CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
710 E STREET • SUITE 200
EUREKA, CA 95501-1865
VOICE (707) 445-7833
FACSIMILE (707) 445-7877

F6b

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Staff:	Robert S. Merrill
Staff Report:	November 21, 2008
Hearing Date:	December 12, 2008
Commission Action:	

STAFF REPORT: APPEAL

SUBSTANTIAL ISSUE

APPEAL NO.:	**A-1-TRN-08-046**
APPLICANT:	**JIM MARSHALL**
LOCAL GOVERNMENT:	City of Trinidad
DECISION:	Approval with Conditions
PROJECT LOCATION:	Corner of Edwards and Hector Streets, within the City of Trinidad, Humboldt County (APNs 042-042-05 and 042-042-13).
PROJECT DESCRIPTION:	Construction of a new 2,454-square-foot, 3-bedroom, 1-story, single-family residence.
APPELLANTS:	Michael Reinman
LUP DESIGNATION:	UR – Urban Residential
ZONING:	UR – Urban Residential

SUBSTANTIVE FILE: DOCUMENTS

1) City of Trinidad Coastal Development Permit Application No. 2007-12a;
2) City of Trinidad Local Coastal Program.

SUMMARY OF STAFF RECOMMENDATION:

The staff recommends that the Commission, after public hearing, determine that a **SUBSTANTIAL ISSUE** exists with respect to the grounds on which the appeal has been filed and that the Commission hold a de novo hearing, because the appellant has raised a substantial issue with the local government's action and its consistency with the certified Local Coastal Program (LCP).

The approved project involves the construction of a new 2,454-square-foot, 3-bedroom, 1-story, single-family residence on a vacant 12,815-square-foot parcel located at the corner of Hector and Edwards Street in the City of Trinidad. In addition, to the house, the approved development includes a septic system with primary and reserve leach fields, a driveway, and landscaping. The subject property is relatively flat with a gentle slope (approximately 6%), but is located approximately 30 feet north from a steep approximately 180-foot high unstable coastal bluff on the other side of Edwards Street.

The appellants raise four basic contentions in their appeal. The appellant contends that the project as approved is inconsistent with the City of Trinidad LCP provisions regarding bluff stability, visual resource protection, design review provisions. The appellant also contends that the Planning Commission approval of the project was in violation of Fair Political Practices Act regarding the need for Planning Commissioners living near a development being reviewed to recuse themselves from voting.

Staff recommends that the Commission find that the contention raised in the appeal regarding bluff stability raises a substantial issue of the development's conformance to the bluff stability policies of the certified LCP. Because the geotechnical investigation prepared for the development did not establish a bluff retreat rate or include a quantitative bluff stability analysis, the degree of legal and factual support for the local government's decision that the approved development will be stable over the life of the project is low.

In addition, because (a) the geologic report indicates that surface and groundwater are major determinants of the stability of the coastal bluff in this area, (b) the proposed development includes the use of a septic system that would discharge septic leachate to the substrate, (c) key assumptions of the geologic report that groundwater from the site flows away from the bluff are based on projections that are difficult to establish, and (d) as alternative septic system designs that could potentially minimize contributions of the approved project to groundwater flow and bluff instability have not been examined, there

is not a high degree of factual support for the local government's decision that the development will not contribute to geologic instability.

Therefore, staff recommends that the Commission finds that the appeal raises a substantial issue of conformance of the project as approved with the provisions of Policy 3 of the LUP's *Constraints on Development* chapter and Zoning Code Sections 4.06(C)(6) and 4.03(C)(10).

Staff further recommends that the Commission continue the de novo portion of the hearing because the Commission does not have sufficient information to determine what development can be approved consistent with the LCP. Continuing the hearing would enable the applicant to provide (1) supplemental geotechnical information that includes an evaluation of the bluff retreat rate and a quantitative slope stability analysis that would help determine if the development would not be affected by bluff instability over the life of the development, and (2) an analysis of the feasibility and relative contribution of groundwater of alternative septic systems to determine if an alternative septic system design would reduce the discharge of water to the substrate and thereby reduce the contribution of the project to bluff instability.

The motion to adopt the staff recommendation of Substantial Issue is found on Page No. 5.

STAFF NOTES:

1. Appeal Process.

After certification of Local Coastal Programs (LCPs), the Coastal Act provides for limited appeals to the Coastal Commission of certain local government actions on coastal development permits (Coastal Act Section 30603).

Section 30603 states that an action taken by a local government on a coastal development permit application may be appealed to the Commission for certain kinds of developments, including developments located within certain geographic appeal areas, such as those located between the sea and the first public road paralleling the sea or within one hundred feet of a wetland or stream or three hundred feet of the mean high tide line or inland extent of any beach or top of the seaward face of a coastal bluff, or those located in a sensitive coastal resource area.

Furthermore, developments approved by counties may be appealed if they are not designated the "principal permitted use" under the certified LCP. Finally, developments

constituting major public works or major energy facilities may be appealed whether approved or denied by the city or county. The grounds for an appeal are limited to an allegation that the development does not conform to the standards set forth in the certified local coastal program and, if development is located between the first public road and the sea, the public access and public recreation policies set forth in the Coastal Act.

The approved development is appealable to the Commission pursuant to Section 30603(a)(2) of the Coastal Act because it is located within 300 feet of the mean high tide line and the top of the seaward face of a coastal bluff.

Section 30625(b) of the Coastal Act requires the Commission to hear an appeal unless the Commission determines that the appeal raises no substantial issue of conformity of the approved project with the certified LCP. Since the staff is recommending substantial issue, unless three Commissioners object, it is presumed that the appeal raises a substantial issue and the Commission may proceed to its *de novo* review.

If the Commission decides to hear arguments and vote on the substantial issue question, proponents and opponents will have three minutes per side to address whether the appeal raises a substantial issue. It takes a majority of Commissioners present to find that no substantial issue is raised.

The only persons qualified to testify before the Commission on the substantial issue question are the applicants, the appellant and persons who made their views known to the local government (or their representatives). Testimony from other persons regarding substantial issue must be submitted in writing.

Unless it is determined that there is no substantial issue, the Commission will proceed to the *de novo* portion of the appeal hearing and review the merits of the proposed project. This *de novo* review may occur at the same or subsequent meeting. If the Commission were to conduct a *de novo* hearing on the appeal, because the proposed development is located between the first public road and the sea, the applicable test for the Commission to consider would be whether the development is in conformity with the certified Local Coastal Program and with the public access and public recreation policies of the Coastal Act.

2. Filing of Appeal

One appeal was filed by Michael Reinman (see Exhibit No. 6). The appeal to the Commission was filed in a timely manner on November 7, 2008, within 10 working days of receipt by the Commission on October 24, 2008 of the City's Notice of Final Local Action.

3. Transalliteration of Zoning Code Citations.

Throughout the City of Trinidad's *Notice of Final Local Action* (see Exhibit No. 7) and the *Appeal from Coastal Permit Decision of Local Government* filed by Michael Reinman (see Exhibit No. 6), references to various coastal zoning ordinance provisions are stated in terms of the numeration system of the Trinidad Municipal Code (i.e., Title 17, §§17.04.010 – 17.76.050) instead of the numeration of the City's certified zoning regulations (i.e., Ordinance No. 166, §§1.01 – 7.23 and Appendix A). With the exception of the differences in the numbering schema and the order in which the various zoning standards and development regulations appear in these two documents, the provisions of the zoning ordinance, as certified by the Commission on July 9, 1980, are duplicated verbatim within Title 17 of the municipal code except in rare minor instances. For consistency with the requirements of the Coastal Act that only new development be approved that is consistent with the policies and standards of the certified LCP and that appeals only be based upon alleged inconsistency with the policies and standards of the certified LCP, in quoting the various findings adopted by the City in support of the approved development staff and/or the appellants' contentions, staff has replaced the cited municipal code numbering with the numbering of the certified zoning ordinance.

I. MOTION, STAFF RECOMMENDATION AND RESOLUTION

Pursuant to Section 30603(b) of the Coastal Act and as discussed below, the staff recommends that the Commission determine that a substantial issue exists with respect to the grounds on which the appeal has been filed. The proper motion is:

MOTION:

I move that the Commission determine that Appeal No. A-1-TRN-08-046 raises No Substantial Issue with respect to the grounds on which the appeal has been filed under Section 30603 of the Coastal Act.

STAFF RECOMMENDATION:

Staff recommends a **NO** vote. Following the staff recommendation will result in the Commission conducting a de novo review of the application, and adoption of the following resolution and findings. Passage of this motion, via a yes vote, will result in a finding of No Substantial Issue and the local action will become final and effective. The motion passes only by an affirmative vote of the majority of the appointed Commissioners present.

RESOLUTION TO FIND SUBSTANTIAL ISSUE:

The Commission hereby finds that Appeal No. A-1-TRN-08-046 presents a substantial issue with respect to the grounds on which the appeal has been filed under Section 30603 of the Coastal Act regarding consistency with the Certified Local Coastal Plan and/or the public access and recreation policies of the Coastal Act.

II. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares:

A. APPELLANTS' CONTENTIONS

The Commission received one appeal of the City of Trinidad's decision to conditionally approve the development from Michael Reinman. The project as approved by the City involves the construction of a new 2,454-square-foot, 3-bedroom, 1-story, single-family residence on a vacant lot located at the corner of Edwards and Hector Streets, in Trinidad.

The appellant raises four basic contentions in his appeal. The appellants' contentions are summarized below, and the full text of the contentions is included as Exhibit No. 6.

1. The Stability of the Coastal Bluff Has Not Been Demonstrated To Ensure the Development will Be Safe from Geologic Hazards.

The appellant contends that the approved development will not be safe from geologic hazards as the stability of the bluff has not been demonstrated. The appellant notes that the City staff report indicates, "the property where the proposed project is located is within an area designated as having questionable stability" and "the building site sits directly above the only road in Trinidad going down to the harbor and right on the top of an already unstable bluff." The appellant contends that the geologic report prepared for the development does not provide the kind of bluff stability analysis normally provided with coastal bluff stability evaluations and does not establish a development setback from the coastal bluff. The appellant notes that the geologic stability of the development site is particularly important as the building site is near the Tsurai Village site (on the bluff face), the Trinidad Cemetery, the Holy Trinity Church (northwest of the approved development) and the Memorial Lighthouse (along the bluff top edge to the east of the development site) which are recognized in the LCP as important historic resources. The LCP states that "any landform alteration or structural construction within one hundred feet of the Tsurai Study Area shall be reviewed to ensure that development does not subject them to abuse or hazards."

2. The Project is Inconsistent with the Design Review and View Protection Policies of the LCP.

The appellant contends that the approved development is inconsistent with provisions of the Zoning Ordinance which requires that certain design review and view protection findings be made for a project to be approved. The appellant contends the City's approval relied on use of a favorable maximum floor to lot area ratio standard that is not part of the certified LCP to approve the project despite the approved project's inconsistencies with other design standards that are part of the certified LCP.

3. The Approved Project Was Not Reviewed By the Design Assistance Committee.

The appellant contends that the revised project design approved by the City Council was not submitted to the City's Design Review Committee for review as required by Section 6.19 of the Trinidad Zoning Ordinance which states that "a design assistance committee…is hereby established to review new developments to ensure their consistency with the character of the City and to minimize their impact on important vistas. The appellant indicates that although the original design for the project was reviewed by the Design Review Committee, a revised design that includes significant changes from the original design was not referred to the Design Review Committee for review.

4. Two Planning Commissioners Did Not Recuse Themselves from Reviewing the Project Pursuant to Requirements of the California Fair Political Practices Act.

The appellant contends that two Planning Commission members who reviewed the project violated provisions of the Fair Political Practices Act that require Planning Commissioners who live less than 300 feet away from a proposed development to recuse themselves from voting on the development.

B. LOCAL GOVERNMENT ACTION

On April 16, 2008, the City of Trinidad Planning Commission conditionally approved the coastal development permit for the project on a 3-2 vote with 15 special conditions (Application No. 2007-12a). The conditions required, among other requirements, that (a) construction related activities occur in a manner that does not impact the integrity of the primary or reserve sewage disposal areas, (b) a grading permit be obtained from the Planning Commission prior to issuance of a building permit for the development, (c) the applicant demonstrate that the site can support a primary and reserve drain field by obtaining a sewage disposal system permit from the County Division of Environmental

Health, (d) construction related activities occur in a manner that incorporates storm water runoff and erosion control measures to protect water quality, (e) the applicant submit a landscaping plan for review and approval of the City Planner, (f) roof drainage from downspouts be directed away from the septic system and into the City's stormwater system, (g) stormwater runoff from impermeable surfaces be routed to the City's stormwater drainage system such that infiltration is minimized and no runoff is directed toward the bluff, (h) excavation or ground disturbing activities be monitored by an elder of the Yurok tribe for discovery of cultural and archaeological resources and stopped in the event such materials are found and not resumed until the find is evaluated by a qualified archaeologist, (i) all recommendations of the geologic hazard report be adhered to including recommendations for grading, directing all surface run-off to the City's storm drain system, controlling erosion and sedimentation impacts, locating residential development within low to moderate geologic hazard zones, designing the residence to meet the UBC and California Seismic Code, and utilize localized climate-tolerant plants that do not require irrigation to reduce groundwater infiltration.

The Planning Commission's approval was appealed to the City Council. On October 22, 2008, the City Council denied the appeal and approved the project as conditioned by the Planning Commission. The City's Notice of Final Action was received by the Commission staff on October 24, 2008 (Exhibit No. 7).

The County's approval of the project was appealed to the Coastal Commission in a timely manner on November 7, 2008, within 10-working days after receipt by the Commission of the Notice of Final Local Action.

C. SITE DESCRIPTION

The project site is a vacant 12,815-square-foot parcel located at the corner of Hector and Edwards Street in the City of Trinidad (see Exhibit Nos. 1-2). The subject property is relatively flat with a gentle slope (approximately 6%), but is located approximately 30 feet north from a steep approximately 180-foot high coastal bluff on the other side of Edwards Street. The property is bordered on the north by the Catholic Church and an apartment building. Single-family residences are located to the east and west. The subject property is treeless and covered with grasses. No known environmentally sensitive habitat exists on the property.

D. PROJECT DESCRIPTION

The approved project involves the construction of a new 2,454-square-foot, 3-bedroom, 1-story, single-family residence. In addition, to the house, the approved development

includes a septic system with primary and reserve leach fields, a driveway, and landscaping (see Exhibit Nos. 3-5). .

D. SUBSTANTIAL ISSUE ANALYSIS

Section 30603(b)(1) of the Coastal Act states:

> *The grounds for an appeal pursuant to subdivision (a) shall be limited to an allegation that the development does not conform to the standards set forth in the certified local coastal program or the public access policies set forth in this division.*

1. Appellants' Contentions That are Valid Grounds for Appeal.

Three of the four contentions raised in the appeal present potentially valid grounds for appeal in that they allege the approved project's inconsistency with policies of the certified LCP. These contentions allege that the approval of the project by the City is inconsistent with LCP provisions regarding: (1) ensuring development does not contribute to geologic instability and is safe from geologic hazards; (2) design standards and view protection; and (3) project review by the City's Design Review Committee.

Coastal Act Section 30625(b) states that the Commission shall hear an appeal unless it determines:

> *With respect to appeals to the commission after certification of a local coastal program, that no substantial issue exists with respect to the grounds on which an appeal has been filed pursuant to Section 30603.*

The term "substantial issue" is not defined in the Coastal Act or its implementing regulations. The Commission's regulations indicate simply that the Commission will hear an appeal unless it "finds that the appeal raises no significant question" (Title 14, Section 13115(b), California Code of Regulations.) In previous decisions on appeals, the Commission has been guided by the following factors:

- The degree of factual and legal support for the local government's decision that the development is consistent or inconsistent with the certified LCP and with the public access policies of the Coastal Act;

- The extent and scope of the development as approved or denied by the local government;

- The significance of the coastal resources affected by the decision;

- The precedential value of the local government's decision for future interpretations of its LCP; and

- Whether the appeal raises only local issues, or those of regional or statewide significance.

Even when the Commission chooses not to hear an appeal, appellants nevertheless may obtain judicial review of the local government's coastal permit decision by filing petition for a writ of mandate pursuant to Code of Civil Procedure Section 1094.5.

In this case, for the reasons discussed further below, the Commission exercises its discretion and determines that with respect to the allegations concerning the consistency of the project as approved with the provisions of the LCP regarding ensuring development does not contribute to geologic instability and is safe from geologic hazards, the appeal raises a substantial issue with regard to the approved project's conformance with the certified City of Trinidad LCP.

1. Allegations Raising Substantial Issue

a. Ensuring Development Does Not Contribute to Geologic Instability and is Safe from Geologic Hazards

The appellant contends that the approved development will not be safe from geologic hazards as the stability of the bluff has not been demonstrated. The appellant notes that the proposed project is located is within an area designated as having questionable stability and contends that the geologic report prepared for the development does not provide the kind of bluff stability analysis normally provided with coastal bluff stability evaluations and does not establish a development setback from the coastal bluff.

LCP Policies and Standards:

Policy 2 of the LUP's *Constraints on Development* chapter states:

> *Provisions in the Uniform Building Code (Chapter 70) regarding grading on slopes should be used to ensure that owners of unstable lands or lands of questionable stability do not create slope stability problems.*

Policy 3 of the LUP's *Constraints on Development* chapter states:

> *Structures, septic tank systems, and driveways should not be located on unstable lands. Structures, septic tank systems, and driveways should only be permitted on lands of questionable stability, or within 100 feet upslope of unstable lands or lands of questionable stability, if analysis by a registered geologist indicates that*

the proposed development will not significantly increase erosion, slope instability or sewage system failure. The area reserved for the backup leach field should be given equal consideration.[1] (emphasis added)

Plate 3 of the LUP

Plate 3 of the LUP designates the area within which the project site is located as having "questionable stability."

Section 4.06(C)(6) of the Zoning Ordinance of the City of Trinidad (ZOCT) states the following with regard to development on lands in the Urban Residential or UR zone designated unstable or of "questionable stability" in the LUP:

Required geologic study. Structures, septic disposal systems, driveways, parking areas, pedestrian trails and other improvements permitted in the SR zone shall only be permitted on lands designated as unstable or of questionable stability on Plate 3 of the general plan if analysis by a registered geologist or engineering geologist, at the applicant's expense, demonstrates to the satisfaction of the planning commission that construction of the development will not significantly increase erosion and slope instability and that any potential adverse impacts have been mitigated to the maximum extent feasible. The geologist's report shall conform to the requirements of Section 4.03(C)(10)

Section 4.03(C)(10) of the Zoning Ordinance of the City of Trinidad (ZOCT) states the following:

Determination of development feasibility.

A. A report by a registered geologist or a certified engineering geologist shall be provided at the applicant's expense as part of an application for a permanent structure, septic disposal system, driveway, parking area, or other use permitted in the SE zone within the unstable and questionable stability areas shown on Plate 3 of the general plan. Before the planning commission approves a development, it shall determine that the proposed development will not significantly increase erosion and slope instability and that any potential adverse impacts have been mitigated to the maximum extent feasible.

B. The report shall be based on an on-site inspection in addition to a review of the general character of the area using a currently acceptable

[1] The areas in the city where studies by a registered geologist are required by this policy are identified on Plate 3. Outside of the city limits the areas where such studies are necessary are identified by a boundary 100 feet upslope of the upland extent of unstable lands and lands of questionable stability as identified on the Geologic Limitations Map in the Environmental Conditions and Constraints Report.

engineering stability analysis method. The report shall take into consideration all potential impacts, including but not limited to impacts from construction activities such as grading, drainage (from septic leach fields, on-site water use, increased runoff from impervious surfaces), roadways, and vegetation disturbance.

C. The report shall contain a professional opinion stating the following:

1. The area covered in the report is sufficient to demonstrate the geotechnical hazards of the site consistent with the geologic, seismic, hydrologic and soil conditions at the site;

2. The extent of potential damage that might be incurred by the development during all foreseeable normal and unusual conditions, including ground saturation and shaking caused by the maximum credible earthquake;

3. The effect the project could have an the stability of the bluff;

4. How the project can be designed or located so that it will neither be subject to nor contribute to significant geologic instability through the lifespan of the project;

5. A description of the degree of uncertainty of analytical results due to assumptions and unknowns. (Ord. 166 §4.03 (C) (10) , 1979)
(emphasis added)

Discussion:

The above-cited policies of the certified LCP require, among other things, that structures, septic tank systems, and driveways not be located on unstable lands and that development be designed or located so that it will neither be subject to nor contribute to significant geologic instability through the lifespan of the project.

The subject property is relatively flat with a gentle slope (approximately 6%), but is located approximately 30 feet away from a steep coastal bluff on the other side of Edwards Street. The subject property is designated in the LUP as having "questionable stability." Section 4.06(C)(6) of the certified zoning ordinance required development within the Urban Residential (UR) zone that are also within an unstable or questionably stable area to meet the requirements of Section 4.03(C)(10) of the code which requires the preparation of geologic report meeting certain standards. Among these standards are requirements that the report address whether the development can be designed or located so that it will neither be subject to nor contribute to significant geologic instability through the lifespan of the project.

Geologic Report.

A geologic report entitled "Preliminary Geologic Hazard Report for A.P. Nos. 042-042-005 and 042-042-013 Located on Hector Street, Trinidad, California," and dated April 10, 2008 was prepared for the approved development by Pacific Watershed Associates,

Inc. The geologic investigation entailed a review of available geologic literature and maps, review of aerial photographs of the site from 1947 to 1996, a surficial reconnaissance of the site, and a subsurface investigation performed in the course of evaluating the capability of the site to support a septic system.

The report indicates that the approximately 180-foot-high coastal bluff directly across Edwards Street from the subject property drops off steeply (>65%) and notes that "the large arcuate nature of the top of the bank is indicative of there having been a previous landslide in this location." The report indicates that the hillside continues to experience downward motion and that arcuate cracks that are currently forming at the top of the slope are indicative of active slope movement. The aerial photo review also indicated that slope stability in this location has been an ongoing problem as evidenced by changes in vegetation and the appearance of a drainage area on the west side of the slope.

The geologic report concludes that "construction of a single family residence on this site will present no added instability to the site itself, or its surrounding area, provided recommendations in this report are adhered to."

With regard to slope stability, the report concludes the following:

> "…based on the gentle slope on this site and the distance from the coastal bluff, the proposed development area is interpreted to be in a low or low to medium geologic hazard zone.
>
> However, slopes on the south side of Edwards Street are very steep (>65%), show indications of large slump block failure and slow downward creep in recent decades, and actively growing cracks can be seen in the recently upgraded Trinidad Lighthouse parking lot. Unanticipated and unforeseen events, such as strong seismic shaking during saturated soil conditions, could cause considerable slope failures affecting the entire slope south of Edwards Street. Additional, strong seismic shaking on the coast, particularly if associated with the Cascadia Subduction Zone, may also result in a tsunami. Tsunami waves could have detrimental effects, largely due to their potential for undercutting coastal bluffs. If such an event were to occur, the bluff retreat at this site could be substantial.
>
> However, these 'acts of nature' such as large scale seismic shaking, seismically induces landslides, tsunami induced landslides, or sever winter storms which undercut slopes creating an inherent instability of the slopes, exist regardless of the development of this project site."

The geologic report indicates that previous reports have concluded that an abundance of groundwater in the bluffs, partially as a result of densely spaced septic system leach fields within this small community to be the single-most contributing factor to

destabilizing the coastal bluffs. The report suggests though, that even though the discharge from the septic system leach field associated with the subject project will contribute additional flow to the subsurface, development will result in a net loss of groundwater contribution from the site. The basis for this statement is a judgment that "based on the slope of the ground surface within the community of Trinidad, and in particular at the project site, subsurface flow below this site is projected to flow in a southwest direction, mimicking the ground surface. If this is the case, additional flows from this site might daylight west of any previous developed slope instability located directly south of the project site." However, the report qualifies this projection by stating "While it may be more obvious on some parcels within the Trinidad area which direction run-off and ground water may travel, without some rather extensive hydrologic investigation it is difficult to determine, from this project site, how much ground water will flow south versus west."

To reduce concerns that surface and groundwater flow from the development would contribute to bluff instability, the geologic report makes a number of drainage recommendations including recommendations that (a) all surface run-off from impermeable surfaces shall be directed to , and captured by, the city of Trinidad storm drain system, in part though use of a curtain drain installed along the south (ocean) side of the property, and (b) appropriate low-flow plumbing fixtures e installed in the residence and any leaky plumbing be repaired as soon as possible.

Consistency With LCP

As noted above, the policies of the certified LCP require, among other things, that structures, septic tank systems, and driveways not be located on unstable lands and that development be designed or located so that it will neither be subject to nor contribute to significant geologic instability through the lifespan of the project. Thus, to be found consistent with these geologic policies of the certified LCP, development on unstable lands must meet two tests, including (a) the project will be sited and designed so as not to contribute to geologic instability through the lifespan of the project, and (b) the project will be sited and designed so that is will not be subject to significant geologic instability through the life span of the project.

