TRINITY VALLEY
CONSULTING ENGINEERS, INC

Joshua T. McKnight CE 60687

ROADWAY ASSESSMENT REPORT

SITE ACCESS ROAD(S)

French Road
Miranda, California
APN: 214-234-006
and
APN: 214-234-007

CLIENT:
Kevin Bourque
Post Office Box 610
Fortuna, CA 95540

September, 2018
Josh McKnight, P.E.
Job #756.05

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Introduction

Trinity Valley Consulting Engineers (TVCE) was contracted by Kevin Bourque. (Applicant) to perform an evaluation of the access roadways leading to and throughout the above referenced property. This evaluation is in response to the roadway certification required by the County of Humboldt in association with a cannabis cultivation license application. The purpose of this evaluation is to determine the roadway's adequacy for continued use and potential for effects on stormwater (water quality). The following is a summary of the findings, conclusions, and recommendations.

Project Description

The project is located 3.5 miles south of the community of Miranda, California (See ***Attachment 1, Project Location Map).*** The project at this location is the evaluation of existing roadways used to access Two subject projects that are located on adjacent properties. The purpose of this evaluation is to determine whether the roadways are adequate for the intended use. The roadways are broken up by category, sections and the descriptions of the roadways and their uses are as follows (See ***Attachment 3, Map Points Map***):

County Road Off Property Road Access Roadway (Gibney Drive): This roadway provides access from Highway101 to the access road of the subject property and is used to access surrounding parcels by residences and for logging operations. Gibney Drive is a paved county road and is the starting point for the Road Evaluation Assessment Report.

Off property Access Roadways: The proposed project sites are accessed by single lane access roads which appear to have originally been utilized to facilitate logging operations and to access neighboring parcel residences. The three road is in this category are:

1. **Access Roadway French Road:** This road is the access road from Gibney Drive to Road 3.

2. **Access Roadway 3:** This road is the access road French Road to Road 4.

3. **Access Roadway Road 4:** This road is the access road for a residence and two cultivation projects on the neighboring parcels (APNs: 214-234-006 and 214-234-007).

On property Access Roadways: The proposed project sites within the property are accessed by single lane access roads which appear to have originally been utilized to facilitate logging operations and to access a parcel residence to the north of APN: 214-234-006 (see **Attachment 2**, *Road Maps, On Property Roads*). On Property

Access Roads are assessed in the Watershed Resource Protection Plans for each of the subject parcels.

In our investigation we evaluated the condition of stream crossing structures but did not perform hydraulic calculations to determine sizing per Rational or Magnitude and Frequency Methods. We only identified problem locations that have the capability of delivering sediment and limit passage of vehicular traffic.

Roadway Inspections

A Roadway Inspection was performed by TVCE on August 17th, 2018. Timberland Resources Company also performed an inspection that addresses road water quality issues in Watershed Resource Protection Plans (WRPP) that addresses the on-property roads and gives recommendations for both subject parcels (See ***Attachment 6 and 7, Watershed Resource Protection Plans for APNs 214-234-006 and 007***). The WRPP documents recommendations are expected to be implemented and this document provides recommendations for deficient areas that the WRPP does not address.

The following is a summary of the observations derived from onsite inspections of access roadways:

Off Property Access Roadway French Road:

A summary of the exhibited characteristics for the French Road inspection can be viewed in Table 1, Summary of Off Property Access Roadway, French Road.

Table 1. Summary of Off Property Access Roadway, French Road.

Roadway Width:	Approximate 14' width
Shoulder Width:	2-10'
Surface:	Gravel
Drainage:	Inboard ditches/Out sloping
Watercourse Crossings:	6 Watercourse Crossing
Length:	1.35 Miles
Slope:	0 % to 24 %
# of Sections with 16%<Slope >20%:	6 sections with slopes between 16 % to 20 %
# of Sections with 20<Slope >24:	3 sections with slopes between 20 %-24 %

These roadways were inspected and appear to be generally in good condition. The access from Gibney Drive is equivalent to a Category IV road and is the starting point of the road evaluation. The inboard ditch of French Road is well maintained, and the road has a

good prism and good drainage. There were six sections of roadway with slopes that ranged from 16-20% and three sections of roadway where slopes ranged 20-24%. Eight turnouts on this section are unusable by larger vehicles due to uneven grown due to accumulation of grading spoils and one is overgrown vegetation (See ***Attachment 3,*** *Road Point Map* for locations of associated road points and see ***Attachment 4,*** *Road Point Figures with Descriptions* for a more detailed description of impacted areas).

Off Property Access Roadway Road 3:

A summary of the exhibited characteristics for the Road 3 inspection can be viewed in **Table 2,** *Summary of Off Property Access Roadway, Road 3.*

Table 2. Summary of Off Property Access Roadway Road 3.

Roadway Width:	Approximate 14' width
Shoulder Width:	2-10'
Surface:	Gravel
Drainage:	Inboard ditches/Out sloping
Watercourse Crossings:	No Watercourse Crossing
Length:	1.58 Miles
Slope:	0% to 24%
# of Sections with 16%<Slope >20%:	0 sections with slopes between 20 %-24 %
# of Sections with 20<Slope >24:	6 Sections with slopes between 20 %-24 %

These roadways were inspected and appear to be generally in good condition. The inboard ditch of Road 3 is well maintained and the road has a good prism with good drainage. There were three sections of roadway where the slopes ranged from 16-20% and five sections of roadway where slopes ranged 20-24%. Eleven turnouts on this section are unusable by larger vehicles due to uneven grown due to accumulation of grading spoils and three is overgrown vegetation. One drainage relief culvert (road point 82) has debris deposited in the inlet (See ***Attachment 3,*** *Road Point Map* for locations of associated road points and see ***Attachment 4,*** *Road Point Figures with Descriptions* for a more detailed description of impacted areas).

Off Property Access Roadway Road 4:

A summary of the exhibited characteristics for the Road 4 inspection can be viewed in Table 3, Summary of Off Property Access Roadway, Road 4.

These roadways were inspected and appear to be generally in good condition. The inboard ditch of Road 3 is well maintained, and the road has a good prism and good

drainage. There were three sections of roadway where the slopes where ranged from 16-20% and five sections of roadway where slopes ranged 20-24%. Two turnouts on this section are unusable by larger vehicles due to uneven ground due to accumulation of grading spoils and thirteen are overgrown with vegetation and have accumulated grading spoils or debris (See ***Attachment 3,*** *Road Point Map* for locations of associated road points and see ***Attachment 4,*** *Road Point Figures With Descriptions* for a more detailed description of impacted areas).

Table 3. Summary of Off Property Access Roadway, Road 4.

Roadway Width:	Approximate 12' width
Shoulder Width:	2-10'
Surface:	Gravel
Drainage:	Inboard ditches/Out sloping
Watercourse Crossings:	7 Watercourse Crossing
Length:	0.53 Miles
Slope:	0 % to 24 %
# of Sections with 16%<Slope >20%:	3 sections with slopes between 16 %-20 %
# of Sections with 20<Slope >24:	5 Sections with slopes between 20%-24 %

Evaluation

The following is an evaluation of the above referenced roadways based on the noted observations:

Off Property State Road Access Roadways Segment (Gibney Drive):

This roadway is in good condition with good drainage off of the roadway surface while also providing frequent areas for turnouts. Paved surfacing is adequate. This roadway meets grade standards for a Category IV roadway in width and slope. Gibney Road is owed and maintained by Humboldt County.

Access for Access Roadways (French Road):

The first 30' of French Road is not paved. The access road provides access to the project site from Gibney Drive to Road 3. This road meets slope and width requirements of a Category IV roadway at the access point to Gibney Drive. Gravel surfacing is adequate with some areas that require minor repairs. Two Drainage relief culverts (map points 1 and 15) need cleaning of debris at the inlet or outlet. Eight turnouts on this section need to be regraded with one also needing regrading with vegetation cleared. This roadway is in good condition. Frequent water breaks, culverts and ditches that offers good drainage

off the roadway surface while also providing frequent areas for turnouts. There are nine sections of road with slope that are greater than 16% and need added rock surfacing added to the steeper road surfaces.

Off Property Access Roadway Road 3:

This roadway is in good condition with frequent water breaks, culverts and ditches that offers good drainage off the roadway surface while also providing frequent areas for turnouts. Eight turnouts on this section need to be regraded with one also needing regrading and vegetation cleared. Gravel surfacing is adequate with some areas that require minor repairs. Six sections had slopes that were between 20 and 24%. These sections need rock added to their surface. One drainage relief culvert (road point 82) has soil and debris deposited in the inlet that needs to be cleared.

On Property County Road Access Roadway Road 4:

These roadways are in generally good condition in the areas of low to moderate inclination. Most of the road has frequent water breaks and ditches that offer good drainage off of the roadway surface, while also providing frequent areas for turnouts. There are eight sections of road with slope that are greater than 16% and need added rock surfacing added to the steeper road surfaces. The gravel surfacing on the rest of the road is adequate for the intended use with some areas that require minor repairs.

Drainage: In general the property access roads have been constructed to provide adequate drainage.

Stormwater Runoff: Discharge points from the subject off property roadways.

Surfacing: Access roadways French Road and Road 3 have 2-6" of rock on their surface. These roads lack the required 6 in. depth of rock to meet Category IV road standards. Road4 needs base rock to be added to the road surfaces to be adequate for the intended use of the project. The road surfaces should have a minimum of six (6) in. of base rock. All off the access roads have sections of roadway with slopes that are greater than 16%. These steeper sections of roadway need to be rocked with 6" of base rock.

Roadway Standards: Gibney Drive is equivalent to Category IV roadway. French Road, Road 3 and Road 4 do not meet slope requirement for Calfire of Humboldt County Regulations but will be adequate for the projects intended use if suggested recommendations are administered.

Traffic: Gibney Dive is a Humboldt County road with Average Daily traffic of 155. While this is significant, it is likely far less impact than the traffic impact previously experienced by historic logging trucks operations on this roadway.

The main access French Road currently serves several parcels A maximum Average Daily Traffic (ADT) of 150 is estimated during peak usage. While this is significant, it is likely far less impact than the traffic impact previously experienced by historic logging trucks operations on this roadway.

The private access Road 3 currently serves several parcels. A maximum ADT of 90 is estimated during peak usage. While this is significant, it is likely far less impact previously experienced by logging trucks and equipment on this roadway.

The private access Road 4 currently serves as access to the projects site. A maximum ADT of between 5 and 15 is estimated during peak usage. While this is significant, it is likely far less impact than what was previously experienced by logging trucks and equipment on this roadway.

Culverts: There are no stream crossing on these roadways. Ditch relief is provided by rolling dips and leadouts.

Conclusion

The subject roadways are adequate for the intended uses on this property, and the estimated uses for the other properties which they will serve. Implementation of the following recommendations will provide for the intended use and limit the effects on water quality. Based on our site exploration and observations, it is in our opinion that if our recommendations are implemented as intended, then no further actions will be necessary.

Recommendations

Specific areas identified for maintenance or repair are identified in **Attachment 1**. The following are general recommendations for continued use of these roadways:

Access Roadways: Use of these roadways will primarily be a function of continued maintenance. This is to include regular grading to remove ruts, addition of rock surfacing when needed, and maintenance and or replacement of drainage structures and water breaks. Pullouts must be graded when the road is graded to prevent vegetation from growing and making the pullout unusable.

Any road improvement and stream crossing maintenance shall be in accordance with AASHTO, County of Humboldt Road Design Manual, Cafferata et al. (2017), and Weaver et al. (2015). The required permits must be obtained for work to be done on onstream culverts.

Limitations

This report, recommendations, and conclusions are solely intended for the site discussed above. The information contained in this report is only intended for use at the stated site using the stated uses. This report should not be used as justification for any other project or site, and only be used for information purposes if referenced and reviewed for other projects. TVCE recognize that the site is in a dynamically active area and conditions can and will change. TVCE has used the best professional judgment to assess the present and future risks to assist the landowner in the proposing development that does not increase the risk to the resources present in the project area or subject the landowner to untenable hazards. If conditions different from those described in this report are encountered during construction/maintenance, the project engineer/contractor/owner should contact this office to review the new conditions and evaluate their bearing on the validity of any recommendations provided herein.

The opinions presented herein have been developed using a degree of care and skill ordinarily exercised, under similar circumstances, by reputable civil engineers practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Do not apply any of this report's conclusions or recommendations if the nature, design, or location of the project changes. If changes are contemplated, the author of this report should be consulted to review the impact on the applicability of the recommendations in this report. The author of this report is not responsible for any claims, damages, or liability associated with any other party's interpretation or reuse of this report for other projects or at other locations without written consent.

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Cafferata, P., Lindsay, D., Spittler, T., Wopat, M., Bundros, G., Flanagan, S., Coe, D., and Short, W. (2017). Designing Watercourse Crossing for Passage of 100-Year Flood Flows, Wood and Sediment (California Forestry Report No. 1). Department of Forestry and Fire Protection, Sacramento, California. p. 137.

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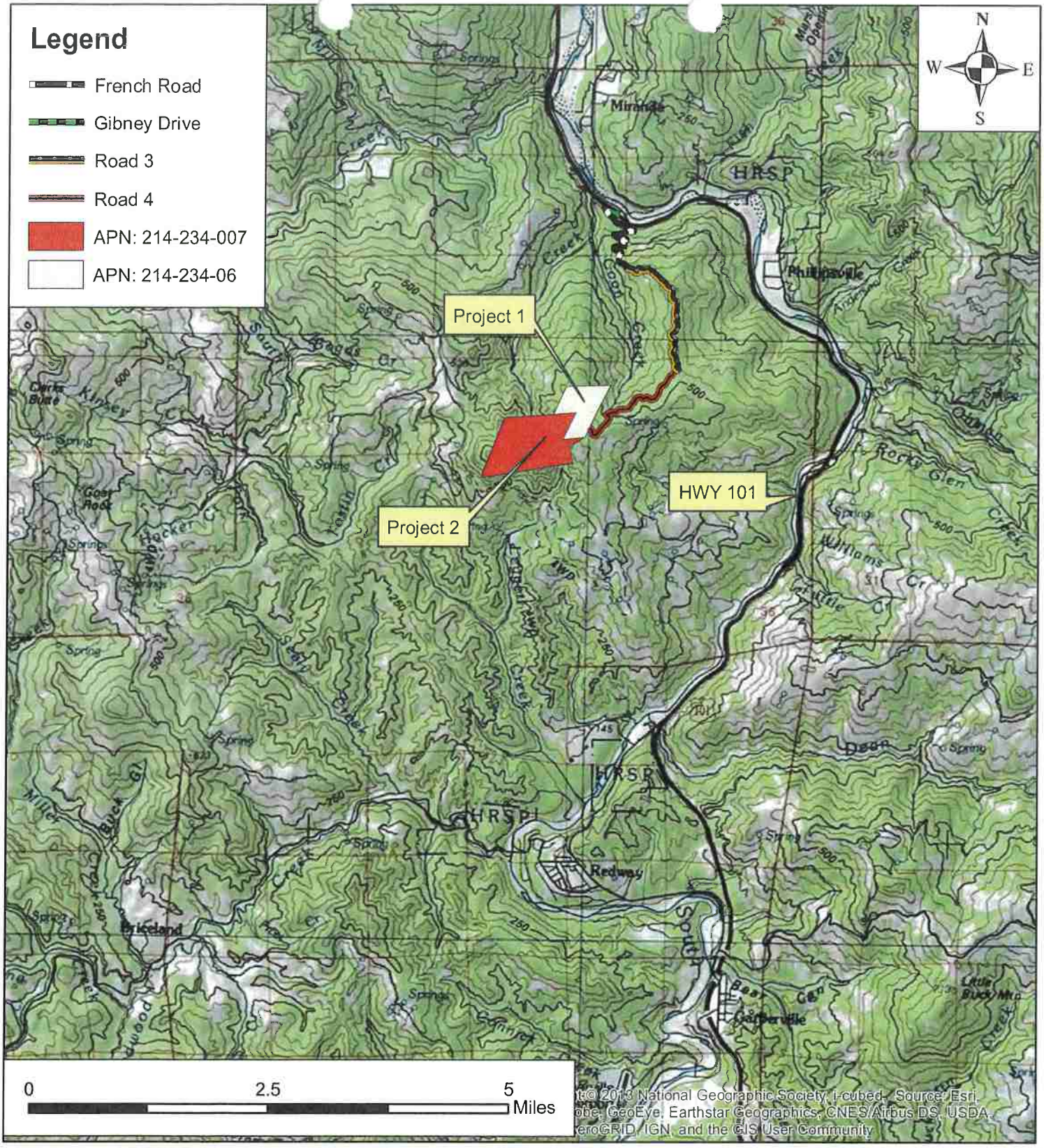
Ken. Freed (Humboldt County Public Works Land Use Division). Personal Communication, 12/04/2017.

ATTACHMENT 1:

Location Map



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Location Map for: APN 214-234-006, and APN 214-234-007

Seamless Topographical Map
FOR
COUNTY OF HUMBOLDT
Parcel Information From Humboldt County GIS
Does not reflect exact location of property lines

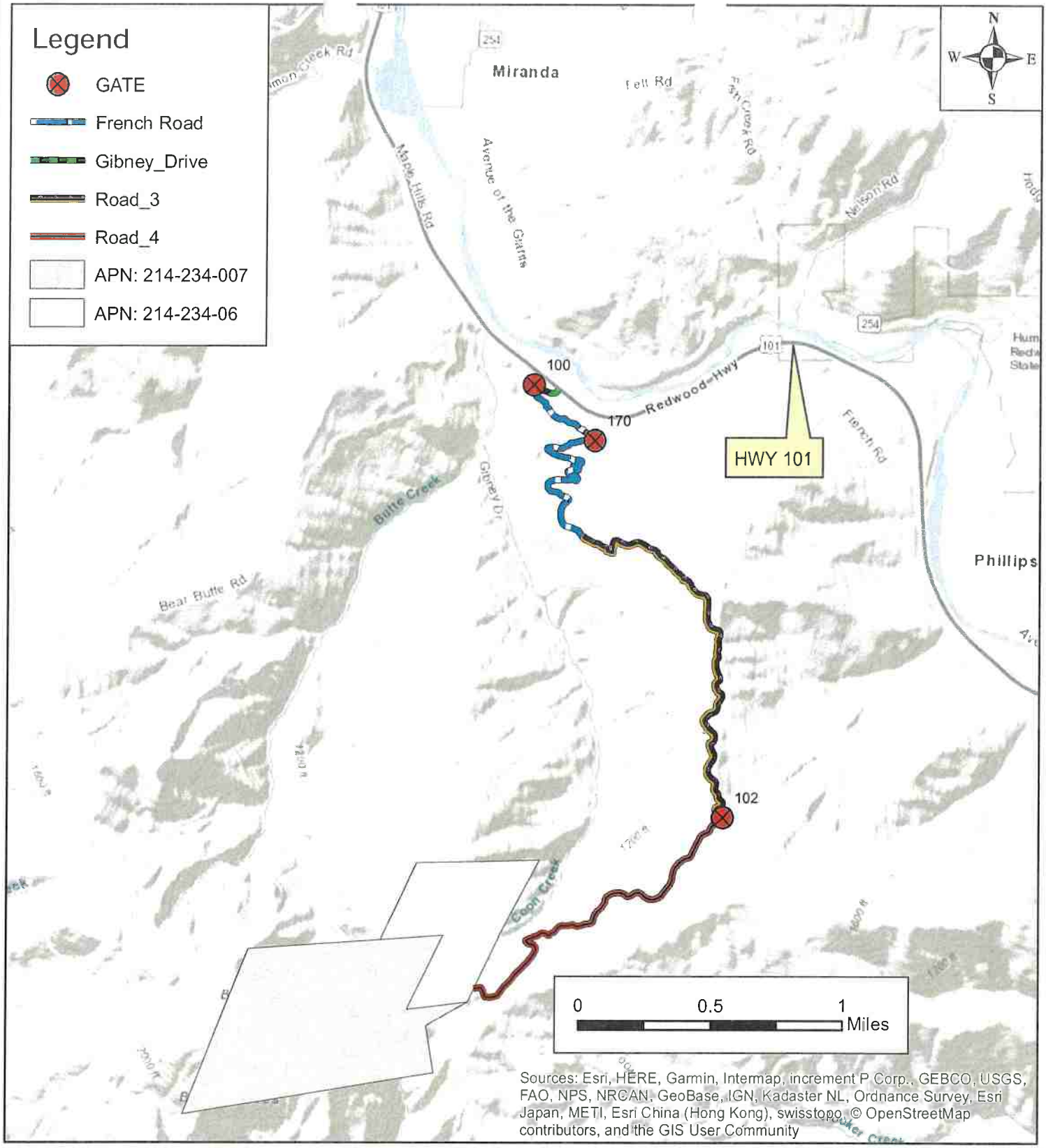
Project: 756.05 Kevin Bourque

Report: Roads Evaluation

Location: Frech Road
Miranda, CA 95573

ATTACHMENT 2:

Road Point Maps



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Road Map for: APN 214-234-006, and APN 214-234-007

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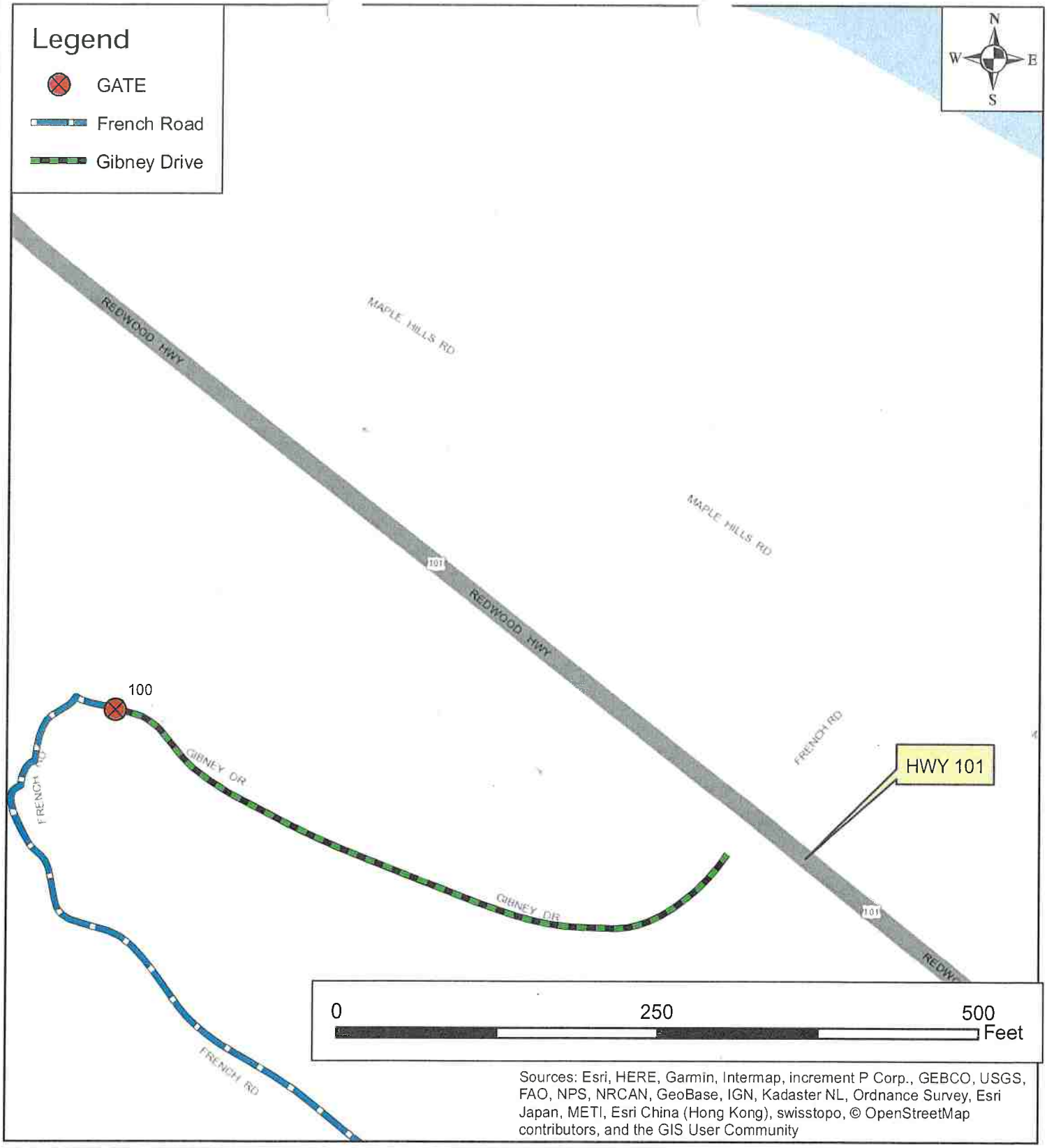

