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☐ additional grantor names on page ____.

1. Shore view Estates

2.

Grantee(s):

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1. Public

2.

Abbreviated legal description:

☐ full legal on page(s) ____.

27-34-4 SE SE et al

Assessor Parcel / Tax ID Number:

☐ additional tax parcel number(s) on page ____.

P20762 & P20763

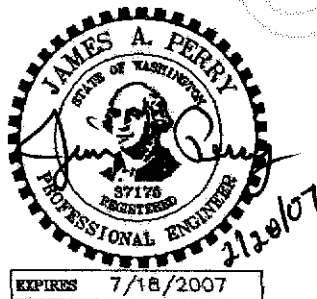
SHORE VIEW ESTATES

OPERATION AND MAINTENANCE MANUAL

FOR THE STORMWATER COLLECTION SYSTEM AND DETENTION SYSTEM

FEBRUARY 28, 2007

PREPARED BY



806 METCALF STREET, SEDRO-WOOLLEY, WA 98284
360-855-2121 360-855-1658 FAX

info@sseconsultants.com www.sseconsultants.com



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OPERATION AND MAINTENANCE MANUAL

For

SHORE VIEW ESTATES

STORMWATER COLLECTION SYSTEM AND DETENTION SYSTEM

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EXHIBITS:

- A. LOT & EASEMENT LAYOUT
- B. DETENTION POND LAYOUT
- C. FLOW CONTROL STRUCTURE DETAIL
- D. MAINTENANCE LOG FORM



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I. PURPOSE OF MANUAL

The purpose of this manual is to outline the procedures for the proper operation and maintenance of the stormwater facilities for SHORE VIEW ESTATES as required to be maintained by the SHORE VIEW ESTATES lot owners.

This manual is the mechanism for the maintenance, repair and replacement of the stormwater, water detention and drainage facilities.

For the benefit of the owners of the five lots in the SHORE VIEW ESTATES Plat, conditions should not be allowed to deteriorate, nor maintenance not performed on-site, which would force the Skagit County Public Works Department to assume responsibility of the facility. The stormwater collection system and detention system should add to the beauty and ease of living in SHORE VIEW ESTATES as much as possible.

II. PURPOSE OF FACILITY

In the development of the residential lots for SHORE VIEW ESTATES, the natural drainage of the area was changed by the construction of the road and houses. Instead of rain falling on trees and grass and percolating into the soil, some of the rain will fall on gravel roads and roofs and quickly run off and collect at low points.

Now with more water reaching the low point faster, this stormwater facility provides control of the quality, amount and rate at which stormwater is discharged to the ditch in Snee-Oosh Road.

III. LAYOUT OF FACILITY

The stormwater system for SHORE VIEW ESTATES basically is comprised of two parts. First, the collection system and secondly, the detention system.

Exhibit "A" shows the layout of the private road, lots and detention pond for SHORE VIEW ESTATES. Also shown are the drainage easements of which the lot owners have legal right of access for maintenance purposes of the swale.

IV. FUNCTION OF UNITS

A. ROAD DITCHES

The ditches on the east side of Shorewood Heights Lane collect runoff from the



road and any runoff from the property to the east. After flowing through a culvert in the road, the stormwater flows along a swale to the detention pond.

B. BIOFILTRATION SWALE

Prior to flowing into the detention pond, the collected stormwater flows along a biofiltration swale. This swale provides for water quality control of the stormwater. This control is provided by slowing down the velocity of the water and having it flow in this grass-lined swale. The flat slope and the grass provide for sediment to settle out along the length of the swale. The grass also removes (absorbs) some oil from the stormwater by having the globules of oil attach to the blades of grass.

This swale is designed as part of the stormwater collection system. Big weeds should not be allowed to grow in the swale. The grass should be maintained at 6 to 10 inches high.