With regard to the first test, the geologic report concludes that the "construction of a single-family residence on the site will present no added instability to the site itself or its surrounding area, provided the recommendations in the report are adhered to." As noted above, this conclusion appears to be based on the assumption that with adherence to the recommendation that surface water runoff be directed away from the bluff and into the City storm drain the project will actually reduce surface water runoff that would flow over the bluff. In addition, the conclusion is based on an assertion that ground water from the development site will flow west rather than south towards the bluff. However, the geologic report qualifies this assertion by stating that "without some rather extensive

hydrologic investigation it is difficult to determine, from this project site, how much ground water will flow south versus west."

The installation of a septic system will discharge significant quantities of wastewater leach into the substrate. The uncertainty expressed in the geologic report about the direction of groundwater flow raises a substantial issue as to whether the discharge of septic wastewater into the substrate will actually flow away from the bluff and not contribute to instability as claimed. In addition, the geologic report and the County's findings for approval of the project do not examine alternative septic system designs to determine if there alternatives that would reduce the total flow of wastewater discharge into the substrate. Wisconsin mound systems and/or sand filter systems are alternative septic system designs that might contribute less groundwater flow to the substrate and thereby minimize any potential contribution to geologic instability caused by septic system wastewater discharge. Therefore, the Commission finds that as the geologic report indicates that key assumptions that groundwater from the site flows away from the bluff are based on projections are difficult to establish and as alternative septic system designs that could potentially minimize contributions of the approved project to groundwater flow and bluff instability have not been examined, there is not a high degree of factual support for the local government's decision that the development will not contribute to geologic instability. Therefore, the Commission finds that the appeal raises a substantial issue of conformance of the project as approved with the provisions of Policy 3 of the LUP's *Constraints on Development* chapter and Zoning Code Sections 4.06(C)(6) and 4.03(C)(10).

With regard to the second test, the geologic report and the City's findings for approval do not demonstrate that the approved development will be sited and designed so that it will not be subject to significant geologic instability through the life span of the project. The geologic report contains a conclusion that based on the gentle slope on this site and the distance from the coastal bluff, the proposed development area is interpreted to be in a low or low to medium geologic hazard zone. However, no factual basis is provided to indicate that all of the approved development, including the septic system, driveway, and the house itself will be located in an area that will be safe even from existing bluff instability. As noted by the appellant, the geologic report prepared for the development does not provide the kind of bluff stability analysis normally provided with coastal bluff stability evaluations and does not establish a development setback from the coastal bluff.

A setback adequate to protect development over the economic life of a development must account both for the expected bluff retreat during that time period and the existing slope stability. Long-term bluff retreat is measured by examining historic data including vertical aerial photographs and any surveys conducted that identified the bluff edge. Slope stability is a measure of the resistance of a slope to land sliding, and is assessed by a quantitative slope stability analysis. In such an analysis, the forces resisting a potential landslide are first determined. These are essentially the strength of the rocks or soils

making up the bluff. Next, the forces driving a potential landslide are determined. These forces are the weight of the rocks as projected along a potential slide surface. The resisting forces are divided by the driving forces to determine the "factor of safety." The process involves determining a setback from the bluff edge where a factor of safety of 1.5 is achieved. The Commission generally defines "stable" with respect to slope stability as a minimum factor of safety of 1.5 against land sliding. Because the geologic report for the approved project neither established a bluff retreat rate nor included a quantitative slope stability analysis, it is unknown where on the bluff top parcel a 1.5 factor of safety is attained, nor what parts of the bluff top will have a 1.5 factor of safety at the end of 75 years of bluff retreat. In this case, there is good reason to consider that at least portions of the development site may have stability problems because the geologic report indicates that the very high bluff is unstable and includes evidence of past land sliding.

It also cannot be assumed that because the development site is inland of Edwards Street, the subject property will be protected by future bluff protection measures the City might install to protect the road. A large episodic failure of the bluff may make repair of the road infeasible, particularly since this section of Edwards Street could potentially be abandoned and traffic rerouted around such a failure site via use of Trinity, Parker, and Hector Streets.

Thus, because the geotechnical investigation did not establish a bluff retreat rate or include a quantitative bluff stability analysis, the degree of legal and factual support for the local government's decision that the approved development will be stable over the life of the project is low. Therefore, the Commission finds that the appeal raises a substantial issue of conformance of the project as approved with the provisions of Policy 3 of the LUP's *Constraints on Development* chapter and Zoning Code Sections 4.06(C)(6) and 4.03(C)(10).

Conclusion

For the reasons discussed above, the Commission finds that the appeal raises a substantial issue of conformance of the approved project with the certified LCP with respect to contentions raised concerning geologic stability.

E. INFORMATION NEEDED FOR *DE NOVO* REVIEW OF APPLICATION

As stated above, Section 30625(b) of the Coastal Act requires the Commission to hear an appeal unless the Commission determines that no substantial issue exists with respect to the grounds on which an appeal has been filed. Section 30621 of the Coastal Act instructs the Commission to provide for a *de novo* hearing on all appeals where it has determined that a substantial issue exists with respect to the grounds on which an appeal has been filed. If the Commission finds substantial issue as recommended above, staff also recommends that the Commission continue the *de novo* hearing to a subsequent date.

The *de novo* portion of the appeal must be continued because the Commission does not have sufficient information to determine what, if any, development can be approved, consistent with the certified LCP.

Given that the project the Commission will be considering *de novo* has come to the Commission after an appeal of a local government action, the Commission has not previously been in the position to request information from the applicant needed to determine if the project can be found to be consistent with the certified LCP. Following is a discussion of the information needed to evaluate the development.

Supplemental Geotechnical Analyses

As discussed above, authorization of the placement of the proposed structures on a bluff top lot is contingent on making findings that approved development will be stable over the life of the project. Because the existing geotechnical report does not have sufficient information with which to make these findings, an evaluation of the bluff retreat rate and a "quantitative slope stability analysis" is needed. In addition, an assessment of the effect of rising sea level on future erosion rates of the bluff is also needed.

Alternatives Analysis of Septic System Designs

As discussed above, to make the necessary findings that the septic system discharge to the groundwater of the substrate will not contribute to geologic instability, an analysis of the feasibility and relative groundwater contributions of alternative septic system designs is needed. The alternatives analysis should examine such alternatives as Wisconsin mound systems, sand filter systems, and other potential designs.

Without the above information, the Commission cannot reach a final determination concerning the consistency of the project with the geologic hazard policies of the LCP. Therefore, before the Commission can act on the proposed project *de novo*, the applicant must submit all of the above-identified information.

EXHIBITS

1. Regional Location Map
2. Vicinity Map
3. Site Plan
4. Floor Plan
5. Exterior Elevations
6. Appeal
7. Notice of Final Local Action

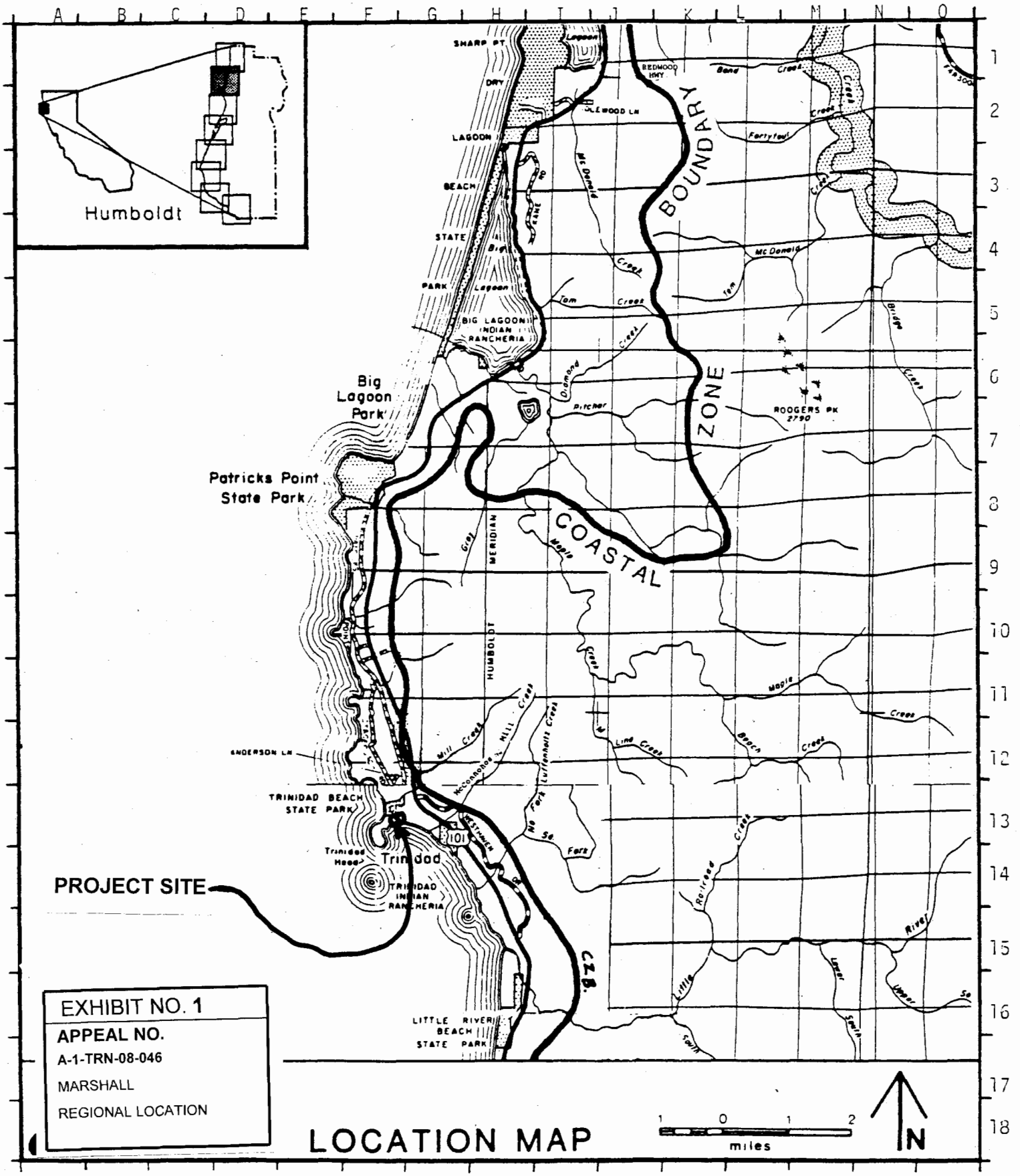
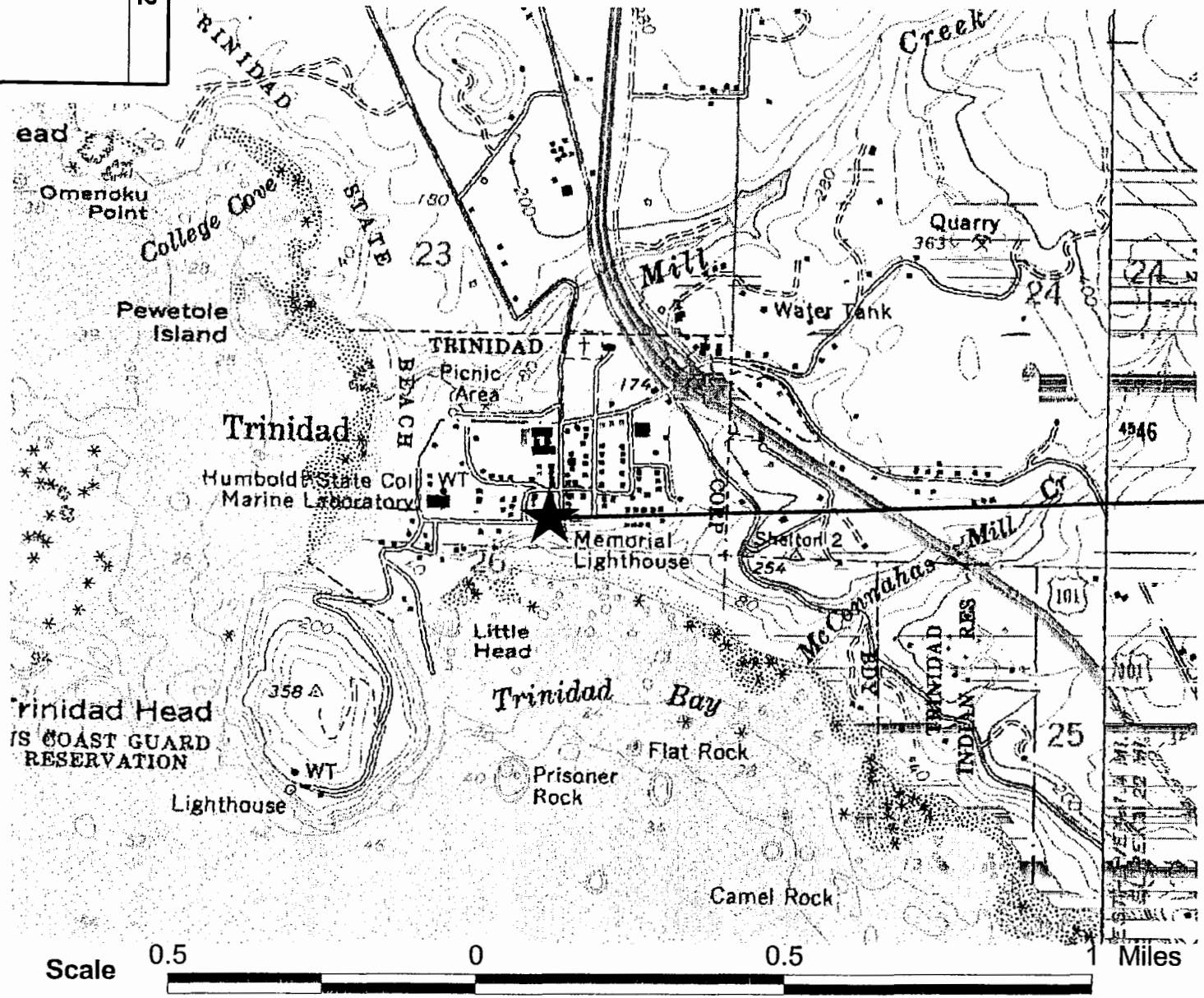

Humboldt
Big Lagoon Park
Patricks Point State Park
BIG LAGOON INDIAN RANCHERIA
TRINIDAD BEACH STATE PARK
Trinidad
TRINIDAD INDIAN RANCHERIA
LITTLE RIVER BEACH STATE PARK
COASTAL ZONE BOUNDARY
C.Z.B.
HUMBOLDT MERIDIAN
ROGERS PK 2790
PROJECT SITE
EXHIBIT NO. 1
APPEAL NO.
A-1-TRN-08-046
MARSHALL
REGIONAL LOCATION
LOCATION MAP
1 0 1 2
miles
N
County of Humboldt

EXHIBIT NO. 2

APPEAL NO.
A-1-TRN-08-046
MARSHALL
VICINITY MAP

General Location Map for Marshall

Marshall



Approximate Project Loaction

APNs.:042-042-005 & 042-042-013

Hector Street
Trinidad, California

Pacific Watershed ASsociates, Inc. P.O. Box 4433 Arcata, CA 95518, Ph: (707) 839-5130, Fx: (707

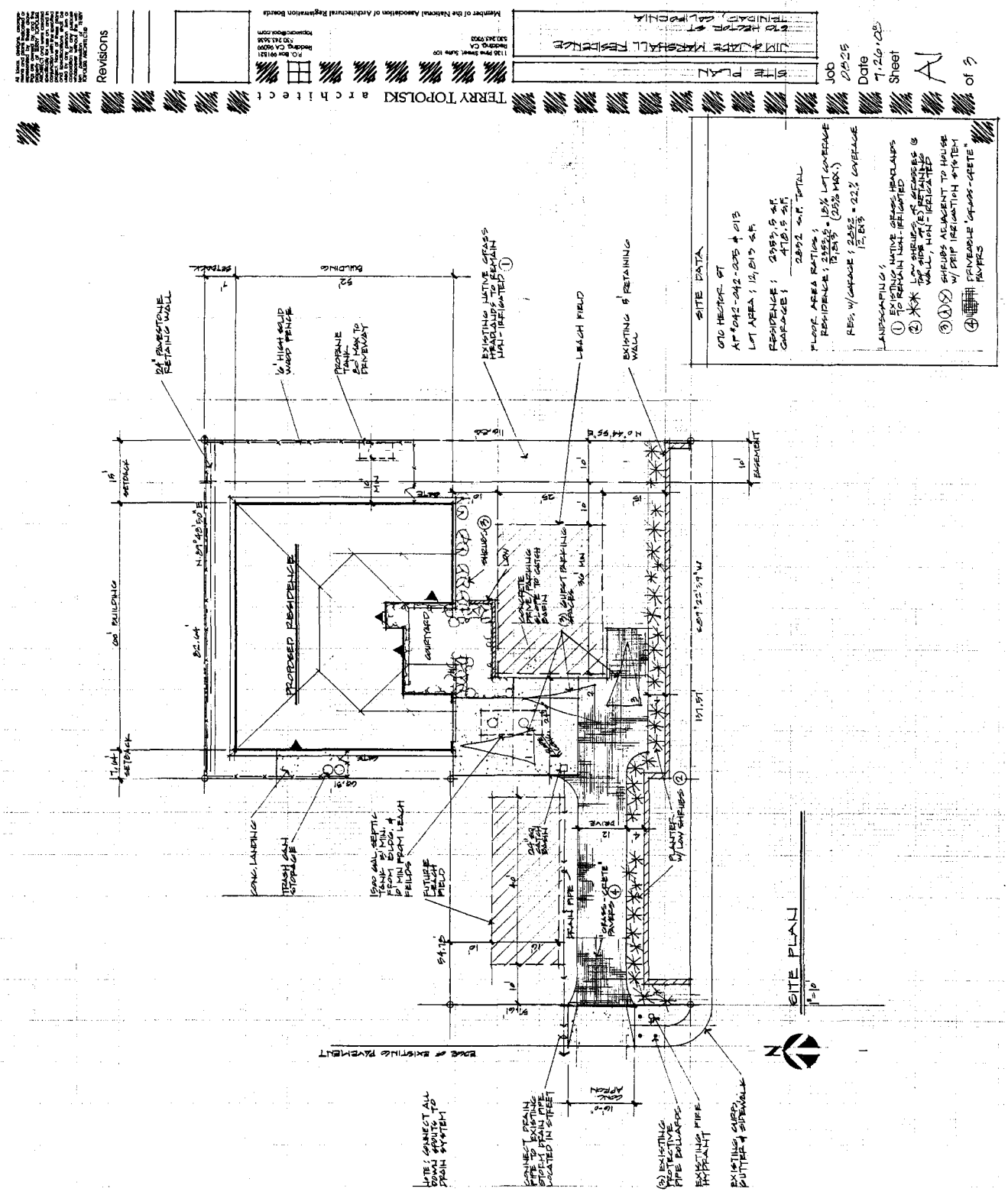


EXHIBIT NO. 3

APPEAL NO.

A-1-TRN-08-046

MARSHALL

SITE PLAN

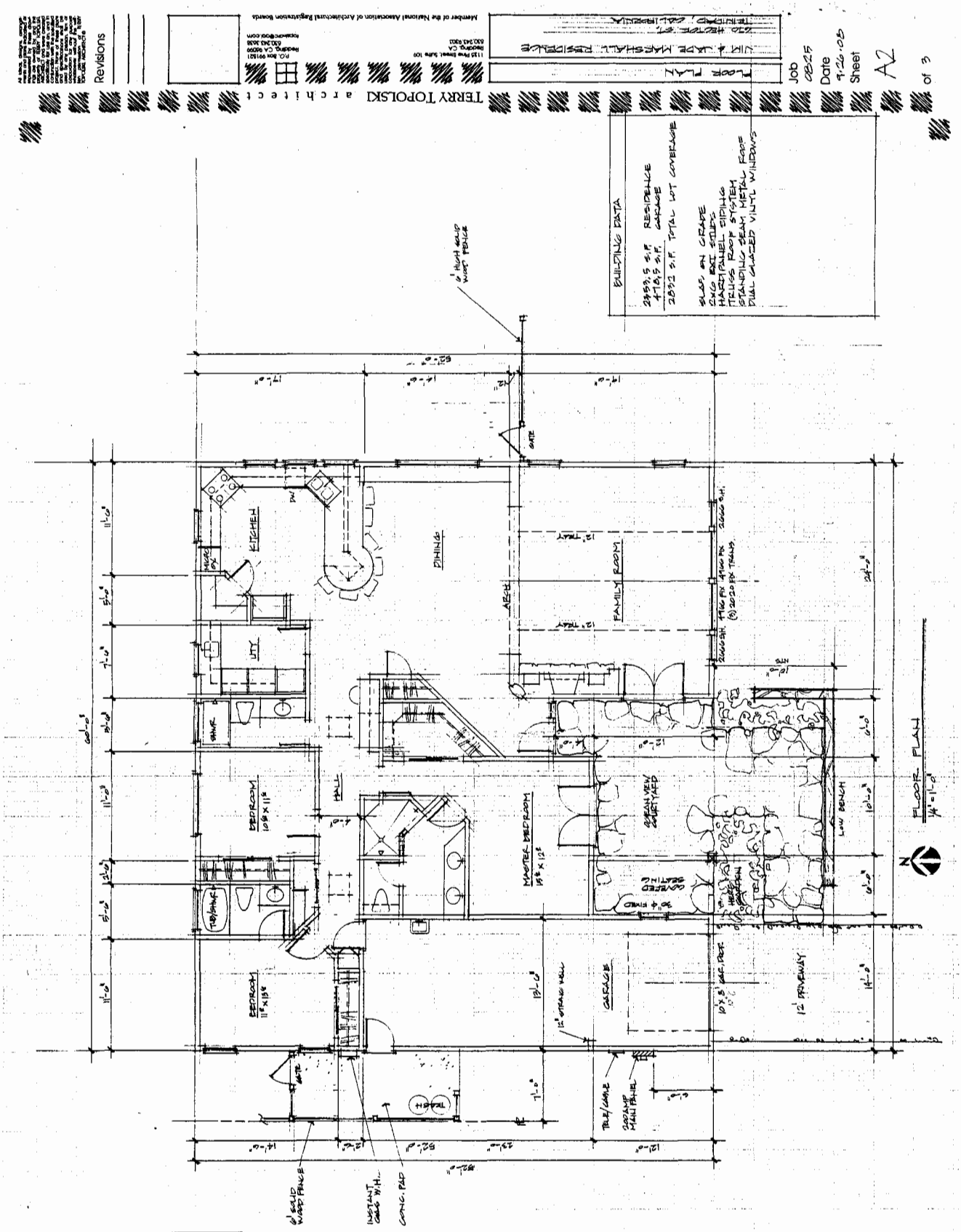


EXHIBIT NO. 4

APPEAL NO.

