Initial Study and Draft Mitigated Negative Declaration

Charles Cox Minor Subdivision

July 2021

Prepared By
Del Norte County
Community Development Department
Planning Division
981 H Street, Suite 110
Crescent City, California 95531

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Project Information Summary

1. Project Title: Charles Cox Minor Subdivision – MS2101

2. Lead Agency Name and Address: Del Norte County
Planning Commission
981 H Street, Suite 110
Crescent City, CA 95531

3. Contact Person and Phone Number: Heidi Kunstal
(707) 464-7254
hkunstal@co.del-norte.ca.us

4. Project Location and APN: 220 Lazy Lane, Crescent City
Assessor Parcel Number 116-040-044

5. Project Sponsor's Name and Address: Charles Cox
4310 Wonder Stump Road, Crescent City, CA

6. County Land Use: Urban Residential – Low Density (two dwellings per acre)

7. County Zoning: Rural Residential Agriculture – one acre minimum lot size with a Manufactured Housing Combining District (RRA-1-MFH)

8. Description of Project:

Charles Cox owns a 3.26 acre parcel located at 220 Lazy Lane off of Old Mill Road in the Crescent City area. The project area is zoned RRA-1-MFH (Rural Residential & Agriculture, one acre minimum lot size, Manufactured Housing Combining District); the General Plan Land Use Designation is UR-2/1 (Urban Residential, two dwelling units per acre). The applicant proposes to subdivide the parcel into two parcels and a remainder. The parcel is developed with a single family home which is located on proposed parcel 2. The remainder parcel was previously developed with a single family residence. The project parcel has been previously subdivided into its current configuration which has resulted into an irregularly shaped parcel. The proposed subdivision would create conventionally shaped (i.e. generally rectangular) parcels from the existing parcel through the recordation of the Parcel Map. If approved the Parcel Map would consist of Parcel 1 – one-acre, Parcel 2 - one-acre and a Remainder – 1.13-acres. Each of the proposed parcels would meet the one acre minimum lot size required under the RRA-1 zoning.

Access to the two parcels and the remainder parcel will be from Lazy Lane. Lazy Lane, per Book 9 of Parcel Maps Page 125 has a right-of-way width of 50 feet and terminates in a hammerhead turnaround. Assessor Parcel Number 116-040-045, which was created as part of a prior two parcel and a remainder subdivision filed by Mr. Cox, is also accessed from Lazy Lane. Road improvements may be required if changes in the County's Road Standards or Fire Safe Regulations have occurred since the Parcel Map that created Lazy Lane in 2004.

The two new potential homes on proposed parcel 2 and the Remainder parcel will served by on-site wastewater treatment systems and individual wells. An updated on-site wastewater treatment system evaluation prepared by Stover Engineering was submitted for proposed parcel 2 that indicate soils suitable for a conventional leachfield and reserve area to be located on the parcel. The applicant has shown on the plot plan the location of a new well to be placed on proposed parcel 2 which meets all required distances to o-site wastewater treatment systems both on and off-site. As noted earlier, the remainder parcel was previously developed and

an existing on-site wastewater treatment system exists. A plumber's report prepared by Wood's Plumbing validates that it is a working system. A well site has also been identified for the remainder parcel that meets all required setback distances to on-site wastewater treatment systems. The locations of all existing and proposed on-site wastewater treatment systems and well locations were validated in the field by Stover Engineering for the applicant at the request of County Environmental Health Division staff.

A biological assessment and wetland delineation were prepared by Galea Wildlife Consulting (now Galea Biological Consulting) in 2011 for the project site as part of a prior minor subdivision application that was later withdrawn by the applicant. The delineation indicated the existence of wetlands along the western portion of proposed parcels 1 and 2. GWC recommended a 100-foot buffer from the wetland edge which conforms to the County's policies for setbacks from wetlands. The primary and reserve leachfield areas for proposed parcel 2 are located within the proposed 100-foot buffer. Based on a review of aerial imagery, a residence has been in existence on proposed parcel 2 since at least 1988. It appears that it has been improved or added to since that time based on the building footprint visible in the imagery. The leachfield and reserve area for undeveloped proposed parcel 1 is located outside of the wetland buffer. Conditions of approval for the subdivision will indicate that the buffer is not designated for development. No biological resources were identified on the remainder parcel.

9. Surrounding Land Uses and Settings:

The undeveloped parcel to the north is owned by the State of California and is part of the Tolowa Dunes State Park. It has mixed zoning of Agriculture – 20 acre minimum lot size along the portion of the parcel that abuts the developable area (i.e. not buffered) area of the subject parcel and is zoned General Resource Conservation Area (RCA-1) for the remainder of the property's north property line heading westward. The General Plan Land Designation is Agriculture General – 20 acre minimum lot size. The parcel to the west is privately owned and is zoned General Resource Conservation Area (RCA-1) where it abuts the west property line. The corresponding General Plan Land Use designation is Agriculture General – 5 acre minimum lot size and Resource Conservation Area. Lands to the south and are developed single family homes and share a common zoning designation of Rural Residential Agriculture – one acre minimum lot size and have a General Plan Land Use designation of Rural Residential – one dwelling unit per acre.

10. Required Approvals: Minor Subdivision – Del Norte County Planning Commission

11. Other Approval (Public Agencies): None.

12. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

Native American tribes, traditionally and culturally affiliated with the project area have been notified of the project application completion and the beginning of the AB 52 consultation period pursuant to PRC §21080.3.1. Notification of the beginning of the AB 52 consultation period was provided June 11, 2021. No requests for consultation pursuant to PRC §21080.3.1 were received.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" without mitigation as indicated by the checklist on the following pages. All mitigation measures are provided in the Mitigation Monitoring and Reporting Program.

☐	Aesthetics	☐	Agriculture and Forestry Resources	☐	Air Quality
☒	Biological Resources	☐	Cultural Resources	☐	Energy
☐	Geology/Soils	☐	Greenhouse Gas Emissions	☐	Hazards & Hazardous Materials
☐	Hydrology / Water Quality	☐	Land Use / Planning	☐	Mineral Resources
☐	Noise	☐	Population / Housing	☐	Public Services
☐	Recreation	☐	Transportation	☐	Tribal Cultural Resources
☐	Utilities / Service Systems	☐	Wildfire	☐	Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Heidi Kunstal

Heidi Kunstal

Community Development Director

7-17-2021

Date

Environmental Checklist

1. Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or public views of the site and its surroundings? (Public views are those that are experienced from publically accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion of Impacts

a. No scenic vistas exist within the project area.
b. This project would have no foreseeable impact on scenic resources; it is not located within a scenic highway.
c. The project exists within an area of rural residential development. The approval and eventual development of this land division would not substantially degrade the existing visual character or quality of the site or its surroundings.
d. The project does not propose any development which would create a new source of substantial light or glare which would adversely affect views.

2. Agriculture and Forest Resources

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest	☐	☐	☐	☒

land to non-forest use?				
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion of Impacts

a. No farmland zoned areas exist within the project area therefore no conflict would arise from the approval of the project.
b. Del Norte County does not participate in the Williamson Act program.
c. No timberland zoning exists within the project area, therefore no rezoning of forest land or timberland production would be required for the consideration of this project.
d. The project area is located within an area designated as Urban Residential – Low Density. No loss or conversion of forest land would occur from the approval of this land division. The potential building sites on proposed parcel 1 and the remainder will not require any tree removal.
e. The project does not involve any other changes in the existing environment that could adversely affect farmland or timberlands.

3. Air Quality

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☐	☒
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d) Result in other emissions (such as those leading to odors or dust) adversely affecting a substantial number of people?	☐	☐	☐	☒

Discussion of Impacts

a. This project would have no foreseeable impacts on the implementation of an air quality plan.
b. This project would have no foreseeable impacts on increasing criteria pollutants in the region.
c. This project would not expose receptors to pollutant concentrations.
d. This project would have no foreseeable impacts in increasing any emissions.

4. Biological Resources

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	☐	☐	☐	☒

Discussion of Impacts

a. The *Biological Assessment for Cox Minor Subdivision Project*, Del Norte County prepared by Galea Wildlife Consulting in April 2011 evaluated the project site for candidate, sensitive, and special status species as designated in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. GWC (now GBC) did not identify any habitat in the project area that would impact designated species such as the Northern red-legged frog, Hippolyta fritillary, Wolf's evening-primrose, Dark-eyed gilia or Sand dune phacelia.

b. The *Biological Assessment for Cox Minor Subdivision Project*, Del Norte County prepared by Galea Wildlife Consulting in April 2011 evaluated the project site for any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service. GWC identified wetlands along the western portion of the property and completed a Wetland Delineation (see response to c) below.) In the Recommendations for Resource Protection section of the *Assessment,* GWC recommends that a 100-foot non-development buffer from the east edge of riparian habitat on the west edge of the property be placed on the project approval. The buffer will be included as a mitigation measure for item 4.c listed below.

c. The *Wetland Delineation for Cox Minor Subdivision Project, Del Norte*, prepared by Galea Wildlife Consulting in May 2011 identified a wetland edge just east of the riparian strip located along the edge of a small drainage channel west of the existing house on the parcel. GWC noted a small patch of small-fruited bulrush that extended farther east tan the riparian strip, likely due to sub-surface water, and extends the wetland edge slightly to the east in the midst of the property. GWC recommend a 100-foot no development buffer to be applied to the wetland edge as delineated and shown the mapping included with the *Delineation.*

d. The *Biological Assessment for Cox Minor Subdivision Project*, Del Norte County prepared by Galea Wildlife Consulting in April 2011 did not identify any native species which utilize the parcel for movement, migration, or nursery site therefore no impact associated with the approval of the project is anticipated.

e. Mitigation Measure Bio Resources 1 will insure there is no conflict with the County's wetland policy in the Local Coastal Program.

f. No Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan affect the parcel.

Mitigation Measure Bio-Resources 1

A 100 foot buffer measured from the edge of the wetland shall be shown on the parcel map and labeled "wetland protection buffer". A note shall also be placed on the parcel map stating that the wetland protection buffer is not approved for development, and no disturbance of the area is allowed without approval from the County of Del Norte;

Timing/Implementation: Upon recordation of the Parcel Map.
Enforcement: County Community Development Department, California Department of Fish and Game and California Coastal Commission
Monitoring: Ongoing.

5. Cultural Resources

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

Discussion of Impacts

a-c. No cultural resources are known to exist on-site. The County records were searched for known cultural sites in the general project vicinity, and none were identified. Notice was provided to the two tribes traditionally culturally affiliated with the project area and no comment was given with regard to cultural resources. While resources are not known to exist on-site, the possibility of an inadvertent discovery is always possible during construction or other implementation activities associated with the project. The County standard inadvertent find condition will be placed upon the project to ensure that any resources located on-site will be properly treated as to not cause a significant impact.

6. Energy

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy	☐	☐	☐	☒

resources, during project construction or operation?				
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Discussion of Impacts

a. The project would have no foreseeable impacts on increasing wasteful, inefficient, or unnecessary energy use since no development is proposed as part of this application.
b. This project does not conflict with nor obstruct a state or local plan for renewable energy or energy efficiency.

7. Geology and Soils

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Discussion of Impacts

a. The responses are as follows:

i) Del Norte County is not identified on the Alquist-Priolo Earthquake Fault Zoning Map;

ii) The project area is not known to be an area prone to strong seismic ground shaking;

iii) The project area is not known to be an area prone to ground failure;

iv) The project area is not known to be an area prone to landslides.

b. The Environmental Review Committee did not identify any site conditions or identify and concerns in the development proposal that would result in substantial soil erosion or the loss of top soil. Grading would be limited to preparing building sites for future residences.

c. The project site has not been identified as being located with a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

d. Standard and approved engineering practices shall be implemented during any excavation and construction activities. These measures will ensure that proposed buildings are structurally sound and future habitants are not exposed to geologic hazards.

e. An On-site Wastewater Treatment System Evaluation was compiled for the Minor Subdivision by Stover Engineering. A supplemental report was prepared by Wood's Plumbing for the existing OWTS. Stover Engineering's evaluation concluded that the proposed parcel 2 was suitable for a conventional on-site sewage wastewater treatment system within specified limitations. The Report from Wood's Plumbing indicated the existing OWTS to be in good working condition.

f. The project area is not known to contain a unique paleontological resource or geologic feature.

8. Greenhouse Gas Emissions

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion of Impacts

a-b. In 2002, the California legislature declared that global climate change was a matter of increasing concern for the state's public health and environment, and enacted a law requiring the state Air Resource Board (ARB) to control GHG emission from motor vehicles (Health and Safety Code §32018.5 et seq.). CEQA Guidelines define GHG to include carbon dioxide (CO2), nitrous oxide (N2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The California Global Warming Solutions Act of 2006 (AB 32) definitively established the state's climate change policy and set GHG reduction targets (Health and Safety Code §38500 et seq.). The state has set its target at reducing greenhouse gases to 1990 levels by the year 2020.

The project will result in the addition of up to two new residences on the property. The addition of two new residences will not create significant new sources of greenhouse gas emissions. Additionally the subdivision of the parcel does not conflict with any applicable greenhouse gas emission reduction plans or policies.

9. Hazards and Hazardous Materials

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Discussion of Impacts

a. The project would not cause a hazard to the public through the routine transport, use, or disposal of hazardous materials.
b. The project would not cause a hazard to the public or environment through reasonably foreseeable accident conditions involving the release of hazardous materials into the environment.
c. The project would not create hazardous emissions or require the handling of hazardous waste.
d. This project is not located on a site which is included on any list of hazardous materials sites.
e. This project is not located near any airport or within an area covered by an airport land use plan.
f. This project would not impair implementation of an emergency response plan.
g. This project is located with the State Responsibility Area based on CAL FIRE mapping. The project is required to comply with County Fire Safe Regulations with regard to road standards and ingress/egress as well as setbacks for defensible space. Additionally, new construction will comply with California Wildland Urban Interface (WUI) code and standards.

10. Hydrology and Water Quality

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation**	**Less Than Significant Impact**	**No Impact**

		Incorporated		
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on-or off-site?	☐	☐	☐	☒
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☐	☒
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional source of polluted runoff; or	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable ground water management plan?	☐	☐	☐	☒

Discussion of Impacts

a. Project activity, on-site would not generate any significant runoff pollutants. Stormwater runoff would be limited to rainfall onto graveled and/or paved areas and is not expected to violate water quality standards. It is the policy of the County to follow existing and future Federal and State water quality standards. An engineered grading and drainage plan will be required to prepared and reviewed by the County Engineer to assure that water quality and waste discharge requirements are not violated.

b. The proposed project will not result in any net deficit of groundwater recharge. The applicant is proposing the use of private wells. The Community Development Department - Environmental Health Division has not identified the area to be water deficient.

c. The project, a residential development of up to two additional single family residences, would not exceed the capacity of any existing or proposed stormwater drainage systems or provide substantial additional sources of polluted runoff. An engineered drainage has been prepared for the project and has been reviewed by the County's Engineering Division for completeness. No alterations of any stream or river or other drainage pattern would occur that would cause substantial erosion or siltation. Also, there will be no change in site characteristics as a result of the project that would alter a course of a stream or river, or substantial increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.

d. The project is not located within a flood hazard zone, tsunami or seiche zone and would not result in the risk of pollutants due to project inundation.

e. The project would not conflict with or obstruct implementation of a water quality control plan or sustainable ground water management plan.

11. Land Use and Planning

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Discussion of Impacts

The proposed project would not divide any community, designated planning area or surrounding area. The project site is located with the Crescent City Urban Area and is designated as Urban Residential – Low Density - two dwelling units per one acre on the Del Norte County Coastal Land Use Map for Crescent City. The site is zoned RRA-1-MFH (Rural Residential Agriculture – one acre minimum lot size – Manufactured Housing Combining District) per Del Norte County Coastal Zoning B-8. The proposed project would not conflict with any regional land use or environmental plans. No environmental plans or policies of state or regional agencies are directly applicable or would be affected by the proposed project.

12. Mineral Resources

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion of Impacts

a. The project site is not located in an area designated to have significant mineral resources, as defined by the California department of Conservation under the Surface Mining and Reclamation Act. The proposed project would not affect mineral resources in the area.

b. The project site and the surrounding area are not subject to mineral resource recovery operations. Thus, the proposed project would not affect mining operations elsewhere in the County.

13. Noise

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion of Impacts

a. The project should not result in a significant level of noise beyond that which is already present. The project would result in the addition of up to two additional family residences on parcels that are 1.0 acre or larger in size. Surrounding lands uses are primarily low intensity residential or publicly owned lands with no existing or proposed development.

b. The project will not expose any persons to or generate excessive groundborne vibration or groundborne noise levels.

a) c. The project site is located with the broadly encompassing Part 77 Horizontal Surface for Crescent City Airport. However, it located well outside of any of the Safety Zones identified in the *Airport Land Use Compatibility Plan for the County of Del Norte, California, July 2017*. Noise associated with the use of the airport may periodically be elevated to a less than significant level for those residing or working within the project area.

14. Population and Housing

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion of Impacts

a. The proposed project would result in up to two single family residences being constructed. It would not result in substantial amount of population growth on-site nor would it affect population growth in the area.

b. The proposed project would not displace any housing units located near the site.

15. Public Services

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation**	**Less Than Significant Impact**	**No Impact**

		Incorporated		
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Discussion of Impacts

Fire Protection - The project must comply with the requirements of the County and State Fire Safe Regulations for fire safety and fire emergency response. The project is served by the Crescent Fire Protection District and CAL FIRE as it is located with the State Responsibility Area.

Police Protection - The project would not result in the need to alter or expand police service in the area and would not have an adverse effect on existing police service or response times. The area is served by the Del Norte County Sheriff's Office.

Schools - The project would not involve a significant increase in the number of school age children and as such no new schools would need to be constructed nor would additions be needed for existing schools. The Del Norte Unified School District collects a school mitigation fee on a per square foot basis for new residential development. The fee goes toward the maintenance of the County school system to assure adequate classroom space is available for a growing population.

Parks - The project would allow for the development of up to two single family residences and thus would not directly nor indirectly place additional strain on existing parks.