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

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Gibney Drive Road Map for: APN 214-234-006, and APN 214-234-007

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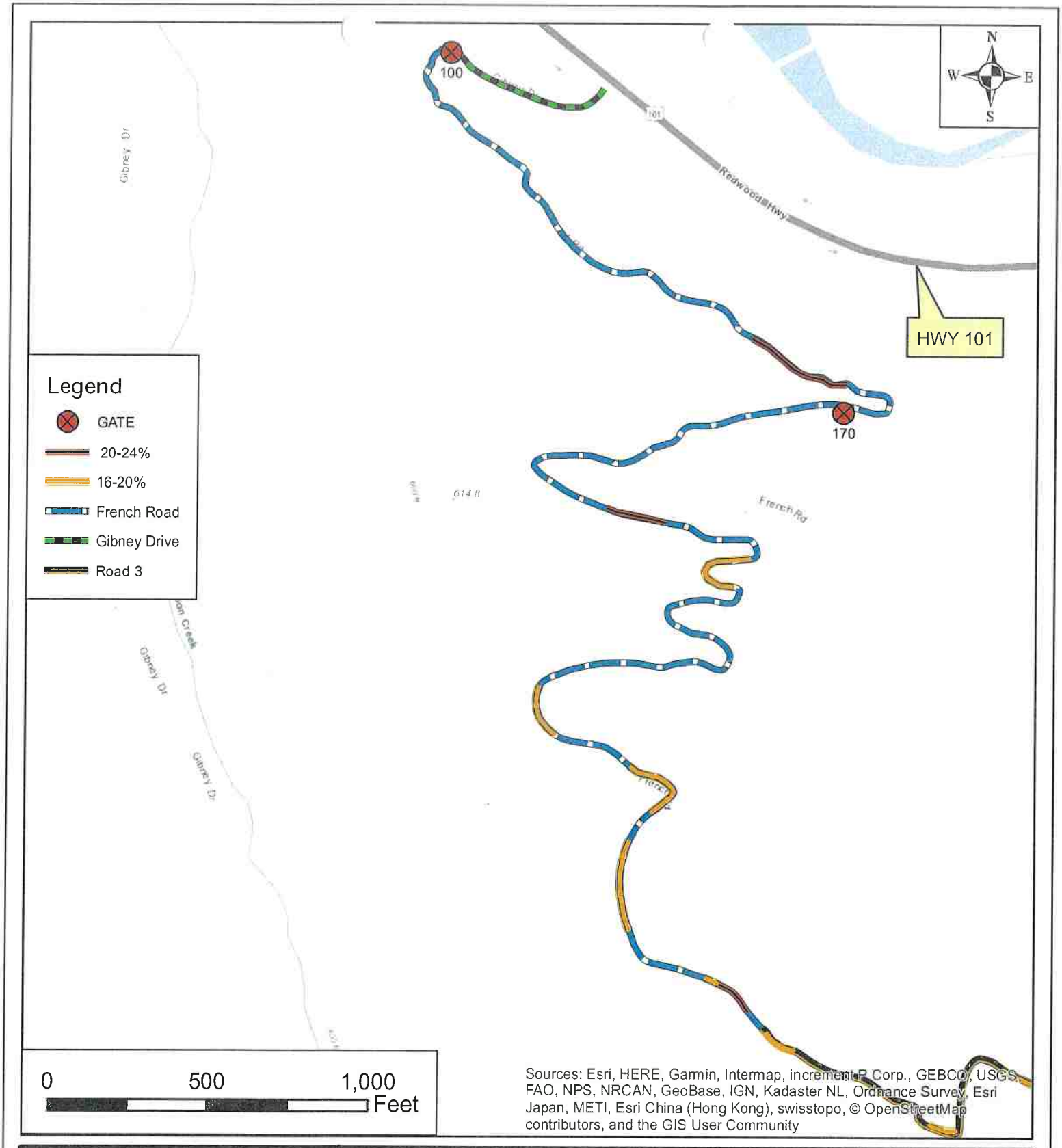

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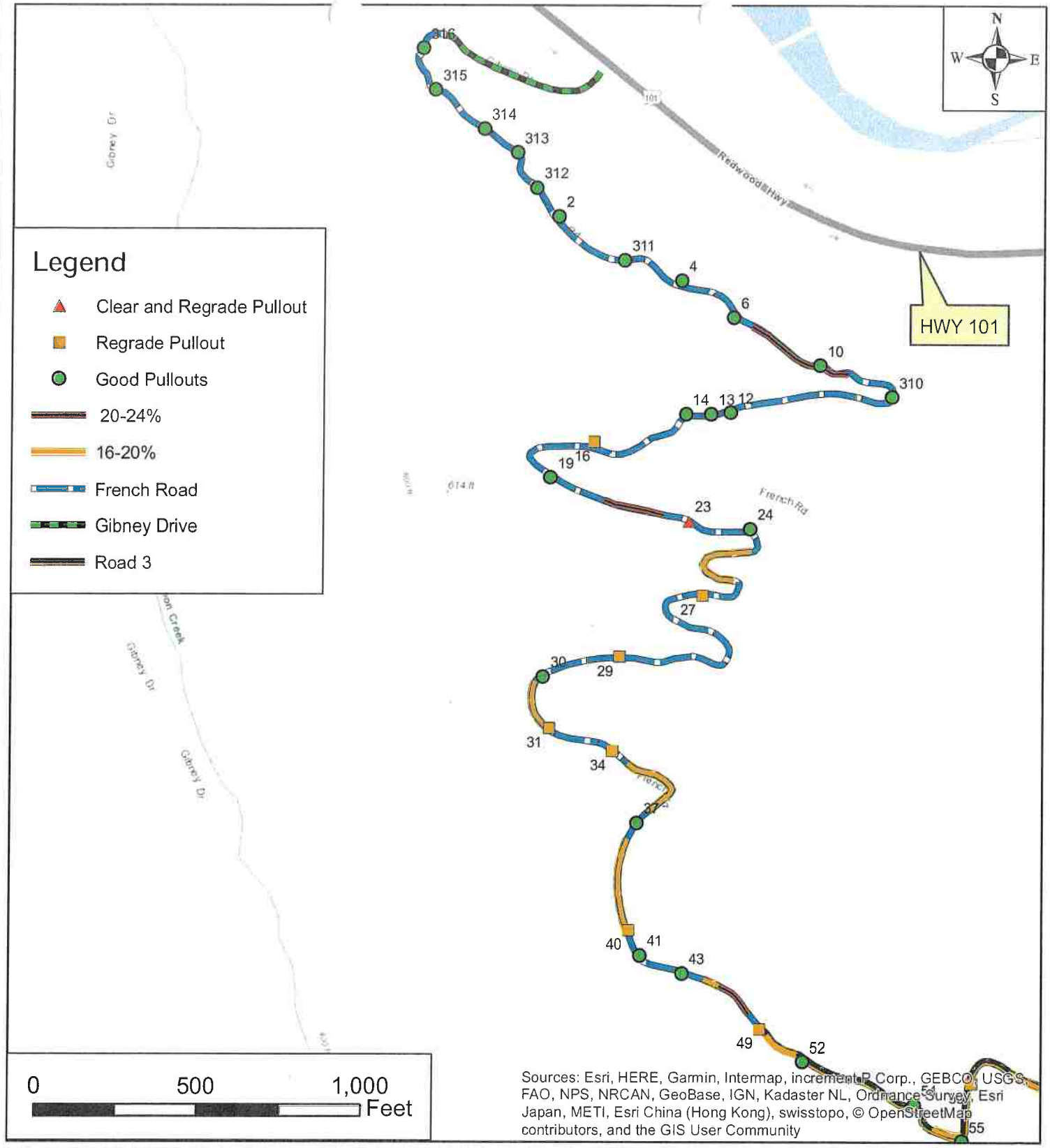

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French Road Pullout Map for: APN 214-234-006, and APN 214-234-007

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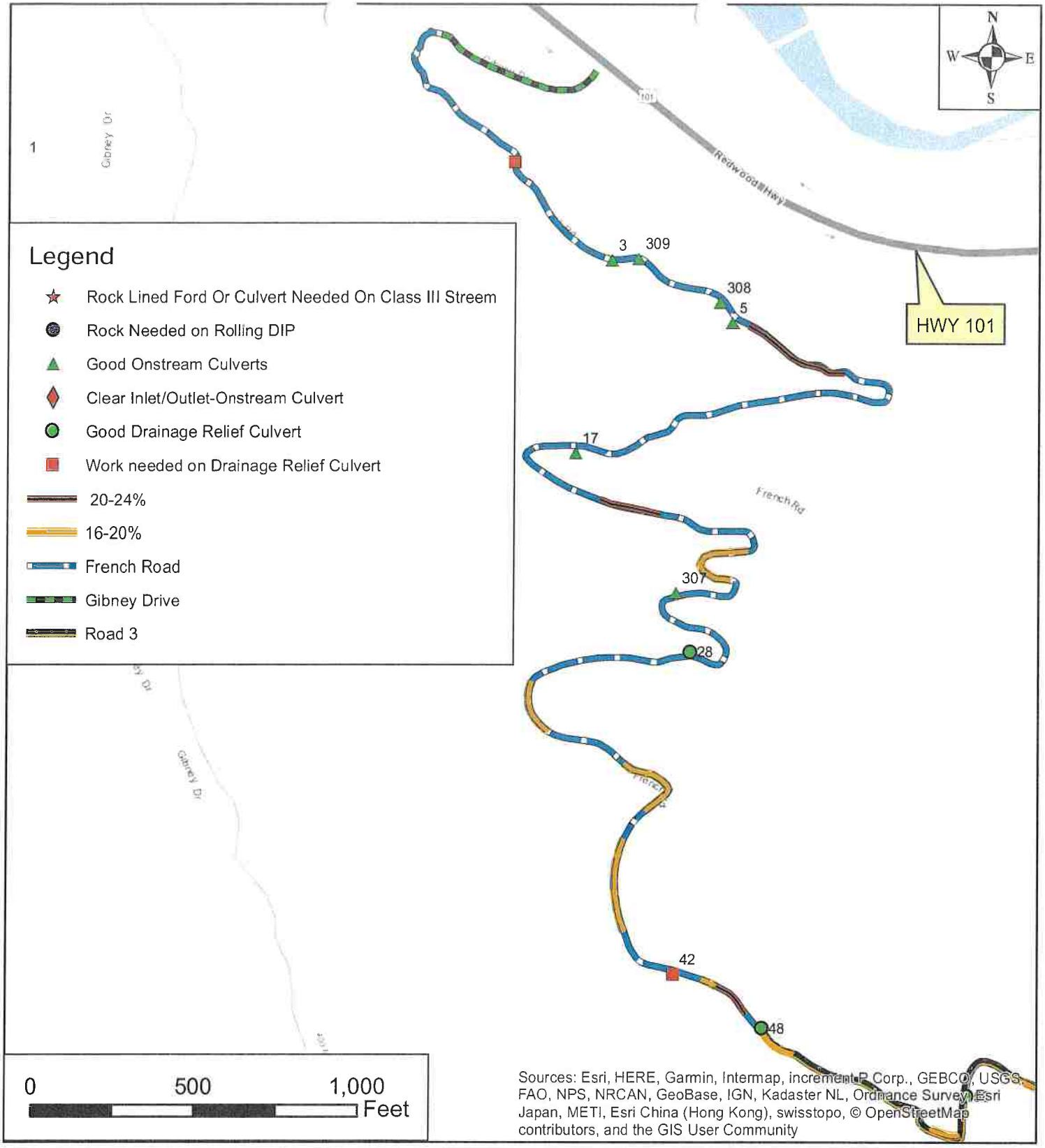

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French Road Drainage Relief And Onstream Culvert Map for APN 214-234-006, and APN 214-234-007

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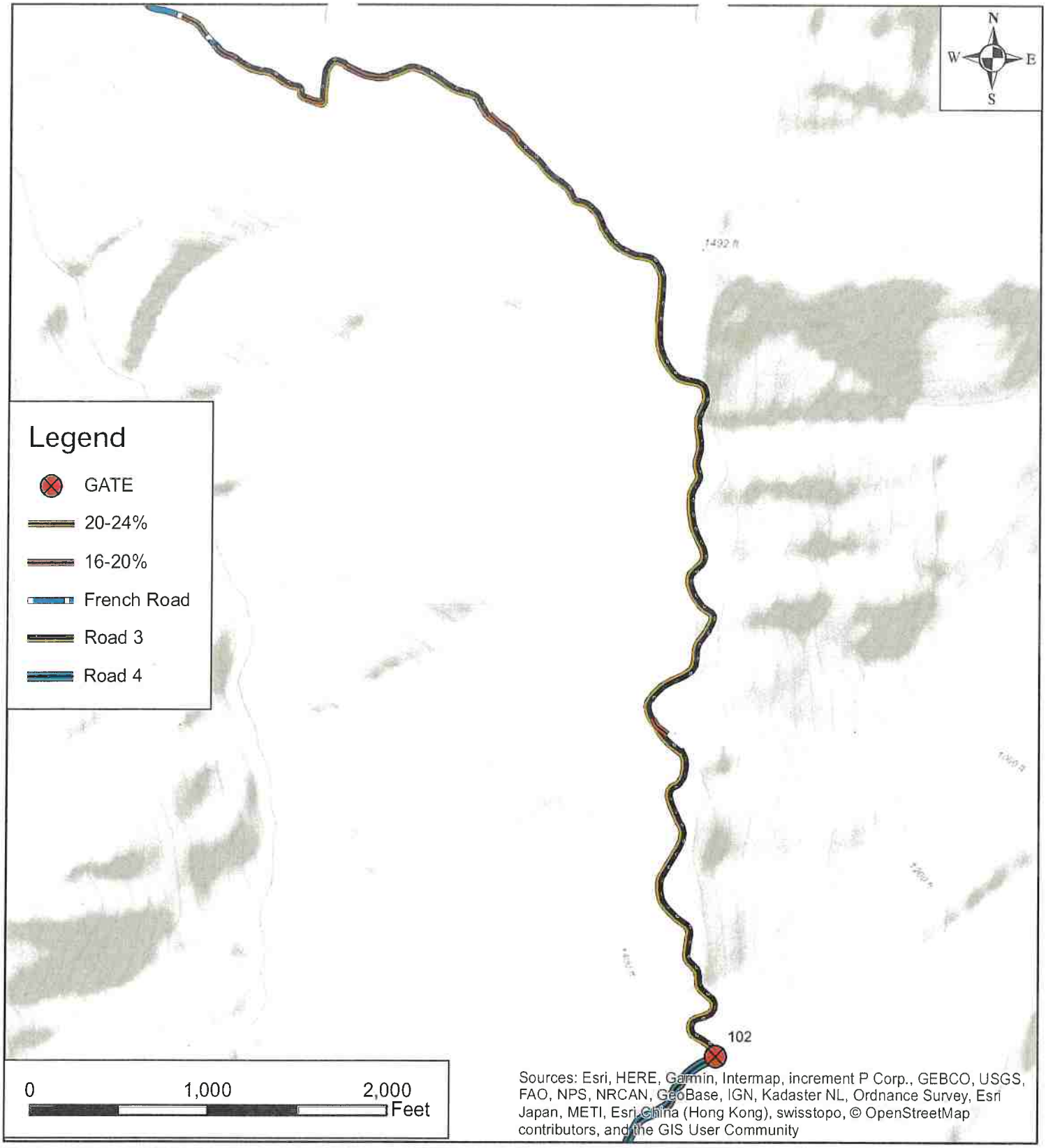

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Road 3 Road Map for: APN 214-234-006, and APN 214-234-007

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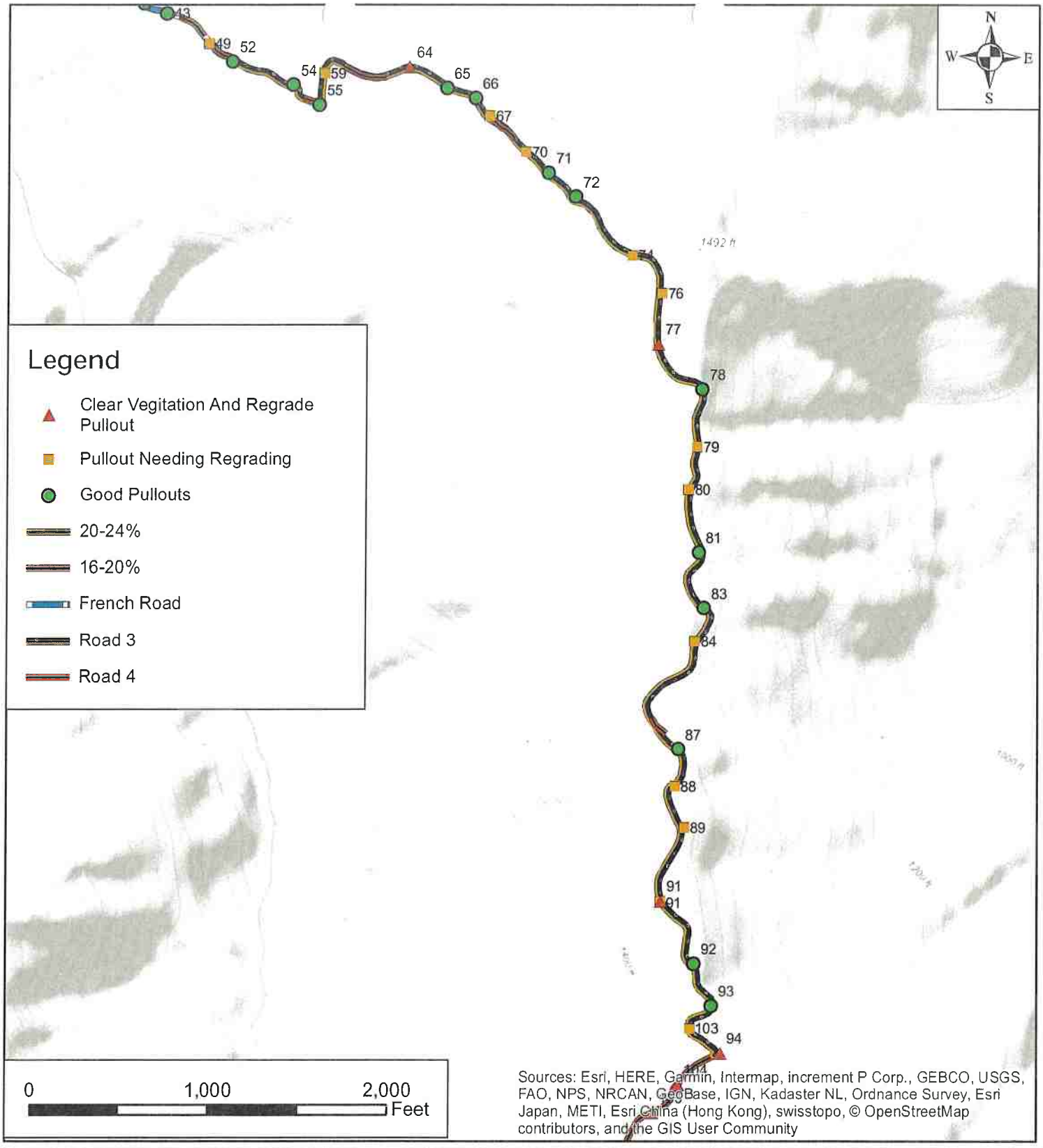

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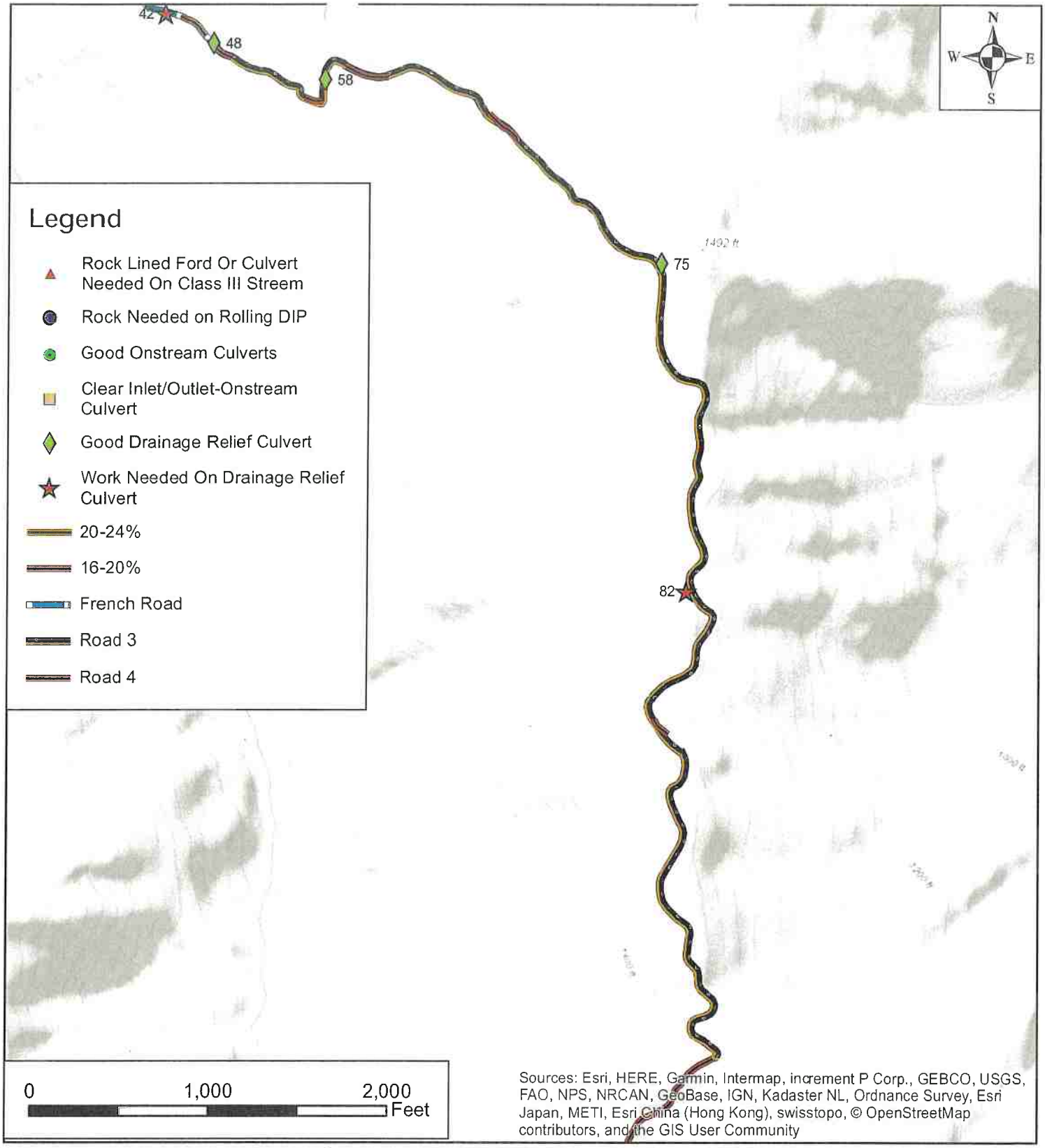

