
REVISED: SEPTEMBER 7, 2012
REVISED: FEBRUARY 2013

ENGINEER'S STATEMENT:
I, PETER K. THORNE, CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THE LAND DEVELOPMENT KNOWN AS PIEDMONT OAK ESTATES, HAS BEEN DESIGNED IN ACCORDANCE WITH THE SPECIFICATIONS AND GUIDELINES ESTABLISHED BY THE COUNTY OF EL DORADO.

PETER K. THORNE, RCE 58279
REG. EXP. DATE: 06/30/14

PLANNING COMMISSION:
APPROVAL/DENIAL DATE:

BOARD OF SUPERVISORS:
APPROVAL/DENIAL DATE:

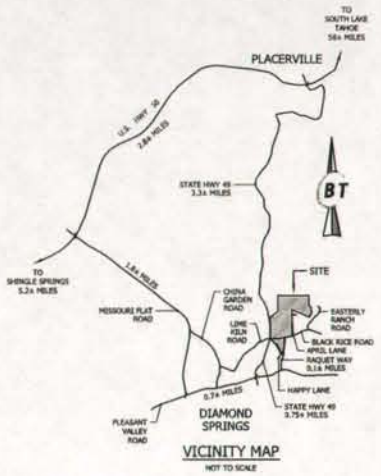
LEGEND:

P.U.E.	PUBLIC UTILITIES EASEMENT
CH#	CHANNEL NUMBER (SEE REPORT BY SYCAMORE ENVIRONMENTAL CONSULTANTS)
SW#	SEASONAL WETLANDS (SEE REPORT BY SYCAMORE ENVIRONMENTAL CONSULTANTS)
	AREAS OF 30% AND GREATER SLOPE
	DETENTION POND
	OPEN SPACE
	PAVED AREAS

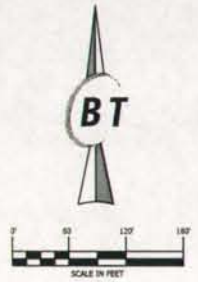
Planning·Engineering·Stormwater Consulting
BT Consulting Incorporated
phone: 530·672·2316 web: www.gobtc.net
P.O. Box 304 Shingle Springs, CA 95682

TENTATIVE MAP & DEVELOPMENT PLAN
FEBRUARY 2013

SLOPE STUDY
PIEDMONT OAK ESTATES
COUNTY OF EL DORADO, STATE OF CALIFORNIA



VICINITY MAP
NOT TO SCALE



OWNERS OF RECORD:
JIM DAVIES AND TERRI CHANG
CONTACT: JIM DAVIES
854 DIABLO ROAD
DANVILLE, CA 94526
TEL: 925-820-9444 FAX: 925-820-7917

NAME OF APPLICANT:
JIM DAVIES AND TERRI CHANG
CONTACT: JIM DAVIES
854 DIABLO ROAD
DANVILLE, CA 94526
TEL: 925-820-9444 FAX: 925-820-7917

MAP PREPARED BY:
BTCONSULTING, INC.
CONTACT: PETER THORNE
PO BOX 304
SHINGLE SPRINGS, CA 95682
TEL: 530-672-2316 FAX: 530-605-4722
E-MAIL: pthorne@gabtc.net

SCALE:
1"=100'

CONTOUR INTERVAL:
ONE (1) FOOT

SOURCE OF TOPOGRAPHY:
AERIAL SURVEY

SECTION, TOWNSHIP & RANGE:
SECTIONS 18 & 30, T.10 N., R.11 E., M.D.B.M. (BEING PORTIONS OF PM 25-48, PM 32-6, PM 39-115 AND RS 28-113)

ASSESSOR'S PARCEL NUMBERS:
051-550-48, 47, 48 & 51

PRESENT/PROPOSED ZONING:
051-550-48: R1/R1-PD
051-550-47: R1-AR-2/R1-PD, C-PD
051-550-48: R1/R1-PD
051-550-51: R1/R1-PD

TOTAL AREA:
25.89± ACRES

TOTAL NUMBER OF PARCELS:
42 CUSTOM RESIDENTIAL LOTS
61 CLUSTERED RESIDENTIAL LOTS
2 COMMERCIAL LOTS
6 OPEN SPACE LOTS
12 ACCESS LOTS
1 ROAD LOT
135 TOTAL

MINIMUM PARCEL AREA:
7,000 S.F.

