

# **PLAN OF CONTROL**

**KENILWORTH ROAD  
OAKLAND AREA GEOLOGIC HAZARD ABATEMENT DISTRICT  
(GHAD)**



# ENGEO

*Expect Excellence*

**Submitted to:**

Mr. Sven Khatri  
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Oakland, CA 94611

**Prepared by:**

ENGEO Incorporated

**November 15, 2016**

**Project No:**

5410.001.000

Project No.  
**5410.001.000**

November 15, 2016

Mr. Sven Khatri  
5801 Scarborough Dr.  
Oakland, CA 94611

Subject: Kenilworth Road  
Oakland Area Geologic Hazard Abatement District (GHAD)  
Oakland, California

**GEOLOGIC HAZARD ABATEMENT DISTRICT (GHAD)  
PLAN OF CONTROL**

Dear Mr. Khatri:

ENGEO is pleased to present the Kenilworth Road Plan of Control to support annexation into the Oakland Area Geologic Hazard Abatement District (GHAD). This annexation satisfies portions of Condition of Approval No. 35 related to inclusion of the Kenilworth Road development into the Oakland Area GHAD.

We are glad to be of service to you on this project. If you have any questions concerning the contents of this plan, please do not hesitate to contact us.

Sincerely,

ENGEO Incorporated



Eric Harrell, CEG  
eh/pcg/cjn



Paul C. Guerin, GE

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## 1.0 INTRODUCTION

The Oakland Area Geologic Hazard Abatement District (“GHAD” or “District”) was formed by the Oakland City Council on July 18, 2006 by Resolution No. 80058 under authority of the California Public Resources Code (Division 17, commencing with Section 26500). Geologic Hazard Abatement Districts are political subdivisions of the State of California and are not a division or instrumentality of a local agency.

Section 26509 of the Public Resources Code requires a Plan of Control, prepared by a State Certified Engineering Geologist, as a prerequisite to formation of or annexation into a GHAD. Pursuant to Section 26509, this Plan of Control was prepared by an Engineering Geologist certified pursuant to Section 7822 of the Business and Professions Code and describes the geologic hazards, their locations, and the areas affected by them. It also provides a plan for the prevention, mitigation, abatement, or control thereof.

As used in this Plan of Control, and as provided in Section 26507, “geologic hazard” means an actual or threatened landslide, land subsidence, soil erosion, earthquake, fault movement, or any other natural or unnatural movement of land or earth.

As provided in the Conditions of Approval (COA)/MMRP for Kenilworth Road PUD, COA No. 35 states:

***Geologic Hazard Abatement District a.** Prior to finalization of Parcel Map – A Geologic Hazard Abatement District (GHAD) shall be operational and assessments, reserve funding and/or other long-term financing and other requirements necessary to fully fund the GHAD shall be established and authorized. The project site may be annexed into the Oakland Area GHAD once it has been fully established.*

### 1.1 PROPERTY IDENTIFICATION

The Kenilworth Road portion of the Oakland Area GHAD will be constructed on the approximately 2.9-acre property in Oakland, California (“Project”) and includes Assessor’s Parcels Numbers 48H-7615-6-5 and 47H-7615-7-6. A plat and written description of the properties within Kenilworth Road development to be included within the Oakland Area GHAD is provided in Appendix A.

## 2.0 PLAN OF CONTROL

### 2.1 GEOLOGIC HAZARDS

Geologic hazards identified in the geotechnical exploration reports for the Project include the following:

- Slope instability
- Seismic hazards
- Expansive soils

All geologic hazards will not be eliminated entirely through remediation by the Project developer. Slope instability or potential slope instability is not unique to this Project but is of importance for hillside projects throughout the greater San Francisco Bay Area. Future stability depends on various factors, including any introduction of natural or artificial groundwater, future grading and earthquake ground shaking.

## **2.2 SLOPE INSTABILITY**

### **2.2.1 Landslides**

Slope stability is a primary geologic hazard of concern for the GHAD. As shown on the Remedial Grading Plan, the stabilization of landslide masses will be undertaken for landslides which may directly pose a threat to improvements. Landslide material that does not have the potential to directly impact the proposed development will not be mitigated, such as areas within the wetlands protection area and creek corridor.

In addition to the landslides mapped during the geotechnical explorations or geologic mapping completed during grading, areas of slope instability or landsliding will likely be identified during the life of the development. Since slope stability is the GHAD's prime geotechnical concern, this section describes several types of slope instability that may be within the GHAD's area of responsibility, subject to Section 3 of this Plan of Control.

Landslides are a common geologic phenomenon and are part of the process of mass wasting. Weathered to fractured bedrock and soil are transported downslope over geologic time as a result of gravitational and hydrostatic forces. A landslide is a deposit of soil and/or bedrock moving downward from its original position under the influence of gravity. Landslides include a variety of morphologies and are further defined by type of materials, wetness, and mode of movement. They can consist of mass movements of earth materials that are primarily intact and occur along discrete shear surfaces. These surfaces (shear or slip planes) can be rotational (conchoidal or concave), such as for earth slumps, or planar, as for transitional earth slide or bedrock glides. Most landslides are truly "complex landslides," sliding, falling and flowing with more than one type of movement and/or material.

Falls are an abrupt free-fall of earth materials off cliffs, steep cuts, or steep stream banks, while earth flows are mass movements of earth materials in which the type of movement is one of flowing. When composed of soil finer than gravel size, the flowing material is commonly called a mudflow. A debris flow/debris avalanche is composed of natural earth material, artificial fill, and/or organic debris which flow downslope with speed. Most of the material is transported away from the area of initial ground failure.

Slope failures are also often triggered by increased pore water pressure due to the infiltration of rainwater. The resulting decrease of shear resistance (internal resistance to deformation by shearing) can cause the slope to move. The level of the groundwater table varies with the amount

of rainfall for the area. If rainfall is higher than average during the winter season, the water table will be higher than average on a hillslope and groundwater pressures may become sufficiently high to activate landsliding.

Landslides located within open-space areas are natural landforms that do not require mitigation except where they affect man-made improvements as described further in Section 3.2. Potential mitigation and repair measures for GHAD areas near development are discussed in Section 4.0.

