

**EMERGENCY RESOLUTION NO. \_\_\_\_\_**

WHEREAS, heavy rains fell in Skagit County on January 9<sup>th</sup> and 10<sup>th</sup>, 2006, causing low lying areas to flood and steep banks to slide in various locations throughout Skagit County; and,

WHEREAS, it is necessary to review damage and take corrective actions in flooded areas of the Skagit River Basin, including areas along the south bank of the Skagit River in eastern Skagit County, including Mill Creek, and in other areas flooded by tributaries of the Skagit River and the Samish River; and,

WHEREAS, Hansen Creek and Red Creek, at their confluence, are out of their banks and causing general flooding in the vicinity resulting in damage to public and private property.

NOW, THEREFORE, BE IT RESOLVED that the Skagit County Board of Commissioners hereby declare that an emergency exists effective January 10, 2006 at 3:00 A.M., to remain in effect until the condition has been stabilized, and hereby authorized the expenditure of funds as required to meet the emergency. This action is in accordance with RCW 38.52.070, RCW 36.40.180, RCW 39.80.060, RCW 36.32.270 and RCW 39.04.280.

Dated this 10<sup>th</sup> day of January, 2006.



BOARD OF COUNTY COMMISSIONERS  
SKAGIT COUNTY, WASHINGTON

Kenneth A. Dahlstedt  
Kenneth A. Dahlstedt, Chairman

Ted W. Anderson  
Ted W. Anderson, Commissioner

Don Munks  
Don Munks, Commissioner

ATTEST

Melissa Collins, Assistant  
Joanna Geisbrecht, Clerk of the Board

March 21, 2006

City of Anacortes  
904 6<sup>th</sup> Street  
P.O. Box 547  
Anacortes, Washington 98221

Attention: Don Measamer

Subject: Bluff Evaluation  
Geotechnical Engineering Services  
4801 Anaco Beach Road Residence  
Anacortes, Washington  
File No. 00382-014-00

## INTRODUCTION AND SCOPE

This letter presents our conclusions regarding a slope evaluation at the above residence in Anacortes. The house is situated along a south-facing bluff that we understand has experienced significant ground loss, particularly since the February 4, 2006 major storm event. Our services were completed at the request of Don Measamer, Assistant Director of the Planning & Community Development Department for the City of Anacortes.

The purpose of our services is to evaluate the stability of the bluff with respect to foundation support of the structure and timing for a proposed toe protection project at the above address. The scope of services included reviewing available geologic information, performing a site visit, and reviewing a bluff profile and "Storm Drain Retaining Wall Emergency App." drawing prepared by Schemmer Engineering Inc.

## SITE CONDITIONS AND OBSERVATIONS

Our understanding of the site conditions is based on review of geologic references and discussions with Don Measamer with the City of Anacortes and Jim Schemmer with Schemmer Engineering, Inc. during our brief site visit on March 17, 2006. The site visit was also attended by Fred Buckenmeyer with the City of Anacortes. The following is a summary of our understanding of the site conditions and observations:

- The house is situated near the top of a bluff that is approximately 50 feet tall. The house is setback approximately 30 to 40 feet from the top of the bluff. The house is founded on conventional shallow spread footing foundations.
- The lot has a southern exposure with a very long fetch at the beach. We understand that waves 8 to 10 feet high will occur during major events, such as the February 4, 2006 storm.
- The geologic map of the area indicates Vashon geology with up to 15 feet of Vashon Till overlying 25 feet of Vashon Advance Outwash (Esperance Sand) over the Whidbey Formation.

- The Coastal Zone Atlas (Department of Ecology, 1977) classifies the slope as unstable. We understand that the stability at the site has been addressed by other geotechnical studies that included subsurface exploration.
- The bluff is nearly vertical and has no vegetation at the location of the residence. It appears that the upper approximately 10 feet of the bluff may be Vashon Till. Esperance Sand, a “clean” fine or fine to medium sand, is exposed along the entire bluff face below the residence. The contact with the Whidbey Formation is exposed a few feet above the Ordinary High Water Mark a few hundred feet west of the residence, but is not exposed below the residence.
- The property located immediately east of the subject site has bulkhead protection at the toe. It is very likely that accelerated toe erosion from wave action is occurring at the subject site because of the edge effects of this bulkhead. The subject property is the only property in the immediate vicinity without toe protection.
- Evidence of recent slope erosion and failures are present at the site:
  - A large block, estimated to be about 20-feet wide, has failed from the top of the slope west of the house. Poor drainage practices (surface and stormwater from two pipes) may have contributed to this failure. However, it is our experience that this is typical of the larger slide blocks we have seen in this geologic environment.
  - “Peel-offs” of up to about 2-feet of material are apparent along the face of the exposed Esperance Sand.
  - The face and base of the bluff have active erosion occurring because the Esperance sand is cohesionless. Some erosion is occurring where a drainpipe discharges directly onto the bluff face.
  - The base of the bluff directly below the house has been undercut by wave action approximately 9 feet back under the face of the bluff. Horizontal and folded stratification is present within the Esperance Sand. The undercutting has occurred in an area with the horizontal stratification. Therefore, these layers are “peeling off” in the undercut area and are accelerating propagation of the void farther up the sandy bluff.
  - No groundwater seepage was observed to emanate from the bluff below the residence. Water seepage was observed to the west of the residence, but it may be related to surface water and/or drainage that is occurring in this area.