C. DETENTION POND

The detention pond is designed and sized to store the increase in runoff as a result of the construction of the road and the construction of five new houses. This increase in runoff from "pre-developed" to "developed" conditions was calculated to be 116,484 cubic feet or 123,300 gallons. The only purpose of the detention pond is to store this volume of increased stormwater runoff while it is slowly discharged into the wetland. The detention pond was dug much deeper than was needed. The pond depth above the flowline of the discharge pipe is the required working volume of the pond. The pond depth (approximately eight feet) below this is only for recreational and aesthetic purposes (source for waterfall).

D. FLOW CONTROL STRUCTURE (FCS)

The purpose of the flow control structure (FCS) is to release the stored water in the detention pond at a slow rate. This rate is regulated by the Skagit County Drainage Ordinance. The flow rate is basically similar to the "pre-developed" runoff rate from the site.

The flow is controlled by two different size pipes inside the FCS. The different size pipes function as orifices in controlling the flow rate. The height of water over the top of these pipes provide for the flow-rate criteria. Stormwater in excess of this criteria flows over the top of the riser pipe and into the discharge pipe. Excess stormwater also flows over the spillway in the berm of the detention pond. Exhibit "B" shows the details of the flow control structure. This flow control structure is below the dock and can be accessed by opening the trap door in the floor at the end of the dock.



It must be understood that the pond and discharge structure are designed to handle only the increase in the stormwater runoff as a result of this development. However, all the collected stormwater runoff is still being directed to the detention pond. Stormwater volume and flow rates in excess of the pond volume and FCS discharge rates will flow over the riser pipe and spillway. This is normal and how the detention system was designed.

V. NORMAL OPERATING PROCEDURES

The stormwater collection and detention system is designed to function on its own. When a rainstorm comes, the water is collected and flows through the ditches and culverts to the detention pond. The only and main operating procedure is to once a month make sure nothing has plugged the culvert and the pipes in the flow control structure (FCS). It is important that this operating procedure be recorded.

Inspect the pipes by opening the trap door in the dock to expose the FCS. Visually inspect the pipes to make sure they are not clogged. Push a stick down each pipe to make sure the bottom of the pipe which is under water is not plugged.

The County may wish to see a record of operating and maintenance procedures actually performed. Keep a log of the date and what was observed and/or done. A copy of a master form for keeping this log is included as Exhibit "C". The person responsible for operating and maintaining the stormwater system for SHORE VIEW ESTATES is to keep a copy of this manual (suggest a three-ring binder) with extra copies of the maintenance log form. This way the manual and the log will keep everything recorded and organized.

A "normal" operating procedure is to do the above mention inspection after a very heavy rain. This way you will make sure everything worked properly and the system is ready for the next rainstorm. Be sure to log all of your inspection items on the log form.

VI. MAINTENANCE OF FACILITY

The ditches and culvert should be inspected to remove any accumulated debris. This should be part of the monthly operating procedure.

When tall weeds or trees start to grow in the biofiltration swale and on the sides of the detention pond they should be removed. When this is necessary, record it on the maintenance log form.



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VII. RECORD KEEPING

As explained in the previous sections, it is important to keep a log of all inspections and maintenance performed on your stormwater collection and detention system. This log is to be available for inspection by the Skagit County Public Works Department. By keeping this log up to date and kept in a binder, you will be ready for any unexpected inspection.

These maintenance procedures are required by Skagit County pursuant to the terms and conditions set forth on the face of the short plat for SHORE VIEW ESTATES.

VIII. EMERGENCIES

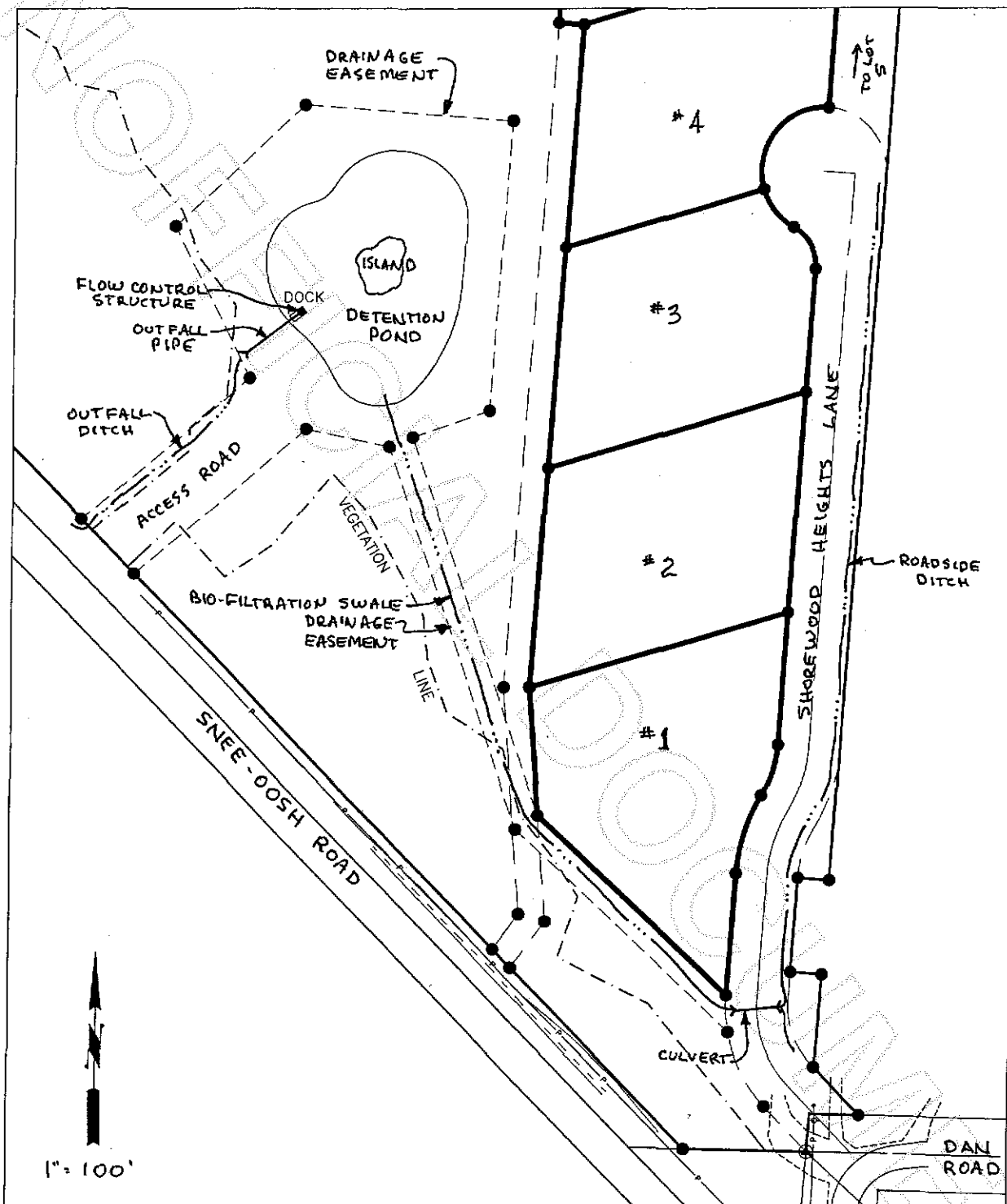
If there is a situation, such as a major oil spill into your collection system, or if there is any other type of major damage to the stormwater collection or detention system, be sure to call the Skagit County Public Works Department at 360-336-9400 and report it to them. Inform the County what happened, what you are doing about it, and solicit any help you may need.

If any major repairs are necessary make sure they are done consistent with the initial plans and construction of your facilities. A copy of the construction plans is to be readily available to the maintenance person at all times.



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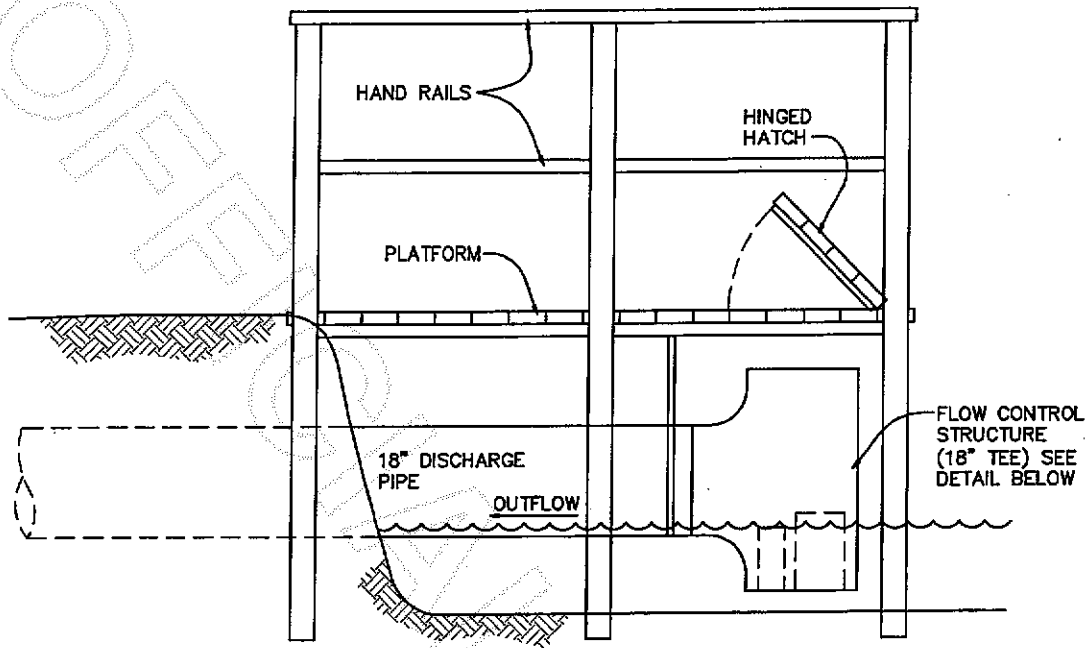
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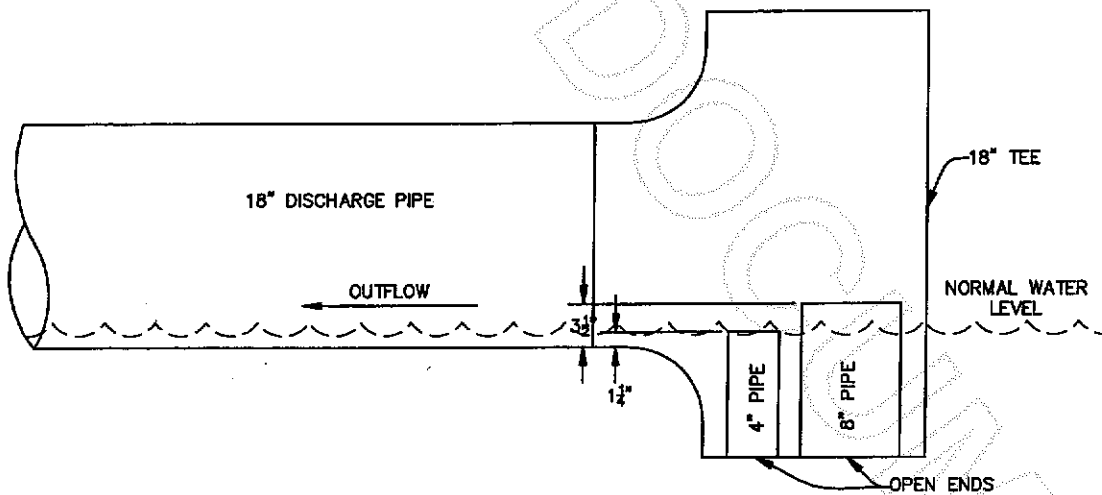
SHORE VIEW ESTATES
 STORMWATER SYSTEM LAYOUT
 EXHIBIT "A"



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DOCK ELEVATION VIEW



FLOW CONTROL CROSS SECTION

NO SCALE



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SHORE VIEW ESTATES
FLOW CONTROL STRUCTURE
EXHIBIT "B"



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Maintenance Log

DESCRIPTION OF INSPECTION/WORK

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