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Road 3 Drainge Relief And Onstream Culvert Map for: APN 214-234-006, and APN 214-234-007

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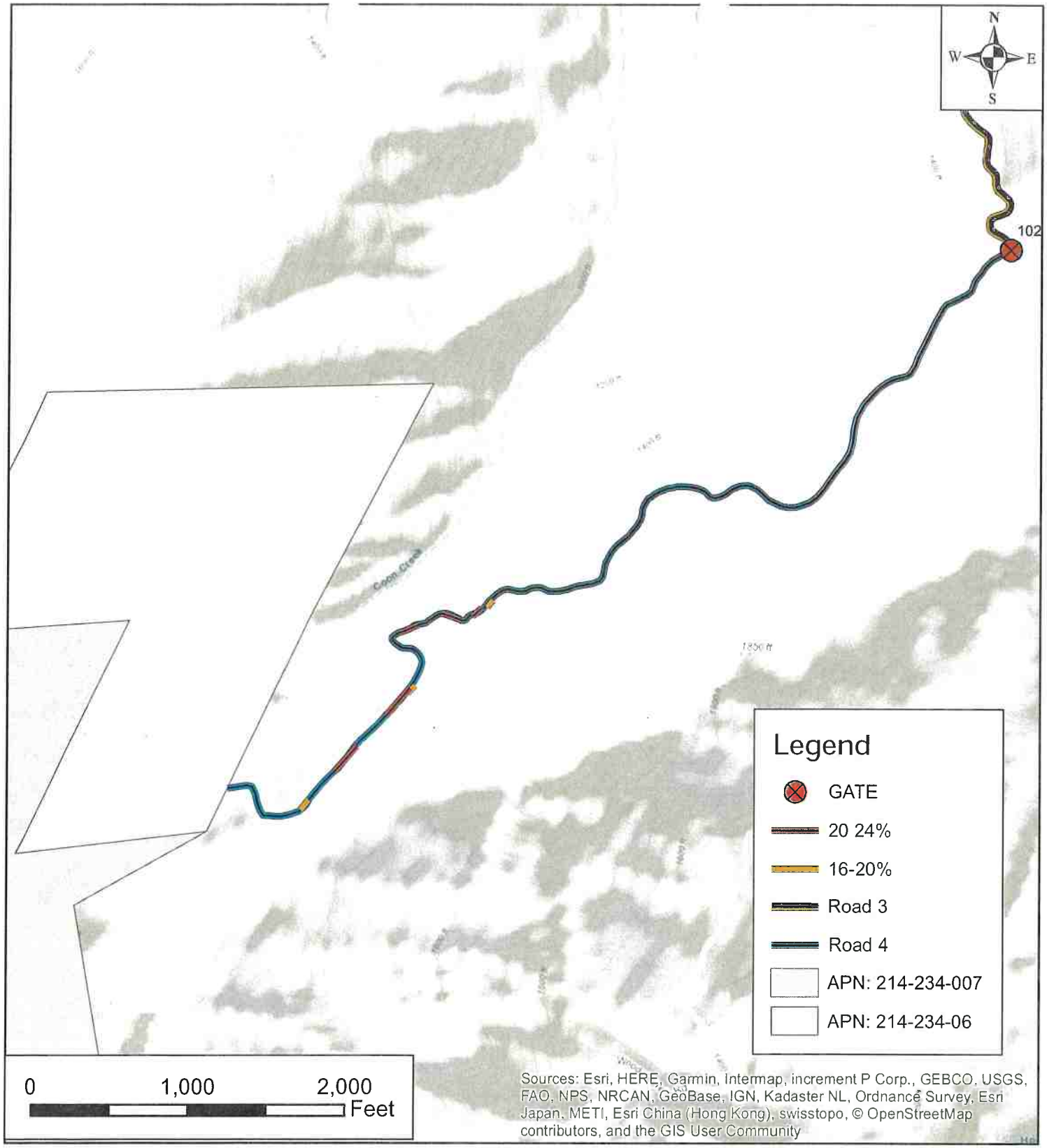

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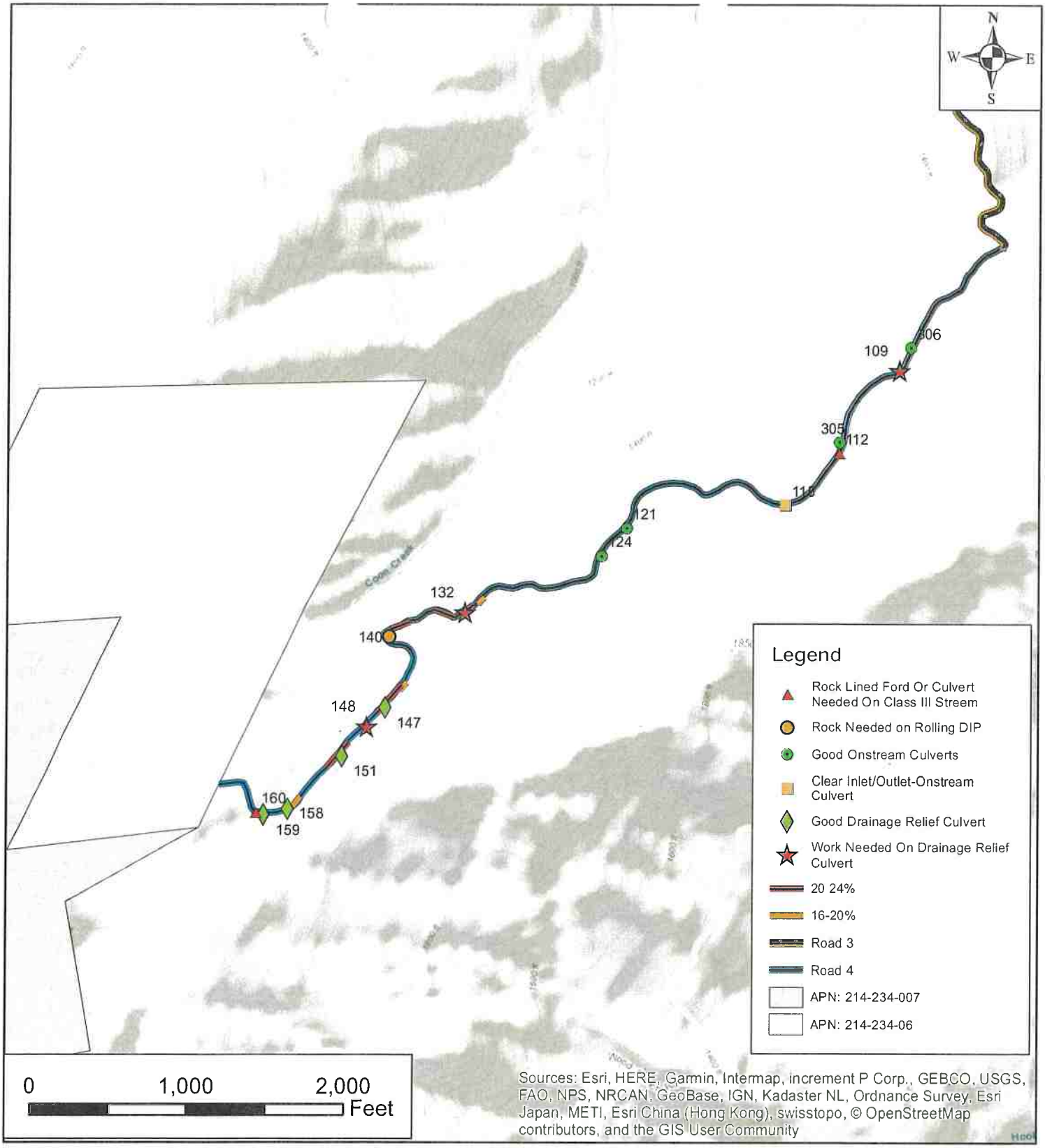
Road 4 Road Slopes And Pullouts Map

Location: Frech Road Miranda, CA 95573



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Road 4 Road Slopes And Pullouts Map

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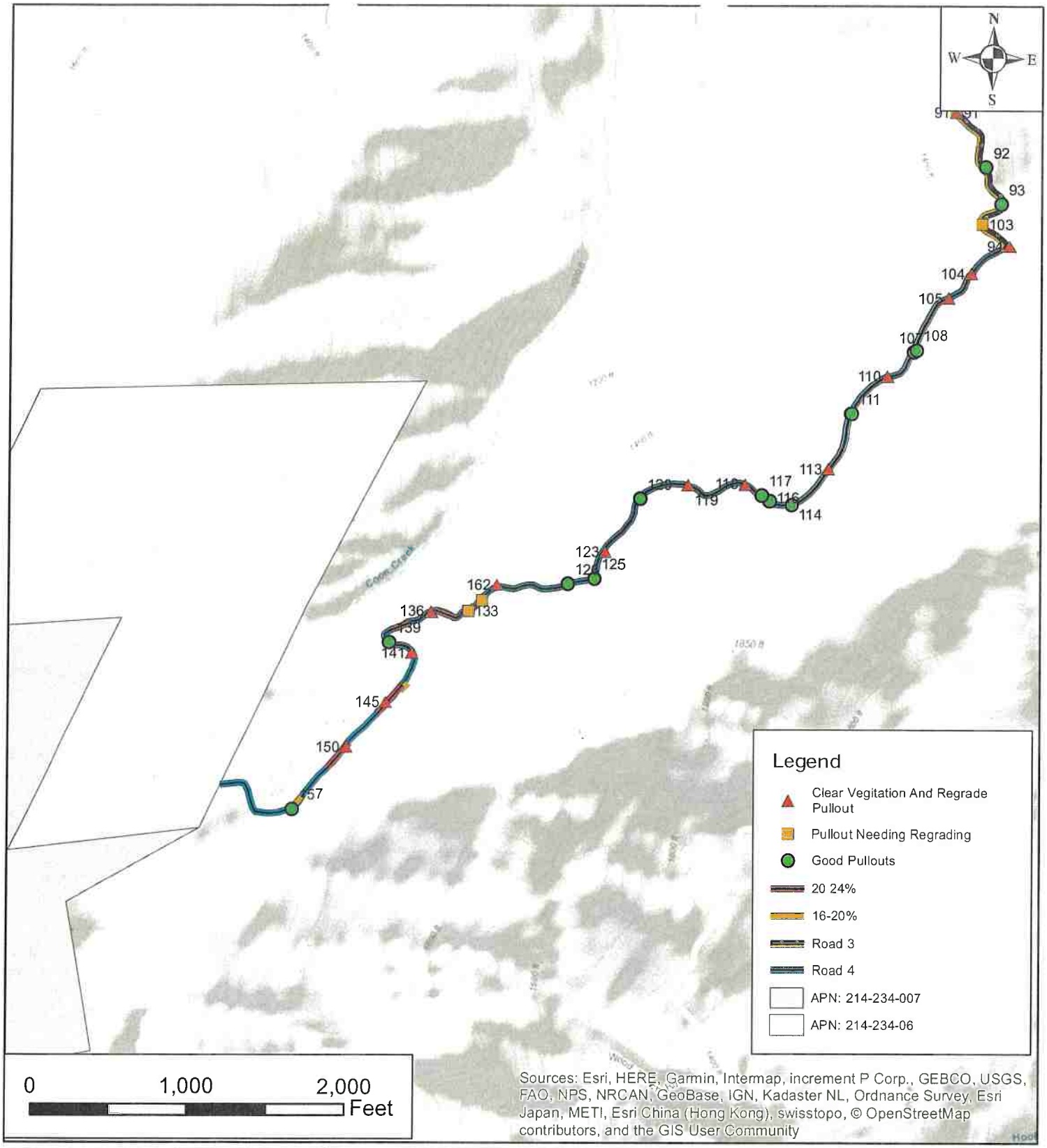

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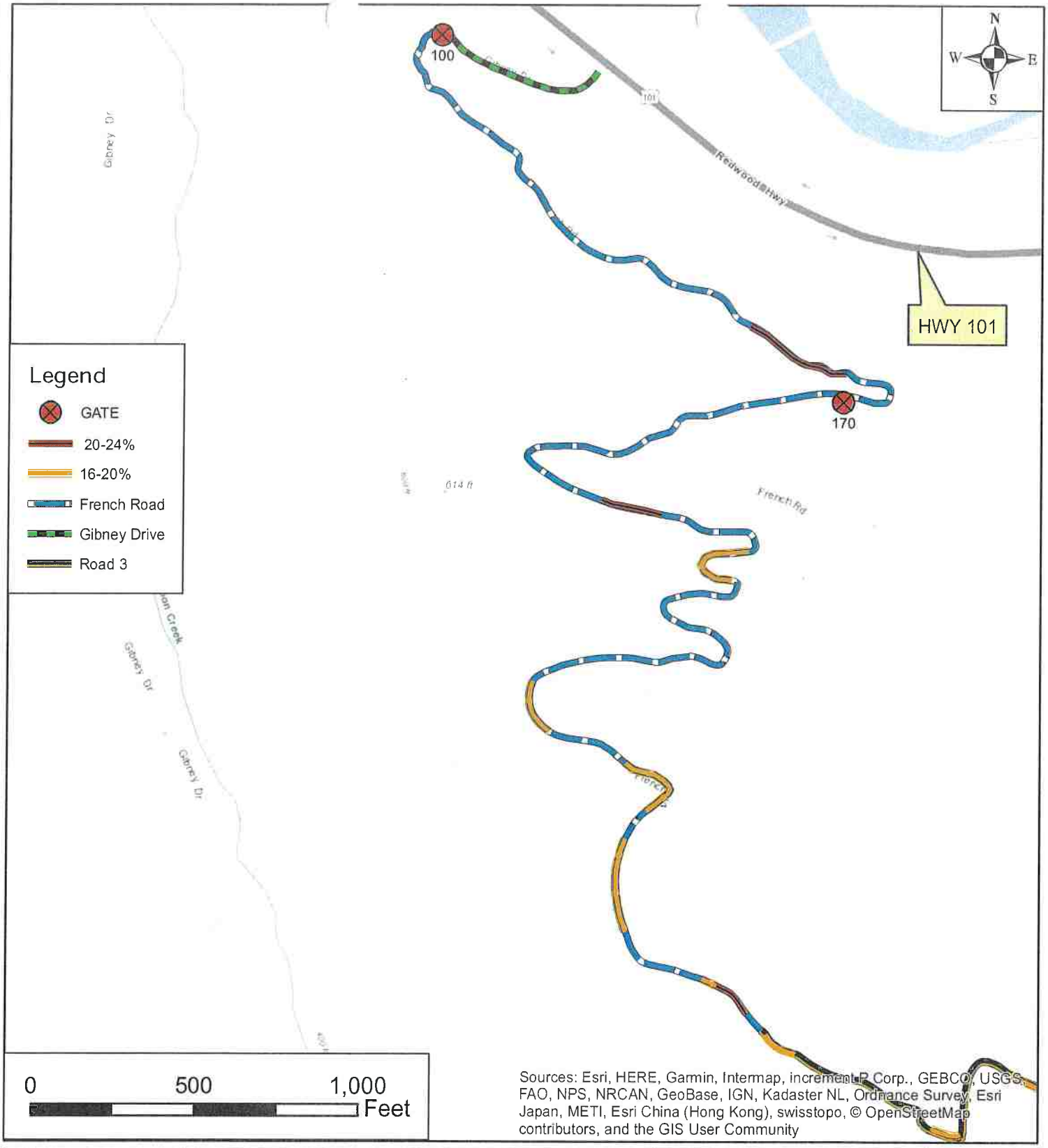

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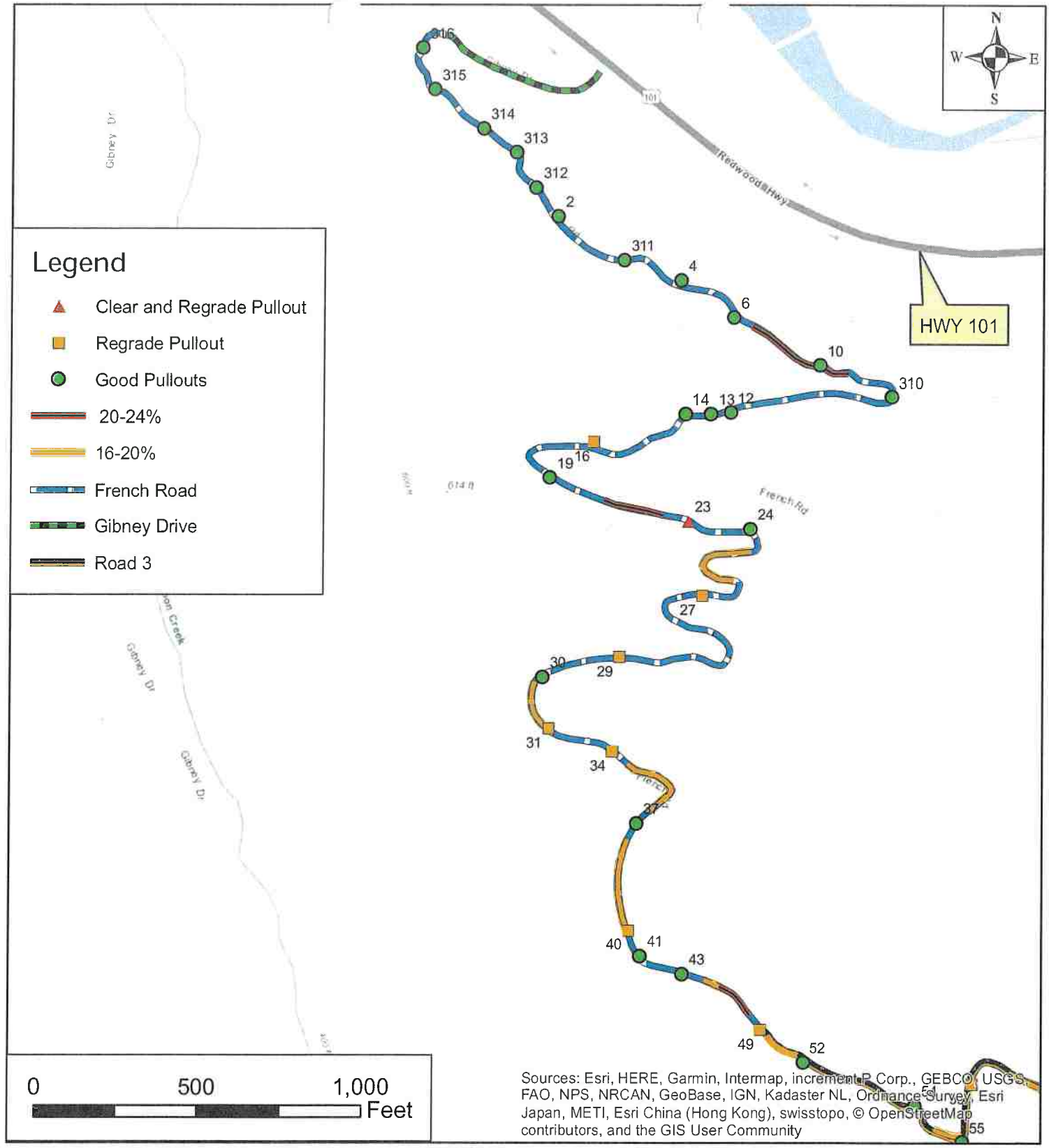

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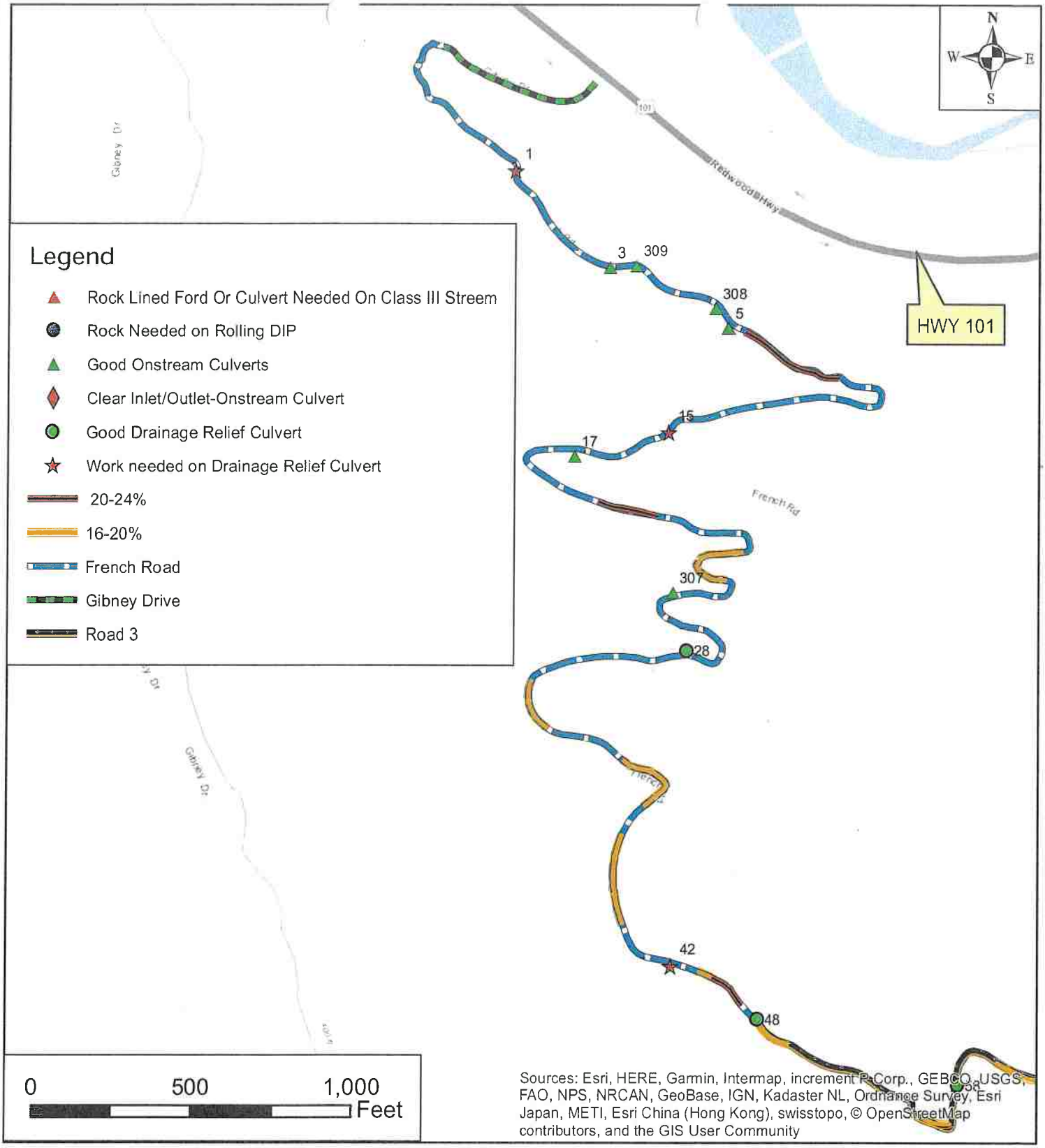