## CONCLUSIONS

We did not conduct any deep exploration or perform quantitative slope stability analyses of the site. However, based on our observations of the surface conditions, our brief site reconnaissance, and our experience with slide events that occur in similar conditions in Puget Sound, the geologic conditions at this site are typically “globally” stable (i.e., resist deep-seated slope stability failures). The glacial till and advance sand unit are both glacially consolidated and therefore have high shear strength. However, the present slope below the house is nearly vertical and has been undercut by wave erosion.

A minimum desirable foundation prism below the house would be 1:1 from the bluff side of the house. The vertical height to the house is approximately 50 feet, and the horizontal distance is 30 to 40 feet, which is 0.6H:1V to 0.8H:1V. An additional consideration is that the toe is undercut 9 feet which can lead to additional loss of the foundation material as failures propagate vertically in the cohesionless sand.

The geometry and frequency of landslides are dependent on soil type, slope inclination, groundwater conditions, weather, human impacts, and other factors. Episodic slides, raveling and erosion will occur with loss of shear strength as a result of moisture, freeze-thaw action, and gravity. Our observations as described above indicate that the bluff is in an accelerated mode of retreat because of a combination of several factors including an adjacent bulkhead, toe erosion that has caused a 9-foot undercut below the bluff, and a cohesionless sand with horizontal stratification.

We conclude that the likelihood of a landslide involving the house foundation in the immediate future is not high enough to warrant concerns regarding life safety for the inhabitants. However, we also conclude that the house foundation soils have been compromised and that the present situation poses an imminent threat that could put the house at far greater risk and could be much more difficult to repair. We understand that Schemmer Engineering, Inc. has submitted plans for stabilization of the toe of the bluff using a concrete retaining wall and then backfilling behind with grout so that the undermined voids will be filled. This will greatly improve the stability of the foundation soils and slow the bluff retreat rate. We recommend that the approval of the repair be granted as soon as possible.

It is apparent that some of the surface drainage from the house, yard and pavement areas is also adversely affecting bluff erosion and stability. We recommend that drainage improvements also be accomplished as soon as possible. All surface water should be tightlined away from or over and not on the bluff. If discharge over the bluff is required, it is our experience that using fused HDPE pipe with anchor blocks in stable soils placed back from the bluff provide the best performance and minimize risk of damage from drainage and pipe failures. Adequate energy dissipation and erosion protection should be included in the design.

### **LIMITATIONS**

We have prepared this letter for use by the City of Anacortes. This letter may be made available to other parties as the City of Anacortes deems appropriate.

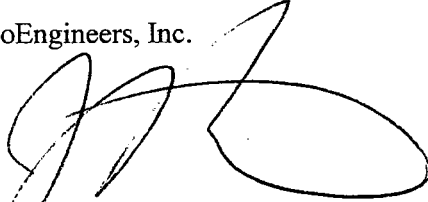
Our services were provided to assist in the determination of safety for the house and timing regarding the proposed toe protection as discussed. All construction on slopes involves risk, only part of which can be mitigated through qualified engineering and construction practices. The magnitude of the risk associated with future erosion or slope stability is a function of natural weathering processes, drainage and maintenance, and other human-caused factors that may change in the future. Favorable performance of structures in the near term does not imply a certainty of long-term performance, especially under conditions of adverse weather or seismic activity. This evaluation was based on a brief site visit to respond to the City of Anacortes and should not be construed as a warranty of subsurface conditions or against future slope movements. We recommend frequent monitoring by the homeowner to determine if maintenance or alternative actions are appropriate.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

We trust this letter serves your current needs. Please call if you have any questions or if you need additional information.

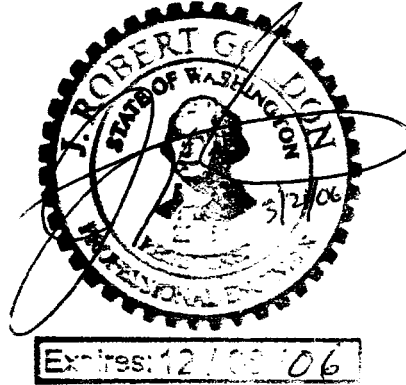
Sincerely,

GeoEngineers, Inc.



