San Juan County Community Development & Planning

135 Rhone Street, P.O. Box 947, Friday Harbor, WA 98250 | cdp@sanjuanco.com
(360) 378-2354 | (360) 378-2116 | Fax (360) 378-3922 | www.sanjuanco.com

REQUEST FOR REVIEW

Applicant Name and File #: Orca Dreams LLC PSJ000-17-0003 **DATE:** 9-6-17

Please review the application materials and return written comments to Julie by 10-4-17.
If you request additional information or materials from the applicant, please notify SJC Community Development & Planning in writing.

	State Agencies
	Dept. of Archaeology
	Dept. of Agriculture – Kelly McLain
	Dept. of Commerce
X	Dept. of Ecology/SEPA
X	Dept. of Ecology/Shoreline – Chad Yunge
	Dept. of Ecology/Shoreline – Doug Gresham
	Dept. of Fish and Wildlife – Doug Thompson
	Dept. of Fish and Wildlife - SEPA
	Dept. of Health – Kelly Cooper
	Dept. of Health - Shellfish
	Dept. of Natural Resources – SEPA
X	Dept. of Natural Resources – NW Region
	Dept. of Social & Health Services –Terri Sinclair-Olson
	Dept. of Transportation Env Svcs – Roland Storme
	Dept. of Transportation – Ferries – Robert Price
	Energy Facility Site Evaluation Council–Stephen Posner
	Interagency Committee on Outdoor Recreation
	Parks and Recreation Commission
	Puget Sound Partnership
X	UW-Friday Harbor Labs, Director
	UW-Real Estate Office, Property Rights Manager
	Washington State Parks NW Region
	Tribal Agencies
	Lummi Historic Preservation Office
	Lummi Natural Resources – Alan Chapman (Shoreline)
	Samish Indian Nation – Jackie Ferry
	Swinomish Tribal Commission – Tim Hyatt
	Tulalip, Natural Resources
	County Agencies
	San Juan County Council
	San Juan County Planning Commission
	San Juan County Prosecutor – Amy Vira
	San Juan County Assessor
	San Juan County Community Development & Planning
	Chief Building Official – Fred Schaller

	County Agencies (Cont.)
	San Juan County Engineer
X	San Juan County Health Dept – Kyle Dodd
	San Juan County Parks Dept – Dona Wuthnow
	San Juan County Dept of Emergency Management
	San Juan County Fire Marshal – Richard Meyers
	Fire Districts (Indicate: #2, #3, #4, or all)
	Town, Utilities, & Utility Districts
	Town of Friday Harbor – Mike Bertrand
	Eastsound Sewer District
	Eastsound Water Users
	Fisherman Bay Sewer Association
	Fisherman Bay Water Association
	Washington Water Service Company
	OPALCO
	CenturyLink
	Schools and Libraries
	School District: Lopez Orcas San Juan Shaw
	Libraries: Lopez Orcas San Juan Shaw
	Other
	San Juan Conservation District
	SJC Noxious Weed Control Board
	San Juan County Parks Board – Dona Wuthnow
	Eastsound Planning Review Committee
	Deer Harbor Plan Review Committee
	Lopez Village Plan Committee

Distribution completed by: Lynda Kinney Date: 9/6/17

SAN JUAN COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT

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dcd@sanjuanco.com | www.sanjuanco.com

Land Use Project Permit Application

PROPERTY INFORMATION Land Use/Shoreline

Tax Parcel Number: **353344008** Designation: **RFF-10** Water Body: **Haro Strait**

Island: **San Juan** Subdivision: **NA** Lot Number: **NA**

Property Size: **40+ Axres** Application Type: SSDP

Existing and Proposed Use: Existing: Residential Proposed: Joint-Use Dock and RO Desalination System

Directions to Property: 57 Island Marble Lane

S.J.C. DEPARTMENT OF
MAR 03 2017
COMMUNITY DEVELOPMENT

OWNER AND AGENT INFORMATION:

Name of Owners:	**Orca Dreams, LLC**	Name of Agent:	**Francine Shaw**
Address	**PO Box 928**	Address	**PO Box 2112**
City, State, Zip	**Friday Harbor, WA 98250**	City, State, Zip	**Friday Harbor, WA 98250**
Phone Number	**Please contact agent**	Phone Number	**(360) 378-6278**
Email	**Please contact agent**	E-mail	**fshaw@rockisland.com**

NOTE: A timely appeal of Shoreline Exemptions will stay the effective date of the granting of the exemption until the appeal has been resolved at the County level. (SJCC 18.80.140A(7))

PERMIT CERTIFICATION (Must be signed by all property owners of record or a notarized agent signature provided.)
I have examined this application and attachments and know the same to be true and correct, and certify that this application is being made with the full knowledge and consent of all owners of the affected property. (Signed by property owner or agent. For agent signature, notarized authorization must be attached.)

Signature	Printed Name	Date
Francine Shaw	Francine Shaw	3-3-17

For CD&P Use Only Complete Application: ☐ YES ☐ NO

Amt. Paid: Date Received: Receipt Number: 0000

FOR STAFF USE ONLY

Date Received: 3/3/17 Amount Paid: $4,500 Receipt #: 00013036

SEPA Exempt Code Citation: Inspection Required: ☐ YES ☐ NO

☐ Approved ☐ Denied By: Date:

NOTE: The Application Submittal Checklist for Land Use Review is a separate form that must be completed and attached to all applications. This checklist, along with other forms that might be needed, and current fees, may be found at: http://sanjuanco.com/permitcenter/applicationforms.aspx

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MITIGATED DETERMINATION OF NONSIGNIFICANCE
Shoreline Permit Application for Orca Dreams LLC
Four-slip dock and RO Desalination System
San Juan Island

Project Description: Orca Dreams LLC is proposing construction of a four-slip dock and associated navigational buoy to serve their three waterront parcels (TPNs 353344008, 340411003, and 340411005) and five existing single family residences. They are also proposing to install a reverse osmosis desalination system to provide potable water to six single-family residences.

Proponent: Orca Dreams LLC, David Honeywell, Managing Member, PO Box 928, Friday Harbor, WA 98250

Agent: Francine Shaw, Land Use Planner, Law Office of Stephanie Johnson O'Day, PO Box 2112, Friday Harbor, WA 98250.

Project Location: San Juan Island, 57 Island Marble Lane

Lead Agency: San Juan County Department of Community Development

The lead agency forthis proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(C). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request. This determination is subject to the mitigating measures as identified below. If this application is approved, these measures shall be deemed conditions of approval of the land use and/or permit pursuant to San Juan County Code 18.80.050. Such conditions are considered binding and may not be altered by subsequent decisions unless a threshold determination is re-issued.

Proposed Conservation Measures for Dock and RO Desalination System Construction:

1. Timing limitations: In-water work shall only be allowed from September 1 through March 1 for the protection of salmon and bull trout.
   a. Work below the ordinary high water line shall not occur from March 2 through August 31 of any year for the protection of migrating juvenile salmonids.
2. A qualified diver will mark th emargins of th eeelgrass beds to ensure that the dock is positioned with a minimum 25-foot buffer from the eelgrass beds.
3. Pile removal will follow the EPA Best Management Practices for pile Removal & Disposal (EPA 2007).
4. A rubber cushion will be placed between the vibratory pile driver and the pile to reduce the generation of both airborne and underwater noise.
5. A collar will be placed around existing creosote-trated piles prior to removal to capture sediment and minimize any increase of turbidity associated with pile removal.

6. Observers qualified in identification of marine mammals and seabirds will be on-site during pile driving operations to watch for presence or absence of killer whale, and other marine mammals and marbled murrelet within the 1.34-mile actin area. Observers will check for presence of marine mammals within the action area 30 minutes prior to and during operations and advise operators of presence of marine mammals. Presence/absence of marine mammals will be recorded and reported.
    a. One observer will be stationed at th etop of the bluff at the promontory just south of the project site (Figure 7). Two additional observers will be stationed in a boat and will be cruising in Hro Strait along the boundary of the zone of influence (ZOI).
    b. Observers will communicate with the contractor with both cellular telephones and VHF radios. Communication checks will occur daily.
    c. Pile driving or removal will not occur if killer whales or humpback whales are within the 1.34-mile ZOI.
    d. Pile driving will not occur when other marine mammals are within 200 feet of the Project site, or when marbled murrelet are within 160 feet of the project.
    e. Pile driving/removal operations will occur between 2 hours after sunrise and 2 hours before sunset from September 1 through September 15 to protect marbled murrelet during nesting season of April 1 through September 15.
7. The contractor will have a prepared Spill control and Countermeasure Plann (SCC Plan) that addresses specific actions to prevent pertroleum products from being discharged into surface waters. The contractor will also have oil-absorbent materials on site to be used in the event of a petroleum product spill and measures to avoid petroleum products or other deleterious materials from entering surface waters will be taken. This plan can be found in the Biological Assessment at Appendix F.
8. Eelgrass and macroalgae will not be adversely impacted due to any project activities:
    a. The construction barge will not be allowed to ground in the Project area.
    b. Prop wash will not be directed toward eelgrass bed that are mapped near the Project area.
    c. Barge anchors and cables will not be placed in the eelgrass bed that is mapped to the south of the dock alignment.
9. The following BMPs described in the Stormwater Management Manual for Western Washington Volume II; Construction Stormwater Pollution Prevention (Ecology 2014) shall be followed to minimize the amount of fine sediment from entering marine water due to disturbance of soil as part of improvements to the access trail:
    a. BMP C101: Preserve Natural Vegetation
    b. BMP C153: Material Delivery
    c. BMP C230: Straw Bale Barrier
    d. BMP C233: Silt Fence
    e. BMP C235: Straw Wattles
10. All construction materials shall be removed from the work site and natural material will be returned to their original position at the end of construction.
11. Petroleum products will not be transferred on or near the joint-use dock. Fuel and lubricating oil will be purchased and transferred at licensed fuel stations.
12. A private navication buoy will be installed to mark the location of rocks that are seaward of the proposed float.
13. Boat operators will use the clear channel along th esouthern approach to the proposed dock to prevent collision wit hsubmerged rocks and avoid impats to the False Bay Preserve.
14. The float and ramp will be removed from the site on or near November 1 and reinstalled on or near May 1.
15. The BMPs in the Orca Dreams Spill Containment, Prevention and control Plan (Appendix D of the BA) will be strictly followed.
16. The project shall comply with all applicable provisions of the Unified Development Code, Title 18 San Juan County Code.

This determination is issued pursuant to WAC 197-11-350. San Juan County will not act on this proposal for 14 days from the date of publication. Comments must be submitted in writing to the Department of Community Development no later than October 7, 2015. Appeals must be submitted in writing to the Department of Community Development no later than October 28, 2015.

Responsible Official: Erika Shook, Director
Department of Community Development
(360) 378 2354

Julie Thompson

By Julie Thompson
Planner III

Date: September 6, 2017 **Permit #** PSJ000-17-0003

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

S.J.C. DEPARTMENT OF
MAY 19 2017
COMMUNITY DEVELOPMENT

A. Background

1. Name of proposed project, if applicable:

   Orca Dreams Four-Slip Joint-Use Community Dock and Reverse Osmosis Desalination System

2. Name of applicant:

   Orca Dreams, LLC

3. Address and phone number of applicant and contact person:

Applicant: *Orca Dreams LLC*
C/O David Honeywell, Managing Member
P.O. Box 928
Friday Harbor, WA 98250

Agent: *Francine Shaw, Land Use Consultant*
Law Offices of Stephanie Johnson O'Day
P.O. Box 2112
Friday Harbor, WA 98250
Phone: (360) 378-6278
Email Address: fshaw@rockisland.com

4. Date checklist prepared:

March 2017 - Revised May 2017

5. Agency requesting checklist:

San Juan County Department of Community Development

6. Proposed timing or schedule (including phasing, if applicable):

The applicant would like to build the proposed joint-use community dock including a navigational warning buoy and RO desalination system as soon as all appeal periods have passed. The applicable construction windows will be strictly observed as noted in the proposed conservation measures in the project description.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

A revised Biological Assessment dated February 24, 2017 addressing potential impacts created by the proposed joint-use dock and reverse osmosis desalination system has been prepared and includes the following information:

1. *Marine Mammal Monitoring Plan (Section 7.4 and Figure 7);*
2. *A list of proposed conservation measures (Section 9.0);*
3. *Seafloor soundings (topography) and lateral boundaries of Orca Dreams' privately owned tidelands prepared by San Juan Surveying on November 9, 2015 (See Figure 6);*
4. *Appendix A – Light Availability Test of Sun Walk Decking;*
5. *Appendix B - Preliminary Underwater Survey conducted by Bob Wells with Wells Construction dated August 24, 2014;*
6. *Appendix C – Orca Dreams, LLC Video and Dive Survey conducted by Fairbanks Environmental Services Inc. dated February 2016;*

7. *Appendix D – Orca Dreams Spill Prevention Containment and Control Plan which addresses impacts (or lack thereof) to the False Bay Preserve;*
8. *Appendix E – EPA BMPs for Pile Removal and Disposal;*
9. *Appendix F – Waterfront Constructions BMPs and Spill Control and Countermeasures Plan;*
10. *Appendix G – Request for Temporary Incidental Harassment Authorization from NOAA.*

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

A building permit application was recently submitted to the San Juan County Department of Community Development for the demolition and replacement of one existing shoreline cabin on TPN 353344008 (BUILDG-17-0021).

10. List any government approvals or permits that will be needed for your proposal, if known.

The proposed dock, navigation buoy and RO desalination system will require the following permit approvals:

- *Shoreline Substantial Development Permit from San Juan County Department of Community Development;*
- *Hydraulic Project Approval (HPA) from the Washington State Department of Fish and Wildlife;*
- *Certificate of CZMA Consistency from the Washington State Department of Ecology;*
- *Section 10 Permit and SPIF from the US Army Corps of Engineers; and*
- *Easement for the desal lines to be located on state owned tidelands from the Washington State Department of Natural Resources.*

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Orca Dreams, LLC is proposing the construction of a four-slip joint-use community dock and associated navigational buoy as well as a reverse osmosis desalination system to serve their three waterfront parcels (TPNs 353344008, 340411003 and 340411005) and five existing single family residences as described in more detail below.

Joint-Use Community Dock

A four-slip joint-use community dock is planned for construction on TPN 340411003 and will serve five existing residences on the Orca Dreams' 40+ acre property.

This dock will be sited where remnants of the old Mar Vista Resort dock are located (an existing wooden shore mount and eight creosote piles as per San Juan County Assessor's records) and will provide moorage to four boats ranging between 18 to 35 feet in length. The purpose of the proposed pier structure is to provide safe moorage and recreational boating opportunities for the five residences. The float will be removed and stored at Snug Harbor Resort from November

through the end of April of each year to prevent damage to the float that could be caused by extreme wind and wave action that this site experiences during the stormy season. The seaward end of the ramp will be lifted out of the water and secured to the two landward float support piles during this time.

The joint-use community dock will consist of:

- *A new 6'-9" X 2' concrete abutment landward of the OHWM providing access to the dock from the shoreline (13.5 sq. ft.);*
- *An existing 10'–6" X 6' wooden pier head shore mount (63 sq. ft.) which remains from the old Mar Vista Resort dock that has since been removed from the site;*
- *Four fixed 6'-9" X 36' long pier sections totaling 144 feet in length (972 sq. ft. cumulatively) connecting with*
- *A 4'-9" X 60' long fully grated ramp (285 sq. ft.) attached to the seaward end of the pier and connecting to*
- *An 8' X 60' long (480 sq. ft.) moorage float with float anchors attaching the seaward end of the float to the seafloor to keep the float steady;*
- *Twelve 10"-diameter galvanized steel piles (9.42 sq. ft.); and a*
- *Private navigation buoy located approximately 95 feet seaward from the seaward end of the float that will mark the proximity of underwater rocks that may be a navigational hazard.*

The total area of the pier, ramp and float will be 1,729.8 sq. ft. (excluding the 19.7 sq. ft. ramp-float overlap area, the 13.5 sq. ft. concrete abutment, and the existing 63 sq. ft. wooden pier shore mount). The total length of the dock will be approximately 260 feet.

The entire deck of the fixed pier, ramp and float will be constructed with "Sun Walk" light penetrating grating with 46% open area that allows 69.9% of the available sunlight to penetrate to 18" below each panel and 86.2% of available light measured 60" below the panel.

The fixed pier will be elevated approximately 5 feet above the beach at the landward end and 14 feet above the seafloor at the waterward end. Eight 10" diameter galvanized steel piles will support the fixed pier.

The ramp will be welded aluminum with fiberglass grated decking and will span approximately 60 feet between the fixed pier and the float. Functional grating of the ramp is 96.5%.

The float will be constructed with a treated wood frame with "Sun Walk" molded plastic grated decking and plastic encapsulated, foam-filled float tubs. Four epoxy guide piles and two anchors with elastic cords will hold the float in place. These anchors will be either auger or duckbill type earth anchors.

Water and electrical lines will be extended to the dock as well.

Construction Technique & Sequencing

1. *Pre-fabrication*

   The new pier, ramp, float and navigation buoy will be prefabricated in the contractor's Seattle yard and transported to the site on the construction barge.

2. *Site Preparation*

   The shoreline slopes downward to the tidelands in front of the project site. The tidelands

vary from solid rock to a mixed sand, gravel and mud bottom. Remnants of an existing pier structure (eight creosote pilings) will be removed and placed on the construction barge and transported to contractor's yard for upland disposal. (The existing wooden shore mount will be retained and used as the water- land interface for this structure.) There will be no upland disturbance.

3. *On Site Construction*

On-site construction will consist first of pulling the eight existing creosote piles from the seafloor with a vibratory hammer. If any one of the piles cannot be pulled, it will be cut off 1-foot below the mudline. Then, the eight 10" steel pier piles near shore and the four 10" steel outboard piles will be driven into the seafloor. Pile driving is expected to take 30-45 minutes per pile with 4 to 5 piles being driven in one day. This equates to three hours of pile driving over a three day period.

Once piles are installed the barge mounted construction crane will be used to set the pier sections in place. Once the pier is in place, the moorage float will be set in the water and bolted together, then positioned in place. The float will be secured with steel guide piles and two auger duckbill anchors using the barge mounted construction crane. Once the float sections are bolted together and secured to the float piles, the crane will lift the ramp into place. The shoreward end of the ramp will be bolted to the pier and the water-ward end set on the moorage float. Plan view and cross sections of the proposed project are shown in project drawing packet. (See project drawings for more details.)

The buoy will be anchored with an imbedded anchor and a series of mid-water floats that will elevate the anchor line off the seafloor to avoid scouring.

4. *Equipment Used*

All construction equipment and materials used in this project would be stationed on the construction barge. A barge mounted crane will be used to set the pier piles, pier, moorage float and ramp in place. Portable power tools and hand tools will also be used to connect the pier to the piles and to secure the floats and ramp in place.

5. *Materials Used*

Piles will be steel driven with a vibratory hammer with cushion block between the pile and the hammer; the pier will have a welded aluminum frame with a molded plastic or fiberglass grated deck; the ramp will be welded aluminum with fiberglass grated deck; the float will have a treated wood frame with a molded plastic grated deck with molded plastic, foam-filled float tubs. (See Material List below for more details).

6. *Work Corridor*

The barge would operate offshore to avoid bottom and shoreline disturbances that could occur with ground-based equipment.

7. *Staging Area and Equipment Wash outs*

All staging area activities will occur on the barge with no need for equipment washouts.

8. *Stockpiling Areas*

The barge will hold all construction materials during project and all construction debris will be held in a 20 c/y steel garbage container secured on the crane barge for disposal upland later.

9. *Running of Equipment During Construction*

Equipment will be running off and on throughout the on-site construction phase. All equipment will be kept in good running order and will only be running when required.

10. *Clean-Up and Re-vegetation*

All construction debris will be removed and loaded into a 20 c/y steel garbage container secured on the crane barge for holding during construction, then transported by the crane barge to the contractor's Seattle yard, off-loaded into trucks and shipped to an approved upland disposal site. No re-vegetation is proposed at this time.

11. *Project Timing*

All proposed construction will take place in approved work windows during daylight hours unless work needs to be coordinated with evening low tides to facilitate construction.

In-water work will only be allowed from September 1 through March 1 for the protection of salmon and bull trout.

Pile driving operation will occur between 2 hours after sunrise and 2 hours before sunset from ~~April~~ 1 through September 15 to protect marbled murrelets during nesting season.
Sept.
Pile driving will cease when whales are within 1.34 miles of the project site and when seals are within 200-feet, their specific Zone of Influence (ZOI) as per the marine mammal monitoring plan that is included in the BA. Pile driving will not resume until these mammals have passed outside their ZOI.

12. *Duration of Construction*

Onsite project construction will take a maximum of 3-4 weeks.

Materials List and Specification

ORCAS DREAMS PIER MATERIAL LIST		
PART	**SPECIFICATIONS**	**TREATMENT**
Auger or Duckbill Anchors	Solid steel shaft and flutes	Galvanized
Anchor Cables	Elastic bungee cords	None
Pre-fab Pier Sections	4 X 4 & 4 X 6 welded aluminum square tube	None
Pile Cap Beam	W6X15 steel "I"-Beam	Galvanized
Float Nailers	2 X 4 #2 or better	ACZA (Chemonite)
Float Joist	2 X 8 & 2 X 6 #2 or better	ACZA (Chemonite)

Float Blocking	2 X 8 #2 or better	ACZA (Chemonite)
Float Walers	4 X 12 #2 or better	ACZA (Chemonite)
Float Flotation	High-density foam-filled plastic tubs	None
Ramp Framing	4 X 4 & 4 X 6 welded aluminum square tube	None
Float and Ramp Grating	Molded plastic or fiberglass	None
Compression Rods	1/2 " &/or 3/4 " solid steel	Galvanized
Piles	10" diameter steel pipe	Galvanized and Epoxy Coated
Hardware, Nuts and Bolts	Solid steel	Galvanized or Stainless

Proposed Navigation Buoy

The applicant proposes the installation of a navigation buoy to mark a rock outcropping that is located about 95' seaward of the seaward end of the proposed joint use dock. The rock outcropping is exposed during most tidal elevations but is submerged during high tides which creates a boating hazard to the users of the proposed dock.

The buoy will consist of a 36" diameter float with mooring ring, attached to a six foot length of ½ inch chain, and an undetermined length of 1" braided rope (the length will be determined at the time of construction depending on water depth at high tide, and 8" diameter non-compressible mid-line float and helix anchor.

Proposed Conservation Measures for Dock Construction:

The following 16 conservation measures have been incorporated into the project to protect and minimize the impact to the aquatic habitat.

1. *Timing limitations: In-water work will only be allowed from September 1 through March 1 for the protection of salmon and bull trout.*

    a. *Work below the ordinary high water line shall not occur from March 2 through August 31 of any year for the protection of migrating juvenile salmonids.*

2. *Pile driving/removal operations will occur between 2 hours after sunrise and 2 hours before sunset from September 1 through September 15 to protect marbled murrelet during nesting season of April 1 through September 15. Pile driving will occur 3 hours per day for three days*

3. *A qualified diver will mark the margins of the eelgrass beds to ensure that the dock is positioned with a minimum 25-foot buffer from the eelgrass beds.*

4. *Pile removal will follow the EPA Best Management Practices for Pile Removal & Disposal (EPA 2007) (attached as Appendix F to the BA)*

5. *A rubber cushion will be placed between the vibratory pile driver and the pile to reduce the generation of both airborne and underwater noise.*

6. *A collar will be placed around existing creosote-treated piles prior to removal to capture sediment and minimize any increase of turbidity associated with pile removal.*

7. *Observers qualified in identification of marine mammals and seabirds will be on-site during pile driving operations to watch for presence or absence of killer whale, and other marine mammals*

and marbled murrelet within the 1.34-mile action area. Observers will check for presence of marine mammals within the action area 30 minutes prior to and during operations and advice operators of presence of marine mammals. Presence/absence of marine mammals will be recorded and reported.

a. *One observer will be stationed at the top of the bluff at the promontory just south of the project site (Figure 7). Two additional observers will be stationed in a boat and will be cruising in Haro Strait along the boundary of the ZOI.*

b. *Observers will communicate with the contractor with both cellular telephones and VHF radios. Communication checks will occur daily.*

c. *Pile driving or removal will not occur if killer whales or humpback whales are within the 1.34-mile zone of influence.*

d. *Pile driving will not occur when other marine mammals are within 200 feet of the Project site, or when marbled murrelet are within 160 feet of the project.*

8. *The contractor will have a prepared Spill Control and Countermeasure Plan (SCC Plan) that addresses specific actions to prevent petroleum products from being discharged into surface waters. The contractor will also have oil-absorbent materials on site to be used in the event of a petroleum product spill and measures to avoid petroleum products or other deleterious materials from entering surface waters will be taken. This plan is attached as Appendix F.*

9. *Eelgrass and macroalgae will not be adversely impacted due to any project activities:*

   a. *The construction barge will not be allowed to ground in the Project area.*

   b. *Prop wash will not be directed toward eelgrass bed that are mapped near the Project area.*

   c. *Barge anchors and cables will not be placed in the eelgrass bed that is mapped to the south of the dock alignment.*

10. *The following BMPs described in Stormwater Management Manual for Western Washington Volume II; Construction Stormwater Pollution Prevention (Ecology 2014) will be followed to minimize the amount of fine sediment from entering marine water due to disturbance of soil as part of improvements to the access trail.*

    a. *BMP C101: Preserve Natural Vegetation*

    b. *BMP C153 Material Delivery*

    c. *BMP C230: Straw Bale Barrier*

    d. *BMP C233: Silt Fence*

    e. *BMP C235 Straw Wattles*

11. *All construction materials will be removed from the work site and natural material will be returned to their original position at the end of construction.*

12. *Petroleum products will not be transferred on or near the joint-use community dock.*

Fuel and lubricating oil will be purchased and transferred at licensed fuel stations.

13. *A private navigation buoy will be installed to mark the location of rocks that are seaward of the proposed float.*

14. *Boat operators will use the clear channel along the southern approach to the proposed dock to prevent collision with submerged rocks and avoid impacts to the False Bay Reserve.*

15. *The float and ramp will be removed from the site on or near November 1 and reinstalled on or near May 1.*

16. *The BMPs in the Orca Dreams Spill Containment, Prevention and Control Plan (Appendix D) will be strictly followed*

Reverse Osmosis Desalination System

Orca Dreams proposes to construct a reverse osmosis (RO) seawater desalination system sized to augment drinking water for a total of six single-family residences (five existing and one future residence). The system which has been designed by Hart Pacific Engineering will be submitted to San Juan County and the Washington State Departments of Health for review and approval once permits have been approved.

Based on the State Department of Health's requirements, the maximum system demand for six residences, including irrigation around the main house existing on TPN 340411005, will be about 2,310 gallons of water per day. The system will be capable of producing about 3,000 gallons of fresh water per day.