Other Public Facilities - The project would allow for the development of up to two single family residences and thus would not directly nor indirectly place additional strain on any other public services.

16. Recreation

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion of Impacts

a. The project would result in limited increase in the use of existing neighborhood and regional parks or other recreational facilities. The impact is not expected to be significant.

b. The project would not result in a substantial increase in users of existing neighborhood and regional parks or other recreational facilities

17. Transportation

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision(b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Discussion of Impacts

a. The project is not anticipated to conflict with a program, plan, ordinance, or policy addressing any circulation system. The remainder parcel previously had a residential use and the proposed project will result in a reinstatement of that use with an additional one residence on proposed parcel 2 for a total of two new residences. This relatively small addition of residents to the area will not create any significant impacts with the circulation system. The use permit will require that road improvements be constructed which will be incorporated as conditions of approval for consistency with County Code.

b. The project is not expected to be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). According to the Institute of Traffic Engineers Trip Generation, the project is anticipated to generate 18.88 new trips per day[1]. According to the 2020 Del Norte Region SB 743 Implementation Plan, the Traffic Analysis Zone (TAZ 100) containing in the project area describes the average VMT to be approximately 5.08 daily per capita and 23.07 daily per employee. Further, the Plan provides for thresholds of significance that screen certain projects out of constituting a significant impact toward VMT generation. In this case, the project is expected to generate less than 110 trips per day, so it can be considered to have a less than significant impact as a 'Small Project' under Section 3.2.1 of the SB 743 Implementation Plan. c. The project does not increase hazards due to a design feature .The project would allow access to the property from an existing encroachment from U.S. Highway 101 to the parcel. Improvements to the encroachments may be a condition of the use permit. There are no dangerous features in the project area and this project would not require improvements that would introduce circulation or traffic safety hazards.

d. The project would not add any new emergency access to the parcel. The only ingress/egress to the parcel already exists and was utilized by a prior owner when occupied with a residential use. No other emergency access in the surrounding area would be affected by development of this project.

1 Average Daily Trips Rate per Single Family Detach House is 9.44 per the 10th Edition of the ITE Trip Generation.

18. Tribal Cultural Resources

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☒

Discussion of Impacts

a. The project would have no foreseeable impacts on tribal cultural resources. An AB 52 tribal consultation was sent to local tribes associated with the project area and no requests for consultations have been received by the Lead Agency.

19. Utilities and Service Systems

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the providers existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion of Impacts

a. The project will result in the addition of up to two new residences. The new residences will not result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects

b. The project would not have a significant impact on water supplies available to the parcel. The project will be served by existing and planned individual private wells. The area has not been identified as being deficient in water.

c. The project will be served by individual on-site wastewater treatment systems. No burden will be placed on a public wastewater treatment provider.

d. The project site has solid waste pickup service available from local franchisee Recology. Self-hauling to the Del Norte Transfer Station is also available. The solid waste generated by up to two homes would not significantly impact the capacity of either service provider.

e. No conflict with solid waste regulations is expected.

20. Wildfire

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Discussion of Impacts

a. The project would not substantially impair an adopted emergency response plan or emergency evacuation plan.

b. The project, as designed and sited on the property, would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The project is located in a relatively flat area that is not prone to wildfires. The residences are and will be clustered and as such will have a shorter distance to travel in the event of a wildfire.

c. The project is located within the State Responsibility Area and is designated as a Moderate Fire Risk Area. The project will be required to be developed in substantial compliance with the County's Fire Safe Regulations and/or the State's Minimum Fire Regulations depending upon when the project is physically constructed. Standards for road widths, emergency water supply, setbacks for defensible space, gates, ingress/egress must be incorporated into final plans for the development. Significant changes to the State's Minimum Fire Safe Regulations are anticipated to go into effect in the fall of 2021. Additional specific conditions related to the implementation of the current County Fire Safe Regulations will be placed on the subdivision approval (i.e. road standards, establishing an emergency water supply etc.).

d. The project as designed and sited will not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes

21. Mandatory Findings of Significance

Would the project:	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

a-c. The project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife species to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. Additionally, the project does not have impacts that are individually limited but cumulatively considerable and does not have environmental effects which will cause substantial adverse effects on human beings directly nor directly.

Mitigation Monitoring Plan

BIOLOGICAL RESOURCES

Mitigation Measure Bio-Resources 1

A 100 foot buffer measured from the edge of the wetland shall be shown on the parcel map and labeled "wetland protection buffer". A note shall also be placed on the parcel map stating that the wetland protection buffer is not approved for development, and no disturbance of the area is allowed without approval from the County of Del Norte;

Timing/Implementation:	*Upon recordation of the Parcel Map.*
Enforcement:	*County Community Development Department, California Department of Fish and Game and California Coastal Commission*
Monitoring:	*Ongoing.*

THIS IS NOT AN OFFICIAL MAP
FOR ASSESSMENT PURPOSES ONLY

1" = 200'

0223
1156
0901
0267
0667
0678
1089
0690

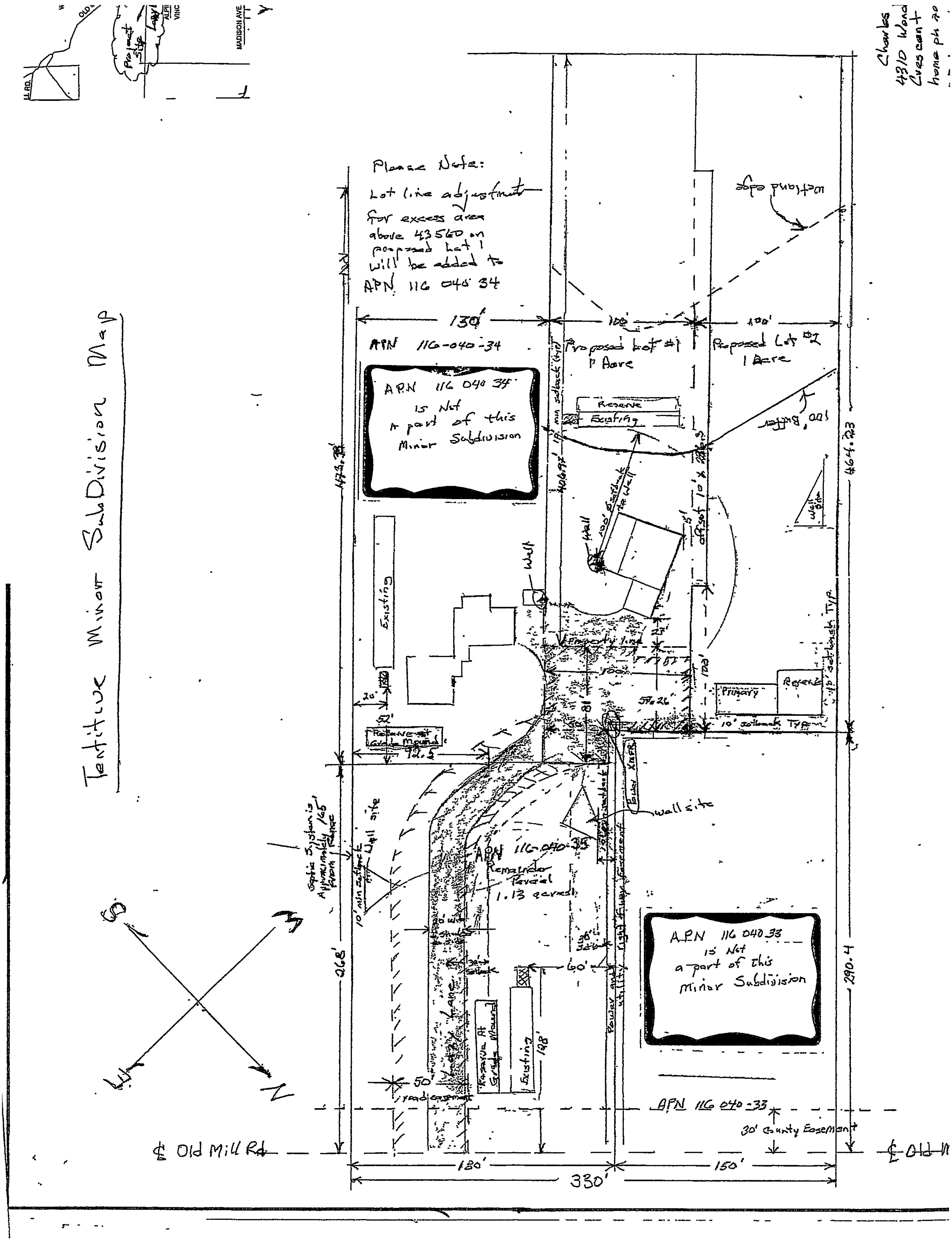
BOOK 110

(05) (06) (17) (08) (03) (02) (02)

HARMONY LANE
MILL LANE
OLD LANE
ROAD
CATES WAY
CHARM LANE
LAUREL PLACE
PAUL PLACE
LAZY LN.
ALPINE ST.
VINCENT RD.
NORTH
SOUTH
EAST
WEST
CTR. SEC. 17
QTR. COR. 8

(1) 1.09AC PCL. 1 6-234 P.M.
(2) 1.00AC PCL. 1 9-125 P.M.
(3) 6.0AC
(4) 1.00AC
(5) LOT 1 BK. 2 PG. 102 P.M.
(6) 1.00AC PCL. 1 10-31 P.M.
(7) 1.00AC PCL. 2 10-31 P.M.
(8) 3.42AC
(9) 0.86A
(10) 2.24AC
(11) 9.70AC
(12) 5.02AC
(17) 1.81AC
(18) 1.09AC
(21) 0.92AC PCL. 1 7-93 P.M.
(22) 0.92AC PCL. 2 7-93 P.M.
(23) 0.92AC PCL. 3 7-93 P.M.
(24) 0.92AC PCL. 4 7-93 P.M.
(27) PCL. 1 8-50 P.M.
(28) PCL. 2 8-50 P.M.
(29) PCL. 3 8-50 P.M.
(30) PCL. 4 8-50 P.M.
(31) 1.31AC PCL. 1 8-146 P.M.
(32) 2.09AC PCL. 2 8-146 P.M.
(33) 1.00AC PCL. 1 9-125 P.M.
(36) 1.00AC PCL. 1 10-31 P.M.
(37) 1.00AC PCL. 2 10-31 P.M.
(38) 1.00AC
(39) 1.00AC
(40) 1.00AC PCL. 4 10-81 P.M.
(41) 1.00AC PCL. 3 10-81 P.M.
(42) 1.00AC PCL. 2 10-81 P.M.
(43) 1.06AC PCL. 1 BK. 10 PG. 80-81 P.M.
(44)
(45) 287.29'

JENNIFER PERRY
DEL NORTE COUNTY ASSES



Tentitive Minor SubDivision Map
Please Note:
Lot line adjustment for excess area above 43560 on proposed Lot 1 will be added to APN 116 040 34
APN 116-040-34
APN 116 040 34 is Not a part of this Minor Subdivision
Proposed Lot #1
1 Acre
Proposed Lot #2
1 Acre
wetland edge
100' Buffer
Reserve
Existing
Well
Primary
wall site
APN 116-040-35
Remainder Parcel
1.13 acres
APN 116 040 33 is Not a part of this Minor Subdivision
APN 116 040-33
30' County Easement
Old Mill Rd
130'
100'
180'
150'
330'
464.23
290.4
268'
50' road easement

GALEA WILDLIFE CONSULTING

200 Raccoon Court . Crescent City . California 95531
Tel: 707-464-3777
E-mail: frankgalea@charter.net • Web: www.galeawildlife.com

APN: 116-040-35

BIOLOGICAL ASSESSMENT, COX MINOR SUBDIVISION PROJECT, DEL NORTE COUNTY

Submitted to: Crescent City Planning Department
377 J Street
Crescent City, CA 95531

Prepared by: Frank Galea, Certified Wildlife Biologist
E-mail: frankgalea@charter.net

Galea Wildlife Consulting
200 Raccoon Court
Crescent City, CA 95531

Submitted: April, 2011

By:

1.0 SUMMARY 1

A biological assessment was prepared for the proposed minor subdivision on the Cox property on Old Mill Road in Del Norte County (Figure 1). The proposed subdivision is located on the west side of the road, south of the Lake Earl Wildlife Area (LEWA).

A 100 foot non-development buffer is recommended from riparian habitat located along the west edge of the property. Overall, this project should have no significant impacts upon any sensitive or rare wildlife species.

2.0 INTRODUCTION

2.1 Project Description

The Applicant (Charles Cox) proposes prepare a minor subdivision (Figure 2) of his property located on Old Mill Road. The Applicant proposes to split the 3 acre property into two lots.

Galea Wildlife Consulting (GWC) Incorporated was contracted to provide a general biological assessment to determine the potential impacts of the project on sensitive wildlife species, including federally or state listed species, and species of special concern. Additionally, GWC conducted a review of habitats within and adjacent to the project area to determine the scope of wetlands and riparian habitats present and to insure that such habitats are not impacted.

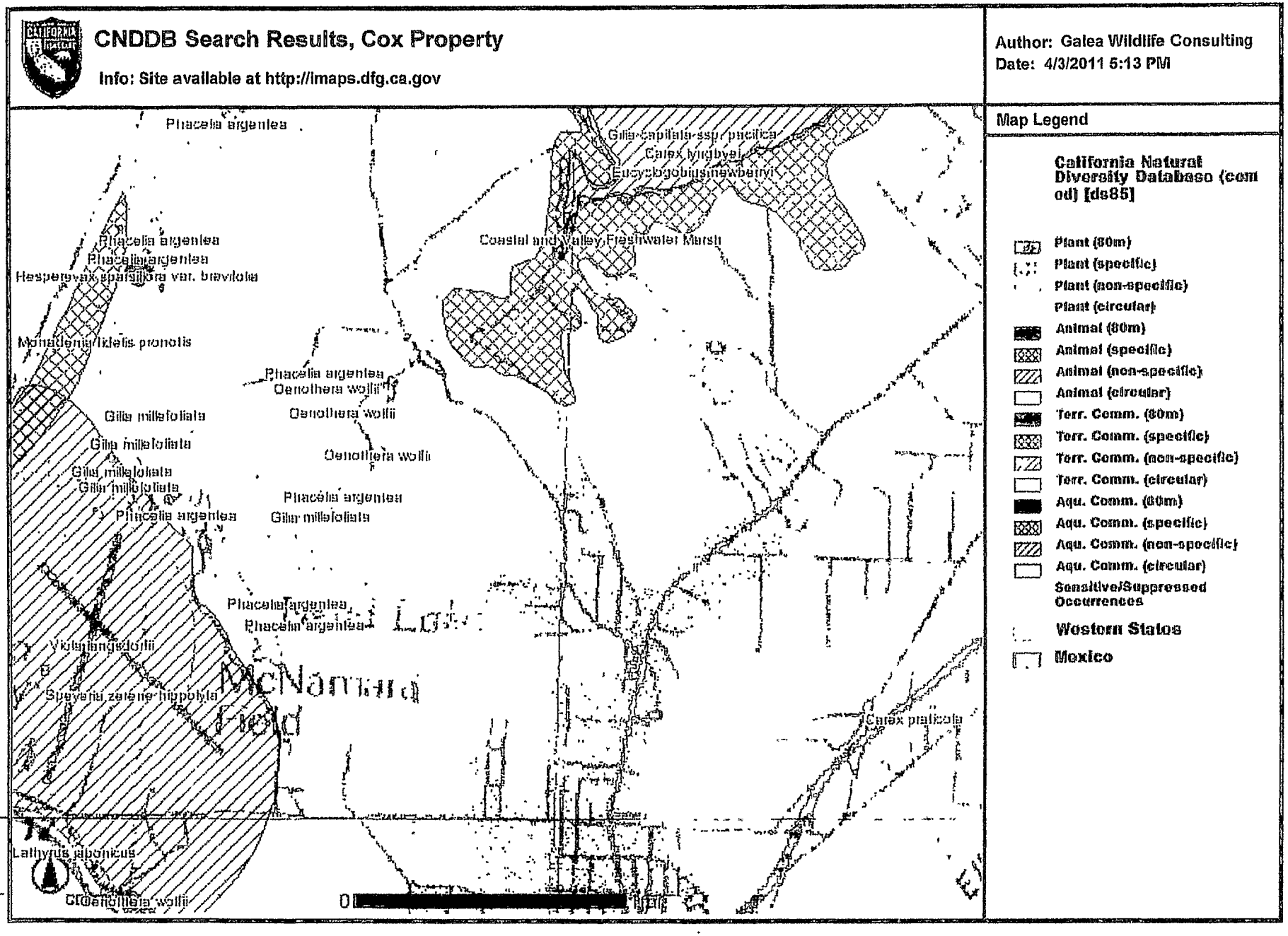
2.2 Environmental Setting

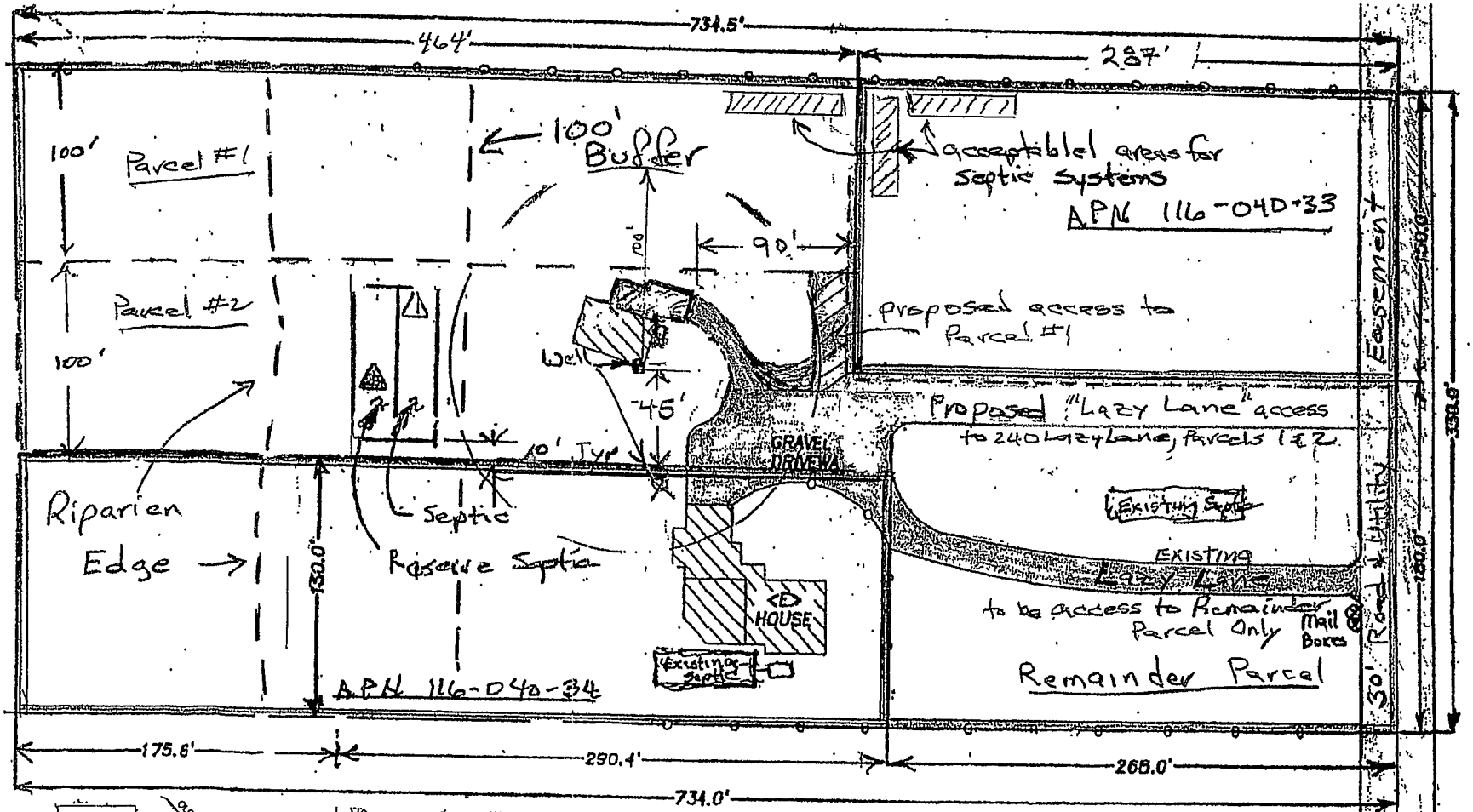
The project is located on the west side of Old Mill Road. The property is south of one field which is part of the LEWA, a large, natural area managed for wildlife by the California Department of Fish and Game.

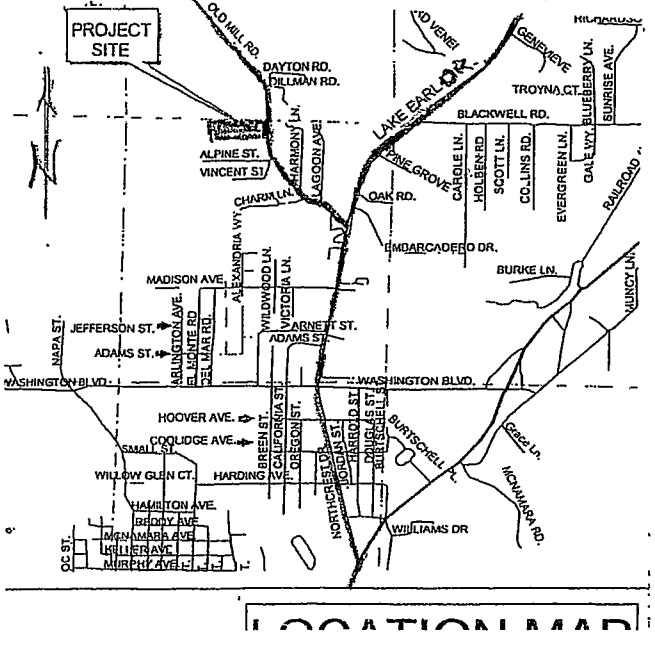
A dense thicket of riparian habitat lines the west edge of the property. Beyond the riparian strip lies lowland coastal forest, which is off the property. No other sensitive natural resources occur near the property.

2.3 Physical Environment

The climate of northern California is characterized as Mediterranean, with cool, wet winters and warm, dry summers with frequent fog. Along the coastline, proximity to the Pacific Ocean produces high levels of humidity and results in abundant fog and fog drip precipitation. The maritime influence diminishes with distance from the coast, resulting in lesser amounts of fog, drier summer conditions and more variable temperatures. Annual precipitation in the project watershed ranges from 60 - 150 inches occurring primarily as rain during the winter months. Air temperatures measured in the Crescent City area vary from 41°F to 67°F annually.


CNDDB Search Results, Cox Property
Info: Site available at http://imaps.dfg.ca.gov
Author: Galea Wildlife Consulting
Date: 4/3/2011 5:13 PM
Map Legend
California Natural Diversity Database (eom od) [ds85]
Plant (80m)
Plant (specific)
Plant (non-specific)
Plant (circular)
Animal (80m)
Animal (specific)
Animal (non-specific)
Animal (circular)
Terr. Comm. (80m)
Terr. Comm. (specific)
Terr. Comm. (non-specific)
Terr. Comm. (circular)
Aqu. Comm. (80m)
Aqu. Comm. (specific)
Aqu. Comm. (non-specific)
Aqu. Comm. (circular)
Sensitive/Suppressed Occurrences
Western States
Mexico
Phacelia argentea
Gilia capitata ssp. pacifica
Carex lyngbyei
Eucyclogobius newberryi
Coastal and Valley Freshwater Marsh
Hesperevax sparsiflora var. brevifolia
Monadenia fidelis pomalis
Oenothera wolfii
Gilia millefoliata
Viola lanceolata
Lathyrus japonicus
Carex praticola
McNamara
Field
0





LOCATION MAP

Charles Kathleen Cox
NAME OF APPLICANT

4310 Wonder Stump Rd
Crescent City
ADDRESS

(707) 464 5411
PHONE NUMBER

116-040-35
APN

PLOT PLAN

3.0 METHODS

3.1 Records Search

A records search of the California Department of Fish and Game's (CDF&G) Natural Diversity Data Base (2011) was conducted to determine if any additional special-status plant or animal species had been previously reported within or near the project area. Listed and sensitive wildlife species potentially occurring within two miles of the project area are presented in Table 1.

Special-Status Species and Significant Natural Communities.

The following special-status species and sensitive community types are considered in this evaluation:

- Species that are listed, or designated as candidates for listing, as threatened or endangered under the federal Endangered Species Act;
- Species that are listed, or designated as candidates for listing as rare (plants), threatened, or endangered under the California Endangered Species Act;
- Wildlife species listed by the CDFG as species of special concern or fully protected species;
- Communities designated by the CDFG to be "significant" natural communities;
- Plant species on List 1A, List 1B, and List 2, in the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California;
- Species that meet the definition of rare or endangered under the California Environmental Quality Act (under Section 15380 of CEQA, a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown to meet the criteria" for listing); and
- Taxa of special concern by local agencies.

3.2 Regulatory Context

The project is located within the geographic range of several special- status plant and wildlife species. Biological resources on the site may be subject to agency jurisdictions and regulations, as described below.

(a) U.S. Fish and Wildlife Service (USFWS). The USFWS has jurisdiction over species listed as threatened or endangered under the federal Endangered Species Act (ESA). The ESA protects listed species from "take," broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." An activity is defined as a "take" even if unintentional or accidental. An endangered plant or wildlife species is one that is considered in danger of becoming extinct throughout all, or a significant portion of its range. A threatened species is one that is likely to become endangered within the foreseeable future. In addition to endangered and threatened species, the USFWS has a list of candidate species, which are those for which the USFWS currently has enough information to support a proposal for listing. Section 9 of the ESA and its applicable regulations restrict certain activities with respect

to endangered and threatened plants. However, these restrictions are less stringent than those applicable to fish and wildlife species. These provisions prohibit the removal of, malicious damage to, or destruction of any listed plant species "from areas under federal jurisdiction." Listed plants may not be cut, dug up, damaged or destroyed, or removed from any other area (including private lands) in knowing violation of a State law or regulation.

(b) Raptors & Migratory Bird Treaty Act (MBTA). The MBTA (16 United States Code [USC] 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorized the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. The MBTA sets seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 CFR 21, 50 CFR 10).

(c) U.S. Army Corps of Engineers. Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers is responsible for regulating the discharge of fill material into waters of the U.S. Waters of the U.S. and their lateral limits are defined in 33 CFR (Code of Federal Regulations) Part 328.3 (a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed "isolated wetlands" and may be subject to U.S. Army Corps of Engineers jurisdiction.

(d) California Department of Fish and Game. The CDFG has jurisdiction over threatened or endangered species that are formally listed by the State under the California Endangered Species Act (CESA). The CESA is similar to the federal Endangered Species Act both in process and substance; it is intended to provide additional protection to threatened and endangered species in California.

The CESA does not supersede the federal Endangered Species Act, but operates in conjunction with it. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and federal laws would apply) or under only one act. The California endangered species laws prohibit the taking of any plant listed as threatened, endangered, or rare. In California, an activity on private lands (such as development) will violate Section 9 of the Endangered Species Act if a plant species, listed under both State and federal endangered species laws, is intentionally removed, damaged, or destroyed. Under the State Fish and Game Code, the CDFG also has jurisdiction over species that are designated as "fully protected." These species are protected against direct impacts. The CDFG maintains informal lists of species of special concern, which are broadly defined as plants and wildlife that are of concern to CDFG because of population declines and restricted distributions, and/or they are associated with habitats that are declining in California. These species, as well as threatened and endangered species, are inventoried in the California Natural Diversity Database.

The CDFG also exerts jurisdiction over the bed and banks of watercourses according to the provisions of Section 1600 to 1616 of the Fish and Game Code. The Department will require a Streambed Alteration Permit for the fill or removal of any material from any natural drainage. CDFG's jurisdiction extends to the top of banks and may include the outer edge of riparian vegetation canopy cover.

(e) California Native Plant Society. The California Native Plant Society has developed lists of plants of special concern in California. A California Native Plant Society List IA plant is a species, subspecies, or variety that is considered to be extinct. A List 1B plant is considered rare, threatened, or endangered in California and elsewhere. A List 2 plant is considered rare, threatened, or endangered in California, but is more common elsewhere. A List 3 plant is a species for which California Native Plant Society lacks necessary information to determine if it should be assigned to a list or not. A List 4 plant has a limited distribution in California. All List 1 and List 2 plant species meet the requirements of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the CDFG Code, and are eligible for State listing. Therefore, List 1 and 2 species should be considered under CEQA. Very few List 3 and List 4 plants are eligible for listing, but may be locally important, and their listing status could be elevated if conditions change.

(f) CEQA Guidelines, Section 15380. Although threatened and endangered species are protected by specific federal and State statutes, the CEQA Guidelines in Section 15380(b) provide that a species not included on the federal or State lists of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the federal Endangered Species Act and the CDFG Code. This section was included in the CEQA Guidelines primarily to deal with situations in which a public lead agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the U.S. Fish and Wildlife Service or CDFG. Thus, CEQA provides a lead agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

(g) Regional Water Quality Control Board. Pursuant to Section 401 of the Clean Water Act, projects that apply for a U.S. Army Corps of Engineers permit for discharge of dredge or fill material, and projects that qualify for a Nationwide Permit, must obtain water quality certification from the Regional Water Quality Control Board (RWQCB) that the project will uphold State water quality standards. Alternatively, the RWQCB may elect to notify an applicant that the State may issue Waste Discharge Requirements in lieu of a Section 401 certification for a project

(h) California Coastal Commission. The California Coastal Commission (CCC) is a state regulatory agency whose primary role is the protection of coastal resources. As this project is located within the coastal zone all CCC protection measures would apply.

3.3 Field Investigation

A field investigation of the project area was conducted in March of 2011. Certified Wildlife Biologist Frank Galea conducted the field review. All potential wildlife habitats within the project area and within 1/5 mile around the project area were assessed for their potential for listed wildlife species.

4.0 RESULTS AND POTENTIAL IMPACTS

4.1 Records Search

The CDFG Natural Diversity Data Base (CNDDB, 2011) provided a summary of those federal and state-listed and sensitive wildlife species and their mapped locations (Figure 3), reported to have occurred at least once within two miles of the project site. Except for anadromous fish, no sensitive wildlife species was noted to occur within 1/2 mile of the project area.

A list of those sensitive or listed animal species potentially occurring in the vicinity of the project area is presented in Table 1, including the common and scientific names for each. The listing status of each species and if potential habitat (as determined by GWC, based upon a review of habitat available within the project area) was located within the project area is also indicated in Table 1.

4.2 Habitat Analysis and Impact Assessment for Fish and Wildlife

An assessment of potential habitats and impacts for sensitive wildlife species was conducted in February of 2011. The project area was found to contain no potential for the wildlife species listed in Table 1, except for fish species in the Smith River. No occurrences of threatened, endangered or otherwise sensitive wildlife species are listed in the CNDDB for the project site.

Table 1. Sensitive Wildlife Species Occurring or with the Potential to Occur Within the Region of the Project Area
(From CNDDB 2011 Quad search, USFWS Del Norte County list, and GWC sources)

Common Name	Scientific Name	Federal Status	State Status	Breeding Habitat in Project Area?	Forage Habitat in Project Area?
AMPHIBIANS					
Northern red-legged frog	*Rana aurora aurora*	None	CSC	No	No
INVERTEBRATES					
Hippolyta frittilary	*Speyeria zerene hippolyta*	FT	SC	No	No

Codes:

Federal Status
- FE Federally endangered
- FT Federally threatened
- FC Federal candidate for listing
- FSC Federal species of concern
- FPE Federally proposed for endangered listing
- FPT Federally proposed for threatened listing

State Status
- CE California endangered
- CT California threatened
- CCE California candidate for endangered listing
- CSC California species of concern (CDFG)
- CFP California fully protected

4.2a Threatened or Endangered Species: Table 1 shows the lack of any threatened or endangered species in or near the project area.

4.2b Migratory Bird Treaty Act, Raptors

There would be no potential impacts to migratory birds from this project. Potential nesting habitat for birds covered by the Migratory Bird Treaty Act occurs around the project area in the form of meadow and forest vegetation. However, no potential nesting habitat is available on the property and none would be impacted by this project.

4.2c Non-sensitive Wildlife

Black-tailed deer (*Odicoileus hemionus*), black bear (*Ursus americanus*) and other local species are known in the area. No heron or egret rookeries are known of nearby and none were observed during field surveys. Nest trees would be easily visible in the project area which is fairly open, and none were observed.

4.2d Amphibians

Table 1 lists the northern red-legged frog as occurring in the area. This species is likely present due to low-lying areas west of the property and open meadows to the north. No preferred habitat was found on the property itself. Although this species is not a protected species in Del Norte County and is locally relatively abundant, population levels are not doing well in the remainder of its range.

4.2e Invertebrates

The CNDDB noted the potential presence of the Hippolyta frittilary, a rare butterfly. Potential habitat may exist in the meadow to the north, however no potential habitat is located on the property.

4.2f Sensitive Plants: The California Native Plant Society Inventory includes five lists for categorizing plant species of concern. The plants on the CNPS list 1B and 2 are considered rare, endangered, and threatened plants pursuant to Section 15380 of the California Environmental Quality Act (CEQA). The plants on these lists meet the definitions under the Native Plant Protection Act and/or the California Endangered Species Act of the California Department of Fish and Game Code and are eligible for state listing.

Table 2 lists three sensitive plant species which were recorded in the CNDDB as potentially occurring in the local area (within 3 miles). None of these plants are federally listed species.

The entire project site is residential, with lawns and manicured areas. No natural habitat exists on the property except for the extreme west edge, where no development would occur. No botanical survey was required due to the lack of potential habitat on the property.

Table 2. Sensitive Plant Species Potentially Occurring in Assessment Area Based On 2011 CNDDB Records.

Common Name	Scientific Name	Federal Status	CNPS List	Preferred Habitat	Habitat in Project Area?
Wolf's evening-primrose	*Oenothera wolfii*	None	List 1B.1	Coastal bluff scrub or dunes, lower coniferous forest	No
Dark-eyed gilia	*Gilia millefoliata*	None	1B.2	Sandy, mesic soils, dunes	No
Sand dune phacelia	*Phacelia argentea*	None	1B.1	Coastal dunes	No

5.0 Recommendations for Resource Protection

A 100 foot non-development buffer from the east edge of riparian habitat on the west edge of the property is recommended. No other resource protections are necessary for this project.

6.0 STAFF QUALIFICATIONS

Habitat assessment and report writing for this project was conducted by Principal Biologist, Frank Galea. Frank is the primary Biological Consultant and owner of Galea Wildlife Consulting, established in 1989. Frank is certified as a Wildlife Biologist through the Wildlife Society. Frank's qualifications include a Master of Science Degree in Wildlife Management from Humboldt State University and a Bachelor of Science in Zoology from San Diego State University. Frank has been assessing habitat and conducting field surveys for Threatened and Endangered species for over 20 years. Frank has taken an accredited class on wetland delineation through the Wetland Training Institute, and has successfully completed a Watershed Assessment and Erosion Treatment course through the Salmonid Restoration Federation.

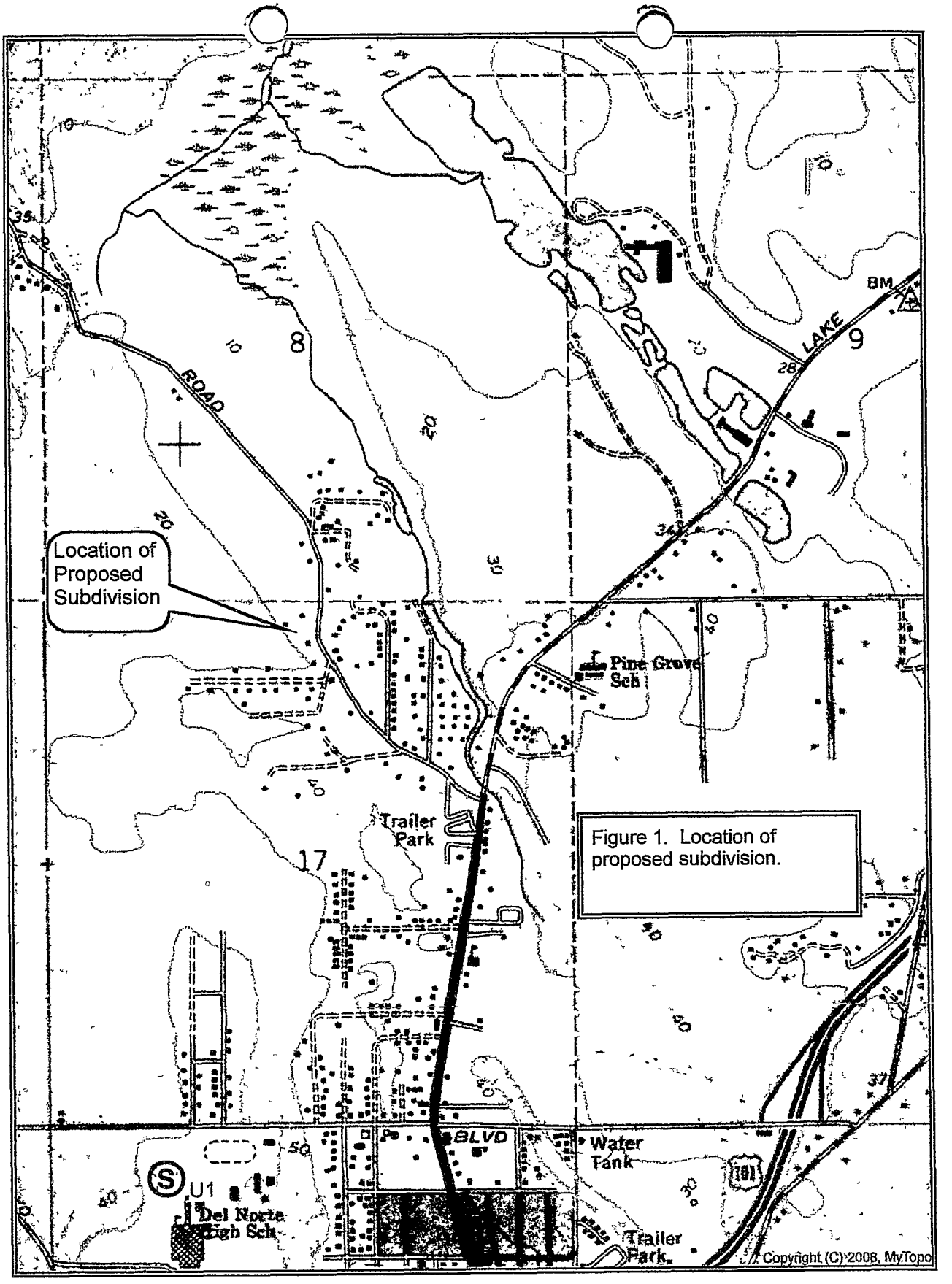


Figure 1. Location of proposed subdivision.

SCALE 1:17142

0 1000 2000 3000 4000 5000

FEET

Occurrence Report

California Department of Fish and Game

California Natural Diversity Database

Map Index Number:	06905	**EO Index:**	16079
Key Quad:	Crescent City (4112472)	**Element Code:**	CTT52410CA
Occurrence Number:	11	**Occurrence Last Updated:**	1998-07-16

Scientific Name: *Coastal and Valley Freshwater Marsh* **Common Name:** Coastal and Valley Freshwater Marsh

Listing Status: **Federal:** None **Rare Plant Rank:**

State: None **Other Lists:**

CNDDB Element Ranks: **Global:** G3

State: S2.1

General Habitat:

□

Micro Habitat:

□

Last Date Observed:	1976-07-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1976-07-XX	**Occurrence Rank:**	Unknown
Owner/Manager:	DFG-LAKE EARL WA, PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

LAKE EARL/TALAWA FRESHWATER MARSH, 4 MILES NORTH OF CRESCENT CITY.

Detailed Location:

Ecological:

SCIRPUS AMERICANUS, S. ACUTUS ARE DOMINANT; SIGNIFICANT PATCHES OF TYPHA LATIFOLIA; ELEOCHARIS MACROSTACHYA, CERATOPHYLLUM DEMERSUM ARE ALSO PRESENT.

Threats:

GRAZING IN ADJ AREAS.

General:

SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

PLSS:	T17N, R01W, Sec. 27 (H)	**Accuracy:**	specific area	**Area (acres):**	1,072
UTM:	Zone-10 N4632386 E402595	**Latitude/Longitude:**	41.83738 / -124.17314	**Elevation (feet):**	10

County Summary:	**Quad Summary:**
Del Norte	Crescent City (4112472), Smith River (4112482)

Sources:

DPR86M0001	CALIFORNIA DEPARTMENT OF PARKS & RECREATION - MAP SHOWING CURRENT OWNERSHIP BY DFG AND DPR AT LAKE EARL / TALAWA, DEL NORTE COUNTY. 1986-07-XX
HOO77R0001	HOOD, L. - INVENTORY OF CALIFORNIA NATURAL AREAS, CNACC 1977-XX-XX
MON75R0001	MONROE, G. - "NATURAL RESOURCES OF LAKE EARL AND THE SMITH RIVER DELTA", COASTAL WETLANDS SERIES #10. 1975-03-XX
USF82M0001	U.S. FISH & WILDLIFE SERVICE - NATIONAL WETLAND SURVEY MAPS. 1982-XX-XX

Occurrence Report

California Department of Fish and Game

California Natural Diversity Database

Map Index Number:	20151	**EO Index:**	9600
Key Quad:	Crescent City (4112472)	**Element Code:**	IILEPJ6087
Occurrence Number:	2	**Occurrence Last Updated:**	1995-08-22

Scientific Name: *Speyeria zerene hippolyta* **Common Name:** Hippolyta frittilary

Listing Status: **Federal:** Threatened **Rare Plant Rank:**

State: None **Other Lists:** XERCES_CI-Critically Imperiled

CNDDB Element Ranks: **Global:** G5T1

State: S1

General Habitat:

COASTAL MEADOWS IN DEL NORTE COUNTY.

Micro Habitat:

THE LARVAE FEED ONLY ON THE FOLIAGE OF THE WESTERN DOG VIOLET (VIOLA ADUNCA).

Last Date Observed:	1990-XX-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1990-XX-XX	**Occurrence Rank:**	Good
Owner/Manager:	DPR, UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

POINT ST GEORGE AREA, ONE MI NW OF CRESCENT CITY.

Detailed Location:

THIS IS ONE OF ONLY TWO OR POSSIBLY THREE POPULATIONS OF THIS BUTTERFLY IN CALIFORNIA.

Ecological:

HABITAT AT THIS SITE IS NORTHERN COASTAL DUNE SCRUB AND NORTHERN COASTAL BLUFF SCRUB CONTAINING THE LARVAL FOOD PLANT, VIOLA ADUNCA. ADULTS FEED ON THE NECTAR OF A VARIETY OF FLOWERING PLANT SPECIES.

Threats:

General:

ADULT EMERGENCE BEGINS IN MID-AUGUST, AND THE FLIGHT PERIOD EXTENDS ON THROUGH SEPTEMBER.

PLSS:	T16N, R02W, Sec. 13 (H)	**Accuracy:**	nonspecific area	**Area (acres):**	1,195
UTM:	Zone-10 N4626062 E396963	**Latitude/Longitude:**	41.77972 / -124.23986	**Elevation (feet):**	50

County Summary:	**Quad Summary:**
Del Norte, Pacific Ocean	Crescent City (4112472)

Sources:

FWS90U0001	U.S. FISH & WILDLIFE SERVICE - LETTER FROM USFWS REGARDING POPULATION LOCATIONS. 1990-05-15
FWS90U0002	U.S. FISH & WILDLIFE SERVICE - LETTER TO DEL NORTE COUNTY PLANNING DEPT. REGARDING PROPOSED DEVELOPMENT AFFECTING KAMPH PARK SITE. 1990-05-28
FWS90U0003	U.S. FISH & WILDLIFE SERVICE - LETTER TO DEPT. OF FISH AND GAME FROM USFWS REGARDING LAKE EARL WLA POPULATION. 1990-10-10

Occurrence Report

California Department of Fish and Game

California Natural Diversity Database

Map Index Number: 72932
EO Index: 73843
Key Quad: Crescent City (4112472)
Element Code: PDHYD0C070
Occurrence Number: 8
Occurrence Last Updated: 2008-11-20

Scientific Name: *Phacelia argentea*
Common Name: sand dune phacelia

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S1.1

General Habitat:
COASTAL DUNES.

Micro Habitat:
STABILIZED AND RECENTLY MOVING SAND DUNES. 3-25M.

Last Date Observed: 2007-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2007-XX-XX
Occurrence Rank: Good
Owner/Manager: DPR-TOLOWA DUNES SP
Trend: Unknown
Presence: Presumed Extant

Location:
EAST SIDE OF DEAD LAKE, CRESCENT CITY.

Detailed Location:
THREE COLONIES LOCATED IN THE SAND DUNES TOWARD THE SOUTHERN HALF OF DEAD LAKE.

Ecological:
INLAND DUNE SYSTEM.

Threats:
AMMOPHILA INVASION, ORV USE, SOME SPORT SHOOTING.

General:
UNKNOWN NUMBER OF PLANTS OBSERVED IN 1987 AND 2003. 9 PLANTS IN 2007. SITES REFERRED TO AS "DEAD LAKE" IN VARIOUS REPORTS ATTRIBUTED TO BOTH THIS OCCURRENCE AND OCCURRENCE #7.

PLSS: T16N, R01W, Sec. 18 (H)
Accuracy: specific area
Area (acres): 1
UTM: Zone-10 N4626399 E398351
Latitude/Longitude: 41.78293 / -124.22322
Elevation (feet): 80

County Summary:
Del Norte

Quad Summary:
Crescent City (4112472)

Sources:

IMP87R0002	IMPER, D. - OVERVIEW: 1987 FIELD SURVEY. PHACELIA ARGENTEA IN CALIFORNIA. 1987-XX-XX
KAL08R0001	KALT, J. - STATUS REVIEW AND FIELD INVENTORY FOR PHACELIA ARGENTEA. 2008-04-01
MYE88R0001	MYERS, M. - ELEMENT CONSERVATION PLAN FOR PHACELIA ARGENTEA 1988-12-01
NYO03F0006	NYOKA, S. - FIELD SURVEY FORM FOR ERYSIMUM MENZIESII SSP. EUREKENSE & PHACELIA ARGENTEA 2003-08-01
NYO04D0001	NYOKA, S. - CNDDB RARE PLANT SHAPEFILES FOR TOLOWA DUNES 2004-01-07

Occurrence Report

California Department of Fish and Game

California Natural Diversity Database

Map Index Number: 72933 **EO Index:** 73846

Key Quad: Crescent City (4112472) **Element Code:** PDHYD0C070

Occurrence Number: 9 **Occurrence Last Updated:** 2008-12-01

Scientific Name: *Phacelia argentea* **Common Name:** sand dune phacelia

Listing Status: **Federal:** None **Rare Plant Rank:** 1B.1

State: None **Other Lists:**

CNDDB Element Ranks: **Global:** G2

State: S1.1

General Habitat:

COASTAL DUNES.

Micro Habitat:

STABILIZED AND RECENTLY MOVING SAND DUNES. 3-25M.

Last Date Observed: 2003-08-XX **Occurrence Type:** Natural/Native occurrence

Last Survey Date: 2003-08-XX **Occurrence Rank:** Good

Owner/Manager: DNT COUNTY **Trend:** Unknown

Presence: Presumed Extant

Location:

SOUTH SIDE OF CRESCENT CITY LANDFILL, NORTHWEST OF DEAD LAKE.

Detailed Location:

2 POLYGONS MAPPED IN THE SW 1/4 OF THE SE 1/4 OF SECTION 7.

Ecological:

DISTURBED FOREDUNE. PLANTS ARE LOCATED AT EDGES OF SAND BORROW PITS, AT THE BASE OR MIDSLOPE. ASSOC. WITH OENOTHERA WOLFII X OENOTHERA GLAZIOVIANA, AMMOPHILA ARENARIA, ANTHOXANTHUM ODORATUM, ET AL. THE RARE OENOTHERA WOLFII OCCURS NEARBY.

Threats:

MECHANICAL IMPACTS, HEAVY EQUIPMENT USE FOR SAND REMOVAL FOR LANDFILL CAP MATERIAL.

General:

10 PLANTS OBSERVED BETWEEN THIS OCCURRENCE AND OCCURRENCE #10 IN 1995. SAND MINING FOR LANDFILL CAP MATERIAL APPEARS TO HAVE CREATED SUITABLE HABITAT FOR PHACELIA.

PLSS: T16N, R01W, Sec. 07 (H) **Accuracy:** specific area **Area (acres):** 2

UTM: Zone-10 N4627104 E398600 **Latitude/Longitude:** 41.78931 / -124.22034 **Elevation (feet):** 50

County Summary:	**Quad Summary:**
Del Norte	Crescent City (4112472)

Sources:

IMP87R0002	IMPER, D. - OVERVIEW: 1987 FIELD SURVEY. PHACELIA ARGENTEA IN CALIFORNIA. 1987-XX-XX
IMP95F0003	IMPER, D. - FIELD SURVEY FORM FOR PHACELIA ARGENTEA 1995-08-08
KAL08R0001	KALT, J. - STATUS REVIEW AND FIELD INVENTORY FOR PHACELIA ARGENTEA. 2008-04-01
NYO03F0006	NYOKA, S. - FIELD SURVEY FORM FOR ERYSIMUM MENZIESII SSP. EUREKENSE & PHACELIA ARGENTEA 2003-08-01
NYO04D0001	NYOKA, S. - CNDDB RARE PLANT SHAPEFILES FOR TOLOWA DUNES 2004-01-07

Occurrence Report

California Department of Fish and Game

California Natural Diversity Database

Map Index Number:	72944	**EO Index:**	73855
Key Quad:	Crescent City (4112472)	**Element Code:**	PDHYD0C070
Occurrence Number:	10	**Occurrence Last Updated:**	2008-11-20

Scientific Name: *Phacelia argentea* **Common Name:** sand dune phacelia

Listing Status: **Federal:** None **Rare Plant Rank:** 1B.1

State: None **Other Lists:**

CNDDB Element Ranks: **Global:** G2

State: S1.1

General Habitat:

COASTAL DUNES.

Micro Habitat:

STABILIZED AND RECENTLY MOVING SAND DUNES. 3-25M.

Last Date Observed:	1995-08-08	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1995-08-08	**Occurrence Rank:**	Good
Owner/Manager:	DNT COUNTY	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NORTH SIDE OF CRESCENT CITY LANDFILL, NORTHWEST OF DEAD LAKE.

Detailed Location:

2 POLYGONS MAPPED IN THE S 1/2 OF THE NE 1/4 OF SECTION 7.

Ecological:

DISTURBED FOREDUNE. PLANTS ARE LOCATED AT EDGES OF SAND BORROW PITS, AT THE BASE OR MIDSLOPE. ASSOC. WITH OENOTHERA WOLFII X OENOTHERA GLAZIOVIANA, AMMOPHILA ARENARIA, ANTHOXANTHUM ODORATUM, ET AL. THE RARE OENOTHERA WOLFII OCCURS NEARBY.

Threats:

MECHANICAL IMPACTS, HEAVY EQUIPMENT USE FOR SAND REMOVAL FOR LANDFILL CAP MATERIAL.

General:

10 PLANTS OBSERVED BETWEEN THIS OCCURRENCE AND OCCURRENCE #9 IN 1995. THE SAND MINING APPEARS TO HAVE CREATED SUITABLE HABITAT FOR PHACELIA.

PLSS:	T16N, R01W, Sec. 07 (H)	**Accuracy:**	specific area	**Area (acres):**	2
UTM:	Zone-10 N4627806 E398469	**Latitude/Longitude:**	41.79562 / -124.22204	**Elevation (feet):**	50

County Summary:	**Quad Summary:**
Del Norte	Crescent City (4112472)

Sources:

IMP87R0002	IMPER, D. - OVERVIEW: 1987 FIELD SURVEY. PHACELIA ARGENTEA IN CALIFORNIA. 1987-XX-XX
IMP95F0003	IMPER, D. - FIELD SURVEY FORM FOR PHACELIA ARGENTEA 1995-08-08
KAL08R0001	KALT, J. - STATUS REVIEW AND FIELD INVENTORY FOR PHACELIA ARGENTEA. 2008-04-01

Occurrence Report

California Department of Fish and Game

California Natural Diversity Database

Map Index Number:	56042	**EO Index:**	56058
Key Quad:	Crescent City (4112472)	**Element Code:**	PDONA0C1K0
Occurrence Number:	15	**Occurrence Last Updated:**	2004-07-14

Scientific Name: *Oenothera wolfii* **Common Name:** Wolf's evening-primrose

Listing Status: **Federal:** None **Rare Plant Rank:** 1B.1

State: None **Other Lists:** BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G1

State: S1.1

General Habitat:

COASTAL BLUFF SCRUB, COASTAL DUNES, COASTAL PRAIRIE, LOWER MONTANE CONIFEROUS FOREST.

Micro Habitat:

SANDY SUBSTRATES; USUALLY MESIC SITES. 3-800M.

Last Date Observed:	1995-07-04	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1995-07-04	**Occurrence Rank:**	Poor
Owner/Manager:	DNT COUNTY	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

CRESCENT CITY LANDFILL, 1.5 MILES NORTHWEST OF CRESCENT CITY.

Detailed Location:

PLANTS SCATTERED ACROSS SITE IN DISTURBED AREAS. MAPPED WITHIN THE S 1/2 OF THE NE 1/4 AND THE N 1/2 OF THE SE 1/4 OF SECTION 7.

Ecological:

DISTURBED ROADSIDE DUNE SLIP FACE AND SAND BORROW PIT. WITH INTRODUCED GRASSES, ACHILLEA, RUBUS URSINUS, RAPHANUS, POLYGONUM, PINUS CONTORTA, AND ERIOGONUM.

Threats:

MECHANICAL IMPACTS FROM MACHINERY AND SAND REMOVAL. HYBRIDIZATION AT NORTHERN COLONIES.

General:

16 PLANTS SEEN IN 1995.

PLSS:	T16N, R01W, Sec. 07 (H)	**Accuracy:**	specific area	**Area (acres):**	7
UTM:	Zone-10 N4627576 E398582	**Latitude/Longitude:**	41.79356 / -124.22063	**Elevation (feet):**	40

County Summary:	**Quad Summary:**
Del Norte	Crescent City (4112472)

Sources:

IMP95F0002 IMPER, D. - FIELD SURVEY FORM FOR OENOTHERA WOLFII 1995-07-04

Occurrence Report

California Department of Fish and Game

California Natural Diversity Database

Map Index Number:	71760	**EO Index:**	72649
Key Quad:	Crescent City (4112472)	**Element Code:**	PDPLM04130
Occurrence Number:	38	**Occurrence Last Updated:**	2008-07-21

Scientific Name: *Gilia millefoliata* **Common Name:** dark-eyed gilia

Listing Status: **Federal:** None **Rare Plant Rank:** 1B.2

State: None **Other Lists:** BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2

State: S2.2

General Habitat:

COASTAL DUNES.

Micro Habitat:

2-20M.

Last Date Observed:	2003-08-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2003-08-XX	**Occurrence Rank:**	Fair
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

0.3 AIR MILE EAST OF THE NORTH END OF DEAD LAKE, NORTH OF CRESCENT CITY.

Detailed Location:

MAPPED IN THE SW 1/4 OF THE SE 1/4 OF SECTION 7, ACCORDING TO SHAPEFILE PROVIDED BY NYOKA IN 2004.

Ecological:

SEMI-STABILIZED DUNES. ASSOC W/FESTUCA RUBRA, ARTEMISIA PYCNOCEPHALA, ERIOGONUM LATIFOLIUM, POLYGONUM PARONYCHIA, ARMERIA MARITIMA.

Threats:

ORV ACTIVITY, AMMOPHILA ARENARIA.

General:

UNKNOWN NUMBER OF PLANTS OBSERVED IN 2003. SITE QUALITY, ECOLOGICAL, AND THREAT INFO. ARE FROM NYO03F0004, WHICH GIVES GENERAL INFO. FOR A VERY LARGE AREA WITH SEVERAL OCCURRENCES.

PLSS:	T16N, R01W, Sec. 07 (H)	**Accuracy:**	specific area	**Area (acres):**	0
UTM:	Zone-10 N4626978 E398466	**Latitude/Longitude:**	41.78816 / -124.22193	**Elevation (feet):**	50

County Summary:	**Quad Summary:**
Del Norte	Crescent City (4112472)

Sources:

NYO03F0004	NYOKA, S. - FIELD SURVEY FORM FOR GILIA MILLEFOLIATA 2003-08-XX
NYO04D0001	NYOKA, S. - CNDDB RARE PLANT SHAPEFILES FOR TOLOWA DUNES 2004-01-07

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COUNTY OF DEL NORTE

WETLAND DELINEATION FOR COX MINOR SUBDIVISION PROJECT, DEL NORTE COUNTY

Wetland Delineation

The primary purpose of a wetland determination at this site was to determine the delineation of wetland versus non-wetland areas within the property. A wetland delineation was performed on May 16th, 2011, one day after a rainfall event. The wetland delineation was conducted in accordance with the currently applicable U.S. Army Corps of Engineers (ACOE) 1987 Wetland Delineation Manual, including the 2008 Supplemental.

The ACOE utilizes a three-parameter method for making wetland determinations. The ACOE considers an area a wetland if all three wetland indicators are present: wetland hydrology (periodic inundation for a minimum of seven consecutive days during the growing season), a predominance of hydrophytic (water-loving) vegetation (plants adapted to anaerobic conditions resulting from a prolonged inundation with water) and hydric soils (soils that become saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth of hydrophytic vegetation).

The CDF&G is the State resource agency with responsibility for wetland protection, and the project is also within the jurisdiction of the California Coastal Commission. Both agencies consider an area a wetland if one of the three wetland indicators is present at that specific location.

Site Conditions

The property is located on the west side of Old Mill Road, south of Lake Earl. The area is very flat with only 20 feet in elevation at the project site. The ground rises to west in the form of natural, tree-covered sand dunes.

A small drainage begins to the south west, which drains the entire neighborhood between Alpine Street and Vincent Road. As the ground rises to the west, much of this area drains east toward Old Mill Road, and the flow is captured in drainage ditches which then empty into the small drainage. This drainage flows northwest, along and away from the west edge of the Applicant's property. The drainage, west of the project property, is narrow, lined with willows (*Salix* sp.), with a stand of Sitka spruce (*Picea sitchensis*) on higher ground immediately west of it.

Wetland Delineation Results

Sample Plot 1a was located 146 feet west of the existing house, at the east edge of the small-fruited bulrush patch. Disturbed conditions exist at this site, as historically some clearing of vegetation has been conducted in this backyard. Soils were very sandy, indicating excellent drainage, and dry although it had rained the day previous. Vegetation was dominated by pasture and velvet grass. Two feet west of Plot 1a, and approximately 6 inches lower in elevation, the vegetation changed dramatically to wetland species such as the small-fruited bulrush and common rush (*Juncus effuses*). The wetland delineation line was placed at Plot 1a.

Sample Plot 2a was located farther to the northwest, as the small-fruited bulrush patch did not extend this far north. As the small drainage moves to the northwest away from the property, this delineation point was much farther west. Although also disturbed from land clearing, re-emergent vegetation was dominated by upland species such as sword fern (*Polystichum munitum*), twinberry (*Lonicera involucrate*), thistles and pasture grass. Soils at this location were not as sandy, but were dry and showed no hydric indicators. Immediately west of Plot 2a, and 12 inches lower in elevation, vegetation was dominated by the willows along the riparian edge. The wetland delineation line was placed at Plot 2a.

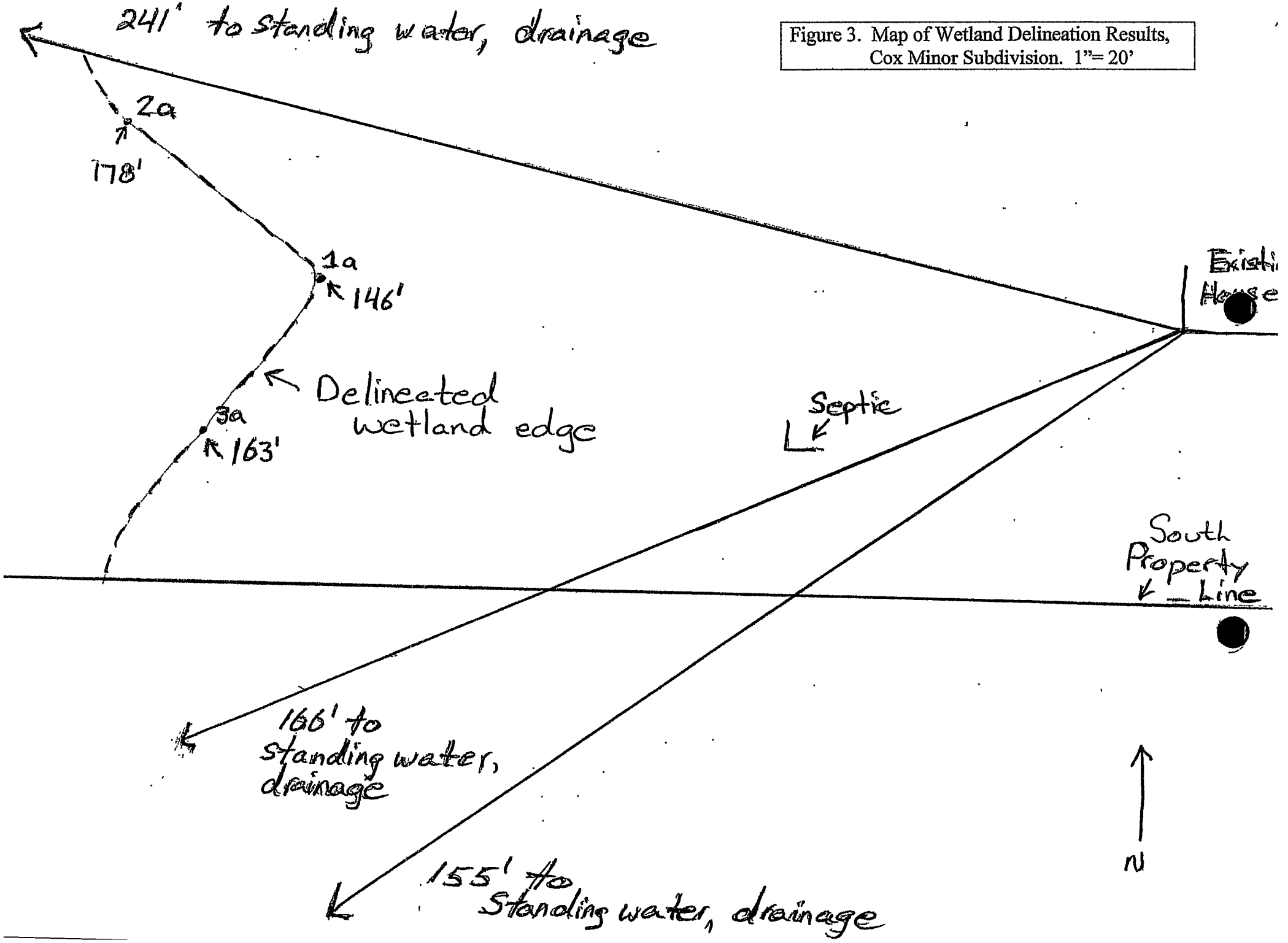
Sample Plot 3a was located 164 feet west southwest of the existing house. Soils at this plot were rich brown in color and dry, with no hydric indicators. As this was part of the mowed backyard, vegetation was limited to upland grasses and weeds. Immediately west of Plot 3a the ground dropped in elevation and vegetation became more hydric in nature, with common rush and willows dominating. The wetland delineation line was placed at Plot 3a.

Summary and Recommendations

A wetland edge was located just east of the riparian strip located along the edge of a small drainage channel west of the existing house on the project property. A small patch of small-fruited bulrush extends farther east than the riparian strip, likely due to sub-surface water, and extends the wetland edge slightly to the east in the midst of the property.

It is recommended that a 100 foot no-development buffer be applied to the wetland edge as delineated and described above.

Figure 3. Map of Wetland Delineation Results, Cox Minor Subdivision. 1"= 20'



SOIL

Sampling Point: 1a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-2								Chipped Veg - historic
16	4/2 7.5YR 95		no features				sandy - loose, sandy	
							soil, dry	
	- chunks of decomposing wood found @ 16" - 4-6" long							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks: dry @ 16" after rainday event one day previous.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: dry at 16" - no wetland indicators.

SOIL

Sampling Point: 2a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-2								wood chips
18"	3/4 5YR 4/6		no features					dry, loose, granulated soil, brown/red in color

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil was dry at 18" one day after rain event.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

evidence of drainage channel to west of plot 2a.

SOIL

Sampling Point: 3a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-10								Previous fill
18	3/3 7.5YR		no features					Rich brown, no mottles or other indicators.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
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- ___ Sandy Mucky Mineral (S1)
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- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (except MLRA 1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil dry @ 18" one day after rain event.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of hydrology at 3a. Wetland plant species dominate one foot to west.

c) National Fire Protection Association Standards (NFPA) for fire flow minimums and other design questions not specifically covered by CFC and PUC
d) Housing and Community Development Codes and Standards —for mobile home parks and recreational camps

4. For Department of Real Estate reporting purposes, fire protection coverage in SRA is generally described as follows:
   During the declared fire season (usually June through October) CALFIRE responds to all types of fires and emergencies in SRA.
   During the remainder of the year (winter period), CALFIRE responds to emergency requests with the closest available fire engine, if a response can reasonably be expected to arrive in time to be effective. A fire engine is usually available somewhere in the Unit, but may have an extended response time.
   There are many hazards confronting fire protection agencies in most subdivisions on SRA lands. Steep terrain and heavy wildland fuels contribute to fire intensity and spread. The distances from fire stations and road grades encountered usually create an excessive response time for effective structure fire suppression purposes.
   Subdivisions increase fire risks from additional people and increase probable dollar losses in the event of fire due to added structures and improvements.

5. If the project expects to produce densities consistent with a major subdivision, the impacts on all infrastructures should be mitigated. Local government more appropriately provides the responsibility for high-density area protection and services. Annexation or inclusion into Local Responsibility Area should be studied as well.

6. CALFIRE does not support development in areas where there is no local agency fire service for structure fires and emergency medical response. Fire services should be extended into service gap areas as a condition of development. New development can adversely impact existing fire services. Careful consideration must be given where development may overload the local fire service's ability to respond.

RESOURCE MANAGEMENT

CALFIRE has enforcement responsibility for requirements of the Z'berg—Nejedly Forest Practice Act of 1973. CALFIRE is also the lead agency for those parts of projects involving the scope of the Forest Practice Act. The following basic input will cover the majority of projects. Each project will be reviewed with additional input sent at a later date, if needed.

The following comments reflect the basic Resource Management policies of the Board of Forestry and Fire Protection and CALFIRE on CEQA review requests. These policies apply to both Local and State Responsibility Areas.

1. If this project reduces the amount of timberland, by policy, the Board of Forestry and CALFIRE cannot support any project that will reduce the timberland base of California. "Timberland" means land which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees regardless of current zoning (PRC 4526). However, if the zoning and intended use are consistent with the county's general plan; and if no land other than timberland can be identified to site the project; then CALFIRE may choose not to oppose the project.

2. If **any** commercial timber operations are involved with a project, the timber operations cannot be conducted without a CAL FIRE permit. Commercial timber operations include the cutting or removal of trees offered for sale, barter, exchange, or trade or the conversion of timberlands to land uses other than the growing of timber (PRC 4527). Contact your nearest CAL FIRE Resource Management office for guidance on obtaining the necessary permits.

3. If **any** timberlands are being converted to a non-timber growing use by this project, the conversion operations cannot be conducted without a CAL FIRE permit (PRC 4621). Conversion of timberland takes place when trees are removed and the land use changes, even without the sale, barter, exchange, or trade of the trees. Contact your nearest CAL FIRE Resource Management office for guidance on obtaining the necessary permits.

GALEA WILDLIFE CONSULTING

200 Raccoon Court . Crescent City . California 95531
Tel: 707-464-3777
E-mail: frankgalea@charter.net . Web: www.galeawildlife.com

BIOLOGICAL ASSESSMENT, COX MINOR SUBDIVISION PROJECT, DEL NORTE COUNTY

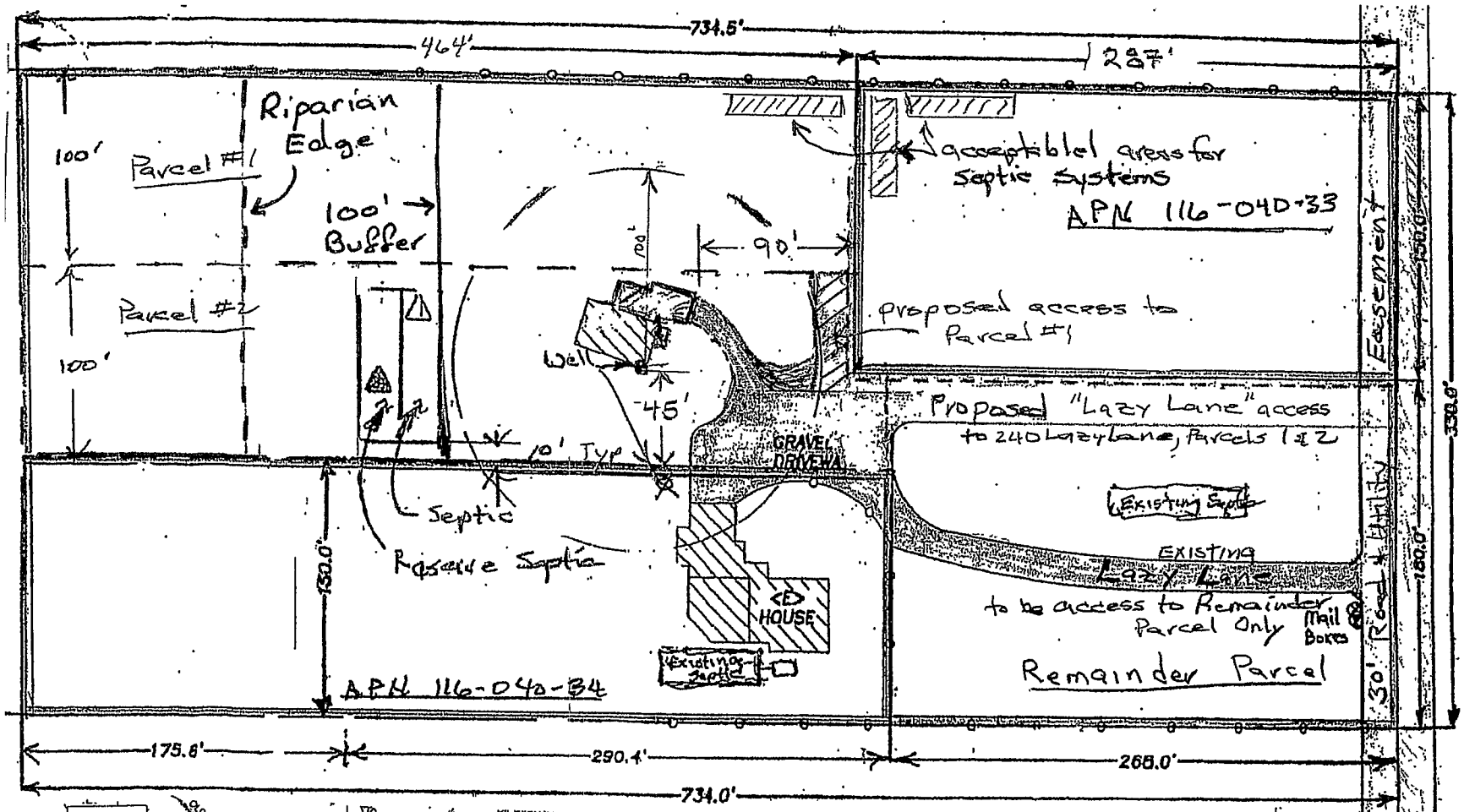
Submitted to: Crescent City Planning Department
377 J Street
Crescent City, CA 95531

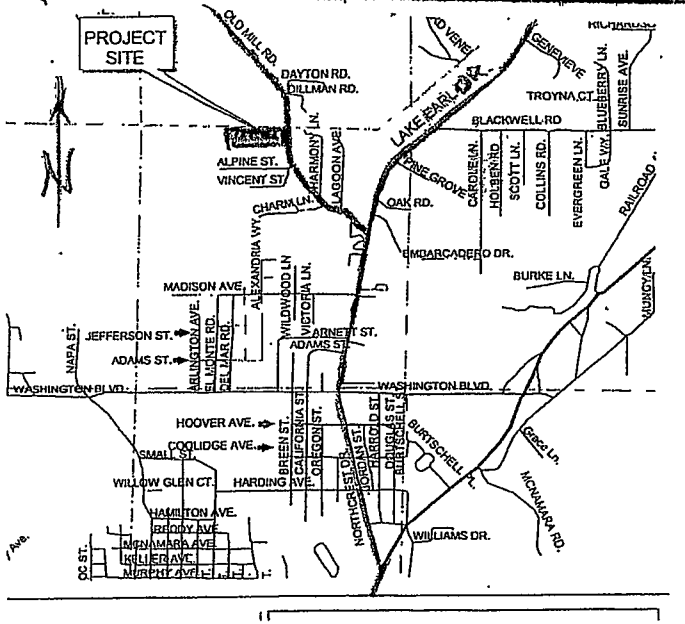
Prepared by: Frank Galea, Certified Wildlife Biologist
E-mail: frankgalea@charter.net

Galea Wildlife Consulting
200 Raccoon Court
Crescent City, CA 95531

Submitted: April, 2011

By:





Charlest Kathleen Cox
NAME OF APPLICANT

4310 Wonder Stump Rd
Crescent City
ADDRESS

(707) 464 5411
PHONE NUMBER

116-040-35
APN

PLOT PLAN

to endangered and threatened plants. However, these restrictions are less stringent than those applicable to fish and wildlife species. These provisions prohibit the removal of, malicious damage to, or destruction of any listed plant species "from areas under federal jurisdiction." Listed plants may not be cut, dug up, damaged or destroyed, or removed from any other area (including private lands) in knowing violation of a State law or regulation.

(b) Raptors & Migratory Bird Treaty Act (MBTA). The MBTA (16 United States Code [USC] 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorized the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. The MBTA sets seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 CFR 21, 50 CFR 10).

(c) U.S. Army Corps of Engineers. Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers is responsible for regulating the discharge of fill material into waters of the U.S. Waters of the U.S. and their lateral limits are defined in 33 CFR (Code of Federal Regulations) Part 328.3 (a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed "isolated wetlands" and may be subject to U.S. Army Corps of Engineers jurisdiction.

(d) California Department of Fish and Game. The CDFG has jurisdiction over threatened or endangered species that are formally listed by the State under the California Endangered Species Act (CESA). The CESA is similar to the federal Endangered Species Act both in process and substance; it is intended to provide additional protection to threatened and endangered species in California.

The CESA does not supersede the federal Endangered Species Act, but operates in conjunction with it. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and federal laws would apply) or under only one act. The California endangered species laws prohibit the taking of any plant listed as threatened, endangered, or rare. In California, an activity on private lands (such as development) will violate Section 9 of the Endangered Species Act if a plant species, listed under both State and federal endangered species laws, is intentionally removed, damaged, or destroyed. Under the State Fish and Game Code, the CDFG also has jurisdiction over species that are designated as "fully protected." These species are protected against direct impacts. The CDFG maintains informal lists of species of special concern, which are broadly defined as plants and wildlife that are of concern to CDFG because of population declines and restricted distributions, and/or they are associated with habitats that are declining in California. These species, as well as threatened and endangered species, are inventoried in the California Natural Diversity Database.

The CDFG also exerts jurisdiction over the bed and banks of watercourses according to the provisions of Section 1600 to 1616 of the Fish and Game Code. The Department will require a Streambed Alteration Permit for the fill or removal of any material from any natural drainage. CDFG's jurisdiction extends to the top of banks and may include the outer edge of riparian vegetation canopy cover.

(e) California Native Plant Society. The California Native Plant Society has developed lists of plants of special concern in California. A California Native Plant Society List IA plant is a species, subspecies, or variety that is considered to be extinct. A List 1B plant is considered rare, threatened, or endangered in California and elsewhere. A List 2 plant is considered rare, threatened, or endangered in California, but is more common elsewhere. A List 3 plant is a species for which California Native Plant Society lacks necessary information to determine if it should be assigned to a list or not. A List 4 plant has a limited distribution in California. All List 1 and List 2 plant species meet the requirements of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the CDFG Code, and are eligible for State listing. Therefore, List 1 and 2 species should be considered under CEQA. Very few List 3 and List 4 plants are eligible for listing, but may be locally important, and their listing status could be elevated if conditions change.

(f) CEQA Guidelines, Section 15380. Although threatened and endangered species are protected by specific federal and State statutes, the CEQA Guidelines in Section 15380(b) provide that a species not included on the federal or State lists of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the federal Endangered Species Act and the CDFG Code. This section was included in the CEQA Guidelines primarily to deal with situations in which a public lead agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the U.S. Fish and Wildlife Service or CDFG. Thus, CEQA provides a lead agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

(g) Regional Water Quality Control Board. Pursuant to Section 401 of the Clean Water Act, projects that apply for a U.S. Army Corps of Engineers permit for discharge of dredge or fill material, and projects that qualify for a Nationwide Permit, must obtain water quality certification from the Regional Water Quality Control Board (RWQCB) that the project will uphold State water quality standards. Alternatively, the RWQCB may elect to notify an applicant that the State may issue Waste Discharge Requirements in lieu of a Section 401 certification for a project

(h) California Coastal Commission. The California Coastal Commission (CCC) is a state regulatory agency whose primary role is the protection of coastal resources. As this project is located within the coastal zone all CCC protection measures would apply.

3.3 Field Investigation

A field investigation of the project area was conducted in March of 2011. Certified Wildlife Biologist Frank Galea conducted the field review. All potential wildlife habitats within the project area and within 1/5 mile around the project area were assessed for their potential for listed wildlife species.

4.0 RESULTS AND POTENTIAL IMPACTS

4.1 Records Search

The CDFG Natural Diversity Data Base (CNDDB, 2011) provided a summary of those federal and state-listed and sensitive wildlife species and their mapped locations (Figure 3), reported to have occurred at least once within two miles of the project site. Except for anadromous fish, no sensitive wildlife species was noted to occur within 1/2 mile of the project area.

A list of those sensitive or listed animal species potentially occurring in the vicinity of the project area is presented in Table 1, including the common and scientific names for each. The listing status of each species and if potential habitat (as determined by GWC, based upon a review of habitat available within the project area) was located within the project area is also indicated in Table 1.

4.2 Habitat Analysis and Impact Assessment for Fish and Wildlife

An assessment of potential habitats and impacts for sensitive wildlife species was conducted in February of 2011. The project area was found to contain no potential for the wildlife species listed in Table 1, except for fish species in the Smith River. No occurrences of threatened, endangered or otherwise sensitive wildlife species are listed in the CNDDB for the project site.

Table 1. Sensitive Wildlife Species Occurring or with the Potential to Occur Within the Region of the Project Area
(From CNDDB 2011 Quad search, USFWS Del Norte County list, and GWC sources):

Common Name	Scientific Name	Federal Status	State Status	Breeding Habitat in Project Area?	Forage Habitat in Project Area?
AMPHIBIANS					
Northern red-legged frog	*Rana aurora aurora*	None	CSC	No	No
INVERTEBRATES					
Hippolyta frittilary	*Speyeria zerene hippolyta*	FT	SC	No	No

Codes:

Federal Status

FE	Federally endangered
FT	Federally threatened
FC	Federal candidate for listing
FSC	Federal species of concern
FPE	Federally proposed for endangered listing
FPT	Federally proposed for threatened listing

State Status

CE	California endangered
CT	California threatened
CCE	California candidate for endangered listing
CSC	California species of concern (CDFG)
CFP	California fully protected

Table 2. Sensitive Plant Species Potentially Occurring in Assessment Area Based On 2011 CNDDB Records.

Common Name	Scientific Name	Federal Status	CNPS List	Preferred Habitat	Habitat in Project Area?
Wolf's evening-primrose	*Oenothera wolfii*	None	List 1B.1	Coastal bluff scrub or dunes, lower coniferous forest	No
Dark-eyed gilia	*Gilia millefoliata*	None	1B.2	Sandy, mesic soils, dunes	No
Sand dune phacelia	*Phacelia argentea*	None	1B.1	Coastal dunes	No

5.0 Recommendations for Resource Protection

A 100 foot non-development buffer from the east edge of riparian habitat on the west edge of the property is recommended, as mapped. No other resource protections are necessary for this project.

6.0 STAFF QUALIFICATIONS

Habitat assessment and report writing for this project was conducted by Principal Biologist, Frank Galea. Frank is the primary Biological Consultant and owner of Galea Wildlife Consulting, established in 1989. Frank is certified as a Wildlife Biologist through the Wildlife Society. Frank's qualifications include a Master of Science Degree in Wildlife Management from Humboldt State University and a Bachelor of Science in Zoology from San Diego State University. Frank has been assessing habitat and conducting field surveys for Threatened and Endangered species for over 20 years. Frank has taken an accredited class on wetland delineation through the Wetland Training Institute, and has successfully completed a Watershed Assessment and Erosion Treatment course through the Salmonid Restoration Federation.

For remainder parcel existing system
4-30-2021

Woods Plumbing

Ricardo de Solenni

PO Box 705, Crescent City, CA 9531

Office: 707-464-3789 Fax: 704-464-2859

woodsplumbingcc@hotmail.com

Charles Cox
4310 Wonderstump
Crescent City Ca. 95531

Re: Septic Inspection
Corner of Lazy Lane and Oldmill Rd.
Crescent City Ca 95531

Date: April 22, 2021

The septic system consists of an 1800 gallon pre-cast two compartment concrete septic tank with a conventional leaching system installed. Water was ran into the leaching lines for one hour and the leaching lines are working properly a this time. The system used to serve a home that burned down over 14 years ago. The system is in good working order at this time my oonly recommendations is to install risers since the the septic tank is approximatley 2' in depth.

Ricardo de Solenni
Woods Plumbing
California Contractors Lic.#844506

Item 1
4-30-2021

STOVER ENGINEERING
Civil Engineers and Consultants

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Crescent City CA 95531
Tel: 707.465.6742
Fax: 707.465.5922
info@stovereng.com

CHARLIE COX
4310 WONDERSTUMP ROAD
CRESCENT CITY, CA 95531

Job Number: 4763

27 April 2021

RE: On-site Wastewater Treatment System Evaluation – APN 116-040-044-000

Dear Mr. Cox,

At your request, Stover Engineering performed an on-site wastewater treatment system (OWTS) evaluation for a minor subdivision on the subject parcel located at 220 Lazy Lane in Crescent City, CA. This letter supplements numerous OWTS reports prepared in the past. The existing parcel has an area of approximately 3.2 acres. The minor subdivision would create two 1-acre parcels and a remainder parcel as shown on the attached site sketch. The southerly parcel (lot #1) is developed with a residence and an existing leachfield. Water is provided for the residence by an existing well. A new well is proposed to provide water on the northerly parcel. Based on our investigation, it is our opinion that a conventional leachfield and reserve area can be located on the proposed northerly parcel. This report conforms to the Del Norte County Sewage Disposal Ordinance (design standards).

Our staff performed field observations during wet weather percolation testing season on 20 April 2021 to determine suitability for an OWTS. Branden Hendrix of the Del Norte County Environmental Health Division was notified of the observations but declined to attend. The existing ground at the site slopes down toward the east at approximately two percent. The site was previously evaluated for OWTS suitability as described in the Stover Engineering report dated 10 November 1992 and percolation testing dated 23 December 1992. Based on the previous evaluation, the proposed northerly parcel contains one suitable test pit (TP3A) and requires one additional primary/reserve area to be located on the site. One test pit was excavated to a depth of 8 feet below ground surface (bgs) with a backhoe, as indicated on the attached site sketch. The test pit is designated as TP-1. Soils observed in TP-1 were comprised of reddish-brown topsoil to a depth of 2 foot-bgs, tan loamy sand from 2 feet to 6 feet bgs, and tan clayey sand from 6 feet to 8 feet bgs. No groundwater or mottling was observed in TP-1.

Our staff performed wet weather percolation testing on the same day for the soil adjacent to TP-1 at a depth of 3 feet bgs. The soil at this location was determined to have a stabilized percolation rate of 10 minutes per inch. This rate is within the acceptable range for onsite wastewater disposal in accordance with the design standards.

The minimum required separation distance to groundwater from the bottom of conventional leachfields is five feet in accordance with the Regional Water Quality Control North Coast Basin Plan. Based on the percolation test results and our calculations, there is sufficient area to locate a conventional leachfield and reserve disposal area on the proposed northerly parcel, as shown on the attached site sketch. Copies of the site evaluation summary, site sketch, soils exploration log,

percolation test log, design calculations, leachfield details, and the referenced previous OWTS evaluations are attached to this letter.

Please be informed that grading activities which disturb the reserve or primary areas indicated on the attached site plan will alter the suitability of the existing soils and subsequently invalidate the findings of our report. In addition, the placement of both on-site and off-site future improvements, including but not limited to wells and water lines, must adhere to the setbacks indicated on the Site Evaluation Summary sheets (page 3).

The recommendations contained in this letter are based on data obtained during the stated site observations only. Soil conditions may vary throughout the site of the proposed disposal areas. Stover Engineering assumes no liability for conditions that differ from those observed by our staff at the time of the site visit.

We trust that this provides the information you require. Please feel free to contact us if you have any questions.

Very truly yours,

STOVER ENGINEERING

Grant Goddard, EIT
Assistant Civil Engineer

Ward L. Stover, PE
Principal

Attachments (9 pages)
Referenced Documents (22 pages)

STOVER ENGINEERING

SITE EVALUATION SUMMARY

Owner: CHARLIE COX

Date: 4/20/21

Address: 4310 WONDERSTUMP RD
CRESCENT CITY CA 95531

Job No.: 4763

APN: 116-040-044

Location: 220 LAZY LANE
"PROPOSED LOT #2"

Lot Size: 1 AC

Water System: PROPOSED WELL

Ground Slope: <1% DOWN TO EAST

Setbacks: (Delnorte County Minimum)	Septic tank		Leach Field	
Property Line	✓	(10')	✓	(10')
Well	✓	(100')	✓	(100')
Water Line	✓	(10')	✓	(10')
Stream	N/A	(100')	N/A	(100')
Drainage Channel	N/A	(50')	N/A	(50')
Ocean, Lake, etc.	N/A	(50')	N/A	(100')
Bluff or Cutback	N/A	(25')	N/A	(25')

Primary Area Site(s): TP-1 ON 4-20-21

Replacement Site(s): TP3A ON 11-5-92

Other excavations NONE

Depth to Hardpan, Bedrock, Etc.: NOT FOUND

Depth To Groundwater: NONE OBSERVED

Depth to Mottling: NONE OBSERVED

Other Factors: MOTTLING IN ADJACENT TEST PIT (1992)

Soil analysis zone: UNKNOWN Percolation Rate: 10 MPI

Depth of Soils under leachfield Required: 5 FT

Actual Depth Available: 5 FT.

Replacement Area Available: YES

Adequate? YES

Other Comments: EXISTING AND PROPOSED WELL LOCATIONS LIMIT SIZE/LAYOUT OF LEACHFIELD

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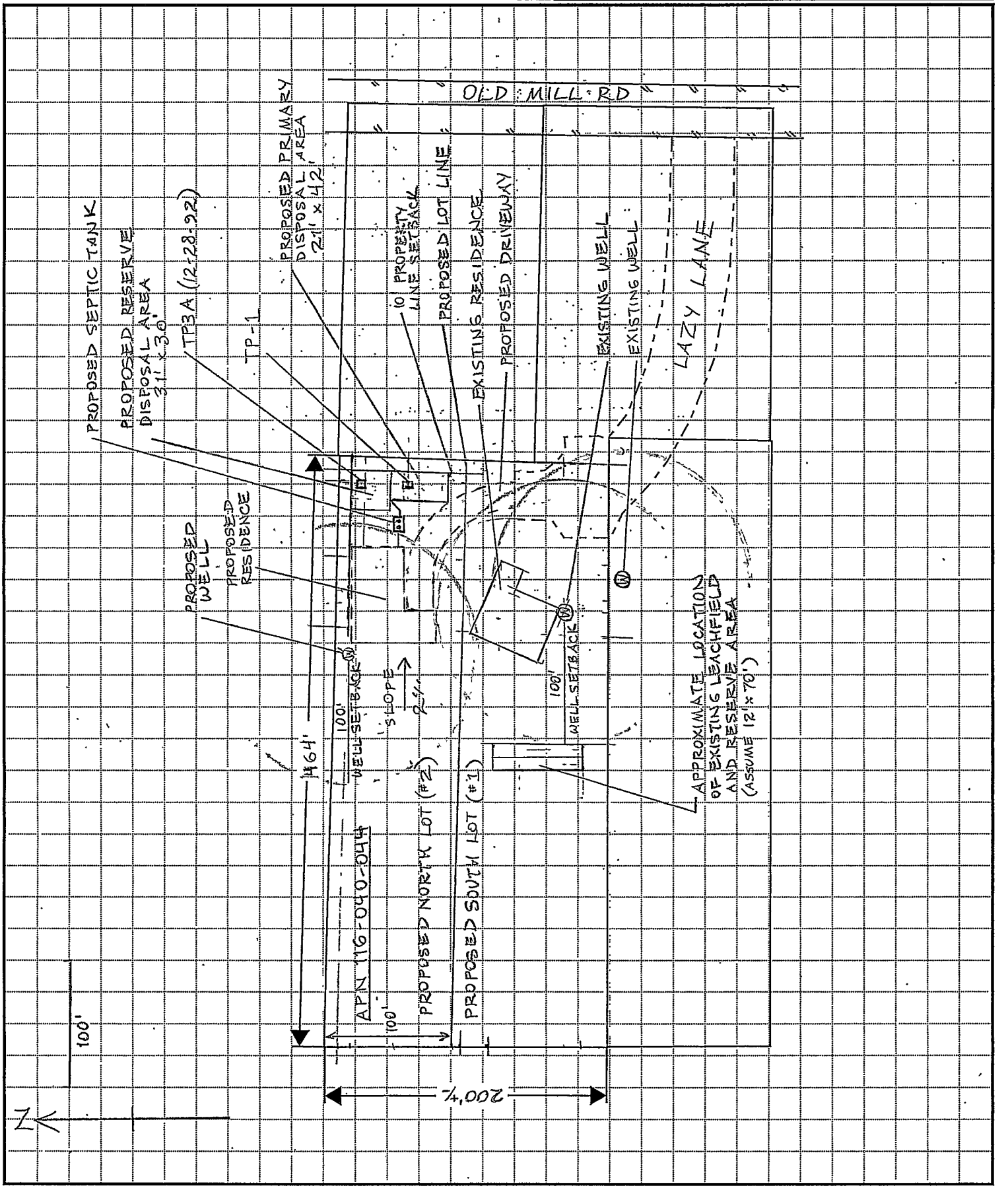
JOB 4763
SHEET NO. 2 OF 9
CALCULATED BY GBG DATE 4/26/21
CHECKED BY DATE
SCALE 1" = 100'



EXPLORATION TEST LOG

by GBG

Project Name Charlie Cox Job Number 4763 Date 4/20/21

Hole Number 1 Hole Type BACKHOE APN 116-040-044

Soil Sample	Depth (ft) 0'	Soil Description			
		Color	Type	Structure	Saturation
	1	RED BROWN	SANDY LOAM TOPSOIL	LOOSE	DRY
	2				
	3				
PERC	4	TAN	LOAMY SAND	GRANULAR	DRY
	5				
	6				
	7	TAN	SAND W/ CLAY	BLOCKY	DRY
	8				
	9	BOTTOM OF HOLE NO WATER OBSERVED			
	10				
	11				
	12				

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PERCOLATION TEST LOG

Project Name CHARLIE COX Job # 4763 Test Date 4/20/21 Logged By GBS

Hole Number 1 Hole Type BACKHOE/HAND Hole Elevation Water Table >8' BGS

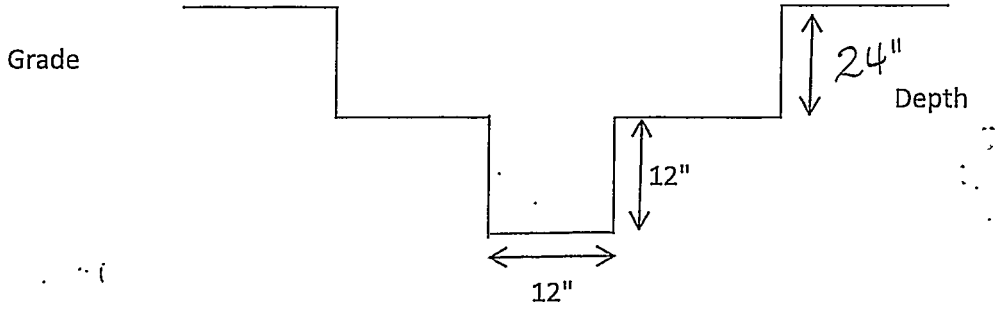
Soil Type SANDY Water Supply HOSE APN 116-040-044

Begin Time	End Time	Begin Level (inch)	End Level (inch)	Elapsed Time (minutes)	Drop (inch)	Rate (min/inch)
10:00	10:15	7.0	9.75	15	2.75	5.5
10:15	10:30	7.0	9.25	15	2.25	6.7
10:30	10:45	7.0	9.25	15	2.25	6.7
10:45	11:00	7.0	9.25	15	2.25	6.7
11:00	11:15	7.0	8.5	15	1.5	10
11:15	11:30	7.0	8.5	15	1.5	10
11:30	11:45	6.75	8.25	15	1.5	10
11:45	12:00	6.75	8.25	15	1.5	10

Maximum Allowable Percolation Rate = 5 min/inch

Minimum Allowable Percolation Rate = 60 min/inch

STABILIZED RATE = 10 MIN/INCH



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JOB 4763
SHEET NO. 5 OF 9
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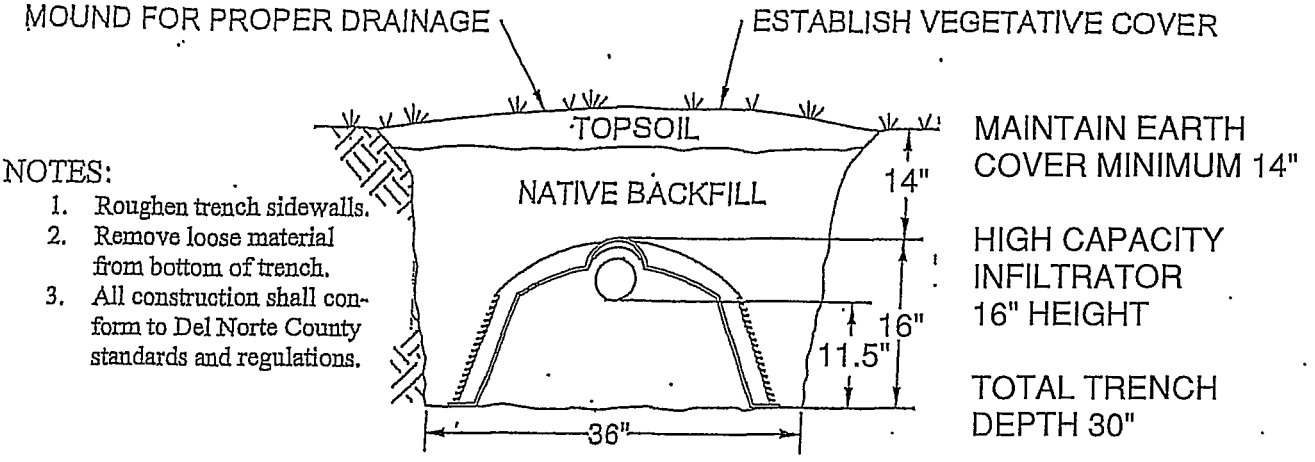
SCALE AS MARKED

TRENCH DETAIL



NOTES:
1. Roughen trench sidewalls.
2. Remove loose material from bottom of trench.
3. All construction shall conform to Del Norte County standards and regulations.

LEACHFIELD
Percolation Rate = ≤10 MPI Therefore, Application Rate = 1.0 GPD/SF

NORTH COAST BASIN PLAN

Table 4-2. RATES OF WASTEWATER APPLICATION FOR ABSORPTION AREAS

Soil Texture	Percolation Rate Minutes per Inch	Application Rate Gallons per Day per Square Foot
Gravel, coarse sand	<1	Not Suitable
Coarse to medium sand	1 - 5	1.2
Fine sand, loamy sand	6 - 15	1.1 - 0.8
Sandy loam, loam	16 - 30	0.7 - 0.6
Loam, porous silt loam	31 - 60	0.5 - 0.4
Silty clay loam, clay loam -a,b	61 - 120	0.4 - 0.2

Note: Application rates may be interpolated based on percolation rates, within the ranges listed above.

a. Soils without expandable clays.
b. These soils may be easily damaged during construction.

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6 OF 9

Disposal Field Design - Primary Disposal Area

01 - Determine Peak Flow	Peak Flow =	450	gpd	
	Based on Del Norte County Code 14.12.130 Table B			
02 - Determine Septic Tank Size	Septic Tank Size =	1200	gal	
	1000 gal minimum per UPC			
	1200 gal minimum per Del Norte County Code			
03 - Required Absorption Area	Soil Infiltration Rate, IR =	1.0	gpd/ft^2	
	Based on percolation testing and North Coast Regional Basin Plan 2018			
	AA =	**450**	ft^2	(Flow/IR)
04 - Determine Trench Length	L_1 =	**150**	ft	(AA/W_1)
	W_1 =	3	ft	
	Trench Depth =	2.5	ft	
	Washrock Depth = (BELOW PIPE)	12	in	
	Reduction Factor, RF =	**83**	%	(Table 3, Manual of Septic Tank Practice)
	For Infiltrators, washrock depth is equal to invert under lateral pipe.			
05 - Determine Adjusted Length	L_2 =	**125**	ft	(L_1*RF)
	No. Laterals, No.L =	3		
	Lateral Spacing, S =	6	ft	
	Del Norte requires 6' minimum, Humboldt 10' minimum			
	Else use twice the depth, W_1			
	Lateral Length, L_3 =	42	ft	(L_2/No.L) **OK**
	L_3 <70' recommended, <100' required for conventional			
	Total Leachfield Width, W =	**21**	ft	(No.L*W_1 + S*(No.L -1)

Note: For pressure distribution network the maximum lateral length may be larger than 100 ft and is determined based on head loss.

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7 OF 9

Disposal Field Design - Reserve Disposal Area

01 - Determine Peak Flow	Peak Flow =	450	gpd	
	Based on Del Norte County Code 14.12.130 Table B			
02 - Determine Septic Tank Size	Septic Tank Size =	1200	gal	
	1000 gal minimum per UPC			
	1200 gal minimum per Del Norte County Code			
03 - Required Absorption Area	Soil Infiltration Rate, IR =	1.0	gpd/ft^2	
	Based on percolation testing and North Coast Regional Basin Plan 2018			
	AA =	**450**	ft^2	(Flow/IR)
04 - Determine Trench Length	L_1 =	**150**	ft	(AA/W_1)
	W_1 =	3	ft	
	Trench Depth =	2.5	ft	
	Washrock Depth = (BELOW PIPE)	12	in	
	Reduction Factor, RF =	**83**	%	(Table 3, Manual of Septic Tank Practice)
	For Infiltrators, washrock depth is equal to invert under lateral pipe.			
05 - Determine Adjusted Length	L_2 =	**125**	ft	(L_1*RF)
	No. Laterals, No.L =	4		
	Lateral Spacing, S =	6	ft	
	Del Norte requires 6' minimum, Humboldt 10' minimum			
	Else use twice the depth, W_1			
	Lateral Length, L_3 =	**31**	ft	(L_2/No.L) **OK**
	L_3 <70' recommended, <100' required for conventional			
	Total Leachfield Width, W =	**30**	ft	(No.L*W_1 + S*(No.L -1)

Note: For pressure distribution network the maximum lateral length may be larger than 100 ft and is determined based on head loss.

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JOB 4763
SHEET NO. 8 OF 9
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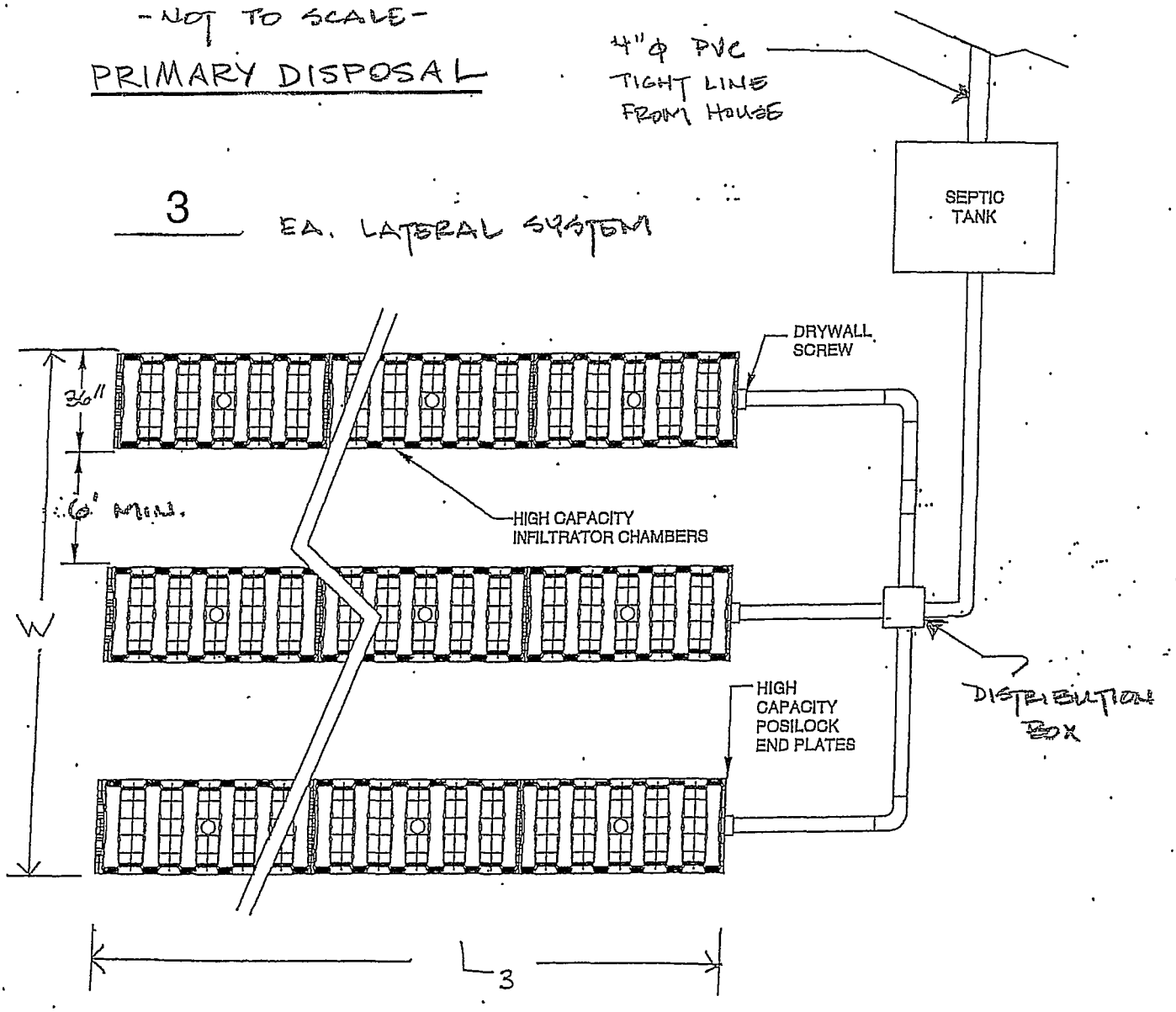
TYPICAL LAYOUT
-NOT TO SCALE-

PRIMARY DISPOSAL



L_3 = LENGTH OF LATERAL = 42 FT

W = OVERALL LEACHFIELD WIDTH = 21 FT

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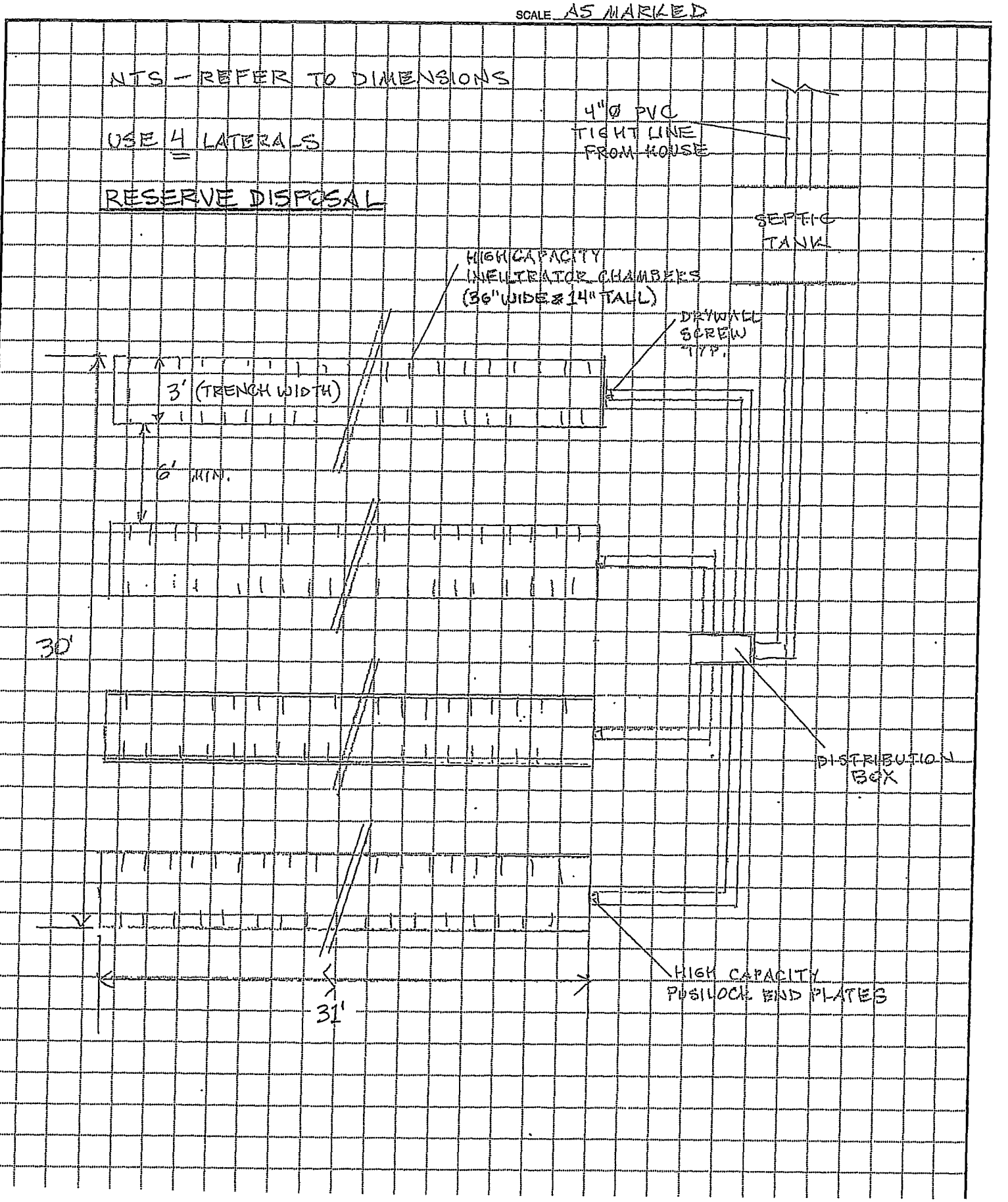


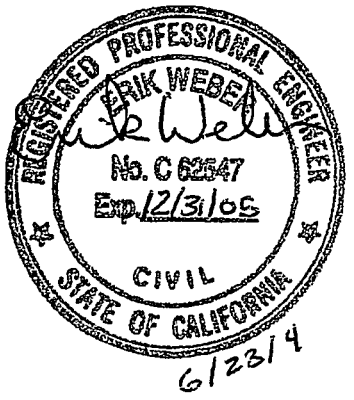
DRAINAGE STUDY

FOR

MINOR SUBDIVISION
APN 116-040-01

Crescent City, CA

June 2004



PREPARED
FOR

CHARLIE COX

BY

STOVER ENGINEERING
711 H St
Crescent City, CA 95531

JN 3605

QA/QC

INTRODUCTION

The proposed subdivision of APN 116-040-01 is located in Crescent City off Old Mill Rd. The project area is bounded on the east by Old Mill Road, and on the north and west by park land owned by the State of California. Residential development bounds the parcel on the south side. Old Mill road is at an elevation higher than the parcel and there does not appear to be any evidence of roadside drainage paths adjacent to the parcel. The topography of the general vicinity is very flat and runoff tends to pond in local depressions thereby limiting overland flow. The proposed subdivision includes 4 lots between 1.0 and 2.4 acres. Two of the four lots have existing residential structures. Generally the subdivision as proposed would not significantly increase runoff.

Based on existing site conditions as indicated in Figure 1.1, the potential for drainage flow between the proposed adjacent lots does not appear significant. Future development of individual lots may alter the drainage patterns as presented in this study.

METHODS

Storm water runoff has been computed using the rational method. Rainfall intensity is based on the IDF curves for Crescent City. Runoff coefficients used are based on land use classifications as described in the Caltrans Design Manual Section 800. Due to the low density of the development and flat terrain, 10 minutes was used for the initial time of concentration.

CONCLUSION

Drainage flow increases as a result of anticipated future development were calculated to be less than 0.1 cubic feet per second for any of the four proposed lots. No drainage improvements are proposed as a result of this insignificant increase in flow coupled with the lack of existing drainage paths and lack of a suitable discharge location. In the event that the development of the parcels occurs, such that significant changes to drainage patterns results, the use of infiltration trenches would be an effective form of mitigation. Preliminary sizing calculations for infiltration trenches for the three undeveloped lots are included in this report. These calculations substantiate the suitability of this particular site for infiltration trenches as a method of overland flow mitigation.

Home site construction should conform to the California Building Code to ensure proper drainage away from any new structure. In an effort to reduce runoff between lots, building pads should be situated with 25' setbacks from property lines. Building pad construction should conform to the California Building Code to ensure proper drainage away from any new structure.

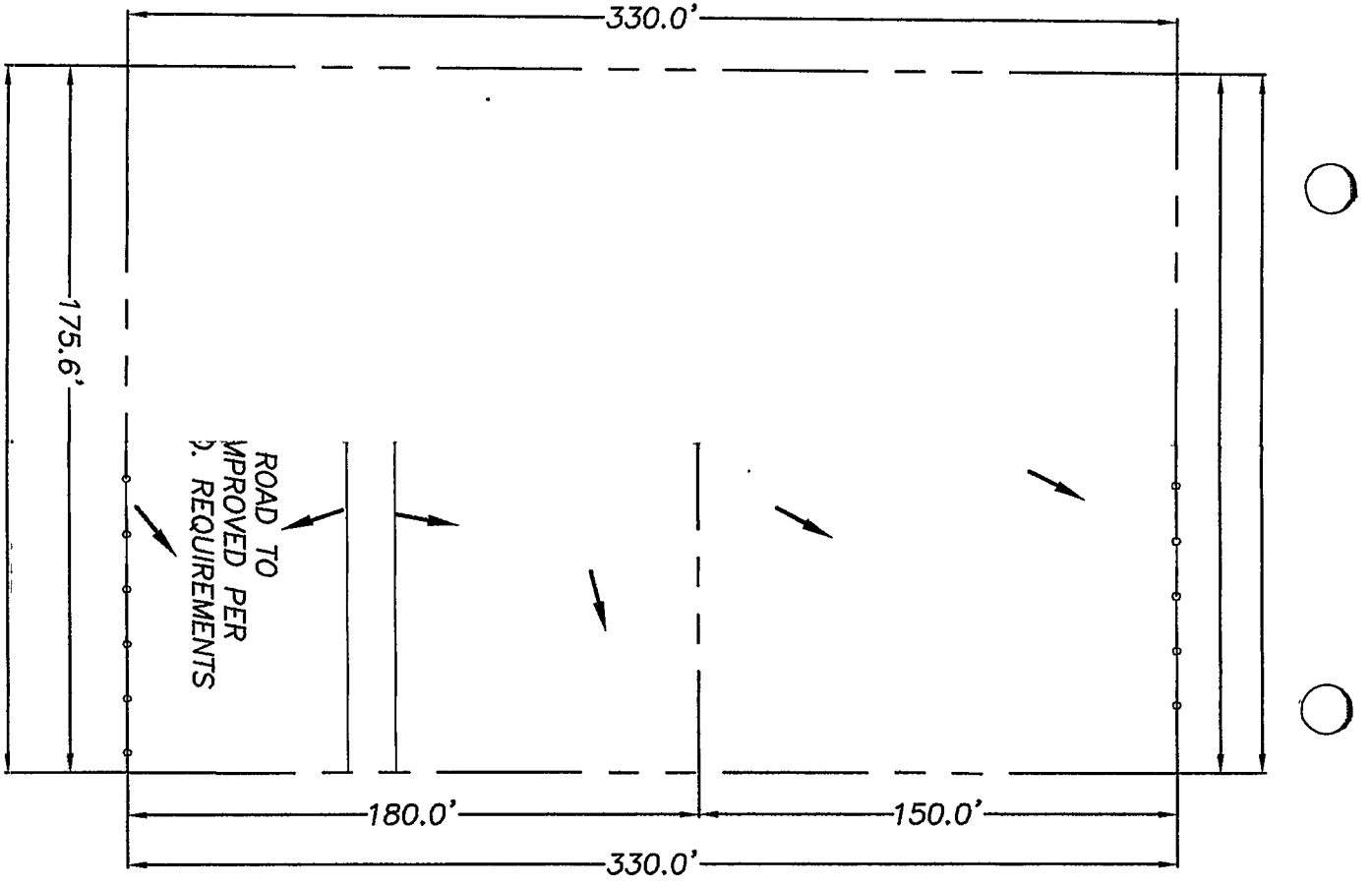


FIGURE 1.1	COX MINOR SUBDIVISION	DATE: 6/25/04	JOB NO. 3506	STOVER ENGINEERING
	EXISTING DRAINAGE CONDITIONS	SCALE: 1"=60'	DRAWN BY: TDC	Civil Engineers and Consultants

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JOB 3605 COX DRAINAGE STUDY
SHEET NO. 4 OF 12
CALCULATED BY EKW DATE 6/23/14
CHECKED BY DATE
SCALE

DRAINAGE CALCULATIONS

Runoff Coefficients (C):

From Table 8.19.2B (CALTRANS Hwy Design Manual)

* NOT IN TABLE

Drives & Walks		C = 0.75
Heavy Soil, flat (<2%)		C = 0.15
Roofs		C = 0.85
* Gravel Road	Assume	C = .45
* Dense Forest	Assume	C = 0.1

CALCULATE AVERAGE "C" VALUES

LOT 1 - EXISTING (E)

ROAD = (15')(270') = 4050 ft²
ROOF = (35')(50') = 1750 ft²
Soil = = 42,550 ft²

$$C = \frac{(4050)(0.45) + (1750)(0.85) + (42,550)(0.15)}{48351}$$

C = 0.20 (EXISTING)

LOT 1 - POST Development

ROAD = (30)(365) = 10950 ft²
Roof = 1750 ft²
Soil = 35,051

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JOB 3605 COX DRAINAGE STUDY
SHEET NO. 50 OF 12
CALCULATED BY EKW DATE 6/23/4
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$$C = \frac{(10950)(0.45) + (1750)(0.85) + (35660)(0.15)}{48,351}$$

$C = 0.24$ (POST Development)

LOT 2 - NO PROPOSED CHANGE (EXISTING = Proposed)

LOT 3 (EXISTING)

Soil = 43560 ft²

$C = 0.15$

LOT 3 (POST Development)

Roof = 2000 ft²

Driveway/walk = 700 ft²

Soil = 40,860 ft²

$$C = \frac{(2000)(0.85) + (700)(0.75) + (40,860)(0.15)}{43,560}$$

$C = 0.19$

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JOB 3605 COX DRAINAGE STUDY
SHEET NO. 6 OF 12
CALCULATED BY EKW DATE 6/23/14
CHECKED BY DATE
SCALE

LOT 4 (EXISTING)

GRAVEL - (30')(80') = 2400 Ft²

ROOF - (40)(25) = 1000 Ft²

FORESTED = 78,322

SOIL - = 25,000 Ft²

$$C = \frac{(2400)(0.45) + (1000)(0.85) + (78,322)(0.1) + (25,000)(0.15)}{(2.45)(43,560)}$$

C = .13

LOT 4 (PROPOSED)

Driveway/WALK = 700 Ft²
GRAVEL = 2400 Ft²
ROOF = 3000 Ft²
FORESTED = 78,322
SOIL = 22,300

$$C = \frac{(2400)(0.45) + (700)(0.75) + (3000)(.85) + (78,322)(0.1) + (22,300)(0.15)}{(2.45)(43,560)}$$

C = .14

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JOB 3605 COX DRAINAGE STUDY
SHEET NO. 7 OF 12
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FLOW CALCULATIONS

$Q = CIA$

$I = R_p T_c^{(G)}$; $T_c = 10$ min. $= 0.167$ hrs

(10YR) $R_p = 0.198$; $S = 70.466$

$I = (.198)(.167)^{(-.466)} = 2.26$ in/hr

	LOT (1)	(2)*	(3)	(4)
AREA (ACRES)	1.11	1.0	1.0	2.49
C PREDEVELOPMENT	0.20	NA	0.15	0.13
Q Predevelopment cfs	0.5	NA	0.34	0.72
C Post-Development	0.24	NA	0.19	0.14
Q Post Development cfs	0.6	NA	0.43	.77

NO CHANGE IN RESIDUE

LOT 1

MODIFIED RATIONAL METHOD

DETERMINATION OF DETENTION VOLUME FOR 10 YEAR RETURN PERIOD

INPUT DATA

S_d		detention volume required (ft^3)
Q_p	= 0.50	allowable peak outflow rate (cfs)
T_c	= 10	time of concentration of the watershed (min)
I_1	2.26	Offsite Pre development intensity (in/hr)
I_2	0.60	Onsite Pre development intensity (in/hr)
S	= -0.498	IDF slope
RP	= 0.98	10 year return period factor
LF	= 1	location factor
A	= 1.11	Total Basin Area (acres)
A_1	= 1.11	Basin Area Onsite (acres)
C_{ave}	= 0.24	Total Basin (post development)
C_{ave}	= 0	Offsite (existing condition)
C_{ave}	= 0.2	Onsite (pre development)

T_1	T_2	I	Q in	Q out	S_d	vol. in	vol. out
10	12.5	2.26	0.60	0.50	15.1	90.1	75.0
12.5	15	2.04	0.54	0.50	21.7	81.6	75.0
15	17.5	1.88	0.50	0.50	21.8	75.1	75.0
17.5	20	1.75	0.47	0.50	16.6	69.9	75.0

LOT 3

MODIFIED RATIONAL METHOD

DETERMINATION OF DETENTION VOLUME FOR 10 YEAR RETURN PERIOD

INPUT DATA

S_d		detention volume required (ft^3)
Q_p	= 0.34	allowable peak outflow rate (cfs)
T_c	= 10	time of concentration of the watershed (min)
I_1	2.26	Offsite Pre development intensity (in/hr)
I_2	0.60	Onsite Pre development intensity (in/hr)
S	= -0.498	IDF slope
RP	= 0.98	10 year return period factor
LF	= 1	location factor
A	= 1	Total Basin Area (acres)
A_1	= 1	Basin Area Onsite (acres)
C_{ave}	= 0.19	Total Basin (post development)
C_{ave}	= 0	Offsite (existing condition)
C_{ave}	= 0.15	Onsite (pre development)

T_1	T_2	I	Q in	Q out	S_d	vol. in	vol. out
10	12.5	2.26	0.43	0.34	13.3	64.3	51.0
12.5	15	2.04	0.39	0.34	20.5	58.2	51.0
15	17.5	1.88	0.36	0.34	23.0	53.5	51.0
17.5	20	1.75	0.33	0.34	21.8	49.8	51.0

COX DRAINAGE STUDY
CALC. BY EKW 6/2
SHT 10 of 12

LOT 4

MODIFIED RATIONAL METHOD

DETERMINATION OF DETENTION VOLUME FOR 10 YEAR RETURN PERIOD

INPUT DATA

S_d		detention volume required (ft^3)
Q_p	= 0.72	allowable peak outflow rate (cfs)
T_c	= 10	time of concentration of the watershed (min)
I_1	2.26	Offsite Pre development intensity (in/hr)
I_2	0.60	Onsite Pre development intensity (in/hr)
S	= -0.498	IDF slope
RP	= 0.98	10 year return period factor
LF	= 1	location factor
A	= 2.45	Total Basin Area (acres)
A_1	= 2.45	Basin Area Onsite (acres)
C_{ave}	= 0.14	Total Basin (post development)
C_{ave}	=	Offsite (existing condition)
C_{ave}	= 0.13	Onsite (pre development)

T_1	T_2	I	Q in	Q out	S_d	vol. in	vol. out
10	12.5	2.26	0.77	0.72	8.1	116.1	108.0
12.5	15	2.04	0.70	0.72	5.1	105.0	108.0

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JOB 3605 COX DRAINAGE STUDY
SHEET NO. _____ OF 12
CALCULATED BY EKW DATE 6/23/14
CHECKED BY _____ DATE _____
SCALE _____

SIZE INFILTRATION TRENCH PIPE

USE S_d MAX = 25 Ft^2

ASSUME 12" PIPE WITH length of 20'

TOTAL AREA REQUIRED $(A_3) = 25/20 = 1.25\ Ft^2$

Void Area = A_1 ' ' Pipe AREA = A_2

$A_1 = [(D + 18")^2 - \pi r^2](.25)$

$A_2 = \pi(\frac{D}{2})^2$

$A_3 = A_1 + A_2$

At D = 12' '

$A_1 = [(12+18)^2 - \pi(12)^2](0.25)/144 = .78\ Ft^2$

$A_2 = \pi(\frac{12}{2})^2 = .78\ Ft^2$

$A_3 = 1.56$

$1.56 > 1.25$ OK

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JOB 3609 COX DRAINAGE STUDY
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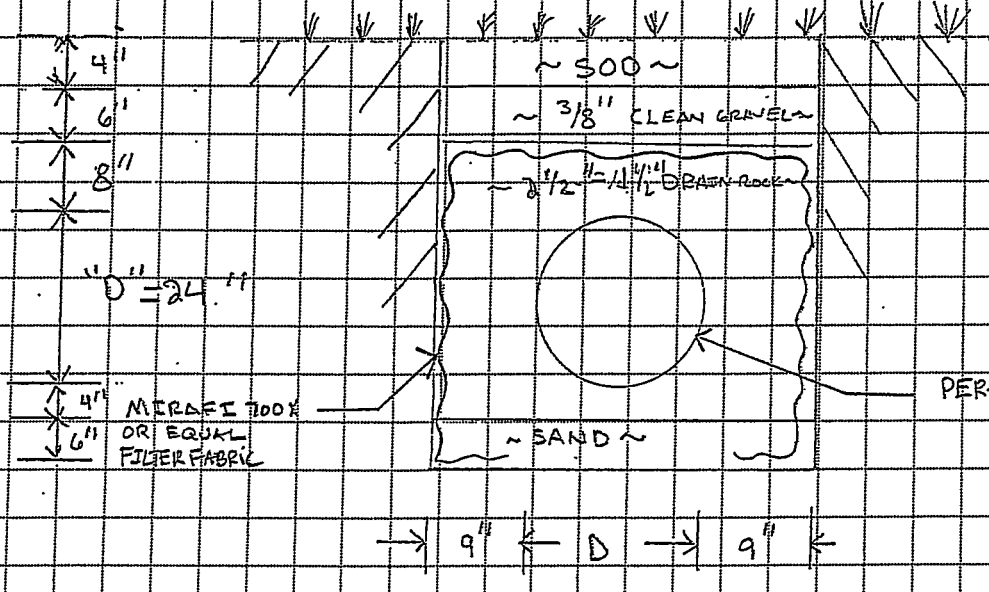
DETENTION TRENCH DETAIL



SECTION