COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

NOTICE OF ENVIRONMENTAL REVIEW PERIOD

SANTA CRUZ COUNTY

APPLICANT: **Jennifer Pope, Hamilton-Swift**

APPLICATION NO.: **07-0633 and 07-0634**

PARCEL NUMBER (APN): **109-112-16 & 109-112-05**

The Environmental Coordinator has reviewed the Initial Study for your application and made the following preliminary determination:

XX Negative Declaration
(Your project will not have a significant impact on the environment.)

XX Mitigations will be attached to the Negative Declaration.

_____ No mitigations will be attached.

_____ Environmental Impact Report
(Your project may have a significant effect on the environment. An EIR must be prepared to address the potential impacts.)

As part of the environmental review process required by the California Environmental Quality Act (CEQA), this is your opportunity to respond to the preliminary determination before it is finalized. Please contact Matt Johnston, Environmental Coordinator at (831) 454-3201, if you wish to comment on the preliminary determination. Written comments will be received until 5:00 p.m. on the last day of the review period.

Review Period Ends: **December 6, 2010**

Staff Planner: **Dave Carlson**

Phone: **(831) 454-3173**

Date: **November 15, 2010**

NAME: Old Smith Road Slide
APPLICATION: 07-0633 07-0634
A.P.N: 109-112-05, 16

NEGATIVE DECLARATION MITIGATIONS

1. In order to mitigate the impacts to the riparian and oak woodlands habitat that resulted from the slide and relocation of the roadway, prior to issuance of the building permit that applicant shall submit to the Planning Department for review and approval a habitat restoration plan.
    - **a.** The plan shall include both riparian and oak woodland habitat, and shall be prepared by a qualified restoration ecologist.
    - **b.** The plan shall include a 5-year monitoring and maintenance plan.
    - **c.** The plan shall include success criteria aimed at achieving eventual vegetative coverage approximate to what existed prior to the slide.
    - **d.** The plan shall base the estimated vegetative cover on the most recent aerial photos available prior to the slide, such as found on the County of Santa Cruz GIS web page.

County of Santa Cruz

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CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ENVIRONMENTAL REVIEW INITIAL STUDY

Date: November 8, 2010 **Application Numbers:** 07-0633 & 07-0634

Staff Planner: David Carlson

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: John Kasunich **APN(s)**: 109-112-16 & 109-112-05

OWNER: Helen Hamilton Trustee and Edward and Lori Ann Margo **SUPERVISORAL DISTRICT**: 4

PROJECT LOCATION: Property located on the west side of Old Smith Road near 821 Old Smith Road, Watsonville

SUMMARY PROJECT DESCRIPTION: Proposal to cut and fill approximately 1,600 cubic yards of earth (Phase I) and 5000 cubic yards of earth (Phase II) to construct a bypass driveway around landslide damage section of Old Smith Road. The work includes grading, surface and subsurface drainage improvements and the construction of a Hilfiker retaining wall.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.

- ☒ Geology/Soils
- ☐ Hydrology/Water Supply/Water Quality
- ☒ Biological Resources
- ☐ Agriculture and Forestry Resources
- ☐ Mineral Resources
- ☐ Visual Resources & Aesthetics
- ☐ Cultural Resources
- ☐ Hazards & Hazardous Materials
- ☐ Transportation/Traffic
- ☐ Noise
- ☐ Air Quality
- ☐ Greenhouse Gas Emissions
- ☐ Public Services
- ☐ Recreation
- ☐ Utilities & Service Systems
- ☐ Land Use and Planning
- ☐ Population and Housing
- ☐ Mandatory Findings of Significance

DISCRETIONARY APPROVAL(S) BEING CONSIDERED:

- ☐ General Plan Amendment
- ☐ Land Division
- ☐ Rezoning
- ☐ Development Permit
- ☐ Coastal Development Permit
- ☒ Grading Permit
- ☒ Riparian Exception
- ☐ Other:

NON-LOCAL APPROVALS

Other agencies that must issue permits or authorizations: None

DETERMINATION: (To be completed by the lead agency)
On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____

Matthew Johnston
Environmental Coordinator

Date

II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS

Parcel Size: 11.79 and 13.3
Existing Land Use: Agriculture/Residential
Vegetation: Oak Woodlands and Grass Land
Slope in area affected by project: ☒ 0 - 30% ☒ 31 – 100%
Nearby Watercourse: Intermittent third order stream that flows into tributary to the Pajaro River.
Distance To: 50 feet

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Water Supply Watershed: Yes
Groundwater Recharge: Portion
Timber or Mineral: No
Agricultural Resource: No
Biologically Sensitive Habitat: Riparian
Fire Hazard: N/A
Floodplain: No
Erosion: Moderate to High
Landslide: Yes
Liquefaction: Potential

Fault Zone: No
Scenic Corridor: No
Historic: No
Archaeology: No
Noise Constraint: No
Electric Power Lines: Yes
Solar Access: N/A
Solar Orientation: N/A
Hazardous Materials: No
Other:

SERVICES

Fire Protection: Pajaro Valley Fire
School District: PV Trustees
Sewage Disposal: CSA 12

Drainage District: Zone 7
Project Access: Old Smith Road
Water Supply: Well

PLANNING POLICIES

Zone District: Special Use (SU)
General Plan: Mountain Residential

Special Designation:

Urban Services Line:	☐ Inside	☒ Outside
Coastal Zone:	☐ Inside	☒ Outside

ENVIRONMENTAL SETTING AND SURROUNDING LAND USES:

The project site is located in a rural area of Santa Cruz County in an area of low hills north of the city of Watsonville at the base of the Santa Cruz Mountains. The area is characterized by very low-density rural residential development, and agriculture, both small and large scale. Vegetation type in the immediate vicinity of the project site consists of oak woodlands, shrub, and open grassland

PROJECT BACKGROUND:

On December 23, 2005 a large 5+ acre rotational landslide inundated approximately 400 feet of Old Smith Road and blocked access to several homes. A portion of the north trending ridgeline paralleling the east side of Old Smith Road, failed causing slide material to flow and raft down slope in a westerly direction with the toe of the landslide material covering Old Smith Road and partially infilling the upper secondary drainage swale.

DETAILED PROJECT DESCRIPTION:

On December 27, 2005 a complaint was received by the Planning Department of a massive landslide involving a riparian corridor that has taken out a water storage area and a road. P. G. & E on 12/23/05 repaired a power line affected by the landslide.

The Planning Departement on 10/5/06 issued an emergency grading permit (06-0547). The plans for the Phase 1 emergency road relocation titled, Emergency Grading, Drainage and Erosion Control Plan for Phase 1, prepared by Haro Kasunich and Associates, Inc., consisting of 3 sheets, dated 9/25/06, were approved for the emergency permit. The approved plans did not include a Hilfiker wall. The plans show the road relocated around the toe of the landslide with a large subdrain below the road (in the swale inundated by the landslide) and catch basins on the inboard side of the road. The drain lines (subdrain and surface drain) are routed to a gabion basket and mattress energy dissipater in the extension of the drainage swale below the south flank of the landslide. Additional straw bale sediment barriers are shown downstream. The staging area was located shown on the southeast side of road below the south flank of the landslide. As a condition of the emergency permit the applicant was required to follow up within 60 days with a regular application, and within 90 days with related technical report and plans.

The Phase 1 work was completed on November 6, 2006. The relocated road was partially supported by a Hilfiker MSE (Mechanically Stabilized Earth) buttress. Phase I construction was documented by Haro, Kasunich and Associates, Inc. (HKA) in a Construction Monitoring and Testing Services letter dated 11/9/06.

During the winter of 2006/2007 the Phase 1 work sustained storm damage. In a letter dated 3/28/07 titled Storm Damage Assessment and Repair Observations HKA described the damage during the relatively light winter consisting of slumping and shallow secondary sliding within the landslide mass along the primary landslide toe, which reduced the width of temporary access road from 14 to 8 feet. The road was cleared consisting of removal of a relatively large volume of earth material without benefit of a permit, emergency or regular.

An application for a Phase II emergency-grading permit (07-0600) was submitted on 9/24/07. Technical reports were not submitted. The Planning Department on 10/11/07 issued a Notice of Code Violation because work had started on Phase II without an approved permit.

Regular applications for grading permits were submitted on 10/15/07: Application 07-0633 for Phase I grading consisting of approximately 1,584 cubic yards of earth, including 1,179 cubic yards of fill; and application 07-0634 for Phase II grading consisting of approximately 5,005 cubic yards of earth, including 2,653 cubic yards of fill to repair an access road, stabilize a landslide and construct a Hilfiker retaining wall. The application included a geologic report titled, Evaluation of Landslide Damaged Roadway prepared by Rogers E. Johnson and Associates (REJA), dated 9/24/07. The application included a geotechnical report titled Geotechnical Investigation for Old Smith Road Landslide Repair, prepared by HKA in conjunction with REJA, dated 10/15/07.

The report provides a geotechnical design for configuration of 450 feet of road around the toe of the landslide. The report concludes that if the recommendations are followed the project would be subject to "moderate risks" from geologic hazards, which is an appropriate level of risk for a driveway. The risks include shallow slumping onto road during rain or earthquake. Contingency plans have been in place to address this risk, including a contractor, equipment, money, and a disposal site to accept the material removed from the roadway. There is a much lower risk of primary landslide reactivation causing distortion of the Hilfiker wall. The report recommends supplementing the Phase I work with Phase II work to include: 1) Extend Hilfiker contained fill vertically to further buttress the landslide mass, 2) Provide a flat pad on the buttress for the road, and 3) Cut the inboard slope of the relocated road (slide mass) to a more stable gradient.

In November 2007 the Phase II work was completed without benefit of a permit. In summary, the first emergency permit (06-0547) was issued with the condition that required geotechnical and geology reports would be submitted. The Phase I work was completed. The following year a second emergency permit application (07-0600) was submitted, but without the required reports. A second emergency permit was not issued, but the Phase II work was completed. Access to the homes was reestablished after completion of the Phase I repairs, the Phase II grading was not necessary for access.

As part of the application processing an additional geotechnical report was prepared and submitted titled, Addendum to Limited Geotechnical Investigation Report Dated 15 October 2007, prepared by HKA, dated 10/9/08. The report addendum consisted of additional data and analysis, and final recommendations for the newly constructed road. The addendum also responded to County comments, results of additional geologic work by REJA (Evaluation of Landslide dated 10/9/08), and a project team meeting held 9/17/08. The addendum concludes that the existing landslide mass as a whole will not reactivate to a degree that will impact the existing reconfigured driveway, even during strong seismic shaking. The addendum further concludes the driveway is stable based on the Slope Stability Analysis. Recommended additional work includes, long-term erosion monitoring, maintenance of existing drainage controls, and the realignment of an existing 18-inch culvert. The future installation of hydro augers is not recommended, but suggested. The new road configuration and excavated area of the landslide performed well in the winter of 2007/2008, and the following winter of 2008/2009.

The Planning Department in a letter dated on 11/21/08 formally accepted (approved) the technical reports by HKA and REJA.

The regular application also includes a design for all of the drainage control measures associated with the project to ensure they are properly sized for expected storm flows. The Hydraulic Calculations were prepared by HKA and include designs for a sediment basin, a temporary "retention" facility, drain lines, and energy dissipaters.

The project plans for the regular permit include plans dated September 2009 prepared by HKA titled, Phase II - Permanent Grading and Drainage Plan, consisting of 5 sheets. To summarize the plans indicate:

- Phase II Hilfiker wall (6-10 feet) on top of Phase I wall (2-4 feet)
- Additional RW back drains (6-inch pipe)
- Cut landslide slope above road to 4:1 gradient (with mid-slope earthen swale)
- Sediment check dam (stacked wood) in swale northeast of slide
- Sediment basin in swale near road (4-foot berm, 15-inch culvert)
- Earth swale below Hilfiker wall (drained by 8-inch pipe)
- Storage area for excess cut material and future clean up on southeast side of road below landslide.

The completed work is represented on a set of as-built plans titled, Phase II – As-built Grading and Drainage Plan, prepared by HKA, consisting of 3 sheets dated September 2009.

HKA in February 2009 prepared an additional set of plans titled, Proposed Hydro Auger, Culvert Extension & Driveway Improvement Plan indicating the proposed hydro augers, modifications to an existing 18-inch culvert, a new 12-inch culvert with cleanouts, and two road turnouts at both ends of the construction area.

In response to additional Planning Department comments on the regular application, HKA on 11/18/09, submitted a response package to the Planning Department. The response states, "the displacement analysis of the landslide verified that stability of the relocated driveway is high. All of our stability results and field observations over the past three years lead us to conclude that the large slide mass has come to rest in a stable condition. The setback from projected extreme landslide failure, the addition of the buttress Hilfiker wall and the drainage improvement have secured the relocated driveway. The realigned access driveway and the improvements implemented to construct and preserve it offer a higher, acceptable level of risk relative to ground movement than that risk which existed prior to the landslide failure for the old driveway alignment."

In addition, HKA submitted construction observation reports for Phases I & II and structural calculations for the Hilfiker wall, plan review letters from REJA, and a letter from REJA recommending the road agreement include responsibility for stream incision monitoring.

The plan review letter from REJA states that the project is geologically feasible if properly constructed. The project increases stability of the toe of the landslide, and inspection and monitoring of the project is required.

The Planning Department in a letter dated March16, 2010 expressed additional concerns on the application regarding slope stability analysis with the hydro augers installed, the drainage calculation, and maintenance measures to protect the roadway.

In a transmittal dated 4/27/10 HKA submitted supplemental slope stability analysis considering the proposed hydro augers, revised hydraulic calculations using more conservative design criteria, and a proposed road agreement containing maintenance requirements for driveway and stream incision monitoring.

The Planning Department on June 23, 2010 deemed the application complete.

III. ENVIRONMENTAL REVIEW CHECKLIST

A. GEOLOGY AND SOILS

Would the project:

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	A. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
	B. Strong seismic ground shaking?	☐	☐	☐	☒
	C. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
	D. Landslides?	☐	☐	☒	☐

Discussion (A through D):

A geologic investigation for the project was prepared by Rogers E. Johnson and Associates, dated 9/24/07 and 10/9/08 (Attachments 4 & 5), and a geotechnical investigation was prepared by Haro, Kasunich and Associates, Inc., dated 10/15/07 and 10/9/08 (Attachments 6 & 7). These reports have been reviewed and accepted by the Environmental Planning Section of the Planning Department (Attachment 8). The reports conclude that if the recommendations are followed the project would be subject to "moderate risks" from geologic hazards, which is an appropriate level of risk for a driveway. The risks include shallow slumping onto road during rain or earthquake. Contingency plans have been in place to address this risk, including a contractor, equipment, money, and a disposal site to accept the material removed from the roadway. There is a much lower risk of primary landslide reactivation causing distortion of the Hilfiker wall.

Implementation of the additional requirements included in the review letter prepared by Environmental Planning staff (Attachment 8) will serve to further reduce the potential risk of seismic shaking.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐

Discussion: The geotechnical engineer in 2009 stated, "the displacement analysis of the landslide verified that stability of the relocated driveway is high. All of our stability results and field observations over the past three years lead us to conclude that the large slide mass has come to rest in a stable condition. The setback from projected extreme landslide failure, the addition of the buttress Hilfiker wall and the drainage improvement have secured the relocated driveway. The realigned access driveway and the improvements implemented to construct and preserve it offer a higher, acceptable level of risk relative to ground movement than that risk which existed prior to the landslide failure for the old driveway alignment."

3. Develop land with a slope exceeding 30%?	☐	☐	☐	☒

Discussion: There are slopes that exceed 30% on the property. However, no improvements are proposed on slopes in excess of 30%.

4. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Discussion: Some potential for erosion exists associated with the project to realign the road, however, this potential is minimal because the project includes measures to capture and filter sediment, and store material stockpiled as a result of ongoing maintenance. Prior to approval of a grading or building permit, the project must have an approved Erosion Control Plan, which will specify detailed erosion and sedimentation control measures. The plan will include provisions for disturbed areas to be planted with ground cover and to be maintained to minimize surface erosion.

5. Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007), creating substantial risks to life or property?	☐	☐	☐	☒

Discussion: The geotechnical report for the project did not identify any elevated risk associated with expansive soils.

6. Place sewage disposal systems in areas dependent upon soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

waste water disposal systems where sewers are not available?

Discussion: No septic systems are proposed.

7. Result in coastal cliff erosion? ☐ ☐ ☐ ☒

Discussion: The proposed project is not located in the vicinity of a coastal cliff or bluff; and therefore, would not contribute to coastal cliff erosion.

B. HYDROLOGY, WATER SUPPLY, AND WATER QUALITY

Would the project:

1. Place development within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? ☐ ☐ ☐ ☒

Discussion: According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated March 2, 2006, no portion of the project site lies within a 100-year flood hazard area.

2. Place within a 100-year flood hazard area structures which would impede or redirect flood flows? ☐ ☐ ☐ ☒

Discussion: According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated March 2, 2006, no portion of the project site lies within a 100-year flood hazard area.

3. Be inundated by a seiche, tsunami, or mudflow? ☐ ☐ ☐ ☒

Discussion: Small mudflows may be expected along the new road alignment. These occurrences will be addressed through ongoing maintenance outlined on the maintenance agreement associated with the project.

4. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits ☐ ☐ ☐ ☒

	Potentially Significant Impact	*Less than* Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

have been granted)?

Discussion: As a road repair the project would have no impact on groundwater resources.

5.	Substantially degrade a public or private water supply? (Including the contribution of urban contaminants, nutrient enrichments, or other agricultural chemicals or seawater intrusion).	☐	☐	☐	☒

Discussion: As a road repair, the project would have no impact on public or private water supply.

6.	Degrade septic system functioning?	☐	☐	☐	☒

Discussion: There is no indication that existing septic systems in the vicinity would be affected by the project.

7.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding, on- or off-site?	☐	☐	☒	☐

Discussion: The original landslide caused minor alteration of drainage patterns in the area. The road repair project includes measures to collect both surface and subsurface drainage and route the collected runoff downstream below the project site for discharge into a natural drainage course. In addition, the project includes measures to monitor the drainage course below the slide for any signs of increased erosion that might affect the stability of the newly realigned road. The Department of Public Works Drainage Section staff has reviewed and given preliminary approval of the proposed drainage plan. The following items are required prior to approval of the grading permit and building permit by the Drainage Section: 1) submit a copy of the recorded maintenance agreement, 2) final pipe analysis that takes friction and head losses into account, 3) revisions to the monitoring and maintenance requirements to include monitoring of the trash rack and inlet to the 18-inch and 12-inch culverts at least monthly and after each major storm event, along with the other catch basins.

8.	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems, or provide substantial	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

additional sources of polluted runoff?

Discussion: Drainage Calculations prepared by Haro Kasunich and Associates, Inc., dated 10/7/09, revised April, 20010, have been reviewed for potential drainage impacts and accepted by the Department of Public Works (DPW) Drainage Section staff. Refer to response B-5 for discussion of polluting runoff.

9.	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒

Discussion: The project would not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam

10.	Otherwise substantially degrade water quality?	☐	☐	☐	☐

Discussion: The project would not otherwise substantially degrade water quality.

C. BIOLOGICAL RESOURCES

Would the project:

1.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

Discussion: According to the California Natural Diversity Data Base (CNDDB), maintained by the California Department of Fish and Game, there are no known special status plant or animal species in the site vicinity, and there were no special status species observed in the project area. The lack of suitable habitat and the disturbed nature of the site make it unlikely that any special status plant or animal species occur in the area.

2.	Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations (e.g., wetland, native grassland, special forests, intertidal zone, etc.) or	☐	☒	☐	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				

Discussion: Following the landslide it became necessary to realign the road partially within a natural drainage swale in order to reestablish access to several homes. The project includes measures to control drainage, erosion and soil stability in order to protect downstream riparian resources from potential adverse impact associated with the road realignment. The slide repair affected riparian habitat and oak woodland, a sensitive natural community, which are identified in the County of Santa Cruz Sensitive Habitat Protection Ordinance (County Code Chapter 16.32). It is estimated that approximately 2.25 acres of oak woodland habitat and 400 lineal feet of riparian habitat were affected by the slide repair. To mitigate this loss of sensitive natural communities a qualified professional shall prepare and implement and plan to mitigate this loss by planting appropriate species in the repair area to help reestablish riparian and oak woodland habitats.

3.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native or migratory wildlife nursery sites?	☐	☐	☐	☒

Discussion: The proposed project does not involve any activities that would interfere with the movements or migrations of fish or wildlife, or impede use of a known wildlife nursery site.

4.	Produce nighttime lighting that would substantially illuminate wildlife habitats?	☐	☐	☐	☒

Discussion: The project does not involve the use of nighttime lighting.

5.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

Discussion: The project would not have a substantial adverse effect on federally protected wetlands

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
6. Conflict with any local policies or ordinances protecting biological resources (such as the Sensitive Habitat Ordinance, Riparian and Wetland Protection Ordinance, and the Significant Tree Protection Ordinance)?	☐	☐	☐	☒

Discussion: The project would not conflict with any local policies or ordinances.

7. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion: The proposed project would not conflict with the provisions of any adopted Habitat Conservation Plan Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur.