J. Robert Gordon, P.E.  
Principal

JRG:ims  
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Three copies submitted



**City of Anacortes**  
904 6th Street  
P.O.Box 547  
Anacortes, WA 98221-0547  
(360) 293-1901

0608104-1 0001 03/22/2006 002 4  
Permit Fees 006695 \$109.00  
**Permit #:** BLD-2006-0183  
**Issue date:** 03/22/2006  
**Expire date:** 03/22/2007

**Job Address:** 4801 ANACO BEACH RD  
ANACORTES WA 98221-8751

**Permit Type:** Grading Permit  
**Project:**

**APN:** P32475

**Remarks:** Temporary access road and slope dewatering. Site revegation shall be provided as required by City Ordinances upon completion of work.

**Owner:** BOB MORAND

**Contractor:** CALLEN CONSTRUCTION

**Address:** 4801 ANACO BEACH RD

**Address:** PO BOX 498

ANACORTES WA 98221-8751

ANACORTES WA 98221

**Phone:** (360) 293-0256

**Phone:** (360) 366-5000

**License #:**

**General Information:**

CUBIC\_YARDS 300

**Fees:**

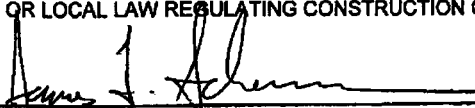
Grading Plan Review Fee 37.00  
Grade and Fill 72.00

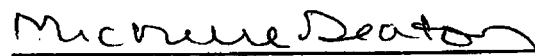
Total Calculated: 109.00

Deposits/Receipts: 0.00

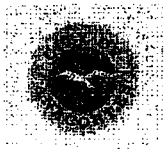
Total Due: 109.00

THIS PERMIT BECOMES NULL AND VOID IF WORK OR CONSTRUCTION AUTHORIZED IS NOT COMMENCED WITHIN 180 DAYS, OR IF CONSTRUCTION OR WORK IS SUSPENDED OR ABANDONED FOR A PERIOD OF 180 DAYS AT ANY TIME AFTER WORK IS COMMENCED. I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS APPLICATION AND KNOW THE SAME TO BE TRUE AND CORRECT. ALL PROVISIONS OF LAWS AND ORDINANCES GOVERNING THIS TYPE OF WORK WILL BE COMPLIED WITH WHETHER SPECIFIED HEREIN OR NOT, THE GRANTING OF A PERMIT DOES NOT PRESUME TO GIVE AUTHORITY TO VIOLATE OR CANCEL THE PROVISIONS OF ANY OTHER STATE OR LOCAL LAW REGULATING CONSTRUCTION OR THE PERFORMANCE OF CONSTRUCTION.

  
SIGNATURE OF OWNER OR AUTHORIZED AGENT

  
ISSUED BY





## CITY OF ANACORTES GRADE AND FILL PERMIT APPLICATION

### Owner Information

Site Address: 4801 ANACO BEACH ROAD Date: 3/16/06  
 Applicant/Owner's Name: ROBERT MORANO Mailing Address: 4801 ANACO BEACH ROAD  
 City: ANACORTES State: WA Zip: 98221 Phone: 360.293.0256

### Legal Description of Proposed Site:

Lot: \_\_\_\_\_ Block: \_\_\_\_\_ Addition: \_\_\_\_\_ Parcel No.: P32475

### Contractor Information

Contractor's Name: COLLEN CONSTRUCTION Mailing Address: P.O. BOX 498  
 City: CLUSTER State: WA Zip: 98240 Phone: 360.366.5000  
 Contractors License No.: CALLEC 280NA Expiration Date: SEPT 11 07  
 Describe work to be performed: ACCESS ROAD FOR EMERGENCY WORK ALONG SHORELINE.

Quantities of export & import material (cubic yards) 3004

### Check List:

	Yes	No	Not Applicable
Approved Land Use Permit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SEPA (over 500 cubic yards)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other Agency Permits (if required) Fees	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

I, hereby certify that I have read and examined this application and the City of Anacortes Grading Standards. Performance of the proposed work shall follow all applicable laws and regulations. The owner/applicant shall assume full and complete responsibility for said work and shall be responsible for the acquisition and compliance of all applicable permits and/or authorizations, which may include, but are not limited to, WSDW Hydraulic Project Approval (HPA), WSDOE Notice of Intent (NOI), any Corp of Engineers Fill Permits, the requirements of the Endangered Species Act, and the Forest Practices Application (FPA).

Signed: Bob Morano - By [Signature] Date: 3/16/06  
 Applicant [Signature] UP-CFO

Approved: \_\_\_\_\_ Date: 3/16/06  
 Building Department

Bld-2006-0183

109.00



## Grading/Clearing Permit

Building Department/Engineering Department  
P.O. Box 547 - Anacortes, WA 98221  
360.293.1901/Fax 360.293.1938

Appendix Chapter 33 – Excavation and Grading (Excerpt from Full Code Book Located at City Hall)

### Section 3306 – Permits Required

**Ordinance No. 3306.1** Except as specified in Section 3306.2 (see below) no person shall do any grading/clearing without first having obtained a grading permit from the City of Anacortes.