A-1-TRN-08-046

MARSHALL

FLOOR PLAN

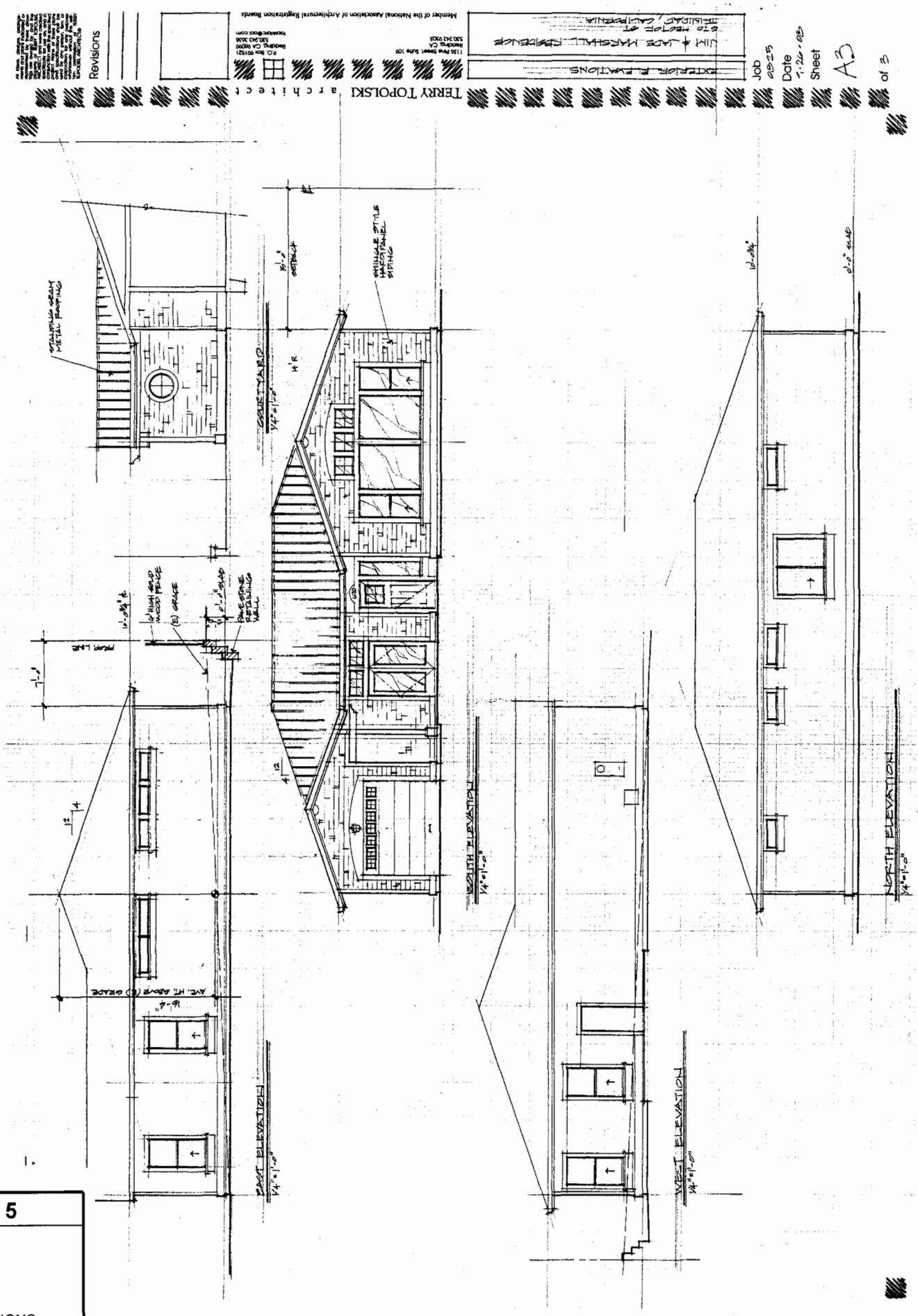


EXHIBIT NO. **5**

APPEAL NO.

A-1-TRN-08-046

MARSHALL

EXTERIOR ELEVATIONS

Attn: Bob Merrill

STATE OF CALIFORNIA -- THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, Governor

CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
710 E STREET, SUITE 200
EUREKA, CA 95501
VOICE (707) 445-7833 FAX (707) 445-7877

APPEAL FROM COASTAL PERMIT DECISION OF LOCAL GOVERNMENT

Please Review Attached Appeal Information Sheet Prior To Completing This Form.

SECTION I. Appellant(s)

Name: Michael Reinman
Mailing Address: PO Box 465
City: Trinidad Zip Code: 95570 Phone: 707-677-3630

RECEIVED
NOV 07 2008
CALIFORNIA COASTAL COMMISSION

SECTION II. Decision Being Appealed

1. Name of local/port government:
Trinidad

2. Brief description of development being appealed:
2,900 Sq. Ft Single Family Residence

3. Development's location (street address, assessor's parcel no., cross street, etc.):
NE Corner of Edwards and Hector Street.
APN 042-042-05

4. Description of decision being appealed (check one.):

- [x] Approval; no special conditions
- [ ] Approval with special conditions:
- [ ] Denial

EXHIBIT NO. 6
APPEAL NO.
A-1-TRN-08-046
MARSHALL
APPEAL (1 of 6)

Note: For jurisdictions with a total LCP, denial decisions by a local government cannot be appealed unless the development is a major energy or public works project. Denial decisions by port governments are not appealable.

TO BE COMPLETED BY COMMISSION:

APPEAL NO: A-1-TRN-08-046
DATE FILED: 11/7/08
DISTRICT: North Coast

APPEAL FROM COASTAL PERMIT DECISION OF LOCAL GOVERNMENT (Page 2)

5. Decision being appealed was made by (check one):

- ☐ Planning Director/Zoning Administrator
- ☑ City Council/Board of Supervisors
- ☐ Planning Commission
- ☐ Other

6. Date of local government's decision: October 22, 2003

7. Local government's file number (if any): _____

SECTION III. Identification of Other Interested Persons

Give the names and addresses of the following parties. (Use additional paper as necessary.)

a. Name and mailing address of permit applicant:

Jim Marshall
19595 San Vicente Dr
Redding, CA 96003

b. Names and mailing addresses as available of those who testified (either verbally or in writing) at the city/county/port hearing(s). Include other parties which you know to be interested and should receive notice of this appeal.

(1) John Rotter
461 Ocean Ave
Trinidad 95570

(2) Sam Phillips
12087 E. Mercer Ln
Scottsdale, AZ 85259

(3)

(4)

APPEAL FROM COASTAL PERMIT DECISION OF LOCAL GOVERNMENT (Page 3)

SECTION IV. Reasons Supporting This Appeal

PLEASE NOTE:

- Appeals of local government coastal permit decisions are limited by a variety of factors and requirements of the Coastal Act. Please review the appeal information sheet for assistance in completing this section.
- State briefly **your reasons for this appeal.** Include a summary description of Local Coastal Program, Land Use Plan, or Port Master Plan policies and requirements in which you believe the project is inconsistent and the reasons the decision warrants a new hearing. (Use additional paper as necessary.)
- This need not be a complete or exhaustive statement of your reasons of appeal; however, there must be sufficient discussion for staff to determine that the appeal is allowed by law. The appellant, subsequent to filing the appeal, may submit additional information to the staff and/or Commission to support the appeal request.

Please See attached

APPEAL FROM COASTAL PERMIT DECISION OF LOCAL GOVERNMENT (Page 4)

SECTION V. Certification

The information and facts stated above are correct to the best of my/our knowledge.

Signature on File

Signature of Appellant(s) or Authorized Agent

Date: 11-4-08

Note: If signed by agent, appellant(s) must also sign below.

Section VI. Agent Authorization

I/We hereby
authorize _____
to act as my/our representative and to bind me/us in all matters concerning this appeal.

_____
Signature of Appellant(s)

Date: _____

Subject: Appeal of Planning Commission decision of APPLICATION NO: 2007-12a
APPLICANT (S): Jim Marshall
PROJECT LOCATION: NE Corner of Edwards and Hector Streets
PROJECT DESCRIPTION: Design Review and Coastal Development
Permit to construct a new 2,400 sq. ft., 3-bdrm,
1-story, single-family residence & 500 foot garage on a vacant lot
ASSESSOR'S PARCEL NUMBER: 042-042-05 & -13

Appeal Issues

1. **The project as approved is inconsistent with section 30253 of the Coastal Act**

It has not been demonstrated that the Bluff is stable enough for more development. The Geological Report presented by the applicant does not comply with the required Johnsson Bluff Stability Analysis, nor has the impact on the Environmentally Sensitive Area and Tsurai Ancestral Land and burial grounds been evaluated under section 30253 (2).

The stability of the bluff for additional new development has not been demonstrated by the Geological Report presented by the applicant, per section 30253 of the California Coastal Act. The Geological Report that was prepared lacks the scientific detail and depth required by the Bluff Stability Analysis **establishing development setbacks from coastal bluffs**, presented in the Mark Johnsson Memo of January 16, 2003.

Per the LCP, "The Tsurai Village site, the Trinidad Cemetery, the Holy Trinity Church and the Memorial Lighthouse are important historic resources. Any landform alterations or structural construction within one hundred feet of the Tsurai Study Area, shall be reviewed to ensure that development does not subject them to abuse or hazards."

This review has not been done by an unbiased third party expert. Also, per the City Staff Report, *"The property where the proposed project is located is within an area designated as having "questionable stability"*. This building site sits directly above the only road in Trinidad going down to the Harbor and right on the top of an already unstable bluff and it is critical that the appropriate tests be done to ensure the stability of the bluff as it stands and with the cumulative impact of this development.

2. **The project as approved is inconsistent with the Design and Review/ View Protections findings of the TLCP:**

Because the project is located within the Coastal Zone and constitutes new construction, §17.60.030 of the Zoning Ordinance requires Design Review and View Protection Findings to be made. The applicant submitted application materials on December 4, 2007. The design Review / View Preservation Findings were written in a manner to allow approval, without adhering to provisions of Section 6.191 the City s primary regulation on the protection of scenic resources where new development is occurring.

Reiman P. 6

The introduction of a 35% ration formula for determining the design Review / View Preservation Findings was an illegitimate change of the TLCP by adding new guidelines to the TLCP, thereby updating it, without the benefit of a public hearing and Coastal Commission Certification to the new guidelines.

This fact was brought to the attention of the DRC and project planner by two commissioners, who specifically stated that no ratio formula for determining size exists in the TLCP or anywhere in the building ordinance. Both had to reject the project on that issue.

3. **The project as approved was not reviewed by the design assistance committee as required by Section 6.19 of the Trinidad Zoning Ordinance**

Section 6.19 of the Trinidad Zoning Ordinance is amended to read; Section 6.19. Design Review and View Preservation Regulations : The following regulations shall apply to all zones; Purpose. The small scale of the community and its unique townsite, affording spectacular views of the coastline and ocean horizon, define the character of Trinidad. Maintaining this character is essential to the continued desirability and viability of the City. A design assistance committee., consisting of the Trinidad Planning Commission and one member of the City Council, is hereby established to review new developments to ensure their consistency with the character of the City.and to minimize their impact on important vistas.

The new project design was not submitted to the Design Review Committee (DRC), which in the case of Trinidad is the Planning Commission, as required by the Local Coastal Plan (LCP). Attached you will find the original design as approved by the Planning Commission, and the subsequent design which was presented to the City Council five months later. The redesign was done with a new architect and includes significant changes, which you will see. This is not the project that was approved by the DRC, and nowhere in the LCP is it stated that certain changes would not require the project to go back to the DRC for review. In essence, the actions of the city have given the DRC responsibilities to the City Council

4. **Per the California Fair Practices Act, two members of the Planning Commission were required to reccuse themselves from the proceedings, but did not.**

Please see the attachment in regards to this matter. Both members own real property less than 300 feet from the building site (small town clause reduces it from 500 feet to 300 feet per the city attorney), but did not reccuse themselves. One of them asked the City Planning Staff about this and they were told, per their testimony, that that only applied if they lived within 100 feet of the site. The two members that did not reccuse themselves were two of the three members who voted to approve the project, with the vote being 3-2 for approval.

FROM: CITY OF TRINIDAD, PO BOX 390, TRINIDAD, CA 95570

TO: CALIFORNIA COASTAL COMMISSION
CITY ENGINEER / BUILDING OFFICIAL
APPLICANT

EXHIBIT NO. 7
APPEAL NO.
A-1-TRN-08-046
MARSHALL
NOTICE OF FINAL LOCAL ACTION (1 of 56)

NOTICE OF ACTION TAKEN

LOCAL PERMIT # 2007-12 (appeal)

APPLICANT: Jim Marshall
19595 San Vincent Dr., Redding, CA 96003

AGENT: NA

AP # APN: 042-042-05 & -13 (lot merger previously approved)

PROJECT LOCATION: Corner of Edwards and Hector Streets, Trinidad, CA

THE CITY COUNCIL TOOK ACTION FOR THE FOLLOWING PROJECT AT THEIR SECOND REGULARLY SCHEDULED MEETING OF OCTOBER 22, 2008:

Marshall 2007-12: Appeal of the Planning Commission approval of Jim Marshall's application No. 2007-12 for Design Review and a Coastal Development Permit to construct a new 2,454 sq. ft., 3-bdrm, 1-story, single-family residence on a vacant 12,820 sq. ft. property. (merger previously approved)

THE CITY
_____ APPROVED
___X___ CONDITIONALLY APPROVED
_____ DENIED

The final staff report, required findings, maps and any conditions placed on the project approval are attached as needed.

City Council action on a Coastal Development Permit, Design Review, Conditional Use Permit or a Variance will become final 10 working days after the date that the Coastal Commission receives this "Notice of Action Taken" from the City, unless an appeal to the City Council is filed in the office of the City Clerk within the time.

Furthermore, this project ~~is~~___ / **is not _X_** appealable to the Coastal Commission per the City's certified LCP, but may be appealable per the requirements of Section 30603 of the Coastal Act.

TREVER PARKER
CITY PLANNER, CITY OF TRINIDAD
DATE: October 23, 2008

RECEIVED
OCT 2 4 2008
CALIFORNIA
COASTAL COMMISSION

MARSHALL 2007-12 APPEAL STAFF REPORT:
SUMMARY OF THE PROJECT & IMPORTANT ISSUES

Applicant: Jim Marshall
Agent: Mike Pigg

Project Status: Conditionally approved by the Planning Commission by a 3-2 vote. The Planning Commission approved the following motion: *"Based on information submitted in the application, and included in the staff report and public testimony, I move to adopt the findings in this staff report and approved the project as conditioned* [in the staff report]." Please see the April staff report for the findings and final list of conditions.

Appellant: Mike and Hope Reinman

Basis for Appeal: *"Based on the application materials and previous public comment, the proposed project is not consistent with the City's General Plan, Zoning Ordinance, Local Coastal Plan, the Coastal Act, and the Northcoast Regional* [Water] *Quality* [Control Board] *Basin Plan, and ignores recommendations and findings of the Tsurai Study Area report. Also, the planning commission appears to be in violation of government code section 8920 in regards to ethical conduct."*

Staff Response to Appeal: The staff reports and supporting materials provide a detailed analysis of the project in terms of all the regulations and documents listed as applicable. The project was found to be in compliance by staff and a majority of the Planning Commission. The ethical issue has been addressed by the City Attorney.

Coastal Commission Appeal Status: The project site is shown to be outside the area that is appealable to the Coastal Commission as mapped in the City's certified LCP due to the fact that Edwards Street, a public road, is located between the project and the sea. However, current Coastal Act provisions (§30603) allow appeals for projects within 300 feet of a bluff. Therefore, the Coastal Commission would accept an appeal of an approval or conditional approval (denial of the appeal). However, a denial of the project, upholding the appeal, would not be appealable. Only major public works projects or major energy facilities can be appealed if denied by a local agency.

CEQA Status: Categorically exempt from CEQA per §15303(a) of the CEQA Guidelines exempting construction of a single-family residence in a residential zone. No substantial evidence has been submitted that this project falls under an exception to the exemptions under §15300.2 due to unusual circumstances including its proximity to the Tsurai Study Area. See 'Staff Response to CEQA Concerns' on age 60 of your background materials.

Zoning: Urban Residential – Single-family dwellings are a principally permitted use. Principally permitted uses are allowed by right, and normally do not require City approvals other than a building permit if it meets zoning requirements. In Trinidad, Design Review is always required. These requirements are discussed in more detail in the April staff report pages 3-7.

Issue	Zoning Requirement	Proposed Project
Lot Size	Minimum 8,000 sq. ft. (although smaller lots that were legally created are generally developable)	12,815 sq. ft. (after merger of two legal lots)
Setbacks	Front: 20 ft. Side: 5 ft. Street Side: 15 ft. Rear: 15 ft.	Front (Hector): 58 ft. Front side (west): 5 ft. Side (north): 7 ft. Street side (south): 50 ft. Rear (east): 15.5 ft.
Density	1 unit per 8,000 sq. ft.	1 unit on 12,815 sq. ft.
Height	Maximum: 25 ft. Minimum (guaranteed): 15 ft.	Maximum: 16 ft. (measured from ave. ground elev.)
Size	Maximum (guideline): 2,000 sq. ft. Minimum (guaranteed): 1,500 sq. ft. Floor to lot area ratio (FAR) (PC guideline) 25% Average house size approved in the last 10 years: 2,251 sq. ft. Average FAR: 25.2%	House size: 2,454 sq. ft. FAR: 19%
Parking	2 spaces in addition to garage	5 spaces in addition to garage

Special Concerns:

The following is a brief description of the primary concerns highlighted during the Planning Commission hearings, all of which were satisfactorily addressed to those Commissioners approving the project.

Historic Resources

General Plan Policy 76 – *"The design assistance committee should ensure that any proposed development does not detract from these* [Holy Trinity Church, Memorial Lighthouse, Tsurai Village, Trinidad Cemetery] *historical sites and structures."* The Zoning Ordinance implements this policy through View Protection finding E for projects within 100 ft. of these sites. Although the project property is within 100 ft. of these sites, the house itself will be at or more than 100 ft. from them. This issue is discussed further on page 6 of the April staff report.

Grading and Drainage

A separate grading permit in accordance with the City's Grading Ordinance (Chapter 15.16) will be required to be approved by the City Engineer and Planning Commission prior to project construction. Drainage impacts on the bluff have been minimized by requiring all hardscape (roof and driveway) drainage to be tied into the City's existing storm system, directing it away from the bluff and resulting in a net decrease in water infiltrating near the bluff. These issues are discussed in more detail on page 6 and 7 of the April staff report.

Slope Stability / Geologic Report

A geologic report was prepared for this project in accordance with Zoning Ordinance §17.32.090 and §17.20.130. The report met the requirements of the City's certified LCP and the Planning Commission made the five required findings listed on page 7 of the April staff report. The

overall conclusion of the report was that: *"Based on geologic hazard investigations conducted for the proposed development area, aerial photograph analysis and a literature review of a selected few geotechnical reports for sites within the vicinity of the project area, it is PWA's* [Pacific Watershed Associates] *opinion that construction of a single-family residence on the site will present no added instability to the site itself, or its surrounding area, provided recommendations in this report are adhered to."* All the recommendations were included as conditions of the project approval. Please see page 7 of the April staff report for additional information.

Sewage Disposal
The project proposal includes a design for a new 3-bedroom septic system that meets all the current requirements of the Humboldt County Health Department and the Regional Water Quality Control Board Basin Plan. The Health Department may grant a reduced setback from the retaining wall for the system due to the shape of the lot, but this is fairly common. An approved permit is required prior to construction as a condition of project approval. More stormwater will be diverted from new hardscapes than will be input through the septic system. Also see page 7 of the April staff report for more details.

Design Review and View Protection Findings
The majority of the Planning Commission agreed that all the necessary findings could be made. The main concern was for the size of the project in relation to the nearby historic sites and structures listed above. Other reasons for dissent included environmental concerns and lack of neighborhood support. The findings and responses can be found on pages 8-11 of the April staff report.

Conditions
Fifteen conditions were placed on this project in order to minimize impacts, respond to public comments and comply with all City regulations. These conditions are listed on pages 13 – 16 of the April staff report.

City Council Action:
There are four possible actions that the City Council may take, and these are described below along with sample motions below.

Motion for Denial of the Appeal and Approval of the Project – Staff Recommendation
Based on the application materials and previous public comment, the proposed project can be found to be consistent with the City's General Plan and Zoning Ordinance. Therefore, staff recommends that the City Council deny the appeal and approve the project. If the City Council agrees with the findings in the staff report, the proposed motion might be similar to the following:

> Based on the information submitted in the application, and included in the staff report and public testimony, I move to adopt the information and findings in the April staff report and approve the project as conditioned in the April staff report with the project design amendments submitted to the Council by the applicant:

Filed:	December 4, 2007
Staff:	Trever Parker
Staff Report:	December 31, 2007
Commission Hearing Date:	January 16, 2007
Commission Action:	Conditionally Approved

STAFF REPORT: CITY OF TRINIDAD

APPLICATION NO:	2007-12a
APPLICANT (S):	Jim Marshall
AGENT:	Mike Pigg
PROJECT LOCATION:	NE Corner of Edwards and Hector Streets
PROJECT DESCRIPTION:	Design Review and Coastal Development Permit to construct a new 2,454 sq. ft., 3-bdrm, 1-story, single-family residence on a vacant 12,815 sq. ft. property (after lot merger).
ASSESSOR'S PARCEL NUMBER:	042-042-05 & -13 (lots to be merged)
ZONING:	UR – Urban Residential
GENERAL PLAN DESIGNATION:	UR – Urban Residential
ENVIRONMENTAL REVIEW:	Categorically Exempt from CEQA per §15303(a) of the CEQA Guidelines exempting construction of a single-family residence in a residential zone.

APPEAL STATUS:

Planning Commission action on a coastal development permit, a variance or a conditional use permit, and Design Assistance Committee approval of a design review application will become final 10 working days after the date that the Coastal Commission receives a "Notice of Action Taken" from the City unless an appeal to the City Council is filed in the office of the City Clerk within that time. Furthermore, this project ~~is~~ ____ / **is not _X_** appealable to the Coastal Commission per the City's certified LCP, but may be appealable per Section 30603 of the Coastal Act.

****New Notes:**
The project has not changed since the February hearing. Therefore, I have not made many changes to the staff report. I included some additional information in the Geology and Slope Stability section regarding the geologic report. I also included a second table showing house and lot sizes of recently approved projects and others that I had already compiled for previous projects. Finally, I included two new conditions of approval, one requiring a cultural monitor to be present during ground disturbance and a condition requiring all the recommendations of the geologic report to be part of the project.

SITE CHARACTERISTICS:

The site is on the northeast corner of Hector and Edwards Streets; access is from Hector Street. The property is bordered on the north by the Catholic Church and an apartment building. Single-family residences are located to the east and west with only open space to the south of Edwards Street. The property currently consists of two parcels that will be merged (application being prepared); one lot is approximately 3,125 sq. ft. and the other is approximately 9,690 for a total of 12,815 sq. ft. The property slopes gently (approx. 6%) to the southwest, is currently vacant and vegetated mostly by grasses.

STAFF COMMENTS:

This project was continued from the regular January meeting in order to give the applicant a chance to work the neighbors to create a more amendable design. The applicant has submitted a short letter explaining his efforts both before and after that meeting to create a house that met City standards and addressed community concerns. Although the applicant did not get much response to holding a community meeting, he has redesigned the house so that it is only one-story and has a smaller floor area. I have amended this staff report so that it is consistent with the current submittal. Other than the redesign of the house, it was also noted belatedly that the project parcels are mapped as being of "questionable stability" in the City's General Plan; there is a discussion of this in the staff report below. Also, along with the staff report, I did a preliminary CEQA / environmental analysis of the project. It is more detailed than it might have otherwise been, but we are also working on the environmental document for the General Plan update, so the information was available.

This project also requires a lot merger of parcels 042-042-05 and -13 in order to provide access from Hector Street, as access from Edwards would require significant earth excavation. The building site is also limited by a variety of setbacks that encumber the lot. A significant limiting factor is the septic system, which requires large setbacks from the retaining wall along Edwards Street and careful placement of the driveway. Please see further discussion under the section on 'sewage disposal' below. Another important note is that the heights are about 1.5 ft. shorter than indicated on the submitted drawings due to grading that will occur; there is more discussion of the building heights below. The applicant has been requested and agreed to place story-poles / string lines

to delineate the new outline of the proposed structure by the weekend before the meeting.

Any requirements of the Building Official will be addressed during the building permit review process. The application will be required to get an approved Sewage Disposal Permit from the Health Department for a 3-bedroom system prior to building permits being issued. The designers for the septic system have been working with the Environmental Health Department. The Engineer has been forwarded copies of the site plan, and may have specific requirements for street frontage and drainage improvements. The City may also be considering potential street improvements along Hector Street including additional parking area for future improvements. Any requirements for this project should be coordinated with those efforts. The Engineer will also review the grading and drainage plan when that is submitted.

ZONING ORDINANCE/GENERAL PLAN CONSISTENCY

This project is proposed for a lot that will be approximately 12,815 sq. ft after approval of the proposed lot merger. The applicant has submitted a plot plan showing the building envelope, floor plans and elevations. Zoning Ordinance Sec. 17.08.310, defines floor area as the enclosed area of a building, excluding garages and covered balconies, but not excluding covered patios. According to this definition, the total square footage of the proposed residence is approximately 2454 sq. ft. The following table summarizes the project square footages.

Table 1 – Project square footages.

	Previous Proposal*	Current Proposal*
LOT AREA	**12,815 sf**	**12,815 sf**
TOTAL FLOOR AREA		
Residence (1st Floor)	1,962 sf	2,294 sf
Residence (2nd Floor)	912 sf	0 sf
Covered Patio and Entry	298 sf	160 sf
Total Residence Floor Area	**3,172 sf**	**2,454 sf**
Garage	550	464
Total Proposed Building Floor Area w/ Garages/Shop/Carport	3,722 s.f	2,918
FOOTPRINT & LOT COVERAGE		
Total Footprint (w/ Garage)	2,823 sf	2,918 sf
Lot Coverage (w/out driveway, uncovered patio, balcony)	22%	22.7%
Floor to Lot Area Ratio	**24.8%**	**19.1%**

*After Lot Merger

Table 2- Lot and house sizes of recent projects, neighboring properties and others that I had already compiled.