D. AGRICULTURE AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

Discussion: The project site does not contain any lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. In addition, the project does not contain Farmland of Local Importance. Therefore, no Prime Farmland, Unique Farmland, Farmland of Statewide or Farmland of Local Importance would be converted to a non-agricultural

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

use. No impact would occur from project implementation.

2.	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

Discussion: The project site is zoned SU, which is not considered to be an agricultural zone. Additionally, the project site's land is not under a Williamson Act Contract. Therefore, the project does not conflict with existing zoning for agricultural use, or a Williamson Act Contract. No impact is anticipated.

3.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒

Discussion: The project is adjacent to land designated as Timber Resource. However, the project would not affect the resource or access to harvest the resource in the future. The timber resource may only be harvested in accordance with California Department of Forestry timber harvest rules and regulations.

4.	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion: No forest land occurs on the project site or in the immediate vicinity. No impact is anticipated.

5.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion: As a road repair project, no impacts are anticipated related to farmland or forest land conversion.

E. MINERAL RESOURCES

Would the project:

1.	Result in the loss of availability of a known mineral resource that would be of value to the region and the	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

residents of the state?

Discussion: The site does not contain any known mineral resources that would be of value to the region and the residents of the state. Therefore, no impact is anticipated from project implementation.

2.	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion: The project site is zoned SU, which is not considered to be an Extractive Use Zone (M-3) nor does it have a Land Use Designation with a Quarry Designation Overlay (Q) (County of Santa Cruz 1994). Therefore, no potentially significant loss of availability of a known mineral resource of locally important mineral resource recovery (extraction) site delineated on a local general plan, specific plan or other land use plan would occur as a result of this project.

F. VISUAL RESOURCES AND AESTHETICS

Would the project:

1.	Have an adverse effect on a scenic vista?	☐	☐	☐	☒

Discussion: The project would not directly impact any public scenic resources, as designated in the County's General Plan (1994), or obstruct any public views of these visual resources.

2.	Substantially damage scenic resources, within a designated scenic corridor or public view shed area including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

Discussion: The project site is not located along a County designated scenic road, public viewshed area, scenic corridor, within a designated scenic resource area, or within a state scenic highway. Therefore, no impact is anticipated.

3.	Substantially degrade the existing visual character or quality of the site and its surroundings, including substantial change in topography or ground surface relief features, and/or development on a ridgeline?	☐	☐	☐	☒

Discussion: The existing visual setting is an unpaved driveway through a isolated

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

rural natural setting. The proposed project is designed to fit into this setting.

4.	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion: The project would not create an incremental increase in night lighting.

G. CULTURAL RESOURCES

Would the project:

1.	Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?	☐	☐	☐	☒

Discussion: As road repair the project would not affect a historic resource on any federal, state or local inventory.

2.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?	☐	☐	☐	☒

Discussion: No archeological resources have been identified in the project area. Pursuant to County Code Section 16.40.040, if at any time in the preparation for or process of excavating or otherwise disturbing the ground, any human remains of any age, or any artifact or other evidence of a Native American cultural site which reasonably appears to exceed 100 years of age are discovered, the responsible persons shall immediately cease and desist from all further site excavation and comply with the notification procedures given in County Code Chapter 16.40.040.

3.	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion: Pursuant to Section 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the sheriff-coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Discussion: The project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

H. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

1. Create a significant hazard to the public or the environment as a result of the routine transport, use or disposal of hazardous materials?	☐	☐	☒	☐

Discussion: The equipment used during construction of the project would involve routine use of fuel and other petroleum products and hydraulic fluids typically used by construction equipment. Minor leaks from construction equipment would not be considered a significant impact in the remote rural setting.

2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐

Discussion: See H.1. above.

3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

Discussion: The project would produce emissions from the use of standard construction equipment and it is not located with one-quarter mile of an existing or proposed school.

4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

Discussion: The project site is not included on the list of hazardous sites in Santa

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Cruz County compiled pursuant to the specified code.

5.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

Discussion: The project is not located within an airport land use plan or within two miles of a public airport or public use airport.

6.	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

Discussion: The project is not within the vicinity of a private airstrip.

7.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

Discussion: The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

8.	Expose people to electro-magnetic fields associated with electrical transmission lines?	☐	☐	☐	☒

Discussion: The project would not expose people to electro-magnetic fields associated with electrical transmission lines.

9.	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion: The project involves measures to protect a road from geologic and geotechnical hazards. As such, the project does not represent an exposure of people or structures to a significant risk of loss, injury or death involving wildland fires. The project design incorporates all applicable fire safety code requirements and includes fire protection devices as required by the local fire agency.

I. TRANSPORTATION/TRAFFIC

Would the project:

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1.	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒

Discussion: There would be no impact because no additional traffic would be generated.

2.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒

Discussion: The project would not affect air traffic patterns.

3.	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

Discussion: The project does not include any feature that would increase traffic hazards.

4.	Result in inadequate emergency access?	☐	☐	☐	☒

Discussion: The project's road access meets County standards and has been approved by the local fire agency or California Department of Forestry, as appropriate.

5.	Cause an increase in parking demand which cannot be accommodated by existing parking facilities?	☐	☐	☐	☒

Discussion: The project does not cause an increase in parking demand.

6.	Conflict with adopted policies, plans,	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				

Discussion: The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

7. Exceed, either individually (the project alone) or cumulatively (the project combined with other development), a level of service standard established by the County General Plan for designated intersections, roads or highways?	☐	☐	☐	☒

Discussion: See response I-1 above.

J. NOISE

Would the project result in:

1. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒

Discussion: The project would create only a temporary increase in the existing noise environment associated with construction. This would not be considered a significant impact in the remote rural setting.

2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒

Discussion: Construction activities would generate groundborne vibration and noise levels, but this noise would be temporary during construction. This would not be considered a significant impact in the remote rural setting.

3. Exposure of persons to or generation of noise levels in excess of standards established in the General Plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒

Discussion: The project would create only a temporary increase in the existing noise environment associated with construction. This would not be considered a significant impact in the remote rural setting.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒

Discussion: Noise generated during construction would increase the ambient noise levels for adjoining areas. Construction would be temporary, however, and given the limited duration of this impact, and the isolated rural setting, it is considered to be less than significant.

5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion: The project is not located within an airport land use plan or within two miles of a public airport or public use airport.

6. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion: The project is not within the vicinity of a private airstrip.

K. AIR QUALITY

Where available, the significance criteria established by the Monterey Bay Unified Air Pollution Control District (MBUAPCD) may be relied upon to make the following determinations. Would the project:

1. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒

Discussion: The North Central Coast Air Basin does not meet state standards for ozone and particulate matter (PM_{10}). Therefore, the regional pollutants of concern that would be emitted by the project are ozone precursors (Volatile Organic Compounds [VOCs] and nitrogen oxides [NO_x]), and dust.

Given the temporary use of standard construction equipment there is no indication that temporary localized emissions of VOCs or NO_x would exceed MBUAPCD thresholds for these pollutants and therefore there would not be a significant contribution to an existing air quality violation.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Project construction may result in a short-term, localized decrease in air quality due to generation of dust. However, standard dust control best management practices, such as periodic watering, will be implemented during construction to reduce impacts to a less than significant level.

2.	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒

Discussion: The project would not conflict with or obstruct implementation of the regional air quality plan. See K-1 above.

3.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒

Discussion: See K-1.

4.	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒

Discussion: The project site is located in a rural residential area characterized by very low density residential development and agriculture. This relatively minor construction project would not expose sensitive receptors (neighboring houses) to substantial pollutant concentrations.

5.	Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion: The project would not create objectionable odors affecting a substantial number of people.

L. GREENHOUSE GAS EMISSIONS

Would the project:

1.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

Discussion: The relatively minor construction activity associated with this project would not generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion: The project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The relatively minor construction activity associated with this project would not generate greenhouse gas emissions, either directly or indirectly, that would have a significant impact on the environment.

M. PUBLIC SERVICES

Would the project:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
a. Fire protection?	☐	☐	☐	☒
b. Police protection?	☐	☐	☐	☒
c. Schools?	☐	☐	☐	☒
d. Parks or other recreational activities?	☐	☐	☐	☒
e. Other public facilities; including the maintenance of roads?	☐	☐	☐	☒

Discussion (a through e): As the repair of an existing road the project would not create any additional need for services.

N. RECREATION

Would the project:

1. Would the project increase the use of	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				

Discussion: As the repair of an existing road the project would not project increase the use of existing neighborhood and regional parks or other recreational facilities.

2. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion: As the repair of an existing road the project would have no impact on recreational facilities.

O. UTILITIES AND SERVICE SYSTEMS

Would the project:

1. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

Discussion: Storm drainage calculations by Haro, Kasunich and Associates, Inc. dated 4/19/10 determined pipe sizes necessary to convey all the collected runoff from roadway watershed to safe points of discharge. Department of Public Works Drainage staff have reviewed the drainage information and have determined that the project is feasible from a drainage standpoint with minor refinements. The Drainage Section staff has reviewed and given preliminary approval of the proposed drainage plan. The following items are required prior to approval of the grading permit and building permit by the Drainage Section: 1) submit a copy of the recorded maintenance agreement, 2) final pipe analysis that takes friction and head losses into account, 3) revisions to the monitoring and maintenance requirements to include monitoring of the trash rack and inlet to the 18-inch and 12-inch culverts at least monthly and after each major storm event, along with the other catch basins.

2. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

Discussion: The project does not require or result in the construction of new water or

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

wastewater treatment facilities or expansion of existing facilities.

3.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒

Discussion: The project has no affect on wastewater treatment.

4.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒

Discussion: The existing water supply for the houses would not be affected by the project.

5.	Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

Discussion: See O-2.

6.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒

Discussion: The repair of an existing road would not represent an additional burden on the landfill.

7.	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion: The project would comply with federal, state, and local statutes and regulations related to solid waste.

P. LAND USE AND PLANNING

Would the project:

1.	Conflict with any applicable land use plan, policy, or regulation of an agency	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Discussion: The proposed project does not conflict with any regulations or policies adopted for the purpose of avoiding or mitigating an environmental effect.

2. Conflict with any applicable habitat conservation plan or natural community conservation plan? ☐ ☐ ☐ ☒

Discussion: Project would not conflict with any applicable habitat conservation plan or natural community conservation plan.

3. Physically divide an established community? ☐ ☐ ☐ ☒

Discussion: The project would not include any element that would physically divide an established community.

Q. POPULATION AND HOUSING

Would the project:

1. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? ☐ ☐ ☐ ☒

Discussion: The proposed project would not extend the road or increase its capacity.

2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? ☐ ☐ ☐ ☒

Discussion: The proposed project would not displace any existing housing.

3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? ☐ ☐ ☐ ☒

Discussion: The proposed project would not displace a substantial number of people.

R. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒

Discussion: The potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory were considered in the response to each question in Section III of this Initial Study. As a result of this evaluation, there is no substantial evidence that significant effects associated with this project would result. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

	Potentially Significant Impact	Less than *Significant* with Mitigation	Less than Significant Impact	No Impact
2. Does the project have impacts that are individually limited, but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒

Discussion: In addition to project specific impacts, this evaluation considered the projects potential for incremental effects that are cumulatively considerable. As a result of this evaluation, there is no substantial evidence that there are cumulative effects associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
3. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Discussion: In the evaluation of environmental impacts in this Initial Study, the potential for adverse direct or indirect impacts to human beings were considered in the response to specific questions in Section III. As a result of this evaluation, there is no substantial evidence that there are adverse effects to human beings associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

IV. TECHNICAL REVIEW CHECKLIST

	REQUIRED	DATE COMPLETED
Agricultural Policy Advisory Commission (APAC) Review	Yes ☐ No ☒	
Archaeological Review	Yes ☐ No ☒	
Biotic Report/Assessment	Yes ☐ No ☒	
Geologic Hazards Assessment (GHA)	Yes ☐ No ☒	
Geologic Report	Yes ☒ No ☐	11/21/08
Geotechnical (Soils) Report	Yes ☒ No ☐	11/21/08
Riparian Pre-Site	Yes ☐ No ☒	
Septic Lot Check	Yes ☐ No ☒	
Other:	Yes ☐ No ☒	

V. REFERENCES USED IN THE COMPLETION OF THIS ENVIRONMENTAL REVIEW INITIAL STUDY

County of Santa Cruz 1994.
1994 General Plan and Local Coastal Program for the County of Santa Cruz, California. Adopted by the Board of Supervisors on May 24, 1994, and certified by the California Coastal Commission on December 15, 1994.

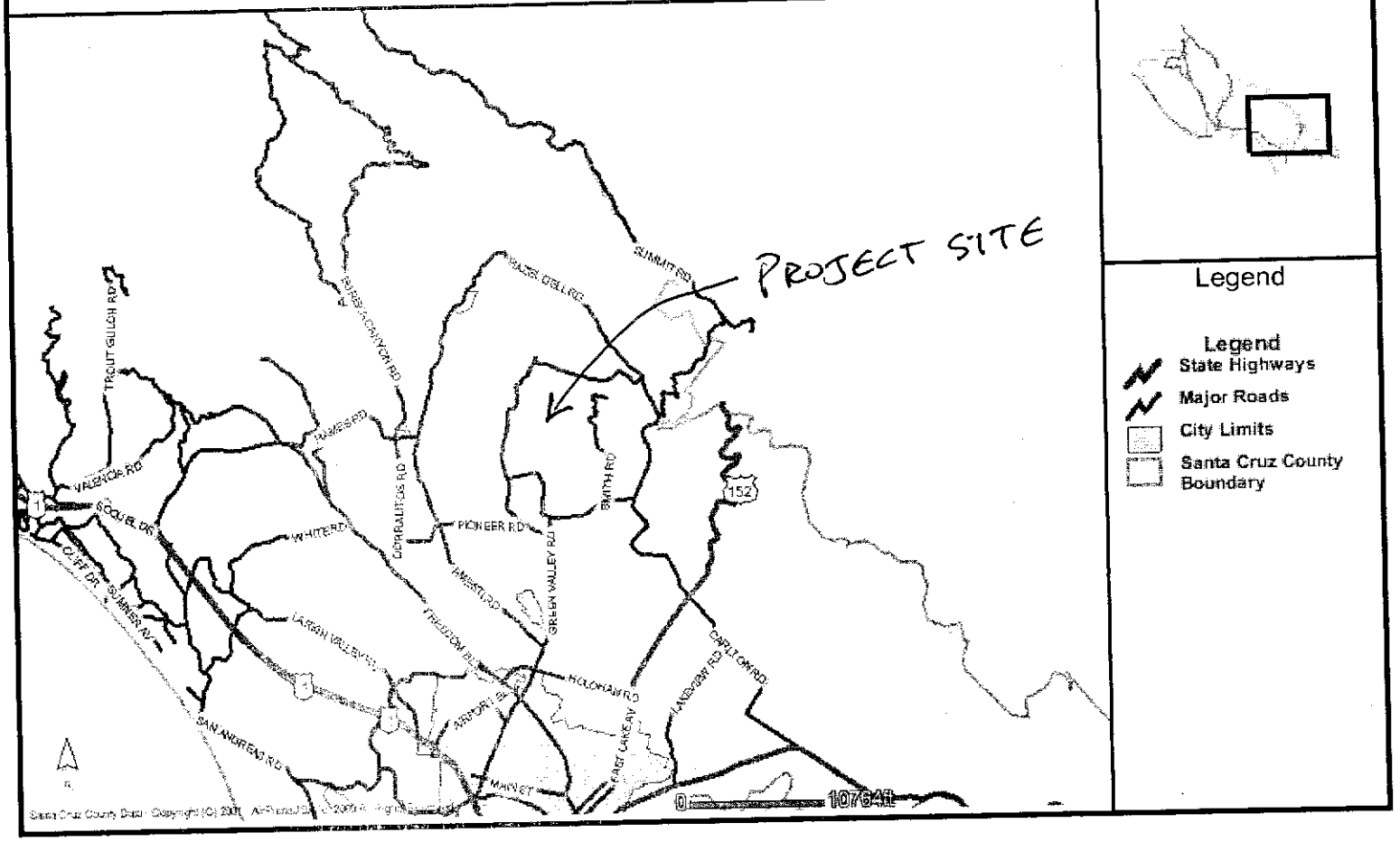
VI. ATTACHMENTS

1. Vicinity Map, Map of Zoning Districts; Map of General Plan Designations; and Assessors Parcel Map.
2. Site Location Map, prepared by E. Johnson and Associates
3. Boring Site Plan, prepared Haro, Kasunich & Associates, Inc., dated September 2007
4. Evaluation of Landslide, prepared by Rogers E. Johnson and Associates, dated 10/9/08
5. Evaluation of Landslide-Damaged Roadway, prepared by Rogers E. Johnson and Associates, dated 9/24/07
6. Geotechnical Investigation (Discussion, Conclusions, and Recommendations), prepared by Haro, Kasunich & Associates, Inc., dated 10/15/07
7. Addendum to Limited Geotechnical Investigation dated 10/15/07, by Haro, Kasunich & Associates, Inc., dated 10/9/08
8. Geologic and Geotechnical Report Review and Acceptance Letter dated 11/21/2008, prepared by Santa Cruz County Planning Department
9. Response to Santa Cruz County Planning Department Review of 21 November 2008, Regarding Stream Incision, letter prepared by Rogers E. Johnson and Associates, dated 6/17/09
10. Review of Phase II Proposed Landslide Stabilization Plans, prepared by Rogers E. Johnson and Associates, dated 11/25/09
11. Review of Phase II As-Built Plans, prepared by Rogers E. Johnson and Associates, dated 11/27/09
12. Review of Phase II Proposed Landslide Stabilization Plans, prepared by Rogers E. Johnson and Associates, dated 11/25/09
13. Review of Proposed Hydro-auger, Drainage and Driveway Improvement Plans, 3rd Revision, prepared by Rogers E. Johnson and Associates, dated 12/15/09
14. Agreement for Partial Relocation and Maintenance of Access Easement between Hamilton, Margo, and Stevenson-Miles, undated, unsigned

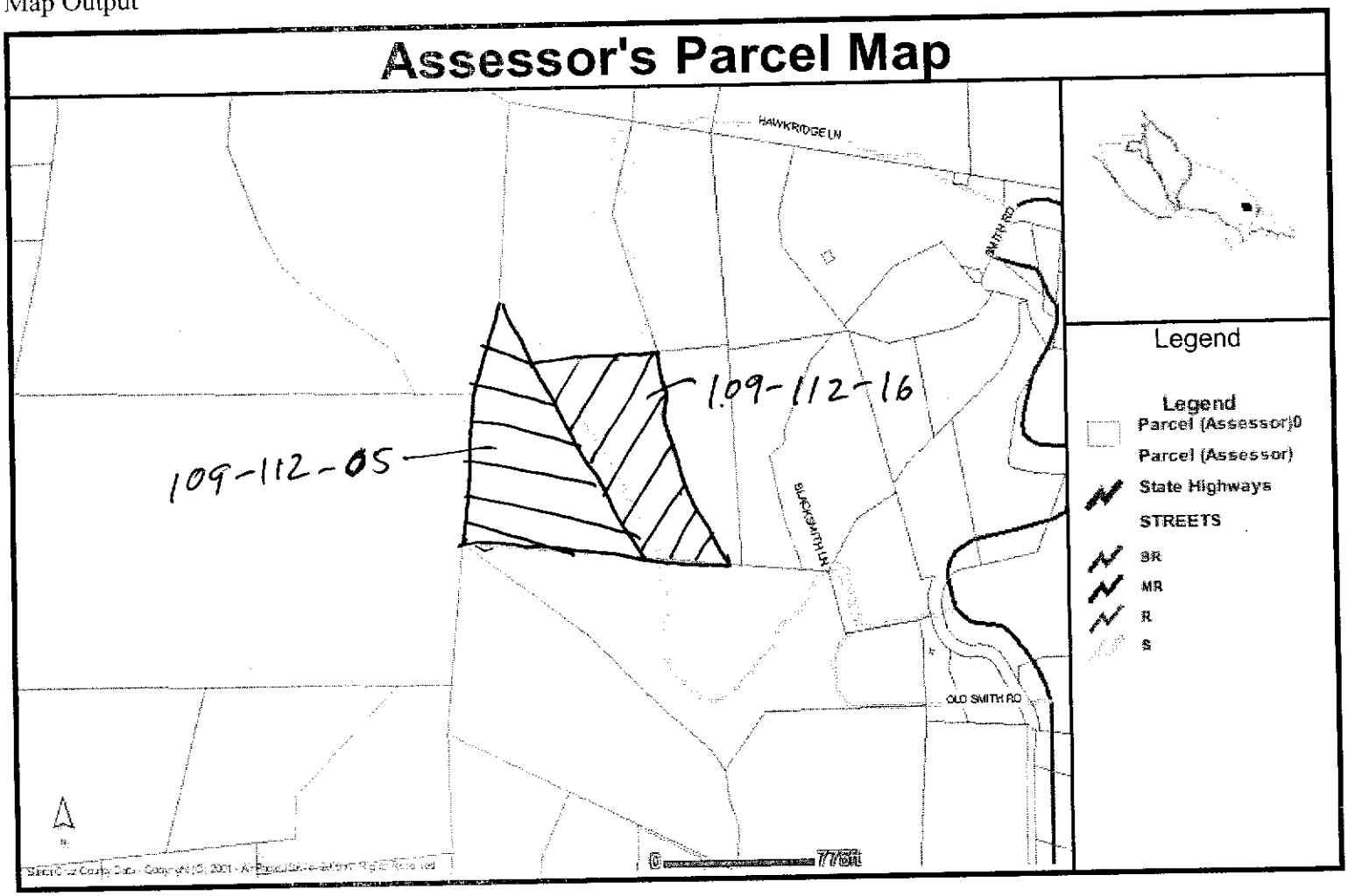
Hydraulic Calculations, prepared by Haro, Kasunich and Associates, Inc., dated 10/7/09, revised April, 20010 (On file at the Planning Department)