**Exempted Work.** A Grading permit is not required for the following:

1. When approved by the City of Anacortes, grading in an isolated, self-contained area if there is no danger to private or public property.
2. An excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid building permit. This shall not exempt any fill made with the material from excavation or exempt any excavation having an unsupported height greater than 5 feet after the completion of such structure.
3. Cemetery graves.
4. Refuse disposal sites controlled by other regulations.
5. Excavations for well, tunnel, or utilizes.
6. Mining, quarrying, excavation, processing or stockpiling of rock, sand, gravel, aggregate or clay where established and provided for by law, provided such operations do not affect the lateral support of increase the stresses in or pressure upon any adjacent or contiguous property.
7. Exploratory excavations under the direction of soil engineers or engineering geologists.
8. An excavation that (1) is less than 2 feet in depth or (2) does not create a cut slope greater than 5 feet in height and steeper than 1 unit vertical in 1-1/2 units horizontal (66.7%) slope.
9. A fill less than 1 foot in depth and placed on natural terrain with a slope flatter than 1 unit vertical in 5 units horizontal (20%) slope, or less than 3 feet in depth, not intended to support structures, that does not exceed 50 cubic yards on any one lot and does not obstruct a drainage course.

Exemptions from the permit requirements of this chapter shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this chapter or any other laws or ordinances of this jurisdiction. (Please check with the Planning Division should you have any questions).

**3309.8 Regular Grading Permit Requirements.** Each application for a grading permit shall be accompanied by a plan in sufficient clarity to indicate the nature and extent of the work. The plans shall give the location of work, the name of the owner and the name of person who prepared the plan. **The plan shall include the following information:**

- A complete application
- Vicinity Map
- 5 each
  - Site plans which shall include the following:
    - ✓ Location of any buildings and/or impervious surfaces (driveways, parking lots, sport courts, etc.) where work is to be performed and the location of any buildings or structures within 25 feet of the proposed grading.
    - ✓ Location of any existing wells and/or septic systems
    - ✓ Existing topography
    - ✓ Dimensions and depth of cuts and fills (Include proposed quantities of cuts, exports and imports)
    - ✓ Indicate the nature and extent of work

- ✓ North Arrow
- ✓ Property lines and dimensions/copy of recent boundary survey
- ✓ Show all streams, wetlands, ponds, etc.
- ✓ Include SEPA\* checklist if required
- ✓ Include any additional agency permit documentations (i.e.: HDP, WSDOT, Skagit County, etc.)
- ✓ Soils engineering report if required by the City Engineer/Building Official
- ✓ Drainage analysis if required by the City Engineer/Building Official

**\*Grading Requirements for more than 500 Cubic Yards**

If the grading involves 500 or more cubic yards, a SEPA (State Environmental Policy Act) review shall be applied for. The Planning Division can provide you with the necessary forms. (The fee for SEPA is \$200.00) For questions contact Planning Department at 293-1907.

**Grading in excess of 1,000 cubic yards shall be performed in accordance with an approved grading plan prepared by a Licensed Washington State Civil Engineer.**

**Plan Review Fees.** When a plan or other data are required to be submitted, plan review fees shall be paid at the time of submitting plans and specifications for review. Said plan review fee shall be as set forth in Table A-33-A. Separate plan review fees shall comply to retaining walls or major drainage structures as required, and as determined by the City Engineer. For excavation and fill on the same site, the fee shall be based on the volume of the excavation or fill, whichever is greater.

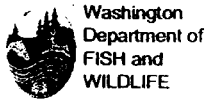
50 cubic yards or less	No fee
51 to 100 cubic yards	\$23.50
101 to 1,000 cubic yards	\$37.00
1,001 to 10,000 cubic yards	\$49.25
10,001 to 100,000 cubic yards - \$49.25 for the first 10,000 cubic yards plus \$24.50 for each additional 10,000 cubic yards or fraction thereof.	
100,001 to 200,000 cubic yards - \$269.75 for the first 100,000 cubic yards plus \$13.25 for each additional 10,000 cubic yards or fraction thereof.	
200,001 cubic yards or more - \$402.25 for the first 200,000 cubic yards plus \$7.25 for each additional 10,000 cubic yards or fraction thereof.	

**Other fees:** Additional plan review required by changes, additions, or revisions to approved plans @ \$50.50 per hour, (minimum charge one (1) hour).

**Grading Permit Fees.** A fee for each grading permit shall be paid to the City of Anacortes as set forth in Table A-33-B. Separate permits and fees shall apply to retaining walls, or major drainage structures as required. There shall be no separate charge for standard terrace drains and similar facilities.