Name of Owner	Street Address	Gross. Floor Area (sq.ft)	Gross. Parcel Area (sq.ft)	% of Floor to Parcel Area
Bahr	730 Edwards St	2,653 sq. ft.	8,690 sq. ft.	30.5%
Heller	570 Trinity St	3,664 sq. ft.	17,147 sq. ft.	21.4%
Davies	435 Ocean Ave	1,754 sq. ft.	8,360 sq. ft.	21%
Sterling	381 Ocean Ave	2,276 sq. ft.	6,000 sq. ft.	38%
Fraser	774 Edwards St	1,528 sq. ft.	9,130 sq. ft.	16.7%
Becker	732 Underwood	1,735 sq. ft	7,740 sq. ft.	22.4%
Jacolick	789 Underwood	2,677 sq. ft.	13,970 sq. ft.	19.2%
Binnie	487 View	1,550 sq. ft.	9,900 sq. ft.	15.7%
Halkides	550 Galindo	2,178 sq. ft.	8,286 sq. ft.	26.3%
Penissi	351 Wagner	3,170 sq. ft.	7,200 sq. ft.	44%
Evans	898 Underwood	2,175 sq. ft.	9,050 sq. ft.	24%
Rowe	797 Edwards	2,380 sq. ft.	8,530 sq. ft.	28%
Biddle	749 Edwards	2,326 sq. ft.	12,000 sq. ft.	19.5%
Lake	740 Edwards	1,567 sq. ft.	11,200 sq. ft.	14%
Talkington	860 Van Wycke	2,320 sq. ft.	8,400 sq. ft.	29%
Berresford	520 Pacific	2,320 sq. ft.	8,000 sq. ft.	29%
Lin	514 Ewing	2,300 sq. ft.	6,700 sq. ft.	34%
Spinas	851 Edwards	1,950 sq. ft.	9,600 sq. ft.	20.3%
Average	**NA**	**2,251 sq. ft.**	**9,439 sq. ft.**	**25.2%**

The property where the project is located is zoned UR – Urban Residential, although it is surrounded by mixed use development, including a church, apartments, a restaurant and residences. The purpose of the UR zone is to allow relatively dense residential development; single-family residences are a principally permitted use. The minimum lot size allowed in the UR zone is 8,000 s.f. and the maximum density is one dwelling per 8,000 s.f.

The Urban Residential zone (§17.32.060) requires minimum yards of front 20', rear 15', and side 5' (§ 17.36.060); a street side-yard is always 15' (§ 17.56.110). The setbacks should be considered in terms of what would be required after the lots are merged. Zoning Ordinance § 17.08.410 defines lot frontage for corner lots as the narrowest street frontage; therefore the parcel faces Hector Street to the west. Because of the irregular shape of the lot, setbacks had to be carefully considered. The reason for the large 20 ft. front setback is for safety purposes related to the street. Therefore, staff determined that only the western side of the property adjacent to Hector Street needed the 20 ft. setback. The western property line adjacent to parcel 042-042-06 was given a 5 ft. setback since it does not have street frontage, which is the same as is required for an interior side yard. The north property lines also have 5 ft. setbacks. There is a 15 ft. setback from the eastern / rear property line and a 15 ft. setback from the side (south) property line adjacent to Edwards Street. Due to the required setbacks for the septic system, the building envelope is limited to an approximately 55 ft. by 62 ft. area on the northern portion of the property.

The building footprint as shown on the site plan indicates that all the setbacks will be met. Section 17.56.110 allows eaves and overhangs to extend 2.5' into side yards and 4' into front, street-side and rear yards. The 18 inch overhangs would not encroach into setbacks more than 2.5'. Decks and stairways are allowed to extend up to eight feet into front, rear or street-side yards and three feet into side yards. None of these proposed features encroach into setbacks. The uncovered patio area that was shown along the east side of the residence in the previous plans is no longer shown. Such a structure would not require Design Review, but would not be allowed to be covered, and must maintain a minimum of a 7 ft. setback from the east property line, encroaching 8 ft into the rear setback as allowed if eventually constructed.

The maximum height allowed in the UR zone, by Zoning Ordinance § 17.36.06 (average ground level elevation covered by the structure to the highest point of the roof), is 25 feet. The Commission may require a lesser height in order to protect views, but a property owner is guaranteed at least 15 ft. in height and 1,500 sq. ft. regardless of view blockage (§17.60.050). Zoning Ordinance §17.56.100 states that height shall be measured from the average ground elevation covered by the structure, and for previous projects, staff and the Planning Commission have agreed that height should be measured from the native or existing ground elevation prior to construction. In this way, the height of a house could be reduced by digging it lower into the ground without actually decreasing the interior height (although this is discouraged by one Design Review finding). In this case, because of the slope of the lot, it will be dug out approximately three feet on the north side of the house, and daylight (no excavation) on

the south side. If the elevation is measured from the average original ground elevation covered by the residence, then the height should be reduced by 1.5 ft. from what is stated on the plans, which was measured from the foundation. The maximum height of the proposed structure as shown on the plans is 17.5 ft., which, as described, will actually be about 16 ft. as defined in the Zoning Ordinance.

The proposed garage is large enough for two vehicles. Zoning Ordinance §17.56.180 requires 2 off-street parking spaces other than any garage spaces. There is no prohibition in Trinidad ordinances against tandem parking. There is ample room within the long driveway area to provide for the two required parking spaces. The parking spaces would meet the size specifications required by the zoning ordinance (8.5' x 18'). Materials for the driveway are proposed to be concrete, which meets the Zoning Ordinance requirement for providing an all-weather surface.

Some grading will be required for the proposed project due to the slope of the lot. A more detailed grading plan and specifications for any retaining wall will be required prior to final approval of the project. A drainage plan will also have to be specified. Services and utilities have not yet been extended to this site, and are not shown on the plot plan, but will have to be approved by the Engineer once building plans are drawn. A more detailed plot plan has been submitted for this project that includes the proposed location of the propane tank. Although the tank will be located in the front of the house so as to be accessible, it is well away from the Church and will be screened with similar material to the siding of the house. The siding is proposed to be Hardi Lap horizontal siding, but the colors have yet to be determined. It will be most likely earth tones of tans or grays.

The Holy Trinity Church, the Memorial Lighthouse and Tsurai Village site have been identified by the General Plan as historic sites and accordingly need special consideration for projects that might affect them. General Plan Policy 76 recommends that ... *"The design assistance committee should ensure that any proposed development does not detract from these historical sites and structures."* There is no additional guidance provided in the General Plan for how to protect these resources. During a 2002 lot line adjustment involving several of the properties on this block, a small parcel to the south of the Church was required to be merged with the parcel with the apartment building which helps protect some of the open space around the church. The house itself will be located approximately 100 ft. from the Church. Because people are generally facing south when viewing the lighthouse, this project should not interfere with the use of that resource.

The project is also within 100 ft. of the Tsurai Study Area. The main concern with this area a would be the impact of additional development on the hydrology of the bluff – increasing stormwater runoff and septic effluent. A condition of approval has been included that stormwater shall be routed directly from all impervious surfaces, including the driveway, directly into the City's drainage system on Edwards Street. As described in the environmental review, this will more than offset the additional water from the leachfields. Details should be specified on the final grading and drainage. Although the City can not require more than is required by the Uniform Building Code without

adopting an enabling ordinance, the applicant is strongly encouraged to consider using water saving fixtures within the house wherever feasible. The septic system has been designed to current standards, and will not pose a risk to ground water quality.

SLOPE STABILITY:

The property where the proposed project is located is within an area designated as having "questionable stability" based on Plate 3 of the Trinidad General Plan. The site is fairly flat with a gentle slope (approx. 6%) to the southwest, and the new retaining wall has stabilized the site significantly. Zoning Ordinance §17.32.090 requires projects within the UR zone that are also within an unstable or questionably stable area to meet the requirements of §17.20.130, which sets forth specifications for a geologic feasibility determination. This section requires that a registered geologist or certified engineering geologist visit the site and write a report that addressed 5 key findings or issues (listed below). The report that was prepared is comprehensive and includes all the information required in the list below. It covers not only the site itself, but the nearby bluff area and contains a review of previous geologic studies that have been done. The report discusses potential hazards and provides recommendations to minimize them. The overall conclusion of the report was that: *"Based on geologic hazard investigations conducted for the proposed development area, aerial photograph analysis and a literature review of a selected few geotechnical reports for sites within the vicinity of the project area, it is PWA's* [Pacific Watershed Associates] *opinion that construction of a single-family residence on the site will present no added instability to the site itself, or its surrounding area, provided recommendations in this report are adhered to."*

Geologic Report Requirements from Zoning Ordinance §17.32.090

1. *The area covered in the report is sufficient to demonstrate the geotechnical hazards of the site consistent with the geologic, seismic, hydrologic and soil conditions at the site;*
2. *The extent of potential damage that might be incurred by the development during all foreseeable normal and unusual conditions, including ground saturation and shaking caused by the maximum credible earthquake;*
3. *The effect the project could have an the stability of the bluff;*
4. *How the project can be designed or located so that it will neither be subject to nor contribute to significant geologic instability through the lifespan of the project;*
5. *A description of the degree of uncertainty of analytical results due to assumptions and unknowns.*

SEWAGE DISPOSAL:

The project will require the installation of a new 3-bedroom septic system approved by the Humboldt County Division of Environmental Health (DEH). The applicant has retained a consultant to conduct the necessary soil testing and design the new system. A preliminary plot plan showing the proposed location of the system has been provided. The tank and risers, if located under the driveway, will have to be rated for traffic. A large setback from the retaining wall along Edwards Street and the long driveway limit the potential locations for placing a standard system. The applicant's agent has stated that The DEH has verbally agreed to a reduced setback from 20 ft. to 15 ft. from the

retaining wall, but this will have to be obtained in writing as part of the permit approval. Soil testing has also been completed on the northern portion of the property, so there is a potential to construct a pressure distribution (pump) system to the north with the house on the southern portion of the lot. In any case, a condition of approval has been included that an appropriate permit must be secured from DEH prior to construction.

LANDSCAPING AND FENCING:

No landscaping or fencing is proposed at this time. The applicant does have plans to landscape the unbuilt portions of the property with mostly grasses and shrubs, but no trees. This parcel falls within the Views and Vegetation Overlay Zone. Although there are no specific regulations restricting the planting of vegetation within this zone, property owners are not allowed to "unreasonably" block public or private views with vegetation within this zone.

DESIGN REVIEW / VIEW PROTECTION FINDINGS:

Because the project is located within the Coastal Zone and constitutes new construction, §17.60.030 of the Zoning Ordinance requires Design Review and View Protection Findings to be made. The applicant submitted application materials on December 4, 2007. Application materials show the project location and include a plot plan with the buildable area and septic system shown, elevations and a summary of the project. Recommended Design Review / View Preservation Findings are written in a manner to allow approval, without endorsing the project. However, if public hearing information is submitted or public comment received indicating that views may be significantly impacted for example, the findings should be reworded accordingly.

Additional external details have been provided with this design as opposed to the last one, and are still an important consideration in some of the Design Review findings that must be made. Particularly since this is such a prominently located property, the Planning Commission may consider discussing and giving suggestions for improving the aesthetics of the residence. This could include such things as size, shape, placement and congruity of the windows and other details. The Planning Commission should give the applicant specific comments for any changes the Commission feel are necessary for making any of the Design Review or View Protection findings. The applicant still wants to get the preliminary design approved prior to finalizing the grading and building plans.

<u>Design Criteria</u>

A. *The alteration of natural landforms caused by cutting, filling, and grading shall be minimal. Structures should be designed to fit the site rather than altering the landform to accommodate the structure.* Response: The alteration of natural landforms caused by cutting, filling, and grading is minimal. The lot is fairly flat and suitable for development. The site will only be leveled as needed for the construction of the house with some cut into the slope to minimize the height of the structure.

B. *Structures in, or adjacent to, open space areas should be constructed of materials that reproduce natural colors and textures as closely as possible.* Response: The area across Edwards Street, to the south of the project site is zoned open space. Hardi Lap siding is proposed to be used, but the colors are not specified. Colors should consist of earth tones as much as possible. The side facing Edwards has some unifying themes such as the arched glass in the garage doors and entryway and matching windows in the master bedroom and great room.

C. *Materials and colors used in construction shall be selected for the compatibility both with the structural system of the building and with the appearance of the building's natural and man-made surroundings. Preset architectural styles (e.g. standard fast food restaurant designs) shall be avoided.* Response: Materials used in construction can be found compatible with both the structural system of the building and the appearance of the building's natural and man-made surroundings; colors have not been specified. Surrounding development consists of variable materials and colors. Also see finding 'B'.

D. *Plant materials should be used to integrate the manmade and natural environments to screen or soften the visual impact of new development, and to provide diversity in developed areas. Attractive vegetation common to the area shall be used.* Response: Landscaping is not necessary to soften the visual impact of this project, but the applicant does intend to landscape the property with low vegetation. Screening will be necessary for any proposed propane tank.

E. *On-premise signs should be designed as an integral part of the structure and should complement or enhance the appearance of new development.* Response: No on-premise signs are proposed for this project.

F. *New development should include underground utility service connections. When above ground facilities are the only alternative, they should follow the least visible route, be well designed, simple and unobtrusive in appearance, have a minimum of bulk and make use of compatible colors and materials.* Response: The neighborhood already has underground utilities. New underground utility extensions will be required as part of construction.

G. *Off-premise signs needed to direct visitors to commercial establishments, as allowed herein, should be well designed and be clustered at appropriate locations. Sign clusters should be a single design theme.* Response: No off-premise signs are proposed as part of the project.

H. *When reviewing the design of commercial or residential buildings, the committee shall ensure that the scale, bulk, orientation, architectural character of the structure and related improvements are compatible with the rural, uncrowded, rustic, unsophisticated, small, casual open character of the community. In particular:*
   1. *Residences of more than two thousand square feet in floor area and multiple family dwellings or commercial buildings of more than four thousand square feet*

in floor area shall be considered out of scale with the community unless they are designed and situated in such a way that their bulk is not obtrusive.

2. *Residential and commercial developments involving multiple dwelling or business units should utilize clusters of smaller structures with sufficient open space between them instead of a consolidated structure.*

Response: The applicant has proposed a residence that will be approximately 2,454 sq. ft., larger than the 2,000 sq. ft. maximum guideline. This maximum is only a guideline and other factors may be considered. Another guideline that the Planning Commission uses is a 25% maximum floor-to-lot area ratio. This guideline is used in order to provide flexibility for varying lot sizes – the larger the lot, the larger the appropriate house, and vice-versa. In this case, the floor-to-area ratio is 19%, which is well within the guideline due to the large lot size.

Design considerations have been given to compatibility with surrounding development and reducing view blockage. There are several large structures nearby to this proposed residence, including the apartment building, the Eatery and the residence to the east. The bulk of the house has been broken up with several roof lines so that its size could be considered unobtrusive. The Planning Commission has recently approved development well in exceedance of one or the other of the above guidelines for various reasons.

View Protection

A. *Structures visible from the beach or a public trail in an open space area should be made as visually unobtrusive as possible.* Response: The proposed project is not in an area designated as open space, and due to its height and setback from the bluff, is generally not visible from nearby beaches. The residence will be visible from some public trail areas, including the head of the Axel Lindgren III Memorial Trail, the walkway along Edwards Street and Trinidad Head trails. However, the proposed residence has been designed to fit in with the surrounding development and minimize its obtrusiveness.

B. *Structures, including fences over three feet high and signs, and landscaping of new development, shall not be allowed to significantly block views of the harbor, Little Trinidad Head, Trinidad Head or the ocean from public roads, trails, and vista points, except as provided in subdivision 3 of this subsection.* Response: Most public viewing points are located seaward of the proposed residence, so public views will not be affected. Some views from outside the Catholic Church and Hector and Parker Streets could be affected, but would be similarly affected even if the proposed residence was the minimum guaranteed size.

C. *The committee shall recognize that owners of vacant lots in the SR and UR zones, which are otherwise suitable for construction of a residence, are entitled to construct a residence of at least fifteen feet in height and one thousand five hundred square feet in floor area, residences of greater height as permitted in the applicable zone, or greater floor area shall not be allowed if such residence would significantly block views identified in subdivision 2 of this subsection.*

Regardless of the height or floor area of the residence, the committee, in order to avoid significant obstruction of the important views, may require, where feasible, that the residence be limited to one story; be located anywhere on the lot even if this involves the reduction or elimination of required yards or the pumping of septic tank wastewater to an uphill leach field, or the use of some other type of wastewater treatment facility: and adjust the length-width-height relationship and orientation of the structure so that it prevents the least possible view obstruction.
Response: Any new development in this area will impact some views, mainly the apartment building, but any development on this parcel will block views. The Lot Merger decreases potential development in this area and serves to help protect views. The redesign is only one story and 1 ft. above the guaranteed minimum of 15 ft. No one other than the owner of the apartments has provided information that their views will be significantly blocked.

D. *If a residence is removed or destroyed by fire or other means on a lot that is otherwise usable, the owner shall be entitled to construct a residence in the same location with an exterior profile not exceeding that of the previous residence even if such a structure would again significantly obstruct public views of important scenes, provided any other nonconforming conditions are corrected.*
Response: No previous residence was removed or destroyed by fire.

E. *The Tsurai Village site, the Trinidad Cemetery, the Holy Trinity Church and the Memorial Lighthouse are important historic resources. Any landform alterations or structural construction within one hundred feet of the Tsurai Study Area, as defined in the Trinidad general plan, or within one hundred feet of the lots on which identified historical resources are located shall be reviewed to ensure that public views are not obstructed and that development does not crowd them and thereby reduce their distinctiveness or subject them to abuse or hazards.*
Response: The proposed development site is located within 100' of the Tsurai Study area, the Catholic Church, and the Memorial Lighthouse, but not within 100' of the Trinidad cemetery. As discussed above under 'Zoning Ordinance/General Plan Consistency,' the proposed development is situated and designs, so it does not significantly crowd these sites and does not impact their distinctiveness. In general this project is designed, and far enough away from the sites in question that it can be found that it will not negatively impact their character or views to and from them.

STAFF RECOMMENDATION

Based on the above analysis, the proposed project can generally be found to meet the Design Review / View Protection requirements and sewage disposal requirements. Provisions of the Zoning Ordinance and General Plan can be met. However, there still needs to be a complete grading permit application prior to the project moving forward. If no additional public comment regarding views or design or other ordinance provisions is received at or before the hearing, the Planning Commission should approve the design with the added condition that the following missing elements come back to the Planning

Commission for final approval: detailed plot plan showing all project elements in relation to the property lines including utilities and drainage, a grading plan, the retaining wall design and final exterior details, colors and materials for the residence. After the hearing, I will transmit a letter or memo to the applicant detailing the items that are still required for final approval as well as a summary of public comments and any Planning Commission recommendations. The Planning Commission also has other options as listed below.

PLANNING COMMISSION ACTION:

Motion for Approval – Staff Recommendation

Based on the application materials and previous public comment, the proposed project can be found to be consistent with the City's General Plan and Zoning Ordinance. Therefore, the staff recommends that the Planning Commission approve the project. If the Planning Commission agrees with the findings in the staff report, the proposed motion might be similar to the following:

> Based on the information submitted in the application, and included in the staff report and public testimony, I move to adopt the information and findings in this staff report and approve the project as conditioned below:

CONDITIONS OF APPROVAL

1. The applicant is responsible for reimbursing the City for all costs associated with processing the application. *Responsibility: City Clerk to place receipt in conditions compliance folder prior to building permits being issued.*

2. Based on the findings that community values may change in a year's time, design review approval is for a one-year period starting at the effective date and expiring thereafter unless an extension is requested from the Planning Commission prior to that time. *Responsibility: City Clerk to verify prior to building permits being issued.*

3. Construction related activities are to occur in a manner that does not impact the integrity of the primary or reserve sewage disposal areas. The leachfield area shall be staked and flagged to keep equipment off the area. Alternatively, a written description of techniques/timing to be utilized to protect the system will be required from the contractor. If the existing system area is impacted by construction activities, an immediate Stop-Work Order will be placed on the project. The builder will be required to file a mitigation report for approval by the City and County Health Department prior to permitting additional work to occur. A Copy of the report is to go to the building official and into the conditions compliance folder. *Responsibility: Building Official to verify prior to building permits being issued and during construction.*

4. Recommended conditions of the City Building Official shall be required to be met as part of the building permit application submittal. Grading, drainage and street improvements will need to be specifically addressed at the time of building permit application. A grading permit must be approved by the Planning Commission. *Responsibility: Building Official prior to building permits being issued.*

5. Applicant shall demonstrate that the site can support a primary and reserve drainfield by obtaining a sewage disposal system permit from the Humboldt County Division of Environmental Health. The system must include risers and an in-line filter. If located within the driveway area, the tank and risers must be rated for traffic capability and the risers should be sealed to ensure no runoff enters the tank. *Responsibility: Building Official to verify prior to building permits being issued and during construction.*

6. The applicant is responsible for submitting proof that a statement on the deed, in a form approved by the City Attorney, has been recorded indicating that any increase in the number of bedrooms above a total of three bedrooms or use of the property in excess of a single unit will require City approval of adequate sewage disposal capabilities and other applicable standards. *Responsibility: Building Official to verify prior to building permits being issued.*

6. Construction related activities are to occur in a manner that incorporates storm water runoff and erosion control measures in order to account for water quality considerations near the bluffs. Specific water quality goals include, but are not limited to:
    a. Limiting sediment loss resulting from construction
    b. Limiting the extent and duration of land disturbing activities
    c. Replacing vegetation as soon as possible
    d. Maintaining natural drainage conditions

Responsibility: Building Official to Confirm at time building permits are issued.

7. Applicant is required to obtain approval from the City Planner for the landscaping plan. *Responsibility: Building Official to Confirm at time building permits are issued.*

8. Applicant to provide method for City to verify height measurements (such as a reference stake) before and during the roof framing inspection and upon project completion. *Responsibility: Building Official to confirm at time building permits are issued and during construction inspections.*

10. Lot line adjustment must be finalized and recorded prior to issuance of building permits. *Responsibility: City Building Official prior to permits being issued.*

11. Applicant shall direct roof drainage downspouts away from the septic system tank and leachfields and into the City's stormwater system. *Responsibility: Building Official to confirm at time building permits are issued.*

12. Stormwater runoff from impermeable surfaces will be routed to the City's stormwater drainage system on Edwards Street such that infiltration is minimized and no runoff is directed towards the bluff. *Responsibility: Building Official to confirm at time building permits are issued.*

13. The application shall submit a final design that includes any details requested by the Planning Commission or City Planner as well as a complete grading permit application that includes drainage details to be approved by the Planning Commission. *Responsibility: Building Official to confirm prior to issuing building permits.*

14. a. Applicant will employ an elder of the Yurok Tribe certified by the Yurok Tribal Historical Preservation Officer to monitor the construction site for cultural and archeological resources. The monitor will be present during excavation or ground disturbing activities.

    b. Should archaeological materials be encountered during construction or grading operations, all ground-disturbing work shall be temporarily halted or shifted to another area. Work near the archeological finds shall not be resumed until a qualified archeologist has evaluated the materials and offered recommendations for further action. Prehistoric materials which could be encountered include: obsidian or chert flakes or tools, locally darkened midden, groundstone artifacts, depositions of shell, dietary bone, and human burials.

    c. Should human remains be uncovered, State law requires that the County Coroner be contacted immediately. Should the Coroner determine that the remains are likely those of a Native American, the California Native Heritage Commission must be contacted. The Heritage Commission consults with the most likely Native American descendants to determine the appropriate treatment of the remains.

15. All recommendation of the Geologic Hazard Report prepared by Pacific Watershed Associates, Inc. dated April 10, 2008 shall be adhered to as follows:

    Grading - Guidelines of the Uniform Building Code as well as current Humboldt County Grading Ordinance should be followed when grading operations are performed on the project site. Grading activities resulting in cuts over 3 feet high or fills over 3 feet thick should not be initiated without soils engineering evaluations. All fills should be appropriately compacted and fill slopes constructed no steeper than 50% gradient.

    Drainage - All surface run-off from impermeable surfaces shall be directed to, and captured by, the City of Trinidad's storm drain system. Any concentration of surface runoff should be avoided. Additionally, a French drain located along the

retaining wall near the southern property line will capture additional surface waters and direct them to the City's storm drain.

Soil Erosion
All means to control sediment and erosion design construction must comply with Title III building regulations (HCC Section 331-12, H-6-d). Planting vegetation and installing appropriate erosion control measures can protect construction areas and graded slope surfaces.

They shall be included in the overall development plan. These recommendations shall be reviewed by the project engineer, architect, structural engineer, and any prospective buyer of the property. Upon request, observation of construction activities may be provided.

1. Proposed Building Area – Residential development and construction, including leachfields, driveways, and parking areas, may be located within low, low to moderate, and moderate geologic hazard zones.