If field-verified geologic field mapping is undertaken during future mass grading operations, the detailed maps showing geologic units, structure, springs, and landslide limits and repairs should be provided to the GHAD.

### **2.2.2 Soil Creep and Colluvium**

Soil creep is the slow, often imperceptible, deformation of slope materials under low stress levels which normally affects the shallow portion of the slopes, but can be deep seated where a weak zone of soil or bedrock exists. It results from gravitational and seepage forces, and may be indicative of conditions favorable for landsliding. Creep can be caused by wetting and drying of clays, by solution and crystallization of salts, by the growth of roots, by burrowing animals, and by downslope movement of saturated ground. Colluvium refers to the mantle of loose soil and weathered bedrock debris that progresses down hillsides by gravity. Colluvial deposits typically occur in a weak, unconsolidated state and are noteworthy because of their susceptibility to landsliding.

### **2.2.3 Erosion and Sedimentation**

The GHAD shall also be concerned with erosion and sedimentation in open space or affecting established lots or improvements. Erosion is defined as the process by which earth materials are loosened and removed by running water on the ground surface or in the subsurface. Sedimentation is the depositing or settling of soil or rock particles from a state of suspension in a liquid.

Hilly terrain in open space, either in a natural condition or particularly on excavated slopes, can be subject to erosion. Landslide deposits which are sometimes in a loosened condition are particularly prone to erosion. Earth flow, debris flow and mud flow landslides typically have an area of deposition or accumulation (sedimentation area) at their base. Graded slopes in the District, those not sufficiently vegetated, can be subject to erosion, and therefore, a source of transported sediment.

## **2.3 SEISMIC HAZARDS**

Potential seismic hazards resulting from a nearby moderate to major earthquake have generally been identified within the geotechnical report.

### **2.3.1 Seismically Induced Landsliding**

Common to the San Francisco Bay Area, the risk of instability is greater during major earthquakes.

### **2.3.2 Ground Shaking**

An earthquake of moderate-to-high magnitude generated within the San Francisco Bay Region could cause considerable ground shaking at the site, similar to that which has occurred in the past. To mitigate the shaking effects, all structures should be designed using sound engineering judgment and the latest California Building Code (CBC) requirements, as a minimum.

## **2.4 EXPANSIVE SOILS**

Fine-grained near-surface colluvium and alluvium at the site could exhibit a moderate to high potential for expansion. These potentially expansive soils could impact the planned site development. Expansive soils shrink and swell as a result of moisture changes. This can cause heaving and cracking of slabs-on-grade, pavements and structures founded on shallow foundations. The potential for expansive soils has been identified in the geotechnical report for the property. Shrink and swell of expansive soils on slopes is a portion of the mechanism of creep movement which can result in shallow slope instability. Within the open space area, slope instability caused by expansive soil creep will be addressed by the GHAD subject to the exceptions in Section 3.3.

## **3.0 AREAS OF GHAD RESPONSIBILITY**

### **3.1 SCOPE OF ACTIVITIES**

The District will have authority and responsibility to manage geologic hazards within the boundary shown in Exhibit A subject to the exclusions listed in Section 3.3 – Exceptions. The GHAD will assume monitoring and maintenance responsibilities for the following site improvements and activities (“GHAD Activities”).

- Slopes
- Subdrains
- Concrete-lined drainage ditches
- Settlement instruments
- Retaining walls
- Storm drain improvements including dissipater

The GHAD’s maintenance, monitoring and repair responsibilities for slopes, which will include partially repaired landslides, as shown on the attached Remedial Grading Plan (Figure 1), are discussed below in additional detail.

The GHAD will obtain necessary State and federal authorization required before performing any maintenance that affects any listed threatened or endangered species and/or the bed, channel or

bank of streams, wetlands, or riparian habitat associated with the creeks, and the associated improvements.

### **3.2 PREVENTION, MITIGATION, ABATEMENT AND/OR CONTROL OF GEOLOGIC HAZARDS**

Subject to the following exceptions, the primary mission of the GHAD shall be the prevention, mitigation, abatement, and/or control of geologic hazards within its boundaries that have damaged, or that pose a significant threat of damage to site improvements within the developed areas of the projects. As used herein, the term “site improvements” means buildings and outbuildings, roads, sidewalks, paths, utilities, improved trails, swimming pools, gazebos, cabanas, geologic stabilization features, or similar improvements.

The District may also take any action necessary to prevent, mitigate, abate or control damage to property or site improvements for which, in the sole judgment of the GHAD Manager, the District would be legally responsible as a property owner, such as damage to property or improvements outside the GHAD boundaries resulting from geologic hazards within the GHAD boundaries.

The single property exclusions and limitations set forth herein do not apply to geologic hazards existing on open-space property owned privately or by any homeowner’s association or golf course property.

### **3.3 EXCEPTIONS**

The GHAD may decline to prevent, mitigate, abate or control geologic hazards under the following circumstances:

1. Isolated or Remote Slope Instability: The GHAD shall not have responsibility or may place a low priority on its responsibility to monitor, abate, mitigate or control slope instability that does not involve damage to or pose a significant threat to damage site improvements.
2. Single Property: The GHAD will not prevent, mitigate, abate or control geologic hazards which are limited in area to a single parcel of property unless the geologic hazard has damaged, or poses a significant threat of damage, to site improvements located on other property within the GHAD boundaries.
3. Geologic Hazard Which Requires Expenditure in an Amount Exceeding the Value of the Threatened or Damaged Improvement: The GHAD will not prevent, mitigate, abate, or control a geologic hazard where, in the GHAD’s sole discretion, the anticipated expenditure required to be funded by the GHAD to prevent, mitigate, abate or control the geologic hazard will exceed the current value of the structure(s) and site improvement(s) threatened with damage or loss.

4. Damage Due to Seismically Induced Ground Shaking: The GHAD will not fund repairs or otherwise compensate for damage resulting from seismically induced ground shaking except for the following:
  - a. Damage to public infrastructure within the GHAD boundaries, as authorized by the GHAD Board and subject to the availability of funds.
  - b. Damage resulting from seismically induced landslides, as authorized by the GHAD Board, and subject to the availability of funds and the other restrictions included within this Plan of Control.
5. GHAD Funding or Reimbursement for Damaged or Destroyed Structures or Site Improvements: In the event a residence or any other private structure, site improvement or landscape feature is damaged or destroyed as a result of a geologic hazard, the GHAD may fund or reimburse the property owner for the expenses necessary to repair or replace the damaged or destroyed structure, site improvement or landscaping with the exceptions noted above. Unless otherwise authorized by the Board of Directors, the dollar amount of the GHAD funding or reimbursement may not exceed ten percent (10%) of the costs incurred by the GHAD in preventing, mitigating, abating or controlling the geologic hazard causing the damage. In the event the geologic hazard damages or destroys a structure, site improvement or landscaping that violated any provisions of the California building code, City of Oakland building code or ordinance, or any other applicable standard at the time of its installation or improvement, the GHAD may decline to provide any funding or reimbursement to the property owner for repair or replacement of the damaged structure, improvement or landscaping.
6. No Reimbursement of Expenses Incurred by Property Owners: The GHAD will not be obligated to reimburse a property owner for expenses incurred for the prevention, mitigation, abatement, or control of a geologic hazard absent a written agreement between the property owner and the GHAD to that effect, which agreement has been executed prior to the property owner incurring said expenses, and following an investigation conducted by the GHAD.
7. Property Not Located within GHAD Boundaries: Except as herein provided, the GHAD shall not prevent, mitigate, abate or control geologic hazards located on property that is not located within the GHAD boundaries. In the event, however, that all or any portion of a geologic hazard existing on property located outside the GHAD boundaries has damaged or poses a significant risk of damage to site or other physical improvements located on property within the GHAD boundaries, the GHAD may prevent, mitigate, abate, or control the geologic hazard.

Any work conducted on property located outside of the GHAD boundaries shall be strictly limited to that which is necessary to prevent, mitigate or control the damage, or threat of damage to property located within the boundaries of the GHAD. Should the GHAD be required to respond to a geologic hazard outside the boundaries of the GHAD, the GHAD may take such actions as may be appropriate to recover costs incurred as a result of preventing, mitigating, abating or controlling such geologic hazard from the responsible party, if any.

### **3.4 GEOLOGIC HAZARDS IN UNIMPROVED AND UNIMPROVED AREAS**

The GHAD may prevent, mitigate, abate, or control the geologic hazards in unimproved areas within the boundaries of the GHAD if said geologic hazards have damaged or have the potential to damage site improvements located on properties within the boundaries of the GHAD (Figure 1).

The GHAD will monitor erosion and sedimentation in open space areas that affect developed lots and/or improvements. In addition, the GHAD may repair erosion gullies, etc. in open space areas.

As required, monitoring of geotechnical instruments (e.g. inclinometers, settlement monuments, etc.) within the entire GHAD limits including open space areas will be included within the operations of the GHAD. Section 7.0 describes the frequency and scope of the monitoring activities that should be provided.

Slope stabilization, including major landslide repairs, will be the responsibility of the GHAD provided it meets the criteria for repair described above for the potential to impact site improvements. This also includes repair of minor landslides and debris flows.

Sediment removal from concrete-lined drainage ditches is the responsibility of the GHAD. The GHAD is further authorized to maintain surface and subsurface drainage facilities and improvements located in unimproved areas, including, but not necessarily limited to, concrete-lined drainage ditches, storm drain inlets and outlets in open space and creek corridors and subdrain outlets. Occasionally, portions of concrete-lined drainage ditches may require replacement due to cracking caused by expansive soils or erosion; this will be the responsibility of the GHAD.

### **4.0 GEOLOGIC TECHNIQUES FOR MITIGATION OF LANDSLIDE AND EROSION HAZARDS**

The techniques the GHAD may employ to prevent, mitigate or abate landsliding or adverse erosion damage might include, but are not necessarily limited to:

- Removal of the unstable earth mass.
- Stabilization (either partial or total) of the landslide by removal and replacement with compacted drained fill.
- Construction of structures to retain or divert landslide material or sediment.
- Construction of erosion control devices such as gabions, rip rap, geotextiles or lined ditches.
- Placement of drained engineered buttress fill.
- Placement of subsurface drainage devices (e.g. underdrains or horizontal drilled drains).

- Slope correction (e.g. gradient change, biotechnical stabilization, slope trimming or slope contouring).
- Construction of additional surface ditches and/or detention basins, silt fences, sediment traps, or backfill of erosion channels.

Potential landslide and erosion hazards can often best be mitigated by controlling soil saturation and water runoff and by maintaining the surface and subsurface drainage system. Maintenance shall be provided for lined surface drainage ditches and drainage terraces.

## **5.0 BIOTECHNICAL RECOMMENDATIONS FOR PREVENTION AND MITIGATION OF EXISTING OR POTENTIAL EROSION HAZARDS**

Slopes within the boundaries of the District are expected to be erodible; therefore, the maintenance of vegetative cover is especially important. Vegetation provides protection for soil and exposed rock. It absorbs the impact of raindrops, reduces the velocity of runoff and retards erosion.

In many instances, adequate erosion protection for slopes can be accomplished with carefully selected and placed biological elements (plants) without the use of structures (e.g., brush layering and willow waddling).

In other areas, biotechnical slope protection may involve the use of mechanical elements or structures in combination with biological elements to provide erosion control and help prevent small-scale slope failures. Locally, walls, welded-wire walls, gabion walls, rock walls, riprap and reinforced earth walls used in combination with carefully selected and planted vegetation can provide high-quality slope protection. The vegetation may be planted on the slope above a low retaining structure or toe wall, or the interstices of the structure can be planted.

## **6.0 PRIORITY OF GHAD EXPENDITURES**

Emergency response and scheduled repair expenditures by the GHAD are to be prioritized by the GHAD Manager, utilizing its discretion, based upon available funds and the approved operating budget. If available funds, less an appropriate reserve allowance, are not sufficient to undertake all of the identified remedial and preventive stabilization measures, the expenditures are to be prioritized as follows in descending order of priority:

1. Prevention, mitigation, abatement or control of geologic hazards that have either damaged or pose a significant threat of damage to habitable structures, critical underground utilities or paved streets.
2. Prevention, mitigation, abatement or control of geologic hazards which have either damaged or pose a significant threat of damage to ancillary structures.

