

# MARIN WOODS

## Attachment B:

### *Updated Review Application Packet*



LETTER OF TRANSMITTAL

ATTN: Lisa Bebee
Permit Coordinator
Development Services Department
865 SE Barrington Drive
Oak Harbor, WA 98277

DATE 08/22/2016 JOB NO. 15-243
RE: Marin Woods; PPL-15-01, PLN-18-09
Preliminary PRD 4th Submittal

THESE ARE TRANSMITTED as checked below:

- For approval, Approved as submitted, Resubmit, For your use, Approved as noted, Submit, As requested, Returned for corrections, Return, For review and comment, FOR BIDS DUE, PRINTS RETURNED AFTER LOAN TO US

REMARKS Marin Woods:

- 5 Cover letter with Response to 03/28/2016 City 3rd comments
5 Sets of plans, full size
5 Waiver requests for no intersection with Swantown
5 Revised drainage reports
5 Drainage O&M manuals under separate cover
5 CC&R with cover letter
5 Design Guidelines (part of CC&R under separate cover)
5 Drainage O&M manuals (5 for Drainage report and 5 for CC&Rs)
This transmittal



If materials are not as stated, please contact Michael Ryan: 360.6775.5973 office, 206.719.4344 cell

COPY TO

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LAND SURVEYING



CIVIL ENGINEERING

Lisa Bebee  
Permit Coordinator  
Development Services Department  
865 SE Barrington Drive  
Oak Harbor, WA 98277

RECEIVED

Aug 22, 2016

AUG 22 2016

CITY OF OAK HARBOR  
Development Services Department

Re: Marin Woods Preliminary Plat/PRD  
Response to City Comments dated March 28 and April 07, 2016, PLN-15-90, PPL-15-01

Greetings, Lisa and reviewers,

Thank you for your efforts on this project and the prompt turn-around of various City comments.

Within the previous comment letters, many items were indicated as complete or satisfied, while others were either new or needed further attention. This document provides only responses to comments that are new or need attention. With various reviewers, the formatting and styles were slightly different. In this response letter, the active City comment is represented in *Italic*.

The largest visible difference in this plan set as compared to the prior plan set is the area of the pond and lots 1-5 which were adjusted to better accommodate drainage and landscape requirements.

The on-site project details have developed and progressed consistent with pre-plat approval guidelines. One topic remains.

Pursuant to City comments and per OHMC 21.60.100, the applicant has analyzed several concepts to connect Marin Woods to Swantown. Of all connection concepts studied, none were a viable solution. The applicant is seeking a waiver to the requirement to connect the proposed development to Swantown Road. The waiver request is included with this proposal.

The City has stated previously (March 28, 2016) that an additional connection to Swantown at Fairway Lane is essential for the subject neighborhood in which Marin Woods is located, and that this intersection is expected to experience increased usage as this section of the City grows. As such, it is critical that a connection from Marin Woods accommodate current needs as well as future growth of this intersection and the community.

To establish the current adequacy of the Loerland-Heller-Swantown neighborhood with its seven access points to the minor arterials of the City grid, we have evaluated several near-by neighborhoods, based on a "connectivity" metric (average number of houses per arterial road access points). At the City's request, the applicant is able to demonstrate and confirm that the Loerland-Heller-Swantown neighborhood is already an adequately well-connected neighborhood with Marin Woods with no additional connection points, and it demonstrates the best connectivity metric of any comparably-sized neighborhood evaluated. (See Engineering #14 for full details)

Second, included in the City comments of April 7, 2016, (City SP5 to LSA letter of February 26, 2016) "More refined drawings proving the concept works or does not work have not been submitted to the City" ("the concept" being that the existing Fairway Lane Swantown intersection is currently non-compliant and furthermore no compliant intersection from Swantown to Marin Woods can be conceived from options under our control).

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## Response to Comments

To be fully responsive, in addition to the Gibson Traffic studies already provided, the Applicant's design team has reviewed and evaluated the project site, City comments and planning objectives, City, WSDOT and AASHTO regulations and found that the existing Fairway lane intersection is unreasonably noncompliant and does not achieve the future growth capacity the City staff desires. The design team's evaluation also demonstrates that an additional connection to Swantown does not resolve any of the Fairway intersection inadequacies, but does exacerbate substandard conditions and introduce additional substandard conditions at the intersection as well as a ripple effect of increased substandard geometry into the project itself, and such negative impacts are not in the public's interest. Neighborhood connectivity is achieved as well as gridded connections to Swantown for pedestrians and utilities, all of which do serve the public interest. A roadway connection to Swantown does not benefit the public and is neither functionally nor economically viable (See Engineering #9 for full details).

The existing intersection of Fairway Lane at Swantown is substandard in many regards (See Engineering #9 for full details). Several of the geometric attributes are strongly discouraged in AASHTO guidelines. Adding a Marin Woods connection to the existing non-compliant Fairway Lane intersection exacerbates substandard conditions, adds additional substandard concerns, and provides no significant benefit to neighborhood or city. A Marin Woods connection also creates undesirable conditions and/or limits future remedies or improvements to the intersection. Remedies to Fairway Lane are beyond the scope of this project and are not in the foreseeable future per City planning procedures. Connectivity is possible, but not achievable to current standards and with consideration to public safety. A potential connection would increase traffic speeds, decrease neighborhood safety, and not produce significant benefits to the Loerland-Heller-Swantown neighborhood.

Harmsen cannot in good faith recommend a Marin Woods connection to Swantown at or near the existing Fairway Lane intersection. In our evaluations, Harmsen has not identified a feasible solution that is AASHTO-compliant and allows for the level of future expansion that staff contemplates. We understand from staff the Fairway Lane intersection expansion, remedies or improvements are not currently in the City's 5-year, 10-year, or 20-year plan. To improve the existing conditions, the applicant has removed the Marin driveway, under their control.

With seven existing access points, the Loerland-Heller-Swantown neighborhood is the most connected neighborhood of seven similar neighborhoods evaluated. (See Engineering #14 for illustrations and full details)

Gibson traffic modeling (December 2015) demonstrates that intra-neighborhood traffic is dissipated across multiple streets and access with neighborhood minor arterials occurs at five of the seven points. (see illustrative map at Engineering #14). Gibson traffic modeling confirms additional connections neither improve nor degrade traffic counts or circulation, and an additional connection at Swantown is not necessary.

Collectively, the Marin Woods development achieves, as submitted, the objectives of integrating new development into an existing neighborhood, OHMC 19.31.10, 21.10.010(8), to "promote the integration of new residential neighborhoods with developed areas of the community."

Finally, OHMC allows the Applicant the presentation of cost-benefit. April 7, 2016, City comments, City SP6 to LSA letter of February 26, 2016, "No evidence has been submitted to staff that demonstrates this." ("This" being "great costs to the owner").

In response, the applicant has included a detailed breakdown of these projected impact costs (for an additional connection if pursued), previously referenced in this submittal, which totals circa \$375,000; the equivalent of a potential 20% surcharge on the Marin Woods infrastructure development budget, with no associated or proportional benefits to the neighborhood. (Also submitted as Exhibit E to the waiver request.)

The Gibson analysis has confirmed an insignificant number of project specific traffic movements at peak hour, and future benefits would accrue only to through-traffic movements detrimental to a sense of neighborhood. Costs to the applicant

Marin Woods

August 22, 2016

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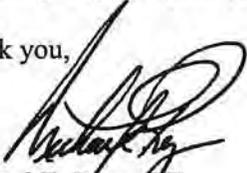
Response to Comments

are the equivalent of a budget surcharge in infrastructure costs in excess of 20%.

All previously proposed street connection alternatives from anywhere along Swantown Road to the proposed development, after detailed analysis, are not compliant with industry accepted traffic design standards (AASHTO). Restated, there is no location along the project frontage with Swantown that remedies Fairway's inadequacies and is free from introducing additional non-compliant conditions.

We will gladly and promptly address any questions you have.

Thank you,



Michael E. Ryan, PE  
Director, Oak Harbor.

## Response to Comments

**Planning:**

1. 20 foot landscape buffer on east side will not allow for rear yard space for homes with 20 foot setback. New owners may remove vegetation to create yard area, thereby removing required buffer. Recommend pulling all homes to front setback line to maximize rear yard area.

*Applicant has adjusted front setback on the drawings to show a 10-foot setback to the front of the home (BSBL) and a 20-foot setback for the garage (GSBL) to allow for a full-length driveway. In order to maximize the rear yard space, the applicant is encouraged to orient homes as far forward as practical, and moving the living area portion of the house forward of the garage itself (to the BSBL).*

Marin Woods Response: We have shown home placement as conceptual and to demonstrate that homes can indeed be placed within these lots. We have also moved many of the homes forward, and discussed with the builder moving homes forward as model plans are refined and molded to each lot, consistent with the BSBL or GSBL of that specific lot. This project is also constrained with drainage, and additional hardscape has a drainage cost. The builder will have a drainage budget for each lot in which each lot encourages careful use of hardscape and forward placement of homes to have the required but not excessive driveway length.

2. This comment was acknowledge as satisfied and is not repeated here.
3. Staff is concerned about blow down of trees left as buffer on edge of property. Clearing will weaken trees remaining and will no longer provide shelter from winds. Additionally, if trees are cleared off Marin property, similar issues could arise for trees on neighboring properties. Staff would recommend clearing all trees from Marin property to property lines (with exception of open space area, see below), and formal written notification of neighboring property owners of potential risks of said clearing on those adjacent properties. Landscape buffer as proposed would then be installed throughout the periphery of project area. Alternatively, applicant may be able to remove larger trees, allowing understory to remain, then replant trees as necessary to attain appropriate native vegetation cover (21.60.190.2).

*Tract A is shown as all "active" recreation space and a significant portion is counted as native vegetation as well. According to OHMC 19.46.140(2)(b), Active open space cannot count toward native vegetation requirements. Please recalculate each open space required and show the areas being counted for each category on page P3.*

Marin Woods Response: All open spaces have been recalculated and displayed more clearly. Active open space no longer contains native vegetation areas. Tract A does contain both active and native spaces, but the spaces are delineated and tabulated separately. The play structure, paths, and such are restricted to the Active open space area. We also arranged the native vegetation areas within Tract A to provide separation between the adjacent homes and the active open space where possible.

4. This comment was acknowledge as satisfied and is not repeated here.

## Response to Comments

5. Include seating, signage, trash receptacle and pedestrian-oriented lighting in open space areas (19.31.120). Show proposed locations and designs on PL-2.

*Pedestrian-oriented lighting design is not shown.*

Marin Woods Response: Pedestrian-oriented lighting was shown, but is difficult to see and was discussed at our review meeting. Tract A was rearranged per comment 3, and pedestrian lighting is included. Cut sheet for this light standard is now included in PL-2.

6. Easement or tract for 20 foot buffer around subdivision perimeter is preferred for ease of maintenance and protection of native vegetation. The landscape buffer is an integral portion of the PRD approval and as such needs to be protected and not allowed to be chipped away by individual property owners. A split-rail or other similar fence would be a good physical option to delineate private property limits.

Note: The landscape buffer cited here should be referred to as native vegetation retention. The easement is shown as requested. Where native vegetation and planting is proposed in Tract A, that area must be detailed and labeled with square footages to show compliance with 15% requirement.

*As noted previously, this comment should address the total space constituting the natural vegetation retention requirement. Possible changes in the calculation of open space in Tract A may change the total. Please ensure that open space areas meet the requirements set forth in 19.31.100-120.*

Marin Woods Response: All open space has been recalculated and displayed in a clearer format. The required values were obtained and are tabulated as shown.

7. Two street trees are required per lot, except where they may cause visibility issues at intersections.

Conceptual landscape plan is shown with home placement and driveways to ensure that trees will fit. Meets requirement. *(No active comment)*

Marin Woods Response: This comment was satisfied previously. We have rearranged certain driveways, crosswalks, streetlights, etc., and have adjusted the trees accordingly. Like the previous set of plans, not every lot contains two street trees due to conflict with driveways, crosswalks, driver visibility, etc., and is in-kind with the concepts used on the previous set of plans. The overall tree count is greater than 2 per lot mostly due to the trees along tract A and B frontage.

8. Landscape buffer along Swantown Road may be used as LID Stormwater Management Facility provided the purpose and character of the landscaping is not compromised (21.60.190.1.f).

*25-foot landscaping buffer on Swantown Avenue is shown as required. Stormwater detention area is shown with no landscaping. A 10 foot landscape buffer required around stormwater ponds (OHMC 21.60.260).*

Marin Woods Response: The 10ft landscape buffer was added around the pond.

## Response to Comments

9. The initial submittal of the Marin Woods Preliminary Plat and PRD (dated November 6, 2015) included a proposed street connection to Swantown Avenue. The revised submittal (dated February 26, 2016) deleted this connection. The revised submittal was accompanied by a request to deviate from OHMC 21.60.100(1) and (2), in a letter dated February 26, 2016, from John Bissel, AICP re: 'Request for deviation to not connect to Swantown Road, Proposed Preliminary Plat and PRD of Marin Woods.' After reviewing it, staff has determined that it cannot support the request. The reasons for this are numerous:

Marin Woods Response: Pursuant to 21.60.100, the applicant has analyzed several concepts to connect Marin Woods to Swantown and has found no viable solution. The applicant is seeking a waiver to the requirement to connect the proposed development to Swantown Road. The waiver request is included with this submittal.

Prior preliminary plat and PRD submittal packages included a proposed connection of the Marin Woods development to Swantown. These plans were preliminary and final engineering had not yet been concluded, and some but not all of the existing conditions of Fairway Lane were understood.

On further evaluation, the existing intersection of Fairway Lane at Swantown Avenue is found to be substandard by many design standards and regulations in effect today. The design team has evaluated various concepts to connect the project site to Swantown which reduce to three basic concepts as described in the waiver request (attached under separate cover).

This document discusses many of the current design standards and existing deficiencies. Considering the public interests, we cannot in good faith recommend a connection from Marin Woods to Swantown.

Although this intersection exists currently and is of relatively low volume, it is indeed substandard. The City has stated that as growth and expansion within the City occur, this intersection's significance and demands will also grow.

According to traffic studies by Gibson Traffic, there is projected to be only up to 14 additional vehicles using this intersection during the peak afternoon hour. Although none of these vehicles are expected to go to or come from Fairway Lane, the vehicles in question would be interacting with an existing and substandard intersection.

A connection is physically possible, but not geometrically supported by Oak Harbor road design standards, AASHTO or WSDOT with the current configuration of Fairway Lane's connection, property and adjacent driveways. Corrections necessary to remedy the existing intersection require horizontal and vertical changes to Fairway, which impact multiple properties not under the Applicant's control.

Marin Woods connection to Swantown at Fairway will also limit future remedies available to Fairway Lane and likely have a negative impact on costs associated with the eventual improvements to Fairway Lane.

We have been unable to demonstrate that connectivity to Marin Woods at Swantown is in the public interest. In contrast, we can show how the existing intersection at Fairway Lane is substandard, and it is not in the public's best interest to exacerbate Fairway Lane's shortcomings with an additional connection to Marin Woods. The substandard conditions at the intersection would also propagate additional substandard constraints onto the project's internal road connections for grade, curvature and ADA compliance.

Of the many design exceptions to any proposed Fairway Lane intersection, one or two non-compliant parameters could be mitigated or ignored – but the entire list of non-compliant deficiencies suggests the three-way intersection is not a good candidate to receive additional traffic via a fourth leg into Marin Woods.

- The optimal solution for future consideration is to realign Fairway Lane to intersect with Swantown at Loerland. Such a connection allows a traditional, right angle, four-way intersection compliant with standards for geometry and gridded systems.

## Response to Comments

- Marin Woods does not create any of the existing inadequacies at Fairway Lane.
- A connection to Swantown from Marin Woods does not remedy Fairway Lane inadequacies, and has the potential to increase traffic as the City grows, thus exacerbating the existing inadequacies.
- As confirmed by Gibson Traffic, no existing or projected traffic impact exists, a City-requested Marin Woods connection does not solve an existing Marin Woods problem.
- Correcting Fairway lane would include:
  - Adding a landing prior to the stop bar on the Fairway approach leg to achieve a less than 3% grade and accommodates ADA crosswalks
  - Correcting the horizontal curve or adding a traffic signal
  - Correcting the horizontal curve can only be achieved by swinging Fairway southerly into Golf Course property prior to reverse curving to the current intersection location closer to 90°
  - Or –moving the Fairway intersection northwesterly such that the existing Fairway lane could host a larger radii turn and/or a tangent section prior to connecting with Swantown, (AASHTO prohibits short-radii turns at intersections to achieve acceptable right-angles.)
  - Or –moving the Fairway connection to the next intersection north at Loerland. A Loerland/Fairway intersection would meet the desires of a gridded connection nicely and be best suited for City growth.
  - Mitigating the Henman driveway, the Wolf driveway, and the Evans private land encroachment issues

*9(a) It is required by Oak Harbor Municipal Code. Several citations within the Code point to the requirement that streets be connected. The Purpose statement of the subdivision code (OHMC 21.10.010) makes reference to street connections in several points – addressing the promotion of “safe and convenient traffic circulation,” providing for “proper ingress and egress,” and promoting the “integration of new residential neighborhoods with developed areas of the community.” In OHMC 21.60.100, the code states, “the street pattern utilized for short subdivisions and subdivisions shall be a grid or modified grid, with four- or three-way intersections designed at right angles.” Finally, OHMC 21.50.080 states that, “streets, sidewalks, pedestrian or bike paths shall be linked within and between neighborhoods to create a continuous and interconnected network of roads and pathways... Local streets, arterials and collectors shall be extended to the boundary of the development...”*

*Marin Woods Response:*

*“safe and convenient Traffic circulation”:*

**Convenient:**

Marin Woods is already well connected. Marin Woods and the larger Loerland-Heller-Swantown neighborhood are currently well connected to the City grid. The Loerland-Heller-Swantown neighborhood has 7 traffic connections to the City grid of minor arterials: 3 to Loerland, 2 to Heller and 2 to Swantown. Marin Woods is well connected in the existing neighborhood configuration.

Gibson Traffic analyzed the Marin Woods site, both within the Loerland-Heller-Swantown neighborhood and beyond in the surrounding City. If there was a Marin Woods connection to Swantown, the Gibson model predicts at the daily peak hour only 5 vehicles would potentially exit Marin Woods onto Swantown, and only 9 vehicles would enter Marin Woods from Swantown totaling only 14 peak hour vehicles, or a new vehicle movement every 4 ¼ minutes (this during peak hour, all other times are less).

## Response to Comments

The analysis absent a Swantown connection predicts no peak hour traffic to or from Fairway Lane, which relieves any future demand on an already non-compliant intersection.

The analysis absent a Swantown connection showed no degradation in the level of service at any intra-neighborhood intersection, any minor-arterial neighborhood connection point, or any surrounding area intersection, and no perceivable impact in wait times.

The Applicant was informed in meetings with the City, that the Fairway Lane Swantown intersection is not currently in the City's 5-year, 10-year, or 20-year plans, nor on current Operations & Maintenance "wish lists".

**Safe:**

OHMC 21.60.100, subdivisions shall be gridded with 4- or 3-way intersections designed at right angles.

All seven existing connections comply with 21.60.100. Fairway lane connecting at 45° to Swantown does not.

The existing intersection of Fairway at Swantown is noncompliant with AASHTO and or City OHMC for these elements:

**Horizontal Geometry:**

OHMC 21.60.100 with respect to horizontal angle. Existing Fairway approaches Swantown at 43-45°. OHMC and WSDOT allow  $90 \pm 15^\circ$ , AASHTO desires  $90^\circ$  and forbids any angle less than  $60^\circ$ . Fairway Right turn lane at Swantown terminates with a  $45^\circ$  angle point.

**Horizontal Curves in or near intersections:**

Fairway left turn lane at Swantown terminates on a 130ft radius curve, not a tangent. AASHTO discourages short radius curves as a means to connect intersections to the extent practical (9.4.2). Although "short radius" is not strictly defined, it is alluded to within other AASHTO discussions and regulations that include entering sight distance, stopping sight distance and horizontal curves that are masked by vertical curves ("Disjoint Effect").

AASHTO 9.4.2 Alignment – (Contrary to instruction provided previously by staff) "The practice of construction short-radius horizontal curves on side-road approaches to achieve right angle intersections should be avoided whenever practical." (9-26)

AASHTO 9.4.2 Alignment – "Roads intersecting at acute angles need extensive turning roadway areas and tend to limit visibility." (9-25)

AASHTO 9.4.2 Alignment – "Acute-angle intersections increase the exposure time for the vehicles crossing the main flow of traffic." (9-25)

AASHTO 9.5.4 Affect of Skew - At an oblique-angle intersection, the length of the travel paths for some turning and crossing maneuvers will be increased (and distances increased accordingly). (9-54)

AASHTO 9.5.4 Affect of Skew - In the acute-angle quadrant of an oblique-angle intersection, drivers often need to turn their heads considerably to see across the entire clear sight triangle. (9-54)

AASHTO 3.5.2 states "Sharp horizontal curvature should not be introduced at or near the top of a pronounced crest vertical curve." (3-165) (the existing intersection condition)

## Response to Comments

**Vertical Geometry:**

The existing Fairway connection is also noncompliant with AASHTO with respect to vertical geometry, terminating at the stop bars at a grade of **approximately 13%**.

Grades vary from 12.5 to 13.5% at the stop bar. Fairway grade increases as it approaches the stop bars.

AASHTO 3.5.2 states "Sharp horizontal curvature should not be introduced at or near the top of a pronounced crest vertical curve." (3-165) (the existing intersection condition)

AASHTO 3.5.2 states "Both horizontal curvature and profile should be made as flat as practical at intersections where sight distance along either roads or streets is important and vehicles may have to slow or stop.

AASHTO 9.4.3 Profile – Accordingly, grades in excess of 3 percent should be avoided on the intersecting roads in the vicinity of the intersection.

AASHTO 2001 p404: AASHTO 9.4.3 Profile – Accordingly, grades in excess of **3 percent** should be avoided on the intersecting roads in the vicinity of the intersection.

OHMC 11.17.100.4 Maximum grades **shall not exceed 10%** for residential streets, collectors and minor arterials unless otherwise approved by the engineer. Deviations for grade are often required and are reasonably available when safety is not adversely affected. Excessive grades in a landing at an intersection are unusual.

**WAC 309.20.21:** The headlights of motor vehicles shall be so constructed, arranged and adjusted that they will at all times mentioned in this act and under normal atmospheric conditions produce ample driving light for the use of the operator of such vehicle but will not project a glaring or dazzling light to persons approaching such lights or to persons whom such headlights may approach.

This 1967 language was superseded by WAC 204-21 and RCW 46.37, which contain regulation for headlamp mounting, height, aim and intensity. Essentially, headlight angles for low beams are directed slightly downward, and headlight angles for high beams are to aim not higher than level with the ground. A common measurement is that the low beam center of light or hot spot is 1.5ft below a level baseline between the headlamp and a vertical wall 25 ft away, which results in approximately 6% down for passenger vehicles, and more steeply downward for taller vehicles.

AASHTO recommends intersections to have less than  $\pm 5\%$  max grade. Intersections with cars stopping with an upward angle will direct headlights upwards in a glaring or dazzling manner.

Glaring headlights easily mask pedestrians, bicyclists, pets, deer and other lighted vehicles.

**Fire:** Current City fire response comes from the northeast and will not likely use a connection at Swantown. A future fire station is being considered on Heller, which would also approach from the north. Again a Swantown connection does not appear beneficial to fire response. (See attached map)

**Intersection Spacing, proximity of driveways to intersections:**

The driveway entrance to the golf course parking lot is non-compliant. The 42 ft distance to eastbound Fairway places this driveway with the functional intersection area for all three elements as described by AASTHO 9.9.2

## Response to Comments

At present, the Fairway intersection at Swantown is low volume with a stop sign on Fairway only. As the City grows and the demand at the Fairway intersection at Swantown increases, Left turn maneuvers will also increase (Swantown to Fairway, and Fairway to Swantown). As left turn demands increase, left turn queuing pockets become necessary. Passing lanes and eventually signalized control may be likely.

AASHTO 9.2.2 Intersection Functional Area describe “the functional area on the approach to an intersection or driveway consists of three basic elements (1) perception-reaction decision distance (2) maneuver distance, and (3) queue-storage distance.”

AASHTO Figure 9-1 Physical and Functional Intersection Area and Figure 9-2 Elements of the Functional Area of an Intersection.

***“proper ingress and egress,”***

Intuitively, a connection at Swantown seems reasonable, perhaps desirable. On review, we find the elements as described above to be worthy of attention. Absent intersection improvements, the existing intersection of Fairway Lane at Swantown does not contain proper ingress and egress options for Marin Woods.

Proper ingress and egress points are proposed as connectivity to SW Roberston Drive and SW Putnam Drive.

***“integration of new residential neighborhoods with developed areas of the community”***

Neighborhood connectivity is provided. Additional studies of nine neighboring neighborhoods (see traffic comment 14) also find that Marin Woods as proposed already has more connectivity with the community than do the existing nine similar neighborhoods studied.

Pedestrian and utility connectivity to Swanton is provided as proposed.

The traffic study predicted no vehicles passing between Marin Woods and Fairway Lane.

***OHMC 21.10.010(1) Purpose:***

*This title shall be known as the “subdivision ordinance of the city of Oak Harbor, Washington.” The purpose of this title is to regulate the subdivision of land and to promote the public health, safety and general welfare in accordance with the standards established by the state in Chapter 58.17 RCW as now or hereafter amended and the city and to...*

Fairway lane connection at Swantown is substandard and deviates from standards established by the City, State and AASHTO. Some of these existing deficiencies have increasingly adverse safety implications as traffic flow along Swantown or Fairway Lane increase, and adding another intersection leg to or near the Fairway intersection will adversely impact existing conditions. A connection from Marin Woods to Swantown exacerbates the deficiencies at the Fairway Lane intersection such that the public health, safety and welfare is not promoted.

*9(b) Not utilizing the available Swantown Avenue connection places an undue burden on the existing neighborhood streets by funneling all new Marin Woods traffic through existing local streets. This is contrary to OHMC 21.10.010(8) that states that new developments be integrated into existing neighborhoods. It also is contrary to the general subdivision review criteria that its approval “be in the public interest.”*

**Marin Woods Response:**

## Response to Comments

Gibson Traffic consultants (GTC) have evaluated the project impacts with and without the required connection to Swantown. GTC concluded that there is no discernible difference in the traffic count or circulation patterns with or without a roadway connection to Swantown.

The studies show that 14 vehicles are projected to use the Swantown entrance, 5 outbound and 9 inbound, during peak hour traffic. No trips are projected to or from Fairway lane.

In both studies, all but 14 vehicles at the daily peak hour were projected to take access via Loerland, Heller, or Thornberry to Swantown. (See map below)

Additional studies of five neighboring neighborhoods (see traffic comment 14) also find that Marin Woods without an additional connection already has more connectivity with the community than do the existing similarly-sized neighborhoods studied.

The City has expressed a desire for traffic calming measures within Marin Woods as reduced speed increases traffic safety. The Applicant agrees, reducing speed increases traffic and pedestrian safety. A connection with Swantown will likely increase the speed and thus increase the need for traffic calming. Not connecting to Swantown is itself a traffic calming measure. Eliminating through traffic will reduce both volume and speed and increase neighborhood safety.

For these and other sound engineering reasons, we have been unable to demonstrate that a connection to Marin Woods "would be in the public interest." To the contrary, we have found existing conditions of Fairway to be substandard, and the substandard conditions will become less safe as the City grows and Swantown or Fairway traffic increases. An additional connection to or near Fairway lane will not remedy Fairway, but exacerbate existing shortcomings and present additional, substandard conditions, which are not in the public's best interest.

*9(c) Regarding the request for relief based on a slope of more than 10%, the applicant submitted an engineered plan on November 6, 2015 for the Swantown Avenue connection that did not indicate that the slope was excessive.*

## Marin Woods Response:

The road slope geometry submitted on November 6, 2015, demonstrated only that a preliminary geometry was possible within Marin Woods, and the plan was not accepted by the City. After further review by the design team, the geometry presented on November 6, 2015, does not demonstrate that connectivity is compliant with other standards per the City, State or AASHTO. The November concept also neither identified nor relieved the substandard conditions of Fairway at Swantown.

The questions have become, not can a compliant solution be efficiently achieved, but given the long list of non-compliant conditions, whether prudent planning would suggest it should not be done. That in aggregate, too many non-compliant conditions exist that need either mitigated or ignored, and collectively, it is not yet clear that a solution can be efficiently engineered that mitigates the safety risk at a viable cost-benefit.

Intuition to connect this project site to Swantown has upon further study not met with demonstrable evidence that connectivity is in the public's best interest, is safe, or adds benefit. On the contrary, connectivity has borne evidence of safety concerns associated with increase traffic and increase speed within the neighborhood and lack of overall benefit.

*9(d) Staff does not agree that the home located on site meets the criteria in OHMC 21.60.100(2) regarding substantial improvements. As stated in that section, the street pattern may be adjusted if "substantial improvements exist on adjacent properties which inhibit a grid..." This section of code is designed to avoid a situation where conditions on a neighboring parcel not owned by the subdivider could block the approval of the subdivision because of a lack of connectivity.*

## Response to Comments

## Marin Woods Response:

Development of the subject property has no apparent ability to block development of adjacent properties. Connection of this property to Swantown would require remedies to existing driveways and to the intersection itself, if current codes and design regulations were applied.

Remedies not under the control of this landowner include the adjacent neighbor's driveway to Swantown (Henman). Across the street lay many other deficiencies not under the control of this land owner, including one driveway to the golf course property, public use of private land (Evans), and significant horizontal and vertical modifications to the approach of Fairway Lane to Swantown.

The existing property contains one home and one driveway. "Substantial" is not defined in the code, and quantifying "substantial" is difficult as it is an adjective; a relative term used to compare. To create a connection at Swantown, one could argue that demolishing the existing home is required, whereas the home is occupied and intended to be retained. In addition, one or more neighbors' driveways are required to be altered to become compliant with current design standards. A portion of the private property across the street (Evans) is also impacted and would require resolution, and the horizontal and vertical modifications to Fairway weigh into the discussion as well. Demolishing one home under the applicant's control and forcing impacts to at least one and as many as two unrelated properties may be considered substantial.

Adding the Swantown connection exacerbates inadequate conditions with the existing Fairway intersection, and adding a connection would further compromise existing inadequacies and add new substandard conditions. Financial considerations for an additional connection include on-site improvements, offsite improvements to neighboring properties, dedication or condemnation of properties and the additional expenses for remedies required to mitigate Fairway's deficiencies. The benefit for this connection appears to be very few peak hour vehicles with no measurable impact to connectivity, emergency services or utilities. Benefits to the public with regard to connectivity for vehicles, pedestrians, utilities and emergency services are provided in absence of an additional connection to Swantown. Comparing the cost of a Swantown connection with no additional benefit to the public, the cost does appear substantial and disproportionate to the benefit to the public.

Considering the financial significance of such on-site improvements, impact to neighboring properties, the additional expenses for the remedies required to mitigate Fairway's deficiencies, as compared to the low number of predicted peak hour movements, "substantial" development on and off-site would require demolition and/or rebuilding in order to create a compliant-connection at Swantown that is compliant with current design standards. The cost of the connection is disproportionate to the benefit to the public.

*9(e) Mr. Bissel's letter seems to indicate that there is only one design solution for a street connection to Swantown Avenue and that a connection at this location is problematic. More than one design solution for this street connection exists.*

## Marin Woods Response:

It is not our intention to suggest that only one design solution for a street connection to Swantown exists.

During preparations for this submittal, several Swantown roadway connection concepts were analyzed. The configurations considered were reduced into the four exhibits attached in the waiver request that accompanies this submittal package. As shown in the waiver request, all concepts exacerbate inadequacies at the existing Fairway intersection and provide no additional benefit to the public or to Marin Woods. It is not in the public's interest to exacerbate the Fairway intersection at Swantown.

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**Response to Comments**

Our position is that multiple connection options do indeed exist at Swantown, all of which are as each option breaks several City, WSDOT or AASHTO rules and design standards. Deviating from one or two rules is different than deviating from 3 or 4 rules and so on. At some point, we need to ask if all the mitigation and deviation from standard remains in the public's best interest. When we can demonstrate that many existing conditions are substandard, the addition of a Marin Woods connection to Swantown not only exacerbates the substandard conditions but also propagates additional substandard conditions into the project. Each substandard element is likely to become less safe as traffic volumes increase. We cannot in good faith recommend an additional connection at or near to a substandard intersection that has no public or project benefit.

The Fairway Lane deficiencies are not created by this project and the mere presence of an additional connection at or near this intersection does not remedy the deficiencies at this intersection. Resolving the deficiencies of the Fairway Lane intersection is beyond the scope of this application.

## Response to Comments

*9(f) Accepted urban planning principles in the recent past support the connection of roads to the greatest extent possible. Among many reasons for these connections are the ease of the provision of emergency services, access to neighborhoods for automobiles, pedestrians and bicyclists alike, and the distribution of automobile traffic on many routes rather than concentration onto few. Street connections will allow children and others who cannot drive to access routes to schools and parks. While there are not significant pedestrian facilities in the area now, the connection will provide access for future improvements. If the connection is not made now, it may never happen due to lot layouts and private property issues.*

**Marin Woods Response:**

Intuitively, a Swantown connection would seem to benefit emergency service responses. On review and analysis, however, emergency services are not expected to be significantly different with or without a Swantown connection. (see attached map)

Current fire response is expected to come from the north east via Whidbey Avenue, not likely to route through a connection at Swantown. A future fire station is being considered on Heller north of Crosby. This fire house would likely serve Marin Woods and would approach from the north. A Swantown connection does not appear to be beneficial to fire response.

**Police:**

An anecdotal conversation with a Loerland-Heller-Swantown neighbor who is a law enforcement officer with the Island County Sheriff's office commented that a Swantown connection might open opportunity for drive through crime and adversely impact crime but not promote a rapid response from police.

Neighborhood connectivity is provided. Additional studies of nine neighboring neighborhoods (see traffic comment 14) also find that Marin Woods as proposed has more connectivity with the community than do the existing nine similar neighborhoods studied.

**Pedestrian and non-vehicular connectivity, utilities:**

Public corridors and connectivity are provided as proposed. A public, pedestrian corridor is provided between Marin and Swantown that contains an ADA compliant walkway with grade of 5%, is landscaped, and varies in width not less than 20ft wide. A walkway following a roadway connection to Marin Woods would also have an ADA compliant walkway, but would be that of the roadway profile and sidewalk grades exceeding 10%.

Public utility corridors are provided as proposed. Two public utility corridors are available between Marin Woods and Swantown that provide water, sewer and stormwater connectivity between Marin Woods and public facilities within Swantown right of way. One corridor holds the pedestrian path, the other is a utility easement along the north property line on lot 1. Capacity exists to add gas and other communications utilities as well.

Multimodal connectivity to the community is provided.

Utility connectivity is provided.

## Response to Comments

**Cost-Benefit Analysis:****Benefit:**

Benefits can be monetary (quantifiable) or non-monetary.

The Gibson Traffic Addendum of 18 December 2015 establishes from a traffic standpoint, no incremental benefit exists in adding another grid connection point to the seven connections that already exist. Gibson states: "with the addition of (anticipated) development trips" ... "All of the study intersection will operate at acceptable LOS (level of service) D or better." (see Engineering #14 for complete response).

**Cost:**

With no incremental benefit, any non-zero incremental cost creates a conclusion that costs exceed the benefits.

Costs can be monetary (quantifiable) and or non-monetary.

Gibson states: "The removal of the access to SW Swantown Road opposite Fairway Lane will eliminate potential cut through traffic and would allow the existing single-family residence to remain."

A potential connection has a negative impact on traffic and pedestrian safety associated with non-resident through traffic, higher volumes and higher speeds.

The incremental costs of attempting a connection, which will not be design-compliant are in fact very large. Large enough to cause the Applicant hardship.

Potential loss of the house **\$145,000** (per (May, 2016) appraisal "as is", current replacement value higher, 2,010 SF)

Loss of Lot **\$90,000** (per (May, 2016) appraisal)

Street construction **\$60,000** (estimate per infrastructure constructor partner)

Rough Grading (through excessive steepness) (per infrastructure partner) **\$10,000**

Retaining wall construction through excessive steepness (per infrastructure partner) (\$3,000 per linear foot) **\$40,000**

Engineering & Management (10% of Construction) **\$11,000**

Maintenance Easement Agreement (if required) **\$5,000**

Loss of mature plantings **\$15,000**

Contingency **\$7,000**

**Cost total - \$375,000**

Not included additionally: costs of delays, costs of resolving non-compliant design issues of surrounding private property, driveway and parking lot access points, etc.

## Marin Woods

## Response to Comments

10. This comment was acknowledge as satisfied and is not repeated here.

11. This comment was acknowledge as satisfied and is not repeated here.

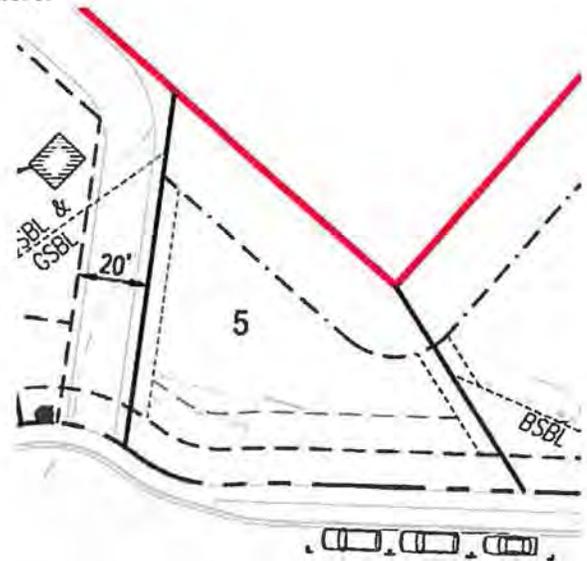
12. This comment was acknowledge as satisfied and is not repeated here.

13. Reconfigured lot 5 will require the 20 foot PRD perimeter setback line in the rear yard. This lot may be difficult to place a home as well. Please show home placement for verification.

*Lot 5 still does not show the required 20 foot PRD perimeter setback line in the rear yard. Setback needs to be shown as such:*

Marin Woods Response: Fixed. Lot 5 now shows 20 foot perimeter setback.

Basic home "E" fits within the front, garage, and side setbacks as shown here.



14. On page P0, "Site Information" lists access to the site off of Swantown Road – with this revision, that is no longer the case. The address of the project site is incorrect.

*The site address is 1292 SW Swantown Avenue. Please correct.*

Marin Woods Response: Fixed. The address is now shown as 1292 SW Swantown on the P0 and on the drainage report cover.

15. This comment was acknowledge as satisfied and is not repeated here.

## Response to Comments

16. Please include a copy of the proposed CCRs for the subdivision. (19.31.180).

*Applicant in process. Please submit with above corrections.*

Marin Woods Response: (Same as Engineering #32)

At the City-direction, the Applicant responded to these comments of 27 March 2016 on 04 April 2016, and City produced comments to the CC&R draft dated 20 April 2016.

Then the Applicant produced a revised CC&Rs dated 21 June 2016, and revised the CC&Rs draft again with a formal response letter dated 06 July 2016, and with changes made in the CC&R draft document provided dated 06 July 2016 and the inclusion of the requested O&M manuals and the requested Design Guidelines (all documents enclosed in this submittal packet).

The CC&Rs are currently in working-draft format that can be efficiently aligned with the drawings once pre-plat approval is stable.

End of Planning Comments

## Response to Comments

**Engineering  
General**

1. It is not clear what the difference between sheets P3 (Preliminary Plat Map) and PL4 (Preliminary PRD Map) are. Please work with the planner assigned to this project to achieve appropriate plan sheet labels. The 3 main labels are Preliminary Plat Map, Planned Residential Map (PRD) map, Preliminary Plat Site *Plan/Map (utility/civil plans/maps), etc. (Also, sheet PL4 may not be necessary.) (OHMC 19.31.180 & 21.20.020)*

Marin Woods Response: We agree and believe that sheets P3 and P4 are largely redundant and could be easily combined. However, it is also our opinion that per the codes, a Plat Map and a PRD Map are each required, and each have subtle differences. Both sheets are retained in the set only because of this read of the code.

Aside from the sheet title and page number, the only difference is that the PRD sheet contains the open space calcs whereas the Plat Map does not.

2. *Delineate and label proposed and existing easements on the plat map and site utilities plan. (OHMC 21.40.040 2(a), (b), & (e)) The pedestrian path through Tract C will likely require an easement for pedestrian right-of-way, etc.*

Marin Woods Response: Pedestrian path through Tract C now included a proposed public easement as a pedestrian right-of-way. No other public or private easements are known. Additional easements, if found or as needed, will be added to final plat documents as necessary.

**Plat Document**

3. *The proposed layout of lots 1 through 4 and Tract C conflict with the required street connection to Swantown Avenue. Please see the first comment under the "Street" heading.*

Marin Woods Response: The applicant has demonstrated that Marin Woods is well connected to the community and that an additional connection at Swantown presents existing inadequacies at Fairway Lane such that an additional connection at Swantown is not in the public's best interest. A waiver request is also included with this submittal, seeking relief from the standards requirement for a connection at Swantown.

Please see planning comment 9.

4. *Per previous comments, please clearly indicate the municipal boundaries on the plat (and on the utility/construction plans). The Wolf and Fischer lots are in the County. The Warner lot is in the City. Also, show the municipal boundary line across Swantown Avenue. It is very important to know where the boundaries are for many reasons, including plan review and approval as well as construction permitting, and inspection. (OHMC 21.40.040 (2) (b)).*

Marin Woods Response: Fixed. The boundary around the Wolf and Fischer properties have been delineated as has the crossing of Swantown.

5. *The following comment was previously provided "Driveway restrictions shall be indicated on each corner lot, subject to final lot and street layout." The note provided by the designer will suffice for preliminary plat, however, a graphical representation of the driveway restrictions is required on the final plat document.*

Response: Agreed, thank you.

## Response to Comments

**Street**

6. *Per previous review comments, including pre-annexation review comments and as presented to City Council as part of the annexation proposal, a road connection to Swantown Avenue aligning with Fairway Lane is required. In addition to a vehicular and pedestrian way, this connection will also provide a connecting route for sewer, water, stormwater, and other utilities. Show on all applicable drawings. OHMC 21.60.100, 11.17.070 (1) & (2) and 2007 Transportation Comprehensive Plan, Policies 1a and 2a*

Marin Woods Response:

**Street connection:**

The annexation process does not include engineering review or construction approval of engineered infrastructure design plans, and could easily miss some of the shortcomings of the Fairway intersection with respect to engineering design standards.

A connection of Marin Woods with Swantown may appear intuitively as a beneficial connection, but analysis and engineering evaluation demonstrates that the existing connection to Fairway Lane is compromised with several substandard deviations from current design standards..

The annexation ordinance passed for this project area did not contain a requirement for a roadway connection to Swantown. If the ordinance did contain such a requirement, the requirement would not supersede the need to safeguard health, welfare and safety of the public.

**Pedestrian and utility connections (also discussed in Planning comment 9):**

Public corridors and connectivity are provided as proposed. A public, pedestrian corridor is provided between Marin and Swantown that contains an ADA compliant walkway with grade not exceeding 5%, is landscaped, and varies in width not less than 20ft wide. A walkway following a roadway connection to Marin Woods would also have an ADA compliant walkway, but would be that of the roadway profile and sidewalk grades exceeding 10%.

Public utility corridors are provided as proposed. Two public utility corridors are available between Marin Woods and Swantown that provide water, sewer and stormwater connectivity between Marin Woods and public facilities within Swantown right of way. One corridor holds the pedestrian path, the other is a utility easement along the north property line on lot 1. Capacity exists to add gas and other telephony conduits as well.

Multimodal connectivity to the community is provided.

Utility connectivity is provided.

(for historical reference, the request for a Swantown connection for the Marin Woods project is summarized below:

The original 1992 application of Highland East, required by OHMC to design 200 feet beyond the cul-de-sac had NO connection to Swantown.

The original Marin Trust application (2011) for annexation had NO connection street to Swantown.

In reviewing the annexation application, the City requested (2011) the Applicant show, and the Applicant showed in conceptual format a street connection in the conceptual sketches.

## Response to Comments

The Applicant proposed (2011) alternative locations for the street that would not require demolishing the existing home, which were not accepted at that time.

**The Annexation was approved, without any binding concept plan.**

The Preliminary Plat application (2014) by Landed Gentry included language about preserving and modernizing the existing house.

The next Landed Gentry revision omitted the house, and showed a street connection.

The Preliminary Plat application by Marin Trust (November 2015) similarly omitted the home, and showed a street connection. Applicant indicated (November 2011) to City the design and cost feasibility of all alternatives were being studied for feasibility. Applicant identified (November 2011) Henman driveway as a non-compliant example.

City comments (December 2015) identified resolution of Henman driveway (off-property and county) as responsibility of the Applicant.

On 18 December 2015 the Applicant provided the City with an amended Gibson Traffic Analysis to include a scenario without the connection, which concluded adding the new street produced no material difference in traffic impact or level of service.

In February 18 2016 meeting City indicated they could not comment on anything that was not an official submittal.

On February 26 the Applicant official submitted a revised plan and the amended traffic study.

7. *Engineering supports an administrative approval for the proposed change from street standard "Local Residential Narrow" to the proposed "Local Narrow Tier 1 Alternative", which eliminates a short section of parallel parking lane between proposed Tracts A and B, with the clarification that exact street geometry is still subject to civil/construction plan review and approval. (It has been demonstrated in accordance with OHMC 21.60.060 that the minimum public parking requirement can be met with the reduction of parallel parking lane.)*

Marin Woods Response: Thank you.

8. *Engineering supports approval of the proposed variance on road geometry for curve length and tangent length, with the clarification that exact street geometry is still subject to civil/construction plan review and approval.*

Response: Thank you.

9. *Engineering supports the approval of the proposed variance for road grade steeper than 10 % on the street proposed as "Upper Marin Drive" for the short distance indicated on the submitted street profile, approximately between stations 6+00 and 8+00 with a maximum slope of 13.5 %. This is contingent upon maintaining access to Robertson Drive and grades no greater than 7 % on Valea Vista, and with the clarification that exact street geometry is still subject to civil/construction plan review and approval.*

Marin Woods Response: Thank you.

## Response to Comments

10. *Reference Sheet C2: The proposed channelization on Swantown Avenue indicates an existing 12' lane, and maintains that width. The existing striping seems to indicate a 10' lane, please verify and adjust accordingly. The channelization detail also does not have appropriate pavement and curb taper/transitions.*

Response: Fixed. Swantown lane widths of 10ft are now shown. Shoulder tapers have since been added per shoulder taper criteria. No tapers are specified for abrupt increase in shoulder widening in the direction of travel, a 30ft taper was used. The transition for a collapsing or narrowing shoulder was calculated to be a 90ft taper for the speeds on Swanton. The narrowing taper pivots on the east neighbor's property corner at the ROW, which constrains the location of that taper. The taper also crosses the neighbor's driveway apron within the ROW and is not perceived to pose any safety concerns.

Tapers can also be further addressed during construction plan preparation and review.

11. *Appropriate curb tapers at road cross section transitions need to be altered to return drivers to the center of the roadway as a travel lane encounters a parallel parking lane. The appropriate transition is a subtle bulb-out shape and it should be generally provided on both sides of the street for symmetry to provide appropriate visual cues to the driver.*

Marin Woods Response: The preliminary plan now shows center and shoulder striping, with markings where bulb-outs could be. Bulb-outs have not been fully designed at this preliminary level. Lane configuration is such that ROW center and road center are not coincident in all road sections, the sections are not all symmetrical. Bulbs, if used, will require considerations for asymmetry as well as drainage. Bulb-outs will certainly be engineered for construction plans. Center and shoulder striping are shown on C5-Grading.

12. *The designer has proposed a street crossing of "Valea Vista" at station 3+75 on plan sheets. This may or may not be an appropriate location, however, the park plans (Sheet Pl-2) seem to also indicate another crossing at 4+20 (labeled as "Park Entrance With Accent Trees"). In addition, the designer's written response to previously provided comment number 17 (street lighting) along with the proposed sidewalk configuration indicate an intended crossing near lots 4 and 6. Also, previously commented on is the probable need for a crossing near lot 13. All crosswalks including midblock crossings will require a street light. Exact locations and designs will need to be determined during the final construction plan preparation process. (Regarding grading requirements for curb ramp cross slopes at midblock crossings, the reviewer suggests the designer review WSDOT Design Manual 1510.019(2)(c)&(d), and as stated before, the cross slope of mid-block crossings is permitted to equal the street grade.)*

Marin Woods Response:

We believe that lighting is now shown appropriately. Crosswalks and street lighting will be revisited during construction plan preparation and review, and will ultimately be designed by PSE or their agent.

Pedestrian Crossing at Valea Vista has been relocated to sta 4+25 approximately, to synchronize with landscape plans and the street light has been moved accordingly. The location of a crosswalk to Tract A has many viable possibilities, as shown seems reasonable and safe.

Pedestrian path near lots 4 and 6 now has a street light as well.

A crosswalk to tract A at lot 13 is also shown, a streetlight is nearby. Agreed, that the crossing, related bulb-outs and/or ramps will all be determined/refined with the construction plan preparation and review process.

Crosswalk grade: Agreed, that a mid block crossing may have a cross slope matching road grade, per WSDOT and PROWAG.

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**Response to Comments***13. Regarding preliminary street light layout:*

- *A previously provided comment instructed the designer to delete the street light in front of lot 4. The designer's written response to that comment indicates that a pedestrian crossing is intended at that location. If a pedestrian crossing is appropriate at that location, a street light will be necessary.*

Marin Woods Response: Streetlight was added at lot 4. Street lights will be addressed again and in more detail during construction plan preparation and review.

- *The intent of a previously provided comment regarding centrally locating the street light along Tract A was to illuminate the probable location of a crosswalk across the street proposed as Valea Vista Lane. The designer has now proposed a crossing at station 3+75. Wherever the crosswalk ends up, a street light shall be provided in that vicinity. Street light layout is subject to change upon review of PSE/Intolight illumination plans and final civil plans.*

Marin Woods Response: Streetlight was intended for the crosswalk and is shown with the crosswalk. Street lights will be addressed again and in more detail during construction plan preparation and review.

Response to Comments

**Traffic**

14. The submitted Traffic Impact Analysis does not include the required road connection to Swantown Avenue per OHMC 21.50.080, 21.60.100, 11.17.070 (1) & (2) and the 2007 Transportation Comprehensive Plan, Policies 1a and 2a. It also does not include any LOS analysis of local residential connections to Swantown such as Loerland, Thornberry, and Quinault.

Marin Woods Response: (in two parts)

**Response (part one -connectivity):**

The (Gibson) Traffic Impact Analysis (dated 16 December 2015) provided in our 14 March 2016 submittal is an ADDENDUM TO the (Gibson) Traffic Impact Analysis (dated August 2014) provided in our 06 November 2015 submittal. The intersections to be studied (by Gibson) were confirmed with City staff in advance of the August, 2014 study.

Both Gibson reports submitted include lengthy addenda with the model results for each intersection studied. The Gibson (December, 2015) conclusion is -- omitting a connection to Swantown there is no degradation in the level of service (Table 2 below). The aggregate delay across all seven intersections under study is less than 20 seconds in total.

Gibson has also observed, not having a connection at this location, improves the Fairway Lane intersection and Swantown Avenue traffic flows (by not increasing demand on an already non-compliant intersection).

**Table 2: 2017 Future Level of Service Summary –PM Peak-Hour**

Intersections	Existing Conditions		2017 Future Conditions			
			without Development		with Development	
	LOS	Delay	LOS	Delay	LOS	Delay
1. Langley Blvd at Ault Field Rd	C	20.7 sec	C	21.9 sec	C	22.1 sec
2. Clover Valley Rd at Ault Field Rd	C	21.9 sec	D	28.0 sec	D	28.9 sec
3. Heller Rd at Whidbey Ave	B	15.7 sec	B	16.4 sec	B	16.8 sec
4. SW Swantown Rd at Fairway Lane	A	9.3 sec	A	9.4 sec	A	9.4 sec
5. Heller Rd at SW Swantown Rd	C	16.5 sec	C	19.4 sec	C	20.1 sec
6. SW Fort Nugent Ave at Swantown Rd	C	28.2 sec	C	30.1 sec	C	30.4 sec
7. SR-20 at Swantown Rd	B	15.8 sec	B	18.9 sec	B	19.0 sec

14. ... It also does not include any LOS analysis of local residential connections to Swantown such as Loerland, Thornberry, and Quinault.

Marin Woods Response: (in two parts)

**Response (part two – Level Of Service (LOS) ):**

This comments addresses the “intra-neighborhood” conditions.

The Subject Neighborhood is bounded by Loerland, Heller, and Swantown, and consists of approximately 410 existing and planned single-family homes, inclusive the proposed Marin Woods and other vacant properties.

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**Response to Comments**

There are in fact seven (7) neighborhood-to-minor-arterial connection streets at the perimeter of this subject neighborhood (bounded by Loerland-Heller-Swantown).

Gibson Traffic has provided the following explanation of the intra-neighborhood workings of their December 2015 model run. First, the peak-hour occurs at PM and totals 42 trips in a (60-minute) hour.

The map (below) illustrates the intra-neighborhood distribution (from Marin Woods) and the inter-neighborhood distribution (from the Loerland-Heller-Swantown neighborhood to the perimeter minor arterials).

The PM-Peak-Hour Trips, 42 trips, flow 28 trips to Putnam, of which 13 trips exit the neighborhood via Tourist, and 12 trips via Roeder Drive, 3 trips via Putnam at Heller. The remaining 14 trips (see black dashed line on subject property) flow to Robertson, of which 13 trips exit the neighborhood via Thornberry [alternatively (per Gibson) 2/3 or 8 trips via Thornberry and the remainder (1/3 or 5 trips) via Regency] and 1 trip via Putnam.

All Gibson Traffic figures are peak-hour, meaning in all other hours of the day, counts are less. Forty-two trips per peak-hour is the equivalent of one trip about every ninety seconds, perhaps peak is not the most appropriate term.

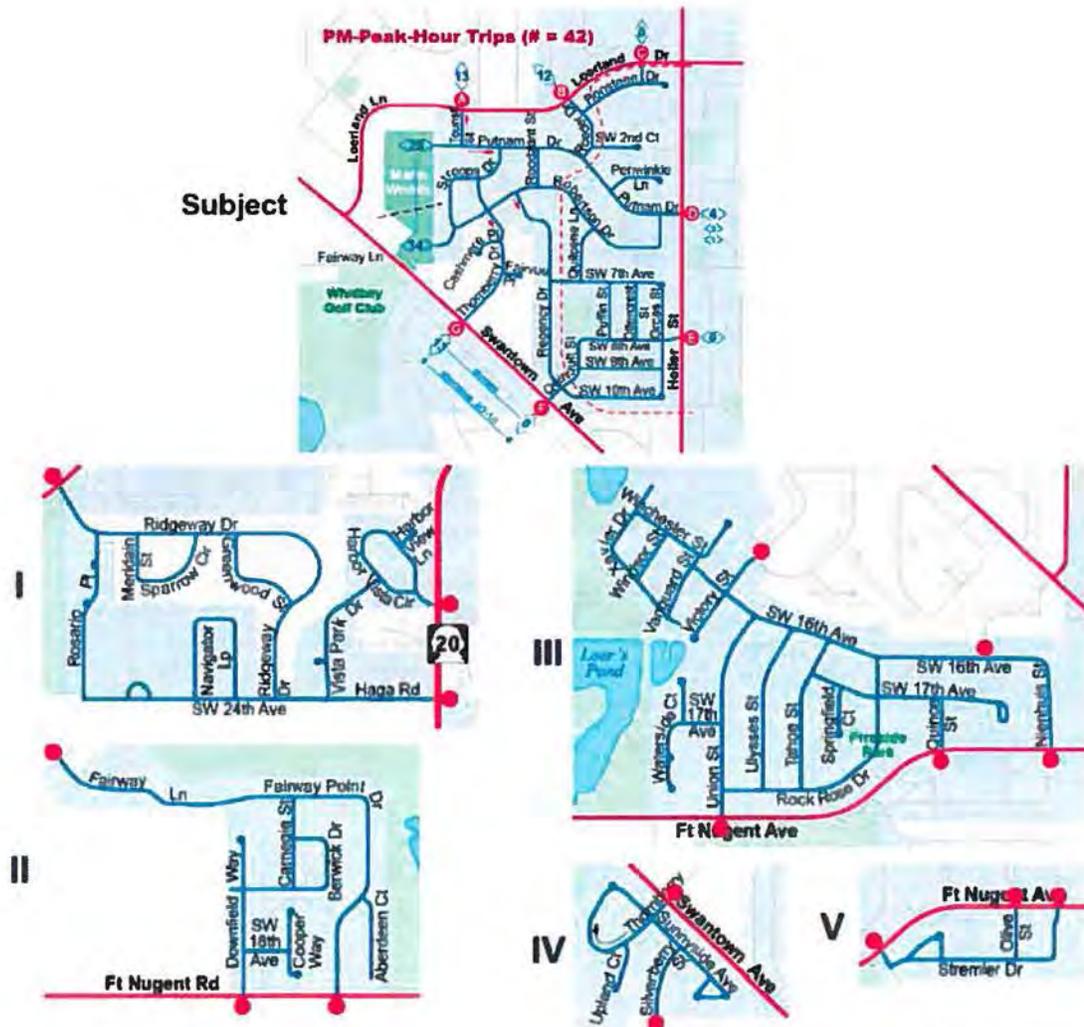
The map also defines (red dashed line) a sub-area of the neighborhood which should have NO distinguishable impact whatsoever.



Response to Comments

Furthermore, the Applicant has evaluated the level of connectivity of the Loerland-Heller-Swantown neighborhood versus six (6) similar neighborhoods in the near vicinity. The chart (below) indicates, using the metric “houses per connection” the Loerland-Heller-Swantown neighborhood is the most connected (least number houses per connection street) neighborhood of comparably-sized nearby neighborhoods studied.

**Neighborhood Connectivity**



Neighborhood	Homes	Connections	Homes/Connect	Vs Subject
I	236	3	78.66	34% less
II	200	3	66.67	14% less
III	318	5	63.60	9% less
Subject	410	7	58.57	—
IV	86	2	43.00	27% more
V	75	3	25.00	57% more

## Response to Comments

**Water**

15. *A clarification is necessary regarding water line size fronting the project in Swantown Avenue. It is not required to replace the existing 16" line with new 18" line along the property frontage. The new extension along the frontage from the existing 16" line needs to be 18".*

Marin Woods Response: Fixed. We misunderstood the intention and have corrected per discussions, thank you. In addition, the water up-size was continued into the project per request by the City.

16. *Some of the water services need minor layout changes. This and the decision as to whether manifolded or single service water services will be used must be addressed prior to civil/construction plan approval.*

Marin Woods Response: Agreed. A manifolded connection is likely and is now shown, to be revisited as needed during construction plan preparation and review.

**Sewer**

17. *It is not understood why the proposed sewer connects to manholes at both ends in the vicinities of 0+60 and 2+25 in the street proposed as "Upper Marin Drive". (Which way is the sewer intended to flow?)*

Marin Woods Response: Corrected. Sewer pipe follows the terrain; Beginning with the SMH near lot 18, sewer flows counter clockwise from SW Putnam to Valea Vista to the connection at the main in Upper Marin near lot 9-10.

18. *All gravity sanitary sewer pipe with diameters 12-inches or less and depths up to 15-ft shall be PVC, ASTM D 3034 SDR 35*

Marin Woods Response: Now stated in note 17 on C1.

**Stormwater**

19. *The following comment was previously provided. "The stormwater drainage collection system needs curb collection catch basins in front of lots 5 and 6 in order to protect the downstream lots from grate bypass/clogging." In response to this comment, the designer moved the formerly proposed catch basing locations from in front of lots 8 and 32 to in front of lots 5 and 6. The intent of the previously provided comment was to add two catch basins in front of lots 5 and 6, not relocate the two from in front of lots 8 and 32. (The length and steeper slopes of the street proposed to be named "Upper Marin Drive" necessitates more catch basins than a flatter street in order to protect downstream properties from grate bypass flow and grate clogging.) Please replace the two catch basins in front of lots 8 and 32.*

Marin Woods Response: CB's moved and added per comment. Note 19 on C1 now states something similar; requiring through curb inlets at low points and significant changes in grade.

20. *Reference Sheet C1: It is not clear if this sheet indicates enclosed stormwater extension along the Swantown Avenue Frontage. Please clearly show the extension on all applicable sheets as required by half street improvements.*

Marin Woods Response: Storm is now shown continuing along frontage improvements of Swantown. Piped storm flow in this vicinity will flow to an existing 18" culvert crossing beneath Swantown at the golf course corner of Swantown and Fairway.

21. *Reference Sheet C1, Note 11: All grates shall have cast language stating to dump no waste drains to "Lake".*

Marin Woods Response: Corrected.

## Response to Comments

22. *The plants included in the bioretention cell are to be per the 2005 or 2012 LID Manual and include planting zone designations for each species, in addition each zone shall be delineated on the bioretention cell.*

Marin Woods Response: Agreed. Planting details, graphics and language, shall be added in the construction plan set. We have added note 18 on C1 to stipulate the planting requirements per this comment.

23. *Insufficient geometry and grading information is provided for the detention pond and bioretention cell areas. Any ponded areas are required to have specific slopes in compliance with City code and DOE regulations. If the pond is not graded to meet the specific slopes and appropriate depth, volume, and landscaping requirements, Tract C will not be sufficiently sized and adjoining lots are likely to be impacted/eliminated due to a need to expand the stormwater tract. It does not appear that the current proposal can meet code requirements within the currently proposed Tract C. Please review OHMC 21.60.250 & 21.60.260 and DOE slope and fencing requirements, and expand the tract accordingly.*

Marin Woods Response:

**Geometry:** Additional contour lines, top of berm and bottom of pond labels have been added. The biocell has been labeled with trench dimensions of 210x70ft.

**Pond Grading:** The pond has been revised per this comment to include a 3:1 side slope on 2 sides within the ponding/wet area. Biocell has top side slopes of 3:1, now labeled.

**Pond Volume:** The pond and adjacent lots were re-shaped to accommodate the pond volume required per WWHM3.

**Fencing:** OHMC requires fencing for ponds with side slopes steeper than 3:1 in the ponded area, and forbids ponds to have slopes steeper than 3:1 on more than 2 sides or 50% of its perimeter. Although this pond has walls on 3 sides, one wall is shown above the water mark with a 3:1 slope in the wet area. This pond meets slope criteria and a fence is not required on 2 sides. However, a fence is shown on all sides of the pond for other reasons.

### Stormwater Report

24. *The submitted Stormwater Report is a conceptual and preliminary report. As such, more detailed information and a more comprehensive and thorough narrative is necessary. The following comments were generated by the report, and are based upon the level of information provided. When a more detailed report is submitted, more comments will be generated.*

Marin Woods Response: The narrative was enhanced somewhat to elaborate on the concepts used and how WWHM modeled those concepts.

25. *The detention concept of post development flows not exceeding predevelopment flows is appropriate within the framework of the 1997 Golf Course Drainage Basin Study.*

Marin Woods Response: Thank you. The pond was reshaped for grading and landscape reasons, and the WWHM calculations and pond volumes were revised until the results became consistent with the concept stated in this comment.

26. *The pond appears to be undersized and proposed neighboring lots/tracts are likely to be affected.*

Response: Yes, it was, given the grading and landscaping comments. Lots 1-4, Tract C, the Pond and the area with the pedestrian path were revisited and reshaped considerably to achieve grading, landscaping and WWHM3 compliance per the prior comment.

## Response to Comments

27. *It appears that the area of converted pervious surfaces is of sufficient size to trigger treatment requirements for pollution generating pervious surfaces (PGPS). ) Over ¾ acre conversion of forest to lawn requires treatment.)*

Marin Woods Response: Yes. This has been the understanding all along, triggered first by the amount of new hardscape proposed. The DOE flow chart 2.2 for new development has been added to the appendix of the report. Water quality treatment is provided by the bioretention cell, but the limited size of the cell requires that the NPGS water be sent directly to storage. If additional water quality treatment is necessary, the dry pond could be converted to a wet pond with dead storage. Alternately, filters may be added for some PGS as necessary. If filters are perused, additional consideration will be necessary to either have filters in the public ROW with the HOA responsible, collect private PGS and route to private filters, or collect some ROW and route to private filters located within Tract C.

28. *Reference WWHM3 screen shot, "Bioretention Cell/Water Quality": Please clarify if the input of 16' for the bottom width is representing the flat bottom cell bottom only or if it is including the 3:1 side slopes.*

Marin Woods Response: WWHM has been revised per the pond reconfiguration; however the comment is still valid. The WWHM dimensions are for the trench excavation rather than the visible surface, so the dimensions are for native earth prior to filling with engineered/amended soil or drain rock. The WQ properties are modeled in this case as a sand filter, which is the amended soil component of the biocell.

29. *Reference WWHM3 screen shot, "Bioretention Cell/Water Quality": Please clarify what the effective depth of 3.5' is representing. The BSM is only 1.5' deep. It is not clear what the 3.5' is representing. (Reviewer compared screen shot to detail 1/C4.)*

Marin Woods Response: The section was not drawn correctly, now fixed. WWHM's effective depth is somewhat preliminary and needs to be taller than the riser, and taller than the overflow structure if one is used. Not tall enough may not account for overflow correctly, yet too tall gives errors as well. WWHM recommends this difference to be 1.0ft or more. To model correctly, the depth must account for overflow depth or pond berm height. In our case, 1.0ft is adequate and was specified in the current screen shots. I model near vertical cuts as 0.1:1, simply because WWHM chokes at vertical cuts (0:1). The limited depth will likely be near vertical with some unintended over-excavation.