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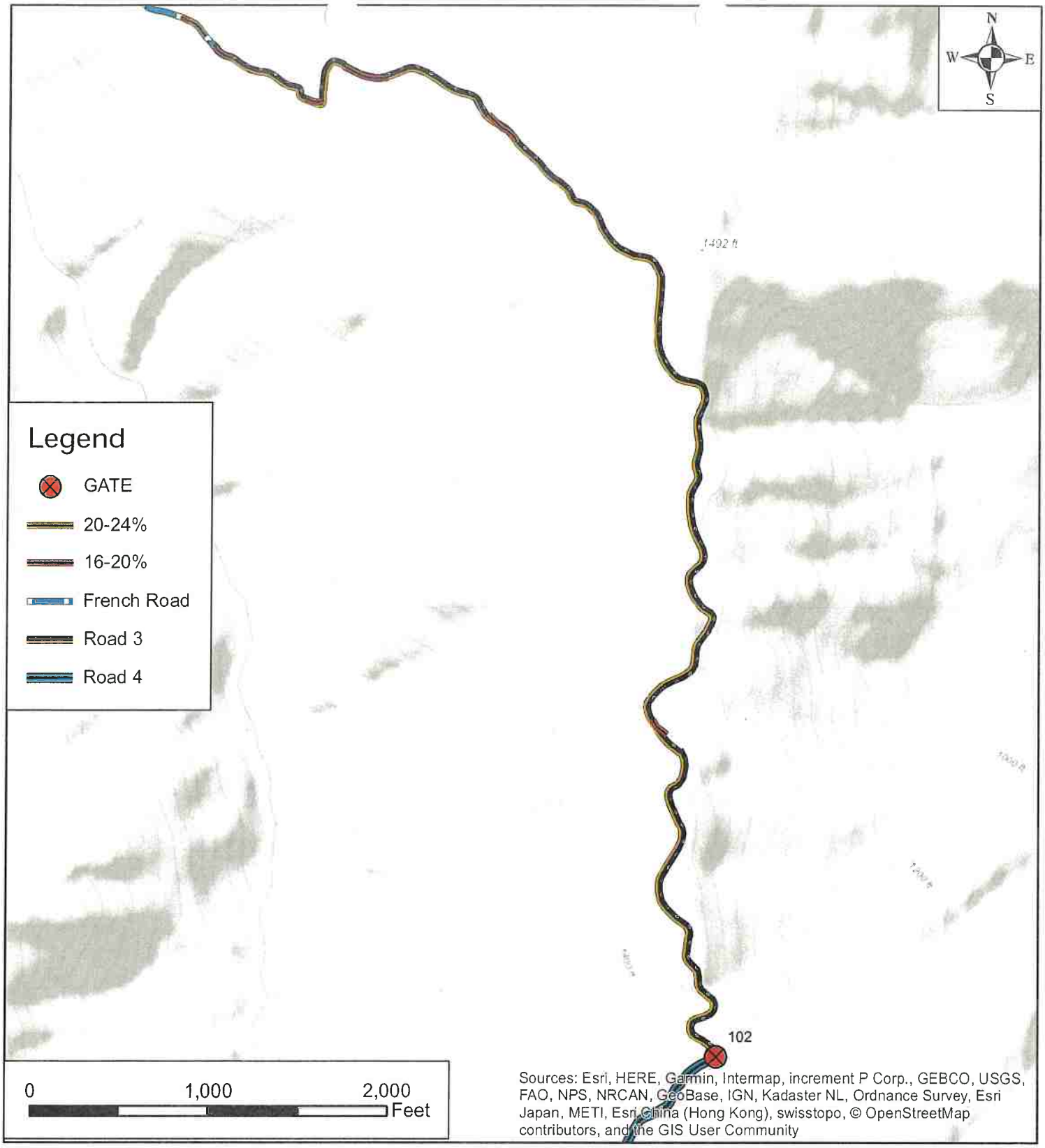

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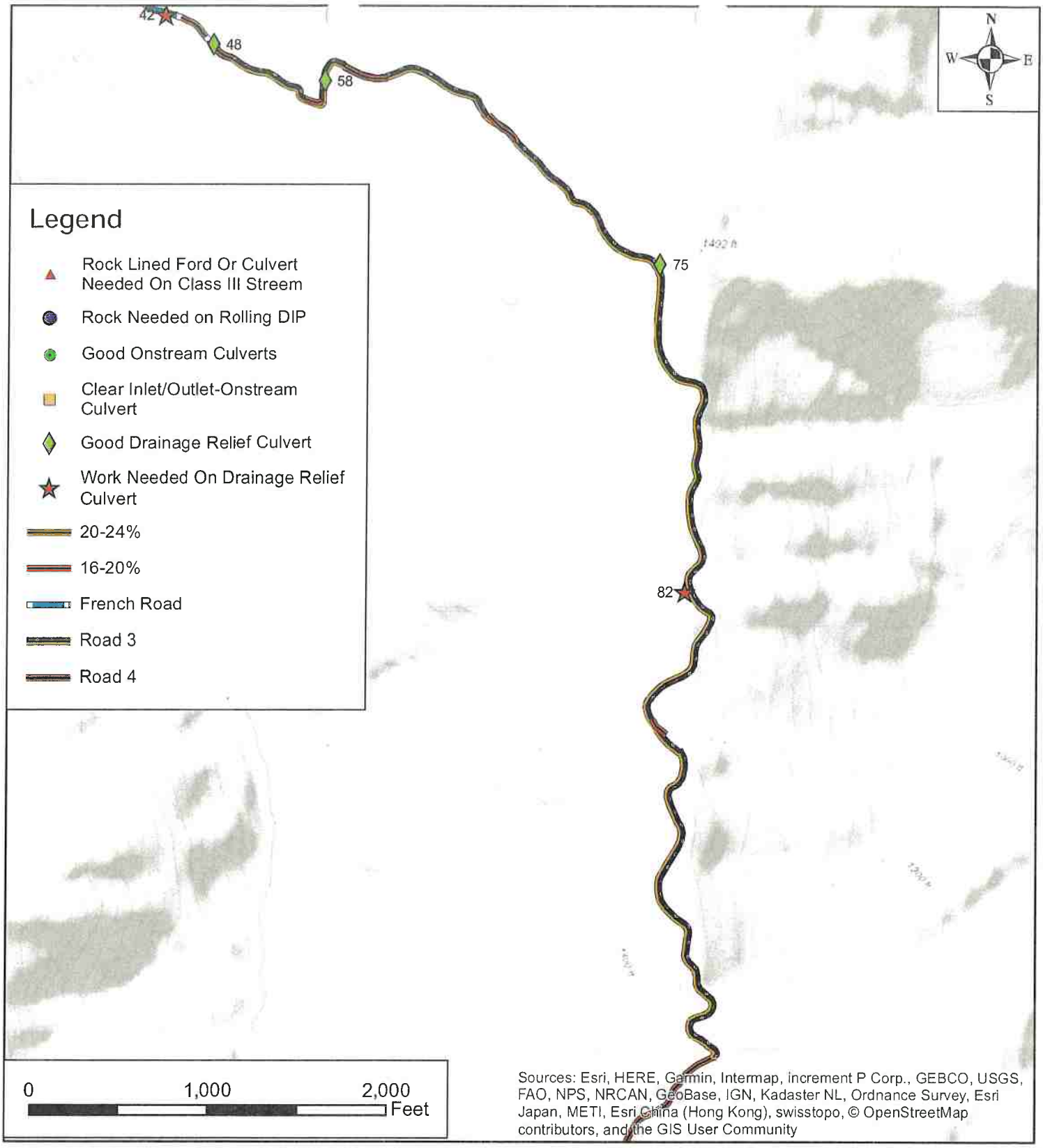

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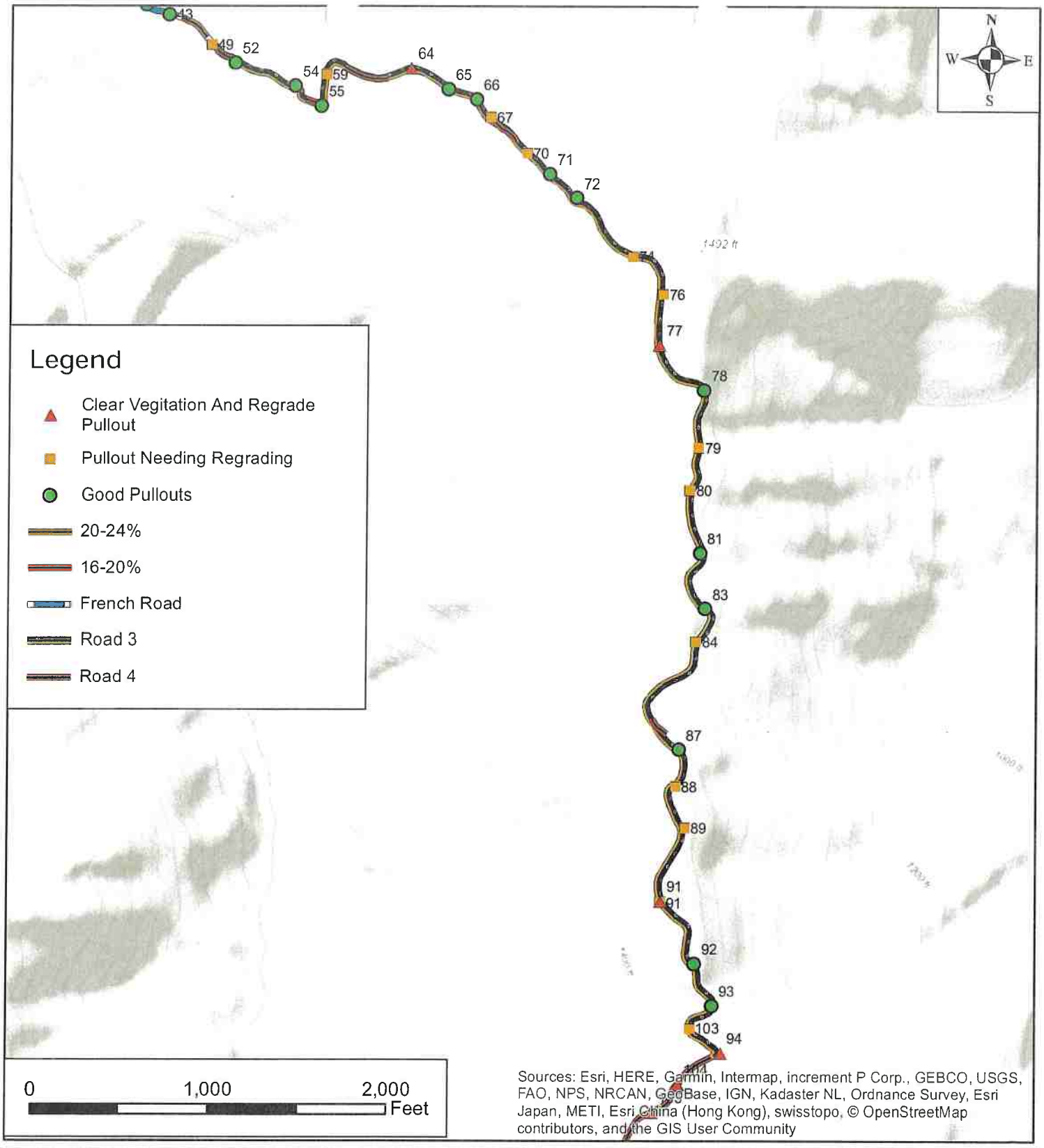
Location: Frech Road
Miranda, CA 95573



TVCE

Trinity Valley Consulting Engineers Inc

Road 3 Road Map for: APN 214-234-006, and APN 214-234-007

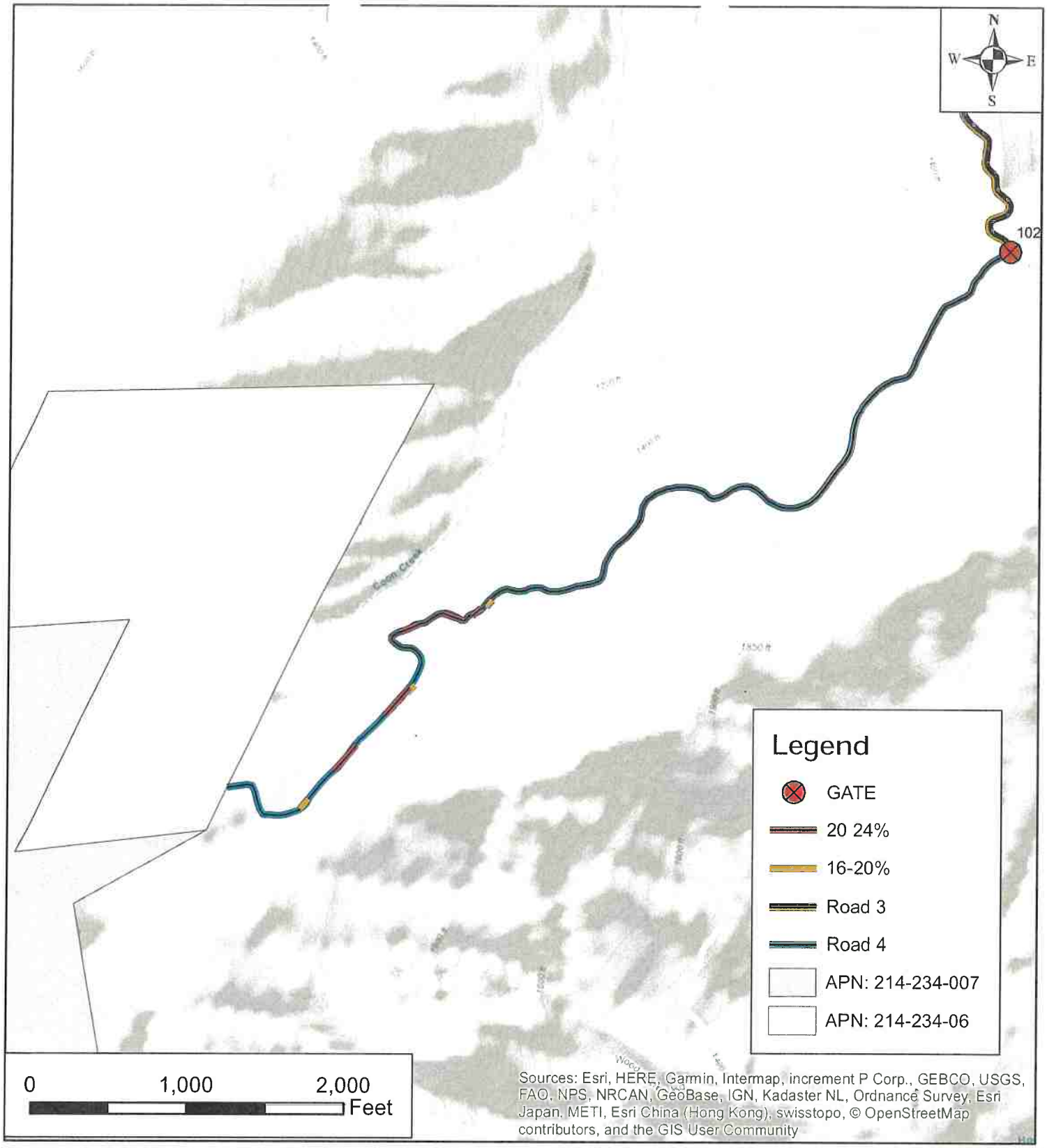
Seamless Topographical Map
FOR
COUNTY OF HUMBOLDT
Parcel Information From Humboldt County GIS
Does not reflect exact location of property lines

Project: 756.05 Kevin Bourque

Report: Roads Evaluation

Road 3 Map

Location: Frech Road
Miranda, CA 95573



TVCE

Road 4 Road Map for: APN 214-234-006, and APN 214-234-007

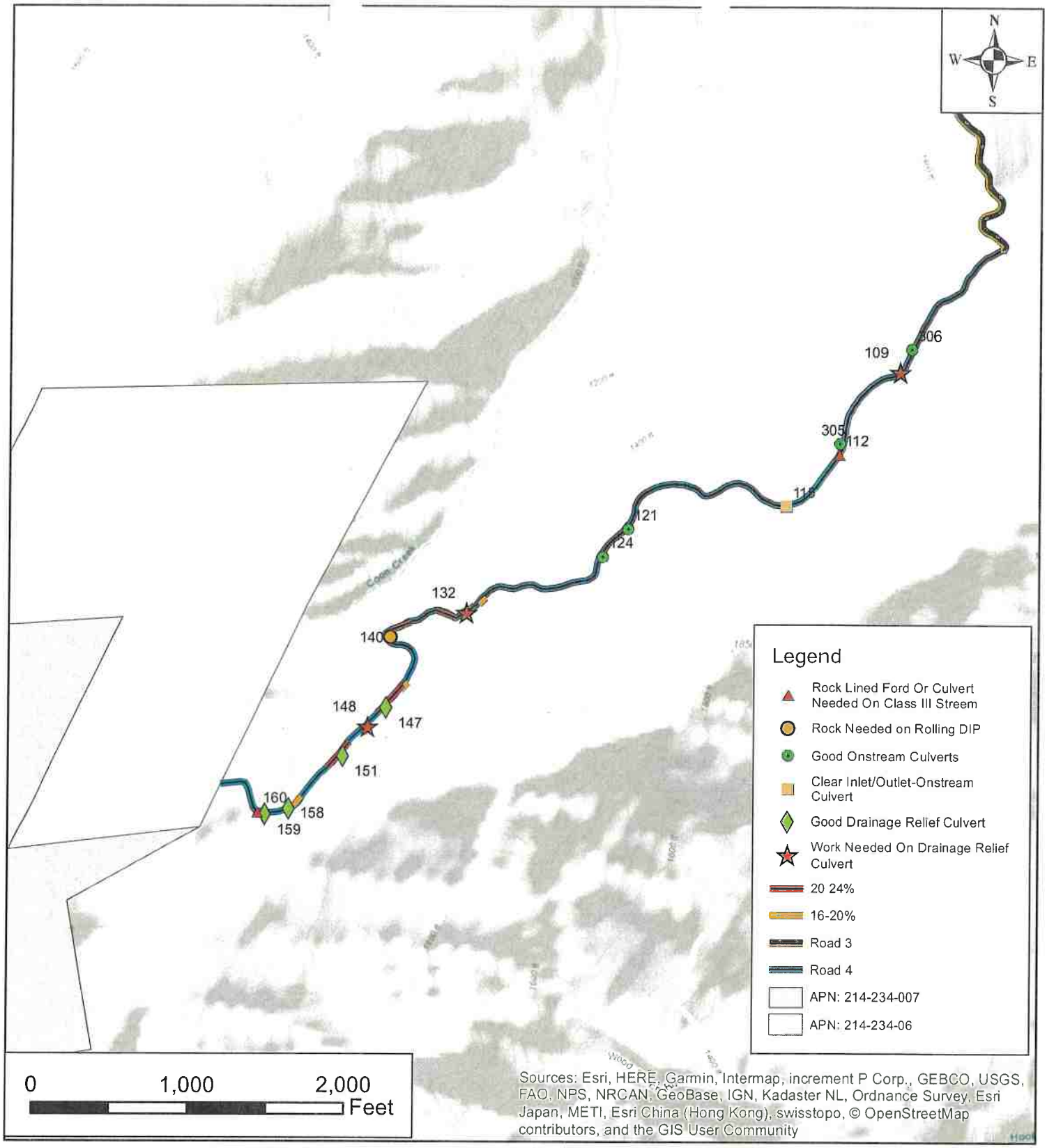
Seamless Topographical Map
FOR
COUNTY OF HUMBOLDT
Parcel Information From Humboldt County GIS
Does not reflect exact location of property lines

Project: 756.05 Kevin Bourque

Report: Roads Evaluation

Road 4 Road Slopes And Pullouts Map

Location: Frech Road
Miranda, CA 95573



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Road 4 Drainage Relief And Onstream Culvert Map for: APN 214-234-006, and APN 214-234-007