3. Prevention, mitigation, abatement or control of geologic hazards that have either damaged or pose a significant threat of damage limited to loss of landscaping or other similar non-essential amenities.
4. Prevention, mitigation, abatement or control of geologic hazards existing entirely on open space areas and which have neither damaged nor pose a significant threat of damage to any site improvements.

As permitted by California Public Resources Code Sections 26591 and 26593, in performing its duties as described above, the GHAD may seek financial assistance from public and private entities including, but not limited to, FEMA, State and local agencies, insurance companies, etc.

## **7.0 MAINTENANCE AND MONITORING SCHEDULE**

GHAD-maintained facilities should be inspected by the GHAD Manager or its consultants as presented below. The GHAD Manager shall be a licensed Geotechnical Engineer or Certified Engineering Geologist in the State of California. The annual budget should be calculated so that inspections will be scheduled to occur two times per year (or as outlined below) and as necessary after heavy storm events, defined as greater than a 5-year storm. The regular inspections should be scheduled to take place in October, prior to the beginning of the historic “rainy season” or “storm season”. The second inspection should occur in March or April, toward the end of the rainy season or storm season.

The timing, frequency and other details regarding such maintenance, inspection and similar activities will be set forth by the GHAD Manager.

- An Engineer or Geologist shall carry out a geologic reconnaissance of the slopes for indications of erosion or slope failures. The removal of accumulated debris, including material from benches, berms or walls, if any, should be undertaken in a manner that maintains the capacity of the catchment feature to protect site improvements.
- Concrete-lined drainage ditches within the District boundaries should be inspected during each scheduled monitoring event. Repairs and maintenance should be performed as needed. Excess silt or sediment in ditches should be removed, and cracked or broken ditches should be patched or repaired as required before the beginning of the next rainy season.
- Subsurface drain outlets and horizontal drain outlets, if any, should be inspected on a regular schedule. Water flowing from these outlets should be measured and recorded during each inspection. Any suspicious interruption in flow should signal a need to unplug or clean the affected drain.
- If installed, piezometers used to measure groundwater levels, or other instruments such as inclinometers and tiltmeters, should be monitored on a regular schedule.

- Settlement-monitoring devices, if any, should be monitored on a regular schedule. In the event of anomalous readings or excessive settlement, the monitoring frequency should be increased.
- Readily accessible developer-constructed retaining walls should be inspected annually for evidence of distress, such as tilting and/or structural failure. Repairs and maintenance would be undertaken only in the event that the structural integrity of the wall has been compromised or if the wall distress poses a threat to the integrity of adjacent structures.
- Inlets and outfalls, if used, must be kept free of debris, and spillways must be maintained.

The District should review its inspection schedule annually and assess the effectiveness of its preventive maintenance program on a regular basis. District staff should prepare an annual report to the GHAD Board of Directors with recommendations for maintenance and/or repair projects. Consultants, as necessary, may be retained to undertake the needed studies.

## 8.0 OWNERSHIP AND MANAGEMENT

Ownership, funding sources and maintenance responsibilities shall be as shown on the following table.

**TABLE 8.0-1**  
**KENILWORTH ROAD RESIDENTIAL DEVELOPMENT/OAKLAND AREA GHAD**  
**Long-Term Ownership and Management Matrix**

| Facility/Function                                                                                 | Maintenance Entity | Funding         | Tentative Acceptance Date or Minimum Monitoring Term | Ownership                    |
|---------------------------------------------------------------------------------------------------|--------------------|-----------------|------------------------------------------------------|------------------------------|
| <b>1. Development Area</b>                                                                        |                    |                 |                                                      |                              |
| a. Residential Lots                                                                               | Private            | Private         | N/A                                                  | Private                      |
| b. Kenilworth Road                                                                                | City of Oakland    | City of Oakland | 1 Year                                               | City of Oakland              |
| c. Sidewalks                                                                                      | HOA                | HOA             | 1 Year                                               | HOA                          |
| d. Common Area Landscaping                                                                        | HOA                | HOA             | 1 Year                                               | HOA                          |
| <b>2. Plan of Control Defined Activities (prior to GHAD assuming rights and responsibilities)</b> |                    |                 |                                                      |                              |
| a. Developer Constructed Retaining Walls                                                          | Developer          | Private Funding | 3 Years                                              | Developer/<br>Property Owner |
| b. Storm Drain Facilities within Public Right of Way and Private Lots                             | Developer          | Private Funding | 3 Years                                              | Developer/<br>Property Owner |

| Facility/Function                                                                                  | Maintenance Entity | Funding             | Tentative Acceptance Date or Minimum Monitoring Term | Ownership                                |
|----------------------------------------------------------------------------------------------------|--------------------|---------------------|------------------------------------------------------|------------------------------------------|
| c. Slopes, Subsurface, and Surface Drainage Improvements                                           | Developer          | Private Funding     | 3 Years                                              | Developer/<br>Property Owner             |
| d. Vegetation Management for Fire Suppression                                                      | Developer/HOA      | Private Funding/HOA | N/A                                                  | Developer/<br>Property Owner/<br>Private |
| <b>3. Plan of Control Defined Activities (Post GHAD assumption of rights and responsibilities)</b> |                    |                     |                                                      |                                          |
| a. Developer Constructed Retaining Walls                                                           | GHAD               | Assessment          | Perpetual                                            | GHAD                                     |
| b. Storm Drain Facilities within Public Right of Way and Private Lots                              | GHAD               | Assessment          | Perpetual                                            | GHAD                                     |
| c. Slopes, Surface Drainage, and Subsurface Improvements                                           | GHAD               | Assessment          | Perpetual                                            | GHAD                                     |

## 9.0 RIGHT-OF-ENTRY

GHAD officers, employees, consultants, contractors, agents, and representatives shall have the right to enter upon all lands within the GHAD boundary, as shown on Exhibit A, for the purpose of performing the activities described in this Plan of Control. Such activities include, but are not limited to: (1) the inspection, maintenance and monitoring of site improvements including drainage ditches, storm drains, outfalls and pipelines; (2) the monitoring, maintenance and repair of slopes, including repaired or partially repaired landslides; and (3) the management of erosion and geologic hazards within the open space areas. Should the GHAD need to access private residential lots to fulfill its duties under the Plan of Control, the GHAD shall provide the affected landowner and/or resident with 72 hours advance notice unless, in the reasonable judgment of the GHAD Manager, an emergency situation exists which makes immediate access necessary to protect public health and safety, in which case no advance notice is required, but the GHAD shall inform the landowner and/or resident as soon as reasonably possible.