The reverse osmosis seawater desalination (RO) system will draw seawater from Haro Strait and pump it about 1,030 feet to a treatment room that will be installed within an existing barn located upland on the northeasterly corner of the property. The seawater will be treated and the resulting product (fresh) water will be pumped about 360 feet to an existing 40,000 gallon concrete storage tank where it will be available for distribution in the water system. The resulting brine will be conveyed back to the shoreline via a dedicated pipe. The brine will pass through a diffuser before being released into Haro Strait.

The RO system will be used to augment the water supply produced by an existing well (Well ID #BBM 060 – see enclosed well report and supporting documentation). In case of well failure, the RO system has been designed to provide all of the water needed for the fully developed property. The well capacity is 1.1 gpm or 1,584 gallons per day. Therefore, when the well is operating normally and under maximum daily demand conditions the RO system would produce just 726 gallons of fresh water per day to meet expected demand of 2,310 gallons per day. However, if the well yield is reduced for some reason, the RO system could supply the additional water or, in fact, the entire 2,310 gallons needed for one day's use. The water from the well will also be pumped to the treatment house where it will be mixed with RO product water. The blended water will be chlorinated and pumped to the water storage tank.

In practice it is expected that when the storage tank volume drops to a level of about 75% the RO system will be running continuously for a number of days until the tank is full. It will then be shut down. Under these conditions a maximum of 12,068 gallons of seawater will be drawn from Haro Strait each day of operation. This will be used to produce about 2,996 gallons of potable water each day. The resulting brine, about 9,072 gallons per day during operation, will drain back into Haro Strait.

Orca Dreams is proposing the following two alternatives for locating the desal utility lines.

Preferred Alternative 1: If construction of the dock is authorized and all permits are issued at the same time as the RO desalination system, the two projects will be integrated and construction will be completed at the same time. On-site construction will consist of driving or drilling the pump and diffuser support piles. Two 6" steel piles will be driven with a vibratory hammer or, where bed rock is encountered, the pilings will be set in drilled holes. The pump support piling will be located at the -7 tidal elevation and the saltwater (brine) diffuser piling will be located at about the -5 tidal elevation within the footprint of the proposed joint-use community dock. Once the piles are installed, the contractor will install the pump and diffuser assemblies on the pilings. (The configuration of seawater intake and brine return pipes, and electrical conduit is illustrated on Sheets 8 and 9 of the attached drawings.) Seawater intake and brine discharge pipes, and electrical conduit will then be attached to the underside of the fixed pier from the pier head to the seaward end of the pier. From there, the pipes and conduit will extend down a pier support piling to the seafloor below at approximately -3 feet MLLW. The saltwater (brine) return line will extend about 56-feet seaward to the diffuser support piling at the -5 tidal elevation and the seawater intake line will then extend about 112-feet seaward and connect to the pump support piling located at the -7 tidal elevation. The pipeline will then be secured to the seafloor with earth anchors set 10' on-center. The work will be completed from the deck of a small boat and/or by divers where appropriate. The near shore (and upland) pipe trench will be excavated with a small track hoe when the tide is low so that digging and filling of the trench between MLLW and MHHW will be completed in one tidal cycle.

Alternative 2: If construction of the dock is not authorized but the RO Desalination System is, then on-site construction will consist of driving or drilling the pump and diffuser support piles. Two steel piles will be driven with a vibratory hammer, or where bed rock is encountered, the pilings will be set in drilled holes. The pump support piling will be located at the -7 tidal elevation and the saltwater (brine) diffuser piling will be located at about the -5 tidal elevation. Once the piles are installed the contractor will install the pump and diffuser assemblies on the pilings and install the seawater supply pipe, saltwater return pipe and electrical power conduit on the seafloor for about 160 feet from the pump/diffuser assembly support pilings where they will then be buried below the seafloor for the remaining 115 feet to protect them from damage caused by wave action landward to the flushing valve vault located on the shoreline above the beach. The pipeline will be secured with earth anchors set 10' on-center where it is exposed above the seafloor. The work will be completed from the deck of a small boat and/or by divers where appropriate. The near shore (and upland) pipe trench will be excavated with a small track hoe when the tide is low so that digging and filling of the trench between MLLW and MHHW will be completed in one tidal cycle.

The only elements of the reverse osmosis desalination system that will extend over public tidelands and into marine waters are the utility lines (saltwater intake, brine discharge and electrical lines), the saltwater intake pump and brine diffuser, and two 6" support pilings. The utility lines will extend seaward from the shoreline flushing valve for about 200 feet over privately owned tidelands and then another 80 feet onto state owned tidelands within public water where they will terminate at the -7 tidal elevation. It will not impede public access to public tidelands or materially interfere with normal public use of public waters due to their location on the seafloor or on the bottom of the proposed joint-use dock as discussed later in this project description.

The system has been designed by Hart Pacific Engineering to include of two 1,500 gpd RO desalination units with the primary elements of the system consisting of the following:

1. *A 10-gpm 3/4 hip submersible pump mounted inside a 6-inch HDPE pipe section which is secured to a new 6-inch steel marine piling. The intake will be screened as required by*

Washington State Department of Fish and Wildlife. The piling will be located near the seaward end of the proposed floating dock. The RO system will be independent from the proposed dock but within the footprint of the dock. The pump and screen will be accessible for removal and cleaning from a boat.

2. *A 2-inch diameter HDPE pipe will be placed on the sea bottom and secured with concrete pipe anchors, or soil-anchors embedded into the sea floor. At MLLW, the pipe will be buried about 2.5 feet below the seafloor and beach. A valve vault will be buried landward of the MHHW. The water pipes and electrical conduit will be buried from the valve vault to the barn/desalination facility.*

3. *Desalination equipment will consist of a seawater strainer, a sand filter with backflushing capability, an 80-gallon fiberglass pressure tank, two bag filters in plastic housings using a 10-micron and a 2-micron filter, two 1,500 gallon per day USWatermaker desalination units in parallel (seawater flow to each unit is 4.2 gpm) - these RO units will be USWatermaker's Workboat Series units, a 2-cubic foot acid neutralizing unit, 40-gallon chlorine batch tank with chlorine injection pump mounted on top, a Seametrics pulse meter for controlling the pump injection rate, a 120 gallon product water accumulation tank and a 5 gpm ½ hp submersible product water pump.*

4. *A 2-inch HDPE saltwater return pipe from the desalination plant in the barn will be installed parallel with the seawater pipe to the valve vault and to the saltwater diffuser installed on a second piling placed 60 feet landward of the seawater intake at the -5 tidal elevation (sheet 6 of 8).*

5. *The brine diffuser will be mounted inside a 6" HDPE pipe section which is secured to a new 6" steel piling. The piling will be located at the landward end of the proposed dock. The diffuser design allows it to be accessible for removal and cleaning from a boat.*

<u>Construction Sequence</u>

The preferred alternative is to connect the desal lines (seawater intake, brine return and electrical conduit) to the bottom of the proposed pier. However, a second alternative is being proposed if the dock component of this application is denied and the desal system is approved. In this situation, the seawater intake, brine discharge pipes and electrical conduit will be installed underground, in a trench, extending from the treatment facility to the flushing valve vault on the shoreline. From the valve vault, the pipes and conduit will continue seaward in a trench for about 115 feet where they will daylight at the MLLW elevation. The pipes and conduit will extend an additional 160 feet seaward to the depth of -7 feet MLLW and will be anchored to the seafloor with soil-anchors embedded in the seafloor (sheet 6). The pilings and RO system will be within the footprint but independent from the proposed joint-use community dock.

Construction of the RO desalination system will be completed with the following sequence:

1. *Pre-Fabrication*

   The pump and diffuser assemblies, the stainless steel sleeve straps and the concrete pipe anchors will be prefabricated in the contractor's yard in Friday Harbor. They will be transported to the site by truck.

2. *Site Preparation*

The pipeline route and vault site will be cleared of vegetation prior to excavating the trench for the pipelines.

3. *On Site Construction*

On-site construction will be conducted as described above depending upon the approved alternative. The work will be completed from the deck of a small boat and/or by divers where appropriate. The near shore (and upland) pipe trench will be excavated with a small track hoe when the tide is low so that digging and filling of the trench between MLLW and MHHW will be completed in one tidal cycle.

4. *Equipment*

All construction equipment (except for the small track hoe) and materials used in this project will be stationed on either a construction barge or a small boat. A barge mounted crane will be used to set the steel piles. Portable power tools and hand tools will also be used to secure the pump and diffuser assemblies in place on the pilings.

5. *Materials*

Piles will be 6-inch galvanized or epoxy-coated steel. The submersible pump will have a stainless steel shell, screen, suction and discharge housing. The diffuser, the 6-inch protective pump and diffuser sleeve, the seawater and saltwater return piping and electrical conduit will all be HDPE pipe. The straps used to secure the protective sleeves to the pilings will be stainless steel.

6. *Work Corridor*

Work in the water will be conducted between Septmeber 1 and March 1 of any given year. Between March 2 and Augst 31, in-water work will be prohibited. The small boat and barge will operate offshore to avoid grounding and disturbing bottom sediment. A small track hoe will be used when the tide is low to excavate the pipe trench above the zero-tide mark.

7. *Staging Areas and Equipment Wash Outs:*

All staging area activities for setting of the steel pilings and the installation of the pump and diffuser assemblies will occur on the barge or small boat with no need for equipment wash outs. The staging area for the pipe trenching will be in the upland area at least 200' from the shoreline.

8. *Stockpiling Areas*

The barge will hold all construction materials during the setting of the pilings and all construction debris will be held in a 20 c/y steel garbage container secured on the crane barge for disposal upland later. Construction debris from the installation of the pump and diffuser assemblies as well as the pipe laying operation will be collected on board the small boat for disposal upland later. All other construction debris from the construction of the pipelines in the trench will be collected on shore and hauled to an approved upland disposal site.

9. *Running of Equipment*

Equipment will be running off and on throughout the on-site construction phase. All equipment will be kept in good running order and will only be running when required.

10. *Clean-Up and Re-Vegetation:*

All construction debris will be removed and disposed of as described above. Other than reseeding the disturbed shore and upland areas after construction activities are completed, no other re-vegetation is proposed.

11. *Project Timing*

All proposed construction will take place in approved work windows during daylight hours unless work needs to be coordinate with evening low tides to facilitate construction. Pile driving will occur only 2 hours after sunrise and will stop at 2 hours before sunset.

12. *Duration of Construction*

On-site construction will take a maximum of 3-4 weeks. If the joint-use community dock component of this application is approved, the desal system will be constructed simultaneously with the dock.

Conservation Measures

The following 14 conservation measures have been incorporated into the project to protect and minimize the impact to the aquatic habitat.

1. *Timing limitations: In-water work will only be allowed from September 1 through March 1 for the protection of salmon and bull trout.*

   b. *Work below the ordinary high water line shall not occur from March 2 through August 31 of any year for the protection of migrating juvenile salmonids.*

1. *A qualified diver will mark the margins of the eelgrass beds to ensure that the dock is positioned with a minimum 25-foot buffer from the eelgrass beds.*

2. *Pile removal will follow the EPA Best Management Practices for Pile Removal & Disposal (EPA 2007) (attached as Appendix E).*

3. *A rubber cushion will be placed between the vibratory pile driver and the pile to reduce the generation of both airborne and underwater noise.*

4. *A collar will be placed around existing creosote-treated piles prior to removal to capture sediment and minimize any increase of turbidity associated with pile removal.*

5. *Observers qualified in identification of marine mammals and seabirds will be on-site during pile driving operations to watch for presence or absence of killer whale, and other marine mammals and marbled murrelet within the 1.34-mile action area. Observers will check for presence of*

marine mammals within the action area 30 minutes prior to and during operations and advise operators of presence of marine mammals. Presence/absence of marine mammals will be recorded and reported.

a. *One observer will be stationed at the top of the bluff at the promontory just south of the project site (Figure 7). Two additional observers will be stationed in a boat and will be cruising in Haro Strait along the boundary of the ZOI.*

b. *Observers will communicate with the contractor with both cellular telephones and VHF radios. Communication checks will occur daily.*

c. *Pile driving or removal will not occur if killer whales or humpback whales are within the 1.34-mile zone of influence.*

d. *Pile driving will not occur when other marine mammals are within 200 feet of the Project site, or when marbled murrelet are within 160 feet of the project.*

e. *Pile driving/removal operations will occur between 2 hours after sunrise and 2 hours before sunset from September 1 through September 15 to protect marbled murrelet during nesting season of April 1 through September 15.*

6. *The contractor will have a prepared Spill Control and Countermeasure Plan (SCC Plan) that addresses specific actions to prevent petroleum products from being discharged into surface waters. The contractor will also have oil-absorbent materials on site to be used in the event of a petroleum product spill and measures to avoid petroleum products or other deleterious materials from entering surface waters will be taken. This plan is attached as Appendix F of the attached Biological Assessment.*

7. *Eelgrass and macroalgae will not be adversely impacted due to any project activities:*

   a. *The construction barge will not be allowed to ground in the Project area.*

   b. *Prop wash will not be directed toward eelgrass bed that are mapped near the Project area*

   c. *Barge anchors and cables will not be placed in the eelgrass bed that is mapped to the south of the dock alignment.*

8. *The following BMPs described in Stormwater Management Manual for Western Washington Volume II; Construction Stormwater Pollution Prevention (Ecology 2014) will be followed to minimize the amount of fine sediment from entering marine water due to disturbance of soil as part of improvements to the access trail.*

   a. *BMP C101: Preserve Natural Vegetation*
   b. *BMP C153 Material Delivery*
   c. *BMP C230: Straw Bale Barrier*
   d. *BMP C233: Silt Fence*
   e. *BMP C235 Straw Wattles*

9. *All construction materials will be removed from the work site and natural material will be return to their original position at the end of construction.*

10. *Petroleum products will not be transferred on or near the joint-use dock. Fuel and lubricating oil*

will be purchased and transferred at licensed fuel stations.

11. *A private navigation buoy will be installed to mark the location of rocks that are seaward of the proposed float.*

12. *Boat operators will use the clear channel along the southern approach to access the proposed dock to prevent collision with submerged rocks and avoid impacts to the False Bay Reserve.*

13. *The float and ramp will be removed from the site on or near November 1 and reinstalled on or near May 1.*

14. *The BMPs in the Orca Dreams Spill Containment, Prevention and Control Plan (Appendix D of the BA) will be strictly followed*

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The project site includes TPNs 353344008 (5.04 acres –287 Golden Paintbrush Lane), TPN 340411003 (10.33 acres – 241 Golden Paintbrush Lane and 16 Island Marble Lane) and TPN 340411005 (25.20 acres – 137 Golden Paintbrush Lane and 16 Island Marble Lane). All three parcels are waterfront and are located along the shoreline of Haro Strait on the southwest side of San Juan Island in Government Lot 1; Section 3, Township 34 North, Range 3 West, W.M., San Juan County. A vicinity map, topographical map and legal description are attached to the Shoreline Substantial Development Permit application (AFN 2013-0710010 and 2017-0503003.)

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site
(circle one): **Flat,** rolling, hilly, **steep slopes,** mountainous,
other _____

The upland portion of the property is generally flat and slopes modestly from False Bay Drive on the northeast corner of the property to the west shoreline where it drops off steeply about 50 feet to the beach below.

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope on the property is the shoreline bank which slopes at about 30% from the top of bank to the beach below.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The San Juan County Soil Survey shows four soil types existing on the property; 1) Coveland loam at 0 to 5% slopes, 2) Pilepoint loam at 2 to 8% slopes, 3) Alderwood, warm-hoypus complex at 5 to 20% slopes, and 4) Roche-Killebrew-Rock Outcrop complex at 5 to 35 % slopes.

Coveland loam is considered prime farmland if drained, Pilepoint loam is prime farmland if irrigated, and Alderwood, warm Hoypus complex is farmland of statewide importance.

This property was used in the past as a commercial resort. The proposed desalination system will not remove any land on this site from farming because the site has never been used for farming other than recently by the applicants for growing lavender for distilling purposes and vegetables for their personal use.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

San Juan County's Critical Area Map for geohazardous areas and the Washington State Department of Ecology's Coastal Zone Atlas do not show this site as being unstable. The site is identified as containing net drift and a feeder bluff.

There is evidence of recent and historical slides along the south end of the marine bluff but not in the vicinity of the dock or desal lines. Some of this has been contributed to the topography of the bluff and groundwater flow. A drainage plan was prepared in May 2014 and updated in January 2016. Pipe slope drains and interceptor trenches were installed to control stormwater runoff to increase the stability of the bluff.(See attached drainage plan and amendment.)

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

The proposed dock construction will not require any filling, grading or excavation. No fill is anticipated for construction of the desal system. Excavation will be required to construct a 2.5 foot wide X 3 foot deep trench in which a PVC Saltwater Transmission Main, PVC RO Brine Return Pipe and PVC Power Conduit will be installed. The trench will extend about 1,030 feet from the treatment house in the existing barn to the shoreline where the utility lines will either be connected to the underside of the fixed pier portion of the proposed joint-use community dock or continue to extend seaward in a trench below the seafloor until they reach MLLW where they will emerge and be anchored to the seafloor. The trench will then be backfilled with material excavated from the trench, land contours will be returned to their original condition and the trenches will either be covered with gravel (where located within existing roads) or seeded and mulched until the disturbed soils stabilize.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Yes, temporary sedimentation will be apparent when the eight creosote piles are removed and the 12 new steel piles are driven during dock construction. The sediments will quickly settle back onto the seafloor once this element of the dock construction is complete.

Also, there could be erosion of exposed soils caused by wind and stormwater run-off during excavation of the utility trench and installation of the desalination utility lines. Temporary sedimentation will also be apparent when the desal utility lines are submerged below and attached to the seafloor, and the two independent piles for supporting the seawater intake pump and brine diffuser are driven. Like the dock, sediments will quickly settle back onto the seafloor once installation is complete.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

In the Rural Farm Forest land use district in which this property is located, no lot may be covered with more than 30% impervious surface (exclusive of driveways and roads) as per the San Juan County Code. That means 12 acres of this property could be covered with impervious surface.

In 2013, when Orca Dreams purchased the property, lot coverage was 18,519 sq. ft. (exclusive of driveways and roads). After redevelopment is complete there will be a total of 23,535 sq. ft. of lot coverage which accounts for only 1.35 % (a little over ½ acre) of the 40+ acre property.

Neither the dock nor the proposed desalination system will add any new impervious surface to the site. A dock is not considered an impervious surface and the treatment house for the desal system will be located inside an existing barn. The 40,000 gallon concrete desal water storage tank is already constructed and considered in the impervious surface counts.(See File No. BUILDG-14-0221.)

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

During dock construction, a collar will be placed around existing creosote-treated piles prior to removal to control and minimize any increase in turbidity associated with pile removal.

During construction of the desal system excavation in the intertidal zone will be completed 'in the dry' during low-tide events and when the work area is exposed. A small track-hoe will be used to dig a trench for placement of pipes and electrical conduit between the valve vault and MLLW. The trench will be filled before being inundated by the rising tide.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Emissions created from the dock construction will be strictly exhaust fumes generated by construction equipment. After the construction is complete, emissions will consist of boat exhaust fumes.

Emissions to the air will be generated during excavation of the trenches in which the RO desal seawater intake, brine discharge and electrical lines will be placed. Emissions will consist of exhaust fumes from construction equipment and dust from exposed soils when the trenches are dug and backfilled. After construction is complete, the desal system will not produce any emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None known.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Construction equipment and boats will be maintained and kept in good working order.

Soils disturbed during construction will be covered with mulch if left exposed for over seven days to prevent wind erosion and dust emission as per the DOE Stormwater Management Manual for Western Washington.

3. Water

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Yes, the project site fronts Haro Strait which is classified as a Type 2 marine water. It is sited along the SW shore of San Juan Island, about 1/4 mile south of False Bay and lies southeast and outside of the False Bay Biological Preserve. In addition, there are two man-made ponds built as landscape features on the upland.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Yes, the proposed four-slip joint-use community dock will be constructed mostly within privately owned tidelands with a small portion of the float being located over the state owned tidelands of Haro Strait (an approximate 80-foot length).

The utility lines (seawater intake, brine discharge and electrical) will be installed underground from the treatment house to about the -0 tidal elevation where they will emerge and be anchored to the seafloor with earth anchors placed on 10-foot intervals for an addition 160 feet. The seawater intake pump and brine diffuser each will be attached to two new 6" steel pilings. A majority of the utility lines will be located within privately owned tidelands with a small portion (80 feet) being located over the state owned bedlands of Haro Strait.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

This project will not require any placement of fill into or dredge from any surface water.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

Yes. A maximum of 12,068 gallons per day of seawater will be withdrawn from Haro Strait for treatment as drinking water. This will result in the possible production of

about 2,996 gallons of potable water each day. An additional 1,584 gallons of water from Well #1 will be mixed with the treated seawater for the total production of 4,580 gallons of new fresh water each day. This is over twice as much water as the engineer expects to be used.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The San Juan County Critical Area Maps do not show this property as being located within the 100-year flood plain. However, the area of the shoreline that experiences tidal change and wave surge is considered to be a FEMA flood plain. The landward end of the proposed pier and shore mount elements of the proposed dock, and the desal system valve vault and utility lines will be within the flood plain.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

As is true of any dock, there is the potential for accidental fuel leaks associated with the boats moored at the dock. Since leaks are accidental, the volume cannot be determined. However, fuel leaks will be highly unlikely at this dock since there will be no fueling of boats or the maintenance of boats at the dock. Boats will be dry docked when the float is removed during the stormy season. While dry docked, boats will be checked for loose hoses, fuel tank damage, etc. and will be maintained and repaired accordingly.

The float will be removed and stored at Snug Harbor Resort from about November through the end of April thus eliminating any chance for accidental spills and leaks for half of the year (6 months). Use of upland restroom facilities will be encouraged instead of use of the heads on the boats. Heads will be pumped at either the Port of Friday Harbor or at other state approved pump out facilities. No waste will be intentionally disposed into surface water.

About 9,072 gallons per day of brine resulting after treatment of the seawater will be returned and discharged into Haro Strait for any day the system is operating.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

Yes, 1,584 gallons of ground water will be withdrawn from an existing well (about 1.1 gpm) that will be mixed with the treated seawater to provide the site an adequate supply of potable water.

No water will intentionally be discharged into ground water.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the

number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve

Orca Dreams encourages the use of the restroom facilities within the homes on the project site and use of the toilets on boats moored at the dock only when necessary. Waste from holding tanks on the boats will be disposed at an approved sewage disposal site, most likely the Port of Friday Harbor.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Run-off is generated by: 1) rainwater from storm events and 2) ground water. This water runs into Haro Strait.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No waste materials will be placed into ground water. Up to 9,072 gpd of brine may be disposed into Haro Strait .

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No, the topography of the site will not change. Drainage patterns will remain the same.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Extensive stormwater controls have recently been installed by Orca Dreams including overbank protection to protect erodible shoreline slopes per geologist's recommendations and as part of the current DOE Construction Stormwater Monitoring Plan.

During construction of the dock, the following BMPs from DOE's Stormwater Management Manual for Western Washington will be implemented:

- *BMP C101: Preserve Natural Vegetation*
- *BMP C153: Material Delivery*
- *BMP C230: Straw Bale Barrier*
- *BMP C233: Silt Fence*
- *BMP C235: Straw Wattles*

4. Plants

a. Check the types of vegetation found on the site:

_X_ deciduous tree: ***alder***, ***maple***, ***aspen***, other ***Willow***
_X_ evergreen tree: ***fir***, ***cedar***, pine, other ***Madrone***
_X_ shrubs *Nootka rose*, ***Elderberry***, ***Serviceberry***, ***Snowberry***, ***Himalayan blackberry***, ***Sword fern***, ***lavender***
_X_ grass

____pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
_X_wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
_X_water plants: water lily, ***eelgrass***, milfoil, other ***bull kelp, marine algae (Ulva, Laminaria and Fucus***
_X_other types of vegetation ***Oaks***, ***Grasslands***, ***Golden Paintbrush***

b. What kind and amount of vegetation will be removed or altered?

Native grasses, shrubbery and marine algaes will be removed in the area where the RO desalination system utility trench will be excavated.

c. List threatened and endangered species known to be on or near the site.

San Juan County Critical Area Maps identify various eelgrass and Bull kelp beds seaward of the project site and Oaks, Prairie (Golden paintbrush) and Grasslands on the uplands. Eelgrass and Bull kelp are not identified as threatened or endangered species but rather "protected habitat." Golden paintbrush is a threatened species. This habitat is located on the southwest corner of the Orca Dreams property and outside all construction areas.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The entire decking of the dock will consist of light penetrating grating to allow sunlight to reach the seafloor macroalgae as noted in the project description.

Eelgrass and macroalgae will not be adversely impacted due to any project activities if the following conservation measures are followed.

a. *The eelgrass bed is marked by a diver before the start of construction;*
b. *No portion of the dock or proposed desal system is located closer than 25-feet to the bed;*
c. *The construction barge will not be allowed to ground in the project area;*
d. *Prop wash will not be directed in the eelgrass bed that is mapped to the south of the dock alignment;*
e. *Barge anchors and cables will not be placed in the eelgrass bed that is mapped to the south of the dock alignment;*
f. *Excavation activity for installation of desal lines on the seafloor is conducted "in the dry" and collars are placed around the existing creosote piles when they are pulled to prevent sedimentation from reaching the eelgrass bed.*

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

After the desal utility trenches are backfilled, the exposed soils will be seeded with native grasses and mulched until the seeds sprout and stabilize the soil. To assure no impacts occur to the eelgrass beds that would affect spawning activity, the dock as well as the points of saltwater intake and brine discharge will be located at least 25-feet away from the eelgrass bed as shown on the attached drawings.

e. List all noxious weeds and invasive species known to be on or near the site.

Unknown

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include:

birds: ***hawk***, ***heron***, ***eagle***, ***songbirds***, other: ***loons***, ***seagulls***, ***marbled murrelet***, ***Streaked Horned lark***, ***Yellow billed cuckoo***
mammals: ***deer***, bear, elk, beaver, other: ***River otter***, ***Harbor seal***, ***Stellar sea lion***, ***Southern Resident killer whale***, ***Humpback whale***, ***rabbit***, ***fox***, ***rat***, ***bat***

fish: bass, ***salmon***, ***trout***, herring, shellfish, other: ***Bocaccio rockfish***, ***Canary rockfish***, ***Yelloweye rockfish***, ***Northern Abalone***, ***Dungeness crab***

b. List any threatened and endangered species known to be on or near the site.

Marbled murrelet, Coastal Puget Sound Bull Trout, Coastal Puget Sound Bull Trout critical habitat, Puget Sound ESU Chinook salmon, Puget Sound ESU Chinook salmon critical habitat, Hood Canal summer-run chum salmon, Hood Canal summer-run chum salmon habitat, Puget Sound steelhead trout, Bocaccio rockfish, Canary rockfish, Yelloweye rockfish, Stellar sea lion, Southern Resident killer whale and Southern Resident killer whale critical habitat, Humpback whale, the Yellow-billed Cuckoo and the Streaked Horned lark.

