

**CARLYON BEACH HOMEOWNERS
ASSOCIATION**

BUILDER/CONSTRUCTION MANAGER

**SEPTIC & STORM WATER DRAINAGE
PACKET**

SEPTIC TANK INFORMATION
SPECIFICATIONS AND INSTALLATION
FOR CARLYON BEACH

Septic Requirements for Carlyon Beach:

All tanks shall consist of pre-cast concrete with 2 chambers (larger 67% of total capacity and smaller 33 % of total capacity) and shall have been designed by a structural engineer licensed to practice in the state of Washington.

Recommended and approved septic tank suppliers are: Evergreen Precast, Cascade NW or Sound Placement Services. If any other supplier or manufacturer will be used, all specs. need to be supplied to the CBHA Septic Inspector before installing. CBHA reserves the right to require more stringent tank requirements as better technology and construction become available.

Refer to CBHA Rules and Regulations and/or the Owner/Builder Checklist attached for testing requirements.

Following are Septic tank installation instructions and diagrams showing details for the tanks.

ONSITE WASTE WATER TANK INSTALLATION SPECIFICATION CARLYON BEACH SUBDIVISION

Installation of onsite waste water holding tanks shall be performed in accordance with the standards set forth by the Washington State Department of Health, Thurston County Environmental Health Department and the tank manufacturer.

In addition to the above, all onsite waste water tanks to be within the franchise area of the Carlyon Beach Homeowners Association waste water treatment facilities, shall meet the following requirements:

- Excavation for all tanks, inlets, and outlets shall be sufficient to leave one foot of clear space between the outer surfaces and the earth bank.
- Tank lid shall be set to project no more than two inches above the surrounding ground level and no more than two feet below the existing ground level.
- Tank lid shall be sealed with a mastic strip or suitable sealant in accordance with the manufacturer's recommendations.
- Tanks and inlet and outlet pipelines shall be constructed on sound undisturbed granular sub grade or gravel backfill for pipe bedding per the latest edition of the Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction (Standard Specifications).
- Tank excavation shall be dewatered prior to setting tank. In the event that groundwater inflow into the excavation is rapid and results in a buoyant condition, the tank shall be filled with water to overcome buoyancy.
- Tank excavation shall be maintained in a water-free condition throughout backfilling.
- Tank excavation shall be backfilled with native material, sand, or gravel fill. No rocks larger than two inches will be permitted in the backfill.
- Backfill shall be placed and compacted in 12-inch lifts around the tank exterior and beneath the tank inlet and outlet pipes to the top of the tank.
- Where tank lids extend above the natural ground level, soil shall be graded to be level with the top of the tank for at least 12 inches beyond the limits of the tank lid.
- All pipelines shall be installed in accordance with the lines and grades specified on the approved site development plan or at a minimum grade of 2%.
- All pipe connections shall be watertight and in conformance with the manufacturer's recommendations.
- All pipes passing through the pipe walls shall be sealed with Adeka P201 water sealant on both the inside and outside of the tank.
- Tank lids shall have no opening other than the tank maintenance accesses.
- Tank lid openings shall be fitted with the circular fiberglass risers specified by the tank manufacturer.
- Fiberglass risers shall be sealed to the fiberglass ring inset in the tank lid using the manufacturer's recommended adhesive.
- Exterior riser joint at the tank lid shall be surrounded with a fillet of FX-I-Jet Set to preclude surface water accumulation around the lid base.
- All tanks shall be tested for water tightness again after installation and backfilling by filling the tank up to a minimum of three inches above the top of the tank lid (including connected pipelines) and letting it stand for 24 hours (presoak). The tank shall then be tested in the presence of a CBHA-designated inspector. After presoak, the tank shall be refilled up to three inches above the tank lid and monitored for two hours. The tank shall show NO loss of water during the two-hour hold period. The tank exterior shall show no leakage from section seams, pinholes, or other imperfections. No allowance will be made for absorption of water into the concrete after the presoak period. Any water loss or leakage shall be considered cause for rejection.

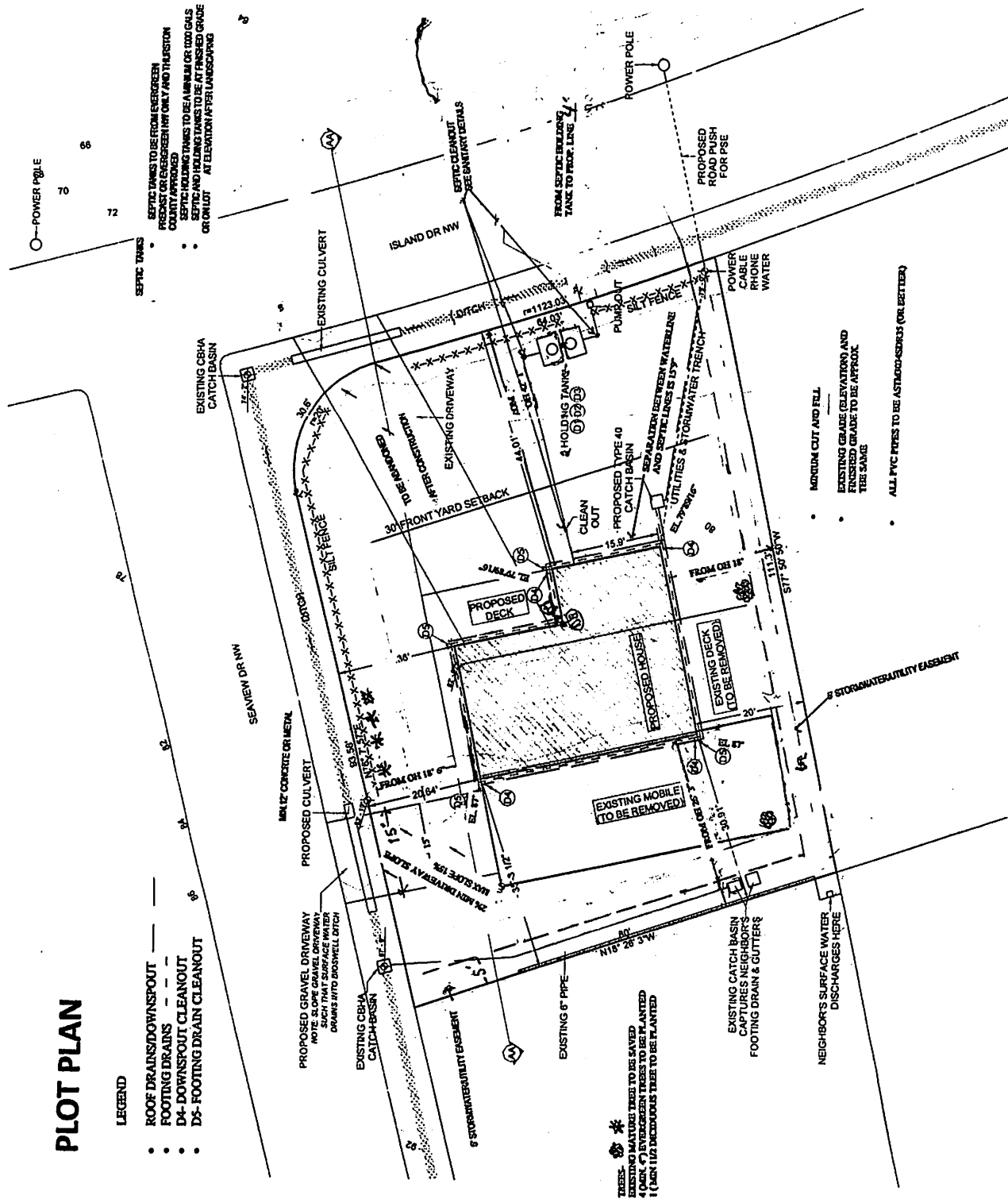
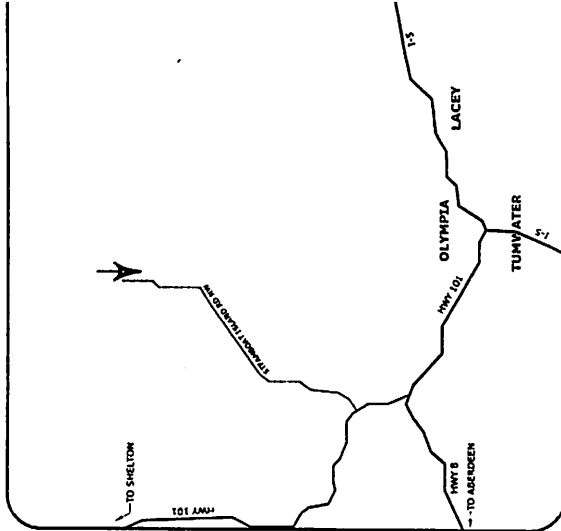
SAMPLE ONLY

- SEPTIC TANKS TO BE FROM EVERGREEN FOREST OR EVERGREEN HW ONLY AND THURSTON COUNTY APPROVED
- SEPTIC HOLDING TANKS TO BE A MINIMUM OF 100 GALS
- SEPTIC AND HOLDING TANKS TO BE AT FINISHED GRADE OR ON LOT AT ELEVATION AFTER LANDSCAPING

- ROOF DRAINS/DOWNSPOUT —
- FOOTING DRAINS — — —
- D4- DOWNSPOUT CLEANOUT
- D5- FOOTING DRAIN CLEANOUT

OWNER	PARCEL#	ADDRESS	LEGAL
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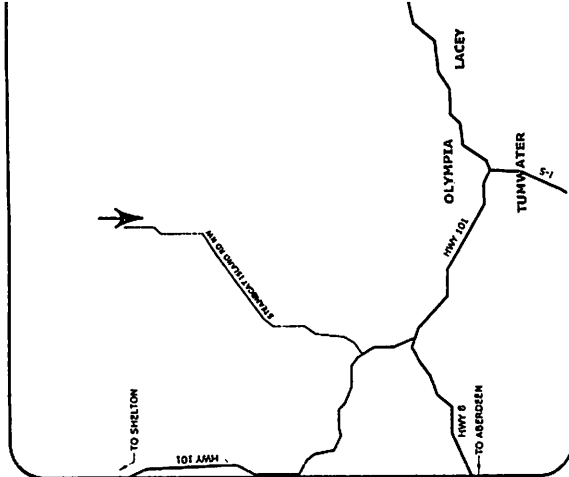
VICINITY MAP



SAMPLE ONLY

OWNER
PARCEL#
ADDRESS
LEGAL

VICINITY MAP



○ POWER POLE

70 68 72

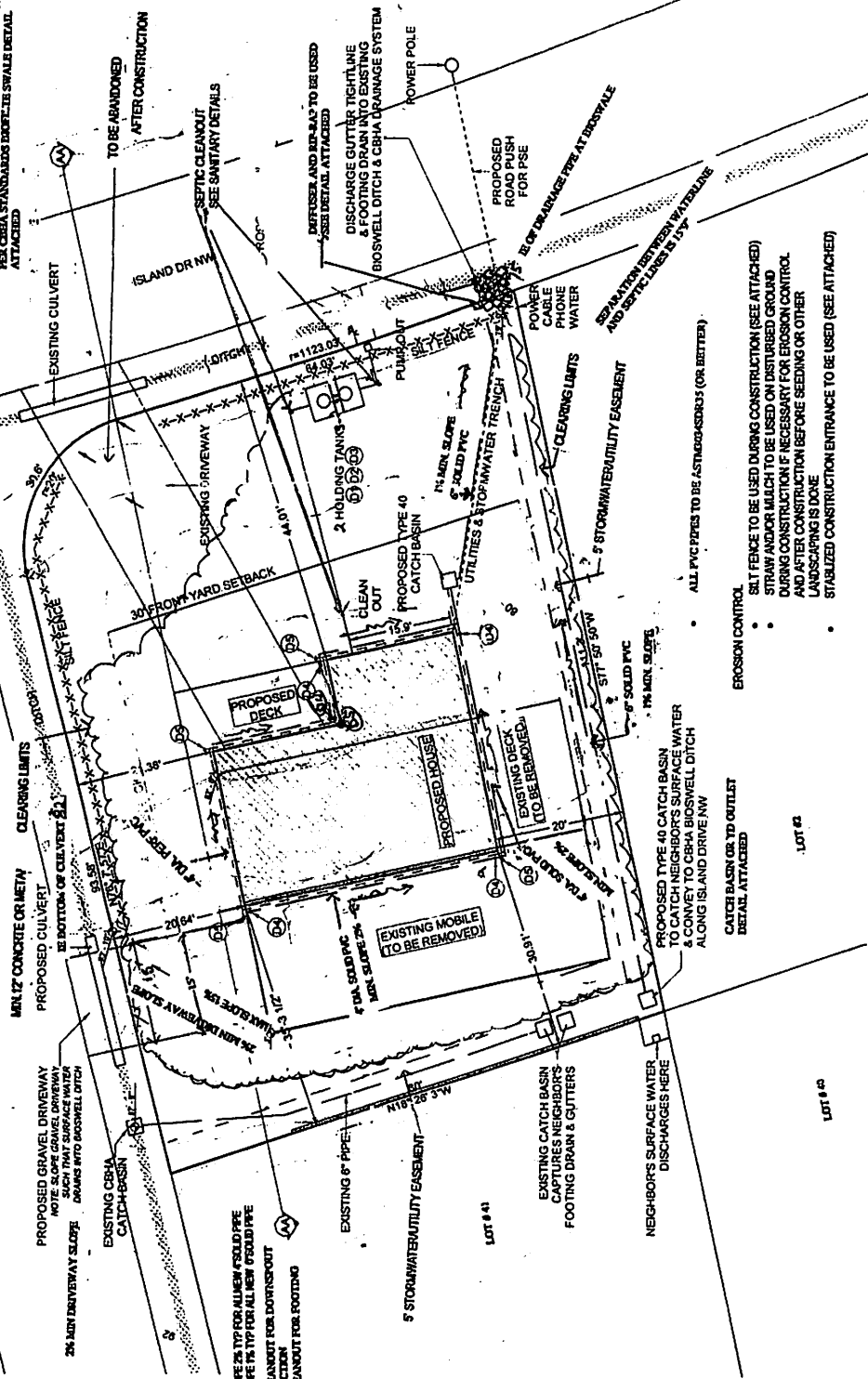
DRAINAGE AND EROSION CONTROL PLAN

LEGEND

- ROOF DRAINS/DOWNSPOUT
- D4- DOWNSPOUT CLEANOUT
- D5- FOOTING DRAIN CLEANOUT
- CLEARING LIMITS
- SILT FENCE
- DIFFUSER AND RIP RAP

- SEPTIC TANKS TO BE FROM ERMERSON PRECAST OR ERMERSON ONLY AND THURSTON COUNTY APPROVED
- SEPTIC HOLDING TANKS TO BE A MINIMUM OF 1000 GALS
- SEPTIC AND HOLDING TANKS TO BE AT FINISHED GRADE OR ON LOT AT ELEVATION AFTER LANDSCAPING
- ANY INTERFERENCE TO DOWNSPOUT WILL BE RESTORED PER CBHA STANDARDS SHOWN IN SWALE DETAIL ATTACHED

SEANVIEW DR NW



- ALL PVC PIPES TO BE ASTIRAGOS-800R35 (OR BETTER)
- EROSION CONTROL
 - SILT FENCE TO BE USED DURING CONSTRUCTION (SEE ATTACHED)
 - STRAW AND/OR MULCH TO BE USED ON UNDISTURBED GROUND DURING CONSTRUCTION IF NECESSARY FOR EROSION CONTROL AND AFTER CONSTRUCTION BEFORE SEEDING OR OTHER LANDSCAPING IS DONE
 - STABILIZED CONSTRUCTION ENTRANCE TO BE USED (SEE ATTACHED)

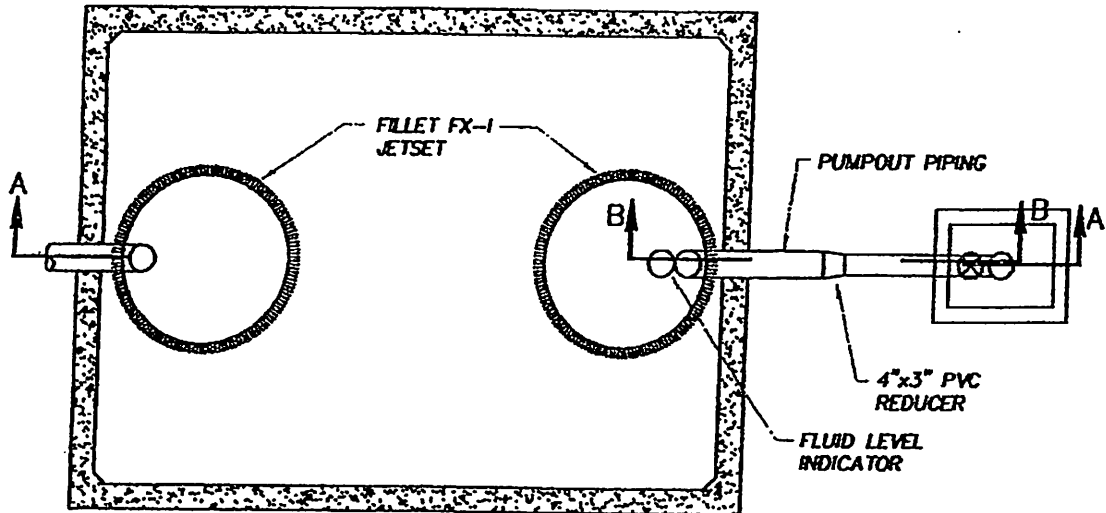
CATCH BASIN OR TO OUTLET DETAIL ATTACHED

LOT # 43

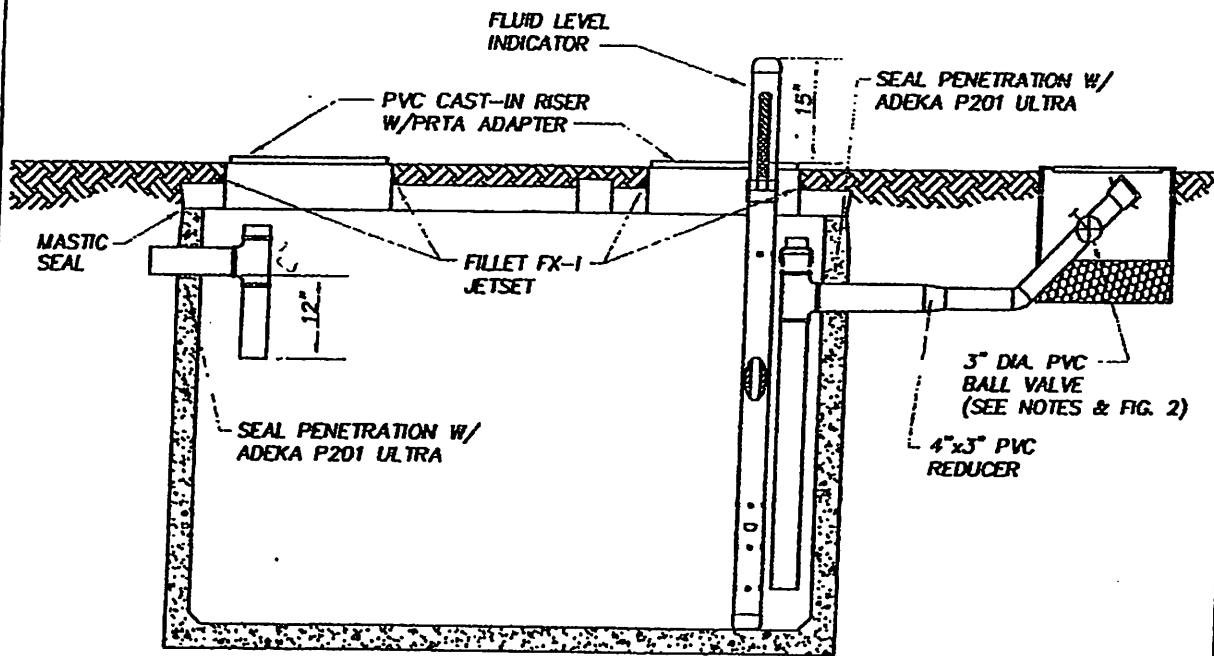
LOT # 42

LOT # 41

SANITATION DETAILS



PLAN
HOLDING TANK



SECTION A-A
HOLDING TANK

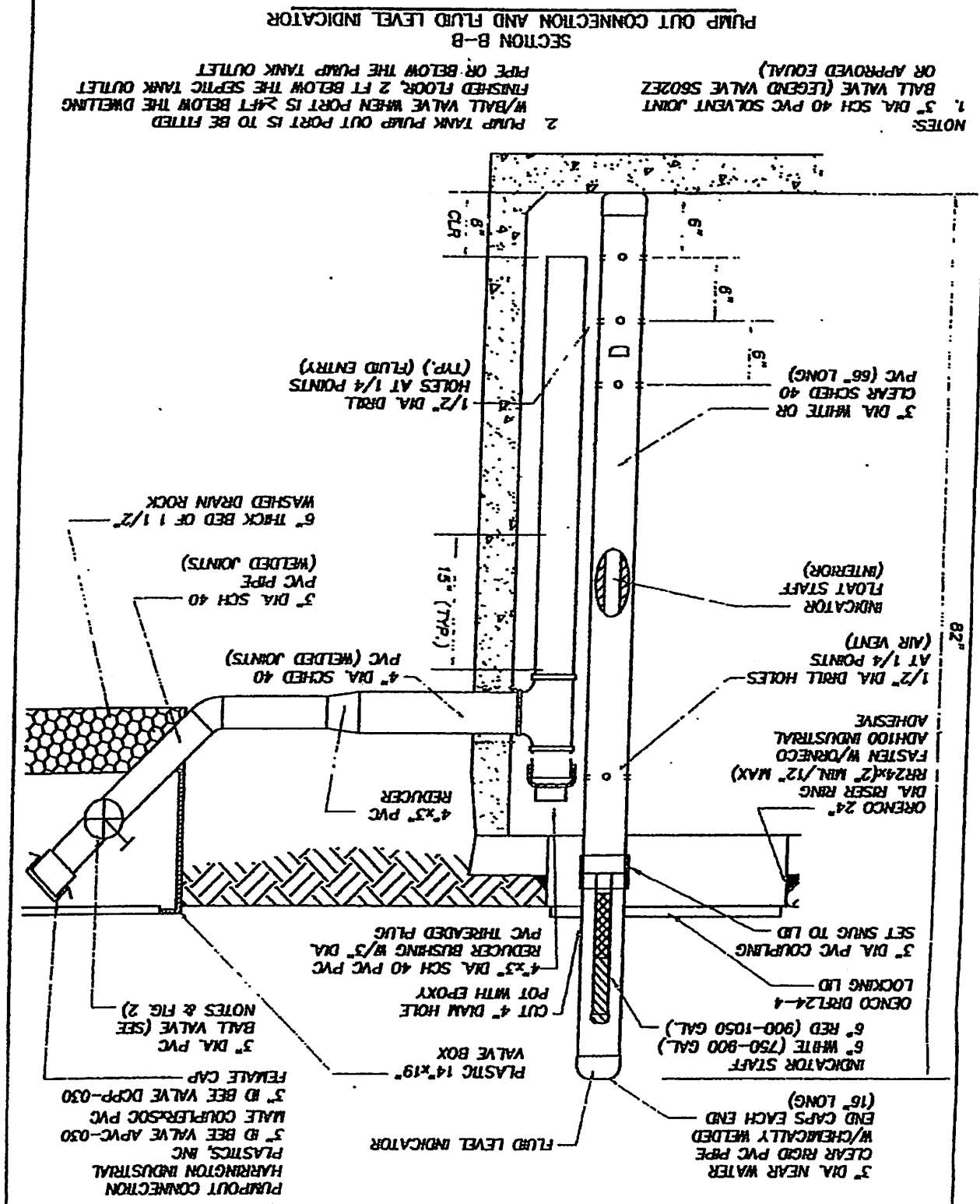
JWM&A Civil • Municipal • Geotechnical Engineering and Planning
 Jerome W. Moseley & Associates Inc., P.C.
 1210 Cooper Point Road SW, 2nd Fl., Olympia, WA 98512-1170 • (360) 332-9455 • FAX (360) 332-8220

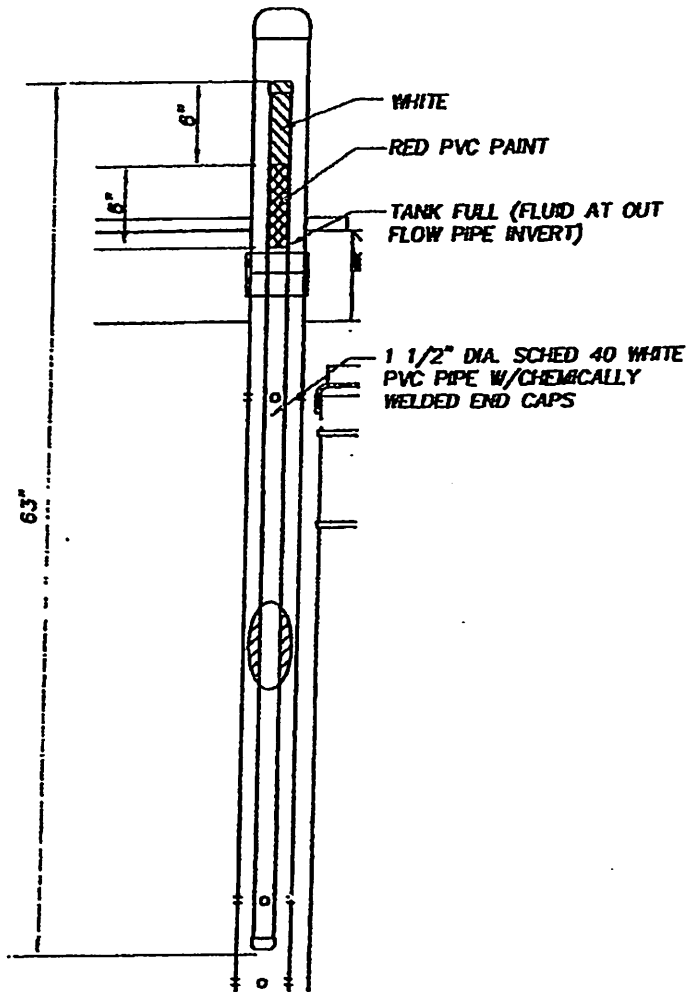
HOLDING
TANK

CARLYON BEACH
SUBDIVISION

11/29/01
00164-1

FIGURE 1





**ELEVATION
INDICATOR FLOAT STAFF**

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**HOLDING
TANK**

**CARLYON BEACH
SUBDIVISION**

11/25/04
00164-1

FIGURE 3



Fact Sheet #7

Revised 9/4/2009

2009 DRAINAGE DESIGN AND EROSION CONTROL MANUAL FOR THURSTON COUNTY

Single Family Residential Projects – On Single Lot

In the 2009 Drainage Manual, construction of a single family residence (or duplex) on a single lot must comply with the minimum requirements as would any other project. However, simplified submittal options are available if your project meets certain criteria. This Fact Sheet outlines these criteria.

What are Minimum Requirements for Single Family Residential Projects

There are twelve Minimum Requirements that must be met for projects in accordance with the 2009 Drainage Manual. Depending on project size, type and location as few as one or as many as all twelve may be required for a single family residential project. See Fact Sheet #6 for details on which minimum requirements apply to a project. In general any single family residential project that creates less than 5,000 square feet of new impervious surface and converts less than 3/4 of an acre- from native vegetation to landscape or lawn will be required to meet the following Minimum Requirements:

- #1: Stormwater Site Planning
- #2: Construction Stormwater Pollution Prevention
- #3: Source Control of Pollution
- #4: Preservation of Natural Drainage Systems and Outfalls
- #5: On-site Stormwater Management
- #12: Off-Site Analysis and Mitigation

If your project creates more than 5,000 square feet of new impervious surface including driveways, roofs, parking areas, etc. or creates greater than 3/4 of an acre of lawn or landscape from native vegetation you need to meet all 12 Minimum Requirements.

The Minimum Requirements are met by submitting documents in accordance with Volume I of the Drainage Manual. This may include an Abbreviated Drainage Plan or Engineered Abbreviated Drainage Plan and a Short Form or Full Construction Stormwater Pollution Prevention Plan.

Can I Still Submit an Abbreviated Drainage Plan for my House Construction?

The 1994 Drainage Manual allowed for submittal of an Abbreviated Drainage Plan for the majority of single family residential construction projects on a single lot. An Abbreviated Drainage Plan is not required to be prepared by a Civil Engineer. The 2009 Drainage Manual still allows an Abbreviated Drainage Plan but only under more limited circumstances. You may submit an Abbreviated Drainage

Plan in accordance with the requirements of the Drainage Manual, Volume I, if you meet the following conditions:

- Create less than 2,000 square feet of new impervious surface and less than 7,000 square feet of land disturbing activity occurs, or
- Create less than 5,000 square feet of new impervious surface and the soils are predominately (greater than 85%) Type A/B (outwash/gravel & sand) soils, or
- For a project of any size if the lot is within a subdivision that has an accepted and functioning stormwater system that accounts for the development of the lot, or
- The project is outside of the urban area, is on a parcel greater than 1-acre in size, has predominately (greater than 85%) Type A/B soils, the total new plus existing impervious surface area is less than 10% of the parcel area and at least 65% of the site remains native vegetation, and no increase in discharge (>0.1 cfs) from the site occurs as a result of the project, or
- The project is outside of the urban area, is on a parcel greater than 2.5-acres in size, the total new plus existing impervious surface area is less than 10% of the parcel area, at least 65% of the site remains native vegetation, and no increase in discharge (>0.1 cfs) from the site occurs as a result of the project.

When calculating the existing impervious area of a parcel, the area to centerline of any public or private roads fronting the property shall be included in the area calculations.

When Would I Need to Hire an Engineer to Do my Abbreviated Drainage Plan?

An Engineered Abbreviated Drainage Plan is a streamlined submittal that is prepared by a civil engineer licensed in the State of Washington. An Engineered Abbreviated Drainage Plan is allowed/required for the following project types:

1. If you meet the requirements to do an Abbreviated Drainage Plan but any of the following conditions apply to your project:
 - Any critical areas defined by Thurston County Code, Title 17, such as steep slopes, aquifer recharge areas, high groundwater areas, wetlands, streams, lakes, etc. existing within 200 feet of the boundaries of the disturbed area of your project.
 - Any project located within 200 feet of a Marine Bluff Hazard Area as defined by Thurston County Code, Title 17.
 - If your lot is less than 1-acre in size, soils are Type C or D (till/hardpan), or the average slope is greater than 10% across the lot, or any slope of greater than 15% and 10 foot or greater height exists on the lot.

- If your project is located in an area that has historically had drainage problems including flooding, and/or water quality problems.
2. Any other single family residential or duplex project on a single lot and not located within a Marine Bluff Hazard Area.

If your project does not meet the requirements for an Abbreviated Drainage Plan or Abbreviated Drainage Plan then a full Drainage Design and Erosion Control Plan & Report will be required to be prepared by a licensed Civil Engineer.

Stormwater Management During Construction

If your project creates more than 2,000 square feet of new impervious surface or disturbs more than 7,000 square feet of land you will need to prepare a Construction Stormwater Pollution Prevention Plan (SWPPP). If the total disturbed area of your project is less than one acre, then a "Short Form" SWPPP can be prepared. A template for a Short Form SWPPP can be found in the Drainage Manual in Appendix II-C of Volume II. If your project disturbs greater than 1-acre then a full Construction SWPPP is required to be prepared per the requirements of Volume II of the Drainage Manual (if there is any discharge of stormwater from the site then an NPDES Construction Stormwater Permit will also be required to be obtained from the Washington State Department of Ecology).

Source Control Plan Requirement

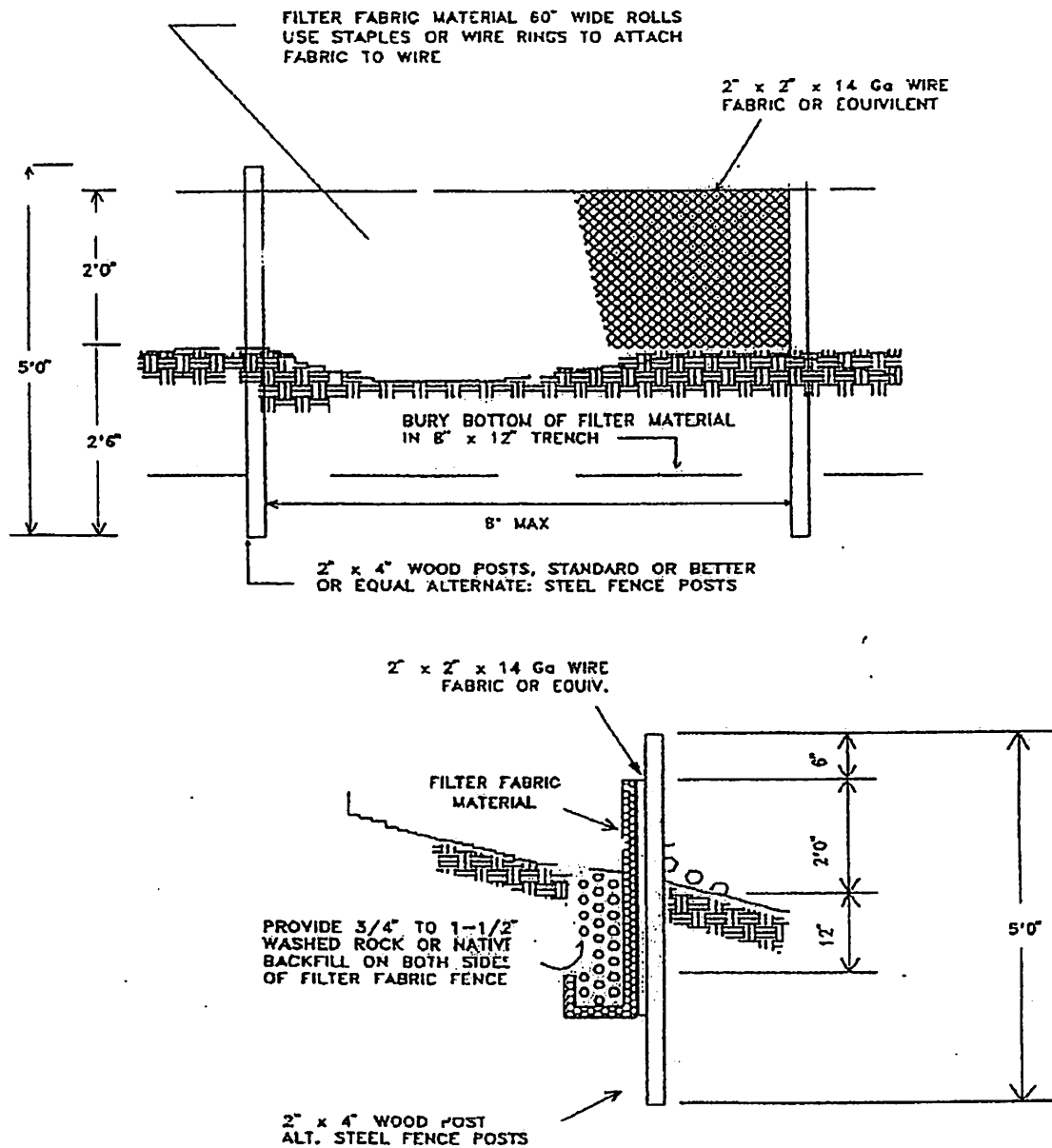
For most single family residential construction projects a Source Control Plan will be required. Volume IV of the Drainage Manual includes requirements for Source Control. Generally, your source control plan will be a written document that includes general practices (Best Management Practices) to prevent pollutants from getting into the stormwater. These include guidance on management of lawn fertilizers, pesticides, and herbicides; storage and use of household chemicals such as paints and lubricants; autowashing, and other routine household activities that if improperly conducted could release pollutants to the stormwater system. The approved source control plan shall be recorded against the property at the Thurston County Assessor's office.

For More Information:

Contact: Pat Allen, P.E., (360) 867-2078, allenp@co.thurston.wa.us

Website: www.co.thurston.wa.us/stormwater

STORM DRAINAGE DESIGN MANUAL FIG B2



FILTER FABRIC FENCE DETAIL

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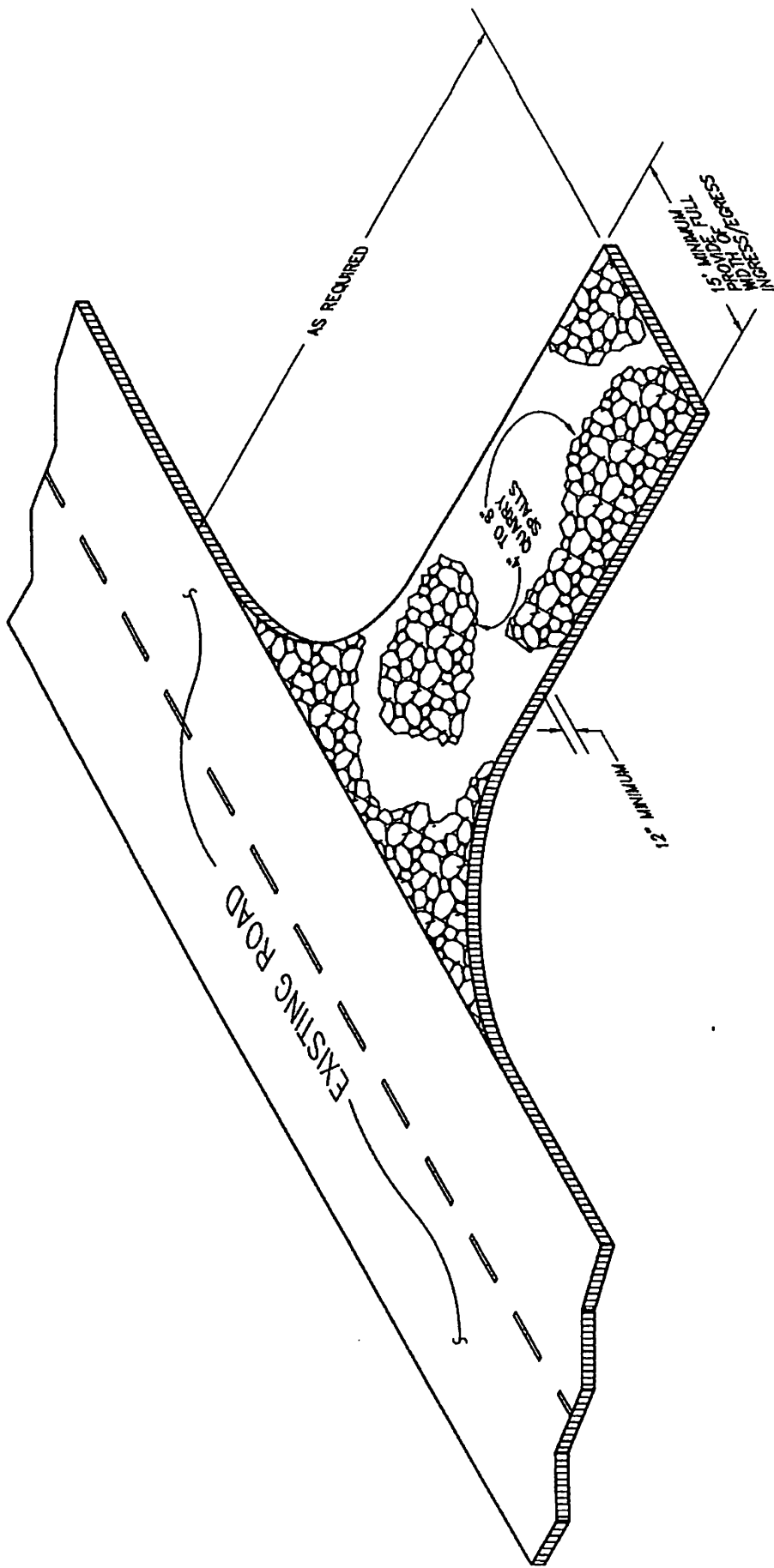
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1700-B2 COOPER POINT ROAD SW
OLYMPIA, WASHINGTON 98502

TEL. (360)352-9456

FAX (360)352-9990

SILT FENCE DETAIL

Figure 6



STABILIZED CONSTRUCTION ENTRANCE

N.T.S.

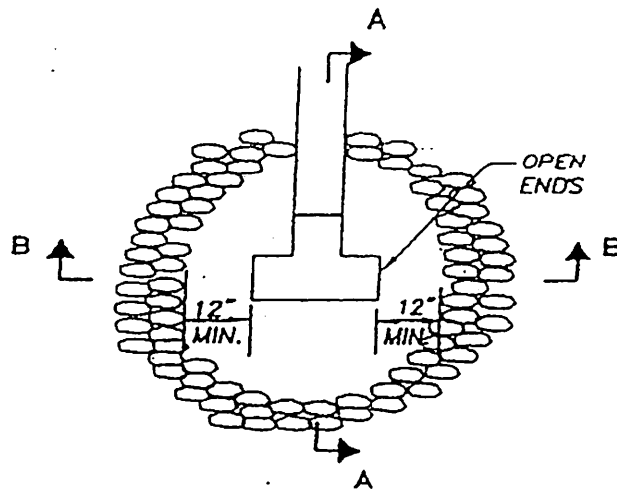
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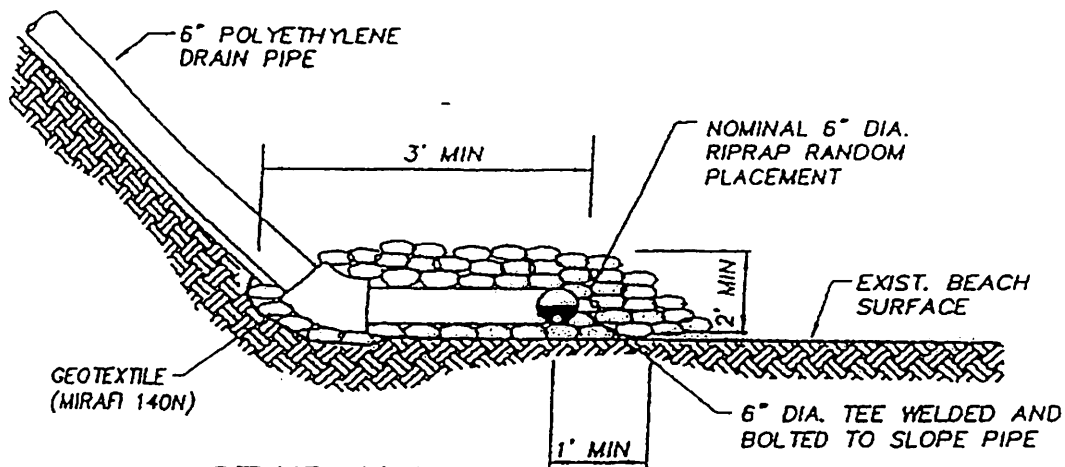
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CONSTRUCTION ENTRANCE DETAIL



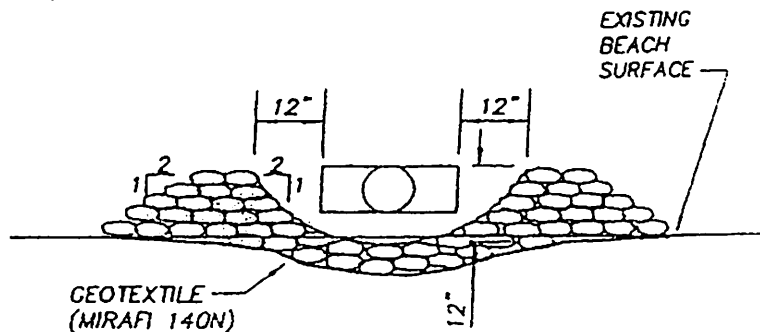
**PLAN
RIPRAP DIFFUSER**

N.T.S.



**SECTION A-A
RIPRAP DIFFUSER**

N.T.S.



**SECTION B-B
RIPRAP DIFFUSER**

N.T.S.

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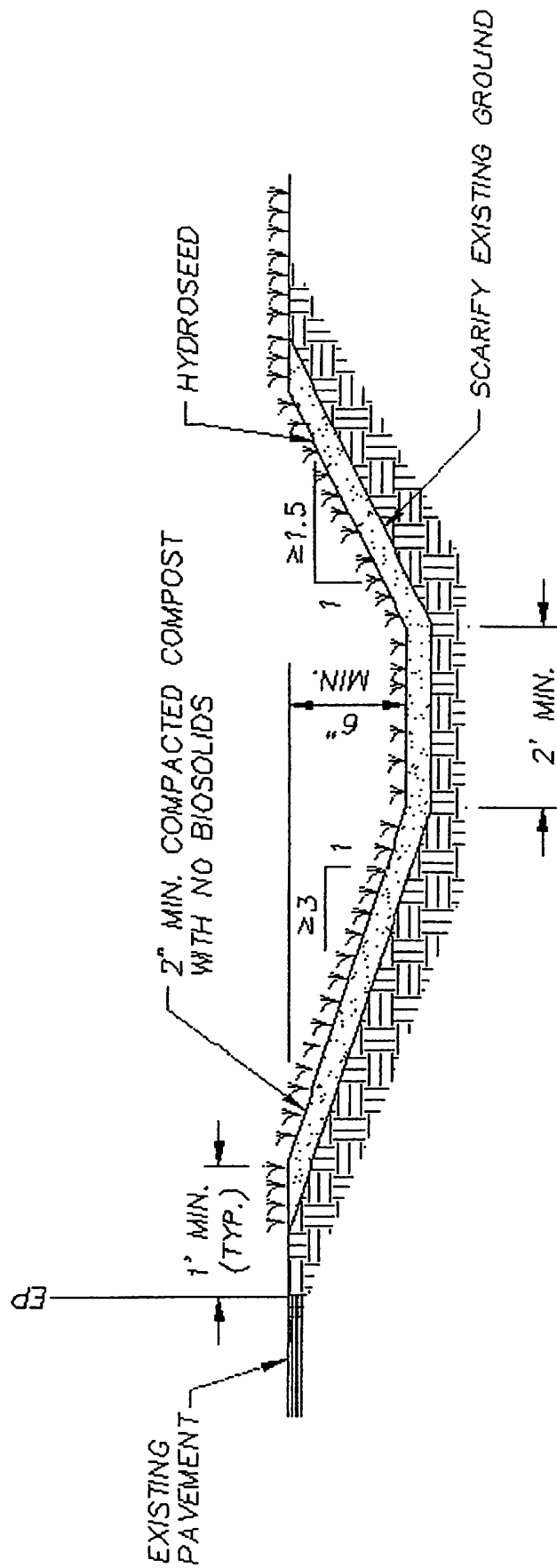
DETAILS

TYPICAL RESIDENTIAL SITE
STORMWATER SYSTEM

CARLYON BEACH

JOB NO. 80143-4

FIGURE 8



BIOFILTER SWALE (SECTION)

N.T.S.

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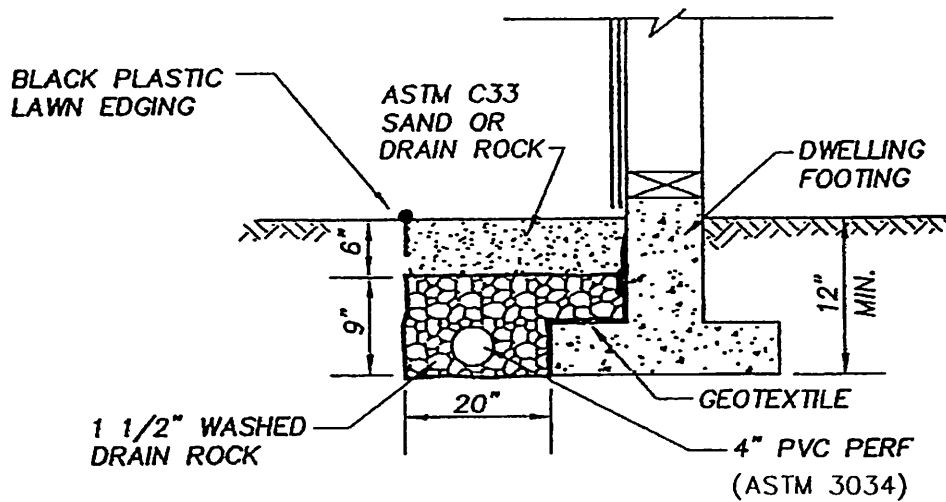
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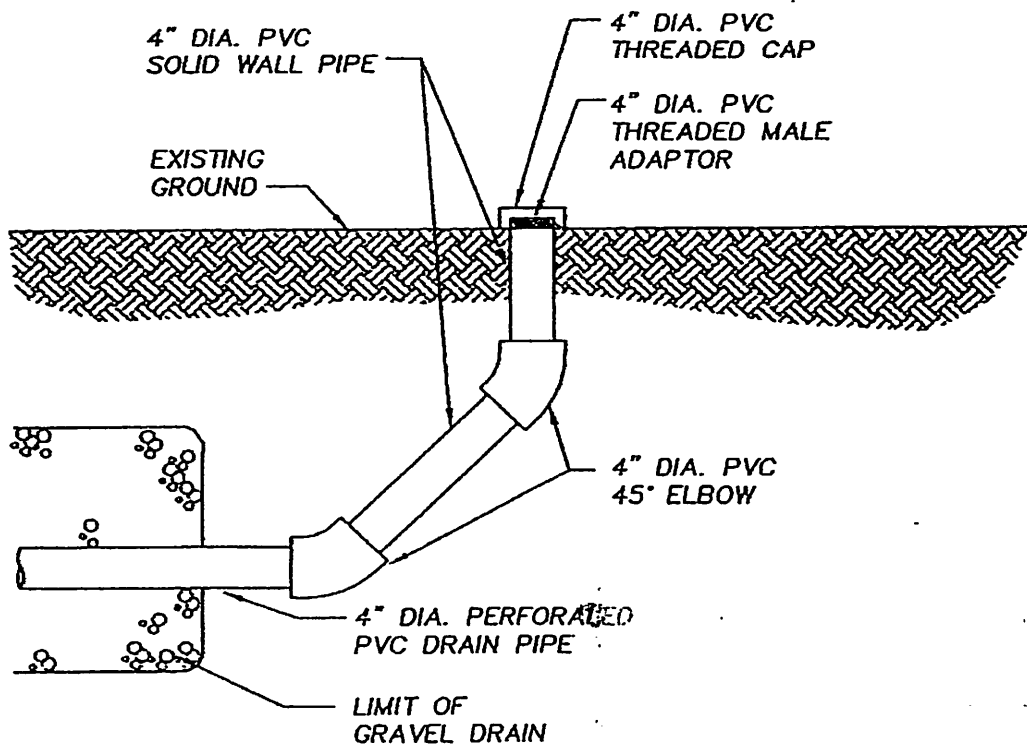
BIOFILTER SWALE DETAIL

Figure 8



DETAIL FOOTING DRAIN

N.T.S.



DETAIL FOOTING DRAIN AND CLEANOUT

N.T.S.

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FOOTING DRAIN DETAILS

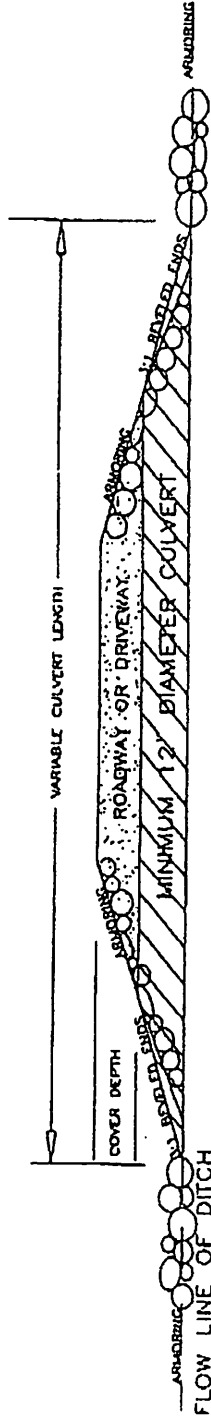
REVISION

PVC Pipe for driveway culverts is not permitted per CBHA Rules &

	DRIVEWAY MINIMUM COVER	ROADWAY MINIMUM COVER
CONCRETE	6"	12"
CORRUGATED METAL, ALUMINIZED	6"	12"
DUCTILE IRON (STEEL)	2"	10"

REVISION

Culvert end bevel is optional on culvert crossings.
Driveway fill must be constructed to minimum 3:1



NOTES:

- 1) DRAWING IS NOT TO SCALE.
- 2) CULVERT BOTTOM IS TO MATCH EXISTING FLOW LINES.
- 3) USE 4-6" RIP RAP OR HAND-PLACED NATURAL ROCK ARMORING.
- 4) ~~USE MINIMUM 3:1 BEVELED ENDS ON BOTH INFLOW AND OUTFLOW OF CULVERT.~~
- 5) ZINC COATED METAL PIPE IS NOT ALLOWED. (TCRS APP. 3-A, STANDARD NOTE F)
- 6) IF PIPE MATERIAL IS NOT LISTED ABOVE, CONTACT DEVELOPMENT REVIEW AT 754-3355 EXT 7586.
- 7) MINIMUM COVER IS TO BE MEASURED AT THE OUTSIDE EDGE OF THE ROADWAY.
- 8) MINIMUM LENGTH FOR DRIVEWAY CULVERT IS 21' AND ROADWAY CULVERT IS 26'.
- 9) DRIVEWAY OR ROADWAY IS TO BE LEVEL WITH COUNTY ROAD AND SLOPED TO PROPERTY. (TCRS APP. 3-A)

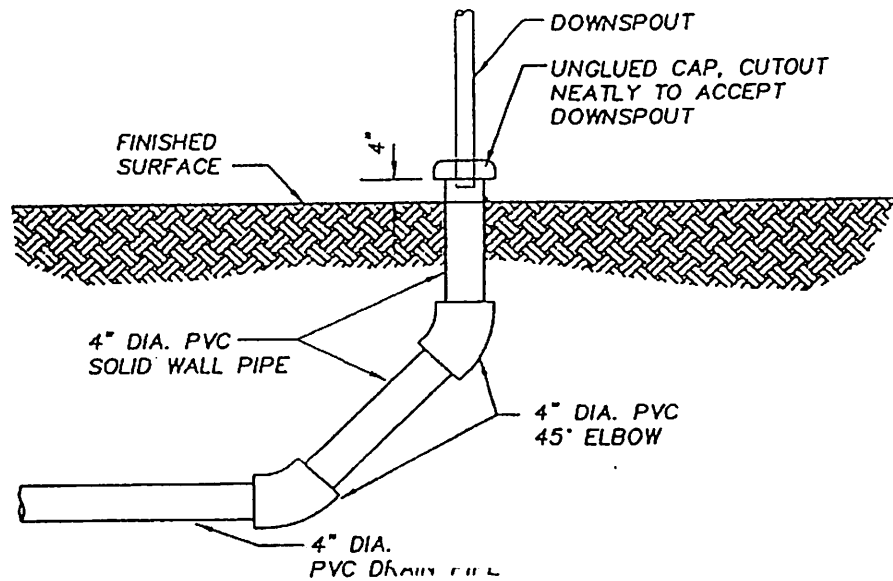
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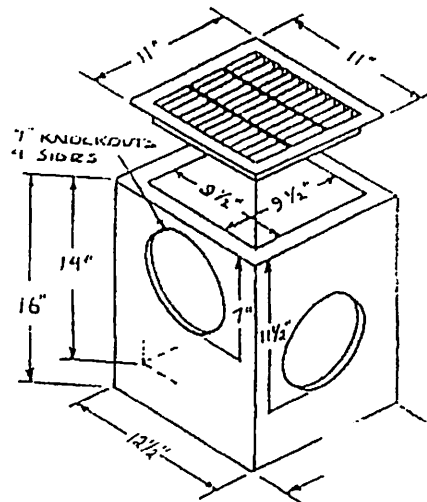
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FAX (360)352-9990

DRIVEWAY CULVERT DETAIL



DETAIL
ROOF DOWNSPOUT CONNECTION CLEANOUT
N.T.S.



DETAIL
DRIVEWAY, YARD & PATIO INLET
N.T.S.

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DETAILS - ROOF DOWNSPOUT & YARD CB

Figure 4



GEOLOGICALLY HAZARDOUS AREAS

Updated June 21, 2012

A 2012 Critical Areas Update Fact Sheet

WHAT IS A GEOLOGICALLY HAZARDOUS AREA?

Geologically hazardous areas are places highly susceptible to erosion, landslides, earthquakes, lahar flows or other geologic events. Their designations are dependent upon slope, soil type, geologic material, and hydrologic conditions. In Thurston County, the most hazardous of these areas are typically found along steep slopes, marine shorelines and stream valleys. In many cases, these areas may be extremely desirable for development because of the scenic view or water and beach access, but their development may endanger people, property, and water resources.

Geologically hazardous areas only become "disasters" when people, property and infrastructure are vulnerable or are located on, or near, the hazardous area. In 1999, for example, heavy rainfalls caused the slope at Carlyon Beach to give way, destroying several homes. Also, earthquakes can cause severe

damage to structures built on unstable soils, such as fill and river deposits. Thurston County, particularly properties in the City of Olympia, incurred significant damage from the effects of the 2001 Nisqually earthquake. A Mount Rainier lahar (debris flow from volcanic activity) could send mudflows down the Nisqually River Valley and sweep away trees and structures in its path.



The potential Critical Areas Ordinance amendments seek to protect people and their property, and minimize the impacts of geologic hazards.

HOW DO I KNOW WHETHER I HAVE A GEOLOGICALLY HAZARDOUS AREA ON MY PROPERTY?

Approximate locations of some critical areas in Thurston County are available in the Resource Stewardship Permit Assistance Center and may also be shown on Thurston County's GeoData website: www.geodata.org. It is important to note that maps are intended to be used as a guide and do not provide a definitive designation. You may call the Thurston County Permit Assistance Center at (360) 786-5490 or visit the Permit Assistance Center in Building 1 of the Thurston County courthouse complex, 2000 Lakeridge Drive S.W. in Olympia. The Permit Assistance Center is open from 8 a.m. to 12:30, Monday through Friday.

Thurston County also offers a critical area review service whereby a staff member will visit a property to help identify critical areas and the possible buildable area before a property owner submits a permit application. This service, subject to fees, helps property owners develop better site plans. A more rigorous environmental review of the site plan itself is conducted during the permit-review process.

IMPORTANT THINGS TO KNOW

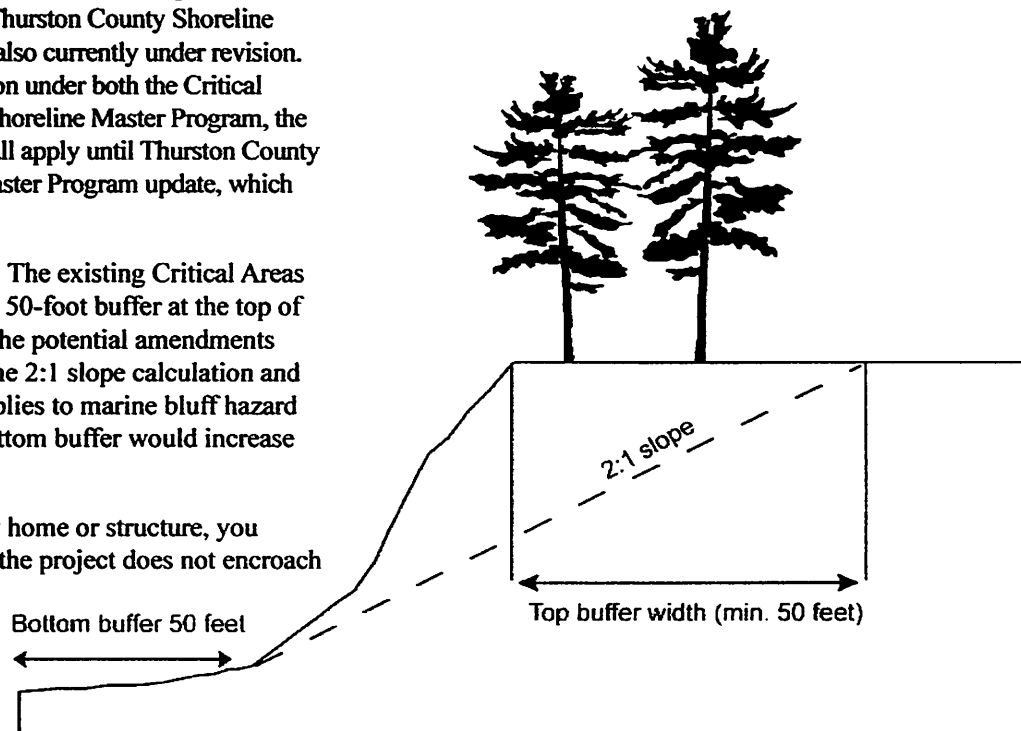
- Marine bluff and landslide hazard areas are determined by the steepness of the slope and the stability of the soils. Generally, the amendments would apply to slopes of 40 percent or greater. Currently regulations are applied to slopes of 50 or greater. If the soils are unstable – for example, if they contain sand, gravel or springs – the amendments would generally apply to slopes that are 15 percent or greater (currently 30% or greater).
- **Marine bluff hazard areas:** To protect the safety of residents and their properties, the existing Critical Areas Ordinance establishes buffers at both the top and the bottom of marine bluff hazard areas. In other words, property owners can't build too close to the top of the slope because the slope could give way, or too close to the bottom of the slope where a slide could submerge their property.

The top buffer is calculated by drawing a line at a 2:1 angle from the ordinary high water mark upward to where the line intersects the surface of the ground at the top of the slope. The minimum top buffer is 50 feet. This provision would remain the same. The buffer at the bottom of the slope, however, would increase from 25 feet to 50 feet. Marine bluff hazard areas also frequently overlap with marine riparian areas (see the companion "Riparian Areas" fact sheet by clicking the "Critical Areas Update" link of www.ThurstonPlanning.org).

Note: Marine bluff hazard areas are also regulated under a different ordinance: the Thurston County Shoreline Master Program, which is also currently under revision. In areas subject to regulation under both the Critical Areas Ordinance and the Shoreline Master Program, the most protective criteria shall apply until Thurston County completes its Shoreline Master Program update, which will then take precedence.

- **Landslide hazard areas:** The existing Critical Areas Ordinance sets a standard 50-foot buffer at the top of a landslide hazard area. The potential amendments would instead use the same 2:1 slope calculation and 50-foot minimum that applies to marine bluff hazard areas (see above). The bottom buffer would increase from 25 feet to 50 feet.
- If you plan to build a new home or structure, you would need to make sure the project does not encroach on the buffers.

- Houses and other structures that are already located within buffers could stay where they are. If a portion of the house or structure is outside the buffer, the property owner could also expand the footprint in that area.
- In most cases, grading activities and removing native vegetation and trees would be prohibited in the buffers – this is true in the existing ordinance as well. Property owners could, however, continue to maintain existing lawns, landscaping, gardens, athletic fields, playgrounds and parks, provided the work did not involve further expansion beyond the existing developed area.
- Thurston County could allow the trimming or removal of vegetation to the minimum extent necessary to provide an approved pedestrian access or view corridor.
- Thurston County could authorize the stabilization of a steep slope or marine bluff in order to protect an existing structure, depending on alternatives as well as impacts to ecological functions.
- To protect property owners from physical harm and property damage, a geologic assessment would be required when a property owner applies for a building permit within or adjacent to a geologically hazardous area.



BEST AVAILABLE SCIENCE

The potential amendments are based on scientific information that is already deemed Best Available Science by the state and federal governments, Growth Management Hearings boards, courts, and other western Washington counties. A list of sources is posted on the “Critical Areas Update” link of www.ThurstonPlanning.org.

CONTACT INFORMATION: Thurston County Planning Department, 2000 Lakeridge Drive S.W., Olympia, WA 98502. Staff contact: Andrew Deffobis, Associate Planner, (360) 754-3355, ext. 5467. E-mail: deffoba@co.thurston.wa.us.