The owner of property within the Project shall record a Declaration of Disclosures, Right of Entry and Restrictive Covenants Regarding Geologic Hazard Abatement District (“Declaration”) after recordation of the Final Map, in the form attached as Appendix E. The Declaration creates covenants that run with the land and will be binding upon all future owners of property within the Project area, their successors and assigns. Recordation of the Declaration must occur before the GHAD can assume ownership responsibilities for the land subject to the Declaration.

## **10.0 GLOSSARY**

Kenilworth Road Engineer's Report – The document that establishes the individual property owners' and Oakland Area GHAD maximum annual assessment based on the projected expenses (budget) of the GHAD.

Geological Hazard Abatement District (GHAD) Manager – An entity employing a licensed Geotechnical Engineer or Certified Engineering Geologist who will oversee the operations of the GHAD including preparation of GHAD budgets. The GHAD Manager is appointed by and reports to the GHAD Board of Directors.

## **SELECTED REFERENCES**

- ENGEO; Supplemental Geotechnical Exploration, Kenilworth Road Project, Oakland, California; June 28, 2002; Project No. 5410.1.003.01.
- ENGEO; Supplemental Geotechnical Exploration, Kenilworth Road Project, Oakland, California; May 14, 2003; Project No. 5410.1.005.01.
- ENGEO; Updated 2013 CBC Seismic Design Parameters and Slope Stability Analysis; January 8, 2015; Project No. 5410.100.000.
- Morgan Engineering, Kenilworth Road Improvement Plan, Kenilworth Road, Oakland, California; August 5, 2002 with Latest Revision dated April 20, 2005; Job No. 02-4512.
- Morgan Engineering, Slide Repair Plan, Grading Plan (Sheet 1 of 2) and Schematic Keyway and Benching Plan (Sheet 2 of 2), Kenilworth Road, Oakland, California; August 5, 2002 with Latest Revision dated April 20, 2005; Job No. 02-4512.
- Oakland City Council, 2006, Resolution of the Oakland City Council Approving Formation of the Oakland Area County Geologic Hazard Abatement District, July 18, 2006, Resolution No 80058.
- Oakland Planning Commission, 2010, Conditions of Approval/MMRP for Kenilworth Road PUD, July 9, 2010.

**FIGURES**

**Figure 1 – Geologic Map**

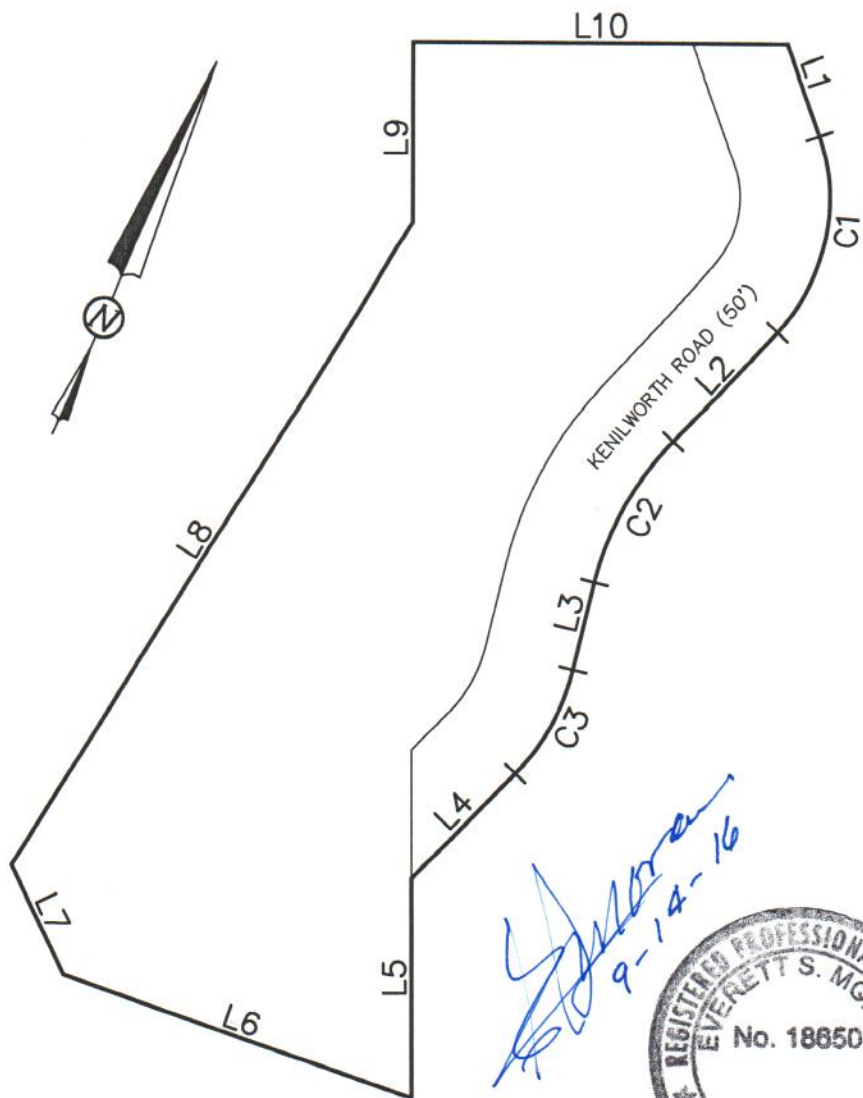
**Figure 2 – Slope Repair Plan**



**APPENDIX A**

**Plat and Legal Description of  
Kenilworth Road - Oakland Area GHAD**





| LINE TABLE |             |          |
|------------|-------------|----------|
| LINE       | BEARING     | DISTANCE |
| L1         | S43°15'00"E | 53.58'   |
| L2         | S75°18'00"W | 84.23'   |
| L3         | S10°15'00"E | 49.93'   |
| L4         | S20°18'00"W | 81.63'   |
| L5         | S23°55'00"E | 122.49'  |
| L6         | S85°34'57"W | 204.14'  |
| L7         | N49°04'00"W | 67.26'   |
| L8         | N07°53'30"E | 419.33'  |
| L9         | N23°55'00"W | 100.00'  |
| L10        | N66°05'00"E | 207.60'  |

| CURVE TABLE |         |           |          |
|-------------|---------|-----------|----------|
| CURVE       | RADIUS  | DELTA     | DISTANCE |
| C1          | 105.00' | 63°00'00" | 115.45'  |
| C2          | 175.00' | 30°00'00" | 91.63'   |
| C3          | 125.00' | 30°33'00" | 66.65'   |

GRAPHIC SCALE



( IN FEET )  
1 inch = 100 ft.

# **EXHIBIT "A"** **PLAT TO ACCOMPANY LEGAL DESCRIPTION FOR** **GEOLOGIC HAZARD** **ABATEMENT DISTRICT**

CITY OF OAKLAND, COUNTY OF ALAMEDA, CALIFORNIA  
 SEPTEMBER, 2016 SCALE: 1" = 100'

**MORAN ENGINEERING, INC.**

CIVIL ENGINEERS \ LAND SURVEYORS  
 1930 SHATTUCK AVENUE, SUITE A  
 BERKELEY, CALIFORNIA 94704  
 (510) 848-1930

EXHIBIT B

LEGAL DESCRIPTION  
GEOLOGIC HAZARD ABATEMENT DISTRICT  
OAKLAND, CALIFORNIA

REAL PROPERTY in the City of Oakland, Alameda County, California, described as follows:

A portion of the map of the Gwin Unit of the Highlands of Oakland, filed November 10, 1925 in Book 5 of Maps at page 39, Official Records of Alameda County (hereinafter referred to as Gwin), and a portion of Parcel One as shown on Parcel Map 3260, filed June 19, 1980, in Book 119 of Parcel Maps, page 23, Official Records of Alameda County, more particularly described as follows:

Beginning at the intersection of the general eastern line of Kenilworth Road, 50 feet in width, with the extension easterly of the northwestern line of Lot 369, as said Lot and Road are shown on said map of Gwin.

Thence, from said Point of Beginning, along said general eastern line the following seven courses:

1. South 43° 15' 00" East 53.58 feet
2. Southerly along the arc of a tangent curve to the right, having a radius of 105 feet, through a central angle of 63° 00' 00", a length of 115.45 feet
3. South 75° 18' 00" West 84.23 feet
4. Southerly, along the arc of a tangent curve to the left, having a radius of 175 feet, through a central angle of 30° 00' 00", a length of 91.64 feet
5. South 10° 15' 00" East 49.93 feet
6. Southerly along a tangent curve to the right, through a central angle of 30° 33' 00", a length of 66.65 feet
7. South 20° 18' 00" West 81.63 feet to the western line of said Gwin (5 M 39);

Thence, along said line

8. South 23° 55 ' 00" East 122.49 feet

Thence, leaving said line the following 3 courses:

9. South 85° 34' 57" West 204.14' feet
10. North 49° 04' 00" West 67.26 feet
11. North 07° 53' 30" East 419.33 feet to said western line of Gwin

Thence, along said line

12. North 23° 55' 00" West 100.00 feet to an intersection with the said northwestern line of Lot 369
13. Thence, along said line, and its extension easterly, North 66° 05' 00" East 207.60 feet to the Point of Beginning and

Containing 124,111 square feet of land, more or less

*Handwritten signature and date:*  
9-14-16



September 2, 2016  
JOB# 16 – 4512.3

**APPENDIX B**

**Background**



## **BACKGROUND**

### **SITE CONDITIONS**

The proposed Kenilworth Road Project is located south and west of Kenilworth Road in Oakland, California (Figure 1). The main feature of the 2.9-acre site is a steep western facing slope, up to about 120 feet in height, and located along the western and southern edges of the site. The slopes are inclined from approximately 1.5:1 (horizontal:vertical) to 3:1. In general, the steep slopes are eroded with active landslide areas (Figure 1).

Vegetation on site consists of grassland, brush, scattered oak and eucalyptus trees. Kenilworth Road is paved to 7080 Kenilworth Road and continues as a dirt road that provides access to the eastern area of the Project.

### **PROPOSED IMPROVEMENTS**

Based on a review of the Morgan Associates Grading Plan, we understand the Project will include an extension of Kenilworth Drive, seven single-family homes, retaining walls, a private sanitary sewer pump station, and storm drain system improvements.

**APPENDIX C**

**Site Geology**



## SITE GEOLOGY

The geologic units mapped on the Project include deposits consisting of engineered fill, landslide, and bedrock. The geologic units described below are adapted from the geotechnical reports that were completed for the Project in 2002 and 2003.

### GEOLOGIC UNITS

The site is located in the Coast Range geomorphic province. As indicated in the referenced 2002 Supplemental Geotechnical Exploration, bedrock at the site includes sandstone of the Sobrante Sandstone of Cenozoic age and siltstone and shale of the Claremont Shale. As shown on Regional Geologic Map by Crane, a synclinal fold axis is mapped across the site in a northwest-trending orientation.

A brief discussion of the geologic units and mapped locations follows:

- Engineered Fill (Q<sub>afe</sub>) were identified in the area of Kenilworth Drive and generally consist of silty clay materials. The fill encountered in borings and test pits ranged up to about 6 feet thick and consists of silty clay and silty sand with rock fragments.
- Landslide Deposits (Q<sub>ls</sub>) were mapped on the site as show on the 2003 Supplemental Geotechnical Exploration report (Figure 1). Most of the landslide areas on the site are considered dormant based on subdued topographic expression and vegetated scarps. These landslide areas involve primarily soil but may include some highly weathered bedrock material. Test pit and boring exploration indicates that the surficial landslides range from about 3 to 11 feet thick. As indicated in the 2015 Updated 2013 CBC Seismic Design Parameters and Slope Stability Analysis, an active landslide scarp was observed near the shoulder of the existing dirt road that is to be the future extension of Kenilworth Road. The landslide scarp was approximately 3 feet deep, about 60 feet wide, and was located approximately 200 feet south of the southern end of the existing property line
- Sobrante Sandstone (T<sub>so</sub>) was encountered in all of the exploratory borings and test pits beneath the overlying fill, soils, slide debris. Bedrock was found to consist predominantly of sandstone with minor interbedded siltstone and claystone. The bedrock encountered varied from friable to moderately strong, and was generally highly fractured and thickly bedded.

### GROUNDWATER

At the time of subsurface work, free groundwater was reportedly encountered at between 3 and 17 feet below the ground surface. In 2002, an ephemeral spring was observed in the central portion of the site. Fluctuations in groundwater levels may occur seasonally and over a period of years because of precipitation, changes in drainage patterns, irrigation and other factors. Future irrigation may cause an overall rise in groundwater levels.

## **SEISMIC SOURCES**

The Project is not located within a State of California Earthquake Fault Hazard Zone for active faults and no faults are shown on regional geologic maps crossing the additional study area. As indicated in the referenced 2002 Supplemental Geotechnical Exploration Report , a thrust fault is mapped by Crane crossing the northern portion of the Project study area. The thrust fault is mapped at the contact between the Sobrante sandstone to the east and the Claremont shale to the west. The thrust fault mapped by Crane is not considered active.

The Hayward and San Andreas faults are located approximately 4,000 feet and 19 miles, respectively, to the southwest of the site. The Calaveras fault is located about 13 miles to the southeast of the site.

**APPENDIX D**  
**Funding and Acceptance**



## **FUNDING AND ACCEPTANCE OF RESPONSIBILITY BY THE GHAD**

Ultimately, an annual assessment shall be levied on all residential parcels within Kenilworth Road development.

### **ACTIVATION OF ASSESSMENT**

The assessment shall be levied by the GHAD on each individual parcel beginning the first property-tax assessment cycle following issuance of a building permit for that parcel.

### **RESPONSIBILITY FOR GHAD ACTIVITIES**

The GHAD is not responsible for any GHAD Activities on the property within the GHAD boundaries until the GHAD formally accepts such responsibility. The property owner shall remain responsible for all GHAD Activities until the GHAD formally accepts such responsibility. GHAD activities may be eligible for transfer to the GHAD at 9:00 a.m. on the day exactly three years after the first residential building permit within the Kenilworth Road GHAD boundaries is issued by the City of Oakland provided that the items listed below have been completed ("Transfer Eligibility Date"). The petitioners for formation of the GHAD intend that the approximately three-year period between the initial levying of the GHAD assessment and the GHAD becoming responsible to perform activities on property will allow the District to accumulate reserve funds without incurring significant expenses.

### **PROCESS FOR TRANSFERRING RESPONSIBILITY FOR GHAD ACTIVITIES**

After the Transfer Eligibility Date, the process for transferring responsibility for performing GHAD activities on such parcel(s) shall be as follows:

1. In the calendar year of the Transfer Eligibility Date or in any subsequent year, at its discretion, the property owner may apply to the GHAD ("Transfer Application") to transfer the responsibility for performing GHAD Activities for parcel(s) to the District.
2. Within 45 days of receiving such notice, the GHAD Manager, in its sole discretion, shall verify that all the facilities for which the GHAD will have maintenance responsibility have been constructed and maintained according to the City-approved plans and specifications for the individual improvements, and that such facilities are operational and in good working order.
3. Within 15 days of such inspection, the GHAD Manager will send the property owner a list ("Punch List") of all of the items that need to be constructed, repaired or otherwise modified.
4. The property owner may notify the GHAD Manager when it has completed the items identified on the Punch List.

5. Within 30 days of receipt of such notice, the GHAD Manager shall verify whether all Punch List items have been completed. If such items have been completed, the GHAD shall notify the property owner that the District accepts responsibility for performing all future GHAD Activities on the parcel(s).
6. The GHAD shall confirm that the reserve requirement defined in the approved Engineer's Report has been met.
7. Any monies owed to the GHAD by the property owner have been paid to the GHAD.

As part of the transfer, the property owner shall provide the GHAD, for its use, copies of the applicable geotechnical exploration reports, grading plans, corrective grading plans, improvement plans, field-verified geologic maps, as-built subdrain plans and other pertinent documents as requested by the GHAD.

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**APPENDIX E**  
**Right-of-Entry**



**DECLARATION OF DISCLOSURES, RIGHT OF ENTRY  
AND RESTRICTIVE COVENANTS REGARDING  
OAKLAND AREA GEOLOGIC HAZARD ABATEMENT DISTRICT**

This Declaration of Disclosures, Right of Entry and Restrictive Covenants Regarding Oakland Area Geologic Hazard Abatement District (the “Declaration”) is made this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ (the “Effective Date”), by Sven Khatri, a \_\_\_\_\_ (“Declarant”).

**RECITALS**

A. Declarant is the owner of that certain real property located in Oakland, State of California, more particularly described as all of that certain real property shown in Final Map, Subdivision \_\_\_\_\_, filed on \_\_\_\_\_, 20\_\_, in Book \_\_\_\_\_ of Maps, at pages \_\_\_\_\_, all in the Official Records of Alameda County, California (the “Property”).

B. The City of Oakland approved a 7-lot residential subdivision on the Property. A condition of approval of the tentative map for Subdivision \_\_\_\_\_ was that the Property be included within a Geologic Hazard Abatement District (“GHAD”) to ensure proactive and effective maintenance of all subdrain facilities.

C. Under the authority of California Public Resources Code section 26500, et seq., the Oakland City Council on July 18, 2006 adopted Resolution No. 80058 forming and establishing the Oakland Area Geologic Hazard Abatement District to prevent, mitigate, abate or control potential geologic hazards within the boundaries of the GHAD. On \_\_\_\_\_, 20\_\_, the Oakland Area GHAD adopted Resolution No. \_\_\_\_\_, approving of the assessment to the Property as described in the Plan of Control.

NOW, THEREFORE, Declarant, as the owner of the Property, for itself, its successors and assigns does hereby declare as follows:

1. Notification and Disclosure of Oakland Area GHAD: The Declarant hereby gives notice and discloses that the Property is a part of the Oakland Area GHAD. The Board of Directors of the Oakland Area GHAD are the members of the Oakland City Council. Pursuant to the Plan of Control for the Oakland Area Geological Hazard Abatement District as it may be amended from time to time (the “Plan of Control”), the Declarant and the Oakland Area GHAD are afforded certain responsibilities and rights relating to the prevention, mitigation, abatement and control of potential geologic hazards on the Property. The powers of the Oakland Area GHAD include the power to assess lot owners within the Property for the purposes set out in the Plan of Control. An assessment was authorized by the Oakland Area GHAD to be imposed on the Property pursuant to adopted Resolution \_\_\_\_\_.
2. Right of Entry: The Declarant by executing and recording this Declaration hereby contractually affords Oakland Area GHAD, its officials, employees, contractors and agents an irrevocable right of entry with continuing and perpetual access to and across the Property for the purposes and responsibilities set out in the Plan of Control (“Access Rights”). Should the Oakland Area GHAD need to access private residential lots to fulfill its duties under the Plan of Control, the

Oakland Area GHAD shall provide the affected landowner and/or resident with 72 hours advanced notice unless, in the reasonable judgment of the GHAD Manager, an emergency situation exists which makes immediate access necessary to protect the public health and safety, in which case no advanced notice is required, but the Oakland Area GHAD shall inform the landowner and/or resident as soon as reasonably possible. The Declarant hereby gives notice that the GHAD will acquire Access Rights immediately upon the execution of this Declaration. The GHAD, in its sole discretion, may elect not to exercise Access Rights until it accepts its maintenance responsibilities consistent with the Plan of Control.

3. GHAD Easement: The Declarant hereby grants the Oakland Area GHAD a perpetual easement for the purposes and responsibilities set out in the Plan of Control and for maintaining certain site improvements as legally described in Exhibit A, and depicted in Exhibit B attached hereto, (the "GHAD Easement"). Such activities include, but are not limited to: (a) the inspection, maintenance, monitoring and replacement of site improvements including, drainage ditches, storm drains, outfalls and pipelines; (b) the monitoring, maintenance and repair of slopes, including repaired or partially repaired landslides; and (c) the management of erosion and geologic hazards within the open space areas shown in the Plan of Control. The GHAD Easement shall become effective upon acceptance by the Oakland Area GHAD of its responsibilities and rights, the process by which is articulated in the Plan of Control. The Oakland Area GHAD has no maintenance responsibilities whatsoever to the Declarant or Property until and unless the Oakland Area GHAD accepts such responsibilities consistent with the Plan of Control.
4. Covenants Running with the Land: The Property shall be held, conveyed, hypothecated, encumbered, sold, leased, used, improved and maintained subject to the limitations, covenants, conditions, restrictions, easements, rights of entry and equitable servitude set forth in this Declaration, all of which are in furtherance of Declarant's plan for the uniform improvement and operation of the Property. All of the limitations, covenants, conditions, restrictions, easements, rights of entry and equitable servitudes set out in this Declaration shall both benefit and burden the Property and shall run with and be binding upon and inure to the benefit of the Property and each parcel therein, and shall be binding upon and inure to the benefit of each owner, and every person having or acquiring any right, title or interest in and to all or any portion of the Property and their successors and assigns. Upon Declarant's conveyance of fee title to the Property, or any portion thereof, Declarant shall be released from any further liability or obligation hereunder related to the portion of the Property so conveyed, and the grantee of such conveyance shall be deemed to be the "Declarant," with all rights and obligations related thereto, with respect to that portion of the Property conveyed.
5. Hold Harmless: Declarant, or its successors and assigns, shall hold harmless, protect and indemnify Oakland Area GHAD and its directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them (collectively, "Oakland Area GHAD Indemnified Parties") from and against any and all liabilities, penalties, costs, losses, damages, expenses (including, without limitation, reasonable attorneys' fees and experts' fees), causes of action, claims, demands, orders, liens or judgments (each a "Claim" and, collectively, "Claims"): (1) for injury to or the death of any

person, or physical damage to any property, related to or occurring on or about the GHAD Easement to the extent arising from the negligence or intentional misconduct of Declarant, its employees, agents or contractors; or (2) related the existence of the GHAD Easement, exclusive of any Claims brought by Declarant.

6. Enforcement: The Oakland Area GHAD shall have the right but not the obligation to enforce the provisions of this Declaration.
7. Modification or Termination: This Declaration shall not be modified, amended or terminated without the written consent of the Oakland Area GHAD.

Executed as of the Effective Date.

Declarant:

By: \_\_\_\_\_  
Its: \_\_\_\_\_

### CERTIFICATE OF ACCEPTANCE

This is to certify that the interest in real property conveyed to the Oakland Area Geologic Hazard Abatement District by the foregoing document titled "Declaration of Disclosures, Right of Entry and Restrictive Covenants", which is dated \_\_\_\_\_, 20\_\_ and executed by \_\_\_\_\_, is hereby accepted by the undersigned pursuant to authority conferred by Resolution No. \_\_-\_\_, dated \_\_\_\_\_, 20\_\_. The County of Oakland Area, as grantee, consents to recordation of said "Declaration of Disclosures, Right of Entry and Restrictive Covenants".

\_\_\_\_\_  
Oakland Area GHAD Manager

Date:

\_\_\_\_\_  
Oakland Area GHAD Clerk and Attorney

KENILWORTH ROAD,  
By:

\_\_\_\_\_  
Its: Owner