Map Output

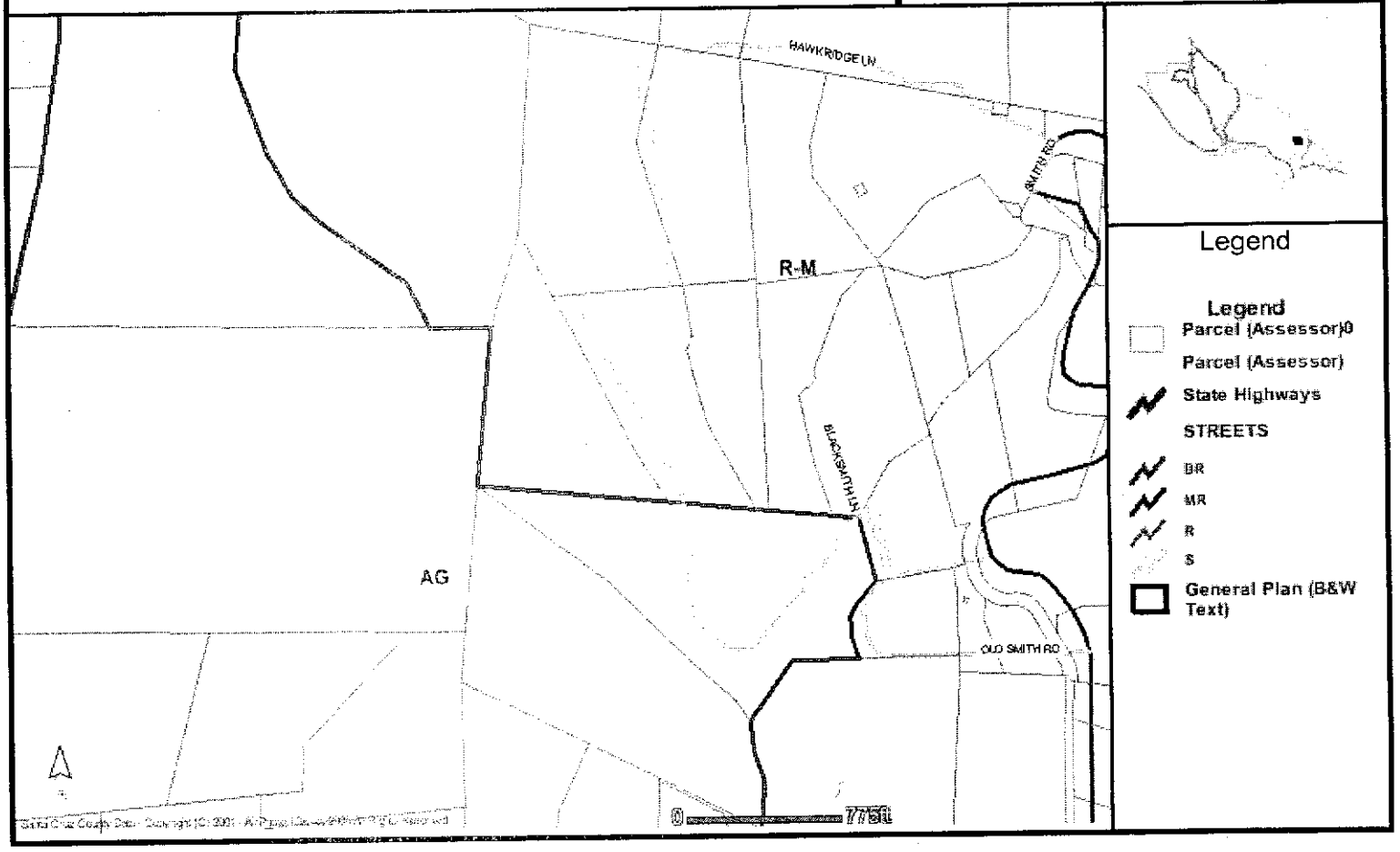
Vicinity Map



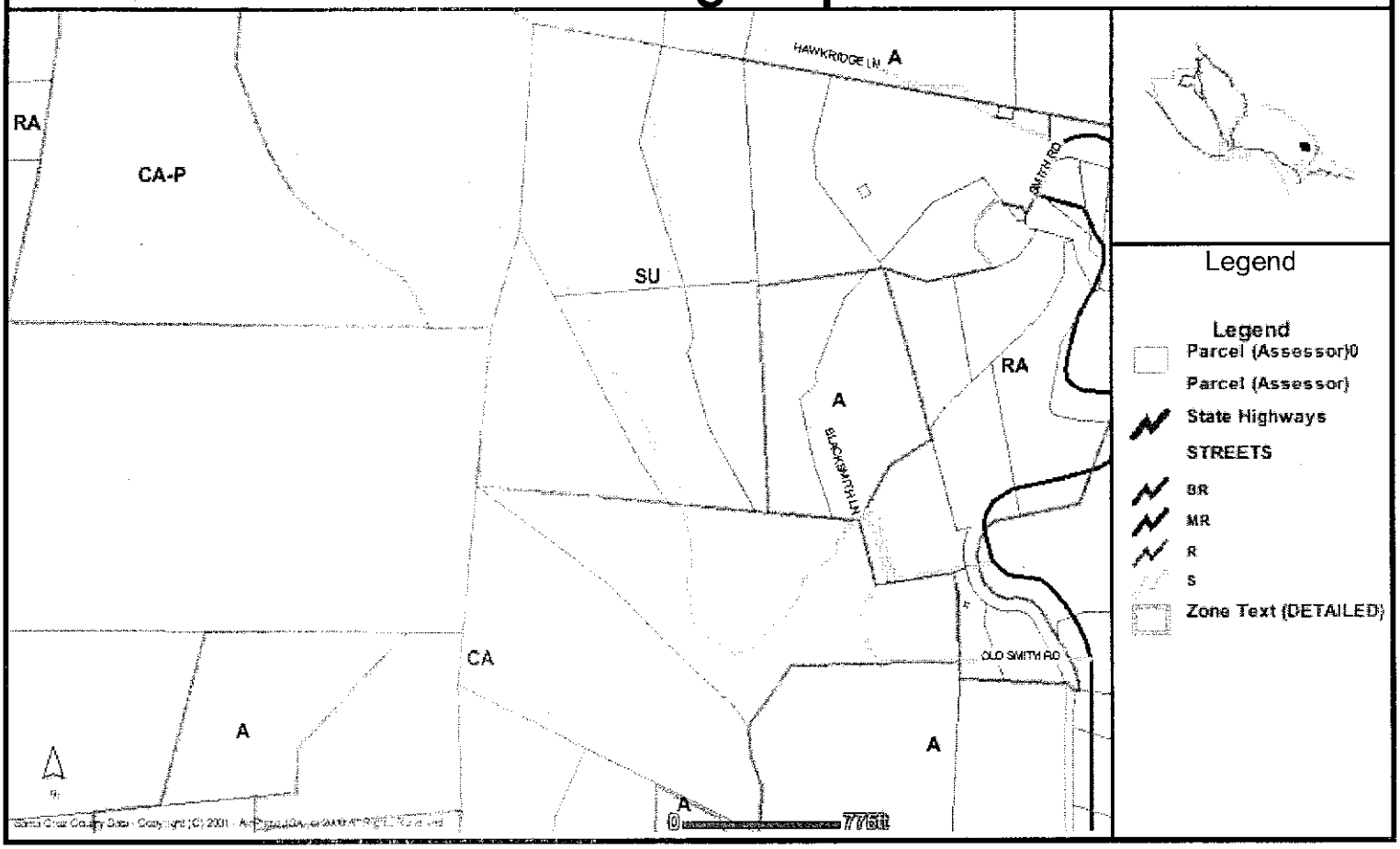
Assessor's Parcel Map



General Plan Map



Zoning Map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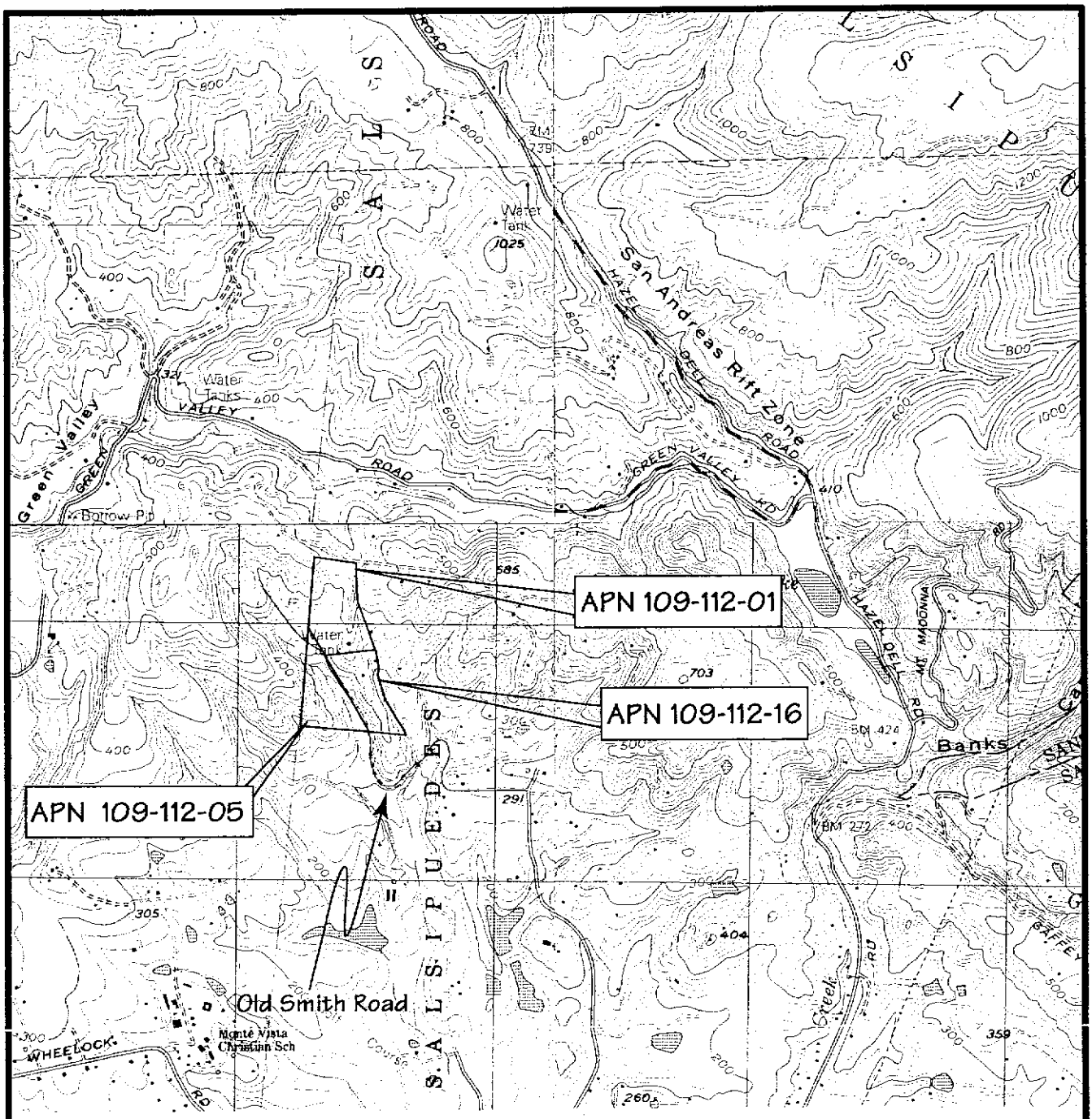

Base Maps: LOMA PRIETA QUADRANGLE, California, 7.5 Minute Series, United States Geological Survey, 1955 (revised 1994), scale 1:24,000; MT. MADONNA QUADRANGLE, California, 7.5 Minute Series, U.S. Geological Survey 1955 (photorevised 1973), scale 1:24,000; WATSONVILLE EAST QUADRANGLE, California, 7.5 Minute Series, U.S. Geological Survey, 1955 (photoinspected 1995), scale 1:24,000; and WATSONVILLE WEST QUADRANGLE, California, 7.5 Minute Series, U.S. Geological Survey, 1954 (photoinspected 1995), scale 1:24,000.

ROGERS E. JOHNSON & ASSOCIATES Consulting Engineering Geologists 41 Hangar Way, Suite B Watsonville, California 95076 (831)728-7200 FAX (831)728-7218	SITE LOCATION MAP *Margo Property* 821 Old Smith Road Watsonville, California Santa Cruz County APN 109-112-05	FIGURE # 1 JOB # G06040-51

ROGERS E. JOHNSON & ASSOCIATES
CONSULTING ENGINEERING GEOLOGISTS
41 Hangar Way, Suite B
Watsonville, California 95076-2458
e-mail: rogersjohnson@sbcglobal.net
Ofc (831) 728-7200 • Fax (831) 728-7218

9 October 2008

Mr. Ed Margo
821 Old Smith Road
Watsonville, California 95076

Job No. G06040-51

Subject: Evaluation of Landslide
821 Old Smith Road
Santa Cruz County APN 109-112-05 , 07-0634

Dear Mr. Margo:

As required by the Santa Cruz County Planning Department, we have completed our evaluation of the subject landslide which destroyed a roughly 400 foot long segment of Old Smith Road, denying access to the Margo and Miles residences. Our work builds on our initial investigation (REJA, September 2007), which was a focused evaluation of the slide as it relates to the existing repair which re-established access to the two residences.

This in-depth evaluation, completed in conjunction with the geotechnical engineering firm of Haro, Kasunich and Associates, Inc. (HKA) concludes that 1) based on stability analysis performed by HKA the slide mass must be adequately drained to obtain stability; 2) the cut slope above an approximately 150 foot stretch at the northern end of the re-established access road is not stable under the design seismic load but Newmark analysis indicates that the mass will only move about two feet; 3) based on limited data, we estimate ten feet of additional incision of the northern segment of the primary drainage below the landslide mass. This incision could jeopardize the entire section of rebuilt roadway, especially an approximately 100 foot long segment at the north end of the repositioned access road.

Please feel free to contact us if you have questions or comments. Thank you for your patronage.

Sincerely,

ROGERS E. JOHNSON & ASSOCIATES

Rogers E. Johnson
CEG No. 1016

CERTIFIED ENGINEERING GEOLOGIST
ROGERS E. JOHNSON
No. 1016
Exp. 7/09
STATE OF CALIFORNIA

DISCUSSION

The chief additional mitigation offered to help stabilize the landslide is to provide adequate surface and subsurface drainage of the slide mass. This will be accomplished primarily by: 1) installing a series of 'hydroaugers' within the landslide to help prevent perched groundwater from saturating the slide plane and 2) providing adequate surface drainage above and on the slide mass. Care will need to be exercised so that subsurface drainage is not released upstream of the nickpoint but instead dispersed downstream of the landslide area.

Our initial investigation (Johnson, 2007) recommended grading the slope inboard of the re-established road to a gradient of 4:1 and constructing a "slough wall" along the inboard edge of the road. As a result of our recent findings, the results of the slope stability analyses performed by the project geotechnical engineer and current conditions at the site, it is our opinion that further grading of the toe of the slide mass and construction of a "slough wall" are not necessary.

Obviously, adequate surface and subsurface drainage will greatly improve the stability of the slide mass. But to insure the slide would never remobilize would require complete removal of the slide mass and replacement with an engineered fill designed to withstand additional incision of the adjacent stream channel. Such a fix would be very expensive, probably several million dollars.

Other possible solutions would entail placing a large culvert in the primary drainage and filling the drainage, or crossing the primary drainage above and below the slide area, thereby avoiding the slide. Such fixes would involve obtaining permits from The California Department of Fish and Game and possibly other agencies in addition to Santa Cruz County. The latter solution would not help stabilize the existing slide mass which would then have a higher probability of remobilizing and entering the drainage. If the slide mass enters the main drainage, additional erosion and landslide problems would probably occur.

Because we have a dip slope condition at the site, continued incision of the drainages will tend to unbuttress the adversely dipping strata which jeopardizes the access road and may eventually engender more large-scale landsliding. This is especially true for the area below the northwestern half of the current landslide and further to the northwest (upstream from the nickpoint). Obviously, as noted earlier, adequate surface drainage and lowering of the perched water table within the landslide mass will help reduce the potential for both large and small scale remobilization of the landslide.

Continued stream incision also threatens to undermine segments of the realigned access road. The most northwesterly 100 feet of the realigned roadway is especially susceptible to undermining. One suggestion to mitigate incision in this area is to not allow runoff from an 18 inch culvert to enter the affected tributary drainage. This remediation will certainly help but we suggest this area be closely monitored so that if the roadway is threatened, additional steps can be taken to maintain access.

ROGERS E. JOHNSON & ASSOCIATES
CONSULTING ENGINEERING GEOLOGISTS
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EVALUATION OF LANDSLIDE-DAMAGED ROADWAY
MARGO PROPERTY
821 OLD SMITH ROAD
WATSONVILLE, CALIFORNIA
SANTA CRUZ COUNTY APN 109-112-05

REJA Job No. G06040-51
24 September 2007

CONCLUSIONS

A large landslide occurred on December 23, 2005, inundating Old Smith Road and blocking access to several properties, including the Margo property. Temporary access was established on the toe of the landslide within a secondary drainage. The proposed final access will be established at the same location and will incorporate additional grading. The toe of the landslide will be partially buttressed and the foot of the landslide will be regraded to a more stable slope. This is the preferred remedial approach of the project geotechnical engineers; John Kasunich of Haro, Kasunich and Associates and Wayne Ferree, C.E..

We estimate there may be up to 20 feet of lateral erosion due to continued incision of the lower, primary drainage. The slope of the drainage walls may recline to an overall slope of about 1.5:1 over the next 50 years. This erosion has the potential to impact any roadway located too close to the primary drainage.

Future slope failures should be expected to occur with the landslide foot. These failure have a high potential to impact the proposed final roadway alignment. However, the proposed regrading of the landslide foot to a flatter slope will reduce the occurrence. Previous failures within the foot were up to about 100 yds^3 is size. The total volume of debris incorporated within the landslide foot is about 25,000 yds^3

Additional slope failures should also be expected. The main landslide scarp is vary steep and actively failing. Failure of the scarp will continue until it reaches a stable configuration. The upper landslide mass may also remobilize. The remobilized mass may move rapidly down slope in the form of a debris flow. Significant enlargement of the original failure, especially to the north-northwest, should be expected.

The site is located in an area of high seismic activity and will be subject to strong seismic shaking in the future. Modified Mercalli Intensities of up to X are possible. The controlling seismogenic source for the subject property is the San Andreas fault, 1.5 kilometers to the northeast. The design earthquake on this fault should be M_w 7.9. Expected duration of strong shaking for this event is about 31 seconds. Deterministic analysis for the site yields a mean peak ground acceleration of 0.87g.

RECOMMENDATIONS

1. The outboard edge of the final alignment should be setback from the lower, primary drainage. This setback should incorporate 20 feet of lateral erosion from the current drainage thalweg. From this point a 1.5:1 slope should be projected to the ground surface above the primary drainage. No portion of the proposed new roadway alignment should derive support from beyond the intersection of the 1.5:1 slope with the ground surface.

2. The slope inboard of the proposed new alignment should be regraded to a gradient no steeper than 4:1. The resulting slope should be relatively planar and smooth. It should be seeded with native grass. This will reduce the volume of concentrated surface drainage flowing over the slope. However, during the summer months there will be significant drying and cracking of the regraded clayey landslide deposits. These cracks will provide numerous conduits for surface water infiltration during the winter.

   Any subsurface water encountered during grading should be permanently drained. All wet zones should be "chased" and finger drains placed and tied to the main storm water sewer system. A V-ditch, or other similar structure, should be placed on the upper portion of the regraded landslide foot to intercept any surface water flowing down slope.

   Continued failure of the landslide foot should be expected subsequent to the proposed regrading. A four feet high "slough wall" should be constructed along the inboard edge of the new alignment. The wall will facilitate removal of debris subsequent to future failures. A fund to cover grading costs associated with removing a minimum of 1,000 yds^3 of new landslide debris should be established.

3. The siltation pond located at the southern terminus of the landslide foot is currently full and should be improved and maintained. The current proposal calls for enlarging the pond by 10 times its original size. Final development plans for the siltation pond must be reviewed and approved by us. Once constructed the pond must be monitored during or immediately after winter rains.