30. *Reference WWHM3 screen shot, "Bioretention Cell/Storage" (Shot 1): the 16' width and 3.5' effective depth questions also apply to this shot. In addition, the inputs for trench slopes don't appear to correlate with detail 1/C4. Please clarify if these slopes are representing the "gravel backfill for drains" and correct as necessary. If they are not representing the "gravel backfill for drains", please explain what the slopes are for and what the geometry is.*

Marin Woods Response: The section was not drawn correctly, now fixed. The storage below the biocell was modeled with a gravel trench that receives all the water from the sand filter. The nearly flat bottom (trench floor) is shown as 0.0001 only because the computer can't handle 0:1. Otherwise, the basic response is the same as with the prior comment's response but with different numbers. The dimensions are trench bottom and sides prior to filling with drain rock.

31. *Reference WWHM3 screen shot, "Bioretention Cell/Storage" (Shot 2): This shot appears to be mislabeled. It appears to be the detention pond. If it is the detention pond, please be aware of the safe side slope, fencing requirements, landscaping, and other requirements established in OHMC 21.60.250 & 21.60.260, which are likely to require pond geometry changes.*

Marin Woods Response: Screen shot and labels addressed, side slope is now 3:1 or wall as per plan. Side slope and landscaping did require significant work as described in earlier comments.

## Response to Comments

**CC&Rs**

32. *The submitted CC&Rs are for an entirely different project that includes sub neighborhoods and villages, abuts a golf course, and has offsite stormwater flow control. Please submit CC&Rs that are applicable to the proposed Marin Woods project. Some of the items that will need to be included are:*

- *Stormwater ownership and maintenance responsibilities*
- *Reference or incorporation of Stormwater Operations and Maintenance Manual*
- *Path, Park, Tract and other common element ownership and maintenance responsibilities*
- *Native vegetation protection area responsibilities/restrictions*
- *Landscape and other right-of-way landscape maintenance responsibilities (including irrigation)*

Marin Woods Response: CC&R's have been revisited and are attached with this submittal.

At the City-direction, the Applicant responded to these comments of 27 March 2016 on 04 April 2016, and City produced comments to the CC&R draft dated 20 April 2016.

Then the Applicant produced a revised CC&Rs dated 21 June 2016, and revised the CC&Rs draft again with a formal response letter dated 06 July 2016, and with changes made in the CC&R draft document provided dated 06 July 2016 and the inclusion of the requested O&M manuals and the requested Design Guidelines (all documents enclosed in this submittal packet).

The CC&Rs are currently in working-draft format that can be efficiently aligned with the drawings once pre-plat approval is stable.

**Building**

*1. Site Address not correctly labeled on drawings. Address to be assigned by city staff per OHMC 11.02.110. Current assigned address is 1292 SW Swantown Avenue.*

Marin Woods Response: Fixed. The address is now shown as 1292 SW Swantown on the P0 and on the drainage report cover.

End of engineering comments.

20 April 2016  
 revised 21 June 2016  
 revised 06 July 2016 and changes made in the CC&R draft document.

RECEIVED  
 AUG 22 2016  
 CITY OF OAK HARBOR  
 Development Services Depart

## CLARIFICATION & RESPONSES Marin Woods CC&R's

Relative to the draft Marin Woods CC&R's provided to the City on 04 April 2016 for preliminary review, we are in receipt of City of Oak Harbor comments, dated 18 through 20 April 2016.

The comments appear to be two separate sets from the Planning and Engineering departments. In some cases, reference is made in our responses, to comments previously made and previously answered.

### Planning

**Planning #1** Formatting is difficult to read in places – assuming that will change and was the result of a copy/paste.

**Response:**

Yes.

Our document header (page 1) reads:

“Draft: To reflect adopted project changes as they become applicable.”

The document submitted is purposely based on the already-approved-from-the-City Fairway Point CC&R's., which we understand were acceptable to the City in format and ultimate content.

As stated in your comments, the objective is to have a project-specific set of CC&R's prior to final plat approval. WE look forward to that collaboration.

**Planning #2** Section 4.2 includes text about a “common design scheme” – it is not clear what this refers to. Please include reference to specific design criteria or section of CCRs where this is detailed.

**Response:**

“Common design scheme” referenced in Section 4.2 (see below), refers broadly to Article III, Sections 3.1 and 3.2; and is referenced more specifically in 4.4.1 Design Guidelines, also provided below.

4.2. Initial Construction of Dwellings and Other Improvements Within Lots. Dwellings and related improvements, including fencing and accessory structures, will be constructed within the Lots by or under the direction of the Declarant, according to a **common design scheme** established by the Declarant. No manufactured homes are permitted. Any addition, alteration or improvement upon any Lot shall be consistent with the Declarant's original scheme, and shall be constructed in accordance with the building code and other ordinances of the City of Oak Harbor.

4.4.1. Design Guidelines.

Design for improvements constructed within the Lots within the Subordinate Communities of this Community shall be consistent with the **theme of the Community** established in Design Guidelines initially prepared by the Declarant.

This is an excellent example of the rolling nature of the approval process. Planning #2 here, and Planning comment #8 seem to ask for a verbal description of Design Guidelines, yet Engineer comments below remind us the plan documents control, and the applicant cannot describe in writing Design Guidelines, not yet approved t by the Planning approval process.

The “design” of the initial and majority of units will be guided by the PRD submittal documents, not yet

approved, which will establish a “common design scheme established by the Declarant.” For subsequent units to follow. All designs shall be compliant with the City of Oak Harbor Municipal Code.

For subsequent units (if any), and revisions (if any), Article 4.2 states (in part) “All construction must be approved in writing in advance by the Architectural Review Coordinator (“ARC”), as provided in Sections 4.4.2 and 9.2 below.”

**Planning #3** Section 4.5.4 includes reference to maintaining landscaping in conformance with “standards established by Board of Directors.” Landscape maintenance must meet the requirements of OHMC 19.46.080.

**Response:**

See proposed text change below:

*Landscaping shall be installed and maintained in conformance with standards established by the Board of Directors, and landscape maintenance must meet the requirements of OHMC 19.46.080.*

(full section would read)

**4.5.4. Landscaping Installation.**

Each Lot Owner is responsible for landscaping his/her Lot. Landscaping shall be completed within fifteen (15) weeks after initial occupancy, unless required to be installed earlier by the City of Oak Harbor. The front yard of each home (from the street to the building face) shall be covered with lawns, landscaping, decking and/or paving within five (5) months from

(page 8)

commencement of construction of the dwelling. Landscaping shall be

*(proposed text change)*

*Landscape shall be installed in conformance with standards established by the Board of Directors and maintained per requirements of OHMC 19.46.080.*

**Planning #4** Section 5.1.1 and other places within the CCRs include bracketed comments with rhetorical questions placed within. These comments are assumed to be for the development team and will need to be resolved and removed.

**Response:**

Yes, sort of.

Bracketed items are discussion points, either within the development group, or in concert with the City, or based on pre-plat approval details.

Comment Brackets will be removed as they are resolved between the applicant and the City. All matters will be resolved.

There are currently eleven [11] such bracketed notes in fifty-one [51] pages of text, highlighted in [red].

May we assume with this City comment above that the City does not currently have any comments on the so-bracketed markers.

**Planning #5** Article VI includes references to Golf Course and wetland areas, which are not located within this subdivision. Please remove references here and in any other location where they may appear in the document.

**Response:**

Article VI applies to Special Use and Upkeep Provisions of which there are several for Marin Woods.

The phrase “golf course” (found in the Table of Contents only) was removed. The phrase “golf” was not found anywhere in the document body.

The phrase “wetlands” is found in section 6.2.2 entitled “Upkeep of Open Space Areas, Tree Retention Areas and Wetland Areas.”

The phrase “wetlands” is used in the body of the text of 6.2.2 as follows: “All Tracts identified as “Tree

Retention” or “Wetland” areas on the Plat Map shall be maintained in a natural state for low impact use and enjoyment of Occupants of the Community.”

There are currently no “wetlands” designated areas on the plat.

When we understand if the City interprets “Tree Retention” as equal to “Wetlands”, as used above, as critical, the Applicant would be in a better position to modify the text accordingly.

**Planning #6** Section 7.7 includes a reference to a public hearing before the Planning Commission. This process may not be appropriate for the dissolution of the Association as staff is not certain that the City would be involved in such a process. A more generic statement to the effect of, “any dissolution process must comply with City and State regulations,” would be more appropriate.

**Response:**

Thank You.

More generic statement (suggested language) inserted at Section 7.7.

**Planning #7** Section 9.1.4 refers to “Private Roads,” there are none in this subdivision – therefore speed and other motor vehicle regulations will not be the purview of the Board.

**Response:**

Yes.

Private road section 9.1.4 does not currently apply, and can be removed.

Substitute language is as follows:

*All roads in are presently designated public. The regulation of parking and driving is the purview of the City of Oak Harbor.*

**Planning #8** Section 9.2.4 refers to “Design Guidelines,” these are not found in the document. Please include and cite section number for guidelines in this section. Design guidelines shall not conflict with PRD approval documents.

**Response:**

Architectural Review, and Design Guidelines, are treated in section 4.4 Architectural and Design Review.

Yes Section 4.4 to comply with PRD approval documents when both exist. Added text at 4.4.1:

*Design guidelines shall not conflict with PRD approval documents.*

**Planning #9.** In Article XIII, please include text stating that compliance with these CCRs does not guarantee compliance with City, State or Federal regulations.

**Response:**

Proposed text to be added to Article XIII.

Suggested language inserted at Article XIII at 13.1:

*Compliance with these CCRs does not guarantee compliance with City, State or Federal regulations.*

Engineering

**Engineering (first paragraph, page 2)** The submitted CC&Rs are incomplete and include information pertaining to elements that are not part of the proposed project such as wetlands, private streets, Subordinate Communities, and a golf course.

**Response:**

In agreement.

Answered in **Planning #5** above.

In addition, there are numerous questions from the document's preparer to the applicant that have not been addressed.

**Response:**

In agreement.

Answered in **Planning #4** above.

Please work internally within the design team to answer the questions and focus the document on the subdivision proposed.

**Response:**

In agreement.

Answered in **Planning #1** above.

**Engineering (Page 6, Section 3.2)**      **Page 6, Section 3.2 omits mention of public road link to Swantown Avenue**

**Engineering (Page 10, Section 4.9)**      Page 10, Section 4.9 appears to be missing language.

**Response:**

In agreement. This is one of the eleven bracketed references mentioned in Planning #4 above, that will be resolved in language, when it is resolved in reality.

In general, the lot owner maintains the surface while the Community Association (CA) maintains the collector drainage pipes.

**Response:**

In agreement. Thank you for answering this issue.

Language added at 4.9:

*The lot owner maintains the surface while the Community Association (CA) maintains the collector drainage pipes per 4.6.2.*

As described in Section 4.6.2, the lot owner maintains the lot drainage to the collector pipe.

**Response:**

In agreement. Reference in 4.9 made to 4.6.2 where "missing language" apparently isn't missing.

The CA also maintains the systems in the private tracts such as Tract C.

**Response:**

In agreement.

The City generally owns and maintains the catch basins and that serve the road (usually between curbs) and the pipes that connect them.

**Response:**

In agreement.

The Stormwater Operations and Maintenance Manual that is required prior to final plat approval must include a color coded map of the system that attributes ownership and responsibilities of the system to the 3 parties (Lot Owner, CA, City).

**Response:**

In agreement.

The final CC&R document is required complete, prior to final plat approval.

Color-coded ownership map to be included.

**Engineering (Article V)**      Article V needs to include provisions for all Tract/common areas uses including public trail or path as applicable.

**Response:**

In agreement.

Documents will correlate when the approved drawings exist.

**Engineering (Page 13, Section 6.2.3)** Page 13, Section 6.2.3 does not represent the drainage system of Marin Woods. It appears to describe the drainage system of Fairway Point.

**Response:**

Answered in **Planning #1** above.

All non-Marin-Woods text and place-holders either have been removed with this submittal, or shall be removed so prior to Final Plat Approval, documents will correlate when the approved drawings exist.

**Engineering (Page 14, Section 6.3)** Page 14, Section 6.3 uses are for Fairway Point wetland and wetland buffer area, not the uses for Marin Wood's Tracts.

**Response:**

In agreement.

See Response to Planning #5 above.

All non-Marin-Woods text and place-holders either have been removed with this submittal, or shall be removed so prior to Final Plat Approval, documents will correlate when the approved drawings exist.

**Engineering (Article XVI)** Article XVI includes general and blanket easements that do not correlate with easements delineated on the preliminary plat for the same or similar purposes.

**Response:**

Yes.

In agreement.

Documents will correlate when the approved drawings with final and stable easements exist.

For example; the "dry" utilities are to be routed behind sidewalk in a 10' utility easement.

**Response:**

In agreement.

Document language will correlate when the approved drawings exist.

Some of the language provided in this section appears to be for a private street or a common area.

**Response:**

Yes. In agreement.

Answered in part in **Planning #7** above.

16.3 contains the only reference to easements for "utilities of any type, whether public or private"

Please also be aware that the plat easements need to be created on the plat document, not in the CC&Rs. (The CC&R language should correlate with the plat easement language, but not be the creating document.)

**Response:**

In agreement. Plat easements created in the Plat documents, correlated in the CC&R's.

Document language will correlate when the approved drawings exist.

**Engineering (page3)** CC&Rs shall contain approved plat notes.

**Response:**

In agreement.

Document language will correlate when the approved drawings exist.

Applicant agrees, the revisions to the CC&R's will be made as agreed to above, when the documents are stable, and the preferences are known and understood.

F R Rick Duran

Development Executive, Marin Woods

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AUG 22 2016

CITY OF OAK HARBOR  
Development Services Department

Introductory Note (not intended to be part of eventual document):

Hugh Lewis, Attorney at Law, the author of these CCR's sits on a Washington state Bar Association drafting committee that has recently completed the implementation draft of a new statewide contract format for CCR's on which this Marin Woods draft, and the previously completed and approved by the City of Oak Harbor, CCR's for Fairway Point is based in form. The introductory legislation is working its way through committee.

This document obviously reflects current applicable state of Washington legislation. Mr. Lewis is currently retained by the George F. Marin Trust.

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

TO REFLECT ADOPTED PROJECT CHANGES AS THEY BECOME APPLICABLE

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

AFTER RECORDING, RETURN TO:  
Hugh Lewis, Attorney at Law, P.C.  
2200 Rimland Drive, Suite 115  
Bellingham, WA 98226  
(360) 392-2880  
(retained by George F. Marin Trust)

DECLARATION  
OF  
COVENANTS, CONDITIONS,  
RESTRICTIONS AND  
RESERVATIONS  
FOR  
MARIN WOODS PRD

TITLE OF DOCUMENT: DECLARATION OF COVENANTS, CONDITIONS,  
RESTRICTIONS AND RESERVATIONS FOR MARIN WOODS  
PRD

GRANTOR: GEORGE F. MARIN TRUST.

GRANTEE: THE GENERAL PUBLIC

ABBREV. LEGAL DESCRIPTION: MARIN WOODS PRD, AF# \_\_\_\_\_

TAX PARCEL NOS.: \_\_\_\_\_

DRAFT DATE:  
10-14-14  
(revised 03-31-16 for City submittal and comments)  
(revised 07-06-16 to reflect City comments of 04-18-16)

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ARTICLE I  
SUBMISSION OF PROPERTY; PURPOSE

1.1. Submission of Property.

GEORGE F MARIN TRUST a Washington Trust, hereinafter referred to as the "Declarant," being the owner in fee simple of certain land located in Oak Harbor, Island County, Washington, has submitted said land, together with all associated improvements, easements, rights and appurtenances, collectively referred to hereinafter as "the Property", to the provisions of the Planned Residential Development Ordinance of the City of Oak Harbor ("the Ordinance", i.e., Chapter 19.31 of the City Code), and has created from and within such Property a Planned Residential Development ("PRD") which PRD is known as "Marin Woods PRD", and which shall hereinafter be referred to as the "Community."

1.2. Reference to Platting Documents.

The Declarant has previously recorded with the Auditor of Island County, Washington certain a PRD Plat Map pursuant to the Ordinance, showing the location and dimensions of the land included within the PRD, the location and dimensions of the Lots, Tracts and Common Areas within the Community, together with other necessary information. This Plat Map is recorded at Auditor's File No. \_\_\_\_\_, Records of Island County, Washington.

1.3. Purpose.

1.3.1. General Purpose - Legally Binding Covenants.

This Declaration of Covenants, together with the Plat Map referred to herein, state covenants, conditions, restrictions and reservations intended by the Declarant to effect a common plan for the development of the Property mutually beneficial to all of the described Lots. The covenants, conditions, restrictions, reservations and plan, are binding upon and run with the land with respect to the entire Property and upon each such Lot as a parcel of realty, and upon its Owners or Occupants, and their heirs, personal representatives, successors and assigns, through all successive transfers of all or part of the Property or any security interest therein, without requirement of further specific reference or inclusion in deeds, contracts or security instruments, and regardless of any subsequent forfeiture, foreclosures, or sales of Lots under security instruments, or of any forfeiture, foreclosures, or sales instituted for nonpayment of government tax, levy or assessment of any kind.

1.3.2. Specific Purpose - Governance of Community.

The specific purpose of this Declaration of Covenants is two-fold: (1) to establish a flexible plan for the future development of the Community and of its Subordinate Communities hereinafter described; and (2) to develop and maintain an effective governance structure for the Community to facilitate its perpetual existence so that goods and services essential to the Upkeep

of common property and to the well-being of the Occupants of the Community may be assured. The Community shall be governed in perpetuity by the Community Association described at Section 7.1 of this Declaration of Covenants.

## ARTICLE II DEFINITIONS

2.1. "Architectural Review Coordinator" ('ARC') means the individual or Committee designated by the Declarant or the Board of Directors pursuant to Section 9.2 hereof, to coordinate compliance with the Design Guidelines of the Community.

2.2. "Allocated interest" means the undivided interest in the Common Areas, the Common Expense liability, and votes in the Association allocated to each Lot by the provisions of Sections 5.3, 7.5.2 and 10.6 of this Declaration of Covenants.

2.3. "Assessment" means all sums chargeable by the Association against a Lot including, without limitation: (a) Regular, Special and Limited Assessments for Common Expenses, charges, and fines imposed by the Association; (b) interest and late charges on any delinquent account; and (c) costs of collection, including reasonable attorneys' fees, incurred by the Association in connection with the collection of a delinquent Owner's account.

2.4. "Board of Directors" means the body with primary authority to manage the affairs of the Association.

2.5. "City" means the City of Oak Harbor.

2.6. "Common Areas" means all portions of the Community other than the Lots. Such areas are typically denoted as "Tracts" on the Plat Map and include areas of land, along with specific facilities and improvements. To the extent that some Common Areas may be depicted within the boundaries of any Lot within this Community, such Common Areas consist of easements burdening such Lot for the benefit of the Association or other Owners and Occupants of the Property within this Community.

2.7. "Common Expenses" means expenditures made by or financial liabilities of the Association, together with any allocations to reserves.

2.8. "Common Expense liability" means the liability for Common Expenses allocated to each Lot pursuant to Section 10.6 of this Declaration of Covenants.

2.9. "Association" means the nonprofit corporation incorporated at the direction of the Declarant to manage the Common Areas of this Community.

2.10. "Conveyance" means any transfer of the ownership of a Lot, including a transfer by deed or by real estate contract, but shall not include a transfer solely for security.

2.11. "Declarant" means the entity, person or group of persons acting in concert (a) who executes this Declaration of Covenants, or (b) who reserves or succeeds to any Special Declarant Right under the Declaration of Covenants [a "Successor Declarant"]. An "Affiliate" of the Declarant means any Person who controls, is controlled by, or is under common control with the Declarant, in the sense described in RCW 64.34.010(1).

2.12. "Declarant control" means the right of the Declarant or persons designated by the Declarant to appoint and remove officers and members of the Board of Directors or to veto or approve a proposed action of the Board or Association pursuant to Sections 8.1 and 16.6 of this Declaration of Covenants.

2.13. "Declaration of Covenants" means this document, which facilitates the governance and management of this Community; the term also includes any lawful amendments to this document.

2.14. "Design Guidelines" means the standards developed by the Board of Directors or a Committee pursuant to Article IX hereof, and any standards established by the Declarant.

2.15. "Development Plan" means any formal plan of development, however termed under the Ordinance, approved by the County or City in which the Community is situated. The term also includes any amendments thereto approved by applicable governmental entities.

2.16. "Development Right" means any right or combination of rights reserved by the Declarant in the Declaration of Covenants: (a) To add real property or improvements to the Community; (b) to create Villages and Neighborhoods within the real property included in or which may be added to the Community; (c) to create Lots, Common Areas, or Limited Common Areas within real property included in or which may be added to the Community; (d) to subdivide or combine Lots or convert Lots into Common Areas; or (e) to withdraw real property from the Community. Development Rights affecting this Community are described in Section 3.3 hereof. Development Rights are personal to the Declarant and may be exercised, or not exercised, in Declarant's sole and absolute discretion.

2.17. "Dwelling" or "Dwelling Unit" means an improved portion of the Property designed for separate ownership and intended to serve as a personal residence.

2.18. "Eligible Insurer" means the insurer or guarantor of a mortgage on a Lot that has filed with the secretary of the Association a written request that it be given copies of notices of any action by the Association that requires the consent of mortgagees. The term "Eligible Insurer" includes such entities as the Veterans Administration, the Federal Housing Administration and the like.

2.19. "Eligible Mortgagee" means the holder of a mortgage on a Lot that has filed with the secretary of the Association a written request that it be given copies of notices of any action by the Association that requires the consent of mortgagees. The term "Eligible Mortgagee" also includes the "servicer" of a mortgage which has been acquired or securitized by secondary mortgage market entities such as the Federal National Mortgage Association ("FNMA" or "Fannie Mae") or the Federal Home Loan Mortgage Corporation ("FHLMC" or "Freddie Mac") or the like.

2.20. "Foreclosure" means a forfeiture or judicial or nonjudicial foreclosure of a mortgage or a deed in lieu thereof.

2.21. "Governing Documents" means this Declaration of Covenants, the Plat Map, the Design Guidelines, the Articles of Incorporation and Bylaws of the Association, along with any Rules and Regulations adopted by the Board of Directors, and any lawfully adopted amendments to any of the above.

2.22. "Governing Law" means the Washington Homeowners Association Act (Chapter 64.38 RCW, the "Act") or any successor statute, and any amendments thereto.

2.23. "Lot" means a physical portion of the Community designated for separate ownership, the boundaries of which are depicted on the Plat Map as a separate lot of record.

2.24. "Lot Owner" means the Declarant or any other person who owns a Lot, but does not include a person who has an interest in a Lot solely as security for an obligation. "Lot Owner" means the vendee, not the vendor, of a Lot under a real estate contract.

2.25. "Mortgage" means a mortgage, deed of trust or real estate contract.

2.26. "Occupant" means a person lawfully occupying any Lot; the term includes without limitation Lot Owners, family members, tenants and sub-tenants of Lot Owners.

2.27. "Ordinance" or "the Ordinance" means the law, statute, ordinance authorizing the creation of this Community in the jurisdiction in which the Property is situated, described with greater particularity in Section 1.2 hereof, along with any administrative regulations implementing same. The term includes any changes, revisions, substitutions and/or deletions in such law or regulations which may exist from time to time.

2.28. "Person" means a natural person, corporation, partnership, limited partnership, trust, governmental subdivision or agency, or other legal entity.

2.29. "Community" means all the Property depicted within the Plat Map, along with all the improvements constructed therein, and all other institutions and things serving the Owners of Lots therein governed by the Association.

2.30. "Property" or "the Property" means the real property depicted on the Plat Map and

legally described thereon.

2.31. "Purchaser" means any person, other than the Declarant or a dealer, who by means of a disposition acquires a legal or equitable interest in a Lot other than as security for an obligation.

2.32. "Record", used as a noun, means information that is inscribed on a tangible medium or that is stored in an electronic or other medium and is retrievable in perceivable form.

2.33. "Residential purposes" means use for dwelling and human habitation, whether on an ownership, rental or lease basis and for reasonable social, recreational or other uses normally incident to such purposes.

2.34. "Special Declarant Rights" means rights reserved for the benefit of the Declarant: (a) to complete improvements indicated on the Plat Map filed with the Declaration of Covenants; (b) to exercise any Development Right described in Section 3.3 hereof; (c) to maintain sales offices, management offices, signs advertising the Community, and models; (d) to use easements through the Common Areas for the purpose of making improvements within the Community or within real property which may be added to the Community under Development Rights reserved hereinafter; or (e) to appoint or remove any Officer of the Association or any member of the Board of Directors or of any Committee, or to veto or approve a proposed action of the Board or of the Association during any period of Declarant Control reserved in this Declaration of Covenants. Special Declarant Rights are described in Section 16.6 hereof.

2.35. "Specially Allocated Assessment" means an assessment made by the Association against one or more but fewer than all of the Lots pursuant to Section 10.1.4 of this Declaration of Covenants.

2.36. "Upkeep" means any care, inspection, maintenance, operation, repair, repainting, remodeling, restoration, improvement, renovation, alteration, replacement and reconstruction that is required to maintain property in a decent, safe and sanitary condition, in keeping with the high standards of the Community.

### ARTICLE III

#### DESCRIPTION OF DEVELOPMENT SCHEME AND DEVELOPMENT RIGHTS

##### 3.1. Development Plan.

The Community has been developed in accordance with a PRD plan ["Development Plan"] approved by the City of Oak Harbor under Council Resolution No.XX-XX, dated MONTH DAY, YEAR for this project, which addressed consistency with the City's Comprehensive Plan, open space and environmentally sensitive areas, and public utility issues. The PRD plan for this Community was adopted by the City under the authority of its Planned Residential Development Ordinance, ("the

Ordinance", i.e., Chapter 19.31 of the Oak Harbor Municipal Code), under which a PRD district is created to promote diversity and creativity of site design, and to protect and enhance natural and community features. Platting requirements associated with the project were addressed under Chapter 21.20, OHMC, in City File No. PPL XX-XXXXX. All further use and development of the Property in this Community shall be consistent with the Ordinance, the Development Plan, and with any other City land use and platting requirements that may be applicable to land subject to Development Rights.

### 3.2. Development Scheme.

The Community will be developed in a single phase by the Declarant. All roads in the Community are public, and provide links to and from SW Robertson Drive and SW Putnam Drive for the Lots in the

Community. Common Areas include Natural Vegetation Buffer areas, open space areas, walking paths and a Community Park. The Community shall be governed by the Association described in Article VII hereof, which is charged with responsibility for providing a panoply of goods and services designed to serve the Owners and Occupants of the Community.

### 3.3. Development Rights.

No Development Rights have been reserved by the Declarant in this Community.

## ARTICLE IV LOTS, DWELLINGS & OTHER STRUCTURES

### 4.1. Number and Location.

The Community currently contains 43 Lots zoned for residential use which are depicted on the Plat Map. The location of those Lots and their dimensions are shown on the Plat Map.

### 4.2. Initial Construction of Dwellings and Other Improvements Within Lots.

Dwellings and related improvements, including fencing and accessory structures, will be constructed within the Lots by or under the direction of the Declarant, according to a common design scheme established by the Declarant. No manufactured homes are permitted. Any addition, alteration or improvement upon any Lot shall be consistent with the Declarant's original scheme, and shall be constructed in accordance with the building code and other ordinances of the City of Oak Harbor.

### 4.3. Subdivision and Combination.

No Lot shall be subdivided by its Owner. Lots may be combined by their Owners, using

lawful procedures for such purposes then in effect in the City of Oak Harbor. In the event that two or more Lots are combined, the resulting Lot shall have allocated to it all the liabilities for Common Expense Assessments and votes in the Association formerly allocated to the Lots affected by the combination.

#### 4.4. Architectural and Design Review.

##### 4.4.1. Design Guidelines.

Design guidelines shall not conflict with PRD approval documents.

Design for improvements constructed within the Lots within the Subordinate Communities of this Community shall be consistent with the theme of the Community established in Design Guidelines initially prepared by the Declarant. Regulated design features in the Design Guidelines include general architectural design, site development, siding materials, painting scheme, roofing materials, the color and pitch of roofing, along with fencing and accessory structures. No mobile homes, manufactured housing units or modular homes are permitted. All construction must be approved in writing in advance by the Architectural Review Coordinator ("ARC"), as provided in Sections 4.4.2 and 9.2 below. Following termination of the Declarant Control Period, the Board of Directors shall have the authority to adopt more specific Design Guidelines and procedures to implement the basic theme contained herein, pursuant to Section 9.2 hereof.

##### 4.4.2. Design Review.

To preserve a harmonious architectural and aesthetic appearance of improvements constructed within the Community, no new construction or improvements of any nature whatsoever shall be constructed or placed on any Lot by any person other than the Declarant or its Affiliate(s) until detailed plans depicting all such improvements have been reviewed and approved by the ARC. Two copies of such plans, specifications and related data must be submitted to the ARC, along with a Design Review fee of \$300.00. Upon approval, one set of plans shall be retained among the permanent records of the Association and one copy shall be returned to the Owner, appropriately marked. The builder and/or Lot Owner are encouraged to submit plans to the ARC at the earliest possible date. Lots still owned by the Declarant or its Affiliates following the termination of the Declarant Control Period shall require no such review by the ARC and shall remain subject to the exclusive design review and control by the Declarant.

##### 4.4.3. Time for Approval - No Construction Prior to Approval.

The ARC shall approve or disapprove plans, specifications and details within the time described in Section 9.2 hereof. No construction activity by other Person other than the Declarant or its Affiliate(s) may commence prior to such approval.

#### 4.5. Construction on Lots.

#### 4.5.1. No Deviation from Plans - Noncompliance Deemed a Nuisance.

Any person obtaining approval of the ARC shall not deviate materially from the approved plans and specifications without the prior written consent of the ARC. Such person shall notify the ARC when the alterations or improvements are complete. Approval of any particular plans and specifications or design does not waive the right of the ARC to disapprove such plans and specifications, or any elements or features thereof, if such plans and specifications are subsequently submitted for use in any other instance or by any other person. Any addition, alteration or improvement upon any Lot existing in violation of the Governing Documents shall constitute a nuisance and shall be removed or altered to conform to the Governing Documents by the Lot's Owner within thirty days after notice from the ARC of the violation.

#### 4.5.2. Governmental Permits.

Approval by the Declarant or the ARC shall not relieve an Owner from the obligation to obtain any required governmental permits. The Owner shall deliver all approvals and permits required by law to the ARC prior to the commencement of any construction requiring such approval or permit. If any application to any governmental authority for a permit to make any such structural addition, alteration or improvement to any Lot or improvement located on any Lot requires execution by the Association, and provided consent has been given by the ARC, then the application shall be executed on behalf of the Association by an Officer, without incurring any liability on the part of the Association to any contractor, subcontractor or materialman on account of such addition, alteration or improvement, or to any person having a claim for personal injury or property damage arising therefrom.

#### 4.5.3. Timing of Construction.

Any person obtaining approval of the ARC for construction of improvements on a Lot shall commence construction or alteration in accordance with plans and specifications approved within six (6) months after the date of approval and shall substantially complete any construction or alteration within five (5) months after start of excavation/construction, or within such other period as specified in the approval. Construction shall not be deemed to be completed until the improvement is finished, the Lot has been cleaned of construction debris and the Lot has been landscaped. Notwithstanding the foregoing, the ARC's approval may provide for a different period during which to commence or complete construction. If any such person does not commence work within six months after approval, or such other time period determined by the ARC, then approval shall lapse.

#### 4.5.4. Landscaping Installation.

Each Lot Owner is responsible for landscaping his/her Lot. Landscaping shall be completed within fifteen (15) weeks after initial occupancy, unless required to be installed earlier by the City of Oak Harbor. The front yard of each home (from the street to the building face) shall be covered with lawns, landscaping, decking and/or paving within five (5) months from

commencement of construction of the dwelling. Landscaping shall be installed and maintained in conformance with standards established by the Board of Directors, and landscape maintenance must meet the requirements of OHMC 19.46.080.

#### 4.5.5. No Permanent Construction Within Easements.

No permanent building, deck, fencing or other structure shall be constructed within the easements on the Lots depicted on the Plat Map.

#### 4.6. Upkeep of Lots.

##### 4.6.1. Owners' General Responsibility.

Each Lot Owner shall, at his or her sole expense, have the right and the duty to keep the Dwelling and other improvements erected within the Lot and any equipment, appliances, and fixtures contained therein in good order, condition and repair and shall do all interior and exterior redecorating and painting at any time necessary to maintain the good appearance and condition of such property. This Section shall not be construed as permitting any interference with or damage to the structural integrity of either the Common Areas or of any other Lot(s), nor shall it be construed to limit the powers or obligations of the Association hereunder. See also Section 8.4 hereof.

##### 4.6.2. Upkeep of Roof/Lot Drains, Etc..

Each individual Lot Owner shall be solely responsible for all Upkeep of the individual roof/lot drain collection system, including the roof gutters, down-spouts, and footing drains serving the Owner's Dwelling, to the point where such individual drain lines connect with a common collector line within either a Utility Easement or a Drainage Easement area.

##### 4.6.3. Upkeep by Association.

If Upkeep to portions of any Dwelling or other portions of a Lot for which the Owner is responsible, is reasonably necessary, in the opinion of the Board, to protect the Common Areas or to preserve the appearance and value of the Community, and the Owner of said Lot has failed or refused to perform said maintenance or repair as required by Section 4.6.1 of this Declaration of Covenants, within a reasonable time after written notice of the necessity of said maintenance or repair has been delivered by the Board to the Owner, the Association may, but is not obligated, to perform such Upkeep. The costs of such Upkeep shall constitute a Specially Allocated Assessment against such Lot, pursuant to Section 10.8 of this Declaration of Covenants.

#### 4.7. Alterations of Dwellings and Lots.

Subject to the provisions of this Declaration of Covenants and other provisions of law, a Lot Owner:

4.7.1. May make any improvements or alterations to the interior portions of a Dwelling constructed within an Owner's Lot that do not affect the structural integrity or mechanical

or electrical systems of any other Lot or the Common Areas, or lessen the support of any portion of the Community;

4.7.2. May not change the appearance of the Common Areas or the exterior appearance of any building constructed within the Lot, nor construct or erect any additional improvements within the Lot without permission of the ARC;

4.7.3. Any reconstruction of the exterior portions of any building constructed within a Lot, and the construction of additional improvements within the Lot which receives the permission of the ARC, shall be performed in a manner consistent with the provisions of Sections 4.6 and 4.8 hereof;

#### 4.8. Damaged Improvements.

If a Dwelling or other major improvement located upon a Lot is damaged or destroyed, the Owner thereof shall restore the site either (i) by repairing or reconstructing such building or improvement or (ii) by clearing away the debris and restoring the site to an acceptable condition compatible with the remainder of the Property. Unless the Board of Directors permits a longer time period, such work must be commenced within four months after the casualty and be substantially completed within twelve months after the casualty. The four-month period may be extended for a reasonable period thereafter in the event that repairs or reconstruction have not commenced because of factors beyond the control of the Owner, provided that the Owner has exercised and does thereafter continue to exercise due diligence in an effort to commence required work.

#### 4.9. Upkeep of Drainage Easement Areas By Lot Owners.

As required by the City of Oak Harbor, Upkeep of portions of Lots burdened with private drainage easements and shall be the responsibility of the affected Lot Owner(s). [TRUE?] The lot owner maintains the surface while the Community Association (CA) maintains the collector drainage pipes per 4.6.2.

## ARTICLE V

### COMMON AREAS, LIMITED COMMON AREAS AND RESERVED COMMON AREAS

#### 5.1. Common Areas and Common Facilities.

The Common Areas and Common Facilities of the Community, which may also be referred to as "General Common Areas," consist of the following:

5.1.1. The Community's identification signage facilities [where?].

5.1.2. The Park Tract [Tract A] and its recreation facilities [what are these?].

5.1.3. The Open Space Areas [Tracts B and C], and any facilities constructed therein

[What do we have in terms of facilities?].

5.1.4. The Drainage Facilities located [where?].

5.1.5. The Natural Vegetation Buffer Areas consisting of contiguous easements burdening each Lot in the Community along its peripheral boundaries.

5.1.6. Any and all other Tracts or areas depicted on the Plat Map that have not been dedicated to public use, including areas of Lots burdened by easements depicted on the Plat Map for drainage.

5.2. Partition, Conveyance, or Encumbrance.

5.2.1. Except as permitted by this Declaration of Covenants or the Ordinance, the Common Areas shall remain undivided and shall not be abandoned by act or omission, and no Lot Owner or other person may bring any action for partition or subdivision of the Common Areas.

5.2.2. Any purported conveyance, encumbrance, or other voluntary transfer of Common Areas, unless made pursuant to this Section, is void. A conveyance or encumbrance of Common Areas pursuant to this Section shall not deprive any Lot of its rights of access and support, nor shall it affect the priority or validity of preexisting encumbrances.

5.3. Allocated Interests - Common Areas Declared an Appurtenance.

The Declarant declares that each Lot in the Community has allocated to it an equal undivided interest in the Common Areas of the Community, which interest shall be conclusively presumed to be a perpetual appurtenance to such Lot, and which is known as the Lot's Allocated Interest in the Common Areas. This Allocated Interest shall be deemed included with each Lot in any conveyance of such Lot, irrespective of whether so stated in the conveyance deed. No Allocated Interest in the Common Areas may be severed from, mortgaged or conveyed separately from the Lot. Any purported severance, mortgaging or conveyance shall be void. Each Lot Owner shall thus be a tenant in common with all other Lot Owners with respect to the Common Areas.

5.4. Upkeep By Association.

The Association is responsible for all necessary maintenance, repair, and replacement of the Common Areas. Provisions relating to Upkeep of the most important Common Areas, known as "Principal Common Amenities," appear in Article VI hereof. [What about Upkeep of the Natural Vegetation Buffers on all the Lots? Association or individual Lot Owner?].

5.5. Right of Access.

Each Lot Owner shall afford to the Association and to its employees, agents, and licensed contractors, access through the Owner's Lot as may be reasonably necessary for the purposes of

maintenance, repair and replacement of Common Areas. If damage is inflicted on the Common Areas, or on any Lot through which access is taken, the Lot Owner responsible for the damage, or the Association, as appropriate, shall be liable for the repair thereof, as provided in Section 8.4 hereof.

#### 5.6. Use of Common Areas.

The Common Areas shall be used only for the furnishing of such services and facilities for which the same are reasonably suited and which are incident to the use and occupancy of the Lots. The improvements located on the Common Areas shall be used only for their intended purposes. Except as otherwise expressly provided in the Governing Documents, no Owner shall make any private, exclusive or proprietary use of any of the Common Areas.

#### 5.7. Interference with Common Areas.

No Lot Owner shall obstruct any of the Common Areas nor shall any Lot Owner place or cause or permit anything to be placed on or in any of the Common Areas without the approval of the Board. Nothing shall be altered or constructed in or removed from the Common Areas except with the prior written consent of the Board of Directors.

#### 5.8. Rights of the City of Oak Harbor.

##### 5.8.1. General Rights and Benefits.

These Covenants contain provisions which require the owners of Lots within the Community and the Association to provide ongoing compliance with the conditions of approval of the Plat. The obligations of the Lot Owners and of the Association to the City are for the benefit of the City, and shall not operate to create an obligation of the City or by the City to the Owners or to any third party. The rights of the City contained in this Section 5.8 are cumulative, and in addition to all other rights and privileges held by the City, and are not in lieu thereof. The obligations of the Owners to the City shall not be amended or altered without the express written consent of the City.

##### 5.8.2. Specific Rights.

The City shall have the right, for the benefit of the City and of the public health, safety and welfare, to perform or provide Upkeep to any or all of the Common Areas of the Community in the event that the Association or the Owners, or any of them, should fail to perform or provide such Upkeep in a competent and/or timely manner. In the event that the City shall incur any costs or expend any funds, directly or indirectly [including without limitation the cost of the City's own equipment and employees in performing or providing any such Upkeep], the Association shall be liable to the City for all costs and expenses so expended or incurred.

ARTICLE VI  
SPECIAL USE AND UPKEEP PROVISIONS – [Special Use] RESTRICTIONS

6.1. Description of Principal Common Amenities.

The Open Space Areas and the paths and trails in the Community provide Lot Owners of the Community with various benefits. Any Wetland Areas comprise part of the Community's stormwater system and also provide wildlife habitat. No construction, clearing, grading, filling, landscaping, mowing, burning or chemical maintenance of plants shall occur within this area, other than in a manner consistent with the City's Critical Areas Ordinance; the Board of Directors is charged with responsibility to maintain these areas in a condition suitable for their multiple purposes.

6.2. Responsibility for Operations and Upkeep.

The Association shall be responsible for the operation and Upkeep of the Principal Common Amenities.

6.2.1. Upkeep of Roads.

The Association shall provide for the striping, signage, lighting and Upkeep, including leaf litter and snow removal services, for all private roads in the Community [are there any?].

6.2.2. Upkeep of Open Space Areas, Tree Retention Areas and Wetland Areas.

All Tracts identified as "Tree Retention" or "Wetland" areas on the Plat Map shall be maintained in a natural state for low impact use and enjoyment of Occupants of the Community. No clearing, grading, filling, logging or removal of woody material, nor any building or construction of any kind, or planting of non-native vegetation is allowed within such areas absent the written approval of the City of Oak Harbor. Tracts identified only as "Open Space" may be landscaped by the Association.

6.2.3. Upkeep of Drainage Facilities.

The Drainage Facilities of this Community consist of drainage ditches and swales within easements located across and between the Lots, along with "stormceptor" devices designed to filter impurities from stormwater. Stormwater is conveyed through such facilities to ponds located in the Community Park Tract [Tract A] [IS THIS CORRECT?]. All necessary Upkeep of the components of the Stormwater System within the Community shall be conducted by the Association in accordance with the provisions of the Storm Water Maintenance Program that has been prepared by Declarant's engineers, and otherwise in accordance with the DOE Stormwater Management Manual for Western Washington [ "DOE Stormwater Manual" ], as the same may be updated from time. A copy of the Storm Water Maintenance Program is attached to this Declaration of Covenants

as Exhibit A. The Association shall consistently engage the services of qualified personnel to perform Upkeep to the Stormwater System, and shall maintain provisions in its Budget to ensure that adequate funding shall always exist for such purposes.

#### 6.2.4. Upkeep of Natural Vegetation Buffer Areas.

The Natural Vegetation Buffer Areas depicted on the Plat Map exist for the protection of trees and other vegetation to preserve and enhance the aesthetic and environmental values of the Community. No structures or improvements are permitted to be constructed in these areas other than as identified on the face of the approved Plat Map. Dumping of debris, yard waste or organic matter in such areas is prohibited. [But who mows them?]

#### 6.2.5. Upkeep of Common Facilities.

The Association will provide necessary Upkeep for any recreation facilities and other improvements constructed within the Common Areas.

#### 6.2.6. Prohibition Against Dumping.

The dumping of solvents, oil, concrete or concrete residue, or water that is heavily laden with sediments, is expressly prohibited anywhere in the Community.

#### 6.3. Use by Lot Owners.

Owners and occupants of the Community may use the Open Space Areas and Wetland Areas for wildlife viewing, picnicking and other low-impact recreational uses which will not disturb wildlife or interfere with the proper functioning of the storm-water system.

#### 6.4. Reserves to Maintain, Repair & Replace Common Facilities and Amenities.

Pursuant to Sections 8.3.2 and 10.1 hereof, a portion of the annual budget for the Association shall be devoted to reserves for maintenance, repairs and replacement of the Principal Common Amenities, and all Owners shall be assessed by the Association for their share of such costs and expenses in proportion to the Allocated Interest for common expense liability, as described in Sections 10.4 and 10.6 hereof.

## ARTICLE VII ASSOCIATION

#### 7.1. Name and Form of Association.

The name of the Association shall be "Marin Woods Community Association" The

Association has been or will be incorporated by the Declarant as a non-profit corporation under the laws of the State of Washington. The rights and duties of the members and of said corporation shall be governed by its Articles of Incorporation, the provisions of the Ordinance and of the Governing Documents. The Association shall remain organized as a profit or nonprofit corporation. In case of any conflict between Chapter 24.06 RCW, the Nonprofit Miscellaneous and Mutual Corporations Act, and the Governing Law, the Governing Law shall control.

## 7.2. Lapse of Corporate Status - Personal Lot-Owner Liability Created.

### 7.2.1. Association Must Remain Incorporated.

The Association shall have perpetual existence. The Lot Owners shall not permit its corporate charter to be dissolved or abandoned, nor may the Association's obligations under this Declaration of Covenants with respect to the Common Areas be altered or abandoned.

### 7.2.2. Incorporation Protects Owners - Owners Personally Liable Upon Abandonment.

Should the corporate charter for the Association be dissolved for any reason in violation of the foregoing, the Lot Owners shall become jointly and severally liable for all obligations imposed upon the Association under these Covenants. The corporate status of the Association exists to protect Lot Owners from personal liability, to the fullest extent provided by law.

## 7.3. Powers of Association.

The Association shall have, through its Board of Directors, all powers available to homeowners associations under the Governing Law, along with such additional powers as may be prescribed in the Articles of Incorporation or the Bylaws of the Association. The Association has the general responsibility to maintain, repair, replace, manage and insure the Common Areas of the Community, to enforce the Covenants contained herein, and to perform such other and further functions as may be provided in the Governing Documents.

## 7.4. Membership Rights and Privileges.

The Owner of each Lot shall be a member of the Association, and such membership shall be an inseparable appurtenance to the Owner's Lot. Membership rights and privileges are specified in the Bylaws of the Association.

## 7.5. Voting.

### 7.5.1. Voting Rights.

The manner of voting shall be as prescribed in the Articles of Incorporation and Bylaws.

#### 7.5.2. Allocated Interests for Voting.

The Declarant has allocated to each Lot in the Community an equal vote in the Association which is known as the Lot's Allocated Interest for voting, or "vote".

#### 7.6. Bylaws of Association.

Bylaws for the administration of the Association and for other purposes not inconsistent with the Homeowners Association Act and this Declaration of Covenants have been or will be prepared by the Declarant for adoption by the Board of Directors of the Association.

#### 7.7. Perpetual Existence- Rights of City of Oak Harbor.

The Association shall have perpetual existence; it may not be dissolved or abandoned, nor may the Association's obligations under this Declaration of Covenants with respect to the Common Areas be altered or abandoned in a manner inconsistent with City of Oak Harbor and State of Washington regulations. That is, any dissolution process must comply with City and State regulations. Should the corporate charter for the Association be dissolved for any reason in violation of the foregoing, the Lot Owners shall become jointly and severally liable for all obligations imposed upon the Association under these Covenants.

### ARTICLE VIII MANAGEMENT OF THE COMMUNITY

#### 8.1. Management by Declarant.

The Declarant has reserved the rights to (a) appoint and remove the Officers and members of the Board of Directors of the Association, and (b) veto or approve a proposed action of the Board or the Association, for a period of time known as the "Declarant Control Period". Limitations on the Declarant Control Period are specified in Section 16.6 hereof.

#### 8.2. Professional Management.

The Association shall be maintained by a professional property manager with substantial Association management experience. Provisions for professional management of the Association are made in Section 8.2 of its Bylaws.

#### 8.3. Authority of the Board.

##### 8.3.1. General Authority.

The Board, for the benefit of the Community and the Owners, shall enforce the provisions of the Governing Documents and shall have all powers and authority granted to the Board

or the Association under the Homeowners Association Act and this Declaration of Covenants which are not expressly subject to the approval of the Owners.

### 8.3.2. Incurring and Payment of Common Expenses.

The Board shall acquire and shall pay for, as Common Expenses, all goods and services deemed necessary or desirable for the proper functioning of the Association. Without limitation, such Common Expenses may include:

- (a) Common water and sewer, common electrical and, if deemed necessary or desirable by the Board of Directors, common garbage and/or trash collection, common gas, and any other necessary utility service as required for the Common Areas.
- (b) Policies of insurance or bonds required by Article XI.
- (c) The services of persons or firms as required to properly manage the affairs of the Community to the extent deemed advisable by the Board as well as such other personnel as the Board shall determine are necessary or proper for the operation of the Common Areas, whether such personnel are employed directly by the Board or are furnished by a Manager.
- (d) The services of attorneys, along with bookkeepers and accountants qualified to maintain Association records in the manner required by Section 8.4 of the Bylaws, and to perform the independent audit required under Section 8.5 of the Bylaws.
- (e) Painting, maintenance, repair and replacement of the Common Areas, landscaping and gardening work for the Common Areas, and such furnishings and equipment for the Common Areas as the Board shall determine are necessary and proper.
- (f) Any other materials, supplies, labor, services, maintenance, repairs, structural alterations, insurance, taxes or assessments which the Board is required to by law to pay or procure or which in its opinion shall be necessary or proper for the operation of the Community, the maintenance, repair or replacement of the Common Areas, or for the enforcement of this Declaration of Covenants.
- (g) If maintenance or repair to portions of any such Dwellings or other portions of the Lots for which the Owner is responsible is reasonably necessary, in the opinion of the Board, to protect the Common Areas or to preserve the appearance and value of the Community, and the Owner of said Lot has failed or refused to perform such Upkeep as required by Section 4.4.1 of the Declaration of Covenants within a reasonable time after written notice of such failure has been delivered by the Board to the Owner, the Association may cause such Upkeep to be performed. The cost of such maintenance or repair shall constitute a Specially Allocated Assessment against the Lot of such Owner, pursuant to Section 10.8 of the Declaration of Covenants.

### 8.3.3. Acquisition of Property.

The Board may acquire and hold in the name of the Association, for the benefit of the Owners, tangible and intangible personal property and real property and interests therein, and may dispose of the same by sale or otherwise. Such property shall thereafter be held, sold, leased, rented, mortgaged or otherwise dealt with for the benefit of the Association as the Board may direct.

### 8.3.4. No Business Authority.

Nothing herein contained shall be construed to give the Board authority to conduct an active business for profit on behalf of all of the Owners or any of them.

### 8.4. Right of Entry.

The Board and its agents or employees may enter any Lot or Limited Common Area when necessary in connection with any maintenance, landscaping or construction for which the Board is responsible, or in the event of emergencies. Except in the case of an emergency, reasonable advance notice shall be given to the Lot Owner and, if applicable, to any lawful tenant or subtenant in any Dwelling on the Lot. Such entry shall be made with as little inconvenience to the occupant(s) as practicable, and any damage caused thereby shall be repaired by the Association out of the Common Expense fund if the entry was due to an emergency (unless the emergency was caused by the Owner or lawful occupant of the Lot entered, in which case the cost shall be specially assessed to the Lot entered) or for the purpose of maintenance, or repairs, to Common or Limited Common Areas where the repairs were undertaken by or under the direction or authority of the Board. If the repairs or maintenance were necessitated by or for the Lot entered or its Owners or lawful occupants, or requested by its Owners, the costs thereof shall be specially assessed to such Lot.

### 8.5. Board as Attorney in Fact.

Each Owner, by the act of becoming an Owner of a Lot, shall be deemed to have irrevocably appointed the Board of Directors as his or her attorney-in-fact, with full power of substitution, to take such actions as are reasonably necessary to perform the duties of the Association and Board hereunder, including, but not limited to, the duties to maintain, repair and improve the Property, to grant licenses and easements, and to secure and distribute condemnation awards and/or insurance proceeds affecting the Common Areas.

## ARTICLE IX PERMITTED USES; ARCHITECTURAL CONTROL

### 9.1. Permitted Uses.

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#### 9.1.1. Residential Use.

Dwellings constructed within Lots in this Community shall be used primarily for residential purposes. The Board may also permit the use of portions of a Dwelling for a professional office or other low impact commercial use, provided that such use is consistent with all applicable laws, ordinances and regulations of any governmental authority, and so long as such use does not generate any appreciable levels of client or customer traffic, noise or other disturbance to other members of the Community. As a condition to consenting to such office use, the Board may require the Lot Owner to provide proof of adequate commercial liability insurance coverage under which the Association shall be named as an additional insured.

#### 9.1.2. Commercial Uses.

Other than the home office and other uses described in Section 9.1.1 hereof, there shall be no commercial activities conducted within the Property.

#### 9.1.3. Vehicle Parking and Operation.

##### 9.1.3.1.

##### General Restrictions.

Parking of up to two vehicles in driveways shall be permitted. Driveway parking spaces are restricted to use for parking of operable, properly registered automobiles, light trucks and family vans; other items and equipment may be parked or kept therein only if expressly permitted by Rules and Regulations and only in such areas, if any, as may be designated for such purpose by the Board of Directors. Garage parking spaces are restricted to use for parking of automobiles, motorcycles, light trucks, family vans and other similar vehicles, and for storage of such other items that pose no unreasonable health, safety or fire risks to persons or property. The Board of Directors may promulgate further Rules and Regulations governing vehicle parking. Vehicle repairs other than ordinary light maintenance are not permitted on the Property. The Board may require removal of any inoperative or unregistered vehicle, and any other equipment or item improperly stored in parking areas. If the same is not removed, the Board may cause removal at the risk and expense of the owner thereof, under such reasonable procedures as may be provided by Rules and Regulations adopted by the Association. Any designated visitors parking areas shall be left open for use by visitors, guests, invitees and licensees of Lot Owners and their tenants. Any designated handicapped parking areas are restricted to use by vehicles validly displaying State handicapped vehicle placards.

#### 9.1.4. Parking and Driving on Private Roads.

All roads in are presently designated public. The regulation of parking and driving is the pervue of the City of Oak Harbor.

#### 9.1.5. RV Parking.

Except as hereinafter provided, junk vehicles (as defined in RCW 46.55.010), Recreational Vehicles (including without limitation camper-trailers, mobile homes, motor homes, "fifth-wheels" off-road vehicles, boats, airplanes or etc.), large commercial-style vehicles (including without limitation trucks, tractors, large vans or other types of vehicles or equipment which either require a commercial vehicle operator's license or which exceed 6,000 lbs in gross vehicle weight) or any other type of vehicle or equipment which exceeds 24 feet in length may not be stored, kept or maintained anywhere within the Community. Nevertheless, a Recreational Vehicle may be maintained within a Lot, if it is fully enclosed within a garage or an approved accessory structure, or if the Board determines that it has been otherwise substantially screened from view by approved fencing, dense vegetation or such other lawful means as may have been previously approved by the Board. The Board may require removal of any vehicle or equipment not authorized by this Section; if it is not so removed, the Board may cause its removal at the risk and expense of the owner thereof, under such reasonable procedures as may be consistent with the provisions of RCW 46.55. Failure of an Owner or other occupant to remove such a vehicle or equipment from a Lot or the Common Areas may result in any or all remedies available to the Association under the Governing Documents. The Board may adopt additional rules and regulations regarding parking and storage of Recreational Vehicles.

#### 9.1.6. Signs.

No sign of any kind shall be displayed to the public view on or from any Lot or the Common Areas without the prior consent of the Board; provided that this section shall not apply to Declarant or Declarant's agents, nor shall it be deemed to prohibit the Owner of a Lot from displaying a normal realtor's sign for a period of time during which the Lot is for sale or rent. No signs advertising home businesses are permitted. The Board may by resolution establish further policies regarding signs, to reflect the sentiments of the Community while giving due regard to traditional democratic rights of free speech, religion and expression of Owners and Occupants of Lots in the Community. The Board's judgment in such matters shall be conclusive, except as to matters controlled by applicable Federal or State law.

#### 9.1.7. Animals.

The maintenance, keeping, boarding and/or raising of animals, livestock, poultry, or reptiles of any kind, regardless of number, shall be and is prohibited within any Lot or upon the Common Areas, except that the keeping of small birds, aquarium fish, well-behaved dogs and/or cats and other well-behaved animals which do not normally leave the Lot is permitted, subject to Rules and Regulations adopted by the Board of Directors. The owner of any animal maintained on the Property shall exercise appropriate control over the animal, and shall clean up after such animal and shall not permit deposits of fecal matter, urinary residue or foodstuffs from or for such animal to remain anywhere on the Common Areas. Any Lot Owner who keeps or maintains any animal upon any portion of the Property shall be deemed to have indemnified and agreed to hold the Association, each Lot Owner and the Declarant free and harmless from any loss, claim or liability of any kind or

character whatever arising by reason of keeping or maintaining such animal within the Community. All animals shall be registered and inoculated as required by law. The Board may at any time require the removal of any animal which it finds is or has become an unreasonable source of annoyance, and may exercise this authority for specific animals even though other animals are permitted to remain.

#### 9.1.8. Noise.

No person shall cause any unreasonably loud noise anywhere on the Property, nor shall any person permit or engage in any activity, practice or behavior for the purpose of causing annoyance, discomfort or disturbance to any person lawfully present on any portion of the Property.

#### 9.1.9. Offensive or Illegal Activity.

No noxious, offensive, noisy, smelly, or illegal activity shall be carried on in any Lot or the Common Areas, nor shall anything be done therein which is or may become a nuisance or an unreasonable source of annoyance to other Owners or other lawful occupants of the Community.

#### 9.1.10. Hazardous Substances.

A person shall maintain or store on or in the Property only such property and materials which may be legally possessed by such person. No person shall improperly store within or release from a Lot or into the Common Areas any petroleum distillates, liquid or aromatic hydrocarbons, medical wastes or infectious biological agents, acids, caustics, carcinogens, mutagens, heavy metals, or any other inflammable, toxic, explosive, radioactive, or other type of substance which may be hazardous to either the Property or to the public health or safety, or the health or safety of any lawful occupants of the Community, any and all such substances being known herein as Hazardous Substances.

#### 9.1.11. Television and Radio Antennas, Dishes.

Satellite TV antennas/dishes 1 meter or less (approximately 36") in diameter are governed by F.C.C. regulations. Larger satellite dishes and other types of reception or transmission antennas may be installed within a Lot only if reasonably screened from view from other Lots and the Common Areas. Ham radio and "citizens band" antennas may be used for transmission purposes only so long as they do not cause interference with electronic equipment of neighboring property owners. No reception or transmission devices may be located within the Common Areas unless expressly permitted by the Board of Directors.

#### 9.1.12. Security Systems.

In the event that either the Declarant or the Association shall install a central security system within the Community, no Owner shall install or maintain any alternative security system which shall interfere with the proper operation of the central system, nor shall any Lot's individual security system be connected in any way with any such central system without the advance written

approval of the Board of Directors.

#### 9.1.13. Fencing.

Fencing is subject to Design Guidelines.

#### 9.1.14. Effect on Insurance.

Nothing shall be done or maintained in any Lot or in the Common Areas which will increase the rate of insurance on the Common Areas or Lots without the prior written consent of the Board. No Owner shall permit anything to be done or maintained in his or her Lot or in the Common Areas which will result in the cancellation of insurance on any Lot or any part of the Common Areas.

#### 9.1.15. Accessory or Temporary Structures.

No structure of a temporary character, nor any trailer, tent, shack, barn, pen, kennel, run, stable, outdoor clothes line, shed or other accessory buildings shall be erected, used or maintained on any Lot absent the written consent of the Board of Directors, which may promulgate rules and regulations governing such matters. Temporary structures may be erected in connection with construction activities associated with the original construction of Dwellings within the Community, for such periods of time as may be reasonable for such purposes.

#### 9.1.16. Lease Restrictions.

Any lease agreement shall be required and deemed to provide that the terms of the lease shall be subject in all respects to the provisions of the Governing Documents, and that any failure by the Lessee to comply with such provisions shall be a default under the lease, entitling the Association to enforce such provisions as a real party in interest.

#### 9.1.17. Assignment or Subletting.

The assignment or subleasing of a Lot shall be subject to the same limitations as are applicable to the leasing or renting thereof. An Owner or tenant may not exempt himself or herself from any liability under the Governing Documents by assigning or subleasing the occupancy rights to his or her Lot.

### 9.2. Architectural Control.

#### 9.2.1. General Authority of Declarant and Board of Directors.

To assure the health, safety and enjoyment of persons lawfully using any portion of this Community, and to promote visual harmony within the Community, the Architectural Review Coordinator ("ARC") shall have the power to enforce architectural control over the improvements constructed within the Community. Initially, as provided in Section 4.4 hereof and Section 9.2.2

below, the Declarant shall constitute or designate the ARC to perform such architectural control, and may regulate the external design, signage, appearance, construction, use and Upkeep of the Property in accordance with Design Guidelines adopted for this purpose. Following the termination of the Declarant Control Period, or at such earlier time as the Declarant may permit, the Board of Directors may promulgate or modify Design Guidelines for the Community and may perform architectural control to the extent permitted in this Declaration of Covenants. The Board of Directors shall have the power to impose reasonable application fees to evaluate any additions or changes to a Dwelling proposed by an Owner; such fees shall constitute a Specially Allocated Assessment against the affected Owner.

#### 9.2.2. Authority to Perform or Delegate Functions of ARC.

The Declarant or its designee shall initially serve as the ARC for the Association. Following the termination of the Declarant Control Period, the Board of Directors may directly perform the activities of the ARC, or the Board may designate an individual to be the ARC, or it may establish an Architectural Review Committee (also to be known as the "ARC"), to coordinate compliance with the Design Guidelines of the Community.

#### 9.2.3. Time for Approval - No Construction Prior to Approval.

The ARC shall approve or disapprove plans, specifications and details within fourteen (14) days of receipt thereof. Upon a failure to respond within such period, then the plans shall be deemed approved. No construction activity may commence prior to such approval.

#### 9.2.4. Status of Design Guidelines.

Design Guidelines approved by the Declarant or by the Board of Directors shall be enforceable as if set forth herein in full.

#### 9.2.5. Authority to Grant Variances.

The ARC shall have the authority, either by act or omission, to waive enforcement of or grant variances from any written Design Guidelines without a specific finding that enforcement of such guidelines would impose an unfair burden on such Owner, but describing the variance and the reasons therefor in a written instrument which shall be part of the records of the Association. Upon such written approval of any specific variance or exception from the requirements of the Design Guidelines, all development conforming to such variance or exception shall be deemed lawful.

#### 9.2.6. No Liability for Architectural Review.

Neither the Declarant nor the Association nor any permitted designee shall be liable to any party for any good faith action or failure to act under the provisions of this Declaration of Covenants.

ARTICLE X  
COMMON EXPENSES AND ASSESSMENTS

10.1. Budget for Common Expenses.

Not less than sixty (60) days prior to the Annual meeting of the Association, or at such other time as may be deemed necessary or desirable by the Association's accountant, the Board shall prepare an Annual Budget which shall estimate the Common Expenses, described generally in Sections 2.7 and 8.3.2 of this Declaration of Covenants, to be paid during such year. The Budget shall make provision for creating, funding and maintaining reserves required by Section 10.3 hereof, and shall take into account any expected income and any surplus available from the prior year's operating fund.

10.2. Meeting of Association to Ratify Budget.

10.2.1. General Provisions.

Within thirty days after adoption of any proposed regular or special budget for the Association., the Board of Directors shall provide a summary of the budget to all the Lot Owners and shall set a date for a meeting of the Lot Owners to consider ratification of the budget not less than fourteen nor more than sixty days after mailing of the summary. Unless at that meeting the Owners of Lots to which a majority of the votes in the Association are allocated reject the budget, the budget is ratified, whether or not a quorum is present. In the event the proposed budget is rejected or the required notice is not given, the periodic budget last ratified by the Lot Owners shall be continued until such time as the Lot Owners ratify a subsequent budget proposed by the Board of Directors. Pursuant to RCW 64.38.025(3), this procedure shall be deemed to govern both general assessments and special assessments; this Section of these Covenants may not be amended without the advice of counsel, since its terms are controlled by law.

10.2.2. Special Notice Requirements Related to Reserve Study & Reserve Accounts.

As part of the summary of the budget provided to all Lot Owners pursuant to Section 10.2.1, the Board of Directors shall disclose to the Owners, pursuant to amendments to the Homeowners Association Act adopted in 2011, information concerning the Association's Reserve Account. Such information, as currently required by the Governing Law appears in the Bylaws. In the event that the Governing Law is amended to modify such notice requirements, the requirements of the Governing Law shall supercede the provisions of this Section of these Covenants.

10.3. Reserves for Major Repairs, Replacements, & Insurance Deductibles.

10.3.1. Establishment of Reserves.

The Board of Directors shall establish and maintain reasonable reserves for major

repairs and replacements. Reserves shall also be established for the deductible under insurance policies obtained by the Association, exclusive of earthquake and/or related coverages. The Annual Budget of the Association shall always contain provisions for such reserves. The Association shall allocate and deposit monthly to such reserves one-twelfth of the total amount budgeted for such reserves in the current fiscal year. The Board may also establish and maintain reserve funds for operations, capital improvements and for such other purposes as may appear advisable. All reserves shall be identified and segregated on the books of the Association. The portions of the Lots' Assessments paid into such reserves shall be conclusively deemed to be non-refundable contributions to the capital of the Association by the Lot Owners. Such reserves may be expended only for the purposes for which they were established [i.e., repair and replacement reserves may not be used to construct capital additions or capital improvements], unless another use for same may be ratified in the manner described in Section 10.2 hereof, or if the process described in Section 10.3.3 hereof is utilized.

#### 10.3.2. Reserve Study Required by State Law.

Unless doing so would impose an unreasonable hardship, and so long as the Association has "significant assets", the Association shall prepare and update a Reserve Study, in accordance with the relevant 2011 amendments to the Homeowners Association Act now codified at RCW 64.38.065. The initial Reserve Study must be based upon a visual site inspection conducted by a Reserve Study Professional. Unless doing so would impose an unreasonable hardship, the Association shall update the Reserve Study annually. At least every three years, an updated Reserve Study must be prepared, based upon a visual site inspection conducted by a Reserve Study Professional. In preparing a Reserve Study, the Association shall estimate the anticipated major maintenance, repair, and replacement costs, whose infrequent and significant nature make them impractical to be included in an annual budget. A Reserve Study shall include:

#### 10.3.3. Limitations on Withdrawals From Reserve Account.

The Association may withdraw funds from its reserve account to pay for unforeseen or unbudgeted costs that are unrelated to maintenance, repair, or replacement of the reserve components. The Board of Directors shall record any such withdrawal in the minute books of the Association, cause notice of any such withdrawal to be provided to the mailing address of each Owner or to any other mailing address designated in a Record by the Owner, and adopt a repayment schedule not to exceed twenty-four months unless it determines that repayment within twenty-four months would impose an unreasonable burden on the Lot Owners. Payment for major maintenance, repair, or replacement of the reserve components out of cycle with the reserve study projections or not included in the reserve study may be made from the reserve account without meeting the notification or repayment requirements under this Section.