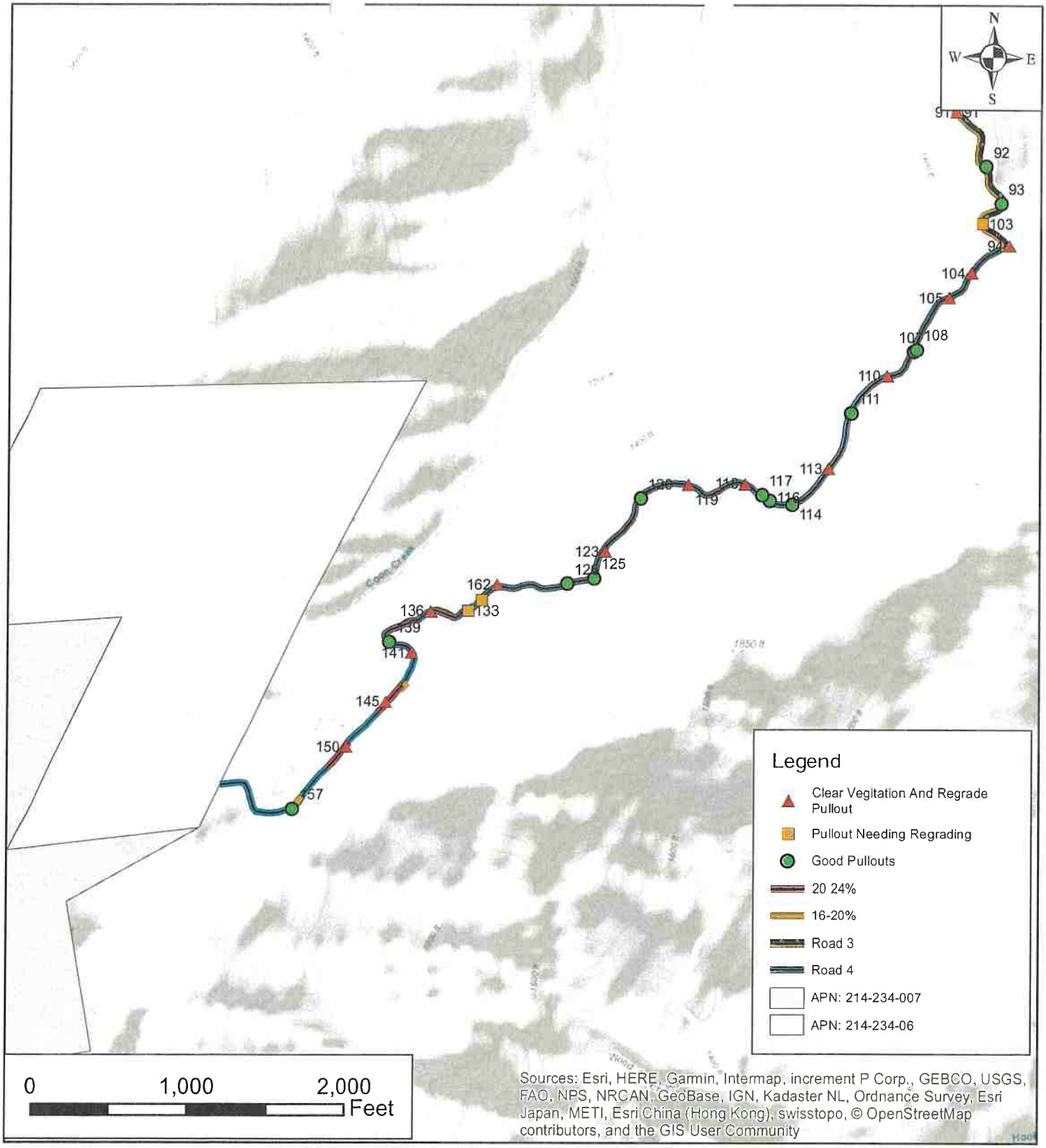
Seamless Topographical Map
FOR
COUNTY OF HUMBOLDT
Parcel Information From Humboldt County GIS
Does not reflect exact location of property lines

Project: 756.05 Kevin Bourque

Report: Roads Evaluation

Road 4 Road Slopes And Pullouts Map

Location: Frech Road
Miranda, CA 95573



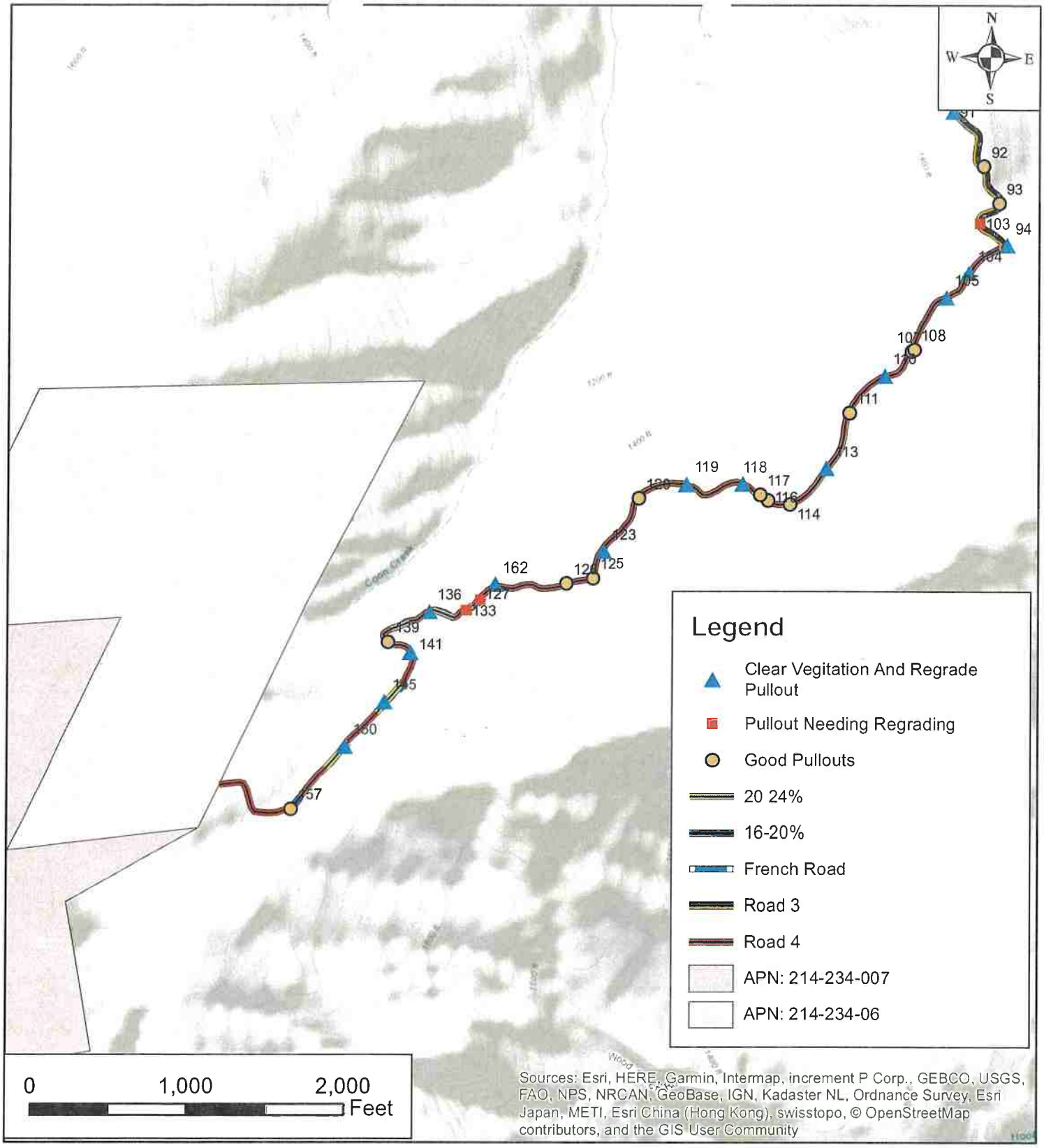
TVCE

Road 4 Pullout Map for: APN 214-234-006, and APN 214-234-007

Seamless Topographical Map
FOR
COUNTY OF HUMBOLDT
Parcel Information From Humboldt County GIS
Does not reflect exact location of property lines

Project: 756.05 Kevin Bourque

Report: Roads Evaluation
Road 4 Road Slopes
And Pullouts Map
Location: Frech Road
Miranda, CA 95573



TVCE
Trinity Valley Consulting Engineers, Inc.

Road 4 Road Map for: APN 214-234-006, and APN 214-234-007

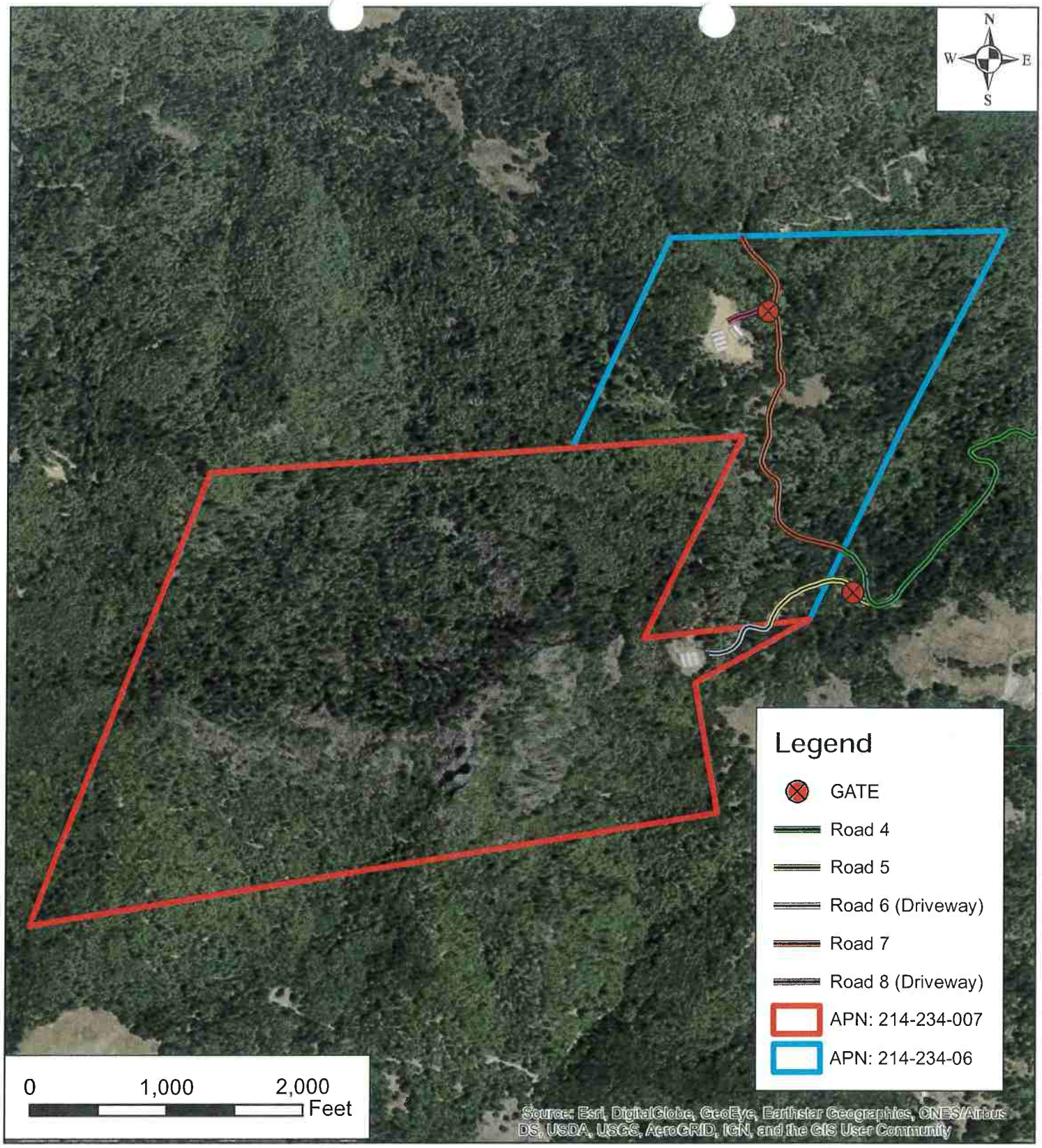
Seamless Topographical Map
FOR
COUNTY OF HUMBOLDT
Parcel Information From Humboldt County GIS
Does not reflect exact location of property lines

Project: 756.05 Kevin Bourque

Report: Roads Evaluation

Road 4 Road Slopes And Pullouts Map

Location: Frech Road Miranda, CA 95573



TVCE
Trinity Valley Consulting Engineers, Inc.

On Property Roads Covered by WRPP For: APN 214-234-006, and APN 214-234-007

Seamless Aeriall Map
FOR
COUNTY OF HUMBOLDT
Parcel Information From Humboldt County GIS
Does not reflect exact location of property lines

Project: 756.05 Kevin Bourque

Report: Roads Evaluation
On Property Roads

Location: Frech Road
Miranda, CA 95573

ATTACHMENT 3:

Road Point Tables

Table 1. Good Pullouts that that will need to be maintained as pullouts.

Point ID	Comments	Latitude	Longitude
2	50'x15'	40.2165553	-123.8191958
4	50'x15'	40.2160448	-123.8178332
6	50'x15'	40.2157449	-123.8172538
10	50'x15'	40.2153630	-123.8162951
12	8'x50'	40.2149552	-123.8172628
13	12'x30'	40.2149391	-123.8174707
14	8'x40'	40.2149366	-123.8177484
19	50'x20'	40.2143837	-123.8192141
24	20'x80'	40.2139901	-123.8170147
30	10'x40'	40.2127259	-123.8192361
37	15'x70'	40.2115248	-123.8181713
41	15'x50'	40.2104251	-123.8180969
43	8'x60'	40.2102822	-123.8176353
52	8'x50'	40.2095690	-123.8162936
54	30'x100'	40.2092328	-123.8150746
55	20'x40'	40.2089394	-123.8145426
65	8'x60'	40.2092335	-123.8119860
66	10'x30'	40.2090907	-123.8114142
71	30'x100'	40.2079746	-123.8099064
72	10'x30'	40.2076191	-123.8093513
78	12'x80'	40.2047205	-123.8067062
81	20'x60'	40.2022344	-123.8067009
83	15'x50'	40.2013845	-123.8065703
87	10'x30'	40.1992211	-123.8070198
92	20'x100'	40.1959520	-123.8066008
93	20'x50'	40.1953186	-123.8062337
101	20'x100'	40.1925324	-123.8045242
107	10'x30'	40.1927121	-123.8081360
108	10'x30'	40.1927477	-123.8080854
111	10'x30'	40.1916231	-123.8095169
114	10'x30'	40.1900118	-123.8108223
116	10'x30'	40.1900800	-123.8113315
117	10'x30'	40.1901740	-123.8115143
120	10'x30'	40.1900663	-123.8142664
125	10'x30'	40.1886585	-123.8152748

Table 2. Good Pullouts that that will need to be maintained as pullouts (continued).

Point ID	Comments	Latitude	Longitude
126	10'x30'	40.1885596	-123.8158713
139	10'x30'	40.1874790	-123.8198948
157	10'x30'	40.1845421	-123.8220164
310	50'x15'	40.2151134	-123.8155131
311	50'x15'	40.2162041	-123.8184630
312	50'x15'	40.2167899	-123.8194449
313	50'x15'	40.2170765	-123.8196694
314	50'x15'	40.2172688	-123.8200359
315	50'x15'	40.2175846	-123.8205888
316	50'x15'	40.2179269	-123.8207281

Table 3. Pullout that need expanding and regrading.

Point ID	Comments	Latitude	Longitude
16	Regrade to 15'x50'	40.2146897	-123.8187498
27	Regrade to 20'x50'	40.2133319	-123.8174968
29	Turnout needs grading	40.2129083	-123.8184116
31	Regrade to 15'x40'	40.2123014	-123.8191611
34	Regrade to 15'x40'	40.2121208	-123.8184607
40	Regrade to 10'x30'	40.2106362	-123.8182352
49	Extend DRC and regrade turnout	40.2098400	-123.8167776
59	Regrade pullout	40.2094221	-123.8144557
67	Expand pullout	40.2088281	-123.8111230
70	Create pullout	40.2082908	-123.8103767
74	Regrade to 10'x60'	40.2067465	-123.8081957
76	Regrade to 8'x80'	40.2061790	-123.8075697
79	Regrade pullout 10'x80'	40.2038453	-123.8067799
80	Create pullout regrade to 14'x80'	40.2031971	-123.8069309
84	Regrade 15'x50'	40.2008762	-123.8067366
88	Regrade pullout to 15'x60'	40.1986554	-123.8070696
89	Regrade pullout 20'x100'	40.1980300	-123.8068641
91	Clear veg regrade to 15'x60'	40.1969009	-123.8073170
103	Regrade and out-slope road	40.1949720	-123.8066608
127	Create pullout by regrading 15'x50'	40.1882533	-123.8178260
133	Regrade pullout 10'x70'	40.1880618	-123.8181238

Table 4. Pullouts that need vegetation to be removed and to be regraded.

Point ID	Comments	Latitude	Longitude
23	Create before slope 20'x80'	40.2140473	-123.8176884
64	Regrade to remove veg 10'x60'	40.2095454	-123.8127510
77	Cut stump and regrade 10'x40'	40.2054030	-123.8076206
91	Regrade veg pullout 15'x60'	40.1969009	-123.8073170
94	Pullout clear veg 15'x70'	40.1946003	-123.8060381
104	Pullout regrade remove veg. 10'x60'	40.1941079	-123.8068787
105	Pullout remove veg.	40.1936762	-123.8073785
110	Pullout clear veg. 10'x60' regrade	40.1922926	-123.8087375
113	Pullout clear veg.	40.1906593	-123.8100186
118	Pullout clear veg.	40.1903616	-123.8119189
119	Pullout clear regrade veg. 15'x60'	40.1903318	-123.8131964
123	Regrade clear veg. 10'x50'	40.1891371	-123.8150423
136	Regrade clear veg. 10'x50'	40.1880305	-123.8189784
141	Regrade clear veg. 20'x60'	40.1873059	-123.8193814
145	Regrade clear veg. 15'x45'	40.1864472	-123.8199470
150	Regrade clear veg. 15'x80'	40.1856533	-123.8208244
162	Clear veg regrade. 10'x45'	40.1885232	-123.8174905

Table 5. Good onstream culverts.

Point ID	Comments	Latitude	Longitude
3	GOOD 24" CPP	40.2161973	-123.8185602
5	GOOD 18" CPP	40.2157010	-123.8172287
17	GOOD 18" CMP	40.2145905	-123.8189055
121	GOOD 30" CPP	40.1895457	-123.8145499
124	GOOD 18" smooth PP	40.1890521	-123.8151034
305	GOOD 24" CPP	40.1911119	-123.8097620
306	GOOD 24" CPP	40.1927836	-123.8081983
307	GOOD 24" CPP	40.2135347	-123.8177945
308	GOOD 24" CPP	40.2158658	-123.8173728
309	GOOD 24" CPP	40.2162159	-123.8182696

Table 6 Onstream culverts that need the inlet/outlet to be cleared.

Point ID	Comments	Latitude	Longitude
115	Clear inlet 36" CPP	40.1900016	-123.8109524

Table 7. Stream Crossing that needs rocked ford or Culvert

Point ID	Comments	Latitude	Longitude
112	Install culvert or rock ford.	40.1909163	-123.8097520
160	Needs a rocked rolling dip or culvert (Class III Stream).	40.1844726	-123.8228150

Table 8. Good drainage relief culverts

Point ID	Comments	Latitude	Longitude
28	18" CMP.	40.2129567	-123.8176029
48	18" CPP.	40.2098437	-123.8167220
58	18" CPP.	40.2093185	-123.8144709
75	18" CPP.	40.2066284	-123.8076484
147	18" smooth PP.	40.1863384	-123.8199432
151	18" smooth PP.	40.1854769	-123.8209024
158	18" smooth PP.	40.1845382	-123.8221067
159	18" smooth pp.	40.1844291	-123.8226411

Table 9. Drainage relief culverts that need work.

Point ID	Comments	Latitude	Longitude
1	Needs cleaning at outlet 18" CPP	40.2169964	-123.8196498
15	18" CMP with exposed opening at road, needs a plate bolted or replacement.	40.21481	-123.818
42	Clear inlet 18" CPP	40.2102757	-123.8176974
82	Clear inlet 18" CMP	40.2016473	-123.8069977
109	Clear inlet 18" CMP	40.1923786	-123.8084436
132	Clear inlet 18" CPP	40.1880211	-123.8181688
148	Clear and rock inlet of 18" concrete culvert	40.1859977	-123.8203488

Table 10. Rolling dips/water-bars that need to be rocked.

Point ID	Comments	Latitude	Longitude
140	Rock needed on rolling dip	40.1875598	-123.8198918

Table 11. Gates that are normally locked

Point ID	Comments	Latitude	Longitude
100	Normally locked	40.2180401	-123.8205053
102	Normally locked	40.1945658	-123.8061614
170	Normally locked	40.2150604	-123.8160170
201	Normally locked	40.1902801	-123.825404
202	Normally locked	40.1847502	-123.822914

ATTACHMENT 4:

Map Point Figures and Descriptions

Map Point(s) Descriptions

Figures for associated Road Points can be viewed below with the associated descriptions and their locations can be referenced on **Attachment 2** (Road Maps), Attachment 3 (Property Road Segment Map) and **Attachment 4** (Road Points Tables).

Road Point(s) Descriptions for off property access road Gibney Drive: This road segment is the access road from Highway 101 to access road way French road. This is a county-maintained road and is the road evaluation starting point.

Figure 1. *Photograph showing the start of Gibney Drive from the highway 101 on-ramp.*

Figure 2. Photograph showing the end of Gibney Drive and the start of French road.

Road Point(s) Descriptions for off property access Roadway French Road: This road segment is the access road from Gibney Drive to access road way Road 3.

Figure 3. Photograph showing Road Point 100, the gate at the intersection of Gibney Drive and French road. French Road will need an encroachment permit to pave the first 30 feet of French Road from the intersection of Gibney Drive..

Figure 4. Road point 58 showing an 18-inch drainage relief culvert that is in good condition.

***Figure 5.**. Photograph showing Road Point 24 which is a pullout that shall be maintained as a pullout.*

***Figure 6.** Road point 15 shows an 18" drainage relief culvert with and exposed opening that needs to be repaired or replaced.*

***Figure** 7. Photo of Road Point 14 which is a good pullout that will need to be maintained as a pullout.*

***Figure 8.** Photograph showing Road Point 16 which is a pullout that need to be regraded.*

Figure 9. *Photograph showing Road Point 27 which is a pullout that need to be regraded.*

Figure 10. *Photograph showing Road Point 31 which is a pullout that need to be regraded.*

Figure 11. *Photograph showing Road Point 40 which is a pullout that need to be regraded.*

Figure 12. *Photograph showing Road Point 42 which is 18" drainage relief culvert with debris in the inlet that needs to be cleared.*

Road Point(s) Descriptions for off property access roadway Road 3: This road segment is the access road from French Road to access road way Road 4.

Figure 13. *Photograph showing Road Point 64 which is a pullout that needs to be regraded to make room for larger vehicles.*

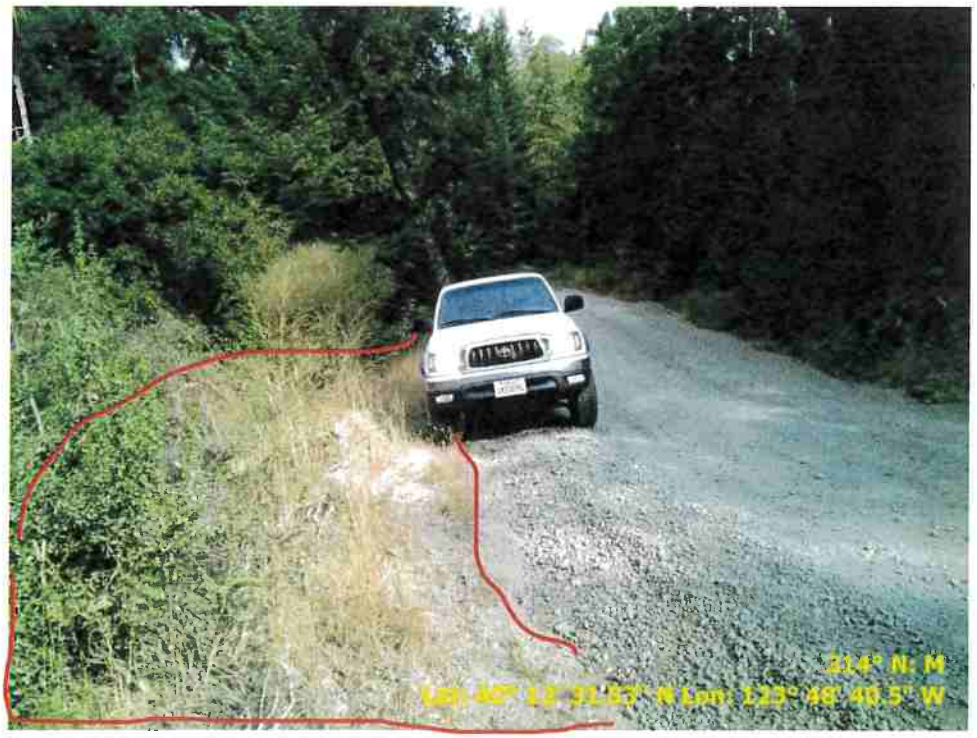


Figure 14. *Photo of Road Point 67 showing a pullout that needs to be regraded and vegetation cleared.*

Figure 15. *Photo of Road Point 71 showing a pullout that needs to be regraded.*

Figure 16. *Photo of Road Point 74 showing a pullout that needs to be regraded and vegetation cleared.*

Figure 17. *Photo of Road Point 76 showing a pullout that needs to be regraded...*

Figure 18. *Photo of Road Point 77 showing a pullout that needs to be have a stump cleared and regraded.*

Figure 19. *Photo of Road Point 79 showing a pullout that needs to be regraded and vegetation cleared.*

Figure 20. *Photo of Road Point 80 showing a pullout that needs to be regraded and vegetation cleared.*

Figure 21. *Photograph of Road Point 82 showing an a partially plugged inlet to an 18 inch drainage relief culvert. The fix is to clear the inlet with a shovel.*

Figure 22. *Photo of Road Point 84 showing a pullout that needs to be regraded and vegetation cleared.*

Figure 23. *Photo of Road Point 80 showing a pullout that needs to be regraded and vegetation cleared.*

Figure 24. *Photo of Road Point 89 showing a pullout that needs to be regraded and vegetation cleared.*

Figure 25. *Photo of Road Point 91 showing a pullout that needs vegetation cleared and to be regraded.*

Figure 26.*. Photo of Road Point 94 showing a pullout that needs to be regraded and vegetation cleared.*

Figure 27. *Photo of Road Point 91 showing a pullout that needs vegetation cleared and to be regraded.*

Figure 28. *Photo showing a pullout that needs to be regraded and vegetation cleared.*

Figure 29. *Photo showing a pullout that needs vegetation cleared and regrading.*

Road Point(s) Descriptions for off property access roadway Road 4: This road segment provides road access from off property access road way Road 3 to on property access roads.

Figure 30. *Photo of Road Point 103 showing a pullout that needs to be regraded.*

Figure 31. *Photo of Road Point 104 showing a pullout that needs to be cleared of vegetation and regrading.*

Figure 32. *Photo of Road Point 190 showing the inlet of and 18" drainage relief culvert that needs to be cleared.*

***Figure 33.**. Photo of Road Point 110 showing a pullout that needs to be cleared of vegetation and regrading.*

***Figure 34.** Photo of Road Point 112 showing where concentrated road runoff crosses the road. The fix is to install a culvert or a rocked rolling dip.*

Figure 35. *Photo of Road Point 115 showing the inlet of a 36" onstream culvert that needs the inlet cleared.*

Figure 36. *Photo of Road Point 118 showing a pullout that needs to be cleared of vegetation and regrading.*

Figure 37. *Photo of Road Point 119 showing a pullout that needs to be cleared of vegetation and regrading.*

Figure 38. *Photo of Road Point 123 showing a pullout that needs to be cleared of vegetation and regrading.*

Figure 39. *Photo of Road Point 127 showing a pullout that needs to be cleared of vegetation and regrading.*

Figure 40. *Photo of Road Point 132 showing the inlet of a 18" onstream culvert that needs the inlet cleared.*

Figure 41. *Photo of Road Point 133 showing a pullout that needs to be cleared of vegetation and to be regraded.*

***Figure 42.**. Photo of Road Point 136 showing a pullout that needs to be cleared of vegetation and regraded.*

***Figure 43.** Photo of Road Point 301showing water-bar/rolling dip that needs surface rock..*

Figure 44. *Photo of Road Point 141 showing a pullout that needs to be cleared of vegetation and regraded.*

Figure 45. *Photo of Road Point 145 showing a pullout that needs to be cleared of vegetation and regraded.*

Figure 46. *Photo of Road Point 148 showing the inlet of an 18" onstream culvert that needs the inlet cleared and the inlet needs rock slope protection above and around the inlet.*

***Figure 47.**. Photo of Road Point 150 showing a pullout that needs to be cleared of vegetation and regraded.*

***Figure 48.** Photo of Road Point 159 showing a class three stream crossing that need a culvert or rock ford.*

***Figure 49**. Photo of Road Point 162 showing a pullout that needs to be cleared of vegetation and regraded.*

Figure 50. **Road Point 202** Shows the gate at intersection of access Road 4 and the off property driveway that leads to Project 2. The start of the driveway has a slope that is approximately 18%.

ATTACHMENT 5:

Watershed Resource Protection Plan For APN: 214-234-006

Water Resource Protection Plan

APN 214-234-06

Submitted to:

California Regional Water Quality Control Board

North Coast Region

5550 Skylane Boulevard, Suite A

Santa Rosa, California 95403

Prepared by:

Timberland Resource Consultants

165 South Fortuna Blvd

Fortuna, CA 95540

07-16-2016

Purpose

This Water Resource Protection Plan (WRPP) has been prepared on behalf of the property owner, Kevin Bourque, by agreement and in response to the California Water Code Section 13260(a), which requires that any person discharging waste or proposing to discharge waste within any region that could affect the quality of the waters of the state, other than into a community sewer system, shall file with the appropriate regional water board a Report of Waste Discharge (ROWD) containing such information and data as may be required by the Regional Water Board. The Regional Water Board may waive the requirements of Water Code section 13260 for specific types of discharges if the waiver is consistent with the Basin Plan and in the public interest. Any waiver is conditional and may be terminated at any time. A waiver should include monitoring requirements to verify the adequacy and effectiveness of the waiver's conditions. Order R1-2015-0023 conditionally waives the requirement to file a ROWD for discharges and associated activities described in finding 4.

Scope of Report

Order No. R1-2015-0023 states that "Tier 2 Dischargers and Tier 3 Dischargers who intend to cultivate cannabis before, during, or following site cleanup activities shall develop and implement a water resource protection plan that contains the elements listed and addressed below. Dischargers must keep this plan on site, and produce it upon request by Regional Water Board staff. Management practices shall be properly designed and installed, and assessed periodically for effectiveness. If a management measure is found to be ineffective, the plan must be adapted and implemented to incorporate new or additional management practices to meet standard conditions. Dischargers shall certify annually to the Regional Water Board individually or through an approved third party program that the plan is being implemented and is effectively protecting water quality, and report on progress in implementing site improvements intended to bring the site into compliance with all conditions of this Order."

Methods

The methods used to develop this WRPP include both field and office components. The office component consisted of reviewing soil maps (California Cooperative Soil-Vegetation Survey), CGS Geomorphic Features Map (North Coast Watersheds Mapping, DMG CD 99-002, 1999). The field component included identifying and accurately mapping all watercourses, wet areas, and wetlands located downstream of the cultivation areas, associated facilities, and all appurtenant roads accessing such areas. An accurate location of the Waters of the State is necessary to make an assessment of whether potential and existing erosion sites/pollution sites have the potential to discharge waste to an area that could affect waters of the State (including groundwater). Next, all cultivation areas, associated facilities, and all appurtenant roads accessing such areas were assessed for discharges and related controllable water quality factors from the activities listed in Order R1-2015-0023, Finding 4a-j. The field assessment also included an evaluation and

determination of compliance with the Standard Conditions per Provision I.B of Order No. R1-2015-0023. The water resource protection plans required under Tier 2 are meant to describe the specific measures a discharger implements to achieve compliance with standard conditions. Therefore, all required components of the water resource protection plan per Provision I.B of Order No. R1-2015-0023 were physically inspected and evaluated. A comprehensive summary of each Standard Condition as it relates to the subject property is appended.

Methods (Cont.

Identified Sites Requiring Remediation

Unique Map Point(s)	Map Point Description	Associated Standard Condition	Temporary BMP	Permanent BMP	Treatment Priority	Time Schedule for completion of Permanent BMP	Completion Date
Road Pt. 01 GPS 905 N 40 11.383' W 123 49.640'	Secondary road	A.1.a.	N/A	Placement of rolling dip to convey surface drainage.	2	10/15/16	
Road Pt. 02 GPS 912 N 40 11.418' W 123 49.541'	Main Road	A.1.a.	N/A	Placement of rolling dip to convey surface drainage.	2	10/15/16	
Cultivation Site to Road Site #3 GPS 873 and 922 N 40 11.403' W 123 49.583 N 40 11.421' W 123 49.530	Cultivation Site to Road Site #3	A.1.a	N/A	Reshape and application of surface rock along 150' of access road	2	10/15/16	

Road Pt. 03 GPS 922 N 40 11.421' W 123 49.530	Main Road	A.1.a.	N/A	Placement of rolling dip to convey surface drainage.	2	10/15/16	
Road Pt 04. GPS 913-914 N 40 11.387 W 123 49.502 N 40 11.377 W123 49.505	Main Road	A.1.a.	N/A	Saturated and muddy road conditions during winter months. Application of 6" of surface rock for approximately 70'.	2	10/15/16	
Road Pt. 05 GPS 915 N 40 11.347 W 123 49.503	Main Road	A.1.a.	N/A	Placement of rolling dip to convey surface drainage.	2	10/15/16	
Road Pt. 07 GPS 919 N 40 11.144' W 123 49.449'	Main Road	A.2.a.	N/A	Placement of an 18"-20' ditch relief culvert prior to drainage channel to ensure hydrological disconnection	2	10/15/16	
Erosion Site #1 GPS 884-887,889, 901,905 & 934 N 40 11.360' W 123 49.548' N 40 11.391' W 123 49.559'	Sloped Bank surrounding the cultivation area	A.1.a	N/A	Application of appropriate erosion control seed prior to the first one inch precipitation event is required to reestablish vegetation cover on approximately .5 acres. Burning of slash pile and reseeding of location.	2	10/15/16	
Erosion Site #2 GPS 884-887 N 40 11.360' W 123 49.548' N 40 11.358' W 123 49.586'	Ditch drainage culvert	A.2.a	N/A	Armoring of 12"-40' culvert on the inlet and outlet headwall.	2	10/15/16	

GPS 802-Multiple N 40 11.386 W 123 49.614	Greenhouses	A.6.a	N/A	Convert from a hand watering to drip irrigation system	4	10/15/2020	
GPS 908 N 40 11.415 W 123 49.600'	Storage/Spoils Facility	A.4.a	N/A	Construction of permanent infrastructure to adequately store soil, organic fertilizer and petroleum based products	3	10/15/2020	
Port a Potty GPS 905 N 40 11.383' W 123 49.640'	Human Waste	A.11.a	N/A	Relocation of bathroom facilities away from seasonal channel during the winter months	2	10/15/16	
Secondary Road GPS 905 N 40 11.383' W 123 49.640'	Refuse	A.11.a	N/A	Removal of cultivation related refuse to prevent from entering watercourses	3		

Coordinates associated with sites UTM 10 NAD 83

Treat Priority: The time frame for treatment of each specific site.

(1) Indicates a very high priority with treatment being planned to occur immediately.

(2) Indicates a high priority site with treatment to occur prior to the start of the winter period (Nov. 15).

(3) Indicates a moderate priority with treatment being planned to occur within a year 1, or prior to the winter period (Nov. 15) of the 2nd season of operations.

(4) Indicates a low priority with treatment being planned to occur in the shortest time possible, but no later than the expiration of this Order (five years).

Identified Sites Not Requiring Mitigation

Site	Description	Planned Monitoring

Monitoring Plan

Tier 2 Dischargers shall include a monitoring element in the water resource protection plan that at a minimum provides for periodic inspection of the site, checklist to confirm placement and efficacy of management measures, and document progress on any plan elements subject to a time schedule. Tier 2 Dischargers shall submit an annual report (Appendix C) by March 31 of each year that documents implementation and effectiveness of management measures during the previous year. Tier 2 annual reporting is a function that may be provided through an approved third party program.

Monitoring of the site includes visual inspection and photographic documentation of each feature of interest listed on the site map, with new photographic documentation recorded with any notable changes to the feature of interest. At a minimum, all site features must be monitored annually, to provide the basis for completion of the annual re-certification process. Additionally, sites shall be monitored at the following times to ensure timely identification of changed site conditions and to determine whether implementation of additional management measures is necessary to iteratively prevent, minimize, and mitigate discharges of waste to surface water: 1) just prior to October 15 to evaluate site preparedness for storm events and storm water runoff, 2) following the accumulation of 3" total precipitation or by November 15, whichever is sooner, and 3) following any rainfall event with an intensity of 3" precipitation in 24 hours. Precipitation data can be obtained from the National Weather Service Forecast Office (e.g. by entering the zip code of the parcel location at http://www.srh.noaa.gov/forecast).

Inspection Personnel Contact Information:

Todd Golder

Timberland Resource Consultants

165 South Fortuna Blvd, Fortuna CA 95540

707-601-7014

Monitoring Plan Reporting Requirements

Order No. R1-2015-0023, Appendix C must be submitted to the Regional Water Board or approved third party program upon initial enrollment in the Order (NOI) and annually thereafter by March 31. Forms submitted to the Regional Water Board shall be submitted electronically to northcoast@waterboards.ca.gov. If electronic submission is infeasible, hard copies can be submitted to: North Coast Regional Water Quality Control Board, 5550 Skylane Boulevard, Suite A, Santa Rosa, CA 95403.

Water Resource Protection Plan

Assessment of Standard Conditions

APN 214-234-06

Assessment of Standard Conditions consisted of field examinations in the summer of 2016. The examination evaluated areas near, and areas with the potential to directly impact, watercourses for sensitive conditions including, but not limited to, existing and proposed roads, skid trails and landings, unstable and erodible watercourse banks, unstable upslope areas, debris, jam potential, inadequate flow capacity, changeable channels, overflow channels, flood prone areas, and riparian zones. Field examinations also evaluated all roads and trails on the property, developed areas, cultivation sites, and any structures and facilities appurtenant to cultivation on the property. Anywhere the Standard Conditions are not met on the property, descriptions of the assessments and the prescribed treatments are outlined following each associated section below.

Summary of Standard Conditions Compliance

1. Site maintenance, erosion control, and drainage features Y☐/N☒
2. Stream crossing maintenance Y☐/N☒
3. Riparian and wetland protection and management Y☒/N☐
4. Spoils management Y☐/N☒
5. Water storage and use Y☒/N☐
6. Irrigation runoff Y☒/N☐
7. Fertilizers and soil amendments Y☒/N☐
8. Pesticides and herbicides? Y☒/N☐
9. Petroleum products and other chemicals Y☒/N☐
10. Cultivation-related wastes Y☒/N☐
11. Refuse and human waste Y☐/N☒

A. Standard Conditions, Applicable to all Dischargers

1. Site maintenance, erosion control and drainage features

Roads shall be maintained as appropriate (with adequate surfacing and drainage features) to avoid developing surface ruts, gullies, or surface erosion that results in sediment delivery to surface waters.

Roads, driveways, trails, and other defined corridors for foot or vehicle traffic of any kind shall have adequate ditch relief drains or rolling dips and/or other measures to prevent or minimize erosion along the flow paths and at their respective outlets

Road Site #1: GPS 905

Runoff associated with road surface and adjacent ground disturbance is encouraging rill formation and sediment delivering down slope.

Placement of rolling dip to convey water off of road surface

Road Site #2: GPS 873,912

Precipitation runoff and vehicular traffic resulting in chronic surface erosion and subsequent uneven/confined road surface. Sediment not entering watercourse. Reshape and application of 6" surface rock on 150' from cultivation area to Road Site #3

Road Site #3: GPS 922
Beginning of rill formation from surface runoff.

Placement of rolling dip to convey water off of road

Road Site #4:GPS 913-914
Surface runoff accumulates along road segment causing saturated and muddy conditions during winter months. Outlets at this point, evidence of significant sediment dispersal on outboard road side.

Application of 6" of surface rock for approximately 70'.

Road Site #5:GPS 915
Placement of one (1) rolling dip to convey water away from road surface.

Quarry Location:GPS 916
Potential surface rock source for road improvement activities.

Seasonal Pond Location- GPS 918
Located on the west side of the main access road. Pond fills during winter months, but draws down during late spring. No sediment delivery from inventoried road occurring.

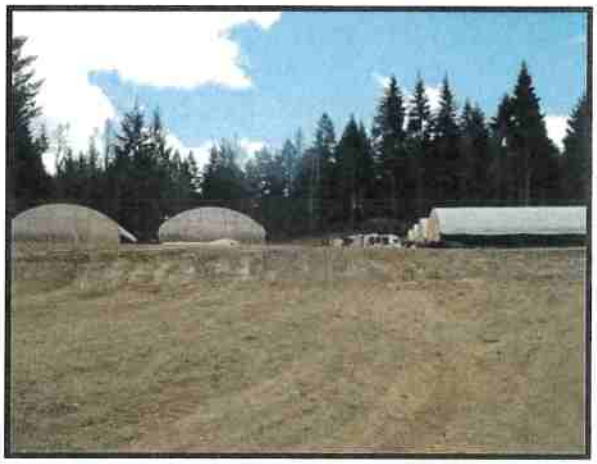
Roads and other features shall be maintained so that surface runoff drains away from potentially unstable slopes or earthen fills. Where road runoff cannot be drained away from an unstable feature, an engineered structure or system shall be installed to ensure that surface flows will not cause slope failure.

Roads, clearings, fill prisms, and terraced areas (cleared/developed areas with the potential for sediment erosion and transport) shall be maintained so that they are not hydrologically connected[1], as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams.

Connected roads are road segments that deliver road surface runoff, via the ditch or road surface, to a stream crossing or to a connected drain that occurs within the high delivery potential portion of the active road network. A connected drain is defined as any cross-drain culvert, water bar, rolling dip, or ditch-out that appears to deliver runoff to a defined channel. A drain is considered connected if there is evidence of surface flow connection from the road to a defined channel or if the outlet has eroded a channel that extends from the road to a defined channel. (http://www.forestsandfish.com/documents/Road_Mgmt_Survey.pdf)

Due to the steepness of surrounding slopes, rill *formation is expected during the next* precipitation season (GPS 884-887,889, 901,905 & 934).

Application of appropriate erosion control seed prior to the first one inch precipitation event is required to reestablish vegetation cover. A native/introduced perennial seed mix consisting of Regreen, California broom, Blue wild rye, Orchard grass and subclover is recommended. Seed mix with appropriate pounds per acre can be developed upon request.



Ditch relief drains, rolling dip outlets, and road pad or terrace surfaces shall be maintained to promote infiltration/dispersal of outflows and have no apparent erosion or evidence of soil transport to receiving waters.

During the clearing and shaping of the area, a ditch was excavated on the west side of the cultivation area to drain water that ponds during precipitation events. A 12"-40' HDPE pipe was placed to drain rainwater towards the north side of property. Neither the inlet or outlet of culvert have been rocked. Along with the reseeding of the

slope, rip rap application will occur prior to the precipitation season to ensure protection of headwall.

Stockpiled construction materials are stored in a location and manner so as to prevent their transport to receiving waters.

Stockpile of greenhouse construction material (GPS 905) including plastic, metal and wood along lower access road on the outboard side. Material could eventually transport to nearby water course.

All erosion related sites shall be monitored prior to and following prescribed treatments.

2. Stream Crossing Maintenance

Culverts and stream crossings shall be sized to pass the expected 100-year peak streamflow.

Culverts and stream crossings shall be designed and maintained to address debris associated with the expected 100-year peak streamflow.

Culverts and stream crossings shall allow passage of all life stages of fish on fish-bearing or restorable streams, and allow passage of aquatic organisms on perennial or intermittent streams.

Stream crossings shall be maintained so as to prevent or minimize erosion from exposed surfaces adjacent to, and in the channel and on the banks.

Culverts shall align with the stream grade and natural stream channel at the inlet and outlet where feasible.[2]

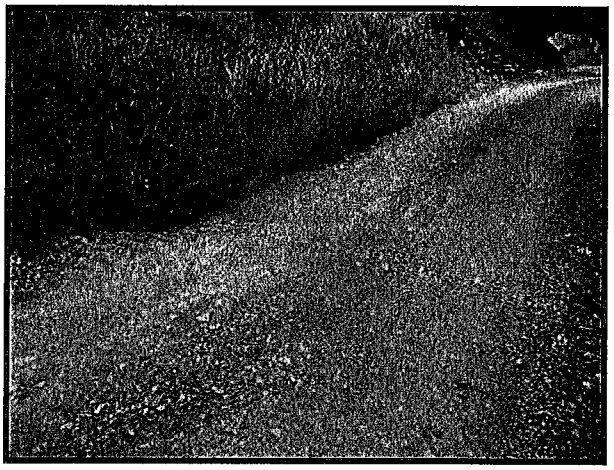
Stream crossings shall be maintained so as to prevent stream diversion in the event that the culvert/crossing is plugged, and critical dips shall be employed with all crossing installations where feasible.[3]

[2] At a minimum, the culvert shall be aligned at the inlet. If infeasible to align the culvert outlet with the stream grade or channel, outlet armoring or equivalently effective means may be applied.

[3] If infeasible to install a critical dip, an alternative solution may be chosen.

Road Site #6:GPS 917

Existing rocked ford on well armored road functioning appropriately. No treatment necessary.



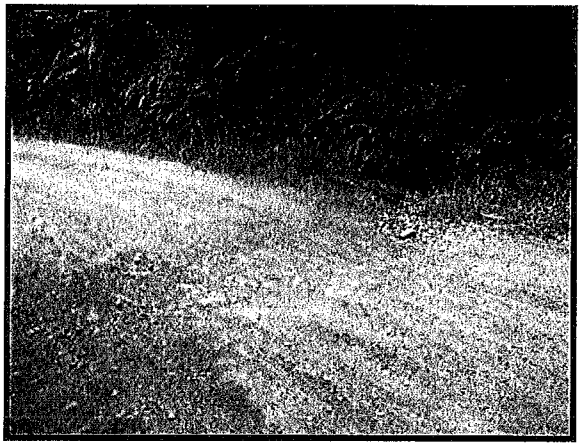
Road Site #7:GPS 919

Existing 18"-20' CMP culvert draining both a seasonal channel and inboard ditch. Culvert appropriately sized for 100 year storm event.

According to California Board of Forestry and Fire Protection 2013 Road Rules and Technical Addendum No. 5- Guidance on Hydrological Disconnection, road drainage, minimization of diversion potential and high risk crossings policy 14CCR923.5(a)-(i)[943.5(a)-(i),963.5(a)-(i), the inboard ditch hydrology must be dispersed prior to entering seasonal drainage. Placement of 18"-20' culvert upslope to separate out the drainage systems.

Road Site #8:GPS 921

Existing rocked ford on well armored road functioning appropriately. No treatment necessary.



3. Riparian and Wetland Protection and Management

For Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at a minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class III watercourse or wetlands. The Regional Water Board for Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class III watercourse or wetlands. The Regional Water Board or its or its Executive Officer may apply additional or alternative[4] conditions on enrollment, including site-specific riparian buffers and other BMPs beyond those identified in water resource protection plans to ensure water quality protection.

[4] Alternative site-specific riparian buffers that are equally protective of water quality may be necessary to accommodate existing permanent structures or other types of structures that cannot be relocated.

Buffers shall be maintained at natural slope with native vegetation.

Buffers shall be of sufficient width to filter wastes from runoff discharging from production lands and associated facilities to all wetlands, streams, drainage ditches, or other conveyances. Riparian and wetland areas shall be protected in a manner that maintains their essential functions, including temperature and microclimate control, filtration of sediment and other pollutants, nutrient cycling, woody debris recruitment, groundwater recharge, streambank stabilization, and flood peak attenuation and flood water storage.

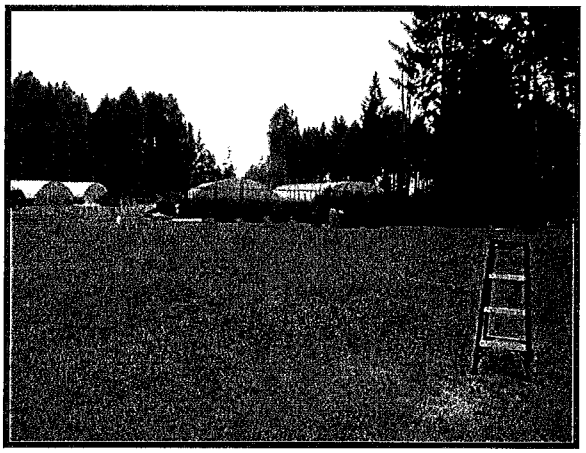
This standard condition is being met at this time.

4. Spoils Management

Spoils[5] shall not be stored or placed in or where they can enter any surface water.

Spoils shall be adequately contained or stabilized to prevent sediment delivery to surface waters.

Spoils generated through development or maintenance of roads, driveways, earthen fill pads, or other cleared or filled areas shall not be sidecast in any location where they can enter or be transported to surface waters.



The intent is to recycle the soil in the short term with the long term plan to construct a metal frame structure to store the cultivation spoils. Photo shows the general proximity of the structure (GPS 883).

Slash material generated from cleared area stored on the side slope will be burned and reseeded in the fall.

[5] Spoils are waste earthen or organic materials generated through grading or excavation, or waste plant growth media or soil amendments. Spoils include but are not limited to soils, slash, bark, sawdust, potting soils, rock, and fertilizers.

5. Water Storage and Use

Size and scope of an operation shall be such that the amount of water used shall not adversely impact water quality and/or beneficial uses, including and in consideration with other water use by operations, instream flow requirements and/or needs in the watershed, defined at the scale of a HUC-12[6] watershed or at a smaller hydrologic watershed as determined necessary by the Regional Water Board Executive Officer.

Water conservation measures shall be implemented. Examples include use of rainwater catchment systems or watering plants with a drip irrigation system rather than with a hose or sprinkler system.

For Tier 2 Dischargers, if possible, develop off-stream storage facilities to minimize surface water diversion during low flow periods.
Water is applied using no more than agronomic rates.[7]

Diversion and/or storage of water from a stream should be conducted pursuant to a valid water right and in compliance with reporting requirements under Water Code section 5101.
Water storage features, such as ponds, tanks, and other vessels shall be selected, sited, designed, and maintained so as to insure integrity and to prevent release into waters of the state in the event of a containment failure.

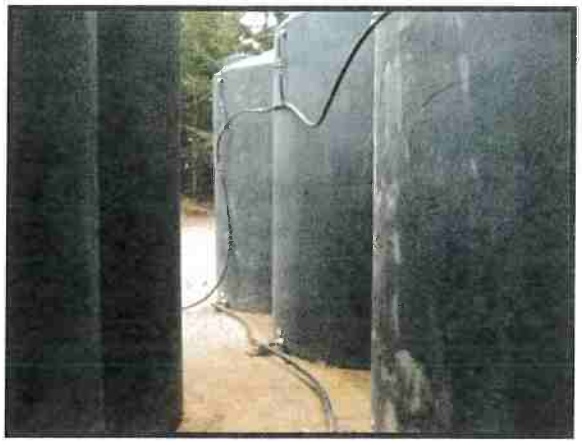
The landowner currently obtains water from an existing permitted agricultural well (GPS 815). The well is approximately 250' deep. Well is used for both domestic and agricultural purposes. The well does not have a water meter at this time, but the delivery pipe has a meter installed. The intent is to have water meter installed on the well.

Water is delivered to eight (8) 5000 gallon tanks (GPS 888) by a gas generator and conveyed by a 1" ADS Polyflex Potable Grade (IPS) pipe. From the storage tanks water can be directed two ways:

[6] See definition and link to maps at: http://water.usgs.gov/GIS/huc.html

[7] "Agronomic rates" is defined as the rates of fertilizer and irrigation water that a plant needs to enhance soil productivity and provide the crop or forage growth with needed nutrients for optimum health and growth, without having any excess water or nutrient percolate beyond the root zone.

1) Water can be delivered directly to greenhouses with a 11/2" pipe which reduces to a 1" at the water meter.
2) Water can be directed from storage tanks to a 1500 gallon mixing tank (GPS 889)
In addition, a 305 gallon mixing tank (GPS 923) is located on flat near the greenhouses.



Eight (8) 5000 gallon storage tanks= 40,000 gallon storage

1500 gallon mixing tank

305 gallon mixing tank

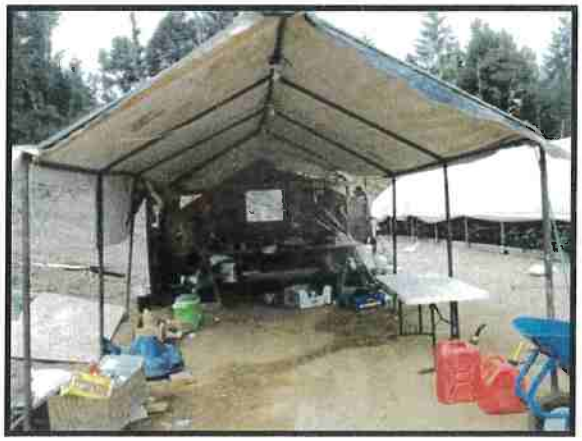
There are no surface water diversions occurring on the property. The tanks are in locations that they will not impact any waterbody if tanks were to fail.

Standard condition is being met at this time.

6. Irrigation Runoff

Implementing water conservation measures, irrigating at agronomic rates, applying fertilizers at agronomic rates and applying chemicals according to the label specifications, and maintaining stable soil and growth media should serve to minimize the amount of runoff and the concentration of chemicals in that water. In the event that irrigation runoff occurs, measures shall be in place to treat/control/contain the runoff to minimize the pollutant loads in the discharge. Irrigation runoff shall be managed so that any entrained constituents, such as fertilizers, fine sediment and suspended organic particles, and other oxygen consuming materials are not discharged to nearby watercourses. Management practices include, but are not limited to, modifications to irrigation systems that reuse tailwater by constructing off-stream retention basins, and active (pumping) and or passive (gravity) tailwater recapture/redistribution systems. Care shall be taken to ensure that irrigation tailwater is not discharged towards or impounded over unstable features or landslides.

The current irrigation system is hand handwatering. The long term goal is to implement a drip irrigation system within raised beds which should not produce runoff. Given the flat topography and distance to watercourse there should be no hydrological connectivity between irrigation and watercourse.



7. Fertilizers and Soil Amendments

Fertilizers, potting soils, compost, and other soils and soil amendments shall be stored in locations and in a manner in which they cannot enter or be transported into surface waters and such that nutrients or other pollutants cannot be leached into groundwater.

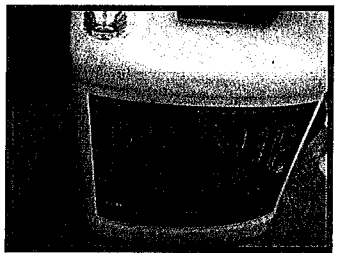
Fertilizers and soil amendments shall be applied and used per packaging instructions and/or at proper agronomic rates.

Cultivation areas shall be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.

The landowner plans on storing soil amendments/organic fertilizers within fabric and metal structure in the short term. Long term plans include a metal structure that will store all organic fertilizers, soil and amendments where they can be protected during the winter months. Soil used in raised beds is Royal Gold-Kings Mix. Royal Gold Kings Mix is a well-aerated, moderately amended coco peat blend.

Organic Liquid soil amendments are added to mixing tank and applied once a week 500 gallons are applied to three (3) greenhouses, followed by an additional 500 gallons for the remaining three (3) greenhouses. 1000 gallons are applied once a week to six (6) greenhouses. All label instructions are followed.

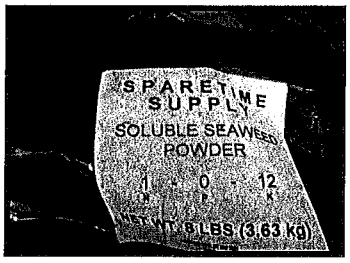
PHUP



N0.00% – P0.00% – K45.00%

pH Up is a strong alkali formula for raising pH.

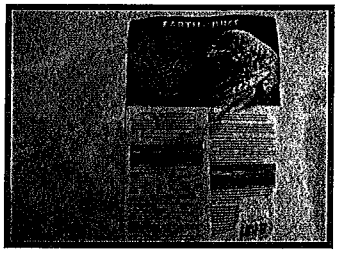
Soluble Seaweed Powder



N1.00% – P0.00% – K12.00%

Soluble Seaweed Powder promotes early root growth and helps create lush foliage. Introducing kelp to a fertilizer program helps improve overall plant health and vigor.

Earth Juice SeaBlast- Bloom



N3.00% – P26.00% – K22.00%

Water-Soluble Plant Food with seaweed, fossilized guano, steamed bone meal and micronutrients.

Flowering and fruiting plants

Earth Juice Sugar Peak Grand Finale

N0.00% – P6.00% – K4.00%

Natural- molasses based liquid formulations

Finishing/Ripening formula that will assist and serve to maximize the production of essential oils, resins, fragrances and yields of determinate flowering and fruiting plants.

8. Pesticides/Herbicides

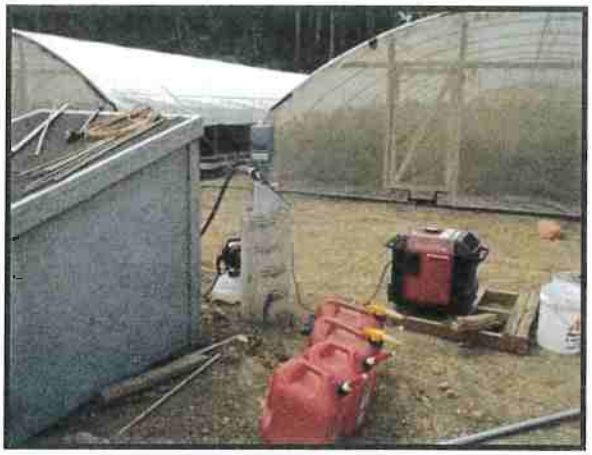
At the present time, there are no pesticides or herbicides registered specifically for use directly on cannabis and the use of pesticides on cannabis plants has not been reviewed for safety, human health effects, or environmental impacts. Under California law, the only pesticide products not illegal to use on cannabis are those that contain an active ingredient that is exempt from residue tolerance requirements and either registered and labeled for a broad enough use to include use on cannabis or exempt from registration requirements as a minimum risk pesticide under FIFRA section 25(b) and California Code of Regulations, title 3, section 6147. For the purpose of compliance with conditions of this Order, any uses of pesticide products shall be consistent with product labeling and any products on the site shall be placed, used, and stored in a manner that ensures that they will not enter or be released into surface or ground waters.

The landowner states that he uses no pesticides/herbicides. Standard condition is being met at this time.

9. Petroleum products and other chemicals

Petroleum products and other liquid chemicals, including but not limited to diesel, biodiesel, gasoline, and oils shall be stored so as to prevent their spillage, discharge, or seepage into receiving waters. Storage tanks and containers must be of suitable material and construction to be compatible with the substance(s) stored and conditions of storage such as pressure and temperature.

Above ground storage tanks and containers shall be provided with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation.



Dischargers shall ensure that diked areas are sufficiently impervious to contain discharged chemicals.

Discharger(s) shall implement spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.

Underground storage tanks 110 gallons and larger shall be registered with the appropriate County Health Department and comply with State and local requirements for leak detection, spill overflow, corrosion protection, and insurance coverage.

Operation is run off of Honda Generator utilizing gasoline. Currently fuel for generator when not in use is stored under the fabric and metal roof located at GPS 897.

This standard condition is being met at this time.

10. Cultivation-related wastes

Cultivation-related wastes including, but not limited to, empty soil/soil amendment/ fertilizer/pesticide bags and containers, empty plant pots or containers, dead or harvested plant waste, and spent growth medium shall, for as long as they remain on the site, be stored[8] at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwater.

Please see Spoils documentation. This standard condition is being met at this time.

11. Refuse and human waste

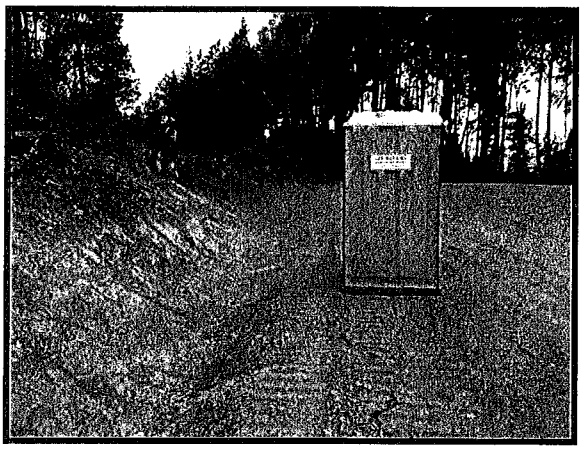
Disposal of domestic sewage shall meet applicable County health standards, local agency management plans and ordinances, and/or the Regional Water Board's Onsite Wastewater Treatment System (OWTS) policy, and shall not represent a threat to surface water or groundwater.

Refuse and garbage shall be stored in a location and manner that prevents its discharge to receiving waters and prevents any leachate or contact water from entering or percolating to receiving waters.

[8] Plant waste may also be composted, subject to the same restrictions cited above for cultivation-related waste storage.

Garbage and refuse shall be disposed of at an appropriate waste disposal location.

Garbage and refuse is regularly hauled to Eel River Resource Recovery's located in Fortuna. Human waste disposal systems consist of port-a-potty located near constructed drainage channel (GPS 908).



This standard condition is being met at this time.

12. Remediation/Cleanup/Restoration

Remediation/cleanup/restoration activities may include, but are not limited to, removal of fill from watercourses, stream restoration, riparian vegetation planting and maintenance, soil stabilization, erosion control, upgrading stream crossings, road outsloping and rolling dip installation where safe and suitable, installing ditch relief culverts and overside drains, removing berms, stabilizing unstable areas, reshaping cutbanks, and rocking native-surfaced roads. Restoration and cleanup conditions and provisions generally apply to Tier 3 sites, however owners/operators of Tier 1 or 2 sites may identify or propose water resource improvement or enhancement projects such as stream restoration or riparian planting with native vegetation and, for such projects, these conditions apply similarly. Appendix B accompanying this Order includes environmental protection and mitigation measures that apply to cleanup activities such as: temporal limitations on construction; limitations on earthmoving and construction equipment; guidelines for removal of plants and revegetation; conditions for erosion control, limitations on work in streams, riparian and wetland areas; and other measures.

Mitigation measures are listed in the Water Resource Protection Plan and also noted above in the document.

ATTACHMENT 6:

Watershed Resource Protection Plan For APN: 214-234-007

Water Resource Protection Plan

APN 214-234-007

180101060405TRC26

Submitted to:

Kevin Bourque

Prepared by:

Timberland Resource Consultants

165 South Fortuna Blvd

Fortuna, CA 95540

Purpose

This Water Resource Protection Plan (WRPP) has been prepared on behalf of the property owner, Kevin Bourque, by agreement and in response to the California Water Code Section 13260(a), which requires that any person discharging waste or proposing to discharge waste within any region that could affect the quality of the waters of the state, other than into a community sewer system, shall file with the appropriate regional water board a Report of Waste Discharge (ROWD) containing such information and data as may be required by the Regional Water Board. The Regional Water Board may waive the requirements of Water Code section 13260 for specific types of discharges if the waiver is consistent with the Basin Plan and in the public interest. Any waiver is conditional and may be terminated at any time. A waiver should include monitoring requirements to verify the adequacy and effectiveness of the waiver's conditions. Order R1-2015-0023 conditionally waives the requirement to file a ROWD for discharges and associated activities described in finding 4.

Scope of Report

Order No. R1-2015-0023 states that "Tier 2 Dischargers and Tier 3 Dischargers who intend to cultivate cannabis before, during, or following site cleanup activities shall develop and implement a water resource protection plan that contains the elements listed and addressed below. Dischargers must keep this plan on site, and produce it upon request by Regional Water Board staff. Management practices shall be properly designed and installed, and assessed periodically for effectiveness. If a management measure is found to be ineffective, the plan must be adapted and implemented to incorporate new or additional management practices to meet standard conditions. Dischargers shall certify annually to the Regional Water Board individually or through an approved third party program that the plan is being implemented and is effectively protecting water quality, and report on progress in implementing site improvements intended to bring the site into compliance with all conditions of this Order."

Methods

The methods used to develop this WRPP include both field and office components. The office component consisted of reviewing soil maps (California Cooperative Soil-Vegetation Survey), CGS Geomorphic Features Map (North Coast Watersheds Mapping, DMG CD 99-002, 1999). The field component included identifying and accurately mapping all watercourses, wet areas, and wetlands located downstream of the cultivation areas, associated facilities, and all appurtenant roads accessing such areas. An accurate location of the Waters of the State is necessary to make an assessment of whether potential and existing erosion sites/pollution sites have the potential to discharge waste to an area that could affect waters of the State (including groundwater). Next, all cultivation areas, associated facilities, and all appurtenant roads accessing such areas were assessed for discharges and related controllable water quality factors from the activities listed in Order R1-2015-0023, Finding 4a-j. The field assessment also included an evaluation and determination of compliance with the Standard Conditions per Provision I.B of Order No. R1-2015-

0023. The water resource protection plans required under Tier 2 are meant to describe the specific measures a discharger implements to achieve compliance with standard conditions. Therefore, all required components of the water resource protection plan per Provision I.B of Order No. R1-2015-0023 were physically inspected and evaluated. A comprehensive summary of each Standard Condition as it relates to the subject property is appended.

Methods

Identified Sites Requiring Remediation

Location	Map Point Description	Associated Standard Condition	Temporary BMP	Permanent BMP	Treatment Priority	Time Schedule for completion of Permanent BMP	Completion Date
Road Point #4 GPS 962 N 40.18363196' W -123.82642594'	Main Access Road	A.1.a.	N/A	Reshape armor rolling dip to ensure surface water discharge. Armoring ensures stability and longevity	2	10/15/17	
Road Point #5 GPS 963 N 40.1835903' W -123.82619008'	Main Access Road	A.1.a.	N/A	Reshape armor rolling dip to ensure surface water discharge. Armoring ensures stability and longevity Reshape, woven geotextile and surface rock application on approximately 300'. Starting from Road Point #5 to Stream Crossing #1	2	10/15/17	
Road Point #6 GPS 964 N 40.18398089' W-123.82568792'	Main Access Road	A.1.a.	N/A	Reshape and armor rolling dip to ensure surface water discharge along with stability and longevity of dip	2	10/15/17	

Road Point #7 GPS 967 N 40.18490525' W -123.82379176'	Main Access Road	A.1.a	N/A	Reshape and armor rolling dip to ensure surface water discharge along with stability and longevity of dip	2	10/15/17	
Road Point #8 GPS 968 N 40.18490027' W -123.82322841'	Main Access Road	A.1.a	N/A	Placement of 18"-30' ditch relief culvert to break inboard ditch hydrology	2	10/15/17	
Erosion Point #1 GPS 930 N 40.18421735' W -123.82546496'	Main Access Road and Agricultural/Wildlife Pond	A.1.a	N/A	Sediment from above road segment delivering to agriculture/wildlife pond Filling of pond and reducing capacity Placement of a series of log catchment structures	2	10/15/17	
Erosion Point #2 GPS 932/937/943 N 40.18308839' W -123.82732507'	Surrounding Cultivation Sites	A.1.a	N/A	Cutbanks surrounding cultivation sites at a 40-45% slope Cutbanks experiencing surface erosion. Due to steepness of slopes, areas to be seeded and straw mulched as needed.	2	10/15/17	
Stockpile #1 GPS 938 N 40.18340573' W -123.8274653'	Between Greenhouse and residence	A.1.a	N/A	Stockpile of cultivation relating material including pvc pipe, metal posts and bamboo poles. Material not in close proximity to watercourse Securing material during winter is necessary to prevent transport to lower elevations where material may enter waterways	2	10/15/17	

Stream Crossing #1 GPS 964 N 40.18398089' W -123.82568792'	Near Agriculture/Wildlife Pond	A.2.a	N/A	Placement of new 24"-30' culvert to ensure transport of seasonal drainage and woody/herbaceous material passage	2	10/15/17	
Stream Crossing #2 GPS 965 N 40.18475018' W -123.82434723'	Main Access Road	A.2.a	N/A	Existing 24"-20' ditch relief culvert-In good condition Outlet experiencing down cutting and bank loss Removal of perched material and rock armor channel Placement of 1/4" rip rap within channel and along toe of bank 10' x 8' x 3'=1 cubic yard	2	10/15/17	
Road Point #3 GPS 969 N 40.18457023' W -123.82292407'	Main Access Road	A.2.a	N/A	Placement of a 24"-20' stream crossing culvert	2	10/15/17	
Water Storage and Use GPS 957 N 40.18411827' W -123.82757334' GPS 951 N 40.18382088' W -123.82784626'	Storage Tanks	A.5.a	N/A	Placement of water meter at well source	2	4/15/17	
Water Storage and Use Throughout	Throughout	A.5.a	N/A	Conduct monitoring and reporting on application rates	2	4/15/17	

Water Storage and Use Structure	Structure	A.5.a	N/A	Placement of raincatchment system at existing infrastructure	4	10/15/20	
Irrigation Efficiency	All Cultivation Sites	A.6.a	N/A	Replace handwatering with a drip irrigation system	2	4/15/17	
Irrigation Efficiency	All Cultivation Sites	A.6.a	N/A	Conduct monitoring and reporting on application rates	2	4/15/17	
Fertilizers and Soil Amendments	Throughout	A.7.a	N/A	Conduct monitoring and reporting on application rates	2	10/15/17	
Petroleum	Throughout	A.9.a	N/A	Provide drip trays for all generators and gas tanks	2	4/15/17	

Coordinates associated with sites UTM 10 NAD 83

Treat Priority: The time frame for treatment of each specific site.