4. We must review and have the opportunity for comment on all geotechnical engineering, civil engineering and drainage reports and plans prior to any and all construction.

5. Rogers E. Johnson and Associates must inspect all final grading. We should be notified at least four days prior to their completion. If any unexpected variations in soil conditions or if any undesirable conditions are encountered, we may have to provide supplemental recommendations.

INVESTIGATION LIMITATIONS

1. The conclusions and recommendations contained herein are based on probability and in no way imply that the proposed remediation will not possibly be subjected to ground failure, seismic shaking or landsliding of such a magnitude that it overwhelms the proposed mitigations. The report does suggest that using the site for residential access in compliance with the recommendations contained herein is an acceptable risk.

2. This report is issued with the understanding that it is the duty and responsibility of the owner or his representative or agent to ensure that the recommendations contained in this report are brought to the attention of the engineers for the project, incorporated into the

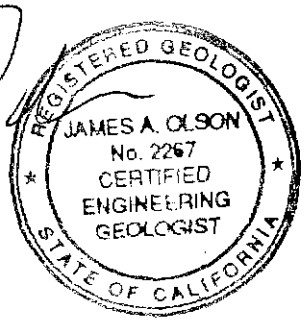
plans and specifications, and that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. If any unexpected variations in soil conditions or if any undesirable conditions are encountered during construction, Rogers E. Johnson and Associates should be notified so that supplemental recommendations may be given.

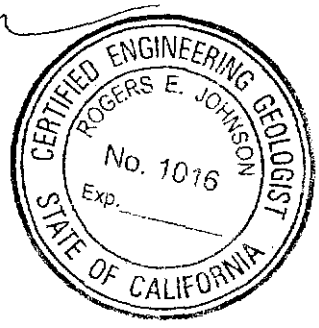
Please contact us if you have any questions regarding this report.

Sincerely,
ROGERS E. JOHNSON & ASSOCIATES

James A. Olson
Project Geologist
C.E.G. No. 2267



Rogers E. Johnson
Principal Geologist
C.E.G. No. 1016



JAO/REJ/jao

Copies: Addressee (4)
Haro, Kasunich and Associates (1)

Enclosures: References
APPENDIX A: Figures 1 through 4
APPENDIX B: Log of Exploratory Borings (Haro, Kasunich and Associates)

Attachments: Plates 1 and 2

GEOTECHNICAL INVESTIGATION
For
Old Smith Road Landslide Repair
APN 109-112-05 & 16
Santa Cruz County, California

Prepared For
ED MARGO
Watsonville, California

Prepared By
HARO, KASUNICH AND ASSOCIATES, INC.
Geotechnical & Coastal Engineers
Project No. SC9107
October 2007

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our investigation, the proposed project will be subject to "moderate risk", as defined in the "Scale of Acceptable Risks From Geologic Hazards" in Appendix C of this report provided the design criteria and recommendations presented in this report are incorporated into the design and construction of the proposed project and maintained for the life of the development. The risks associated with the proposed project consist of:

- Shallow soil slumping onto the new road alignment from cut slopes into the landslide mass with gradients of 4:1 or steeper occurring during severe winter rains and/or severe ground shaking. Up to 1000 cubic yards is anticipated possibly making the road temporarily impassible to traffic. The slump material can be easily cleared and a contingency plan, selected contractor, equipment and monies have been made available.
- Primary landslide reactivation or movement during severe ground shaking causing the Hilfiker Buttresses to distort and move laterally, possibly making the road temporarily impassible for vehicular traffic. We anticipate this occurring only under fully saturated soil conditions plus severe ground shaking. It is our opinion, this risk is much less likely than the first, due to the surface and

subsurface drainage improvements proposed for the Phase 2 road reconstruction plan.

If this level of risk is unacceptable, more extensive mitigation of the hazards can be determined.

Our slope stability analysis indicates the proposed Hilfiker buttressed, Phase 2 reconstructed road alignment slope (with 4:1 inboard cut slopes) is statically more stable than the preslide road condition was during saturated, in-situ soil conditions (compare Figure 1, slope stability cross section, to Figures 13 and 14, slope stability cross sections, Appendix B). That is the in-situ, parent slope materials which failed under static saturated slope conditions in December 2005 and covered the old roadway will not fail under static, saturated conditions with the proposed Hilfiker Buttress installed, and dislodge or cover the new road alignment. This is not to say that the existing slide material, cut back to slope gradients of 4:1 or steeper,, above the proposed Hilfiker buttressed road alignment, won't slump when saturated and inundate the new road surface (See Figure 10, slope stability cross section, Appendix B); but this is more likely to occur only during earthquake shaking (See Figure 9, slope stability cross section Appendix A). This is why a contingency plan with selected contractor, equipment and monies have been made available should a portion or all of the 1000

cubic yards left in place slide material erode onto the new road alignment during heavy rains or earthquake shaking.

Primary geotechnical considerations at the site include slide debris cut slope instability during saturated conditions, reactivation or movement of the primary landslide mass during strong seismic shaking, adequate bearing support of the Hilfiker MSE buttress, site drainage and erosion control.

The new alignment of the road should be supported by a Hilfiker MSE situated at the toe of the primary landslide mass. The Hilfiker MSE should be designed to buttress the primary landslide mass and mitigate future reactivation or movement. To accommodate the new alignment, the upper secondary drainage swale will need to be filled with a subdrain to intercept subsurface water. The Hilfiker MSE base and swale subdrain should be placed below the estimated recession line, discussed previously. Cut slopes into landslide mass should be inclined no steeper than 4:1 (H:V) and cut slopes into undisturbed native soil should be cut no steeper than 2.5:1 (H:V) except at transition zones where steeper in-place slope gradients exist.

The following recommendations should be used as guidelines for preparing project plans and specifications:

Site Grading

1. The geotechnical engineer should be notified at least four (4) working days prior to any site clearing or grading so that the work in the field can be coordinated with the grading contractor and arrangements for testing and observation can be made. The recommendations of this report are based on the assumption that the geotechnical engineer will perform the required testing and observation during grading and construction. It is the owner's responsibility to make the necessary arrangements for these required services.

2. Where referenced in this report, Percent Relative Compaction and Optimum Moisture Content shall be based on ASTM Test Designation D1557 current.

3. Areas to be graded should be cleared of all obstructions including loose fill, building foundations, trees not designated to remain, or other unsuitable material. Existing depressions or voids created during site clearing should be backfilled with engineered fill.

4. Cleared areas should then be stripped of organic-laden topsoil. Stripping depth should be from 2 to 4 inches. Actual depth of stripping should be determined in the field by the geotechnical engineer. Strippings should be wasted off-site or stockpiled for use in landscaped areas if desired.

5. Areas to receive engineered fill should be scarified to a depth of 6 inches, moisture conditioned, and compacted to at least 90 percent relative compaction. Portions of the site may need to be moisture conditioned to achieve suitable moisture content for compaction. These areas may then be brought to design grade with engineered fill.

6. Engineered fill should be placed in thin lifts not exceeding 10 inches in loose thickness, moisture conditioned, and compacted to at least 90 percent relative compaction.

7. If grading is performed during or shortly after the rainy season, the grading contractor may encounter compaction difficulty, such as pumping or bringing free water to the surface, in the upper surface clayey and silty sands. If compaction cannot be achieved after adjusting the soil moisture content, it may be necessary to over-excavate the subgrade soil and replace it with angular crushed rock or Hilfiker MSE to stabilize the subgrade. We estimate that the depth of over-excavation would be approximately 24 inches under these adverse conditions.

8. Engineered fills should be retained with a retaining wall and/or MSE wall. Engineered fill should be inclined no steeper than 3:1 (H:V).

ATTACHMENT

9. The on-site soils generally appear suitable for use as engineered fill. Materials used for engineered fill should be free of organic material, and contain no rocks or clods greater than 6 inches in diameter, with no more than 15 percent larger than 4 inches.

10. We estimate shrinkage factors of about 20 percent for the on-site materials when used in engineered fills.

11. Permanent cut slopes within the landslide mass should be inclined no steeper than 4:1 (horizontal to vertical) except at transition zones to inplace slopes. Cut slopes within undisturbed native material should be inclined no steeper than 2.5:1 (horizontal to vertical).

12. In order to minimize slumping of finished cuts into the landslide mass, it is important that seepage forces and accompanying hydrostatic pressure be relieved by subsurface drains. The placement of subsurface drains in areas where seepage is uncovered during grading should be provided. The locations of subdrains and outlets will be determined by the geotechnical engineer and grading contractor in the field during grading.

13. Following grading, all exposed slopes should be planted as soon as possible with erosion-resistant fabric and vegetation.

14. After the earthwork operations have been completed and the geotechnical engineer has finished his observation of the work, no further earthwork operations shall be performed except with the approval of and under the observation of the geotechnical engineer.

Retaining Structures Lateral Pressures

15. Retaining structures should be designed to resist both lateral earth pressures and any additional surcharge loads. For design of retaining walls up to 15 feet high, the following design criteria may be used:

A. An unrestrained active earth pressure equivalent fluid weighing of 40 pcf for a level backslope, 50 pcf for a 4:1 backslope, 60 pcf for a 3:1 backslope and 70 pcf for a 2:1 backslope may be used. **This assumes a partially drained condition**.

B. A coefficient of friction of 0.5 may be used between the foundation of the Hilfiker wall and supporting soil.

C. In addition, the walls should be designed for any adjacent live or dead loads which will exert a force on the wall (traffic loads).

16. For seismic design of critical retaining walls, a dynamic surcharge load equal to 10H psf per foot of wall, where H is the height of the wall, should be added to the above active lateral earth pressures.

17. Fully drained walls and in filled swales should be backfilled with drainage materials consisting of Class 1, Type A permeable material complying with Section 68-1.025 of Caltrans Standard Specifications, latest edition or an approved equivalent.

18. The drainage material should be at least 12 inches thick. The drains should extend from the base of the walls or swale to within 12 inches of the top of the backfill. A perforated, rigid pipe should be placed (holes down) about 4 inches above the bottom of the wall and be tied to a suitable drain outlet. Wall backdrains and swale subdrains should be capped at the surface with clayey material to prevent infiltration of surface runoff into the backdrains. A layer of filter fabric (Mirafi 140N or equivalent) should separate the subdrain material from the overlying soil cap.

Site Drainage & Erosion Control

19. Thorough control of runoff is essential to the performance of the project. Surface runoff should **not** be allowed to flow onto and over uncovered bare slopes.

26. Erosion control mats should protect at least 80 linear feet of the cutslopes above the roadways and be applied according to the manufactures specifications.

Plan Review, Construction Observations, and Testing

27. Our firm should be provided the opportunity for a general review of the final project plans prior to construction so that our geotechnical recommendations may be properly interpreted and implemented. If our firm is not accorded the opportunity of making the recommended review, we can assume no responsibility for misinterpretation of our recommendations. We recommend that our office review the project plans prior to submittal to public agencies, to expedite project review. The recommendations presented in this report require our review of final plans and specifications prior to construction and upon our observation and, where necessary, testing of the earthwork and foundation excavations. Observation of grading and foundation excavations allows anticipated soil conditions to be correlated to those actually encountered in the field during construction.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that planned at the time, our firm should be notified so that supplemental recommendations can be given.

2. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans, and that the necessary steps are taken to ensure that the Contractors and Subcontractors carry out such recommendations in the field. The conclusions and recommendations contained herein are professional opinions derived in accordance with current standards of professional practice. No other warranty expressed or implied is made.

3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or partially, by changes outside our control. Therefore, this report should not be relied upon after a period of three years without being reviewed by a geotechnical engineer.

HARO, KASUNICH AND ASSOCIATES, INC.

CONSULTING GEOTECHNICAL & COASTAL ENGINEERS

Project No. SC9716
9 October 2008

MR. ED MARGO
821 Old Smith Road
Watsonville, California 95076

Subject: Addendum To Limited Geotechnical Investigation
Report Dated 15 October 2007

Reference: Margo Driveway Rehabilitation/Reconstruction
821 Old Smith Road
APN 109-112-05 and 16
Santa Cruz County

We are presenting the geotechnical data and final results of our field work and analysis of the existing landslide and driveway configuration. The purpose of this addendum report is to provide final supplemental data, geotechnical evaluation and analysis; final discussion and recommendations for the current configuration of Mr. Margo's newly constructed driveway.

In addition, this report responds to; 1) the questions and concerns raised in the 6 November 2007 Santa Cruz County review letter regarding the work completed to date at the reference site; 2)the results of Rogers E. Johnson and Associate's (REJA's) 24 September 2007 Geology Report; 3) the results of our 15 October 2007 Limited Geotechnical Investigation of the Margo Driveway Landslide and 4) the results of a County staff meeting with Joe Hanna and Kent Edler of the County Of Santa Cruz Planning Department, Greg Easton of Rogers E. Johnson and Associates, Deidre Hamilton of Hamilton Swift Land Use and Planning, John Kasunich and Bill St. Clair of Haro, Kasunich and Associates (HKA) held on 17 September 2008 to discuss the results of our Summary Status Report dated 8 August 2008 and REJA's Evaluation of Landslide DRAFT report dated 12 August 2008.

Scope Of Work

The following tasks have been completed by our firm and REJA:

1. The as-built topographic map prepared by Silicon Valley Land Surveyors (SVLS) dated 8 July 2008. This as-built topographic map is used as the basis for REJA's Site Geologic Map plate 1;

2. REJA's in-depth evaluation of the mechanics and geometry of the landslide utilizing oriented, continuous core samples at selected sites on the slide and below the slide;

Discussions, Conclusions and Recommendations

Based on the good correlation of the laboratory soil strength measurements to the back calculated soil strength values and the results of the slope stability analysis, it is our strong professional opinion that the existing landslide mass as a whole, will not reactivate to a degree that will impact the existing reconfigured driveway, even during strong seismic shaking (k=0.47).

A very stable reconfigured driveway alignment has been established based on results of the slope stability analysis and long term erosion evaluation of the lower thalweg, future draining of the slide mass with subsurface hydro augers, maintaining current surface drainage provisions on and below the slide mass; and implementing the proposed realignment of the 18 inch diameter culvert to discharge past the nick point of the adjacent ephemeral stream Some shallow surface slumping is possible, as is with any slope, based on the past performance of the Phase 1 cut banks. The shallow slumping would be limited to the inboard side of the road and vehicular traffic may have to drive around it, but it would not close the driveway and would be easily removed with small equipment in less than one day.

If the drainage provisions are not properly maintained and/or repaired, the result will be slide debris flowing onto the road and possibly obstructing and even temporarily closing the road to vehicular traffic. In this non maintained scenario, a greater accumulation of slide debris material is possible to slump onto and across the road. This would require larger equipment and a greater period of time to clear.

In addition, the new 18 inch diameter culvert extension will also need to be inspected and maintained to ensure its working condition. If this culvert becomes plugged at the downstream outlet or upstream inlet such that storm water overflows over the road and into the secondary tributary drainage, the potential for road failure to occur for the northern 100 liner feet Hilfiker MSE due to erosion and incising at the toe of the lower thalweg is increased.

Based on the calculated Newmark displacements of 1.5 to 5 feet for landslide remobilization and secondary debris flow sliding potential, it is our professional opinion there will be no appreciable accumulation of slide debris falling onto the driveway. While the project does not meet the County's 1.2 seismic factor of safety criteria, the projected reactivated landslide displacement of 5 feet is small relative to the large seismic coefficient used (k=0.47), and will occur at least 15 to 45 feet above the existing driveway alignment. This is an appropriate setback from a potential geologic hazard.

Based on the improvements performed to the driveway to date and results of our engineering analysis, we recommend the following additional work be completed in order to increase the long term stability of the driveway and reduce the amount of road clearing for the restored section of the Margo driveway:

1. We do not believe the addition of hydro augers is necessary because the projected landslide displacements of 5 feet require a 15 foot rise in water levels from those measured during the past two winters. This will not occur due to the surface and subsurface drainage improvements implemented along and above the realigned driveway to date and the abandonment of the leaking (overflowing) water tank. Nevertheless, because the present water levels were measured in below average rainfall seasons, we suggest a series of 12 hydro augers be installed at the base of the slide plane, above the Hilfiker wall. This will allow potential future subsurface water another conduit to drain out of the slope. This will maintain a partial drained condition as currently measured in the field. The layout should be discussed with the design team and contractor to develop an effective application program.

2. The 18 inch culvert located beyond the driveway repair project drains a considerable watershed. The culvert appears to have been installed at the time the two properties were developed and the access driveways to each home constructed. To reduce the rate of ephemeral stream incision paralleling the northern 100 linear feet of reconstructed driveway, we recommend the homeowners redirect and extend the existing 18 inch diameter culvert to the sediment basin built below the Hilfiker retained driveway; where it will then discharge into the more stable southern ephemeral stream bed past the nick point as recommended by REJA. This will counteract the closer realignment of the driveway to the northern segment of the ephemeral stream. As previous discussed above, the culvert inlet and outlet will need to be inspected and maintained.

3. Maintenance of existing and proposed drainage provisions is the key to long term performance and stability of this site. Existing and proposed surface drainage improvements, including, but not limited to, catch basins, culverts, v-ditches, drain inlets, sediment and retention facilities, should be inspected and if needed repaired and cleared of any material and sediment that would obstruct their function to flow to the existing suitable collection facilities. Inspection and maintenance should be performed prior to the winter rains and again after each significant rain fall. The proposed hydro augers may require maintenance and possibly replacement if a large earthquake distorts them, terminating their drainage function.

4. Based on the working meeting held on 17 September 2008, the County expressed concern for installing these hydro augers prior to upcoming winter rains. We are hesitant to do any more work on the project without formal written authorization from the Planning Department.

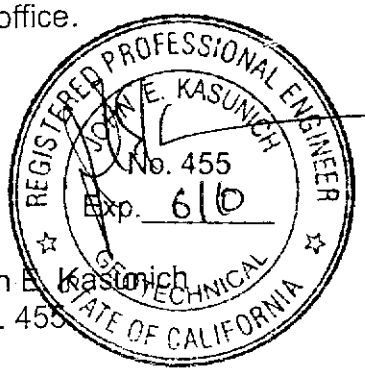
The Planning Department has asked for an alternative analysis demonstrating that the reconfigured driveway is the only viable or achievable alternative for maintaining access to the Margo and Miles residences. Two additional alternatives have been considered.

1. Removal and Recompaction of the slide mass with appropriate keyway, benches and drainage. This option is physically feasible; however, it is not economically viable to either the homeowners or their insurance policies, due to the extreme cost ($3 million ±) of grading this massive volume of displaced earth materials. The selected solution has substantially less environmental grading impacts than removal and recompaction of the landslide mass.

2. Constructing a new access road by building two bridges across the ephemeral stream to access the southwest side of the creek, circumventing the landslide mass. This option is physically feasible but not viable because the landslide would not be stabilized and eventually it may encroach into the ephemeral stream disrupting drainage patterns and possibly precipitate more landsliding. In addition there would be permitting issues as the California Department of Fish and Game would also have to permit the bridge construction projects. The economic burden ($3 million ±) relative to the selected solution is not viable to either the homeowners or their insurance policies.

Based on our recent work and the good performance of the existing driveway construction project last winter (2007/2008), it is our opinion the current configuration of the driveway and excavated upslope landslide mass will perform well enough to service the Margo and Miles residences, with normal homeowner maintenance, in the coming winter rains of 2008/2009.

If you have any questions concerning our conclusions and recommendations, as well as the results of the investigation on which they are based, please contact our office.



Very truly yours,

HARO, KASUNICH AND ASSOCIATES, INC.

John E. Kasunich
G.E. 455

William E. Clair
Staff Engineer

BSC/dk

Attachments

Copies: 1 to Addressee
3 to Deidre Hamilton
1 to Rogers E. Johnson and Associates

COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
TOM BURNS, PLANNING DIRECTOR

November 21, 2008

Mr. Ed Margo
821 Old Smith Road
Watsonville, CA 95076

And,

Hamilton Swift Land Use and Development Consultants
500 Chestnut Street Suite 100
Santa Cruz, CA 95060

Subject: **Review of Evaluation of Landslide by Rogers E. Johnson and Associates; Dated October 9, 2008 Project Number. G06040-51;**
And Addendum to Limited Geotechnical Investigation by Haro, Kasunich and Associates;
Dated October 9, 2008 Project Number SC9716

APN: 109-112-05,06, Application No's: 07-0634

Reference: **Construction Monitoring and Testing Services, Haro, Kasunich and Associates, dated November 9, 2006; Project Number SC9107**

Evaluation of Landslide Damaged Roadway, Rogers E. Johnson and Associates, Dated September 24, 2007; Project Number G06040-51

Geotechnical Investigation, Haro, Kasunich and Associates
Dated October 15, 2007; Project Number SC9107

County Review Letter of Development Permit Application 07-0634
Dated November 6, 2007

Response to County of Santa Cruz Planning Department Comments dated 11 October 2007, Haro, Kasunich and Associates,
Dated November 13, 2007

Evaluation of Slope Stability, W. Ferree and Associates,
Dated December 31, 2007

Hamilton Swift Land Use Consultants01/14/2008 Transmittal of HKA and RJA Proposals

Phase 1 – Storm Damage Assessment and Repair, Haro, Kasunich and Associates, dated March 28, 2008; Project Number SC9107

Administration of Access Driveway Reconstruction, Status of Geologic and Geotechnical Investigation, Timeline for Submittal of Geologic and Geotechnical Reports, Haro, Kasunich and Associates, dated July 5, 2008; Project Number SC9107

Summary Status Report, Haro, Kasunich and Associates, dated August 8, 2008; Project Number SC9716

Request for Extension of Existing Emergency Permit or Application for Additional Emergency Permit to Allow Construction of Phase II Driveway Stability Improvements Prior to Winter Rains of 2007, Haro, Kasunich and Associates, dated September 12, 2008; Project Number SC9107

Dear Applicant:

The purpose of this letter is to inform you that the Planning Department has accepted the subject reports and the following items shall be required:

1. All construction shall comply with the recommendations of the reports.

2. Influence of the incision of the channel on the Project:

   The reports indicate that continuing incision could jeopardize the entire section of rebuilt roadway. The project civil engineer/geotechnical engineer must elaborate on mitigations required to reduce the incision of the channel and show the mitigations on the plans.The engineering geologist must review and approve these mitigations. This information must be provided before the project can be deemed complete.