50 cubic yards or less	\$23.50
51 to 100 cubic yards	\$37.00
101 to 1,000 cubic yards - \$37.00 for the first 100 cubic yards plus \$17.50 for each additional 100 cubic yards or fraction thereof.	
1,001 to 10,000 cubic yards - 194.50 for the first 1,000 cubic yards plus \$14.50 for each additional 1,000 cubic yards or fraction thereof.	
10,001 to 100,000 cubic yards - \$325.00 for the first 10,000 cubic yards plus \$66.00 for each additional 10,000 cubic yards or fraction thereof.	
100,001 cubic yards or more - \$919.00 for the first 100,000 cubic yards plus \$36.50 for each additional 10,000 cubic yards or fraction thereof.	

**Other fees:** Additional inspections outside normal business hours @ \$50.50 per hour (minimum charge two (2) hours). Re-inspection fees assessed @ \$50.50 per hour (minimum charge (1) hour).



# HYDRAULIC PROJECT APPROVAL

RCW 77.55.141 - Appeal to Hydraulic Appeals Board

North Puget Sound  
16018 Mill Creek Boulevard  
Mill Creek, WA 98012-1296  
(425) 775-1311

Issue Date: April 17, 2006

Control Number: 103953-1

Project Expiration Date: June 17, 2006

FPA/Public Notice #: N/A

<u>PERMITTEE</u>	<u>AUTHORIZED AGENT OR CONTRACTOR</u>
Bob Morand 4801 Anaco beach Road Anacortes, WA 98221 360-293-0256	Schemmer Engineering, Inc. ATTENTION: Jim Schemmer 317 Commercial Ave. Anacortes, WA 98221 360-293-9006 Fax: 360-293-4051

**Project Name:** Moran Bulkhead

**Project Description:** Project is to conduct emergency bank stabilization at 4801 Anaco Beach Road, Anacortes, WA. A beach access road on the adjacent property along with a stormwater collection system and outfall dissipator "T" have been constructed prior to the issuance of this Hydraulic Project Approval (HPA). Mitigation measures are required for these activities. Erosion control BMPs shall be installed to prevent further slope failure and deposition of additional fill material onto the beach.

Bulkhead construction shall be at the toe of the bank below the existing single family residence at the ordinary high water mark (OHWM). A combination concrete and riprap rock bulkhead shall be constructed that is approximately 120-feet in length and no greater than seven feet high. A rock seawall shall extend an additional 57 feet. Total length of the bulkhead shall be 177 feet. Separate mitigation measures are required for this phase of the project.

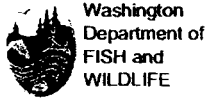
## PROVISIONS

**1. TIMING LIMITATIONS:** The project may begin immediately and shall be completed by June 17, 2006.

**2. NOTIFICATION REQUIREMENT:** The Area Habitat Biologist (AHB) listed below shall receive written notification (FAX or mail) from the person to whom this Hydraulic Project Approval (HPA) is issued (permittee) or the agent/contractor no less than three working days prior to the start of construction activities. The notification shall include the permittee's name, project location, starting date for work, and the control number for this HPA.

**3. Work shall be accomplished per plans and specifications approved by the Washington Department of Fish and Wildlife entitled Stormwater Tee Emergency Repair Details (C1) and Storm Drain Retaining Wall Emergency App. (C5), submitted with the JARPA application, and dated March 13, 2006, except as modified by this Hydraulic Project Approval. A copy of these plans shall be available on site during construction.**

## EROSION AND WATER QUALITY CONTROL MEASURES



## HYDRAULIC PROJECT APPROVAL

RCW 77.55.141 - Appeal to Hydraulic Appeals Board

North Puget Sound  
16018 Mill Creek Boulevard  
Mill Creek, WA 98012-1296  
(425) 775-1311

Issue Date: April 17, 2006

Control Number: 103953-1

Project Expiration Date: June 17, 2006

FPA/Public Notice #: N/A

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4. Prior to starting work, erosion control methods shall be used to prevent further slope failure and silt-laden water from entering the beach. These may include, but are not limited to, straw bales, filter fabric, pea gravel-filled burlap bags or other material, and/or immediate mulching of exposed areas.
  5. Pea gravel-filled burlap bags and straw bales shall be placed at the base of the existing riprap rock outfall splash pad.
  6. All waste material such as construction debris, silt, excess dirt or overburden resulting from this project shall be deposited above the ordinary high water mark (OHWM). Accumulated sediments that are now present on the beach below OHWM shall be removed and deposited above OHWM.
  7. Alteration or disturbance of the bank and bank vegetation shall be limited to that necessary to construct the project. Within seven calendar days of project completion, all disturbed areas shall be protected from erosion using vegetation or other means. Within four months of project completion, the slope on which the access road was built, for a distance of 25-feet landward of OHWM, shall be revegetated with native or other WDFW approved woody species. Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.
  8. If high flow conditions that may cause siltation are encountered during this project, work shall stop until the flow subsides.
  9. Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the stream.
  10. All manmade debris on the beach shall be removed and disposed of upland such that it does not enter waters of the state.

### STORMWATER OUTFALL

11. All catch basins, culverts, pipeline outfalls and energy dissipation "T" shall be free of obstructions for the life of the project to ensure proper functioning of the stormwater management system.
12. The waterward face of the energy dissipator "T" at the beach pipeline entrance shall be located landward of OHWM.
13. Rock used for the splash pad shall be composed of clean, angular material of a sufficient durability and size to prevent its being broken up or washed away by high water or wave action.



Issue Date: April 17, 2006

Control Number: 103953-1

Project Expiration Date: June 17, 2006

FPA/Public Notice #: N/A

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14. The face of the rock splash pad shall be located at or landward of the OHWM.

#### CONCRETE AND ROCK BULKHEAD

15. The bulkhead alignment shall be staked by the Area Habitat Biologist listed below and the contractor prior to the start of construction.

16. The waterward face of the concrete bulkhead shall be located at or landward of the OHWM. The length of this bulkhead shall be 120-feet and the height shall be no greater than seven feet

17. Riprap rock (3'-4' diameter) placed in front of the concrete bulkhead for a distance of 120-feet, shall extend no further waterward than six feet from the face of the concrete bulkhead or OHWM.

18. The waterward face of the 57-foot riprap rock bulkhead extension shall follow the contour of the existing natural bankline and be placed no further waterward than six feet from the toe of the bank.

19. Bulkhead wing walls shall tie into existing bulkhead at the east end and be angled approximately 30 degrees to the bankline on the west end.

20. The top of the concrete footing shall be buried a minimum of 18 inches below the preproject natural beach grade.

21. Wet concrete shall be prevented from entering waters of the state. Forms for any concrete structure shall be constructed to prevent leaching of wet concrete. Impervious materials shall be placed over any exposed concrete not lined with the forms that will come in contact with state waters. Forms and impervious materials shall remain in place until the concrete is cured.

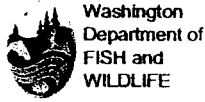
22. Base rocks shall be buried a minimum of 18 inches below the preproject natural beach grade.

23. Rock for the bulkhead shall be composed of clean, angular material of a sufficient durability and size to prevent its being broken up or washed away by high water or wave action.

24. Project activities shall not occur when the project area, including the work corridor is inundated by tidal waters.

25. Use of equipment on the beach shall be held to a minimum, confined to a single access point, and limited to a 25-foot work corridor waterward of the base rocks. Construction materials shall not touch the beach outside this work corridor.

26. Bed material, other than material excavated for base rocks, shall not be utilized for project construction or fills.



Issue Date: April 17, 2006

Project Expiration Date: June 17, 2006

Control Number: 103953-1

FPA/Public Notice #: N/A

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27. Excavated materials containing silt, clay, or other fine grained soil shall not be stockpiled below the ordinary high water line.

28. If stockpiling of sand, gravel, and other coarse excavated material is conducted below the ordinary high water line, it shall be placed within a 25-foot work corridor waterward of the base rocks.

29. If sand, gravel, and other coarse excavated material is to be temporarily placed where it will come into contact with tidal waters, this material shall be covered with filter fabric and adequately secured to prevent erosion and/or potential entrainment of fish.

30. All excavated or stockpiled material shall be removed from the beach within 72 hours of bulkhead construction. Upon removal of the excavated material, the beach shall immediately be returned to the preproject natural grade.

31. Beach area depressions created during project activities shall be reshaped to preproject beach level upon project completion.

32. All trenches, depressions, or holes created in the beach area shall be backfilled prior to inundation by tidal waters. Trenches excavated for base rocks may remain open during construction. However, fish shall be prevented from entering such trenches.

33. The beach waterward of the bulkhead shall be nourished with a sand/gravel mixture of approximately 80% clean sand and 20% pea gravel in compliance with the following specifications:

- a. Gravel shall be clean round 'pea gravel,' not crushed.
- b. Gravel shall be sized between 1/16 inch and 1/4 inch in diameter.
- c. Sand and gravel mixture shall be spread along the entire length of the bulkhead waterward for a distance of nine lineal feet to a uniform depth of six inches. Approximately 30 cubic yards of gravel shall be required.
- d. Graveling shall be conducted within 72 hours following bulkhead construction.

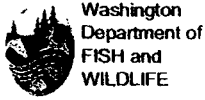
34. All natural habitat features on the beach larger than 12 inches in diameter, including trees, stumps, logs, and large rocks, shall be retained on the beach following construction. These habitat features may be moved during construction if necessary.

35. Project activities shall be conducted to minimize siltation of the beach area and bed.

36. All debris or deleterious material resulting from construction shall be removed from the beach area and bed and prevented from entering waters of the state.

37. No petroleum products or other deleterious materials shall enter surface waters.

38. Project activities shall not degrade water quality to the detriment of fish life.



## HYDRAULIC PROJECT APPROVAL

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39. If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification shall be made to the Washington Department of Ecology at 1-800-258-5990, and to the Area Habitat Biologist listed below.

### MITIGATION

40. Mitigation measures including a beach nourishment and monitoring plan are required for the bulkhead construction.

#### Monitoring Plan

Before construction can begin the property owner will need to complete a baseline study of the current conditions of the nearshore environment in the vicinity of the proposed bulkhead. That study shall establish baseline elevations along a series of transects starting from the SE end of the proposed bulkhead to the NW end of the proposed riprap rock wall. Transects shall run down the beach from mean higher high water (MHHW) to mean lower low water (MLLW) and be spaced approximately 10-feet apart. Elevations shall be determined bi-monthly for a period of five years.

#### Annual Reports

Annual reports including these components shall be submitted: (a) measurement of beach elevations at fixed points and (b) a determination of the quantity of beach nourishment materials required to maintain baseline elevations. These reports will be submitted to the WDFW at the end of each winter season (by May 1). The information required for each component is described in detail below. Beach elevations along established transects shall include at least one surveyed beach elevation benchmark within the mapped upper intertidal and lower intertidal sand bed waterward of the proposed bulkhead. The location of the surveyed elevation benchmarks shall be identified with a permanent stadia rod or other fixed device to allow bimonthly readings. Beach elevations shall be recorded every other month for a period of five years.

#### Documentation of Beach Nourishment

The annual beach nourishment amount shall be based on the difference between pre-construction (baseline) beach elevations and beach elevations for each subsequent year. The monitoring report shall include calculations used to determine the amount of beach nourishment actually provided to the nearshore environment as well as delivery information from the supplier of the materials used for beach nourishment. A minimum of 30 cubic yards of beach nourishment must be provided for each year. Beach nourishment materials shall consist of approximately 80% sand and 20% pea gravel (see provision #33 above). In some years when beach elevations show little or no decline the minimum amount of beach nourishment shall be required. In years where the beach elevation shows a drop in elevation a proportionate amount of beach nourishment material shall be added to raise the beach to baseline elevations. After a five-year period of adding beach nourishment material, all subsequent beach nourishment quantities in addition to the required minimum of 30



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cubic yards shall be based on the five-year average of beach nourishment.

### Photo Documentation

The annual reports shall include photo documentation of the condition of the bulkhead, the condition of the beach nourishment materials, and the condition of the beach at the beach elevation benchmarks.

### Owner Obligation of Artificial Beach Nourishment

The property owners shall execute and record a covenant that will acknowledge their obligation and the obligation of their successors in interest to continue artificial beach nourishment as a condition of being allowed to maintain the bulkhead in place. That covenant will provide the following:

- (a) The property owner shall keep records showing the amounts of beach nourishment provided on an annual basis.
- (b) The property owner shall provide copies of those records to the WDFW for review annually.

41. Additional mitigation measures are required for all aspects of the project completed prior to the issuance of this HPA. These aspects include outfall construction and deposition of fill material onto the upper beach area below OHWM. Mitigation measures shall include:

- (a) A commitment from the property owner that no future bulkheading or hard armoring of the bank shall occur along the approximately 300-feet of shoreline west of the single family residence.
- (b) A replanting of the riparian zone with native trees and shrubs as approved by WDFW along this same section of beach within an area 25-feet landward of the OHWM (see provision #7 above).

Within 30 days of project completion, the property owner shall meet with WDFW and provide a plan for accomplishing these additional mitigation measures or to provide an alternate mitigation plan of equal or higher biological value and function.

## PROJECT LOCATIONS

### Location #1 Moran Property

WORK START: April 17, 2006				WORK END: June 17, 2006		
WRIA: 03.9070		Waterbody: Wria 03 Marine		Tributary to: Puget Sound		
1/4 SEC: SW 1/4	Section: 27	Township: 35 N	Range: 01 E	Latitude: N 48.4872	Longitude: W 122.6710	County: Skagit
Location #1 Driving Directions						



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## NOTES

### APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW (formerly RCW 77.20). Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in a civil penalty of up to one hundred dollars per day and/or a gross misdemeanor charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued pursuant to RCW 77.55.021 (EXCEPT agricultural irrigation, stock watering or bank stabilization projects) or 77.55.141 are subject to additional restrictions, conditions or revocation if the Department of Fish and Wildlife determines that new biological or physical information indicates the need for such action. The person(s) to whom this Hydraulic Project Approval is issued has the right pursuant to Chapter 34.04 RCW to appeal such decisions. All agricultural irrigation, stock watering or bank stabilization Hydraulic Project Approvals issued pursuant to RCW 77.55.021 may be modified by the Department of Fish and Wildlife due to changed conditions after consultation with the person(s) to whom this Hydraulic Project Approval is issued: PROVIDED HOWEVER, that such modifications shall be subject to appeal to the Hydraulic Appeals Board established in RCW 77.55.301.

## APPEALS INFORMATION

If you wish to appeal the issuance or denial of, or conditions provided in a Hydraulic Project Approval, there are informal and formal appeal processes available.

**A. INFORMAL APPEALS (WAC 220-110-340) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.021, 77.55.141, 77.55.181, and 77.55.291:** A person who is aggrieved or adversely affected by the following Department actions may request an informal review of:

(A) The denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval; or

(B) An order imposing civil penalties. A request for an INFORMAL REVIEW shall be in WRITING to the Department of Fish and Wildlife HPA Appeals Coordinator, 600 Capitol Way North, Olympia, Washington 98501-1091 and shall be RECEIVED by the Department within 30 days of the denial or issuance of a Hydraulic Project Approval or receipt of an order imposing civil penalties. If agreed to by the aggrieved party, and the aggrieved party is the Hydraulic Project Approval applicant, resolution of the concerns will be facilitated through discussions with the Area Habitat Biologist and his/her supervisor. If resolution is not reached, or the aggrieved party is not the Hydraulic Project Approval applicant, the Habitat Technical Services Division Manager or his/her designee shall conduct a review and recommend a decision to the Director or his/her designee. If you are not satisfied with the results of this informal appeal, a formal appeal may be filed.



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**B. FORMAL APPEALS (WAC 220-110-350) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.021 (EXCEPT agricultural irrigation, stock watering or bank stabilization projects) or 77.55.291:**

A person who is aggrieved or adversely affected by the following Department actions may request a formal review of:

(A) The denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval;

(B) An order imposing civil penalties; or

(C) Any other 'agency action' for which an adjudicative proceeding is required under the Administrative Procedure Act, Chapter 34.05 RCW.

A request for a FORMAL APPEAL shall be in WRITING to the Department of Fish and Wildlife HPA Appeals Coordinator, shall be plainly labeled as 'REQUEST FOR FORMAL APPEAL' and shall be RECEIVED DURING OFFICE HOURS by the Department at 600 Capitol Way North, Olympia, Washington 98501-1091, within 30-days of the Department action that is being challenged. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, the deadline for requesting a formal appeal shall be within 30-days of the date of the Department's written decision in response to the informal appeal.

**C. FORMAL APPEALS OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.021 (agricultural irrigation, stock watering or bank stabilization only), 77.55.141, 77.55.181, or 77.55.241:** A person who is aggrieved or adversely affected by the denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval may request a formal appeal. The request for FORMAL APPEAL shall be in WRITING to the Hydraulic Appeals Board per WAC 259-04 at Environmental Hearings Office, 4224 Sixth Avenue SE, Building Two - Rowe Six, Lacey, Washington 98504; telephone 360/459-6327.

**D. FORMAL APPEALS OF DEPARTMENT ACTIONS TAKEN PURSUANT TO CHAPTER 43.21L RCW:** A person who is aggrieved or adversely affected by the denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval may request a formal appeal. The FORMAL APPEAL shall be in accordance with the provisions of Chapter 43.21L RCW and Chapter 199-08 WAC. The request for FORMAL APPEAL shall be in WRITING to the Environmental and Land Use Hearings Board at Environmental Hearings Office, Environmental and Land Use Hearings Board, 4224 Sixth Avenue SE, Building Two - Rowe Six, P.O. Box 40903, Lacey, Washington 98504; telephone 360/459-6327.

**E. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS** results in forfeiture of all appeal rights. If there is no timely request for an appeal, the department action shall be final and unappealable.

**ENFORCEMENT: Sergeant Heinck (25) P1**

Habitat Biologist Doug Thompson	360-466-4345		for Director WDFW
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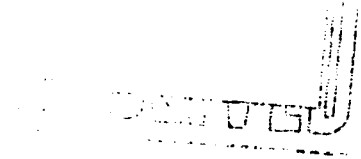
CC:



**SCHEMMER ENGINEERING INC.**

September 11, 2006

Ian Munce  
City of Anacortes  
P.O. Box 547  
Anacortes, WA 98221



Re: Bob Morand Project  
Completion of the Site Drainage Work

Dear Ian,

Please consider the following:

1. After reviewing the existing sites drainage seeps we are now wanting to continue our work as to the on site grading per previously approved plans such that we can complete the required drainage improvements prior to the start of the wet season.
2. In no way is this request related to any creeping approval request for the new lots that are under consideration, only to allow us to complete the drainage elements associated with the recent Emergency Bulkhead Construction.
3. Please know that as soon as we can complete the slopes as shown on our plans we will mulch and plant such as to protect the slopes from the upcoming rainy season.

Sincerely,

Schemmer Engineering Inc.

James A. Schemmer, P.E.

cc: Don Measamer

IAN,  
They DO have a Grade  
and Fill for drainage  
work and this would,  
Hopefully, tie the site up  
for the fall and winter.

Truly  
A

I AGREE THAT  
THIS WORK GO  
SHOULD FORWARD  
IAN