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RE: Biological survey report with specific biological assessments of areas of unpermitted construction and areas of short-term rentals and events and outlines of restoration and mitigation required on the 54722 Highway 1 (Wind and Sea) Property, Big Sur, California 93920. APN: 421-011-010, PLN200097, Citation 16CE00201.

Dear Ms. Jensen:

My surveys of the 54722 Highway 1 (Wind and Sea) Property were conducted on September 1, 2023 and November 29, 2023. Chris Gourlay, project consultant, provided maps and aerial photographs for the property. He met with me on the property and gave me an orientation of the characteristics of the project and the specific project tasks.

THE PROPERTY AND PROJECT

The 54722 Highway 1 Property is 5.8 acres in size and roughly square in shape, located between the shoreline and Highway 1. The project tasks are: providing a biological assessment for citation 16CE00201 associated with PLN200097 to obtain after-the-fact permits for conversion of a garage into habitable space, tubs, a sauna, an outdoor patio/amphitheater area, two decks and grading.

ENVIRONMENTAL OVERVIEW

Four plant communities are dominant on the project areas of the 54722 Highway 1 Property. Using the terminology of the California Department of Fish and Wildlife's Preliminary Descriptions of the Terrestrial Natural Communities of California by Robert F. Holland, 1986, and A Manual of California Vegetation, Second Edition by Sawyer, Keeler-Wolf and Evans, 2009, these communities are best classified as northern coastal scrub, central coastal scrub, non-native grassland and coast live oak forest, listed in order of decreasing areas of coverage. These plant communities are in a largely natural state over the undeveloped portions of the property, although disturbances associated with development of specific areas in the past at different times has resulted in an expansion of the area occupied by non-native grassland.

Some plants characteristic of the northern mixed chaparral plant community, Hoover's manzanita (*Arctostaphylos hooveri*) and Carmel ceanothus (*Ceanothus thyrsiflorus* var. *griseus*), were observed on the property but they appear to have been planted. The previous biological survey report for the property prepared by Jeff Norman and submitted in 1998 does not mention the manzanita or the ceanothus that I observed on the property on my surveys. Project consultant Chris Gourlay stated that Carmel ceanothus was planted on the property in 2007.

SENSITIVE HABITAT

No sensitive habitat occurrences are indicated to be present on or near the 54722 Highway 1 Property on the most recent California Department of Fish and Wildlife Natural Diversity Data Base records for the Partington Ridge Quadrangle and surrounding area.

No sensitive habitat was observed on the project area of the 54722 Highway 1 Property. The closest areas of sensitive habitat to the project area are riparian habitat along the margins of Buck Creek approximately one-half mile to the north of the property and Hot Springs Canyon approximately one-half mile to the south of the property and the rocky intertidal habitat along the shoreline on the property.

100 feet is the minimum setback distance of developments from environmentally sensitive habitat recommended by Monterey County Planning Services and the closest areas of riparian habitat and rocky intertidal habitat are well over 100 feet away from the closest developments on the property. The major canyon to the south of the project area is immediately below some areas of development, however, and measures to ensure that construction related debris does not enter this canyon must be implemented to protect any ephemeral aquatic habitat in the canyon bottom and to protect the rocky intertidal habitat downstream as well. Measures must also be implemented to ensure that construction related debris does not enter the drainage on the north side of the property containing area A6: Outdoor Deck 2 to protect the rocky intertidal habitat downstream from it and measures must also be implemented to ensure that construction related debris is not allowed to fall towards the coastline from any developments near the edges of the coastal bluffs on the property.

Mitigation for the loss of environmentally sensitive habitat is usually to restore at least twice the amount of the sensitive habitat that was lost, usually in the area where it was located prior to its loss.

SENSITIVE PLANT SPECIES

One sensitive plant species was observed on my survey of the 54722 Highway 1 Property. This plant is Hoover's manzanita (*Arctostaphylos hooveri*). Hoover's manzanita is shrub that is endemic to California and has a California rare plant rank of 4.3, which is for species that have limited distributions. A few individuals of this plant were observed on the project area and, as mentioned above, there is a strong probability that they were planted. The previous biological survey report for the property submitted in 1998 does not mention the manzanitas or the Carmel ceanothus (*Ceanothus thyrsiflorus* var. *griseus*) observed on the property on my surveys. No occurrences for sensitive plant species are indicated on or adjacent to the 54722 Highway 1 Property from California Department of Fish and Wildlife Natural Diversity Data Base records for the Partington Ridge Quadrangle and surrounding area.

The closest records to the project site for sensitive plant species that could potentially exist in the habitats present on the 54722 Highway 1 Property as indicated on the California Department of Fish and Wildlife Natural Diversity Data Base records for the Partington Ridge Quadrangle and surrounding area are for the following species:

- Hutchinson's larkspur (*Delphinium hutchinsoniae*). This Monterey County endemic perennial wildflower has a California rare plant rank of 1B.2, which is for moderately endangered species.
- Jolon clarkia (*Clarkia jolonensis*). This Monterey County endemic annual wildflower also has a California rare plant rank of 1B.2, which is for moderately endangered species.
- Arroyo Seco bush mallow (*Malacothamnus palmeri* var. *lucianus*). This shrub, endemic to Monterey County, also has a California rare plant rank of 1B.2, which is for moderately endangered species.
- San Luis Obispo sedge (*Carex obispoensis*). This California endemic perennial herbaceous grasslike rhizomatous plant also has a California rare plant rank of 1B.2, which is for moderately endangered species.
- Cone peak bedstraw (*Galium californicum* ssp. *luciense*). This California endemic perennial herbaceous plant has a California rare plant rank of 1B.3, which is for slightly endangered species.

- Santa Lucia bedstraw (*Galium clementis*). This California endemic perennial herbaceous plant also has a California rare plant rank of 1B.3, which is for slightly endangered species.
- Santa Lucia fir (*Abies bracteata*). This California endemic tree also has a California rare plant rank of 1B.3, which is for slightly endangered species.
- Tear drop moss (*Dacryophyllum falcifolium*). This California endemic moss also has a California rare plant rank of 1B.3, which is for slightly endangered species.

With the exception of Santa Lucia fir, the occurrences for these species are over two miles from the 54722 Highway 1 Property.

The location for Santa Lucia fir is approximately one mile east of the 54722 Highway 1 Property, upstream in Hot Springs Canyon. Santa Lucia fir is not present along the immediate coast and is unlikely to be present in the habitats present on the 54722 Highway 1 Property. With the exception of Hutchinson's larkspur and Jolon clarkia, the habitat requirements of these sensitive plant species would largely exclude them from being present on the 54722 Highway 1 Property.

These sensitive plant species and others known from the greater local area were searched for on my surveys and no evidence for their presence was observed.

SENSITIVE ANIMAL SPECIES

No sensitive animal species were observed on my survey of the 54722 Highway 1 Property. Two occurrences for a sensitive animal species are indicated on or adjacent to the 54722 Highway 1 Property from California Department of Fish and Wildlife Natural Diversity Data Base records for the Partington Ridge Quadrangle and surrounding area.

There are two records for Smith's blue butterfly (*Euphilotes enoptes smithi*) on or adjacent to the property. Smith's blue butterfly is one of the few sensitive animal species in the local area that could potentially exist in the habitats present on the 54722 Highway 1 Property. Smith's blue butterfly is federally listed as endangered. None of these butterflies were observed on the property. The presence of this species in an area is often indicated by the presence of sea cliff buckwheat or dune buckwheat (*Eriogonum parvifolium*), and coast buckwheat (*Eriogonum latifolium*), its host plants. One individual of sea cliff buckwheat was observed near the project areas of the property on my survey.

Another sensitive animal species in the local area that could potentially exist in the habitats present on the 54722 Highway 1 Property is the monarch butterfly (*Danaus plexippus*). The monarch butterfly is a candidate for federal listing, is classified as endangered by IUCN and is classified as sensitive by the United States Forest Service. It is included in the California Natural Diversity Data Base records for the Partington Ridge Quadrangle and surrounding area, in part, due to its vulnerability during its winter roosting period in trees along the coast of central California. I know of no "butterfly trees" in the immediate local area and it is unlikely that any trees on the 54722 Highway 1 Property are winter roosting sites. Monarch butterflies, however, were observed foraging and feeding on the property.

There are a few records for California red-legged frog (*Rana draytonii*) in creeks on the seaward side of the coast ridge in the general area. California red-legged frogs are federally listed as threatened and a state species of special concern. The closest records for California red-legged frogs in the local area are over three miles from the 54722 Highway 1 Property. Aquatic environment necessary for breeding habitat for this species is not present on or close to the property. These amphibians move into upland habitats during the dry season and can be found up to one mile or more from the nearest aquatic habitats.

THE NATURAL HABITATS OF THE VIOLATION RELATED IMPACT AREAS

Biological consultant Jeff Norman conducted the biological assessment of the 54722 Highway 1 Property in 1995 and concluded that the dominant plant community on 100 percent of the project area of the property was northern coastal scrub. I came to a somewhat similar conclusion after surveying the project area and neighboring undeveloped habitat. The difference is that large areas of continuous northern coastal scrub habitat are common north of Point Sur (which is considered to be the southern limit for the occurrence of this plant community) and it becomes less continuous and more mixed with central coastal scrub in the coastal portions of the Santa Lucia mountain range south of Point Sur. This is where 54722 Highway 1 is located and what I observed is a dominance of northern coastal scrub but with considerable central coastal scrub in drier, more exposed areas. This is what guided my recommendations for perennial shrubs for restoration below.