#### 10.4. Assessments for Common Expenses.

#### 10.4.1. Liability of Lots.

Except as provided in Sections 10.4.2 and 10.8 below, the total amount of the estimated funds required to pay the Common Expenses of the Association set forth in the Annual Budget adopted by the Board of Directors for the fiscal year shall be assessed against the Lots in proportion to their respective Allocated Interests for Common Expense liability described in Section 10.6 hereof.

#### 10.4.2. Assessment of Undeveloped Lots.

Until the Dwelling on a Lot is substantially completed and sold to a purchaser other than the Declarant, such Lot shall be subject to only 20% of the assessment liability allocated to a Lot containing completed improvements.

#### 10.4.3. Timing of Payments - Authority for Installment Payments.

Unless otherwise determined by the Board of Directors, the annual Assessment against each Lot for its proportionate share of the Common Expenses shall be payable on or before February 1st of each year; the Association nevertheless shall have the authority to require that assessments be paid in 12 equal, monthly installments; each such installment shall be payable in advance on the first day of the month.

#### 10.5. Assessments to Pay Judgment Against Association.

Assessments to pay a judgment against the Association may be made only against the Lots in the Community at the time the judgment was entered, in proportion to their Allocated Interests for Common Expense Liability at the time the judgment was entered.

#### 10.6. Allocated Interests.

The Declarant has allocated to each Lot in the Community an equal obligation to pay the general Common Expenses of the Association, which obligation is known as the Lot's Allocated Interest for Common Expense Liability. Notwithstanding the foregoing, Lots may be subject to differential assessments for Common Expenses under Sections 10.4.2 and 10.8 hereof.

#### 10.7. Special Assessments.

The Board of Directors may levy a Special Assessment for the purpose of defraying the cost of any unexpected repair or other nonrecurring contingency, or to meet any other deficiencies in operations or reserves occurring from time to time. The Board of Directors shall give notice to the Lot Owners of any such Special Assessment by a statement in writing giving the amount and reasons therefor, along with a date for a Special Meeting of the Association to be held not less than 14 days following such notice, for approval of the Special Assessment. Subject to the provisions of Section 10.2 hereof, such Special Assessments shall become due and payable, unless otherwise specified in

the notice, with the next monthly Assessment payment which is due more than thirty days after the delivery or mailing of such notice. All Lot Owners shall be obligated to pay the adjusted monthly amount or, if the Special Assessment is not payable in installments, the full amount of such Special Assessment, in proportion to their Allocated Interests for Common Expense Liability.

#### 10.8. Specially Allocated Assessments.

10.8.1 All costs and expenses associated with Upkeep performed by the Association to or within a Lot shall constitute a Specially Allocated Assessment against such Lot.

10.8.2 To the extent that any Common Expense is caused by the negligence or misconduct of any Lot Owner, the Association may, subject to the provisions of Section 7.10 of the Bylaws, levy a Specially Allocated Assessment for that expense against the Owner's Lot. In addition and without limitation, the liability of a Lot Owner to pay for expenses associated with any other costs, fees, charges, insurance deductibles or fines imposed or incurred by the Association associated with the Lot, along with any costs and/or attorney's fees recoverable under the Governing Documents, and interest on any delinquent account shall be deemed a Specially Allocated Assessment which, unless otherwise directed by the Board, shall be due and payable within thirty (30) days following their imposition.

10.8.3 Any portions of the Common Expenses which vary among the Lots based upon divergent usage of special services or facilities, or other factors which justify differential assessment rates, shall be assessed differentially among the Lots. Any other Common Expense or portion thereof which benefits fewer than all of the Lots shall be assessed exclusively against the Lots so benefitted.

#### 10.9. Accounts; Commingling Prohibited.

Amounts collected by the Board of Directors as Assessments against the Lots for operating expenses or Reserves shall be kept in accounts in the name of the Association and shall not be commingled with funds of any other Association, nor with the funds of any Managing Agent or any other person responsible for the custody of such funds. Any reserve funds shall be kept in one or more insured, segregated accounts and any transaction affecting such funds, including the issuance of checks, shall require the signature of at least two persons who are Officers or Directors of the Association.

#### 10.10. Surplus Funds.

Any surplus funds of the Association remaining after payment of or provision for Common Expenses and any prepayment of reserves shall, in the discretion of the Board of Directors, either be paid to the Lot Owners in proportion to their Allocated Interest for Common Expense Liability or credited to them to reduce their future Common Expense Assessment liability.

#### 10.11. Liability of Lot Owners for Association Obligations.

The liability of any Lot Owner arising out of any contract made by the Board of Directors, or tort of the Association not fully covered by insurance, or arising out of the indemnification of the Board of Directors, shall be limited to that proportion of the total liability thereunder as the Allocated Interest of his or her Lot bears to the aggregate Allocated Interests of all Lots.

#### 10.12. Owner's Personally Liable for Common Expenses.

Each Assessment shall be the joint and several obligation of the Owner or Owners of the Lot to which the same are assessed as of the time the Assessment is due. Suit to recover a personal judgment for any delinquent Assessment shall be maintainable in any court of competent jurisdiction without foreclosing or waiving the lien securing such sums. No Lot Owner may exempt himself or herself from liability with respect to the Common Expenses by waiver of the enjoyment of the right to use any of the Common Areas or by leasing, rental or abandonment of his or her Lot or otherwise. The failure or delay of the Board of Directors to adopt the Annual Budget for any year shall not constitute a waiver or release in any manner of a Lot Owner's obligation to pay his or her allocable share of the Common Expenses as herein provided, and in the absence of an Annual Budget or adjusted Annual Budget, each Lot Owner shall continue to pay (with or without notice) a monthly Assessment at the rate established for the preceding fiscal year until an Assessment is made under a current Annual Budget or adjusted Annual Budget and notice thereof has been sent to the Lot Owner.

#### 10.13. Liability Following Conveyance of Lot.

A selling Lot Owner shall not be liable for the payment of any part of the Common Expenses assessed against his or her Lot subsequent to a sale, transfer or other conveyance by him of such Lot. The purchaser of a Lot shall be jointly and severally liable with the selling Lot Owner for all unpaid Assessments against the Lot up to the time of the conveyance without prejudice to the purchaser's right to recover from the selling Lot Owner the amounts paid by the purchaser therefore. Except as provided in Section 10.17 hereof, the holder of a mortgage or other purchaser of a Lot who obtains the right of possession of the Lot through foreclosure shall not be liable for Assessments that became due prior to such right of possession. Such unpaid Assessments shall be deemed to be Common Expenses collectible from all the Lot Owners, including such mortgagee or other purchaser of the Lot. Foreclosure of a mortgage does not relieve the prior Owner of personal liability for Assessments accruing against the Lot prior to the date of such sale as provided above.

#### 10.14. Statement of Unpaid Assessments.

The Association, upon written request, shall furnish to a Lot Owner or a mortgagee a statement signed by an officer or authorized agent of the Association setting forth the amount of unpaid Assessments against that Lot. The statement shall be furnished within fifteen days after receipt of the request and is binding on the Association, the Board of Directors, and every Lot Owner, unless and to the extent known by the recipient to be false.

#### 10.15. Lien for Assessments.

The Association shall have a lien on each Lot for any unpaid Assessments levied against a Lot from the time the Assessment is due.

#### 10.16. Perfection of Lien - Lien is Automatic .

Recording of this Declaration of Covenants constitutes record notice and perfection of the lien for Assessments. While no further recording of any claim of lien for Assessments shall be required to perfect the Association's lien, the Association may record a notice of claim of lien for Assessments under this Section in the real property records of Island County.

#### 10.17. Priority of Lien.

10.17.1. A lien under this Section shall be prior to all other liens and encumbrances on a Lot except: (a) Liens and encumbrances recorded before the recording of the Declaration of Covenants; (b) a mortgage on the Lot recorded before the date on which the Assessment sought to be enforced became delinquent; and (c) liens for real property taxes and other governmental assessments or charges against the Lot.

10.17.2. The Association's lien shall also be prior to the mortgages described in subpart (b) of Section 10.7.1 hereof, to the extent of the "priority amount," that is, an amount equal to (1) the Common Expense Assessments against the Lot, excluding any amounts for capital improvements, based on the periodic Budget adopted by the Association pursuant to Section 10.2 hereof, which would have become due in the absence of acceleration during the six months immediately preceding the institution of proceedings to foreclose either the Association's lien or a lien described in Subsection 10.7.1(b) hereof; and if the Governing Law then so permits (2) the Association's actual costs and reasonable attorney's fees incurred in foreclosing its lien up to the time when any person pays to the Association the full priority amount described above, including the Association's attorneys' fees and costs. The term "institution of proceedings," as used herein, shall mean either: (i) the date of recording of a notice of trustee's sale by a deed of trust beneficiary; (ii) the date of commencement, pursuant to applicable court rules, of an action for judicial foreclosure either by the Association or by the holder of a recorded mortgage; or (iii) the date of recording of a notice of intention to forfeit in a real estate contract forfeiture proceeding by the vendor under a real estate contract. The term "capital improvements," as used herein, does not include making, in the ordinary course of management, repairs to common areas or facilities or replacements thereof with substantially similar items, subject to: (a) availability of materials and products, (b) prevailing law or (c) sound engineering and construction standards then prevailing.

#### 10.18. Enforcement of Lien.

The lien arising under this Section shall be enforced judicially by the Association or its authorized representative in the manner set forth in Chapter 61.12 RCW. The Association or its authorized representative shall have the power, subject to the provisions of Section 8.3.4 hereof, to

purchase the Lot at the foreclosure sale and to acquire, hold, lease, mortgage, or convey the same. Upon an express waiver in the complaint of any right to a deficiency judgment in a judicial foreclosure action, the period of redemption shall be eight months. The Association may elect to take a deed in lieu of foreclosure in any such proceeding.

#### 10.19. Limitation of Lien Enforcement.

A lien for unpaid Assessments and the personal liability for payment thereof is extinguished unless proceedings to enforce the lien are instituted within six years after the amount of the Assessments sought to be recovered becomes due.

#### 10.20. Rent Subject to Lien for Assessments- Other Remedies for Nonpayment.

##### 10.20.1. Rent Payable to Association Upon Default of Owner.

If a Lot is rented or leased by its Owner, and if the Owner becomes delinquent in the payment of assessments for more than 90 days, the Association may collect the delinquent amount from the tenant, who shall pay over to the Association so much of the rent for such Lot as is required to pay such delinquency, plus interest, attorneys' fees and other costs of collection. In order to avail itself of the remedy contained in this Subsection, the Association shall first send a notice jointly to the Owner and the Tenant by First Class U.S. Mail, advising both parties [a] of the Owner's delinquency in assessments [b] of the tenant's obligations under this Subsection of the Declaration, and [c] notifying both parties that if such delinquency is not cured within ten (10) days of mailing, the tenant must commence paying rent to the Association until the delinquency has been cured. The tenant shall not have the right to question payment to the Association, and such payment shall discharge both the tenant's duty to pay rent to the Lot Owner and the Lot Owner's obligation to pay assessments, pro tanto. The Association shall not resort to this remedy where a receiver has been appointed and is collecting such rents, as provided immediately below in Section 10.10.2.

##### 10.20.2. Association Entitled to Appointment of Receiver.

From the time of commencement of an action by the Association to foreclose a lien for nonpayment of delinquent Assessments against a Lot that is not occupied by the Owner thereof, the Association shall be entitled to the appointment of a receiver to collect from the lessee thereof the rent for the Lot as and when due. If the rent is not paid, the receiver may obtain possession of the Lot, refurbish it for rental up to a reasonable standard for rental Lots in this type of project, rent the Lot or permit its rental to others, and apply the rents first to the cost of the receivership and attorneys' fees thereof, then to the cost of refurbishing the Lot, then to applicable charges, then to costs, fees, and charges of the foreclosure action, and then to the payment of the delinquent Assessments. The exercise by the Association of the foregoing rights shall not affect the priority of preexisting liens on the Lot.

#### 10.21. Remedies Cumulative.

The remedies provided are cumulative and the Board may pursue them concurrently, along with any other remedies which may be available under the law although not expressed herein.

## ARTICLE XI

### INSURANCE, DESTRUCTION, RESTORATION AND DISTRIBUTION

#### 11.1. Authority, Name of Insured.

The Board of Directors should obtain and maintain casualty and liability insurance under such terms and for such amounts as shall be deemed necessary by the Board of Directors, but unless not reasonably available. The name of the insured under each required policy shall be stated as follows: "Marin Woods Community Association."

#### 11.2. Insurance Policies and Coverage.

##### 11.2.1 Basic Coverage.

Any insurable common improvements in this Community subject to the primary jurisdiction of the Association shall be insured against casualty or physical damage in an amount equal to the maximum insurable replacement value thereof (i.e., 100% of replacement costs based upon the value of replacing all such insurable improvements in the Community exclusive of land, excavations and foundations, utilizing contemporary building materials and technology. Level(s) of coverage shall be determined annually by the Board of Directors with assistance of the agent of the insurance company affording such coverage. Such coverage shall afford protection against:

- (a) loss or damage by fire, vandalism, malicious mischief, windstorm, and other hazards covered by the standard "broad form" and/or "special" extended coverage endorsements or their equivalent, and such other perils customarily covered by insurance for similar projects. The policy shall also cover other Common property including fixtures, building service equipment and common personal property and supplies owned by the Association or included in the Common Areas.
- (b) liability for death, personal injury and property damage arising from the use, ownership or maintenance of any of the Common Areas. The insurance should also cover any commercial spaces that are owned by the Association, even if they are leased to others. Coverage should be afforded under a commercial general liability policy for the entire Community, including all areas under the supervision of the Association. Limits of liability shall in no event be less than \$1,000,000 with respect to any single occurrence; and
- (c) medical payments coverage, in such amounts as are customarily provided in such policies.

#### 11.2.2 Directors' and Officers' Insurance.

If reasonably available, the Board shall acquire Directors' and Officers' errors and omissions insurance to satisfy the Association's indemnification responsibilities under the Bylaws of the Association.

#### 11.2.3 Fidelity Insurance.

The Association should also obtain blanket fidelity insurance for any person who either handles (or is responsible for) funds that he or she holds or administers, whether or not that individual receives compensation for services; such a policy should name the Association as the insured and include a provision that calls for at least ten days' written notice to the Association before the policy can be canceled or substantially modified for any reason. The policy should cover the maximum funds that will be in the custody of the Association or its Manager at any time while the policy is in force. A Manager that handles funds for the Association shall be covered by its own fidelity insurance policy, which must provide the same coverage required of the Association.

#### 11.2.4 Additional Insurance.

The Board shall also acquire such additional insurance coverage as it may deem advisable and appropriate, including Workmen's Compensation insurance, where necessary to meet the requirements of law. Further, and notwithstanding any other provisions herein, the Association shall continuously maintain in effect such casualty, flood and liability insurance and fidelity insurance meeting the insurance and fidelity bond requirements, if any, for similar projects established by Federal National Mortgage Association, Federal Home Loan Mortgage Corporation, FHA, VA or other governmental or quasi-governmental agencies involved in the secondary mortgage market or loan guaranty programs, so long as any such agency is an Eligible Mortgagee, Eligible Insurer or Owner of a Lot within the Community, if such additional coverage is reasonably available.

#### 11.2.1. General Insuring Scheme - Limited Coverage for Owners And Tenants.

The Association is not a "guarantor" of the health, safety or property of the Unit Owners, tenants or other Occupants of the project. See Section 14.1 hereof for further details. The Association's Policy does not and cannot provide coverage for real or personal property belonging to any Lot Owner, tenant or other Occupant of a Lot, nor does the Association's Policy provide coverage for liability for harm arising within a Lot.

#### 11.2.2. Owners And Tenants Responsible for Acquiring their Own Insurance.

Because of the limitations in coverage afforded under the Association's Policy, Lot Owners and tenants must acquire their own insurance coverage in order to be fully protected. In acquiring such insurance, Owners and tenants should pay particular attention to the general provisions of Sections 11.5 hereof.

### 11.3. Deductible.

Except as otherwise provided herein, the deductible under any policy of insurance purchased by the Board of Directors shall not exceed the lesser of \$10,000 or 1% of the face amount of the policy. Except as provided herein, the amount of the deductible shall be paid by the Association as a Common Expense. Funds to cover the amount of the deductible shall be included in the Association's reserve accounts. The deductible should be established at a level that is sufficiently high to eliminate minor "nuisance" claims which could cause cancellation of the Association's insurance policy.

### 11.4. Unavailability, Cancellation or Nonrenewal.

If the insurance described in Section 11.2 hereof is not reasonably available, or is modified, canceled or not renewed, the Association promptly shall cause notice of that fact to be handdelivered or sent prepaid by first class United States mail to all Lot Owners, and to each Eligible Mortgagee, at their respective last known addresses.

### 11.5. Owners' Individual Policies Required.

#### 11.5.1. Property & Liability Insurance.

Each Owner shall obtain, at such Owner's expense, a policy or policies of insurance providing coverage against personal liability and against casualty or physical damage to the Dwelling and other insurable improvements on the Lot in an amount equal to the maximum insurable replacement value thereof (i.e., 100% of replacement costs based upon the value of replacing all such improvements exclusive of land, excavations and foundations, utilizing contemporary building materials and technology. Such coverage shall afford protection against:

- (a) loss or damage by fire, vandalism, malicious mischief, windstorm, and other hazards covered by the standard "broad form" and/or "special" extended coverage endorsements or their equivalent, and such other perils customarily covered by insurance for Dwellings in similar projects.
- (b) liability for death, personal injury and property damage arising from the use, ownership or maintenance of any part of the Lot.

#### 11.5.2. No Obligation to Monitor.

The Board of Directors is not obligated to monitor the existence or nonexistence of any insurance required under this Section 11.5; such responsibility, and the risks to the Owner of a failure to have proper insurance, are to be borne solely by the Lot Owner. A failure by the Owner to maintain insurance, which failure results in any economic loss or other harm or damage to the Association shall constitute misconduct on the Owner's part.

## ARTICLE XII CONDEMNATION

### 12.1. Condemnation of Common Areas.

If parts of the Common Areas are acquired by condemnation, the portion of the award attributable to the Common Areas taken shall be paid to the Owners based on their respective Allocated Interests in the Common Areas unless the Association at a special meeting called for such purpose, decides otherwise.

### 12.2. Association Necessary Party to Proceeding.

The Association, through its Board of Directors, shall be a necessary party to any condemnation proceedings and shall, to the extent feasible, act as a fiduciary on behalf of and in the best interests of any and all Lot Owners affected by such proceedings. Should the Association not act on the Owners' behalf in a condemnation proceeding, the affected Owners may individually or jointly act on their own behalf.

### 12.3. Reconstruction and Repair.

Any reconstruction and repair necessitated by condemnation shall be governed by the procedures specified in Article XI hereof, provided that the Board may retain and apply such portion of each Owner's share of the Condemnation Award as is necessary to discharge said Owner's liability for any special Assessment arising from the operation of said Article XI.

### 12.4. Notice to Mortgagees.

The Board of Directors shall promptly give written notice to all Eligible Mortgagees of the pendency of any condemnation proceedings affecting any portion of the Community.

### 12.5. Payment of Award.

When a Lot Owner becomes entitled to receipt of a condemnation award, or of any portion of such an award, or of any payment in lieu of such an award, then any such payment shall be made payable jointly to such Lot Owner and to the holders of any Mortgages encumbering such Owner's Lot, as their interests may appear.

## ARTICLE XIII COMPLIANCE WITH LAW AND COVENANTS

### 13.1. Compliance by Owners and Occupants.

Each Owner and occupant of a Lot shall comply strictly with the provisions of the Governing Documents. All remedies provided the Association in this Article may be enforced against any tenant or other Occupant of a Lot.

Compliance with these CCRs does not guarantee compliance with City, State or Federal regulations.

### 13.2. Enforcement by Association.

The Board of Directors shall have primary responsibility for maintaining and enforcing compliance with the covenants, conditions and restrictions contained in the Governing Documents.

### 13.3. Legal Proceedings.

Failure to comply with any of the terms of the Governing Documents shall be grounds for legal relief, including without limitation, actions to recover any sums due for money damages, injunctive relief, foreclosure of the lien for payment of Assessments, or any combination thereof and any other relief afforded by a court of competent jurisdiction, all of which relief may be sought by the Association or, if appropriate, by any aggrieved Owner, and shall not constitute an election of remedies.

### 13.4. Costs and Attorney's Fees.

The Association shall be entitled to recover any costs and reasonable attorneys' fees incurred in connection with the collection of delinquent Assessments, whether or not such collection activities result in suit being commenced or prosecuted to judgment. In addition, the Association shall be entitled to recover costs and reasonable attorneys' fees if it prevails on appeal and in the enforcement of a judgment. In any other proceeding arising out of an alleged default by an Owner, the prevailing party shall be entitled to recover the costs of the proceeding, and such reasonable attorney's fees as may be determined by the court. In the event that the prevailing party is the Association, the costs and attorney's fees so awarded shall constitute a Specially Allocated Assessment against the Owner's Lot. An aggrieved Owner shall also be entitled to an award of costs and attorney's fees in a proceeding initiated by such Owner.

### 13.5. No Waiver of Rights.

The failure of the Association, the Board of Directors or of an Owner to enforce any right, provision, covenant or condition which may be granted by the Governing Documents or the Governing Law, shall not constitute a waiver of the right of the Association, the Board or the Owner to enforce such right, provision, covenant or condition in the future.

### 13.6. Remedies Cumulative.

A suit to recover a money judgment for unpaid Assessments may be maintained without foreclosing or waiving the lien securing the same, and a foreclosure may be maintained

notwithstanding the pendency of any suit to recover a money judgment. All rights, remedies and privileges granted to the Association, the Board of Directors or any Owner pursuant to any term, provision, covenant or condition of the Governing Documents or the Governing Law shall be deemed to cumulative and the exercise of any one or more thereof shall not be deemed to constitute an election of remedies, nor shall it preclude the party exercising the same from exercising such other privileges as may be granted to such party by the Governing Documents or the Governing Law or at law or in equity.

#### 13.7. Occupants Subject to Rights and Responsibilities of Owners.

Any tenant or other Occupant of a Lot shall be deemed to be bound by all portions of the Governing Documents that are binding upon the Owner. All rights, remedies and procedures available to the Association when dealing with Owners under the Governing Documents shall be available to the Association when dealing with any tenant of an Owner. In addition, the Association shall have the right (but not the obligation) to terminate the lease of a tenant who, in a hearing held pursuant to the Bylaws, has been found to have violated the Governing Documents; the Association shall be deemed a "real party in interest" in any legal proceeding brought to enforce this right. The Association shall not resort to this remedy unless the Owner of the Lot occupied by such tenant has failed and refused to take steps designed to cure the tenant's violation(s) within sixty (60) days following notice from the Association to the Owner of the necessity for such curative action.

### ARTICLE XIV LIMITATION OF LIABILITY

#### 14.1. No Liability for Utility Failure, Etc. - Association Not a Guarantor.

The Association is not a guarantor of the health or safety of any Occupant of the Community, or of the integrity and usefulness of any portions of the Property within the Community. Except to the extent covered by insurance obtained by the Board pursuant to Article XI, neither the Association nor the Board shall be liable for any failure of any equipment or services obtained by the Board, or for injury or damage to person or property caused by the elements, or for inconvenience or discomfort resulting from any action taken to comply with any law, ordinance or orders of a governmental authority. No diminution or abatement of liability for Common Expense Assessments shall be claimed or allowed for any such injury or damage, or for such inconvenience or discomfort.

#### 14.2. Liability of Officers and Directors, Indemnification.

The Directors and Officers shall exercise ordinary and reasonable care in discharging their responsibilities and shall not be liable to the Association or to the Lot Owners for mistakes of judgment or for negligence not amounting to gross negligence, willful misconduct or bad faith. The Lot Owners shall indemnify and hold harmless each of the Directors and Officers from and against all contractual liability to others arising out of contracts made by the Board of Directors or Officers

on behalf of the Association or the Lot Owners unless such contract was made in bad faith or contrary to the provisions of the Governing Documents. The Directors and Officers shall not be personally liable for contracts made by them on behalf of the Association. The Association shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding by reason of the fact that (s)he is or was a Director or Officer of the Association, against amounts paid in settlement incurred by him in connection with such action, suit or proceeding if (s)he acted in good faith and in a manner (s)he reasonably believed to be in, or not opposed to, the best interests of the Community or the Association, to the fullest extent authorized by RCW 23B.08.510, 520, 530, and 570, and any amendments thereto, whether or not the Association is incorporated under RCW 23B.

#### 14.3. No Bailment.

Neither the Board of Directors, the Association, any Owner nor the Declarant shall be considered a bailee of any personal property stored or placed on the Common Areas (including property located in vehicles parked on the Common Areas), whether or not exclusive possession of the particular area is given to an Owner for parking or otherwise, nor shall they be responsible for the security of such personal property or for any loss or damage thereto, whether or not due to negligence, except to the extent covered by insurance in excess of any applicable deductible.

### ARTICLE XV MORTGAGEE PROTECTION

This Article establishes certain standards and covenants which are for the benefit of the holders, insurers and guarantors of certain mortgages. This Article is supplemental to, and not in substitution for, any other provisions of the Governing Documents, but in the case of conflict, this Article shall control.

#### 15.1. Percentage of Eligible Mortgagees.

Wherever in this Declaration of Covenants the approval or consent of a specified percentage of Mortgagees is required, it shall mean the approval or consent in writing of Eligible Mortgagees holding first lien mortgages on Lots, and the percentage shall be based upon the votes attributable to Lots with respect to which Eligible Mortgagees have an interest.

#### 15.2. Notice of Actions.

The Association shall give prompt written notice to each Eligible Mortgagee and Eligible Insurer of, and each Lot Owner hereby consents to, and authorizes the giving of notice of:

- (a) Any condemnation loss or any casualty loss which affects a material portion of the Community or any Lot in which there is a first mortgage held, insured, or guaranteed by such

Eligible Mortgagee or Eligible Insurer, as applicable;

(b) Any delinquency in the payment of Common Expense Assessments owed by a Lot Owner whose Lot is subject to a first mortgage held, insured, or guaranteed, by such Eligible Mortgagee or Eligible Insurer, as applicable, which remains uncured for a period of sixty (60) days;

(c) Any lapse, cancellation, or material modification of any insurance policy or fidelity bond maintained by the Association.

#### 15.3. Inspection of Books.

The Association shall maintain current copies of the Declaration of Covenants, Bylaws, Articles of Incorporation, Rules and Regulations, books and records and financial statements. The Association shall permit any Eligible Mortgagee, Eligible Insurer or other first mortgagee of a Lot, or the authorized agent of any of the foregoing, to inspect the books and records of the Association during normal business hours.

#### 15.4. Financial Statements.

The Association shall provide any Mortgagee or Eligible Insurer who submits a written request, a copy of its annual financial statement within one hundred twenty (120) days following the end of each fiscal year of the Association. Such financial statement shall be audited by an independent certified public accountant if:

(a) The Association's budget for annual assessments is fifty thousand dollars or more, in which case the cost of the audit shall be a Common Expense; or

(b) The Association's budget for annual assessments is less than fifty thousand dollars and any Eligible Mortgagee or Eligible Insurer requests it, in which case the Eligible Mortgagee or Eligible Insurer shall bear the cost of the audit.

#### 15.5. Enforcement.

The provisions of this Article are for the benefit of Eligible Mortgagees and Eligible Insurers and their successors, and may be enforced by any of them by any available means, at law, or in equity.

#### 15.6. Attendance at Meetings.

Any representative of an Eligible Mortgagee or Eligible Insurer may attend and address any meeting which a Lot Owner may attend.

#### 15.7. Limitations on Mortgagees' Rights.

No requirement for approval contained in this Article may operate to (1) deny or delegate control over the general administrative affairs of the Association by the Lot Owners or the Board of Directors, or (2) prevent the Association or the Board of Directors from commencing, intervening in, or settling any litigation or proceeding, or receiving and distributing any insurance proceeds except as provided in this Declaration of Covenants.

#### 15.8. Implied Approval by Mortgagee.

The failure of an Eligible Mortgagee or Insurer to respond within sixty (60) days to any written request of the Association delivered by certified or registered mail, "return receipt requested" for approval of an amendment to the Governing Documents, or wherever Eligible Mortgagee or Insurer approval for an action of the Association is required, shall constitute an implied approval of the action or amendment.

### ARTICLE XVI EASEMENTS AND SPECIAL DECLARANT RIGHTS

#### 16.1. Easements for Lots and Lot Owners.

Each Lot has an easement in and through each other Lot and the Common Areas for utilities and for lateral and/or subjacent support, and each Lot Owner in Good Standing has a perpetual right of ingress to and egress from his or her Lot over any sidewalks or roadways included in the Common Areas.

#### 16.2. Easement for Association Functions.

There is hereby reserved to the Association, or its duly authorized agents and representatives, such easements as are necessary to perform the duties and obligations of the Association as are set forth in the Declaration of Covenants, the Bylaws, or the Rules and Regulations. See Section 8.4 hereof.

#### 16.3. Easement for Utilities and Emergency Access.

##### 16.3.1. Easement for Utilities.

A non-exclusive perpetual blanket easement is hereby granted over and through the Property for ingress, egress, installation and Upkeep of any utility lines, pipes, wires, ducts, conduits and/or other facilities and equipment for providing to any portion of the Property utilities of any type, whether public or private; such easement is hereby granted to any person installing or providing Upkeep for such utilities, including without limitation the City. Any pipes, conduits, lines, wires,

#### 16.5. Easements Shown on Plat Map.

Any easement shown on the Plat Map which benefits one or more Lots in the Community or which benefits any real property not included within the Community, confer various rights and benefits upon the owner(s) of such real property, and may also impose obligations upon the Association.

#### 16.6. Special Declarant Rights.

##### 16.6.1. General Reservation.

The Declarant has reserved the following Special Declarant Rights for the purpose of furthering and completing the development of the Community: To complete any improvements indicated on the Plat Map filed with the Declaration of Covenants; to exercise any Development Right under Section 3.3.1 hereof; to maintain sales offices, management offices, signs advertising the Community, and models on the Property, all in such location or locations as the Declarant may unilaterally determine; to use easements through the Common Areas for the purpose of making improvements within the Community; and to control the Association during the Declarant Control Period described in Section 16.6.2 below. Special Declarant Rights other than those specified in Section 16.6.2 shall persist until the last Lot in the Community is conveyed by the Declarant to a party other than an Affiliate of the Declarant, or until a date which is fifteen (15) years following the recordation of this Declaration of Covenants, whichever first occurs.

##### 16.6.2. Declarant Control Period.

The Declarant has reserved the rights to designate a majority of the members of the Board of Directors of the Association, and to appoint or remove any officer of the Association or any member of its Board of Directors or of any Committee, or to veto or disapprove a proposed action of the Association, its Board of Directors or any Committee, for a period of time known as the "Declarant Control Period." The Declarant shall be deemed to hold a proxy from all Lot Owners during the Declarant Control Period for all such purposes. The Declarant Control Period shall not to exceed ten (10) years following the recordation of this Declaration of Covenants, subject to the following limitations:

- (a) Not later than sixty days after conveyance of twenty-five percent of the Lots which may be created to Owners other than the Declarant, at least one member of the Board of Directors must be elected by Owners other than the Declarant.
- (b) Not later than sixty days after conveyance of fifty percent of the Lots which may be created to Owners other than the Declarant, another member of the Board of Directors must be elected by Owners other than the Declarant.
- (c) The Declarant Control Period shall terminate sixty days after conveyance of seventy-five percent of the Lots which may be created in the Community to Owners other than the

Declarant.

#### 16.6.3. Legal Status of Special Declarant Rights.

Each Special Declarant Right reserved by Declarant in this Declaration of Covenants has been, is and shall remain an equitable servitude burdening all lands subject thereto and running with such lands. Each Special Declarant Right shall exist for the benefit of the Declarant and/or any assignee of Declarant and/or any successor declarant. Declarant has and shall retain, with respect to each Special Declarant Right, a power coupled with Declarant's interest in said lands. The Special Declarant Rights reserved in this Declaration of Covenants include the right, but not the obligation, to create future interests or future estates in real property, and to own, convey, mortgage, lease and/or otherwise use and deal with such real property and such future interests or future estates free and clear of any interest of other Lot Owners or the Association, except as may be otherwise specifically provided herein.

### ARTICLE XVII AMENDMENT OF DECLARATION OF COVENANTS

#### 17.1. Procedure for Amendment of Declaration of Covenants.

Amendments to the Declaration of Covenants shall be made by an instrument in writing entitled "Amendment to Declaration of Covenants" which sets forth the entire amendment. Except as otherwise specifically provided for in this Declaration of Covenants, any proposed amendment must be approved by a majority of the Board prior to its adoption by the Owners. Except in cases of amendments that may be adopted by the Declarant unilaterally pursuant to Section 17.4 hereof, amendments may be adopted only at a meeting of the Owners if at least sixty-seven percent (67%) of the votes in the Association are cast for such amendment, or without any meeting if all Owners have been duly notified and Owners holding at least sixty-seven percent (67%) of the votes in the Association consent in writing to such amendment. In all cases, the amendment when adopted shall bear the acknowledged signature of the President of the Association.

#### 17.2. Recordation Required.

Every amendment to the Declaration of Covenants must be recorded with the County Auditor and is effective only upon recording. An amendment shall be indexed in the name of the Community and shall contain a cross-reference by recording number to the Declaration of Covenants and each previously recorded amendment thereto.

#### 17.3. Special Restrictions.

No amendment may restrict, eliminate, or otherwise modify any Special Declarant Right provided in the Declaration of Covenants without the consent of the Declarant and any mortgagee

of record with a security interest in the Special Declarant Right or in any real property subject thereto, excluding mortgagees of Lots owned by persons other than the Declarant.

#### 17.4. Amendments by Declarant.

The Declarant may unilaterally adopt and file amendments to the Declaration of Covenants and to the Plat Map for so long as the Declarant is the Owner of any Lot in the Community or until the expiration of the time limit for the exercise of any Special Declarant Rights reserved by the Declarant.

### ARTICLE XVIII MISCELLANEOUS

#### 18.1. Notices for All Purposes, Delivery.

18.1.1. Any notice permitted or required to be delivered under the provisions of the Declaration of Covenants or the Bylaws may be delivered either personally or by mail, addressed to the person entitled to such notice at the most recent address given by such person to the Board in a Record, or to the most recent address known to the Board. Notice to the Owner of any Lot shall be sufficient if mailed to his or her Lot if no other mailing address has been given to the Board. With the advance written consent of any Owner, required notice may be provided electronically. Mailing addresses may be changed from time to time by notice provided by the Owner in a Record to the Board. Notice to be given to the Association may be given to the President or Secretary of the Association, or to its Registered Agent. Notice also may be provided to any person in any manner permitted by statute.

18.1.2. New Lot Owners must supply their names and addresses, telephone numbers and, if so desired in order to receive notices from the Association, e-mail addresses, to the Secretary of the Association promptly after conveyance.

#### 18.2. Severability.

The provisions hereof shall be deemed independent and severable, and the invalidity or partial invalidity or unenforceability of any one provision or portion thereof shall not affect the validity or enforceability of any other provision hereof, if the remainder complies with the Governing Law and furthers the common plan of this Subdivision.

#### 18.3. No Right of First Refusal.

There is no right of first refusal in the Association limiting or restricting the right of any Lot Owner to sell, transfer or convey his or her Lot.

18.4. Effective Date.

This Declaration of Covenants shall take effect upon recording.

DATED this \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_.

DECLARANT: GEORGE F MARIN TRUST

By:

CHRISTINE R. MARIN, its Executor  
STATE OF WASHINGTON )

) ss.

COUNTY OF \_\_\_\_\_ )

I hereby certify that I know or have satisfactory evidence that Christine R. Marin is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the Executor of the Declarant GEORGE F MARIN TRUST, a Washington Trust, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: \_\_\_\_\_, 201\_\_.

\_\_\_\_\_  
NOTARY PUBLIC for the State of  
Washington. My Commission  
expires \_\_\_\_\_

EXHIBIT "A"  
MAINTENANCE REQUIREMENTS FOR STORM WATER SYSTEM

45

**RECEIVED**  
AUG 22 2016  
CITY OF OAK HARBOR  
Development Services Department

**MARIN WOODS**  
**HOMEOWNERS ASSOCIATION**

**DESIGN GUIDELINES**

**DRAFT DRAFT DRAFT DRAFT**

Version: 19 July 2016

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EXHIBIT 4 APPLICATION WITH ATTACHMENTS

EXHIBIT 5 RECOMMENDED PLANT MATERIALS

**PLANNING AND DESIGN PHILOSOPHY**

The planning and design philosophy of Marin Woods is to encourage consistent quality and design expression throughout its boundaries, while allowing for individuality of architectural expression by its Owners.

The guidelines, procedures and information herein define the means by which homes built at Marin Woods can be compatible with each other and with their unique setting. These Design Guidelines are the criteria for judgment and form the basis of control by the Architectural Review Committee.

These Architectural Guidelines may change from time to time to reflect new experiences and changing conditions without modifying their overall intent.

These Design Guidelines and exhibits attached hereto have been adopted by the Design Review Committee for the Marin Woods Homeowners Association Inc. (the "Association").

## A. INTRODUCTION/GENERAL

### 1. Authority

Per the Declaration of the Covenants, Conditions and Restrictions for Marin Woods (the "Declaration"), the Marin Woods Architectural Review Committee (the "Committee") hereby exercises its rights and establishes these Architectural Guidelines (the "Guidelines"). The Declaration will control if there are any discrepancies between the Guidelines and the Declaration.

### 2. General Purposes

The Committee has adopted the Guidelines to maintain consistency in the use and development of Marin Woods (the "Property"). The Guidelines are subject to the Committee's supervision and approval, and to the zoning and planning regulations of the City of Oak Harbor, and applicable federal and state statutes, rules and ordinances.

### 3. Definitions

- a. "Declarant" is Pulte Home Corporation, and its specifically designated successors or assigns.
- b. "Improvement" or "Development" shall mean all structures and improvements located upon or made to a Lot and any appurtenances thereto of every type or kind, including, but not limited to, buildings, outbuildings, swimming pools, patio covers, awnings, the painting of any exterior surfaces of any visible structure, roofing, trash containers, mail boxes, satellite dishes, additions, walkways, outdoor sculptures or artwork, sprinkler pipes, garages, carports, roads, driveways, parking areas, fences, screening walls, retaining walls, stairs, decks, fixtures, landscaping, hedges, windbreaks, plantings, planted trees and shrubs, poles, signs, exterior tanks, solar equipment, exterior air conditioning and water softener fixtures.
- c. "Owner" means the record owner, whether one or more persons or entities, of the fee simple title to any site.
- d. "Lot" or "Site" means any numbered lot shown on the recorded subdivision map, but shall not include the Common Areas.

### 4. Architectural Review Committee

The Committee shall consist of three members, initially designated by Declarant, to review, study, and approve or reject proposed Improvements upon the Property. The term of the members shall be designated by the Board of Directors.

Unless otherwise expressly provided herein to the contrary, all approvals required shall be in writing and may be granted or withheld at the sole discretion of the Committee. Any approval pursuant to these guidelines does not constitute a warranty, assurance, or representation by the approving party; and the approving party should have no responsibility by virtue of such approval.

The Committee shall meet at the convenience of its members or may utilize the mail or phone as necessary to transact its business. An Owner or his representative need not be present for the Committee to act upon an application. The initial address of the principal office of the Committee shall be: 7475 S. Joliet St, Englewood, CO 80112.

#### a. Right of Waiver

The Committee reserves the right to waive or vary any of the procedures or Design Guidelines at its discretion, for good cause shown. Any waiver or variance granted shall be considered unique and will not set any precedent for future decisions.

#### b. Enforcement and Non-Liability of Committee, Declarant, Management Company and Marin Woods Homeowners Association, Inc.

These guidelines may be enforced by the Committee as provided in the Declaration. Neither the Committee, the Association, the Board of Directors of the Association, the Declarant, nor the management company nor any of their respective individual members, employees, agents, successors or assigns shall be liable for any loss, damage or injury arising out of or in any way connected with the performance and duties of the Committee. Every Owner or other person who submits plans to the Committee for approval agrees, by submission of such plans and specifications, that they will not bring an action, lawsuit or claim against the Committee, the Association, the Board of Directors of the Association, the Declarant, nor the management company nor any of their respective individual members, employees, agents, successors or assigns based on mistake in judgment, negligence, or nonfeasance arising out of, or in connection with, the

approval or disapproval or failure to approve any plans or specifications. Approval by the Committee shall not be deemed to constitute compliance with the requirements of any local building codes, development regulations or other applicable laws, and it shall be the responsibility of the Owner to comply therewith.

**c. Information Submitted by An Owner**

Any Owner submitting plans for Committee approval shall be responsible for the verification and accuracy of all dimensions, grade, elevations and the location of key natural terrain features for the Site.

**d. Re-submittal of Plans and Appeal**

Should the Committee deny any submission, any re-submission shall follow the same procedures as the rejected submittal. The Owner shall reply in writing to Committee concerns during, or after the submission, if requested.

**e. Owner Representation**

The Owner shall advise all his representatives, including but not limited to, his architect, engineer, contractor, subcontractors, and their employees of the standards and procedures outlined in the Declaration and these Design Guidelines, including the Appendixes, and all such representatives shall abide by said documents.

**B. ARCHITECTURAL GUIDELINES**

All requirements noted within this section which are pertinent to the development of an Owner's Site shall be incorporated into the plan submittal in the form of general notes, details or drawings.

**1. Professional Design Assistance**

The Committee reserves the right to require Owners to utilize a registered and accredited architect.

**2. Design and Configuration**

Additions or improvements will have details that are coordinated and consistent in their architectural treatment and with any and all structures currently existing on the lot.

**3. Exterior Materials and Finishes**

Exterior materials and finishes shall be reviewed on an individual basis by the Committee and should be consistent with any materials of finishes currently existing on the lot.

**4. Finishes**

Solid body stains which relate to the surrounding improvements are acceptable. Color samples must be submitted for Committee review.

**5. Roofs**

A building's roof is integral to a home's architectural character. Roofing material color and texture should reflect other materials on the homes and adjacent properties. Roofing materials to be used for replacement of an existing roof are to be submitted to the Committee for approval prior to replacement.

**6. Doors**

Solid core wood, plank, or fiberglass doors are acceptable for exterior doors. Any painted materials must be of an approved color. Door designs complementary to the overall residence design are preferred. Overly ornate, gaudy or period designs are not allowed. One or more standard storm, security or screen doors are allowed on a case by case basis.

**7. Color**

Exterior improvement colors shall generally be complementary to the applicant's home color. The use of decorative accent colors and color-blocking will be reviewed for location and application. The Committee will consider all coloration schemes based on their architectural merit and compatibility to the community as a whole. Any submittal not utilizing the existing home colors must be accompanied by color samples of all proposed materials.

## 8. Changes

No material changes in plans or materials previously approved may be undertaken without WRITEN approval of the Committee. No work shall be undertaken (other than routine maintenance and repair) which will result in material changes in the exterior appearance of an approved residence, including painting or re-staining, without prior, written approval of the Committee.

## C. SITE STANDARDS

These Site Standards, together with the Architectural Guidelines, form the basic direction for the community.

Plans should minimize disturbance of existing terrain and should not disturb drainage patterns. Respect for adjacent residences is stressed.

## 1. Setbacks and Side Yards

Building envelopes and minimum setbacks are defined for each Site.

## 2. Trash/Garbage Receptacles

Trash receptacles storage will be screened, enclosed from view, planned as a part of the total design, and subject to Committee approval. Trash receptacles shall only be placed out for collection on the night before collection and must be returned to storage on the night after collection.

## 3. Landscaping

When preparing to landscape or amending existing landscaping, an Owner must submit a complete landscape plan and schedule per the Architectural Review Process as described herein.

## 4. Retaining Walls

Retaining walls should be as low as possible and integrated into the entire landscape plan.

## 5. Erosion Control

Techniques to control Site erosion and protect adjacent properties are mandatory and must conform to the requirements of the City of Oak Harbor.

## 6. Drainage

No Owner shall interfere with or redirect the natural course or intended flow of any drainage and runoff, nor construct any improvement, place any landscaping, or allow the existence of any condition which will alter the drainage pattern as intended.

## 7. Fencing

Community fencing surrounding Marin Woods has been designed and constructed to provide a consistent and unified image. This fencing is designed to satisfy the functional and privacy needs of residents.

Three distinct types of fencing or yard enclosures may be constructed depending on location and functional requirements. These include Community Fencing, constructed along the perimeter of a neighborhood, Lot Fencing (open), built along interior side and rear lot lines; and Privacy Fencing and Walls, used to screen or enclose a private patio, spa, or outdoor living area.

a. Lot and Privacy Fences

Lot Fences are designed to define interior lot lines, (side and rear yards). Lot fences shall be limited to open space fencing located adjacent to open space. Open style lot fences, located along property lines adjacent to open space shall be 4' 5" three rail fences that comply with Exhibit 1.

*Interior perimeter fencing not adjacent to open space or common space shall be limited to 6' solid wood picket fencing. Fences shall comply with Exhibit 2.*

(Exhibit 2 needs to illustrate standard 6' cedar or redwood planks.  
Also, distance between fence posts should be addressed)

Double fencing is not permitted on any lot. Any change in existing fence, including removal, must be approved by the Committee.

Any access through open space or fencing installed by the Developer must be approved by the Committee.

#### **8. Outdoor Lighting**

All outdoor lighting is subject to Committee approval. Lights must be functional and enhance the overall appearance of a residence, without disturbing neighbors or motorists.

All exterior lighting fixtures, used for illumination of driveways, walks, address signage, and general landscape purposes, shall be compatible with the design of the structure(s).

Motion detectors shall be installed in such a manner as to minimize light emanance.

#### **9. Mailboxes**

No individual mailboxes may be installed on an individual lot. Mailboxes are provided in gang boxes for use by each residential address.

#### **10. House Address Numbers**

There shall be no more than two (2) sets of house address numbers on each Lot, only one of which shall be placed on the residence. Numbers shall not exceed seven inches in height.

#### **11. Accessory Buildings**

Accessory buildings or facilities such as gazebos, greenhouses, pools, cabanas, hot tubs, etc., shall adhere to the standards for buildings and Site planning as well as the existing building codes for the City of Oak Harbor. Massing and scale, as well as forms, materials, and other detailing should be coordinated with the main structure(s) on the Site. Homeowners are required to submit the design of any such structure to the Committee for approval prior to construction of such structure or building. The structure shall not exceed 6' in height.

#### **12. Utility Equipment**

Exterior utility equipment storage, where possible, must be incorporated into the main building or, along with other detached structures, be architecturally compatible with the residence. Any storage shed should be built from the same materials as the residence and located behind the residence, out of full view from the front of the residence. All utility equipment shall be painted to match the color of the wall to which it is mounted. The utility equipment storage shall not exceed 6' in height.

Air conditioning units and swamp coolers are not allowed on rooftops or in front of residences.

#### **13. Decks**

All decks are subject to Architectural Committee approval. A drawing of the proposed deck must be submitted with the architectural request for committee review. Written approval must be obtained prior to construction.

Decks shall be architecturally harmonious with the house and shall be painted or stained to match the other significant features of the house. Unpainted, or un-stained exposed features of the deck shall not be allowed.

#### **14. Play and Sports Equipment**

All play and sports equipment are subject to Architectural Committee approval. Such play equipment shall be of an appropriate scale and constructed of approved material and of an approved color. Such equipment shall not exceed 12' in height.

##### **a. Basketball Backboards**

Basketball hoops shall only be allowed in front Lot areas if: (i) the backboard is installed on a separate free-standing post or pole and is set perpendicular to the street; (ii) is portable and can be removed from the driveway; or (iii) as otherwise approved by the Architectural Review Committee. No basketball backboards shall attached to the garage or set facing the street. Portable basketball backboards shall not be placed in the public right of ways, streets, or sidewalks and must be removed from view from the street when not in use.

**15. Miscellaneous**

Awnings, shutters, visual screens, and other such exterior elements require written Architectural Committee approval.

a. Dog Houses/Runs

Dog houses, shelters and runs shall be allowed on residential Lots and shall be completely screened from view of adjacent public and private property and streets and shall be built from materials compatible with the residential Improvements installed on the Lot.

**16. Contiguous Property Owner Approval**

Any structure, accessory building, storage shed or plate structure which exceeds 6' in height shall require the approval of all contiguous property owners, including individuals under contract for contiguous property that has not yet closed. Such approval shall accompany the architectural request submittal in order to be considered by the committee.

**D. RULES FOR INSTALLATION OF ANTENNAE AND SATELLITE DISHES**

No more than two (2) small satellite antennae may be installed and maintained on any Lot, but only upon compliance with the following conditions:

a. The satellite antennae must be forty (40) inches or less in diameter and should be disguised to resemble and be visually indistinguishable from other structures, devices or improvements otherwise allowed in the community and/or by the Declaration and/or these Guidelines.

b. The installation of the satellite antennae must comply with any zoning requirements and building codes.

NOTE: Architectural Committee approval of a satellite dish antennae is in no way to be construed as a representation, guaranty, warranty, etc. by the Architectural Committee and/or the Marin Woods Homeowners Association that reception and/or transmission signals will be adequate or will remain undisturbed by vegetation or improvements located on surrounding properties.

**1. TV Antennae, Radio Antennae and Other Antennae**

Although approved satellite antennae may be installed on a Lot or Site, all other exterior radio, TV or other antennae shall remain restricted from residential Lots or Sites.

**E. CONSTRUCTION PERIOD REGULATIONS**

Owners must abide by these regulations, and must ensure that their contractor is familiar with the applicable sections of the Marin Woods Declaration as well as the Design Guidelines with respect to any construction.

**1. Construction Limits**

The architect shall provide a detailed plan of construction limits on the Site plan prior to construction. The plan shall include size and location for a construction material storage area, limits of work, dumpster, utility trenching, and construction design. This plan may be included in the Site plan.

**2. Construction Trailers, Sheds, Temporary Structures, Debris and Trash Removal**

Temporary construction trailer, trash containers, or sheds are only permitted in the event there is substantial improvements/repairs, and is subject to prior Committee approval. A trash container shall be located on the Site at all times for construction debris. Burning of trash or construction debris is prohibited.

**3. Daily Operation**

Daily construction working hours shall be 8:00 a.m. to 8:00 p.m.

## 4. Excavation

Excavation material shall not be placed in common areas, roads, or other Sites. Any excess excavation material should be disposed by the Owner on a timely basis in an authorized location.

## 5. Storage of Construction Material, Trash and Equipment

The Owner and/or contractor shall maintain and store construction materials, trash and equipment in a neatly stacked, properly covered and secure manner.

## 6. Dust, Noise and Odor

Every effort shall be made to control dust, noise and odor emitted from a construction area. Radios, tape players, or other such devices must be played at a volume which does not disturb adjacent Owners. The homeowner will be responsible for watering dust problem areas and controlling noise and offensive odors from the Site.

**F. LANDSCAPE DESIGN GUIDELINES AND PROCEDURES**

## 1. Landscape Review Process

a. Landscape Considerations

When preparing the landscape plan for a residence, the Owner and/or designated designer will want to consider existing site conditions. All landscaping requests must include a detailed sketch of the proposed landscape design.

## 2. Landscape Design

a. Grading and drainage

- i. Your lot was prepared to achieve positive drainage away from your home either to the front or rear of your property generally utilizing existing topography or the side yard swales. Special care must be taken not to change, alter or interfere with the drainage system designed for your lot.

Planning Tip

One of the most effective ways to reduce infiltration of water next to a house foundation is to construct a runoff slope and cover it with organic or inorganic mulch landscape material. When used for this purpose the mulch landscape should extend at least 5 feet out from the house. For additional information regarding slope landscaping, please consult Chapter 4 of the *Special Publication 43A Guide to Swelling Soils for Colorado Homebuyers and Homeowners*.

b. Interior Side and Rear Yard Landscape

- i. Use of plants from the list of Recommended Plant Materials (see Exhibit 5) is encouraged. The design solution and plant selection should be consistent with and compliment the overall landscape concept for the lot, provide a cohesive and flowing relationship with adjacent homes and lots, and blend with surrounding common areas.

c. Landscape Installation

- i. All plant materials should be in good health when planted and should conform to industry standards.
- ii. All landscaping must be installed within one year. Exceptions for certain plant materials are subject to Committee review.
- iii. After installation, all materials must be cleaned up from the Site and surrounding area.
- iv. Landscaping must conform to the approved plan and meet the requirements of these guidelines. All stipulations and changes made during the approval process must be followed.

v. The Committee reserves the right to inspect the Site during and/or after installation in ensure conformance to the approved plan. If the installed landscape does not meet the required design standards and does not follow the approved plan, the Committee reserves the right to require the owner to correct any discrepancies at the Owner's expense. The Owner shall immediately correct any installation which is not in conformance with the approved plans.

d. Landscape Design Suggestions

i. Use plant materials that produce unusual effects at different times of the year so that the landscape will have interest during each season.

ii. Design in elevation as well as plan view. Use the architectural elevations or pictures on the house to determine what plant massing, height, and density would work best to enhance and compliment the architecture.

iii. Group plants with similar water requirements so that the irrigation system can be adjusted by specific zone

iv. The soils in the Marin Woods community are expansive in nature. It is highly recommended that landscaping that requires a great deal of irrigation not be located next to building foundations. A good rule of thumb is that the first ten foot strip around the house be graded with a minimum of one foot of fall in ten foot of horizontal distance and that no vegetation be located adjacent to or within 5' of the building foundation.

v. Select plants from the Recommended Plant Materials for Marin Woods.

G. REVIEW PROCESS

These Architectural Guidelines provide a framework for the Committee to review, process and approve residential additions or improvements in Marin Woods. An Owner (inclusive of the Owner and his architect, contractor, and/or other representatives) must follow these procedures ("Design Review Process") to secure the necessary approvals.

Please address all written submittals to the Marin Woods Architectural Review Committee, c/o the Managing Agent. Any decision of the Architectural Review Committee shall be made within thirty (30) days after receipt by the Architectural Review Committee of all materials/documents required by the Architectural Review Committee, unless such time period is extended by mutual agreement.  
Construction must not begin prior to receiving a written approval from the Architectural Review Committee.

1. Plan Review

a. The Owner completes a Design Review Request form (Exhibit 4), fully completed and signed. The Owner gathers sufficient drawings, brochures, or other material to make a determination. The Owner utilizes the Design Guidelines in preparation.

b. The Owner sends or delivers their request and supporting materials to Design Review Committee c/o the Managing Agent.

c. The request is logged and given preliminary review by the Managing Agent to determine that there is adequate information for the Committee to make a decision.

d. The request package is forwarded to the Committee. They meet, review the submission, and reach a decision as to acceptability.

e. The request package is returned to the Managing Agent where it is again logged.

f. The Managing Agent returns the request to the Owner.

Note: It is extremely important to receive approval before commencing work. Failure to do so may result in removal or modification of improvements by the Owner.

**What To Submit:**

A general rule of thumb is this - imagine you are on the Committee and you are reviewing the submission. Do you have everything necessary in order to visualize the completed product so you can make a judgment? If there are no unanswered questions in your mind based on the submission, then it is likely your submission will be acceptable.

**IT IS EXTREMELY IMPORTANT TO RECOGNIZE THAT YOU MAY NOT ALTER THE DRAINAGE ON YOUR LOT BY YOUR LANDSCAPE IMPROVEMENTS.**

Approval of plans by the Committee shall not be deemed to constitute compliance with the requirements of any local building, zoning, subdivision, sign, safety, health, public works or fire codes and regulations, nor shall approval waive any requirements on the part of the Owner to comply with setbacks, height restrictions, or requirements unless such waiver or variance is specifically requested at the time of submittal and granted by the Committee and City of Oak Harbor), where applicable. The covenants, conditions and restrictions as established by the Declarant shall remain in force as the legal restrictions governing all construction.

*Neither the management company nor its successors or assigns shall be liable in damages to anyone submitting plans for approval, or to any Owner by reason of mistake in judgement, negligence, or nonfeasance arising out of, or in connection with, the approval or disapproval or failure to approve any plans or specifications. Every Owner or other person who submits plans to the Committee for approval agrees, by submission of such plans and specifications, that they will not bring an action or suit against the Committee or its individual members to recover damages.*

The Committee reserves the right to waive or vary any of the procedures of Architectural Guidelines at its discretion, for good cause shown. Any waiver or variance granted shall be considered unique and will not set any precedent for future decisions.

**(DRAFT – PRELIMINARY)****Exhibit I****Recommended Plant Materials****Deciduous Trees** Autumn

Blaze Maple Ginnala or Amur

Maple Rocky Mountain Maple

Norway Maple

Red Sunset Maple

Asian White Birch

Pyramidal European Hornbeam

Western Catalpa

Western Hackberry

Thornless Cockspur Hawthorn

Downy Hawthorn

Russian Hawthorn

Washington Hawthorn

"Autumn Purple" Autumn Purple Ash

"Marshall", "Parmore", and "Summit" Marshall,

Parmore, and Summit Ash Imperial and Skyline

Honeylocust Kentucky Coffeetree

Goldenrain Tree

David, Dolgo, Hopa, Radiant, and Spring Snow Crab

Lanceleaf Cottonwood

Narrowleaf Cottonwood Waking

Aspen Montmorency Cherry

Canada Red or Shubert Chokecherry Swamp

White Oak

Gambel Oak Pin Oak

English Oak Red Oak

Burr Oak

Peachleaf Willow Japanese

Pagoda Tree European Mountain

Ash

Redmond and American Linden Greenspire

and Littleleaf Linden

**(DRAFT – PRELIMINARY)**

**Exhibit II**

**Evergreen Trees**

Rocky Mountain Juniper Dwarf Alberta

Spruce Colorado Blue/Green Spruce

Bristlecone Pine

Pinon Pine Austrian Pine

Ponderosa Pine

Southwestern White Pine Scotch Pine

**(DRAFT – PRELIMINARY)****Exhibit III****Deciduous Shrubs**

Saskatoon Serviceberry  
 Shadowblow Serviceberry Fragrant  
 False Indigo Clover Sage  
 Four Wing Saltbush  
 Tall Western Sagebrush Greenleaf  
 Barberry  
 Redleaf Barberry (dwarf variety okay) Mentor Barberry  
 Russet Buffaloberry Boulder  
 Raspberry Native River Birch  
 Purple, Lavender, and White Butterfly Bush Boxwood  
 Pygmy Peashrub  
 Blue Mist Spirea Mountain  
 Mahogany Red Flowering Quince  
 Bud's Yellow Dogwood  
 Bailey, Isanti, and Kelsey Dwarf Redwig Dogwood Cranberry  
 Cotoneaster  
 Burning Bush (dwarf variety okay) Sarcocoe  
 Euonymus  
 Manhattan Euonymus New  
 Mexico Privet Northern Sun  
 Forsythia Annabelle Hydrangea  
 Compact Holly  
 Blue Girl Holly  
 Cheyenne and Lodense Priver Tiny  
 Trumpet Honeysuckle Arnold's Red  
 Honeysuckle Grape Holly (dwarf variety  
 okay)  
 Golden Ninebark (dwarf variety okay) Mountain  
 Ninebark  
 Creeping Mahonia Golden  
 Currant  
 Great Plains Leadplant  
 Gold Drop and Jackman Potentilla American  
 Plum  
 Purple Leaf Plum European Dwarf  
 Cherry Pink Flowering Almond  
 Canada Red and Native Chokecherry Cutleaf Smooth  
 Sumac  
 Alpine Currant Shrub  
 Rose  
 Daisy, Blue Stem, and Dwarf Arctic Willow Anthony Water,  
 Froebel, and Neon Flash Spirea Snowball Spirea  
 Vanhoutte Spirea Rock Spirea White  
 Snowberry Burkwood Viburnum  
 Snowball Viburnum  
 American Compact Cranberry  
 Pink Princess and Red Prince Weigela Lavender  
 Wisteria  
 Russian Sage  
 Tall Blue Rabbitbrush

***(DRAFT – PRELIMINARY)***

**Evergreen Shrubs**

Blue Chip Juniper Bar Harbor  
Juniper Broadmoor Juniper  
Buffalo Juniper Hughes Juniper  
Holbert Juniper Mugho Pine  
Tam Juniper  
Dwarf Norway Spruce Mugo Pine  
Tuantoni Yew

**Ornamental Grasses**

**RECEIVED**  
AUG 22 2016  
CITY OF OAK HARBOR  
Development Services Department

**RECEIVED**  
AUG 22 2016  
CITY OF OAK HARBOR  
Development Services Department

**STORM DRAINAGE  
OPERATIONS & MAINTENANCE MANUAL**

**FOR**

**Marin Woods**

**1292 SW Swantown Avenue  
Oak Harbor, Washington**

□  
□  
□

August 22, 2016 □



**INTRODUCTION**

This Operations and Maintenance Manual provides detailed information and guidelines on the proper maintenance of the on-site storm drainage system. The Manual has been based on the requirements of the 2005 Department of Ecology Stormwater Manual (DOE Manual). Inspection and maintenance requirements may change in the future, and this manual does not exempt this facility from any future changes in inspection and maintenance requirements. The record documents should be consulted during inspection, maintenance and repair activities; a copy of the record documents is kept at the Oak Harbor Public Works Department.

Volume I, Section 2.5.10 of the DOE Manual provides further guidance in developing an O & M manual. DOE Maintenance Standards for Drainage Facilities can be found in Volume V, Section 4.6. (OHMC 12.20 & 12.30)

**DRAINAGE NARRATIVE**

This O&M document is to address the facilities that manage the drainage and water quality needs for Marin Woods. For the purposes of this discussion, there are two types of surfaces that collector shed stormwater in this development, Pollution Generating Surfaces (PGS) and Non Pollution Generating Surfaces (NPGS).

PGS is essentially any surface that cars drive or park on, some types of metal rooftops like copper or zing plated, or surfaces that have certain chemical treatments like concrete mixing yards or over fertilized lawn. In most residential applications, PGS are those areas where cars drive or park. NPGS is the remaining surfacing, all that is neither a pollution generating surface or an area that receives runoff from a pollution generating surface.

Stormwater runoff management is required to provide water quality treatment for all Pollution Generating surfaces and runoff that comingles with PGS runoff. Water quality is managed by a bioretention facility located at the bottom of the development along Swantown Avenue. The bioretention facility treats the water and discharges to the pond's control structure, which will use the pond for storage as necessary.

This development is also required to provide stormwater detention such that the stormwater discharge from this site does not exacerbate downstream problems. Detention on this site has been designed to produce release rates that are similar to pre-development release rates.

To this end, PGS and NPGS drainage are captured and conveyed separately. PGS is captured in catch basins routed via storm pipe to the bioretention cell. NPGS runoff is also collected via roof downspouts, yard and footing drains and wall drains, and conveyed directly to the pond.

The pond is fitted with a control structure that regulates the release rates of stormwater leaving the site and entering the public storm system beneath Swantown.

This manual is specifically to address drainage improvements installed for and within Marin Woods.

## FACILITY MAINTENANCE RESPONSIBILITY

The on-site drainage system located in Tract C is a private facility. Marin Woods Home Owner's Association and its successors and assigns are the responsible party for maintenance of the private storm drainage systems. This includes all storm systems that lie within the platted tracts for Marin Woods, including the catch basins and storm pipe, pond, flow control structure, bioretention cells, retaining walls, landscaping, fences and bioretention plantings.

The home owner's association or its legal equivalent is responsible for the maintenance and performance of the stormwater facilities located within the private tracts of the plat of Marin Woods. Private lots that have storm management facilities are the sole responsibility of the property owner. The City of Oak Harbor is the responsible for maintenance of storm drainage facilities in public streets. All storm drainage features within the right-of-way will be maintained by the City.

## FACILITY DESCRIPTION

The following are drainage items in this system and a description of their function:

**Storm drainage pipe:** Conveys runoff underground from one point to another. On this site, storm drainage piping ranges in size from 6" PVC for roof drain collectors to 8" and 12" diameter storm pipe for larger conveyance systems.

**Yard Drains/Catch Basins:** A structure used to collect surface water and direct it to a storm drainage pipe, or structures used as junctions between runs of storm pipe. Yard drains are typically plastic or small concrete structures and are often used in vegetated areas around the building to collect runoff. Catch basins are larger concrete structures; rectangular or cylindrical.

**Control Structure/Flow Restrictor:** A device designed to regulate the flow of water that passes through. Common methods of control include the use of one or a combination of orifices, weirs, and risers. A riser is a short segment of pipe, usually mounted vertically and affixed to a horizontal discharge pipe. The top of the riser is often open and designed to have a particular elevation at the opening, and acts as an overflow for detained water. Orifices are machine drilled holes, usually in metal, and are mounted as a horizontal cap in a medium size pipe elbow. The pipe elbow is connected to the side of the riser and conducts flow from the orifice into the riser. Weirs are tiny dams that the water overtops, such as the rim of the riser. Weirs may be flat, slotted or notched, or shaped like a "V". The control structure in this facility has one or more orifices mounted on the riser, and a notch in the riser. The control structure is mounted in the catch basin located within the bioinfiltration cell.

**Overflow Structure:** A catch basin intended to limit the depth of stored water in a pond, ditch or bioretention cell. Overflow structures are often located at the high water mark of the storage facility.

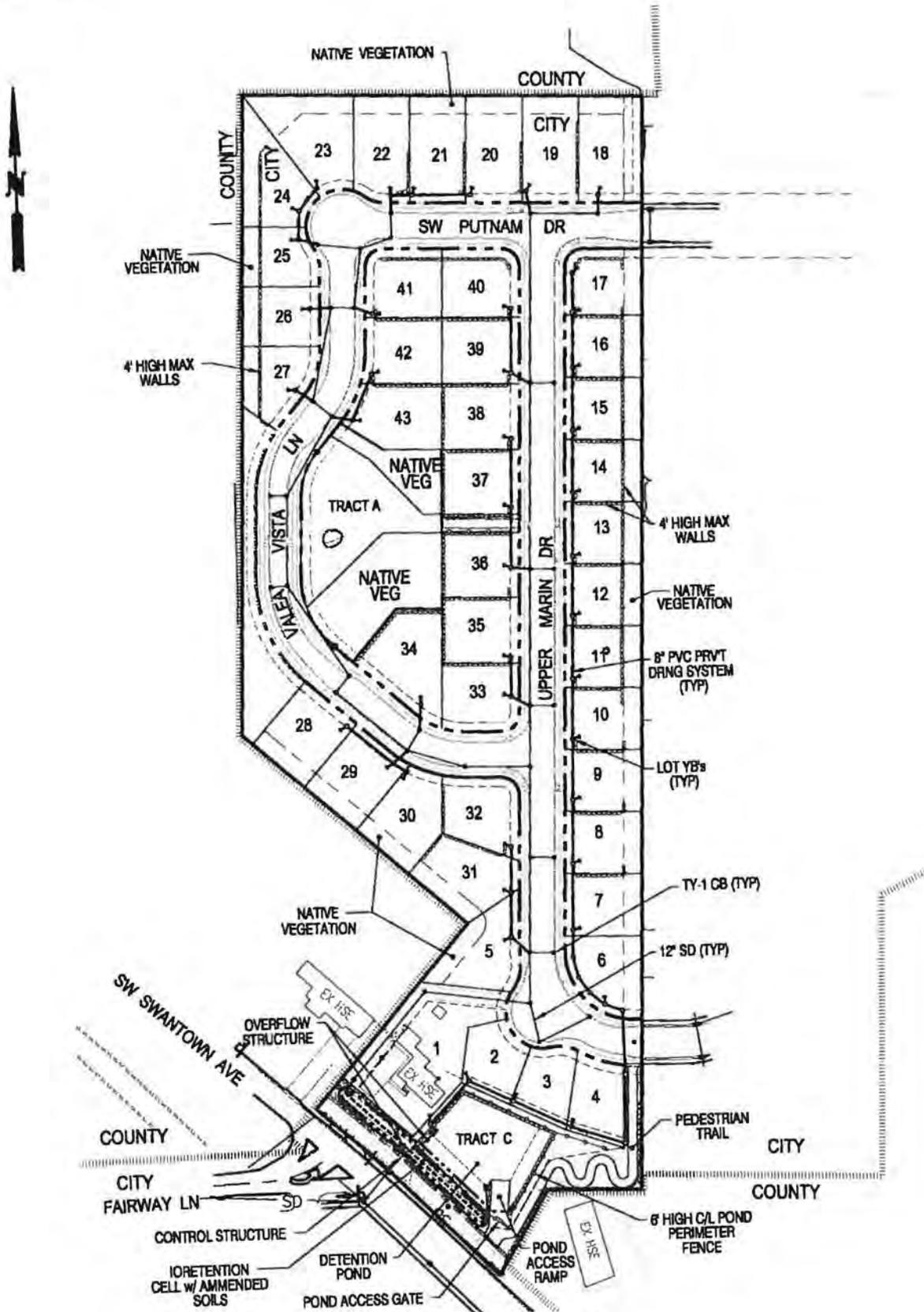
**Bioretention Cell:** A vegetated area designed as a basin to receive and treat storm runoff as water slowly passes through the plantings and their root systems, then either infiltrates into the soil beneath or is captured with underdrains and routed to a storage or discharge system. Marin Woods has a bioretention cell located between the pond and the Swantown that is vegetated and also acts as a planted buffer between the project and Swantown.

**Detention Pond:** A stormwater storage facility excavated into the ground. The detention pond for this development is an open air facility and is situated between the bioretention cell and lots

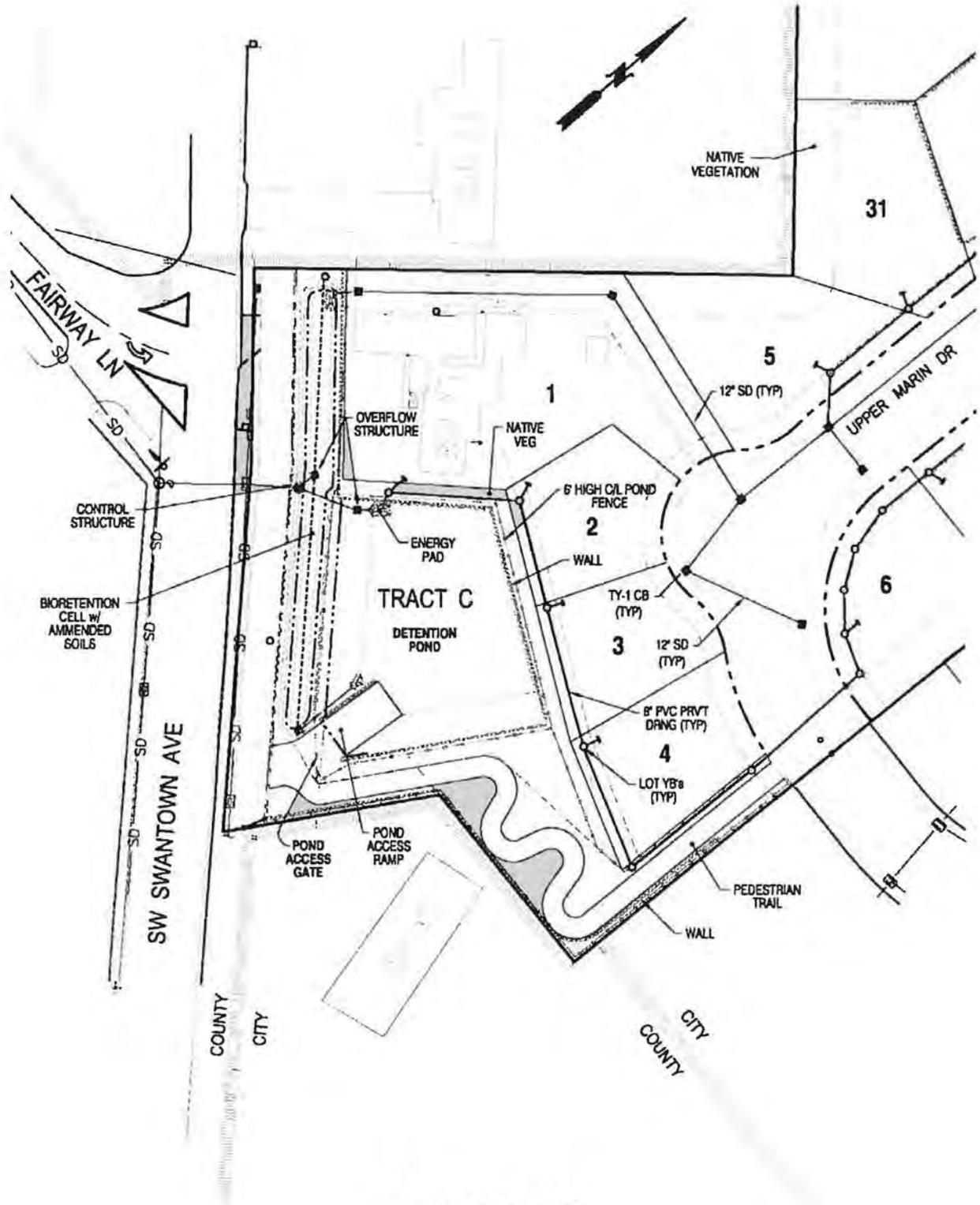
1-4. To obtain the storage required for this development, the pond has walls on two sides and graded earth on the other two sides. This pond is expected to drain during the dryer months and between small storm events, and will temporarily fill to varying depths depending on the severity and duration of larger storms.

Exhibits A and B provide the location of the various site storm systems. Please refer to the record drawings for greater detail.

STORM DRAINAGE OPERATIONS & MAINTENANCE MANUAL  
Marin Woods



**EXHIBIT A**



**EXHIBIT B**

**MAINTENANCE REQUIREMENTS:**

The text below provides general guidelines for the maintenance of facilities and a description of specific requirements for on-site facilities. Where applicable, the standard DOE Manual maintenance standards are referenced and included at the back of this report. The City of Oak Harbor keeps a copy of the DOE Manual if further reference is required.

**General:**

1. Proper maintenance of public and private stormwater facilities is necessary to ensure they serve their intended function
2. Drainage systems shall be inspected at least annually. A representative of the local government should also inspect private facilities at least annually to ensure compliance by the owner of the following maintenance requirements.
3. Any deterioration threatening the structural integrity of the facilities shall be immediately repaired. These include such things as replacement of clean-out grates, catch basin lids, and rock in emergency spillways.
4. Debris shall be regularly removed from surface basins used for either peak-rate control or stormwater treatment.
5. Driveways and parking areas shall be swept as necessary to remove debris, rather than washing the sediments into the storm system.

**Yard Drains:** The yard drains are similar in maintenance requirements to catch basins. The standard DOE maintenance for catch basins is provided for reference.

**Detention Pond:** The standard DOE maintenance requirements for ponds are provided for reference. In addition to standard DOE requirements, this pond contains walls, fences and landscaping that must be maintained and kept in good operating condition.

**Bioretention Cell:** This facility has maintenance requirements that are similar to a detention pond. The standard DOE maintenance for Detention Ponds is provided for reference. In addition, the following maintenance items are specific to bioretention cells:

Bioretention areas require annual plant, soil, and mulch layer maintenance to ensure optimum infiltration, storage, and pollutant removal capabilities. In general, bioretention maintenance requirements are typical landscape care procedures and include:

1. *Watering:* Plants should be selected to be drought tolerant and not require watering after establishment (2 to 3 years). Watering may be required during prolonged dry periods after plants are established.
2. *Erosion control:* Inspect flow entrances, ponding area, and surface overflow areas periodically, and replace soil, plant material, and/or mulch layer in areas if

erosion has occurred. Properly designed facilities with appropriate flow velocities should not have erosion problems except perhaps in extreme events. If erosion problems occur the following should be reassessed: (1) flow volumes from contributing areas and bioretention cell sizing; (2) flow velocities and gradients within the cell; and (3) flow dissipation and erosion protection strategies in the pretreatment area and flow entrance. If sediment is deposited in the bioretention area, immediately determine the source within the contributing area, stabilize, and remove excess surface deposits.

3. *Plant material:* Depending on aesthetic requirements, occasional pruning and removing dead plant material may be necessary. Replace all dead plants and if specific plants have a high mortality rate, assess the cause and replace with appropriate species. Periodic weeding is necessary until plants are established. The weeding schedule should become less frequent if the appropriate plant species and planting density have been used and, as a result, undesirable plants excluded.
4. *Nutrient and pesticides:* The soil mix and plants are selected for optimum fertility, plant establishment, and growth. Nutrient and pesticide inputs should not be required and may degrade the pollutant loads to receiving waters. By design, bioretention facilities are located in areas where phosphorous and nitrogen levels are often elevated and these should not be limiting nutrients. If in question, have soil analyzed for fertility.
5. *Mulch:* Replace mulch annually in bioretention facilities where heavy metal deposition is likely (e.g., contributing areas that include parking lots and roads). In residential lots or other areas where metal deposition is not a concern, replace or add mulch as needed to maintain a 2 to 3 inch depth at least once every two years.
6. *Soil:* Soil mixes for bioretention facilities are designed to maintain long-term fertility and pollutant processing capability. Estimates from metal attenuation research suggest that metal accumulation should not present an environmental concern for at least 20 years in bioretention systems (see Performance section). Replacing mulch in bioretention facilities where heavy metal deposition is likely provides an additional level of protection for prolonged performance. If in question, have soil analyzed for fertility and pollutant levels.

### 4.6 Maintenance Standards for Drainage Facilities

The facility-specific maintenance standards contained in this section are intended to be conditions for determining if maintenance actions are required as identified through inspection. They are not intended to be measures of the facility's required condition at all times between inspections. In other words, exceedence of these conditions at any time between inspections and/or maintenance does not automatically constitute a violation of these standards. However, based upon inspection observations, the inspection and maintenance schedules shall be adjusted to minimize the length of time that a facility is in a condition that requires a maintenance action.

**Table 4.5 – Maintenance Standards**

#### No. 1 – Detention Ponds

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Trash & Debris	Any trash and debris which exceed 5 cubic feet per 1,000 square feet (this is about equal to the amount of trash it would take to fill up one standard size garbage can). In general, there should be no visual evidence of dumping.  If less than threshold all trash and debris will be removed as part of next scheduled maintenance.	Trash and debris cleared from site.
	Poisonous Vegetation and noxious weeds	Any poisonous or nuisance vegetation which may constitute a hazard to maintenance personnel or the public.  Any evidence of noxious weeds as defined by State or local regulations. (Apply requirements of adopted IPM policies for the use of herbicides).	No danger of poisonous vegetation where maintenance personnel or the public might normally be. (Coordinate with local health department)  Complete eradication of noxious weeds may not be possible. Compliance with State or local eradication policies required
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants  (Coordinate removal/cleanup with local water quality response agency).	No contaminants or pollutants present-
	Rodent Holes	Any evidence of rodent holes if facility is acting as a dam or berm, or any evidence of water piping through dam or berm via rodent holes.	Rodents destroyed and dam or berm repaired. (Coordinate with local health department; coordinate with Ecology Dam Safety Office if pond exceeds 10 acre-feet.)

**No. 1 – Detention Ponds**

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
	Beaver Dams	Dam results in change or function of the facility.	Facility is returned to design function.  (Coordinate trapping of beavers and removal of dams with appropriate permitting agencies)
	Insects	When insects such as wasps and hornets interfere with maintenance activities.	Insects destroyed or removed from site.  Apply insecticides in compliance with adopted IPM policies
	Tree Growth and Hazard Trees	Tree growth does not allow maintenance access or interferes with maintenance activity (i.e., slope mowing, silt removal, vactoring, or equipment movements). If trees are not interfering with access or maintenance, do not remove  If dead, diseased, or dying trees are identified  (Use a certified Arborist to determine health of tree or removal requirements)	Trees do not hinder maintenance activities. Harvested trees should be recycled into mulch or other beneficial uses (e.g., alders for firewood).  Remove hazard Trees
Side Slopes of Pond	Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion.  Any erosion observed on a compacted berm embankment.	Slopes should be stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction.  If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.
Storage Area	Sediment	Accumulated sediment that exceeds 10% of the designed pond depth unless otherwise specified or affects inletting or outletting condition of the facility.	Sediment cleaned out to designed pond shape and depth; pond reseeded if necessary to control erosion.
	Liner (If Applicable)	Liner is visible and has more than three 1/4-inch holes in it.	Liner repaired or replaced. Liner is fully covered.

**No. 1 – Detention Ponds**

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
Pond Berms (Dikes)	Settlements	<p>Any part of berm which has settled 4 inches lower than the design elevation.</p> <p>If settlement is apparent, measure berm to determine amount of settlement.</p> <p>Settling can be an indication of more severe problems with the berm or outlet works. A licensed civil engineer should be consulted to determine the source of the settlement.</p>	Dike is built back to the design elevation.
	Piping	<p>Discernable water flow through pond berm. Ongoing erosion with potential for erosion to continue.</p> <p>(Recommend a Geotechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.</p>	Piping eliminated. Erosion potential resolved.
Emergency Overflow/ Spillway and Berms over 4 feet in height.	Tree Growth	<p>Tree growth on emergency spillways creates blockage problems and may cause failure of the berm due to uncontrolled overtopping.</p> <p>Tree growth on berms over 4 feet in height may lead to piping through the berm which could lead to failure of the berm.</p>	Trees should be removed. If root system is small (base less than 4 inches) the root system may be left in place. Otherwise the roots should be removed and the berm restored. A licensed civil engineer should be consulted for proper berm/spillway restoration.
	Piping	<p>Discernable water flow through pond berm. Ongoing erosion with potential for erosion to continue.</p> <p>(Recommend a Geotechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.</p>	Piping eliminated. Erosion potential resolved.
Emergency Overflow/ Spillway	Emergency Overflow/ Spillway	<p>Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil at the top of out flow path of spillway.</p> <p>(Rip-rap on inside slopes need not be replaced.)</p>	Rocks and pad depth are restored to design standards.
	Erosion	See "Side Slopes of Pond"	

**No. 4 – Control Structure/Flow Restrictor**

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Trash and Debris (Includes Sediment)	Material exceeds 25% of sump depth or 1 foot below orifice plate.	Control structure orifice is not blocked. All trash and debris removed.
	Structural Damage	Structure is not securely attached to manhole wall.	Structure securely attached to wall and outlet pipe.
		Structure is not in upright position (allow up to 10% from plumb).	Structure in correct position.
		Connections to outlet pipe are not watertight and show signs of rust.	Connections to outlet pipe are water tight; structure repaired or replaced and works as designed.
		Any holes--other than designed holes--in the structure.	Structure has no holes other than designed holes.
Cleanout Gate	Damaged or Missing	Cleanout gate is not watertight or is missing.	Gate is watertight and works as designed.
		Gate cannot be moved up and down by one maintenance person.	Gate moves up and down easily and is watertight.
		Chain/rod leading to gate is missing or damaged.	Chain is in place and works as designed.
		Gate is rusted over 50% of its surface area.	Gate is repaired or replaced to meet design standards.
Orifice Plate	Damaged or Missing	Control device is not working properly due to missing, out of place, or bent orifice plate.	Plate is in place and works as designed.
	Obstructions	Any trash, debris, sediment, or vegetation blocking the plate.	Plate is free of all obstructions and works as designed.
Overflow Pipe	Obstructions	Any trash or debris blocking (or having the potential of blocking) the overflow pipe.	Pipe is free of all obstructions and works as designed.
Manhole	See "Closed Detention Systems" (No. 3).	See "Closed Detention Systems" (No. 3).	See "Closed Detention Systems" (No. 3).
Catch Basin	See "Catch Basins" (No. 5).	See "Catch Basins" (No. 5).	See "Catch Basins" (No. 5).

## No. 5 – Catch Basins

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
General	Trash & Debris	Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%.	No Trash or debris located immediately in front of catch basin or on grate opening.
		Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe.	No trash or debris in the catch basin.
		Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height.	Inlet and outlet pipes free of trash or debris.
		Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No dead animals or vegetation present within the catch basin.
	Sediment	Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	No sediment in the catch basin
	Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch (Intent is to make sure no material is running into basin).	Top slab is free of holes and cracks.
		Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached	Frame is sitting flush on the riser rings or top slab and firmly attached.
	Fractures or Cracks in Basin Walls/ Bottom	Maintenance person judges that structure is unsound.	Basin replaced or repaired to design standards.
		Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	Pipe is regouted and secure at basin wall.
	Settlement/ Misalignment	If failure of basin has created a safety, function, or design problem.	Basin replaced or repaired to design standards.
	Vegetation	Vegetation growing across and blocking more than 10% of the basin opening.	No vegetation blocking opening to basin.
		Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation or root growth present.

**No. 5 – Catch Basins**

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
	Contamination and Pollution	See "Detention Ponds" (No. 1).	No pollution present.
Catch Basin Cover	Cover Not in Place	Cover is missing or only partially in place. Any open catch basin requires maintenance.	Catch basin cover is closed
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.	Mechanism opens with proper tools.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure.  (Intent is keep cover from sealing off access to maintenance.)	Cover can be removed by one maintenance person.
Ladder	Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.	Ladder meets design standards and allows maintenance person safe access.
Metal Grates (If Applicable)	Grate opening Unsafe	Grate with opening wider than 7/8 inch.	Grate opening meets design standards.
	Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.	Grate free of trash and debris.
	Damaged or Missing.	Grate missing or broken member(s) of the grate.	Grate is in place and meets design standards.

**No. 6 – Debris Barriers (e.g., Trash Racks)**

Maintenance Components	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Trash and Debris	Trash or debris that is plugging more than 20% of the openings in the barrier.	Barrier cleared to design flow capacity.
Metal	Damaged/ Missing Bars.	Bars are bent out of shape more than 3 inches.	Bars in place with no bends more than 3/4 inch.
		Bars are missing or entire barrier missing.	Bars in place according to design.
		Bars are loose and rust is causing 50% deterioration to any part of barrier.	Barrier replaced or repaired to design standards.
	Inlet/Outlet Pipe	Debris barrier missing or not attached to pipe	Barrier firmly attached to pipe

**No. 18 – Catchbasin Inserts**

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Sediment Accumulation	When sediment forms a cap over the insert media of the insert and/or unit.	No sediment cap on the insert media and its unit.
	Trash and Debris Accumulation	Trash and debris accumulates on insert unit creating a blockage/restriction.	Trash and debris removed from insert unit. Runoff freely flows into catch basin.
	Media Insert Not Removing Oil	Effluent water from media insert has a visible sheen.	Effluent water from media insert is free of oils and has no visible sheen.
	Media Insert Water Saturated	Catch basin insert is saturated with water and no longer has the capacity to absorb.	Remove and replace media insert
	Media Insert-Oil Saturated	Media oil saturated due to petroleum spill that drains into catch basin.	Remove and replace media insert.
	Media Insert Use Beyond Normal Product Life	Media has been used beyond the typical average life of media insert product.	Remove and replace media at regular intervals, depending on insert product.

**No. 11 – Wetponds**

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Water level	First cell is empty, doesn't hold water.	Line the first cell to maintain at least 4 feet of water. Although the second cell may drain, the first cell must remain full to control turbulence of the incoming flow and reduce sediment resuspension.
	Trash and Debris	Accumulation that exceeds 1 CF per 1000-SF of pond area.	Trash and debris removed from pond.
	Inlet/Outlet Pipe	Inlet/Outlet pipe clogged with sediment and/or debris material.	No clogging or blockage in the inlet and outlet piping.
	Sediment Accumulation in Pond Bottom	Sediment accumulations in pond bottom that exceeds the depth of sediment zone plus 6-inches, usually in the first cell.	Sediment removed from pond bottom.
	Oil Sheen on Water	Prevalent and visible oil sheen.	Oil removed from water using oil-absorbent pads or vacator truck. Source of oil located and corrected. If chronic low levels of oil persist, plant wetland plants such as <i>Juncus effusus</i> (soft rush) which can uptake small concentrations of oil.
	Erosion	Erosion of the pond's side slopes and/or scouring of the pond bottom, that exceeds 6-inches, or where continued erosion is prevalent.	Slopes stabilized using proper erosion control measures and repair methods.
	Settlement of Pond Dike/Berm	Any part of these components that has settled 4-inches or lower than the design elevation, or inspector determines dike/berm is unsound.	Dike/berm is repaired to specifications.
	Internal Berm	Berm dividing cells should be level.	Berm surface is leveled so that water flows evenly over entire length of berm.
	Overflow Spillway	Rock is missing and soil is exposed at top of spillway or outside slope.	Rocks replaced to specifications.

Table 3. Maintenance Standards:

Component	Recommended Frequency <sup>a</sup>		Condition when Maintenance is Needed (Standards)
	Inspection	Routine Maintenance	
<b>Facility Footprint</b>			
Earthen side slopes and berms	B, S		Erosion (gullies/ rills) greater than 2 inches deep around inlets, outlet, and alongside slopes
	A		Erosion of sides causes slope to become a hazard
	A, S		Settlement greater than 3 inches (relative to undisturbed sections of berm)
	A, S		Downstream face of berm wet, seeps or leaks evident
	A		Any evidence of rodent holes or water piping in berm
Concrete sidewalls	A		Cracks or failure of concrete sidewalls
Rockery sidewalls	A		Rockery side walls are insecure
Facility area		All maintenance visits (at least biannually)	Trash and debris present
Facility bottom area	A, S		Accumulated sediment to extent that infiltration rate is reduced (see "Ponded water") or surface storage capacity significantly impacted
		During/after fall leaf drop	Accumulated leaves in facility
Low permeability check dams and weirs	A, S		Sediment, vegetation, or debris accumulated at or blocking (or having the potential to block) check dam, flow control weir or orifice
	A, S		Erosion and/or undercutting present
	A		Grade board or top of weir damaged or not level

<sup>a</sup> Frequency: A = Annually; B = Biannually (twice per year); M = Monthly; W = At least one visit should occur during the wet season (for c  
Perform inspections after major storm events (24-hour storm event with a 10-year or greater recurrence interval).

IPM – Integrated Pest Management

ISA – International Society of Arboriculture

Table 3 (continued). Maintenance Sta

Component	Recommended Frequency <sup>a</sup>		Condition when Maintenance is Needed (Standards)
	Inspection	Routine Maintenance	
<b>Facility Footprint (cont'd)</b>			
Ponded water	B, S		Excessive ponding water: Water overflows during storms smaller than the design event or ponded water remains in the basin 48 hours or longer after the end of a storm.
Bioretention soil media	As needed		Bioretention soil media protection is needed when performing maintenance requiring entrance into the facility footprint
<b>Inlets/Outlets/Pipes</b>			
Splash block inlet	A		Water is not being directed properly to the facility and away from the inlet structure
Curb cut inlet/outlet	M during the wet season and before severe storm is forecasted	Weekly during fall leaf drop	Accumulated leaves at curb cuts
Pipe inlet/outlet	A		Pipe is damaged
	W		Pipe is clogged
	A, S		Sediment, debris, trash, or mulch reducing capacity of inlet/outlet
		Weekly during fall leaf drop	Accumulated leaves at inlets/outlets
		A	Maintain access for inspections
Erosion control at inlet	A		Concentrated flows are causing erosion

<sup>a</sup> Frequency: A = Annually; B = Biannually (twice per year); M = Monthly; W = At least one visit should occur during the wet season (for c Perform inspections after major storm events (24-hour storm event with a 10-year or greater recurrence interval).

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Table 3 (continued). Maintenance Sta

Component	Recommended Frequency <sup>a</sup>		Condition when Maintenance is Needed (Standards)
	Inspection	Routine Maintenance	
<b>Inlets/Outlets/Pipes (cont'd)</b>			
Trash rack	S		Trash or other debris present on trash rack
	A		Bar screen damaged or missing
Overflow	A, S		Capacity reduced by sediment or debris
Underdrain pipe	Clean pipe as needed	Clean orifice at least biannually (may need more frequent cleaning during wet season)	<input type="checkbox"/> Plant roots, sediment or debris reducing capacity of underdrain <input type="checkbox"/> Prolonged surface ponding (see "Ponded water")
<b>Vegetation</b>			
Facility bottom area and upland slope vegetation	Fall and Spring		Vegetation survival rate falls below 75% within first two years of establishment (unless project O&M manual or record drawing stipulates more or less than 75% survival rate).
Vegetation (general)	As needed		Presence of diseased plants and plant material
Trees and shrubs		All pruning seasons (timing varies by species)	Pruning as needed
	A		Large trees and shrubs interfere with operation of the facility or access for maintenance
	Fall and Spring		Standing dead vegetation is present
	Fall and Spring		Planting beneath mature trees

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Table 3 (continued). Maintenance Sta

Component	Recommended Frequency <sup>a</sup>		Condition when Maintenance is Needed (Standards)
	Inspection	Routine Maintenance	
<b>Vegetation (cont'd)</b>			
Trees and shrubs (cont'd)	Fall and Spring		Planting beneath mature trees
	Fall and Spring		Presence of or need for stakes and guys (tree growth, maturation, and support needs)
Trees and shrubs adjacent to vehicle travel areas (or areas where visibility needs to be maintained)	A		Vegetation causes some visibility (line of sight) or driver safety issues
Flowering plants		A	Dead or spent flowers present
Perennials		Fall	Spent plants
Emergent vegetation		Spring	Vegetation compromises conveyance
Ornamental grasses (perennial)		Winter and Spring	Dead material from previous year's growing cycle or dead collapsed foliage
Ornamental grasses (evergreen)		Fall and Spring	Dead growth present in spring
Noxious weeds		M (March – October, preceding seed dispersal)	Listed noxious vegetation is present (refer to current county noxious weed list)

<sup>a</sup> Frequency: A = Annually; B = Biannually (twice per year); M = Monthly; W = At least one visit should occur during the wet season (for c Perform inspections after major storm events (24-hour storm event with a 10-year or greater recurrence interval).

IPM – Integrated Pest Management

ISA – International Society of Arboriculture

Table 3 (continued). Maintenance Sta

Component	Recommended Frequency <sup>a</sup>		Condition when Maintenance is Needed (Standards)
	Inspection	Routine Maintenance	
<b>Vegetation (cont'd)</b>			
Weeds		M (March – October, preceding seed dispersal)	Weeds are present
Excessive vegetation		Once in early to mid- May and once in early- to mid- September	Low-lying vegetation growing beyond facility edge onto sidewalks, paths, or street edge poses pedestrian safety hazard or may clog adjacent permeable pavement surfaces due to associated leaf litter, mulch, and soil
	As needed		Excessive vegetation density inhibits stormwater flow beyond design ponding or becomes a hazard for pedestrian and vehicular circulation and safety
	As needed		Vegetation blocking curb cuts, causing excessive sediment buildup and flow bypass
<b>Mulch</b>			
Mulch		Following weeding	Bare spots (without mulch cover) are present or mulch depth less than 2 inches
<b>Watering</b>			
Irrigation system (if any)		Based on manufacturer's instructions	Irrigation system present
	A		Sprinklers or drip irrigation not directed/located to properly water plants
Summer watering (first year)		Once every 1-2 weeks or as needed during prolonged dry periods	Trees, shrubs and groundcovers in first year of establishment period

<sup>a</sup> Frequency: A = Annually; B = Biannually (twice per year); M = Monthly; W = At least one visit should occur during the wet season (for c Perform inspections after major storm events (24-hour storm event with a 10-year or greater recurrence interval).

IPM – Integrated Pest Management  
ISA – International Society of Arboriculture

Table 3 (continued). Maintenance Sta

Component	Recommended Frequency <sup>a</sup>		Condition when Maintenance is Needed (Standards)
	Inspection	Routine Maintenance	
<b>Watering (cont'd)</b>			
Summer watering (second and third years)		Once every 2-4 weeks or as needed during prolonged dry periods	Trees, shrubs and groundcovers in second or third year of establishment period
Summer watering (after establishment)		As needed	Established vegetation (after 3 years)
<b>Pest Control</b>			
Mosquitoes	B, S		Standing water remains for more than 3 days after the end of a storm
Nuisance animals	As needed		Nuisance animals causing erosion, damaging plants, or depositing large volumes of feces
Insect pests	Every site visit associated with vegetation management		Signs of pests, such as wilting leaves, chewed leaves and bark, spotting or other indicators

<sup>a</sup> Frequency: A = Annually; B = Biannually (twice per year); M = Monthly; W = At least one visit should occur during the wet season (for c  
 Perform inspections after major storm events (24-hour storm event with a 10-year or greater recurrence interval).

IPM – Integrated Pest Management  
 ISA – International Society of Arboriculture

CONCEPTUAL DRAINAGE REPORT  
FOR  
**MARIN WOODS**  
**PRELIMINARY RESIDENTIAL DEVELOPMENT**  
2099 SW ROBERTSON DRIVE  
OAK HARBOR, WASHINGTON

RECEIVED

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**CONCEPTUAL STORM DRAINAGE  
ANALYSIS FOR the PRD of**

**Marin Woods**

**1292 SW Swantown Avenue  
Oak Harbor, Washington**

September 23, 2014  
Revised August 22, 2016  
Michael E. Ryan, PE



A N T I C I P A T E   U N D E R S T A N D   G U I D E   D E L I V E R

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- B NRSC Soil Data and Geotech Report
- C Plan Sheet P2 “Preliminary Plat Map Existing Conditions” (Topographic Survey)
- D Plan Sheet “Preliminary Civil Grading Plan”
- E “1997 Study”, Golf Course Drainage Basin Stormwater Mitigation Study, August 1997
- F “2007 Update”, Golf Course Drainage Basin, North Basin Build-Out Stormwater Evaluation, published in 2007
- G “2002 Drainage Agreement”, Basin Study Agreement between the City of Oak Harbor, Island County and the Whidbey Golf Course
- H “2014 Agreement Letter”, Van Ness Feldman letter to Landed Gentry re “2002 Drainage Agreement”

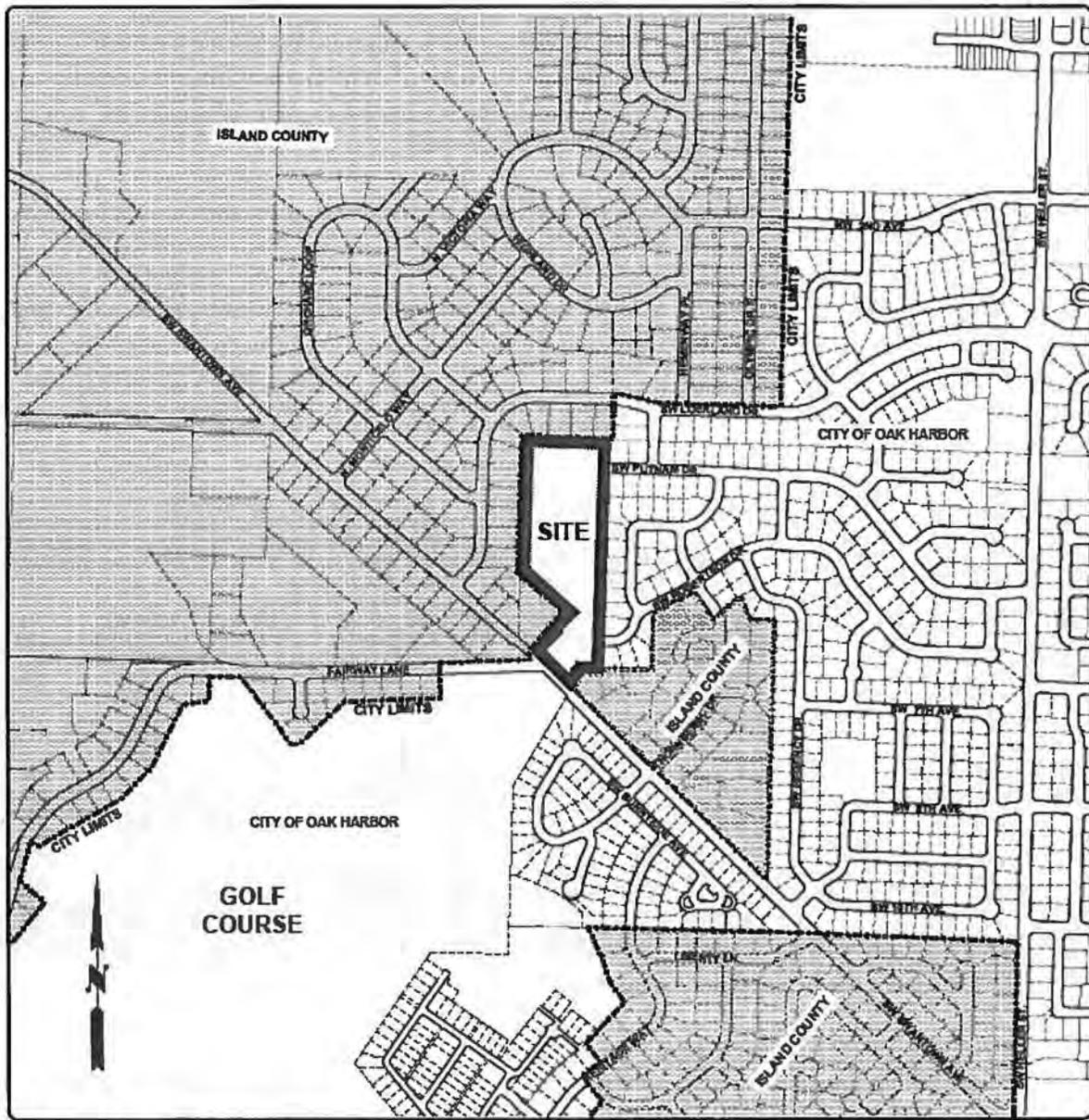


Figure 1 Vicinity Map

## PROJECT DESCRIPTION

This report is a Conceptual Drainage Report that is being submitted with the Preliminary PRD and Preliminary Plat plans of Marin Woods to the City of Oak Harbor for consideration and approval. A Final Drainage Reports and PRD Construction plans shall be submitted at a later date and after preliminary approval of this PRD is achieved.

Marin Woods is a proposed Planned Residential Development that is situated in approximately 10.6 acres of undeveloped area east of the intersection of Swantown Road at Fairway Lane. This nearly rectangular site is bound on three sides by developed residential neighborhoods, and slopes approximately and generally at 10% towards Swantown Road which borders the fourth side. This PRD proposes 43 individual lots for single family homes, public roadways with utilities and three tracts. The 1.4 Acres of tracts include opens space, preserved native vegetation, recreational areas and a bioretention cell that provides water quality for all pollution generating surfaces.

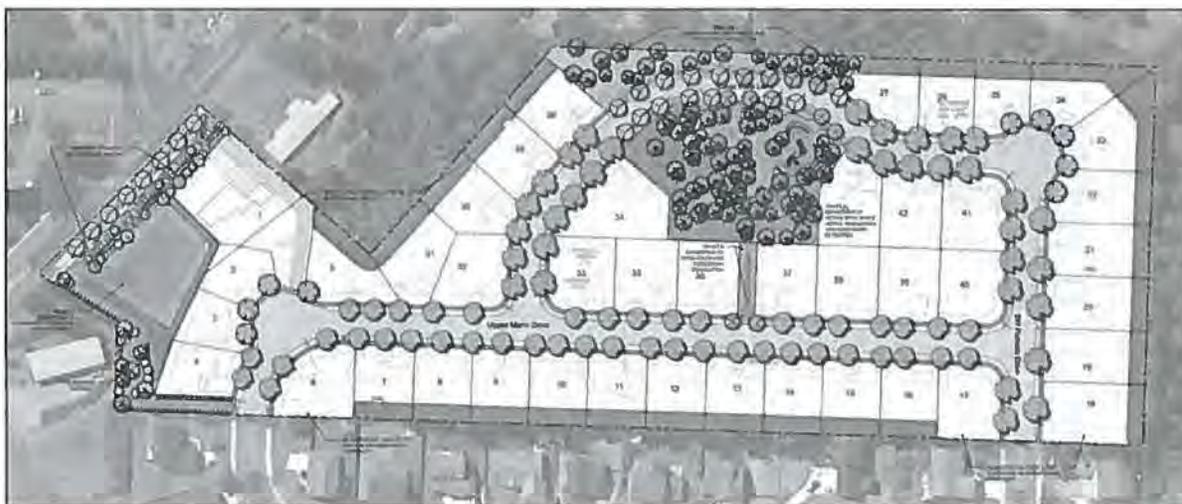


Figure 2 Marin Woods Conceptual Landscape Plan by eccos Design, 7/2016

Marin Woods proposes reduced roadway pavement widths, consisting of two drive lanes with one parking lane in areas containing homes, and two lanes without parking where the public road passes between tracts A and B. The hillside development will contain terraces with short MSE walls or rockeries to reduce the crossfall of yards and moderate earthwork.

The crosswalks have ADA compliant widths with 5% max slope or crossfall at intersections, mid-block crosswalks shall have ADA compliant connections with sidewalks and may have cross slopes that match the roadway profile. ADA compliance shall be per WSDOT 1510.06, 151.07 and United States Access Board (USAB) chapter 3.

NRSC soil data, now confirmed with March 2016 soil exploration by GeoTest reveal soils with high silt and clay content as well as shallow perched interflow, conditions not conducive to infiltration. Roof runoff shall be provided by splashblocks to BMP T5.13 treated soils where vegetative flowpaths and grading allow, but are expected to be typically tightlined to the storm

system as appropriate. This project utilizes a bioretention facility for water quality treatment of all PGS surface runoff. Bioretention surface area is large enough to manage all PGS but not all of the NPGS runoff; some NPGS surface runoff will be conveyed separately from PGS flow, and shall be conveyed directly to the retention/detention part of the private drainage system prior to discharge. All disturbed soils shall be amended per BMP T5.13 and permanently landscaped.

The bioretention cell is located in Tract C at the downhill edge of the development and parallel to Swantown Road. Soil exploration and infiltration testing in the proposed bioretention area revealed soil conditions similar to those on the hillside; soil types and shallow interflow that are not conducive to infiltration techniques. This drainage report and supporting calculations assume that infiltration is unavailable, and the water quality facility has been designed with underdrains to provide a method for adequate drainage. Considering the shallow depths to interflow, the drainage facilities will require impervious liners where vertical separation to the perch flow is inadequate.

Per the Golf Course Drainage Basin Stormwater Mitigation Study published August 1997 (1997 Study), and the subsequent 2007 Golf Course North Basin Build-Out Stormwater Evaluation (2007 Update) which updated 1997 Study, this development proposes rapid release of stormwater for Marin Woods in lieu of traditional detention per DOE MR-7, but does not exempt these areas from considering flow control as necessary for impact mitigation. The proposed project does provide limited detention to moderate flow control to match pre-development conditions per WWHM3 calculations.

The 1997 Study and the 2007 Update are attached as Appendices E and F. WWHM3 screenshots are in Appendix A

A three-party agreement (Drainage Agreement) between the City of Oak Harbor, Island County and the Whidbey Island Golf Course was established in March of 2002. The 2002 Drainage Agreement outlines how future development shall be coordinated per the 1997 Study. In June of 2014, the 2002 Drainage Agreement was reviewed by Jay Derr, atty, with Van Ness Feldman, LLP, and an evaluation of the 2002 Drainage Agreement (Evaluation of Drainage Agreement) was prepared for Landed Gentry.

The 2002 Drainage agreement and the 2014 Evaluation of Drainage Agreement are attached as Appendices G and H.

**SUMMARY OF THE 1997 STUDY AND 2007 UPDATE:**

Marin Woods dominates the undeveloped area or sub basin labeled as N2 as well as a portion of N1, and lies adjacent to N3 as outlined in the 1997 Study and 2007 Update. Areas N1, N2 and N3 are recommended for rapid release via the "Exit Ditch" which is the natural and historic waterway for these sub basins, and which terminates into the Sound at West Beach.

The 1997 Study analyzed storm drainage of the existing conditions of areas surrounding the Whidbey Golf Course and proposed a basin approached solution for stormwater management. The 1997 Study predicted growth and development of the undeveloped areas, and was updated in 2007 to account for growth that had occurred and re-predict growth that was available. This PRD proposes more hardscape than did the original 1997 Study, but significantly less hardscape than was measured and proposed in the 2007 Update.

Marin Woods is the last of the undeveloped 10.6 acre space available in the approximately 30 acres of basins N1 and N2. All other areas of N1, N2 and N3 are currently platted into lots with single family homes in existence. Additional growth in areas N1, N2 and N3 can only result in sub dividing existing, developed lots, or by removing existing homes and reconfiguring lot lines. Additional growth is possible and likely, but is not likely to occur on a large scale.

Discharge from this site, the golf course basins and the significantly larger contributing area that drains into Loer's Pond ultimately join and flow through the "Exit Ditch" to a release point at West Beach into the Sound, an exempt water body. The basic premise of the 1997 Study which was upheld in the 2007 Update, is that the release from the 2400 acre golf course basin and even larger release potential from Loer's Pond is significant and somewhat delayed as compared to the release from the 95 acre combined drainage basins N1, N2 and N3 (which contain 10.6 acres of Marin Woods). Areas N1, N2, N3 and Loer's Pond all release via gravity flow to West Beach whereas the Golf Course basin contains a pumped discharge from the Golf Course itself. The Marin Woods discharge peak flow and velocity is substantially less than the Golf course release and Loer's Pond release. The 1997 Study recommend that the release from areas N1, N2 and N3 (which contain Marin Woods) shall be allowed to flow ahead of/prior to the golf course surge and Loer's Pond surge, and thus not compound either subsequent surge.

## **METHODOLOGY**

The drainage design for the site was prepared using the requirements of the Washington State Department of Ecology *Storm Water Management Manual for Western Washington*, 2005, (DOE Manual) as adopted by the City of Oak Harbor. Western Washington Hydrology Model, Version 3 (WWHM3), as supplied by the Department of Ecology, was used to prepare runoff calculations.

Existing conditions to be developed were modeled as native forest. Existing conditions to remain and not developed were modeled as-is, which is a single family home and a portion of its driveway.

As this site is part of the 1997 drainage basin study, stormwater storage is not required except as to not exacerbate downstream conditions. To this end, a pond is proposed to supplement storage capacity such that post construction release rates do not exceed pre-development release rates.

Proposed conditions route all PGS (pervious and impervious) through a bioretention cell for water quality treatment and some storage, which is connected to a pond to provide required storage. NPGS flows are routed directly to the pond and bypass the bioretention cell.

The pond is not a wet pond, water quality is proposed via the bioretention cell rather than dead storage. The pond is equipped with an access ramp, but is also intended to receive NPGS from roof and yards with little to no sedimentation expected.

WWHM models the PGS basin routed through a sand filter (biocell) then to gravel trench (Storage below the biocell) with an overflow riser connected to the Pond. The Pond has a control structure and overflow that discharges to the public system in Swantown.

The biocell and trench are modeled with trench sidewalls that are nearly vertical, the values in WWHM3 represent the trench cavity rather than the top of placed soil.

## **SOILS DATA**

According to the Us Department of Agriculture Natural Resources Conservation Service (NRSC), this site contains more than 95% Everett-Alderwood complex covering all of the residential sites, and less than 5% Whidbey-Hoypus Complex in the vicinity of the bioretention facility along Swantown Road. The Everett-Alderwood soil profile consists of a mixture of well draining soil (Everett) and non-draining soil (Alderwood) suggesting that the soil is very well draining in some locations and nearly impervious in others locations, not uncommon in the Oak Harbor area. The nature of the slopes combined with NRSC's predicted depths to impervious layers, infiltration of stormwater at home sites is neither likely nor advisable as infiltrate is likely to perch and follow impervious layers to downhill locations.

The Whidbey-Hoypus soil type near the bioretention facility is suggestive of favorable permeability as well as favorable depth to water tables. The bioretention facility is proposed with under drains, but infiltration may be likely. Infiltration testing in this location may determine infiltration abilities.

Relatively shallow depths to impervious layers suggest a high hazard for erosion on upland soil areas.

In March of 2016, Geotest conducted field infiltration testing in the vicinity of the proposed bioretention facility, as well as soil exploration in the facility and other places accessible on the non-forested portion of the lower slope. Geotechnical evaluation and field observation observed soil types of poor infiltration ability as well as shallow, perched interflow. The poor soil quality and shallow perched flow are not conducive to infiltration techniques for disposal of stormwater.

See Appendix B for NRSC and Geotest soil data.

## **DRAINAGE ANALYSIS**



Figure 3 Existing Conditions Aerial

## **EXISTING CONDITIONS**

Marin Woods is currently a 10.6 acre site, most of which is forested area with no wetlands, streams or critical areas known, see Figure 3 Existing Conditions Aerial. Currently, the ground cover is first and second growth timber with understory on grades that generally fall northeast to southwest. The middle of the site contains slopes that tease 12% whereas as the upper third of the site is closer to 9% and the lower parcel approaches 7% near the tree line, and 6% near the west boundary along Swantown.

Access to this site currently consists of two public streets, SW Robertson Drive and SW Putnam Drive, each of which are truncated at the east property line.

Offsite runoff is expected to arrive along the northern and eastern boundaries, but in very reduced quantities as the contributing area is rear yards from developed neighborhoods that capture and convey roof and street runoff elsewhere.

Contours and a tree survey are depicted within the preliminary plan set on the "Existing Conditions" sheet P2, attached as Appendix C. Please see full size plans for more detail.

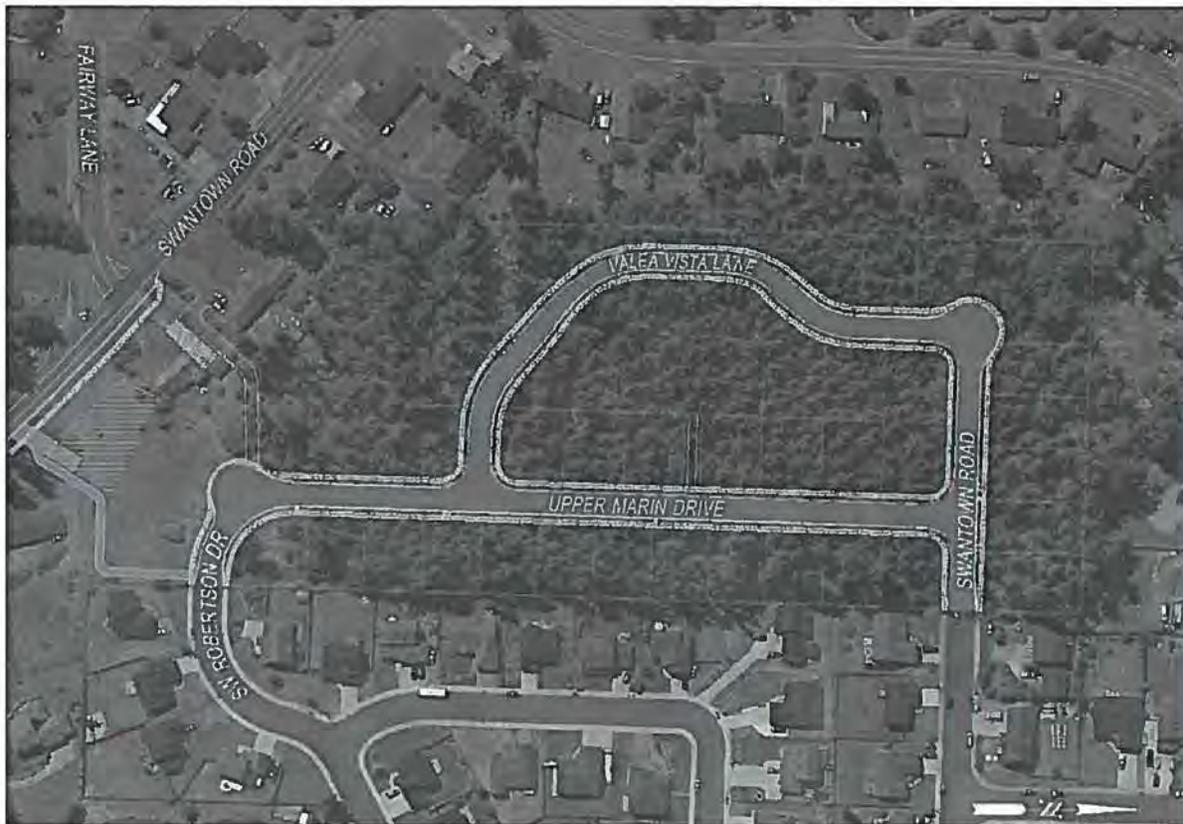


Figure 4 Developed Conditions

## DEVELOPED CONDITIONS

Two access points are proposed for Marin Woods. From the east, SW Robertson Drive and SW Putnam Drive shall be continued through Marin Woods.

43 lots with single family homes are proposed, as are three tracts to contain open space and recreational area and tree retention. One tract also contains frontage buffer plantings as well as the water quality facility; a vegetated bioretention and stormwater storage.

Marin Woods crosses two sub drainage basins, N1 and N2, both of which converge in pipe conveyance along Fairway Lane within a quarter mile of the site. The developed Marin Woods will become a single drainage basin that will follow the natural and historic discharge route for N2, and is consistent with the proposed drainage patterns described in the 1997 Study. Figure 4: Developed Conditions, indicates the extent of work and graphically shows the drainage basin area.

The proposed impervious surfaces are as follows:

Roadway and walkways, including Swantown frontage	83,600 sf
Driveways	28,900 sf
<u>Rooftops</u>	<u>70,000 sf</u>
Total	182,500 sf

The proposed drainage system is as follows:

**Roadway Runoff:** Runoff from the roadway, sidewalks, driveways and any tributary areas that mingle with PGS discharge will be collected and conveyed to the bioretention cell located in Tract C. To reduce the size required for the biocell, NPGS discharge shall be collected and conveyed separately to the pond to the greatest extent practicable.

**Roof Runoff:** Roof downspouts shall be per 3.1 of the 2005 DOE Manual. Per the NRSC data and geotechnical review of onsite soils and slopes, downspout infiltration is neither likely nor advisable in the form of infiltration trenching or dry wells. Roof runoff may be splash blocked where vegetated flowpaths allow, but typical roof downspout management is expected to be tightlined into the appropriate storm conveyance system.

**Yard and wall discharge:** As this development is terraced to a large degree, many walls exist at the terrace, separating adjacent parcels. Each wall shall be constructed with a drain, which will also intercept and collect yard runoff. Wall and footing drains shall be directed to the storm drain system which passes through the bioretention facility in Tract C at the toe of the development.

Downspouts and the Bioretention facility are further addressed in Minimum Requirement 6 & 7. See Appendix A for site runoff calculations via WWHM3. See Storm Drain Analysis section of the report for water quantity control sizing.

Offsite runoff is expected from the adjacent, east and north rear yards of developed and landscaped home sites, which is small in area and the quantity is expected to be minimal and from non pollution generating surfaces.

The proposed conditions are also depicted in more detail within the preliminary plan set on the Sheet C5 "Grading Plan", attached as Appendix D. Please see the full size plan set for more detail.

This report is preliminary. All construction documentation and drainage detail shall be compliant with 2005 DOE per the City of Oak Harbor.

## **STORM DRAIN ANALYSIS**

The storm drain plan for this development will be prepared using the 2005 DOE Manual, which allows for drainage basin plans. As such, we are complying with the 1997 Study and subsequent 2007 Update to that study which recommends rapid release of stormwater on in this basin rather than traditional detention, which is a deviation from the typical Minimum Requirement #7. This project must consider stormwater impact, and manage appropriately which may require some form of flow mitigation. This proposal and Construction Storm Water Site Plan will need to meet Minimum Requirements #1-10 with a variation on #7. Limited detention is provided to allow developed condition stormwater release that matches pre-development (existing) release rates.

These requirements and the proposed storm drain system are listed below:

### **Minimum Requirement #1: Preparation of Storm water Site Plans.**

A Conceptual Storm Drainage Plan is submitted with the plans set accompanying this report. A Final Storm Drainage Plan shall be part of the construction drawings submitted to the City of Oak Harbor for review and approval.

### **Minimum Requirement #2: Construction Storm water Pollution Prevention.**

The 12 elements of the erosion and sediment control plan will be detailed in a SWPPP Narrative, prepared as part of the construction permit documents.

### **Minimum Requirement #3: Source Control of Pollution**

The proposed development is a single-family residential site. As such, it falls outside of the land uses described in Chapter 4 of the 2005 DOE Manual. The one source control that specifically applies is the Maintenance of Stormwater Drainage and Treatment Systems. An Operations and Maintenance Manual shall be prepared as a separate document for use by the Property Owners in maintaining the proposed storm drainage system. The Maintenance Manual shall be provided with the Construction Plans for review after preliminary approval is achieved.

### **Minimum Requirement #4: Preservation of Natural Drainage System**

The natural drainage basins and discharge routes are preserved and in agreement with the 1997 Study and 2007 Update.

### **Minimum Requirement #5: On-site Stormwater Management**

The following On-site Stormwater Management BMP's are proposed; BMP T5.13: Soil Quality per Section 3.1.1.

**BMP T5.13: Soil Quality:** All areas subject to clearing and grading that have not been covered by impervious surface, incorporated into a drainage facility or engineered as structural fill or slope shall, at project completion, demonstrate the following:

1. A topsoil layer with a minimum organic matter content of ten percent dry weight in planting beds, and 5% organic matter content in turf areas, and a pH from 6.0 to 8.0 or matching the pH of the original undisturbed soil. The topsoil layer shall have a minimum depth of eight inches except where tree roots limit the depth of incorporation of amendments needed to meet the criteria. Subsoils below the topsoil layer should be scarified at least 4 inches with some incorporation of the upper material to avoid stratified layers, where feasible.
2. Planting beds must be mulched with 2 inches of organic material
3. Quality of compost and other materials used to meet the organic content requirements:
  - a. The organic content for “pre-approved” amendment rates can be met only using compost that meets the definition of “composted materials” in WAC 173-350-220. This code is available online at: <http://www.ecy.wa.gov/programs/swfa/facilities/350.html>. The compost must also have an organic matter content of 35% to 65%, and a carbon to nitrogen ratio below 25:1. The carbon to nitrogen ratio may be as high as 35:1 for plantings composed entirely of plants native to the Puget Sound Lowlands region.
  - b. Calculated amendment rates may be met through use of composted materials as defined above; or other organic materials amended to meet the carbon to nitrogen ratio requirements, and meeting the contaminant standards of Grade A Compost. The resulting soil should be conducive to the type of vegetation to be established.

Implementation Options: The soil quality design guidelines listed above can be met by using one of the methods listed below

1. Leave undisturbed native vegetation and soil, and protect from compaction during construction
2. Amend existing site topsoil or subsoil either at default “preapproved” rates, or at custom calculated rates based on specific tests of the soil and amendment.
3. Stockpile existing topsoil during grading, and replace it prior to planting. Stockpiled topsoil must also be amended if needed to meet the organic matter or depth requirements, either at a default “pre-approved” rate or at a custom calculated rate.
4. Import topsoil mix of sufficient organic content and depth to meet the requirements.

More than one method may be used on different portions of the same site. Soil that already meets the depth and organic matter quality standards, and is not compacted, does not need to be amended.

**Roof Downspout Controls:** Downspouts shall be managed via DOE section 3.1. Per the NRSC soil profiles and geotechnical review of onsite soils, infiltration is not expected at the home sites. With rare exception, vegetated flow paths of adequate length on this project are not available to support splash block release per DOE 3.1.2. Roof downspouts shall be tightlined to the storm drainage system.

#### **Minimum Requirement #6: Runoff Treatment**

The proposed impervious area subject to vehicular traffic is greater than 5,000 sf., runoff treatment is required.

This is a residential neighborhood and is absent of elements that trigger oil control BMP's for a "High use site" per DOE, Oil Control is not specifically required. Enhanced treatment is not required as the proposal is a single-family residential development. Therefore, Basic Treatment is required.

The proposed method for providing this treatment is a Bioretention Cell. The Bioretention Cell uses a layer of amended soil to treat runoff prior to detention and discharge. In this case, runoff from all PGS areas, and areas with flowpaths crossing PGS surfaces are directed through this bioretention cell. As infiltration is not feasible on this site, the bioretention facility shall be constructed with underdrains and connected to a detention facility.

Flow from NPGS surfaces that have not mingled with PGS flow may be conveyed separately from PGS flow and may discharge directly into the detention facility.

This system provides Runoff Treatment for the entire project site and is further described in Minimum Requirement #7.

The bioretention cell shall contain soils amended specifically per the 2005 DOE Volume III chapter 3 to adequately treat residential runoff, including phosphorus.

These systems are sized as follows:

**Bioretention Cell:** Based on the 2005 DOE Appendix III-C.

**Soils:** The soil of the bioretention facility is a principle design element for determining infiltration capacity, sizing and rain garden type. The planting soil mix placed in the cell is a highly permeable soil mixed thoroughly with compost amendment, and a surface mulch layer. Soil depth should be a minimum of 18 inches to provide acceptable minimum pollutant attenuation and good growing conditions for selected plants. The texture for the soil component of the bioretention soil mix should be a loamy sand (USDA Soil Textural Classification). Clay content for the final soil mix should be less than 5 percent. The final soil mixture should have a minimum organic content of approximately 10 percent by dry weight. The pH for the soil mix should be between 5.5 and 7.0.

**Mulch layer:** Bioretention areas can be designed with or without a mulch layer.

**Compost:** Material must be in compliance with WAC chapter 173-350-220. This code is available online at

<http://www.ecy.wa.gov/programs/swfa/facilities/350.html>.

The pH should be between 5.5 and 7.0 with carbon nitrogen ratio between 20:1 and 35:1 (35:1 CN ratio recommended for native plants). Organic matter content should be between 35% and 65%.

**Installation:** Minimize compaction of the base and sidewalls of the bioretention area. Excavation should not be allowed during wet or saturated conditions. Excavation should be performed by machinery operating adjacent to the bioretention facility and no heavy equipment with narrow tracks, narrow tires or large lugged, high pressure tires should be allowed on the bottom of the bioretention facility. On-site soil mixing or placement should not be performed if soil is saturated. The bioretention soil mixture should be placed and graded by excavators and/or backhoes operating adjacent to the bioretention facility.

**Plant materials:** Plants should be tolerant of ponding fluctuations and saturated soil conditions for the length of time anticipated by the facility design, and drought during the summer months. In general, the predominant plant material utilized in bioretention areas are facultative species adapted to stresses associated with wet and dry conditions.

**Maximum ponding depth:** A maximum ponding depth of 12 inches with a maximum surface pool drawdown time of 24 hours is recommended. Ponding depth and system drawdown should be specified so that soils dry out periodically in order to:

- Restore hydraulic capacity to receive flows from subsequent storms.

- Maintain infiltration rates.
- Maintain adequate soil oxygen levels for healthy soil biota and vegetation.
- Provide proper soil conditions for biodegradation and retention of pollutants.

**Infiltration Rate:** The amended soil is to have a long term infiltration rate of 2 in/hr. This may be lower than the long term infiltration rate of the subsurface soils provided by NRSC and geotechnical review, and an underdrain is proposed at this time. With an underdrain, the amended soil is the controlling element in the sizing calculations. As such, 2in/hr was used to calculate that 99.8% of the stormwater will pass through the bioretention facility, per WWHM3.

Infiltration, to whatever capacity is available, may occur beneath the bioretention facility. Overflow and the underdrain shall be connected to the existing storm drain conveyance system in Swantown Road and exit to the Sound at West beach via a series of pipes and open ditches.

Use the following method of determining the infiltration rate for the imported soil in a bioretention facility:

- Use ASTM D 2434 Standard Test Method for Permeability of granular Soils (Constant Head) with a compaction rate of 80% using ASTM D1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
- Use 4 as the infiltration reduction correction factor.

WWHM3 was used to size the bioretention cell to infiltrate 99.8% of the tributary runoff through the amended soils and thus into the subsurface soils. Per the modeling software, the required bottom area is 3,220 sf.

See Appendix A for WWHM3 modeling output and sizing calculations.

**Roof Downspout Management:** Poor soil quality shallow depth to perched flow disqualify infiltration methods for downspout management. With rare exception, vegetated flow paths of adequate length on this project are not available to support splash block release per DOE 3.1.2. Roof downspouts shall be tightlined to the storm drainage system.

**Minimum Requirement #7: Flow Control**

Per the 197 Study and the 2007 Update, traditional Flow control is not required; however flow control may be necessary for proper flow management. This project proposes to manage flow control with the use of a bioretention cell and a detention pond on-site.

The detention facility has a control structure that regulates the discharge to meet existing, pre-development flow rates. The control structure does not detain per traditional MR-7 requirements but is compliant with the 97 Study.

Stormwater release shall discharge into an 18" pipe conveyance system near the intersection of Swantown and Fairway.

Additionally, Marin Woods is using reduced width roadways in the form of City Standard sections "Local Residential, Narrow" and the proposed Tier one variation of the "Local Residential Narrow" has been approved for this purpose. The reduced pavement widths are all aimed at reducing stormwater flow.

**Minimum Requirement #8: Wetlands Protection**

There are no wetlands on or near the site.

**Minimum Requirement #9: Basin Planning**

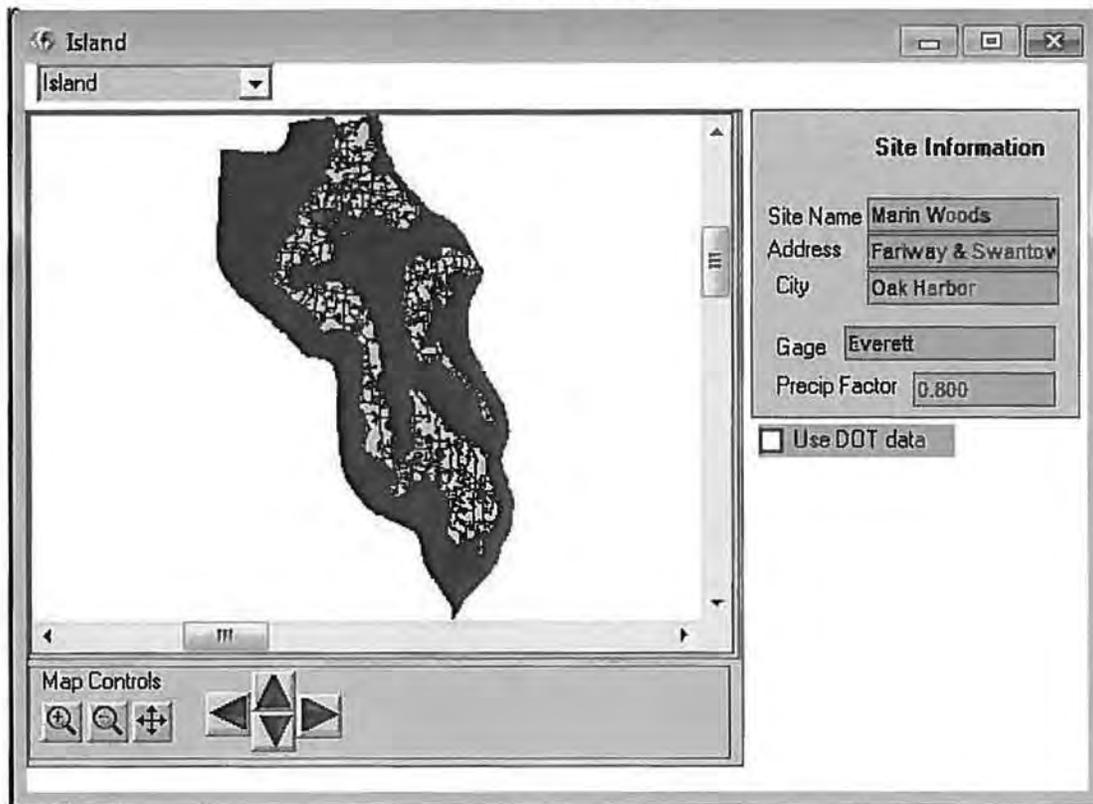
The basin containing this development is in compliance with the 1997 Drainage Basin Study.

**Minimum Requirement #10: Operation and Maintenance**

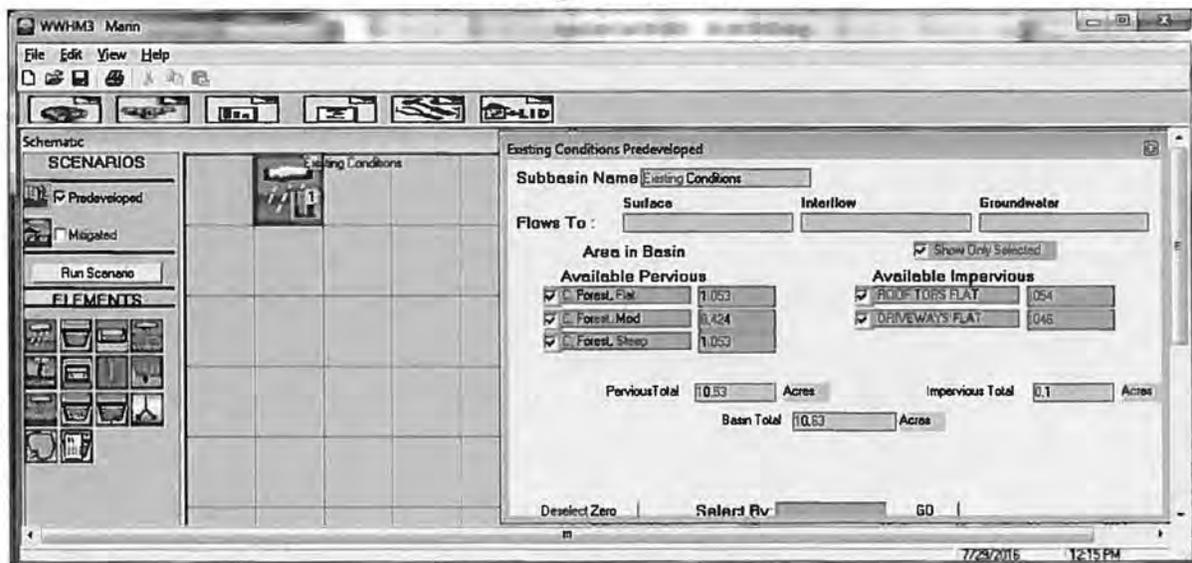
An Operations and Maintenance Manual shall be provided under separate cover..

**APPENDIX A**  
**WWHM3 SCREEN SHOTS**

### SITE LOCATION



### PRE DEVELOPED BASIN, Existing Conditions



### DEVELOPED BASINS

**Developed - PGS Mitigated**

Subbasin Name:   Designate as Bylaws for PDC

Flows To: Surface:  Interflow:  Groundwater:

Area in Basin

Available Pervious

Available Impervious

- ROADS MOD 1,895
- DRIVEWAYS FLAT 653

Pervious Total:  Acres      Impervious Total:  Acres

Basin Total:  Acres

7/29/2016 12:19 PM

**Developed NPGS Mitigated**

Subbasin Name:   Designate as Bylaws for PDC

Flows To: Surface:  Interflow:  Groundwater:

Area in Basin

Available Pervious

- Forest, Mod 707
- Pasture, Flat 2,071
- Pasture, Mod 3.5

Available Impervious

- ROOF TOPS FLAT 1,607
- POND 163

Pervious Total:  Acres      Impervious Total:  Acres

Basin Total:  Acres

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## BIORETENTION CELL/WATER QUALITY (Infiltration through bioretention soil only)

**WWHM3 Mann**

File Edit View Help

**Schematic**

**SCENARIOS**

- Predeveloped
- Mitigated

Run Scenario

**ELEMENTS**

Bioretention Cell 1

**Bioretention Cell 1 Mitigated**

Facility Name: Bioretention Cell 1

Downstream Connections:

Outlet 1	Outlet 2	Outlet 3
Edge under Biocell 1	Edge under Biocell 1	0

Facility Type: Sand Filter

Precipitation Applied to Facility

Evaporation Applied to Facility

Facility Bottom Elevation (ft): 0

**Facility Dimensions**

Bottom Length	210
Bottom Width	11
Effective Depth	3.6
Left Side Slope	0.1
Bottom Side Slope	0.1
Right Side Slope	0.1
Top Side Slope	0.1

**Infiltration**  YES

Hydraulic Conductivity (in/hr): 2

Filter material depth (ft): 1.5

Total Volume Filtered (acre-ft): 239.361

Total Volume Through Riser (acre-ft): 0.303

Total Volume (acre-ft): 239.664

Percent Filtered: 99.87

**Outlet Structure**

Riser Height (ft)	Riser Diameter (in)	Riser Type	Notch Type
2.25	12	Flat	

Orifice Number	Diameter (In)	Height (Ft)	QMax (cfs)
1	0	0	0
2	0	0	0
3	0	0	0

Filter Storage Volume at Riser Head: .194

Pond Increment: 0.10

Show Pond Table: Open Table

7/29/2016 12:23 PM

### BIORETENTION CELL/STORAGE

**WWHM3 Mann**

File Edit View Help

**Schematic**

**SCENARIOS**

Predeveloped

Mitigated

Run Scenario

**ELEMENTS**

Storage under Biocell 1

**Storage under Biocell 1 Mitigated**

Facility Name: Storage under Biocell 1

Downstream Connection: Pond

Facility Type: Gravel Trench/Bed

Precipitation Applied to Facility

Evaporation Applied to Facility

Facility Bottom Elevation (ft): 0

**Facility Dimensions**

Trench Length: 210

Trench Bottom Width: 11

Effective Total Depth: 3.5

Bottom slope of Trench: 0.1

Left Side Slope: 0

Right Side Slope: 0.1

**Material Layers for**

Layer 1 Thickness (ft): 1.5

Layer 1 porosity: 0.3

Layer 2 Thickness (ft): 0

Layer 2 porosity: 0

Layer 3 Thickness (ft): 0

Layer 3 porosity: 0

Infiltration: NO

**Outlet Structure**

Outlet 1: Pond

Outlet 2: 0

Outlet 3: 0

Riser Height (ft): 2.25

Riser Diameter (in): 12

Riser Type: Flat

Notch Type:

Orifice Number	Diameter (In)	Height (Ft)	QMax (cfs)
1	8	0	3.14466
2	0	0	0
3	0	0	0

Trench Volume at Riser Head (acre-ft): .066

Pond Increment: 0.10

Show Pond Table: Open Table

7/29/2016 12:23 PM

# POND

**WWHM3 Marin**

File Edit View Help

**Schematic**

**SCENARIOS**

- Predeveloped
- Mitigated

Run Scenario

**ELEMENTS**

Move Elements

**Pond Mitigated**

Facility Name: Pond

Downstream Connections: Outlet 1: 0, Outlet 2: 0, Outlet 3: 0

Facility Type: Trapezoidal Pond

Precipitation Applied to Facility (Auto Pond / Quick Pond)

Evaporation Applied to Facility

Facility Bottom Elevation (ft): 0

**Facility Dimensions**

Bottom Length (ft): 100

Bottom Width (ft): 71

Effective Depth (ft): 6

Left Side Slope (H/V): 3

Bottom Side Slope (H/V): 3

Right Side Slope (H/V): 0.1

Top Side Slope (H/V): 0.1

**Facility Dimension Diagram**

Infiltration: NO

**Outlet Structure**

Riser Height (ft): 5.5

Riser Diameter (in): 12

Riser Type: Notched

Notch Type: Rectangular

Notch Height (ft): 1.10

Notch Width (ft): 0.27

Orifice Number	Diameter (in)	Height (ft)	QMax (cfs)
1	1.62	0	0.16884
2	0	0	0
3	0	0	0

Pond Volume at Riser Head (acre-ft): 1.101

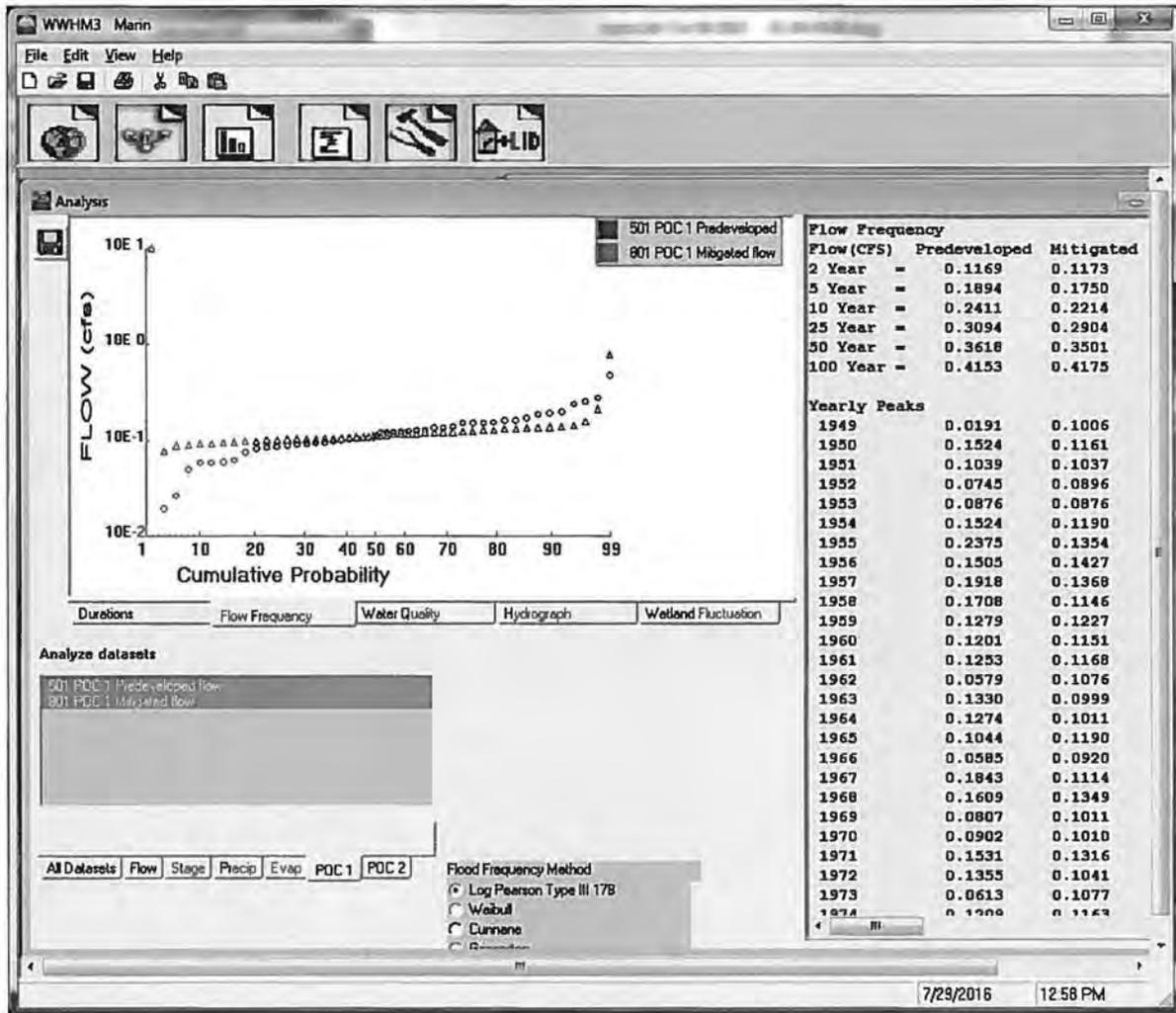
Pond Increment: 0.10

Show Pond Table: Close Table

Use Tide Gate? NO

7/29/2016 12:58 PM

### FLOW FREQUENCY

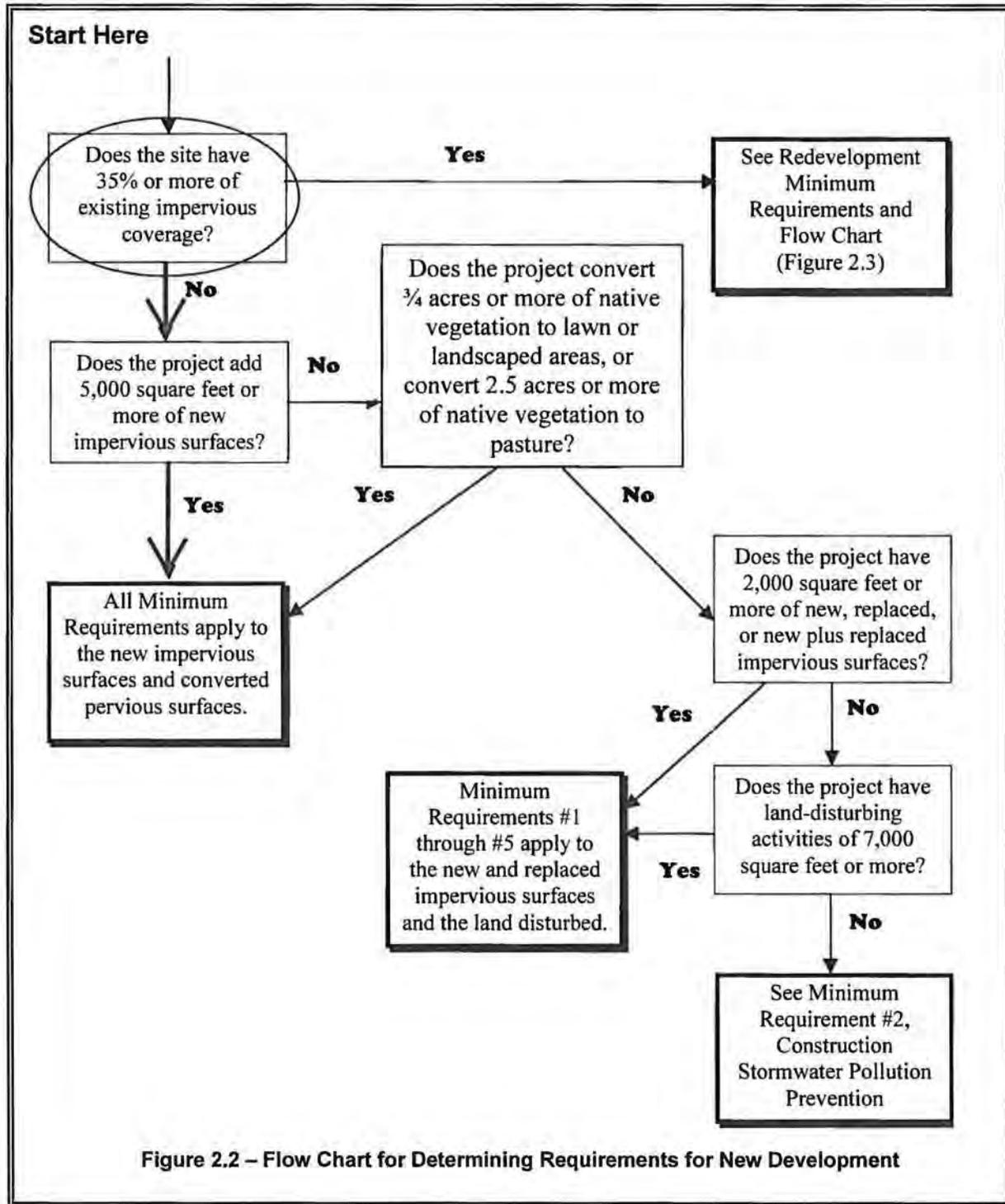


**APPENDIX B**

**2005 DOE FIGURE 2.2 FLOW CHART FOR DETERMINING  
REQUIREMENTS FOR NEW DEVELOPMENT**

**NRSC SOILS MAP & DESCRIPTION**

**GeoTest Geotechnical Evaluation**





A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Island County, Washington

## Marin Woods and Adjacent Area



## Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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## Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

### Custom Soil Resource Report Soil Map



Custom Soil Resource Report

<b>MAP LEGEND</b>	<b>MAP INFORMATION</b>
<p><b>Area of Interest (AOI)</b></p> <p> Area of Interest (AOI)</p> <p><b>Soils</b></p> <p> Soil Map Unit Polygons</p> <p> Soil Map Unit Lines</p> <p> Soil Map Unit Points</p> <p><b>Special Point Features</b></p> <p> Blowout</p> <p> Borrow Pit</p> <p> Clay Spot</p> <p> Closed Depression</p> <p> Gravel Pit</p> <p> Gravelly Spot</p> <p> Landfill</p> <p> Lava Flow</p> <p> Marsh or swamp</p> <p> Mine or Quarry</p> <p> Miscellaneous Water</p> <p> Perennial Water</p> <p> Rock Outcrop</p> <p> Saline Spot</p> <p> Sandy Spot</p> <p> Severely Eroded Spot</p> <p> Sinkhole</p> <p> Slide or Slip</p> <p> Sodic Spot</p>	<p> Spoil Area</p> <p> Stony Spot</p> <p> Very Stony Spot</p> <p> Wet Spot</p> <p> Other</p> <p> Special Line Features</p> <p><b>Water Features</b></p> <p> Streams and Canals</p> <p><b>Transportation</b></p> <p> Rails</p> <p> Interstate Highways</p> <p> US Routes</p> <p> Major Roads</p> <p> Local Roads</p> <p><b>Background</b></p> <p> Aerial Photography</p>
	<p>The soil surveys that comprise your AOI were mapped at 1:12,000.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Warning: Soil Map may not be valid at this scale.</p> <p>Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.</p> </div> <p>Please rely on the bar scale on each map sheet for map measurements.</p> <p>Source of Map: Natural Resources Conservation Service                  Web Soil Survey URL: <a href="http://websoilsurvey.nrcs.usda.gov">http://websoilsurvey.nrcs.usda.gov</a>                  Coordinate System: Web Mercator (EPSG:3857)</p> <p>Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</p> <p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p> <p>Soil Survey Area: Island County, Washington                  Survey Area Data: Version 11, Dec 7, 2013</p> <p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p> <p>Date(s) aerial images were photographed: Jul 9, 2010—Aug 28, 2011</p> <p>The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</p>

## Custom Soil Resource Report

## Map Unit Legend

Island County, Washington (WA029)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2010	Whidbey-Hoypus complex, 2 to 15 percent slope	0.7	4.4%
3017	Everett-Alderwood complex, 3 to 15 percent slopes	10.4	65.3%
3019	Everett-Alderwood complex, 15 to 40 percent slopes	4.8	30.3%
<b>Totals for Area of Interest</b>		<b>15.9</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

## Custom Soil Resource Report

on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Custom Soil Resource Report

**Island County, Washington****2010—Whidbey-Hoypus complex, 2 to 15 percent slope****Map Unit Setting**

*National map unit symbol:* 2dvrw  
*Elevation:* 0 to 300 feet  
*Mean annual precipitation:* 20 to 35 inches  
*Mean annual air temperature:* 48 to 50 degrees F  
*Frost-free period:* 200 to 240 days  
*Farmland classification:* Prime farmland if irrigated

**Map Unit Composition**

*Whidbey and similar soils:* 60 percent  
*Hoypus and similar soils:* 40 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Whidbey****Setting**

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Glacial drift over dense glacial drift

**Typical profile**

*Oi - 0 to 2 inches:* slightly decomposed plant material  
*A - 2 to 6 inches:* gravelly loam  
*Bw - 6 to 20 inches:* very gravelly sandy loam  
*Bg - 20 to 37 inches:* very gravelly sandy loam  
*2Cd - 37 to 60 inches:* gravelly sandy loam

**Properties and qualities**

*Slope:* 2 to 10 percent  
*Depth to restrictive feature:* 20 to 40 inches to densic material  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 12 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 3.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 4e  
*Land capability classification (nonirrigated):* 4s  
*Hydrologic Soil Group:* B/D  
*Ecological site:* Pseudotsuga menziesii-arbutus menziesii/holodiscus discolor/  
 goodyera oblongifolia (F002XN901WA)

**Description of Hoypus****Setting**

*Landform:* Hillslopes

## Custom Soil Resource Report

*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Glacial outwash

### Typical profile

*O<sub>i</sub> - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 5 inches:* sandy loam  
*Bw<sub>1</sub> - 5 to 20 inches:* loamy sand  
*Bw<sub>2</sub> - 20 to 36 inches:* very gravelly loamy sand  
*C - 36 to 60 inches:* extremely gravelly sand

### Properties and qualities

*Slope:* 5 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):* High (1.98 to 5.95 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 3.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* 4e  
*Land capability classification (nonirrigated):* 4s  
*Hydrologic Soil Group:* A  
*Ecological site:* Pseudotsuga menziesii-arbutus menziesii/holodiscus discolor/  
 goodyera oblongifolia (F002XN901WA)

## 3017—Everett-Alderwood complex, 3 to 15 percent slopes

### Map Unit Setting

*National map unit symbol:* 2dzc6  
*Elevation:* 0 to 590 feet  
*Mean annual precipitation:* 25 to 40 inches  
*Mean annual air temperature:* 48 to 50 degrees F  
*Frost-free period:* 200 to 240 days  
*Farmland classification:* Prime farmland if irrigated

### Map Unit Composition

*Everett and similar soils:* 70 percent  
*Alderwood and similar soils:* 30 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Everett

#### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope

## Custom Soil Resource Report

*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Glacial outwash

### Typical profile

*Oi - 0 to 2 inches:* slightly decomposed plant material  
*A - 2 to 9 inches:* sandy loam  
*Bw1 - 9 to 13 inches:* gravelly sandy loam  
*Bw2 - 13 to 30 inches:* very gravelly coarse sand  
*C - 30 to 60 inches:* extremely gravelly coarse sand

### Properties and qualities

*Slope:* 3 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 3.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* 4e  
*Land capability classification (nonirrigated):* 4s  
*Hydrologic Soil Group:* A  
*Ecological site:* Tsuga heterophylla-thuja plicata/vaccinium parvifolium-gaultheria shallon/polystichum munitum (F002XN906WA)

## Description of Alderwood

### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Glacial drift over dense glaciomarine deposits

### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 10 inches:* extremely gravelly sandy loam  
*Bw - 10 to 18 inches:* extremely gravelly coarse sandy loam  
*Bg - 18 to 36 inches:* extremely gravelly coarse sandy loam  
*2Cd - 36 to 60 inches:* gravelly silty clay loam

### Properties and qualities

*Slope:* 3 to 15 percent  
*Depth to restrictive feature:* 20 to 40 inches to densic material  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 12 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Very low (about 1.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* 4s

## Custom Soil Resource Report

*Land capability classification (nonirrigated): 4s*

*Hydrologic Soil Group: B/D*

*Ecological site: Tsuga heterophylla-thuja plicata/vaccinium parvifolium-gaultheria shallon/polystichum munitum (F002XN906WA)*

**3019—Everett-Alderwood complex, 15 to 40 percent slopes****Map Unit Setting**

*National map unit symbol: 2dzc8*

*Elevation: 0 to 590 feet*

*Mean annual precipitation: 25 to 40 inches*

*Mean annual air temperature: 48 to 50 degrees F*

*Frost-free period: 200 to 240 days*

*Farmland classification: Not prime farmland*

**Map Unit Composition**

*Alderwood and similar soils: 45 percent*

*Everett and similar soils: 45 percent*

*Minor components: 10 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Everett****Setting**

*Landform: Hillslopes*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Glacial outwash*

**Typical profile**

*O<sub>i</sub> - 0 to 2 inches: slightly decomposed plant material*

*A - 2 to 9 inches: sandy loam*

*Bw<sub>1</sub> - 9 to 13 inches: gravelly sandy loam*

*Bw<sub>2</sub> - 13 to 30 inches: very gravelly coarse sand*

*C - 30 to 60 inches: extremely gravelly coarse sand*

**Properties and qualities**

*Slope: 15 to 40 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Somewhat excessively drained*

*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>): High (1.98 to 5.95 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Available water storage in profile: Low (about 3.4 inches)*

**Interpretive groups**

*Land capability classification (irrigated): 7e*

*Land capability classification (nonirrigated): 6e*

## Custom Soil Resource Report

*Hydrologic Soil Group:* A

*Ecological site:* Tsuga heterophylla-thuja plicata/vaccinium parvifolium-gaultheria shallon/polystichum munitum (F002XN906WA)

### Description of Alderwood

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Glacial drift over dense glaciomarine deposits

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 10 inches:* extremely gravelly sandy loam

*Bw - 10 to 18 inches:* extremely gravelly coarse sandy loam

*Bg - 18 to 36 inches:* extremely gravelly coarse sandy loam

*2Cd - 36 to 60 inches:* gravelly silty clay loam

#### Properties and qualities

*Slope:* 15 to 40 percent

*Depth to restrictive feature:* 20 to 40 inches to densic material

*Natural drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)

*Depth to water table:* About 12 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Very low (about 1.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 7e

*Land capability classification (nonirrigated):* 6e

*Hydrologic Soil Group:* B/D

*Ecological site:* Tsuga heterophylla-thuja plicata/vaccinium parvifolium-gaultheria shallon/polystichum munitum (F002XN906WA)

### Minor Components

#### Morancreek, cool

*Percent of map unit:* 10 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* Tsuga heterophylla-thuja plicata/vaccinium parvifolium-gaultheria shallon/polystichum munitum (F002XN906WA)

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United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

## Custom Soil Resource Report

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**GEOTEST**

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 360.733\_7318  
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March 09, 2016  
 Job No. 16-0108

**George F. Marin Trust**  
 c/o Christine R. Marin, Executor  
 245 N. Vine Street, Apt 301  
 Salt Lake City, Utah, 84103

Attn: Mr. F.R. Rick Duran  
 Development Manager

**Re: Preliminary Infiltration Feasibility Evaluation  
 Marin Woods  
 11292 SW Swantown Road  
 Oak Harbor, Washington**

Dear Mr. Duran,

As requested, GeoTest Services, Inc. is pleased to submit this report summarizing the results of our preliminary infiltration feasibility evaluation for the proposed residential subdivision to be constructed at 11292 SW Swantown Road in Oak Harbor, Washington, as shown on the Vicinity Map, Figure 1.

The purpose of this evaluation was to obtain information at the project site to be used in the design phase of the proposed residential subdivision project. This report summarizes our conclusions and recommendations regarding the feasibility of stormwater infiltration. Specifically, our services included the following:

1. Evaluation of 4 test pits within the vicinity of the planned development. Test pits were advanced to depth of 5 to 14 feet below the ground surface.
2. The execution of a single Pilot Infiltration Test (PIT) in accordance with the Washington State Department of Ecology 2012 Stormwater Management Manual for Western Washington (SWMMWW)
3. Review of the information collected during this phase of the investigation with the purpose to perform geotechnical engineering analyses to develop recommendations for the project. Our findings and recommendations are summarized in this site-specific report and contain the following information:
  - A site plan showing pertinent existing site features and the approximate location of the explorations accomplished for this project.
  - Logs of our explorations and results of our laboratory testing including a chart illustrating the soil classification criteria and the terminology and symbols used on the exploration logs.
  - A summary of long-term infiltration rates based off of PIT testing results.
  - A summary of surface and subsurface soil and groundwater conditions observed at the site during our field exploration. The summary includes descriptions of subsurface profiles and the potential seasonal effects of groundwater.

GeoTest Services, Inc.  
Marin Woods, Oak Harbor, Washington

March 09, 2016  
Job No. 16-0108

## PROJECT DESCRIPTION

The proposed Marin Woods development consists of a new 43 lot subdivision with associated roads, sidewalks, and underground utilities at the above referenced project site. GTS anticipates that this subdivision will consist of 1 and 2 story structures that utilize shallow conventional foundations and wood-frame construction. Structural loads are anticipated to be light to moderate.

The proposed subdivision will most likely route stormwater discharge to the south of the site, and will convey runoff according to existing site topography. A stormwater facility is most likely to be constructed in close proximity to Swantown Road, at the southern end of the property.

## SITE CONDITIONS

This section discusses the general surface and subsurface conditions observed at the project site at the time of our field investigation. Interpretations of the site conditions are based on the results of our review of available information, site reconnaissance, subsurface explorations, PIT testing results, laboratory testing, and our experience in the project vicinity.

### General Geologic Conditions

Geologic information for the project site was obtained from the interactive *Geologic Map of Washington State*, published by the Washington State Department of Natural Resources (DNR). According to the DNR map, subsurface soils within the subject property consist of primarily Pleistocene aged continental glacial drift. These deposits usually consist of till, drift, and outwash with grain sizes ranging from silts, clays, and sands, to gravel, cobbles, and boulders.

### Surface Conditions

At the time of our visit, the subject property was located to the north of Swantown Road, to the east of Highway 20, and the city of Oak Harbor, Washington. The majority of the property was forested. To the south edge of the site, where all of the subsurface and infiltration investigations were conducted, was a landscaped grassy area, which contained a single family home. Topographic grades across the site were generally and gently sloping toward SW Swantown Road from north to south.

### Subsurface Soil Conditions

Subsurface conditions were explored by excavating and sampling four tests pits (TP-1 through TP-4) on February 29, 2016. Test pits were advanced to depths between approximately 5 to 14 feet below ground surface (BGS). Approximate locations of the explorations have been plotted on the Site and Exploration Plan, Figure 2. A discussion of field exploration and laboratory test procedures, together with detailed logs of the test pits, are presented at the end of this report.

Subsurface soils encountered within the area of proposed development generally consisted of approximately 8 inches of topsoil above approximately 3 to 5 feet of medium dense, tan grey, silty, sand (Glacial Outwash/Beach Reworked Drift) over stiff to very stiff, grey, sandy, silt/clay (Glaciomarine Drift). At depth, the subsurface soils appeared to alternate between sandy and silty/clayey soils. Please refer to the Test Pit Logs, Figures 4 and 5, for more detail of subsurface soil conditions.

## Groundwater

At the time of our subsurface investigations on February 29, 2016, groundwater seepage was observed within all of the test pit explorations at various depths from 2 feet BGS and below. All soils were observed to vary from wet to saturated at the time of our explorations. The observed groundwater is representative of a perched condition and not a regional aquifer. Perched groundwater conditions develop when loose or more granular soils exist over dense or silty soils, with infiltrated surface water being retained at or near the soil contact area.

Groundwater levels and or seepage rates are not static and it is anticipated that groundwater conditions will vary depending on local subsurface conditions, season, precipitation, changes in land use both on and off site, and other factors. In general, groundwater levels are higher during the wetter winter and spring months. As our subsurface investigations were conducted during the winter months we anticipate that groundwater elevations are near their higher elevations at the subject property.

## CONCLUSIONS AND RECOMMENDATIONS

Based upon an evaluation of the data collected during this investigation, elevated groundwater seepage and highly silty/clayey subsurface soils are anticipated to present significant design challenges for conventional stormwater infiltration systems. We recommend traditional detention/retention systems, or alternative means of stormwater management utilizing LID (low impact development) systems, be considered at the project site.

### In-Situ Infiltration Testing

We conducted Pilot Infiltration Testing at location TP-4 to determine an in-situ long term design infiltration rate for use at the project site. Due to elevated groundwater seepage conditions encountered in our explorations, a significantly reduced separation of 0.5 feet between the base of the PIT excavation and groundwater was maintained. Please refer to Figure 2, Site and Exploration Plan, for the location of the Pilot Infiltration Testing at the project site

Pilot infiltration testing (PIT) was conducted using a method in general accordance with the procedure described for in the 2012 Stormwater Management Manual for Western Washington. Infiltration testing was conducted by discharging water into a flat-bottomed pit of known dimensions. The intent of the PIT test was to allow sufficient flow into the excavated area to allow the soils in the immediate vicinity of the excavation to become saturated. During introduction of water into the excavation, a water meter was used to monitor and adjust flow rates. Water was brought onto the site using 2½ inch fire hose attached to water truck provided by the Client. Testing took approximately three hours, including a one hour pre-soak and flow stabilization period.

During the test, water was discharged into the pit through a diffuser to reduce turbulence and scouring in the bottom of the pit. Water discharge rates were calculated by recording the volume of water passing through a water meter over a recorded time. The rate of water discharge was adjusted such that approximately 6 inches of water was maintained in the pit, thus maintaining a "constant head" in the pit during testing. Following the completion of the "constant head" portion of the test, the water flow was halted and 45 minutes of "falling head" infiltration data was collected.

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Marin Woods, Oak Harbor, Washington

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The pilot infiltration test at TP-4 was conducted at a depth of 1.5 feet below the existing ground surface with an 8.5 foot by 9.5 foot wide test area (bottom surface of pit). Undisturbed native Glacial Outwash/Beach Reworked Drift was exposed at the base of the PIT excavation.

### Design Infiltration Rates

Based on our observed short-term infiltration rate of 0.9 inches per hour, in conjunction with reduction factors in accordance with the 2012 Stormwater Management Manual for Western Washington, we recommend that a **long-term design infiltration rate of 0.13 inches per hour be incorporated into the design of infiltration systems founded in the Glacial Outwash/Beach Reworked Drift.** This rate does not specifically address Department of Ecology required amounts of separation between the bottom of facilities and groundwater conditions or a detailed mounding analysis. Our rate is based off of approximately 0.5 feet of separation between the perched groundwater condition and the bottom of the excavated pit used for our test. This is representative of a shallow infiltration facility with a bottom at 1.5 to 2 feet below existing site grades and an elevated, perched, groundwater condition. As such, additional reductions to the infiltration rate may be required to address mounding, but it should first be verified that conventional infiltration is feasible based on the reduced vertical separation from the bottom of shallow facilities to low permeability restrictive layers that would otherwise impede infiltration.

Due to the presence of low permeability Glaciomarine Drift at shallow depths across the site, groundwater and any infiltrated stormwater will tend to perch above the Glaciomarine Drift and migrate laterally. In other words, it should not be expected that water will fully infiltrate into the ground, but will more likely flow across the site to the next lowest point of relief. We recommend that the potential effects to developments lower in elevation, but in close proximity to the project site be considered in design.

Based on the elevated groundwater conditions observed and the design infiltration rates recommended above, full infiltration of site stormwater does not appear feasible. Alternative means of stormwater management utilizing LID (low impact development) systems, such as pervious pavements, raingardens, bioretention cells, swales, and/or planter boxes may be feasible at the project site but should be further evaluated as part of a more comprehensive study. We are available to assist with the design of these alternative systems upon request.

No specific stormwater plan was available at the time of this report. If infiltration systems are incorporated into the final stormwater design, we recommend we be allowed to review the stormwater design plans to insure adherence with the recommendations provided in this report. It is recommended that GTS be allowed to view the excavation of any planned infiltration facilities during construction to determine if the subsurface soils within individual facilities are consistent with conditions encountered at our test locations.

Infiltration areas should be protected from construction traffic and compaction activities. Densification of the native soils due to construction activities has the potential to significantly reduce the infiltration capacity of the native soils. We recommend the client and/or contractor consider protecting infiltration area soils from unintended densification by surrounding these areas with temporary construction fencing or similar temporary obstructions.

GeoTest Services, Inc.  
 Marin Woods, Oak Harbor, Washington

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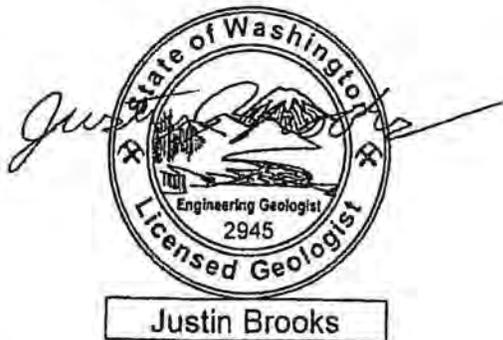
**LIMITATIONS**

The analyses, conclusions, and recommendations provided in this report are based on conditions encountered at the time of the subsurface exploration performed by GeoTest Services, Inc., information from previous studies and our experience and judgment. Our work has been performed in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in this area. GeoTest Services has prepared this report for the exclusive use of George F. Marin Trust and their design representatives for specific application to the proposed new development located within the development proposed at 11292 SW Swantown Road, Oak Harbor, Washington. No warranty, expressed or implied, is made.

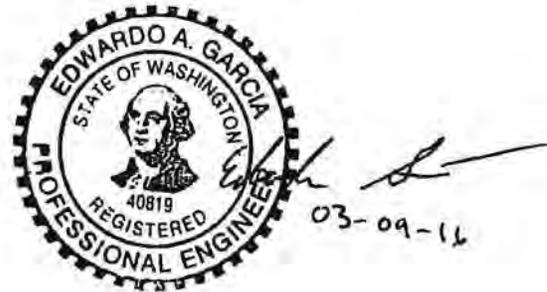
We must presume the subsurface conditions encountered are representative for the proposed site for the purposes of formulating our recommendations. However, you should be aware that subsurface conditions may vary with time and between exploratory locations, and unanticipated conditions may be encountered. If construction reveals differing conditions or the design is modified, we should be retained to reevaluate our recommendations and provide written confirmation or modification, as needed.

We appreciate the opportunity to be of service to you on this project. If any questions should arise regarding this report, please contact the undersigned.

Respectfully Submitted,  
**GeoTest Services, Inc.**



Justin Brooks, L.E.G.  
 Engineering Geologist



Edwardo Garcia, P.E.  
 Project Geotechnical Engineer

- |   |   |
|---|---|
| <p>Attachments:</p> <ul style="list-style-type: none"> <li>Figure 1</li> <li>Figure 2</li> <li>Figure 3</li> <li>Figures 4 - 5</li> <li>Figure 6</li> </ul> | <ul style="list-style-type: none"> <li>Vicinity Map</li> <li>Site and Exploration Plan</li> <li>Soil Classification System and Key</li> <li>Test Pit Logs</li> <li>Grain Size Distribution</li> </ul> |
|---|---|

References:

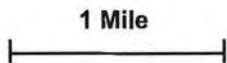
DNR, 2016, Washington Interactive Geologic Map. Washington Division of Geology and Earth Resources. Washington State Department of Natural Resources.

Washington State Department of Ecology Water Quality Program. August 2012. *Stormwater Management Manual for Western Washington*. Publication Number 14-10-055.

PROJECT LOCATION



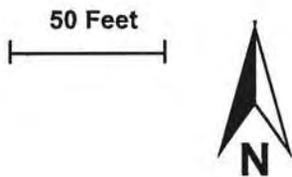
MAP REFERENCED FROM GOOGLE MAPS



<p><b>GEOTEST SERVICES, INC.</b>                  741 Marine Drive                  Bellingham, WA 98225                  phone: (360) 733-7318                  fax: (360) 733-7418</p>	Date: 03-04-2016	By: ENM	Scale: As Shown	Project <b>16-0108</b>
	<p><b>SITE VICINITY MAP</b>  <b>MARIN WOODS INFILTRATION PROJECT</b>  <b>11292 SW SWANTON STREET</b>  <b>OAK HARBOR, WASHINGTON</b></p>			Figure <b>1</b>



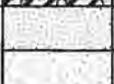
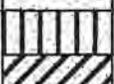
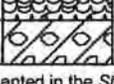
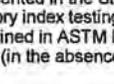
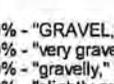
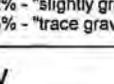
REFERENCE DRAWING FROM GOOGLE MAPS

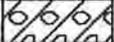


TP-# = Approximate Test Pit Location

<b>GEOTEST SERVICES, INC.</b> 741 Marine Drive Bellingham, WA 98225 phone: (360) 733-7318 fax: (360) 733-7418	Date: 03-04-2016	By: ENM	Scale: As Shown	Project <b>16-0108</b>
	<b>SITE AND EXPLORATION MAP</b> <b>MARIN WOODS INFILTRATION PROJECT</b> <b>11292 SW SWANTOWN ROAD</b> <b>OAK HARBOR, WASHINGTON</b>			Figure <b>2</b>

### Soil Classification System

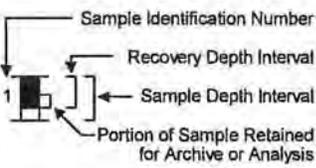
	MAJOR DIVISIONS	GRAPHIC SYMBOL	USCS LETTER SYMBOL	TYPICAL DESCRIPTIONS <sup>(1)(2)</sup>
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL  (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)	 <b>GW</b>	Well-graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)	 <b>GP</b>	Poorly graded gravel; gravel/sand mixture(s); little or no fines
	SAND AND SANDY SOIL  (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)	 <b>GM</b>	Silty gravel; gravel/sand/silt mixture(s)
		SAND WITH FINES (Appreciable amount of fines)	 <b>GC</b>	Clayey gravel; gravel/sand/clay mixture(s)
		CLEAN SAND (Little or no fines)	 <b>SW</b>	Well-graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)	 <b>SP</b>	Poorly graded sand; gravelly sand; little or no fines
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY  (Liquid limit less than 50)	 <b>SM</b>	Silty sand; sand/silt mixture(s)	
		 <b>SC</b>	Clayey sand; sand/clay mixture(s)	
		 <b>ML</b>	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity	
	SILT AND CLAY  (Liquid limit greater than 50)	 <b>CL</b>	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay	
		 <b>OL</b>	Organic silt; organic, silty clay of low plasticity	
		 <b>MH</b>	Inorganic clay of high plasticity; fat clay	
HIGHLY ORGANIC SOIL	 <b>CH</b>	Organic clay of medium to high plasticity; organic silt		
		 <b>OH</b>	Peat; humus; swamp soil with high organic content	

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		<b>AC or PC</b>	Asphalt concrete pavement or Portland cement pavement
ROCK		<b>RK</b>	Rock (See Rock Classification)
WOOD		<b>WD</b>	Wood, lumber, wood chips
DEBRIS		<b>DB</b>	Construction debris, garbage

Notes: 1. Soil descriptions are based on the general approach presented in the *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*, as outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the *Standard Test Method for Classification of Soils for Engineering Purposes*, as outlined in ASTM D 2487.

2. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

- Primary Constituent: > 50% - "GRAVEL," "SAND," "SILT," "CLAY," etc.
- Secondary Constituents: > 30% and ≤ 50% - "very gravelly," "very sandy," "very silty," etc.
- > 12% and ≤ 30% - "gravelly," "sandy," "silty," etc.
- Additional Constituents: > 5% and ≤ 12% - "slightly gravelly," "slightly sandy," "slightly silty," etc.
- ≤ 5% - "trace gravel," "trace sand," "trace silt," etc., or not noted.

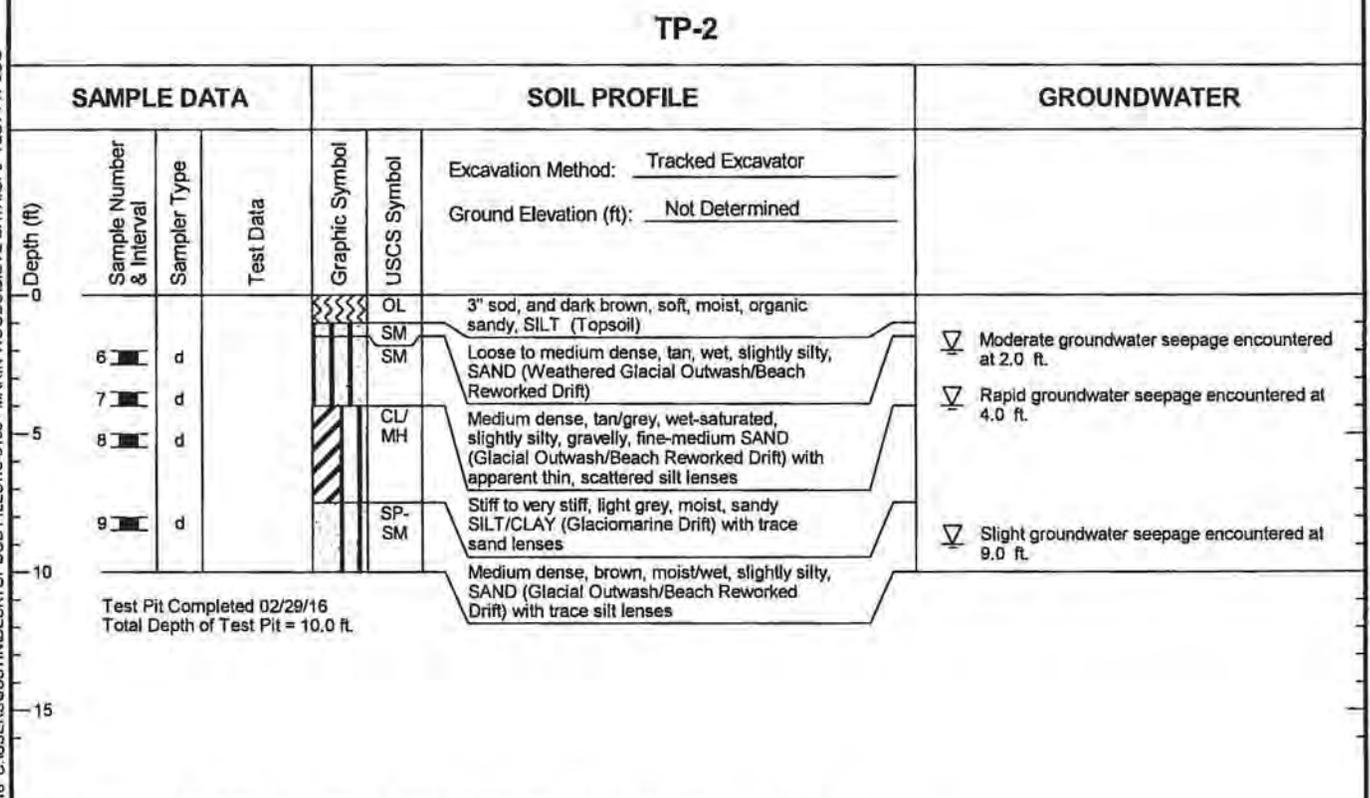
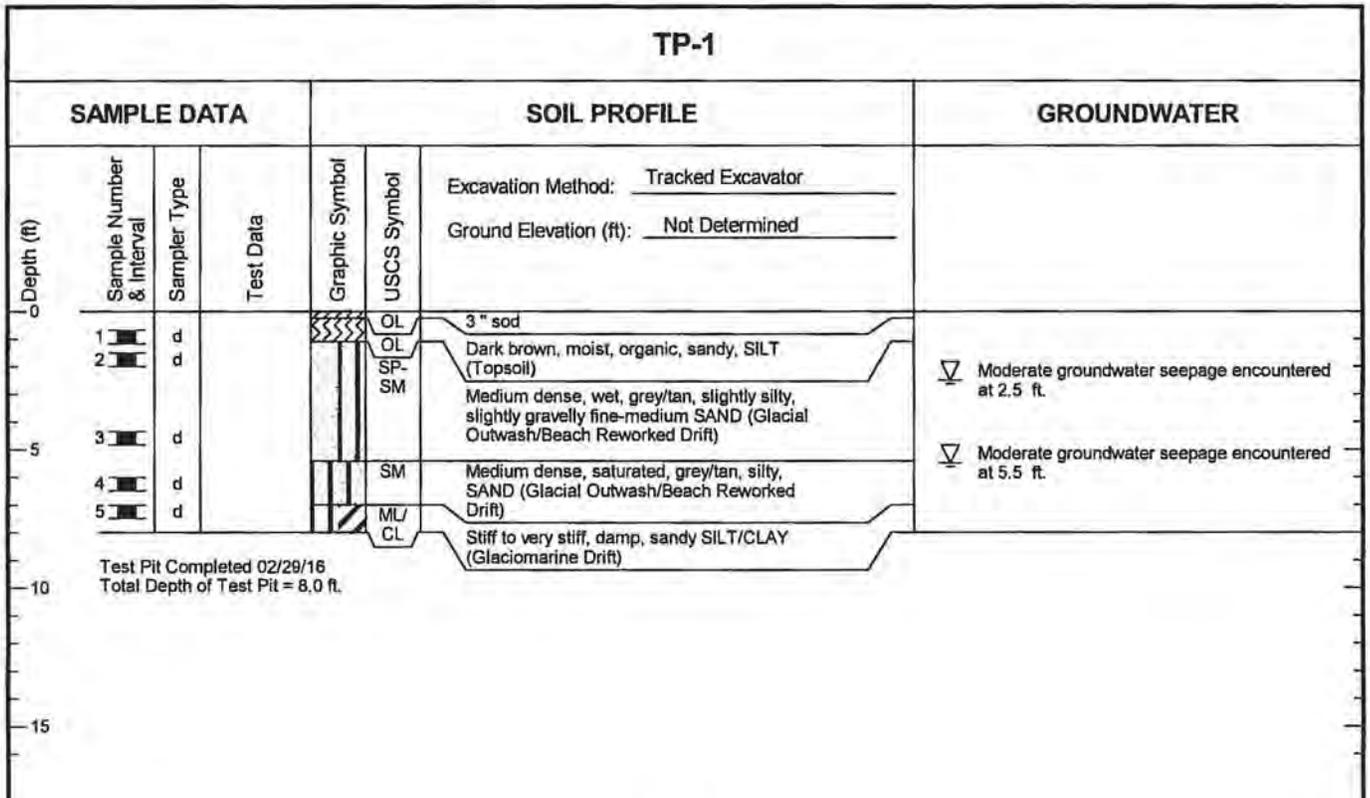
Drilling and Sampling Key		Field and Lab Test Data		
SAMPLE NUMBER & INTERVAL	SAMPLER TYPE	Code	Description	
	Code	Description		
	a	3.25-inch O.D., 2.42-inch I.D. Split Spoon	PP = 1.0	Pocket Penetrometer, tsf
	b	2.00-inch O.D., 1.50-inch I.D. Split Spoon	TV = 0.5	Torvane, tsf
	c	Shelby Tube	PID = 100	Photoionization Detector VOC screening, ppm
	d	Grab Sample	W = 10	Moisture Content, %
e	Other - See text if applicable	D = 120	Dry Density, pcf	
1	300-lb Hammer, 30-inch Drop	-200 = 60	Material smaller than No. 200 sieve, %	
2	140-lb Hammer, 30-inch Drop	GS	Grain Size - See separate figure for data	
3	Pushed	AL	Atterberg Limits - See separate figure for data	
4	Other - See text if applicable	GT	Other Geotechnical Testing	
		CA	Chemical Analysis	
<b>Groundwater</b>				
 Approximate water elevation at time of drilling (ATD) or on date noted. Groundwater levels can fluctuate due to precipitation, seasonal conditions, and other factors.				

**GEOTEST**

Marin Woods  
11292 SW Swanton Street  
Oak Harbor, Washington

Soil Classification System and Key

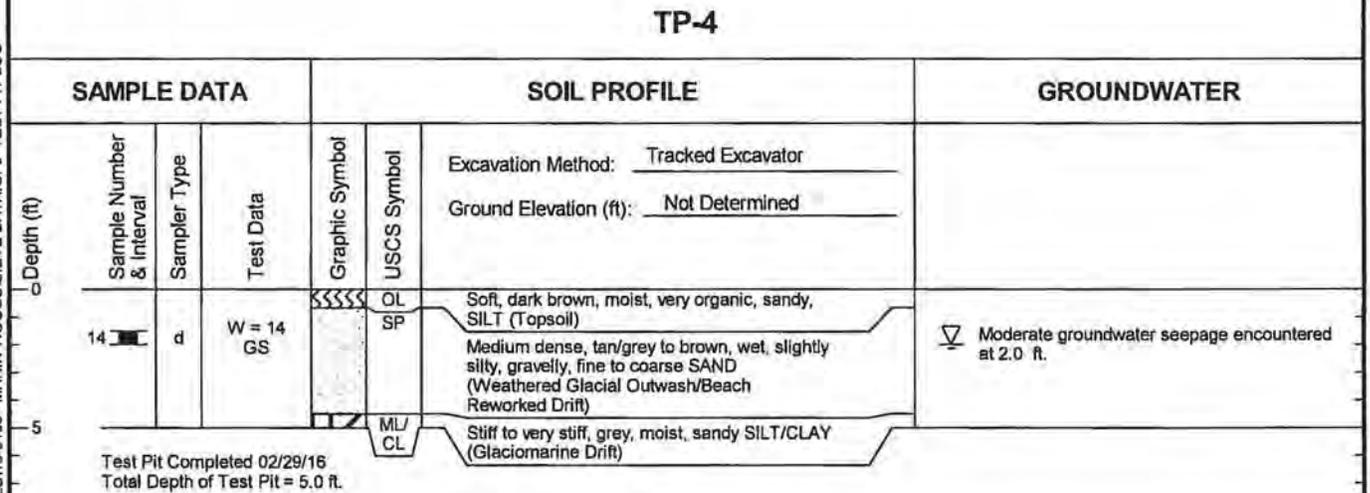
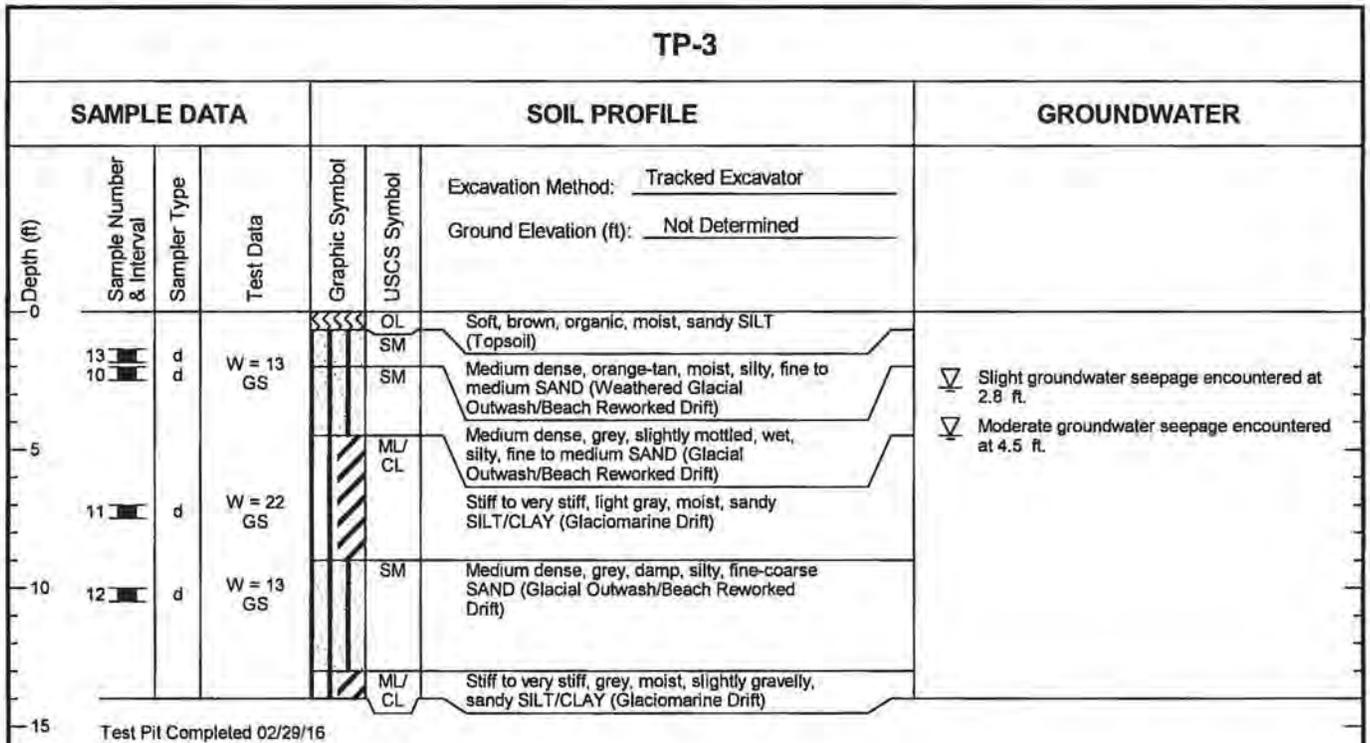
Figure  
**3**



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
  2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
  3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

16-0108 3/8/16 C:\USERS\JUSTIN\DESKTOP\JOB FILES\16-0108 - MARIN WOODS\SIEVE DATA.GPJ TEST PIT LOG

	Marin Woods 11292 SW Swanton Street Oak Harbor, Washington	Log of Test Pits	Figure <span style="font-size: 2em; font-weight: bold;">4</span>
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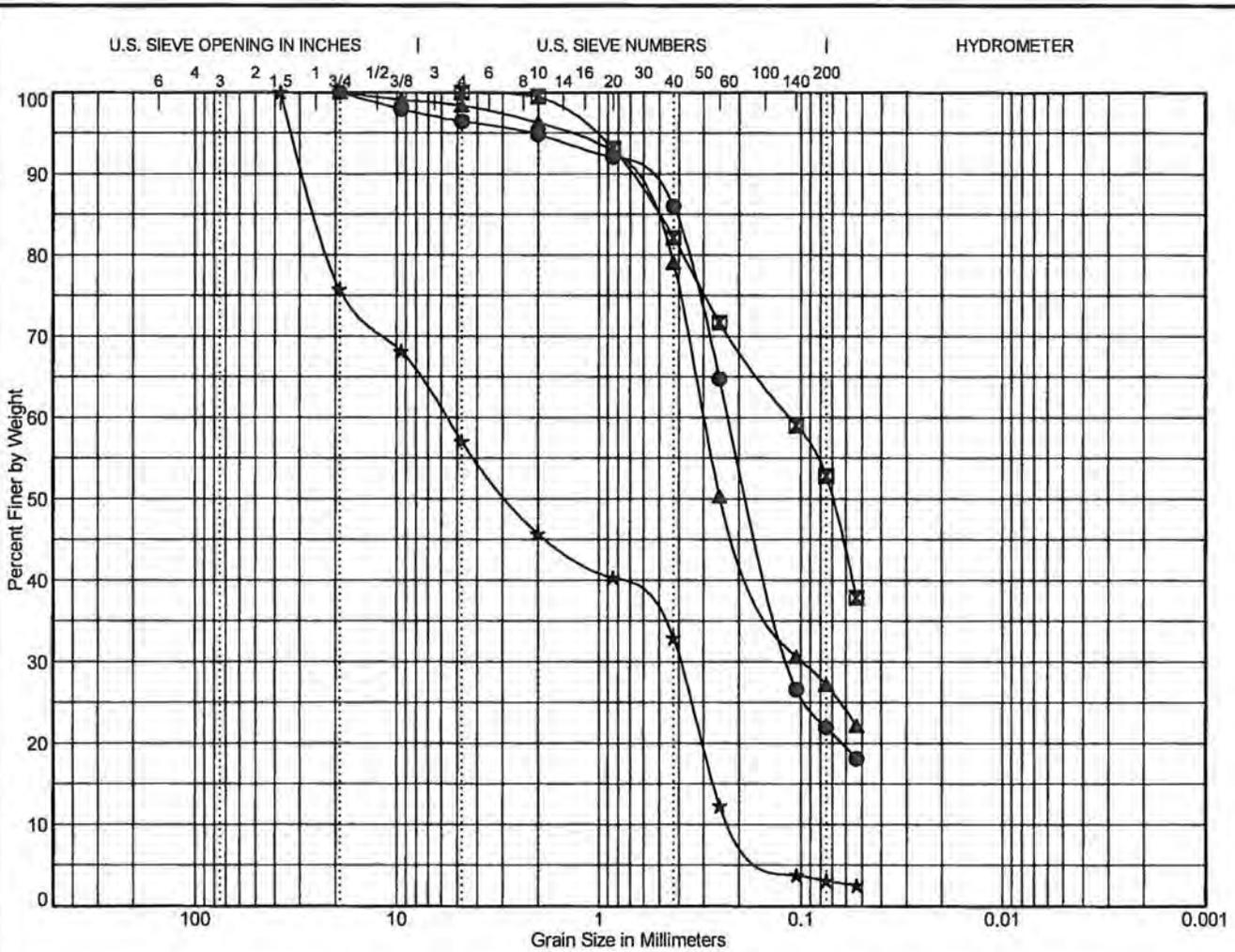


- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
  2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
  3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

16-0108 3/8/16 C:\USERS\JUSTIN\DESKTOP\JOB FILES\16-0108 - MARIN WOODS\SIEVE DATA.GPJ TEST PIT LOG

	Marin Woods 11292 SW Swanton Street Oak Harbor, Washington	Log of Test Pits	Figure <span style="font-size: 2em; font-weight: bold;">5</span>
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16-0108 C:\USERS\JUSTIN\DESKTOP\JOB FILES\16-0108 - MARIN WOODS\SIEVE DATA.GPJ GRAIN SIZE W/STATS



Cobbles	Gravel		Sand			Silt or Clay
	coarse	fine	coarse	medium	fine	

Point	Depth	Classification	LL	PL	PI	C <sub>c</sub>	C <sub>u</sub>
●	TP-3 2.0	Silty, fine SAND (SM)					
■	TP-3 7.0	Very sandy, SILT/CLAY (ML/CL)					
▲	TP-3 10.0	Silty, fine the medium SAND (SM)					
★	TP-4 1.5	Very gravelly, fine to coarse SAND (SP)				0.14	28.79

Point	Depth	D <sub>100</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>10</sub>	% Coarse Gravel	% Fine Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Fines
●	TP-3 2.0	19	0.224	0.179	0.113		0.0	3.6	1.6	8.8	64.1	21.9
■	TP-3 7.0	4.75	0.112	0.07			0.0	0.0	0.5	17.3	29.3	52.9
▲	TP-3 10.0	19	0.299	0.247	0.099		0.0	1.6	2.1	17.2	51.9	27.2
★	TP-4 1.5	37.5	5.71	2.772	0.394	0.198	24.2	18.7	11.3	12.8	29.9	3.1

$$C_c = D_{30}^2 / (D_{60} * D_{10})$$

$$C_u = D_{60} / D_{10}$$

To be well graded:  $1 < C_c < 3$  and  $C_u > 4$  for GW or  $C_u > 6$  for SW

**GEOTEST**

Marin Woods  
11292 SW Swanton Street  
Oak Harbor, Washington

Grain Size Test Data

Figure  
**6**

## REPORT LIMITATIONS AND GUIDELINES FOR ITS USE<sup>1</sup>

Subsurface issues may cause construction delays, cost overruns, claims, and disputes. While you cannot eliminate all such risks, you can manage them. The following information is provided to help:

### **Geotechnical Services are Performed for Specific Purposes, Persons, and Projects**

At GeoTest our geotechnical engineers and geologists structure their services to meet specific needs of our clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of an owner, a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared solely for the client. No one except you should rely on your geotechnical engineer who prepared it. And no one – not even you – should apply the report for any purpose or project except the one originally contemplated.

### **Read the Full Report**

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

### **A Geotechnical Engineering Report is Based on a Unique Set of Project-Specific Factors**

GeoTest's geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the clients goals, objectives, and risk management preferences; the general nature of the structure involved its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless GeoTest, who conducted the study specifically states otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed, for example, from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed construction,
- alterations in drainage designs; or
- composition of the design team; the passage of time; man-made alterations and construction whether on or adjacent to the site; or by natural alterations and events, such as floods, earthquakes or groundwater fluctuations; or project ownership.

Always inform GeoTest's geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

<sup>1</sup>Information in this document is based upon material developed by ASFE, Professional Firms Practicing in the Geosciences([asfe.org](http://asfe.org))



### **Subsurface Conditions Can Change**

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. Do not rely on the findings and conclusions of this report, whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. Always contact GeoTest before applying the report to determine if it is still relevant. A minor amount of additional testing or analysis will help determine if the report remains applicable.

### **Most Geotechnical and Geologic Findings are Professional Opinions**

Our site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoTest's engineers and geologists review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in your report. Retaining GeoTest who developed this report to provide construction observation is the most effective method of managing the risks associated with anticipated or unanticipated conditions.

### **A Report's Recommendations are *Not* Final**

Do not over-rely on the construction recommendations included in this report. Those recommendations are not final, because geotechnical engineers or geologists develop them principally from judgment and opinion. GeoTest's geotechnical engineers or geologists can finalize their recommendations only by observing actual subsurface conditions revealed during construction. GeoTest cannot assume responsibility or liability for the report's recommendations if our firm does not perform the construction observation.

### **A Geotechnical Engineering or Geologic Report may be Subject to Misinterpretation**

Misinterpretation of this report by other design team members can result in costly problems. Lower that risk by having GeoTest confer with appropriate members of the design team after submitting the report. Also, we suggest retaining GeoTest to review pertinent elements of the design teams plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having GeoTest participate in pre-bid and preconstruction conferences, and by providing construction observation.

### **Do not Redraw the Exploration Logs**

Our geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors of omissions, the logs included in this report should never be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable; but recognizes that separating logs from the report can elevate risk.

### **Give Contractors a Complete Report and Guidance**

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, but preface it with a clearly written letter of transmittal. In that letter, consider advising the contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the GeoTest and/or to conduct

<sup>1</sup>Information in this document is based upon material developed by ASFE, Professional Firms Practicing in the Geosciences(asfe.org)

additional study to obtain the specific types of information they need or prefer. A pre-bid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might you be in a position to give contractors the best information available, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. In addition, it is recommended that a contingency for unanticipated conditions be included in your project budget and schedule.

### **Read Responsibility Provisions Closely**

Some clients, design professionals, and contractors do not recognize that geotechnical engineering or geology is far less exact than other engineering disciplines. This lack of understanding can create unrealistic expectations that can lead to disappointments, claims, and disputes. To help reduce risk, GeoTest includes an explanatory limitations section in our reports. Read these provisions closely. Ask questions and we encourage our clients or their representative to contact our office if you are unclear as to how these provisions apply to your project.

### **Environmental Concerns Are Not Covered in this Geotechnical or Geologic Report**

The equipment, techniques, and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated containments, etc. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. Do not rely on environmental report prepared for some one else.

### **Obtain Professional Assistance to Deal with Biological Pollutants**

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts biological pollutants from growing on indoor surfaces. Biological pollutants includes but is not limited to molds, fungi, spores, bacteria and viruses. To be effective, all such strategies should be devised for the express purpose of prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional biological pollutant prevention consultant. Because just a small amount of water or moisture can lead to the development of severe biological infestations, a number of prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of this study, the geotechnical engineer or geologist in charge of this project is not a biological pollutant prevention consultant; none of the services performed in connection with this geotechnical engineering or geological study were designed or conducted for the purpose of preventing biological infestations.

<sup>1</sup>Information in this document is based upon material developed by ASFE, Professional Firms Practicing in the Geosciences([asfe.org](http://asfe.org))



**APPENDIX C**  
**PRELIMINARY PLAT MAP SHEET P2 EXISTING CONDITIONS**



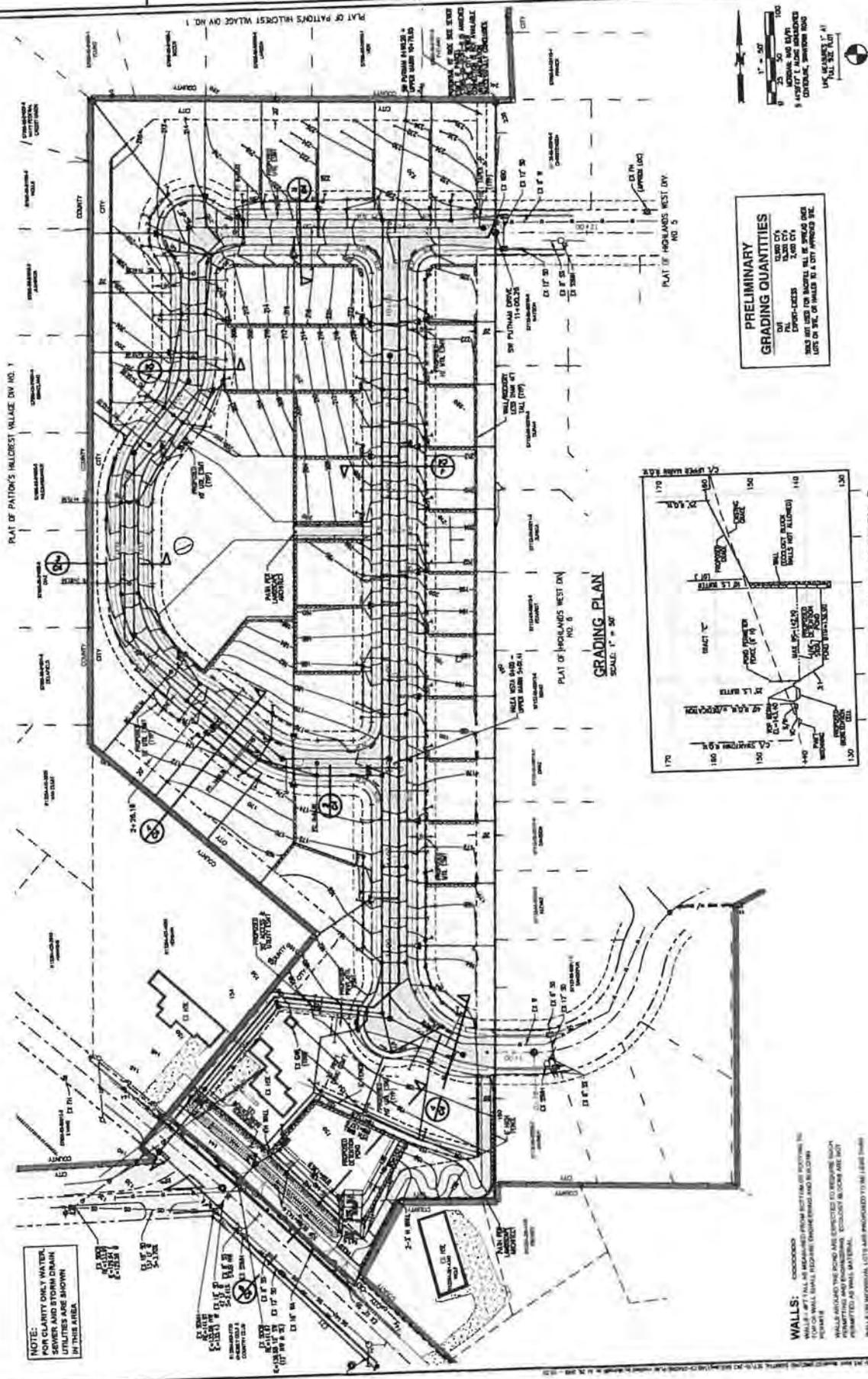
**APPENDIX D**  
**PRELIMINARY CIVIL SHEET C5 GRADING PLAN**

MARIN WOODS  
PLANNED RESIDENTIAL DEVELOPMENT  
GEORGE F. MARIN TRUST  
GRADING PLAN / SITE MAP  
PRELIMINARY

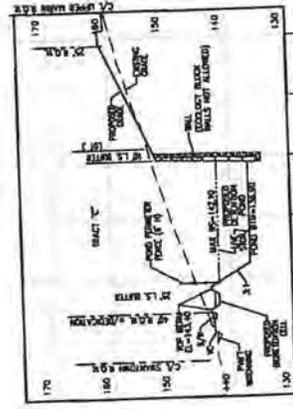
DRAWN BY: [Signature]  
CHECKED BY: [Signature]  
DATE: 15-2-43  
C5

REVISIONS  
HARMSEN ASSOCIATES INC  
HARMSEN ENGINEERS SURVEYORS  
13401 875-0973  
(206) 794-7811  
FAX: (206) 875-7258  
940 8th Avenue, Suite 102  
OAK HARBOR, WA 98277

A PORTION OF THE NE1/4, SEC 4, TWN 32 N, RING 1 E, WM, WA



PRELIMINARY  
GRADING QUANTITIES  
CUT 11,000 CY  
FILL 11,000 CY  
EXPOSED-ROCK 2,000 CY  
SLOCS NOT USED FOR MATERIAL WILL BE SPREAD OVER  
LOTS OF SEC. OR MAINT. BY A CITY APPROVED VEC.



NOTE:  
NOT CLARITY ONLY WATER,  
SEWERS AND STORM DRAIN  
UTILITIES ARE SHOWN  
IN THIS AREA.

WALLS:   
WALLS 4 FT TALL OR MORE SHALL BE CONCRETE OR  
MADE OF BLOCK, REINFORCED CONCRETE AND BLOCK  
CONCRETE  
WALLS 4 FT TALL OR MORE SHALL BE CONCRETE OR  
MADE OF BLOCK, REINFORCED CONCRETE AND BLOCK  
CONCRETE  
WALLS 4 FT TALL OR MORE SHALL BE CONCRETE OR  
MADE OF BLOCK, REINFORCED CONCRETE AND BLOCK  
CONCRETE  
WALLS 4 FT TALL OR MORE SHALL BE CONCRETE OR  
MADE OF BLOCK, REINFORCED CONCRETE AND BLOCK  
CONCRETE

PRELIMINARY PRD

**Appendix E**

**“1997 Study”**

**Golf Course Drainage Basin Stormwater Mitigation Study, August 1997**

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

***AUGUST 1997***

***PREPARED BY:***

***FAKKEMA AND KINGMA, INC.  
840 SE 8TH AVENUE, SUITE 102  
OAK HARBOR, WA 98277  
(360) 675-5973***

# GOLF COURSE DRAINAGE BASIN STORMWATER MITIGATION STUDY

AUGUST 1997

PREPARED BY:

GREGORY R. CANE, P.E.



OF

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*APPENDIX A*      *HYDROLOGIC PARAMETERS OF STUDY*

*APPENDIX B*      *RAINFALL HISTORY*

*APPENDIX C*      *CALIBRATION RUNS*

*APPENDIX D*      *ANALYSIS OF CONVEYANCE*

*APPENDIX E*      *POSTDEVELOPMENT PARAMETERS*

*APPENDIX F*      *MISCELLANEOUS*

*APPENDIX G*      *PREDEVELOPMENT MODEL RUNS*

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*APPENDIX I*      *LOERS' POND STORMWATER LEVELS - AFTER IMPROVEMENTS*

*MAPS*              *PRE- AND POSTDEVELOPMENT PARAMETERS*

## **GOLF COURSE DRAINAGE BASIN STORMWATER MITIGATION STUDY**

### **INTRODUCTION**

Historically, the geographical depression containing the 18 hole golf course of the Whidbey Golf and Country Club (WGCC) has been the collection point for the 2,400 acre drainage basin lying to the southwest of the City of Oak Harbor on North Whidbey Island (Figure 1). In recent years, largely as a result of increased rainfall run-off from residential development within the " Golf Course Basin", low lying homes adjacent to the Golf Course have been subject to an increased frequency of flooding.

Most of the golf course basin area north of Ft. Nugent Road is designated in the Oak Harbor Comprehensive Plan for Low Density Residential (3 to 6 dwelling units/acre) growth. In line with the Washington State Growth Management Act directives regarding mitigation of development impacts, the proponents of various future residential developments within the Golf Course Drainage Basin<sup>1</sup> have commissioned this stormwater analysis and report to address the control of increased run-off. The goals of this study are as follows:

- 1) Consider the use of basin-wide detention in accordance with the expanded environmental checklist submitted under SEPA, prepared for the annexation of the golf course and adjacent properties.
- 2) Utilize stormwater computer modeling to assess the existing and proposed rates and volumes of surface water run-off for applicable storms.
- 3) Propose capital and operational improvements to mitigate the impacts of the residential developments.

In accordance with the City of Oak Harbor Comprehensive Plan, the proponents are planning the construction of new homes in sub-basins N3, N4, N5, N7a, N7b, N8, and N10 (Figure 13)<sup>2</sup>.

---

<sup>1</sup> Approximately 350 single family and townhouse units proposed. The Swantown Ridge and Shannon Forest subdivisions will add an additional 230 (+/-) houses.

<sup>2</sup> Two single family residential plats, Shannon Forest and Swantown Ridge, are currently under construction in sub-basin N6. The increase in impervious surface and the constructed drainage facilities have been incorporated into the postdevelopment analysis.

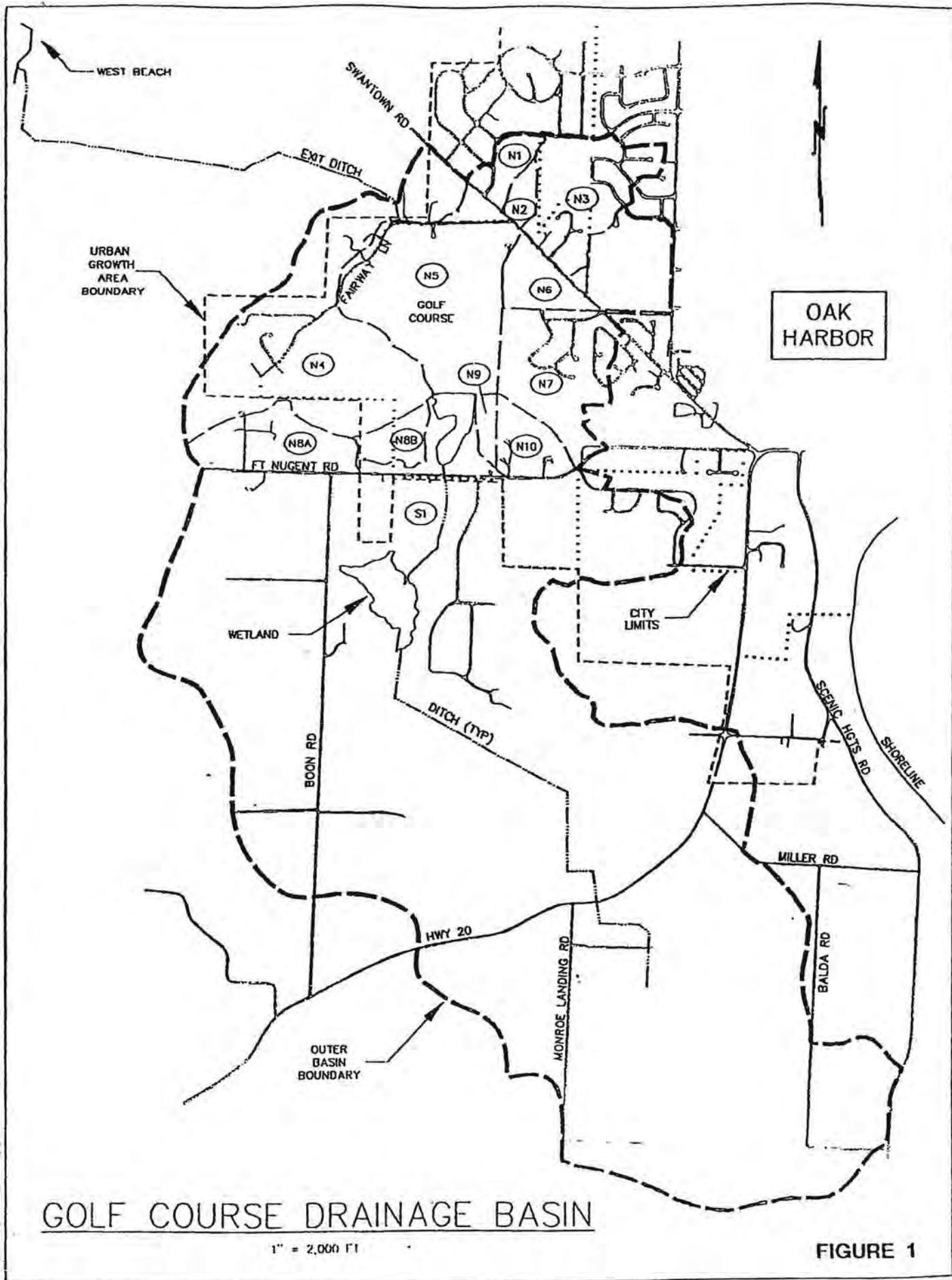


FIGURE 1

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY*****3**

With the exception of predevelopment parameters, this report has been prepared by the staff of Fakkema and Kingma. Predevelopment parameters were prepared by Keilwitz Engineering, Coupeville, WA in the capacity as subconsultant (see Appendix A).

**EXISTING CONDITIONS  
GOLF COURSE BASIN**

The assessment of existing conditions was performed by the use of the City of Oak Harbor aerial topographic maps (1991), Island County aerial photography (1985 and 1992), SCS soils maps, construction record drawings and field investigation.

For the purpose of analysis, the Golf Course Basin has been divided into 12 existing sub-basins: (Figure 2)

S1 (1712 acres) - This sub-basin lying south of Ft. Nugent Road largely consists of farm and forest land and a low housing density. Although it is sparsely developed, by virtue of its size, S1 contributes more run-off during large rainstorms than the sum of all other sub-basins combined. Given the size of S1 and the existence of a large wetland approximately 1,500 feet south of Ft. Nugent Road, the downstream impacts of a given rainfall event are delayed by about 20 hours and significantly decreased. This lag and attenuation of run-off, typical of large sub-basins in a natural state, reduces stormwater impacts to the Golf Course and surrounding properties.

S1 outlets into Loers' Pond through two 18" culverts crossing Ft. Nugent Road.

N10 (24 acres) - Primarily forested, the run-off from this basin flows to the southeast corner of the golf course.

N9 (8 acres) - The State of Washington Department of Fish and Wildlife maintains a wetland and forested area within this sub-basin. In order to impound water for the creation of the wetland, a berm was constructed on the north line of the sub-basin. Run-off from the wetland is directed over the berm to the southeast corner of sub-basin N5.

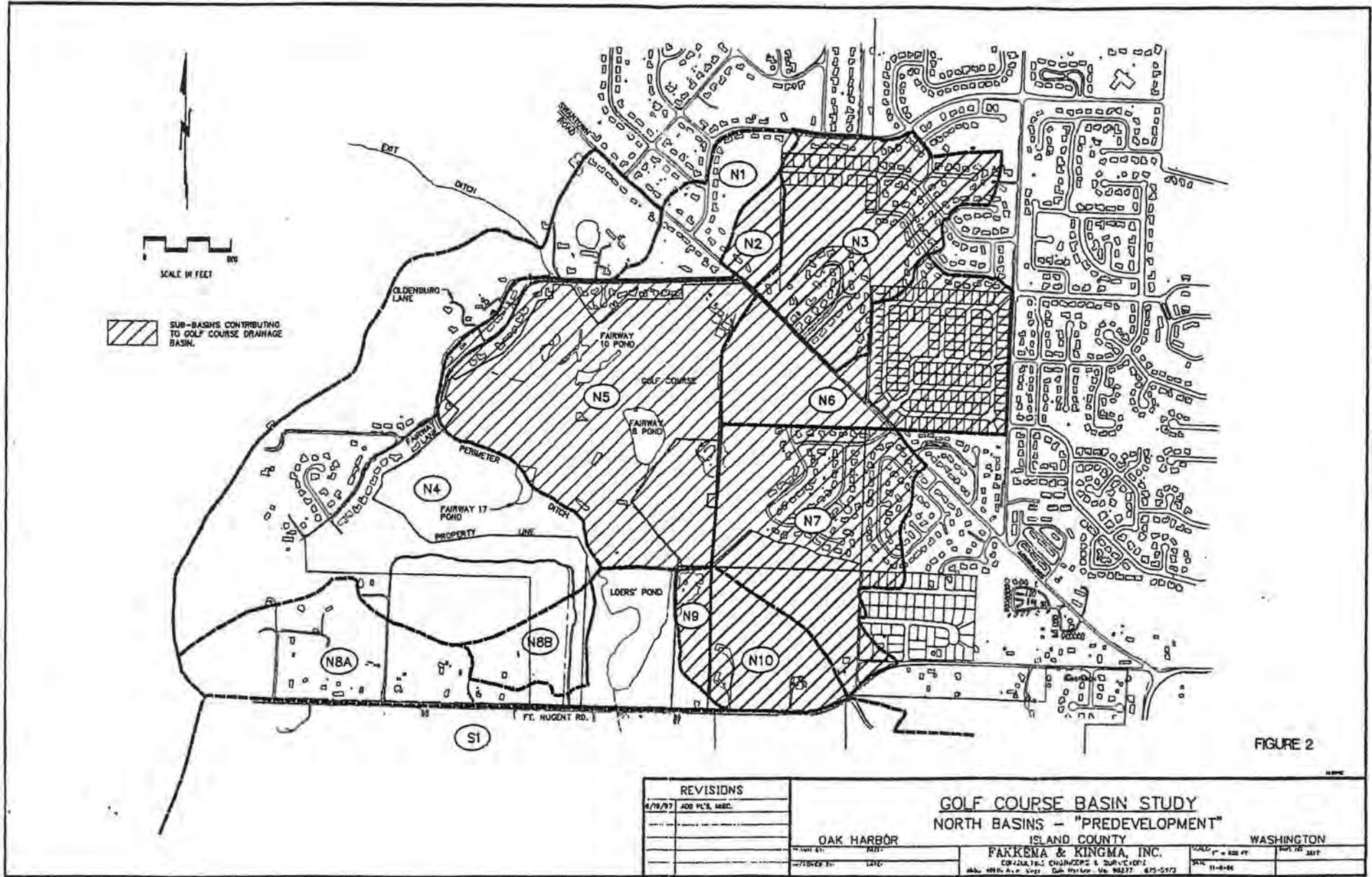


FIGURE 2

REVISIONS		GOLF COURSE BASIN STUDY NORTH BASINS - "PREDEVELOPMENT"		
8/18/17	ADD P.L.'S. MISC.	OAK HARBOR	ISLAND COUNTY	WASHINGTON
		CONTRACT NO. 17-10-001	FAKEMA & KINGMA, INC.	SCALE: 1" = 400 FT. DATE: 11-8-16
		DATE: 11-8-16	11-8-16	11-8-16

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

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N8a (73 acres) - This area is characterized by a combination of forest land and residential development along with a small portion of the golf course greens and fairways surrounding Loers' Pond. Run-off travels overland from this sub-basin to Loers' Pond.

The 10 acre Loers' Pond, operated as a transit for the stormwater flow from the sizeable basin south of Ft. Nugent Road and for the storage of irrigation water, was enlarged to its current size by WGCC in 1979. Based on limited soundings performed for this study (Appendix F), it is estimated that the current useful storage volume in the Pond is 47 acre-feet (5 feet of useful storage; one foot of freeboard). The outlet structure for Loers' Pond consists of a 24" pipe with a rectangular overflow weir. During the dry season the 24" discharge pipe is blocked to raise the water level for golf course irrigation. The board is removed in the wet season, permitting the pond water level to drop approximately 4 feet below the overflow level. Reducing the pond level increases run-off storage, thereby attenuating rain storm peaks.

Immediately downstream of the pond outlet structure there is a 12" culvert pipe with a small sandbag impoundment constructed around the upstream pipe end. The effect of this impoundment is to direct the flow from the 24" discharge pipe into the 12" pipe, effectively reducing the discharge capacity from the pond.

N8b (16 acres) - Like N8a this area is composed of scattered housing and forested land. Run-off from N8b enters the perimeter ditch.

N7 (68 acres) - The sub-basin N7 is comprised of the Crosswoods residential subdivision (approx. 40% of area), forest (40%) and a marsh area bordering sub-basins N5 and N7 (20%). The natural contours of the sub-basin route some storm run-off to the golf course through the marsh, with the remainder traveling overland into the southeast portion of the course.

N6 (69 acres) - When this study was initiated, the Plat of Shannon Forest had been partly constructed. In order to assess the impacts of new subdivisions, and to establish a baseline for measuring the effectiveness of proposed mitigation measures, sub-basin N6 was modeled in its natural state for the predevelopment condition. Prior to subdivision, N6 consisted of forest and farmland.

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

6

N5 (125 acres) - The major portion of the WGCC 18 hole golf course lies within N5.

Prior to the siting of a farm at this location in the 1900's, the area contained a small lake. In order to by-pass the large volume of water entering the sub-basin from the south, the Loers family constructed an elevated flume from an area near the current location of Loers' pond to the vicinity of the "exit" ditch to the north. With the sale of the Loers' farm, the flume fell into disrepair and was replaced in the 1950's with the perimeter ditch in existence today.

The perimeter ditch is generally in fair condition. A reconnaissance level field review of the ditch and appurtenances indicated some requirement for removal of accumulated siltation. Vegetation and grasses are overgrown along portions of the ditch. Area residents and WGCC staff have indicated that the ditch has overflowed its banks under certain conditions following large storm events. Such large events have additionally overtopped Loers' Pond.

Currently run-off from sub-basins N2, N3, N6, N7, N8, N9 and N10 combines with run-off from N5 and travels, through a series of ponds, pipes and swales to the Fairway 10 Pond, actually an interconnected series of ponds at the lowest point in the golf course. WGCC personnel indicate that stormwater is pumped from the Fairway 10 Pond to the exit ditch through an 8" pipe utilizing from 1 to 3 pumps, as dictated by the level of rainfall intensity and anticipated flooding:

Level 1: Single electric powered pump operated; Rate (approx.) = 250 gallons per minute (gpm).

Level 2: Tractor powered pump put on-line. Both pumps discharge through the 8" pipe; Rate (approx.) = 1,350 gpm; Total rate = 1,600 gpm.

Level 3: Additional diesel powered pump placed into service with 6" pipe laid overland to exit ditch; Rate (approx.) = 1,350 gpm; Total Rate = 2,950 gpm.

N4 (197 acres) - Area N4 is similar to N8 in that it contains a sparse density of residential housing along with forested land. A portion of the golf course lies within its westerly boundary. Run-off from N4 enters the perimeter ditch and, given its close proximity to the golf course, run-off peaks reach the ditch and leave the basin much earlier than the run-off peak from S1.

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

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N2 and N3 (73 acres, total) - About 60% of the land area in these sub-basins is composed of single family residential development, with the remainder primarily in forest. Stormwater is directed through two culverts across Swantown Road to the marsh on the N5/N7 border and then to N5.

N1 (23 acres) - This sub-basin consists of single family residential housing and forest land. Run-off bypasses the golf course by being directed through a 12 inch culvert across Swantown Road and through a road ditch along Fairway Lane to the exit ditch.

**DOWNSTREAM DRAINAGE**

To increase flow capacity, the exit ditch was deepened for a distance of approximately 800 feet north of Fairway Lane in early 1996. Prior to this rechanneling, a large storm event in late November 1995 created a situation where the combination of run-off in the perimeter ditch and the discharge from all three of the golf course pumps caused stormwater to overflow the banks of the perimeter ditch near the exit ditch. Water ran south over Fairway Lane back into the golf course, worsening the ongoing flooding of low-lying golf course areas.

Drainage proceeds in a well defined, but somewhat overgrown, channel and through culverts at farm access roads to a large (38 acre) impoundment east of West Beach Road. The impoundment is drained to Admiralty Inlet by two tidegate structures. During site visits in April and May, 1996, water was standing in the low area to a depth of several feet.

In previous years a pump station had been operating at the site that, in combination with the tide gates, would permit farming of the area (the pump station has since been abandoned). Given previous flooding problems, Island County replaced the tidegates in July, 1991, and has maintained the West Beach outfall since that time.

**ANALYSIS OF EXISTING SYSTEM****INTRODUCTION**

In the selection of an approach to analysis of a given drainage basin the following should be considered:

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

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- Are there easily erodible channels downstream?
- What is the hydraulic capacity of downstream conveyance facilities?
- Are there large detention ponds to analyze?

Field review of stream channels within the basin and in downstream reaches did not reveal erosive activity in existing ditches. Although some specific areas appear to lack sufficient hydraulic capacity and require upsizing (see Improvements section), with proper maintenance, as well as procedures and facilities to control the total stormwater flow, the conveyance system will be able to pass large rainstorm events. Given these factors, which are typical for Whidbey Island, the City and County governments have not usually required analysis and control of the relatively small 6-month and 2-year storm events.<sup>3</sup>

The scope of this project required the consideration of the use of Loers' pond as a regional detention facility (pond). Inherent in the design of large ponds is the characteristic of filling quickly during large storms and then "metering out" water slowly over a period of time. Problems arise when ponds remain partially full from an earlier storm when another storm arrives. Adequate pond capacity may not be available for control of the second storm.

Given the above considerations, it was decided to analyze the Golf Course Basin for the following storms: (Figures 4 through 6)

- 10 year - 24 hour<sup>4</sup> (abbreviated 10 yr herein)
- 25 year - 24 hour (abbreviated 25 yr)
- 100 year - 24 hour (for use in sizing conveyance) (abbreviated 100 yr)
- 25 year - 24 hour preceded by 2 year - 24 hour (abbreviated 2-25 yr)
- 100 year - 24 hour preceded by 2 year - 24 hour (abbreviated 2-100 yr)

---

<sup>3</sup> A notable exception is the detention pond constructed for projects within NG where the downstream conveyance system consists of golf course pumps with a limited discharge capacity. The pond was designed and constructed to control the peak release rate for the 2, 10, and 100 year storm.

<sup>4</sup> More readily interpreted as the storm that has a 1 in 10 chance of occurring during a given year. A 100 year storm has a 1 in 100 chance of occurring in a given year. "24 hour" relates to the depth of rainfall over a 24 hour period.

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

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Hydrologic analysis was performed using Waterworks computer software, Ver. 4.11. The summarized results of the analysis are shown in Table 1.

Once the existing system (often called "Predevelopment") computer model was set up (see flowchart, Figure 7) and calibrated, run-off peak rates were determined for the applicable storms. The resulting run-off pattern, displayed in time vs. flow rate format (hydrograph), is shown in Figures 8 through 12 at the end of this section.

Capital improvements are proposed herein to prevent exceedence of these predevelopment release rates.

### **CALIBRATION**

In order to increase the level of confidence in the results of the analysis, the computer model was checked (calibrated) against actual field conditions, as described by WGCC staff, existing during two recent storms. Rainfall data was obtained from the weather station at the Whidbey Island Naval Air Station for storms on November 26-29, 1995 and February 5-8, 1996 (see calibrated runs - Appendix C).<sup>5</sup> As indicated in Table 2, a reasonable calibration was obtained. Where possible, the model was additionally checked against the modeling performed for the 1994 City of Oak Harbor Comprehensive Storm Drainage Plan.

---

<sup>5</sup> Rainfall data is collected every three hours at the Naval Air Station, making it useful for calibration. Daily rainfall records are also kept at WGCC. On February 7, 1996 records for the two stations did not agree. Additional research including review of rainfall records kept at the City of Oak Harbor Wastewater Treatment Plant supported the theory that the storm dropped variable rainfall depths in different areas. The recorded rainfall depth from WGCC was utilized, proportioning over the 3 hour pattern of the Air Station.

# PREDEVELOPED CONDITIONS GOLF COURSE BASIN STORMWATER ROUTING

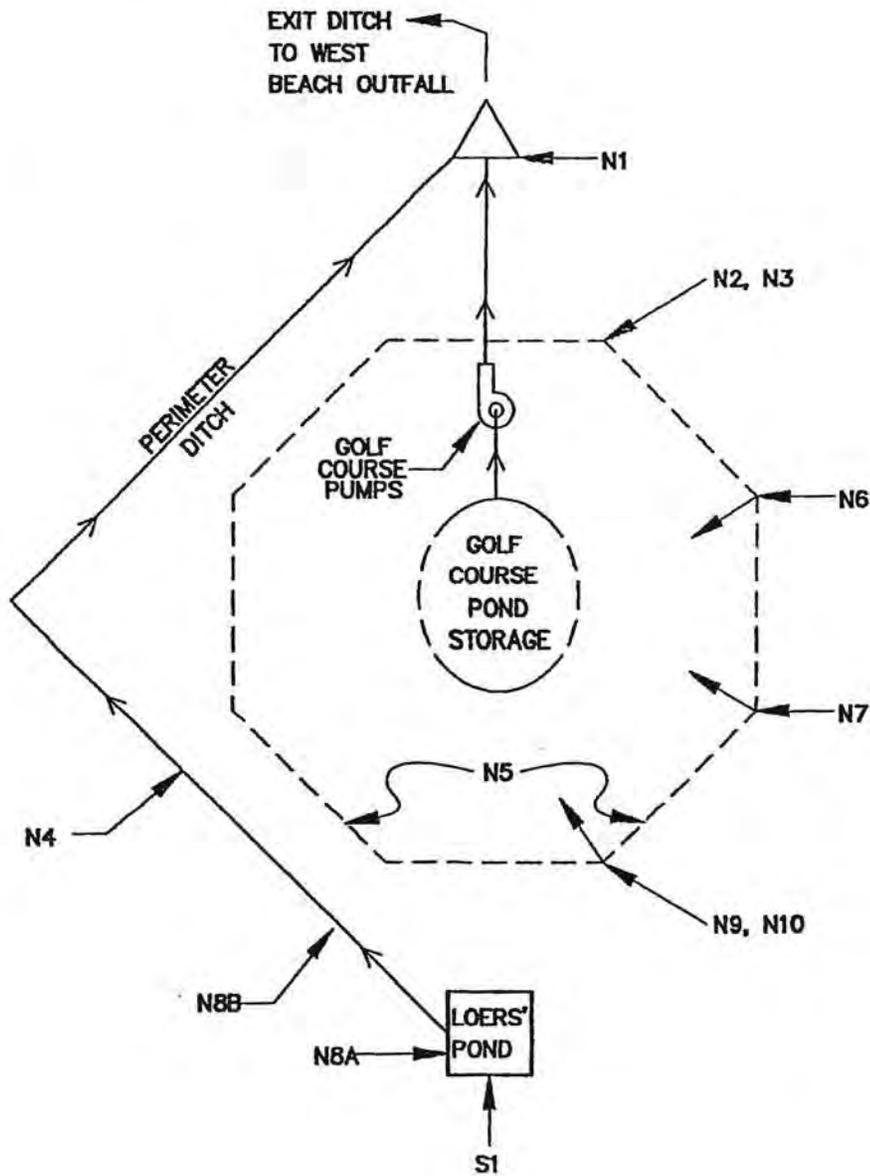


FIGURE 3

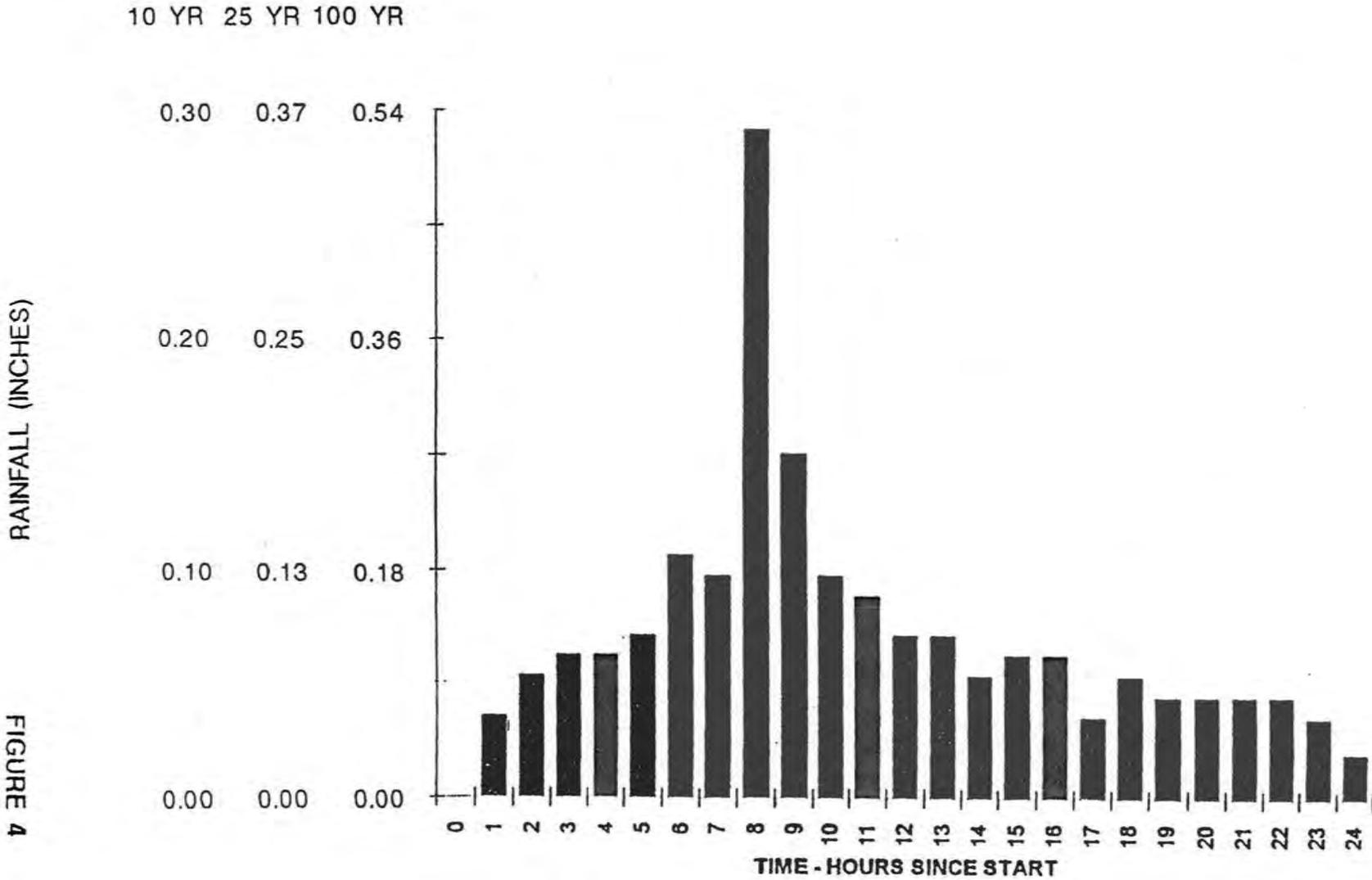
SWAHI

**TABLE 1 - Results of Computer Model Runs - Golf Course Basin**

PREDEVELOPMENT RUNS						
Runs	Hydrograph Exiting Basin (Peak Rate - CFS) <sup>1</sup>	Loer's Pond Level	Golf Course		Total Runoff Volume (Ac-Ft) <sup>3</sup>	Notes
			Level Below Flood Stage (ft)	Peak Pumping Rate (GPM) <sup>2</sup>		
25 yr - 24 hr	37.2	Slightly Over Top	2.4 <sup>(4)</sup>	2,950	175.5	Golf Course Flood Stage Est: 172.0 ft
100 yr - 24 hr	87.7	Over Top	0.8 <sup>(4)</sup>	2,950	279.5	
25 yr - 24 hr Preceded by 2 yr - 24 hr	95.1	Over Top	0.7	2,950	319.0	
100 yr - 24 hr Preceded by 2 yr - 24 hr	148.3	Over Top	-0.5 <sup>(4)</sup>	2,950	436.7	
POSTDEVELOPMENT RUNS						
25 yr - 24 hr	29.9	0.7 ft Below Overflow Spillway	2.9	2,950	200.2	
100 yr - 24 hr	87.4	0.1 ft Below Overflow Spillway	1.8	2,950	309.5	
25 yr - 24 hr Preceded by 2 yr - 24 hr	93.6	0.1 ft Above Overflow Spillway	2.0	2,950	350.7	
100 yr - 24 hr Preceded by 2 yr - 24 hr	143.5	1.0 ft Over Overflow Spillway	0.6	2,950	471.1	

<sup>1</sup> - cubic feet per second<sup>2</sup> - gallons per minute<sup>3</sup> - acre-feet<sup>4</sup> - negative sign indicates above flood stage<sup>5</sup> - records indicate that rainfall w/intensities between 25 year and 100 year storms have in reality resulted in flooding at the No. 10 pond. The model did not account for water overtopping the perimeter ditch at locations within the golf course and may not match observed conditions in the predeveloped conditions..

### 24 HOUR STORMS



### 25 YR PRECEDED BY 2 YR STORM

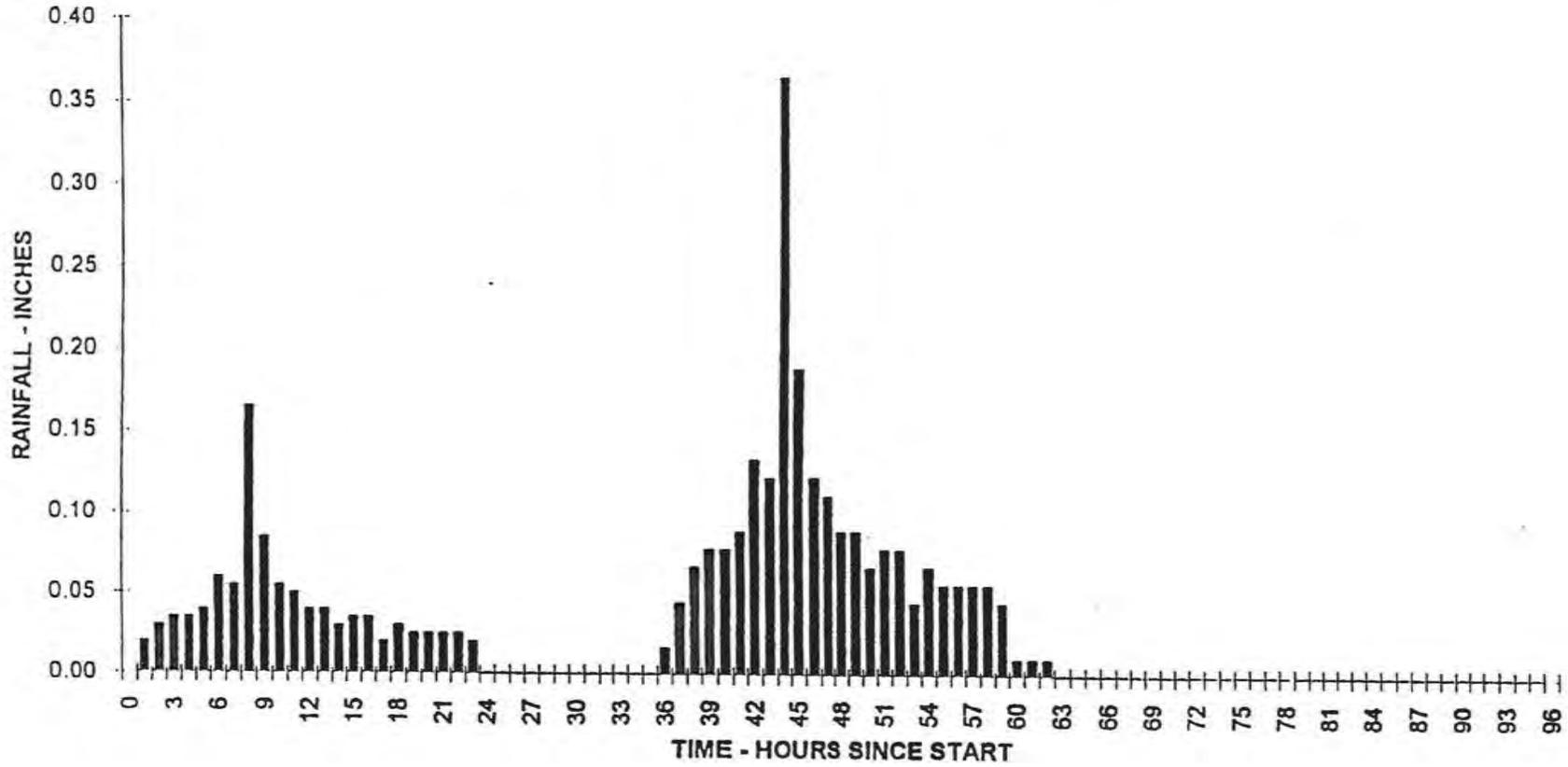


FIGURE 5

### 100 YR PRECEDED BY 2 YR STORM

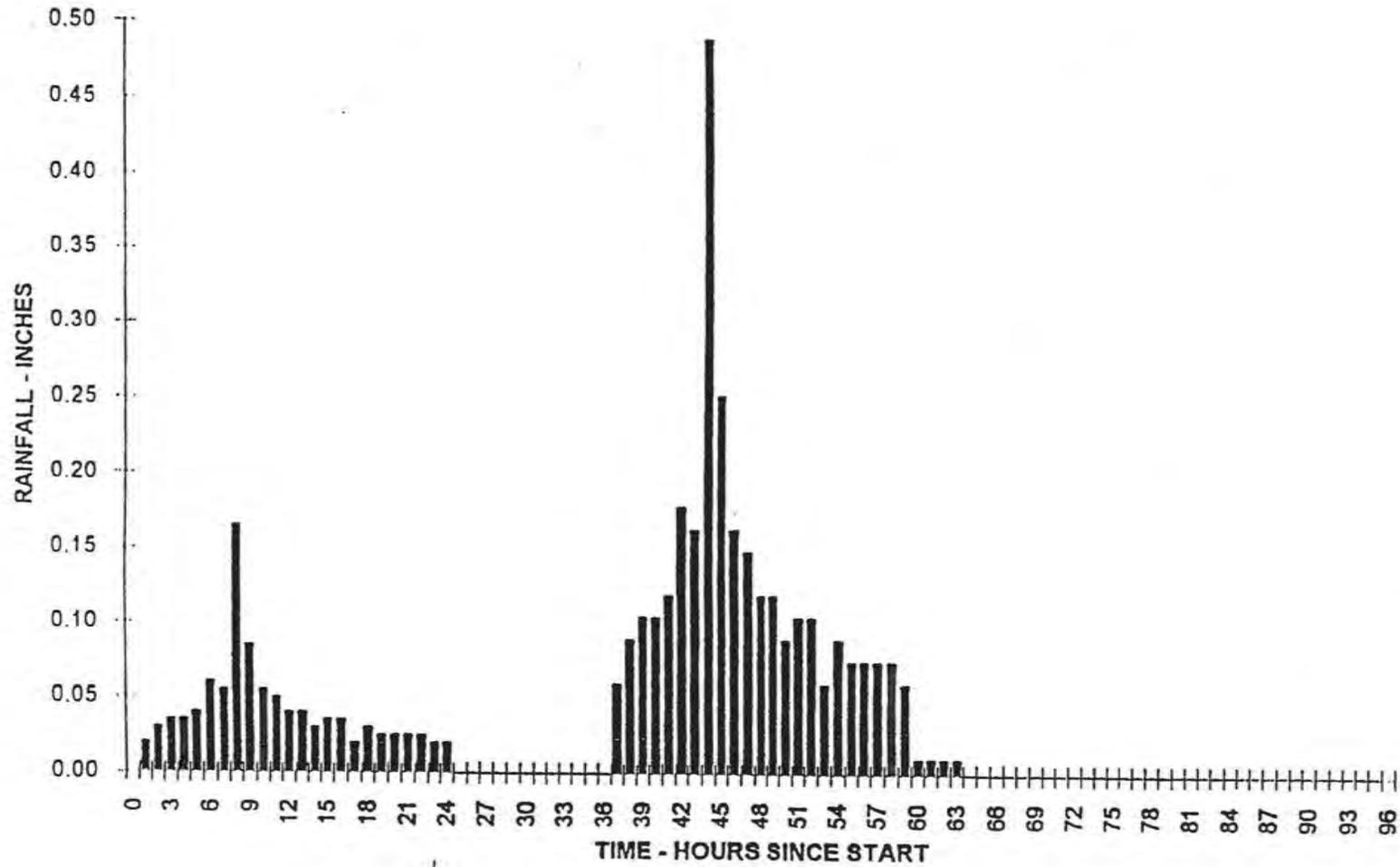


FIGURE 6

# GOLF COURSE BASIN STUDY – PREDEVELOPMENT MODEL FLOWCHART

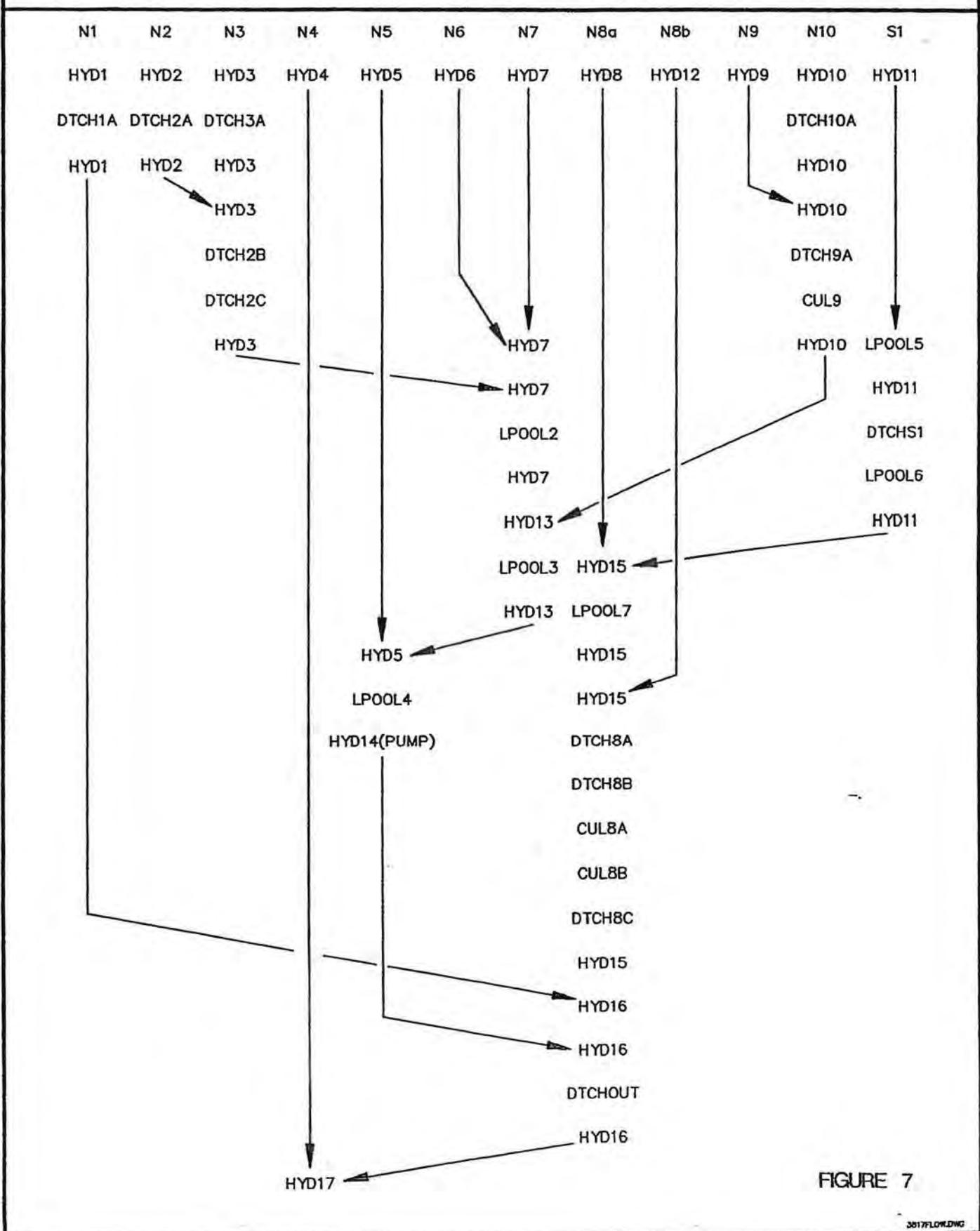
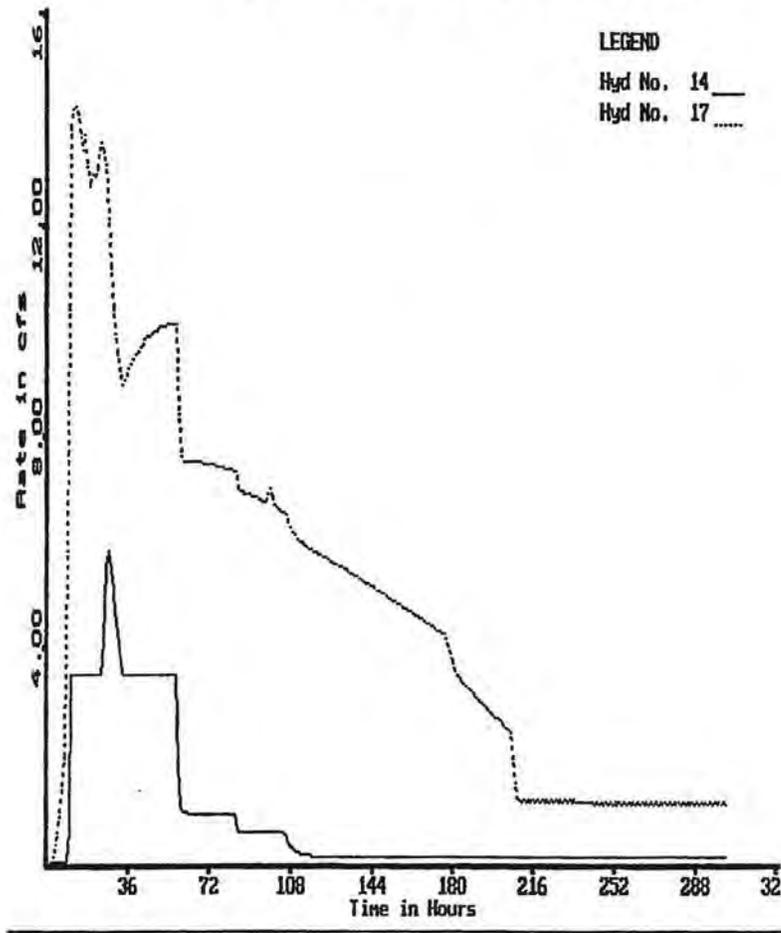


FIGURE 7

2017FLOW.DWG

# PREDEVELOPMENT 10 YR - 24 HR STORM



Hyd No.: 14 Pumped

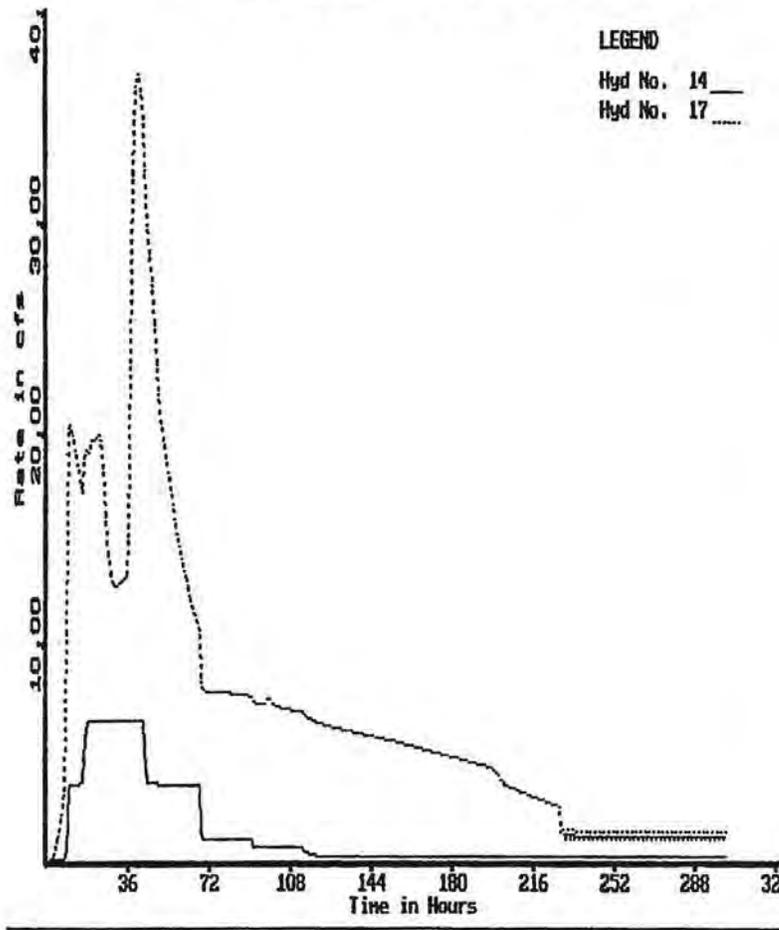
Rate: 5.91 cfs      Time: 26.00 hr  
Vol : 19.57 Ac-ft    Int: 60.00 min

Hyd No.: 17 Basin Outflow

Rate: 14.29 cfs      Time: 12.00 hr  
Vol : 121.29 Ac-ft    Int: 60.00 min

FIGURE 8

# PREDEVELOPMENT 25 YR - 24 HR STORM



Hyd No.: 14 Pumped

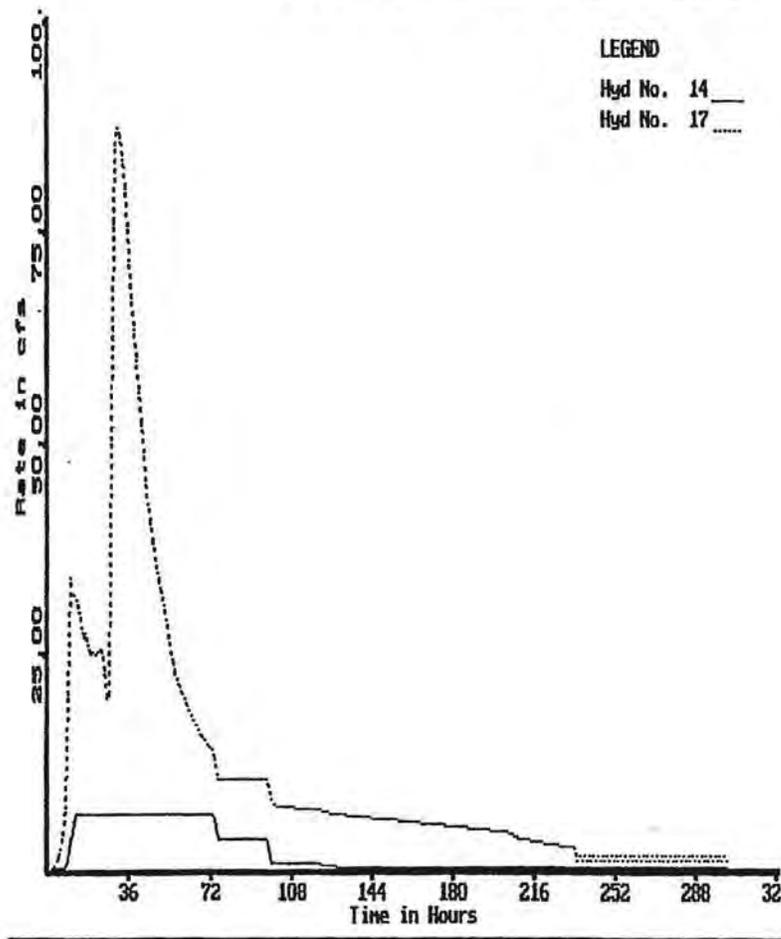
Rate: 6.57 cfs      Time: 27.00 hr  
Vol : 27.98 Ac-ft    Int: 60.00 min

Hyd No.: 17 Basin Outflow

Rate: 37.25 cfs      Time: 39.00 hr  
Vol : 175.48 Ac-ft    Int: 60.00 min

FIGURE 9

# PREDEVELOPMENT 100 YR - 24 HR STORM



Hyd No.: 14 Pumped

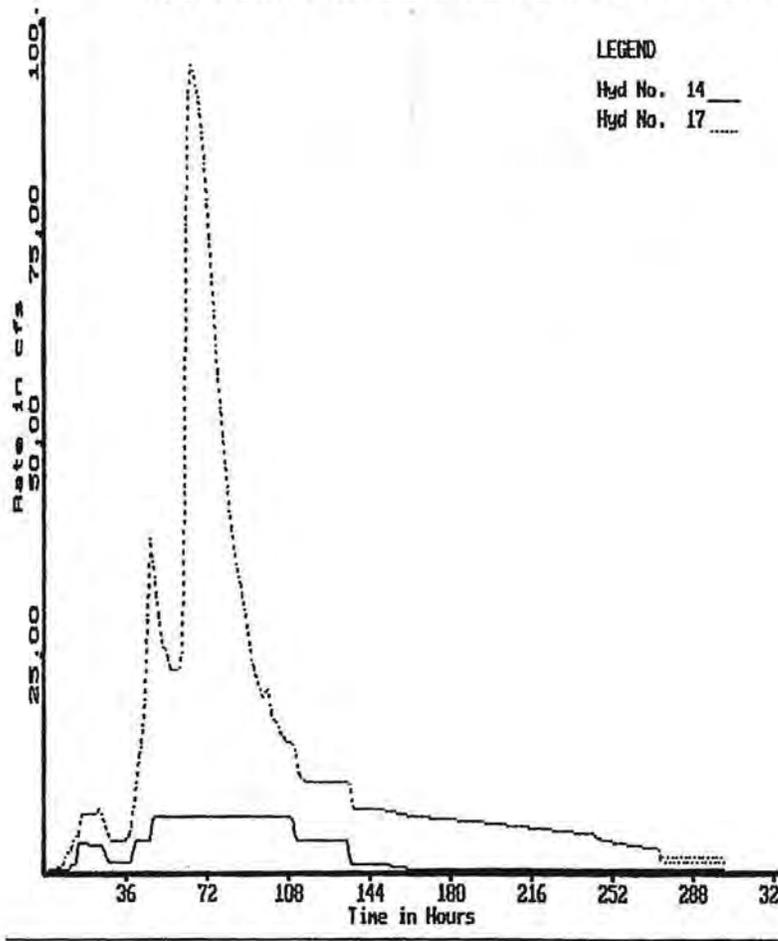
Rate: 6.57 cfs      Time: 29.00 hr  
 Vol : 43.85 Ac-ft    Int: 60.00 min

Hyd No.: 17 Basin Outflow

Rate: 87.65 cfs      Time: 30.00 hr  
 Vol : 279.45 Ac-ft    Int: 60.00 min

FIGURE 10

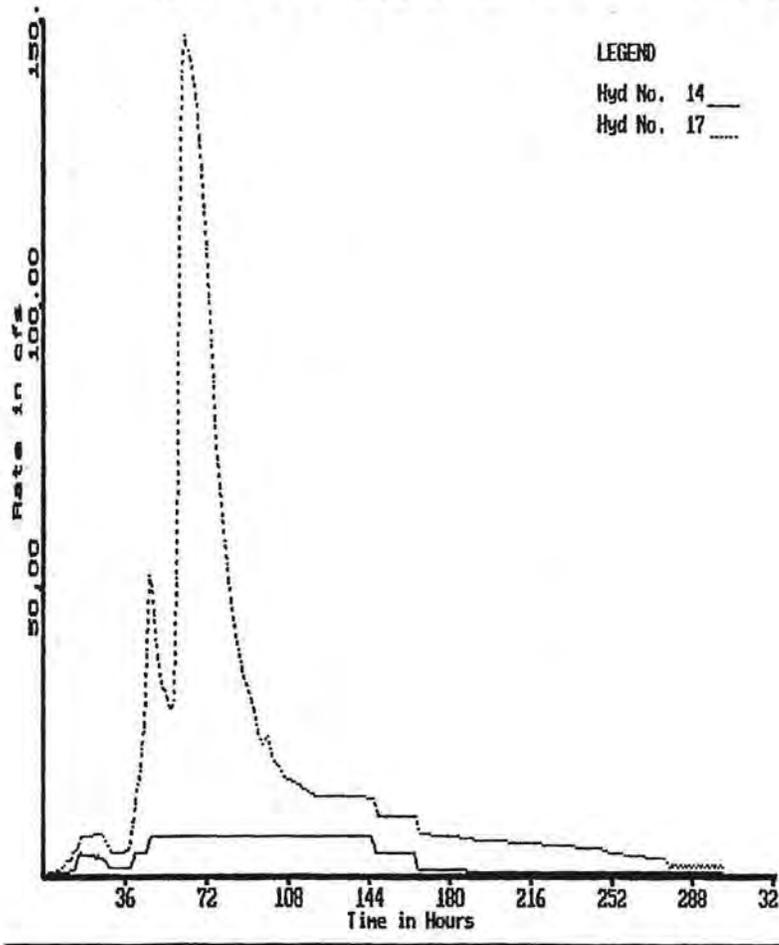
# PREDEVELOPMENT 25 YR PRECEDED BY 2 YR STORM



LEGEND  
 Hyd No. 14 \_\_\_\_\_  
 Hyd No. 17 .....

Hyd No.:	14	Pumped		
Rate:	6.57	cfs	Time:	64.00 hr
Vol :	49.87	Ac-ft	Int:	60.00 min
Hyd No.:	17	Basin Outflow		
Rate:	95.05	cfs	Time:	63.00 hr
Vol :	318.98	Ac-ft	Int:	60.00 min

# PREDEVELOPMENT 100 YR PRECEDED BY 2 YR STORM



Hyd No.	<b>Pumped</b>		
	Rate:	6.58 cfs	Time: 65.00 hr
	Vol :	67.64 Ac-ft	Int: 60.00 min
Hyd No.:	<b>Basin Outflow</b>		
	Rate:	148.22 cfs	Time: 60.00 hr
	Vol :	436.70 Ac-ft	Int: 60.00 min

FIGURE 12

**TABLE 2 - Model Calibration - Table of Results**

Calibration Storm	Parameter	Model Result	Field Observation <sup>1</sup>	City of Oak Harbor Storm Drain Comprehensive Plan <sup>2</sup>	Notes
February 5-9, 1996	N5/N7 Marsh	Slightly Below Road	Almost Overtopped		
	Ft. Nugent Rd. Crown	1.6' Below Crown	Not Over Road		
	Fairway 10 Pond	Elevation 168.4	Elevation 168.4		
	Loers' Pond	0.1' Below Top	1.0' Below Top		
	Fairway 8 Pond	Slightly Over Top	Over Top		
November 26-29, 1995	N5/N7 Marsh	Over Road	Over Road		
	Ft. Nugent Rd. Crown	0.7' Over Crown	Not Over Crown		
	Fairway 10 Pond	Elevation 170.8	Minor Flooding of Home (>172.0)		Overflow of Loer's Pond and Along Fairway Lane Increase Flooding in Golf Course - Overflows not Modeled, See Note 5, Table I
	Loers' Pond	Over Top	NA		
	Fairway 8 Pond	Over Top	Over Top		
100 yr - 24 hr	Storm Volume, Basin S1	203.3 Acre-Feet		249.1 Acre-Feet	City of Oak Harbor Comprehensive Plan, Basins GC1-GC10
10 yr - 24 hr	Hydrograph Peak at Ft. Nugent	25.2 CFS		26 CFS	City of Oak Harbor Comprehensive Plan, Basins GC1-GC10

Notes: 1 - Elevations and distances are estimated; from conversations w/WGCC staff and local residents  
2 - Comparison of model results of two studies, not a true calibration;  
NA - Not Available

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

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**ANALYSIS OF POSTDEVELOPMENT CONDITIONS**

**DESCRIPTION OF SUB-BASINS**

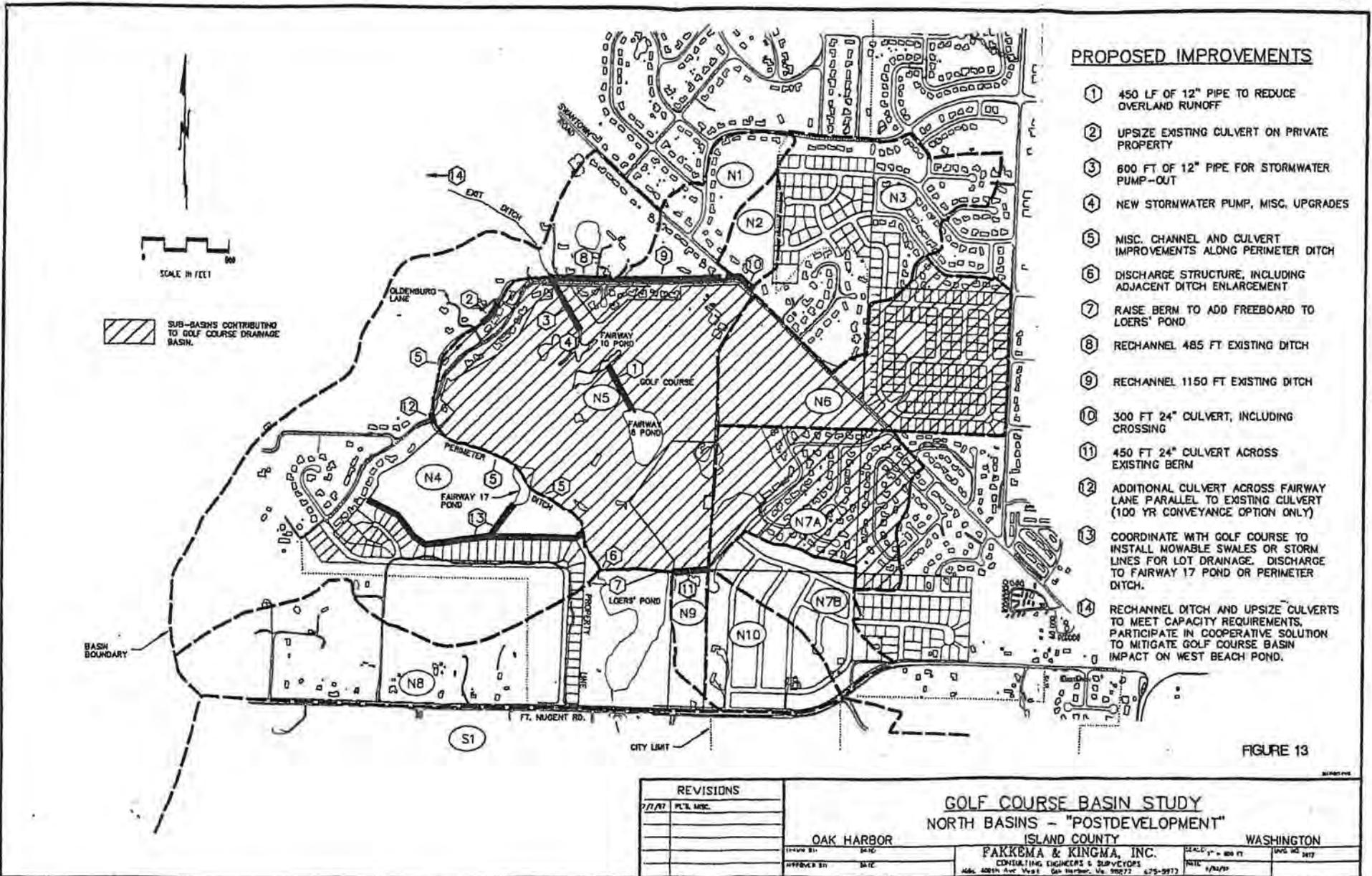
In 1995, the City of Oak Harbor, in accordance with the Washington State Growth Management Act (RCW 36.70A.040), adopted the Oak Harbor Comprehensive Plan. As part of the Plan, the Urban Growth Area Report has analyzed that portion of the study area contained within the Urban Growth Area (UGA) and assigned residential densities to those undeveloped parcels planned for housing. The UGA planning criteria was used for estimating future (postdevelopment) conditions.

A 20 year planning horizon was used for estimating future conditions. It is assumed herein that those residential sub-divisions proposed for sub-basins N3, N5, N7a, N7b, N8, and N10 will be fully developed by the end of the planning period. Additionally, a background growth rate of 3.5% was assumed for the undeveloped areas in the sub-basins within the Urban Growth Area. It would not be possible to predict the location of future development for this back-ground growth rate. A larger proportion of new homes (and associated impervious surface) were located in sub-basins with anticipated higher growth, following existing growth patterns in the area (see Table 3).

The land use map for the Urban Growth Area projects Low Density Residential development for most sub-basins north of Ft. Nugent Road. Per the Comprehensive Plan, areas with a Low Density Residential land use designation are proposed for development at 3-6 dwelling units/acre. Conceptual plans, as provided by the proponents, were used to more precisely determine the densities used in this study.

For analysis of the postdevelopment conditions, the Golf Course Basin was divided in 12 sub-basins, similar to the predevelopment sub-basins: (Figure 13).

S1 - Although S1 is nearly all outside the Urban Growth Area, this basin was modeled in the postdeveloped condition with a significant increase in impervious surface area. Utilizing a 3.5% background growth rate over the 20 year study period, impervious surface is approximately doubled. This is likely a conservative assumption, but is useful to confirm the capacity of Loers' Pond improvements and downstream conveyances.



***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

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remainder resulting from the background growth rate. N4 will continue to drain to the perimeter ditch.

N3 - The construction of additional single family units within this sub-basin will increase impervious surface from 5.8<sup>6</sup> acres to approximately 19.1 acres. Given the existence of large individual lots within the sub-basin, average density at buildout is estimated to be 2.5 units/acre. Nearly all of the additional houses are part of planned developments. Run-off from N3 will be directed to the exit ditch.

N2 - It is estimated that background growth will add 15 new homes to this area. Run-off will be diverted to the exit ditch.

N1 - Twenty (20) new homes from background growth are estimated for sub-basin N1. Run-off will continue to drain toward the exit ditch.

A summary of dwelling units, by basin, is included on the following page:

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<sup>6</sup> The predeveloped condition for N3 is taken prior to recent Highlands West Divisions. The postdeveloped condition includes existing and proposed Highlands West Divisions.

**GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY**

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**TABLE 3  
DWELLING UNITS, BY BASIN**

SUB-BASIN	PREDEVELOPMENT UNITS	PROPOSED UNITS	BACKGROUND UNITS	TOTAL ESTIMATED UNITS IN 2010
S1	195	0	*	*
N1	30	0	20	50
N2	2	0	15	17
N3**	51	118	0	169
N4	71	47	44	162
N5	27	40	0	67
N6	10	230	0	240
N7 (Combined)	97	119	0	216
N8 (Combined)	19	13	11	43
N9	0	0	0	0
N10	3	85	0	88
<b>TOTAL N1-N10</b>	<b>310</b>	<b>652</b>	<b>90</b>	<b>1,052</b>

\* Not determined. Total impervious surface for sub-basin S1 estimated to double by 2016.

\*\* Estimated 48 units - future construction. To fully account for increased runoff, predeveloped condition for N3 considered to be prior to some Highlands West Divisions.

**STUDY RESULTS - RECOMMENDED IMPROVEMENTS**

A number of model iterations were performed to assess the impact of the increased run-off and the redirection of run-off around the golf course area. Model runs were performed according to the logic detailed in Figures 14 and 15. As expected, without mitigation, peak run-off rates were increased for both "early" (from sub-basins near the exit ditch) and "delayed" (from sub-basin S1) hydrographs (Figures 16 through 20), and total run-off volume increased.

As can be seen in Figure 16 for the 10 year storm, the early hydrograph has a higher peak rate than the delayed hydrograph; both postdevelopment peaks are higher than predevelopment peaks.

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

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As the early hydrograph is mainly the result of the close-in basins (N1 - N4), reducing the postdevelopment peak to the predevelopment rate would require the construction of a 1 to 2 acre-foot detention pond in the vicinity of the Exit Ditch and Fairway Lane. Attenuating the postdevelopment peak on the delayed hydrograph requires the installation of a relatively small orifice on Loers' Pond to control the release rate of stormwater for the 10 year storm. The undesired side effect of installing a 10 year control orifice on Loers' Pond is the exceptionally long period of time it would take after a given rainstorm to drain the pond. Calculations indicate that a full pond would drain at a rate of less than one inch per day. By not draining more rapidly, the pond would not have sufficient storage capacity to control a large follow-up storm.

- Given:
- 1) that a prolonged detention of stormwater in Loers' Pond could in some instances, leave downstream areas without adequate stormwater control for larger storms and,
  - 2) that the 10 year post-development peak run-off rate would not cause significant erosion in downstream ditches,

it was decided to use the larger storms (those with the highest likelihood for causing property damage) for the postdevelopment analysis.

Modeling indicated that for control of peak discharge for the larger (25 year, 100 year, 2-25 year, 2-100 year) storms, the structural improvements detailed below would be required:

**Loers' Pond**

Recommended changes to Loers' Pond are as follows: (Figures 21 - 23)

- a) Raise level of pond berm approximately 10" to provide needed freeboard at full pond conditions.
- b) Construct discharge structure with orifice tee for control of 25 year storm. Construct concrete weir and spillway for control of 2-25 year and 2-100 year storms, respectively. Control manhole will be designed with a low-level entrance pipe for wet season (reference Figure 24) pond operation (maximum storage) and a mid-level entrance pipe to allow for some filling of the pond in Spring. During the dry season, valves on both entrance pipes will be shut to maintain the pond at its highest level.

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

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- c) Reconstruct existing ditch immediately downstream of pond. Provide for golf cart crossing.
- d) Extend 8-inch drain line, currently in place in the pond berm, to outlet in the reconstructed ditch.

Modeling indicates that the implementation of these changes will reduce the postdevelopment run-off peak flow to less than predevelopment peak rates as shown in Table 1 and Figures 17 - 20.

Prior to the use of Loers' Pond as a detention facility, it should be determined whether this will conflict with wetland ordinances and regulations. Preliminary indications are that, given that the pond is man-made and currently level-controlled, use as a detention pond may be allowable. Further discussions with the City of Oak Harbor, Washington State Department of Ecology, and the Army Corps of Engineers are required in order to make a formal determination.

**Golf Course Pump-out Capacity**

The diversion of run-off from sub-basins N2, N3, N7b, N9, and N10 results in a net decrease in run-off volume into the golf course for the storms evaluated (e.g. 45 Acre-Feet to 38 Acre-Feet for the 100 year storm). Given this decreased in flow volume, the existing estimated golf course pump capacity of 2,950 gpm should be adequate to maintain the water level at 1.8 feet below flood stage during the 100 year storm.

Although pump capacity appears to be adequate for golf course run-off control, the existing pumps and outlet pipes would not be considered reliable in an emergency situation. It is recommended that a 2,500 gpm electric pump station be installed at Pond 10 in order to replace most of the existing capacity. The pump station will incorporate a manifold connection for the existing tractor-mounted and portable pumps. These pumps will provide additional capacity during large storm events, and backup during power outages. Outlet piping capacity should be increased by the installation of a permanent 12-inch pipeline, placed parallel to the existing line.<sup>6</sup>

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<sup>6</sup> The flow capacity of the existing pump-out pipe should be verified prior to final design.

## ***GOLF COURSE DRAINAGE BASIN STORMWATER MITIGATION STUDY***

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### **Conveyance System**

The postdevelopment conveyance system was checked for capacity during the 25 year and 100 year storms.<sup>7</sup>

To route stormwater around the golf course, 24-inch storm lines would be required as follows:

- 300 linear feet east of the Swantown Road/Fairway Lane intersection to divert sub-basins N2 and N3 around the golf course.
- 450 linear feet along the northern boundary of N9, across the existing berm to divert stormwater from N7b, N9, and N10 into Loers' Pond.

Preliminary sizing calculations for culverts downstream of Loers' Pond indicated the need to upsize some of the culverts as indicated on Table 4 and Figure 14.

In most areas, the hydraulic capacity of the perimeter ditch was adequate to carry the 25 year storm run-off. Some areas will need to be widened and deepened for the 100 year storm as indicated in Table 4.

### **Downstream and West Beach Improvements**

Accompanied by the land owners, the capacity of the Exit Ditch was evaluated in January, 1997. Portions of the ditch require re-excavation to increase capacity. Additionally, replacement of an existing single 18" culvert will be required. The Exit Ditch travels adjacent to field access roads and, as such, capacity upgrades and maintenance would not be difficult. Project proponents have agreed to make capacity improvements (see Table 4) herein described.

As indicated above, the impoundment tidegates at West Beach appeared to be stuck in the open position there have been some problems with maintaining tidegate function in the past. Although it is beyond the scope of this study, an evaluation of the tidegate elevations, operations, and

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<sup>7</sup> Because of the high cost of construction, many municipal storm drainage systems do not have adequate capacity to convey a 100 year storm. Based on a review of costs vs. benefits for providing a 100 year system, agencies will often opt for conveyance systems with lower capacity, e.g. 25 year or less. For this reason, the conveyance system was additionally analyzed for its ability to pass the 25 year storms without overtopping.

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

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capacity would likely indicate that upgrades to these outlet pipes would result in a more rapid draining of the impoundment area.

City of Oak Harbor and Island County Engineering staff have indicated that, given the existing drainage problems in the West Beach Area, it is their expectation that the proponents of the projects described herein participate in the mitigation of downstream stormwater volume. Mitigation is required and would require coordinating with county staff with respect to tidegate improvements. Given the unknowns and the need for continuing coordination between the governmental agencies and the proponents, it is not clear at this point how the impacts of increased volume should be handled.

The impact of the proposed projects, and background growth over the 20 year period is to increase the run-off volume from 293 Acre-Feet to 310 Acre-Feet during the 100 year storm, approximately 6%. When the background growth rate is excluded, the impact of the proposed projects adjacent to the Golf Course is to increase the runoff volume for the 100 year storm by approximately 3%.

**Improvement Priorities**

In order to provide the proponents, WGCC, and governmental agencies with guidance, the improvements described herein have been ranked in order of priority. The ordering is based upon the opinion of the author and relies on the following criteria:

- A) Will the improvement enhance public safety?
- B) Will the improvement reduce the risk of property damage?
- C) Will the improvement reduce public inconvenience caused by flooding?

This is a recommended ranking. The order of implementation may be modified by the involved parties:

- Raise berm to add freeboard to Loers' Pond.
- Construct Loers' Pond discharge structure and associated work.
- Divert N2 and N3 to Exit Ditch with associated storm pipe and ditch improvements along Swantown Road and Fairway Lane.

***GOLF COURSE DRAINAGE BASIN  
STORMWATER MITIGATION STUDY***

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- Install 12" pipe for stormwater pump-out from Fairway 10 Pond to Exit Ditch.
- Upsize existing culvert in backyard of private property on Fairway lane northerly of Oldenburg Lane.
- Install new stormwater pump and associated upgrades at Fairway 10 Pond.
- Construct other culvert and channel improvements along perimeter ditch.
- Install ditch and culvert improvements along Exit Ditch.
- Participate in mitigation of Golf Course Basin Stormwater Impact on West Beach impoundment.
- Construct parallel culvert on Fairway Lane - 100 year conveyance option only.
- Install 12" storm line to reduce overland flow from Fairway 8 Pond to lower ponds.

Some proposed improvements should be installed in conjunction with an associated development. The following are examples; each plat will have its own associated internal and off-site stormwater facility requirements, as dictated by site conditions:

- Construct 24" storm line across N9 berm; install with development of N7b and N10.
- Construct swale/storm line improvement to better channel runoff to perimeter ditch and Fairway 17 Pond; install with proposed development on southern portion of N4.

**Long-Term Maintenance and Operation of Basin Drainage Facilities**

At this time, maintenance for the drainage facilities in the Golf Course Basin appears to be performed by WGCC, Island County, the City of Oak Harbor, and individual landowners. Stormwater control, by its nature, is best managed by a public authority. For long term reliability, it is recommended that the maintenance and operation of the Golf Course Basin facilities be transferred entirely to a public entity.

The first step in a long-term maintenance plan would be the establishment of easements along drainage ways. Easements to the City of Oak Harbor along the perimeter ditch from Ft. Nugent, northerly to the crossing at Fairway lane were secured as a part of the annexation of the golf course into the City. For that portion of the perimeter ditch from Fairway Lane to the Exit Ditch and for the Exit Ditch to West Beach additional research and/or negotiations will be required to secure the required maintenance easements. For reference, an estimate of annual maintenance costs has been compiled, and is included in Appendix F.

# RECOMMENDED IMPROVEMENTS GOLF COURSE BASIN

TIDEGATE AND POSSIBLE OTHER IMPROVEMENTS TO DRAIN WEST BEACH IMPOUNDMENT

DITCH IMPROVEMENTS TO INCREASE FLOW CAPACITY

DITCH IMPROVEMENTS

INSTALL ADD'L DISCHARGE PIPE

VARIOUS INTERNAL DRAINAGE IMPROVEMENTS INCLUDING 12" DRAIN PIPE BETWEEN POND 8 AND POND 10

IMPROVE PUMPING RELIABILITY

GOLF COURSE POND STORAGE

LOERS' POND

- INCREASE USEABLE CAPACITY
- RAISE PORTION OF BERM APPROX. 1 FT
- INSTALL DISCHARGE STRUCTURE TO PERMIT USE OF MORE POND DEPTH
- MAINTAIN LOW LEVEL DURING RAINY SEASON
- KEEP LEVEL HIGH IN SUMMER.

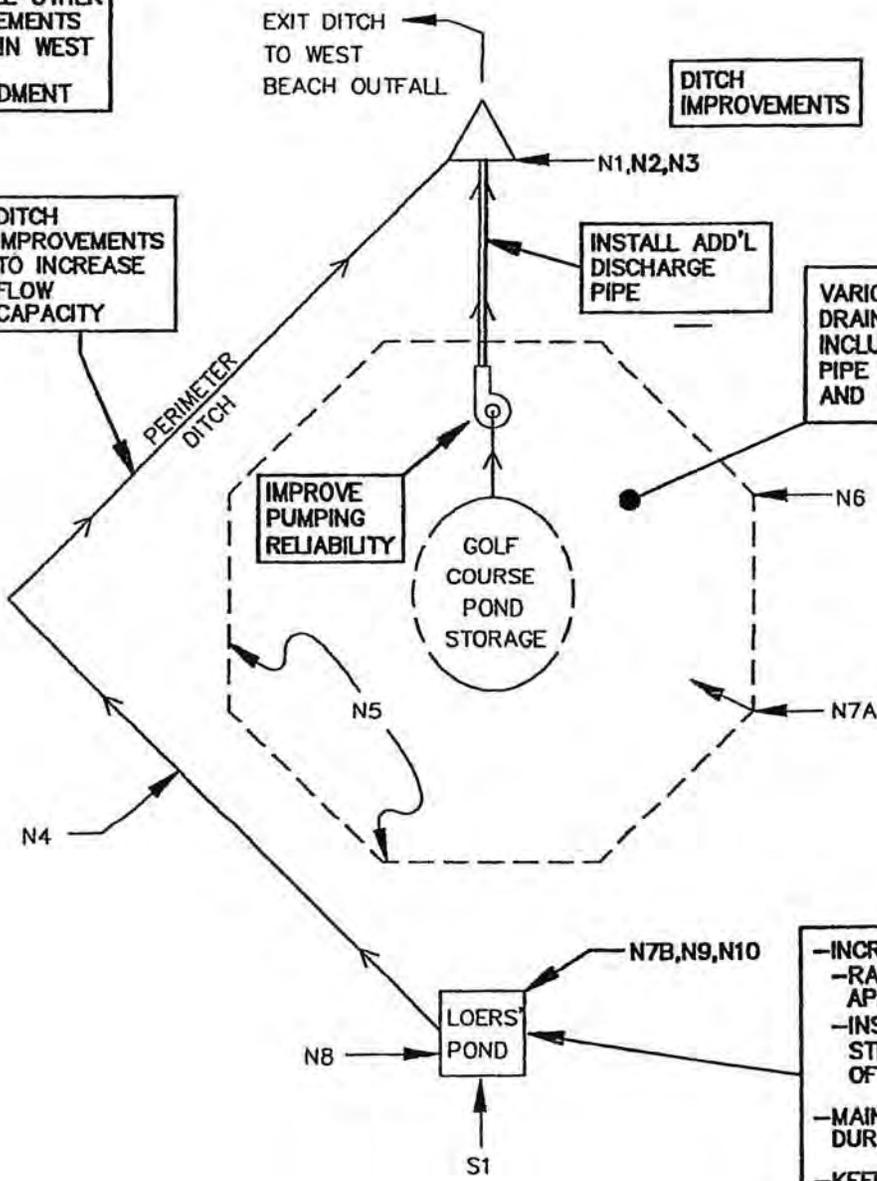


FIGURE 14

SWAN 1

### GOLF COURSE BASIN STUDY – POSTDEVELOPMENT MODEL FLOWCHART

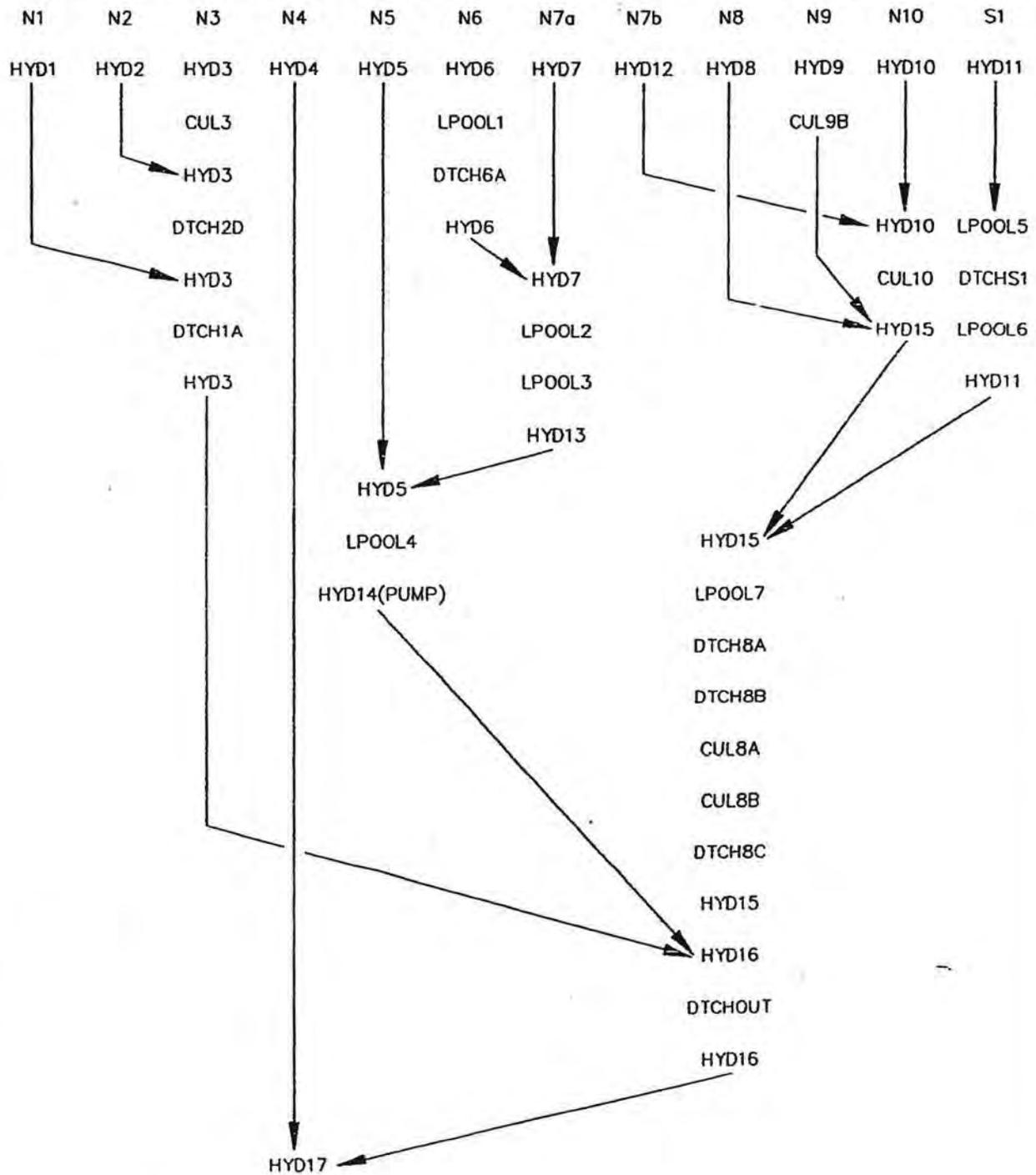
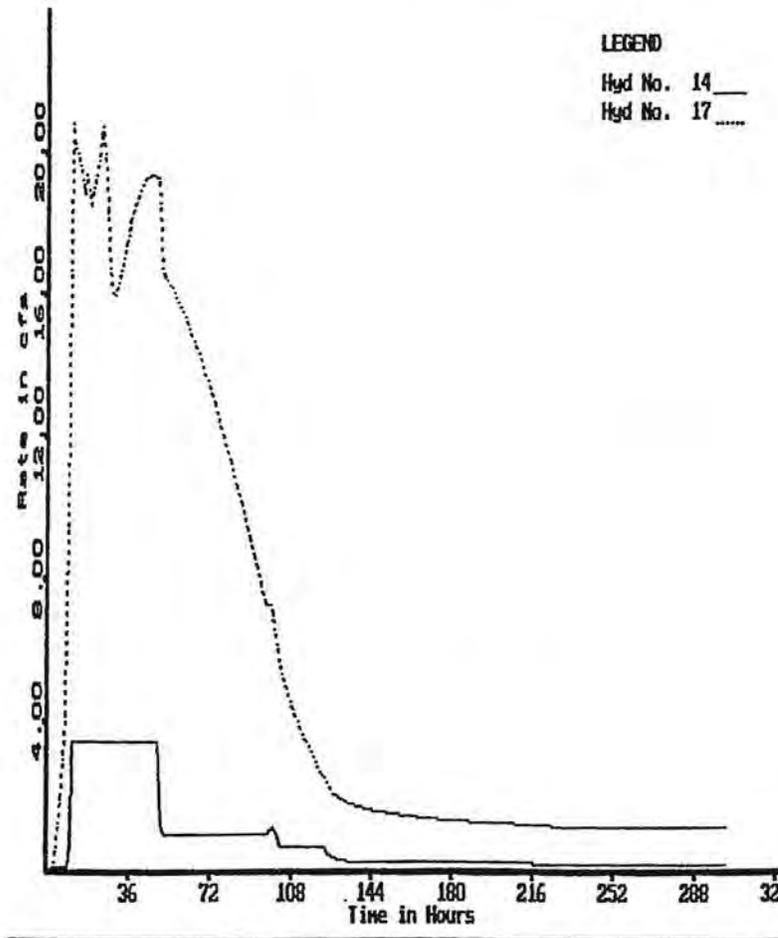


FIGURE 15

# POSTDEVELOPMENT 10 YR - 24 HR STORM



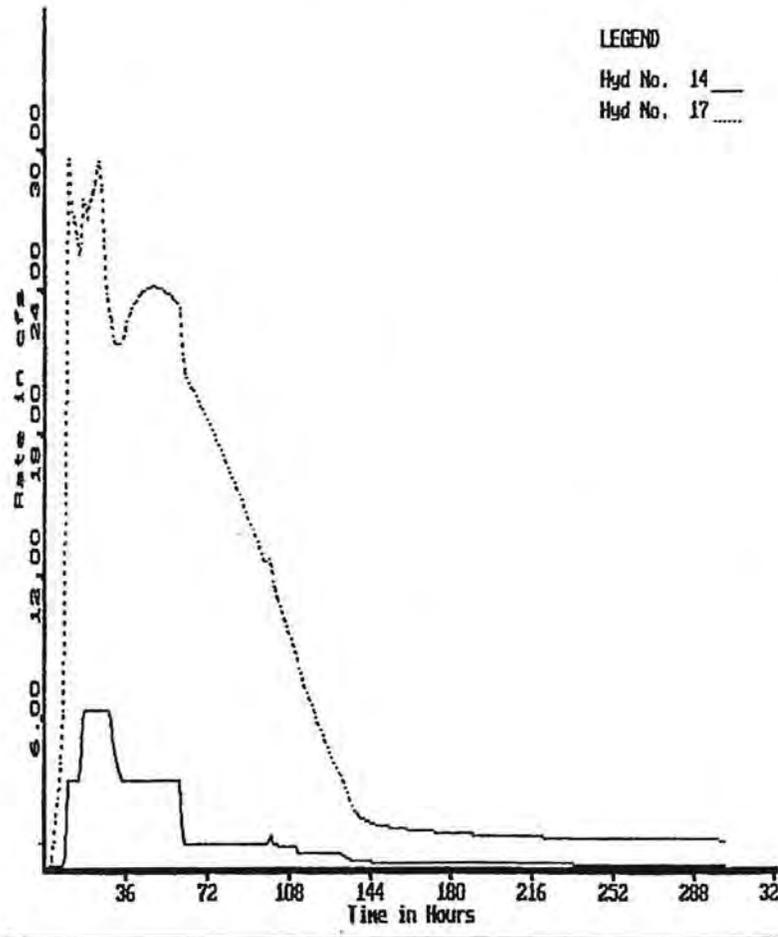
Hyd No.: 14 Pumped

Rate: 3.57 cfs      Time: 25.00 hr  
Vol                      Int: 60.00 min

Hyd No.: 17 Basin Outflow

Rate: 20.93 cfs      Time: 10.00 hr  
Vol : 142.17 Ac-ft    Int: 60.00 min

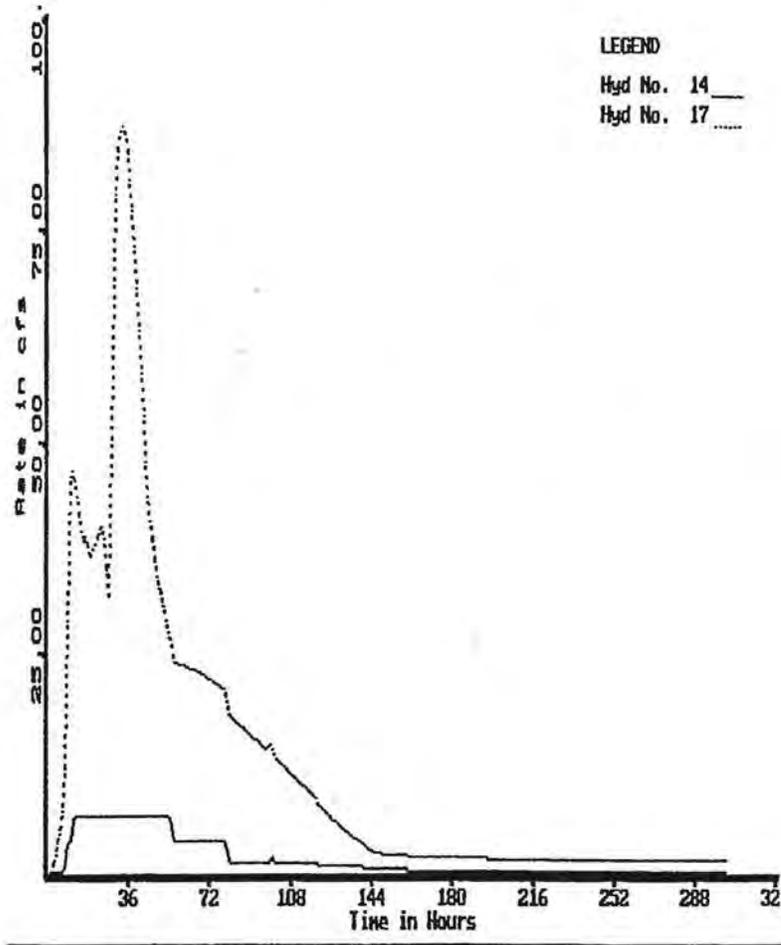
# POSTDEVELOPMENT I 25 YR - 24 HR STORM



Hyd No.: 14 Pumped  
 Rate: 6.57 cfs      Time: 24.00 hr  
 Vol : 24.72 Ac-ft    Int: 60.00 min

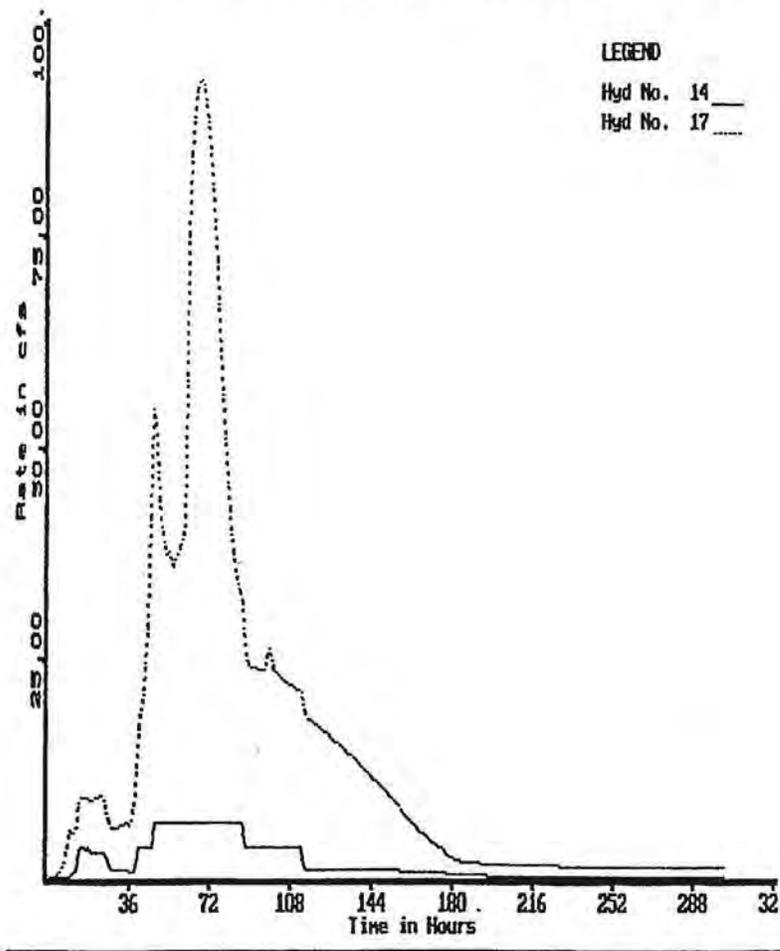
Hyd No.: 17 Basin Outflow  
 Rate: 29.88 cfs    Time: 10.00 hr  
 Vol : 200.21 Ac-ft   Int: 60.00 min

# POST DEVELOPMENT 100 YR - 24 HR STORM



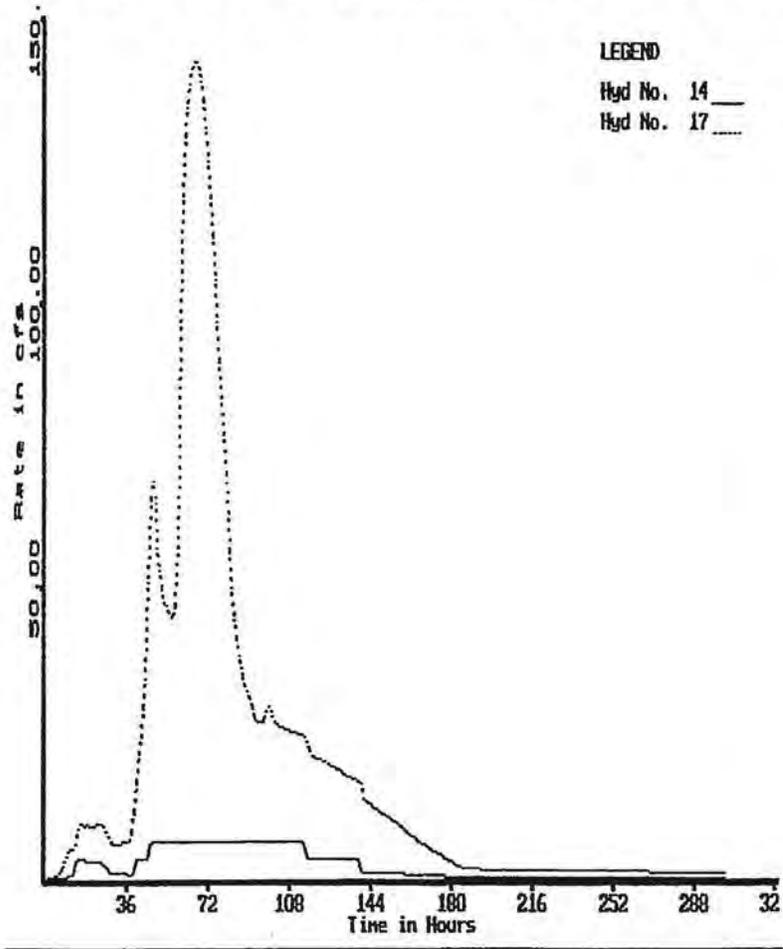
<b>Hyd No.: 14 Pumped</b>			
Rate:	6.57 cfs	Time:	27.00 hr
Vol :	36.89 Ac-ft	Int:	60.00 min
<b>Hyd No.: 17 Basin Outflow</b>			
Rate:	87.44 cfs	Time:	32.00 hr
Vol :	309.46 Ac-ft	Int:	60.00 min

# POSTDEVELOPMENT 25 YR PRECEDED BY 2 YR STORM



<b>Hyd No.: 14 Pumped</b>			
Rate:	6.57 cfs	Time:	62.00 hr
Vol :	41.47 Ac-ft	Int:	60.00 min
<b>Hyd No.: 17 Basin Outflow</b>			
Rate:	93.56 cfs	Time:	66.00 hr
Vol :	350.71 Ac-ft	Int:	60.00 min

# POSTDEVELOPMENT 100 YR PRECEDED BY 2 YR STORM

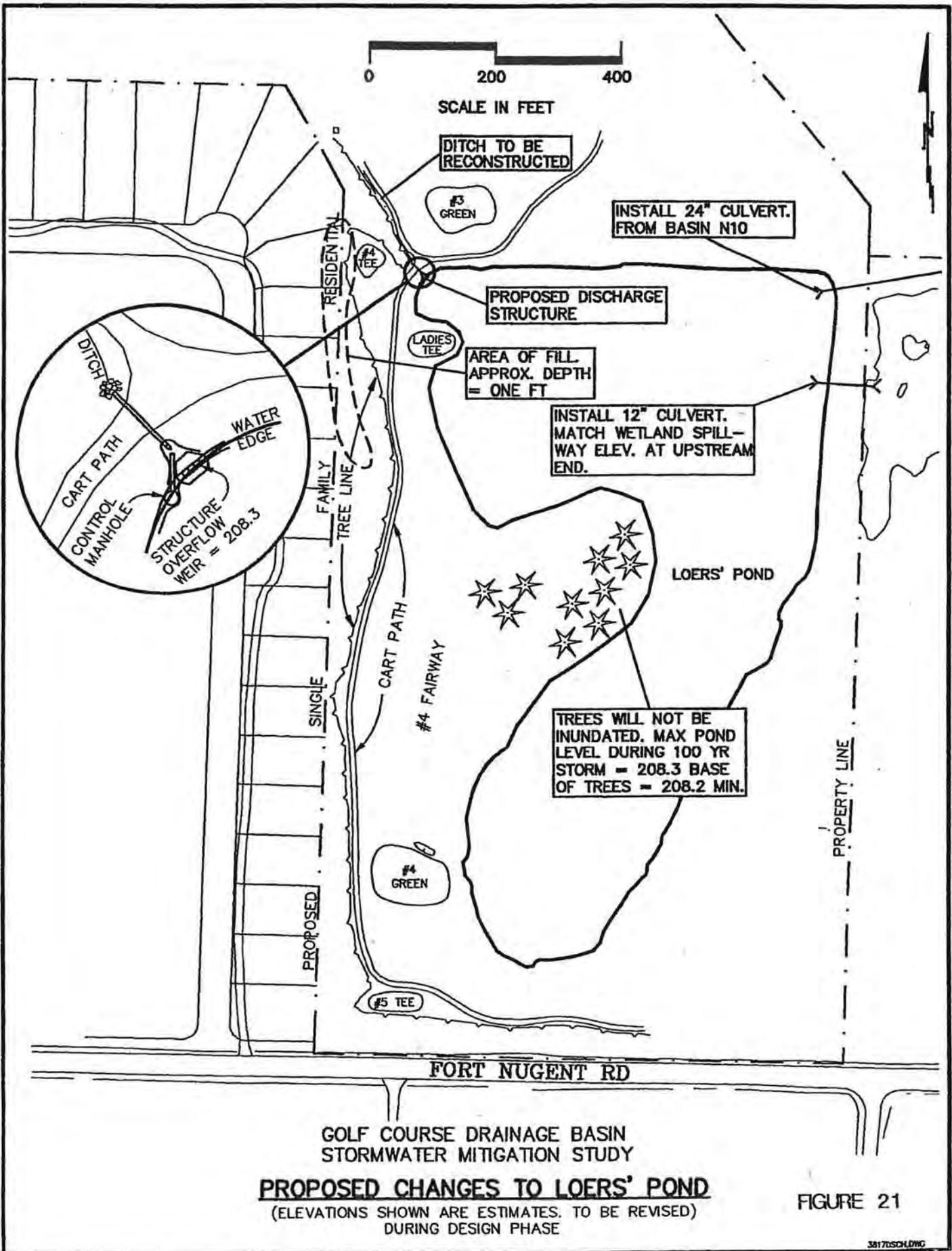


Hyd No.: 14 Pumped

Rate: 6.57 cfs      Time: 63.00 hr  
Vol : 53.19 Ac-ft    Int: 60.00 min

Hyd No.: 17 Basin Outflow

Rate: 143.53 cfs    Time: 64.00 hr  
Vol : 471.12 Ac-ft   Int: 60.00 min



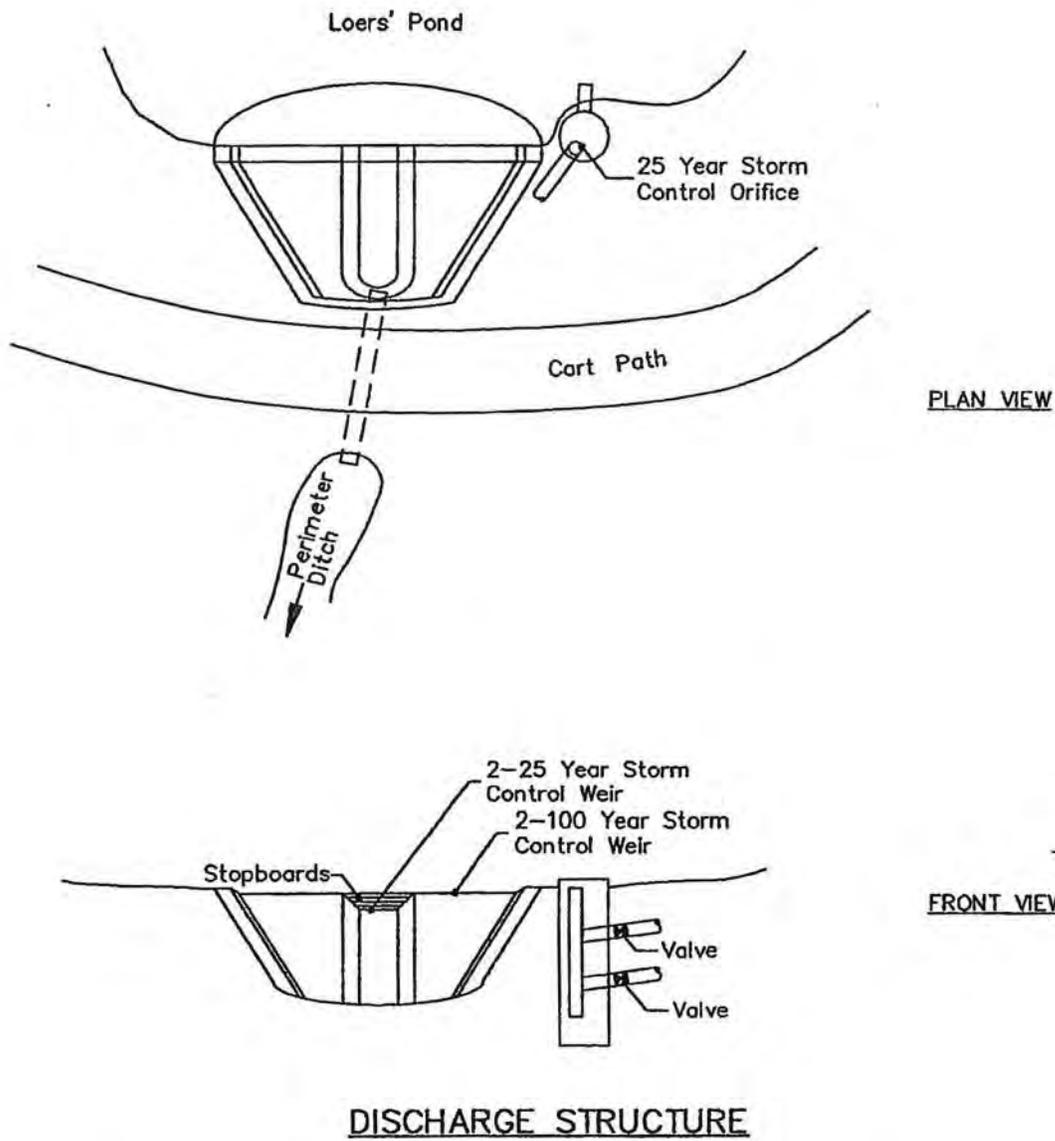
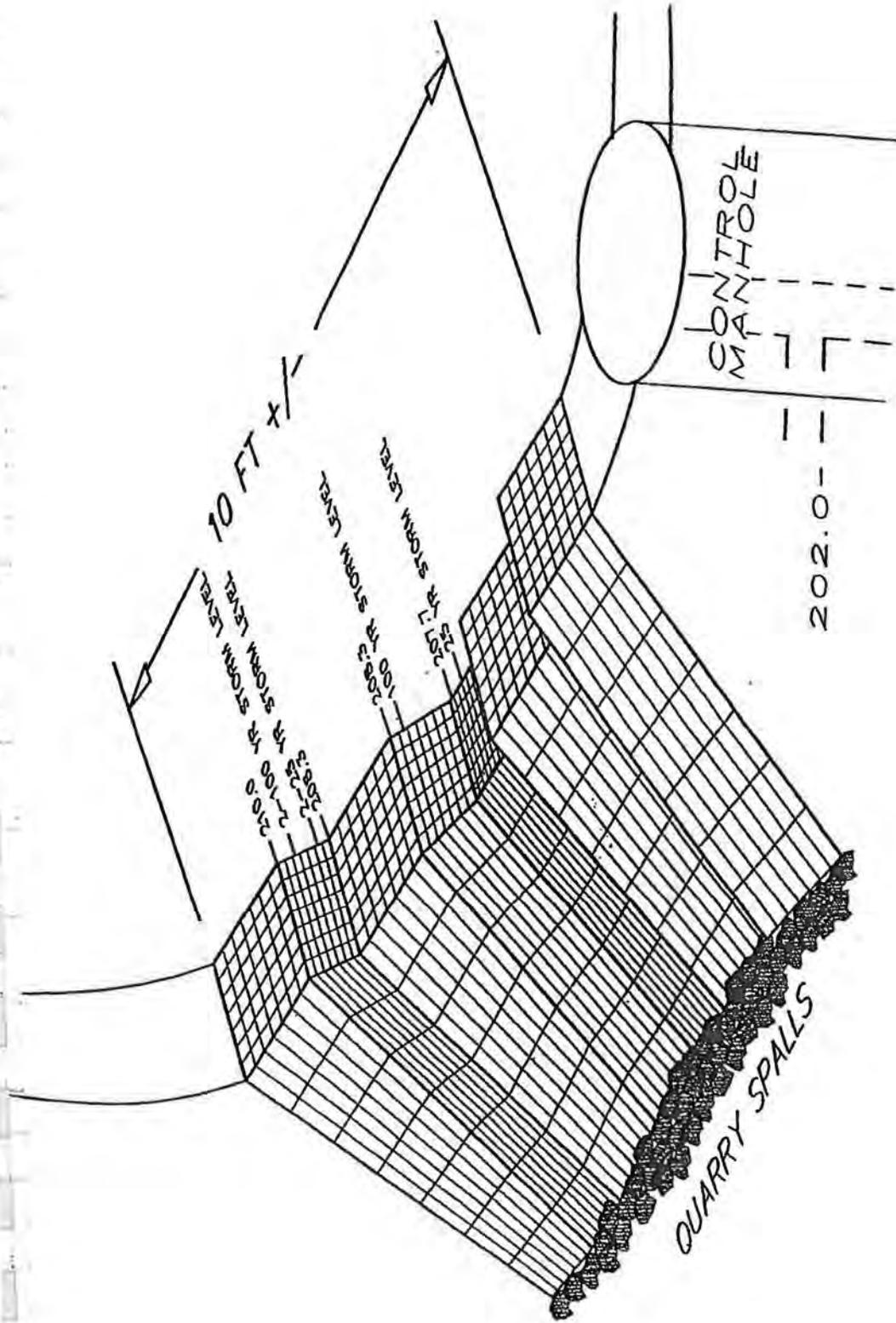


FIGURE 22

FIG22.DWG



LOERS' POND  
DISCHARGE STRUCTURE

NOT TO SCALE

FIGURE 23

WHIDBEY ISLAND AND VICINITY - PROPORTION OF ANNUAL RAINFALL - BY MONTH

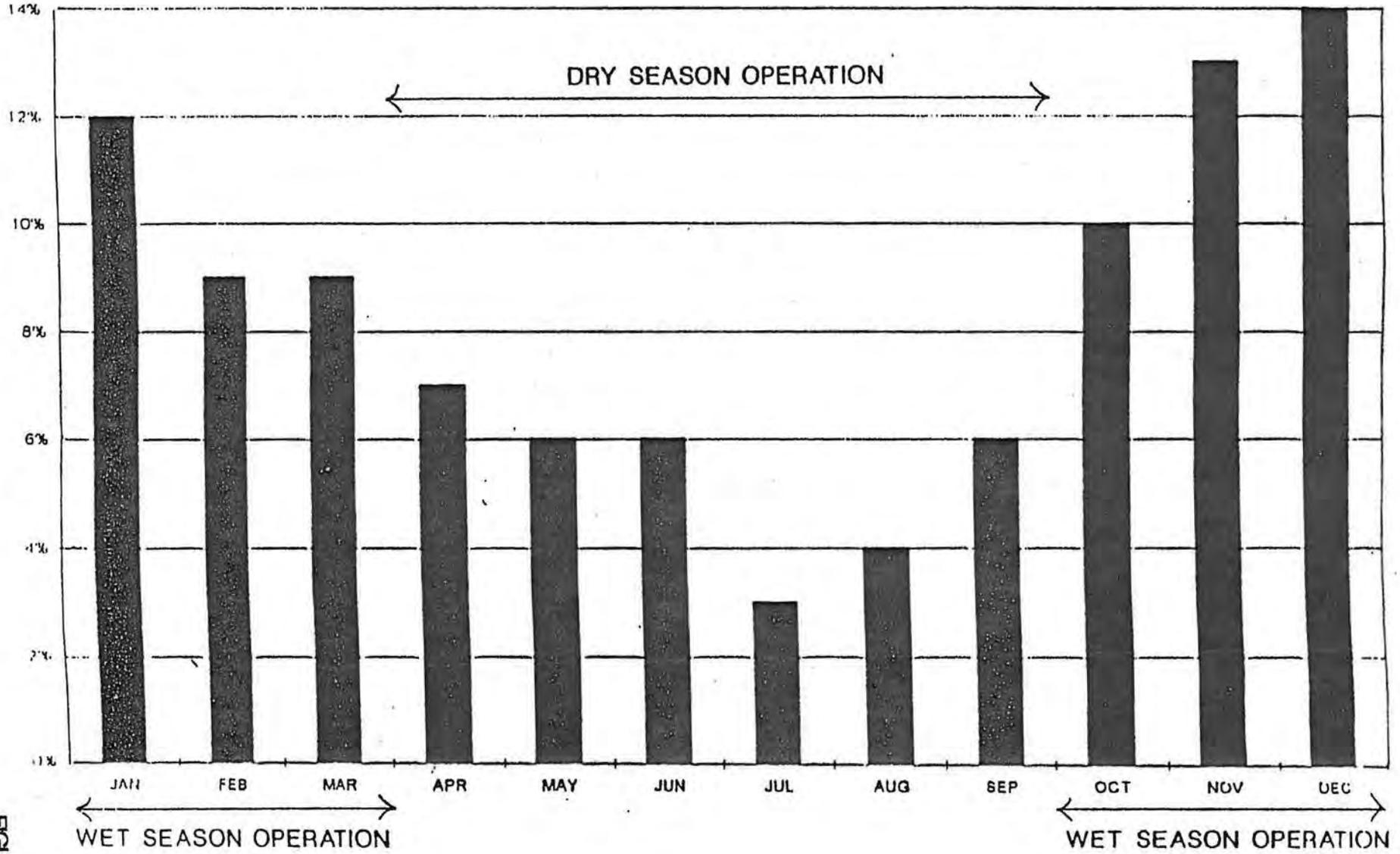


FIGURE 24

**TABLE 4 - GOLF COURSE BASIN - SUMMARY OF IMPROVEMENTS**

**DITCHES (25 YEAR CONVEYANCE SYSTEM)**

The following ditches will require rechanneling:

DITCH I.D.	DESCRIPTION	REQUIRED DITCH CROSS-SECTION (or Equivalent Hydraulic Capacity)			ESTIMATED COST	NOTES
		Base (Ft)	Sides	Depth (Ft) <sup>2</sup>		
1A	North Side of Fairway Lane (From Exit Ditch, 485 LF Easterly Along Road)	2	1:1	3.5	\$4,500	485 Linear Feet Upgrade in Conjunction with Development
2D	North Side of Fairway Lane (From Swantown Road, 1,150 LF Westerly Along Road)	2	1:1	2.5	\$6,500	1,150 Linear Feet Upgrade in Conjunction with Development

**DITCHES (100 YEAR CONVEYANCE SYSTEM)**

The following ditches will require rechanneling:

DITCH I.D.	DESCRIPTION	REQUIRED DITCH CROSS-SECTION (or Equivalent Hydraulic Capacity)			ESTIMATED COST	NOTES
		Base (Ft)	Sides	Depth (Ft) <sup>1</sup>		
1A	North Side of Fairway Lane (From Exit Ditch 485 LF Easterly Along Road)	2	1:1	3.5	\$4,500	485 Linear Feet Upgrade in Conjunction with Development
2D	North Side of Fairway Lane (From Swantown Road, 1,150 LF Westerly Along Road)	2	1:1	2.5	\$6,500	1,150 Linear Feet Upgrade in Conjunction with Development
8A	Loer's to Fairway 17 Pond	4	5:1	3.0	\$5,500	Raise Ditch Sides, Excavate, As Required. Cost Estimate Does Not Include Right-of- Way or Easement Acquisition.
8B	Fairway 17 Pond to Oldenburg Lane	5	2:1	4.5	\$17,000	
8C	Oldenburg Lane to Exit Ditch	5	2:1	4.5	\$6,500	

<sup>1</sup> Costs include estimated engineering fees and permits.

<sup>2</sup> Ditch depth includes at least one foot of freeboard.

**CULVERTS AND STORM DRAIN LINES - (25 YEAR CONVEYANCE SYSTEM)**

CULVERT I.D.	DESCRIPTION	REQUIRED CULVERT (or Equivalent Hydraulic Capacity)	ESTIMATED COST	NOTES
10	New pipe from proposed developments in n10 and n7b	450 LF - 24"	\$40,000	Install in Conjunction with Development
3	North side of Swantown Rd. (including road crossing)	300 LF - 24"	\$20,000	Install in Conjunction with Development
8A	North of Oldenburg Lane (existing 24")	80 LF - 36"	\$10,000	90 LF of Existing 36" Culvert to Remain in Place
Unnamed	Miscellaneous Golf Course Culvert Upgrades		\$10,000	Replace Most Culverts at Ditch Crossings w/Cart Paths
Unnamed	New Pipe From Pond 8 to Pond 10	450 LF - 12"	\$11,500	

**CULVERTS AND STORM DRAIN LINES - (100 YEAR CONVEYANCE SYSTEM)**

CULVERT I.D.	DESCRIPTION	REQUIRED CULVERT (or Equivalent Hydraulic Capacity)	ESTIMATED COST	NOTES
10	New pipe from proposed developments in n10 and n7b	450 LF - 24"	\$40,000	
3	North side of Swantown Rd. (including road crossing)	300 LF - 24"	\$20,000	
8A	North of Oldenburg Lane (existing 24")	170 LF - 48"	\$26,000	Replace existing 24" & 36"
Unnamed	Crosses Fairway Lane	70 LF - 36"	\$10,000	Install Parallel to Existing Culvert
Unnamed	Miscellaneous Golf Course Culvert Upgrades		\$10,000	Replace Most Culverts at Ditch Crossings w/Cart Paths
Unnamed	New Pipe From Pond 8 to Pond 10	450 LF - 12"	\$11,500	

**LOER'S POND IMPROVEMENTS**

DESCRIPTION	ESTIMATED COST	NOTES
Discharge Structure, Including Adjacent Ditch Enlargement	\$28,500	
Additional Soil to Permit Increase in Elevation of Berm Approximately 10" at Two Low Areas	\$8,500	Provides Freeboard.

**IRRIGATION & PUMPOUT IMPROVEMENTS**

DESCRIPTION	ESTIMATED COST	NOTES
Install 600 LF of 12" Pipe for Stormwater Pump-Out To Exit Ditch	\$35,000	
New Stormwater Pump	\$40,000	Represents New 2,500 GPM Pump w/Manifold Provided For Portable Pump Connection. Existing Pump To Be Retained.

**DOWNSTREAM IMPROVEMENT (Exit Ditch and West Beach)**

DESCRIPTION	ESTIMATED COST	NOTES
Install Dual 30" Culverts On Field Access Road	\$3,000	
Ditch Cleaning	\$2,000	
West Beach - Participation in Mitigation to Stormwater Impact on West Beach Impoundment		Form of Participation to be Determined Based on Discussions with Governmental Agencies.

**COMMENTS AND CORRESPONDENCE  
RELATED TO DRAFT STUDY**

**NOVEMBER, 1996**

WHIDBEY GOLF AND COUNTRY CLUB  
 1411 W. Fairway Lane  
 Oak Harbor, WA 98277

February 19, 1997

Mr. Ryan Kingma  
 Fakkema and Kingma Inc.  
 4086 400th Ave. West  
 Oak Harbor, WA 98277

Dear Mr. Kingma:

The Whidbey Golf and Country Club (Club) wishes to be a good neighbor and to work with the surrounding land owners, the City of Oak Harbor, Island County and the State to develop an effective and fitting drainage plan for stormwater. We believe it is in the Club's best interest to support such a plan.

Following are our comments and suggestions regarding the draft Golf Course Drainage Basin Stormwater Mitigation Study (Study) dated November 1996. These comments and suggestions are made in a positive fashion in an effort to improve the draft study to make it more effective and fitting to the situation in the sub-basin of the larger watershed drainage basin.

The introduction to the Study, page 1, provides four goals of the study.

1. With regard to the first goal, we suggest that the goal of this stormwater mitigation study should be to develop a program leading to the efficient handling of the current and increasing future flows of stormwater due to development activities in areas N1 thru N10 as shown on Figure 1 (page 2) bearing in mind the significant flows north from area S1. This program goal should cover the golf course sub-basin including the exit ditch from the golf course to Puget Sound from the standpoint of developing and maintaining an effective means of moving the stormwater to Puget Sound.

The referenced Oak Harbor Mitigated Determination of Non-Significance for the 1992 Swanlow Annexation does not mention and certainly does not require the golf course itself to be the detention location for "development" stormwater. This, of course, does not preclude the use for other locations, such as the Homestead site, for such detention facilities nor the continued use of certain Club ponds as transit facilities.

2. With regard to the third goal, over the past several years the Club has spent considerable time and effort to increase its water storage capabilities for summer irrigation. At present, the Club believes it has sufficient storage for its summer requirements and is not looking for any additional flow to its facilities at any time of the year. We suggest that this goal be eliminated.

The next series of comments relate to the Study's section on existing conditions.

1. On page 4, we suggest that the last sentence in the description of N8b be changed to read "Run-off from N8b, other than from the small section of fairway, enters the ditch at the border of the properties and flows into the ditch which receives the water from Loers Pond." This is the actual condition.

Also on page 4 in the second paragraph, it should be noted that the extension of Loers Pond was from an existing pond-wetland combination. Therefore, we suggest the first sentence read, "The 10 acre Loers Pond, operated as a transit for the stormwater flow from the sizable area south of Ft. Nugent Road and for the storage of irrigation water, was extended in 1979 by the WGCC."

2. On page 5, we suggest that "N8" be removed from the first sentence of the last paragraph since this stormwater exits using the perimeter ditch.
3. On the bottom of page 5, the single electric 7hp submersible pump is rated (approx.) at 250 gpm. The level 2 pump is rated 1,350 gpm (total 1,600 gpm). The level 3 pump is rated 1,350 gpm (total 2,940 gpm).
4. On page 6 and regarding the last paragraph, it is our understanding that the pump station and tide gates have not been operating for at least ten years. You might add this comment to the text.
5. On page 7 in the paragraph starting "Field review", we suggest the second sentence be modified to read "section), with some additional work and proper maintenance as well as procedures and facilities to control the total stormwater flow, the conveyance system will be able to pass large rain storm events." This is not presently the case.
6. On page 9, we believe it would be helpful to show the Club's property line on this Figure and also on Figure 13 (page 31) and on Figure 1 (page 2).
7. On page 10, Figure 3 should show N8A flowing to the perimeter ditch and not to Loers Pond to be consistent with page 3. We realize a portion of this water flows to Loers Pond by means of the ditch along Ft. Nugent Road.

Before we list our comments and suggestions regarding the Analysis of Post development Conditions starting on page 23, we need to mention three items which form the backdrop for our comments.

As mentioned on the first page, we believe we have sufficient storage for summer irrigation and are not looking for additional stormwater runoff during that period. In any event, very little if any summer stormwater reaches the convergence point just prior to the exit ditch to Puget Sound. Therefore, we do not believe the study should consider back-flowing stormwater from the convergence point to fairway 10 pond.

With regard to the conveyance system down-stream of Fairway Lane, it is our understanding that the ditch to the pond at West Beach can accommodate a regulated amount of stormwater flow if some further ditching work is done and if a larger culvert is installed at the dam on this property. In order for this system to function, we believe the tidegates and other mechanism at West Beach need to be operational and maintained and the ditch maintained.

More than half of the stormwater runoff in the sub-basin during large storms comes from the sizeable area south of Ft. Nugent Road. Currently, Loers Pond can not accommodate large flows that we have been experiencing without overflowing. Additional work may be severely limited at Loers Pond. In any event, we believe this pond should continue to handle only water from the large area to the south and not be burdened with a significant portion of the other half of the sub-basin's runoff. The large runoff from the south can only increase in rate and certainly total volume as development takes place in this area. Loers Pond must be available to accommodate this flow.

The following comments and suggestions, therefore, are based on 1) the items mentioned on the previous page regarding existing conditions, 2) no summer runoff to the Club at Fairway Lane, 3) an effective and maintained conveyance system from Fairway Lane to Puget Sound and 4) Loers Pond continuing to absorb only waters crossing Ft. Nugent Road.

Starting in the northeast, we agree in general with items 8, 9 and 10 regarding 300 feet of 24 inch culvert along the north side of Swantown Road with a road crossing to the rechanneled ditch along Fairway Lane leading to the exit ditch. However, we question the use of a culvert along Swantown Road when so much of the stormwater reaches the ditch opposite the Club's property arriving at a right angle from the up hill developments in N1, N2 and N3. The other portions of the ditch should be reworked to assure adequate flow. You might consider a concrete lined ditch at some distance on either side of the culvert crossing to Fairway Lane. Because of the current significant flow of stormwater from this area and its increase due to planned future development, a retention pond may be required.

We also agree with items 3 and 4 regarding 600 feet of 12 inch pipe from fairway 13 pond to the exit ditch and a new stormwater pump which we would prefer to be electric. Fairway ponds 10 and 18 are very shallow and improved control of stormwater would result from the dredging of these ponds.

It is also appropriate to upsize the 170 feet of existing culvert, item 2, to 48 inches and to add a second culvert across Fairway Lane, item 12.

We agree that the perimeter ditch, item 5, along and adjacent to Fairway Lane needs to be reworked. We also agree that the perimeter ditch between fairway 17 pond and Fairway Lane needs to be deepened and the culverts under the four cart paths replaced with bridges to allow unobstructed flow of stormwater. We also believe the perimeter ditch and pipe between Loers Pond, other than near the discharge structure, and fairway 17 pond needs to be enlarged.

The Fairway Lane road ditches, particularly to the south of the crossing of the perimeter ditch, need to be reworked to prevent flows to the fairways. Additionally, the ditch on the north side of Ft. Nugent Road should be reviewed to see if some stormwater can be diverted away from Loers Pond.

To the southwest, the ditch along fairway 16 ending in fairway 17 pond needs to be reworked to be able to handle the increased flow of development storm water. The current ditch along the property line to the west of Loers Pond also needs to be reworked and a more definitive entrance made to the perimeter ditch north of Loers Pond. Additionally, the ditch along the property line on the curve in fairway 3 needs to be reworked to handle the increase in volume.

We need a better understanding of the need for and design of item 6, the \$20,000 new discharge structure at Loers Pond.

One of the most significant increased flows of development stormwater currently and in the near future, based on existing development and the plans of the proponents, will come from areas N5, N6, N7 and N10. This flow will increase in both rate and in total volume. We are not prepared to handle the significantly increased flows due to development. Therefore, the Study should look to alternate proposals which would gather this stormwater and directly transport it in some fashion to the exit ditch to West Beach.

We believe the stormwater flows need to be analyzed to determine that the various flows reach the exit ditch in a manner consistent with the ability of that facility. At year-end 1996, we witnessed a flow of stormwater quickly characterized as a 2 or 3 year storm which created significant problems.

As you indicated, the study would not be complete without a long-range operating and maintenance plan based on a program identifying the timing and financing of the necessary drainage facilities.

The draft Study is a good start toward developing an effective plan. We believe our comments and suggestions, which are based on our knowledge of the physical conditions and not on an engineering evaluation, will make the Study more effective and useful. We are prepared to work with you and others to complete an effective and fitting drainage plan.

We hope the discussion of our comments and suggestions today has answered any questions you may have. Please feel free to contact me with any additional questions or comments.

Sincerely,

*Roy Dickerson*  
Roy Dickerson  
President

CC: Mr. Roy Allen, Island County Engineer  
Mr. Richard Fakkema  
Mr. Robert Fakkema  
Mr. Ryan Goodman, City Engineer, City of Oak Harbor

## ISLAND COUNTY PUBLIC WORKS DEPARTMENT

P.O. Box 5000  
 Coupeville, WA 98239



Phone: (360) 679-7331  
 From Camano: 629-4522  
 From S. Whidbey: 321-5111  
 SCAN: 592-7331 FAX: 678-4550

Roy Allen, County Engineer  
 Lew Legat, Assistant County Engineer

Larry Kwarsick, Director

March 3, 1997

Gregory R. Cane, P.E.  
 Fakkema & Kingma, Inc.  
 830 S.E. 8th Avenue, Suite 102  
 Oak Harbor, WA 98277

MAR - 6

Subject: Golf Course Drainage Basin Plan

Dear Greg:

One of Island County's goals is to support the initiative of land owners who are seeking to solve basin-wide surface water problems. One of the primary vehicles that is available to land owners is the formation of a surface water utility. To be considered for adoption as the basis of a surface water utility plan, the draft Golf Course Basin Plan would have to be amended to comply with statutory, administrative and grant planning requirements. This would include developing a program for construction of capital facilities, suggest a funding mechanism with a rate schedule, identify affected property owners, prepare list of easements needed for proposed improvements. A "comprehensive" plan should include the entire watershed and not be restricted to only those areas most likely to develop. One of the major deficiencies of the existing draft study is that it does not effectively analyze the downstream conditions.

As an example, the Marshall Drainage Basin Plan was drafted after repeated requests for assistance from property owners affected by local flooding. Extensive public review and comment preceded the final draft and adoption of the Plan. The Golf Course Study does not propose or present opportunities for citizen input. To date, we have not heard from local property owners residing in the Swantown Drainage Basin about proposed stormwater improvements. Only land owners planning development in the Golf Course Basin have voiced support for the Study. While the BOCC supports watershed based utilities to solve area drainage problems, there needs to be a demonstration of broad based "local" support, particularly from properties impacted by inadequate surface water systems.

The Golf Course Basin Plan suggests that a "public entity" accept responsible for long-term maintenance and operation of the Golf Course Basin drainage facilities. Funding for M&O and capital improvements would have to come from a local Storm and Surface Water Utility similar to the Marshall Utility. Given the fact that the majority of the property delineated as the "Golf Course Drainage Basin" is located either within the

Gregory R. Cane  
March 3, 1997  
Page 2

incorporated area of the City of Oak Harbor or within the UGA of Oak Harbor, it would appear to be appropriate that the City take the lead in the creation of a surface water utility. If proponents expand the Basin Plan to include the entire Swantown watershed, then a City/County joint utility would more accurately represent the property owners.

On December 19, 1996, Island County staff members met with Greg Cane, Robert Fakkema, and representatives from the City of Oak Harbor and Whidbey Golf and Country Club. Mr. Fakkema explained the phased installation of the Swantown drainage system. This phasing requires the Golf Course to accept increasing volumes of water until completion of the improvements. Recent comments from the Golf Course suggest alternate detention may be needed.

In summary, we would like to see a "Comprehensive" Golf Course Drainage Basin Plan include the following:

- analysis of downstream conditions, as well as upstream, with associated drainage improvements;
- represent an effort by the existing community to solve an area drainage problem;
- conform with planning requirements for a storm and surface water utility;
- resolve issues with Whidbey Golf and Country Club regarding irrigation and the use of Loer's Pond as a detention facility.

I appreciate the opportunity to comment on the Draft Golf Course Drainage Basin Plan. The County looks forward to continued involvement in the development of the Swantown drainage improvements. Please feel free to call me at (360) 679-7331 if you have any questions.

Sincerely,



Julie Buktenica,  
Surface Water Manager

cc: Board of County Commissioners  
Ryan Goodman, City of Oak Harbor  
Robert Fakkema  
Roy Dickerson, Whidbey Golf and Country Club





**Fakkema  
And  
Kingma, Inc.**

Ryan D. Kingma, P.E.  
Robert D. Gray, P.E.  
Edward K. Fakkema, P.E.  
Garth D. Gray, P.E.  
Gregory R. Case, P.E.

Civil Engineers & Land Surveyors • 840 SE 8th Ave., Suite 102 • Oak Harbor, WA 98277 • (360) 675-5973 • (360) 321-7242

April 3, 1997

Roy Dickerson, President  
Whidbey Golf & Country Club  
1411 W. Fairway Lane  
Oak Harbor, WA 98277

RE: Response to Whidbey Golf & Country Club Letter  
Golf Course Basin Study

Dear Roy:

Thank you for your response to the Draft Golf Course Drainage Basin - Stormwater Mitigation Study. Your input is critical to this process, and we appreciate the thoroughness that you and the Drainage Committee have shown in the review of the draft document.

As detailed below, we have responded to WGCC's comments and concerns by either:

- 1) making revisions to the draft study and/or
- 2) responding herein, in detail, to your concerns.

In order to better coordinate our letters, I have keyed my responses to the format of your February 19, 1997, letter. It is our intent that both letters, along with other plan comments, be incorporated into the appendix of the final study.

Page 1, Item 1, 2nd Paragraph

This goal has been reworded to say, "Consider the use of basin-wide detention in accordance with the expanded environmental checklist submitted under SEPA as prepared for the annexation of the golf course and adjacent properties."

Page 1, Item 2

Per WGCC comment, this goal has been eliminated. References to, and considerations of, improvements to irrigation have been eliminated from the study.

Page 2, Item 1

This typographical error has been corrected. Some modification has been made to the sentence addressed in paragraph 2.

RESPONSE TO WG&CC LETTER  
GOLF COURSE BASIN STUDY  
ROY DICKERSON

2

Page 2, Item 2

"n8" deleted.

Page 2, Item 3

The revised pump capacities have been included in the report. The stormwater model was rerun with the changed pump capacities. As would be expected, the flood levels in the Fairway 10 area of the golf course rose for the calibration runs. The model now more closely represents observed conditions during the two calibration storms.

Page 2, Item 4

WGCC comment acknowledged.

Page 2, Item 5

WGCC comment acknowledged.

Page 2, Item 6

WGCC property lines added to Figures 1, 2, and 13.

Page 2, Item 7

The typographical errors in the text on pages 3 and 4 of the study have been modified to conform to Figure 3, and the stormwater model.

Page 3, Paragraph 5

Given that the study is, by its nature, an analysis and planning document, the configuration of proposed improvements are conceptual, utilizing available information. Since the preparation of the draft study in November, 1996, the design of the stormwater conveyance from Swantown Road, along Fairway Lane to the exit ditch has been completed. Given the slopes, it was possible to convey the 100 year storm runoff through an 18" stormwater pipe. The stormwater pipe will run the entire length from Swantown Road to the exit ditch along Fairway Lane.

Page 4, Paragraph 1

WGCC comments acknowledged.

RESPONSE TO WG&CC LETTER  
GOLF COURSE BASIN STUDY  
ROY DICKERSON

3

Page 4, Paragraph 2

WGCC comments acknowledged.

Page 4, Paragraph 3

WGCC comments acknowledged.

Page 4, Paragraph 4

The concerns regarding existing ditches along Fairway Lane south of the crossing with the exit ditch are acknowledged. With respect to the diversion of Ft. Nugent ditches around Loers' Pond, given the significant ability of Loers to attenuate runoff peaks, routing of stormwater around the pond would increase the rate of runoff flow to downstream property owners.

Page 4, Paragraph 5

WGCC comments acknowledged.

Page 4, Paragraph 6

Meetings with the appropriate WGCC members are planned to better explain the operation of the discharge structure.

Page 4, Paragraph 7

Loers' Pond has available storage for stormwater control if a discharge structure similar to the one modeled in the study is constructed at the outlet. Given:

- 1) that with the proposed modifications to Loers' can adequately store and attenuate future runoff with the addition of stormwater from the proposed developments without overtopping,
- 2) that regional detention is an acknowledged responsible method for the management of increased runoff volumes, and
- 3) that alternatives for routing runoff from the basins would significantly increase pumping requirements and would not likely result in an equivalent moderation of downstream flows

we strongly believe that the use of Loers' Pond for stormwater control for the proposed projects is likely the most responsible of available alternatives

RESPONSE TO WG&CC LETTER  
GOLF COURSE BASIN STUDY  
ROY DICKERSON

4

Page 4, Paragraph 8

Given the available storage in a facility the size of Loers' Pond, the study proposes that by detaining stormwater during the peak storm period, it is possible to reduce the runoff rate below that which is experienced by comparable storms in the present condition. We acknowledge that some existing downstream conveyance facilities are inadequate, even for existing conditions, and have been working with property owners to determine the need for ditch and culvert improvements.

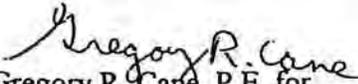
Page 5, Paragraph 1

More than 97% of the runoff volume analyzed in the study results from sources and areas other than the proponents projects. Given that the large majority of the water is from other sources and that the maintenance of stormwater facilities is inherently a function of public entities, it is reasonable to expect that the City or County would take the lead in facility maintenance.

-----  
The improvements proposed herein do not require specialized or unique maintenance. It is expected that ongoing discussions with the City, County, and WGCC will result in effective and ongoing maintenance of proposed and existing facilities.

Again, thank you for your input to the draft study. If we can be of additional service in answering questions or comments, do not hesitate to call.

Sincerely,  
FAKKEMA AND KINGMA, INC.

  
Gregory R. King, P.E. for  
Ryan H. Kingma, P.E.  
kgm:WGCC-GRC.RHK

WHIDBEY GOLF AND COUNTRY CLUB  
1411 W. Fairway Lane  
Oak Harbor, WA 19277

April 22, 1997

Mr. Ryan Kingma  
Fakkema and Kingma Inc.  
4086 400th Ave. West  
Oak Harbor, WA 98277

Dear Mr. Kingma:

The Whidbey Golf and Country Club (Club) wishes to modify and amplify the letter to you of February 19, 1997 based upon your letter of April 3, 1997 and meetings with Greg Cane. This letter does not replace our February letter since it deals with only a few aspects of the Golf Course Drainage Basin Stormwater Mitigation Study.

Third paragraph on page 4.

We prefer that the culverts under the four cart paths be replaced by larger culverts, or more than one culvert, as appropriate, rather than by bridges. The required flow can be achieved with lower initial cost as well as lower maintenance costs. We also suggest that a berm be placed on the north side of fairway 17 pond to accommodate more water, particularly since water from fairway 16 lots, plus a couple of lots along fairway 3, will flow directly to this pond, avoiding Loers Pond.

Additionally, the revised draft should provide the specifics of the ditching discussed at the April 7 meeting along fairways 16, 3 and 4 leading to fairway 17 pond.

Sixth paragraph on page 4

Your revised proposal for Loers Pond will likely be acceptable when we see it in the revised draft. Greg Cane's discussion with us on April 7 was very helpful. It would be useful if the drawing "Proposed Changes To Loers Pond" also provided the location of the swale to the west of fairway 4, the lengthening of the berm near the ladies' tee and the entry pipe to Loers Pond near this location. We also discussed the possible need for additional berming at the Northeast corner of the pond based on a detailed evaluation of the Pond's contours as well as the critical importance of the capacity of Loers Pond.

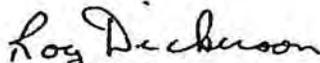
We believe the water exiting the Swantown Estates retention pond would be best handled by the installation of a pipe from the exit point directly to fairway 8 pond. This pipe with an enlargement of the existing gravity pipe between fairway 8 pond and fairway 10 pond, and the dredging of both fairway 10/13 and 13 ponds, will provide an adequate pathway for this significant volume of water. In so doing it will also protect the road to, and the area around, the new sewer lift station.

Fifth paragraph on page 3

Now that Homestead Northwest has agreed to do the proposed improvements identified as eight and nine in the study, as well as work on the Fakkema Farm ditch, as a trade-off for the Study sponsors assuming responsibility for the NE area stormwater and since the Club is doing a portion of proposed improvement ten, we suggest the revised draft reflect these actions. In this regard, the cost to the club of the Swantown Road crossing should remain as a cost to be reimbursed by the Study sponsors.

We hope these comments and suggestions are helpful to you in developing the revised draft of the Study. Please feel free to contact me with any questions or comments.

Sincerely,

  
Roy Dickerson  
President

CC: Mr. Roy Allen, Island County Engineer  
Mr. Richard Fakkema  
Mr. Robert Fakkema  
Mr. Ryan Goodman, City Engineer, City of Oak Harbor

## COMMENTS FROM TELEPHONE CONVERSATION

JUNE 20, 1997

WGCC drainage committee in general is dissatisfied with the level of detail provided in the study.

Some areas of concern included the need for more information regarding the volume of Loers' Pond, the berm and swale proposed for the northwest corner of Loers' Pond, the drainage facilities and discharge locations for the proposed housing in the southeast corner of N5, and the method of transmitting water from N6 detention pond to Pond 8.

### Response of Author:

It is critical in the design phase that improvements described in this study be evaluated in detail. The author feels that a prudent conservatism has been incorporated into the study (e.g. significantly increasing impervious area in the postdevelopment model for S1 and determining that Loers' Pond has a storage volume capacity in excess of that required to control the 100 year - 24 hour storm) so that "surprises" during the design phase will not nullify the core findings of this study. The study incorporates a level of detail comparable to studies of this type and should be taken as a first (major) step.

Further coordination will be required between the project proponents and WGCC members to come to agreement allowing the use of golf course facilities for stormwater control. A discussion of these details herein is beyond the scope of this study.

August 4, 1997

Mr. Ryan Kingma  
Fakkema and Kingma Inc.  
4086 400th Ave. West  
Oak Harbor, WA 98277

Dear Mr. Kingma:

After a Stormwater Committee meeting and discussions with Ryan Goodman, City of Oak Harbor, we continue to believe there are several significant deficiencies in the July draft of the Golf Course Drainage Basin Stormwater Mitigation Study.

Until these deficiencies, listed below, are appropriately dealt with, we believe it makes little sense to further consider other matters in the draft report.

1. Page 24 - N8 - The Study offers no conceptual plan for the drainage of this stormwater other than it will go to Loers Pond.

In our proposal, the existing ditch or a swale or drain along the boundary continues to drain the stormwater from 8a entering the ditch to fairway 17 pond north of fairway 3 green - as it does currently.

2. Page 24 - N6 - We recommended that the "routed to N5" be identified as a pipe from the detention pond to fairway 8 pond. We believe this is the proper way to handle this increasing flow of stormwater rather than to let it simply flow across the Golf Course and its maintenance road until it reaches fairway 8 pond.
3. Page 24 - N5 - What is the conceptual plan for stormwater drainage for the approximately 20 duplex units?
4. Page 25 - It should be noted that the run-off from N2 and N3 has been handled by an agreement dated January 29, 1997 wherein the Club agreed to take the water from the detention pond on a short term temporary basis and provided that this stormwater be included in the mitigation of the Study proponents. The Club and Homestead are currently incurring expenditures to move the proponent stormwater by drainage pipe from Swantown Road through Fairway Lane to the exit ditch.
5. Page 27 states "Raise level of pond berm approximately 10" to provide needed freeboard at full pond conditions." We suggest adding "at the two low areas" to be consistent with page 45 and our latest understanding of your proposal.

6. Page 29 - In the last sentence in the first paragraph of the section "Downstream and West Beach Improvements", it appears that Homestead Northwest, Inc. is now one of the project's proponents. Is this true?

We understand the field west of the south end of the exit ditch will have additional soil added to raise its level.

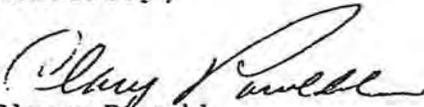
We hope we have again made clear our concerns. In this regard, please see page 59 of the July draft.

Please feel free to contact me with any questions or comments.

If these concerns are adequately addressed, I feel the Committee is prepared to move ahead.

We look forward to your response.

Sincerely,



Clary Powell  
President

CC: Mr. Roy Allen, Island County Engineer  
Mr. Richard Fakkema  
Mr. Robert Fakkema  
Mr. Ryan Goodman, City Engineer, City of Oak Harbor

**Appendix F**  
**“2007 Update”**  
**Golf Course Drainage Basin**  
**North Basin Build-Out Stormwater Evaluation**  
**published in 2007**

## GOLF COURSE DRAINAGE BASIN

### NORTH BASIN BUILD-OUT — STORMWATER EVALUATION

#### **Background**

In September 2005, the stormwater model initially prepared for the 1997 Golf Course Drainage Basin – Stormwater Mitigation Study was updated by Thomas Cleverdon, P.E., to reflect most constructed facilities resulting from the Study's recommend capital improvements.<sup>1</sup> As with the 1997 Study, this "archive" model-run evaluated the 100-year, 24-hour storm event for impervious surface areas calculated for the Study's design year (2016). Also, as with the 1997 model, the large southerly Sub-basin "S1" was modeled with two times the impervious surface determined at the time of the Study. This decision relative to S1 impervious area was initially made to apply a degree of conservatism to the Study, and a factor of safety to its recommended facility upgrades. The Build-out analysis discussed herein leaves in place this conservative assumption.

#### **Build-Out Stormwater Model**

This model was prepared in order to accompany a request for the establishment of a latecomers' agreement for cost recovery for capital improvements in the north portion of the Golf Course Basin. The recovery period for a latecomers' agreement is 15 years. It is therefore necessary to reflect, by analysis, a long-term adequate capacity of the stormwater system improvements for the proposed cost recovery period. The purpose of this model, therefore, was to adjust the program's input parameters in order to represent a situation that reflected "worst-case" conditions at the end of the latecomers' period. To be safe, the north sub-basins (n1 through n10) were evaluated for build-out density and impervious surface area, as reflected in Table I.

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<sup>1</sup> Constructed improvements that affected only the sub-basins were not necessarily modeled in this update.

### **Model Results**

As described in greater detail in the 1997 Study, runoff characteristics of the Golf Course Basin are strongly influenced by the 1,700 acre sub-basin S1. This sub-basin's size and attenuated hydrograph have a considerable impact on the runoff characteristics within the main conveyances in the northerly sub-basins. This overarching influence continues to be evident in the build-out condition. Figure 1 is a snapshot of model results of the 2005 archive and the build-out runs. As reflected therein, runoff parameters are little influenced by the increased impervious surface.

Two exceptions are as follows:

- The runoff peak for Sub-basin n4 is significantly higher than in the archived run (increased from 26.2 cfs to 38.2 cfs). As with any stormwater model, sub-basin hydrographs are added at the downstream end of the sub-basin. The impact of this convention is that runoff from n4 is not routed through the Perimeter Ditch and associated culverts. It therefore becomes necessary to manually check the conveyance capacity of this section of the Golf Course Basin by adding the n4 hydrograph to the Loers' discharge hydrograph. This, in essence, adds the n4 runoff at the upper end of the Perimeter ditch and provides a good check of the capacity of all the elements along the ditch length. Figure 2 reflects these two hydrographs individually, and combined. As shown therein, the first combined peak occurs at 9 hours after the start of the storm event. This peak coincides with the n4 hydrograph peak and reflects a total runoff rate of 41.6 cfs. The second peak occurs at 33 hours, reflects a runoff rate of 61.1 cfs and is a result of the sub-basin S1 hydrograph.

This analysis reflects a conservative assumption that n4 will enter the perimeter ditch at its upper reach. Even with this conservative assumption, the predicted peak of the

combined hydrographs is negligibly (0.5%) greater than the Loers' discharge hydrograph alone.

Given the size of n4, the runoff will enter the Perimeter Ditch at multiple locations. During the planning for future development, the engineer will be required to size the conveyances from a given project to the Perimeter Ditch.<sup>2</sup>

- The other area which will experience a significant increase in runoff in the build-out condition is sub-basin n8. This analysis evaluates an increase in impervious surface from 16.9 acres to 36.9 acres and an associated increase in peak runoff from 12.8 cfs to 18.3 cfs.

Sub-basin n8 is routed through Loers Pond. The calculated maximum water surface level for Loers Pond (Figure 1) is unchanged between the 2005 Archive model and the Build-out model. This increased discharge from n8, therefore, does not notably impact the operation of this detention structure during the analyzed storm event.

### **Summary and Conclusions**

The model discussed herein is significantly conservative for the purpose of checking available stormwater system capacity during the latecomers' recovery period. The conservative assumptions employed in this analysis are as follows:

- Sub-basin S1 is modeled with a more impervious surface than is anticipated for this area.
- The Build-out impervious surface modeled herein is larger than the impervious surface that is predicted to be constructed during the 15 year latecomers' period.

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<sup>2</sup> To get a feel for the magnitude of required improvements, it is instructive to look at the size of conveyance(s) required to carry a peak discharge of 38.2 cfs. This flow rate can typically be handled by 2 - 24 inch culverts

With the conservative assumptions made herein, this analysis reflects that the stormwater capacity of the constructed capital facilities is greater than that which would be required during the latecomers' period. It would therefore follow that landowners, which are included in the latecomers' recovery area, could reasonably expect to receive value for their latecomer fee in the form of adequately sized stormwater capacity in the Golf Course Basin.

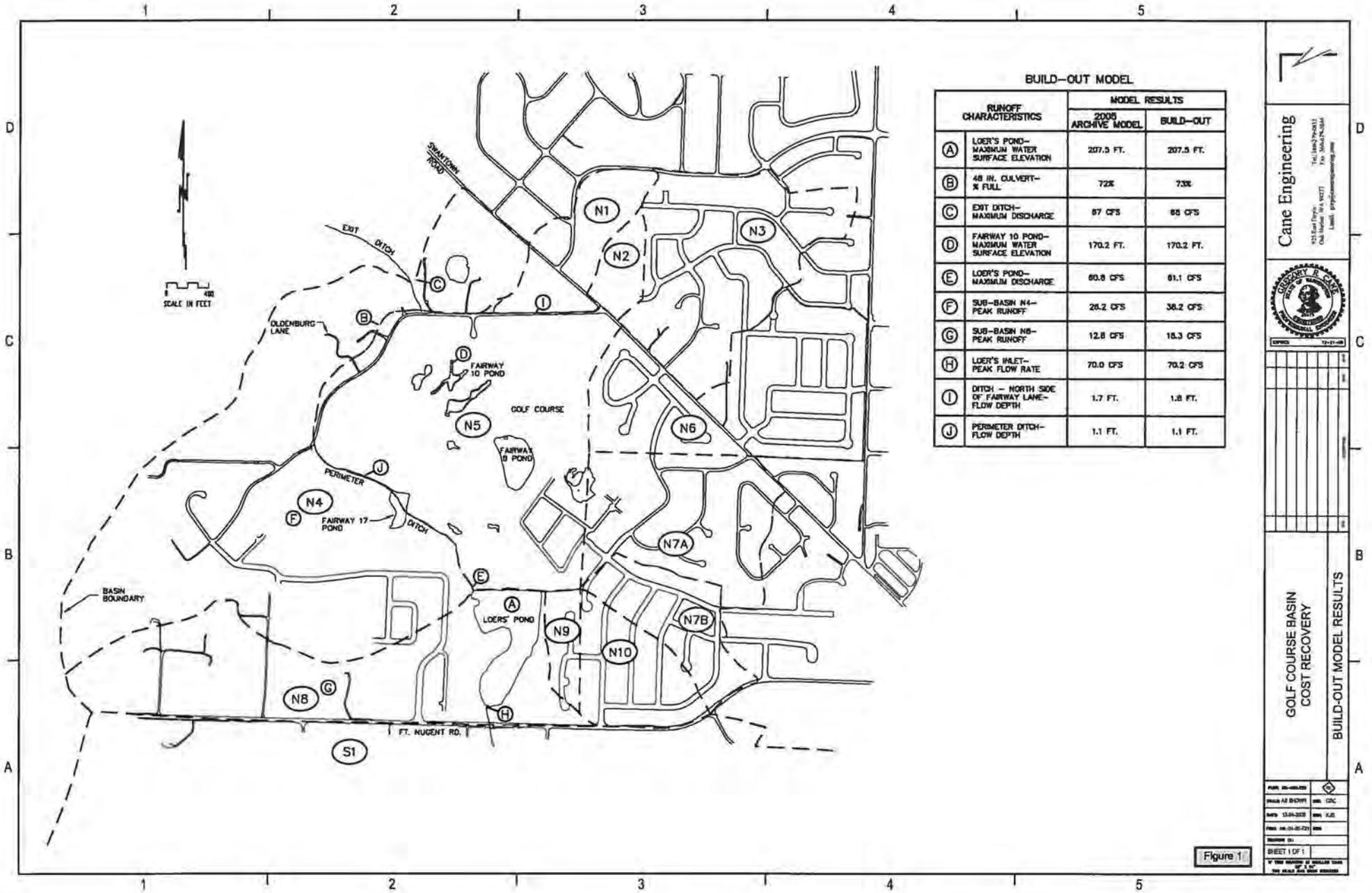
Two notes:

- 1) This model conservatively estimates the runoff during the time period discussed, and serves the purpose of verifying the capacity of constructed improvements. It does not represent an up-to-date model in all respects. As with any planning tool, the model will require further updating (including calibration) in order to address changes within the individual sub-basin areas.
- 2) The 1997 Study recommended a change in the water surface level of Loers Pond during the wet and dry seasons. It is important to be cognizant of this requirement, and to perform this seasonal adjustment, in order to safely mitigate large rainfall events.

TABLE I

## Build-Out Model - Impervious Surface - North Sub-Basins

Sub-Basin	1997 Report Description	Total Area (Acres)	1997 Report Impervious (Acres)	Build-out Impervious (Acres)	Build-Out Model Assumptions Density (Gross Impervious)	Notes
n1	Twenty (20) new homes from background growth are estimated for sub-basin N1. Run-off will continue to drain toward the exit ditch.	22.9	6.0	8.7	3.5 DU/ Ac (38%)	
n2	It is estimated that background growth will add 15 new homes to this area. Run-off will be diverted to the exit ditch.	8.2	1.6	3.1	3.5 DU/ Ac (38%)	
n3	The construction of additional single family units within this sub-basin will increase impervious surface from 5.8 acres to approximately 19.1 acres. Given the existence of large individual lots within the sub-basin, average density at buildout is estimated to be 2.5 units/acre. Nearly all of the additional houses are part of planned developments. Run off from N3 will be directed to the Exit Ditch.	64.4	19.1	21.9	3.0 DU/ Ac (34%)	
n4	An estimated total of 91 additional homes are analyzed in the postdevelopment condition. Forty-seven (47) of these homes are to be located within proposed developments with the remainder resulting from the background growth rate. N4 will continue to drain to the Perimeter Ditch.	196.5	20.0	66.8	3.0 DU/ Ac (34%)	
n5	Approximately 20 duplex units (40 homes) are planned for the southeast corner of N5. Some additional impervious surface has been factored into the analysis to account for expansion to WGCC facilities. Run-off from this increase in impervious surface will continue to flow toward the Golf Course.	125	22.4	27.4		Increased by 5 acres
n6	... approximately 230 single family homes will be constructed in this subbasin. Runoff will be directed through a 5 5 Acre-Feet detention pond in order to reduce peak rate of discharge, and then routed to N5.	68.5	27.5	27.5		No Change - Currently at 40% impervious.
n7a	This sub-basin consists of the N7 area that will continue to drain to the golf course. Proposed development includes the construction of 10 duplexes and approximately 17 single family units within the sub-basin.	44	15.7	16.7	3.5 DU/ Ac (38%)	
n7b	Residential development within the sub-basin is proposed at a 3.5 units/acre density. Runoff will be diverted to Loers' Pond.	23.7	8.3	9	3.5 DU/ Ac (38%)	
n8	A portion of a proposed residential subdivision will lie within the eastern part of N8. Based on the owner's plans and an estimate of growth from background development, the run-off impacts from a total of 24 units were analyzed. Presently a portion of N8 drains to the Perimeter Ditch. The postdevelopment condition will route all run-off to Loers Pond.	89.1	16.9	36.9		Loers Pond= 10 Acres Impervious. Remaining 79.1 Acres at 3.0 DU/ Ac
n9	Change was made in run-off parameters from the predevelopment conditions. As with N10, sub-basin discharge will be intercepted and directed to Loers' Pond. No change in the N9 pond elevation is planned.	7.5	1.3	2.9	3.5 DU/ Ac (38%)	
n10	Based on the conceptual plans of the owner, this sub-basin is anticipated for development at a density of 3.5 single family units per acre, or approximately 85 homes. Run-off will be intercepted and directed to Loers Pond	24.3	9.0	9.2	3.5 DU/ Ac (38%)	



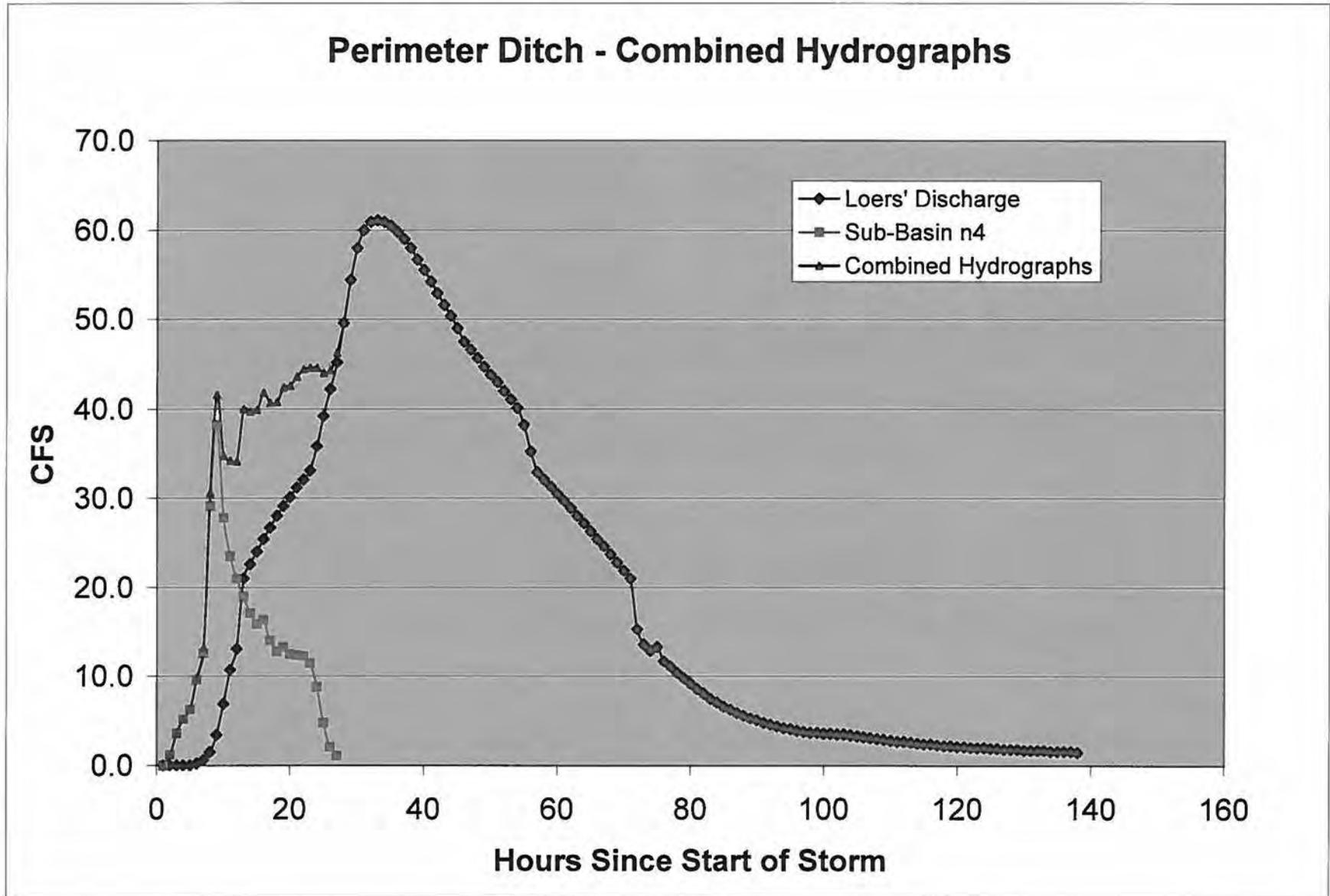


Figure 2

**Appendix G**

**“2002 Drainage Agreement”**

**Basin Study Agreement between the City of Oak Harbor, Island County and the  
Whidbey Golf Course**

*Steve P. [Signature]*

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04/05/2002 09:05A

ISLAND COUNTY AUDITOR

AGR

RETURN TO: City of Oak Harbor  
 865 SE Barrington Drive  
 Oak Harbor, WA 98277  
*Attn: Rosemary Morrison*

### DRAINAGE AGREEMENT

THIS Drainage Agreement, is entered into this 14 day of March, 2002, by and between the following parties; Island County, hereinafter referred to as "County"; the City of Oak Harbor, hereinafter referred to as the "City"; and Whidbey Golf & Country Club, a Washington non-profit corporation, hereinafter referred to as "Golf Club"; PTN Portion NE SW 4-32-1E; See Attachment B for full legal; Assessor parcel no. R13204-262-2721;

WHEREAS in the City and County, surface water from Waterloo and Swantown drainage basins, in Section 4, Township 32 North, Range 2 East, W.M., Island County, Washington flow onto Golf Club property through culverts under Fort Nugent Road and from other areas within the Swantown Basin;

WHEREAS, the Golf Club property has, during periods of intense rainfall, the potential to receive a large volume of water runoff; and

WHEREAS, during peak drainage periods the water could possibly overwhelm and impede the capacity of the Golf Club drainage system causing flooding and associated nuisances on and in the vicinity of the Golf Club property; and

WHEREAS, the parties hereto are desirous of entering into an agreement to establish drainage system operation and maintenance responsibilities to assure fair and reliable system performance; and

WHEREAS, the Golf Club has previously entered into a memorandum of understanding regarding drainage with certain property owners regarding system improvements, attached to this agreement as Attachment C; and

WHEREAS, most system capital and maintenance needs have been identified in a study entitled "Golf Course Drainage Basin Stormwater Mitigation Study" by Fakkema and Kingma, dated August, 1997, hereinafter referred to as the Study; and

WHEREAS, the City has established a stormwater utility with the purpose of providing reliable storm system operation and maintenance, and recent development and annexations contribute or will contribute runoff that affects the Golf Club system; and

WHEREAS, pursuant to Chapter 36.89 RCW, the use of County funds for the purpose of installing stormwater control facilities within such County is declared to be a County purpose; and

WHEREAS, the Golf Club has established a program for managing and controlling stormwater runoff and provisions for irrigation on the Golf Club property; and

WHEREAS, the Golf Club desires to continue to operate this system in its best interest; and

WHEREAS, in consideration of the mutual and valuable benefits to be derived by the parties pursuant to this agreement;

WITNESSETH: It is hereby agreed by and among the parties; the City, the County, and the Golf Club, as follows:

1. The Golf Club agrees to the following:
  - a. Assume responsibility for the operation and maintenance of the stormwater control and conveyance system as outlined on Attachment A and as shown in the Study within the property of the Golf Club, identified as Property A in Attachment B; when obtained, the ditch easement near Fairway Lane, identified as Property B in Attachment B; and when obtained, the exit ditch easement through Beachview Farm and other properties until it reaches the County property at Lake Swantown, identified as property C in Attachment B.
  - b. Use all City and County monetary contributions solely for the purposes stated in 1.a above, including maintenance and future replacement of the 2,500 GPM stormwater pump.
  - c. Provide annual operating and maintenance expenses for City and County review and record keeping by February 15 of each succeeding year.
  - d. Comply with current standards for stormwater quality and best management practices, in managing properties described in 1.a. above, as identified in the current Department of Ecology Technical Manual as adopted by the City and County.
  - e. Use good faith efforts to obtain drainage easements of a variable width for the benefit of, and at no cost to the County as required to provide maintenance access to the drainage system within lots 28-34 of the plat

of Whidbey Country Club Estates, Division #1, and the properties within Beachview Farms, from Fairway Lane, where it meets fairway fifteen of the Golf Club, to Lake Swantown identified as Property B and C in Attachment B.

- f. That total reimbursements sought for operation and maintenance of the system described in 1.a. shall not exceed \$10,000 annually without written authorization of the parties.

2. The City agrees to the following:

- a. Coordinate proposed development under City jurisdiction within this basin and drainage improvements as identified within the study.
- b. Reimburse the Golf Club a proportionate share of maintenance and operation costs defined in Attachment A of this agreement. Reimbursement shall be made annually by April 1 based upon the previous year's expenses. This reimbursement shall be the City's only responsibility in the operation and maintenance of the drainage system between Fort Nugent Road and the County's property known as Lake Swantown.
- c. As new development occurs and mitigation measures are required:
  - (1) Inform the Golf Club of any proposed development activity that requires a permit and could affect storm water runoff; and give the Golf Club notice of proposed mitigation measures;
  - (2) Proposed mitigation measures may include improvements on Golf Club property if the Golf Club approves; and
  - (3) The purposes for such measures, if required, should include protection of Golf Club property.
- d. City crews will be available on an emergency basis in consideration of other citywide emergency situations, and assistance will be rendered based upon priorities established by the City. Labor and materials shall be reimbursable to the City or credited to the annual payment as agreed upon by the parties.
- e. Refund the Golf Club for the operation and maintenance portion of the storm water utility fee paid. Such refund shall be paid by April 1 along with the amount identified in 2.b., above, or in another manner acceptable to the Golf Club.

3. The County agrees to the following:

- a. Coordinate proposed development under County jurisdiction within this basin and drainage improvements as identified within the study.
- b. Reimburse the Golf Club a proportionate share of maintenance and operation costs defined in Attachment A of this agreement.

Reimbursement shall be made annually by April 1 based upon the previous year's expenses. This reimbursement shall be the County's only responsibility for the drainage system from Fort Nugent Road to Lake Swantown.

- c. As new development occurs and mitigation measures are required:
    - (1) Inform the Golf Club of any proposed development activity that requires a permit and could affect storm water runoff; and give the Golf Club notice of proposed mitigation measures;
    - (2) Proposed mitigation measures may include improvements on Golf Club property if the Golf Club approves; and
    - (3) The purposes for such measures, if required, should include protection of Golf Club property.
  - d. County crews will be available on an emergency basis in consideration of other countywide emergency situations, and assistance will be rendered based upon priorities established by the County. Labor and materials shall be reimbursable to the County or credited to the annual payment as agreed upon by the parties.
  - e. Accept the public easements obtained by the Golf Club described in 1.e. above.
4. Except for any action, claim, demand, liability, loss or damage arising out of negligent acts or omissions of the City and/or County, their agents or employees, Golf Club, for itself, its heirs, executors, administrators, successors and assigns, jointly and severally, does hereby agree to and does hereby release the City and/or County, their officials, agents, employees, and contractors and does hereby remise and relinquish to them all actions or causes of action, claims, demands, liabilities, loss, damage or expense of whatsoever kind or nature including attorney's fees, which said Golf Club has sustained or shall at any time sustain or incur by reason or in consequence of any work done or which should be done on that portion of the drainage system to be constructed, operated and/or maintained by the Golf Club.
5. It is mutually understood and agreed by the parties hereto that the Golf Club is in no sense an agent of or employed by the City or County, shall not represent itself as such, and have no authority to bind the City and/or County to any such agreement or act as agents of the City and/or County in any way.
6. It is agreed that any amendment, modifications, or changes to this agreement must be in writing and approved by all parties to this agreement.
7. This agreement shall take effect upon its execution by Whidbey Golf & Country Club, the City of Oak Harbor and the Board of County Commissioners of Island County, Washington and shall have a term of twenty (20) years. Prior to the

completion of the term, the parties agree to renegotiate in good faith an extension of this agreement.

- 8. Attachment A shall be reviewed and amended annually by July 15 of each year specifically for City and County pro-rata share cost adjustments, due to factors such as land use, annexation, environmental laws and other unspecified impacts. Amendments to Attachment A will become effective for the following calendar year.

IN WITNESS THEREOF, the parties have caused this agreement to be executed this 20th day of February, 2002.

Whidbey Golf & Country Club, a Washington non-profit corporation

Vicki Boltz  
Vicki Boltz, President

Board of County Commissioners  
Island County, Washington

Mike Shelton 2/25/02  
Mike Shelton, Chairman

Lois Roopthe  
Lois Roopthe, Secretary LMR

William F. Thorn 2/25/02  
William F. Thorn, Member

(acknowledgement attached)

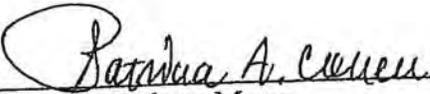
Wm. L. McDowell 2/25/02  
Wm. L. McDowell, Member

Attest:

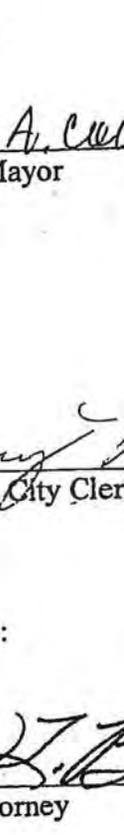
Elaine Marlow  
Elaine Marlow, Clerk of the Board



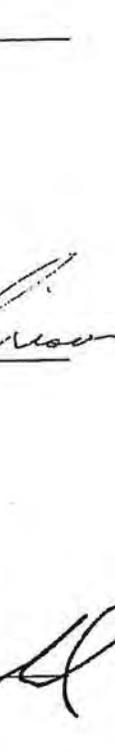
City of Oak Harbor:

  
Patricia A. Cohen, Mayor

Attest:

  
Rosemary Morrison, City Clerk

Approved as to form:

  
Oak Harbor City Attorney

STATE OF WASHINGTON )  
 ) ss:  
COUNTY OF ISLAND )

THIS IS TO CERTIFY that on this 20<sup>th</sup> day of Feb., 2002, before me, the undersigned, a notary public in and for the State of Washington, duly commissioned and sworn, personally appeared Vicky Boltz, to me known to be President of Whidbey Golf and Country Club, the corporation that executed the within and foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of said corporation for the uses and purposes therein mentioned, and on oath stated that said individual was authorized to execute said instrument.

WITNESS my hand and official seal the day and year in this certificate first above written.

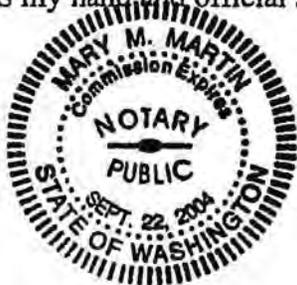


MARY M. MARTIN  
*Mary M. Martin*  
Notary Public in and for the State of Washington, Island County.  
Commission expires: 09/22/04

STATE OF WASHINGTON )  
 ) ss:  
COUNTY OF ISLAND )

THIS IS TO CERTIFY that on this 20<sup>th</sup> day of Feb., 2002, before me, the undersigned, a notary public in and for the State of Washington, duly commissioned and sworn, personally appeared Lois Rothe, to me known to be Secretary of Whidbey Golf and Country Club, the corporation that executed the within and foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of said corporation for the uses and purposes therein mentioned, and on oath stated that said individual was authorized to execute said instrument.

WITNESS my hand and official seal the day and year in this certificate first above written.



MARY M. MARTIN  
*Mary M. Martin*  
Notary Public in and for the State of Washington, Island County.  
Commission expires: 09/22/04

Drainage Agreement  
Whidbey Golf & Country Club  
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## ATTACHMENT A

Anticipated Golf Club Operating and Maintenance Items  
and Estimated Normal Costs

## Golf Club Property – Annual

Mowing, weeding and spraying of grass lined ditches	\$ 500
Clearing, trimming and pruning of trees and bushes of other ditches	500
Inspection of ditches and other facilities, including adjacent areas	200
Electric power for pump	400
Other – including pump setup, maintenance and repair, valve control and maintenance; and tractor (pump) maintenance	<u>250</u>
	<u>\$1,850</u>

Pump replacement - \$45,000 pump with a 10 year life span.

## Other than Golf Club Property

Cleaning of Fairway Lane ditch and the Beachview Farm ditch every two years or as needed	\$4000-5000
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Total annual estimated range of costs \$1,850-\$6,850

The type of cost incurred is limited to those listed above unless otherwise agreed upon by the parties in writing.

**Proportional Reimbursement Formula**

Based upon actual Golf Club operating and maintenance costs submitted in detail in a form acceptable to the City, by the Golf Club by February 15 of the year following expenditures the City and County will reimburse the Golf Club by April 1 of that same year based on the following: 34% County; 56% City; 10% Golf Club.

The formula determining City and County cost allocation is based upon calculated flows taken from the "Golf Course Drainage Basin Stormwater Mitigation Study", July 1997, by Fakkerna & Kingma, Inc. The formula is based upon predicted stormwater volume increases in the "Golf Course Drainage Basin Summary of Runoff Volumes" as shown in the study attached; City stormwater post development flows expressed as a percentage of the total being the responsibility of the City; and the remainder the responsibility of the County. The Golf Club responsibility shall be held at 10% in recognition of their administrative responsibilities and cooperative efforts.

It is understood that existing conditions at the time of the study are to be considered the baseline for this calculation; that existing flows from basin S1 are not to be used in calculating cost distribution without mutual consent.

Drainage Agreement  
Whidbey Golf & Country Club  
Attachment A  
Page 1 of 2

ATTACHMENT A

Percentages by Contributing Flow

GOLF COURSE DRAINAGE BASIN  
SUMMARY OF RUNOFF VOLUMES

1. Contributing Flows

<u>County</u>	<u>City</u>	<u>Golf Club</u>	<u>Total</u>
146.3	35.4	11.0 cfs (n5)	65.5 cfs
-126.2 (S1)	-3.4 (S1)		
20.1 cfs	+2.4 (n5)		
	34.4 cfs		

Pre-Development Runoff Volume (AF)			Estimated Volumes by Jurisdiction (AF)			
Basin	25 Year	100 Year	City		County	
			25 Year	100 Year	25 Year	100 Year
n1	1.9	3.1	0	0	1.9	3.1
n2	0.5	0.8	0	0	0.5	0.8
n3	4.6	7.5	3.5	5.8	1.1	1.7
n4	14.1	23.2	4.4	7.2	9.7	16.0
n5	13.7	20.6	13.4	20.1	0.3	0.5
n6	0.8	2.0	0.8	2.0	0	0
n7	7.4	10.5	7.4	10.5	0	0
n8a	6.2	9.7	0	0	6.2	9.7
n8b	0.8	1.5	0.4	0.7	0.4	0.8
n9	0.7	1.1	0.7	1.1	0	0
n10	1.4	2.4	1.4	2.4	0	0
S1	129.6	203.3	3.4	5.3	126.2	198.0
Totals	181.7	285.7	35.4	55.1	146.3	230.6

2. Percentage by agency:

<u>County</u>	<u>City</u>	<u>Golf Club</u>
$\frac{20.1}{65.5} = 30.7\%$	$\frac{34.4}{65.5} = 52.5\%$	$\frac{11}{65.5} = 16.8\%$

**n5 detail**

Total area = 125 ac      Total Flow  
 City            22/125= 18% x 13.4 = 2.4  
 County        103/125= 82% x 13.4 = 11.0

Drainage Agreement  
 Whidbey Golf & Country Club  
 Attachment A  
 Page 2 of 2

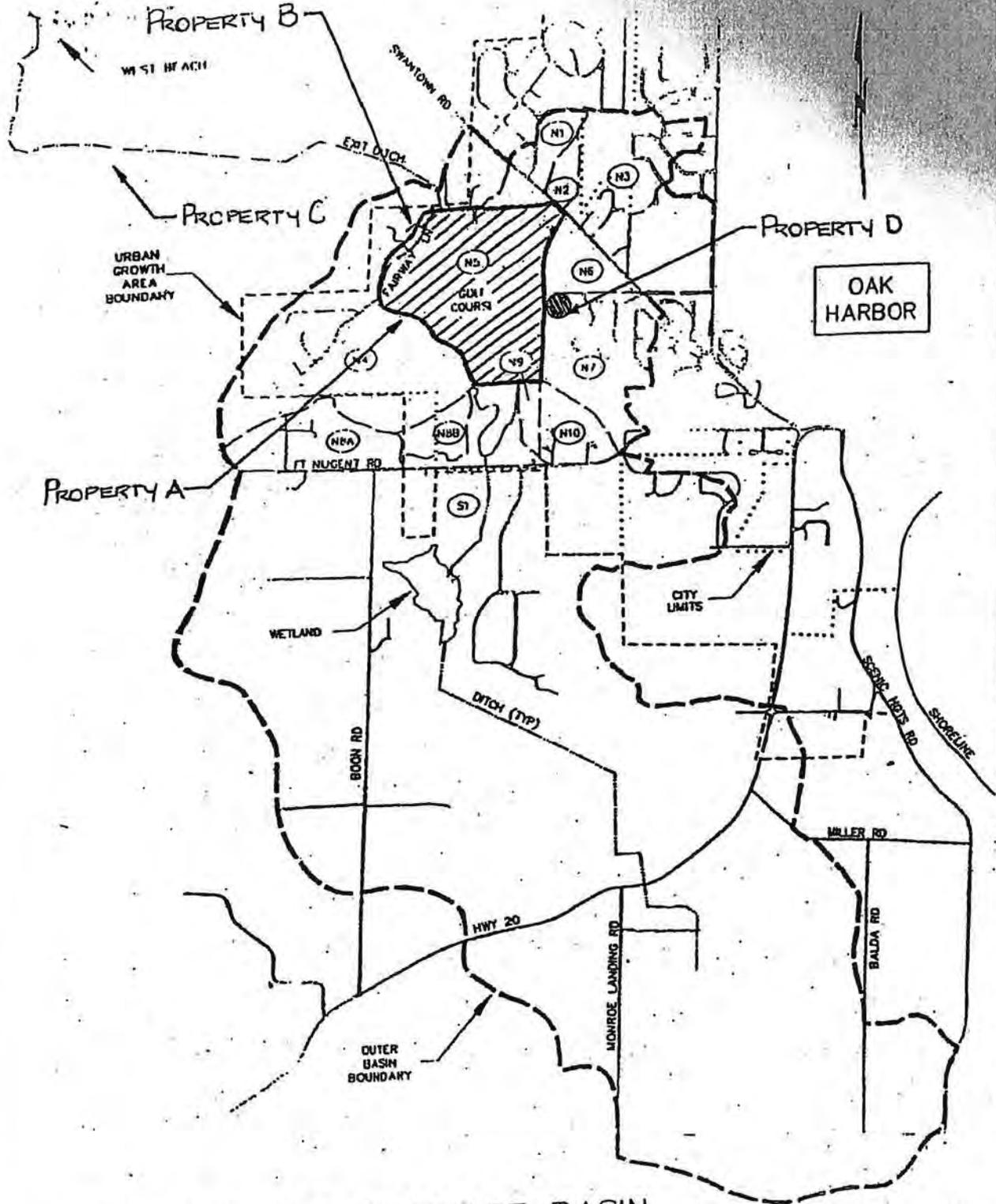
## ATTACHMENT B

### LAND DESCRIPTION

- **PROPERTY A - Golf Club**
  1. Included in the Golf Club property is a 2,500 GPM stormwater pump with connection to the exit ditch on Beachview Farm
- **PROPERTY B - Fairway Lane**
- **PROPERTY C - Lake Swantown**
- **PROPERTY D - Swantown Ridge Detention Pond**

Drainage Agreement  
Whidbey Golf & Country Club  
Swantown Basin  
Page 1 of 2

ATTACHMENT B



GOLF COURSE DRAINAGE BASIN

FIGURE 1

PROPERTY A

EXHIBIT A

Page 1

Assessor's parcel no. S8410-00-0000A-0 & S8410-02-0000B-0  
 That portion of Section 4, Township 22 North, Range 1 East, W.H., described as follows:

Beginning at the Southeastly corner of Lot 44 of the Plat of Whidbey Country Club Estates, Division No. 2, as per Plat recorded in Volume 9 of Plats, Page 59, Records of Island County, Washington; thence  
 South 31° 10' 00" West along the Southwesterly extension of the South-easterly boundary of said Lot 44 a distance of 105.00 feet; thence  
 South 65° 06' 09" East 307.53 feet; thence  
 South 39° 03' 36" East 245.98 feet; thence  
 South 59° 24' 14" East 133.60 feet; thence  
 North 81° 21' 18" East 560.00 feet; thence  
 South 89° 52' 41" East parallel to the South line of the North 1/2 of the Southwest 1/4 of the aforesaid Section 4 a distance of 795.00 feet; thence  
 South 30° 24' 36" East 190.00 feet; thence  
 South 00° 46' 10" West parallel to the West line of the Southwest 1/4 of the Southeast 1/4 of the aforesaid Section 4 a distance of 1387.60 feet to the Northerly margin of the Fort Nugent Road; thence  
 South 89° 49' 22" East along said Northerly margin a distance of 507.82 feet to the West line of the East 1/2 of the East 1/2 of the Southwest 1/4 of the Southeast 1/4 of said Section 4; thence  
 North 00° 38' 29" East 1301.94 feet to the Northwest corner of the aforesaid East 1/2; thence  
 North 00° 38' 29" East 80.00 feet; thence  
 North 40° 35' 04" West 681.55 feet; thence  
 North 33° 43' 42" East 698.35 feet; thence  
 South 09° 24' 04" East 400.00 feet to the East line of the Northwest 1/4 of the Southeast 1/4 of said Section 4; thence  
 North 00° 35' 56" East 147.26 feet to the Northeast corner of the said Northwest 1/4 of the Southeast 1/4; thence  
 North 00° 42' 19" East along the East line of the Southwest 1/4 of the Northeast 1/4 of said Section 4 a distance of 725.02 feet; thence  
 North 29° 48' 06" East to the Southwesterly margin of Summit Road; thence  
 Northwesterly - - - - along said Southwesterly margin to the Southerly margin of Fairway Lane, as shown on the Plat of Whidbey Country Club Estates, Division No. 1, as per Plat recorded in Volume 7 of Plats, Page 65, Records of Island County, Washington; thence  
 South 87° 34' 37" West along said Southerly margin to the Northeastly corner of Lot 1 of said Plat; thence

10-11-01

PROPERTY A

EXHIBIT A

Page 2

Southerly and Westerly along the boundary of said Plat the following courses and distances:

- South 02° 25' 23" East 175.00 feet; thence
- South 87° 35' 37" West 500.00 feet; thence
- South 46° 20' 00" East 327.00 feet; thence
- South 87° 34' 37" West 65.00 feet; thence
- North 77° 30' 00" West 677.74 feet; thence
- North 89° 52' 47" West 167.12 feet; thence
- South 00° 07' 13" West 125.00 feet; thence
- South 79° 04' 00" West 133.03 feet; thence
- South 25° 47' 30" West 355.00 feet; thence
- South 42° 34' 05" West 236.50 feet; thence
- South 59° 20' 40" West 499.82 feet; thence
- North 54° 39' 20" West 44.26 feet to the Northeastly corner of Parkway Lane, as shown on the aforesaid Plat of Whidbey Country Club Estates, Division No. 2; thence

Southerly and Westerly along the Easterly boundary of said Plat of Whidbey Country Club Estates, Division No. 2, the following courses and distances:

- South 15° 10' 51" West 207.94 feet; thence
- South 49° 09' 20" East 171.52 feet; thence
- South 37° 40' 40" West 245.34 feet; thence
- South 47° 54' 40" West 396.24 feet; thence
- South 59° 30' 40" West 237.00 feet to the beginning of a curve to the left;

thence Southwesterly along said curve to the left, having a radius of 17.00 feet, through an arc of 40° 12' 40" a distance of 49.13 feet to the beginning of a curve to the left; thence

Southerly along said curve to the left, having a radius of 105.00 feet, through an arc of 40° 45' 55" a distance of 74.69 feet; thence

South 31° 10' 00" West 67.54 feet to the Point of Beginning.

Also included in this conveyance are the following two tracts situated in Island County, Washington:

Tract A, Plat of Whidbey Country Club Estates, Div. No. 1, as recorded in Volume 7 of Plats, page 65, records of Island County, Washington; and,

Tract B, Plat of Whidbey Country Club Estates, Div. No. 2, as recorded in Volume 9 of Plats, page 59, records of Island County, Washington.

TED D. ZYLSTRA

1-10-01

(date)

1-10-01

10-11-1

State of Washington )  
 County of ISLAND )  
 I, Suzanne Sinclair, County Auditor,  
 do hereby certify that the foregoing instrument is  
 a true and correct copy of the document now on  
 file or recorded in the office of the County Auditor.  
 In witness whereof, I hereunto set my hand  
 this 12th day of Oct 2010  
 Suzanne Sinclair, County Auditor  
 Deputy



GNRL BK 830 PG 2137

Front

## ATTACHMENT C

## MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (MOU) is the basis of an agreement between Whidbey Golf & Country Club (WG&CC) and a group of property owners who own land abutting or near to the golf course owned by WG&CC. This group consists of Reicon, Inc. (R.P. Fakkeima and R.H. Kingma), K. Krieg and MK Partnership (K. Manni and K. Kreig), (Collectively referred to as the Proponents).

## BACKGROUND

All parties were aware of the history of flood problems at and near the golf course and at the Beachview Farm, that land around the golf course is planned for residential development and that any such development would exacerbate existing flooding problems. The Proponents have funded a stormwater drainage study, titled "Golf Course Drainage Basin Stormwater Mitigation Study" (Study), prepared by Greg Cane, PE, of Fakkeima and Kingma, Inc., which was completed in late 1997. The Study contains an analysis of existing conditions and the proposed improvements needed to correct both existing problems and the impact of further basin development, including mitigation of these impacts. The Study and associated letters provides the basis for this MOU.

The purpose of the MOU is to delineate the responsibilities of the individual Proponents regarding new development on properties whose stormwater drains to the property of the WG&CC. This MOU will be followed as soon as practical with an agreement which will incorporate the items in the MOU, detail the Proponents financing arrangement, describe the credits to the Proponents and the WG&CC associated with any additional development in the golf course basin, describe maintenance responsibilities and any other pertinent items.

As indicated above, when properties other than those of the Proponents identified herein reach the development stage, the WG&CC will work with the Proponents to accommodate late-comers or other appropriate agreements.

At the initiation of the first project identified on Schedule A, the Proponents will install the pump and discharge line identified as item 2 on Schedule A. Installation will be completed as a condition of final plat of this first project. The installation will include a new pump station, a new 12" discharge line thru Fairway Lane capable of volumes up to 3,000 gpm and containing "quick-connect" ports for additional portable pump connection as a further back-up.

## PROPOSED IMPROVEMENTS

The attached list of improvements (Schedule A) is a summary of the mitigation to be completed by the Proponents as a condition to final plat approval of their development projects. Additional information can be found in the Study.

### ATTACHMENT C (cont'd)

The preliminary plan for each property proposed for development will include a drainage plan as required by the City of Oak Harbor as part of the approval process. These plans will include drainage collection details and discharge paths to the various detention ponds and ditches, and will address the basin mitigation requirements. Unless specifically approved by the WG&CC, all drainage systems will be located on the Proponents' property other than covered transit lines to the WG&CC's ponds and perimeter ditches. Aesthetics are important to the WG&CC and to the Proponents and the design must take this into consideration. The Proponents agree that their respective development proposals can receive final plan approval only after completing the appropriate mitigating item or items.

The conceptual drainage plan for each project must be approved by the WG&CC based on the MOU and the agreement resulting from this MOU, and such approval shall not be withheld unreasonably. If approval is not initially granted and an agreement can not be reached, the Oak Harbor City Engineer shall act as arbitrator of the intent of this MOU. Once conceptual design is agreed upon, WG&CC will receive final construction plans for review to insure that final design concurs with conceptual design.

The attached Schedule A contains an itemized list of drainage improvements, a brief description of each improvement, the name of the responsible proponent(s) scheduled to finance the cost of the improvement, and the development or project which will trigger the improvement.

#### DEVELOPMENT USING THE LOERS POND AND PERIMETER DITCH SYSTEM

Work on this integrated system to be effective must be completed so that the entire system is improved. Recognizing the cost of this work, the WG&CC agrees that it can be completed in two stages. The first stage, to be completed as a condition of final plan for the first project using this system, will consist of items 3 and 4 on Schedule A. The second stage, to be completed within one year of final plan for the first project using this system, will consist of items 5 and 6 on Schedule A. The second stage could receive joint financing as several developments are associated with use of the system.

#### SYSTEM MAINTENANCE, GOVERNMENTAL RESPONSIBILITY

The Proponents and the WG&CC agree that the long-term maintenance of the drainage system operated by the WG&CC is essential to the basin's development. The Proponents therefore support the efforts of the WG&CC to seek a reasonable compensation from the City of Oak Harbor for the annual operation and maintenance of the stormwater drainage system in the basin including a flow measurement device at E. Nugent Road and the ditch to the west of Fairway Lane, not on WG&CC property, which ends at the start of the exit ditch on Beachview Farm.

ATTACHMENT C (cont'd)

The Proponents and the WG&CC also agree that the exit ditch which runs through the Beachview farm and other private property to the road at West Beach Road and then to the Stream of Juan de Fuca must be periodically maintained. The Proponents and the WG&CC hereby agree to work with Island County and the City of Oak Harbor to establish responsibility for this maintenance.

Entered into this 8 day of DECEMBER, 1998.

Libby Golf & Country Club  
[Signature]  
Gary Powell, Vice President

Keleon, Inc.  
[Signature]  
Ryan H. Kingma, President

[Signature]  
Manni, Partner

Karl & Darlyne Kreig  
[Signature]  
Karl Kreig III

ATTACHMENT C (cont'd)

**PROPOSED IMPROVEMENTS**  
**Golf Course Drainage Basin**  
**Stormwater Mitigation Study**  
**Improvement**

Schedule A

Study	Responsible Proponent(s)	Trigger
1. Preparation of the Golf Course Drainage Basin Mitigation Study.	1. All Proponents	Completed
<b>New Pumping Facility</b> 2. New electric pump(s) system near 13 pond and approximately 500 feet of pipe from the pump thru the existing pipe under Fairway Lane to the exit ditch.	2. All Proponents	First project initiated
<b>Loers Pond and Perimeter Ditch System</b> 3. Install 170 feet of 48 inch pipe in place of existing 24 and 38 inch pipe north of Oidenburg Lane and excavate, as required, the perimeter ditch from Fairway Lane to the exit ditch (not on WG&CC property).	3. Nelson, Inc. has lead responsibility	Triggered by the first development to use the complex either: a. Development associated with access to Loers Pond or to the perimeter ditch for stormwater emanating from the area adjacent to fairways 3 and 4, or b. Development associated with access to 17 pond or the perimeter ditch for stormwater emanating from the area adjacent to fairways 3 and 16, or c. Development associated with access to Loers pond for stormwater emanating from the areas identified as N10 and N7b.
4. Additional culvert across Fairway Lane parallel to existing culvert for the perimeter ditch.	4. Same	
5. Raise perimeter ditch sides and excavate, as required, from Loers Pond to Fairway Lane. Repairs or modify culverts at perimeter ditch crossing cart paths.	5. Same	
6. Replace existing Loers Pond discharge structure, including adjacent ditch enlargement, and add additional soil to the berm of Loers Pond at two locations.	6. Same	
<b>Townhouse Project</b> 7. Install approximately 500 feet of pipe running from the Homeland detention pond to 8 pond along with appropriate valves at the pond exit.	7. Nelson, Inc.	
8. Install approximately 450 feet of pipe from 8 pond to 10 pond.	8. Same	

Triggered by the development of the "Townhouse" project to the east of WG&CC properties associated with the access to 8 pond. Item 8 is subject to regulatory review regarding wetlands.

*(Handwritten signatures and initials)*

Note:  
 The above is based on the 100 year conveyance system as identified to date. Additional or substitute improvements may be indicated by detailed engineering.

September 18, 1998

**Appendix H**

**“2014 Agreement Letter”**

**Van Ness Feldman letter to Landed Gentry re “2002 Drainage Agreement”**



719 Second Avenue, Suite 1150  
 Seattle, WA 98104-1728  
 206-623-9372  
 vnf.com

June 27, 2014

Brian Gentry  
 Landed Gentry Homes & Communities  
 Old City Hall Building  
 504 E. Fairhaven Ave.  
 Burlington, WA 98233

Re: Marin Woods | Evaluation of Drainage Agreement

Dear Brian:

This letter summarizes my evaluation of the March 14, 2002, Drainage Agreement (“Drainage Agreement”) among Island County (“County”), the City of Oak Harbor (“City”), and the Whidbey Golf & Country Club (“Golf Club”) addressing plans and commitments to manage surface water drainage in the Waterloo and Swantown drainage basins including, but not limited to, parcels N-1 and N-2 (“Marin Woods”). I have reviewed the following public information which you provided:

1. March 14, 2002 Drainage Agreement
2. August 1997 Golf Course Drainage Basin Stormwater Mitigation Study (“Drainage Study”)

Based on that information, it is my opinion that development of parcels N-1 and N-2 are subject to and entitled to rely upon the stormwater management design as recommended in the Drainage Study and as established and enforced by the commitments in the Drainage Agreement. The Drainage Agreement clearly establishes mutual contract obligations and commitments regarding stormwater management for these properties. The Agreement further establishes the duration of those commitments through 2022, with the potential for a “good faith” negotiation of an additional extension beyond that date. Thus development of parcels N-1 and N-2 at this time fall within the duration and the express provisions of the Drainage Agreement.

Key provisions of the Drainage Agreement that support this conclusion include the following:

- **Agreement Section 1:** The Golf Club has assumed responsibility for operation and maintenance of the various stormwater management facilities for these drainage basins as they are described in the Drainage Study.
- **Agreement Section 2 (City) and Section 3 (County):** Stormwater utility funds are used to reimburse the Golf Club for operation and maintenance costs of the drainage improvements in the Drainage Study. Parcels N-1 and N-2 are within that City Stormwater Utility (all properties within the City limits, OHMC Chapter 12.40), have

Brian Gentry

- 2 -

June 27, 2014

been paying assessments to the utility, and are included in the proportionate share calculations in the Drainage Agreement.

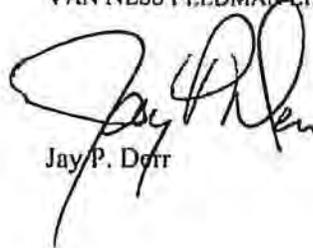
- **Agreement Sections 2 and 3:** The City and County are both obligated to “coordinate” proposed development within their respective jurisdictions in the affected drainage basins consistent with the drainage improvements identified within the Drainage Study.
- **Agreement Section 7:** Drainage Agreement duration is 20 years, plus agreement to negotiate extension in good faith.

In addition to these legal reasons why parcels N-1 and N-2 are entitled to be developed in reliance on the stormwater mitigation measures established in the Drainage Study and the Drainage Agreement, it is my understanding that the nature and timing of peak stormwater flows in these basins further support direct discharge so that the stormwater detention facility capacity is not exceeded when upstream peak flows pass through the same stormwater detention facilities. Thus, not only does the contract support this conclusion, but sound stormwater engineering practices do so as well. The 2005 Stormwater Manual, as adopted by the City in OHMC Chapter 12.30, specifically provides for drainage basin or subbasin planning to modify stormwater minimum requirements.

It is my understanding that you may choose to share this letter with the City of Oak Harbor, to assist the City in its evaluation of the Drainage Agreement and its implications for stormwater management for Marin Woods development. However, in doing so, that should not be deemed by any party as a waiver of other attorney-client communications between us regarding this issue, or any other issues related to the Marin Woods project development.

Very truly yours,

VAN NESS FELDMAN LLP



Jay P. Dorr