WATER SUPPLY:
EL DORADO IRRIGATION DISTRICT

SEWAGE DISPOSAL:
EL DORADO IRRIGATION DISTRICT

PROPOSED STRUCTURAL FIRE PROTECTION:
DIAMOND SPRINGS/EL DORADO F.P.D.

DATE:
APRIL 24, 2009
REVISED: SEPTEMBER 7, 2012
REVISED: FEBRUARY 2013

SLOPE STUDY LEGEND:

RANGE	ACRES	% OF TOTAL
< 10%	8.15	31.5
10% to 20%	9.85	38.1
20% to 30%	6.27	24.2
30% to 40%	1.15	4.5
> 40%	0.44	1.69

LEGEND:

CH# — CHANNEL NUMBER (SEE REPORT BY SYCAMORE ENVIRONMENTAL CONSULTANTS)

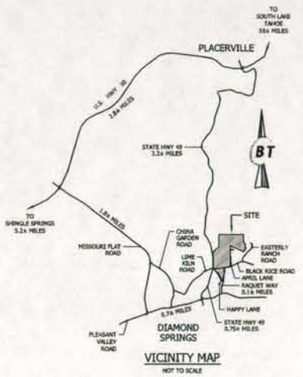
SW# — SEASONAL WETLANDS (SEE REPORT BY SYCAMORE ENVIRONMENTAL CONSULTANTS)

DETENTION POND

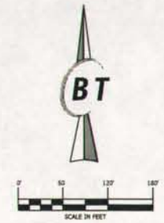
Planning·Engineering·Stormwater Consulting
BT Consulting Incorporated
phone: 530·672·2316 web: www.gabtc.net
P.O. Box 304 Shingle Springs, CA 95682

SLOPE STUDY
FEBRUARY 2013

PRELIMINARY GRADING AND DRAINAGE PLAN
PIEDMONT OAK ESTATES
COUNTY OF EL DORADO, STATE OF CALIFORNIA



VICINITY MAP
NOT TO SCALE



EARTHWORK QUANTITY

48,000 CY

BALANCED (PHASE 1 AND PHASE 2)

OWNERS OF RECORD:
JIM DAVIES AND TERRI CHANG
CONTACT: JIM DAVIES
854 DIABLO ROAD
DANVILLE, CA 94526
TEL: 925-820-9444 FAX: 925-820-7917

NAME OF APPLICANT:
JIM DAVIES AND TERRI CHANG
CONTACT: JIM DAVIES
854 DIABLO ROAD
DANVILLE, CA 94526
TEL: 925-820-9444 FAX: 925-820-7917

MAP PREPARED BY:
BTCONSULTING, INC.
CONTACT: PETER THORNE
PO BOX 304
SHINGLE SPRINGS, CA 95682
TEL: 530-672-2316 FAX: 530-405-4722
E-MAIL: pthorne@pobtc.net

SCALE:
1"=100'

CONTOUR INTERVAL:
ONE (1) FOOT

SOURCE OF TOPOGRAPHY:
AERIAL SURVEY

SECTION, TOWNSHIP & RANGE:
SECTIONS 19 & 30, T.10 N., R.11 E., M.D.M. (BEING PORTIONS OF PM 25-46, PM 32-6, PM 39-115 AND RS 29-113)

ASSESSOR'S PARCEL NUMBERS:
051-550-46, 47, 48 & 51

PRESENT/PROPOSED ZONING:
051-550-48: R1/R1-PD
051-550-47: R1-PF-DP/OR1-PD, C-PD
051-550-46: R1/R1-PD
051-550-51: R1/R1-PD

TOTAL AREA:
75.89± ACRES

TOTAL NUMBER OF PARCELS:
42 CUSTOM RESIDENTIAL LOTS
82 CLUSTERED RESIDENTIAL LOTS
2 COMMERCIAL LOTS
8 OPEN SPACE LOTS
12 ACCESS LOTS
1 ROAD LOT
125 TOTAL

MINIMUM PARCEL AREA:
2,000 S.F.

WATER SUPPLY:
EL DORADO IRRIGATION DISTRICT

SEWAGE DISPOSAL:
EL DORADO IRRIGATION DISTRICT

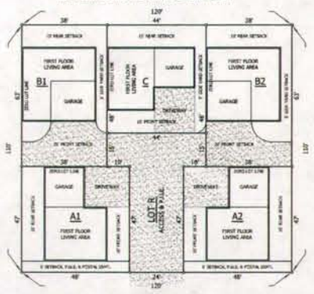
PROPOSED STRUCTURAL FIRE PROTECTION:
DIAMOND SPRINGS/EL DORADO F.P.D.

DATE:
APRIL 24, 2009
REVISED: SEPTEMBER 7, 2012
REVISED: FEBRUARY 2013

GRADING NOTES:

1. MATERIALS, CONSTRUCTION QUALITY AND METHODS FOR THIS PROJECT WILL BE SUBJECT TO THE COUNTY OF EL DORADO DESIGN AND IMPROVEMENT STANDARDS MANUAL AND THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS.
2. CLEARING AND GRUBBING WILL CONFORM TO THE PROVISIONS OF SECTION 16, "CLEARING AND GRUBBING" OF THE STANDARD SPECIFICATIONS. ROOTS, STUMPS, TREES, ROCKS OR OTHER DELETERIOUS SUBSTANCES WILL BE DISPOSED OF LAWFULLY OFF-SITE.
3. ALL WORK WILL BE ACCOMPLISHED TO THE SATISFACTION OF THE COUNTY OF EL DORADO DEPARTMENT OF TRANSPORTATION.
4. RIGHTS TO ENTER AND CONSTRUCT WILL BE OBTAINED PRIOR TO CONSTRUCTING ANY OFF-SITE WORK SHOWN IN THE APPROVED PLANS.
5. PROVISIONS FOR PROTECTION AND PRESERVATION OF OAK TREES AND WETLANDS WILL BE PROVIDED IN ACCORDANCE WITH COUNTY OF EL DORADO RESOLUTION NO. 199-91. ONLY DESIGNATED TREES WILL BE REMOVED. PROTECTIVE FENCING WILL BE INSTALLED AT THE DRIP LINE OF ALL OTHER TREES WITHIN 50' OF ANY GRADING.
6. DURING CONSTRUCTION DUST WILL BE CONTROLLED BASED ON AN APPROVED FUGITIVE DUST CONTROL PLAN.
7. IF UNUSUAL AMOUNTS OF STONE OR BONE OR ARTIFACTS ARE UNCOVERED DURING CONSTRUCTION, ALL WORK WILL BE STOPPED WITHIN 100' OF THE FIND, UNTIL APPROPRIATE STUDIES ARE MADE AND WITH APPROVAL APPROPRIATE MITIGATION MEASURES ARE FULLY IMPLEMENTED.
8. EROSION CONTROL WILL BE PROVIDED FOR IN ACCORDANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES, ORDER NO. 2009-0009-DWQ NPDES NO. CAS000002.

DETAIL
TYPICAL CLUSTERED RESIDENCES
SCALE: 1"=20'
THE RESIDENTIAL STRUCTURE SHOWN IS CONCEPTUAL ONLY.



DETAIL
TYPICAL CUSTOM LOTS
SCALE: 1"=20'

LEGEND:

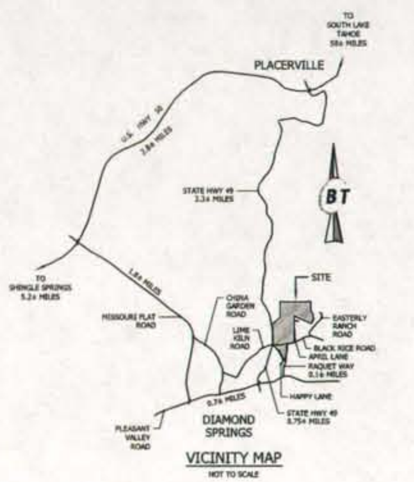
- P.U.E. — PUBLIC UTILITIES EASEMENT
- CH# — CHANNEL NUMBER (SEE REPORT BY SYCAMORE ENVIRONMENTAL CONSULTANTS)
- SW# — SEASONAL WETLANDS (SEE REPORT BY SYCAMORE ENVIRONMENTAL CONSULTANTS)
- AREAS OF 30% AND GREATER SLOPE
- DETENTION POND
- OPEN SPACE
- PAVED AREAS

Planning·Engineering·Stormwater Consulting
BT Consulting Incorporated
phone: 530·672·2316 web: www.gobtc.net
P.O. Box 304 Shingle Springs, CA 95682

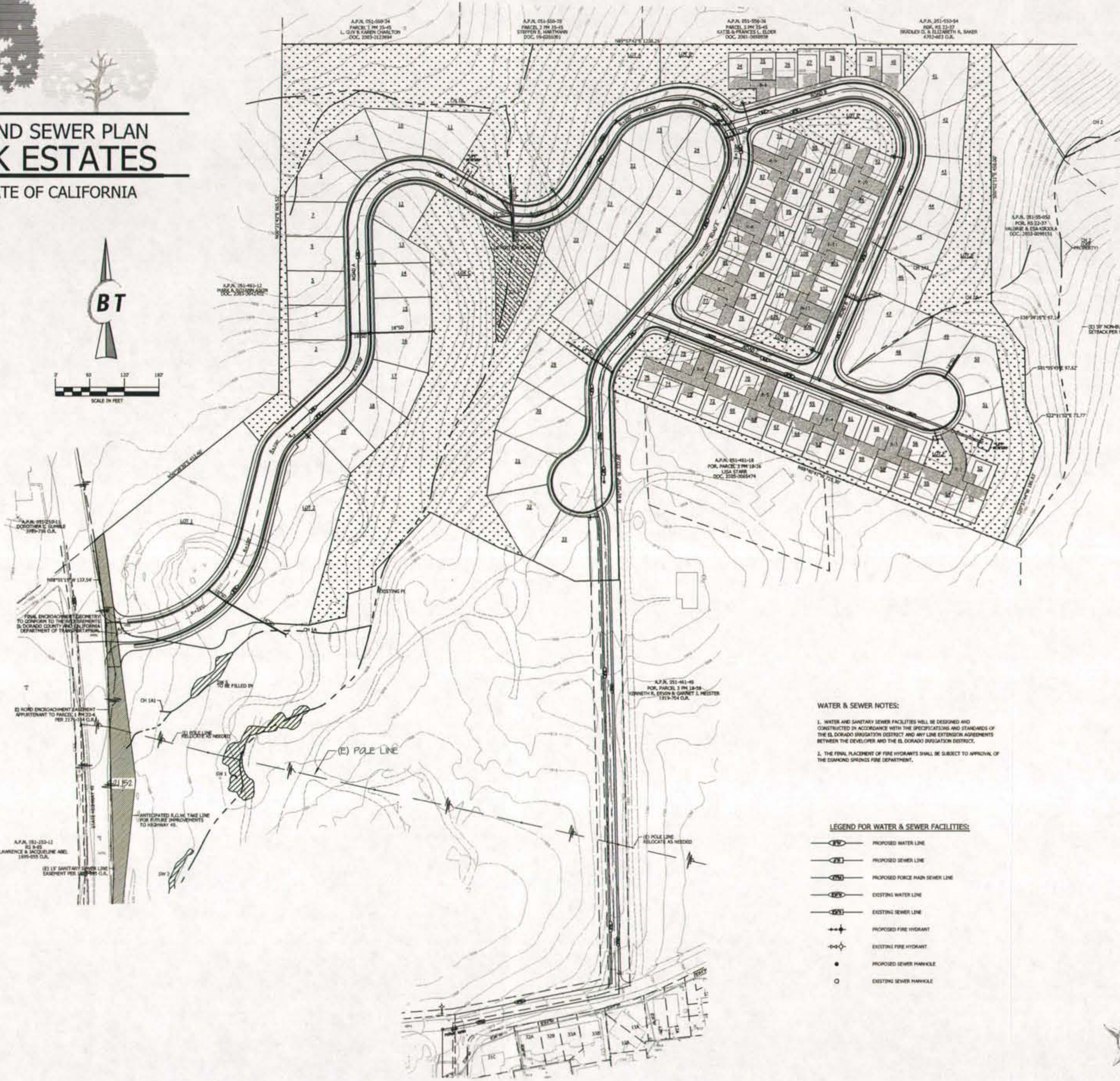
PRELIMINARY GRADING AND DRAINAGE PLAN
FEBRUARY 2013

PRELIMINARY WATER AND SEWER PLAN
PIEDMONT OAK ESTATES

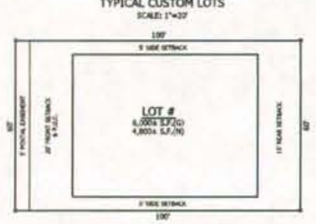
COUNTY OF EL DORADO, STATE OF CALIFORNIA



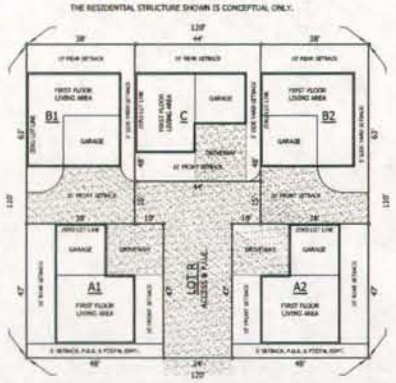
VICINITY MAP
NOT TO SCALE



DETAIL
TYPICAL CUSTOM LOTS



DETAIL
TYPICAL CLUSTERED RESIDENCES
SCALE: 1"=20'
THE RESIDENTIAL STRUCTURE SHOWN IS CONCEPTUAL ONLY.



OWNERS OF RECORD:
JIM DAVIES AND TERRI CHANG
CONTACT: JIM DAVIES
654 DIABLO ROAD
DANVILLE, CA 94526
TEL: 925-820-9444 FAX: 925-820-7917

NAME OF APPLICANT:
JIM DAVIES AND TERRI CHANG
CONTACT: JIM DAVIES
654 DIABLO ROAD
DANVILLE, CA 94526
TEL: 925-820-9444 FAX: 925-820-7917

MAP PREPARED BY:
BTCONSULTING, INC.
CONTACT: PETER THORNE
PO BOX 304
SHINGLE SPRINGS, CA 95682
TEL: 530-672-2316 FAX: 530-405-4722
E-MAIL: pthorne@gcbtc.net

SCALE:
1"=100'

CONTOUR INTERVAL:
ONE (1') FOOT

SOURCE OF TOPOGRAPHY:
AERIAL SURVEY

SECTION, TOWNSHIP & RANGE:
SECTIONS 19 & 30, T.10 N., R.11 E., M.D.M. (BEING PORTIONS OF PM 25-46, PM 32-6, PM 38-119 AND RS 29-113)

ASSESSOR'S PARCEL NUMBERS:
051-550-40, 47, 48 & 51

PRESENT/PROPOSED ZONING:
051-550-40: R1/R1-PD
051-550-47: R1-PF-CPO/R1-PD, C-PD
051-550-48: R1/R1-PD
051-550-51: R1/R1-PD

TOTAL AREA:
25.89± ACRES

TOTAL NUMBER OF PARCELS:
42 CUSTOM RESIDENTIAL LOTS
62 CLUSTERED RESIDENTIAL LOTS
2 COMMERCIAL LOTS
6 OPEN SPACE LOTS
12 ACCESS LOTS
1 ROAD LOT
125 TOTAL

MINIMUM PARCEL AREA:
3,000 S.F.

WATER SUPPLY:
EL DORADO IRRIGATION DISTRICT

SEWAGE DISPOSAL:
EL DORADO IRRIGATION DISTRICT

PROPOSED STRUCTURAL FIRE PROTECTION:
DIAMOND SPRINGS/EL DORADO F.P.D.

DATE:
APRIL 24, 2008
REVISED: SEPTEMBER 7, 2012
REVISED: FEBRUARY 2013

WATER & SEWER NOTES:

1. WATER AND SANITARY SEWER FACILITIES WILL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARDS OF THE EL DORADO IRRIGATION DISTRICT AND ANY LINE EXTENSION AGREEMENTS BETWEEN THE DEVELOPER AND THE EL DORADO IRRIGATION DISTRICT.

2. THE FINAL PLACEMENT OF FIRE HYDRANTS SHALL BE SUBJECT TO APPROVAL OF THE DIAMOND SPRINGS FIRE DEPARTMENT.

LEGEND FOR WATER & SEWER FACILITIES:

PROPOSED WATER LINE
PROPOSED SEWER LINE
PROPOSED FORCE MAIN SEWER LINE
EXISTING WATER LINE
EXISTING SEWER LINE
PROPOSED FIRE HYDRANT
EXISTING FIRE HYDRANT
PROPOSED SEWER MANHOLE
EXISTING SEWER MANHOLE

LEGEND:

P.U.E. PUBLIC UTILITIES EASEMENT
CHANNEL NUMBER (SEE REPORT BY SYCAMORE ENVIRONMENTAL CONSULTANTS)
SEASONAL WETLANDS (SEE REPORT BY SYCAMORE ENVIRONMENTAL CONSULTANTS)
AREAS OF 30% AND GREATER SLOPE
DETENTION POND
OPEN SPACE
PAVED AREAS

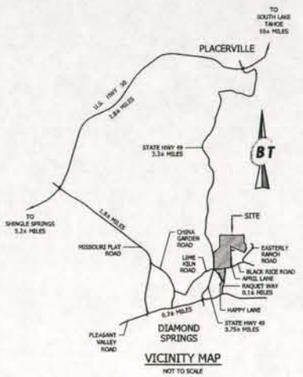
Planning · Engineering · Stormwater Consulting
BT Consulting Incorporated
phone: 530·672·2316 web: www.gcbtc.net
P.O. Box 304 Shingle Springs, CA 95682

PRELIMINARY WATER AND SEWER PLAN
FEBRUARY 2013

PHASING PLAN

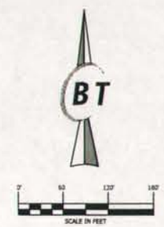
PIEDMONT OAK ESTATES

COUNTY OF EL DORADO, STATE OF CALIFORNIA



VICINITY MAP

NOT TO SCALE



PHASE 1 LOTS

PHASE 2 LOTS

ALL ROADS ARE TO BE COMPLETED DURING PHASE 1

OWNERS OF RECORD:
JIM DAVIES AND TERRI CHANG
CONTACT: JIM DAVIES
654 DIABLO ROAD
DANVILLE, CA 94526
TEL: 925-820-9444 FAX: 925-820-7917

NAME OF APPLICANT:
JIM DAVIES AND TERRI CHANG
CONTACT: JIM DAVIES
654 DIABLO ROAD
DANVILLE, CA 94526
TEL: 925-820-9444 FAX: 925-820-7917

MAP PREPARED BY:
BTCONSULTING, INC.
CONTACT: PETER THORNE
PO BOX 304
SHINGLE SPRINGS, CA 95682
TEL: 530-672-2316 FAX: 530-406-4722
E-MAIL: pthorne@gobtc.net

SCALE:
1"=100'

CONTOUR INTERVAL:
ONE (1') FOOT

SOURCE OF TOPOGRAPHY:
AERIAL SURVEY

SECTION, TOWNSHIP & RANGE:
SECTIONS 19 & 30, T.10 N., R.11 E., M.D.M. (BEING PORTIONS OF PM 25-48, PM 33-6, PM 36-115 AND RS 20-113)

ASSESSOR'S PARCEL NUMBERS:
051-550-40, 47, 48 & 51

PRESENT/PROPOSED ZONING:
051-550-40: RL/RE-PD
051-550-47: RE-PF-CPO/RE-PD, C-PD
051-550-48: RL/RE-PD
051-550-51: RL/RE-PD

TOTAL AREA:
75.84± ACRES

TOTAL NUMBER OF PARCELS:
42 CUSTOM RESIDENTIAL LOTS
62 CLUSTERED RESIDENTIAL LOTS
2 COMMERCIAL LOTS
8 OPEN SPACE LOTS
12 ACCESS LOTS
1 ROAD LOT
125 TOTAL

MINIMUM PARCEL AREA:
2,000 S.F.

WATER SUPPLY:
EL DORADO IRRIGATION DISTRICT

SEWAGE DISPOSAL:
EL DORADO IRRIGATION DISTRICT

PROPOSED STRUCTURAL FIRE PROTECTION:
DIAMOND SPRINGS/EL DORADO F.P.D.

DATE:
APRIL 24, 2008
REVISED: SEPTEMBER 7, 2012
REVISED: FEBRUARY 2013

Planning*Engineering*Stormwater Consulting

BT Consulting Incorporated

phone: 530*672*2316 web: www.gobtc.net
P.O. Box 304 Shingle Springs, CA 95682

PHASING EXHIBIT

FEBRUARY 2013