RESTORATION PLANTING RECOMMENDATIONS FOR VIOLATION RELATED IMPACT AREAS

In this list of potential plants to use for restoration on impacted areas on the 54722 Highway 1 Property, I took into consideration four factors for the plants on the list:

1. Native to the property or to the general surrounding area
2. Erosion control potential in this environment
3. Survivability in this environment
4. Aesthetics

I started with the attached list of the plants observed this area of the property on my survey and chose ones observed to be meeting all of these four criteria. I also chose some that were not observed on the property but are known to occur nearby from my observations and from California Department of Fish and Wildlife Natural Diversity Data Base records. I made the list long enough to provide diversity and aesthetics and for substitutions if some are hard to obtain. Illustrations of and ranges for these plant species can be obtained at www.calflora.org and at www.calscape.org.

LIST OF SOME SUITABLE PLANTS FOR GENERAL USE IN THE RESTORATION OF THIS AREA

Seacliff buckwheat (*Eriogonum parvifolium*). This shrub is scattered on the more steep and rugged portions of the property and was not observed on the impacted areas. This is the type of habitat where it commonly occurs. Seacliff buckwheat is a host plant for the federally endangered Smith's blue butterfly (*Euphilotes enoptes smithi*), which has been observed on or close to the 54722 Highway 1 Property from California Department of Fish and Wildlife Natural Diversity Data Base records. As a general mitigation for the developmental impacts on the property, Jeff Norman recommended planting 160 seacliff buckwheat plants as mitigation for loss of habitat for this plant due to the development. My recommendation for planting 90 plants differs from this because my estimation of the habitat for this plant that was lost due to the development is considerably less.

Lizard tail or seaside wooly sunflower (*Eriophyllum staechadifolium*). This medium sized shrub is common on the property including around some of the project areas. It has attractive yellow flowers May through August.

Deerweed (*Acmispon glaber*). This small to medium sized shrub is common on the property including around some of the drier portions of the project areas. It has yellow flowers March through August. It has small leaves and loses some of them and may look somewhat lifeless in the winter portion of the year.

Carmel Ceanothus (*Ceanothus griseus* var. *horizontalis*) also known as (*Ceanothus thyrsiflorus* var. *griseus*), specifically, the Ceanothus 'Yankee Point' cultivar. I don't know whether any individuals of this plant were native here. The plants that I observed appear to be the more prostrate 'Yankee Point' cultivar, which would indicate that it was planted. It was not listed as growing on the property in Jeff

Norman's 1998 biological survey report for the property. It is the most abundant *Ceanothus* planted on the property and may have liberally reseeded itself in this very favorable environment for it. This shrub occurs along the Big Sur coast and in the local area in similar conditions to the project areas and is a well suited *Ceanothus* for this restoration. It is a medium sized shrub, vigorously growing in low mounds.

Dwarf ceanothus (*Ceanothus dentatus*). Dwarf ceanothus is the other *Ceanothus* observed on the property and happens to be one of the most beautiful plants in the genus. It is a small to medium sized shrub, somewhat smaller than other *Ceanothus* species, with small dark green leaves and when blooming is covered with abundant clusters of long lasting vivid dark blue flowers. It is a good plant for slope stabilization.

Bear berry manzanita or Kinnikinnick (*Arctostaphylos uva-ursi*). I did not observe this manzanita on the 54722 Highway 1 Property, but I have observed it on the Big Sur coast in similar environments. This is a good manzanita for the restoration areas. This is a small shrub that is an attractive, low ground cover that roots as it spreads. *Arctostaphylos* 'emerald carpet' is one of its hybrids and is also a good choice.

As mentioned previously, A few individuals of Hoover's manzanita, likely planted, were observed on the project area. This large manzanita is not well suited for the limited restoration requirements on the impacted areas of the property.

California coffeeberry (*Rhamnus californica*). This is an abundant medium to large sized shrub in north coastal scrub on the property. It has bright green leaves and abundant berries that color change from green to yellow to red to black as they mature.

Red flowering currant (*Ribes sanguineum*). This is a deciduous medium sized shrub with clusters of red to pink fragrant flowers in winter and spring followed by dark purple edible fruits. It is native to the local area and is shade tolerant. Hummingbirds are attracted to the flowers, other birds are attracted to the fruits, and it is a host plant for several butterfly species.

Prostrate coyote brush (*Baccharis pilularis*). Coyote brush is present but uncommon on the project site. The prostrate varieties of coyote brush, like *Baccharis* 'pigeon point' are low growing varieties coyote brush best adapted to rugged, windy coastal areas and would be a good addition to the restoration areas.

Common yarrow, white yarrow or queen anne's lace (*Achillea millefolium*). This small herbaceous evergreen plant is scattered on the restoration area. I have found it to be very adaptable, attractive, and a good lower level of plant structure among shrubs. It will grow best in the moister areas.

Douglas' iris (*Iris douglasiana*). This is our native iris. It is scattered around the project area. I have found it to be another very adaptable, attractive plant. It has attractive purple flowers and it makes a good lower level of plant structure among shrubs.

Sawtooth goldenbush (*Hazardia squarrosa*). This smaller shrub is scattered on the site and well adapted to somewhat drier portions of the area. It is attractive and has yellow flowers June through October.

Douglas' bush lupine (*Lupinus albifrons* var. *douglasii*). This attractive small to medium sized bush is widely scattered on the site. It is well adapted to this environment and has blue-purple spikes of flowers April through July.

California poppy (*Eschscholzia californica*). This plant is rare on the property but is often planted in the local area as the coastal variety *Eschscholzia californica maritima*. This is a good, low herbaceous plant

with colorful flowers February through September) that grows easily (easier than Indian paintbrush – seaside painted cup) and can be perennial in addition to being annual.

Sea pink or thrift (*Armeria maritima*). This small herbaceous plant was not observed on the property but occurs in the local area. It is well adapted to the environment and attractive with pink flowers in May and June. The dried flowers last a long time on the stems. It is a good plant for lower level of plant structure among larger shrubs.

California blackberry (*Rubus ursinus*). This aggressive vine is common on the site and is one of the better plants for site stabilization because of its vigorous growth of long, ground hugging stems.

Sticky monkey flower (*Mimulus aurantiacus*). This medium sized shrub is scattered on the property and blooms with orange flowers March through August. Cultivars with other flower colors are available.

Foothill sedge (*Cyperus tumulicola*). This attractive perennial grass-like plant is scattered on the site. It is a good ground cover and soil binder for steep slopes.

Yerba buena (*Clinopodium douglasii*). This low growing, fast spreading native mint is a great ground cover around areas where people are walking. It won't trip people and it will tolerate being stepped on.

Hummingbird sage (*Salvia spathacea*). This attractive small to medium sized perennial plant was not observed on the property, but there are records for it nearby. It has abundant magenta flowers that attract hummingbirds and it spreads to form clumps. It prefers shady sites.

California fuchsia (*Epilobium canum*). This perennial plant was not observed on the property, but there are records for it nearby. This is one of California's most beautiful plants with its red flowers and greyish foliage. It is adaptable and does occur on rugged coastal cliffs in our general area. 'Burt's Bluff' comes from such an environment and would be the best choice for the restoration area.

NUMBERS OF PLANTS TO INSTALL

Because of the differences in the sizes and environmental specifics of the individual restoration areas, an accurate general calculation of a set number of plants per specific square footage area cannot be made. I did make specific recommendations for number of plants per square footage in some of the restoration areas. In restoration areas where recommendations were not made, I recommend deciding on which plants to use and then looking over the area and deciding how many plants for specific habitat areas to install. Of course, the larger the plant, the fewer plants per area would be required.

INVASIVE NON-NATIVE PLANTS TO REMOVE

Before restoration planting, invasive, non-native plants growing on the restoration areas must be removed. I observed the following invasive non-native plants on the property on my surveys: castor bean (*Ricinus communis*), cape ivy (*Delairea odorata*), New Zealand spinach (*Tetragonia tetragonoides*), garden nasturtium (*Tropaeolum majus*), pampas grass (*Cortaderia jubata*), and Kikuyu grass (*Pennisetum clandestinum*). Non-invasive, non-native plants like pride of Madeira (*Echium candicans*), some of which were observed growing wild on the property, may be retained in the project area if desired. Monterey pine (*Pinus radiata*), Monterey cypress (*Hesperocyparis macrocarpa*) and Eucalyptus (*Eucalyptus* sp.) are trees not native to the property and can also be considered invasive. If desired, removal of any of them would be beneficial to the restoration process but is not mandatory.