2. Seismic Design – The risk of damage due to very strong ground shaking can be significantly mitigated with proper structural design, sufficient lateral bracing, an adequate foundation system, and good construction techniques. The proposed residence should be designed to withstand seismically induced ground shaking of Modified Mercalli Intensities of VII or greater from a large magnitude earthquake centered on the Cascadia Subduction Zone. At a minimum, the appropriate sections of the most current issue (at the time of construction) of the UBC and California Seismic Code should be utilized.

3. Control of Run Off – Storm-water run-off shall be carefully controlled. Run-off from impervious surfaces (roofs, gutters, downspouts, and driveways) must be directed into the City's Stormwater system.

4. Native Vegetation – Landscaping utilizing native, localized climate-tolerant plants shall be used. Lawns that require irrigation will contribute large amounts of water to the site and could in conjuction with strong seismic shaking result in triggering slope instability on local slopes.

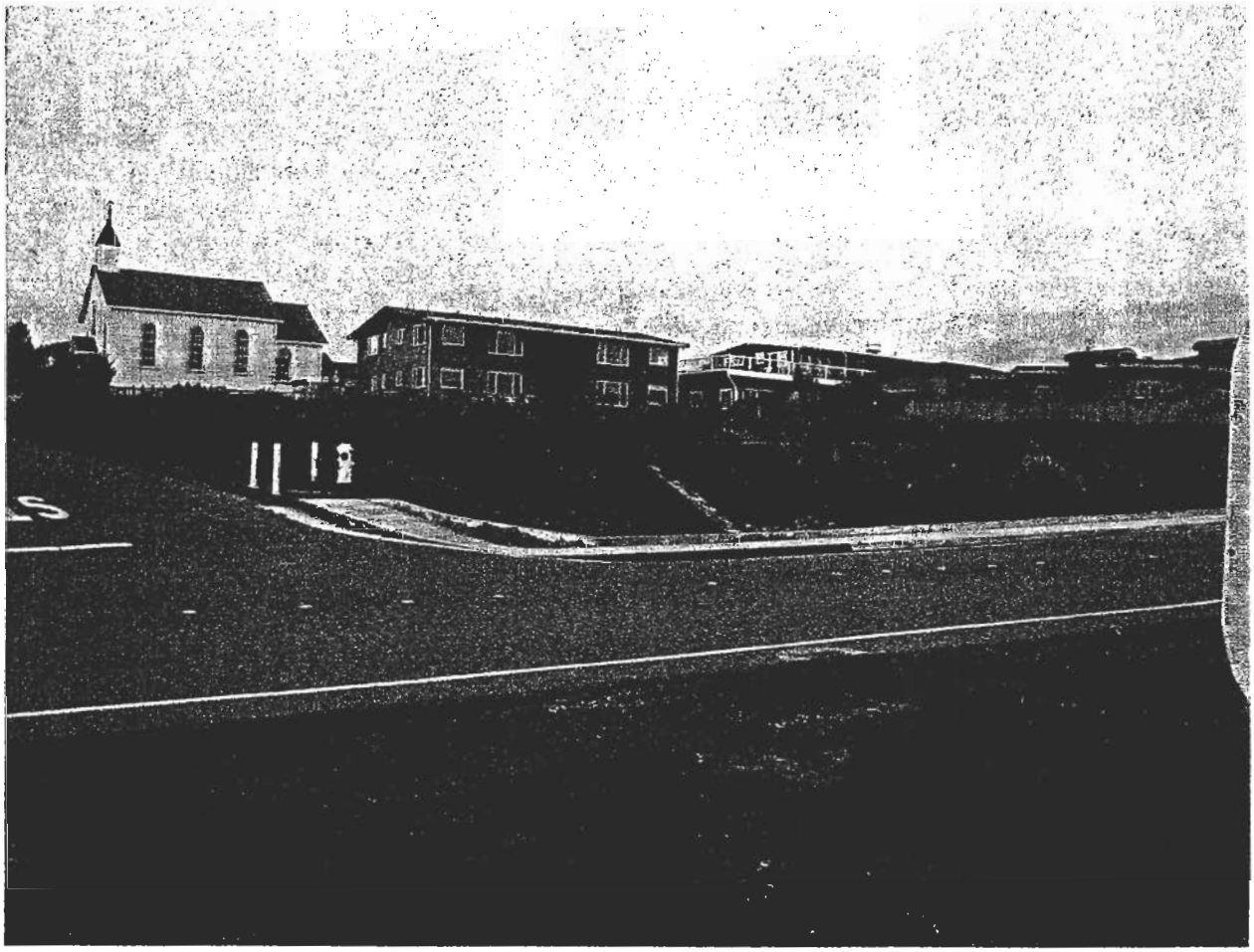
PACIFIC WATERSHED ASSOCIATES

Preliminary Geologic Hazard Report

For

A.P. Nos.: 042-042-005 and 042-042-013

Located on Hector Street
Trinidad, California



Submitted to

Jim and Jade Marshall

By

Pacific Watershed Associates, Inc.

April 10, 2008

Geologic and Geomorphic Studies • Wildland Hydrology • Erosion Control • Septic Evaluation • Environmental Services
P.O. Box 4433 • Arcata, California 95518 • Ph 707-839-5130 • Fax 707-839-8168 • pwa@northcoast.com

PACIFIC WATERSHED ASSOCIATES

Jim and Jade Marshall
19595 San Vincente Drive
Redding, California 96003

April 10, 2008

RE: Preliminary Geologic Hazard Report for A.P. Nos.: 042-042-005 and 042-042-013, located on Hector Street, Trinidad, California.

At your request, Pacific Watershed Associates, Inc. (PWA) has prepared a report entitled "Preliminary Geologic Hazard Report for A.P. Nos.: 042-042-005 and 042-042-013, located on Hector Street, Trinidad, California", dated April 10, 2008. This report documents PWA's geologic hazard assessment investigations of the "subject property" and the surrounding vicinity.

We understand that you intend to construct a single family residence on this parcel. We also understand that based on the City of Trinidad's 1980 General Plan, the City requires a geologic report that discusses the impact any future development on this site might have on the geologic stability of the project site and surrounding vicinity. Therefore, at your request we have prepared this preliminary geologic report for proposed residential development on this site.

Evaluations by PWA indicate that the proposed development of the "subject property" will not create, nor enhance any existing, geologic hazards to the project area or surrounding vicinity provided that recommendations provided in the report are followed.

If you have any questions regarding the information provided in this report, or need further assistance, please contact us.

Sincerely,
Pacific Watershed Associates, Inc.

Kathy Moley
Professional Geologist #7594

Enclosure

Geologic and Geomorphic Studies • Wildland Hydrology • Erosion Control • Septic Evaluation • Environmental Services
P.O. Box 4433 • Arcata, California 95518 • Ph 707-839-5130 • Fax 707-839-8168 • pwa@northcoast.com

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PACIFIC WATERSHED ASSOCIATES

Jim and Jade Marshall
19595 San Vincente Drive
Redding, California, 96003

April 10, 2008

RE: Preliminary Geologic Hazard Report for A.P. Nos.: 042-042-005 and 042-042-013, located on Hector Street, Trinidad, California.

Dear Jim and Jade,

INTRODUCTION

This report presents results of preliminary geologic hazard investigations for the proposed development of a 3-bedroom residence within A.P. Nos.: 042-042-005 and 042-042-013, located on Hector Street, Trinidad, California (Figure 1). At your request, the purpose of this report is to discuss potential geologic hazards resulting from residential development on this site to the surrounding environment. Of most concern are the coastal bluffs located on the south side of Edwards Street, immediately south of the property.

We understand that according to the City of Trinidad's 1980 General Plan this property has been classified as being within an area of questionable stability. As a result, the City of Trinidad requires a geologic report that discusses the impact any future development this site might have on the geologic stability of the site, and the coastal bluffs to the south of the project site. Therefore, investigations focused on identifying geologic hazards that would be affected by the proposed residential development on this parcel.

Methods of study used to evaluate the geologic suitability of the site for residential development included: a review of available published and unpublished geologic literature and maps; aerial photographs for years 1947/48, 1962, 1965, 1988 and 1996; a surficial reconnaissance of the project site; and subsurface investigations conducted during Pacific Watershed Associates (PWA) onsite wastewater treatment evaluation for this site and adjoining parcels.

In general, providing recommendations detailed in the RECOMMENDATIONS section of this report are followed, the residential development of this site will not trigger any new, or enhance any existing, geologic hazards to this site or to the surrounding vicinity. The geologic hazards which currently exist for the coastal bluffs south of Edwards Street will continue to exist if this parcel were not to be developed.

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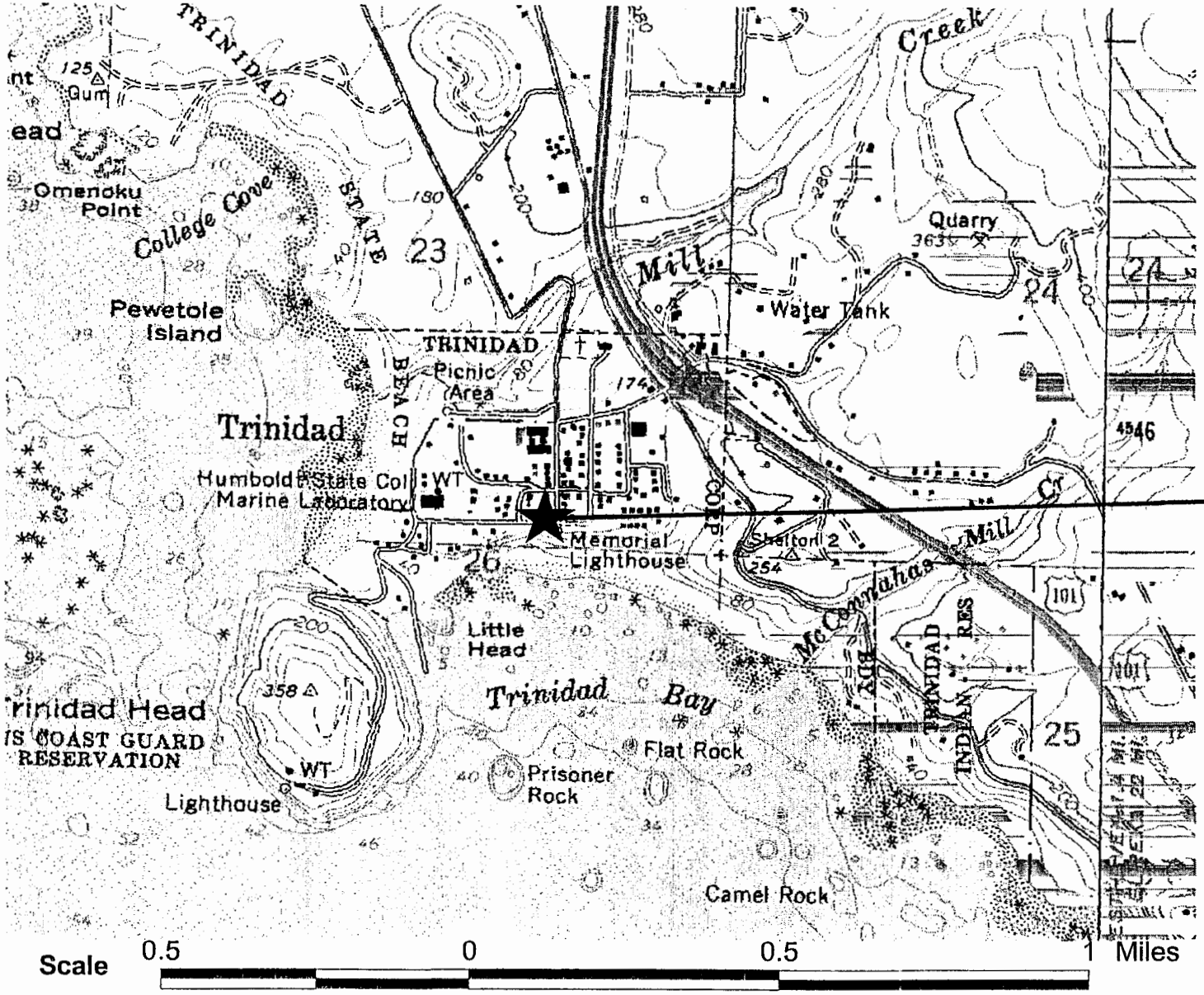
General Location Map for Marshall



APNs.:042-042-005 & 042-042-013

Hector Street
Trinidad, California

Approximate Project Loaction

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Figure 1

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PHYSICAL SETTING

The physical setting of the project site is characterized by the physical location, land use, hydrology, slope stability, bedrock and surficial geology, and local faults. Each of these attributes is discussed below.

Physical Location

This property is located in the NE 1/4, of Section 26, T8N, R1W, Humboldt Meridian, Humboldt County, within the town of Trinidad, California. This parcel is bound on the north and east by developed residential property, on the west by undeveloped property and by Hector Street, and to the south by Edwards Street (Figure 2). Immediately south of Edwards Street is the Tsurai Study Area.

Land Use

Surficial investigations of the property indicate that this property has remained undeveloped for the last number of decades and groundcover is currently primarily restricted to grasses. Land use practices within the surrounding parcels are: single family residential, multi-family residential (apartments), commercial (The Eatery), historic (Trinity Church) and tourism (the Trinidad Lighthouse). Of additional concern to this project is the Tsurai Study Area immediately south of Edwards Street. The Tsurai Study Area has considerable historical and spiritual significance to the Tsurai Ancestral Society and includes, but may is not be limited to: sacred burial sites, middens, and the Axel Lindgren Memorial Trail. Additionally, the property is surrounded on both the south and the west by city roadways.

During the construction of the property immediately to the east of this site, the subject parcel was utilized as a staging area for construction. During that period of time between 2 to 4 feet of fill was imported to the site and a five (5) foot retaining wall was constructed along the south side of the property.

Slope Stability

Preliminary geologic review of this site reveals that slope stability of the coastal bluffs poses the most important geologic hazard of the project. In recent years portions of this bluff have experienced slope failure. Most recently, in 2005 while flushing the fire hydrant, a water line diverted flow over the coastal bluff. This resulted in an over saturation of the bluff and portions of the bluff and Van Wyke Road failed. This portion of Van Wyke Road has been rebuilt and the fire hydrant location moved to the north side of Edwards Street.

Directly across Edwards Street from the project site the coastal bluff drops off steeply (<65%). The large arcuate nature of the top of the bank is indicative of there having been a previous landslide in this location. Upon further inspection of the top of the slope and the edge of the roadway on the south side of Edwards Street, the hillside continues to experience downward motion. Subtle to prominent arcuate cracks are currently forming at the top of the slope. These cracks are showing enechelon side stepping pattern, indicative of active slope movement (Photo 1 and Photo 2). Indeed, the parking area for the Trinidad Lighthouse Monument which was recently upgraded and paved (circa 2005) at approximately the same time as the lighthouse trail was installed is showing signs of slope movement.

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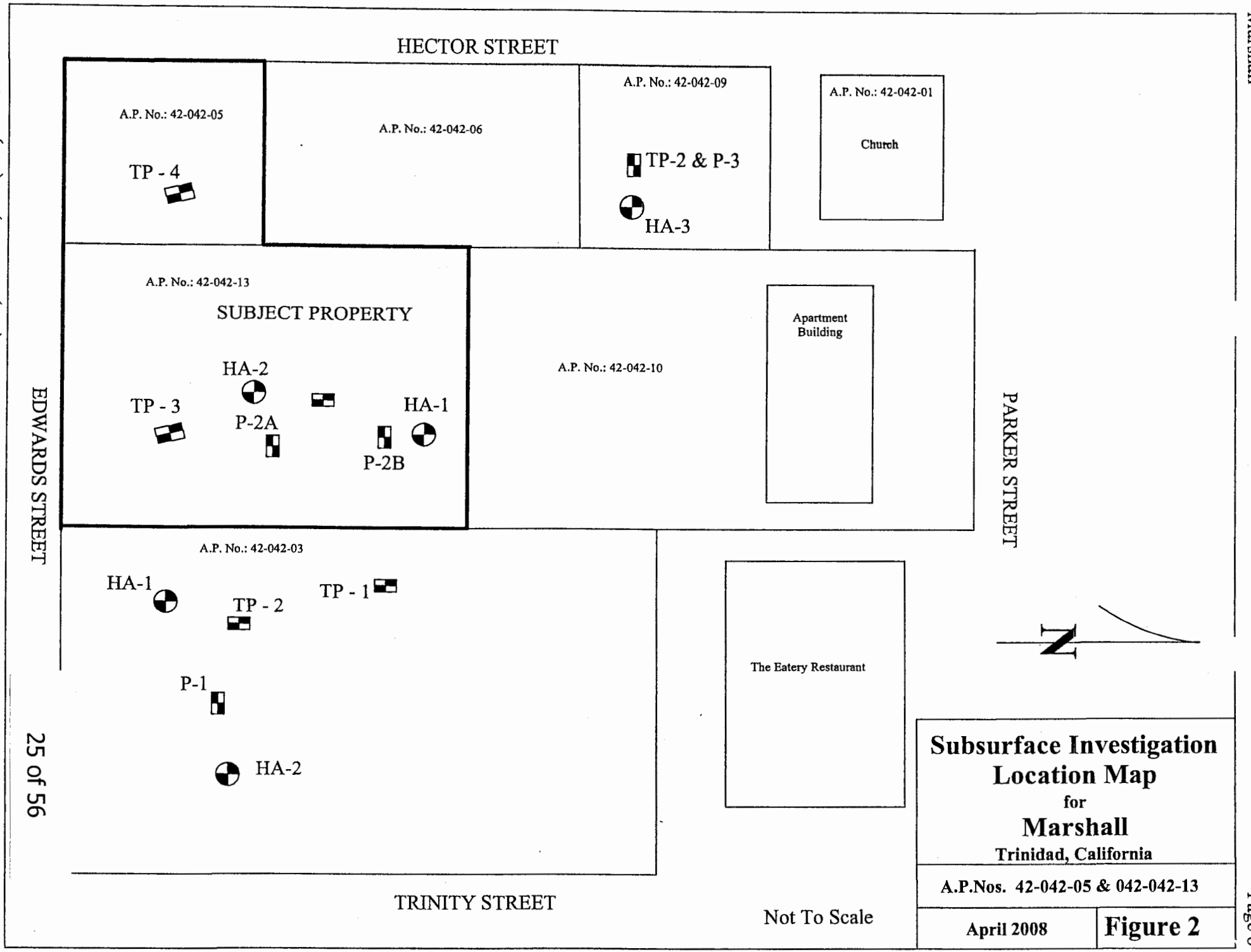

Subsurface Investigation Location Map

for

Marshall

Trinidad, California

A.P.Nos. 42-042-05 & 042-042-13

April 2008 | **Figure 2**

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Photo 1. Enechelon arcuate cracks within the parking area adjacent to the Trinidad Lighthouse and the Axel Lindgren Memorial Trail. Arcuate cracks are indicative of slope movement. View looking toward the west.

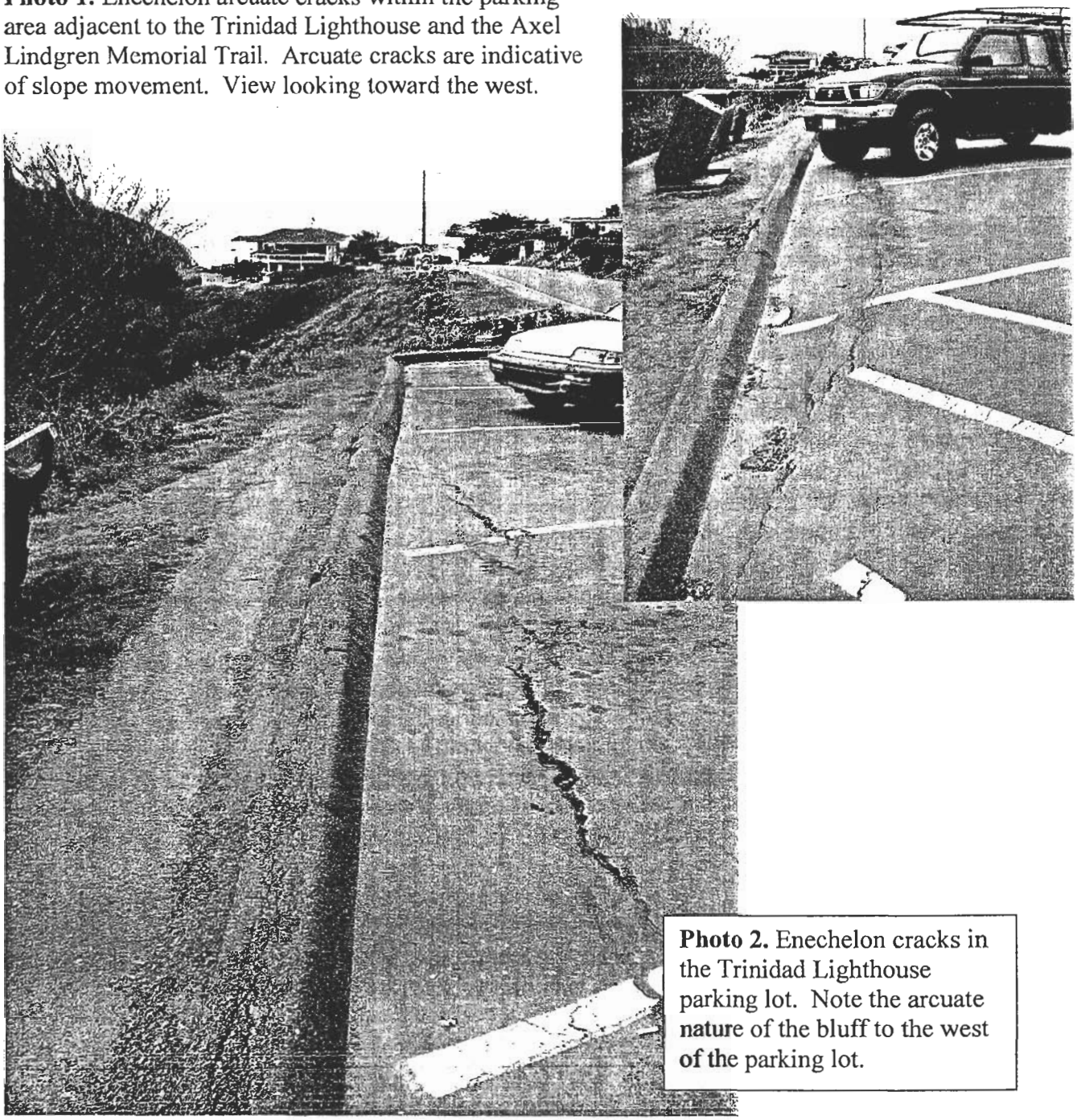

Photo 2. Enechelon cracks in the Trinidad Lighthouse parking lot. Note the arcuate nature of the bluff to the west of the parking lot.

Furthermore, a review of aerial photographs from the previous six decades indicates that slope stability in this location has been an ongoing problem. While the aerial photographs are at varying scales the site is still visible. In the late 1940's the slope on the south side of Edwards Street, directly south of project site, appears well vegetated. However, by the early 1960's there is a distinct arcuate pattern and there appears to be a drainage area developed on the west side of the slope. This drainage is possibly a gully or a location of slope failure that failed all the way

down to the beach and is in line with Hector Street. This drainage feature remains visible through the sixties; however, by the late 1980's, became vegetated.

Hydrology

The project site is approximately 180 feet above sea level and averages about 65 - 70-inches of rainfall annually (Western Region Climate Center). There are no natural drainages within the immediate vicinity of the project area. The major contributors to the local hydrology from this site will be run-off from the site due to development improvements and from the onsite wastewater treatment system for the proposed residence. These two contributing sources will be discussed separately below.

Streamline Planning indicates that based on the proposed footprint of the house (2,918 ft^2) and 2,388 ft^2 of parking and driveway there will be more than 5,000 ft^2 of impermeable surface area resulting from this development. As part of the condition of approval for this project all run-off from these surfaces must be captured and routed directly into the City's storm drain system at the corner of Edwards Street and Hector Street. Based on 5,000 ft^2 of impermeable surface area and an average of 8-inches of rainfall per month during the raining season, capturing run-off would divert over 26,000 gallons of water that otherwise would have landed on the ground surface, infiltrated through the soil profile, and contribute to an already impacted ground water.

The onsite wastewater treatment system for this site is designed to handle a wastewater flow from a three-bedroom residence, or 450-gallons per day. Unlike many of the older leachfield systems which were installed during the 1970's and 1980's this system will be composed of 110 linear feet of leachfield with a calculated 529 ft^2 of absorption area within the trenches. Compared to many of the very small leachfields and leach pits within the community of Trinidad, this leachfield will spread effluent throughout a larger area. Based on a maximum use of 450-gallons per day, this proposed development will contribute a approximately 13,500-gallons of effluent per month to the site. However, given the amount of meteoric water (rainwater) which will be diverted from the site (26,000 gallons), a net decrease of 12,500 gallons of water per month will result from the proposed development of this property.