Pinto abalone habitat is also in the vicinity of the dock but there is no abalone present. The abalone are not currently listed as threatened or endangered, but are a species of concern.

c. Is the site part of a migration route? If so, explain.

Yes, Haro Strait is a migratory route for Southern Resident killer whale and salmon. The entire County is also considered a migratory route for Bald eagle.

d. Proposed measures to preserve or enhance wildlife, if any:

An observer qualified in identification of marine mammals and seabirds will be on site during pile driving operations to watch for presence or absence of killer whale, and other marine mammals and marbled murrelet within the 1.34-mile action area. The observer will check for presence of marine mammals within the action area 30 minutes prior to and during operations and advise operators of presence of marine mammals. Presence/absence of marine mammals will be recorded and reported.

a. *One observer will be stationed at the top of the bluff at the promontory just south of the project site.*
b. *The observer will communicate with the contractor with both cellular telephones and VHF radios. Communication checks will occur throughout the pile driving operation.*
c. *Pile driving will not occur when other marine mammals are within 200 feet of the Project site, or when marbled murrelet are within 160 feet of the Project site.*
d. *Barge anchors and cables will not be placed in the eelgrass bed that is mapped to the south of the dock alignment.*

All construction materials will be removed from the work site and natural material will be return to their original position at the end of construction.

Pile driving will occur for three hours a day over a three day period between 2 hours after sunrise and 2 hours before sunset to protect Marbled murrelet.

e. List any invasive animal species known to be on or near the site.

None known.

6. Energy and natural resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Fossil fuels will be used to operate construction equipment and boats moored at the proposed dock. Electricity is necessary to operate the desalination system treatment facility, pumps and alarm lights.

The roof of the existing barn is covered with solar panels. Energy produced by these panels peaks at 30Kw, usually in the summer. The surplus energy is sold to OPALCO, the service provider.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Construction equipment will be properly maintained.

7. Environmental health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.

There are no environmental health hazards associated with this development proposal if the mitigation proposed in the plans prepared for this development are followed.

1) Describe any known or possible contamination at the site from present or past uses.

Prior to purchase of the project site by the applicant, the property was occupied by the Mar Vista Resort, which was originally constructed in 1947. It is unlikely that there was any contamination created by use of the site as a destination resort.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

There are no hazardous chemicals/conditions associated with this development proposal.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

There will be no toxic or hazardous chemicals used or stored on site during construction of the dock other than the typical solvents and fluids used to maintain equipment during construction. These chemicals will be stored within an enclosed area on the construction barge. Once construction is complete, no toxic or hazardous chemicals will be used at the dock or stored within the boats moored there.

No toxic or hazardous chemical are necessary for constructing the proposed RO desalination system .

4) Describe special emergency services that might be required.

There will be no need for "special emergency services." Typical EMT and fire protection services may be required in the event of an accident or medical emergency during construction.

It will be highly unlikely that special emergency services will be required while boats are moored at the proposed joint-use community dock. Boating emergencies typically occur while a boat is in operation away from the dock and the project site.

5) Proposed measures to reduce or control environmental health hazards, if any:

An extensive Spill Prevention, Containment and Control Plan has been prepared by both the contractor and Orca Dreams to assure that no hazardous, toxic or polluting materials enter the waters of Haro Strait. See attached revised BA.

b. **Noise**

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

The average ambient noise levels on the west side of San Juan Island were reported by Veirs and Veirs (2005 as cited in WSDOT 2012) to be 118dBRMS during the summer months of July and August and 116dBRMS during the non-summer months of October through April. Applying the practical spreading loss model, underwater noise will attenuate to background level over a distance of 1.8 miles through open water during July and August and 2.5 miles from October through April.

The only noise in the area of the project site is that associated with residential use of adjoining properties and heavy boating activity within Haro Strait.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Short term noise sources will be associated with the construction of the dock when the existing creosote piles are removed from the seafloor, new steel piles are driven, the barge mount crane sets the fixed pier, ramp and float sections in place and dock components are connected by hand held power tools. Operation of the vibratory pile driver will not reach the SPL that can cause injury to marine mammals (180dBRMS)

Short term noise sources associated with the construction of the desal plant will be from excavation equipment when trenches are dug for installation of underground pipelines and backfilled, and when the two piles used for supporting the seawater intake pump and brine diffuser are driven.

After construction is complete, noise sources will be from boat motors and voices from people using the dock and a low audible hum from operation of the RO desalination system.

Project noise will not reach the threshold of harm to fish (183 dB). However, noise will be greater than the distance threshold for fish for a distance of 71 feet from the work site. Project noise will not reach the threshold for harm 180dBRMS for whales and 190 dBRMS for pinnipeds. Using the practical spreading loss model (NMFS 2102) underwater noise will fall below the disturbance threshold of 120dBRMS for marine mammals at a distance of 1.34 miles.

3) Proposed measures to reduce or control noise impacts, if any:

Construction activities will be limited to day light hours between 8:00 a.m. and 5:00 p.m. and noise regulations found in WAC 173-60 and within the San Juan County Code will be followed.

Pile driving/removal operations will occur between 2 hours after sunrise and 2 hours before sunset from September 1 through September 15 to protect marbled murrelet during nesting season of April 1 through September 15.

A rubber cushion will be placed between the vibratory pile driver and the pile to reduce the generation of both airborne and underwater noise.

Observers qualified in identification of marine mammals and seabirds will be on-site during pile driving operations to watch for presence or absence of killer whale, and other marine mammals and marbled murrelet within the 1.34-mile action area. Observers will check for presence of marine mammals within the action area 30 minutes prior to and during operations and advice operators of presence of marine mammals. Presence/absence of marine mammals will be recorded and reported.

a. *One observer will be stationed at the top of the bluff at the promontory just south of the project site (Figure 7). Two additional observers will be stationed in a boat and will be cruising in Haro Strait along the boundary of the ZOI.*

b. *Observers will communicate with the contractor with both cellular telephones and VHF radios. Communication checks will occur daily.*

c. *Pile driving or removal will not occur if killer whales or humpback whales are within the 1.34-mile zone of influence.*

d. *Pile driving will not occur when other marine mammals are within 200 feet of the Project site, or when marbled murrelet are within 160 feet of the Project site.*

8. Land and shoreline use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The site and surrounding properties are used for rural residential development. The False Bay Preserve, which is located ¼ mile north of the dock site, is used by the public for recreation and students, primarily from the University of Washington labs, for research. There will be no disruption caused by this development to the residential use of adjoining properties or the use of the False Bay Preserve.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No.

c. Describe any structures on the site.

The site is occupied by the original 1887 homestead (which has recently been returned to period appropriate architecture), a newly constructed residence, eight cabins, a barn and a 40,000 gallon concrete water storage tank. Remnants of the old Mar Vista Resort Dock include a wooden shore mount and eight creosote pilings.

d. Will any structures be demolished? If so, what?

Yes, the three waterfront cabins that remain from the Mar Vista Resort will be torn down (or burned as training for fire fighters) and replaced with new structures; one as a residence and the other two for residerntial accessory uses. Three upland cabins will be torn down and permanently removed from the property.(See attached site plan.)

In addition, eight existing creosote pilings located in the area of the proposed dock will be removed to accommodate the new dock. (The shore mount will be retained and will be used as an element of the proposed dock construction.)

e. What is the current zoning classification of the site?

Rural Farm Forest-5 (RFF-5)

f. What is the current comprehensive plan designation of the site?

Rural

g. If applicable, what is the current shoreline master program designation of the site?

Rural Farm Forest

i. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Yes, the portion of the property located at and 200 feet landward of the OHWM is within a buffer area for a marine fish and wildlife habitat conservation area including Northern abalone, Dungeness crab, Southern Resident killer whale, salmon, eelgrass and kelp beds. On the upland is Garry Oak/Prairie/Golden paintbrush habitat.

i. Approximately how many people would reside or work in the completed project?

NA – This is not a housing project or commercial development.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

None proposed.

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed dock and desalination system are allowed to be constructed on this property if it can be shown they are consistent with the goals, policies and implementing regulations of the County's Shoreline Master Program (SMP) and Critical Areas Ordinance (CAO). Both codes allow for the construction of a dock and desal system as long as it can be shown that they will not create significant adverse impacts. With the extensive mitigation proposed, the impacts of the proposed dock and desal system will be insignificant and, therefore, are consistent with the SMP and CAO.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

The project site does not abut any lands zoned for long-term agricultural or forestry uses, although there are lands designated for these purposes within the vicinity of the property to the north and northeast.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

NA – this is not a housing project.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Three upland cabins that remain from the Mar Vista Resort will be demolished and not replaced. One existing shoreline cabin on TPN 353344008 will be demolished and replaced with a new residence (BUILDG-17-0021).

c. Proposed measures to reduce or control housing impacts, if any:

None proposed.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The fixed pier will be the tallest portion of the joint-use dock. It will extend about 3+ feet above EHT (10.5').

The tallest structure associated with the proposed desalination system is the existing barn in which the treatment house will be located.

b. What views in the immediate vicinity would be altered or obstructed?

The proposed dock and the associated navigation buoy will not "obstruct" views of Haro Strait from adjacent properties although the dock and buoy will be new fixtures along the shoreline. (A set of beach access stairs exists along the shoreline of the adjacent property to the north.)

No new structure is proposed with the construction of the desalination system. Infrastructure will be installed underground or within existing buildings and will not be visible.

c. Proposed measures to reduce or control aesthetic impacts, if any:

The four-slip joint-use community dock will be built with natural materials that do not reflect light or create glare.

11. Light and glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

No lighting fixtures are proposed as part of the dock construction. Alarm lights will be installed on the desal plant to alert the property owner in the event the system was to shut down. The alarm lights will be apparent during hours of darkness.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

In the event the desal system was to shut down, alarm lights will engage which could temporarily interfere with views into the site from adjacent properties. The alarm lights are not a safety hazard but will actually act as a safety measure to assure the

water system is functioning adequately.

c. What existing off-site sources of light or glare may affect your proposal?

There are no off-site sources of light or glare that affect this property.

d. Proposed measures to reduce or control light and glare impacts, if any:

None.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Pleasure cruises, fishing, diving, hiking, biking, kayaking and whale watching excursions are typical recreational activities experienced in this area of San Juan Island.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No. The proposed joint-use dock is located mostly over privately owned tidelands reducing impact to state owned tidelands.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

There are portions of the beach along the Orca Dreams property that cannot be accessed due to the steep, and in places, rocky terrain of the shoreline bank. The restoration of the old resort trails along the shoreline is planned to provide residents of the Orca Dreams family compound access to isolated areas along the beach that they would not have access to otherwise. The proposed dock will provide five families direct access to the marine waters in front of the property for cruising, kayaking, fishing and crabbing.

13. Historic and cultural preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

Possibly the old homestead that was constructed in 1887.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

San Juan County was contacted and they confirmed this property does not lie in an area of archaeological or cultural significance or a buffer area. However, an archaeological survey was conducted as requested by the Lummi Tribe and the Washington State Department of Archaeology and Historical Preservation. The survey found no cultural resources or historic artifacts on the property. (See enclosure.)

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Recently, Orca Dreams renovated the old homestead back to period appropriate architecture, with construction materials and appliances that replicate that which would have originally occupied the home.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The property is accessed by an internal private road system that intersects with False Bay Drive, a County owned and maintained right-of-way, near the northeast corner of the Orca Dreams property.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

There is no public transit system available in San Juan County.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

No new parking is proposed or required by the San Juan County Code.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The desal utility trench will be placed in the existing gravel surfaced private beach access road. The utility trench will require resurfacing with gravel after the seawater intake, brine discharge and electrical lines are installed and the trench is backfilled.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Yes, the site fronts Haro Strait. The proposed dock will provide residents direct access to these marine waters, primarily for recreational purposes.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

The proposed dock and RO desalination system will not generate additional vehicular traffic to or from this property. However, it is anticipated the dock will generate a maximum of 368

round trips per year (2 per day) if all four slips are occupied and all four boats are used 50% of the time they are moored at the dock (from May through October.) This is a "worst case scenario" analysis. It is highly unlikely all four boats will be used on a daily basis. It is more likely they will be used only two or three times a week and closer to 200 round trips per year.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

h. Proposed measures to reduce or control transportation impacts, if any:

None proposed.

15. Public services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

If an accident were to occur during the use of the dock, there could be the need for EMT service.

b. Proposed measures to reduce or control direct impacts on public services, if any.

None proposed.

16. Utilities

a. Circle utilities currently available at the site:
electricity, natural gas, *water*, refuse service, *telephone*, sanitary sewer, *septic system*, other _____

There are no utilities currently available at the dock site.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The applicant intends to extend water and electricity service to the proposed dock.

As stated previously, the reverse osmosis desalination plant is necessary to assure a potable water source exists to serve the Orca Dreams properties. Electricity is the only utility required to operate the plant.

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Francine Shaw

Name of signee: *Francine Shaw*

Position and Agency/Organization: *Land Use Planner- Law Office of Stephanie Johnson O'Day*

Date Submitted: *Revised May 11, 2017*

Detailed Project Data, Description and Regulatory Analysis

Shoreline Substantial Development Permit
Proposed Joint-Use Community Dock and Reverse Osmosis Desalination System

Applicant: Orca Dreams, LLC
David Honeywell, Managing Member
P.O. Box 928
Friday Harbor, WA 98250

S.J.C. DEPARTMENT OF
MAY 19 2017
COMMUNITY DEVELOPMENT

Agent: Francine Shaw, Land Use Consultant
Law Office of Stephanie Johnson O'Day
P.O. Box 2112
Friday Harbor, WA 98250
Phone: (360) 378-6278
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Project Description: Orca Dreams proposes the construction of 1) a four-slip joint-use dock for the purpose of providing residential recreational boat moorage for five single-family residences and 2) a reverse osmosis desalination system for the purpose of providing potable water to six single-family residences.

Project Location: The project site consists of three waterfront parcels including TPN 353344008, a 5.04 acre parcel (287 Golden Paintbrush Lane); TPN 340411003, a 10.33 acre parcel (61 Island Marble Lane and 241 Golden Paintbrush Lane); and TPN 340411005, a 25.20 acre parcel (137 Golden Paintbrush Lane and 54 Island Marble Lane), for a total of 40.57 acres. All three parcels front Haro Strait on the southwest side of San Juan Island in Government Lot 1; Section 3, Township 34 North, Range 3 West, W.M., San Juan County.

A vicinity map, topographical map and legal descriptions are attached to the Shoreline Substantial Development Permit Application (BLM File No. PBLM00-17-0012/AFN 2017-0503003)

Background: This property was once occupied by the Mar Vista Resort which was developed in the late 1940's. Originally, the resort hosted a mix of 11 vacation cabins and single-family residences.

Orca Dreams, LLC purchased the property in 2013 with the intent of converting the resort into a residential family compound. Their plan was to build a new main residence, restore the old 1889 homestead, permanently remove five of the old cabins on the property, and replace about five others. Since their purchase, Orca Dreams has completed construction of their new

main residence, replaced two 624 sq. ft. shoreline cabins with slightly larger, 1080 sq. ft. single-family residences, and demolished an old church, one old upland cabin and the caretaker's residence. Currently there are 10 single-family residences/cabins on their 40+ acre property. They plan to demolish three cabins located on the east side of Golden Paintbrush Lane and convert two cabins on TPN 340411005 into residential accessory structures leaving a net total of five single-family residences on the entire property once redevelopment is complete.

I. Proposed Joint-Use Community Dock Regulatory Analysis

A. Detailed Project Description

Orca Dreams proposes the construction of a four-slip joint-use community dock on TPN 340411003 that will serve five existing single-family residences (two located on TPN 340411005, two single-family residences on TPN 340411003 and one single-family residence on TPN 353344008). The majority of the dock will be constructed on privately owned tidelands as shown on the detailed dock drawings.

This dock will be sited where remnants of the old Mar Vista Resort dock are located (an existing wooden shore mount and eight creosote piles as per San Juan County Assessor's records) and will provide moorage to four boats ranging between 18 to 35 feet in length. The purpose of the proposed pier structure is to provide safe moorage and recreational boating opportunities for the residents of the compound. The float will be removed and stored at Snug Harbor Resort from early November through the end of April of each year to prevent damage that could be caused to the float by extreme wind and wave action that this site may experience during the stormy season. The seaward end of the ramp will be lifted out of the water and secured to the two landward float support piles during this time.

The joint-use community dock will consist of:

- A new 6'-9" X 2' concrete abutment landward of the OHWM which supports an;
- Existing 10'–6" X 6' wooden pier head shore mount (63 sq. ft.) which remains from the old Mar Vista Resort dock;
- Four fixed 6'-9" X 36' long pier sections totaling 144 feet in length (972 sq. ft. cumulatively) connecting with
- A 4'-9" X 60' long fully grated ramp (285 sq. ft.) attached to the seaward end of the pier and connecting to
- An 8' X 60' long (480 sq. ft.) moorage float with float anchors attaching the seaward end of the float to the seafloor to keep the float steady;
- Twelve 10"-diameter galvanized steel piles (9.42 sq. ft.); and a

- Private navigation buoy located approximately 95 feet seaward from the seaward end of the float that will mark the proximity of underwater rocks that may be a navigational hazard.

The total area of the pier, ramp and float will be 1,729.8 sq. ft. (excluding the 19.7 sq. ft. ramp-float overlap area, the 6' -9 " concrete abutment and the existing 63 sq. ft. wooden pier shore mount). The total length of the dock will be approximately 260 feet.

All decking on the fixed pier, ramp and float will be constructed with state-of-the-art "Sun Walk" light penetrating grating with 46% open area that allows 69.9% of available light to penetrate to 18" below each panel and 86.2% of available light measured 60" below the panel.

The fixed pier will be elevated approximately 5 feet above the beach at the landward end and 14 feet above the seafloor at the waterward end. Eight 10" diameter galvanized steel piles will support the fixed pier.

The ramp will be welded aluminum with fiberglass grated decking and will span approximately 60 feet between the fixed pier and the float. Functional grating of the ramp is 96.5%.

The float will be constructed with a treated wood frame with "Sun Walk" molded plastic grated decking and plastic encapsulated, foam-filled float tubs. Four epoxy guide piles and two anchors with elastic cords will hold the float in place. These anchors will be either auger or duckbill type earth anchors.

Water and electrical lines will be extended to the dock as well.

Construction Technique & Sequencing

1. *Pre-fabrication:* The new pier, ramp, float and navigation buoy will be prefabricated in the contractor's Seattle yard and transported to the site on the construction barge.

2. *Site Preparation:* The shoreline slopes downward to the tidelands in front of the project site. The tidelands vary from solid rock to a mixed sand, gravel and mud bottom. Remnants of an existing pier structure (eight creosote pilings) will be removed and placed on the construction barge and transported to contractor's yard for upland disposal. (The existing wooden shore mount will be retained and used as the water- land interface for this structure.)

3. *On-Site Construction:* On-site construction will consist first of pulling the eight existing creosote piles from the seafloor with a vibratory hammer. If any one of the piles cannot be pulled, it will be cut off 1-foot below the mudline. Then, the eight 10" steel pier piles near shore and the four 10" steel outboard piles will be driven into the seafloor. Pile driving is expected to take 30-45 minutes per pile with 4 to 5 piles being driven in one day. This equates to three hours of pile driving per day for three days.

4. Once piles are installed the barge mounted construction crane will be used to set the pier sections in place. Once the pier is in place, the moorage float will be set in the water and bolted together, then positioned in place. The float will be secured using steel guide piles and two auger duckbill anchors using the barge mounted construction crane. Once the float sections are bolted together and secured to the float piles, the crane will lift the ramp into place. The shoreward end of the ramp will be bolted to the pier and the water-ward end set on the moorage float. Plan view and cross sections of the proposed project are shown in project drawing packet. (See project drawings for more details.)

   The navigation buoy will be anchored with an imbedded earth anchor and a series of mid-water floats will elevate the anchor line to avoid scouring of the seafloor

4. *Equipment Used:* All construction equipment and materials used in this project would be stationed on the construction barge. A barge mounted crane will be used to set the pier and float piles, pier, moorage float and ramp in place. Portable power tools and hand tools will also be used to connect the pier to the piles, and to secure the floats and ramp in place.

5. *Materials Used:* Piles will be driven with a vibratory hammer with cushion block between the pile (for noise attenuation) and the hammer into the existing bottom; the pier will have a welded aluminum frame with a molded plastic or fiberglass grated deck; the ramp will be welded aluminum with fiberglass grated deck; the float will have a treated wood frame with a molded plastic grated deck with molded plastic, foam-filled float tubs. (See Material List below for more details).

6. *Work Corridor:* The barge will operate offshore to avoid bottom and shoreline disturbances that could occur with ground-based equipment.

7. *Staging Area and Equipment Wash Outs:* All staging area activities will occur on the barge with no need for equipment washouts.

8. *Stockpiling Areas:* The barge will hold all construction materials during project and all construction debris will be held in a 20 c/y steel garbage container secured on the crane barge for disposal upland later.

9. *Running of Equipment During Construction:* Equipment will be running off and on throughout the on-site construction phase. All equipment will be kept in good running order and will only be operating when required.

10. *Clean-Up and Re-vegetation :* All construction debris will be removed and loaded into a 20 c/y steel garbage container secured on the crane barge for holding during construction, then transported by the crane barge to the contractor's Seattle yard, off-loaded into trucks and shipped to an approved upland disposal site. No re-vegetation is proposed at this time.

11. *Project Timing:* All proposed construction will take place in approved work windows during daylight hours unless work needs to be coordinated with evening low tides to facilitate construction.

    In-water work will only be allowed from September 1 through March 1 for the protection of salmon and bull trout.

    Pile driving operation will occur between 2 hours after sunrise and 2 hours before sunset from April 1 through September 15 to protect marbled murrelet during nesting season.

    Pile driving will cease when whales are within 1.34 miles of the project site and when Stellar sea lions are within 200-feet, their specific Zone of Influence (ZOI) as per the marine mammal monitoring plan that is included in the BA. Pile driving will not resume until these mammals have passed outside their ZOI.

12. *Duration of Construction:* Onsite project construction will take a maximum of 3-4 weeks.

Materials List and Specification

ORCAS DREAMS PIER MATERIAL LIST		
PART	**SPECIFICATIONS**	**TREATMENT**
Auger or Duckbill Anchors	Solid steel shaft and flutes	Galvanized
Anchor Cables	Elastic bungee cords	None
Pre-fab Pier Sections	4 X 4 & 4 X 6 welded aluminum square tube	None
Pile Cap Beam	W6X15 steel "I"-Beam	Galvanized
Float Nailers	2 X 4 #2 or better	ACZA (Chemonite)
Float Joist	2 X 8 & 2 X 6 #2 or better	ACZA (Chemonite)
Float Blocking	2 X 8 #2 or better	ACZA (Chemonite)
Float Walers	4 X 12 #2 or better	ACZA (Chemonite)
Float Flotation	High-density foam-filled plastic tubs	None
Ramp Framing	4 X 4 & 4 X 6 welded aluminum square tube	None
Float and Ramp Grating	Molded plastic or fiberglass	None
Compression Rods	1/2 " &/or 3/4 " solid steel	Galvanized
Piles	10" diameter steel pipe	Galvanized
Hardware, Nuts and Bolts	Solid steel	Galvanized or Stainless

Proposed Navigation Buoy

A navigation buoy is proposed to mark a rock outcropping that is located about 95' seaward off the seaward end of the proposed joint-use dock. The rock outcropping is exposed during most tidal elevations but is submerged during high tides which creates a boating hazard to the users of the proposed dock.

The buoy will consist of a 36" diameter float with mooring ring, attached to a six foot length of ½ inch chain, and an undetermined length of 1" braided rope (the length will be determined at the time of construction depending on water depth at high tide) and 8" diameter non-compressible mid-line float and helix anchor.

Proposed Conservation Measures for Dock Construction:

The following 14 conservation measures have been incorporated into the project to protect and minimize the impact to the aquatic habitat.

1. Timing limitations: In-water work will only be allowed from September 1 through March 1 for the protection of salmon and bull trout.

    a. Work below the ordinary high water line shall not occur from March 2 through August 31 of any year for the protection of migrating juvenile salmonids.

1. A qualified diver will mark the margins of the eelgrass beds to ensure that the dock is positioned with a minimum 25-foot buffer from the eelgrass beds.

2. Pile removal will follow the EPA Best Management Practices for Pile Removal & Disposal (EPA 2007) (attached as Appendix E).

3. A rubber cushion will be placed between the vibratory pile driver and the pile to reduce the generation of both airborne and underwater noise.

4. A collar will be placed around existing creosote-treated piles prior to removal to capture sediment and minimize any increase of turbidity associated with pile removal.

5. Observers qualified in identification of marine mammals and seabirds will be on-site during pile driving operations to watch for presence or absence of killer whale, and other marine mammals and marbled murrelet within the 1.34-mile action area. Observers will check for presence of marine mammals within the action area 30 minutes prior to and during operations and advise operators of presence of marine mammals. Presence/absence of marine mammals will be recorded and reported.

    a. One observer will be stationed at the top of the bluff at the promontory just south of the project site (Figure 7). Two additional observers will be stationed in a boat and will be cruising in Haro Strait along the boundary of the ZOI.

b. Observers will communicate with the contractor with both cellular telephones and VHF radios. Communication checks will occur daily.

c. Pile driving or removal will not occur if killer whales or humpback whales are within the 1.34-mile zone of influence.

d. Pile driving will not occur when other marine mammals are within 200 feet of the Project site, or when marbled murrelet are within 160 feet of the project.

e. Pile driving/removal operations will occur between 2 hours after sunrise and 2 hours before sunset from September 1 through September 15 to protect marbled murrelet during nesting season of April 1 through September 15.

6. The contractor will have a prepared Spill Control and Countermeasure Plan (SCC Plan) that addresses specific actions to prevent petroleum products from being discharged into surface waters. The contractor will also have oil-absorbent materials on site to be used in the event of a petroleum product spill and measures to avoid petroleum products or other deleterious materials from entering surface waters will be taken. This plan is attached as Appendix F of the attached Biological Assessment.

7. Eelgrass and macroalgae will not be adversely impacted due to any project activities:

   a. The construction barge will not be allowed to ground in the Project area.

   b. Prop wash will not be directed toward eelgrass bed that are mapped near the Project area

   c. Barge anchors and cables will not be placed in the eelgrass bed that is mapped to the south of the dock alignment.

8. The following BMPs described in Stormwater Management Manual for Western Washington Volume II; Construction Stormwater Pollution Prevention (Ecology 2014) will be followed to minimize the amount of fine sediment from entering marine water due to disturbance of soil as part of improvements to the access trail.

   a. BMP C101: Preserve Natural Vegetation

   b. BMP C153 Material Delivery

   c. BMP C230: Straw Bale Barrier

   d. BMP C233: Silt Fence

   e. BMP C235 Straw Wattles

9. All construction materials will be removed from the work site and natural material will be return to their original position at the end of construction.

10. Petroleum products will not be transferred on or near the joint-use dock. Fuel and lubricating oil will be purchased and transferred at licensed fuel stations.

11. A private navigation buoy will be installed to mark the location of rocks that are seaward of the proposed float.

12. Boat operators will use the clear channel along the southern approach to the proposed dock to prevent collision with submerged rocks and avoid impacts to the False Bay Reserve.

13. The float and ramp will be removed from the site on or near November 1 and reinstalled on or near May 1.

14. The BMPs in the Orca Dreams Spill Containment, Prevention and Control Plan (Appendix D of the BA) will be strictly followed

B. Joint-Use Dock Regulatory Analysis

The proposed joint-use community dock will be located within two different shoreline environments. The portion of the dock lying at and landward of the OHWM is within the Rural Farm Forest shoreline environment. The portion of the dock located seaward of the OHWM is within the Aquatic environment. Both environments allow for the construction of a residential use dock as long as the goals and policies of the Shoreline Master Program are met, particularly Element 3.5.C of the San Juan County Comprehensive Plan, and the regulations of Section 18.50.190 of the San Juan County's Unified Development Code.

The proposal must also demonstrate compliance with Section 18.35.110 through 18.35.135, Fish and Wildlife Habitat Conservation Areas, of the San Juan County Critical Areas Ordinance due to the presence of protected marine species and habitats within 50-feet of the proposed development.

Each of the applicable policies and development standards are identified below and are followed by an explanation of how the proposal complies or can be conditioned to comply with these policies and development regulations.

I. ***Section 18.35.110 SJCC; Critical Areas Regulations for Fish and Wildlife Habitat Conservation Areas***

The Biological Assessment prepared by Fairbanks Environmental Services identifies the following animals and habitats as listed under the federal Endangered Species Act within the vicinity of the proposal:

Marbled murrelet, Coastal Puget Sound Bull Trout, Coastal Puget Sound Bull Trout critical habitat, Puget Sound ESU Chinook salmon, Puget Sound ESU Chinook salmon critical habitat, Hood Canal summer-run chum salmon, Hood Canal summer-run chum salmon habitat, Puget Sound steelhead trout, Bocaccio rockfish, Canary rockfish, Yelloweye rockfish, Stellar sea lion, Southern Resident killer whale and Southern Resident killer whale critical habitat, Humpback whale, the Yellow-billed Cuckoo and the Streaked Horned lark

The San Juan County Critical Areas maps identify Net Shore Drift and a Feeder Bluff, Northern Abalone, Dungeness Crab, Red Sea Urchin, Eelgrass Outer Line, and Bald Eagle Nest Buffer within the vicinity of the proposed joint-use dock location. Eelgrass and bluff backed beaches including associated feeder bluffs are considered protected fish and wildlife habitat conservation areas in the San Juan County Critical Areas Ordinance. Northern abalone, Dungeness crab and red Sea urchin are not. In addition, the entire County is a migratory route for Bald eagles, Chinook salmon and Southern Resident killer whale. Although the Critical Areas Ordinance does not recognize the migratory routes for these species as protected habitat, this analysis takes into account protection of all endangered species.

- ***Section 18.35.110(G.1.b) SJCC – Mitigation Sequencing**: Per WAC 173-26-201(2)(e) adverse impacts associated with new, expanded or replacement shoreline modifications must be mitigated consistent with the requirements of SJCC 18.35.020 through 18.35.050 and the following sequence.*

  i. Avoiding the impact by not taking the action or part of the action.
  ii. Minimizing impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts.
  iii. Rectifying the impact by using appropriate technology or by repairing, rehabilitating, or restoring the affected environment.
  iv. Reducing or eliminating the impact overtime by preservation and maintenance operations.
  v. Compensating for the impact by replacing or providing substitute resources or environments.
  vi. Monitoring the impact and compensation projects and taking appropriate corrective measures.

  Response: The proposed dock lies within the 200 foot fish and wildlife habitat conservation buffer area associated with eelgrass and bluff backed beaches including associated feeder bluffs. A Preliminary Underwater Survey, and Video and Dive Survey conducted by Fairbanks Environmental Services in August 2014 and February 2016, respectively, for this proposal shows only sparse areas of ulva (seaweed), fucus (brown algae) and kelp (not Bull kelp) within 25 feet of the proposed dock location. The limited amount of kelp present in this area does not warrant the description of these areas as "beds." Native eelgrass was found both north and south of the proposed dock with the densest "bed" lying 25-feet to the south.

The dock will lie over sparse patches of ulva, fucus and kelp. The impact of any dock construction on eelgrass and kelp is primarily the dock's shading effect. Eelgrass and kelp need sunlight in order to grow and flourish. Docks can cast shadows on these habitats causing these species to decrease in density, retreat or, in the worst case scenario, even die. The float's location 25-feet north of the eelgrass bed assures that it will never block sunlight from reaching the eelgrass because sunlight shines from the south to the north. Although the dock will cast shadows, these shadows will lie to the north of the dock, not to the south where the eelgrass bed is located. Therefore, the dock location avoids impact to the eelgrass beds.

Fourteen (14) additional impact avoidance, minimization and conservation measures have been proposed as previously discussed herein.

The proposed joint-use dock will be located within designated migratory routes for Southern Resident killer whale, Chinook salmon and Bald eagle. The dock will not create a barrier preventing migration of any of these species because it will not be in deep enough water (≈ 20 feet) to impact migrating whales and the float won't ground creating a barrier to migrating salmon.

Short term noise sources will be associated with the construction of the dock when the existing creosote piles are removed from the seafloor, new steel piles are driven, the barge mount crane sets the fixed pier, ramp and float sections in place and dock components are connected by hand held power tools. Operation of the vibratory pile driver will not reach the SPL that can cause injury to marine mammals (180dBRMS)

After construction is complete, noise sources will be from boat motors and voices from people using the dock.

Project noise will not reach the threshold of harm to fish (183 dB). However, noise will be greater than the distance threshold for fish for a distance of 71 feet from the work site. Project noise will not reach the threshold for harm 180dBRMS for whales and 190 dBRMS for pinnipeds. Using the practical spreading loss model (NMFS 2102) underwater noise will fall below the disturbance threshold of 120dBRMS for marine mammals at a distance of 1.34 miles.

There will be no ground disturbing activities or new impervious surface associated with construction of the dock which would require temporary and permanent erosion and sedimentation controls.

A site inspection conducted by marine biologist, Chris Fairbanks, revealed no evidence of a feeder bluff at the dock site.

There will be no impact to the functions and values of the migratory routes.

- ***Section 18.35.110(G.2) SJCC - Additional Standards for Docks***

a. *Private, noncommercial docks and associated piers and floats for individual residential use, or for community use by the owners of no more than four adjacent or nearby residences, will be permitted over critical salt and fresh water habitats if the application complies with the applicable federal and state regulations and shows that:*

   i. *Avoidance of impacts to critical salt and fresh water habitats by an alternative alignment or location is not feasible; and*

   ii. *The project, including any required mitigation, will result in no net loss of ecological functions associated with critical salt water habitat.*

   Response: This dock will serve a total of five existing residences. However, the dock will provide only four moorage slips.

   All the marine waters surrounding the San Juan Islands are designated as critical saltwater habitat under the County's Critical Areas Ordinance; Chapter 18.35. The County is fully aware of this but, has not prohibited dock construction in their codes.

   The fact is that any construction in any critical saltwater habitat will create an impact. In order to mitigate impacts, the proposed joint-use dock is sited at the seaward end of an existing beach access road in the area where the prior Mar Vista Resort dock was located. This is evident from the existence of eight creosote piles and a wooden shore mount left over from the resort dock in areas that have already been impacted by development.

   The dock has been heavily mitigated, as previously discussed, to the point that it will create no significant long term impact. There will be no net loss of ecological functions. Please see attached revised Biological Assessment dated February 24, 2017.

   The dock requires permit approval from the Washington State Department of Fish and Wildlife and US Army Corps of Engineers, both who also look at the environmental impacts of the proposal. These agencies typically place additional mitigating measures on a dock permit if necessary.

II. SMP Policies of Element 3.5.C of the Comprehensive Plan; Boating Facilities

A. Policies of Element 3.5.C of the Comprehensive Plan; Boating Facilities

Policy 3.5.C.1: *Locate, design and construct boating facilities to minimize adverse impacts upon, and to protect all forms of aquatic, littoral or terrestrial life including animals, fish, shellfish, birds and plants, their habitats and migratory routes.*

Response: All of the San Juans are considered a migratory route for Southern Resident killer whales, Bald eagle and various species of salmon. The San Juan County Critical Area maps show Dungeness Crab, Northern abalone, Bull kelp and eelgrass habitat within or adjacent to the project site.

The proposed joint-use community dock has been specifically positioned centrally along the waterfront of TPN 340411003 in the area where remnants of the old Mar Vista Resort dock are located to take advantage of existing infrastructure including the existing beach road and pedestrian path providing access to the proposed dock location. An existing pier head shore mount is also located in this area which will be incorporated into the dock design. This location is ideal from a habitat perspective because: 1) it avoids location over any eelgrass or kelp beds, 2) requires no vegetation removal except for native grasses where the concrete abutment will be constructed, 3) uses an existing beach road and pedestrian pathway providing access to the dock requiring no additional construction within the riparian area, 4) the pier head shore mount already exists, and 5) it is situated in an area protected from wave action caused by storm events due to the location of the dock in a protected cove and the presence of a large outcropping about 95 feet seaward of the proposed float which acts as a natural breakwater.

The entire deck of the proposed dock (pier, ramp and float) will be constructed with light penetrating grating which allows for 69.9% of sunlight to penetrate through the dock and reach the seafloor to support the health and growing habits of sparse patches of ulva, focus and kelp that exist in this area.

Eight existing creosote piles from the old Mar Vista Resort dock will be pulled from the seafloor with a vibratory hammer to accommodate the new dock construction. If they cannot be pulled, they will be cut off 1-foot below the seafloor and placed on the barge for disposal at a County approved disposal site.

The west side of San Juan Island is a significant migratory site for Southern Resident killer whale and Chinook salmon. A Marine Mammal Monitoring Plan has been prepared for this proposal and is attached to the application. The Marine Mammal Monitoring Plan requires surveillance for Southern Resident killer whales, Stellar sea lions and marbled murrelet during dock construction. In order to avoid potential acoustical impacts caused by pile driving and other noise associated with construction, pile driving or removal will not occur if killer whales or humpback whales are within the 1.34-mile zone of influence. Pile driving will not occur when other marine mammals are within 200 feet of the project site, or when marbled murrelet are within 160 feet of the project. Further acoustical protective measures will include the use of a cushion block to reduce noise caused by equipment used to install the piles. Once construction is complete there will be no impact to wildlife habitat caused by noise.

Work windows placed on the development by WDFW and US Army Corps of Engineers to eliminate adverse impacts that could occur to protected habitat during construction activities will be strictly followed.

Policy 3.5.C.2: *Protect beneficial shoreline features and processes including erosion, littoral or riparian transport and accretion shoreforms, as well as scarce and valuable shore features including riparian habitat and wetlands.*

Response: The shoreline of the project site consists of a mix of steeply sloping rock outcroppings, heavily vegetated areas and low level gravel beaches. The shoreline is considered stable with a modified drift cell and no feeder bluffs as per the Coastal Zone Atlas. There will be no potential for the cessation or increase of existing erosion because dock construction will not require any vegetation removal, excavation or shoreline armoring. The natural habitat on and surrounding the dock site will be protected 1) by the placement of the dock on an existing pier head shore mount, 2) through retention of marine and terrestrial vegetation (riparian areas), 3) by mooring boats 25-feet away from eelgrass beds and 4) by the inclusion of light penetrating grating decking on the entire surface of the dock.

Policy 3.5.C.3: *The location, design, configuration and height of boathouses, piers, ramps and docks should both accommodate the proposed use and minimize obstructions to views from the surrounding area.*

Response: There is no element of the proposed dock that isn't necessary. The float needs to be placed at the proposed location 175 feet seaward of the existing pier head so that it is in deep enough water to prevent grounding of boats that moor there. The proposed dock will be visible from only one adjacent parcel to the north (TPN 353344007) due to the concave configuration of the shoreline along this area of San Juan Island. The dock will not be in the direct view of this property because it will be located about 300 feet south of this property. The dock will not be visible from False Bay. As such, the dock will not "obstruct" views currently enjoyed from this property.

The dock will be located in an area on San Juan Island where no docks currently exist and will be a new fixture along the shoreline as viewed from the water. The most visually obvious portion of the dock will be the fixed pier which will be located about 3.2+/- feet above the line of Extreme High Tide (EHT - 10.50 feet) and the ramp will connect the fixed pier to the float that rests on the surface of Haro Strait. The float will be practically invisible because of its position on the surface of the water. Due to the high bank waterfront, the pier and ramp will blend in with the surrounding landscape due to the heavily treed shoreline.

In *Inskeep*, a joint-use community dock was found to be low profile and to minimize visual impact due to its location in an area described as high bank waterfront in which the structure blended. The proposed dock is no different than the *Inskeep* proposal except that it is significantly smaller and the bank where it is located is significantly higher. It, too, can be considered low profile due to its location in an area that can be described as high bank heavily vegetated waterfront which allows the dock to blend in with the shoreline backdrop. See the Shoreline Hearings Board (SHB) decision for the Inskeep Dock; SHB No. 98-033.

Policy 3.5.C.4: *Boating facilities should be designed to optimize the trade-offs between the number of boats served and the impacts on the natural and visual environments.*

Response: The proposed joint-use community dock is designed modestly to serve five residences. A building permit was recently submitted to the Department of Community Development for replacement of the most northerly cabin located on TPN 353344008 (BUILDG-17-0021). The float is sized to moor four boats varying from 18 to 35 feet in length.

It will have no significant impact on the natural and visual environments if it is constructed in the proposed location, away from eelgrass, and if construction techniques, proposed mitigation and the Marine Mammal Monitoring Program are followed. The removal of eight existing creosote piles will be an environmental improvement over existing conditions.

The dock will have a visual impact simply due to its presence along the shoreline in an area where no dock exists today. The size of the dock is not predicated on the number of boats served but rather the need to place the float at an appropriate water depth to avoid grounding of the float and the boats at extreme low tide. For this reason, the pier and ramp would be the same size regardless of the number of boats moored at the site.

Policy 3.5.C.5: *In providing boating facilities, the capacity of the shoreline to absorb the impact should be considered.*

Response: The proposed dock will have no impact on the shoreline. The fixed pier will be accessed by an existing beach road and connect to the shoreline via an existing pier head shore mount. It will require no land disturbance to the surrounding marine or terrestrial vegetation or animals. It will not require the removal of any vegetation along the shoreline. Dock construction will not require any excavation that could weaken the integrity or cause sediment or erosion of the shoreline. It will not disturb the natural ebb and flow of the tides.

Policy 3.5.C.6: *The use of mooring buoys should be encouraged in preference of piers or floating docks.*

Response: The use of mooring buoys at this site would require the placement of four buoys within Haro Strait and the construction of an area on the uplands above EHT to safely store four dinghies. This would require, at a minimum, the clearing and grading of an area about 36+ feet in width and a minimum of 10 feet in depth (360 square feet) that is currently covered in native vegetation and the installation of a pulley system to get the dinghies up and over the driftwood line to the storage area. It would likely eliminate the proposed removal of the eight creosote piles because it would not be necessary to remove the piles in order to accommodate the proposed dock construction.

While the dock location is protected by a large rock outcropping, the installation of four buoys would by necessity be placed, at least partly, in an area subject to extreme wave action simply due to the long unobstructed fetch that exists between the site and Vancouver Island, B.C, to the west, especially during winter and spring storm events. (See attached map.) This would require the buoys to be placed near the shoreline within the cove that this property surrounds to provide some protection from extreme wave action. The swing radius associated with four boats moored on buoys requires the boats to spread out over a large area which would likely cause some of the buoys to be anchored within or near eelgrass beds or not moored at all.

The Department of Natural Resources (DNR) limits four buoys per acre. An acre equals 43,560 sq. ft. of land (an area about 208.7' wide X 208.7' long). Furthermore, DNR will not issue a license for any residential use buoy where the boat will ground at low tide. This will require the buoys to be placed further seaward than what is required from a safety standpoint

due to the need to place the boats in an area with an appropriate water depth (typically the -16 tidal elevation) and away from rock outcroppings which are exposed during low tide. It would place the buoys seaward of the rock outcropping in an area that is not protected from storm waves. Although this is not the concern of San Juan County, it would be fruitless for the applicant to seek buoy permit approval from San Juan County if the buoys could never be installed due to DNR guidelines.

Considering all of these variables, a joint-use community dock is the most safe and ecologically viable solution.

Policy 3.5.C.7: *The use of floating docks should be encouraged in those areas where scenic values are high and serious conflicts with recreational boaters and fisherman will not be created.*

Response: A floating dock would need to be sized large enough to accommodate four boats and the storage of four dinghies which would cumulatively be larger than the proposed 8' X 60' float. It would require clearing and grading for an appropriate dinghy storage area on the upland and the construction of a pulley system on the shoreline so dinghies could be lifted up and over driftwood and up the steep shoreline bank to the storage area. Although the creosote piles would be removed, the impact created by construction of the floating dock would be greater than the proposed joint-use dock.

Policy 3.5.C.8: *Piers should be encouraged where there is significant littoral drift and where scenic values will not be impaired.*

Response: There is no significant littoral drift at this site. The shoreline of this site is described by the Coastal Zone Atlas as being a modified drift cell.

The presence of a dock at this location will not significantly impair the views of Haro Strait or the Strait of Juan de Fuca from adjacent properties since only one parcel to the north will have sight of the dock. Although this will be the only dock along this length of shoreline, it is low in profile and set against a fully vegetated high-bank waterfront which allows the dock to blend in with the surroundings.

Policy 3.5.C.9: *In many cases, a combination of fixed and floating structures on the same dock may be desirable given tidal currents, habitat protection and topography, and should be considered.*

Response: The proposal includes a fixed pier, ramp and moorage float. This is the most desirable and suitable design for this section of shoreline considering that the property is: 1) exposed to wave action due to the extreme fetch that exists between the project site and Vancouver Island during storm events, 2) the proposed dock location avoids impact to wildlife habitat and 3) the dock can be accessed by an existing beach road.

Policy 3.5.C.10: *The County should attempt to identify those shorelines where littoral drift is a significant factor and where, consequently, fixed piers probably would be preferred to floating docks.*

Response: Littoral drift is not a significant factor at the project site.

Policy 3.5.C.11: *To spare San Juan County from the so-called "porcupine effect" created by dozens of individual private docks and piers on the same shoreline, preference should be given to the joint-use of a single structure by several waterfront property owners, as opposed to the construction of several individual structures.*

Response: The proposed joint-use community dock eliminates, in perpetuity, the potential for three additional single-use docks to be built along the shoreline of San Juan Island.

Policy 3.5.C.13: *The capacity of the shoreline site to absorb the impacts of waste discharges from boats and gas and oil spills should be considered in evaluating every proposed dock or pier:*

Response: There will be no intentional discharge of waste or gas and oil spills from any boat moored at the proposed dock. However, if there happens to be an accidental discharge or spill, it will be promptly cleaned up as spelled out in the proposed Waterfront Construction and Orca Dreams spill prevention plans.

Policy 3.5.C.14: *Expansion or repair of existing facilities should be encouraged over construction of new docks and piers.*

Response: There are no private docks within the vicinity of the property that could moor four additional boats.

Policy 3.5.C.15: *To reduce the demand for single-user docks, multi-user docks should be encouraged through construction and dimensional incentives.*

Response: As an incentive for joint-use, the San Juan County Code allows the size of a dock to increase based on the number of users it will serve. The size of this dock falls within the parameters for a residential use dock serving more than two single-family residences found in SJCC, Section 18.50.190(G.2.c) which limits the dock area to a maximum of 2,000 sq. ft. and dock length to 300 feet in length. This dock will be 1,729.8 sq. ft. in area (including the ramp-float overlap area and the shoreline concrete abutment) and approximately 260 feet in total length.

B. Section 18.50.190 of the Shoreline Master Program; Boating Facilities

I. Section 18.50.190; General Regulations

- ***Section 18.50.190(B.1)*** *– Boating facilities shall be designed to minimize adverse impacts on marine life and the shore process corridor and its operating systems.*

Response: The proposed dock will not upset the shore process corridor because the shoreline consists primarily of base rock transitioning into areas of mixed sand and mud. The fixed pier will remain elevated 3.2+ feet above EHT at all times. The piles supporting the float will include stops so it will never ground and obstruct existing water circulation patterns or the migration of Dungeness crab or juvenile salmon under said dock. No eelgrass is located within 25 feet of the proposed structure. Sparse patches of macro algae are located under the proposed pier section. However, the entire decking of the dock will be constructed with 69.9% light penetrating grating so there will be no significant shading impacts to seafloor below. All construction materials are free of pollutants.

- ***Section 18.50.190(B.2)*** *– Boating facilities shall be designed to make use of the natural site configuration to the greatest degree possible:*

  Response: The dock has been specifically positioned along the shoreline where the previous Mar Vista Resort dock once existed as is evident by the existing pier head shore mount and the eight creosote pilings. It is located within a cove and landward of a rock outcropping; both which act to provide some protection from storm events that originate out of the southwest. The existing beach road that lead to the old Mar Vista dock was recently repaired under Shoreline Exemption, File No.PSJXMP-16-0021, and remains in good condition and can continue to be used to access this dock. It is the most suitable location along this shoreline to construct the dock. Placing the dock at this location will not require any excavation or removal of vegetation along the shoreline.

- ***Section 18.50.190(B.3)*** *– All boating facilities shall comply with the design criteria established by the State Department of Fish and Wildlife relative to the disruption of currents, restrictions of tidal prisms, flushing characteristics, and fish passage to the extent that those criteria are consistent with projection of the shore process corridor and its operating systems.*

  Response: In order for the dock to be constructed, an HPA (Hydraulic Project Approval) from the Department of Fish and Wildlife (WDFW) must be received.

- ***Section 18.50.190(B.4)*****:** *Areas with poor flushing action shall not be considered for overnight or long term moorage facilities.*

  Response: There is no evidence of poor flushing activity in the vicinity of the project site.

- ***Section 18.50.190(B.5)*****:** *In general, only one form of moorage or other structure for boat access to water shall be allowed on a single parcel: a dock or a marine railway or a boat launch may be permitted subject to the applicable provisions of this code. (A mooring buoy may be allowed in conjunction with another form of moorage.) However, multiple forms of moorage or other structures for boat access to water may be allowed on a single parcel if:*

a. *Each form of boat access to water serves a public or commercial recreational use, provides public access, is part of a marina facility, or serves an historic camp or historic resort; or*

b. *The location proposed for multiple boat access structures is common area owned by or dedicated by easement to the joint use of the owners of at least 10 waterfront parcels.*

Response: The proposal complies with these criteria. It will be the only form of moorage available to serve the Orca Dreams three parcels.

- ***Section 18.50.190(B.6):*** *Structures on piers and docks shall be prohibited except as provided by the San Juan County Shoreline Master Program.*

  Response: No structures are proposed as part of the joint-use community dock.

II. Section 18.50.190(C) General Regulations – Docks, Piers and Recreational Floats

- ***Section 18.50.190(C.1):*** *Multiple use and expansion of existing facilities are preferred over construction of new docks and piers.*

  Response: There are no private docks existing within the vicinity of the project site. (See attached aerial photograph.)

  Roche Harbor Resort, Jensen's Marina and Snug Harbor Resort were contacted on January 30, 2017 and asked if these facilities had available moorage for four boats ranging between 20 to 35 feet in length. Kevin Carlton, with Roche Harbor Resort, stated that there will be no moorage available for between 10 and 15 years for 30 foot boats at the Roche Harbor Marina. Alisa Schoultz, with Jensen's Marina, indicated they have only one covered space to accommodate a boat up to 25' in length with a narrow beam around 6.5.' There were no slips available to accommodate all four boats. (See attached emails.) Michael Long, with the Port of Friday Harbor, was contacted on February 24, 2017 regarding the availability of moorage for four boats. While the Port has moorage available for boats 20', 24' and 40', there are no slips available for a boat ranging in length from 24' to 35' in size. (See attached emails.)

  Snug Harbor Resort has availability for only two boats in the 28' range and under.

  No marina has slips available for boats ranging between the 28' and 35' in length.

- ***Section 18.50.190(C.2):*** *Mooring buoys shall be preferred over docks and piers on all marine shorelines except in the case of port, commercial or industrial development in the urban environment.*

  Response: The location of four mooring buoys in Haro Strait is not feasible as previously discussed. The wave action during storms is extreme and can cause boats moored on the buoys to be damaged and the anchor system for the buoy to dislodge.

- ***Section 18.50.190(C.3)***: *Moorage floats, unattached to a pier or floating dock, are preferred over docks and piers.*

  Response: Please see response to Policy 3.5.C.7 above.

- ***Section 18.50.190(C.4)***: *Every application for substantial development permit for dock or pier construction shall be evaluated on the basis of multiple considerations, including but not limited to the potential impacts on littoral drift, sand movement, water circulation and quality, fish and wildlife, navigation, scenic views, and public access to the shoreline.*

  Response: There will be no impact on littoral drift because the dock will present no obstruction to existing water circulation and sand movement patterns in this area. The pier is fixed at a distance of 10.5 feet above MLLW. Stops will prevent the float from grounding thus eliminating any barrier to migration. Water, fish and other marine animals will be able to circulate under and around the dock at all times. During construction the proposed dock may impact sand movement simply due to disruption of the seafloor when creosote piles are removed and piles are driven. However, water quality disruption will quickly return to normal conditions once pile removal and driving is complete. The applicant agrees to work 'in the dry' whenever possible (during low tides) and within designated construction windows imposed by WDFW and the US Army Corps of Engineers to protect sensitive wildlife species and habitats during migration and spawning, and to help prevent sediment caused by pile driving/removal from entering and disturbing the water quality.

  Materials used in the construction of the dock will not contaminate surrounding waters because the materials will be free of pollutants. To avoid pollutants from the creosote piles from entering marine water during removal, the piles may be required to be cut off just below the seafloor rather than being pulled out. This will reduce the amount of creosote polluted sediments from being released into marine waters.

  No impact to public access to the shoreline will occur since there is no public dock or land devoted to public use in this area. The majority of the dock will be placed over privately owned tidelands. Scenic views will be slightly altered simply due to the presence of the dock in an area where none exists today.

  Wildlife in the area consists of eelgrass (forage fish habitat), ulva, fucus, Dungeness crab, Northern abalone, Southern Resident killer whale and Chinook salmon. The dock location is 25 feet to the north of the eelgrass bed. Macroalgae is found in the area where the dock will be constructed. Macroalgae needs sunlight in order to grow. Impacts to macroalgae will be mitigated through the construction of a fixed pier head at a height that will allow sunlight to reach the seafloor beneath the pier. The inclusion of 69.9% light penetrating grating on the entire surface of the dock will also allow sunlight to reach the macro algae on seafloor.

- ***Section 18.50.190(C.5)***: *Docks or piers which can reasonably be expected to interfere with the normal erosion-accretion process associated with feeder bluffs shall not be permitted.*

Response: The area where the proposed dock will be located is not considered a feeder bluff.

- ***Section 18.50.190(C.6)**: Abandoned or unsafe docks and piers shall be removed or repaired promptly by the owner. Where any such structure constitutes a safety hazard to the public, the County may, following notice to the owner, abate the structure if the owner fails to do so within a reasonable time and may impose a lien on the related shoreline property in an amount equal to the cost of abatement.*

  Response: There are remnants of an old dock at the proposed dock site. The eight remaining creosote piles will be removed. Waterfront Construction inspected the existing wooden shore mount during their site visit and it was found to be structurally stable. Because of this, the existing shore mount will be utilized in this dock construction.

- ***Section 18.50.190(C.7)**: Unless otherwise approved by a shoreline conditional use permit, boats moored at residential docks shall not be used for commercial overnight accommodations.*

  Response: The applicants have no intention of using the dock for commercial overnight accommodations.

- ***Section 18.50.190(C.8)**: Use of a dock for regular float plane access and moorage shall be allowed only by shoreline conditional use permit and shall be allowed only at commercial or public moorage facilities or at private community docks.*

  Response: The applicants have no intention of using the dock for moorage of float planes at this time.

III. Section 18.50.190(D); Regulations, General Design and Construction Standards

- ***Section 18.50.190(D.1)**: Pilings must be structurally sound prior to placement in the water:*

  Response: The 12 proposed pilings consist of 10" diameter steel posts, which Waterfront Construction has determined to be structurally sound for supporting a dock of this size at this location.

- ***Section 18.50.190(D.2)**: Chemically treated or coated piles, floats or other structural members in direct contact with the water shall be as approved by the Environmental Protection Agency.*

  Response: ACZA pressure treated wood will be used to construct the frame of the float.

- ***Section 18.50.190(D.3)**: Pilings employed in piers or any other structure shall have a minimum vertical clearance of one-foot above extreme high water.*

Response: The proposed pilings will have a minimum clearance of at least two-feet above the water level at extreme high tide (EHT). Extreme High Tide for this area is 14.30 feet. (See Sheet 4 of 9 of the dock design drawings.)

- ***Section 18.50.190(D.4)**: All floats shall include stops, which serve to keep the bottom off tidelands at low tide.*

  Response: Stops will be provided as required.

- ***Section 18.50.190(D.5)**: When plastics or other non-biodegradable materials are used in float, pier or dock construction, full containment features in the design of the structure shall be required.*

  Response: The float will be constructed with foam encased entirely in a molded plastic tub. No other non-biodegradable material will be used to construct the dock.

- ***Section 18.50.190(D.6)**: Overhead wiring or plumbing is not permitted on docks or piers.*

  Response: The proposed dock does not include overhead wiring or plumbing. Electrical and water lines will be placed in conduit attached to the side of or under dock decking until reaching the float where they will connect with a hose bib(s) and electrical outlet(s) for use by boat owners. In addition, utility lines for a proposed RO Desalination System (seawater intake, brine discharge and electrical conduit) will be attached to the underside of the fixed pier section of the dock if it is approved.

- ***Section 18.50.190(D.7)**: New boathouses or covered moorages are prohibited on floats, piers, and docks. Other structures on floats, piers and docks shall be limited to three feet in heights.*

  Response: No boathouses or covered moorage are proposed.

- ***Section 18.50.190(D.8)**: A pier shall not extend offshore farther than 50 feet beyond the extreme low tide contour.*

  Response: The pier is located approximately 48-feet landward of the extreme low tide contour.

- ***Section 18.50.190(D.9)**: Dock lighting shall be designed to shine backwards, be of a low wattage, and shall not exceed a height of three-feet above the dock surface.*

  Response: The applicant agrees to comply with this regulation.

- ***Section 18.50.190(D.10)**: All construction related debris shall be disposed of properly and legally. Any debris that enters the water shall be removed promptly. Where feasible, floats shall be secured with anchored cables in place of pilings.*

Response: The applicant agrees to comply with this development regulation. Item 10 of the proposed construction sequence states:

> *All construction debris will be removed and loaded into a 20 c/y steel garbage container secured on the crane barge for holding during construction, then transported by the crane barge to the contractor's Seattle yard, off-loaded into trucks and shipped to an approved upland disposal site.*

- ***Section 18.50.190(D.11)**: Materials used in dock construction shall be of color and finish that will blend visually with the background.*

  Response: Construction materials will remain unpainted and in a natural condition (wood, aluminum and galvanized steel) with colors resembling earth tones.

IV. Regulations: Section 18.50.190(E); Joint-Use Community Piers, Docks and Floats

- ***Section 18.50.190(E.1):** No more than one moorage facility shall be allowed as an accessory to any hotel, motel, multi-family residential development, or similar development.*

  Response: This proposed dock will serve three parcels and five existing single family residences and, potentially, one future residence for a total of six residences on the Orca Dreams 40+ acre property

- ***Section 18.50.190(E.2):** Proposals for joint-use community piers and docks shall demonstrate and document that adequate maintenance of the structure and the associated upland area will be provided by the responsible parties.*

  Response: Because the proposal will serve a family compound there is no need for a joint-use agreement. However, if the property owner ever decides to sell the residences in the future, a joint-use agreement will be necessary. The applicant agrees that a condition be placed on the dock approval to this effect.

- ***Section 18.50.190(E.3):** Recreational floats shall be placed off-shore no farther than 200-feet beyond extreme low tide, the minus 3 fathom contour, or the line of navigation, whichever is closets to shore (WAC 332-30-148(2))*

  Response: NA

- ***Section 18.50.190(E.4):** All waterfront subdivisions approved after the adoption of this SMP shall include or provide for construction of a single joint-use moorage facility by the lot owners if moorage is desired by the owners, in a designated, reserved area of the waterfront. . .*

  Response: NA

V. Section 18.50.190(G.2.c); Regulations; Residential Docks

- ***Section 18.50.190(G.2.c)**: The maximum dimensions for a joint-use community dock (including the pier, ramp, and float) associated with more than two single-family residences shall not exceed 2,000 square feet in total area. In addition, the length of the dock (including the pier, ramp, and float) may not extend more than 300 feet in length seaward of the ordinary high water mark. If a variance is granted to allow a dock exceeding these dimensions, its construction may only be authorized subject to the regulations for a marina.*

  Response: The total area of the dock (excluding the ramp/float overlap, existing pier head shore mount, and proposed concrete abutment) is 1,729.8 sq. ft. The total length of the dock is approximately 260 feet. The dock falls within the size limits for a dock serving more than two residences.

- ***Section 18.50.190(G.3)** – Docks shall be setback a minimum of 10-feet from side property lines.*

  Response: The dock is set back about 10 feet from the north property line of the privately owned tidelands and about 240 feet from the south property line of TPN 340411003.

- ***Section 18.50.190(G.4)**: Development of a dock on a lot intended for single-family residential purposes shall require a shoreline substantial development permit or statement of exemption.*

  Response: The applicant has complied with this regulation by submitting this Shoreline Substantial Development Permit Application.

- ***Section 18.50.190(G.5)**: Applications for non-exempt docks and piers associated with single-family residences shall not be approved until:*

  a. *It can be shown by the applicant that existing facilities are not adequate or feasible for use;*

  Response: There are no existing facilities on San Juan Island that can guarantee long term moorage to serve all four boats. There are no private moorage facilities within a reasonable distance that are available to the applicants. Roche Harbor Resort Marina, Jensen's Marina and the Port of Friday Harbor do not have permanent moorage available to accommodate the applicant's boats. Snug Harbor Resort marina has two slips available but for boats only 28 feet in length. The marina at Snug Harbor Resort is located in shallow water and the landward side of the marina often grounds out, making slips at the marina less than desirable. However, Snug Harbor Resort recently received approval from San Juan County to modernize their marina by pushing it into deeper water to prevent grounding of boats that occurs during low tide. Permitting activity at the US Army Corps of Engineers and the WA Department of Natural Resources has been tied up due to on-going negotiations with the tribes and no approval has been given by these agencies at this time.

  b. *Alternative moorage is not adequate or feasible: and*

Response: There is no adequate or feasible alternative moorage available (mooring buoy or mooring float) to serve all four boats. Buoys and floats require the use of dinghies. The launching of dinghies on the beach could cause damage to potential surf smelt spawning habitat located along this shoreline by dragging them across the sand to the water's edge. Storage of four dinghies would require clearing an area along the shoreline in the Critical Areas Ordinance 110 foot tree protection zone. Considering tree removal is prohibited in the first 35 feet of the tree protection zone (Zone 1) as measured landward of the OHWM (see SJCC 18.35.130. B.1) and this shoreline is high bank, some sort of mechanical system would be required to pull the dinghies 35 feet up the steep embankment and outside Zone 1 to an area where clearing is allowed. This would have greater detrimental impacts than the proposed dock.

c. *The applicant shall have the burden of providing the information requested for in Subsections (a) and (b) of this section, and shall provide this information in a manner subscribed by the administrator.*

Response: Please see responses to Subsections a and b as well as the attached email responses to the applicants inquiry regarding available moorage at San Juan Island marinas.

II. Proposed RO Desalination Plant and Regulatory Analysis

When Orca Dreams purchased the land in 2013, there were two wells serving the property; one for potable water and the other for irrigation. Because the only potable water source did not produce enough water during the summer to serve existing development on their land, Orca Dreams drilled a new well (Well #1 - see attached information regarding Well ID # BBM 060) on the northeast corner of the property. The pump tests conducted for Well #1 showed insufficient quantity to serve the site.

A. Detailed Project Description

Orca Dreams proposes to construct a reverse osmosis (RO) seawater desalination system sized to augment drinking water obtained from Well #1 to serve a total of six residences.

Based on the State Department of Health's requirements, the maximum system demand for six residences, including irrigation around the main house existing on TPN 353344008, will be about 2,310 gallons of water per day. The system will be capable of producing about 3,000 gallons of fresh water per day.

The reverse osmosis seawater desalination (RO) system will draw seawater from Haro Strait and pump it about 1,030 feet to a treatment room that will be installed within an existing barn located on the northeasterly corner of the property. The seawater will be treated and the resulting product (fresh) water will be pumped about 360 feet to the existing 40,000 gallon concrete storage tank where it will be available for distribution in the water system. The

resulting brine water will be conveyed back to the shoreline via a dedicated pipe. The brine will pass through a diffuser before being released into Haro Strait.

The RO system will be used to augment the supply of existing Well #1. In case of well failure, the RO system has been designed to provide all of the water needed for the fully developed property. The well capacity is 1.1 gpm or 1,584 gallons per day. Therefore, when the well is operating normally and under maximum daily demand conditions the RO system would produce just 726 gallons of fresh water per day to meet the expected demand of 2,310 gallons per day. However, if the well yield is reduced for some reason, the RO system could supply the additional water or in fact the entire 2,310 gallons needed for one day's use if required. The water from Well #1 will also be pumped to the treatment house where it will be mixed with RO product water. The blended water will be chlorinated and pumped to the water storage tank.

Orca Dreams is proposing two alternatives for installation of the desal utility lines.

Preferred Alternative 1: If construction of the dock is authorized and all permits are issued at the same time as the RO desalination system, the two projects will be integrated and construction will be completed at the same time. On-site construction will consist of driving or drilling the pump and diffuser support piles. Two 6" steel piles will be driven with a vibratory hammer or, where bed rock is encountered, the pilings will be set in drilled holes. The pump support piling will be located at the -7 tidal elevation and the saltwater (brine) diffuser piling will be located at about the -5 tidal elevation, both within the footprint of the proposed joint-use community dock. Once the piles are installed, the contractor will install the pump and diffuser assemblies on the pilings. (The configuration of seawater intake and brine return pipes, and electrical conduit is illustrated on Sheets 5 and 6 of the attached drawings.) Seawater intake and brine discharge pipes, and electrical conduit will then be connected to the underside of the fixed pier from the head of the pier to the seaward end of the pier. From there, the pipes and conduit will extend to the seafloor on a pier support piling at approximately -3 feet MLLW. The saltwater (brine) return line will extend about 56-feet seaward to the diffuser support piling at the -5 tidal elevation and the seawater intake line will then extend about 112-feet seaward and connected to the pump support piling -7 tidal. The pipelines will then be secured to the seafloor with earth anchors set 10' on-center. The work will be completed from the deck of a small boat and/or by divers where appropriate. The 2.5' X 3' pipe trench will be excavated with a small track hoe when the tide is low so that digging and filling of the trench between MLLW and MHHW will be completed in one tidal cycle.

Alternative 2: If the joint-use dock application is not approved or if it is appealed and the desalination system is permitted, then on-site construction will consist of driving or drilling the pump and diffuser support piles. Two steel piles will be driven with a vibratory hammer or where bed rock is encountered, the pilings will be set in drilled holes. The pump support piling will be located at the -7 tidal elevation and the saltwater (brine) diffuser piling will be located at about the -5 tidal elevation. Once the piles are installed the contractor will install the pump and diffuser assemblies on the pilings and install the seawater supply pipe, saltwater return pipe and electrical power conduit on the seafloor extending about 160 feet landward from the pump/diffuser assembly support pilings then be buried below the seafloor for the remaining

115 feet to the valve vault on the shore. The pipeline will be secured with earth anchors set 10' on-center where it is exposed above the seafloor. The work will be completed from the deck of a small boat and/or by divers where appropriate. The near shore (and upland) pipe trench will be excavated with a small track hoe when the tide is low so that digging and filling of the trench between MLLW and MHHW will be completed in one tidal cycle.

When the storage tank volume drops to a level of about 75% the RO system will run continuously for a number of days until the tank is full. It will then be shut down. Under these conditions a maximum of 12,068 gallons of seawater will be drawn from Haro Strait each day of operation. This will be used to produce about 2,996 gallons of potable water each day of operation. The resulting brine, about 9,072 gallons per day, will drain back into Haro Strait.

The only elements of the reverse osmosis desalination system that will extend over public tidelands and into marine waters are the utility lines (saltwater intake, brine discharge and electrical lines), the saltwater intake pump and brine diffuser. The utility lines will extend about 80 lineal feet onto public tidelands and public waters (initially on the seafloor and ultimately under the proposed dock) and will not impede public access to public tidelands or materially interfere with normal public use of public waters due to their location on the seafloor or on the bottom of the proposed joint-use dock if it is approved for construction.

The system has been designed by Hart Pacific Engineering to include two 1,500 gpd RO units with the primary elements as follows:

1. A 10-gpm 3/4 hp submersible pump mounted inside a 6" HDPE pipe section which is secured to a new 6" steel marine piling. The intake will be screened as required by Washington State Department of Fish and Wildlife. The piling will be located two feet seaward of the seaward end of the proposed float. The pump and screen will be accessible for removal and cleaning from a boat. Diving should not be necessary.

2. The seawater intake, brine discharge and electrical lines will be installed in an underground trench, 2.5 feet wide X 3 feet deep, extending about 1,030 feet from the treatment that will be located in an existing barn on the uplands to the flushing valve vault on the shoreline just above the beach. From the flushing valve vault, the preferred alternative ("Alternative1") is to attach the seawater intake, brine discharge and electrical lines under the proposed pier deck to the seaward end of the pier. At the seaward end of the pier the utility lines will run straight down a pile supporting the pier to the tidelands below where the lines will be anchored to the seafloor using earth anchors. The brine return line will extend further seaward about 55-feet to a 6" diffuser piling at the -5 tidal elevation where water depth and currents are sufficient to allow for mixing the brine with seawater at all tidal elevations. The seawater intake line will extend about 115 feet from the pier support pile to a 6" intake pump assembly piling at the -7 tidal elevation.

   The Orca Dreams property needs an additional source of good drinking water to augment their existing system. If the proposed joint-use dock is not approved or appealed, the applicants propose "Alternative 2" which consists of burying the seawater intake, brine discharge and electrical lines below the bottom of the tidelands in a trench about 2.5 feet

wide X 3 feet deep (this is intended to protect it from wave action) and extending them seaward about 115 feet from the flushing valve vault where they will emerge at the -0 tidal elevation and extend an additional 160 seaward. From there, the saltwater intake line and pump will attach to a 6" steel piling located at the -7 tidal elevation and the brine discharge line and diffuser will connect to a second piling located at the -5 tidal elevation.

For both alternatives the pump control relay and emergency pump power switch is located at the valve vault area. From here the 2" seawater delivery pipe extends up to the barn and connects to the new desalination equipment.

3. Desalination equipment will consist of a seawater strainer, a sand filter with backflushing capability, an 80-gallon fiberglass pressure tank, two bag filters in plastic housings using a 10-micron and a 2-micron filter, two 1,500 gallon per day USWatermaker desalination units in parallel (seawater flow to each unit is 4.2 gpm) - these RO units will be USWatermaker's Workboat Series units, a 2-cubic foot acid neutralizing unit, 40-gallon chlorine batch tank with chlorine injection pump mounted on top, a Seametrics pulse meter for controlling the pump injection rate, a 120 gallon product water accumulation tank and a 5 gpm ½ hp submersible product water pump.

4. A 1.5" HDPE pipe from Well #1 to the barn and a 1.5" HDPE combination product water and well water pipe from the barn back to the 40,000 gallon storage tank.

5. 2" HDPE saltwater return pipe from the RO units in the barn to the valve vault on the shoreline and on to the saltwater diffuser.

6. The saltwater diffuser will be mounted inside a 6" HDPE pipe section which is secured to a new 6" steel marine piling. The piling will be located at the landward end of the proposed dock. The diffuser design allows it to be accessible for removal and cleaning from a boat. Diving should not be necessary.

***Construction Sequence*:** Construction of the RO desalination system will be completed in the following sequence:

1. *Pre-Fabrication:* The pump and diffuser assemblies, the stainless steel sleeve straps and the concrete pipe anchors will be prefabricated in the contractor's yard in Friday Harbor. They will be transported to the site by truck.

2. *Site Preparation:* The pipeline route and vault site will be cleared of vegetation (grasses and a few shrubs) prior to trench excavation for the pipelines.

3. *On-Site Construction:* On-site construction will be conducted as described above depending upon the approved alternative. The work will be completed from the deck of a small boat and/or by divers where appropriate. The near shore (and upland) pipe trench will be excavated with a small track hoe when the tide is low so that digging and filling of the trench between MLLW and MHHW will be completed in one tidal cycle.

4. *Equipment:* All construction equipment (except for the small track hoe) and materials used in this project will be stationed on either a construction barge or a small boat. A barge mounted crane will be used to set the steel piles. Portable power tools and hand tools will also be used to secure the pump and diffuser assemblies in place on the pilings.

5. *Materials:* Piles will be 6-inch galvanized or epoxy-coated steel. The submersible pump will have a stainless steel shell, screen, suction and discharge housing. The diffuser, the 6-inch protective pump and diffuser sleeve, the seawater and saltwater return piping and electrical conduit will all be HDPE pipe. The straps used to secure the protective sleeves to the pilings will be stainless steel.

6. *Work Corridor:* The small boat and barge will operate offshore to avoid grounding and disturbing bottom sediment. A small track hoe will be used when the tide is low to excavate the pipe trench above the zero-tide mark.

7. *Staging Areas and Equipment Wash Outs*: All staging areas for the setting of the steel pilings and the installation of the pump and diffuser assemblies will occur on the barge or small boat with no need for equipment wash outs. The staging area for the pipe trenching will be in the upland area at least 200' from the shoreline.

8. *Stockpiling Areas:* The barge will hold all construction materials during the setting of the pilings and all construction debris will be held in a 20 c/y steel garbage container secured on the crane barge for disposal upland later. Construction debris from the installation of the pump and diffuser assemblies as well as the pipe laying operation will be collected on board the small boat for disposal upland later. All other construction debris from the construction of the pipelines in the trench will be collected on shore and hauled to an approved upland disposal site.

9. *Running of Equipment:* Equipment will be running off and on throughout the on-site construction phase. All equipment will be kept in good running order and will only be operating when required.

10. *Clean-Up and Re-Vegetation:* All construction debris will be removed and disposed of as described above. Other than reseeding and regraveling the disturbed shore and upland areas after construction activities are completed, no other re-vegetation is proposed at this time.

11. *Project Timing:* All proposed construction will take place in approved work windows during daylight hours unless work needs to be coordinate with evening low tides to facilitate construction. Pile driving will occur only 2 hours after sunrise and will stop at 2 hours before sunset.

12. *Duration of Construction:* On-site construction will take a maximum of 3-4 weeks. The two 6" diameter seawater intake pump and brine diffuser support piles will be driven in one day for a total of 1.5 hours.

Little to no clearing will be required to install the proposed desalination system. The only areas that will be disturbed by construction will be areas where the utility trench will be excavated. The trench will be 2.5 feet wide X 3 feet deep and about 1,030 feet long which accounts for about 2,575 sq. ft. of disturbed land area. The dirt excavated from the utility trench will be saved and used as backfill. The portion of the trench located within the beach access road will be re-covered with a gravel driving surface. The portion of the trench located within the upland field will be seeded with native grasses and then mulched to hold the seeds in place until they sprout and stabilize the disturbed soil. Little to no clearing will be required to install the proposed desalination system.

B. ***Regulatory Analysis***

The proposed RO desalination system will be located within both the 200-foot Shoreline Management Act jurisdictional area and the uplands of the property. The elements of the system that will be in the shoreline include the flushing valve vault, seawater intake, brine discharge and electrical lines, the seawater intake pump, brine diffuser and two support pilings. The portions of the system located in the uplands include seawater intake, brine discharge and electrical lines, treatment house and the existing 40,000 gallon concrete water storage tank. The portion of the desalination system that is located within 200-feet of the OHWM is subject to the permitting requirements of the San Juan County Shoreline Master Program, Chapter 18.50 SJCC. Regulations for utility installation in the uplands are found in SJCC 18.60.150. An analysis of how the proposed RO desalination system meets these development criteria is provided below.

Shoreline Master Program

The shoreline along the waterfront of the project site from the OHWM landward is designated "Rural Farm Forest." Seaward of the OHWM the shoreline is designated "Aquatic." Section 18.50.350(C) SMP, Utility Regulations by Environment allows for the construction of a Reverse Osmosis Desalination System in both environments if the policies and regulations of the Master Program can be met and a Shoreline Substantial Development Permit (SSDP) is obtained.

Section 3.5.O of the Comprehensive Plan Element of the Shoreline Master Program (SMP) provides 13 policies for constructing desalination systems within the shoreline. These polices are enumerated in Section 18.50.350(B) of the San Juan County Code, Regulations – Desalination, which sets forth development criteria which desalination plants must comply.

- ***Section 18.50.350(B.1):*** *Desalination water system lines must be located along existing paths, trails or connected to existing docks and beach access structures whenever possible.*

  Response: The seawater intake, brine discharge and electrical lines will be located underground in a 2.5 foot wide X 3 foot deep X 1,030 foot-long trench that will extend from the flushing valve vault mounted on the shore just above the beach up to an

existing barn located about 600 feet landward of the OHWM, where the saltwater treatment house will be located. The trench will extend along the side of the existing beach access road until it reaches the top of bank where the trench will then extend further landward through an existing field to the treatment house. As previously discussed, seaward of the flushing valve vault the utility lines will either be attached to the bottom of the fixed pier portion of the proposed joint-use community dock (preferred Alternative 1) or will be submerged about 2.5 feet below the seafloor until they reach the -0 tidal elevation where they will emerge and be anchored to the seafloor via earth anchors (Alternative 2).

- ***Section 18.50.350(B.2):*** *Desalination and reverse osmosis systems on shorelines that are known or demonstrated to be eroding bluffs, unstable bluffs, eroding beaches, or exposed cliffs, will require design and engineering which will assure that no significant visual or environmental impacts will be created and that effects on the natural shoreline conditions be minimized.*

  Response: Review of the San Juan County Critical Areas Map for geo-hazardous areas does not indicated the presence of eroding bluffs, unstable bluffs, eroding beaches, or exposed cliffs. Rather, the shoreline along this property is identified as bedrock. There is no evidence of erosion in the location of the proposed desalination system.

  The proposed desalination system has been designed by Hart Pacific Engineering who took potential erosion into consideration when siting the utility lines. The lines will be located underground in a utility trench and will not cause any visual impact along the shoreline. They will be located in an environmentally sensitive area (Fish and Wildlife Habitat Conservation Area). In order to avoid adverse impacts to the environment the following conservation measures have been proposed by marine biologist Chris Fairbanks with Fairbanks Environmental Services. (See attached BE)

Proposed Conservation Measures for RO Desalination System Construction

1. Timing limitations: In-water work will only be allowed from September 1 through March 1 for the protection of salmon and bull trout.

   a. Work below the ordinary high water line shall not occur from March 2 through August 31 of any year for the protection of migrating juvenile salmonids.

2. A qualified diver will mark the margins of the eelgrass bed to ensure that the dock is positioned with a minimum 25-foot buffer from the eelgrass beds.

3. An observer qualified in identification of marine mammals and seabirds will be on site during pile driving operations to watch for presence or absence of killer whale, and other marine mammals and marbled murrelet within the 1.34-mile action area. The observer will check for presence of marine mammals within the action area 30 minutes prior to and during operations and advise operators of presence of marine mammals. The presence/absence of marine mammals will be recorded and reported.

a. One observer will be stationed at the top of the bluff at the promontory just south of the project site.
b. The observer will communicate with the contractor with both cellular telephones and VHF radios. Communication checks will occur throughout the pile driving operation.
c. Pile driving will not occur when other marine mammals other are within 200 feet of the Project site, or when marbled murrelet are within 160 feet of the project.

4. Pile driving/removal operations will occur between 2 hours after sunrise and 2 hours before sunset from September 1 through September 15 to protect marbled murrelet during nesting season of April 1 through September 15.

5. Excavation in the intertidal zone will be completed 'in the dry' during low-tide events and when the work area is exposed. A small track-hoe will be used to dig a trench for placement of pipes and electrical conduit between the valve vault and MLLW. The trench will be filled before being inundated by the rising tide.

6. The contractor will have a prepared Spill Control and Countermeasure Plan (SCC Plan) that addresses specific actions to prevent petroleum products from being discharged into surface waters. The contractor will also have oil-absorbent materials on site to be used in the event of a petroleum product spill and measures to avoid petroleum products or other deleterious materials from enter surface waters will be taken. This plan is attached as Appendix F.

7. Eelgrass and macroalgae will not be adversely impacted due to any project activities because:
    a. The construction barge will not be allowed to ground in the Project area except to off load and load equipment to be used on the beach.
    b. Prop wash will not be directed toward eelgrass bed that are mapped near the Project area
    c. Barge anchors and cables will not be placed in the eelgrass bed that is mapped to the south of the dock alignment.

8. The following BMPs described in Stormwater Management Manual for Western Washington Volume II; Construction Stormwater Pollution Prevention (Ecology 2014) will be followed to minimize the amount of fine sediment from entering marine water due to disturbance of soil as part of improvements to the access trail.

    a. BMP C101: Preserve Natural Vegetation
    b. BMP C153 Material Delivery
    c. BMP C230: Straw Bale Barrier
    d. BMP C233: Silt Fence
    e. BMP C235 Straw Wattles

9. All construction materials will be removed from the work site and natural material will be returned to their original position at the end of construction.

- ***Section 18.50.350(B.3):*** *All desalination and reverse osmosis production equipment and necessary pumping equipment, utility connections and pipelines must be located and designed to blend in with the natural surroundings to the extent feasible to reduce visual impacts. Existing vegetation and terrain features must be used whenever possible for screening.*

  Response: The portion of the desalination plant located within the 200-foot shoreline jurisdictional area consists of piping (intake and discharge lines), electrical conduit, the flushing valve vault and the seawater pump and brine diffuser systems. Considering the utility lines will be located underground in a trench and attached to the underside of the fixed pier portion of the proposed joint-use community dock or submerged in marine waters, and the flushing valve vault that will be mounted below grade, the only visible portion of the system will be the existing barn in which the treatment house will be located and the existing 40,000 gallon concrete water storage tank.

- ***Section 18.50.350(B.4):*** *Desalination and reverse osmosis facilities must not impede on public access to public tidelands or materially interfere with normal public use of public waters.*

  Response: The Orca Dreams property was patented on June 13, 1883, before statehood, which occurred on November 11, 1889. Waterfront boundaries of properties that were patented before statehood extend landward from either the OHWM or the meander line, whichever is further seaward. (See attached document titled *Waterfront Titles in the State of Washington*, and Homestead Deed #1648.) In this case, the waterfront boundary varies between the OHWM and meander line as shown on the site plan. In addition, Orca Dreams owns a portion of the second class tidelands that run along their waterfront. (See attached Quit Claim Deed (AFN 2014-1203014.)

  The only elements of the reverse osmosis desalination system that will extend over public tidelands and into marine waters are the utility lines (seawater intake, brine discharge and electrical lines), the saltwater intake pump, brine diffuser and two support pilings. Under both Alternative 1 and Alternative 2, the utility lines will extend about 80 lineal feet onto public tidelands in waters of the state. The utility lines will not impede public access to public tidelands or materially interfere with normal public use of public waters due to their location on the seafloor and/or under the dock.

- ***Section 18.50.350(B.5):*** *Desalination and reverse osmosis systems will not be allowed for the purpose of providing primary water supply within new subdivisions and short subdivisions. Such facilities may be allowed for the purpose of supplying water for an established community water system.*

  Response: There are no plans to subdivide the land. The facility will provide water to augment an existing water system.

- ***Section 18.50.350(B.6):*** *Desalination intake and discharge lines shall be located underground wherever feasible, except for that portion located underneath or along any docks, piers, walkways, stairs, or other shoreline improvements located on site.*

  Response: As proposed in both alternatives, the desalination system utility lines will be located underground in a trench that will extend from the treatment house in the barn to the shore mount flushing valve vault. Alternative 1 proposes to locate the utility lines under the fixed pier section of the proposed joint-use community dock and then route them down to the seafloor on a pier support piling where they will extend seaward on the seafloor to the seawater intake pump support piling and the brine diffuser support piling. If the proposed SSDP application for the dock is not approved, then Alternative 2 proposes to locate the desalination utility lines underground in a 115-foot long, 3' deep X 2.5' wide trench that will extend seaward from the flushing valve vault on the shoreline to MLLW where they will daylight and extend an additional 160 feet seaward to the support pilings.

- ***Section 18.50.350(B.7):*** *Desalination and reverse osmosis brine discharge is not considered to be potentially harmful to aquatic life or water quality provided all require state and federal requirements are met.*

  Response: All state and federal requirements will be met.

- ***Section 18.50.350(B.8):*** *All desalination and reverse osmosis installations shall comply with the following regulations:*

  a. *The intake and discharge lines must be trenched, run or located together except where necessary to provide adequate separation between intake and discharged water.*

     Response: The intake, discharge and electrical lines will run together in a trench both on the upland as well as within the 200-foot shoreline jurisdictional area as discussed above. The lines will separate at about the -4 tidal elevation where the brine discharge line and diffuser will connect to a new 6" steel piling at the -5 tidal elevation and the seawater intake pump, seawater water intake line and electrical conduit will connect to a new 6" steel piling at about the -7 tidal elevation.

  b. *The intake and discharge lines must be engineered so as not to materially interfere with normal public use of public tidelands or navigation. The intake point shall not float on the surface.*

     Response: The proposed RO desalination system was designed by Hart Pacific Engineering, a reputable civil engineering firm located here in San Juan County. The system is designed to use 2" HDPE piping to assure that wave action will not cause breakage of the intake and discharge lines or electrical conduit. The location of these lines underground, on the seafloor and/or beneath the proposed dock are

such that they will not float and interfere with normal public use of public tidelands or navigation.

c. *Intake and discharge lines must not be placed through or over any known or discovered archeological resources, unless the location is approved by the Washington Office of Archaeology and Historic Preservation.*

Response: There are no historical and cultural sites or associated buffer areas on the project site.

d. *The use of existing wells with saltwater contamination or intrusion as the intake source for desalination and reverse osmosis systems is prohibited unless specifically authorized by the County Department of Health and Community Services.*

Response: Well #BBM 060, has good quality water, will contribute about 1.1 gpm to the system. The well water and desal product water (potable water) will be blended and then treated with chlorine before being pumped into the 40,000 gallon water storage tank.

e. *The use of pre-filtration beach wells located landward of the line of mean lower low water is allowed provided all state and federal requirements are met.*

Response: There are no pre-filtration beach wells existing or proposed.

SJCC 18.60.150 – Utility Service Lines and Facilities – General Regulations

- ***SJCC 18.60.150(A):*** *Utility service lines and secondary connections shall be placed underground, unless otherwise approved by the permitting agency.*

Response: All service lines for the desalination system will be installed underground in a trench as previously described.

- ***SJCC 18.60.150(B):*** *Environmental impacts resulting from installation or maintenance of utilities shall be minimized. Areas disturbed during construction shall be replanted with native vegetation and maintained until firmly established. Clearing shall be confined to that necessary to allow installation and to prevent interference by vegetation once the system is in operation.*

Response: Little to no clearing will be required to install the proposed desalination system. The trench portion of the system that will be located within the upland field will require removal of some grasses and shrubs that are in the proposed trench path. Areas of the property will be disturbed by construction where the utility trench will be excavated. The trench will be 2.5' wide X 3' deep and about 1,030' long which accounts for about 2,575 sq. ft. of disturbed land area. The dirt excavated from the utility trench will be saved and used as backfill. After the trench is backfilled, it will be seeded with

native grasses and mulched to hold the seeds in place until they sprout and stabilize the disturbed soil.

The portion of the trench located within the beach access road will be re-covered with a gravel driving surface.

- ***SJCC 18.60.150(C):*** *Utilities and transportation facilities shall be installed in the same rights-of-way when the effect will be to reduce the adverse impacts on the physical environment.*

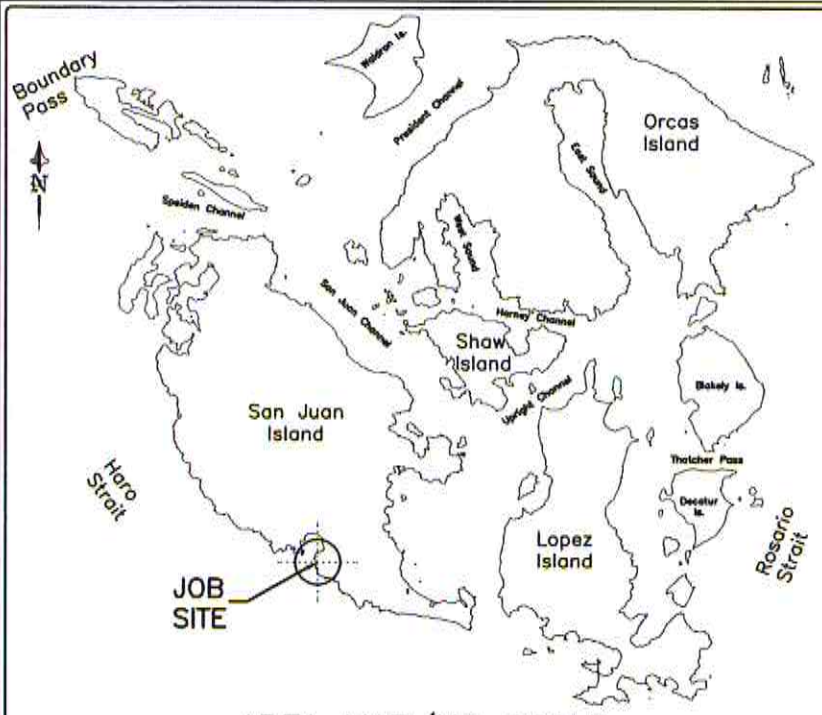
  Response: See response to SJCC 18.60.150(D) above.

- ***SJCC 18.60.150(D):*** *Solid waste transfer and disposal facilities shall be located and designed in accordance with Chapter 173-301 WAC, Department of Ecology Minimum Functional Standards for Solid Waste Handling, the San Juan County Comprehensive Solid Waste Management Plan, and applicable local health, safety, and fire protection codes.*

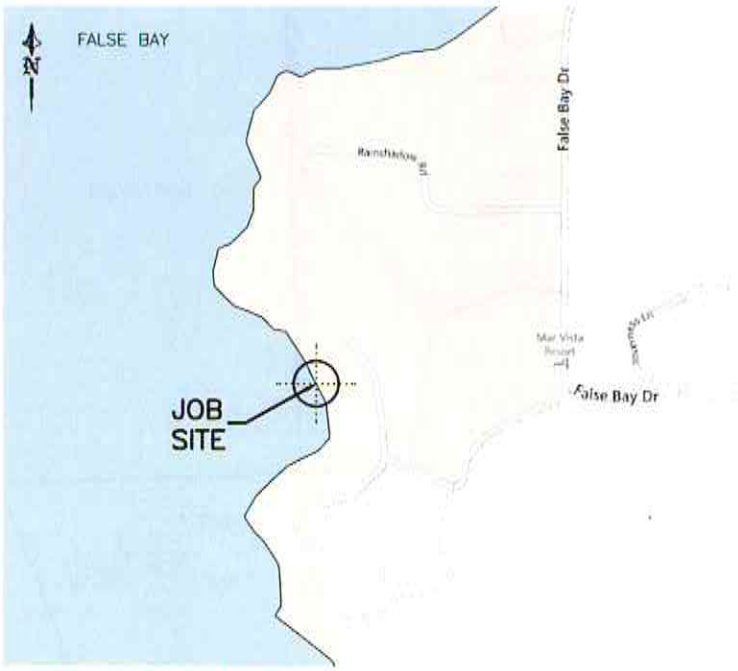
  Response: NA – this is neither a solid waste transfer nor disposal facility.

- ***SJCC 18.60.150(E):*** *Utility lines within agricultural resource lands shall be designed and located to minimize disruption of existing and potential agricultural uses.*

  Response: NA



AREA MAP/NO SCALE



VICINITY MAP/NO SCALE

S.J.C. DEPARTMENT OF
MAY 19 2017
COMMUNITY DEVELOPMENT

LEGAL DESCRIPTION

TAXLOT #: 340411003 LAT: 48.4754825
LONG: -123.0665416

PR GL 1 (PARCEL A PER BLM AFN 2014-0929019)
SEC 4, T34N, R3W

UPDATED BOUNDARY LINES **REVISED 5-17-17**

PROJECT DESIGNED BY:
Waterfront Construction Inc.
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PURPOSE: PROVIDE BOAT MOORAGE

ADJACENT OWNERS:

(1) FRIDAY HARBOR ASSOCIATES LP
c/o MICHAEL V PRENTISS PRES
P.O. BOX 7046
DALLAS, TX. 75209

(2) CATHERINE LINN GOULD
2015 14TH AVE E
SEATTLE, WA. 98112

PROJECT NAME: ORCA DREAMS, LLC

DATUM: MLLW = 0.00'

REFERENCE #:

SITE LOCATION ADDRESS:

1601 A FALSE BAY DR
FRIDAY HARBOR, WA. 98250

DWG#: 14-31020-A.1-5

PROPOSED: CONSTRUCT NEW PIER, RAMP AND FLOAT. INSTALL (1) WARNING BUOY.

IN: FALSE BAY

NEAR/AT: SAN JUAN ISLAND

COUNTY: SAN JUAN | STATE: WA

APPL BY: ORCA DREAMS, LLC c/o DAVID HONEYWELL

SHEET: 1 OF: 9 | DATE: 3-31-14

PROJECT DESIGNED BY:
Waterfront Construction Inc.

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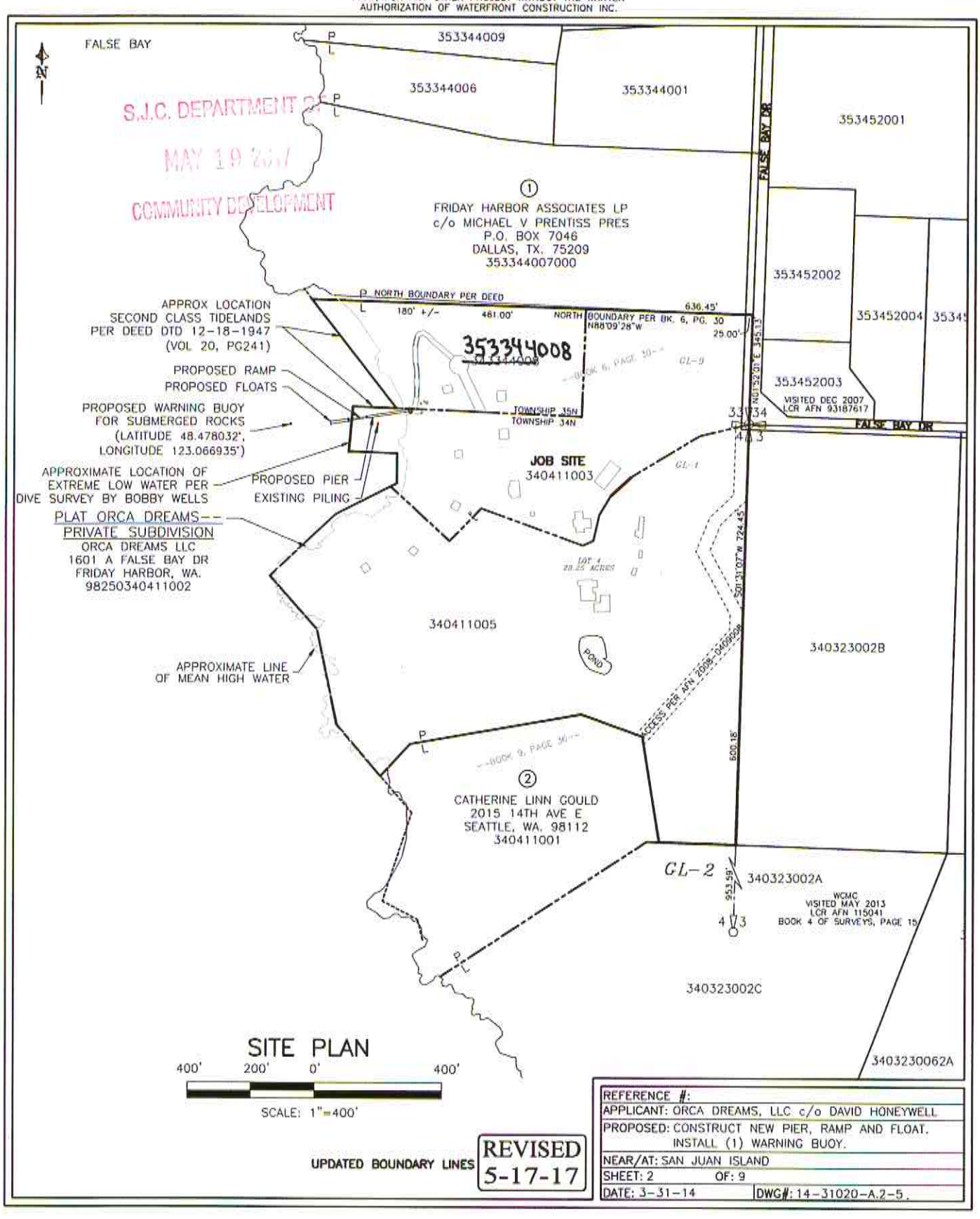


SITE PLAN

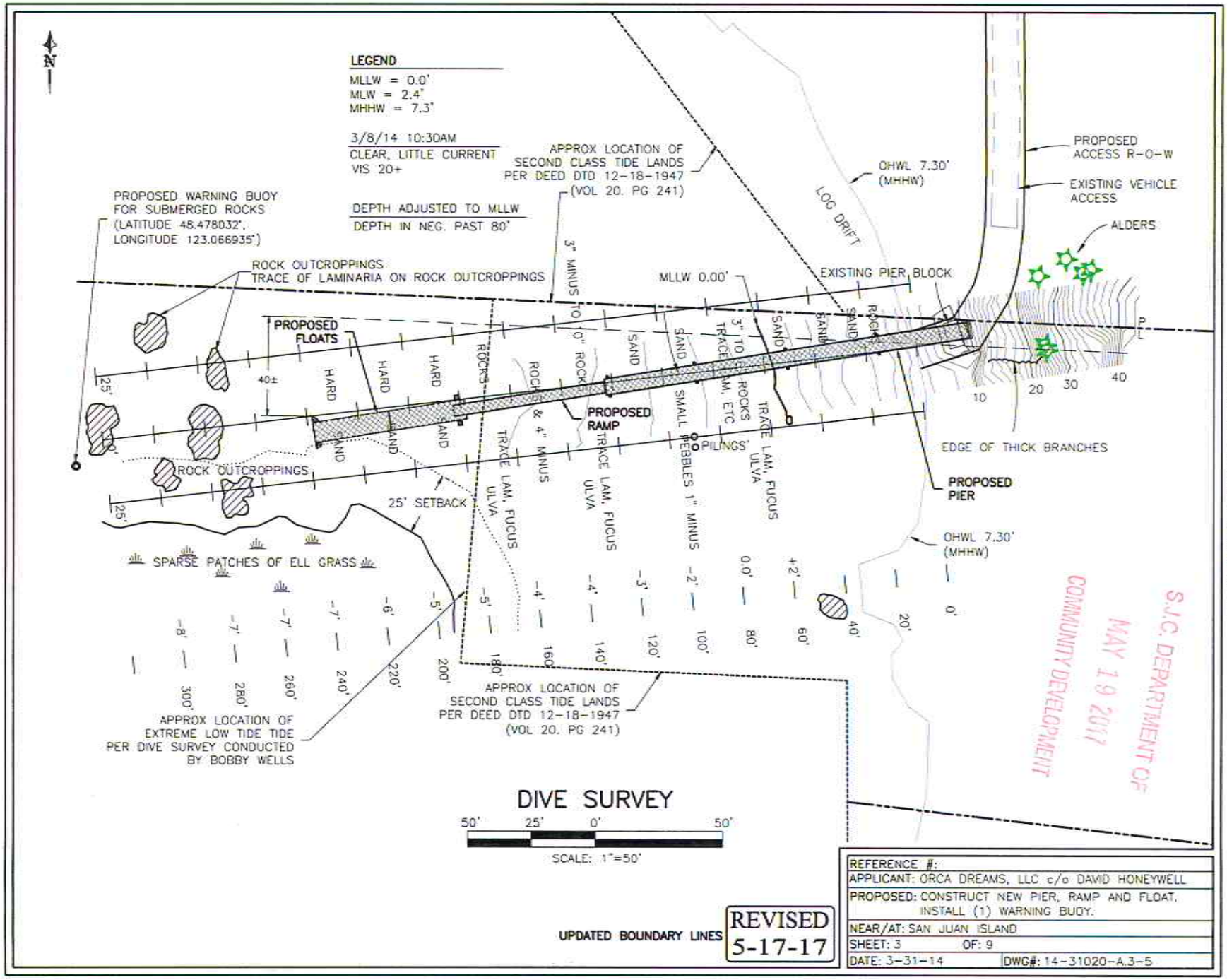
400' 200' 0' 400'

SCALE: 1"=400'

UPDATED BOUNDARY LINES

REVISED 5-17-17

REFERENCE #:	
APPLICANT: ORCA DREAMS, LLC c/o DAVID HONEYWELL	
PROPOSED: CONSTRUCT NEW PIER, RAMP AND FLOAT. INSTALL (1) WARNING BUOY.	
NEAR/AT: SAN JUAN ISLAND	
SHEET: 2 OF: 9	
DATE: 3-31-14	DWG#: 14-31020-A.2-5.



REFERENCE #:	
APPLICANT: ORCA DREAMS, LLC c/o DAVID HONEYWELL	
PROPOSED: CONSTRUCT NEW PIER, RAMP AND FLOAT. INSTALL (1) WARNING BUOY.	
NEAR/AT: SAN JUAN ISLAND	
SHEET: 3	OF: 9
DATE: 3-31-14	DWG#: 14-31020-A.3-5

S.J.C. DEPARTMENT OF COMMUNITY DEVELOPMENT MAY 19 2017

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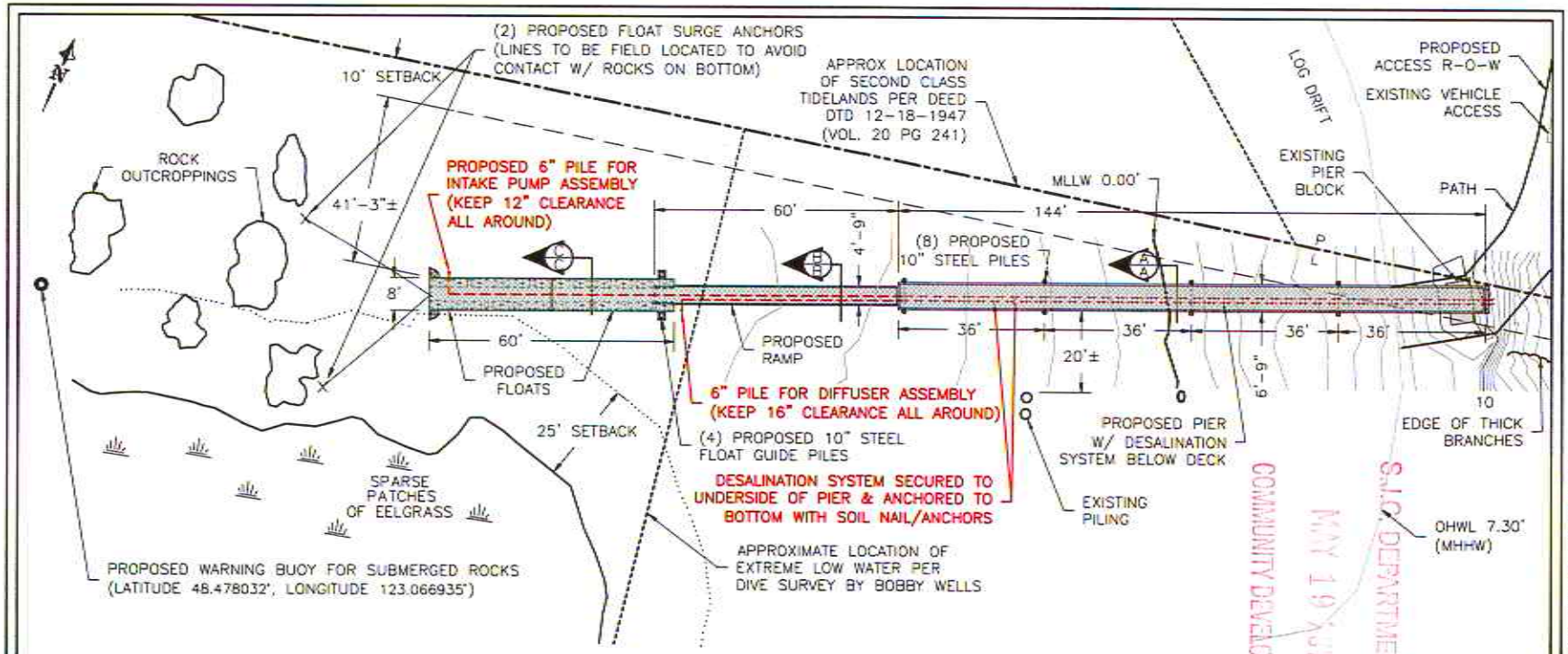
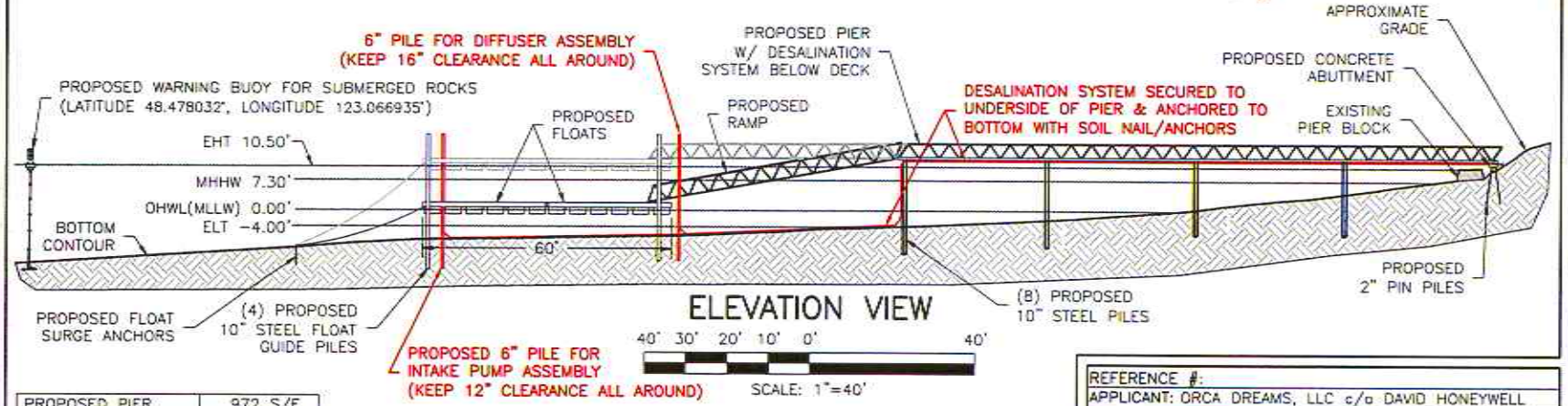


DETAIL VIEW

SCALE: 1"=40'

NOTE:
(SEE HART PACIFIC ENGINEERING DRAWINGS FOR DETAILS ON DESALINATION SYSTEM.)

COMMUNITY DEVELOPMENT
MAY 19 2017
S.J.C. DEPARTMENT OF



ELEVATION VIEW

SCALE: 1"=40'

PROPOSED PIER	972 S/F
PROPOSED RAMP	285 S/F
PROPOSED FLOATS	480 S/F
LESS RAMP OVERLAP	-19.7 S/F
TOTAL FOOTPRINT	**1717.3 S/F**

UPDATED BOUNDARY LINES

REVISED 5-17-17

REFERENCE #:	
APPLICANT: ORCA DREAMS, LLC c/o DAVID HONEYWELL	
PROPOSED: CONSTRUCT NEW PIER, RAMP AND FLOAT. INSTALL (1) WARNING BUOY.	
NEAR/AT: SAN JUAN ISLAND	
SHEET: 4	OF: 9
DATE: 3-31-14	DWG#: 14-31020-A.4-5

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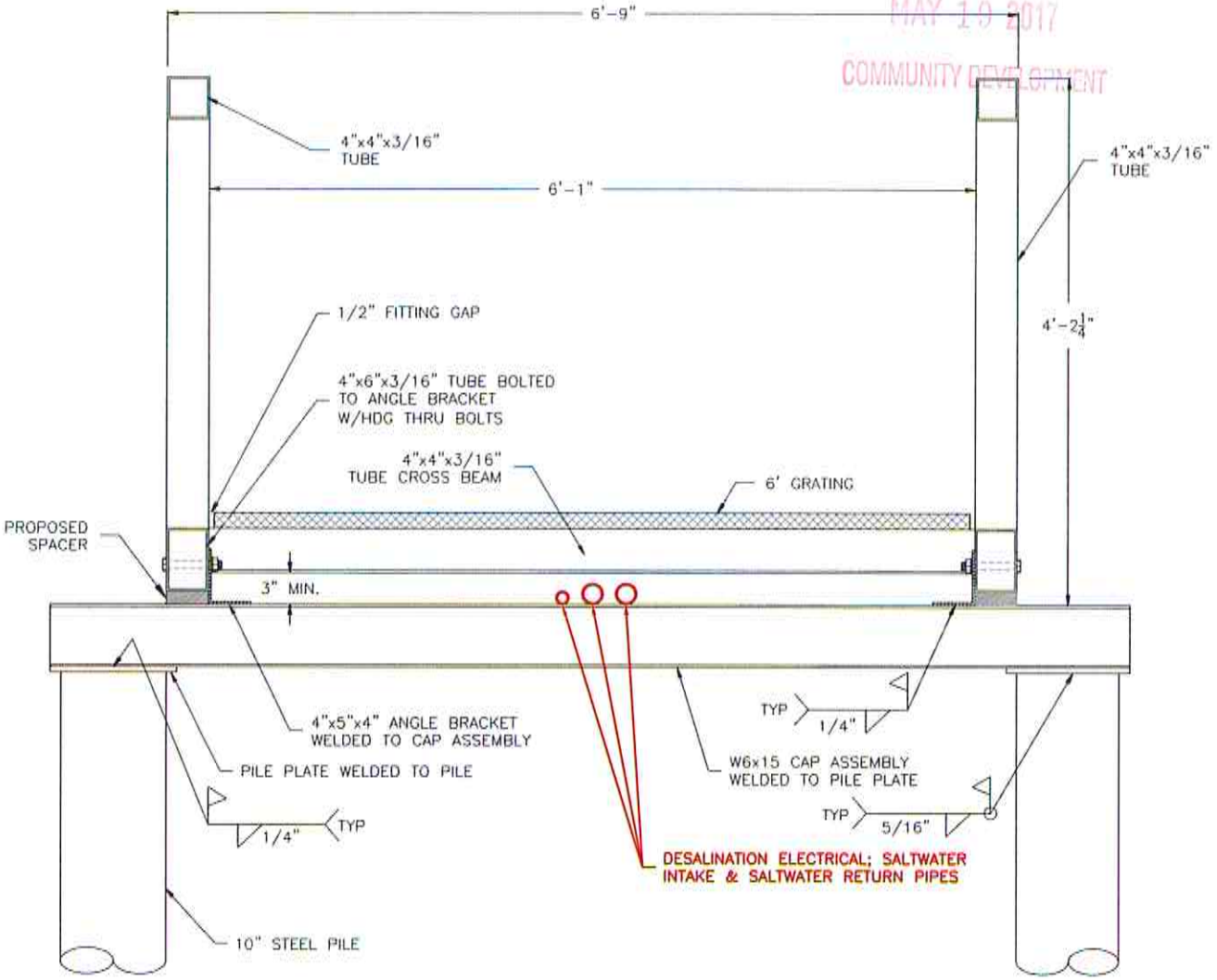
S.J.C. DEPARTMENT OF
MAY 19 2017
COMMUNITY DEVELOPMENT



PIER SECTION VIEW A–A

12" 6" 3" 0' 1'

SCALE: 3/4"=1'

UPDATED BOUNDARY LINES

REVISED 5-17-17

NOTE:
(SEE HART PACIFIC ENGINEERING DRAWINGS FOR DETAILS ON DESALINATION SYSTEM.)

REFERENCE #:	
APPLICANT: ORCA DREAMS, LLC c/o DAVID HONEYWELL	
PROPOSED: CONSTRUCT NEW PIER, RAMP AND FLOAT. INSTALL (1) WARNING BUOY.	
NEAR/AT: SAN JUAN ISLAND	
SHEET: 5	OF: 9
DATE: 3-31-14	DWG#: 14-31020-A.5-5

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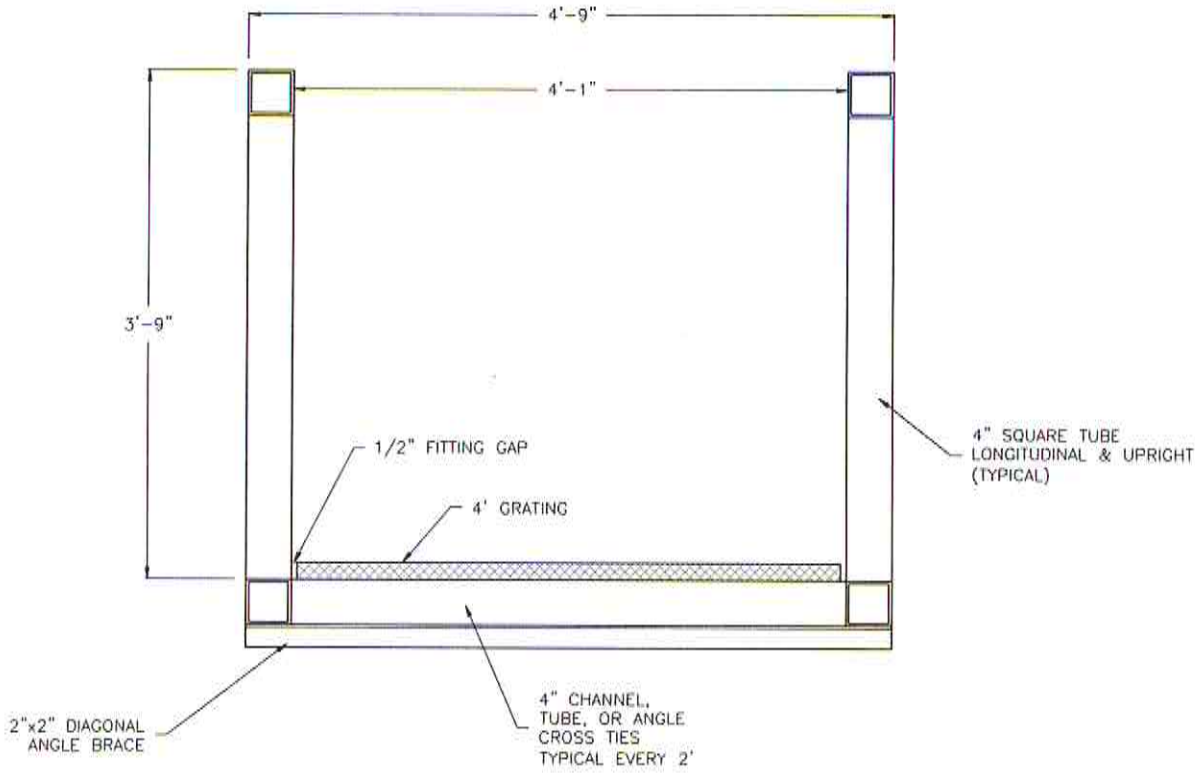
S.J.C. DEPARTMENT OF
MAY 19 2017
COMMUNITY DEVELOPMENT



RAMP SECTION VIEW B-B

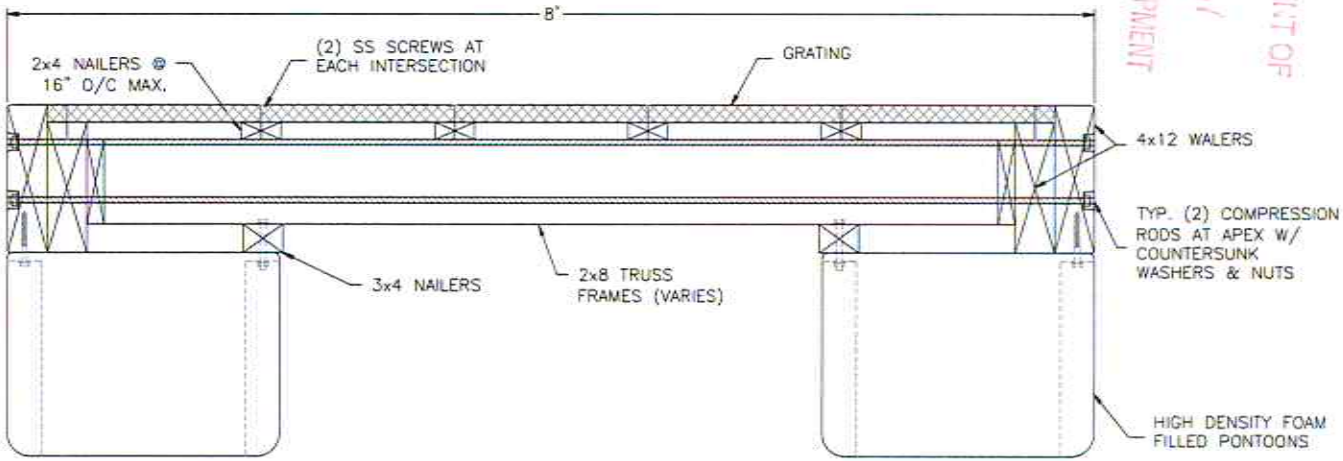
12" 6" 3" 0' 1'

SCALE: 3/4"=1'

UPDATED BOUNDARY LINES **REVISED 5-17-17**

REFERENCE #:	
APPLICANT: ORCA DREAMS, LLC c/o DAVID HONEYWELL	
PROPOSED: CONSTRUCT NEW PIER, RAMP AND FLOAT. INSTALL (1) WARNING BUOY.	
NEAR/AT: SAN JUAN ISLAND	
SHEET: 6 OF: 9	
DATE: 3-31-14	DWG#: 14-31020-A.6-5

S.J.C. DEPARTMENT OF
MAY 19 2017
COMMUNITY DEVELOPMENT



FLOAT SECTION C–C

12" 6" 3" 0' 1'

SCALE: 3/4"=1'

MATERIAL SPECIFICATIONS

PART	SPECIFICATIONS	TREATMENT
FLOAT GUIDE PILING	10" STD WALL STEEL PIPE	EPOXY COATED
FLOAT NAILERS	2x4 & 3x4 DF #2 OR BTR	ACZA
FLOAT RIM JOIST	2x8 DF #2 OR BTR	ACZA
FLOAT JOIST	2x8 DF #2 OR BTR	ACZA
FLOAT STRINGERS	4x12 DF # 2 OR BTR	ACZA
FLOAT GRATING	MOLDED PLASTIC	NONE
ALL HARDWARE	STEEL	HDG

PATENT NO.
US 7,708,497 B2
MAY 4, 2010

UPDATED BOUNDARY LINES REVISED 5-17-17

REFERENCE #:	
APPLICANT: ORCA DREAMS, LLC c/o DAVID HONEYWELL	
PROPOSED: CONSTRUCT NEW PIER, RAMP AND FLOAT. INSTALL (1) WARNING BUOY.	
NEAR/AT: SAN JUAN ISLAND	
SHEET: 7	OF: 9
DATE: 3-31-14	DWG#: 14-31020-A.7-5

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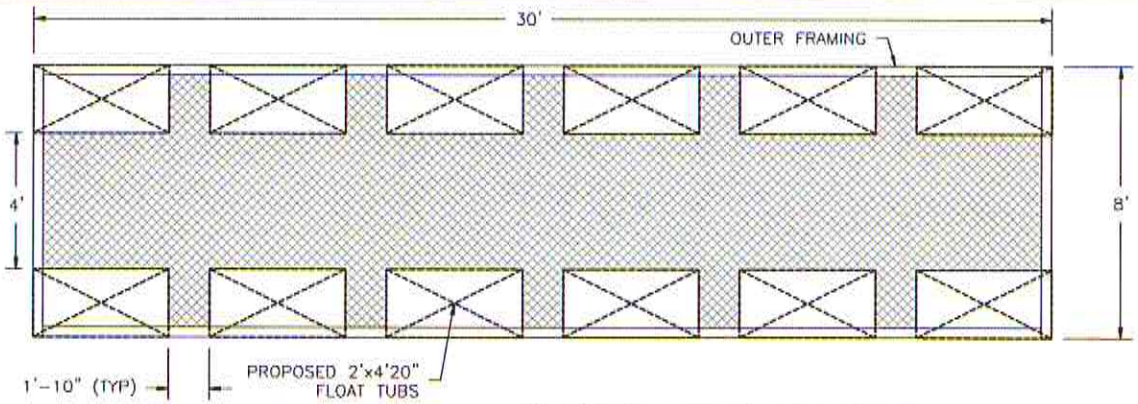


8'x 30' FLOAT = 240 S/F X 2 = 480 S/F
(1) 8'x30' FLOAT TOTAL GRATING= 218.2 S/F, X 2= 436.4 S/F
(2) 8'x30' FUNCTIONAL GRATING= 138.1 S/F, X 2= 276.2 S/F AT 63%

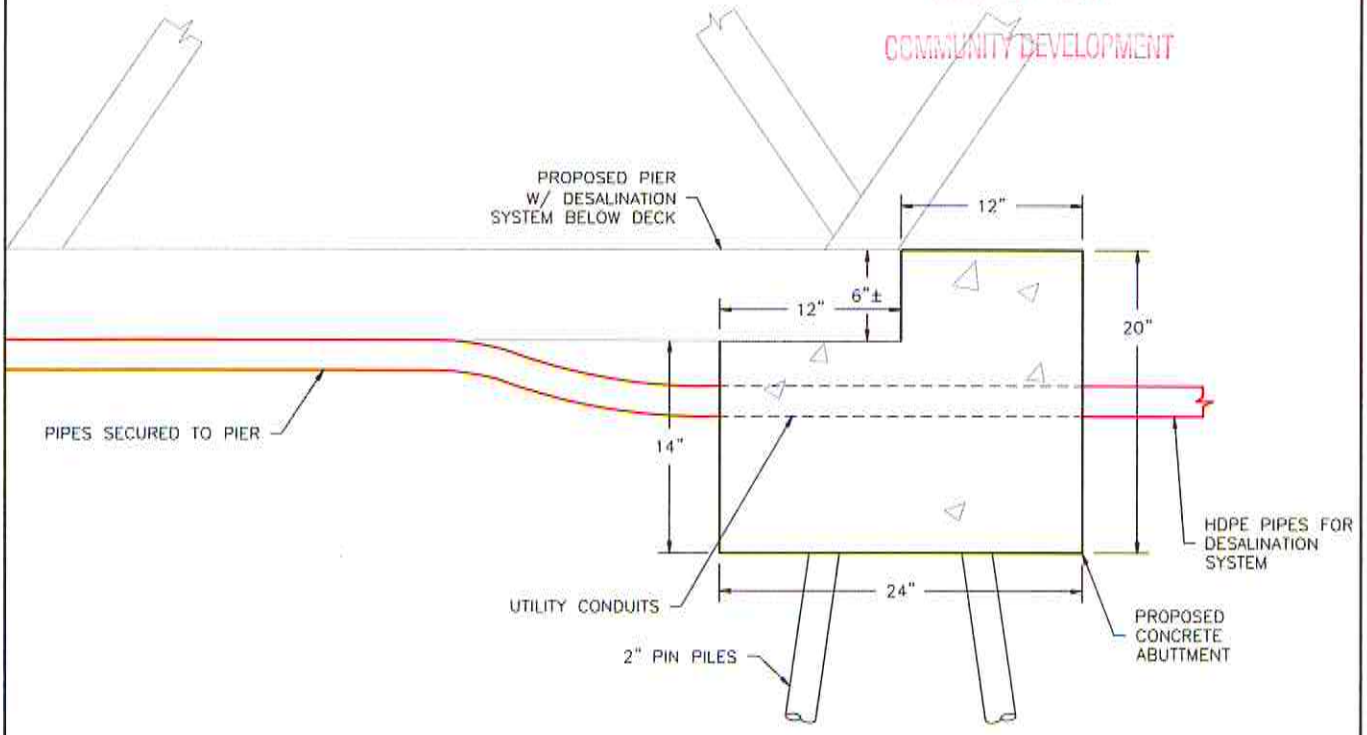
= OPEN GRATING AREA

FLOAT TUB LAYOUT (TYP)

4' 3' 2' 1' 0' 4'

SCALE: 3/16"=1'

S.J.C. DEPARTMENT OF
MAY 19 2017
COMMUNITY DEVELOPMENT



PROPOSED CONCRETE ABUTTMENT

1' 6" 3" 0' 1'

SCALE: 1"=1'

UPDATED BOUNDARY LINES

REVISED 5-17-17

REFERENCE #:	
APPLICANT: ORCA DREAMS, LLC c/o DAVID HONEYWELL	
PROPOSED: CONSTRUCT NEW PIER, RAMP AND FLOAT. INSTALL (1) WARNING BUOY.	
NEAR/AT: SAN JUAN ISLAND	
SHEET: 8	OF: 9
DATE: 3-31-14	DWG#: 14-31020-A.8-5

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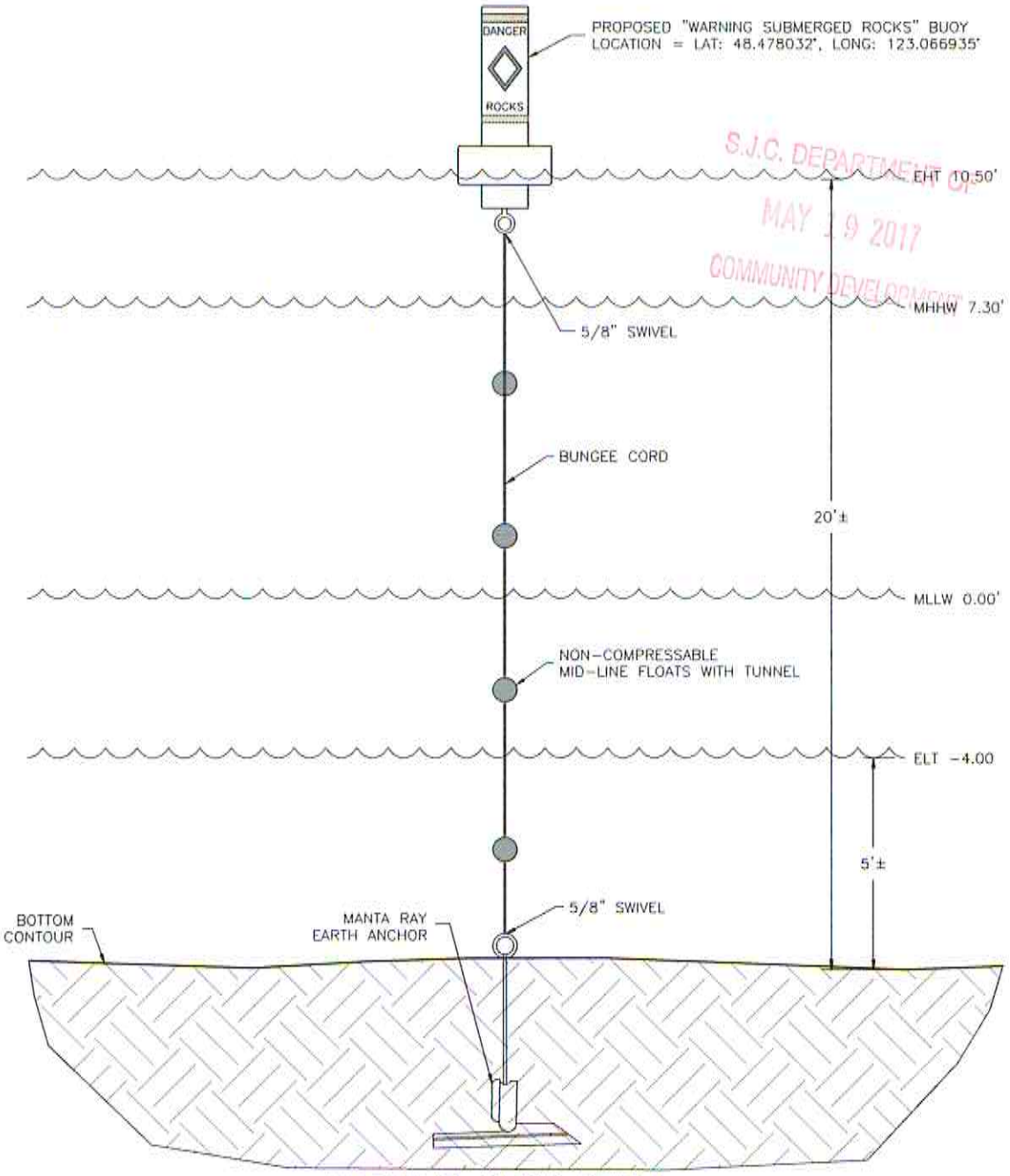


S.J.C. DEPARTMENT OF
MAY 19 2017
COMMUNITY DEVELOPMENT

WARNING BUOY DETAIL

4' 3' 2' 1' 0' 4'

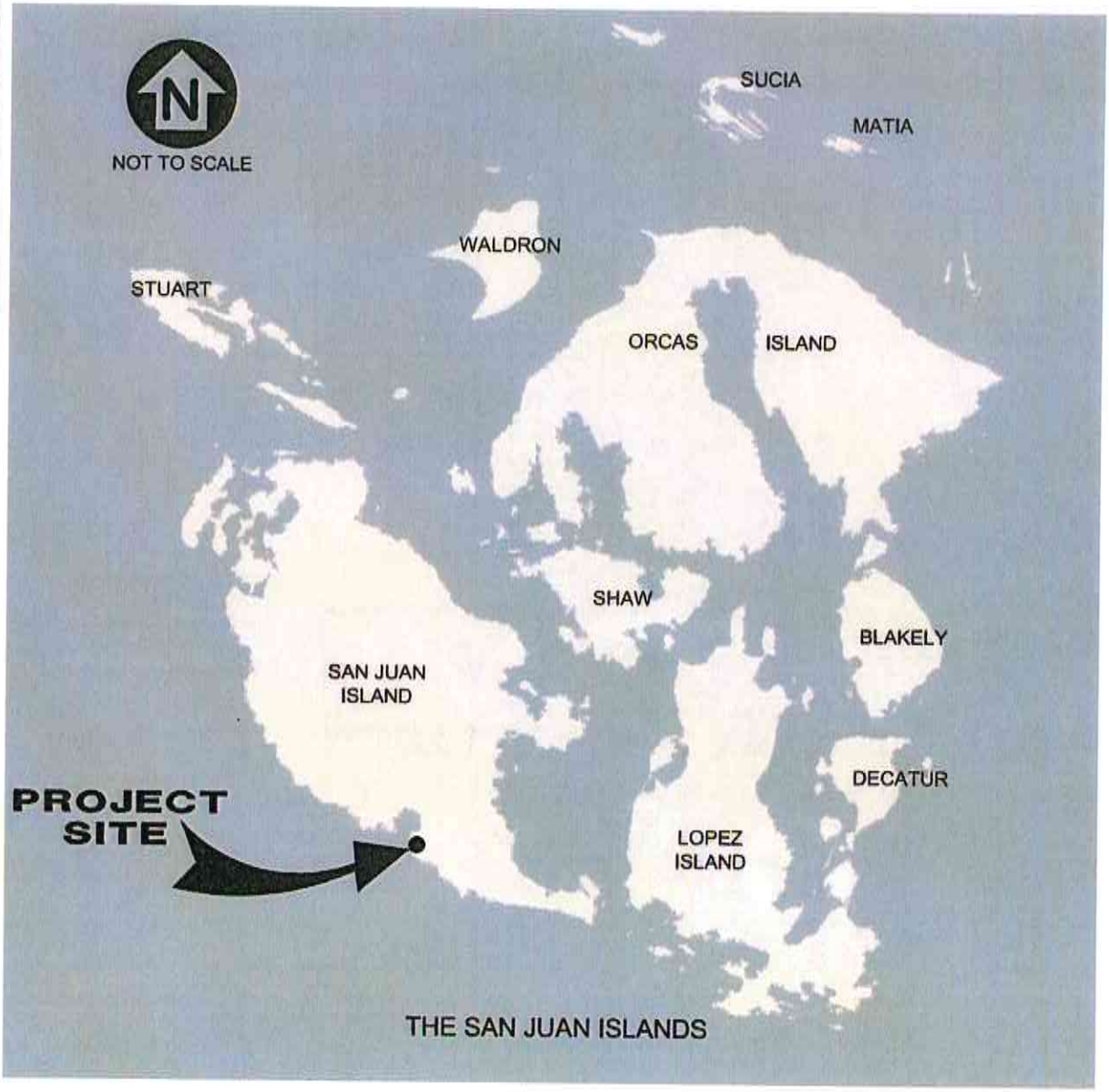
SCALE: 1/4"=1'

UPDATED BOUNDARY LINES

REVISED 5-17-17

REFERENCE #:	
APPLICANT: ORCA DREAMS, LLC c/o DAVID HONEYWELL	
PROPOSED: CONSTRUCT NEW PIER, RAMP AND FLOAT. INSTALL (1) WARNING BUOY.	
NEAR/AT: SAN JUAN ISLAND	
SHEET: 9 OF: 9	
DATE: 3-31-14	DWG#: 14-31020-A.9-5

RO DESAL SYSTEM



REFERENCE: _____

APPLICANT: David & Nancy Honeywell

ADJACENT PROPERTY OWNERS:
1. Friday Harbor Assoc. / TPN 353344007000
2. Michel F & Patricia A Aiello / TPN 353452002000 & 353452003000
3. Warren Road Assoc., TPN 340323002000
4. Cathrine Linn Gould, TPN 340411001000
5. Orca Dreams, LLC, TPN 340411004000

Vicinity Map #1

LOCATION: 1601 False Bay Rd, Friday Harbor, WA 98250. TPN 353344008000 & 340411003000

LAT/LONG: 48.478226° N
123.065649° W

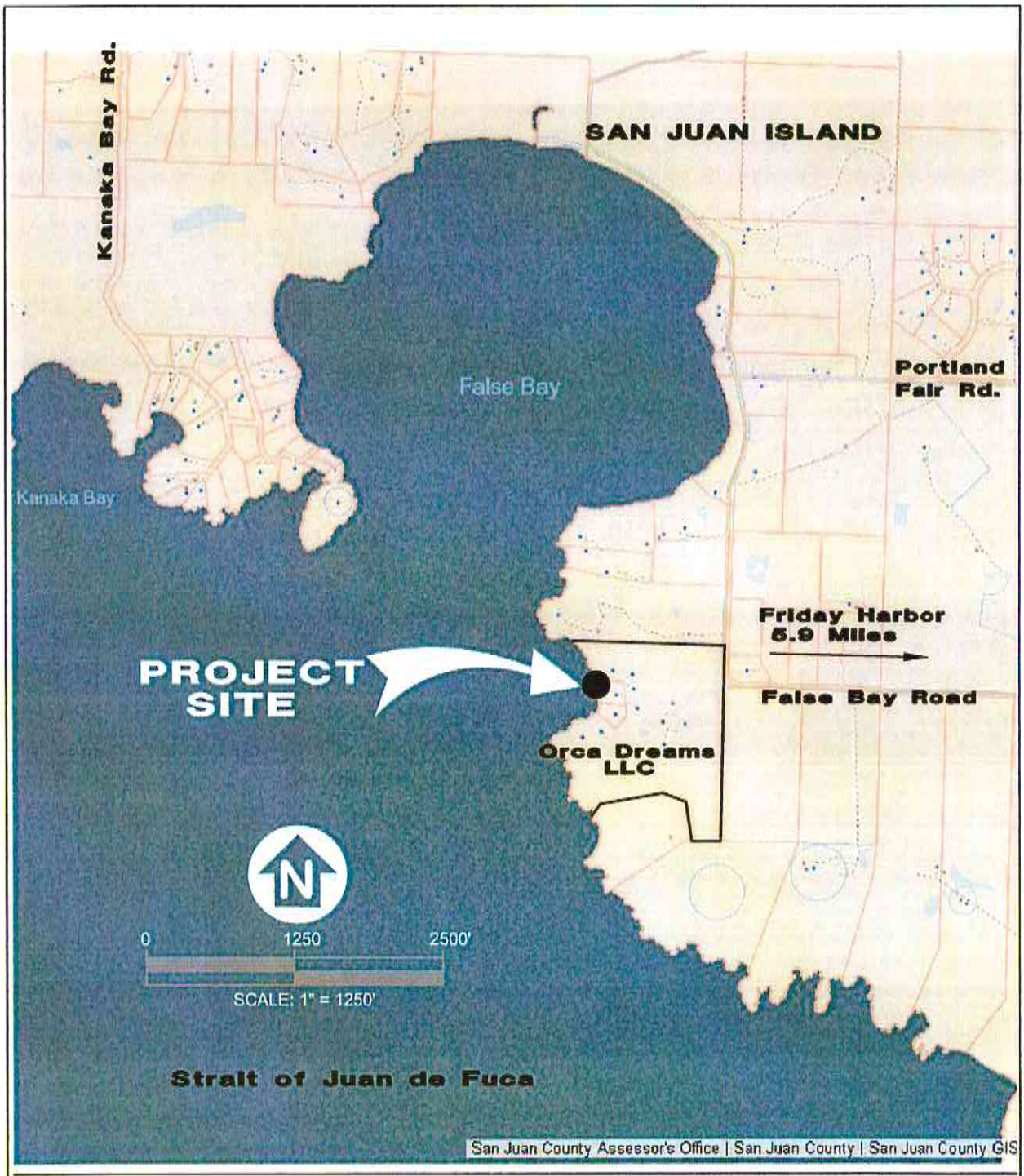
PAGE 1 OF 8

DATE: 11/29/2016

PROPOSED PROJECT: Desalination System: submersible seawater pump on piling, 1.5" electrical conduit, 2" seawater supply pipe, 2" saltwater return pipe, salt-water diffuser on piling, upland desalination building, & 2" product water pipe from building to existing 40,000 g. storage tank.

IN: Friday Harbor
AT: San Juan Island
COUNTY: San Juan
STATE: WA

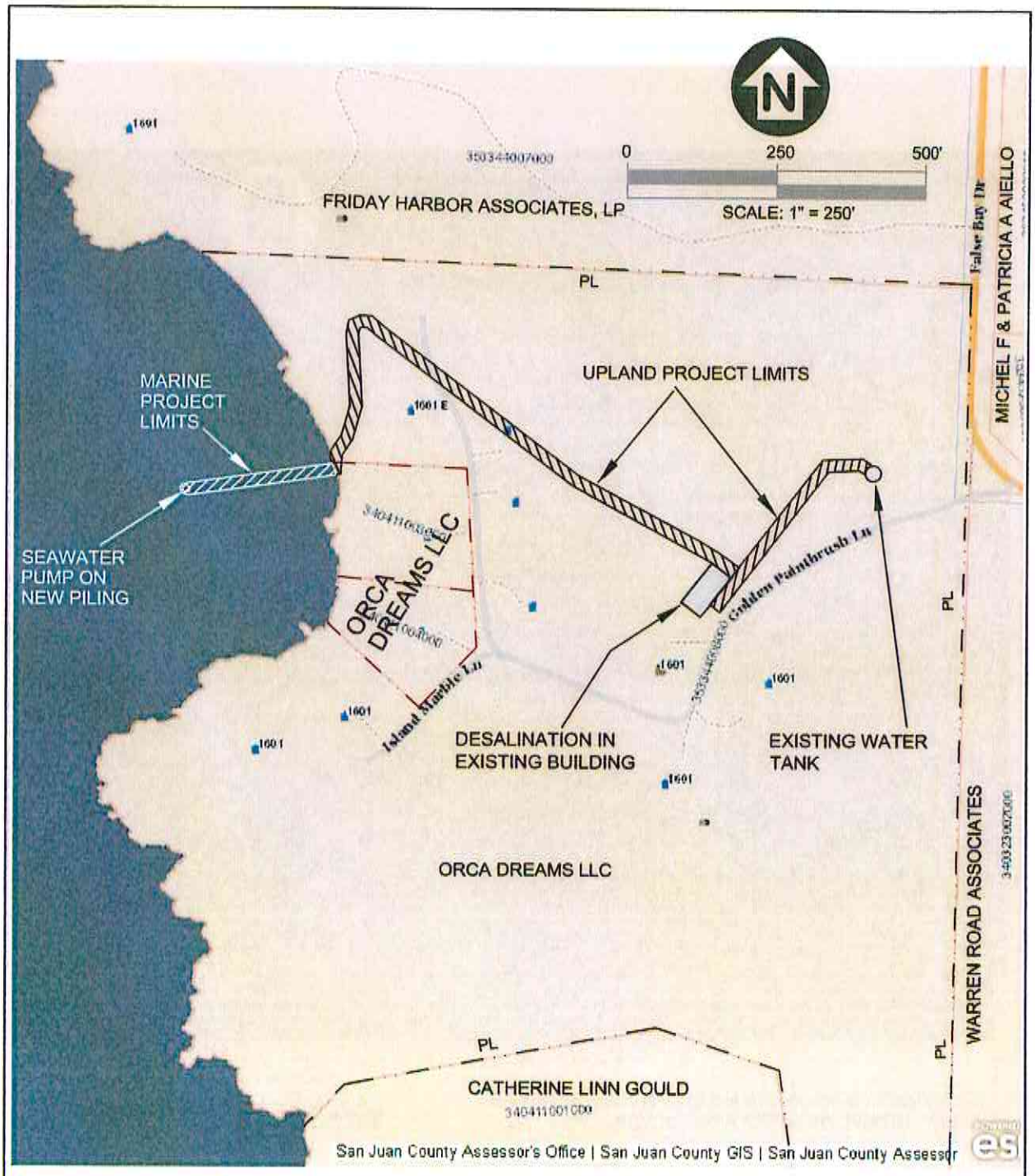
Prepared By:
Hart Pacific Engr.
Friday Harbor, WA
Proj. # 820-16



Vicinity Map #2

Reference Number:
Applicant: David & Nancy Honeywell
Proposed Project: Desalination System
Location: 1601 False Bay Rd, Friday Harbor, WA 98250. 353344008000 & 340411003000
Page: 2 of 8, Date:11/29/2016

Prepared By:
Hart Pacific Engineering
Friday Harbor, WA
Proj. #820-16



Vicinity Map #3

Reference Number:
Applicant: David & Nancy Honeywell
Proposed Project: Desalination System
Location: 1601 False Bay Rd, Friday Harbor, WA 98250. 353344008000 & 340411003000
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Prepared By:
Hart Pacific Engineering
Friday Harbor, WA
Proj. #820-16

UPLAND CONTOURS PREPARED BY SAN JUAN SURVEYING, FRIDAY HARBOR, WA DATED: APRIL 21, 2016.

SCALE: 1" = 200'

0 100' 200' 400'

General Site Plan

Reference Number:
Applicant: David & Nancy Honeywell
Proposed Project: Desalination System
Location: 1601 False Bay Rd, Friday Harbor, WA 98250. 353344008000 & 340411003000
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Prepared By:
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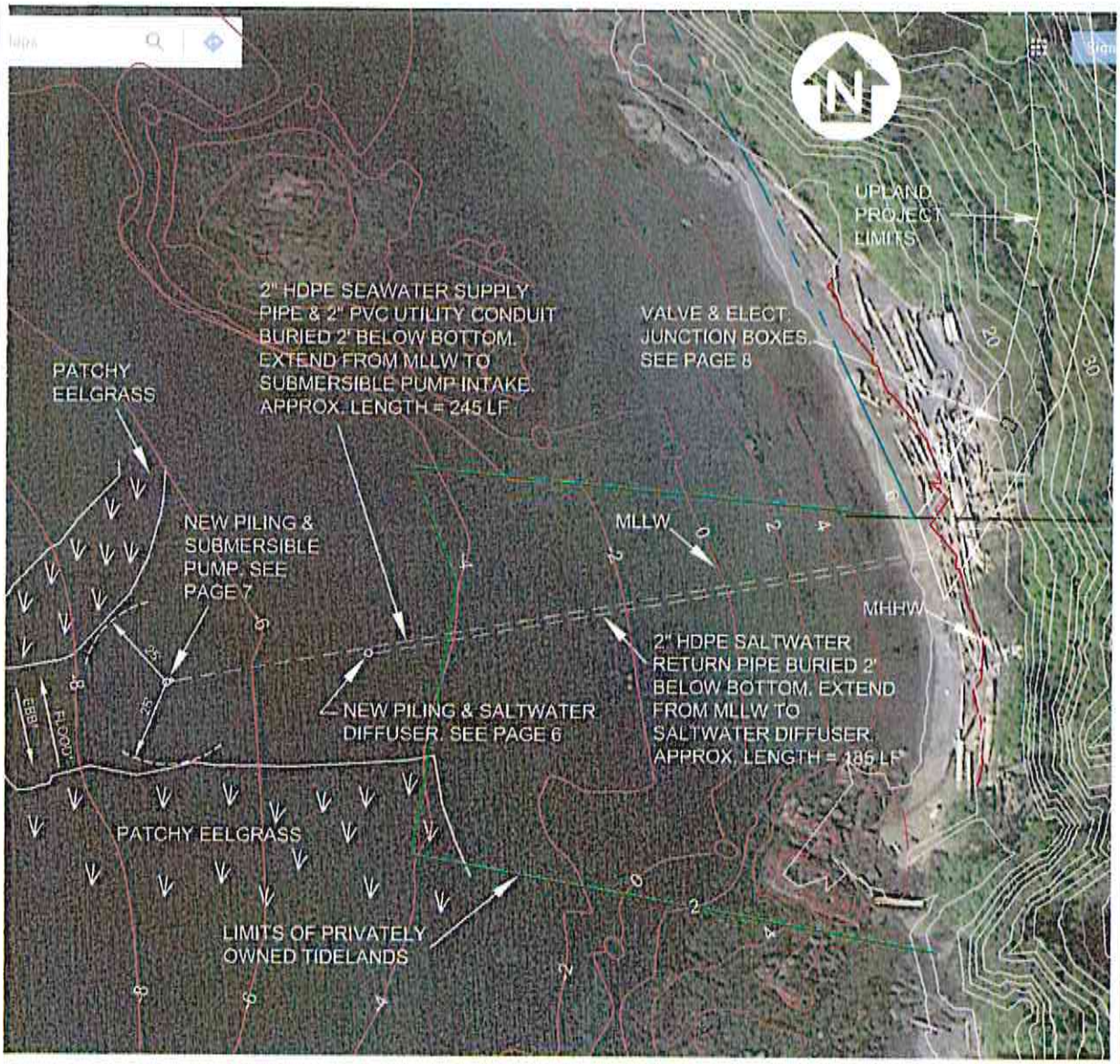

TIDELANDS DELINEATION, BOTTOM & UPLAND CONTOURS PREPARED BY SAN JUAN SURVEYING, FRIDAY HARBOR, WA DATED: NOV. 2, 2016.

EELGRASS DELINEATION FROM SURVEY PREPARED BYFAIRBANKS ENVIRONMENTAL, BELLINGHAM, WA FEBRUARY 2016

* FLOW DIRECTION BASED ON CANADIAN CURRENT ATLAS
NOTE THAT WEAK EBB FLOWS ARE TO THE NW - SAME AS THE FLOOD DIRECTION

SCALE: 1" = 50'

0 25' 50' 100'

Shoreline Site Plan

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Prepared By:
Hart Pacific Engineering
Friday Harbor, WA
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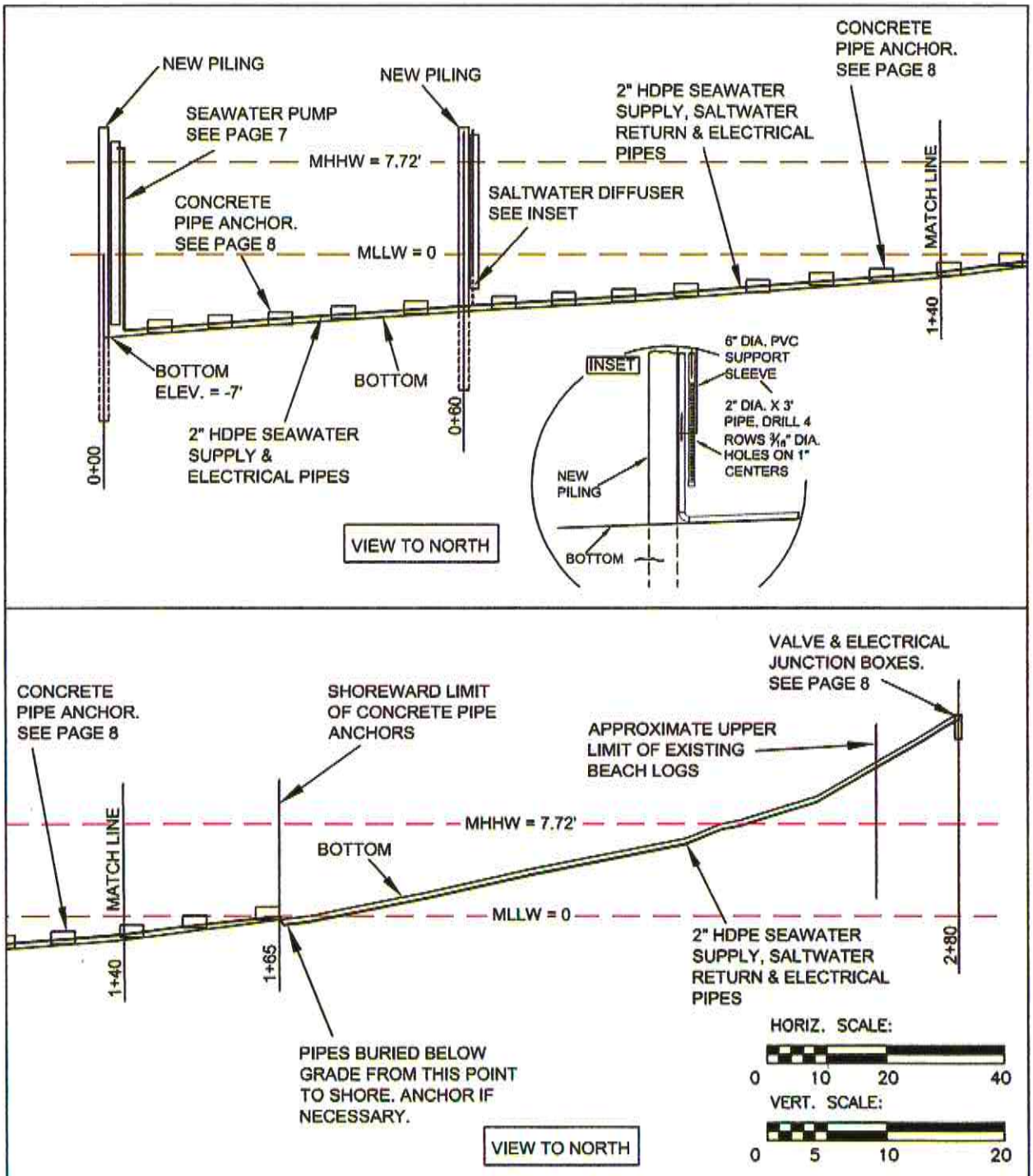

Bottom Profile

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Prepared By:
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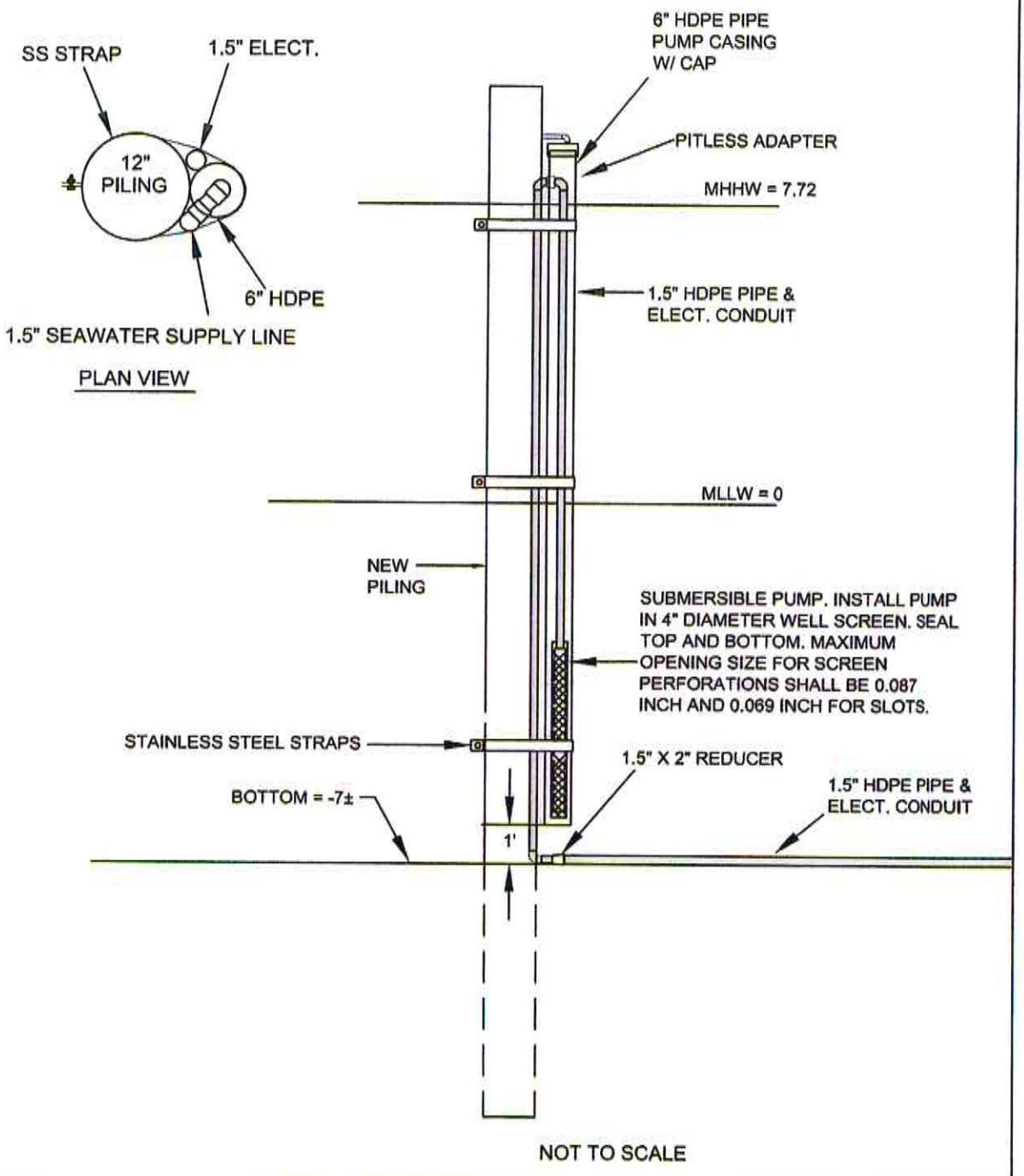

Submersible Pump Detail

Reference Number:
Applicant: David & Nancy Honeywell
Proposed Project: Desalination System
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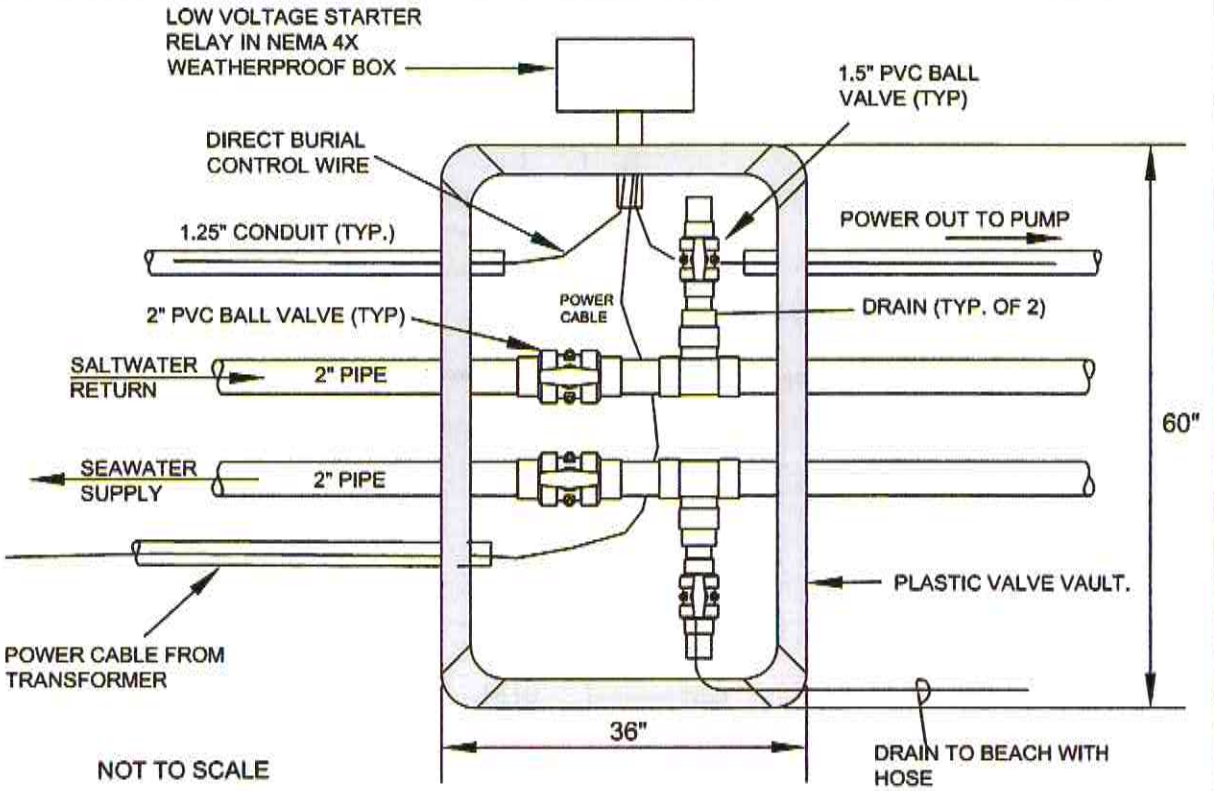
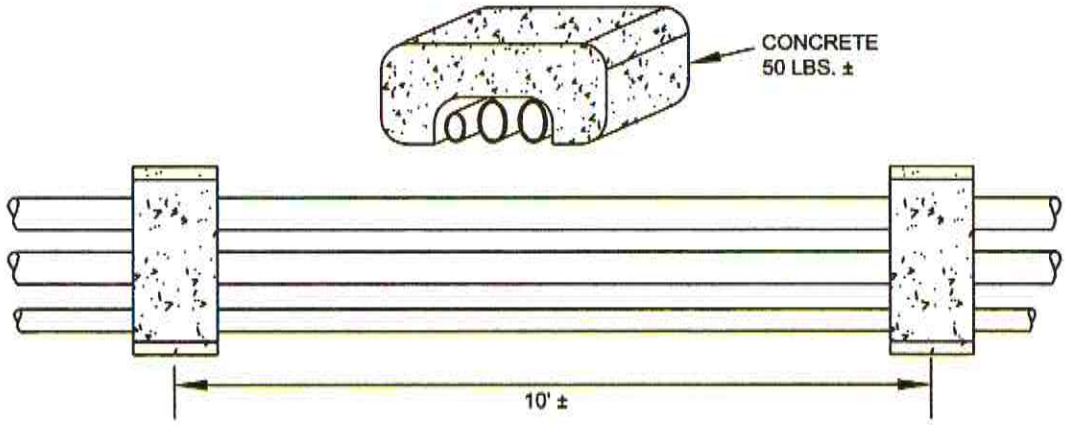


VALVE BOX



CONCRETE PIPE ANCHORS

NOT TO SCALE

Anchor & Valve Box Detail

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