3. Newmark Analysis:

   The Newmark Analysis provides results that are more indicative of trends or orders of magnitude of displacement rather than actual discrete amounts of deformation. The report treats these as discrete amounts of movements rather than a more general indicator of movement. The geotechnical engineer must elaborate and support their use of use of displacement as discrete values, prior to the Planning Department's preparation of the Initial Study per the requirements of the California Environmental Quality Act (CEQA).

4. Maintenance Agreement:

   The property owners must sign and record a road maintenance agreement. The agreement must be based upon the engineer's recommendations for maintenance of the drainage facilities and must include a statement that all debris shall be removed from the roadway within 30 days.

5. Hydro Augers:

   The engineer and engineering geologist must provide a plan for the installation of the Hydro augers. This plan must be implemented as soon as practical and before the winter of 2009/2010.

6. Final plans shall reference the reports and include a statement that the project shall conform to the reports' recommendations. Plans shall also provide a thorough and realistic representation of all grading necessary to complete this project

7. Prior to building permit issuance *plan review letters* shall be submitted to Environmental Planning. The authors of the reports shall write the *plan review letters.* The letters shall state that the project plans conform to the report's recommendations.

8. Prior to final approval, an electronic copy (PDF file) of the reports' files must be submitted to Environmental Planning. It can also be emailed to pln829@co.santa-cruz.ca.us. Please note that the electronic file must include the consultants' signature.

9. A declaration of Geologic Hazards must be recorded with the County of Santa Cruz Recorders Office before the issuance of the grading permit. This declaration will be prepared by the County Geologist after the completion of the CEQA review by the Planning Deartment.

After building permit issuance the soils engineer and engineering geologist *must remain involved with the project* during construction. Please review the *Notice to Permits Holders* (attached).

Our acceptance of the report is limited to its technical content of the reports. Other project issues such as zoning, fire safety, septic or sewer approval, etc. may require resolution by other agencies. Please see the County Review letter dated November 6, 2007 for some additional comments that must be completed before the issuance of the grading and/or building permit. The next step in the process will be preparation of the Initial Study per the requirements of CEQA, once the project is deemed complete.

Please call the undersigned at 454-(3175) if we can be of any further assistance.

Sincerely,

Joe Hanna
County Geologist CEG 1313

Kent Edler
Senior Civil Engineer

Cc: Haro, Kasunich and Associates
Rogers E. Johnson and Associates

ATTACHMENT 6

NOTICE TO PERMIT HOLDERS WHEN A SOILS ENGINEERING AND ENGINEERING GEOLOGIST REPORTS HAVE BEEN PREPARED, REVIEWED AND ACCEPTED FOR THE PROJECT

After issuance of the building permit, the County requires your soils engineer and engineering geologist be involved during construction. Several letters or reports are required to be submitted to the County at various times during construction. They are as follows:

1. **When a project has engineered fills and / or grading**, a letter from your soils engineer must be submitted to the Environmental Planning section of the Planning Department prior to foundations being excavated. This letter must state that the grading has been completed in conformance with the recommendations of the soils report. Compaction reports or a summary thereof must be submitted.

2. **Prior to placing concrete for foundations**, a letter from the soils engineer and engineering geologist must be submitted to the building inspector and to Environmental Planning stating that they have observed the foundation excavation and that the excavations meets the recommendations of the reports.

3. **At the completion of construction,** *final letters* from your soils engineer and engineering geologist must be submitted to Environmental Planning that summarizes the observations and the tests the consultants have made during construction. The final letters must also state the following: "Based upon our observations and tests, the project has been completed in conformance with our geotechnical recommendations."

   If the *final letters identify* any items of work remaining to be completed or that any portions of the project were not observed by the soils engineer and the engineering geologist, you will be required to complete the remaining items of work and may be required to perform destructive testing in order for your permit to obtain a final inspection.

ROGERS E. JOHNSON & ASSOCIATES
CONSULTING ENGINEERING GEOLOGISTS
41 Hangar Way, Suite B
Watsonville, California 95076-2458
e-mail: rogersjohnson@sbcglobal.net
Ofc (831) 728-7200 ● Fax (831) 728-7218

17 June 2009

Mr. Ed Margo
821 Old Smith Road
Watsonville, CA 95076

Job No. G06040-51

Subject: Response to Santa Cruz County Planning Department Review of 21 November 2008, Regarding Stream Incision

Dear Mr. Margo:

As we have discussed in our previous reports addressing the "Margo landslide and access road" (REJA, 2007; 2008), incision of the drainage located adjacent to the realigned access road has important ramifications for two chief reasons: 1) deeper incision could adversely affect the overall stability of the main dip-slope landslide and 2) the stability of the access road can be compromised as smaller, more localized slides occur on the southern slope of the drainage.

We note in our latest geologic report (REJA, 2008) that the long-term rate of stream incision has not been determined, chiefly because we have not had a sufficient time interval to monitor changes in the stream profile. We do know that the incision began prior to1931, the date of the earliest aerial photographic coverage of the area.

In our 2008 report we suggest a maximum amount of stream incision over a 100 year period of about 10 feet, within the stretch of steam channel located below the main landslide. This estimate was based chiefly on the fact that the lower segment of the relevant portion of the steam bed profile is a planar feature with a gradient of about 2 percent while the upper segment was highly irregular. We assumed the lower planar segment would not incise any deeper while the upper segment would "smooth out" after achieving a planar gradient of 2 percent. A projection of the lower 2 percent gradient onto the upper gradient showed a maximum of ten feet of additional vertical incision.

A more conservative approach involves looking at the total amount of incision that has occurred within the stream channel in the affected area and then projecting that rate into the future. Using this methodology, we came up with the following scenario:

The total amount of vertical incision of the streambed below the main landslide mass varies from about 22 feet at the lower end to 35 feet at the upper end of the channel. Assuming that the incision is associated with changes in runoff patterns related to agricultural practices that were initiated about 100 years ago, the rate of stream incision ranges between 2.2 and 3.5 feet every 10 years. Projection of this rate for the next 50 years would yield between 11 and 17.5 feet of additional incision of the stream channel. This assessment is admittedly conservative as the rate of

incision is probably non-linear and is ameliorating over time. Therefore, the lower computed rate of 11 feet in 100 years is probably a more realistic value.

Haro, Kasunich and Associates geotechnical report (2008) suggests that the angle of repose of the stream side slopes is about 1.5 to 1. Applying this criteria to additional incision of 17.5 feet shows that a 50 to 100 foot long stretch of the eastern portion of the realigned access road would be compromised within 50 years. If, conversely, we apply the 11 foot figure, the roadway would not be compromised in 50 years assuming HKA's analysis and assumptions regarding a stable angle of repose are valid.

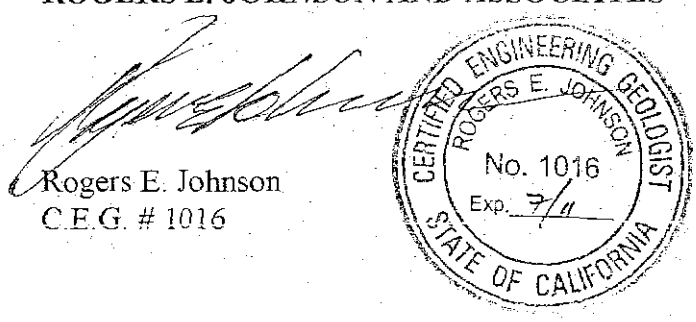
If the more conservative and less likely scenario of 17.5 feet of incision does occur, access along this stretch of roadway could be maintained by grading into the slope above the road and retaining the cut with an engineered retaining wall.

We reiterate that the rate of stream incision should be monitored on a yearly basis to determine what the actual rates of incision are and to determine if and when moving the road alignment will be necessary. We understand that the County Planning Department will require a maintenance agreement for the repaired section of access road. Part of this agreement should include monitoring of stream incision on the stretch of channel located below the realigned road. This agreement should explicitly delineate who is responsible for monitoring stream incision.

Please contact us if you have questions regarding this response.

Sincerely,

ROGERS E. JOHNSON AND ASSOCIATES



Rogers E. Johnson
C.E.G. # 1016

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25 November 2009

Mr. Ed Margo
821 Old Smith Road
Watsonville, CA 95076

Job No. G06040-51

Subject: Review of Phase II Proposed Landslide Stabilization Plans
Old Smith Road, Santa Cruz County, California
Santa Cruz County APNs 109-112-05 and 16

Dear Mr. Margo:

We have reviewed the Phase II Proposed Landslide Stabilization Plans for the subject site, prepared by Haro, Kasunich and Associates, revised September 2009. The intention of the proposed plans is to improve the stability of the driveway. Driveway access was re-established during Phase I of the landslide repair and completed in November 2006. The repairs were necessary due to the occurrence of a large dip-slope landslide in 2005 that destroyed a portion of the access road.

The plans propose that grading for the project will increase the stability of the toe of the slidemass. Spoils from the slidemass grading will be used as engineered fill for the Hilfiker retaining wall along the access road. Excess fill will be stockpiled at a prepared area outside the landslide area.

Runoff from the slidemass and repaired driveway will be collected by sediment basins, earthen v-ditches and catch basins which will ultimately discharge the runoff into a temporary retention facility which will be maintained in good working order. Drainage from the Hilfiker wall will also flow to the retention facility, located within an established drainage swale.

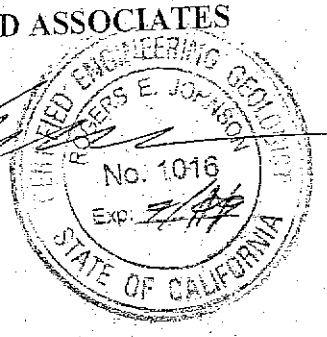
It is important to reiterate the need for diligent monitoring of the entire stretch of drainage below the landslide mass, especially the upper segment that has an irregular thalweg, and the discharge area below the retention facility. Our firm recently set and surveyed several monuments in the streambed so that it may be monitored over the coming years for rates of incision.

It is our opinion that the proposed improvements, if properly constructed, are geologically feasible. Regular inspection and monitoring of the completed improvements should be performed to ensure they are functioning properly. Any necessary modifications to the improvements should first be reviewed by our firm.

Please contact us if you have questions. Thank you for your patronage.

Sincerely,

ROGERS E. JOHNSON AND ASSOCIATES



Rogers E. Johnson
C.E.G. # 1016

Copies: addressee (1)
Haro, Kasunich and Associates; attn: Bill St. Clair (4)
Hamilton, Swift Land Use Planning; attn: Deidre Hamilton (1)

Reference:

Haro, Kasunich and Associates, 2009, Old Smith Road Landslide Stabilization, APN 109-112-16 and 05, Santa Cruz County, California, Job No: SC9107, 5 sheets, dated September 2009, revised September 2009.

ROGERS E. JOHNSON & ASSOCIATES
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Ofc (831) 728-7200 • Fax (831) 728-7218

27 November 2009

Mr. Ed Margo
821 Old Smith Road
Watsonville, CA 95076

Job No. G06040-51

Subject: Review of Phase II As-Built Plans
Old Smith Road Landslide Stabilization
Old Smith Road, Santa Cruz County, California
Santa Cruz County APNs 109-112-05 and 16

Dear Mr. Margo:

We have reviewed the Phase II As-Built Plans for the Old Smith Road Landslide Stabilization project prepared by Haro, Kasunich and Associates, September 2009. The as-built plans show the actual locations of the proposed improvements, as they were constructed and completed in November 2007. The driveway access was destroyed by a large dip-slope landslide in 2005, necessitating the restoration of a portion of Old Smith Road.

Grading for the project has generally been completed to plan.

Runoff from the slide area and repaired driveway is collected by sediment basins, earthen v-ditches and catch basins which discharge the runoff into a temporary retention facility. Drainage from the Hilfiker wall also flows to the retention facility, located within an established drainage swale.

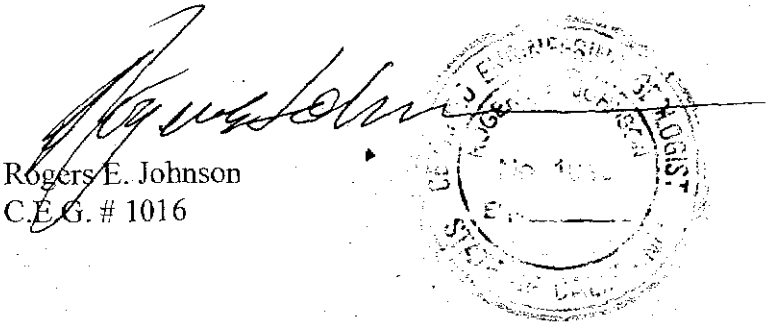
As you are aware, our firm did not perform any construction observation of the improvements: all of this work was done by the project geotechnical engineers, Haro, Kasunich and Associates. It is our opinion, based primarily on the slope stability analysis performed by Haro, Kasunich and Associates, that the completed as-built improvements, if properly constructed, are geologically acceptable. Regular inspection and monitoring of the constructed improvements should be performed to ensure they are functioning properly. Any necessary modifications to the improvements should first be reviewed by our firm.

It is important to reiterate the need for diligent monitoring of the entire stretch of drainage below the landslide mass, especially the upper segment that has an irregular thalweg, and the discharge area below the retention facility. Our firm recently set and surveyed several monuments in the streambed so that it may be monitored over the coming years for rates of incision.

Please contact us if you have questions. Thank you for your patronage.

Sincerely,

ROGERS E. JOHNSON AND ASSOCIATES



Rogers E. Johnson
C.E.G. # 1016

Copies: addressee (1)
Haro, Kasunich and Associates; attn: Bill St. Clair (4)
Hamilton, Swift Land Use Planning; attn: Deidre Hamilton (1)

Reference:

Haro, Kasunich and Associates, 2009, Old Smith Road Landslide Stabilization, APN 109-112-16 and 05, Santa Cruz County, California, Job No: SC9716, 3 sheets, dated September 2009.

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25 November 2009

Mr. Ed Margo
821 Old Smith Road
Watsonville, CA 95076

Job No. G06040-51

Subject: Review of Phase II Proposed Landslide Stabilization Plans
Old Smith Road, Santa Cruz County, California
Santa Cruz County APNs 109-112-05 and 16

Dear Mr. Margo:

We have reviewed the Phase II Proposed Landslide Stabilization Plans for the subject site, prepared by Haro, Kasunich and Associates, revised September 2009. The intention of the proposed plans is to improve the stability of the driveway. Driveway access was re-established during Phase I of the landslide repair and completed in November 2006. The repairs were necessary due to the occurrence of a large dip-slope landslide in 2005 that destroyed a portion of the access road.

The plans propose that grading for the project will increase the stability of the toe of the slidemass. Spoils from the slidemass grading will be used as engineered fill for the Hilfiker retaining wall along the access road. Excess fill will be stockpiled at a prepared area outside the landslide area.

Runoff from the slidemass and repaired driveway will be collected by sediment basins, earthen v-ditches and catch basins which will ultimately discharge the runoff into a temporary retention facility which will be maintained in good working order. Drainage from the Hilfiker wall will also flow to the retention facility, located within an established drainage swale.

It is important to reiterate the need for diligent monitoring of the entire stretch of drainage below the landslide mass, especially the upper segment that has an irregular thalweg, and the discharge area below the retention facility. Our firm recently set and surveyed several monuments in the streambed so that it may be monitored over the coming years for rates of incision.

It is our opinion that the proposed improvements, if properly constructed, are geologically feasible. Regular inspection and monitoring of the completed improvements should be performed to ensure they are functioning properly. Any necessary modifications to the improvements should first be reviewed by our firm.

Please contact us if you have questions. Thank you for your patronage.

Sincerely,

ROGERS E. JOHNSON AND ASSOCIATES

Rogers E. Johnson
C.E.G. # 1016

CERTIFIED ENGINEERING GEOLOGIST
ROGERS E. JOHNSON
No. 1016
Exp. 7/11
STATE OF CALIFORNIA

Copies: addressee (1)
Haro, Kasunich and Associates; attn: Bill St. Clair (4)
Hamilton, Swift Land Use Planning; attn: Deidre Hamilton (1)

Reference:

Haro, Kasunich and Associates, 2009, Old Smith Road Landslide Stabilization, APN 109-112-16 and 05, Santa Cruz County, California, Job No: SC9107, 5 sheets, dated September 2009, revised September 2009.

ROGERS E. JOHNSON & ASSOCIATES
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15 December 2009

Mr. Ed Margo
821 Old Smith Road
Watsonville, CA 95076

Job No. G06040-51

Subject: Review of Proposed Hydro-auger, Drainage and Driveway Improvement Plans, 3rd Revision
Old Smith Road, Santa Cruz County, California
Santa Cruz County APNs 109-112-05 and 16

Dear Mr. Margo:

We have reviewed the revised Proposed Hydro-auger, Culvert Extension and Driveway Improvement Plan (Sheet 1) and Drainage Details and Sections (Sheet 2) for the subject site, prepared by Haro, Kasunich and Associates, revised December 2009. The intention of the proposed improvements is to improve the stability of the large dip-slope landslide that occurred in 2005, improve drainage from the realigned driveway access and reduce the potential for incision within a tributary drainage which parallels a stretch of the driveway.

The plans call for the installation of 6 Hydro-augers, each between 150 and 200 feet in length. The Hydro-augers will penetrate the slidemass from several locations along its toe. The Hydro-augers are designed in a manner consistent with current practice, and will drain into an established drainage system.

The 12 inch diameter culvert proposed for the upper portion of the driveway in the improvement area is designed to divert the majority of runoff from a 25-year storm to an established, heavily vegetated drainage channel. The remainder of runoff from a 25-year storm will flow into an existing 18 inch diameter culvert and released into a tributary drainage. The proposed culvert improvements and grading along the driveway will reduce the amount of runoff flowing through the incised tributary drainage, lessening the potential for slope instability and erosion.

It is important to reiterate the need for diligent monitoring of the entire stretch of drainage (including the tributary drainage) below the landslide mass, especially the upper segment that has an irregular thalweg, and the discharge area for the proposed new culvert. Our firm recently set and surveyed several monuments in the streambed so that it may be monitored over the coming years for rates of incision.

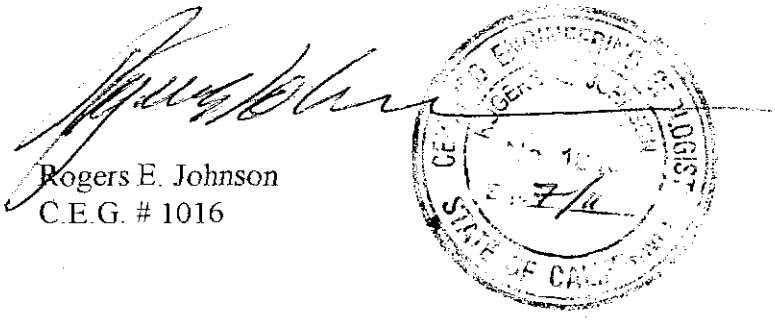
It is our opinion that the proposed improvements, if properly constructed, are geologically feasible. Regular inspection and monitoring of the constructed improvements should be performed

to ensure they are functioning properly. Any necessary modifications to the constructed improvements should first be reviewed by our firm.

Please contact us if you have questions. Thank you for your patronage.

Sincerely,

ROGERS E. JOHNSON AND ASSOCIATES



Rogers E. Johnson
C.E.G. # 1016

Copies: addressee (1)
Haro, Kasunich and Associates; attn: Bill St. Clair (4)
Hamilton, Swift Land Use Planning; attn: Deidre Hamilton (1)

Reference:

Haro, Kasunich and Associates, 2009, Proposed Hydro Auger, Culvert Extension & Driveway Improvement Plan, Old Smith Road, APN 109-112-16 and 05, Santa Cruz County, California 95076, Job No: SC9716, 2 sheets, dated February 2009, December 2009 (3rd revision).