Bedrock and Surficial Geology

The earth materials encountered on this site are represented by the underlying bedrock and overlying surficial deposits. These earth materials are briefly described below.

Bedrock - Geologic maps of this region indicate that the local bedrock consists of Cretaceous/Jurassic age Central Belt of the Franciscan Complex (KJf) (Wagner and Saucedo, 1987; Aalto, 1992). The Franciscan Complex is characterized by highly sheared massive sandstone with interbedded siltstone or sandstone/siltstone. Boulders of metagraywacke, greenstone, chert, blueschist, greenschist, amphibolite schist may be present (Jenkins, 1962).

Surficial Geology - Surficial deposits encountered on this site are typically composed of uplifted Patrick's Point marine terrace. The Patrick's Point marine terrace is estimated to be 64,000 years in age (Carver and Burke, 1992) and has been deposited upon the Cretaceous/Jurassic Franciscan Complex. Within the project area the surficial geology includes the soils which have developed upon the marine terrace and any fill material that has been imported to the site.

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Soil - Soils encountered in test pits underlying the proposed development area were logged during multiple site investigations by PWA on this site. Subsurface investigations throughout the property revealed consistent native soil conditions partially overlain by fill. Investigations conducted in 2001 and 2002 revealed 2 to 3 feet of LOAM underlain by SANDY CLAY LOAM, SANDY LOAM, and LOAMY SAND. Refer to Figure 2 for the approximate location of test pits on the "subject property" and adjacent parcels. For soil profiles logged within test pits throughout the project area, and for details regarding additional subsurface properties see previous reports submitted by PWA regarding the project site and the surrounding parcels.

Fill – Investigations conducted in 2007 within test pits underlying the proposed leachfield areas revealed approximately 18 to 48-inches of mixed fill brought onsite during construction activities on the neighboring parcel.

Local Faults

The project site is located approximately ¼ mile from the Trinidad Fault. The Trinidad Fault has been deemed by the State of California as having been active within the last 11,000 years (Holocene time). Additionally, the Trinidad Fault is estimated to have an average slip rate over the last 700,000 years of 1.9 mm/yr (Carver and Burke, 1992). Depending on the size and location of an earthquake originating on the Trinidad fault, this site would experience moderate to severe ground shaking.

SEISMITIY AND FAULTING

The project site is in a high seismic zone (Zone 4) as defined by the Uniform Building Code. Although no faults have been documented within the immediate vicinity (50 feet) of the building site that displays surface fault rupture during Holocene time, the north coastal region of California, and in particular Humboldt County, is subject to frequent seismic ground motion resulting in moderate to strong ground shaking (Figure 3). Over sixty earthquakes within the region have produced damage and over twenty-five earthquakes of magnitude 6 or greater have originated in the north coastal region since the mid-1800's (Dengler, *et al.*, 1992b).

Strong seismic shaking during saturated soil conditions could produce slope instabilities within the project site. The Humboldt County Seismic Safety Map (1979) depicts the project area is within the D1 slope stability zone. Zone D is representative of relatively shallow sedimentary deposits. The seismic characteristics of these sediments during an earthquake typically produce moderately high accelerations of short to intermediate periods with intermediate duration of shaking. The numerical value represents the relative slope stability. A numerical value of one (1) is indicative of an area of low instability.

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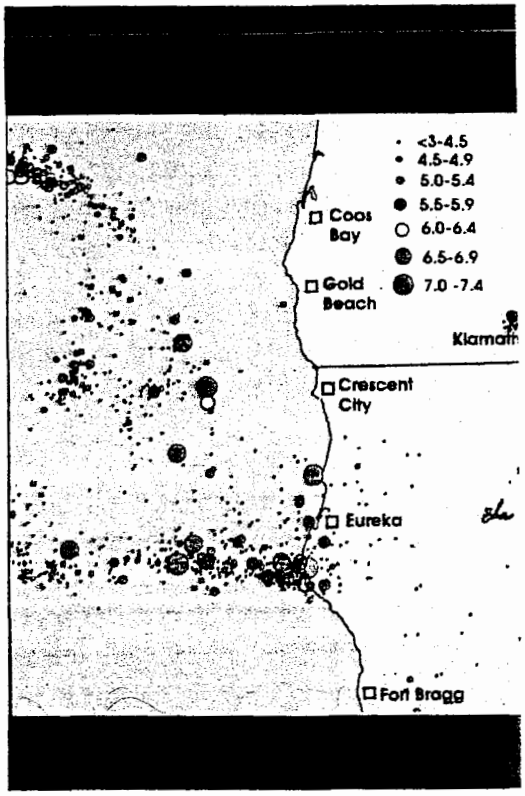

Figure 3. Earthquakes of magnitude 3.0 and higher, January 1975 through July 1995. (Data compiled from U.S. Geological Society. Figure from Dengler and Moley, 1995).

Earthquake sources on the north coast primarily originate from interactions and internal deformation of the North American plate, the Pacific plate and the Gorda plate. Specifically, the sources of earthquakes that affect the project site include: the Mad River fault zone (MRFZ), the Little Salmon fault zone (LSFZ), the subducting Gorda plate, the Mendocino fault, the Mendocino triple junction (MTJ), the Cascadia Subduction Zone (CSZ), and the San Andreas fault (Dengler, *et al.*, 1992a) (Figures 4 and 5).

Based on distance from known active faults, this project site is expected to experience light to strong damage to well built structures (Dengler and Moley, 1995). Based on ground shaking intensity data, this project site should have experienced very strong ground shaking (Modified Mercalli Intensity VI, (Figure 6) between three and nine times since the year 1900 (Dengler *et al.*, 1992a & b).

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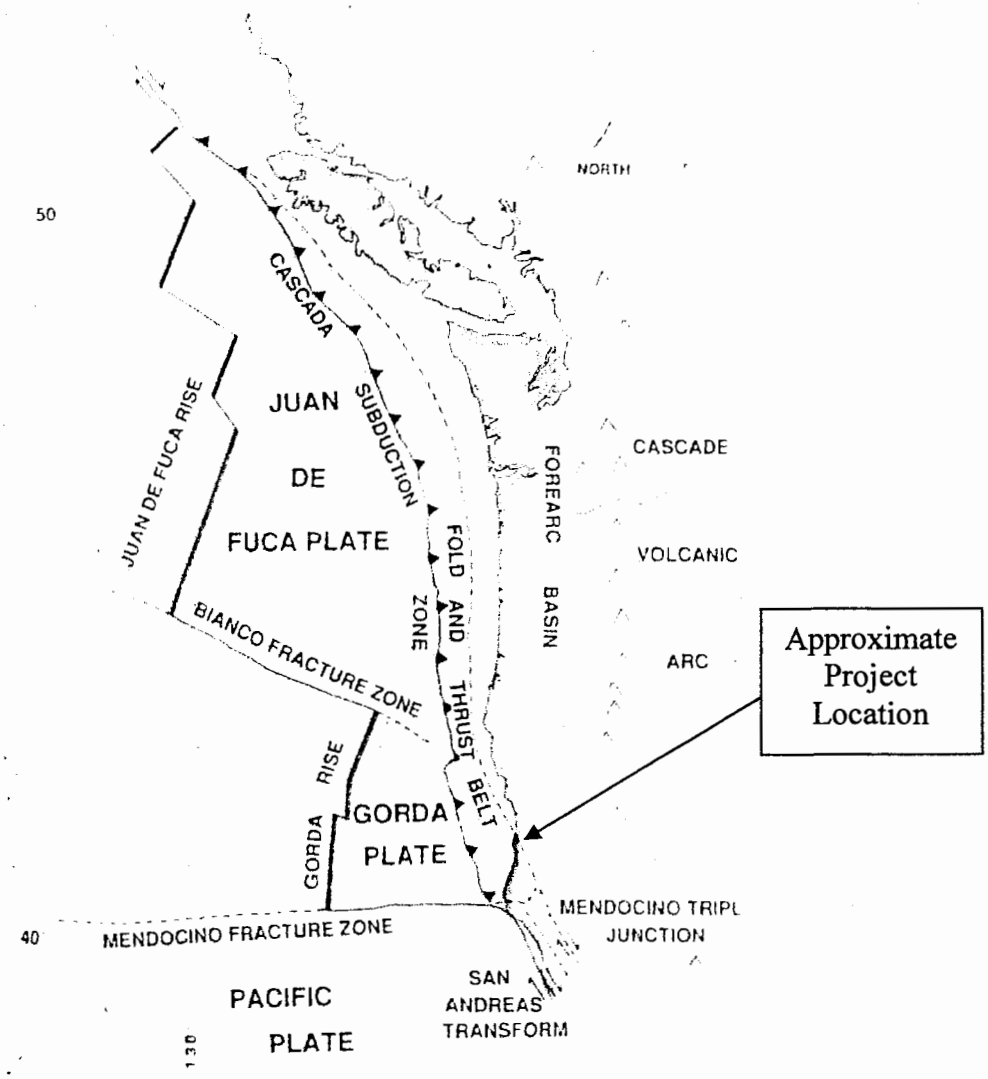

Figure 4. Three geologic plates intersect at the Mendocino triple junction. The San Andreas fault separates the Pacific and North American plates; Mendocino fault separates Gorda and Pacific plates; and the Cascadia subduction zone separates the Gorda/Juan de Fuca plates offshore and the North American plate (unpublished document of Carver, 1989).

The Mad River and Little Salmon Fault Zones -Large to very large magnitude earthquakes can originate from compressional faults located within the North American plate such as faults within the Mad River fault zone (MRFZ) and the Little Salmon fault zone (LSFZ) (Figure 5). The MRFZ is generally considered to consist of the Fickle Hill fault, Mad River fault, McKinleyville fault, Blue Lake fault, Trinidad fault, Big Lagoon fault, and numerous smaller faults within the area. Strong levels of seismic shaking can be produced from these North American plate faults. This site is located within the northern span of the Mad River Fault Zone.

The site is slightly northeast of the McKinleyville Fault and southwest of the Trinidad Fault. Moderate to very strong ground shaking should be expected due to earthquakes originating from these sources.

Present research indicates the recurrence intervals of earthquakes originating within the North American plate is on the order of hundreds or thousands of years which is much longer than the recurrence intervals of earthquakes originating from the CSZ, the Mendocino fault or faults located within the Gorda plate (Carver and Burke, 1992; Clarke, S.H., Jr., and McLaughlin, R.J., 1992; McPherson, 1992; and Dengler, *et al.*, 1992b). Although earthquakes originating within the North American plate can produce greater degrees of damage due to the potentially high magnitude as well as the proximity of the earthquake to residential development (Dengler, *et al.*, 1992b).

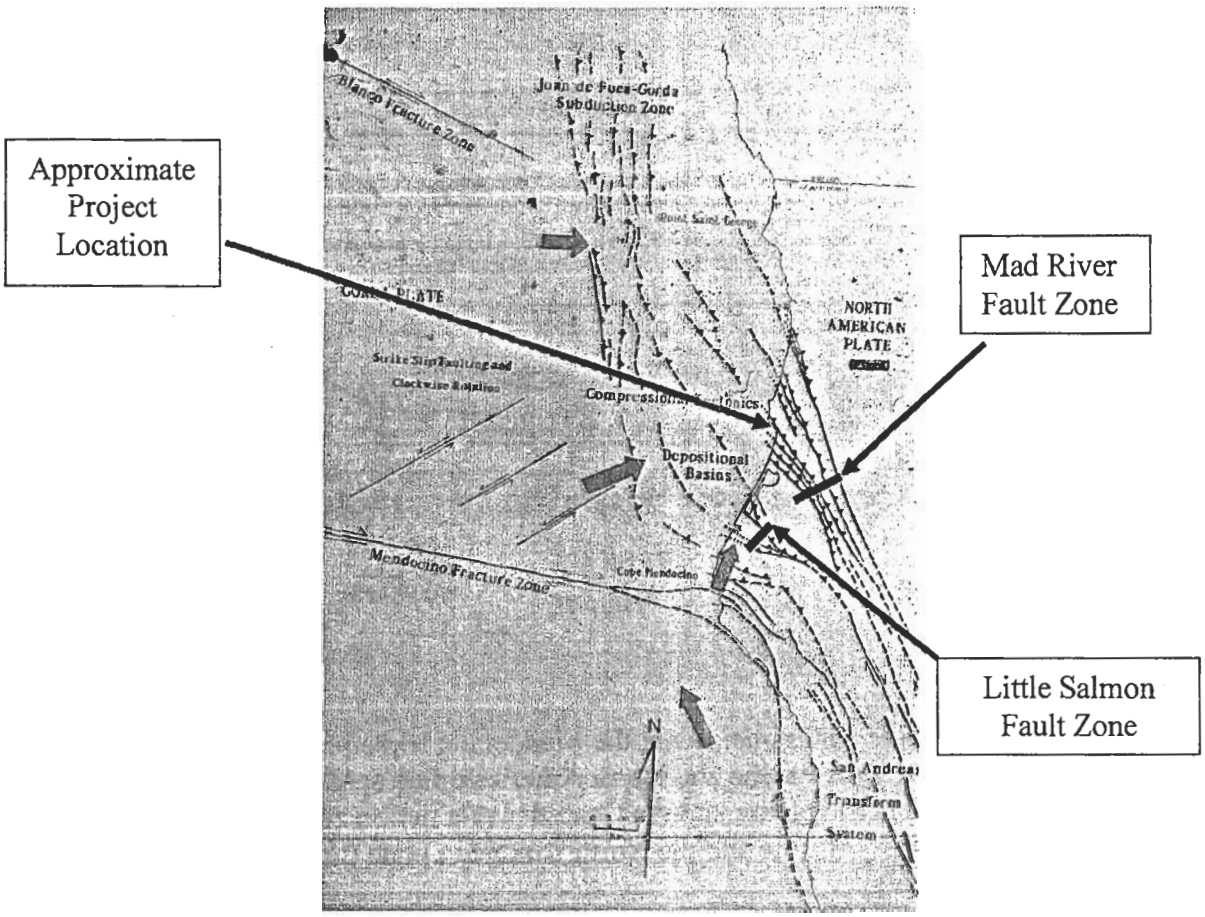

Figure 5. Cartoon depiction of compressional tectonics of the southern Cascadia Subduction Zone displaying the numerous unnamed faults within the subducting Gorda plate as well as upper plate faults within the North American plate. Red arrows indicate relative Plate Motion. (Personal Comm., unpublished documents of Gary Carver, 1989).

Modified Mercalli Intensity Scale

Intensity Value	Description (with approximate ground acceleration (g))
I.	Not felt. Marginal and long-period effects of large earthquakes (0.002 g).
II.	Felt by persons at rest, on upper floors, or favorably placed.
III.	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake (0.004 g).
IV.	Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing cars rock. Windows, dishes, doors rattle. Glasses clink. Crockery clashes. In the upper range of IV, wooden walls and frame creak (0.008 g).
V.	Felt outdoors; direction estimated. Sleepers awakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate (0.02 g).
VI.	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked. Small bells ring (church, school). Trees, bushes shaken visibly, or heard to rustle (0.04 g).
VII.	Difficult to stand. Noticed by drivers. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices, also un-braced parapets and architectural ornaments. Some cracks in masonry C. Waves on ponds, water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged (0.1 g).
VIII.	Steering of cars affected. Damage to masonry C; partial collapse. Some damage to masonry B; none to masonry' A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes (0.2 g-0.3 g).
IX.	General panic. Masonry D destroyed; masonry C heavily damaged, some-times with complete collapse; masonry B seriously damaged. General damage to foundations. Frame structures, if not bolted, shifted off foundations. Frames racked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluviated areas, sand and mud ejected, earthquake fountains, sand craters (0.4g–0.5g).
X.	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly (0.6 g – 1.0 g).
XI.	Rails bent greatly. Underground pipelines completely out of service (2.0 g).
XII.	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into the air (+3.0 g).

Figure 6. Modified Mercalli Intensity Scale (Bolt, 1988).

The Gorda Plate - The most common source of seismic shaking in the project area is the Gorda plate (McPherson, 1992; Dengler, *et al.*, 1992a & b). Seismicity from this source is thought to be from internal deformation of the subducting oceanic plate beneath the North American plate and offshore west of the coast of the Northern California (McPherson, 1992). Moderate to strong levels of seismic shaking can be expected from this source. The Gorda plate produces multiple earthquakes per year, few of which are damaging. The November 8, 1980 (M7.1), April 26, 1992 (M6.9 & M6.7) and December 26, 1994 (M5.4) earthquakes are examples of damaging earthquakes that originated from this source (McPherson, 1992; Dengler, *et al.*, 1992c). While not a damaging earthquake, primarily due to its distance from residential communities, the June 14, 2005 (M7.2) earthquake was the largest earthquake recorded on the Gorda plate in recent decades and demonstrates the Gorda plate's ability to generate large earthquakes.

The Mendocino Fault - Another common source of earthquake shaking is the Mendocino fault located offshore, west of Cape Mendocino. The Mendocino fault is the plate boundary between the Pacific plate and the Gorda plate. The September 1, 1994 (M6.9) earthquake originated from the Mendocino fault. This earthquake caused slight ground shaking at the project site (Dengler and Moley, 1995). Earthquake events of large magnitudes producing strong levels of seismic shaking can be anticipated from this source. The recurrence interval of earthquakes originating from this source is poorly understood (Clarke and McLaughlin, 1992; Carver and Burke, 1992; McPherson, 1992; Dengler, *et al.*, 1992a; and Merritts, *et al.*, 1992).

The San Andreas Fault - Large to great magnitude earthquakes originating from the San Andreas fault system produce very strong levels of seismic shaking as occurred in 1906 during the Great San Francisco earthquake (M8.3) causing damage in the residential areas of Humboldt County (Toppozada and Parke, 1982). The San Andreas fault marks the boundary between the Pacific plate and the North American plate. The recurrence interval of large events on this fault has been estimated to be between 200 to 400 years (Prentice, 1989).

The Cascadia Subduction Zone (CSZ) - The Cascadia Subduction Zone (CSZ) is the plate boundary that separates the offshore Gorda/Juan de Fuca oceanic plates from the continental North American plate, extending from Cape Mendocino, California northward to the Queen Charlotte Islands, British Columbia. During historic times, the CSZ has been less active than other nearby north coast seismic sources. However, on April 25, 1992 a magnitude 7.1 earthquake shook the north coast. While moderately felt in the project area this earthquake originated near this major plate boundary and may have been a CSZ event. The CSZ is a seismic source that is capable of producing very large to great magnitude earthquake events. The recurrence interval for great earthquakes on the CSZ (M8.5+) has been estimated to be between 200 to 500 years (Carver and Burke, 1992). The last known great earthquake originating from the CSZ occurred on January 26, 1700 and has an estimated magnitude of ~M9 (Satake *et al.*, 1996).

Earthquakes originating from the CSZ pose the potential for major damage (Carver and Burke, 1992; Dengler *et al.*, 1992a & b). However, according to published document *"Planning Scenario in Humboldt and Del Notre Counties, California for a Great Earthquake on the Cascadia Subduction Zone"* (Toppazada *et al.*, 1995), the project site is expected to receive damage that is slight structures (brick) build especially to withstand earthquakes, considerable in

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ordinary substantial buildings; with partial collapse, racked, and tumbled down wooden houses in some cases. Fall of walls, twisting and or falling of chimneys, columns and monuments are also expected. This planning scenario is for a M8.5 Earthquake on the CZS.

The Mendocino Triple Junction (MTJ) - Mendocino triple junction (MTJ) marks the junction of the Pacific plate, the North American plate and the Gorda plate. Additionally, the MTJ is where the San Andreas fault, the Mendocino fault and the CSZ come together. Earthquakes originating from this source are generally shallow and onshore in the immediate vicinity of the MTJ. The August 17, 1991 (M6.0 – 6.2) and the March 7, 1992 (M5.6) earthquakes, which produced moderate to strong seismic shaking in southern Humboldt County and northern Mendocino County are examples of earthquakes originating from this source. While potentially damaging, the project area is not expected to experience strong ground shaking by earthquakes originating from this source. The recurrence intervals of earthquakes from this source are not well understood (Carver and Burke, 1992; Clarke, S.H., Jr., and McLaughlin, R.J., 1992; McPherson, 1992; and Dengler, *et al.*, 1992a & b).

Estimated Peak Ground Acceleration - Recent investigations indicate that strong levels of seismic shaking can be expected at the project site due to a significant event produced from the seismic sources mentioned above. Ground shaking should be anticipated at the site and during the design life of residential structures. At the site, the estimated peak ground acceleration with a ten percent probability of being exceeded in 50 years (the design life recommended by the Uniform Building Code) assuming uniform soft rock site conditions is approximately >0.7g (Figure 7, MMI VIII+; USGS, 1996).

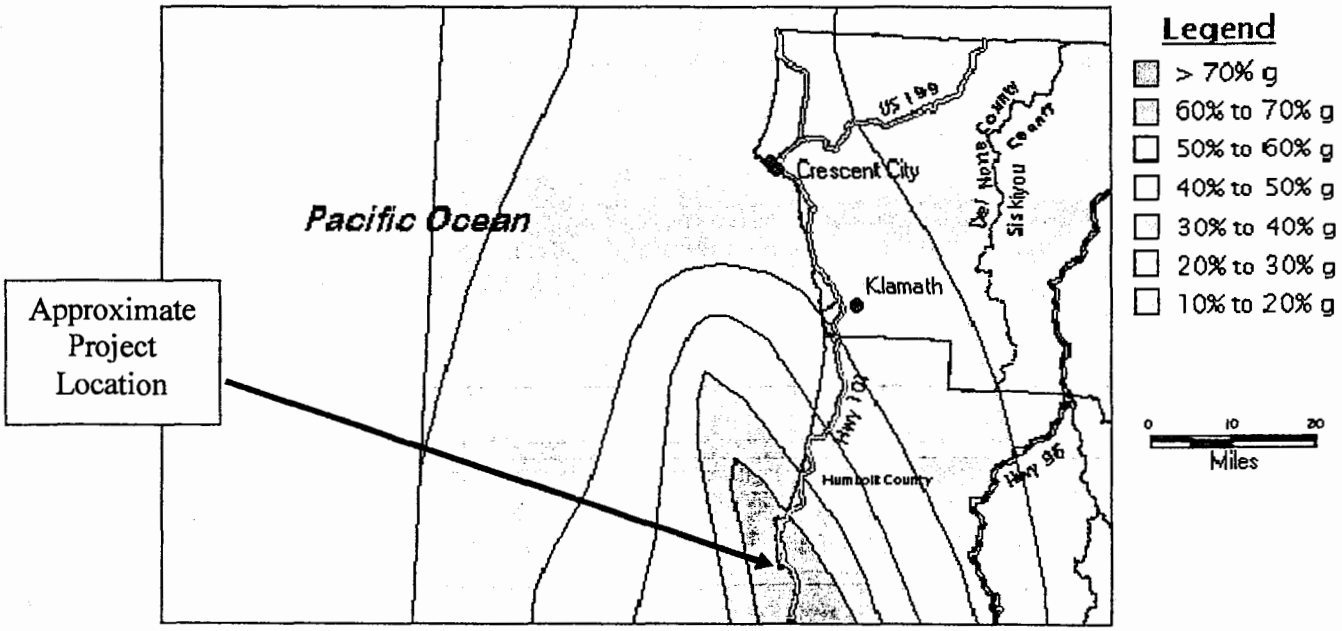

Figure 7. Probabilistic ground shaking map (PGS) peak ground acceleration with 10% probability of being exceeded in 50 years, assuming uniform soft rock site conditions (California Geological Society, 2003).

It should be emphasized that the ground shaking intensities presented above are estimates based upon field studies of the effects of past earthquakes in areas similar to that of the project site. Since these are estimates they should be used only as a general guide, which may reflect probable future ground shaking intensities. Nevertheless, we believe that it is reasonable to conclude that any residential structure constructed on the subject property should be expected to experience strong ground shaking during the lifetime of the structure.

Strong ground shaking can have a detrimental effect on a residential structure, its contents, and the people inside. However, much can be done in order to properly prepare your house and family for a large earthquake and mitigate some of its consequences. The front pages of your local telephone book contain much useful information regarding first aid and survival techniques before, during and after an earthquake. Also, the Humboldt Earthquake Education Center has published "Living on Shaky Ground, How to Survive Earthquakes and Tsunamis on the North Coast". Copies of this publication are available for free downloading on the internet as at http://www.humboldt.edu/~geology/earthquakes/shaky2.html.