EROSION CONTROL SEED MIX FOR THE PROPERTY

The seed mix that I recommend for erosion control cover in the restoration areas on the property is this all native one:

- 20% Red fescue (*Festuca rubra*)
- 20% Coast Range Melic (*Melica imperfecta*)
- 20% Six Week Fescue (*Vulpia microstachys*) a.k.a. *Festuca microstachys*
- 10% Blue Wild rye (*Elymus glaucus*)
- 10% California Brome (*Bromus carinatus*)
- 10% Leafy Bent-Grass (*Agrostis pallens*)
- 10% Tomcat Clover (*Trifolium willdenovii*)

ANNUAL WILDFLOWER SEED MIX FOR THE PROPERTY

Seeds of the following plants native to this general area can be broadcast over any areas where additional annual spring through summer color is desired.

- Baby blue eyes (*Nemophila menziesii*)
- Birds foot (*Gilia tricolor*)
- Blue Eyed Grass (*Sisyrinchium bellum*)
- California buttercup (*Ranunculus californicus*)
- California poppy (*Eschscholzia californica*)
- Checker bloom (*Sidalcea malviflora*)
- Chinese houses (*Collinsia heterophylla*)
- Fare-well to spring (*Clarkia amoena*)
- Hedge nettle (*Stachys bullata*)
- Johnny jump up (*Viola pedunculata*)
- Miniature lupine (*Lupinus bicolor*)
- Parry's larkspur (*Delphinium parryi*)
- Seaside daisy (*Erigeron glaucus*)
- Seaside painted cup (*Castilleja latifolia*)
- Sky Lupine (*Lupinus nanus*)
- Sun cup (*Camissonia ovata*)

LIST OF SPECIFIC PERENNIAL PLANTS FOR EROSION CONTROL ON THE PROPERTY

Ground Covers for soil retention

- Common yarrow (*Achillea millefolium*)** - full sun or part shade; spreads
- Dwarf Coyote Brush (*Baccharis pilularis*)** 'Twin Peaks' or 'Pigeon Point'
- Carmel Ceanothus (*Ceanothus thyrsiflorus* var. *Griseus*)** 'Yankee Point'
- California Fuchsia (*Epilobium canum* ssp. *canum*)** and (*Epilobium canum* ssp. *latifolium*)

Small shrubs for soil retention and limited hillside stabilization

- California Sagebrush (*Artemisia californica*)** - super-tough plant for dry spots
- Brickell Bush (*Brickellia grandiflora*)** - easy to grow and tough; good for partially shaded dry spots
- Seacliff Buckwheat (*Eriogonum parvifolium*)**, other buckwheats also
- Matilija Poppy (*Romneya coulteri*)** - tough root system spreads by rhizomes
- Wild Rose (*Rosa californica*)** - likes moist, tolerates dry

Large shrubs and trees for hillside stabilization

Osoberry (*Oemleria cerasiformis*) - great in disturbed areas, rapid growth, thicket-forming suckering habit

Manzanitas (*Arctostaphylos spp.*) - local species and hybrids. Very deep root systems

Ceanothus (*Ceanothus spp.*) - local species and hybrids

Toyon (*Heteromeles arbutifolia*) – red berries, adaptable to wet or dry, sun or shade

Blue elderberry (*Sambucus nigra ssp. caerulea*) - takes moisture or drought

SOURCES FOR PLANTS AND SEEDS

There are a number of native plant nurseries in the central coast area that are good sources for native plants and native plant seeds and seed mixes. I know and have worked with and can recommend Central Coast Wilds of Santa Cruz (831-459-0656, centralcoastwilds.com), Rana Creek Nursery in Carmel Valley (831-659-3820, ranacreekdesign.com), and Yerba Buena Nursery in Half Moon Bay (650-851-1668, yerbabuenanursery.com). In addition, Pacific Coast Seeds in Livermore (925-373-9417, pcseed.com) can supply a wide diversity of native plant seeds and seed mixes, and Suncrest Nursery in Watsonville (800-949-5064, 831-728-2595, suncrestnurseries.com) is a wholesale nursery with an extensive selection of local native plants. Since Suncrest Nursery is wholesale only, it should only be investigated as a last resort. Please let me know if it is, indeed, your last resort after contacting others, and I will see if there could be any avenues for you to purchase from them.

These nurseries are good sources for native plants and seeds of local origin including erosion control seed mixes and plantings and for recommendations on planting and maintaining plants. Native grass and rice straw mulches, wattles and hay bales are recommended and may also be obtained from these sources.

SEED PLANTING SUGGESTIONS

The native plant seed mixes should be applied in the late fall or early winter after the site has received sufficient moisture to wet the top 1/2 inch of the soil profile. Hopefully, this will be close to October 15, around the start of the next rainy season. In the event that regular rains do not sufficiently irrigate the grass to germinate and develop, supplemental water will have to be applied as needed. Bare ground will be, as much as possible, cultivated and raked to a moderately fine consistency prior to seed distribution. Vegetated areas will be cleared of as much non-native vegetation as possible prior to seeding. Final tracking of the site should be done perpendicular to slopes. The tracks will help reduce erosion and help retain seed and seed moisture.

The seed will be evenly hand broadcast across the entire area and, as much as possible, raked in to cover the seed with 1/4-1/2 inch of soil. Native grass or rice straw hay should be used as mulch and for rolls or wattles used in erosion control. Mulching with native grass straw or rice straw and the use of jute netting and/or straw/coconut fiber mats is recommended to retain moisture and minimize erosion as much as possible. Hydroseeding (also known as hydromulching) may alternatively be used to protect the seed from drying out or washing away.

There are benefits to hydroseeding. As straw breaks down it can leach nitrogen from soil. By contrast, when wood fiber mulch, as in hydromulch, breaks down, it will leach much less nitrogen and will actually add to the humus content, creating a healthier underlayer for grasses. Hydromulch is far superior for protecting against soil erosion. On its own, the wood fiber that can be included in a hydroseeding slurry will significantly inhibit soil erosion, but hydroseeding also allows for the addition of a tackifier, a kind of organic "glue" that helps to bind the mulch to the underlying soil. So, while mats and straw can help to some degree in inhibiting soil erosion on slopes, a hydroseed crust will perform much better. As the application hardens, many potential erosion problems can be well controlled until the seed germinates, grows and establishes itself as a permanent erosion inhibitor. Loss from animal consumption of seeds will also be greatly reduced. Combined with the effects of the superior mulching, the fertilizer that is included in a hydroseeding slurry will do much to promote excellent growth of grasses. When all factors are taken into consideration, hydroseeding may be found to actually be cost-comparable to broadcast seeding.

MITIGATION FOR LOSS OF SMITH'S BLUE BUTTERFLY HABITAT

Seacliff buckwheat is the host plant for Smith's blue butterfly and planting more of this plant is the prime way to mitigate for habitat loss for this species. Were many seacliff buckwheat plants lost through the amount of development that has occurred on the property? Probably not, since seacliff buckwheat tends to be most common in thin rocky soil and sandy soils, often on slopes. Thin rocky soils are present on the property but are mostly closer to the coast and on more sloping areas than where the existing developments are located. This is the type of area where seacliff buckwheat was observed on my survey.

Based on the numbers of seacliff buckwheat that I observed in habitats in the immediate area similar to those of the developed areas of the property, I estimate that approximately 30 plants were lost to the development. 3:1 mitigation for this loss gives us 90 plants to restore to the property. I recommend the planting of these 90 seacliff buckwheat plants primarily in and around restoration areas 4 and 5, as described below.

PROJECT AREAS AND THEIR RESTORATION AND MITIGATION PLANTING

There are six restoration project areas. They are associated with the areas where the violations were recorded.

Area A1: Garage

The violation here was the unpermitted construction of the garage. No specific area of biological restoration is stated in the violation, however, the original permit issued in 1999 for the house and garage requested the planting of seacliff buckwheat.

My recommendations for restoration of seacliff buckwheat restoration for this area are to plant them in areas where they are likely to have the best environments for survival, which would be around the restoration areas of Areas A4 and A5. The environment around the garage is not optimal for their survival and it is unlikely that many were in this area prior to its development.

Area A2: Tubs

The violation here was the installation of outdoor tubs and a shower without proper permits. A specific area of 600 square feet below the tubs is designated in the violation. The recommended restoration is to revegetate this area with native plant species and maintain it as a butterfly/bee/hummingbird pollinator zone. This has already been implemented to a degree, but mostly with non-native plants.

My recommendations for restoration in this area are to additionally plant native plants characteristic of the northern coastal scrub and central coastal scrub plant communities that were formerly present in this area. Since much of the restoration area has already been revegetated with mostly non-natives, a planting spacing of one plant per 36 square feet, planting 6 feet apart, will be used. That gives us 16 native shrubs that should be installed within this area. The area immediately below the tubs is more sparsely restored at this point and more of the plants can be concentrated in this area beyond where they would interfere with comfort of those using the tubs. The list of plants can be used for selection of plants and ones with flowers that are compatible with a butterfly/bee/hummingbird pollinator zone aspect can be selected for use. I recommend including California fuchsia, hummingbird sage, red flowering currant, deerweed, dwarf ceanothus and sticky monkey flower in the plantings. The annual wildflower seed mix for the property should be broadcast over this restoration to provide additional annual plant flowers for this area. The erosion control seed mix is not a priority for this area because of its gentle slopes.

Area A3: Sauna

The violation here was the installation of a sauna without proper permits. No specific area of biological restoration is stated in the violation but it is stated that the surrounding vegetation is primarily native and additional planting of native vegetation is suggested.