Recorded at the Request of and
When Recorded Mail to:

_____
_____
_____
_____

_____

AGREEMENT FOR PARTIAL RELOCATION
AND MAINTENANCE OF ACCESS EASEMENT

This Agreement is entered into on this __ day of _____, 2010, by and between Helen Beth Hamilton, as Trustee of the Helen Hamilton Revocable Living Trust UDT dated October 11, 1999 ("Hamilton"), Edward J. Margo and Lori Ann Margo, husband and wife as Joint Tenants (collectively, "Margo"), and Natalie Stevenson and Steven A. Miles, wife and husband as Joint Tenants (collectively, "Stevenson-Miles").

RECITALS

A. Hamilton is the owner of that certain parcel of real property situated in the County of Santa Cruz, State of California, and more particularly described in Exhibit A, attached to this Agreement (the "Hamilton Property").

B. Margo is the owner of that certain parcel of real property situated in the County of Santa Cruz, State of California, and more particularly described in Exhibit B, attached to this Agreement (the "Margo Property").

C. Stevenson-Miles is the owner of that certain parcel of real property situated in the County of Santa Cruz, State of California, and more particularly described in Exhibit C, attached to this Agreement (the "Stevenson-Miles Property").

D. Old Smith Road is a private roadway running from Smith Road, a County maintained road, and ending at the Stevenson-Miles Property. In December, 2005, a landslide occurred that cut off a portion of Old Smith Road, preventing access to the Margo Property and the Stevenson-Mills Property from Old Smith Road. The County of Santa Cruz ("County") issued an emergency permit in October, 2006, to construct an access roadway around the toe of the landslide. Additional landsliding occurred during the winter of 2006-2007 and Development Permit Applications for a grading permit (#_____) and a building permit (#_____) for relocating a portion of Old Smith Road (the "Relocated Roadway) and installation of extensive drainage facilities (the "Drainage Facilities") to protect the Relocated Roadway (collectively, the "Permits") were submitted to the County on October 15, 2007. On _____, 2010, the County

approved the Permits with conditions (the "Conditions") that, among other things, set forth the monitoring and maintenance requirements pertaining to the Relocated Roadway and the Drainage Facilities (collectively, "Monitoring and Maintenance").

E. The purpose of this Agreement is to describe the rights and responsibilities of the parties regarding compliance with the Conditions pertaining to Monitoring and Maintenance, and to address certain access easement rights, as described below.

NOW, THEREFORE, the parties agree:

1. **Monitoring and Maintenance.**

Attached as Exhibit D is a summary of the Monitoring and Maintenance requirements in the Conditions; however, Exhibit D is not intended to be all-inclusive of the requirements of the Conditions, and reference should be made to the Conditions for a complete list of the Monitoring and Maintenance Requirements. Margo and Stevenson-Miles agree to perform, at their cost and in equal shares, the Monitoring and Maintenance requirements, which shall be accomplished expeditiously and with due diligence, in accordance with the timing requirements of the Conditions. Hamilton shall have no obligation to perform any of the Monitoring and Maintenance requirements, or to share in the costs of same except to the extent the actions of Hamilton, or her agents, employees, contractors or invitees have caused additional fees and costs to be incurred in repairing or replacing any of the Drainage Facilities or the Relocated Road.

Margo and Stevenson-Miles shall cooperate with each other in meeting the Monitoring and Maintenance requirements. Whenever expenditure is deemed necessary by one party, he/she shall notify the other party, giving the latter a minimum of ten (10) days within which to concur as to the work to be performed, by whom it is to be performed, and the cost of same. Should the party receiving notice fail to agree for any reason, the other party may proceed with the work and may collect from the other party his/her share of the cost of same, so long as the work was necessary, the cost was reasonable and the work was competently performed and in full compliance with the Permits and any applicable federal, State and County statutes and ordinances. In the event either party incurs or commits any such expenditure without written notification to the other party, that party shall have the right to do so provided such expenditure and the work accomplished comply with the Monitoring and Maintenance requirements, but such expenditure shall be at that party's sole cost without any right of reimbursement of what would otherwise be the other party's share, except in the case of an emergency. In the latter event, the party causing the work to be performed will take all reasonable steps to contact the other party, whether by telephone, email or other by means, as well as by giving written notice as provided below.

Notwithstanding the foregoing, Stevenson-Miles and Margo are not restricted by the terms of this Agreement from seeking contributions or reimbursement from third parties who either have road/drainage maintenance obligations or incur same in the future, e.g., through California Civil Code §845.

2. **Grant of Easements.**

a. Old Smith Road Easement. Attached to this Agreement, marked Exhibit E, is a Site Plan showing the location of the portion of the existing Old Smith Road Easement that crosses the Margo Property, and the location of the Relocated Roadway, which also lies entirely on the Margo Property. A legal description of the reconfigured Old Smith Road Easement crossing the Margo Property is marked Exhibit F and attached to this Agreement. Margo hereby grants to Stevenson-Miles an easement for ingress and egress over and along the Relocated Roadway, which area, along with the land between the Relocated Roadway and the Old Smith Road Easement, is added to the Old Smith Road Easement crossing the Margo Property. Otherwise, this Agreement is not intended, nor does it change the easement rights or obligations of the parties or third parties to Old Smith Road.

b. Monitoring and Maintenance Easement. Hamilton grants to Stevenson-Miles and Margo an easement for ingress and egress over the Hamilton Property as is reasonably necessary to monitor and maintain the Drainage Facilities located on the Hamilton Property in accordance with the applicable Conditions of the Permits. The Drainage Facilities are located within the portion of the Hamilton Property shown on the Site Plan marked Exhibit G and attached to this Agreement. A legal description of the portion of the Hamilton Property where the Drainage Facilities are located is marked Exhibit H and attached to this Agreement. Stevenson-Miles and Margo agree to keep the Hamilton Property free of any liens arising out of work performed, materials furnished or obligations incurred by them, and they shall indemnify, hold harmless and defend Hamilton from any claims, liens, attachments, encumbrances and litigation (including attorneys' fees and costs), arising from any work performed or materials furnished by or at the direction of Stevenson-Miles and Margo relating to the Hamilton Property. Stevenson-Miles and Margo shall cause any such lien imposed to be released of record by payment or by posting of a bond within forty-five (45) days of the filing of such lien.

Margo grants to Stevenson-Miles an easement for ingress and egress over the Margo Property as is reasonably necessary to monitor and maintain the Relocated Roadway and the Drainage Facilities located on the Margo Property.

c. Appurtenant Easements. The above-described easements shall be in perpetuity and appurtenant to respective grantee's real property.

3. **Insurance.**

Without limiting the indemnity obligations of the parties set forth in Section 2.b, Margo and Stevenson-Miles agree, at all times from and after the above date, to maintain general liability insurance in an amount not less than $1,000,000, written on an occurrence basis, covering bodily injury, death, and property damage arising out of or relating to the use of any easement granted in this Agreement. All liability insurance required under this Agreement shall name Hamilton or her successor in interest as an

additional insured. This liability insurance also shall provide that it is primary and noncontributing with any insurance that may be carried by any other party, and shall provide further that it covers the contractual indemnity obligation of Margo and Stevenson-Miles under Section 1, above. Margo and Stevenson shall deliver to Hamilton a certificate of insurance, in form reasonably satisfactory to Hamilton, evidencing compliance with the insurance requirements of this Section. Any such certificate(s) of insurance shall provide for not less than 30 days' prior written notice to all of the parties of any cancellation, nonrenewal, or material change in coverage.

4. **Covenant Running With Land.**

All of the performance obligations contained herein are covenants and shall be binding upon and run to the benefit of all persons having or acquiring any right, title or interest therein or any part thereof. These covenants shall further be binding upon and run to the benefit of each successor in interest to the owners of said property pursuant to California Civil Code Section 1468.

5. **Arbitration.**

Arbitration. Any dispute or claim in law or equity arising out of this contract or any resulting transaction shall be decided by neutral binding arbitration in accordance with Part III, Title 9, of the California Code of Civil Procedure (commencing with Section 1280), and not by court action except as provided by California law for judicial review of arbitration proceedings. Judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. The parties shall have the right to discovery in accordance with Code of Civil Procedure Section 1283.05. Whenever possible, the arbitrator shall be a retired Superior or Appellate Court Judge or Justice, or someone of equivalent knowledge and experience. The filing of a judicial action to enable the recording of a notice of pending action, for order of attachment, receivership, injunction, or other provisional remedies, shall not constitute a waiver of the right to arbitrate under this provision.

6. **Attorneys' Fees.**

In the event arbitration is sought or suit is brought to enforce or interpret any part of this Agreement, the prevailing party shall be entitled to recover as an element of his/her costs of suit, and not as damages, a reasonable attorneys' fee to be fixed by the arbitrator or the court. The "prevailing party" shall be the party who is entitled to recover his/her costs of suit, whether or not the suit proceeds to final award or judgment. A party not entitled to recover his/her costs shall not recover attorneys' fees.

7. **Notices.** All notices and other communications under this Agreement shall be in writing, addressed to the parties at the addresses set forth below, and delivered by personal service, or by Federal Express or other overnight delivery service, or by registered or certified mail, postage prepaid, return receipt requested:

Helen Beth Hamilton
507 Hawk Ridge Lane
Watsonville, CA 95076

Edward J. Margo and Lori Ann Margo
821 Old Smith Road
Watsonville, CA 95076

Natalie Stevenson and Steven A. Miles
960 Old Smith Road
Watsonville, CA 95076

Any such notice shall be deemed delivered as follows: (a) if personally delivered, the date of delivery to the address of the person to receive such notice; (b) if sent by Federal Express or other courier service, the date of delivery to the address of the person to receive such notice; (c) if mailed, three (3) calendar days after depositing same in the mail. Any party may change its address for notice by written notice given to the other at least five (5) calendar days before the effective date of such change in the manner provided in this Section.

8. **Captions**. All captions and headings in this Agreement are for the purpose of reference and convenience only and shall not limit or expand the meanings of the provisions of this Agreement.

9. **Merger Clause**. This Agreement contains the sole and entire agreement of the parties regarding the location of, easement rights over and future monitoring and maintenance of the Relocated Roadway and the Drainage Facilities, and correctly sets forth the rights, duties and obligations of each to the other regarding same; any prior agreements, promises, negotiations or representations regarding same that are not expressly set forth in this Agreement are hereby superseded and of no force or effect. This Agreement does not affect any other rights or obligations of the parties to each other.

10. **Jurisdiction**. This Agreement shall be interpreted and enforced pursuant to the laws of the State of California.

11. **Severability**. If any term or provision hereof is illegal or invalid for any reason whatsoever, such illegality or invalidity shall not affect the validity and binding effect of the remainder of this Agreement upon the parties.

12. **Time**. Time is of the essence of this Agreement, and of all performances required under this Agreement.

13. **Exhibits**. Exhibits A, B, C, D, E, F, G and H, attached hereto, are incorporated herein by this reference.

14. **Construction.** The parties mutually acknowledge that each has had a full and fair opportunity to review and comment upon the terms of this Agreement and to obtain the advice of legal counsel. This Agreement shall not be construed against any party by virtue of the fact that such party, its counsel or any other party was responsible for its preparation.

15. **Counterparts Clause**. This Agreement and any subsequent amendments may be executed in any number of counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument.

This Agreement is executed on the day and year first-above written.

HAMILTON:

_____
Helen Beth Hamilton – Trustee

MARGO:

_____
Edward J. Margo

_____
Lori Ann Margo

STEVENSON-MILES:

_____
Natalie Stevenson

_____
Steven A. Miles

STATE OF CALIFORNIA)
)
COUNTY OF SANTA CRUZ)

On _____, 2010, before me, _____, Notary Public, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed this instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Signature of Notary Public

STATE OF CALIFORNIA)
)
COUNTY OF SANTA CRUZ)

On _____, 2010, before me, _____, Notary Public, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed this instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Signature of Notary Public

STATE OF CALIFORNIA)
)
COUNTY OF SANTA CRUZ)

On _____, 2010, before me, _____, Notary Public, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed this instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Signature of Notary Public

CONSENT OF LIENHOLDER

_____ ("Lienholder" and "Beneficiary"), hereby consents to the grant of the foregoing Agreement For Partial Relocation and Maintenance of Access Easement ("Agreement") between Helen Beth Hamilton, as Trustee of the Helen Hamilton Revocable Living Trust UDT dated October 11, 1999 ("Hamilton"), Edward J. Margo and Lori Ann Margo, husband and wife as Joint Tenants (collectively, "Margo"), and Natalie Stevenson and Steven A. Miles, wife and husband as Joint Tenants (collectively, "Stevenson-Miles"), and joins in the execution hereof solely as Lienholder of lien dated _____ and recorded _____ as Instrument No. ____-_____, Official Records of Santa Cruz County, State of California, and hereby agrees that in the event of foreclosure of said Deed of Trust under judicial or non-judicial proceedings, the same shall be sold subject to this Agreement.

Dated: _____

Trustee:

_____

By: _____

Its: _____

Beneficiary:

_____

By: _____

Its: _____

CONSENT OF LIENHOLDER

_____ ("Lienholder" and "Beneficiary"), hereby consents to the grant of the foregoing Agreement For Partial Relocation and Maintenance of Access Easement ("Agreement") between Helen Beth Hamilton, as Trustee of the Helen Hamilton Revocable Living Trust UDT dated October 11, 1999 ("Hamilton"), Edward J. Margo and Lori Ann Margo, husband and wife as Joint Tenants (collectively, "Margo"), and Natalie Stevenson and Steven A. Miles, wife and husband as Joint Tenants (collectively, "Stevenson-Miles"), and joins in the execution hereof solely as Lienholder of lien dated _____ and recorded _____ as Instrument No. ____-_____, Official Records of Santa Cruz County, State of California, and hereby agrees that in the event of foreclosure of said Deed of Trust under judicial or non-judicial proceedings, the same shall be sold subject to this Agreement.

Dated: _____

Trustee:

_____

By: _____

Its: _____

Beneficiary:

_____

By: _____

Its: _____

CONSENT OF LIENHOLDER

_____ ("Lienholder" and "Beneficiary"), hereby consents to the grant of the foregoing Agreement For Partial Relocation and Maintenance of Access Easement ("Agreement") between Helen Beth Hamilton, as Trustee of the Helen Hamilton Revocable Living Trust UDT dated October 11, 1999 ("Hamilton"), Edward J. Margo and Lori Ann Margo, husband and wife as Joint Tenants (collectively, "Margo"), and Natalie Stevenson and Steven A. Miles, wife and husband as Joint Tenants (collectively, "Stevenson-Miles"), and joins in the execution hereof solely as Lienholder of lien dated _____ and recorded _____ as Instrument No. ____-_____, Official Records of Santa Cruz County, State of California, and hereby agrees that in the event of foreclosure of said Deed of Trust under judicial or non-judicial proceedings, the same shall be sold subject to this Agreement.

Dated: _____

Trustee:

_____

By: _____

Its: _____

Beneficiary:

_____

By: _____

Its: _____

ATTACHMENT 1

LEGAL DESCRIPTION

Real property in the unincorporated area of the County of Santa Cruz, State of California, described as follows:

PARCEL ONE:

SITUATE IN RANCHO SALSIPUEDES AND

BEING A PORTION OF THE LANDS OF DAVID ROBIN BERG, ET UX, SAID PORTION BEING MORE PARTICULARLY BOUNDED BY A LINE DESCRIBED AS FOLLOWS:

BEGINNING AT A 1/2 INCH PIPE SET THROUGH THE BUTT OF AN OLD 3 INCH BY 3 INCH STAKE ON THE LINE BETWEEN THE RANCHOS SALSIPUEDES AND CORRALITOS AT THE NORTHWESTERN CORNER OF PARCEL 2 OF THE LANDS CONVEYED BY DOYLE R. THOMPSON, ET UX, TO DAVID ROBIN BERG, ET UX, BY DEED RECORDED JUNE 22, 1954 IN VOLUME 971, PAGE 604, OFFICIAL RECORDS OF SANTA CRUZ COUNTY; THENCE FROM SAID POINT OF BEGINNING SOUTH 5° 55' WEST 868.38 FEET TO A 1/2 INCH PIPE; THENCE SOUTH 30° 3' 20" EAST 478.60 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING SOUTH 30° 35' 20" EAST 1125.29 FEET TO A 1/2 INCH PIPE ON THE NORTHERN BOUNDARY OF THE LANDS CONVEYED BY LAWRENCE L. MOSSBARGER, ET UX, TO CHARLES E. BRAUN, ET UX, BY DEED RECORDED DECEMBER 19, 1960, IN VOLUME 1362, PAGE 196, OFFICIAL RECORDS OF SANTA CRUZ COUNTY; THENCE ALONG SAID LAST MENTIONED BOUNDARY SOUTH 85° 00' EAST 458.66 FEET TO AN 8 INCH SPIKE DESIGNATED STATION "B" IN THE CENTER OF A RIGHT OF WAY FOR AN ACCESS ROAD AND UTILITIES 40 FEET IN WIDTH AT RIGHT ANGLES, AND AT THE SOUTHWEST CORNER OF LANDS CONVEYED TO VICTOR J. BERG, BY DEED RECORDED DECEMBER 20, 1971, IN VOLUME 2157, PAGE 391, OFFICIAL RECORDS OF SANTA CRUZ COUNTY; THENCE ALONG THE WEST BOUNDARY OF LAST MENTIONED LANDS AND THE CENTER OF SAID RIGHT OF WAY; NORTH 18° 11' WEST 31.07 FEET; THENCE NORTH 32° 09' WEST 476.55 FEET; THENCE NORTH 18° 49' 40" WEST 346.36 FEET; THENCE LEAVING SAID CENTERLINE AND CONTINUING ALONG THE WEST BOUNDARY OF LAST MENTIONED LANDS NORTH 21° 32' EAST 68.92 FEET; THENCE NORTH 8° 46' WEST 241.06 FEET TO THE SOUTHWEST CORNER OF LANDS CONVEYED TO ROSEMARY L. BERG, BY DEED RECORDED DECEMBER 20, 1971 IN VOLUME 2157, PAGE 389, OFFICIAL RECORDS OF SANTA CRUZ COUNTY; THENCE SOUTH 84° 10' WEST 642.72 FEET TO THE TRUE POINT OF BEGINNING

PARCEL TWO:

A RIGHT OF WAY FOR AN ACCESS ROAD AND UTILITIES OVER A STRIP OF LAND 40 FEET IN WIDTH AT RIGHT ANGLES DESCRIBED BY ITS CENTERLINE AS FOLLOWS:

BEGINNING AT STATION "B" ON THE SOUTH BOUNDARY OF LANDS CONVEYED TO DAVID ROBIN BERG AND ROSEMARY L. BERG, BY DEED RECORDED FEBRUARY 27, 1968, IN VOLUME 1867, PAGE 43, OFFICIAL RECORDS OF SANTA CRUZ COUNTY, FROM WHICH THE SOUTHEAST CORNER THEREOF BEARS ALONG SAID BOUNDARY SOUTH 85° 00' EAST 72.96 FEET DISTANT; THENCE FROM SAID PLACE OF BEGINNING AND ALONG THE WEST BOUNDARY OF LANDS CONVEYED TO VICTOR J. BERG, BY DEED RECORDED DECEMBER 20, 1971 IN VOLUME 2157, PAGE 391, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

1) NORTH 18° 11' WEST 31.07; THENCE
2) NORTH 32° 09' WEST 476.55 FEET; THENCE

EXHIBIT 'A'

ATTACHMENT 14

3) NORTH 18° 49' 40" WEST 346.36 FEET; THENCE LEAVING THE WEST BOUNDARY OF SAID LANDS OF VICTOR J. BERG
4) NORTH 30° 31' 30" WEST 104.01 FEET; THENCE
5) NORTH 21° 10' 20" WEST 296.14 FEET; THENCE
6) NORTH 10° 34' WEST 406.89 FEET; THENCE
7) NORTH 02° 14' 20" EAST 208.16 FEET; THENCE
8) NORTH 41° 35' 40" WEST 142.91 FEET; THENCE
9) NORTH 12° 05' 40" EAST 175.22 FEET; THENCE
10) NORTH 53° 54' 10" EAST 136.89 FEET; THENCE
11) NORTH 87° 06' 40" EAST 151.20 FEET; THENCE
12) NORTH 72° 30' 10" EAST 104.84 FEET TO A POINT WHICH IS 20 FEET DISTANT AT RIGHT ANGLES SOUTHERLY FROM THE NORTH BOUNDARY OF LANDS CONVEYED TO ROSEMARY L. BERG, BY DEED RECORDED DECEMBER 20, 1971 IN VOLUME 2157, PAGE 389, OFFICIAL RECORDS OF SANTA CRUZ COUNTY; THENCE PARALLEL WITH LAST MENTIONED BOUNDARY

13) SOUTH 82° 12' EAST 158.22 FEET TO A POINT ON THE EAST BOUNDARY LINE OF LAST MENTIONED LANDS FROM WHICH THE NORTHEAST CORNER THEREOF BEARS NORTH 5° 50' WEST 20.58 FEET DISTANT.