PREVIOUS STUDIES

Numerous studies have been performed both on and within the vicinity of this project site. PWA has performed onsite wastewater investigations for the project site, for three of the surrounding parcels and on numerous parcels throughout the community of Trinidad. Additionally, numerous geologic evaluations have been conducted within the vicinity of the project site assessing the general stability of the coastal bluff above Tsurai Village, particularly in the vicinity of the Wagner Street Trail and the Trinidad Lighthouse (Bush Geotechnical Consultants, 1990, 1995, 2002, 2003a, 2003b; LACO ASSOCIATES, 1994a, 1994b, 2004; SHN, 1996; Taber Consultants, 2003: Chaney et al, 2004). A few key points of some of these previous studies are highlighted below.

Pacific Watershed Associates (PWA)

PWA conducted subsurface investigations on the project site and adjoining parcels in 2001 and 2002 for the purpose of evaluating the subsurface conditions and suitability for an onsite wastewater treatment system. On 12/19/01, five subsurface exploration holes were advanced by hand auger to depths ranging between 114-inches and 120-inches below the ground surface (bgs). Ground water observation wells were installed in test pits and were monitored between 1/03/02 and 2/08/02. All wells remained dry during ground water monitoring events. On both 3/29/01 and on 2/08/02 a total of four backhoe dug test pits were advanced within the surrounding area to depths ranging between 10 feet and 12 feet bgs. On 2/08/02 soil percolation testing was also performed on these sites. See Figure 2 for test pit locations.

During the years between 2002 and 2005, the parcel immediately to the east of the project site was built upon and the project site was used as a staging area during construction. During that time a variable amount of fill was placed on the project site. Additionally, a retaining wall approximately five (5) feet in height was constructed along the southern property line. We

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understand that inboard of this retaining wall a French drain was installed. Fluids captured by the French drain empty out onto a concrete drainage ditch along the north side of Edwards Street via drain lines located beneath the sidewalk. We also understand that roof run-off from some of the neighboring parcels are plumbed into this French drain.

In October of 2007, subsurface investigations were again conducted on the project site. On 10/02/07, multiple hand augered test holes were advanced on the property and were met with auger refusal between 18"-24" bgs due to the imported fill on this site. On 10/03/07, two additional test pits (TP-3 and TP-4) were advanced by backhoe to depths of 10 feet bgs. Investigations revealed previous construction activities on this site added 2 to 4 feet of fill placed on top of native soils.

Testing on this site and adjacent sites deemed the soils sufficient for the treatment of wastewater onsite. As a result of these investigations, PWA designed onsite wastewater treatment systems for the parcel on the corner of Trinity and Edwards and for the project site. All subsurface investigations, test results and system designs can be found in the Humboldt County Division of Environmental Health files located in Eureka, California.

LACO and Associates (LACO)

In 2004, LACO presented the Tsurai Ancestral Society with their "Engineering Geologic Assessment of Tsurai Village". The purpose of that report was to provide an engineering geologic assessment of the general stability of the Tsurai village and surrounding areas. In their report they state that the potential primary hazards affecting the Tsurai Villiage and surrounding management area include, but may not be limited to *"slope instability due to coastal erosion, surface erosion due to uncontrolled runoff emanating from upslope residential hardscaped areas and bare areas resulting from vegetation removal, slope failure induced by strong ground earthquake shaking, tsunami inundation, and year round high ground water conditions resulting from densely spaced residential septic systems and diversion of runoff from neighboring properties"*. In their report LACO recognizes numerous existing slope instabilities and geomorphic signals that coastal bluffs may fail again in the future.

Based on a review of rates of beach and bluff migration investigations conducted by Tuttle (1981), LACO concluded that apparently at the Tsurai Village site, which has been occupied for centuries, the coastal bluffs at the village site has not changed significantly and has therefore been relatively stable over the past 150 years. However, recent winter storms had freshly exposed shell middens and ancestral remains.

Noting that there are a series of ongoing issues contributing to the overall instability of the coastal bluffs in the vicinity of the Tsurai Village and surrounding management area, LACO states *"The single greatest factor that could adversely affect slopes at the Tsurai Village is an increase in the groundwater surface elevation"* and that *"Increases in groundwater surface elevations . . . are primarily related to the densely spaced network of private on-site waste water disposal fields (leachfields)"*.

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SHN Consulting Engineers and Geologist (SHN)

In 1995 SHN contracted by the City of Trinidad to conduct a surficial geologic investigation and assess the general geologic conditions relative to erosion and slope instability impacts of trail development. This was presented to the City of Trinidad in a report entitled "Geologic Report for Two Trail Alternatives South of Edwards Street, Trinidad California" dated February 21, 1996. In their discussion of the coastal bluffs located south of Edwards Street SHN states:

> *"It has been well established that the coastal bluff slope south of Edwards and Wagner Streets is not a stable landform. The entire bluff slope and top edge is subject to chronic slow colluvial soil creep with localized intermittent shallow landslide occurrences. Most of the slope is mantled by loose silty sand soils that are highly erodable when exposed to direct rainfall or concentrated runoff. Springs are common along lower portions of the bluff slope. The resulting emergent groundwater aggravates slope failure and erosion processes. The toe of the bluff is subject to direct ocean wave erosion that slowly undercuts the slope. Most of the bluff toe is slowly sliding onto upper reaches of the beach, and as long as this continues the slope above will continue to remain unstable. It is important to note that large scale bluff failure has not occurred in this area for over 50 years, but the risk of large scale failure is significant and should not be ignored".*

Busch Geotechnical Consultants (Busch)

In a report for the City of Trinidad Busch performed a limited-scope geotechnical investigation for a proposed walkway which would have extended from the area adjacent to the Trinidad Lighthouse west towards the ocean, down Van Wyke Street. After a review of aerial photographs of the area that they had flown for another project in 1987, Busch indicated that there was a moderate to large scale landslide within the coastal bluff on the south side of Edwards Street, across the street from this project site. Busch mapped this feature as a slump earth flow and indicated that this failure was initiated when *"marine waves undercut the toe of the bluff face, the mélange bedrock in the base of the bluff plastically deformed (crept or flowed) downslope, and the overlying terrace rocks experienced brittle rotational failure (a slump) down onto the earthflow"*. At the time of Busch's investigations they did not encounter any cracks within the headwall areas of this slide and Busch indicated that *"the head region of this slide has not settled since the street was last paved"*. Busch did indicate that the area above the head of the scarp now had a risk level higher than Moderate.

CONCLUSIONS

Based on geologic hazard investigations conducted for the proposed development area, aerial photograph analysis and a literature review of selected geotechnical reports for sites within the vicinity of the project area, it is PWA's conclusion that construction of a single family residence on this site will present no added instability to the site itself, or its surrounding area, provided recommendations in this report are adhered to.

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Slope Stability and Geologic Hazard Zones

The level of rating of the geologic hazard zones pertain to probability of slope failure occurring and the consequences of the failure on site improvements or the degree to which site improvements would have on the surrounding area. The geologic hazard designations discussed in this report are based on geologic processes on and around the site in the past 50 years and it is assumed that these processes will continue in the future in a similar manner. Based on the gentle slope on this site and the distance from the coastal bluff, the proposed development area is interpreted to be in a low or low to medium geologic hazard zone.

However, slopes on the south side of Edwards Street are very steep (>65%), show indications of large slump block failure and slow downward creep in recent decades, and actively growing cracks can be seen in the recently upgraded Trinidad Lighthouse parking lot. Unanticipated and unforeseen events, such as strong seismic shaking during saturated soil conditions, could cause considerable slope failures affecting the entire slope south of Edwards Street. Additionally, strong seismic shaking on the coast, particularly if associated with the Cascadia Subduction Zone, may also result in a tsunami. Tsunami waves could have detrimental effects, largely due to their potential for undercutting coastal bluffs. If such an event were to occur, the bluff retreat at this site could be substantial.

However, these "acts of nature" such as large scale seismic shaking, seismically induced landslides, tsunami induced landslides, or severe winter storms which undercut slopes creating an inherent instability of the slopes, exist regardless of the development of this project site.

Ground Water

As stated by LACO and discussed earlier in this report, LACO considers the abundance of fluid that percolates through the soil throughout the community of Trinidad, elevating or mounding the ground water surface due to densely spaced leachfields within this small community, to be the single most contributing factor to destabilizing the coastal bluffs. They further conclude that high ground water conditions coupled with strong seismic shaking has the highest probability of producing a landslide event.

However, high ground water conditions currently exist within the coastal community of Trinidad. As discussed earlier, proposed development of this site will include the capture and redirection of meteoric waters into existing storm drains. Even though an appropriately sized leachfield will contribute additional flow to the subsurface, development will result in a net loss of ground water contribution from this site. In other words, left undeveloped, this site contributes more to the already elevated ground water than it would if this site were to be developed.

The onsite wastewater treatment system for this site is designed for a three-bedroom residence with an estimated 450-gallons a day flow. Based on soil properties at this site, PWA considers effluent flow to be primarily vertical. During site investigations by PWA on this site and on adjoining properties soils become increasingly sandy with depth.

Based on the slope of the ground surface within the community of Trinidad, and in particular at the project site, subsurface flow below this site is projected to flow in a southwest direction,

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mimicking the ground surface. If this is the case, additional flows from this site might daylight west of any previous developed slope instability located directly south of the project site.

While it may be more obvious on some parcels within the Trinidad area which direction run-off and ground water may travel, without some rather extensive hydrologic investigations it is difficult to determine, from this project site how much ground water will flow south verse west.

Geologic Hazards

Geologic hazards that will affect development of the property include seismically induced ground shaking and the potential for small scale landsliding to occur under either aseismic or seismic conditions to the coastal bluffs south of Edwards Street, south of the property. PWA does not consider the construction of this project to enhance the slope instability to the bluff due to seismic shaking.

A substantial geologic hazard to the project site during the economic life span of residential development is seismic shaking produced by earthquakes within the Gorda plate, the North American plate, the San Andreas fault, the Mendocino fault, the Mendocino triple junction, and Cascadia Subduction Zone or other seismically active sources in the North Coast region.

Residential structures developed on the site should be designed and constructed to withstand very strong levels of ground shaking. Since there are several earthquake sources that can affect the project site, wood-frame construction is generally recommended for residential structures. Construction should be in accordance with the current edition of the Uniform Building Code for Zone 4, the highest seismic zone.

No engineering recommendations are specified by PWA in this report. If required by the Humboldt County Building Department, footing excavations can be observed by a qualified professional. Driveways, parking areas, and small-scale cut and/or fill operations can generally be located in areas designated as low to moderate and moderate geologic hazard.

Grading, Drainage, and Soil Erosion

Grading, drainage and soil erosion control plans have not been prepared by PWA and are not included in this report. However, they are briefly discussed below.

Grading - Guidelines of the Uniform Building Code as well as current Humboldt County Grading Ordinance should be followed when grading operations are performed on a project site. Grading activities resulting in cuts over 3 feet high or fills over 3 feet thick should not be initiated without soils engineering evaluations. All fills should be appropriately compacted and fill slopes constructed no steeper than 50% gradient.

Drainage - All surface run-off from impermeable surfaces shall be directed to, and captured by, the City of Trinidad's storm drain system. Any concentration of surface run-off should be avoided. Additionally, a French drain located along the retaining wall near the southern property line will capture additional surface waters and direct them to the City's storm drain.

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Soil Erosion
All means to control sediment and erosion during construction must comply with *Title III Land Use and Development Division 3, Building Regulations Section 331-12 Grading, Excavation, Erosion, and Sedimentation Control Planning (HCC Section 331-12, H-6-d).* Planting vegetation and installing appropriate erosion control measures can protect construction areas and graded slope surfaces.

RECOMMENDATIONS

The following recommendations are provided for subsequent stages of project development. They shall be included in the overall development plan. These recommendations shall be reviewed by the project engineer, architect, structural engineer, and any prospective buyer of the property. Upon request, observation of construction activities may be provided.

1. Proposed Building Area – Residential development and construction, including leachfields, driveways, and parking areas, may be located within low, low to moderate, and moderate geologic hazard zones.

2. Seismic Design – The risk of damage due to very strong ground shaking can be significantly mitigated with proper structural design, sufficient lateral bracing, an adequate foundation system, and good construction techniques. The proposed residence should be designed to withstand seismically induced ground shaking of Modified Mercalli Intensities of VII or greater from a large magnitude earthquake centered on the Cascadia Subduction Zone. At a minimum, the appropriate sections of the most current issue (at the time of construction) of the UBC and California Seismic Code should be utilized.

3. Control of Run-off – Storm-water run-off shall be carefully controlled. Run-off from impervious surfaces (roofs, gutters, downspouts, and driveways) must be directed into the City's storm drain system.

4. Native Vegetation – Landscaping utilizing native, localized climate-tolerant plants shall be used. Lawns that require irrigation will contribute large amounts of water to the site and could in conjunction with strong seismic shaking result in triggering slope instability on local slopes.

5. Onsite Wastewater Treatment System (OWTS) – The site specific onsite wastewater treatment system designed for the proposed 3-bedroom residence must be installed by a qualified professional and constructed to the design specifications provided in PWA's report entitled: "Onsite Wastewater Treatment Evaluation of A.P. Nos.: 042-042-005 and 042-042-013, located on Hector Street, Trinidad, California", dated January 22, 2008.

6. Minimizing Wastewater Flow – Appropriate low-flow plumbing fixtures shall be installed in the proposed residence and any leaky fixtures or other plumbing problems shall be repaired as soon as possible.

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INVESTIGATION LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted geologic principles and practices. No warranty, express or implied, or merchantability or fitness, is made or intended in connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings. If the client desires assurances against project failures, he agrees to obtain appropriate insurance through his own insurance broker.

The analysis and recommendations submitted in this report are based on our site reconnaissance and the information derived from natural and artificial exposures. Unanticipated field conditions are commonly encountered during construction and cannot be fully determined from existing exposures and may require that additional expenditures be made during construction to obtain a properly constructed project. Some contingency fund is recommended to accommodate these possible extra costs.

This report is issued with the understanding that it is the responsibility of the owner of the property, or their representatives, to ensure that the information and recommendations contained herein are called to the attention of the geotechnical (soils and foundation) engineer, the project architect and structural engineer, and are incorporated into the plans, and that the necessary steps are taken to see that the contractor(s) and subcontractors carry out such recommendations in the field. This report and associated recommendations can not be used by third parties without written approval of Pacific Watershed Associates, Inc.

If this project is not completed with three (3) years the conclusions and recommendations in this report should be re-evaluated prior to further development. Additionally, the client may wish to have portions of this site re-evaluated as the project proceeds and/or if site conditions change.

Any plan review or construction observations that may be necessary as called for in the RECOMMENDATIONS section above are separate tasks from the preparation of this report and are not a part of the contract under which this report was prepared. If requested, plan review and construction observation services will be preformed on a time-and-materials basis. We will require a minimum of at least 72 hours advance notice for field review or construction observation services.

This report has been prepared to evaluate the geologic conditions of A.P. Nos.: 042-042-005 and 042-042-013, located on Hector Street, Trinidad, California, as shown on Figures 1 and 2 and discussed in the INTRODUCTION section of this report. In the event that any new information pertaining to changes in plans is formulated, our conclusions and recommendations shall not be considered valid unless the changes are reviewed and the conclusions in this report modified or verified in writing by a representative of Pacific Watershed Associates, Inc.

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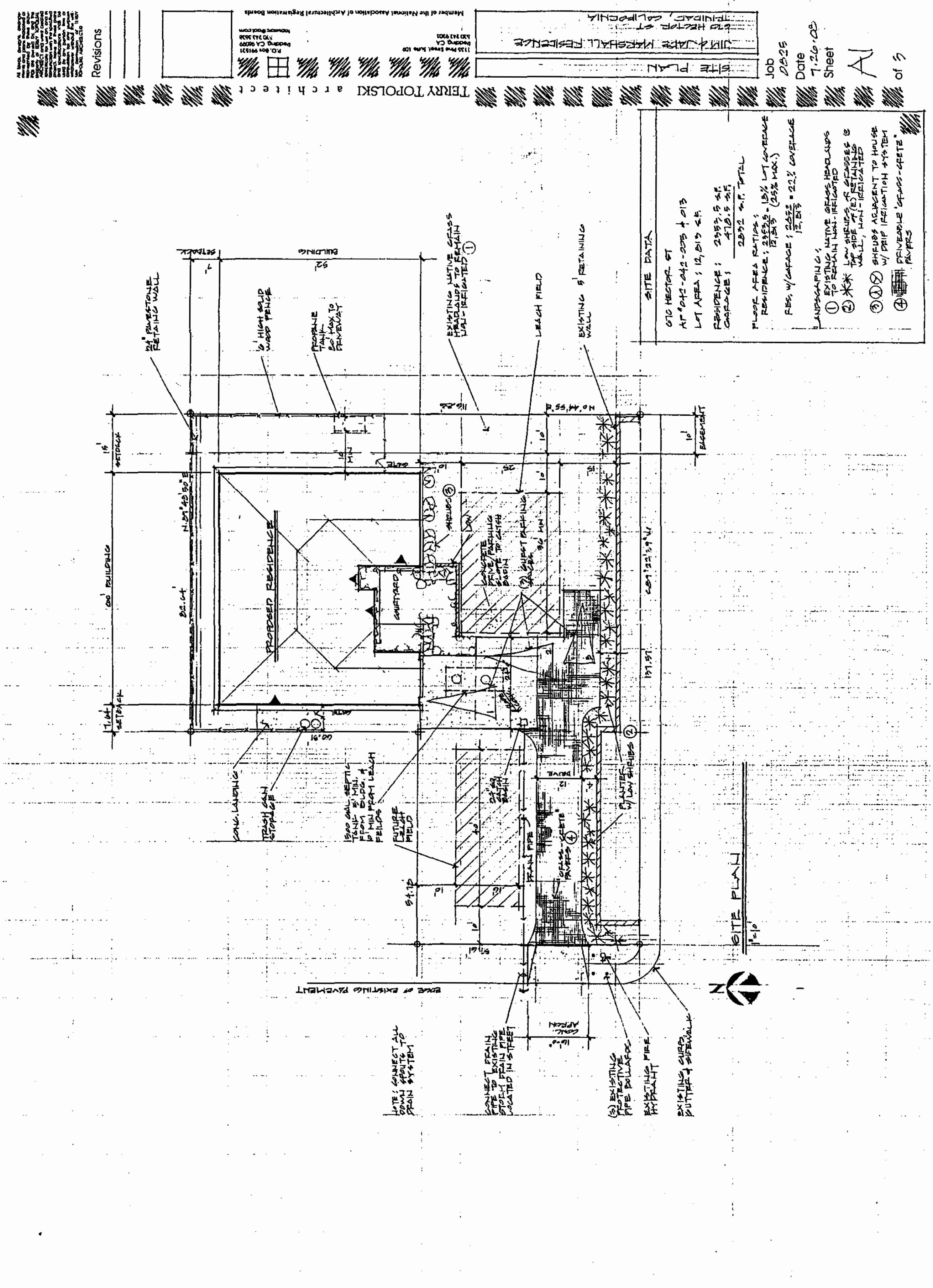
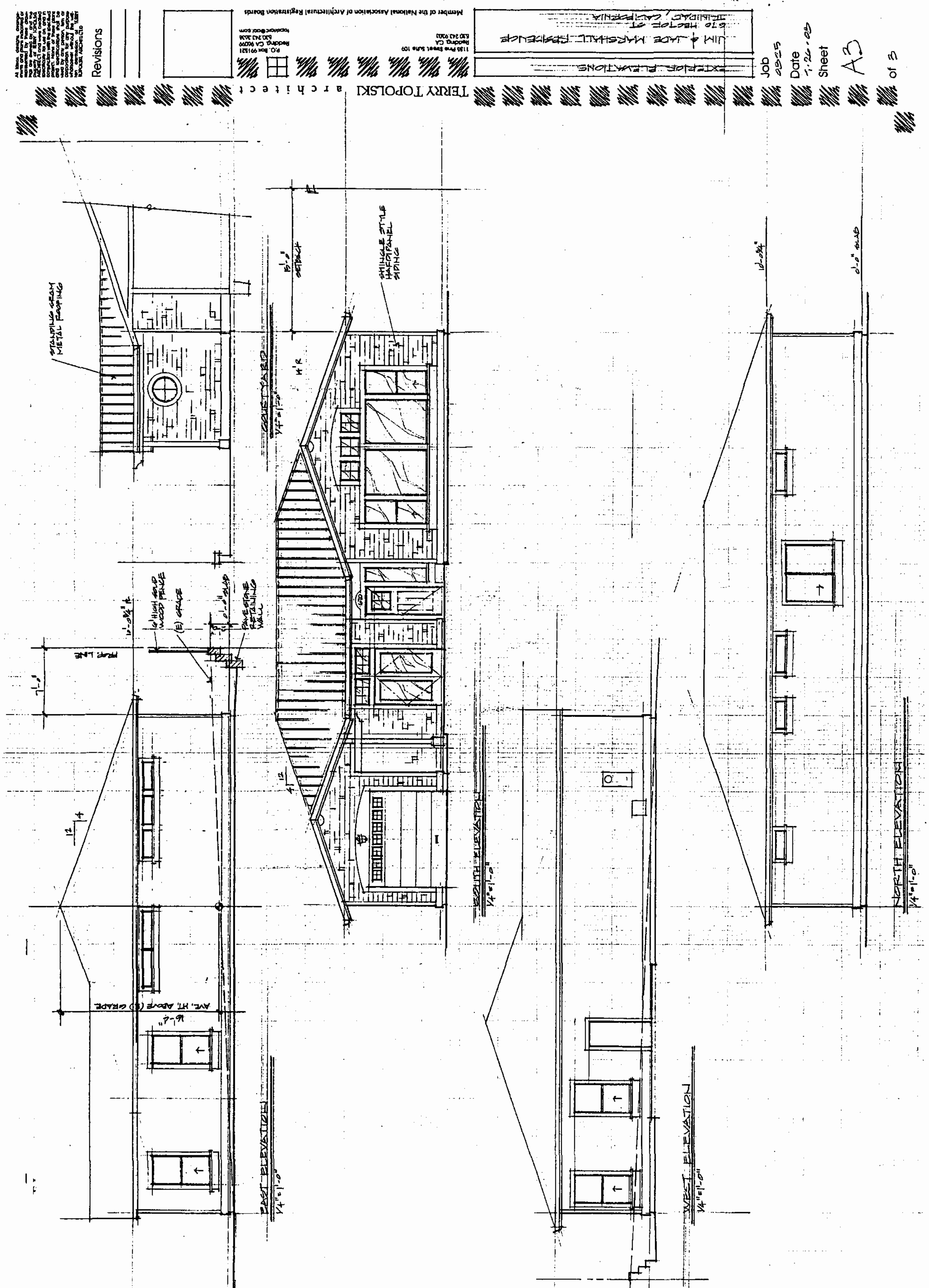

TERRY TOPOLSKI architect
Revisions
SITE PLAN
Job
Date
Sheet
A1
PROPOSED RESIDENCE
SITE DATA
LEACH FIELD
COURTYARD