I observed the sauna area to be actually vegetated mostly by non-native shrubs and trees and heavily shaded. My recommendations for restoration in this small area are to additionally plant 6 shade tolerant native plants characteristic of the northern coastal scrub and central coastal scrub plant communities that were formerly present in this area. I recommend including the shade tolerant hummingbird sage, red flowering currant, Douglas' iris and sticky monkey flower in the plantings.

Area A4: Outdoor Patio

The violation here was construction without proper permits. Grading and construction of retaining walls and a gas fire pit within 100 feet of the edge of a coastal bluff occurred in this area. A specific area, 3600 square feet in size below the patio and along the cliff is designated for restoration with native plants. Minimal watering requirements are mandatory here to prevent additional erosion along the edge of the cliff. This is an area designated for mitigation planting of seacliff buckwheat.

The northern approximately two-thirds of the designated restoration area is clear of brush, the rest of it is mostly northern coastal scrub vegetation containing a lot of Carmel Ceanothus and California blackberry. This cleared area is relatively level and approximately 1850 square feet in area. From Google Earth historical imagery, this area appears to have been cleared in 2019.

The first task in the restoration of this area is to properly install plastic sheet barrier fencing (silt/exclusion fencing) between the restoration area and the floor of the drainage to the north before restoration activities begin. It should have no gaps and extend at least 15 feet, curving upward, beyond each end of the restoration area. This will prevent loose silt and soil from the restoration area from reaching the floor of the drainage and also keep small animals from entering the area of ground disturbance as well. Particles of silt and soil suspended in waters can seriously degrade the quality of wetland and aquatic environments and could seriously impact the ephemeral stream environment on the floor of the drainage near its end at the coastline and the rocky intertidal environment further downstream. This silt/exclusion fencing will remain in place until the end of the rainy season following its installation to ensure that any loose soil will have been stabilized by the growth of the erosion control herbaceous plants in the seed mix that was broadcast over the disturbed ground areas.

My recommendations for restoration in this area are to restore the cleared portion of the area with shrubs native to the local area and that occur in northern coastal scrub habitat. Since this restoration area is devoid of most perennial plant vegetation, a planting spacing of one plant per 25 square feet, planting 5 feet apart, will be used. That gives us 74 native shrubs that should be installed within the more level portions of the cleared area. These can be chosen from the list of plants listed above.

Along with this, 25 of the 90 seacliff buckwheat plants to be planted as mitigation for what is estimated to have been lost to development on the property will be planted along the approximately 80 feet of the northern rim of the cleared portion of the restoration area. They should be planted on rockier, thinner soil of the beginning of the slope into the drainage. This is their preferred habitat. They should be planted approximately 4 feet apart, staggered in two rows where possible, on the sloping ground. Some of these plants can also be planted on the sloping ground along the southern rim of the uncleared portion of the restoration area, but this area is more difficult to access. The seed mix that I recommend for erosion control cover in the restoration areas on the property will be used for erosion control on these slope areas.

Area A5: Outdoor Deck 1

The violation here was construction without proper permits. Construction of the deck within 100 feet of the edge of a coastal bluff occurred in this area. A specific area, approximately 5000 square feet in size below the deck where a trail was previously is designated for restoration. The recommended restoration includes the removal of non-native invasive plant species, such as pampas grass and castor bean, from the drainage below. This is an area designated for mitigation planting of seacliff buckwheat.

The restoration area here is on a moderate to in some places, steep, south facing slope that has been seriously degraded in some places by growths of invasive non-native pampas grass and castor bean.

As for Area A4, the first task in the restoration of this area is to properly install plastic sheet barrier fencing (silt/exclusion fencing) between the restoration area and the floor of the drainage before restoration activities begin. It should have no gaps and extend at least 15 feet, curving upwards, beyond each end of the restoration area. This will prevent loose silt and soil from the restoration area from reaching the floor of the drainage and also keep small animals from entering the area of ground disturbance as well. Particles of silt and soil suspended in waters can seriously degrade the quality of wetland and aquatic environments and could seriously impact the ephemeral stream environment on the floor of the drainage and the rocky intertidal environment further downstream. This silt/exclusion fencing will remain in place until the end of the rainy season following its installation to ensure that any loose soil will have been stabilized by the growth of the erosion control herbaceous plants in the seed mix that was broadcast over the disturbed ground areas.

The second task in the restoration of this area is the removal of the invasive non-native plants on this slope, from top to drainage bottom, south of the house, south of Outdoor Deck 1 and south of the ridge to the southwest of Outdoor Deck 1 out to the end of the area of development.

Following this, the approximately 5000 square foot restoration area on the slope south of the house and south of Outdoor Deck 1 will be planted. Since some native plants are already present on this slope, a planting spacing of one plant per 49 square feet, planting 7 feet apart, will be used. That gives us 102 shrubs to be planted here. These plants can be chosen from the list of plants for general use on the property on much of this slope, but on steeper, rockier areas, plants can be chosen from the list of specific perennial plants for erosion control on the property. The seed mix that I recommend for erosion control cover in the restoration areas on the property will be used for erosion control throughout this area.

Along with this, 65 of the 90 seacliff buckwheat plants to be planted as mitigation for what is estimated to have been lost to development on the property will be planted along the approximately 100 feet of the rim above the restoration area and along unshaded portions of the rim on either side of the restoration area. They should be planted on rockier, thinner soil close to the top of the beginning of the slope into the drainage. This is their preferred habitat, especially on this south facing slope. They should be planted approximately 4 feet apart, staggered in two rows, where possible, on the sloping ground. The seed mix that I recommend for erosion control cover in the restoration areas on the property will be used for erosion control here also.

Area A6: Outdoor Deck 2

The violation here was grading and construction without proper permits. It is stated that Impacts occurred here from grading within environmentally sensitive habitat. An area of approximately 800 square feet below the deck and an area of approximately 1750 square feet in pathway areas around the deck are designated for restoration. The recommended restoration is the removal of non-native invasive plant species, such as poison hemlock, from the area below the deck and removal of non-native invasive plant species and restoration with native plant revegetation for the pathway areas around the deck.

The trail to the deck and the deck are both in thick northern coastal scrub vegetation that is some of the most uniform and most continuous on the property. This is probably related to the topography in this area which is a broad, shallow drainage with deeper soil than on most of the rest of the property which contains more steeper and more exposed slopes. Although this is a drainage, I did not observe what could be defined as any type of corridor of riparian vegetation along the bottom of the drainage. This is because running water would be a very rare occurrence in this portion of this drainage. Arroyo willows, which are a plant frequently associated with riparian vegetation, however, are in this drainage and in the deeper drainage on the south side of the property. They are present in thick growths on the slopes of the drainages, but are not very common in the bottoms of the drainages. This is because a lot of the water available to the plants on this property comes from fog drip and as the fog in the coastal winds ascends the coastal bluffs, it has greater contact with the ground on the higher slopes and bluff tops and delivers more water here in the form of fog drip, which maintains these willows as well as maintaining the lushest, thickest northern coastal scrub. Of course, the more coastal portions of deeper drainages that extend further into the mountains are likely to have streams of flowing water and riparian corridors along their streams. But that is not the case with the short and comparatively shallow drainages on this property.

So, the vegetation that was impacted by the construction of Outdoor Deck 2 was not riparian habitat which would be classified as sensitive habitat. Although it is thick northern coastal scrub vegetation, it nonetheless contains a considerable amount of invasive non-native plants. Some of these invasive non-native plants, such as poison hemlock (*Conium maculatum*), fennel (*Foeniculum vulgare*) and Kikuyu grass (*Pennisetum clandestinum*) are present mostly because of disturbances created by the development, and some, such as sticky ageratina (*Ageratina adenophora*), cape ivy (*Delairea odorata*) and Italian thistle (*Carduus pycnocephalus*) also typically occur in most unimpacted stands of northern coastal scrub in this area.

My recommendations for restoration in this area are to first clear the areas around the deck and around the steps leading down to the deck of as many invasive non-native plants as possible and then to restore the cleared portions of the area with shrubs native to the local area and that occur in northern coastal scrub habitat. I observed that some clearing has already occurred along the trail. Plants listed in the list of plants for general use on the property will be good choices for most of this area. For the areas immediately around the trail, however, the low growing - ground cover types, such as yerba buena, foothill sedge, common yarrow and sea pink would be good choices since they won't interfere with walking on the trail as they spread into it.

Since the restoration plantings will be implemented in areas that will be largely cleared bare, I recommend a plant spacing of 4 feet apart, which is one plant per 16 square feet. That is 50 plants for the approximately 800 square feet below the deck, and 109 plants for the approximately 1750 square feet in pathway areas around the deck.

The annual wildflower seed mix for the property can be broadcast over the trail restoration to provide additional annual plant flower attractiveness for this area. The erosion control seed mix is not a priority for most of this area because of rather gentle slopes, but should be used selectively in areas with the greatest erosion potential.

The first task in the restoration of this area will also be to properly install plastic sheet barrier fencing (silt/exclusion fencing) before restoration activities begin, but here the silt/exclusion fencing can be installed on the slopes most downhill and downstream from the restoration areas to primarily protect the rocky intertidal environment and the small amount of ephemeral stream channel near the coastal end of this drainage. I did not observe any ephemeral stream channel environment on the floor of this drainage within the restoration areas. Again, it should have no gaps and extend at least 15 feet, curving upward, beyond each end of the restoration area. This will prevent loose silt and soil from the restoration area from reaching biologically sensitive areas will and also keep small animals from entering the area of ground disturbance.

Particles of silt and soil suspended in waters can seriously degrade the quality of wetland and aquatic environments and could seriously impact the ephemeral stream environment on the floor of the drainage near its end at the coastline and the rocky intertidal environment further downstream. This silt/exclusion fencing will remain in place until the end of the rainy season following its installation to ensure that any loose soil will have been stabilized by the growth of the erosion control herbaceous plants in the seed mix that was broadcast over the disturbed ground areas.

SUMMARY OF NUMBERS OF PLANTS AND AMOUNTS OF SEEDS REQUIRED

Total number of native shrubs other than seaciff buckwheat for mitigation to plant = 357

Total number of seaciff buckwheat for mitigation to plant = 90

Total amount of erosion control seed mix = ~11 pounds

Total amount of annual wildflower seed mix = ~4 pounds

MONITORING AND ADDITIONAL WORK

The following monitoring inspections will be conducted on the 54722 Highway 1 Property.

1. Immediately prior to the start of restoration. The installation of the silt fences will be verified and inspected at this time.
2. Within the three months following completion of the restoration plantings
3. One year after completion of the restoration plantings in the spring season.
4. Two years after completion of the restoration plantings in the spring season.
5. Three years after completion of the restoration plantings in the spring season.

These inspections will monitor the planting and survival of plants for restoration. They will also monitor the protection and survival of existing plants on the property. A report on each inspection will be submitted to Monterey County Planning Services.

A spring survey of annual plants will be necessary since sensitive winter growing annual plant species and some spring blooming perennial species were not identifiable at the times of the year of my surveys in September and November. Much of the flora and many of the rare, endangered and threatened plant species occurring in this area are winter and spring growing annual species and some spring blooming perennial species that can only be conclusively identified during the spring season and some of the summer. Jolon clarkia (*Clarkia jolonensis*) and Hutchinson's larkspur (*Delphinium hutchinsoniae*) are two sensitive plant species with occurrences on the coast on the Partington Ridge Quadrangle in habitats that are present on the 54722 Highway 1 Property that can only be conclusively identified during the spring and early summer. This survey can be conducted at the same time as the first monitoring inspection.

CRITERIA FOR SUCCESS

Success of revegetation will be assessed on the basis of percent cover and percent progress towards the establishment of plant community structure, and percent survival of plants expected for the period of time under optimal conditions. Success will be defined as 85 percent or better of optimum time correlated status. Ongoing replacement of any plants that are lost during the monitoring period will ensure that this success criteria is consistently met.

RECOMMENDATIONS ON THE PROJECT

With the successful implementation of the restoration mitigations listed above, impacts to biological values on the 54722 Highway 1 Property will be at a level of insignificance and in compliance with the regulations and standards of Monterey County Planning Services and state and federal agencies concerned with the maintenance of habitat quality and protection of biological resources.

Please contact me if you have any questions.

Best regards,

A handwritten signature in black ink, appearing to read 'Ed Mercurio', written in a cursive style.

Ed Mercurio,
Biological Consultant

**PLANTS OF THE 54722 HIGHWAY 1 PROPERTY, 54722 HIGHWAY 1, BIG
SUR, CALIFORNIA 93920**

**NATIVE AND NATURALIZED VASCULAR PLANTS OBSERVED ON THE
54722 HIGHWAY 1 PROPERTY ON MY SURVEYS****

By Ed Mercurio, Biological Consultant
November 2023

Scientific Name

Common Name

DIVISION PTEROPHYTA

FERNS AND FERN ALLIES

EQUISETACEAE

Equisetum sp.

HORSETAIL FAMILY

Horsetail

DENNSTAEDTIACEAE

Pteridium aquilinum var. pubescens

BRACKEN FERN FAMILY

Western Bracken Fern

DRYOPTERIDACEAE

Dryopteris arguta

WOOD FERN FAMILY

Coastal Wood Fern

DIVISION CONIFEROPHYTA

CONIFERS

CUPRESSACEAE

*Hesperocyparis macrocarpa**

CYPRESS FAMILY

Monterey Cypress

PINACEAE

*Pinus radiata**

PINE FAMILY

Monterey Pine

DIVISION ANTHOPHYTA

FLOWERING PLANTS

CLASS DICOTYLEDONEAE

DICOTS (Two seed-leaved flowering plants)

AIZOACEAE

*Tetragonia tetragonoides**

ICEPLANT FAMILY

New Zealand Spinach

ANACARDIACEAE

Toxicodendron diversiloba

SUMAC FAMILY

Poison Oak

APIACEAE

*Conium maculatum**

*Foeniculum vulgare**

*Torilis nodosa**

CARROT FAMILY

Poison Hemlock

Fennel

Knotted Hedge-Parsley

ARACEAE

*Zantedeschia aethiopica**

ARUM FAMILY

Calla Lily

ASTERACEAE

Achillea millefolium
*Ageratina adenophora**
Artemisia californica
Baccharis pilularis
*Carduus pycnocephalus**
Conyza Canadensis
*Delairea odorata**
Eriophyllum staechadifolium
*Gnaphalium luteo-album**
Hazardia squarrosa
Heterotheca oregona
Lessingia nemaclada
Pseudognaphalium microcephalum
Senecio vulgaris
*Silybum marianum**
*Sonchus asper**
*Sonchus oleraceus**
Symphotrichum chilense

BORAGINACEAE

*Echium candicans**

BRASSICACEAE

*Brassica nigra**
*Brassica rapa**
*Lobularia maritima**

CHENOPODIACEAE

*Chenopodium rubrum**

CONVOLVULACEAE

Calystegia macrostegia
*Convolvulus arvensis**

CRASSULACEAE

Dudleya caespitosa

ERICACEAE

Arctostaphylos hooveri

EUPHORBIACEAE

*Euphorbia peplus**
*Ricinus communis**

FABACEAE

Acacia melanoxylon

SUNFLOWER FAMILY

Common Yarrow
 Sticky Ageratina
 California Sagebrush
 Coyote Brush
 Italian Thistle
 Horseweed
 Cape Ivy
 Lizard Tail
 Weedy Cudweed
 Sawtooth goldenbush
 Oregon Golden Aster
 Slender-Stemmed Lessingia
 Wright's Cudweed
 Common Groundsel
 Milk Thistle
 Spiny Sow Thistle
 Common Sow Thistle
 California Aster

BORAGE FAMILY

Pride of Madeira

MUSTARD FAMILY

Black Mustard
 Field Mustard
 Sweet Alyssum

GOOSEFOOT FAMILY

Red Pigweed

MORNING-GLORY FAMILY

Coast Morning Glory
 Field Bindweed

STONECROP FAMILY

Sea Lettuce

HEATH FAMILY

Hoover's Manzanita

SPURGE FAMILY

Petty Spurge
 Castor Bean

PEA FAMILY

Blackwood Acacia

Acmispon glaber
Acmispon wrangelianus
Lathyrus vestitus
Lupinus albifrons
*Medicago polymorpha**
*Trifolium repens**

Deerweed
 Chile Lotus
 Common Pacific Pea
 Silver Bush Lupine
 Bur-Clover
 White Clover

GARRYACEAE
Garrya eliptica

SILK TASSEL FAMILY
 Coast Silk Tassel

GERANIACEAE
*Erodium cicutarium**
*Geranium molle**

GERANIUM FAMILY
 Red-Stemmed Filaree
 Dove's Foot Geranium

LAMIACEAE
Clinopodium douglasii
Stachys bullata

MINT FAMILY
 Yerba Buena
 Hedge Nettle

MALVACEAE
*Malva parviflora**

MALLOW FAMILY
 Cheeseweed

MYRTACEAE
*Eucalyptus sp**

MYRTLE FAMILY
 Eucalyptus

ONAGRACEAE
Oenothera elata ssp. *hookeri*

EVENING PRIMROSE FAMILY
 Common Evening Primrose

OXALIDACEAE
*Oxalis pes-caprae**

OXALIS FAMILY
 Bermuda Buttercup

PAPAVERACEAE
Eschscholzia californica

POPPY FAMILY
 California Poppy

PITTOSPORACEAE
Pittosporum sp.

PITTOSPORUM FAMILY
 Pittosporum

PLANTAGINACEAE
Plantago coronopus
*Plantago lanceolata**

PLANTAIN FAMILY
 Cut-leaved Plantain
 Ribwort

POLYGONACEAE
Eriogonum parvifolium
*Rumex crispus**
*Polygonum argyrocoleon**

BUCKWHEAT FAMILY
 Seacliff Buckwheat
 Curly Dock
 Silversheath Knotweed

PRIMULACEAE

PRIMROSE FAMILY

*Anagallis arvensis**

Scarlet Pimpernel

RHAMNACEAE

Ceanothus dentatus

Ceanothus thyrsiflorus var. *griseus*

Rhamnus californica

BUCKTHORN FAMILY

Dwarf Ceanothus

Carmel Ceanothus

California Coffeeberry

ROSACEAE

Fragaria vesca

Horkelia californica var. *californica*

Rosa californica

Rubus ursinus

ROSE FAMILY

Wild Strawberry

California Horkelia

California Wild Rose

California Blackberry

SALICACEAE

Salix lasiandra

Salix lasiolepis

Salix sitchensis

WILLOW FAMILY

Pacific Willow

Arroyo Willow

Coulter Willow

SCROPHULARIACEAE

*Digitalis purpurea**

Mimulus aurantiacus

Scrophularia californica

FIGWORT FAMILY

Purple foxglove

Sticky Monkey Flower

California Bee Plant

SOLANACEAE

Solanum americanum

Solanum douglasii

NIGHTSHADE FAMILY

Small-Flowered Nightshade

Douglas' Nightshade

TROPAEOLACEAE

*Tropaeolum majus**

TROPAEOLUM FAMILY

Garden Nasturtium

URTICACEAE

Urtica dioica ssp. *holosericea*

NETTLE FAMILY

Hoary Nettle

VERBENACEAE

*Phyla nodiflora**

VERVAIN FAMILY

Common Lippia

CLASS MONOCOTYLEDONEAE

MONOCOTS (one seed-leaved flowering plants)

CYPERACEAE

Cyperus tumulicola

SEDGE FAMILY

Foothill Sedge

IRIDACEAE

Iris douglasiana

IRIS FAMILY

Douglas' Iris

POACEAE

Agrostis pallens

*Aira caryophyllea**

GRASS FAMILY

Leafy Bent-Grass

Silvery Hair-Grass

<i>Avena fatua</i> *	Wild Oat
<i>Bromus diandrus</i> *	Ripgut Grass
<i>Bromus hordaceus</i> *	Soft Chess Grass
<i>Cortaderia jubata</i> *	Pampas Grass
<i>Cynodon dactylon</i> *	Bermuda Grass
<i>Hierochloe occidentalis</i>	Vanilla Grass
<i>Hordeum murinum</i> ssp. <i>leporinum</i> *	Barnyard Foxtail
<i>Leymus condensatus</i>	Giant Rye Grass
<i>Lolium multiflorum</i> *	Italian Rye Grass
<i>Melica</i> sp.	Melica
<i>Pennisetum clandestinum</i> *	Kikuyu Grass
<i>Phalaris californica</i>	California Canary-Grass
<i>Polypogon monspeliensis</i> *	Rabbitfoot Grass

* Naturalized species not native to the 54722 Highway 1 Property.

**Based on field studies conducted by Ed Mercurio in September 2023.

VEGETATION AND RESTORATION MAP FOR THE 54722 HIGHWAY 1 PROPERTY

By Ed Mercurio, Biological Consultant, December 2023

KEY

Background aerial photograph natural habitat areas are mostly northern coastal scrub and central coastal scrub plant communities.

Areas with continuous arroyo willows (*Salix lasiolepis*) are outlined in green.

Developments related to restoration are outlined in blue.

Primary restoration areas are outlined in magenta.

Restoration areas for planting of seacliff buckwheat (*Eriogonum parvifolium*) are shown as orange lines.



BIOLOGICAL REPORT: FAWLEY, BIG SUR, APN 421-011-010

This Biological Report will discuss the habitats present on the Fawley property, and the impacts upon those habitats which may occur if the proposed development is implemented. Mitigation measures are presented which will reduce those impacts to a biologically acceptable level.

This report has been prepared by Jeff Norman, Consulting Biologist, P. O. Box 15, Big Sur, CA 93920. Field work was performed on 12 February 1995 and 15 September 1998.

The report was completed for the owner of the parcel, Mr. Norman Fawley, represented by Land Use Facilitator Arden Handshy, P. O. Box 51758, Pacific Grove, CA 93950.

The site is located in Section 4, T21S, R3E, on the South Coast of Big Sur, and is bounded by Highway One to the northeast and the Pacific Ocean to the southwest. Esalen Institute, and Hot Springs Creek, lie a short distance to the southeast. The nearest named stream to the north is Buck Creek. APN is 421-011-010, and the parcel size is 5.8 acres.

SUMMARY RESULTS: The parcel provides habitat for the Federally-endangered Smith's blue butterfly (*Euphilotes enoptes smithi*), manifested by the presence on-site of its host foodplant, seacliff buckwheat (*Eriogonum parvifolium*). The parcel, in addition, supports riparian habitat, present within 100' of the proposed development. Monterey pines (*Pinus radiata*) and Monterey cypresses (*Cupressus macrocarpa*), considered rare and endangered where they occur naturally, exist as planted specimens on the Fawley parcel.

The predominant vegetation type was found to be northern coastal scrub.

BIOLOGICAL REPORT: FAWLEY, BIG SUR, APN 421-011-010

INTRODUCTION: This biotic report deals with the possible impacts of the proposed project: the construction of a residence and garage. Given the sensitivity of habitats near the project site, this report was required of the applicant by the Monterey County Planning and Building Inspection Department for a Coastal Development Permit.

REGIONAL SETTING: This 5.8-acre parcel is located along the Big Sur Coast between Esalen Institute and Julia Pfeiffer Burns State Park. A number of similar-sized parcels lie west of the highway in this area, most of which are developed. Parcels east of the highway in this area are, for the most part, larger, and adjoin Los Padres National Forest to the east.

LOCAL VEGETATION: The Big Sur Coast is characterized by redwood riparian forest and pure redwood forest associations in the deeper canyons and the Big Sur Valley, dominated by coast redwood (*Sequoia sempervirens*). Mixed evergreen forest occurs in higher or drier conditions, with various species of oaks, as well as California laurel (*Umbellularia californica*), tan oak (*Lithocarpus densiflora*), scattered coast redwoods, etc. Toward the ocean, coastal sage scrub and coastal bluff scrub (the latter closer to the sea) are encountered. On the Big Sur Coast, northern coastal scrub approaches, if not reaches, its southern geographic limit. Coast range grassland occurs in many areas with shallow soils, generally at higher elevations than the ecologically-sensitive coastal terrace prairie. In scattered locations can be found the biologically-sensitive maritime chaparral habitat, which often includes rare plant taxa. Higher slopes support such habitats as chaparral and montane coniferous forest.

The dominant plant community for the project site is northern coastal scrub, which originally covered 100% of the project site. With landscaping and other activities which have been implemented over the years, the project site as proposed now involves ca. 25% northern coastal scrub, all located at the proposed garage site. In this location, the habitat is dominated by mature California coffeeberry (*Rhamnus californica*), with several other shrubs present, including poison-oak (*Toxicodendron diversilobum*), coyote brush (*Baccharis pilularis*), and sticky monkey flower (*Mimulus aurantiacus*). The location of the proposed residence was once northern coastal scrub as well, although all original vegetation has been cleared. Native vegetation has been replaced by plantings of red fescue (*Festuca rubra*) and various showy herbaceous annuals which are not native to the site. Many weedy plants are established in this cleared area, and these are overtaking the plants which have been introduced by the land owner. These weeds include bull thistle (*Cirsium vulgare*), milk thistle (*Silybum marianum*), poison hemlock (*Conium maculatum*), field mustard (*Brassica rapa*), Kikuyu grass (*Pennisetum clandestinum*), and pampas grass

BIOLOGICAL REPORT: FAWLEY, BIG SUR, APN 421-011-010

LOCAL VEGETATION (cont.):

(*Cortaderia jubata*). Much of this weedy area is presently under irrigation.

Within the northern coastal scrub plant community, near the southern corner of the property (see Botanical Map), was found habitat for Smith's blue butterfly (*Euphilotes enoptes smithi*), with the presence of seacliff buckwheat (*Eriogonum parvifolium*), a host food plant of this Federally-endangered butterfly. On the subject property, this habitat is threatened by the spread of pampas grass. Much northern coastal scrub habitat was lost earlier this year by a major slope failure at the bluff edge (see Botanical Map), and small amounts are degraded by debris piles.

Riparian vegetation, in the form of stream-mouth woodland, is present northwest of the garage site, and southeast of the house site. Arroyo willows (*Salix lasiolepis*) are present, and breeding of Pacific tree frog (*Hyla regilla*) probably occurs here. Stream-mouth woodland is becoming reduced on the Fawley property by the spread of pampas grass.

RARE AND ENDANGERED SPECIES: The parcel supports habitat for the Federally-endangered Smith's blue butterfly (*Euphilotes enoptes smithi*), with the presence there of the butterfly's host food plant, seacliff buckwheat (*Eriogonum parvifolium*). The subject parcel lies 1 mi. SE of the type locality (place of discovery) of Smith's blue butterfly, and sightings have been made of this taxon recently within 1000' of the project site. Despite the date of the survey, no other rare or endangered taxa are believed to occur on-site, or are likely to be affected by the proposed project.

THREATENED SPECIES AND VEGETATION: The parcel supports valuable riparian areas of stream-mouth woodland on its southeast and northwest edges.

IMPACT ASSESSMENT AND MITIGATION MEASURES:

Impact 1. Smith's blue butterfly habitat. Seacliff buckwheat, one of the two major host food plants of the Federally-endangered Smith's blue butterfly, was more common on the subject property prior to landscaping work. A number of seacliff buckwheat plants were also lost during the recent landslide. Future brush clearing, landscaping, or fire clearance could remove more of these plants.

Other impacts to Smith's blue butterfly could occur on the property. These include the spread of weeds from cleared areas into native habitat, and the possibility of future slope

BIOLOGICAL REPORT: FAWLEY, BIG SUR, APN 421-011-010

IMPACT ASSESSMENT AND MITIGATION MEASURES (cont.):

failure at locations supporting seacliff buckwheat.

Mitigation 1. The loss of Smith's blue butterfly habitat should be mitigated by the planting of 160 nursery-obtained seacliff buckwheat (*Eriogonum parvifolium*) plants on the property. The two receiver sites for seacliff buckwheat plants are shown on the accompanying Botanical Map, with 80 plants required for each site. These sites will be in places currently type-converted to irrigated grassland; one site is adjacent to an extant seacliff buckwheat plant. The following configuration is prescribed for Smith's blue butterfly habitat restoration: eight seacliff buckweats are to be planted around the perimeter of a 3-foot-diameter circle, with two plants at the center. The plantings should be undertaken after the onset of the rainy season, and must be kept weeded until established. If planting occurs during the dry season, irrigation will be needed; supplemental irrigation may also be necessary until the plants are established, although use of water should be kept at the minimum. The restoration area should be monitored twice a year for two years by a qualified biologist.

To reduce impacts to Smith's blue butterfly elsewhere on the property, and surrounding parcels as well, a weed abatement program must be established at the Fawley property. The following plants should be eradicated: pampas grass, castor bean, and Kikuyu grass. These plants are aggressively spreading into areas which can or do support habitat for Smith's blue butterfly. In the case of pampas grass, seed plumes should be removed and burned before they set seed. The large clumps of pampas grass should be first cut to within 2 feet of ground level, and next (as resprouting occurs) sprayed with a glyposphate-type herbicide, following all legal and safety proscriptions.

The area where seacliff buckwheat is extant should be protected from further brush clearing, landscaping, or other disturbances.

The issue of slope failure is under assessment by geologic consultants. Slope stabilization measures should take into consideration biotic impacts (including those to Smith's blue butterfly). However, it should be mentioned here that continued irrigation of the grassy areas near the edge of the existing bluff may contribute to soil saturation (and consequential slope instability). Continued irrigation will certainly reduce the ability of the original plant community (i.e., northern coastal scrub) to reassert itself. It seems likely, also, that northern coastal scrub, a different habitat type than the grassland now under irrigation, contributes more toward slope stability than grassland. It is therefore recommended that widespread irrigation along the bluff edge be discontinued.

BIOLOGICAL REPORT: FAWLEY, BIG SUR, APN 421-011-010

IMPACT ASSESSMENT AND MITIGATION MEASURES (cont.):

Impact 2. Riparian habitats. Both elements of the proposed project approach the riparian vegetation of the small unnamed drainages near each side of the parcel. The vegetation of the stream-mouth woodland there, as well as its associated riparian animal habitat, could be negatively affected if overburden or any other excavated material cascades downslope into this area, or if future erosion causes the deposition of such material there. Some impact has already occurred at the uppermost reach of the drainage at the southeast side of the property, where brush debris and clippings have been placed in the channel just seaward of the highway culvert near the property line. Continued dumping there could cause channel obstruction during periods of heavy rain.

Much riparian habitat is being lost by the spread of pampas grass. Additional impacts could result from proposed erosion control measures, which involve the emplacement of two drainage pipes from the existing roadway. Both stream drainages would receive a pipe conducting storm-water runoff from the road. Loss of riparian vegetation could result from pipeline installation and/or location of the termini of the pipes.

Mitigation 2. No excavated material or overburden, or any other material, may be allowed to enter riparian areas. If any areas susceptible to erosion are created during the erosion-control phase of the project, they must be stabilized in a fashion which will prevent subsequent degradation during periods of stormwater runoff. The location of the outlets of the pipelines should be selected to reduce impacts on native vegetation.

Debris must not be placed in the drainage area, especially in places where it may obstruct water flow. Debris near the highway culvert should be removed prior to the onset of the rainy season.

As described under Mitigation 1., pampas grass will be eradicated from the Fawley property, thus reducing impacts to the stream-mouth woodland on-site.

Impact 3. Loss of northern coastal scrub vegetation. At least one acre of northern coastal scrub habitat has been lost through brush clearing and slope failure. More of the existing examples of this plant community will be removed for the proposed garage. Further impacts could result from continued brush clearing/landscaping, dumping of tree-trimming waste, and fire clearance needs. Most of the remaining northern coastal scrub on the parcel is threatened by the spread of exotic plants.

Mitigation 3. Areas presently supporting northern coastal scrub habitat (except where the

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IMPACT ASSESSMENT AND MITIGATION MEASURES (cont.):

proposed garage would be built) should be retained as habitat preserves on the subject property. No further clearing or other development should be undertaken there, except in areas where non-native plants, such as pampas grass, will be eradicated. The large number of tree-limb trimmings, southeast of the proposed house site, should be removed and burned.

Impact 4. Spread of pitch canker. The subject parcel presently supports a large number of Monterey pines (*Pinus radiata*), which will likely become host to potentially-fatal pitch canker. This disease can spread into other areas supporting any member of the pine genus, and also Douglas-fir (*Pseudotsuga menziesii*). The subject property can thus serve as a vector for this disease, especially if more pines are planted there.

Mitigation 4. No more pines of any species should be planted on the subject parcel. If pitch canker appears on the Fawley property, afflicted trees should be monitored for the extent and severity of the disease; trees which are terminal should be cut down and burned, or otherwise destroyed in a manner that will not spread the disease. Contamination of pruning tools, etc., should be carefully avoided.

If these mitigations measures are followed, the impacts of the proposed project at the Fawley property will have been reduced to an insignificant level.



Jeff Norman

28 September 1998

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LIST OF SPECIES ENCOUNTERED ON-SITE:

Trees:

<i>Cupressus macrocarpa</i> (planted)	Monterey cypress
<i>Eucalyptus globulus</i>	blue gum
<i>Pinus radiata</i> (planted)	Monterey pine
<i>Salix lasiolepis</i>	arroyo willow
<i>Sequoia sempervirens</i> (planted)	coast redwood

Shrubs, Subshrubs and Woody Vines:

<i>Artemisia californica</i>	California sagebrush
<i>Baccharis pilularis</i>	coyote brush
<i>Eriogonum parvifolium</i>	seacliff buckwheat
<i>Eriophyllum staechadifolium</i>	lizard tail
<i>Mimulus aurantiacus</i>	sticky monkey-flower
<i>Oemleria cerasiformis</i>	oso berry
<i>Rhamnus californica</i>	coffeeberry
<i>Ricinus communis</i>	castor bean
<i>Rosa gymnocarpa</i>	wood rose
<i>Toxicodendron diversilobum</i>	poison oak

Herbaceous Species:

<i>Achillea millefolium</i>	common yarrow
<i>Agrostis pallens</i>	leafy bentgrass
<i>Anagallis arvensis</i>	scarlet pimpernel
<i>Artemisia douglasiana</i>	mugwort
<i>Aster chilensis</i>	common California aster
<i>Avena barbata</i>	slender oat
<i>Brassica rapa</i>	field mustard
<i>Briza maxima</i>	rattlesnake grass
<i>Bromus diandrus</i>	ripgut grass
<i>Calystegia cyclostegia</i> ssp. <i>macrostegia</i>	coast morning-glory
<i>Castilleja affinis</i>	Indian paint-brush
<i>Cirsium vulgare</i>	bull thistle
<i>Conium maculatum</i>	poison hemlock
<i>Conyza canadensis</i>	horseweed
<i>Cortaderia jubata</i>	pampas grass
<i>Dryopteris arguta</i>	wood fern
<i>Dudleya farinosa</i>	bluff lettuce

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LIST OF SPECIES ENCOUNTERED ON-SITE (cont.):

<i>Erigeron glaucus</i>	seaside daisy
<i>Eschscholzia californica</i>	California poppy
<i>Euphorbia peplus</i>	petty spurge
<i>Festuca rubra</i>	red fescue
<i>Foeniculum vulgare</i>	sweet fennel
<i>Galium porrigens</i>	climbing bedstraw
<i>Gnaphalium luteo-album</i>	weedy cudweed
<i>Gnaphalium ramosissimum</i>	pink everlasting
<i>Helianthus annuus</i> var. <i>lenticularis</i>	sunflower
<i>Heracleum lanatum</i>	cow parsnip
<i>Hirschfeldia incana</i>	summer mustard
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	barnyard foxtail
<i>Lamarckia aurea</i>	golden-top
<i>Leymus condensatus</i>	giant ryegrass
<i>Linaria</i> sp.	toad-flax
<i>Lolium perenne</i>	perennial rye
<i>Lotus benthamii</i>	Bentham's lotus
<i>Lupinus succulentus</i>	succulent annual lupine
<i>Marah fabaceus</i>	manroot
<i>Medicago polymorpha</i>	bur-clover
<i>Melilotus alba</i>	white sweet-clover
<i>Mimulus guttatus</i>	seep-spring monkey flower
<i>Oenothera elata</i> ssp. <i>hookeri</i>	Hooker's evening primrose
<i>Oxalis pilosa</i>	wood sorrel
<i>Pennisetum clandestinum</i>	Kikuyu grass
<i>Plantago lanceolata</i>	English plantain
<i>Polygonum arenastrum</i>	common knotweed
<i>Polypogon monspeliensis</i>	rabbit's-foot grass
<i>Pteridium aquilinum</i> var. <i>pubescens</i>	western bracken
<i>Rubus ursinus</i>	California blackberry
<i>Rumex conglomeratus</i>	clustered dock
<i>Rumex crispus</i>	curly dock
<i>Satureja douglasii</i>	yerba buena
<i>Scrophularia californica</i>	coast figwort
<i>Silybum marianum</i>	milk thistle
<i>Solanum douglasii</i>	Douglas' nightshade
<i>Solidago californica</i>	common goldenrod
<i>Sonchus oleraceus</i>	common sow thistle

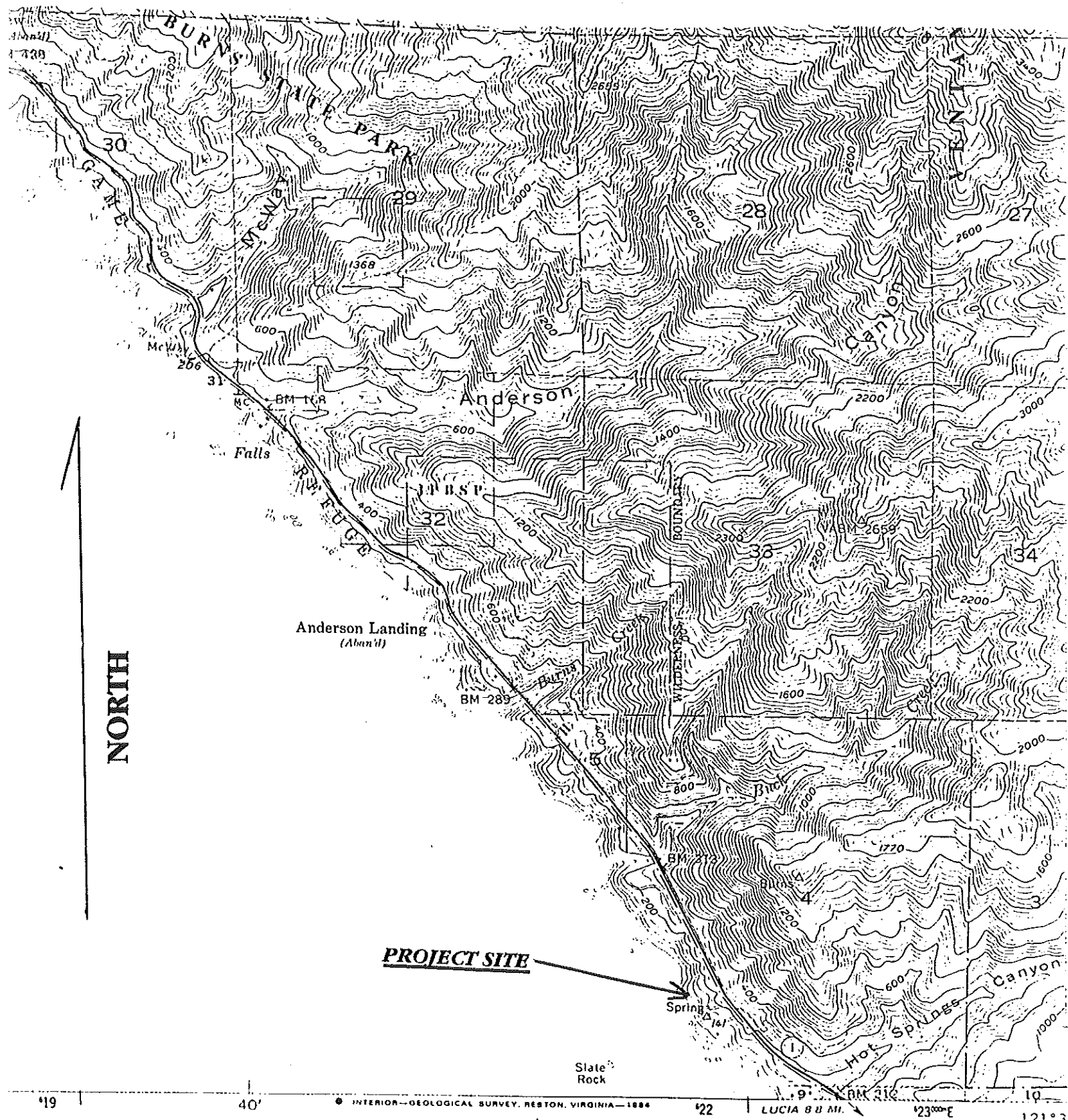
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LIST OF SPECIES ENCOUNTERED ON-SITE (cont.):

<i>Stachys bullata</i>	wood mint
<i>Taraxacum officinale</i>	dandelion
<i>Tropaeolum majus</i>	nasturtium
<i>Vicia gigantea</i>	giant vetch

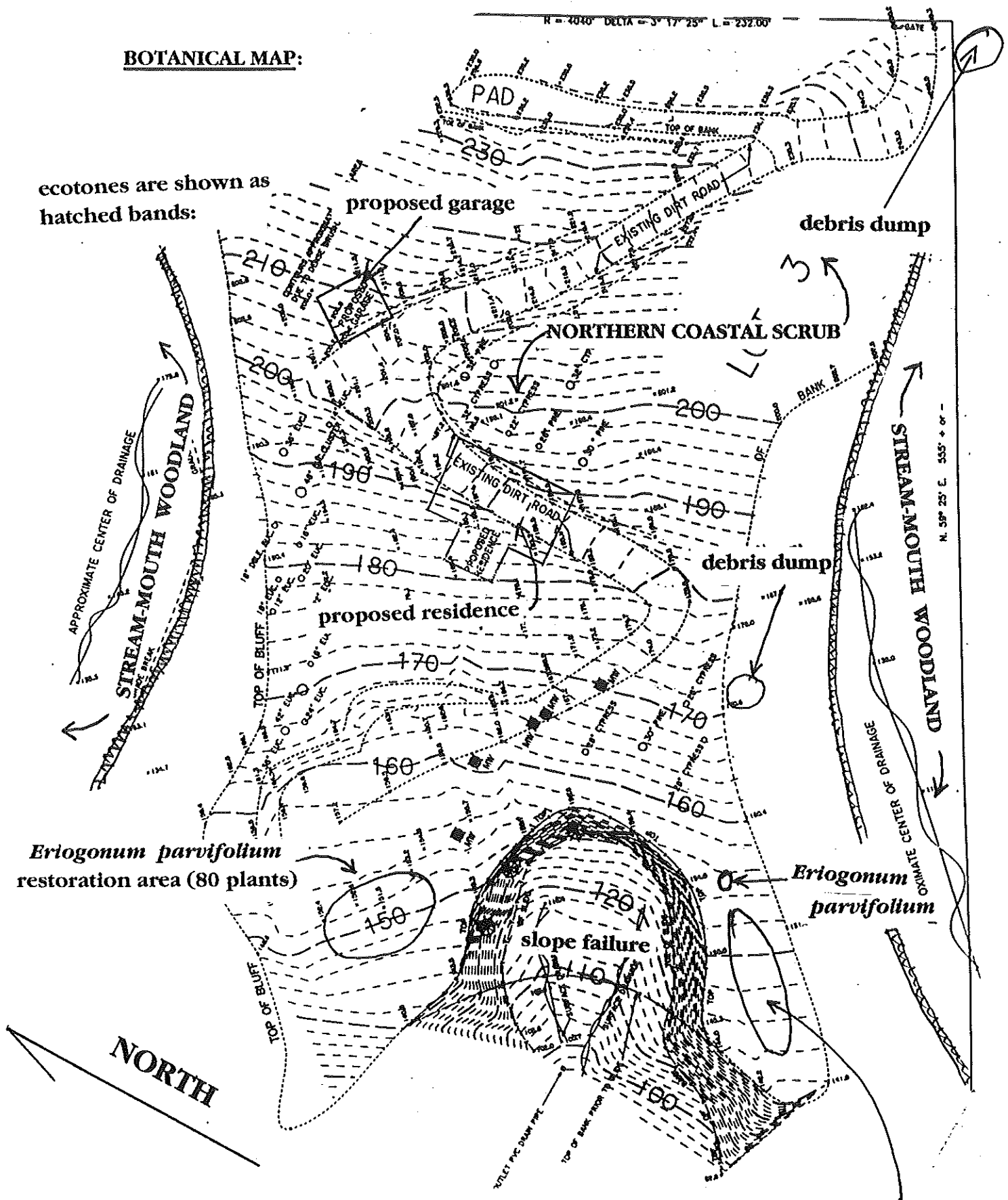
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REGIONAL MAP (from USGS 7.5' Partington Ridge Quad.):



BOTANICAL MAP:

ecotones are shown as
hatched bands:



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