

STREAM AND WILDLIFE ASSESSMENT UPDATE

**Marian Meadows Planned Unit Development
Kittitas County, Washington**

October 20, 2016

RAEDEKE ASSOCIATES, INC.



Wetland & Aquatic Sciences
Wildlife Ecology
Landscape Architecture

Report To: Martens Enterprises, LLC
and Easton Ridge Land Company, Inc.
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Title: Stream and Wildlife Assessment Update
Marian Meadows Planned Unit Development,
Kittitas County, Washington

Project Number: 2006-087-003

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Date: October 20, 2016



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Wildlife Ecology
Landscape Architecture

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1.0 INTRODUCTION

This report documents the results of our field investigation and assessment of streams and wildlife of the Marian Meadows Planned Unit Development (PUD). The project site is located in Sections 1 and 12, Township 20 North, Range 13 East, W.M. in Kittitas County, Washington (Figure 1). The property consists of 560 acres located north of Easton, on the southwest facing slopes of Easton Ridge. However, the focus of our investigation was the southwestern 140 acres of the site, proposed as a residential development. Site boundaries and proposed development is based on information provided to us by Encompass Engineering and Surveying, dated October 6, 2016.

The primary objective of our investigation was to determine the ordinary high water mark (OHWM) on existing streams in or near future development areas and to update previous investigations of threatened, endangered, or sensitive wildlife and its habitat. We visited the site on July 14, 2016 to investigate the wildlife, vegetation, and hydrologic conditions of the site in order to document the mean high water mark for a stream in the southeast portion of the development area. We also collected general descriptions of vegetation communities, presence of rare plants, and documented wildlife habitat and use in representative areas.

2.0 METHODS

2.1 STREAMS

The ordinary high water mark of streams within the project site were delineated using definitions provided by the Washington State Shorelines Management Act of 1971: “that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation.” (RCW 90.58.030(2)(b) and WAC173-22-030(6). The OHWM will be delineated using procedures outlined in the Washington Department of Ecology (1994) Shoreline Administrators Manual.

Background Research

In preparation for our investigation, we collected and analyzed available background information for the project area. We reviewed maps and information from the U.S. Fish and Wildlife (USFWS 2006) National Wetlands Inventory (NWI) map, the USDA Natural Resource Conservation Service (NRCS) Soil Survey (USDA NRCS 2006), and the Washington Department of Natural Resources (WDNR 2004) Forest Practice Activity Maps.

Field Sampling Procedures

We investigated the site on July 14, 2016 to delineate the ordinary high water mark of a stream in the southeast portion of the development area under the proposed development plan.

In addition, we assessed habitat conditions for wildlife and recorded wildlife observations or sign during the field inspection. Changes in general vegetation patterns since the 2006 report were noted; scientific nomenclature of plant species generally follows Hitchcock and Cronquist (1976), with nomenclature as updated by Pojar and MacKinnon (1994), Guard (1995), and Cooke (1997).

2.2 WILDLIFE AND WILDLIFE HABITAT

Background Review

We reviewed information from the Priority Habitats and Species (PHS) database maintained by the Washington Department of Fish and Wildlife 2016 (<http://wdfw.wa.gov/conservation/phs/>) for documented information on the potential occurrence of endangered, threatened, sensitive or other priority species and habitats on the project site and vicinity. The WDFW (1999) lists species as “Priority” for management and conservation other than those legally designated as endangered,

threatened, and sensitive (WAC 232-12-011, -014). State Priority designations include candidate, monitor, and game species and habitat for special consideration.

State priority species are defined as those fish and wildlife species “requiring protective measures and/or management guidelines to ensure their perpetuation” (WDFW 1999). State priority habitats are defined as “a habitat type with unique or significant value to many species” (WDFW 1999).

We reviewed the list of endangered, threatened, or sensitive plant species and habitats of special concern in Kittitas County [Washington Natural Heritage Program (WNHP) <http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf>] prior to our field visit. These results were referenced with available species accounts and descriptions (<http://www1.dnr.wa.gov/nhp/refdesk/plants.html>), for information on plant species of special concern (i.e., threatened, endangered, or sensitive) known to occur in the County that could be found in the area. During the field survey, we searched for any of these species suspected to occur on the site or vicinity.

Field Sampling Procedures

We conducted a field investigation of wildlife habitat and species use of the site and immediate vicinity concurrently with the stream investigation on July 14, 2016. We documented changes to plant communities (primarily due to forest succession) during the field investigation. Historic and present land-use patterns of the site and immediate vicinity were noted primarily from direct observations in the field.

We investigated wildlife use of the project site and vicinity through direct field observations and with reference to information provided by local agencies and published sources. Wildlife sign was noted while observing plant communities and habitats during the field reconnaissance. Data on reproduction, habitat use, and activities of wildlife species observed was also recorded. Particular attention was focused on signs or observations, if any, of state- or federally-listed species or other state priority species, or their habitats. Information about the project site was also extrapolated from available information on species-habitat relationships on similar sites in the vicinity, and from our research and management experience in eastern Cascades forest habitats.

3.0 EXISTING CONDITIONS

The project area consists of approximately 142 acres located north of Easton at the base of the southwest-facing slopes of Easton Ridge, in Kittitas County. It corresponds to Alternative 5 from the Marian Meadows Planned Unit Development and Subdivision FEIS (Parametrix 2011). The property is relatively level with a slight rise from 2,200 feet elevation in the southwest corner toward the north. A Bonneville Power Administration (BPA) power transmission line runs from the northwest portion of the site to the southern eastern corner of the project site.

The Marian Meadows project site consists primarily of open to closed conifer forest representing various ages of regrowth from past timber harvest activities (see Figure 2).

Off-site areas surrounding the property consist primarily of second-growth mixed, coniferous-deciduous forest with houses and associated outbuildings, lawns, and livestock pastures. There are 131 residential lots on adjacent and surrounding plats, with densities ranging from 80 quarter-acre lots on the Easton Village plat to Silver Creek I and II with 26 lots averaging 5 to 8 acres each, with the remaining platted lots averaging 3 acres each. The land north of the project site is also primarily second growth conifer forest and co-owned by Easton Ridge Land Company, Inc.

3.1 HABITAT TYPES

A total of 5 habitat types were identified on the site, including: (1) Young Conifer, (2) Medium-aged Conifer, (3) Mixed-age Conifer, and (4) Submature Conifer forest, and (5) Maintained Grassland/Low shrub (powerline corridor; Figure 2).

1. Young Conifer consisted of planted Ponderosa pine and Douglas-fir < 20 ft. tall, following the most recent timber harvest in a large portion of the southern part of the site, and generally contained a grass/herb understory.
2. Medium-aged Conifer consisted of planted 20-40 ft. tall Douglas-fir and pines covering the eastern areas of the site. Shrubs dominated the understory here.
3. Mixed-age Conifer areas covered a portion of the central part of the site and appeared to be the result of a selective harvest in this area, which left 10-25% mature trees with some planted conifers present throughout. Shrubs dominated the understory here as well.
4. Submature Conifer covered much of the northern and western edges of the property and represents forest that has almost reached a mature stage following timber harvest over 40 years ago. Understory was sparse in these areas and dominated by herbs.
5. Maintained Grassland/Low shrub habitat occurred mainly along the powerline corridor and was dominated by cheatgrass and knapweed, with other introduced and native herbs and grasses also common.

Vegetation in the project site consists of a scattered mix of shrubs, young conifers, and mature black cottonwood (*Populus balsamifera*) trees. Conifer cover is dominated by Douglas-fir (*Pseudotsuga menziesii*) and Ponderosa pine (*Pinus ponderosa*), with lesser amounts of lodgepole pine (*P. contorta*), western red cedar (*Thuja plicata*), grand fir (*Abies grandis*), black cottonwood, red alder (*Alnus rubra*), and bigleaf maple (*Acer macrocarpa*).

The shrub layer is dominated by ocean-spray (*Holodiscus discolor*), hazelnut (*Corylus cornuta*), redstem ceanothus (*Ceanothus sanguineus*), Pacific blackberry (*Rubus ursinus*), common snowberry (*Symphoricarpos albus*), and kinnikinnick (*Arctostaphylos uva-ursi*).

Herbaceous vegetation is dominated by grasses (*Festuca*, *Agropyron*, *Poa*, *Dactylis* species) and herbs typical of the site conditions, including Brackenfern (*Pteridium aquilinum*), Indian paintbrush (*Castilleja* spp.), mullein (*Verbascum* sp.), selfheal (*Prunella vulgaris*), purple peavine (*Lathyrus nevadensis*), and yarrow (*Achillea millefolium*), among many others. Dense patches of diffuse knapweed (*Centaurea diffusa*) and cheatgrass (*Bromus tectorum*), both invasive plants, are scattered throughout much of the disturbed areas on the site, such as the powerline corridor.

Along the Type 4 stream in the eastern portions of the site we observed a vegetation community dominated by an overstory of red alder (*Alnus rubra*) with a shrub understory of swamp gooseberry (*Ribes lacustre*). Herbaceous vegetation along the stream consists of slough sedge (*Carex obnupta*), Watson's willow-herb (*Epilobium ciliatum*), and large-leaved sedge (*Carex amplifolia*). The stream was inundated only in the lower streambed and only to a depth of a few inches during our July 2016 site visit.

4.0 STREAM ASSESSMENT

4.1 BACKGROUND INVESTIGATION

The WDNR (2016) Forest Practice Activity Map depicts a Type N stream in the central portion of the property (Figure 3). The Forest Practice Activity Map also depicts a Type F stream to the southeast of the site.

4.2 STREAM RECONNAISSANCE

During our field visit we found no wetlands within the proposed development area. On the eastern portion of the site we encountered a non-fish bearing stream.

Streams

We investigated the area identified as a Type N stream by the WDNR (Figure 3) within the proposed development area of the Marian Meadows PUD property. This area contains a swale feature that is approximately 10 feet wide and the bottom of which is two feet below the surrounding ground surface. Vegetation in the swale consists of scattered lodgepole pine and Douglas fir trees, with a shrub understory of common snowberry. Western wheatgrass (*Agropyron smithii*) and diffuse knapweed are the most abundant herbaceous species observed in the swale. Soils in the swale are brown (10YR 4/3) sandy loams with no redoximorphic features. We did not observe hydrology within the swale to a depth of 16 inches. No evidence of frequent or prolonged inundation was seen, nor was evidence of scour from flowing water observed. It appears that the swale may convey some water during spring snowmelt, however no indications of this area being a regulated stream or wetland were found.

Raedeke Associates, Inc. did identify and delineate a stream in the southeast portion of the investigated area. This stream appears to meet the Kittitas County Type 4 requirements.

5.0 WILDLIFE AND WILDLIFE HABITAT ASSESSMENT

The project site and the surrounding lands provide habitat for a variety of native animal species common to second-growth forest and successional shrublands of the Washington Cascade Mountains. Human activities on the site, both past and present, including timber harvest and management, and vegetation control within the powerline corridors have determined the configuration and condition of vegetation cover types currently found on the site.

5.1 BACKGROUND INVESTIGATION

Threatened and Endangered Plant and Animal Species

The Washington Natural Heritage Program database contained no records of any rare plant species or high quality native ecosystems on the Marian Meadows PUD site or immediate vicinity (<http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf>).

The WDFW (2016) PHS and WNHP databases have no record of the occurrence of any plant or animal species listed as threatened, endangered, or sensitive (TES) by federal or state agencies on the actual project site. There were records of TES species within the township containing the site, however no records of the species were noted in Section 1 where the site is located. Species of concern included the northern spotted owl (*Strix occidentalis caurina*; Federal Threatened, State Endangered), and wolverine (*Gulo gulo*; State Candidate species).

The state of Washington manages its habitat for spotted owls with USFWS oversight. Generally, within a 1.8-mile radius of known nest sites for this species, the state requires 40% of the area of the circle to be kept in habitat suitable for the species. Landowners who file forest practices applications to remove significant amounts of forest habitat for harvest or development, may have to show that enough habitat remains in the circle to allow for the application to move forward. The very northwest corner (approx. 200 ft. from the corner) of the project site falls within a known spotted owl management circle. Further, the project site is within what is known as a “Spotted Owl Special Emphasis Area”, a region where the State is concerned with maintaining a viable population of owls. Any forest practices application that removes significant amounts of habitat could be denied if insufficient habitat remains in this management circle. It is more likely that a plan could be negotiated with the State to remove a small amount of habitat within the management circle in trade for retention of alternate habitat somewhere near the edge of the management circle.

The wolverine is a wide-ranging but rare carnivore that has only recently been recolonizing the state of Washington from Canada. It was originally a part of the native fauna of the state but was trapped to extinction locally in the early 1900’s. This is generally a species of mountainous regions but could occur at almost any elevation, particularly in winter. It is possible this species could be seen in the future near the

project site, but as of now, no sightings within the project site are known, and only one record is known from 1999, within the township (WDFW 2016 PHS database).

Priority Habitats

The WDFW (2008) lists species as “Priority” for management and conservation some that are managed as game species (WAC 232-12-011, -014). State “Priority” game species that use habitats found on the project site and vicinity include elk (*Cervus elaphus*) and mule/black-tailed deer (*Odocoileus hemionus*) and Westslope cutthroat trout (*Oncorhynchus clarki lewisi*). For these species, the WDFW has designated “priority habitats” for areas such as winter range and calving areas of ungulates, and stream habitat for trout.

The WDFW (2016) PHS maps show a “priority habitat” area of “regular large concentrations” of elk which includes all of the current Marian Meadows project site. This would be a spring/fall and possibly summer range area, as snow accumulations would typically preclude use of the area in mid-winter.

5.2 WILDLIFE FIELD RESULTS

We conducted a habitat and wildlife reconnaissance of the property concurrently with the stream OHWM survey. We searched for evidence of large mammal concentration and movement areas and habitats of special significance, and noted wildlife observed. Wildlife (birds) observed during our field reconnaissance were those species common to the forested habitats of the Cascades. Mule deer and elk droppings were observed on the site; however we did not observe any sign of important areas of concentration or movement during our visit. Because our visit occurred in mid-summer, we may not have been able to assess use of the site by large mammals during spring and fall migratory periods.

Wildlife Corridors

As discussed in the FEIS and in our previous report (Raedeke Associates, Inc. 2006), large wildlife species such as deer, elk, cougar, bear, etc., would be expected to use the project site as a passage corridor and spring/summer migration corridor from mountainous terrain to the north to lowland river valley habitat along the Yakima River. With development currently restricted to the lowland portions of the site, and development occurring north of the powerline corridor only in the northwest, large wildlife can access the powerline corridor from much of Easton Ridge to the north of the site without traversing roadways and yards around housing development.

6.0 REGULATORY CONSIDERATIONS

6.1 STREAM REGULATIONS

The identified stream in the southeastern portion of the site would be regulated as a Type 4 water under Kittitas County code. Type 4 streams are afforded buffers only at their confluence with higher order (Type 3, 2, 1) streams. The county does require a 15-foot-wide structural setback from the OHW mark of Type 4 streams.

6.2 WILDLIFE HABITAT REGULATIONS

Kittitas County Code, Title 17 identified Priority Species Habitat (17A.02.230), Priority Animal Species (17A.02.240), and Riparian Habitat (17A.02.250), Big Game Winter Range (17A.02.042), and Fish and Wildlife Habitat Conservation Areas (17A.02.090). Based on our field reconnaissance and review of the existing data provide by WDFW (2016) and WDNR (2016) there do not appear to be any species or habitats on the Marian Meadows PUD property that are protected by Title 17 of the Kittitas County Code, with the potential exception of the first 200 ft. from the northwest corner. This area, which occurs within a spotted owl management circle, may require some negotiation with WDFW, but given the small area of impact occurring in the outer portion of the circle, a successful negotiation would be expected.

Likewise, there do not appear to be any species or habitats on the Marian Meadows PUD property that are protected by State or Federal regulations, beyond the spotted owl management circle mentioned above.

7.0 LIMITATIONS

We have prepared this report for the exclusive use of Martens Enterprises, LLC, Easton Ridge Land Company, Inc., and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from them.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various resource agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such agency determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies prior to any detailed site planning or construction activities.

We warrant that the work performed conforms to standards generally accepted in our field, and that this work was prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponents and their consultants, together with information gathered in the course of this study. No other warranty, expressed or implied, is made.

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**PROJECT LOCATION
(APPROX.)**

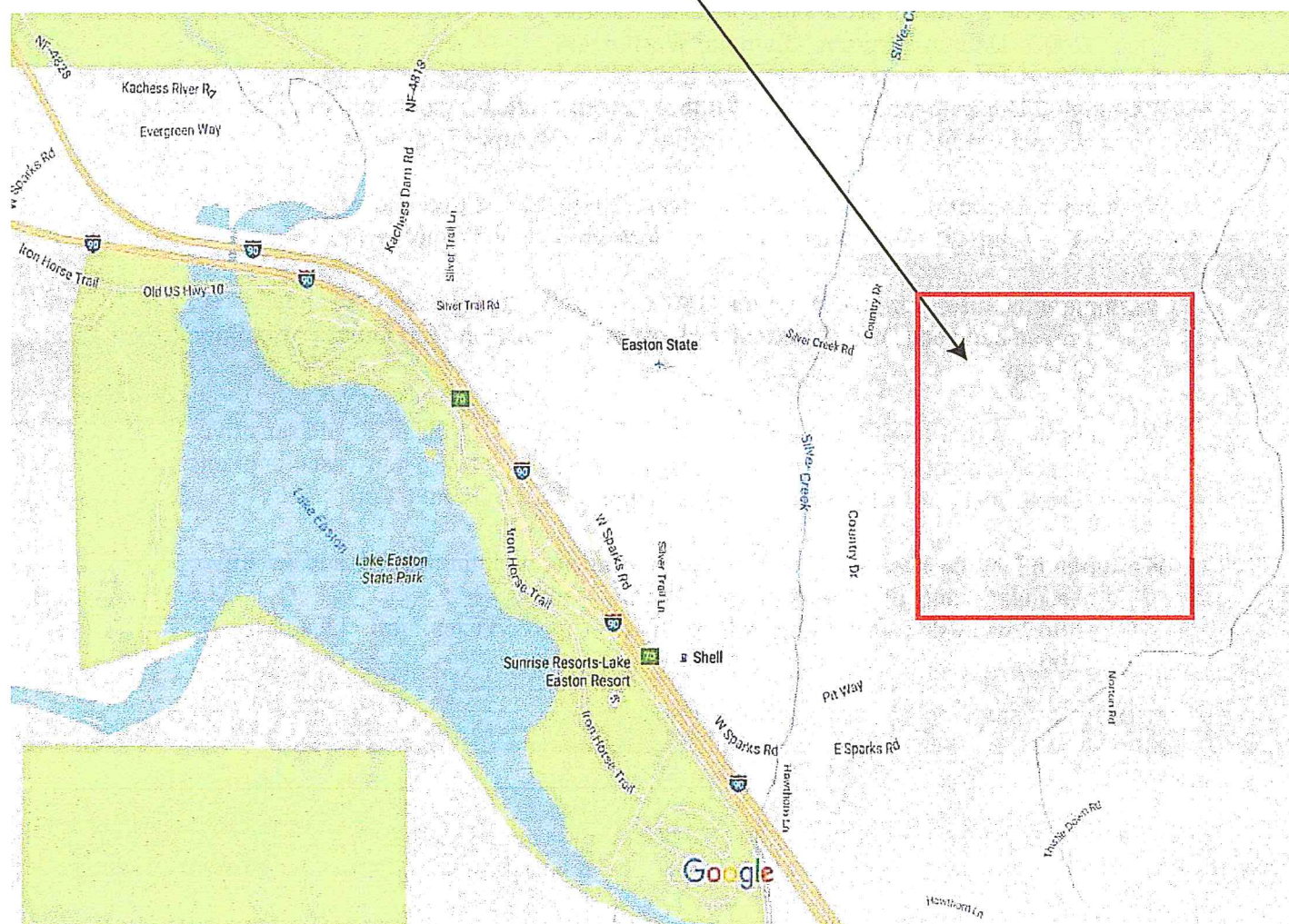
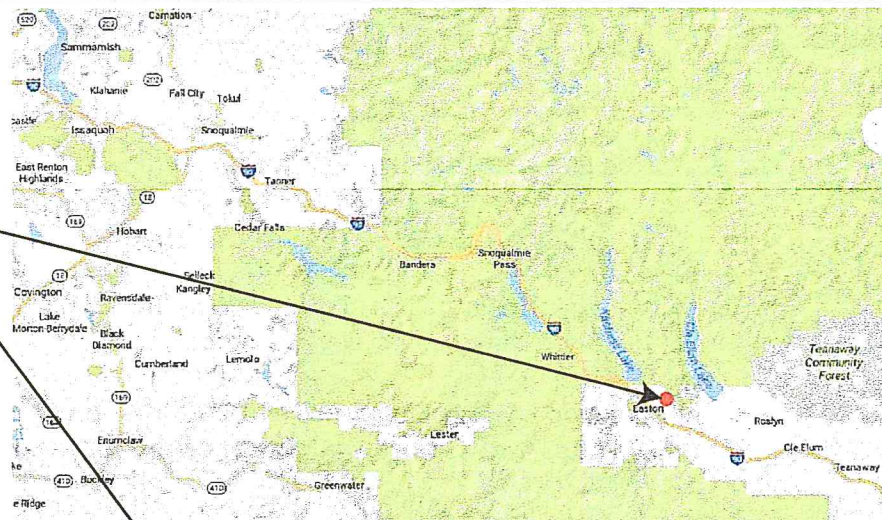


FIGURE 1
REGIONAL & VICINITY MAP
MARIAN MEADOWS
EASTON, WA

Raedeke
Associates, Inc.

2111 N. Northgate Way, Ste. 219
Seattle, WA 98133
2006-087-003

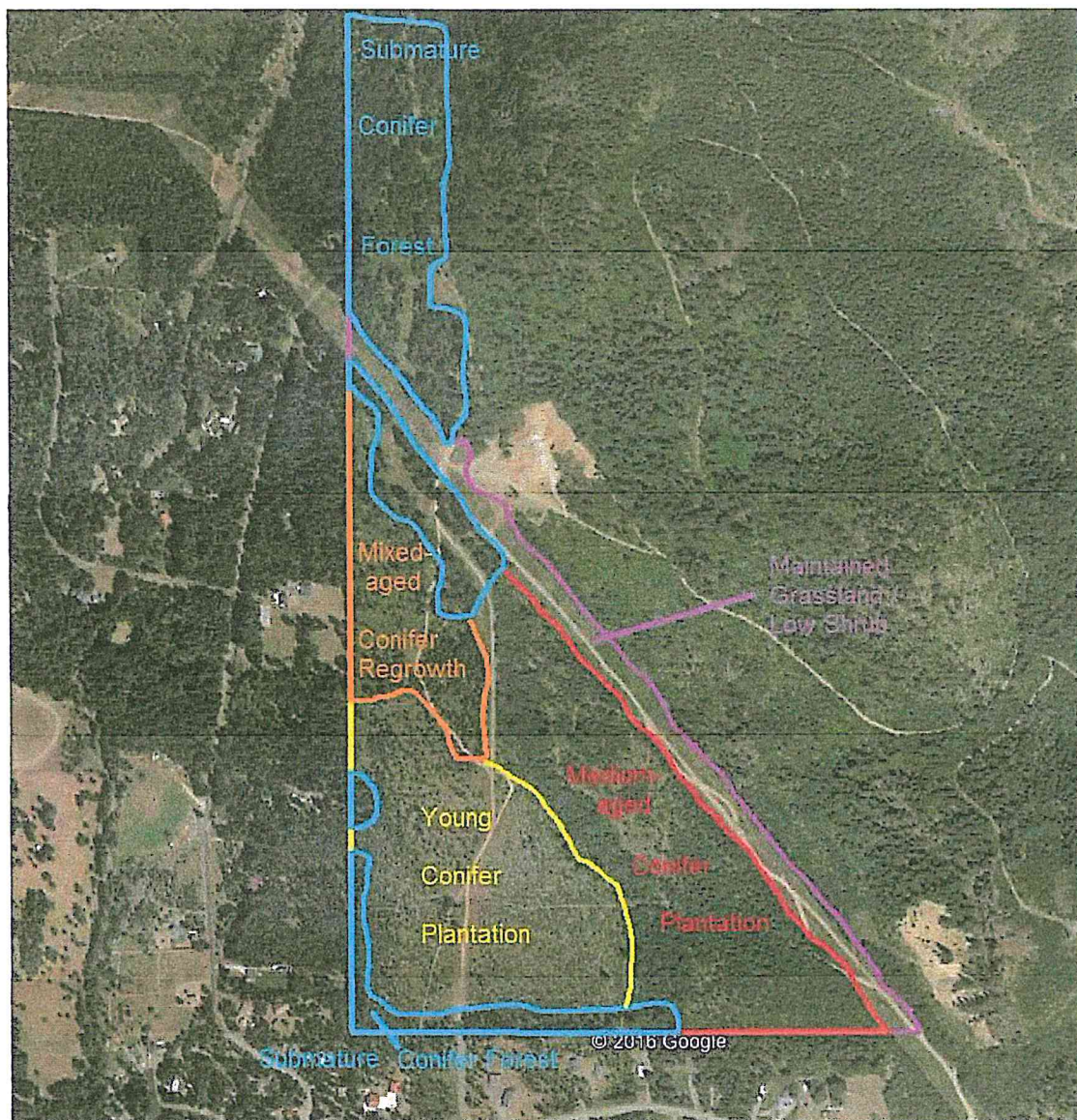
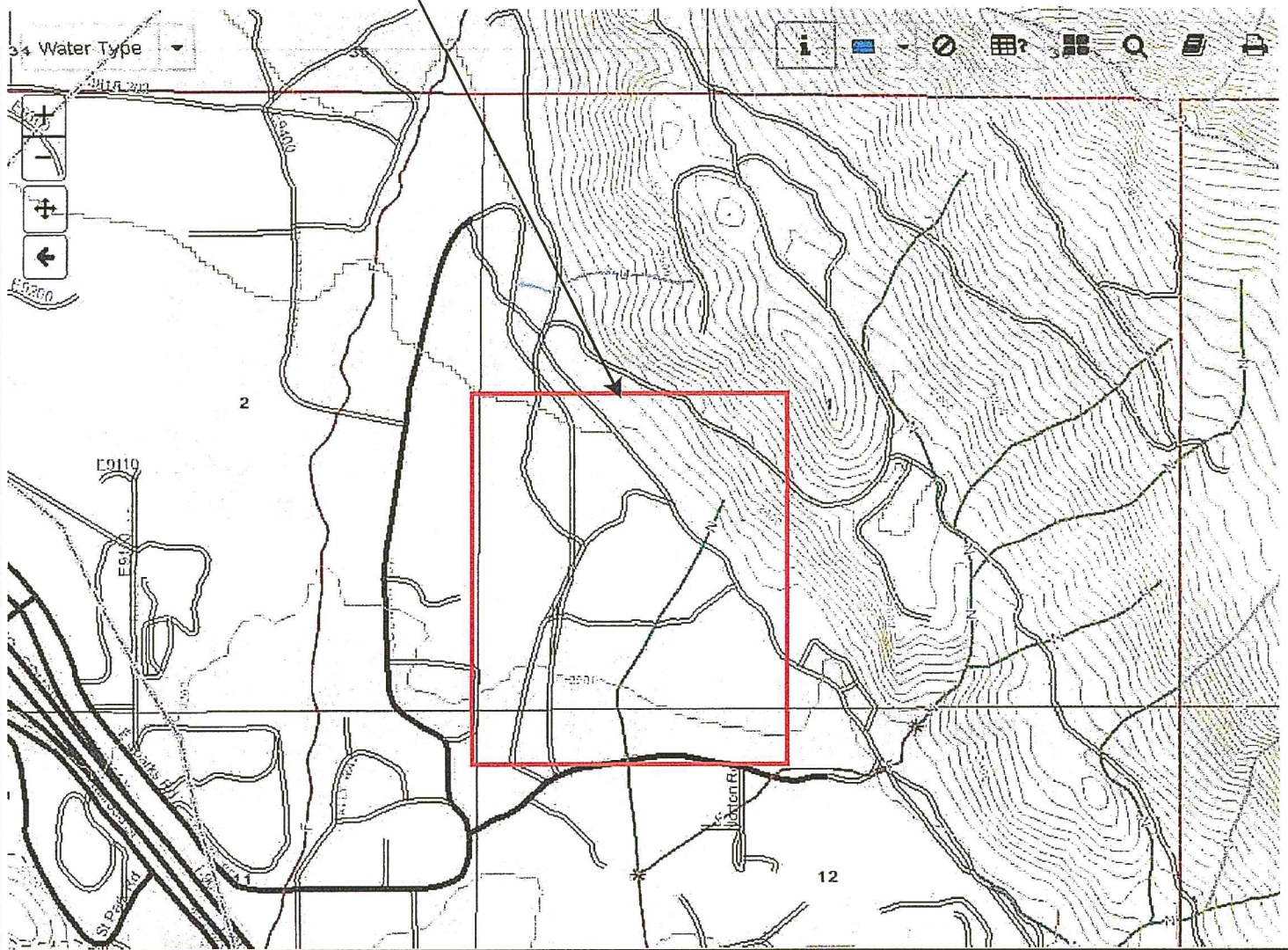


Figure 2. Major habitat types on the Marian Meadows project site.

PROJECT LOCATION



Washington State Department of Natural Resources. Forest Practices Application Review System (FPARS).
 Accessed at <http://www.dnr.wa.gov/programs-and-services/forest-practices/forest-practices-application-review-system-fpars>
 on 10/11/16.

Type "F" = Fish

Streams and waterbodies that are known to be used by fish, or meet the physical criteria to be potentially used by fish. Fish streams may or may not have flowing water all year; they may be perennial or seasonal.

Type "Np" = Non-Fish

Streams that have flow year round and may have spatially intermittent dry reaches downstream of perennial flow. Type Np streams do not meet the physical criteria of a Type F stream.

Type "Ns" = Non-Fish Seasonal

Streams that do not have surface flow during at least some portion of the year, and do not meet the physical criteria of a Type F stream.

FIGURE 3
 WA-DNR WATER TYPES MAP
 MARIAN MEADOWS
 EASTON, WA

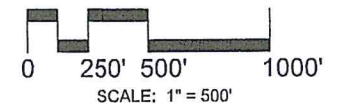
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 2006-087-003

FIGURE 4
MARTENS ENTERPRISES, LLC
MARIAN MEADOWS
STREAM & WILDLIFE ASSESSMENT UPDATE
EXISTING CONDITIONS

LEGEND

- EXISTING CONTOURS
- TYPE 4 STREAM ORDINARY HIGH WATER (OHW)

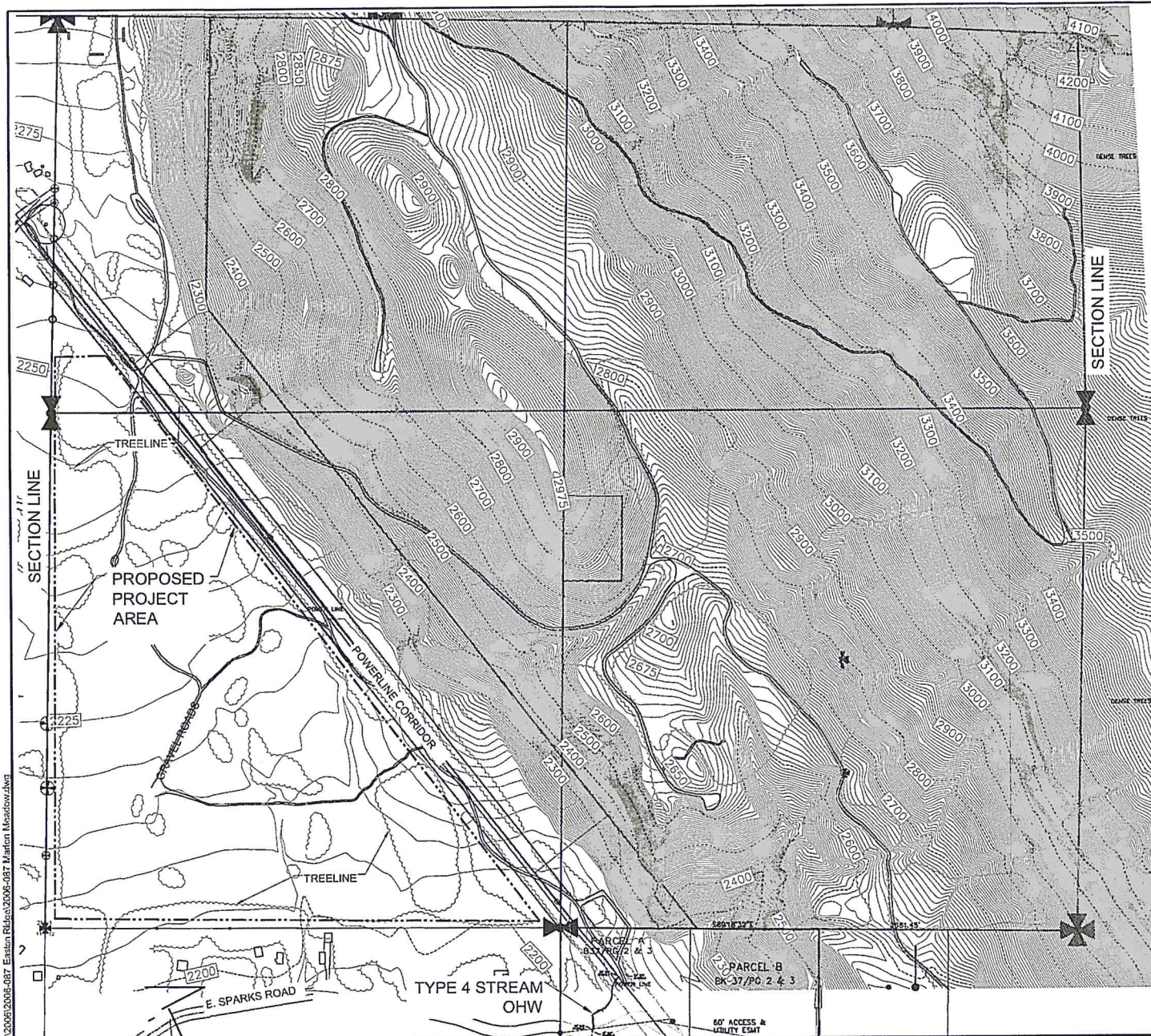


RAI PROJECT: 2006-087-003

DATE: OCT. 14, 2016

DRAWN BY: AC PM: CW

BASE INFORMATION: SURVEY & SITE PLAN
ENCOMPASS ENGINEERING & SURVEYING
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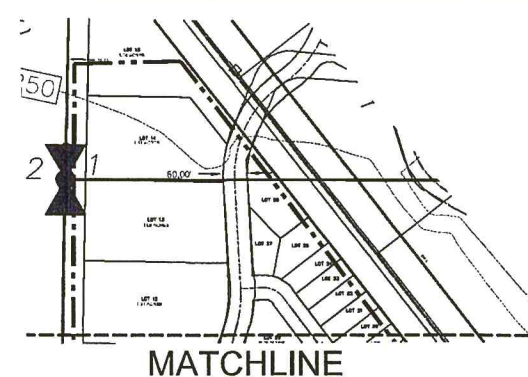
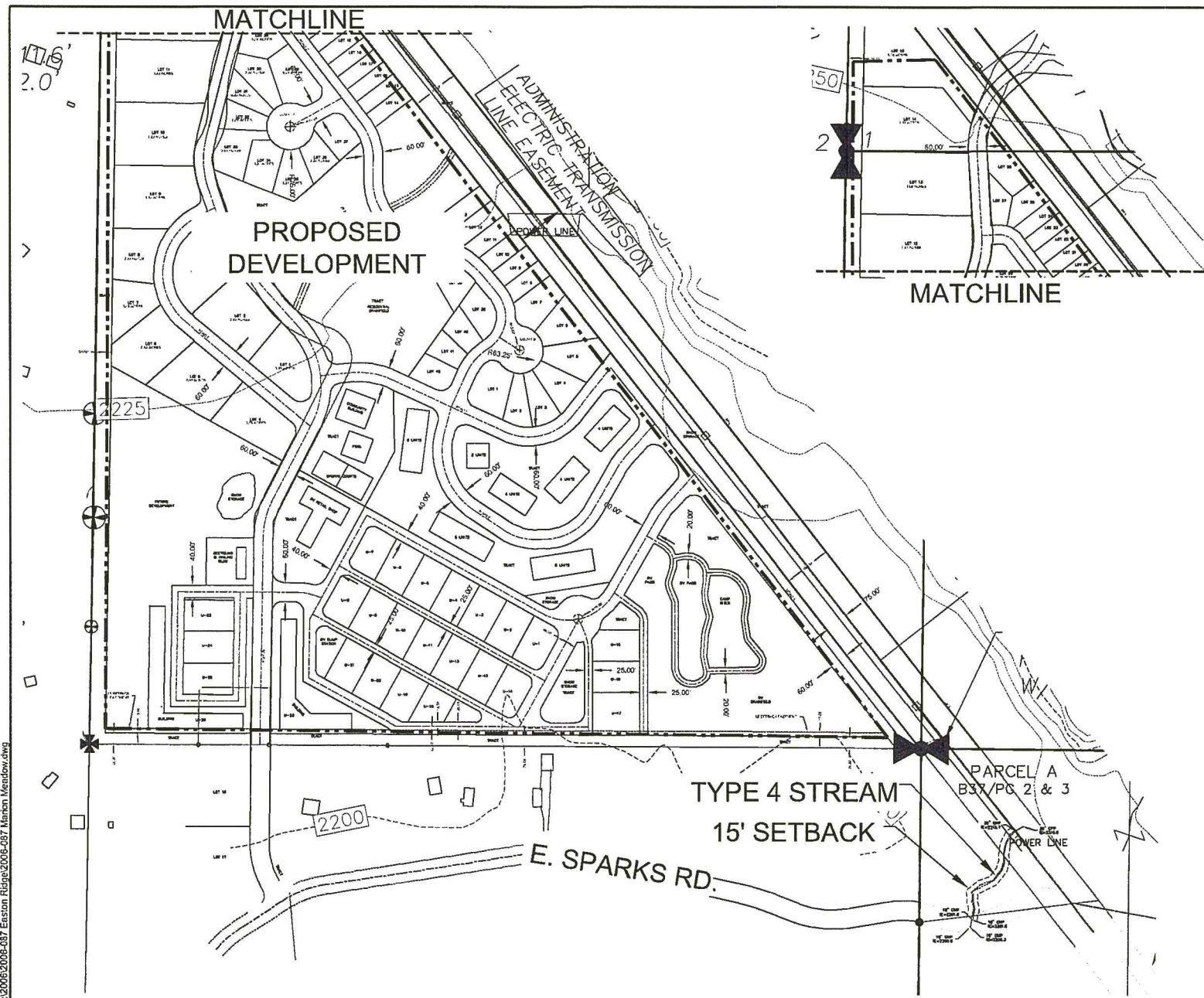
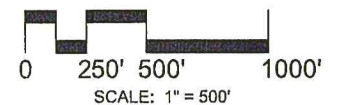


FIGURE 5
 MARTENS ENTERPRISES, LLC
MARIAN MEADOWS
 STREAM & WILDLIFE ASSESSMENT UPDATE
 SITE PLAN

LEGEND

- EXISTING CONTOURS
- TYPE 4 STREAM ORDINARY HIGH WATER (OHW)
- 15' STREAM SETBACK



RAI PROJECT: 2006-087-003

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