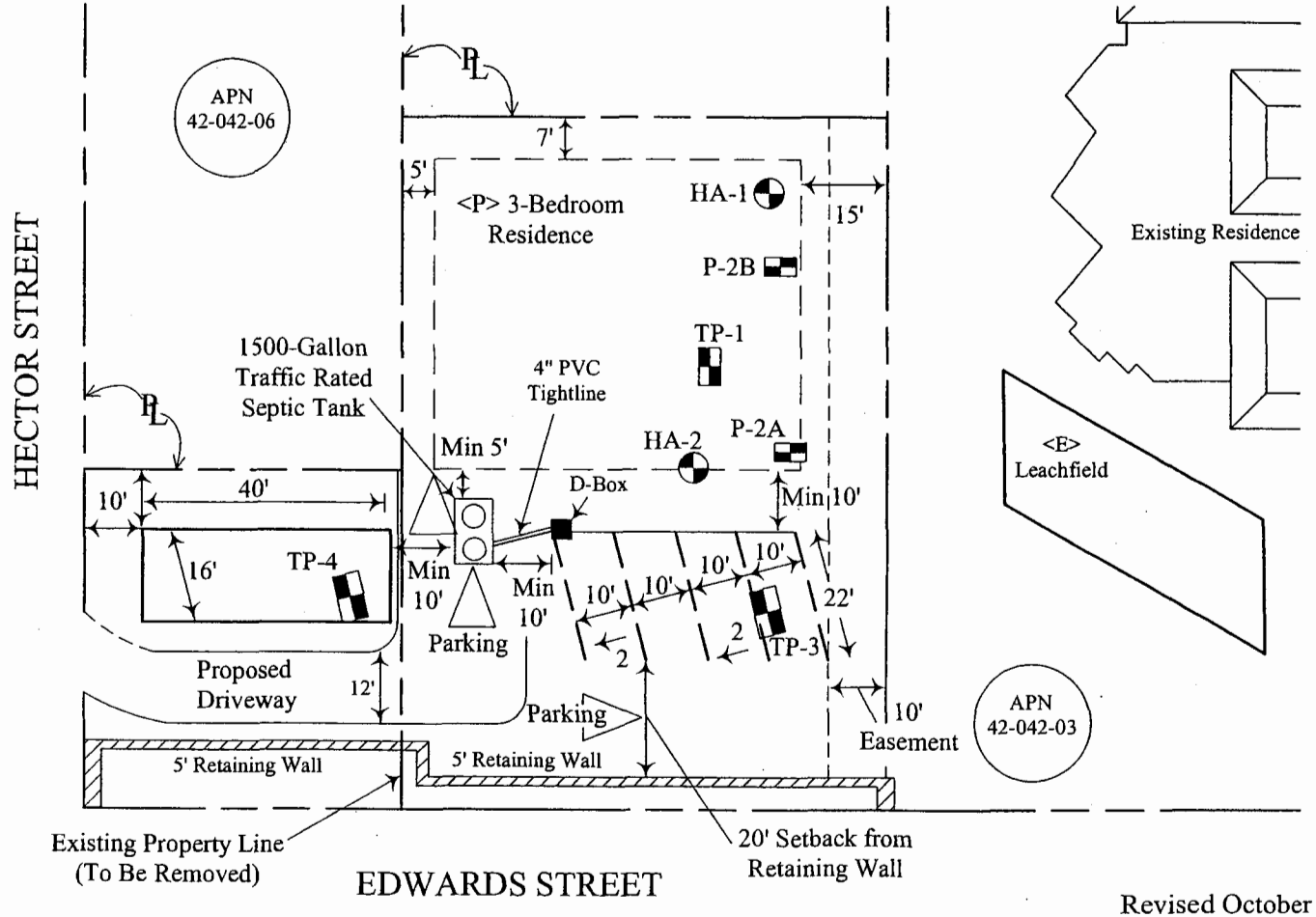
TERRY TOPOLSKI architect
Revisions
Site Plan
Job 0525
Date 7.26.05
Sheet A1 of 5
SITE DATA
SITE PLAN
PROPOSED RESIDENCE
EXISTING 6' RETAINING WALL
LEACH FIELD
FUTURE LEACH FIELD
PLANTER W/ LOW SHRUBS
TRASH CAN STORAGE
EXISTING FIRE HYDRANT
EXISTING CURB, GUTTER & SIDEWALK
EDGE OF EXISTING PAVEMENT
SITE PLAN

TERRY TOPOLSKI architect
Revisions
Job 0825
Date 9-26-05
Sheet A2
of 3
FLOOR PLAN
LOT 4 - TYPE MARSHALL RESIDENCE
BUILDING DATA
2952.5 s.f. RESIDENCE
410.5 s.f. GARAGE
3363 s.f. TOTAL LOT COVERAGE
GLASS AN CRAFT
2x6 EXT STUDS
HARDIPANEL SIDING
ITEWES ROOF SYSTEM
STANDING SEAM METAL ROOF
DUAL GLAZED VINYL WINDOWS
6' HIGH SOLID WOOD FENCE
KITCHEN
PANTRY
FAMILY ROOM
MASTER BEDROOM
BEDROOM
BEDROOM
GARAGE
FLOOR PLAN
1/4"=1'-0"


TERRY TOPOLSKI architect
Revisions
EXTERIOR ELEVATIONS
Job
Date
Sheet
A3
of 3
STANDING SEAM METAL ROOFING
SHINGLE STYLE HARDIPANEL SIDING
COURTYARD
6' HIGH SOLID WOOD FENCE
(E) GRADE
PROP LINE
AVE. HT. ABOVE (E) GRADE
EAST ELEVATION
SOUTH ELEVATION
WEST ELEVATION
NORTH ELEVATION
1/4"=1'-0"

NOTES: 1) THE BOTTOM OF THE LEACH TRENCHES SHOULD BE LEVEL.
2) LEACHLINES MUST FOLLOW LAND SURFACE CONTOURS.
3) DO NOT DISTURB SOIL OR CONDUCT GRADING DOWNSLOPE OF LEACHFIELD.
4) DIRECT ALL SURFACE DRAINAGE AWAY FROM LEACHFIELD.
5) CONSTRUCTION OF THE SYSTEM SHOULD BE DURING DRY WEATHER.
6) SMEARED SOIL ON TRENCH SIDEWALL SHOULD BE RAKED.
7) DISTRIBUTION BOX (D-BOX) SHALL BE PLACED ON STABLE GROUND.
8) IF THE SEPTIC TANK IS LOCATED UNDER ANY PAVED SURFACE, IT MUST BE TRAFFIC RATED.
9) THE TOP OF THE LEACH TRENCH SHALL BE INSTALLED BELOW ANY EXISTING FILL.

ALL LOCATIONS APPROXIMATE



Explanation

- TP - 2 / P-2A — Backhoe Test Pit & Percolation Test Location (2002)
- HA-1 — Hand Augered Observation Well (2001)
- TP - 3 — Backhoe Test Pit Location (2007)
- 2 — Slope Direction and Gradient in Percent
- Leachline with Observation Tube
- Distribution Box (D-Box)
- Reserve Leachfield Area
- 1500-Gallon Septic Tank
- Property Line

N

Approximate Scale
1 Inch = 20 Feet

0 10 20 40

Site Map
for
Marshall
Hector Street
Trinidad, California

APNs 042-042-005 & 013

Revised October 2008

ONSITE WASTEWATER TREATMENT EVALUATION

SITE MAP PREPARED BY:
TARA ZUROWESTE AND KATHY MOLEY
PACIFIC WATERSHED ASSOCIATES, P.O. Box 4433, Arcata, California 95518
Ph: (707) 839-5130, Fx (707) 839- 8168

January 2008

Figure 3

Final Humboldt County DEH Approval
Signature _____ Stamp

ANALYSIS OF MARSHALL PROJECT / INFORMATION IN SUPPORT OF CATEGORICAL EXEMPTION FROM CEQA[1]

Project Description: Design Review and Coastal Development Permit to construct a new 2,294 sq. ft., 3-bdrm, 1-story, single-family residence on a vacant 12,815 sq. ft. property (after lot merger). The project is located on a parcel of land that is zoned for single-family residence use (UR – Urban Residential).

CEQA Exemption: Categorically Exempt from CEQA per §15303(a) of the CEQA Guidelines exempting construction of a single-family residence in a residential zone.

Exceptions to Exemptions
However, Guidelines §15300.2 provides for exceptions to the exemptions. A categorical exemption does not apply if:

- A reasonable possibility exists that the activity may have a significant environmental impact because of unusual circumstances.
- Project cumulative impacts would be considerable and therefore significant (successive projects of the same type in the same place over time)
- A project that is ordinarily insignificant may in a particularly sensitive environment (where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to lay by federal state or local agencies) be significant.
- A project affects scenic resources within official state scenic highways
- A project is located on a toxic site listed by the CA EPA
- A project causes substantial adverse changes in historic resources

The 1999 CEQA Deskbook states: *"A person challenging the use of a categorical exemption must produce substantial evidence that the project has the potential for significant environmental impacts and that, therefore, an exception applies. The Lead Agency is not required by CEQA to write findings to explain why the exceptions to the exemption do not apply. It is recommended, however, that the Lead Agency prepare enough information within the administrative record to support the use of a categorical exemption."*

This document is meant to provide additional information to support the use of this exemption. Although no one has produced any evidence specific to this project that there is potential for significant environmental impacts, a letter dated January 14, 2008 was submitted by the Tsurai Ancestral Society objecting to the exemption. Because the Tsurai Management Plan, and associated LACO report, addressed the issues bought up in the objection, it, along with previous comments on other projects, was reviewed to provide additional context to the concerns.

There are three of the exceptions to exemptions that may be applicable to this project: 1) unusual circumstances, 2) sensitive environment, and 3) cumulative impacts.

Sensitive Environment / Unusual Circumstances
The nearby Tsurai Study Area is the unusual circumstance in this case, and because the project is not actually within this sensitive environment number 1 is a more appropriate exception then

[1] Some of the analysis contained herein comes from information being developed as part of the City's watershed analysis and General Plan update and environmental review.

number 2. However, the same issues arise with both. Because stormwater runoff and water additions to the soil through leachfields all flow downhill, and we do not know how groundwater flows under the City, this circumstance could apply to almost any development within the main part of town, and so should not really be considered unusual. Test holes from past studies indicate that groundwater in the area of town west of the freeway is generally greater than 20 ft. below the ground surface. Water tends to percolate through the sandy terrace deposits in the upper soil layer until it hits a layer of generally impervious Franciscan Formation and then flows horizontally until it exits from a bluff or on a beach. This project is closer in proximity to the Tsurai Study Area than most development, but the impact would not be any different since the water flows horizontally to this bluff from other areas of the City as well. Also, having the Tsurai Study Area near the project results in a few discreet concerns (cultural resources, stormwater runoff and water quality / leachfields) that need to be addressed, but have been done though project design considerations and fairly standard conditions of approval as opposed to going through the formal Initial Study process, which will not add any new information than what is already contained in project file and this document (see below for further discussion).

Cumulative Impacts

The cumulative impacts exception is probably the most applicable concern to this project, but the following discussion indicates that it is not an issue. The development of Trinidad in general has, over time, increased the impacts on the nearby environment and resources. Some things that should be considered in terms of cumulative impacts is that Trinidad's population has been decreasing over the past few decades, since the last General Plan and EIR were written (population: 379 in 1980, 362 in 1990, and 311 in 2000). The decreases are mostly due to shrinking household sizes. A shrinking population would indicate that actual water use has decreased due to the decrease in population and increase in the efficiency of plumbing fixtures and onsite wastewater treatment systems (OWTS). This is supported by the City's annual water reports since 1985 that show this to be the case for metered water deliveries. The most prevalent causes of excess water entering the groundwater aquifer would be leaking water lines, old plumbing fixtures and outdated / undersized OWTS. The most significant thing that can be done at this point to decrease the quantity of water going to the bluffs would be to find and fix these problems. The draft Integrated Coastal Watershed Management Plan calls for developing and implementing a water conservation program within the City, which will be incorporated into the upcoming General Plan update.

In addition, as is shown in the analysis below (see Geology and Soils), the amount of impermeable surfaces in the main area of the City has been increasing (currently approximately 40%) and is routing more storm water away from the bluff and into the City's storm drain system (where there are curbs and drain inlets) than is being added through the leachfields. Improvements and additions to the City's stormwater system would increase this diversion. Based on the 40% impermeable surfaces, more than 94.5 million gallons of stormwater would be converted to runoff rather than infiltration in comparison with the 12.5 million gallons of water that are used by City residents each year. The LACO study of the Tsurai Study Area did not include any below-ground investigations, although they reviewed previous studies, or analysis of groundwater conditions. Some of the new saturation of the Village site may be due to changes in the routing of groundwater flows more than increased amounts of groundwater. Certainly, summer groundwater levels would be increased due to additions of water through leachfields and landscaping, which is evidence by prolonged flows of the creeks and seeps in the area (throughout the summer). Thoughtful landscaping and judicious watering can be used to increase

evapotranspiration and reduce the soil moisture. The relationship between increased impermeable surfaces and stormwater runoff and water additions through leachfields has been considered and will be included in the General Plan update Environmental Impact Report.

Another thing to consider in terms of cumulative impacts is that this is one of the very last undeveloped properties in town. Over the past 5 years, there have only been 3 new houses built within City limits. The lot merger that is proposed as part of this project will reduce development potential in this area. There are not many more vacant, developable lots within the City: one small lot adjacent to this project, two on Van Wycke St., two off Underwood, one on Wagner, two on View Ave, a couple near Parker Creek and a few off Scenic Drive. Development in Trinidad now generally consists of additions and remodels of existing homes, which tend to result in upgrades of the septic system and plumbing fixtures that would reduce the amount of and improve the quality of water leaving the sites. In addition to the three new homes in the past five years, there have been 16 additions and remodels. This project will add only 0.2% new impervious surfaces to the City from what currently exists.

Also, cumulative impacts must be considered in terms of existing, surrounding development. In this case, there are two questionable septic systems adjacent to the property. The 4-unit apartment building has a septic system of unknown status. Hopefully the owner has been performing appropriate maintenance, but the property has no file information at the Health Department as of 2006. This means that the system for this densely developed property (1 unit per 3,660 sq. ft. of lot area verses the proposed project that is 1 unit on 12,815 sq. ft. of lot area) was installed prior to 1970 and has had no upgrades or repairs since that time. In contrast, the Eatery property has a large file at the Health Department and is routinely inspected and maintained. However, the system is undersized for the existing use and the leachfield has been paved over for a parking area. This is not to say that either of these properties have malfunctioning systems or are causing pollution, but they do pose a much higher risk to water quality than the proposed project. This is the reason that the City is preparing to adopt a comprehensive OWTS (septic system) management program that will ensure that all systems are functioning properly.

Another comparison for cumulative impacts in terms of surrounding development is looking at water usage. The Eatery is the 7th highest water user in town with an average last year of over 30,300 gallons used per month. The Apartment building is the 24th highest user, averaging over 10,730 gallons per month last year (which is actually low for the number of units). Interestingly, the neighboring residential property (Heller) is the 13th highest water user, right behind the Trinidad Bed and Breakfast across the street. Of note though is that the Heller house has a newly installed 5-bedroom septic system that was designed to handle that amount of water, as does the Bed and Breakfast, although it is an older system. For the Marshall single-family residence, the water use is anticipated to be well below the septic design capacity of 13,500 gallons per month, closer to the average water use throughout the City of 4,350 gallons per month. Even assuming a higher use of 5,000 gallons per month, this would only be a 0.48% increase in water use within the City limits. Compared to existing water use surrounding the development, this is not significant enough to push the project over the threshold of significant cumulative impacts.

Procedural

It is up to the Planning Commission to make the CEQA determination for this project. If the Planning Commission determines that there is substantial evidence that the exemption does not

apply based on the exceptions, then the next step would be to prepare an initial study. The Initial Study analyzes the project to determine if there are significant effects and whether mitigation measures reduce any potentially significant impacts to a less than significant level. If impacts can not be mitigated to less than significant, then an Environmental Impact Report (EIR) would have to be prepared. An EIR is really a disclosure document that states what the impacts are going to be of a project and what measures can be taken to reduce those impacts. Unlike a Negative Declaration, where impacts have to be mitigated to a less than significant level, a project can still be approved under an EIR that identifies significant impacts. This report includes the same sections (below) and addresses the same issues as an Initial Study.

As a note it was brought up at January's meeting that because a Negative Declaration was prepared for both the pier project and the Knapp subdivision last year, this project should also have a similar review. However, those were different circumstances, because no exemption applied to either project. The pier was a large project that had obvious potential for impacts. A subdivision that is not in an urbanized area always requires environmental review, and that subdivision also had unusually circumstances such as a fault zone and steep slopes. As far as I know, there has never been a formal environmental review required for a single-family residence in Trinidad.

Notes on Tsurai Management Plan

In addition to the LACO report that is cited below, I carefully reviewed the Tsurai Management Plan (TMP) for consistency with the proposed project. The project does not conflict with any of the findings or recommendation of that report. The TMP does not anywhere recommend that development should be curtailed, however, there were findings and recommendation related to this project. For example, in the Natural Resource findings (10.3), there are findings related to investigating water quality issues and septic system conditions, both of which the City are currently working on in its General Plan update. There is also a finding which related to impermeable surfaces increasing runoff over the bluff, which this project will not do since stormwater will be directed into the City's storm drain system. In the next TMP section in the findings related to geomorphic conditions, there are five findings related to stormwater runoff, which is not an issue for this project. There is only one finding relating to water quality and septic and the City is addressing this issue through the OWTS Management Program consistent with that finding.

There are also several recommended projects that relate to the proposed development. The first one under Natural Resources (2.4.1) is to mitigate and stop run off onto the Village site, which this project helps to implement by tying all the stormwater runoff into the City's storm drain. 12.4.3 is to reduce waste and storm water run-on to Village. Again stormwater will be routed to the stormdrain, and although treated wastewater will come from the septic, it will be designed and built to current Basin Plan standards so that the water will be fully treated before reaching the groundwater. Again, the City is also working toward implementing and adopting its OWTS Management Program that will implement several of the recommendations by evaluating existing systems and continuing to monitor water quality. There are no findings or recommendations that suggest that new development be curtailed or required to go through a formal environmental or geotechnical review.

Aesthetics
The City of Trinidad is generally a scenic area, however, no scenic resources are located on the project site itself and the surrounding area is already substantially developed. Impacts to views and the historic Catholic Church are adequately addressed by the City's existing design review process.

Agriculture
Not applicable to this project or site.

Air Quality
The construction of one single-family residence in a residential zone will not have any significant impacts on air quality.

Biological Resources
The project site is within a previously disturbed area and vegetation with mainly non-native grasses and forbs. It is surrounded by other development on all sides. There are no wetlands or riparian habitat on the property and no potential habitat for special status species. It is not within an area identified as potentially containing rare plants in the Trinidad General Plan or by the CA Natural Diversity Database.

Cultural Resources
As noted above, the project is located on a previously disturbed site and surrounded by existing development. However, the Tsurai Village area is located on the bluff across Edwards Street to the south and nearby to the project. In addition to the village site itself, the Tsurai utilized other areas within the City during day-to-day living. Although it has not been required of previous projects in this area, it would not be unreasonable for the City to require that a cultural monitor be present during excavation and grading activities as a condition of project approval if requested by the Tsurai Ancestral Society; at this point there has been no such request. Impacts related to geology and slope stability or hydrology and water quality that affect the Tsurai Study Area are discussed under those sections below.

Geology and Soils
The project will not result in new earthquake hazards. A grading plan and permit will be required in order to address soil erosion issues. It was discovered since the original staff report, that this project falls within an area mapped as being of "questionable stability" on Plate 3 of the General Plan. Zoning Ordinance §17.20.130 requires specific findings to be made by a certified geologist prior to approving any development. This issue is further described in the new staff report for the project, and the City expects to receive the geologist's report prior to the public hearing. Any recommendations from such a report are required as conditions of project approval; this is standard practice. The Planning Commission can not give final approval of the project without making those finginds.

The soils on the site are adequate to support a septic system. The main concern for geology in this case is the water from the leachfield that will be infiltrating into the soil below the site and potentially flowing onto the bluff / village site area. Saturation affecting the use of the village site itself as well as a raised groundwater table that could contribute to slope instability, particularly in conjunction with an earthquake are both major concerns. The LACO report that

was prepared in conjunction with the development of the Tsurai Management Plan had the following conclusion:

Based on LACO's field investigation and review of existing geotechnical investigations, it appears that the coastal bluff occupied by Tsurai Village is subjected to long-term erosional processes occurring at relatively slow rates punctuated by episodic debris slide events. Rotational slumping of the coastal bluff toe slope, resulting from ongoing wave and tidal action, also contributes to destabilization of the upslope areas. The coastal bluff as a whole generally appears stable in its present configuration and is unlikely to undergo catastrophic slope movement. Factor which may ultimately contribute to localized slope instability in and around Tsurai Village are:

- *The diversion, concentration, and improper discharge of surface runoff onto the slopes above and on Tsurai Village, originating from hardscaped surfaces such as rooftops, driveways and patios;*
- *An increase in the groundwater elevation, and spring and creek flow volume due to excessive landscape irrigation, densely spaced and undersized septic leachfields, and the addition of new leachfields resulting from continual development*
- *Disposal of landscape yard waste and the girdling and topping of trees on the slopes above Tsurai Village*
- *Continual destabilization of the coastal bluff toe slope resulting from wave and tidal processes, and;*
- *Strong earthquake groundshaking.*

Although there are natural processes including toe slope erosion, high rainfall and earthquakes that are outside the City's control and which existed prior to European settlement, the report found evidence that shows that the bluff was likely fairly stable over a long period of time in order to support the permanent Village settlement. However, current conditions, particularly the unearthing of cultural artifacts and ancestral remains indicate active erosion.

This project is an instance where impermeable surfaces are a benefit for bluff stability and saturation issues. The Trinidad area receives approximately 10 inches (measured at the Luffenholtz water plant, and compared to average rainfall amounts in Orick) of rain per month during the five wettest months: November – March, which is the time that is of greatest concern for bluff stability and saturation. With the proposed footprint of the house at approximately 2,918 sq. ft. with an additional 2,388 sq. ft of surface area of the driveway, there will be more than 5,000 sq. ft. of impermeable surface area resulting from this development. A condition of approval was included in the project to require that all runoff from these surfaces be captured and routed directly into the City's storm drain on the corner of Edwards and Hector, so that it goes directly into the Bay instead of infiltrating into the bluff. With even just 8 inches of rain from those impermeable surfaces, it will result in diversion of an average of over 26,000 gallons of water per month that would have otherwise fallen on the soil and infiltrated into the bluff. The 3-bedroom septic system is designed for flows of 450 gallons per day (75 gallons per day per person, with two people per bedroom), which will result in less than 14,000 gallons of water per month being pumped through the system and eventually infiltrating the soil during those same five months. This amount of water use is actually higher than is likely ever to be used, since the average monthly water use in Trinidad is approximately 4,350 gallons.

Therefore, this project will result in significantly less water infiltrating the bluff during the five wettest, most critical months of the year when bluff failures are most likely to occur. Even over an entire year, there will be less water coming out of the OWTS than is diverted into the stormwater system. However, that does not include the potential addition of water through landscaping, car washing, etc. Landscaping would be the largest potential water use. It is standard to require that a landscaping plan be submitted after design review is approved to be approved by the City Planner, which has already been included as a condition of project approval. The purpose of this is mainly for view blockage issues, but can also be used in this case to ensure that appropriate, low-water maintenance vegetation is used in the landscaping.

Hazards and Hazardous Materials
The project site is not located on or near any hazardous materials storage sites and will not create new sources of hazardous materials. The project is not in the vicinity of an airport or airstrip and is not adjacent to wildlands.

Hydrology
The project will not deplete groundwater supplies or be within a flood or tsunami hazard zone. It will not alter the course of a stream or exceed the capacity of the City's stormwater system. The biggest concern in terms of this project is the impact to water quality on the adjacent Tsurai Study Area. However, it is the older, unpermitted, undersized, overused or poorly maintained OWTS in town that are the potential cause of water quality pollution in Trinidad, not a brand new system installed to today's standard with current requirements and oversights. The Regional Water Quality Control Board (RWQCB) has approved the County's OWTS requirements and procedures and certified with their own environmental review process that following these standards will not result in significant water quality pollution in the region. The RWQCB has a partial exemption from CEQA as a 'certified regulatory program.' Because the agency was set up to protect water quality, their own internal environmental review process is considered to meet the requirements of CEQA. In addition, the City is in the process of adopting a comprehensive OWTS (onsite wastewater treatment system) Management Program that will require inspections, maintenance and certain upgrades for all systems within the City. This program is anticipated to improve water quality conditions in and around Trinidad.

Further, because of the status of Trinidad Bay as a State designated Area of Special Biological Significance, water quality, including runoff from the City is regulated by the CA Ocean Plan, which basically has a zero molecule discharge standard. Since this is infeasible under current conditions, the City is in the process of applying for an exception request from the State Water Resources Control Board (also a certified regulatory program under CEQA). The granting of such a request will have strict standards that include water quality monitoring in order to meet the goals of the Ocean Plan and will require the City to maintain or improve the quality of the water entering the Bay, including the seeps within the Tsurai Study Area. This one single-family residence is not going to significantly, or measurably increase water pollution in the area.

Land Use and Planning
The project is within an existing community and is consistent with City land use regulations as described in the staff report. Design Review findings are required to ensure the project is consistent with community values.

Mineral Resources
The project and project site do not involve mineral resources.

Noise
Noise is not an issue with this project. The development of one single-family residence in a residential zone within a mixed use area will not have noise impacts.

Population and Housing
The development of one single-family residence on a vacant, residentially zoned lot will not significantly increase population and will not displace other residents.

Public Services
The Development of one single-family residence on a residentially zoned property will not significantly impact public services (police, fire, schools, parks). Public services already are provided to the area.

Recreation
The development of one single-family residence on a residentially zoned lot does not have the potential to impact recreational facilities.

Transportation
The development of one single-family residence on a residentially zoned lot does not have the potential to significantly impact roads and traffic, emergency access or public transportation. Street improvements will be recommended by the City Engineer according to City standards.

Utilities and Service Systems
The project will not exceed the capacity of, or result in the need for improved stormwater or solid waste facilities. It will require the construction of a OWTS that meets current standards.

Mandatory Findings of Significance

Biological and historical resource impacts
Based on existing City resource information and site visit analysis, the project does not 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 or eliminate important examples of the major periods of CA history or prehistory.

Cumulative Impacts
Based on existing City resource information and site visit analysis, the project does not have impacts that are individually limited by cumulatively considerable. See discussion above under exceptions to the categorical exemptions.

Human Impacts
Based on existing City resource information and site visit analysis, the project will not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly.