

MARTINAC SHIPBUILDING
(MARTINAC BEACH SITE)

Final Copy File
Martinac Shipbuilding

Agreed Order
INTERIM ACTION STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

FS1395

In the Matter of Remedial Action by:)

J.M. Martinac Shipbuilding Corporation)

401 East 15th Street)

Tacoma, WA 98421)

AGREED ORDER

No. DE96TC-S314

TO: Joe Martinac, Jr.

I.

Jurisdiction

This Agreed Order ("Order") is issued pursuant to the authority of RCW 70.105D.050(1).

II.

Findings of Fact

Ecology makes the following Findings of Fact.

1. J.M. Martinac Shipbuilding Corporation (Martinac) owns and operates a shipbuilding facility located along east bank of the Thea Foss Waterway at 401 East 15th Street in Tacoma, Washington. Martinac has operated in this location since 1924.

2. Abrasive sand blasting has been performed at the facility for many years. Spent sand blasting grit used on the yard contains elevated levels of metals including arsenic, copper and zinc.

3. Through past shipyard practices, spent sandblast grit has come to be located on the intertidal beach area on the north portion of the facility. The grit on the beach is in excess of three feet thick in the middle of the tidal elevation range on the beach and may be up to nine feet thick in the upper portions of the beach. The volume of grit

on the beach is estimated to be approximately 1,000 cubic yards.

4. Concentrations of arsenic, copper and zinc of up to 190 mg/kg, 2000 mg/kg and 1100 mg/kg, respectively, were found in the grit on the beach. The Sediment Quality Objectives for arsenic, copper and zinc established for the Thea Foss Waterway in the Commencement Bay Nearshore/Tideflats Record of Decision (ROD) are 57 mg/kg, 390 mg/kg, and 410 mg/kg, respectively.

5. The concentrations of metals found in the grit at the Martinac facility pose a threat to the environmental health of the Thea Foss Waterway. The Martinac facility was identified as a source of problem chemicals to the Head of Thea Foss Waterway sediment problem area in the ROD.

III.

Ecology Determinations

1. Martinac is an "owner or operator" as defined at RCW 70.105D.020(11) of a "facility" as defined in RCW 70.105D.020(4).

2. The facility is known as the Martinac site and is located at 401 East 15th Street in Tacoma, Washington.

3. The substances found at the facility as described above are "hazardous substances" as defined at RCW 70.105D.020(7).

4. Based on the presence of these hazardous substances at the facility and all factors known to the Department, there is a release or threatened release of hazardous substances from the facility, as defined at RCW 70.105D.020(19).

5. By letter dated April 1, 1996, Ecology notified Martinac of its status as a "potentially liable person" under RCW 70.105D.040 after notice and opportunity for comment.

6. Pursuant to RCW 70.105D.030(1) and 70.105D.050, the Department may require potentially liable persons to investigate or conduct other remedial actions with respect to the release or threatened release of hazardous substances, whenever it believes such action to be in the public interest.

7. Based on the foregoing facts, Ecology believes the remedial action required by this Order is in the public interest.

IV.

Work to be Performed

Based on the foregoing Facts and Determinations, it is hereby ordered that Martinac take the following remedial actions and that these actions be conducted in accordance with Chapter 173-340 WAC unless otherwise specifically provided for herein. This work is to be performed as an Interim Action under WAC 173-340-430. The work to be performed is described in detail in Exhibit A, Scope of Work and Schedule, and Exhibit C, Project Drawings. Exhibits A and C are incorporated by reference and are an integral and enforceable parts of this Order.

1. Excavate contaminated grit on the beach area exceeding Sediment Quality Objectives for metals which is accessible from upland using conventional excavation equipment. Excavate and dispose of the northernmost metals

turnings (lathe tailings) pile adjacent to the beach area. These tasks are further described in Exhibit A.

2. Perform sampling of the footprint of excavation as detailed in Exhibit A to confirm that Sediment Quality Objectives for metals have been attained.

3. Backfill the excavation to reestablish the existing (pre-excavation) beach grade as described in Exhibit A.

4. Submit to Ecology a report as described in Exhibit A on the remedial work performed including a description of the extent of excavation, volume and type of material removed, final disposal location of all material removed, the elevation and location of all samples taken and all sampling results.

V.

Terms and Conditions of Order

1. Definitions

Unless otherwise specified, the definitions set forth in ch. 70.105D RCW and ch. 173-340 WAC shall control the meanings of the terms used in this Order.

2. Public Notices

RCW 70.105D.030(2)(a) requires that, at a minimum, this Order be subject to concurrent public notice. Ecology shall be responsible for providing such public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that the Order is inadequate or improper in any respect.

3. Remedial Action Costs. Martinac shall pay to Ecology costs incurred by Ecology pursuant to this Order. These

costs shall include work performed by Ecology or its contractors for investigations, remedial actions, and Order preparation, oversight and administration. Ecology costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). Martinac shall pay the required amount within 90 days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general description of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Failure to pay Ecology's costs within 90 days of receipt of the itemized statement of costs will result in interest charges.

4. Designated Project Coordinators. The project coordinator for Ecology is:

Garin Schrieve
Southwest Regional Office
P.O. Box 47775
Olympia, Washington 98504-47775

The project coordinator for Martinac is:

Bill Lang
J.M. Martinac Shipbuilding Corporation
401 East 15th Street
Tacoma, Washington 98421

The project coordinator(s) shall be responsible for overseeing the implementation of this Order. To the maximum extent possible, communications between Ecology and Martinac, and all documents, including reports, approvals, and other correspondence concerning the activities performed

pursuant to the terms and conditions of this Order, shall be directed through the project coordinator(s). Should Ecology or Martinac change project coordinator(s), written notification shall be provided to Ecology or Martinac at least ten (10) calendar days prior to the change.

5. Performance. All work performed pursuant to this Order shall be under the direction and supervision, as necessary, of a professional engineer or hydrogeologist, or similar expert, with appropriate training, experience and expertise in hazardous waste site investigation and cleanup. Martinac shall notify Ecology as to the identity of such engineer(s) or hydrogeologist(s), and of any contractors and subcontractors to be used in carrying out the terms of this Order, in advance of their involvement at the Site. Martinac shall provide a copy of this Order to all agents, contractors and subcontractors retained to perform work required by this Order and shall ensure that all work undertaken by such agents, contractors and subcontractors will be in compliance with this Order.

Except where necessary to abate an emergency situation, Martinac shall not perform any remedial actions at the Martinac beach outside that required by this Order unless Ecology concurs, in writing, with such additional remedial actions.

WAC 173-340-400(7)(b)(i) requires that "construction" performed on the Site must be under the supervision of a professional engineer registered in Washington.

6. Access. Ecology or any Ecology authorized representative shall have the authority to enter and freely move about the Site at all reasonable times for the purposes

of, inter alia: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing the progress in carrying out the terms of this Order; conducting such tests or collecting samples as Ecology or the project coordinator may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by Martinac. By signing this Agreed Order, Martinac agrees that this Order constitutes reasonable notice of access, and agrees to allow access to the Site at all reasonable times for purposes of overseeing work performed under this Order. Ecology shall allow split or replicate samples to be taken by Martinac during an inspection unless doing so interferes with Ecology's sampling. Martinac shall allow split or replicate samples to be taken by Ecology and shall provide seven (7) days notice prior to the start of excavation.

7. Public Participation Ecology shall maintain the responsibility for public participation at the site. Martinac shall help coordinate and implement public participation for the site.

8. Retention of Records Martinac shall preserve in a readily retrievable fashion, during the pendency of this Order and for ten (10) years from the date of completion of the work performed pursuant to this Order, all records, reports, documents, and underlying data in its possession relevant to this Order. Should any portion of the work performed hereunder be undertaken through contractors or agents of Martinac, then Martinac agrees to include in their

contract with such contractors or agents a record retention requirement meeting the terms of this paragraph.

9. Dispute Resolution. Martinac may request Ecology to resolve disputes which may arise during the implementation of this Order. Due to the sensitive nature of work in the shoreline environment and the requirements to complete excavation of the grit and restore the beach as quickly as possible, such request may be in writing via facsimile or by telephone and directed to the Toxics Cleanup Program Southwest Region Section Manager. Ecology shall issue a decision within two working days of receiving a request from Martinac to resolve a dispute. Ecology resolution of the dispute shall be binding and final. Martinac is not relieved of any requirement of this Order during the pendency of the dispute and remains responsible for timely compliance with the terms of the Order unless otherwise provided by Ecology in writing.

10. Reservation of Rights/No Settlement. This Agreed Order is not a settlement under ch. 70.105D RCW. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any Ecology rights or authority. Ecology will not, however, bring an action against Martinac to recover remedial action costs paid to and received by Ecology under this Agreed Order. In addition, Ecology will not take additional enforcement actions against Martinac to require those remedial actions required by this Agreed Order, provided Martinac complies with this Agreed Order.

Ecology reserves the right, however, to require additional remedial actions at the Site should it deem such

actions necessary, including the right to require additional action if SQOs are not met.

Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the releases or threatened releases of hazardous substances from the Martinac facility.

In the event Ecology determines that conditions at the Site are creating or have the potential to create a danger to the health or welfare of the people on the Site or in the surrounding area or to the environment, Ecology may order Martinac to stop further implementation of this Order for such period of time as needed to abate the danger.

11. Transference of Property No voluntary or involuntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by Martinac without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to transfer of any legal or equitable interest Martinac may have in the site or any portions thereof Martinac shall serve a copy of this Order upon any prospective purchaser, lessee, transferee, assignee, or other successor in such interest. At least thirty (30) days prior to finalization of any transfer, Martinac shall notify Ecology of the contemplated transfer.

12. Compliance with Other Applicable Laws

A. All actions carried out by Martinac pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including

requirements to obtain necessary permits, except as provided in paragraph B of this section.

B. Pursuant to RCW 70.105D.090(1), the substantive requirements of chapters 70.94, 70.95, 70.105, 75.20, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals for the remedial action under this Order that are known to be applicable at the time of issuance of the Order have been included in Exhibit B, Substantive Permit Requirements, and are binding and enforceable requirements of the Order.

Martinac has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order. In the event Martinac determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify Ecology of this determination. Ecology shall determine whether Ecology or Martinac shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Martinac shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by Martinac and on how Martinac must meet those requirements. Ecology shall inform Martinac in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of

this Order. Martinac shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

Ecology shall ensure that notice and opportunity for comment is provided to the public and appropriate agencies prior to establishing the substantive requirements under this section.

C. Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency which is necessary for the State to administer any federal law, the exemption shall not apply and Martinac shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits.

VI.

Satisfaction of this Order

The provisions of this Order shall be deemed satisfied upon Martinac's receipt of written notification from Ecology that Martinac has completed the remedial activity required by this Order, as amended by any modifications, and that all other provisions of this Agreed Order have been complied with.

VII.

Enforcement

1. Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

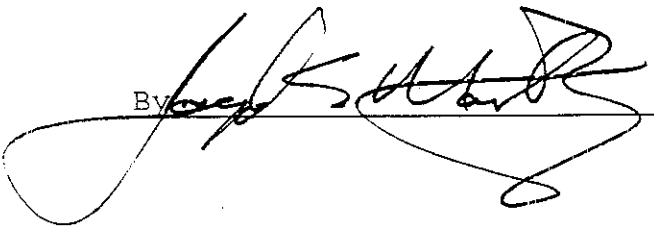
- A. The Attorney General may bring an action to enforce this Order in a state or federal court.
- B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.
- C. In the event Martinac refuses, without sufficient cause, to comply with any term of this Order, Martinac will be liable for:
- (1) up to three times the amount of any costs incurred by the state of Washington as a result of its refusal to comply; and
 - (2) civil penalties of up to \$25,000 per day for each day it refuses to comply.
- D. This Order may be reviewed only as provided under Section 6 of ch. 70.105D RCW.

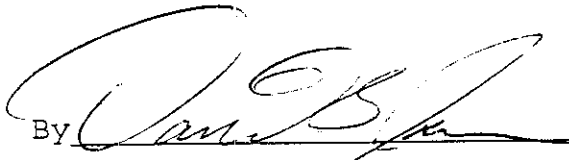
Effective date of this Order: 7/26/1996

J.M. MARTINAC SHIPBUILDING

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

By 

By 

David B. Jansen, P.E.

EXHIBIT A

SCOPE OF WORK AND SCHEDULE

The work described in this document is to be conducted as an Interim Action under WAC 173-340-430. This work addresses only the sandblast grit contamination and the northernmost lathe tailings pile on the beach at the north end of the property; other sediment contamination may be associated with other portions of the Martinac facility and is expected to be dealt with through the Superfund cleanup of the Thea Foss Waterway sediments. The work conducted under this Scope of Work and Schedule shall be conducted in compliance with the requirements outlined in Exhibit B, Substantive Permit Requirements, and shall be substantially equivalent to the Project Drawings contained in Exhibit C.

For the purposes of project oversight and review of documents, the project is broken down into six specific tasks. These tasks and their deliverable due dates are provided below.

Task 1 - Obtain Army Corps of Engineers Nationwide #38 (Section 404) Permit

Martinac shall obtain the necessary Army Corps of Engineers permit (Nationwide #38 permit under Section 404 of the Clean Water Act permitting authority) for performing the beach cleanup work.

Schedule: The necessary permit(s) shall be obtained prior to commencing work at the site. Martinac shall make complete application for this permit within 10 days of the effective date of this Order.

Task 2 - Safety and Health Plan

All work, including sampling, excavation and other data gathering activities shall be performed under an appropriate safety and health plan for the protection of workers and the surrounding community in accordance with Ecology and WISHA requirements.

Schedule: Martinac shall submit a safety and health plan to Ecology one week prior to commencing any on-site activities associated with this Order.

Task 3 - Excavation and disposal of contaminated grit and lathe tailing piles

Martinac shall excavate all contaminated grit from the beach area accessible from upland using conventional excavation equipment. It is expected that this will result in excavation of all grit to an elevation of approximately 0.0 feet (mean lower low water); the excavation shall continue until all contaminated grit accessible from upland using

conventional excavation is removed, regardless of elevation. Martinac shall also remove the northernmost lathe tailings pile located under the outfitting docks. All of the excavated materials shall be disposed of off-site in compliance with applicable federal, state and local laws. It is expected that excavated grit will be recycled for use in the manufacture of cement.

The cleanup standards applicable for this action are the Sediment Quality Objectives (SQO) for arsenic, copper and zinc defined in the Record of Decision (ROD) for the Commencement Bay Nearshore/Tideflats Superfund Site. The SQOs for arsenic, copper and zinc are 57 mg/kg, 390 mg/kg and 410 mg/kg, respectively.

It is expected that the extent and depth of excavation will be based initially on visual indications of contamination (presence of black grit). Once the extent of visual contamination has been excavated, compliance monitoring (Task 4) shall be conducted to confirm the attainment of SQOs.

Schedule: This work shall be completed during a suitable tidal sequence during the Summer of 1996 not later than September 30, 1996.

Task 4 - Compliance monitoring

Once excavation is completed, Martinac shall conduct sampling of the footprint of excavation to ensure that the SQOs for arsenic, copper and zinc have been met. Discrete samples for metals shall be collected from the top 2 centimeters of sediments along two north-south transects. Samples shall be collected on thirty (30) foot centers along each transect over the full length of the excavation area. One transect shall be located within ten (10) feet of the waterward extent of excavation. The other transect shall be located midway horizontally between the first transect and the mean higher high tide elevation. Samples shall be collected, handled, prepared and analyzed in accordance with the following methods and guidelines:

Analyte	Sample Preparation Method ⁽¹⁾	Analytical Method ⁽²⁾	Detection Limit mg/kg
arsenic	PSEP	6010/7041	0.1
copper	PSEP	6010	0.1
zinc	PSEP	6010	0.2

(1) Puget Sound Estuary Program (PSEP), Recommended protocols for measuring metals in Puget Sound water, sediment and tissue samples. Final Report. Prepared by USEPA, Seattle, WA.

(2) Test Procedures for Solid Waste. 1986. 3rd Edition. SW-846. USEPA, Office of Solid Waste and Emergency Response, Washington, D.C.

All samples shall be collected by experienced sampling personnel using a clean stainless steel sampling spoon and glass sample jars. The minimum sample size to be collected shall be 100 grams. Once collected, samples shall be cooled to 4 degrees C and delivered to an accredited laboratory for analysis. Field documentation shall include location (horizontal and vertical), date, time, tidal stage, unique sample identification, and the name of the person collecting the sample.

Martinac shall notify the Ecology project manager at least 7 days prior to the start of excavation and shall allow Ecology or its authorized representative to collect split samples of compliance monitoring samples.

Results shall be reported to Ecology within 5 days of receipt of results by Martinac.

Schedule: Compliance monitoring shall be conducted immediately upon completion of excavation based on visual extent of grit.

Task 5 - Reestablish Beach Grade

Once compliance monitoring data has indicated that the excavation has attained SQOs, the pre-excavation beach contours and grade shall be reestablished by backfilling the excavation with clean pit run.

Schedule: This work shall be conducted immediately following confirmation of attainment of SQOs as demonstrated by the compliance monitoring data collected under Task 3.

Task 6 - Reporting

Martinac shall prepare and submit to Ecology a report detailing the beach cleanup work performed at the site. The report shall include the following: description of the extent of excavation (including plan view and cross section drawings showing the elevations of extent of excavation); volume of materials excavated; final disposal/recycling location of excavated materials; the depth, location and elevation from which all samples were collected; and, all sampling results (including lab data sheets and all lab QA/QC data).

Schedule: The grit cleanup report shall be submitted to Ecology within 45 days of completion of the excavation, compliance monitoring and backfilling activities covered under this Order

EXHIBIT B

SUBSTANTIVE PERMIT REQUIREMENTS

Pursuant to RCW 70 105D 090(1), the substantive requirements of chapters 70 94, 70 95, 70 105, 75 20, 90 48, and 90 58 RCW and any laws requiring or authorizing local government permits or approvals for the remedial action under this Order that are known to be applicable at the time of issuance of the Order have been included below and are binding and enforceable requirements of the Order.

This project is subject to federal permitting requirements. A U.S. Army Corps of Engineers permit under Section 404 of the Clean Water Act is required to conduct the work described in this Order. This project consists of a cleanup of toxic wastes and therefore may be eligible for the Nationwide #38 permit path under Section 404; this is a streamlined permitting path requiring less paperwork than an individual Section 404 permit. It is the Defendant's responsibility to obtain the necessary federal permits.

Permits pertinent to this action:

1. Tacoma Shoreline Regulations and Grading and Excavation Regulations
2. State Hydraulic Project Approval
3. State Water Pollution Control Act
4. State Hazardous Waste Management Act
5. Puget Sound Air Pollution Control Agency
6. Local health Department - Solid Waste Regulations

Substantive requirements for state and local permits that have been identified as pertinent to this project and that shall be complied with in the process of completing the sandblast grit removal interim action are described below:

1. City of Tacoma, Chapter 13.10, Shoreline Regulations, and Grading and Excavation Regulations

The substantive permit requirements which have been identified are listed in the following correspondence; this letter and its attachments are attached incorporated by reference and are integral and enforceable parts of this Exhibit and the Order.

- Correspondence from Peter Katich, Public Works Department, City of Tacoma, to Garin Schrieve dated March 27, 1996

2. Hydraulic Project Approval, Washington State Department of Fish and Wildlife, Chapter 220-110 WAC.

The substantive permit requirements which have been identified are listed in the following correspondence; this letter and its attachments are attached and incorporated by reference and are integral and enforceable parts of this Exhibit and the Order.

- Correspondence from R. Timothy Flint, State of Washington Department of Fish and Wildlife, to Garin Schrieve dated April 15, 1996.

3. State of Washington, Chapter 90.48 RCW, Water Pollution Control

- Construction design and implementation shall include measures to prevent discharge into any of the waters of the state of any organic or inorganic matter that shall cause or tend to cause pollution of such waters according to the determination of Ecology.

4. State of Washington, Chapter 70.105 RCW, Hazardous Waste Management

- The remedial action shall provide for management or disposal of dangerous wastes or hazardous wastes in a manner in compliance with regulations under Chapter 173-303 WAC

5. Puget Sound Air Pollution Control Agency

- Remedial action shall be conducted such that toxic air contaminant emissions will not result in the exceedance of acceptable source impact levels listed in Appendix A of the Puget Sound Air Pollution Control Authority, Regulation III.
- Remedial action shall be performed so as to not allow the emission of any air contaminants in violation of the visual standard established by Section 9.03 of Regulation I.
- Remedial action shall be performed so as to not allow the emission of particulate matter in violation of Section 9.04 or 9.09 of Regulation I.
- Remedial action shall be performed so as to not allow the emission of air contaminants in violation of Section 9.11 of Regulation I.
- Remedial action shall be performed so as to not allow the emission of fugitive dust in violation of Section 9.15 of Regulation I.
- Equipment utilized on-site for the remedial action shall be maintained in a manner so as not to be in violation of Section 9.20(b) of Regulation I.

6. Local Health Department - Solid Waste Disposal Authorization

- Comply with Local Health Department provisions for acceptance of any soils to be disposed of at a landfill in the state of Washington, according to criteria developed for the specific facility.



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

Mailing Address: 600 Capitol Way N • Olympia, WA 98501-1091 • (360) 902-2200 TDD (360) 902-2207
Main Office Location: Natural Resources Building • 1111 Washington Street SE • Olympia, WA

April 15, 1996

Mr. Garin Schrieve
Washington Department of Ecology
PO Box 47775
Olympia, WA 98504-7775

Dear Mr. Schrieve:

As requested, the Washington Department of Fish and Wildlife (WDFW) is submitting the following substantive requirements for the proposed Model Toxics Control Act (MTCA) cleanup at the J.M. Martinac Shipbuilding facility on the Thea Foss Waterway in Tacoma. These comments are specific to this project site only and should not be construed as applicable to other aquatic sites. Each aquatic site potentially has unique physical and biological characteristics and therefore warrants site-specific review and comment.

For the proper protection of fish life, the project shall be conducted in accordance with the following provisions:

1. Work below the ordinary high water line (OHWL) shall not occur from March 15 through June 14 of any year for the protection of migrating juvenile salmonids.
2. Project activities below the OHWL shall not occur when the project area is inundated by tidal waters.
3. Excavated materials shall not be stockpiled on the beach.
4. All trenches, depressions, or holes created in the intertidal area shall be backfilled prior to inundation by tidal waters.
5. All manmade debris on the beach at the project site shall be removed and disposed of upland such that it does not enter waters of the state.
6. Subsequent to excavation of the sandblast grit, clean pit-run material shall be used to reestablish existing contours at the site.
7. Riprap placed to stabilize the shoreline shall be subsequently covered with clean pit-run up to an elevation that matches existing grade.

Mr. Garin Schrieve

April 15, 1996

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8. The sheetpile bulkhead shall be located at or landward of the OHWL and shall therefore not result in loss of aquatic area.
9. Project activities shall be conducted to minimize siltation of beach areas and bed materials.
10. If a fish kill occurs or fish are observed in distress, the project activity shall immediately cease and WDFW Habitat Program shall be notified immediately.
11. Debris or deleterious material resulting from construction shall be removed from the beach area and project site and shall not be allowed to enter waters of the state.
12. Water quality is not to be degraded to the detriment of fish life as a result of this project.

If you have any questions regarding these comments please contact Randy Carman at (360) 664-4673.

Sincerely,

R. Timothy Flint

R. Timothy Flint
Marine Permits
Habitat Program

RTF:cg:11

cc: Ted Muller, WDFW
Peter Katich, City of Tacoma
Tuggle, 028, WDFW



City of Tacoma
Public Works Department

March 27, 1996

Garin Schrieve
Toxics Cleanup Program
Southwest Regional Office
Washington Department of Ecology
P O. Box 47775
Olympia, WA 98504-7775

RE: Request for Substantive Requirements for Cleanup of Martinac Beach (401 East 15th Street)

Dear Mr. Schrieve:

I am in receipt of your letter dated February 27, 1996, in which you request the City's substantive requirements as they apply to the remedial cleanup of the property referenced above. As described in your letter and the attached letter from Martinac, the project would consist of the removal of approximately 1,000 cubic yards of spent sandblast grit from the intertidal beach zone of the site, together with the placement of a "riprap" type bulkhead approximately five feet waterward of the present shoreline edge location. Approximately 25 lineal feet of sheet pile would be driven along the north edge of the existing overwater dock structure to retain the uplands in this location. The goal of the project is to return the beach to its original elevations.

In this regard, please note that the site is located within the City's "S-8" Thea Foss Waterway Shoreline District. The "S-8" regulations (Section 13.10.110 of the Tacoma Municipal Code [T.M.C]) allow environmental remediation activities (including dredging and filling) as a permitted use activity subject to the development regulations set forth in Section 13.10.175.B of the T.M.C. Attached, are the applicable development regulations which appear to apply to the work proposed. Also attached, are the City's regulations which apply to grading and filling activity (Section 2.02.120 of the Uniform Building Code)

Please note that Sub-section 13.10.175 B 3 (3) limits the placement of bulkheads to no more than three (3) feet waterward of the original bulkhead. The remedial option for this project should be designed consistent with the aforementioned provision.

Garin Schrieve
March 27, 1996
Page No. 2

Thank you for the opportunity to review this matter. Should you have any questions, please contact me at 206-591-5374.

Sincerely,

A handwritten signature in cursive script, reading "Peter Katich". The signature is written in dark ink and is positioned above the printed name.

Peter Katich, Sr. Land Use Admin. Planner

pk96-028.doc
attach.

FILE: Building and Land Use Services Division

B. Development Regulations.

1. Aquaculture. The following regulations apply to all Shoreline Districts within which Aquaculture is allowed:

a. Only aquacultural enterprises for personal consumption, educational projects, or improvement of habitat shall be permitted. Over-water commercial facilities shall be prohibited.

b. Hatcheries, including commercial enterprises, shall be permitted at upland locations only, with net pens allowed as an accessory use on a seasonal basis as set forth in Section 13.10.175.B.1.g of this chapter.

c. Aquacultural enterprises shall be located in areas of high water quality where the navigational access of upland owners and commercial traffic is not restricted, and where the water body is capable of absorbing the wastes generated by the proposed aquaculture activities.

d. Aquacultural development shall have no significant adverse impact on the visual access of upland owners or on water quality, and the general aesthetic quality of the shoreline area shall be protected.

e. Aquaculture shall not eliminate or destroy naturally occurring areas of great biological productivity or modify existing or natural beaches or natural environments.

f. Aquaculture shall use only those species indigenous to the area.

g. Where net pens are used, they shall be temporary, seasonal structures.

h. The goals and intent of the 1988 Agreement between the Puyallup Tribe of Indians and various governmental agencies shall be considered when evaluating aquacultural enterprises.

2. Breakwaters. The following regulations governing breakwaters apply to all Shoreline Districts within which breakwaters are allowed:

a. The construction of breakwaters shall be permitted only in special cases where overall public benefit can be demonstrated.

b. Floating breakwaters shall be used in place of fixed types where they can withstand extensive wave action, in order to maintain sediment movement, fish habitat, and water circulation. Fixed breakwaters shall be allowed where design can maintain desired movement of sediment and circulation of water.

c. Breakwaters shall be permitted only for navigational purposes and marinas in "S-1" Shoreline District - Western Slope South and "S-5" Shoreline District - Point Defiance Conservation.

d. Breakwaters shall incorporate public access where appropriate.

3. Bulkheads.

a. The following regulations governing bulkheads apply to all Shoreline Districts within which bulkheads are allowed:

(1) The construction of bulkheads shall be permitted only when they provide protection to upland areas or facilities or for protection of approved landfills. Bulkheads shall not be permitted for the indirect purpose of creating land by filling behind the bulkhead.

(2) Bulkheads shall be constructed of concrete, wood, rock, riprap, or other suitable materials. The design and construction of such bulkheads shall, to the maximum extent feasible, preserve the natural characteristics of the shoreline, including beaches, and shall take into account habitat protection and aesthetics, including consideration of Washington Department of Fish and Wildlife criteria.

(3) Bulkheads shall be replaced not more than three feet seaward of the existing bulkhead.

(4) When a bulkhead is constructed or replaced on public lands and where a beach is present, physical access to the beach shall be provided.

(5) Bulkheads shall be constructed to minimize damage to fish and shellfish habitat, and shall conform to the requirements of the Washington Department of Fish and Wildlife Hydraulics Code.

(6) Repair and maintenance of bulkheads shall maintain the aesthetic integrity of the existing structure.

(7) In permitting bulkheads on public lands, factors to be considered shall include: possible damage to marine life, reduction of beach surface area, reduction in hours of beach accessibility on tidal waters, reduction of navigable water surface, and limitation of points of access to the beach.

b. The following regulations additionally apply to the specific Shoreline District indicated:

(1) "S-5" Shoreline District - Point Defiance Conservation: The construction of bulkheads shall be limited to repair or replacement of existing bulkheads, except that the existing rubble fill (as of January 15, 1974) at the northwesterly extent of the conservancy environment, may be bulkheaded.

(2) "S-6" Shoreline District - Ruston Way: Bulkheads shall additionally conform to the

standards set forth in the Ruston Way Plan and Ruston Way Design Booklet.

(3) "S-8" Shoreline District – Thea Foss Waterway: Bulkheads shall additionally conform to the standards set forth in the *Thea Foss Waterway Design and Development Plan*.

Commercial.

a. The following regulations apply to all Shoreline Districts within which commercial uses are allowed:

(1) In construction of commercial uses, it is the intent of the City to require that such uses, either through the nature of their use or through provisions for public access, substantially increase the opportunity for public use, access, and enjoyment of the City's shoreline. An applicant for a commercial use shall demonstrate the following:

(a) That the proposed development will be designed and oriented to take advantage of the waterfront siting and the water view.

(b) That the proposed development will be designed to maximize public view and public access to and along the shoreline as provided in Section 13.10.175 of this chapter.

(c) That the proposed development will be designed to be compatible with existing and/or proposed uses and plans for adjacent properties.

(d) That landscaping for proposed developments will receive special consideration to screen unsightly aspects of their operation from the public view but to minimize blockage of the existing scenic view.

(e) That the proposed development will be designed to be compatible with the character of the Shoreline District in which it is located.

(f) That the proposed development will be designed to have a minimum adverse impact on the natural environment of the site.

(2) In order to determine the appropriateness of a proposal to locate a commercial use on the shorelines of the City and to evaluate its consistency with the Shoreline Management Act of 1971 (Chapter 90.58 RCW) and the Tacoma Master Program for Shoreline Development, the Land Use Administrator or Hearing Examiner shall consider the following:

(a) The general accessibility and availability of the facility to the public.

(b) The extent to which the location of the facility attracts people to the shorelines and provides access to the shorelines. For example, uses such as restaurants, boutiques, and shops, especially those intended and designed to attract

tourist trade, tend to attract the public to the shorelines.

(c) The degree or orientation of the use to the shorelines and waters of the City. For example, marine supply stores, small boat sales and other retail uses serving the boating public may be facilitated by their location and orientation to the shorelines and the water.

(d) The extent to which public access is provided to the shorelines as set forth in Section 13.10.175 of this chapter. Since the Tacoma Master Program for Shoreline Development only permits commercial uses which will provide for substantial numbers of people to enjoy the shorelines of the State, significant public access elements must be incorporated into a proposal for such use.

(3) In issuing a Substantial Development Permit or Substantial Development/Conditional Use Permit for a commercial use, the Land Use Administrator or Hearing Examiner shall require, as an element of the project and/or as a condition to the permit, provisions for substantial public access to the shoreline. Such access shall be in accordance with the public access criteria set forth in Section 13.10.175.A of this chapter.

b. The following regulations additionally apply to the specific Shoreline District indicated:

(1) "S-5" Shoreline District – Point Defiance Conservation:

(a) Commercial development shall be limited to upland locations only, except at the present Pavilion Boathouse complex, where water-oriented commercial development is permitted over water.

(b) Commercial development shall be limited to businesses providing recreational equipment or services or food services.

(2) "S-6" Shoreline District – Ruston Way: Hotel/motel/boatel development shall be prohibited except landward beyond a line located 150 feet from the OHWM northwesterly 2,155 feet only.

(3) "S-8" Shoreline District – Thea Foss Waterway:

(a) Artisan/craftsperson uses must demonstrate that adequate site design, operating methods, and construction techniques are used to ensure that the use is compatible with surrounding uses and protection of public safety. Furthermore, the use must conform with other code components as specified for water-employment uses. Uses may be permitted to occur outdoors; provided, that shoreline permits involving outdoor activities

b. Construction of jetties and groins shall not create significant interference with the public use of the water surface.

c. The effect on sediment movement shall be a primary consideration in the evaluation of proposed jetties or groins. Provision shall be made to minimize potential adverse effects on natural systems caused by jetties or groins, and costs of mitigating damages which do occur shall be borne by the person who develops the jetty or groin.

d. Consideration shall be given to the effect which jetties and groins will have on wildlife propagation and movement, particularly with reference to the out migration of juvenile salmonidae from the Puyallup and Nylebos River systems and to a design of these structures which will not detract from the aesthetic quality of the shoreline.

e. Public access for sightseeing and public fishing shall be considered in jetty and groin design wherever such access would not interfere with the public safety.

10. Landfill.

a. The following regulations apply to all Shoreline Districts within which landfill is permitted:

(1) Landfills below the OHWM shall be permitted for water-dependent uses (including habitat improvement and environmental remediation) only.

(2) Landfills shall be considered only where such construction can be integrated with the existing shoreline.

(3) Landfills shall not be authorized unless a specific use for the site has been evaluated and permitted; speculative landfills shall be prohibited in all Shoreline Districts.

(4) Applications for landfills shall address methods which will be used to minimize damage of the following types:

(a) Biota:

(i) Reduction of habitat.

(ii) Reduction of feeding areas for shellfish, fishlife, and wildlife.

(iii) Reduction of shellfish fishlife, and wildlife reproduction areas.

(iv) Reduction of fish migration areas.

(b) Current:

(i) Alteration of local current.

(ii) Wave damage.

(iii) Alteration of water surface.

reduction.

(iv) Navigation restriction.

(v) Impediment to water flow.

ity.

(vi) Reduction of water quality.

(vii) Loss of public access.

(viii) Elimination of accretional beaches.

(ix) Erosion.

(x) Aesthetics.

(5) All perimeters of fills shall use vegetation, retaining walls, or other means for erosion control.

(6) Shoreline areas shall not be used for any form of sanitary landfill or for any disposal of solid waste; however, this would not preclude the disposal of hazardous substances or other materials generated, treated, or disposed of in conjunction with an environmental cleanup in accordance with State and Federal regulations.

(7) Only material which will not cause violation of State Water Quality Standards may be used in permitted landfill projects.

(8) Dust control measures, including plants and vegetation where feasible, shall be taken in all landfill projects.

(9) Beach materials shall not be used for fill behind bulkheads, other than clean dredge materials from a permitted dredge and fill operation and materials excavated during construction of the bulkheads.

b. The following regulations additionally apply to the specific Shoreline District indicated:

(1) "S-9" Shoreline District - Puyallup River: Landfill shall only be permitted landward of the Puyallup River dike, except for environmental remediation and habitat improvement projects.

(2) "S-10" Shoreline District - Port Industrial: Landfill is prohibited within the Puyallup River, except for environmental remediation and habitat improvement projects.

11. Log Storage and Rafting.

a. The following regulations apply to Shoreline Districts in which log rafting is permitted:

(1) Water storage of logs shall be limited to locations and periods of time required for cargo handling purposes.

(2) Restrictions shall be considered in public waters where log storage and handling are prohibited for other beneficial water uses.

(3) Easy let-down devices shall be used for placing unpeeled logs into the water, and the tree-fall, dumping of logs into water shall be prohibited.



OFF-SITE IMPROVEMENT REQUIREMENTS AND GRADING, EXCAVATION AND CLEARING

EXCERPTS FROM ORDINANCE 25825 DATED JANUARY 23, 1996

2.02.120 AMENDMENT BY ADDITION OF A NEW UBC SECTION 111 — OFF-SITE IMPROVEMENTS.

Sec. 111. Off-Site Improvements. All new construction and all alterations or additions to buildings with a cost greater than 50 percent of evaluation of the existing building shall comply with the following regulations. The evaluation of the existing building shall be determined from the latest available Building Evaluation Table as published by the International Conference of Building Officials in its Building Standards Magazine. The evaluation table will be applied to the floor area of the existing building for the existing occupancy as if it were new construction.

111.1. Access to all new buildings, and all newly established access to existing buildings within the City of Tacoma, shall be so graded that the finished driveway grade does not exceed a 15 percent slope, unless a design is approved by the City Engineer. Changes of driveway grade shall be gradual, such that no vehicle clearances are reduced to a point where the vehicle comes in contact with the surface of the driveway. Vehicles in this case shall mean commercially-produced unmodified vehicles which might normally use the driveway, including emergency vehicles where applicable. Grades shall be established using the property side of the sidewalk.

111.2. All buildings other than Group R, Division 3, occupancies, shall install street improvements to minimum Public Works Department Standards for the location, including, but not limited to, street paving, concrete curbs and gutters, storm drainage, utility relocation, and sidewalks on all frontages facing on dedicated street rights-of-way.

111.3. Construction of Group R, Division 3, occupancies shall require the development of cement concrete curb and gutter, paving, and drainage of all dedicated streets along the property frontages, except, in cases where the topography or other conditions make it impractical, the Building Official may modify this residential street regulation. Such development of cement concrete curb and gutter, paving, and drainage shall be to minimum Public Works Department Standards for the location, but, in no case shall the paving be less than 28 feet wide or consist of less than three inches of asphaltic concrete over an approved base. Drainage shall meet minimum Public Works Department Standards. The same criteria used for determining the placement of sidewalks for

Group R, Division 3, Occupancies, set forth in Section 111.4, shall be used, in part, to determine placement of cement concrete curb and gutter and associated paving.

Sec. 111.4. All Group R, Division 3, Occupancies shall install City of Tacoma approved standard sidewalks when:

111.4.1. Sidewalks exist on the site, or sites, adjacent to the site to be built on, or

111.4.2. Sidewalks exist on the majority of the developed sites in the area, or

111.4.3. There is sufficient undeveloped property in the area that, when added to properties already containing sidewalks, it will comprise a majority of the street frontages in the area, or

111.4.4. The development involves more than one site and warrants sidewalks as part of the overall development, or

111.4.5. The site has a total street frontage of 150 feet or greater.

111.5. All new construction shall provide for surface and subsurface drainage to the satisfaction of the Building Official. Satisfactory surface drainage shall include, but not be limited to:

111.5.1. Running all roof and area drainage to the street gutter or storm sewer. Connection to the City storm sewer shall be at a storm sewer structure, unless otherwise approved by the Building Official.

111.5.2. Running all roof and area drainage to an approved engineered infiltration system. Infiltration systems are only allowed when City storm sewers are not available. Infiltration systems shall be designed per City standards.

111.5.3. Running all roof and area drainage to an existing acceptable drainage course. The City of Tacoma requires prior approval to direct roof drains to drainage courses

Sec. 111.6. The City Engineer or designated representative may waive or modify the above requirements where it is determined to be not practical or in the best interests of the City of Tacoma

2.02.420 AMENDMENT TO APPENDIX CHAPTER 33--EXCAVATION AND GRADING.

Sec. 3304--PURPOSE.

The purpose of this appendix is to safeguard life, limb, property, and the public welfare by regulating grading and/or clearing on private property.

Sec. 3305--SCOPE.

This appendix sets forth rules and regulations to control land clearing, excavation, grading, and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading and/or clearing construction.

The standards listed below are guideline standards and, as such, are not adopted as part of this code (see Sections 3502 and 3503).

1. Testing

- A. ASTM D 1557, Moisture-density Relations of Soils and Soil Aggregate Mixtures
- B. ASTM D 1556, In-Place Density of Soils by the Sand-Cone Method
- C. ASTM D 2167, In-Place Density of Soils by the Rubber-Balloon Method
- D. ASTM D 2937, In-Place Density of Soils by the Drive-Cylinder Method
- E. ASTM D 2922 and D 3017, In-Place Moisture Content and Density of Soils by Nuclear Methods

Sec. 3306--PERMITS REQUIRED.

Sec. 3306.1 Permits Required. Except as specified in subsection 3306.3, no person shall do any grading or clearing in the City of Tacoma without first having obtained a grading and/or clearing permit from the Building Official.

Sec. 3306.2 Grading, Excavation, Filling, and Clearing Prohibited. No permits to perform grading, excavation, filling or clearing during the period from October 1st through March 31st shall be issued.

EXCEPTION: The Building Official may approve a grading, excavation, filling, and or clearing plan, prepared by a licensed civil or geotechnical engineer, which specifically addresses the winter rain season and the associated erosion problems, and issue a permit based on such plan.

Sec. 3306.3 Exempted Work. A grading and/or clearing permit is not required for the following unless such work is in a Critical Area governed by Chapter 13.11 of the Tacoma Municipal Code:

1. Clearing only, of any parcel of land one acre or less in area.
2. When approved by the Building Official, grading and clearing in an isolated, self-contained area, if there is no danger to private or public property
3. 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 such excavation, or exempt any excavation having an unsupported height greater than five feet after the completion of such structure.
4. Cemetery graves.
5. Refuse disposal sites controlled by other regulations.
6. Excavation for wells, tunnels, or utilities.
7. Mining, quarrying, excavating, processing, stockpiling of rock, sand, gravel, aggregate, or clay where established and provided for by law, provided such operations do not affect the lateral support or increase the stresses in or pressure upon any adjacent or contiguous property.
8. Exploratory excavations under the direction of soil engineers or engineering geologists.
9. An excavation which (1) is less than two feet in depth, or (2) does not create a cut slope greater than five feet in height and steeper than 1-1/2 horizontal to 1 vertical.
10. A fill less than one foot in depth and placed on natural terrain with a slope flatter than five horizontal to one vertical, or less than three feet in depth, not intended to support structures, which does not exceed 50 cubic yards on any one lot and does not obstruct a drainage course.
11. Land clearing associated with routine maintenance by utility agencies or companies. Utility agencies or companies shall follow appropriate vegetation management practices.
12. Land clearing associated with all work related to the installation and maintenance of City of Tacoma projects performed by the City or its contractors

13. Land clearing within ten feet of the perimeter of buildings, or land clearing for the installation of driveways, utilities or septic systems, provided the total cleared area does not exceed one acre in area.
14. Removal of dead or diseased trees.
15. Removal of trees or other vegetation which cause sight distance obstructions at intersections so determined by the City of Tacoma Traffic Engineer.
16. Removal of vegetative ground cover for the purposes of general property and utility maintenance, landscaping, or gardening, provided the total cleared area does not exceed one acre in area.

Exemption 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 the City of Tacoma.

SEC. 3307--HAZARDS.

Whenever the Building Official determines that any existing excavation or embankment or fill on private property has become a hazard to life and limb, endangers property, or adversely affects the safety, use, or stability of a public way or drainage channel, the owner of the property upon which the excavation or fill is located, or other person or agent in control of said property, upon receipt of notice in writing from the Building Official, shall, within the period specified therein, repair or eliminate such excavation or embankment so as to eliminate the hazard and be in conformance with the requirements of this code.

SEC. 3308--DEFINITIONS.

For the purposes of this appendix, the definitions listed herein shall be construed as specified in this section.

APPROVAL shall mean the proposed work or completed work conforms to this chapter in the opinion of the Building Official.

AS-GRADED is the extent of surface conditions on completion of grading.

BEDROCK is in-place solid rock.

BENCH is a relatively level step excavated into earth material on which fill is to be placed.

BORROW is earth material acquired from an off-site location for use in grading on a site.

CIVIL ENGINEER is a professional engineer registered in the State of Washington to practice in the field of civil works.

CIVIL ENGINEERING is the application of the knowledge of the forces of nature, principles of mechanics, and the properties of materials to the evaluation design and construction of civil works.

CLEARING means the destruction or removal of logs, scrub-shrubs, stumps, trees or any vegetative material by burning, chemical, mechanical or other means. Clearing does not include normal property maintenance, such as tree and shrubbery trimming, lawn mowing, and removal of noxious or nuisance vegetation.

COMPACTION is the densification of a fill by mechanical means.

CRITICAL AREAS – see definition in Chapter 13.11 of the Tacoma Municipal Code.

EARTH MATERIAL is any rock, natural soil, or fill, or any combination thereof.

ENGINEERING GEOLOGIST is a geologist experienced and knowledgeable in engineering geology.

ENGINEERING GEOLOGY is the application of geologic knowledge and principles in the investigation and evaluation of naturally occurring rock and soil for use in the design of civil works.

EROSION is the wearing away of the ground surface as a result of the movement of wind, water, or ice.

EXCAVATION is the mechanical removal of earth material.

FILL is a deposit of earth material placed by artificial means.

GEOLOGICALLY HAZARDOUS AREA means an area that is susceptible to erosion, sliding, severe risk of earthquake damage, or other geological events.

GEOTECHNICAL ENGINEER -- see "soils engineer."

GRADE is the vertical location of the ground surface.

Existing grade is the grade prior to grading.

Rough grade is the stage at which the grade approximately conforms to the approved plan.

Finish grade is the final grade of the site which conforms to the approved plan.

GRADING is any excavating or filling or combination thereof.

KEY is a designed compacted fill placed in a trench excavated in earth material beneath the toe of a proposed fill slope.

PROFESSIONAL INSPECTION is the inspection required by this code to be performed by a civil engineer, soils engineer, or engineering geologist. Such inspections include that performed by persons supervised by such engineers or geologists and sufficient to form an opinion relating to the conduct of the work.

SITE is any lot or parcel of land, or contiguous combination thereof, under the same ownership, where grading is performed or permitted.

SLASH is organic waste material created during clearing.

SLOPE is an inclined ground surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

SOIL is naturally-occurring superficial deposits overlying bedrock.

SOILS ENGINEER (GEOTECHNICAL ENGINEER) is an engineer experienced and knowledgeable in the practice of soils engineering (geotechnical engineering).

SOILS ENGINEERING (GEOTECHNICAL ENGINEERING) is the application of the principles of soil mechanics in the investigation, evaluation, and design of civil works involving the use of earth materials and the inspection or testing of the construction thereof.

TERRACE is a relatively level step constructed in the face of a graded slope surface for drainage and maintenance purposes.

Sec. 3309--GRADING AND/OR CLEARING PERMIT REQUIREMENTS.

Sec. 3309.1 Permits Required. Except as exempted in Section 3306 hereof, no person shall do any grading and/or clearing without first obtaining a grading and/or clearing permit from the Building Official. A separate permit shall be obtained for each site, and may cover excavations, fills, grading and clearing.

Sec. 3309.2 Application. The provisions of Section 106.3.1 are applicable to grading and/or clearing, and, in addition, the application shall state the estimated quantities of work involved.

Sec. 3309.3 Grading Designation. Grading in excess of 5,000 cubic yards shall be performed in accordance with an approved grading plan prepared by a civil engineer, and shall be designated as "engineered grading." Grading involving less than 5,000 cubic yards shall be designated "regular grading" unless the permittee chooses to have the grading performed as engineered grading, or the Building Official determines that special conditions or unusual hazards exist, in which case grading shall conform to the requirements for engineered grading.

Sec. 3309.4 Engineered Grading Requirements. Application for a grading permit shall be accompanied by two sets of plans and specifications and supporting data consisting of a soils engineering report and engineering geology report. When required by the Building Official, the plans and specifications shall be prepared and signed by an individual licensed by the State of Washington to prepare such plans or specifications.

Specifications shall contain information covering construction and material requirements.

Plans shall be drawn to scale upon substantial paper or cloth, shall be of sufficient clarity to indicate the nature and extent of the work proposed, and shall show in detail that the work will conform to the provisions of this code and all relevant laws, ordinances, rules, and regulations. The first sheet of each set of plans shall give the location of the work and the names, addresses and telephone numbers of the owner and the person by whom the plans were prepared.

The plans shall include the following information:

- 1 General vicinity of the proposed site.
2. Property limits and accurate contours of existing ground and details of terrain and area drainage.
3. Limiting dimensions, elevations, or finish contours to be achieved by the grading, and proposed drainage channels and related construction.
- 4 Detailed plans of all surface and subsurface drainage devices, walls, cribbing, dams, and other protective devices to be constructed with, or as a part of, the proposed work, together with a map showing the drainage area and the estimated runoff of the area served by any drains.
5. Location of any buildings or structures on the property where the work is to be performed, and the location of any buildings or structures on land of adjacent owners which are within 15 feet of the property or which may be affected by the proposed grading operations.
6. Recommendations included in the soils engineering report and the engineering geology report shall be incorporated in the grading plans.
7. The dates of the soils engineering and engineering geology reports, together with the names, addresses, and phone numbers of the firms or individuals who prepared the reports.
8. Special conditions relative to site clearing showing conformance to the requirements set forth in section 3319
- 9 A construction sequence.
- 10 An erosion and dust mitigation plan during construction and while the work area is bare.

Sec. 3309.5 Soils Engineering Report. The soils engineering report required by Section 3309.4 (d) shall include data regarding the nature, distribution, and strength of existing soils, conclusions and recommendations for grading procedures, and design criteria for corrective measures, including buttress fills, when necessary, and opinion on adequacy for the intended use of sites to be developed by the proposed grading as affected by soils engineering factors, including the stability of slopes.

Sec. 3309.6 Engineering Geology Report. The engineering geology report required by Section 3309(d) shall include an adequate description of the geology of the site, conclusions and

recommendations regarding the effect of geologic conditions on the proposed development, and opinion on the adequacy for the intended use of sites to be developed by the proposed grading, as affected by geologic factors.

Sec. 3309.7 Liquefaction Study. The Building Official may require a geotechnical investigation in accordance with Sections 1804.2 and 1804.5 when, during the course of an investigation, all of the following conditions are discovered. The report shall address the potential for liquefaction:

1. Shallow ground water, 50 feet (15,240 mm) or less.
2. Unconsolidated sandy alluvium.
3. Seismic Zones 3 and 4.

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

1. General vicinity of the proposed site.
2. Limiting dimensions and depth of cut and fill.
3. Location of any buildings or structures where work is to be performed, and the location of any buildings or structures within 15 feet of the proposed grading.
4. Special conditions relative to site clearing showing conformance to the requirements set forth in section 3319.
5. A construction sequence.
6. An erosion and dust mitigation plan during construction and while the work area is bare.

Sec. 3309.9 Clearing Permit Requirements. Each application for clearing a site where no excavation, filling, or grading is to be done shall be accompanied by two sets of plans in sufficient clarity to indicate the nature and extent of the work. The plans shall contain the location of the work, the name of the owner, and the name of the person who prepared the plan, and shall also include the following information:

1. General vicinity of the proposed site.

2. Limiting dimensions of the proposed clearing.
3. Location of any existing improvements or structures where work is to be performed, and the location of any existing improvements or structures within 15 feet of the proposed clearing.
4. Special conditions relative to the site clearing showing conformance to the requirements set forth in Section 3319
5. A construction sequence.
6. An erosion and dust mitigation plan during the clearing process and while the site is bare.

Sec. 3309.10 Issuance. The provisions of Section 106.4 are applicable to grading and/or clearing permits. The Building Official may require that grading operations and project designs be modified if delays occur which incur weather-generated problems not considered at the time the permit was issued.

The Building Official may require professional inspection and testing by a soils engineer. When the Building Official has cause to believe that geologic factors may be involved, the grading will be required to conform to engineered grading.

SEC. 3310--GRADING FEES.

Grading plan review and grading plan review fees are set forth in Chapter 2.09 of the Tacoma Municipal Code.

SEC. 3311--BONDS.

The Building Official may require bonds in such form and amounts as may be deemed necessary to assure that the work, if not completed in accordance with the approved plans and specifications, will be corrected to eliminate hazardous conditions.

In lieu of a surety bond, the applicant may file a cash bond or instrument of credit with the Building Official in an amount equal to that which would be required in the surety bond.

SEC. 3312--CUTS.

Sec 3312.1 General. Unless otherwise recommended in the approved soils engineering or engineering geology report, cuts shall conform to the provisions of this section.

In the absence of an approved soils engineering report, these provisions may be waived for minor cuts not intended to support structures.

Sec. 3312.2 Slope. The slope of cut surfaces shall be no steeper than is safe for the intended use, and shall be no steeper than two horizontal to one vertical unless the permittee furnishes a soils engineering or an engineering geology report, or both, stating that the site has been investigated, and giving an opinion that a cut at a steeper slope will be stable and not create a hazard to public or private property.

SEC. 3313--FILLS.

Sec. 3313.1 General. Unless otherwise recommended in the approved soils engineering report, fills shall conform to the provisions of this section.

In the absence of an approved soils engineering report, these provisions may be waived for minor fills not intended to support structures.

Sec. 3313.2 Preparation of Ground. Fill slopes shall not be constructed on natural slopes steeper than two horizontal to one vertical. The ground surface shall be prepared to receive fill by removing vegetation, noncomplying fill, topsoil, and other unsuitable materials, scarifying to provide a bond with the new fill, and, where slopes are steeper than five horizontal to one vertical and the height is greater than five feet, by benching into sound bedrock or other competent material as determined by the soils engineer. The bench under the toe of a fill on a slope steeper than five horizontal to one vertical shall be at least ten feet wide. The area beyond the toe of fill shall be sloped for sheet overflow, or a paved drain shall be provided. When fill is to be placed over a cut, the bench under the toe of fill shall be at least ten feet wide, but the cut shall be made before placing the fill and acceptance by the soils engineer or engineering geologist, or both, as suitable foundation for fill.

Sec. 3313.3 Fill Material. Detrimental amounts of organic material shall not be permitted in fills. Except as permitted by the Building Official, no rock or similar irreducible material with a maximum dimension greater than 12 inches shall be buried or placed in fills.

EXCEPTION: The Building Official may permit placement of larger rock when the soils engineer properly devises a method of placement, continuously inspects its placement, and approves the fill stability. The following conditions shall also apply:

- A. Prior to issuance of the grading permit, potential rock disposal areas shall be delineated on the grading plan.
- B. Rocks greater than 12 inches in maximum dimension shall be 10 feet or more below grade, measured vertically.

C. Rocks shall be placed so as to assure filling of all voids with well-graded soil.

Sec. 3313.4 Compaction. All fills shall be compacted to a minimum of 90 percent of maximum density.

Sec. 3313.5 Slope. The slope of fills shall be no steeper than is safe for the intended use. Fill slopes shall be no steeper than two horizontal to one vertical.

SEC. 3314--SETBACKS.

Sec. 3314.1 General. Cut and fill slopes shall be set back from site boundaries in accordance with this section. Setback dimensions shall be horizontal distances measured perpendicular to the site boundary. Setback dimensions shall be as shown in Figure No. A-33-1.

Sec. 3314.2 Top of Cut Slope. The top of cut slopes shall not be made nearer to a site boundary line than one-fifth of the vertical height of cut with a minimum of two feet and a maximum of ten feet. The setback may need to be increased for any required interceptor drains.

Sec. 3314.3 Toe of Fill Slope. The toe of fill slope shall be made not nearer to a site boundary line than one-half the height of the slope, with a minimum of two feet and a maximum of 20 feet. Where a fill slope is to be located near the site boundary and the adjacent off-site property is developed, special precautions shall be incorporated into the work as the Building Official deems necessary to protect the adjoining property from damage as a result of such grading. These precautions may include, but are not limited to:

1. Additional setbacks.
2. Provisions for retaining or slough walls.
3. Mechanical or chemical treatment of the fill slope surface to minimize erosion.
4. Provisions for the control of surface waters.

Sec. 3314.4 Modifications of Slope Location. The Building Official may approve alternate setbacks. The Building Official may require an investigation and recommendation by a qualified engineer or engineering geologist to demonstrate that the intent of this section has been satisfied.

SEC. 3315--DRAINAGE AND TERRACING.

Sec. 3315.1 General. Unless otherwise indicated on the approved grading plan, drainage facilities and terracing shall conform to the provisions of this section for cut or fill slopes steeper than three horizontal to one vertical.

Sec. 3315.2 Terrace. Terraces at least six feet in width shall be established at not more than 30-foot vertical intervals on all cut or fill slopes to control surface drainage and debris, except that where only one terrace is required, it shall be at mid-height. For cut or fill slopes greater than 60 feet and up to 120 feet in vertical height, one terrace at approximately mid-height shall be 12 feet in width. Terrace widths and spacing for cut and fill slopes greater than 120 feet in height shall be designed by a civil engineer and approved by the Building Official. Suitable access shall be provided to permit proper cleaning and maintenance.

Swales or ditches on terraces shall have a minimum gradient of five percent and must be paved with reinforced concrete not less than three inches in thickness, or an approved equal paving. They shall have a minimum depth at the deepest point of one foot and a minimum paved width of five feet.

A single run of swale or ditch shall not collect runoff from a tributary area exceeding 13,500 square feet (projected) without discharging into a down drain.

Sec. 3315.3 Subsurface Drainage. Cut and fill slopes shall be provided with subsurface drainage as necessary for stability.

Sec. 3315.4 Disposal. All drainage facilities shall be designed to carry waters to the nearest practicable drainage-way approved by the Building Official or other appropriate jurisdiction as a safe place to deposit such waters. Erosion of ground in the area of discharge shall be prevented by installation of non-erosive down drains or other devices.

Building pads shall have a drainage gradient of two percent toward approved drainage facilities, unless waived by the Building Official.

EXCEPTION: The gradient from the building pad may be one percent if all of the following conditions exist throughout the permit area:

- A. No proposed fills are greater than ten feet in maximum depth
- B. No proposed finish cut or fill slope faces have a vertical height in excess of ten feet
- C. No existing slope faces have a slope face steeper than ten horizontal to one vertical or have a vertical height in excess of ten feet.

Sec. 3315.5 Interceptor Drains. Paved interceptor drains shall be installed along the top of all cut slopes where the tributary drainage area above slopes toward the cut and has a drainage path greater than 40 feet measured horizontally. Interceptor drains shall be paved with a minimum of three inches of concrete or gunite and reinforced. They shall have a minimum depth of 12 inches and a minimum paved width of 30 inches measured horizontally across the drain. The slope of drain shall be approved by the Building Official.

SEC. 3316--EROSION CONTROL.

Sec. 3316.1 Slopes. The faces of cleared, cut, or filled slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.

Sec. 3316.2 Other Devices. Where necessary, check dams, cribbing, riprap, or other devices or methods shall be employed to control erosion and provide safety.

SEC. 3317--GRADING INSPECTION.

Sec. 3317.1 General. Grading operations for which a permit is required shall be subject to inspection by the Building Official. Professional inspection of grading operations shall be provided by a civil engineer, soils engineer and engineering geologist retained to provide such services in accordance with Section 3317.5 for engineered grading and as required by the Building Official for regular grading.

Sec. 3317.2 Civil Engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade, and surface drainage of the development area. If revised plans are required during the course of the work, they shall be prepared by the civil engineer.

Sec. 3317.3 Soils Engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the Building Official, and the civil engineer.

Sec. 3317.4 Engineering Geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.

Sec. 3317.5 Special Inspector. The special inspector shall be subject to the requirements and qualifications set forth in Chapter 17 of the Uniform Building Code as adopted by this chapter. The special inspector shall report to the Building Official and shall be responsible for assuring

that the clearing, excavation, and/or grading are done in accordance with the approved plans and that the construction sequence is followed. It shall also be the responsibility of the special inspector to assure that any required compaction tests are called for and performed, and that the level of compaction called for in the specifications has been met.

Sec. 3317.6 Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this code, and the permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor, and the Building Official. In the event of changed conditions, the permittee shall be responsible for informing the Building Official of such change and shall provide revised plans for approval.

Sec. 3317.7 Building Official. The Building Official shall inspect the project at the various stages of work requiring approval to determine that adequate control is being exercised by the professional consultants.

Sec. 3317.8 Notification of Noncompliance. If, in the course of fulfilling their respective duties under this chapter, the civil engineer, the soils engineer, or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately, in writing, to the permittee and to the Building Official.

Sec. 3317.9 Transfer of Responsibility. If the civil engineer, the soils engineer, or the engineer geologist of record is replaced during grading, the work shall be stopped until the replacement has agreed in writing to accept his/her responsibility within the area of technical competence for approval upon completion of the work. It shall be the duty of the permittee to notify the Building Official in writing of such change prior to the recommencement of such grading.

Sec. 3318--COMPLETION OF WORK.

Sec. 3318.1 Final Reports. Upon completion of the rough grading work and at the final completion of the work, the following reports, drawings, and supplements thereto are required for engineered grading or when professional inspection is performed for regular grading, as applicable.

1. An as-built grading plan prepared by the civil engineer retained to provide such services in accordance with Section 3317.5 showing original ground surface elevations, as-graded ground surface elevations, lot drainage patterns, and the locations and elevations of surface drainage facilities and the outlets of subsurface drains. As-constructed locations, elevations, and details of subsurface drains shall be shown as reported by the soils engineer.

Civil engineers shall state that, to the best of their knowledge, the work within their area of responsibility was done in accordance with the final approved grading plan.

2. A report prepared by the soils engineer retained to provide such services in accordance with Section 3317.3, including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during grading and their effect on the recommendations made in the approved soils engineering investigation report. Soils engineers shall submit a statement that, to the best of their knowledge, the work within their area of responsibility is in accordance with the approved soils engineering report and applicable provisions of this chapter.

3. A report prepared by the engineering geologist retained to provide such services in accordance with Section 3317.5, including a final description of the geology of the site, any new information disclosed during the grading, and the effect of same on recommendations incorporated into the approved grading plan. Engineering geologists shall submit a statement that, to the best of their knowledge, the work within their area of responsibility is in accordance with the approved engineering geologist's report and applicable provisions of this chapter.

4. The grading contractor shall submit, in form prescribed by the Building Official, a statement of conformance to said as-built plan and the specifications.

Sec. 3318.2 Notification of Completion. The permittee shall notify the Building Official when the grading operation is ready for final inspection. Final approval shall not be given until all work, including installation of all drainage facilities and their protective devices, and all erosion-control measures have been completed in accordance with the final approved grading plan, and the required reports have been submitted.

SEC. 3319 STANDARDS FOR CLEARING.

All land clearing not exempt under section 3306.3 shall conform to the following standards and provisions unless otherwise recommended by an approved soil engineering, geology, hydrology or forest management plan approved by the Building Official where the alternate procedures will be equal or superior in achieving the purposes of this chapter:

1. No land clearing and/or ground surface level changes shall occur except as required for uses permitted for the area by the City of Tacoma's Land Use Regulatory codes. In addition, such clearing shall be subject to all other applicable standards and regulations.

2. Clearing or tree removal in designated greenbelt or buffer areas of approved and recorded subdivisions or approved projects which would substantially alter their character or purpose of said greenbelt or buffer areas is prohibited.

3. Clearing will meet the performance standards of WAC 222-30. Timber Harvesting. Erosion control measures will be provided by the applicant's professional engineer, in conformance with the "City of Tacoma Stormwater Management Manual." The erosion control measures will be reviewed and subject to approval of the Building Official. The requirements for a professional engineer may be waived by the Building Official on a case-by-case basis.
4. Clearing shall be accomplished in a manner that will not create, or contribute to, landslides, accelerated soil creep, settlement and subsistence on the subject property and/or adjoining properties.
5. The plans for clearing shall contain provisions for the preservation of natural land and water features, vegetation, drainage, and other indigenous features of the site.
6. Clearing shall be accomplished in a manner that will not create, or contribute to, flooding, erosion or increased turbidity, siltation or other forms of pollution in a watercourse.
7. Clearing in critical areas, as defined in this chapter, shall be done in accordance with the provisions set forth in Chapter 13.11 of the Tacoma Municipal Code.
8. Clearing shall be conducted so as to expose the smallest practical area of soil to erosion for the least possible time, consistent with the construction schedule. Provisions shall be made for interim erosion control measures.
9. Slash shall be disposed of from the cleared site, or chipped and applied to the site, within six months from the completion of the operation. Chipped material deposited on an interim basis shall be protected from becoming a fire hazard.
10. During the clearing process, and after the clearing is complete, measures shall be implemented to prevent air-borne dust.

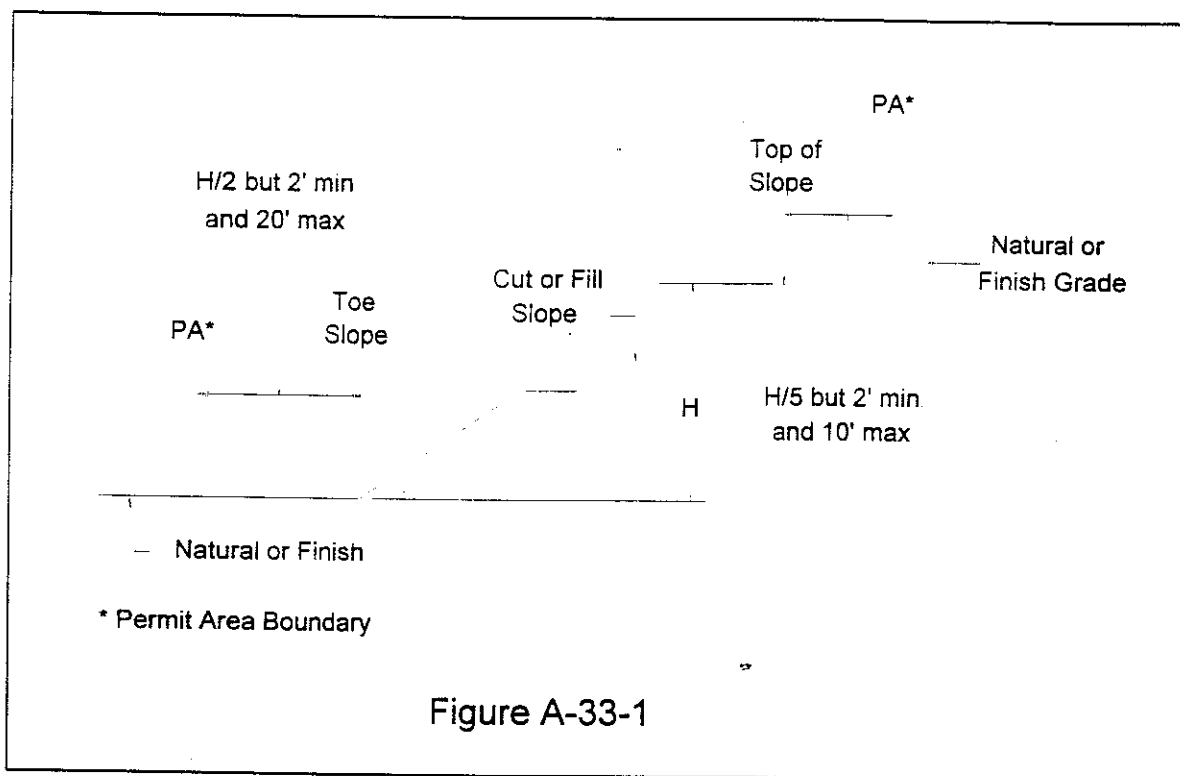


EXHIBIT C
PROJECT DRAWINGS