PARCEL THREE:

AN EASEMENT FOR INGRESS AND EGRESS TO LANDS NOW OR FORMERLY OF DAVID R. BERG AND ROSEMARY L. BERG, HIS WIFE, WHICH LANDS ARE MORE PARTICULARLY DESCRIBED IN VOLUME 2062, PAGE 391, OFFICIAL RECORDS OF SANTA CRUZ COUNTY, DESCRIBED AS FOLLOWS:

A RIGHT OF WAY FOR ROAD PURPOSES 50 FEET IN WIDTH DESCRIBED BY ITS CENTERLINE AS FOLLOWS:

BEGINNING AT A STATION ON THE CENTERLINE OF A 60 FOOT RIGHT OF WAY AT THE NORTHEASTERN TERMINUS OF THE COURSE SHOWN AS "NORTH 27° 58' EAST 218.69 FEET" ON THE MAP RECORDED IN VOLUME 16 OF PARCEL MAPS AT PAGE 30, SANTA CRUZ COUNTY RECORDS; THENCE FROM SAID POINT OF BEGINNING.

1) NORTH 72° 02' WEST 155.23 FEET TO AN 8 INCH SPIKE; THENCE
2) NORTH 56° 02' WEST 154.16 FEET TO AN 8 INCH SPIKE; THENCE
3) NORTH 69° 02' WEST 191.09 FEET TO AN 8 INCH SPIKE; THENCE
4) NORTH 49° 02' WEST 83.16 FEET TO AN 8 INCH SPIKE; THENCE
5) SOUTH 86° 58' WEST 169.09 FEET TO AN 8 INCH SPIKE; THENCE
6) NORTH 69° 02' WEST 266 FEET, MORE OR LESS, TO A STATION 25.00 FEET SOUTH OF THE NORTHERN BOUNDARY OF PARCEL 2 AS SHOWN ON THE ABOVE MENTIONED PARCEL MAP MEASURED AT RIGHT ANGLES TO SAID NORTHERN BOUNDARY; THENCE PARALLEL TO AND 25 FEET FROM SAID NORTHERN BOUNDARY AND THE NORTHERN BOUNDARY OF PARCEL 3 AS SHOWN ON SAID PARCEL MAP
7) NORTH 82° 10' WEST 580 FEET, MORE OR LESS, TO THE WESTERN BOUNDARY OF SAID PARCEL 3;

ALSO A RIGHT OF WAY 50 FEET IN WIDTH FOR JOINT USE OF A ROADWAY DESCRIBED BY ITS EAST BOUNDARY LINE (WHICH IS THE CENTERLINE OF A 60 FOOT WIDE ROADWAY EASEMENT) AS FOLLOWS:

BEGINNING AT THE SOUTH CORNER OF PARCEL 1 AS SHOWN ON THE MAP RECORDED SEPTEMBER 10, 1974 IN VOLUME 16 OF PARCEL MAPS, PAGE 30, SANTA CRUZ COUNTY RECORDS; THENCE

1) SOUTH 27° 58' EAST 223.98 FEET; THENCE
2) ON A CURVE TO THE LEFT FROM A TANGENT OF SOUTH 27° 58' EAST WITH A RADIUS OF 50 FEET, THROUGH AN ANGLE OF 106° FOR A DISTANCE OF 91.50 FEET TO THE EAST BOUNDARY OF LANDS CONVEYED TO MICHAEL ROONEY, BY DEED RECORDED IN VOLUME 2126, PAGE 468, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

SAID 50 FOOT WIDE EASEMENT IS APPURTENANT ONLY TO SAID LANDS NOW OR FORMERLY OF DAVID R. BERG AND ROSEMARY L. BERG AND IS LIMITED TO SERVICE FOUR DWELLINGS WHICH MAY NOW OR HEREAFTER BE LOCATED THEREON, TO BE USED JOINTLY WITH LANDS OVER WHICH SAID RIGHT OF WAY PASSES.

PARCEL FOUR:

A RIGHT OF WAY FOR ACCESS ROAD OVER A STRIP OF LAND 60 FEET IN WIDTH FROM THE SOUTH END OF EASEMENT DESCRIBED IN PARCEL THREE HEREIN, SOUTHERLY TO THE NORTH END OF THE COUNTY ROAD CALLED SMITH ROAD, BEING MORE PARTICULARLY DESCRIBED IN THE EXHIBITS C-1 AND C-2 ATTACHED TO ROAD AGREEMENT DATED NOVEMBER 1, 1975 BY AND BETWEEN DAVID R. BERG, ET AL, RECORDED APRIL 29, 1976 IN VOLUME 2610, PAGE 619, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

PARCEL FIVE:

A RIGHT OF WAY 20 FEET IN WIDTH APPURTENANT TO PARCEL ONE FOR ROAD PURPOSES AS THE SAME IS SHOWN ON THAT CERTAIN RECORD OF SURVEY MAP FILED FOR RECORD SEPTEMBER 11, 1973 IN MAP BOOK 59, PAGE 6, SANTA CRUZ COUNTY RECORDS.

PARCEL SIX:

AN EASEMENT FOR THE JOINT USE OF A WATER STORAGE TANK AND FOR INGRESS AND EGRESS AND WATER PIPELINE PURPOSES AND FOR INGRESS AND EGRESS AND ELECTRIC POWER LINE PURPOSES CONVEYED TO DAVID ROBIN BERG AND ROSEMARY L. BERG, HUSBAND AND WIFE, BY DEED DATED DECEMBER 15, 1981, RECORDED JANUARY 18, 1982 IN VOLUME 3407, PAGE 66, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

PARCEL SEVEN:

AN EASEMENT FOR THE JOINT USE OF A WELL AND FOR INGRESS AND EGRESS AND WATER PIPELINE PURPOSES AND FOR INGRESS AND EGRESS AND ELECTRICAL POWER LINE PURPOSES CONVEYED TO DAVID ROBIN BERG AND ROSEMARY L. BERG, HUSBAND AND WIFE, BY DEED DATED DECEMBER 15, 1981 AND RECORDED JANUARY 18, 1982 IN VOLUME 3407, PAGE 72, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

APN: 109-112-16

LEGAL DESCRIPTION

Real property in the unincorporated area of the County of SANTA CRUZ, State of CALIFORNIA, described as follows:

PARCEL ONE:

BEING A PART OF THE RANCHO SALSIPUEDES AND BEGINNING ON THE BOUNDARY BETWEEN SAID RANCHO SALSIPUEDES AND THE RANCHO CORRALITOS AND NORTH 6iÆ EAST 13.62 CHAINS FROM THE SOUTHEASTERN CORNER OF LANDS OF ONE LITCHFIELD AND RUNNING THENCE ALONG SAID RANCHO BOUNDARY NORTH 6iÆ EAST 16.65 CHAINS; THENCE LEAVING SAID RANCHO BOUNDARY SOUTH 35iÆ 20' EAST 21.85 CHAINS AND NORTH 85iÆ WEST 14.41 CHAINS TO THE PLACE OF BEGINNING.

PARCEL TWO:

BEING A PART OF THE RANCHO SALSIPUEDES AND BEGINNING ON THE BOUNDARY LINE BETWEEN SAID RANCHO SALSIPUEDES AND THE RANCHO CORRALITOS AND AT THE MOST NORTHERN CORNER OF A 12 ACRE TRACT OF LAND CONVEYED BY A. W. NUNES TO LILLIAN R. HIGMAN BY DEED DATED APRIL 1, 1912 AND RECORDED IN VOLUME 239 OF DEEDS, PAGE 266, SANTA CRUZ COUNTY RECORDS, AND RUNNING THENCE FROM SAID POINT OF BEGINNING ALONG SAID RANCHO BOUNDARY NORTH 6iÆ EAST 4.00 CHAINS; THENCE LEAVING SAID RANCHO BOUNDARY SOUTH 29iè8 15' EAST 25.00 CHAINS TO THE MOST EASTERN CORNER OF SAID 12.00 ACRE TRACT; THENCE ALONG THE NORTHWESTERN BOUNDARY OF SAID 12 ACRE TRACT NORTH 35iÆ 20' WEST 21.85 CHAINS TO THE PLACE OF BEGINNING.

PARCEL THREE:

BEING THAT PORTION OF PARCEL TWO OF THE LANDS CONVEYED BY DOYLE R. THOMPSON, ET UX., TO DAVID ROBIN BERG, ET UX., BY DEED RECORDED JUNE 22, 1954 IN VOLUME 971, PAGE 604, OFFICIAL RECORDS OF SANTA CRUZ COUNTY, LYING SOUTHWESTERLY OF A LINE DESCRIBED AS FOLLOWS:

BEGINNING AT A ¨ö INCH PIPE SET THROUGH THE BUTT OF AN OLD 3 INCH BY 3 INCH STAKE ON THE LINE BETWEEN THE RANCHO SALSIPUEDES AND THE RANCHO CORRALITOS AT THE NORTHWESTERN CORNER OF PARCEL 2 OF THE LANDS CONVEYED BY DOYLE R. THOMPSON, ET UX., TO DAVID ROBIN BERG, ET UX., BY DEED RECORDED JUNE 22, 1954 IN VOLUME 971, PAGE 604, OFFICIAL RECORDS OF SANTA CRUZ COUNTY; THENCE FROM SAID POINT OF BEGINNING SOUTH 5iÆ 55' WEST 868.38 FEET TO A ¨ö INCH PIPE AND THE TRUE POINT OF BEGINNING; THENCE FROM SAID TRUE POINT OF BEGINNING SOUTH 30iÆ 35' 20" EAST 1603.89 FEET TO A ¨ö INCH PIPE ON THE NORTHERN BOUNDARY OF THE LANDS CONVEYED BY LAURENCE L. MOSSBARGER, ET UX., TO CHARLES E. BRAUN, ET UX., BY DEED RECORDED DECEMBER 19, 1960 IN VOLUME 1326, PAGE 196, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

APN: 109-112-05

EXHIBIT 'B'

ATTACHMENT 14

3. The following additional parcel or parcels has/have appeared in a recorded document or documents describing the land referred to in this preliminary report/commitment:

PARCEL FOUR:

A RIGHT OF WAY 20 FEET IN WIDTH, APPURTENANT TO PARCELS ONE THROUGH THREE, FOR ROAD PURPOSES, AS THE SAME IS SHOWN ON THAT CERTAIN RECORD OF SURVEY MAP FILED FOR RECORD SEPTEMBER 11, 1973 IN MAP BOOK 59, PAGE 6, SANTA CRUZ COUNTY RECORDS.

PARCEL FIVE:

TOGETHER WITH AND RESERVING A RIGHT OF WAY, 50 FEET IN WITH, FOR ROAD AND PUBLIC UTILITY PURPOSES, THE CENTER LINE OF WHICH IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE SOUTHERLY LINE OF THAT CERTAIN 12 ACRE TRACT OF LAND CONVEYED BY A. W. NUNES TO LILLIAN R. HIGMAN BY DEED DATED APRIL 1, 1912 AND RECORDED IN VOLUME 239 OF DEEDS, PAGE 266, RECORDS OF SANTA CRUZ COUNTY, DISTANT THEREIN NORTH 85° 00' 00" WEST 30.25 FEET FROM THE MOST EASTERLY CORNER THEREON; THENCE RUNNING ALONG A LINE WHICH IS PARALLEL WITH AND 25 FEET SOUTHWESTERLY, MEASURED AT RIGHT ANGLES, FROM THE MOST NORTHEASTERLY LINE OF PARCEL TWO AS DESCRIBED IN THE DEED FROM LAURA PICANSO, A WIDOW, TO PATRICK HENRY LAYHEE AND BERNICE MARLE LAYHEE, RECORDED APRIL 19, 1977 IN BOOK 2748 OF DEEDS, PAGE 78, RECORDS OF SANTA CRUZ COUNTY;

1. NORTH 29° 15' 00" WEST 1130.46 FEET; THENCE
2. NORTH 55° 32' 49" WEST 274.06 FEET TO A POINT IN THE WESTERLY LINE OF SAID 12 ACRE PARCEL. SAID POINT BEING DESIGNATED AS POINT "A"; THENCE CONTINUING FROM SAID POINT "A"
3. NORTH 55° 32' 47" WEST 112.14 FEET; THENCE
4. NORTH 29° 46' 26" WEST 206.12 FEET; THENCE
5. NORTH 47° 22' 23" WEST 207.43 FEET; THENCE
6. SOUTH 61° 41' 35" WEST 95.14 FEET TO A POINT HEREINAFTER REFERRED TO AS POINT "B"; THENCE
7. SOUTH 14° 35' 45" EAST 332.10 FEET; THENCE
8. SOUTH 46° 29' 00" EAST 365.00 FEET; THENCE
9. SOUTH 62° 40' 00" EAST 63.45 FEET TO A POINT IN THE SAID WESTERLY LINE OF SAID 12 ACRE PARCEL, SAID POINT BEING DESIGNATED AS POINT "C".

BEGINNING AT POINT "B" HEREINABOVE REFERRED TO; THENCE

10. NORTH 56° 20' 57" WEST 165.67 FEET TO A POINT OF BEGINNING OF A TANGENT CURVE IN THE RIGHT; THENCE
11. NORTHWESTERLY ALONG SAID CURVE TO THE RIGHT OF RADIUS 100.00 FEET, THROUGH A CENTRAL ANGLE OF 74° 52' 30" AN ARC LENGTH OF 130.68 FEET; THENCE TANGENT TO THE LAST NAMED CURVE
12. NORTH 16° 31' 33" EAST 203.21 FEET; THENCE
13. NORTH 38° 50' 05" WEST 338.10 FEET; THENCE
14. NORTH 57° 15' 20" WEST 567.53 FEET; THENCE
15. NORTH 01° 08' 25" WEST 81.55 FEET; THENCE
16. NORTH 34° 23' 40" EAST 144.67 FEET; THENCE
17. NORTH 59° 32' 13" EAST 250.83 FEET TO A POINT IN THE NORTHERLY LINE OF PARCEL "B" AS THE SAME IS SHOWN ON THAT CERTAIN PARCEL MAP RECORDED FEBRUARY 27, 1974 IN BOOK 14 OF PARCEL MAPS, PAGE 50, SANTA CRUZ COUNTY RECORDS, SAID POINT ALSO BEING THE SOUTH AND OF THE RIGHT OF WAY DESCRIBED IN THE DEED FROM DAVID WRAY, JR., ET UX, TO EDWIN W. CHOATE, ET AL, DATED SEPTEMBER 17, 1978, RECORDED FEBRUARY 29, 1980 IN VOLUME 3169, PAGE 158, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

ATTACHMENT 14

THE ABOVE DESCRIBED EASEMENT IS TERMINATED AT ITS NORTHERLY AND BY SAID NORTHERLY LINE OF PARCEL "B" AND AT ITS SOUTHERLY BEGINNING BY THE SOUTHERLY LINE OF SAID 12 ACRE PARCEL.

PARCEL SIX:

A WALL LOT EASEMENT FOR MAINTENANCE OF A WALL AND OTHER RELATED PURPOSES LOCATED ADJACENT AND CONTIGUOUS TO THE RIGHT OF WAY DESCRIBED ABOVE, AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE CENTERLINE OF THE ABOVE REFERENCED PRIVATE ROAD EASEMENT, SAID POINT LOCATED NORTH 29° 46' 26" WEST A DISTANCE OF 14.84 FT. FROM THE END OF COURSE 3 AS DESCRIBED ABOVE; THENCE FROM SAID POINT OF BEGINNING
1. NORTH 60° 13' 34" EAST 41.53 FT. TO A POINT; THENCE
2. NORTH 29° 46' 26" WEST 20.00 FT. TO A POINT; THENCE
3. SOUTH 60° 13' 34" WEST 41.53 FT. TO A POINT OF THE CENTERLINE OF SAID ROAD EASEMENT; THENCE
4. SOUTH 29° 46' 26" EAST 20.00 FT. TO THE POINT OF BEGINNING.

PARCEL SEVEN:

A TANK LOT EASEMENT FOR THE INSTALLATION AND MAINTENANCE OF A WATER TANK AND RELATED EQUIPMENT AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE CENTERLINE OF THE ABOVE REFERENCED ROAD EASEMENT, SAID POINT LOCATED AT THE END OF COURSE 17 AS DESCRIBED ABOVE; THENCE FROM SAID POINT OF BEGINNING.

1. NORTH 84° 01' 20" WEST A DISTANCE OF 149.59 FT. TO A ½" IRON PIPE; THENCE
2. SOUTH 34° 23' 40" WEST A DISTANCE OF 289.14 FT. TO A POINT; THENCE
3. NORTH 59° 32' 13" EAST A DISTANCE OF 309.66 FT. TO THE POINT OF BEGINNING.

TOGETHER WITH AN UNDIVIDED ONE-QUARTER INTEREST IN AND TO THE WELL AND PUMPING PLANT LOCATED ON PARCEL SIX HEREIN DESCRIBED AND ALSO AN UNDIVIDED ONE-QUARTER INTEREST IN AND TO THE WATER TANK AND RELATED EQUIPMENT LOCATED ON PARCEL SEVEN HEREIN DESCRIBED.

PARCEL EIGHT:

RIGHT OF WAY APPURTENANT TO PARCEL ONE, 50 FEET WIDE, FOR UTILITIES AND INGRESS AND EGRESS TO GREEN VALLEY ROAD, AS SHOWN ON PARCEL MAP RECORDED IN VOLUME 13 OF PARCEL MAPS, PAGE 31, SANTA CRUZ COUNTY RECORDS, AND CONTINUING ALONG THE FOLLOWING FIFTY FOOT WIDE STRIP OF LAND DESCRIBED BY ITS CENTERLINE AS FOLLOWS:

BEGINNING AT A STATION ON THE COMMON BOUNDARY OF PARCEL A AND PARCEL B, AS SHOWN ON SAID MAP FROM WHICH STATION "C" SHOWN ON SAID MAP BEARS SOUTH 13° 53' 20" EAST 21.04 FEET DISTANT AND RUNNING THENCE SOUTH 69° 01' 40" WEST 332.76 FEET; THENCE SOUTH 3° 11' 40" WEST 59.00 FEET; THENCE SOUTH 75° 59' 20" EAST 159.35 FEET; THENCE SOUTH 73° 00' 20" EAST 215.00 FEET; THENCE SOUTH 13° 53' 20" EAST 60.0 FEET TO A POINT ON THE COMMON BOUNDARY BETWEEN SAID PARCEL A AND PARCEL B IN THE DEED TO LAURA PICANCO, RECORDED IN VOLUME 1641, PAGE 575, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

LEGAL DESCRIPTION

Real property in the unincorporated area of the County of Santa Cruz, State of California, described as follows:

PARCEL I:

BEING A PART OF THE RANCHO CORRALITOS AND BEGINNING ON THE BOUNDARY LINE BETWEEN SAID RANCHO CORRALITOS AND THE RANCHO SALISPUEDES AND AT A POST AT THE NORTHEAST CORNER OF LANDS OF ONE LITCHFIELD AND RUNNING THENCE ALONG SAID RANCHO BOUNDARY 6° E., 22.72 CHAINS TO A POST AND TO LANDS NOW OR FORMERLY OWNED BY ONE ONE BROCKMAN; THENCE ALONG SAID BROCKMAN TRACT N. 59 1/2° W., 12.61 CHAINS TO A POST; THENCE N. 68° 50' W., 3.13 CHAINS TO AN OAK TREE 8 INCHES IN DIAMETER; THENCE N. 84 1/4° W., 6.94 CHAINS TO A POST AT A FENCE CORNER; THENCE CONTINUING ALONG SAID BROCKMAN TRACT AND ALONG LANDS OF ONE JOHNSON, S. 4° 35' W., 13.71 CHAINS; S. 21° 50' E., 6.40 CHAINS; S. 33° 20' E., 3.43 CHAINS; S. 50° E., 2.41 CHAINS, S. 56° 10' E., 7.76 CHAINS AND S. 29° 50' E., 2.90 CHAINS TO THE AFORESAID LANDS OF LITCHFIELD, A LIVE OAK TREE 18 INCHES IN DIAMETER BEARS N. 32 1/2° W., 5 1/2 LINKS DISTANT; THENCE ALONG SAID LANDS OF LITCHFIELD E., 5.42 CHAINS TO THE PLACE OF BEGINNING.

EXCEPTING THEREFROM THE PORTION THEREOF CONVEYED BY LAURA PICANSO TO DAVID WRAY, JR., ET UX, BY DEED RECORDED AUGUST 6, 1971 IN VOLUME 2118, PACE 618, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

ALSO EXCEPTING THEREFROM SO MUCH THEREOF AS WAS CONVEYED BY A.L. PICANSO, ET AL, TO CARLY J. MORTENSEN, ET UX, BY DEED RECORDED MARCH 25, 1974 IN VOLUME 2395, PAGE 323, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

ALSO EXCEPTING THEREFROM SO MUCH THEREOF AS WAS CONVEYED BY LAURA PICANSO, A WIDOW, ET AL, TO DAVID ROBIN BERG, BY DEED RECORDED FEBRUARY 27, 1968 IN VOLUME 1867, PAGE 41, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

PARCEL II:

A RIGHT OF WAY FOR INGRESS AND EGRESS TO GREEN VALLEY ROAD MORE PARTICULARLY DESCRIBED IN "ROAD AND BRIDGE MAINTENANCE AGREEMENT", RECORDED JULY 30, 1984 IN VOLUME 3739, PAGE 664, OFFICIAL RECORDS OF SAID COUNTY AND SUBJECT TO THE TERMS AND CONDITIONS THEREIN CONTAINED.

PARCEL III:

A RIGHT TO THE JOINT USE OF A RIGHT OF WAY 20 FEET IN WIDTH FOR ROAD PURPOSES AS THE SAME IS SHOWN ON THAT CERTAIN RECORD OF SURVEY MAP FILED FOR RECORD SEPT. 11, 1973 IN VOLUME 59 OF MAPS, PAGE 6, SANTA CRUZ COUNTY RECORDS.

PARCEL IV:

A RIGHT OF WAY 50 FEET IN WIDTH AT RIGHT ANGLES, THE NORTHEAST BOUNDARY OF WHICH IS THE NORTHEAST BOUNDARY OF LANDS FIRST DESCRIBED AS ONE COMPACT PARCEL OF LAND IN GRANT DEED DATED DEC. 31, 1981 TO GREGORY V. TARSY, ET UX,

EXHIBIT 'C'

RECORDED JAN. 15, 1982 IN VOLUME 3406 OF OFFICIAL RECORDS, PAGE 414, RECORDS OF SAID COUNTY.

PARCEL V:

A RIGHT OF WAY APPURTENANT TO PARCEL I, 50 FEET WIDE FOR UTILITIES AND INGRESS AND EGRESS TO GREEN VALLEY ROAD, AS SHOWN ON PARCEL MAP RECORDED IN VOLUME 13 OF PARCEL MAPS, PAGE 31, SANTA CRUZ COUNTY RECORDS, AND CONTINUING ALONG THE FOLLOWING FIFTY FOOT WIDE STRIP OF LAND DESCRIBED BY ITS CENTERLINE AS FOLLOWS:

BEGINNING AT A STATION ON THE COMMON BOUNDARY OF PARCEL A AND PARCEL B, AS SHOWN ON SAID MAP FROM WHICH STATION "C" SHOWN ON SAID MAP BEARS S. 13° 53' 20" E., 21.04 FEET DISTANT AND RUNNING THENCE S. 69° 01' 40" W., 332.76 FEET; THENCE S. 3° 13' 40" W. 59.00 FEET, THENCE S. 75° 59' 20" E., 159.35 FEET; THENCE S. 73° 00' 20" E., 215.00 FEET; THENCE S. 13° 53' 20" E., 60.00 FEET TO A POINT ON THE COMMON BOUNDARY BETWEEN SAID PARCEL A AND PARCEL B IN THE DEED TO LAURA PICANSO, RECORDED IN VOLUME 1641, PAGE 575, OFFICIAL RECORDS OF SANTA CRUZ COUNTY.

APN: 109-061-34

EXHIBIT D

MONITORING AND MAINTENANCE REQUIREMENTS

The Relocated Roadway and the Drainage Facilities are shown on those certain Plans entitled Phase I and Phase II, Permanent Grading and Drainage, Old Smith Road, prepared by Haro Kasunich & Associates, Job #SC 9107, _____ **[dates]**(collectively, the Plans). The following monitoring and maintenance requirements apply to the Relocated Roadway (including two turnouts) and the Drainage Facilities shown on the Plans.

1. Roadway. Improved roadway (Relocated Roadway) width of 12 feet and the two turnouts maintained at all times to accommodate emergency response vehicles. The roadway should be monitored after a major storm event (i.e., one inch or more of rainfall), but not less than once per month during the rainy season, with removal of any debris, with erosion material to be cleared from the roadway and stock piled at the storage area southeast of the improved road.

2. Lower Stream Channel. Monitoring of incision of the lower stream channel following each major storm event, but not less than once a year after the winter season. Immediately notify a geotechnical engineer, hydro geologist and/or hydrologic engineer for examination should there be incision of the lower stream channel by 3 or more feet.

3. Road Culverts. Monitoring and inspecting after each major storm event, but not less than once a year prior to the winter season: (i) all road culverts (new and existing) for inlet plugging, leaking lines and excessive erosion at the outlets; and (ii) trash guards and protective screens at the inlet locations. Plugged culverts and trash guards should be cleared; leaky culverts should be repaired and erosion runnels or undermining at the outlets should be repaired immediately after inspection. The new and existing culverts consist of: (i) the new 15-inch diameter road culvert at the southeast end of the improved road that drains the sediment basin to the temporary retention facility location; (ii) the existing 18- inch diameter corrugated metal pipe (CMP) culvert at the northwest end of the improved road; and (iii) the new 12-inch diameter culvert extension from the previously mentioned existing 18-inch diameter CMP, across the base of the Hilfiker Wall and to the temporary retention facility location.

4. Catch Basins. Inspection of in-board catch basins and associated drain lines, and clearing of earth and any other deleterious material. Inspection should be performed after each major storm event, but not less than once per month during the rainy season.

5. Hydro Augers. Periodic monitoring of the hydro augers, and high pressured water jet cleaning 3 months, 1 year and every 4 years thereafter from the time of installation.

6. Drain Line Outlets. All drain line outlets at the temporary retention facility location, including the 12-inch diameter drain line for the swale drain, should be inspected for clogging, severe erosion and water flow to the lower stream channel, as positive drainage

from the swale drain outlet, down the upper swale and to the lower stream channel is a critical component to the long term stability to the improved roadway. Sediment and deleterious material that obstructs positive flow from these outlets to the lower stream channel should be cleared. The temporary retention facility should be monitored after each major storm event, but not less than once per month during the rainy season.

7. Mid-Slope Drainage Bench. Monitoring and inspection of the mid-slope drainage bench at the northwest end and up-slope of the improved roadway should be performed after each major storm event, but not less than once a year prior to the winter season. Any material obstructing flow down this bench should be removed and stockpiled at the storage area southeast of the improved roadway.

8. Sediment Basin. Monitoring and inspection of the sediment basin at the southeast end and upslope of the improved roadway after each major storm event, but not less than once a year prior to the winter season. If sediment has built up to the same elevation as the bottom (invert) of the new 15-inch diameter culvert, the sediment should be removed and stockpiled at the storage area southeast of the improved road.

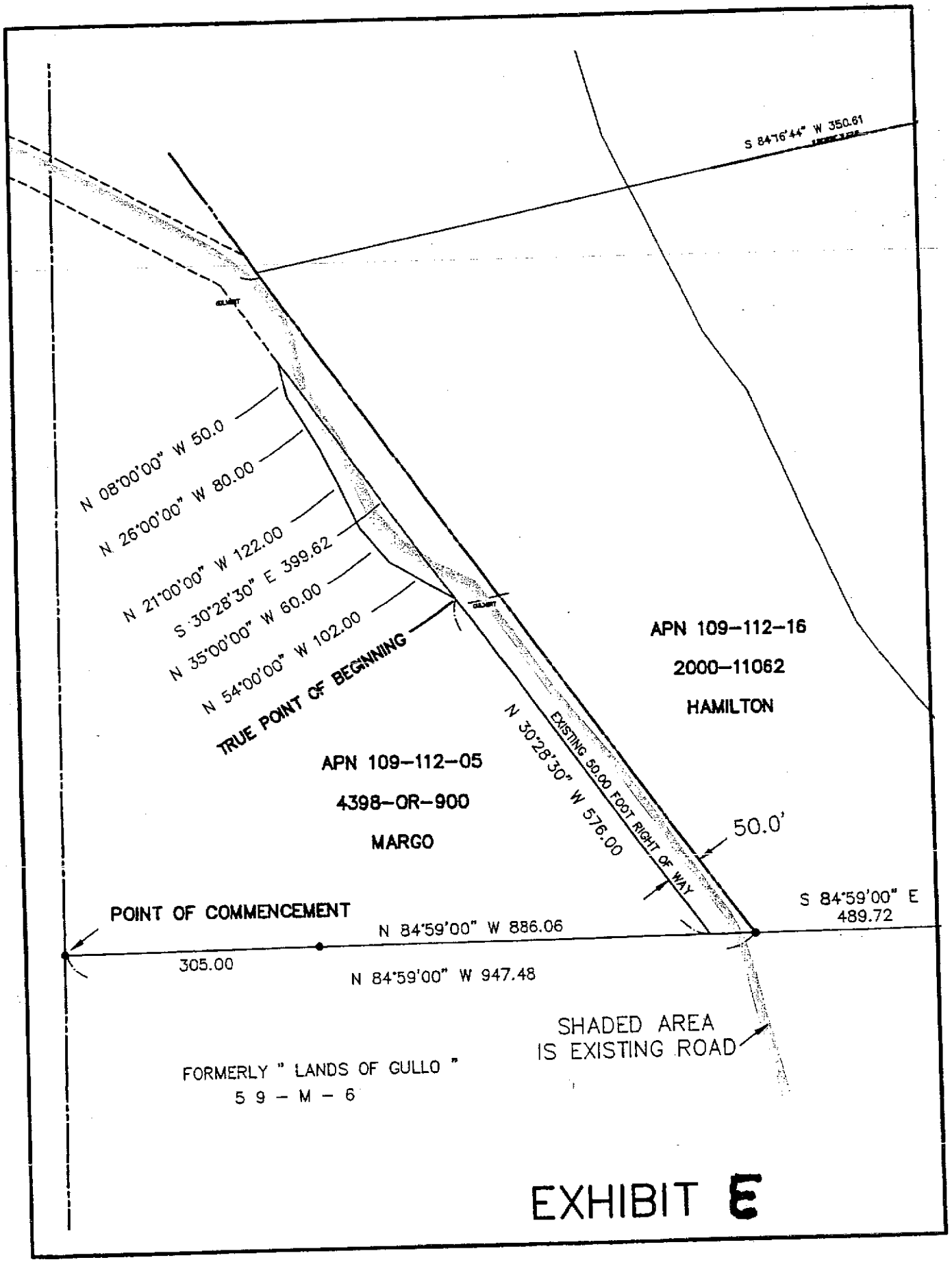

S 84°16'44" W 350.61
N 08°00'00" W 50.0
N 26°00'00" W 80.00
N 21°00'00" W 122.00
S 30°28'30" E 399.62
N 35°00'00" W 60.00
N 54°00'00" W 102.00
TRUE POINT OF BEGINNING
APN 109-112-16
2000-11062
HAMILTON
APN 109-112-05
4398-OR-900
MARGO
N 30°28'30" W 576.00
EXISTING 50.00 FOOT RIGHT OF WAY
50.0'
POINT OF COMMENCEMENT
N 84°59'00" W 886.06
S 84°59'00" E
489.72
305.00
N 84°59'00" W 947.48
SHADED AREA
IS EXISTING ROAD
FORMERLY " LANDS OF GULLO "
5 9 - M - 6

EXHIBIT E

EXHIBIT F

Situate in the County of Santa Cruz, State of California.

Being a part of the lands conveyed to Edward J. Margo and Lori Ann Margo by Grant Deed recorded October 7, 1988 in Volume 4398 of Official Records at Page 900 Santa Cruz County Records;

Being an easement for ingress, egress and public utilities and for the construction and maintenance of drainage improvements and being more particularly described as follows, to wit:

Commencing at found ½ inch iron pipe tagged LS 3223 at the northwestern corner of that certain 51.89 acre Parcel shown as the lands of "Anthony T. Gullo 2198-OR-417" on that certain map recorded in Volume 59 of Maps at Page 6, Santa Cruz County Records;.

Thence from said **Point of Commencement,** along the northern boundary of said lands of Gullo, South 84°59'00" East (at 350.00 feet a found ½ inch iron pipe tagged LS 3223) a total distance of 886.06 feet to the western sideline of an existing 50.00 foot wide easement from which a found ½ inch iron pipe tagged LS 3223 at the southwestern corner of said lands of Hamilton bears along said northern boundary South 84°59'00" East 61.42 feet distant; thence leaving the northern boundary of the lands of Gullo, along the western boundary of said 50.00 foot easement, North 30°28'30" West 576.00 feet the **True Point of Beginning;**

Thence from said **True Point of Beginning,** leaving the western boundary of said 50.00 foot easement, 25.00 feet westerly of and parallel to the centerline of the existing re-aligned roadbed of Old Smith Road the following courses:

1) North 54°00'00" West 102.00 feet to an angle therein; thence
2) North 35°00'00" West 60.00 feet to an angle therein; thence
3) North 21°00'00" West 122.00 feet to an angle therein; thence
4) North 26°00'00" West 80.00 feet to an angle therein; thence
5) North 8°00'00" West 50.0 feet, more or less, to the western sideline of said 50.00 foot easement;
6) thence along the western sideline of said 50.00 foot wide easement, South 30°28'30" East 399.62 feet, more or less to the **True Point of Beginning**

Surveyed and compiled in 2009 by Dunbar and Craig Land Surveys, Inc.

Curt G. Dunbar, PLS 5615
License renewal date 9-30-2010

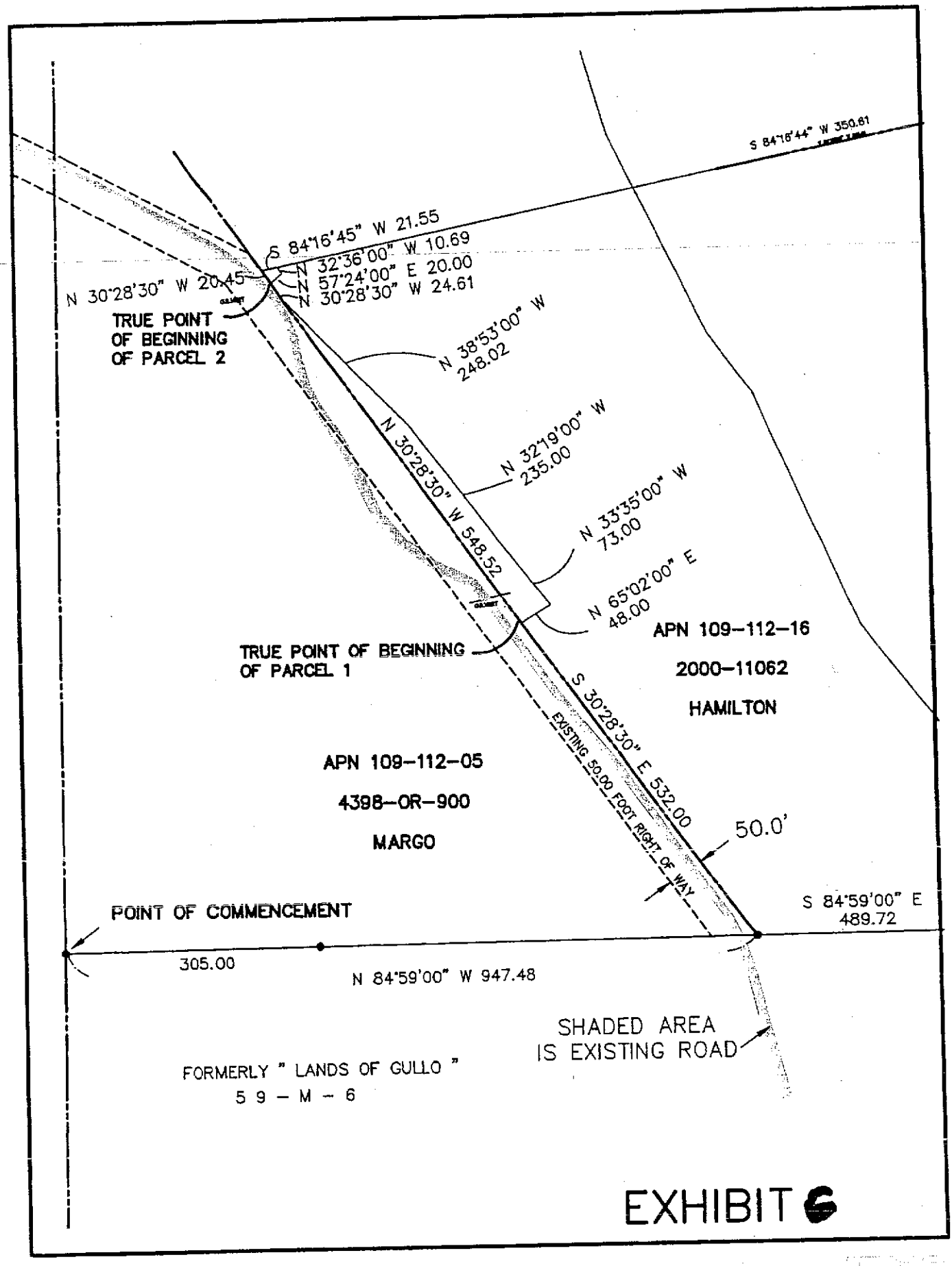

S 84°16'44" W 350.61
S 84°16'45" W 21.55
N 32°36'00" W 10.69
N 57°24'00" E 20.00
N 30°28'30" W 24.61
N 30°28'30" W 20.45
TRUE POINT OF BEGINNING OF PARCEL 2
N 38°53'00" W 248.02
N 32°19'00" W 235.00
N 33°35'00" W 73.00
N 65°02'00" E 48.00
N 30°28'30" W 548.52
TRUE POINT OF BEGINNING OF PARCEL 1
APN 109-112-16
2000-11062
HAMILTON
APN 109-112-05
4398-OR-900
MARGO
S 30°28'30" E 532.00
EXISTING 50.00 FOOT RIGHT OF WAY
50.0'
POINT OF COMMENCEMENT
S 84°59'00" E 489.72
305.00
N 84°59'00" W 947.48
SHADED AREA IS EXISTING ROAD
FORMERLY " LANDS OF GULLO "
5 9 - M - 6

EXHIBIT 6

EXHIBIT H

Situate in the County of Santa Cruz, State of California.

Being a part of the lands conveyed to Helen Beth Hamilton as Trustee of the Helen Hamilton Revocable Living Trust by Grant Deed recorded March 7, 2000 as Document No. 2000-0011062 in Official Records, Santa Cruz County Records;

Being an easement for the construction and maintenance of drainage improvements and being more particularly described as follows, to wit:

PARCEL ONE

Commencing at found ½ inch iron pipe tagged LS 3223 at the northwestern corner of that certain 51.89 acre Parcel shown as the lands of "Anthony T. Gullo 2198-OR-417" on that certain map recorded in Volume 59 of Maps at Page 6, Santa Cruz County Records;.

Thence from said **Point of Commencement,** along the northern boundary of said lands of Gullo, South 84°59'00" East (at 350.00 feet a found ½ inch iron pipe tagged LS 3223) a total distance of 947.48 feet to a found ½ inch iron pipe tagged LS 3223 at the southwestern corner of said lands of Hamilton; thence leaving the northern boundary of the lands of Gullo, along the western boundary of said lands of Hamilton, North 30°28'30" West 532.00 feet to a ½ inch iron pipe tagged LS 5615 and the **True Point of Beginning**;

Thence from said **True Point of Beginning,** leaving the western boundary of the lands of Hamilton, North 65°02'00" East 48.00 feet to a ½ inch iron pipe tagged LS 5615; thence North 33°35'00" West 73.00 feet to a ½ inch iron pipe tagged LS 5615; thence North 32°19'00" West 235.00 feet to a ½ inch iron pipe tagged LS 5615; thence North 38°53'00" West 248.02 feet to a ½ inch iron pipe tagged LS 5615 on the western boundary of said lands of Hamilton; thence along the western boundary of said lands of Hamilton, South 30°28'30" East 548.52 feet, more or less, to the **True Point of Beginning**.

PARCEL TWO

COMMENCING AT FOUND ½ INCH IRON PIPE TAGGED LS 3223 AT THE NORTHWESTERN CORNER OF THAT CERTAIN 51.89 ACRE PARCEL SHOWN AS the lands of "Anthony T. Gullo 2198-OR-417",on that certain map recorded in Volume 59 of Maps at Page 6, Santa Cruz County Records\;.

Thence from said **Point of Commencement,** along the northern boundary of said lands of Gullo, South 84°59'00" East (at 350.00 feet a found ½ inch iron pipe tagged LS 3223) a total distance of 947.48 feet to a found ½ inch iron pipe tagged LS 3223 at the

southwestern corner of said lands of Hamilton; thence leaving the northern boundary of the lands of Gullo, along the western boundary of said lands of Hamilton, North 30°28'30" West 1105.13 feet to a ½ inch iron pipe tagged LS 5615 and the **True Point of Beginning**;

Thence from said **True Point of Beginning,** leaving the western boundary of the lands of Hamilton, North 57°24'00" East 20.00 feet to a ½ inch iron pipe tagged LS 5615; thence North 32°36'00" West 10.69 feet to a ½ inch iron pipe tagged LS 5615 on the northern boundary of said lands of Hamilton; thence along the northern boundary of said lands of Hamilton, South 84°16'45" West 21.55 feet, more or less, to the western boundary of said lands of Hamilton; thence along said western boundary, South 38°53'00" East 20.45 feet more or less, to the **True Point of Beginning**.

Surveyed and compiled in 2009 by Dunbar and Craig Land Surveys, Inc.

Curt G. Dunbar, PLS 5615
License renewal date 9-30-2010