(1) Indicates a very high priority with treatment being planned to occur immediately.

(2) Indicates a high priority site with treatment to occur prior to the start of the winter period (Nov. 15).

(3) Indicates a moderate priority with treatment being planned to occur within a year 1, or prior to the winter period (Nov. 15) of the 2nd season of operations.

(4) Indicates a low priority with treatment being planned to occur in the shortest time possible, but no later than the expiration of this Order (five years).

Identified Sites Not Requiring Mitigation

Site	Description	Planned Monitoring

Monitoring Plan

Tier 2 Dischargers shall include a monitoring element in the water resource protection plan that at a minimum provides for periodic inspection of the site, checklist to confirm placement and efficacy of management measures, and document progress on any plan elements subject to a time schedule. Tier 2 Dischargers shall submit an annual report (Appendix C) by March 31 of each year that documents implementation and effectiveness of management measures during the previous year. Tier 2 annual reporting is a function that may be provided through an approved third party program.

Monitoring of the site includes visual inspection and photographic documentation of each feature of interest listed on the site map, with new photographic documentation recorded with any notable changes to the feature of interest. At a minimum, all site features must be monitored annually, to provide the basis for completion of the annual re-certification process. Additionally, sites shall be monitored at the following times to ensure timely identification of changed site conditions and to determine whether implementation of additional management measures is necessary to iteratively prevent, minimize, and mitigate discharges of waste to surface water: 1) just prior to October 15 to evaluate site preparedness for storm events and storm water runoff, 2) following the accumulation of 3" total precipitation or by November 15, whichever is sooner, and 3) following any rainfall event with an intensity of 3" precipitation in 24 hours. Precipitation data can be obtained from the National Weather Service Forecast Office (e.g. by entering the zip code of the parcel location at http://www.srh.noaa.gov/forecast).

Inspection Personnel Contact Information:

Todd W. Golder

Timberland Resource Consultants

165 South Fortuna Blvd, Fortuna CA 95540

707-601-7014

Monitoring Plan Reporting Requirements

Order No. R1-2015-0023, Appendix C must be submitted to the Regional Water Board or approved third party program upon initial enrollment in the Order (NOI) and annually thereafter by March 31. Forms submitted to the Regional Water Board shall be submitted electronically to northcoast@waterboards.ca.gov. If electronic submission is infeasible, hard copies can be submitted to: North Coast Regional Water Quality Control Board, 5550 Skylane Boulevard, Suite A, Santa Rosa, CA 95403.

Water Resource Protection Plan

Assessment of Standard Conditions

APN 214-234-007

180101060405TRC26

Assessment of Standard Conditions consisted of field examinations in the summer of 2016. The examination evaluated areas near, and areas with the potential to directly impact, watercourses for sensitive conditions including, but not limited to, existing and proposed roads, skid trails and landings, unstable and erodible watercourse banks, unstable upslope areas, debris, jam potential, inadequate flow capacity, changeable channels, overflow channels, flood prone areas, and riparian zones. Field examinations also evaluated all roads and trails on the property, developed areas, cultivation sites, and any structures and facilities appurtenant to cultivation on the property. Anywhere the Standard Conditions are not met on the property, descriptions of the assessments and the prescribed treatments are outlined following each associated section below.

Summary of Standard Conditions Compliance

1. Site maintenance, erosion control, and drainage features Y☐/N ☒
2. Stream crossing maintenance Y☐/N ☒
3. Riparian and wetland protection and management Y ☒ /N☐
4. Spoils management Y☒/N ☐
5. Water storage and use Y☐/N☒
6. Irrigation runoff Y ☐ /N ☒
7. Fertilizers and soil amendments Y☒ /N☐
8. Pesticides and herbicides? Y ☒ /N☐
9. Petroleum products and other chemicals Y☐/N☒
10. Cultivation-related wastes Y ☒ /N☐
11. Refuse and human waste Y☒/N☐

A. Standard Conditions, Applicable to all Dischargers

1. Site maintenance, erosion control and drainage features

A) Roads shall be maintained as appropriate (with adequate surfacing and drainage features) to avoid developing surface ruts, gullies, or surface erosion that results in sediment delivery to surface waters.

B) Roads, driveways, trails, and other defined corridors for foot or vehicle traffic of any kind shall have adequate ditch relief drains or rolling dips and/or other measures to prevent or minimize erosion along the flow paths and at their respective outlets

C) Roads and other features shall be maintained so that surface runoff drains away from potentially unstable slopes or earthen fills. Where road runoff cannot be drained away from an unstable feature, an engineered structure or system shall be installed to ensure that surface flows will not cause slope failure.

D) Roads, clearings, fill prisms, and terraced areas (cleared/developed areas with the potential for sediment erosion and transport) shall be maintained so that they are not hydro logically connected[1], as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams.

E) Ditch relief drains, rolling dip outlets, and road pad or terrace surfaces shall be maintained to promote infiltration/dispersal of outflows and have no apparent erosion or evidence of soil transport to receiving waters.

Connected roads are road segments that deliver road surface runoff, via the ditch or road surface, to a stream crossing or to a connected drain that occurs within the high delivery potential portion of the active road network. A connected drain is defined as any cross-drain culvert, water bar, rolling dip, or ditch-out that appears to deliver runoff to a defined channel. A drain is considered connected if there is evidence of surface flow connection from the road to a defined channel or if the outlet has eroded a channel that extends from the road to a defined channel. (http://www.forestsandfish.com/documents/Road_Mgmt_Survey.pdf)

Road Point #1: GPS 959

- Rolling Dip functioning

Road Point #2: GPS 960

- Rolling Dip functioning

Road Point #3: GPS 961

- Rolling Dip functioning

Road Point #4: GPS 962

- Reshape and armor rolling dip to ensure surface water discharge along with stability and longevity of dip

Road Point #5: GPS 963

- Placement of armor rolling dip to ensure surface water discharge along with stability and longevity of dip

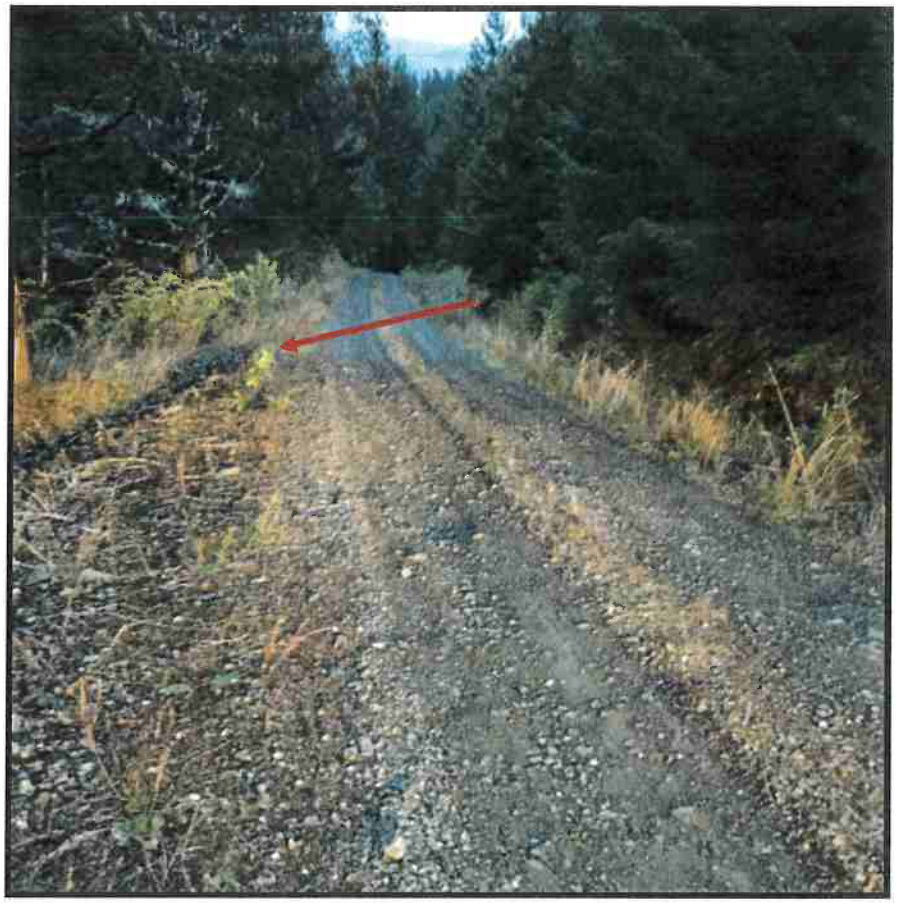
- Reshape, woven geotextile and surface rock application on approximately 300'.
- Starting from Road Point #5 to Stream Crossing #1

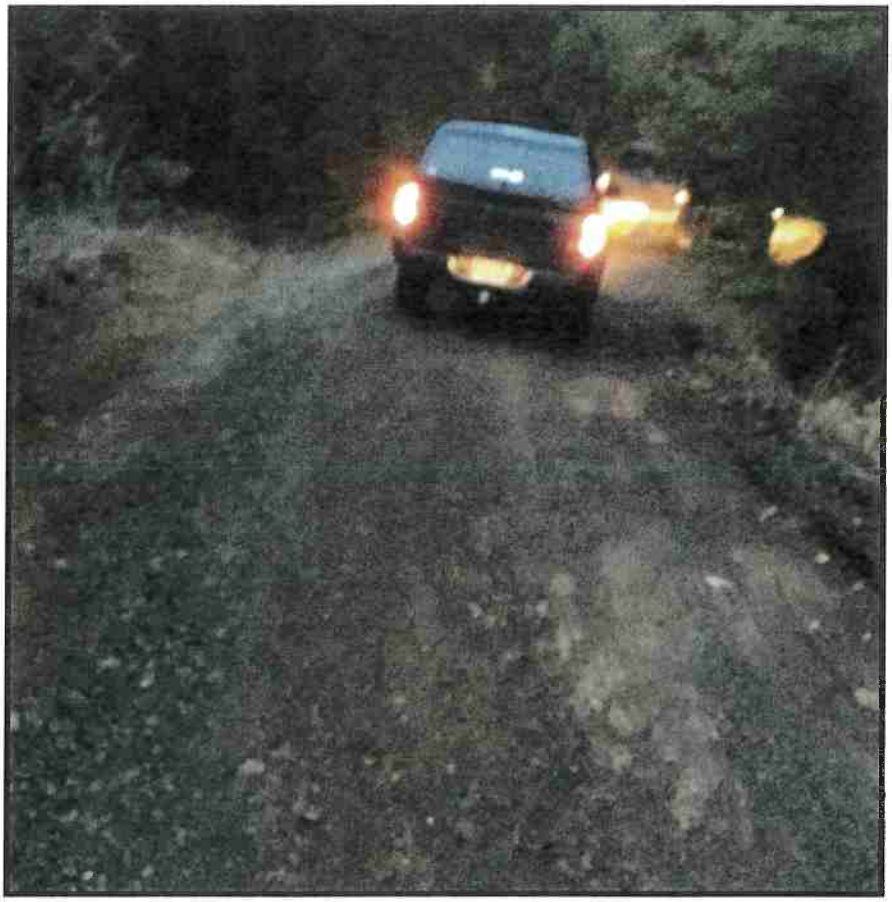
Road Point #6: GPS 964

- Placement of armor rolling dip to convey surface runoff into seasonal drainage.

Road Point #7: GPS 967

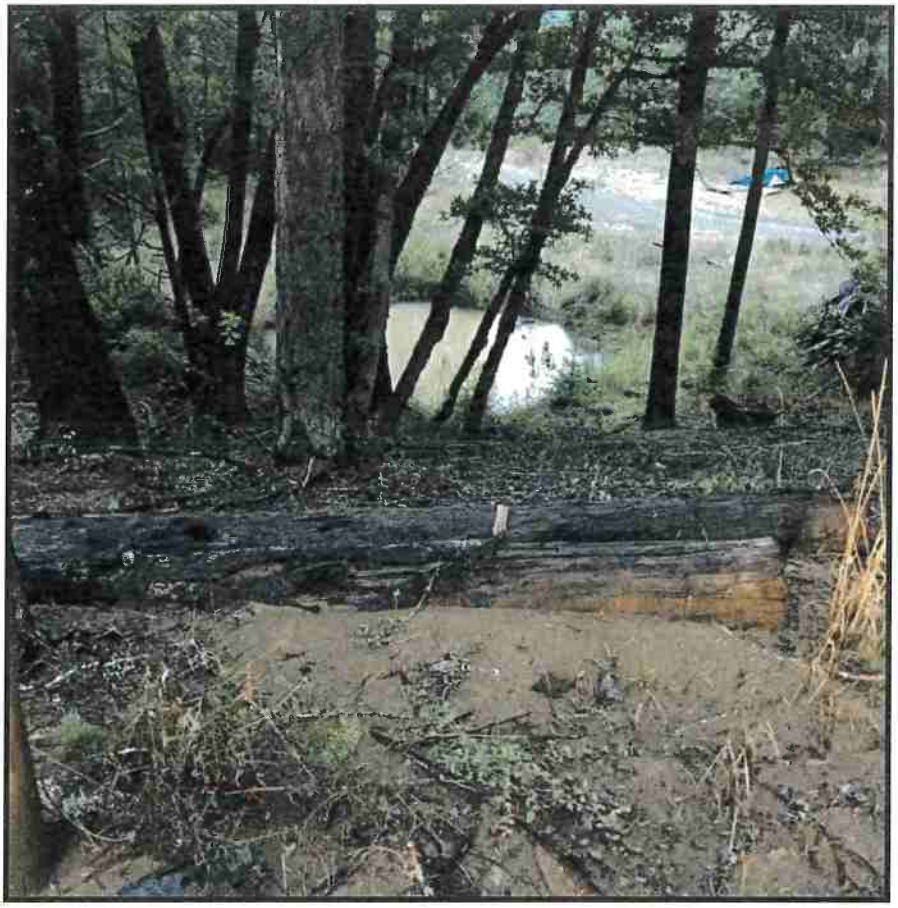
- Placement of armor rolling dip to convey surface runoff on the outboard side of the road





Road Point #8: GPS 968

- Placement of 18"-30' ditch relief culvert to break inboard ditch hydrology



Erosion Point #1 GPS 930

- Sediment from above road segment delivering to agriculture/wildlife pond
- Filling of pond and reducing capacity
- Placement of a series of log catchment structures

Erosion Point #2 GPS 932/937/943

- Cutbanks surrounding cultivation sites at a 40-45% slope
- Soil is permeable and no evidence of rill formation
- Litter movement is evident
- Cutbanks experiencing surface erosion.
- Due to steepness of slopes, areas to be seeded and straw mulched as needed.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** All erosion related sites shall be monitored prior to and following prescribed treatments*

** Refer to Figure 28/36-Rolling Dip Types -The Handbook for Forest, Ranch and Rural Road*

** Refer to Figure 79-Rip Rap Application -The Handbook for Forest, Ranch and Rural Road*

F) Stockpiled construction materials are stored in a location and manner so as to prevent their transport to receiving waters.

Stockpile #1: Near Residence Structure-GPS 938

- Stockpile of cultivation relating material including pvc pipe, metal posts and bamboo poles.
- Material not in close proximity to watercourse
- Securing material during winter is necessary to prevent transport to lower elevations where material may enter waterways

2. Stream Crossing Maintenance

Culverts and stream crossings shall be sized to pass the expected 100-year peak streamflow.

Culverts and stream crossings shall be designed and maintained to address debris associated with the expected 100-year peak streamflow.

Culverts and stream crossings shall allow passage of all life stages of fish on fish-bearing or restorable streams, and allow passage of aquatic organisms on perennial or intermittent streams.

Stream crossings shall be maintained so as to prevent or minimize erosion from exposed surfaces adjacent to, and in the channel and on the banks.

Culverts shall align with the stream grade and natural stream channel at the inlet and outlet where feasible.[2]

Stream crossings shall be maintained so as to prevent stream diversion in the event that the culvert/crossing is plugged, and critical dips shall be employed with all crossing installations where feasible.[3]

Stream Crossing #1: GPS 964

- Placement of new 24"-30' culvert to ensure transport of seasonal drainage and woody/herbaceous material passage

[2] At a minimum, the culvert shall be aligned at the inlet. If infeasible to align the culvert outlet with the stream grade or channel, outlet armoring or equivalently effective means may be applied.

[3] If infeasible to install a critical dip, an alternative solution may be chosen.

Stream Crossing #2: GPS 965

- Existing 24"-20' ditch relief culvert-In good condition
- Outlet experiencing down cutting and bank loss
- Removal of perched material and rock armor channel
- Placement of 1/4" rip rap within channel and along toe of bank
- 10' x 8' x 3'=1 cubic yard

Stream Crossing #3: GPS 969

- Placement of a 24"-20' stream crossing culvert
- No Photo

**** All stream crossings are sized for the 100 year storm event using the rationale method.***

3. Riparian and Wetland Protection and Management

For Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at a minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class III watercourse or wetlands. The Regional Water Board for Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class III watercourse or wetlands. The Regional Water Board or its or its Executive Officer may apply additional or alternative[4] conditions on enrollment, including site-specific riparian buffers and other BMPs beyond those identified in water resource protection plans to ensure water quality protection.

Buffers shall be maintained at natural slope with native vegetation.

Buffers shall be of sufficient width to filter wastes from runoff discharging from production lands and associated facilities to all wetlands, streams, drainage ditches, or other conveyances. Riparian and wetland areas shall be protected in a manner that maintains their essential functions, including temperature and microclimate control, filtration of sediment and other pollutants, nutrient cycling, woody debris recruitment, groundwater recharge, streambank stabilization, and flood peak attenuation and flood water storage.

- Standard condition is being met at this time

[4] Alternative site-specific riparian buffers that are equally protective of water quality may be necessary to accommodate existing permanent structures or other types of structures that cannot be relocated.

4. Spoils Management

Spoils[5] shall not be stored or placed in or where they can enter any surface water.

Spoils shall be adequately contained or stabilized to prevent sediment delivery to surface waters.

Spoils generated through development or maintenance of roads, driveways, earthen fill pads, or other cleared or filled areas shall not be sidecast in any location where they can enter or be transported to surface waters.

- Standard condition is being met at this time

5. Water Storage and Use

Size and scope of an operation shall be such that the amount of water used shall not adversely impact water quality and/or beneficial uses, including and in consideration with other water use by operations, instream flow requirements and/or needs in the watershed, defined at the scale of a HUC-12[6] watershed or at a smaller hydrologic watershed as determined necessary by the Regional Water Board Executive Officer.

Water conservation measures shall be implemented. Examples include use of rainwater catchment systems or watering plants with a drip irrigation system rather than with a hose or sprinkler system.

For Tier 2 Dischargers, if possible, develop off-stream storage facilities to minimize surface water diversion during low flow periods.
Water is applied using no more than agronomic rates.[7]

Diversion and/or storage of water from a stream should be conducted pursuant to a valid water right and in compliance with reporting requirements under Water Code section 5101.
Water storage features, such as ponds, tanks, and other vessels shall be selected, sited, designed, and maintained so as to insure integrity and to prevent release into waters of the state in the event of a containment failure.

[5] Spoils are waste earthen or organic materials generated through grading or excavation, or waste plant growth media or soil amendments. Spoils include but are not limited to soils, slash, bark, sawdust, potting soils, rock, and fertilizers.

[6] See definition and link to maps at: http://water.usgs.gov/GIS/huc.html

[7] "Agronomic rates" is defined as the rates of fertilizer and irrigation water that a plant needs to enhance soil productivity and provide the crop or forage growth with needed nutrients for optimum health and growth, without having any excess water or nutrient percolate beyond the root zone.

Irrigation is obtained from two sources

1. Agricultural Well located on adjacent parcel
   - WRPP written for adjacent property-Water meter to be placed on well

2. Livestock/Wildlife pond
   - Pumped to two (2) sets of storage tanks
   - Pond has the potential of being expanding to increase capacity

- 1st Set- Three (3) 5000 gallon storage tanks (GPS 957)
  - Float assembly within storage tanks
  - Delivered by a 1" Polyethylene pipe to lower greenhouses

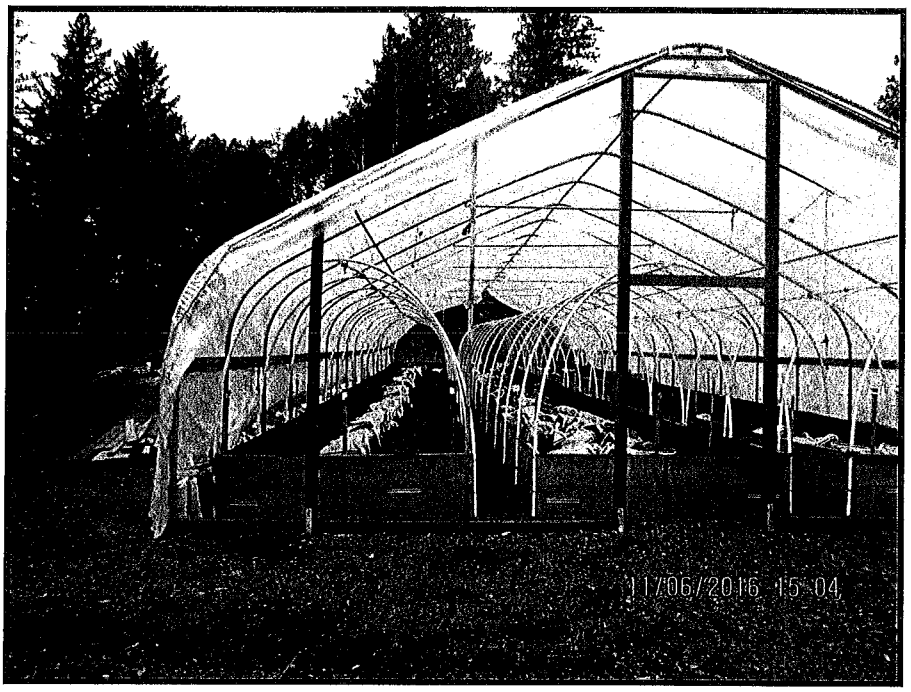
- 2nd Set- Three (3) 5000 gallon storage tanks (GPS 952-953)
- Float assembly within storage tanks
- Delivered by a 1" polyethylene pipe to mixing tank.

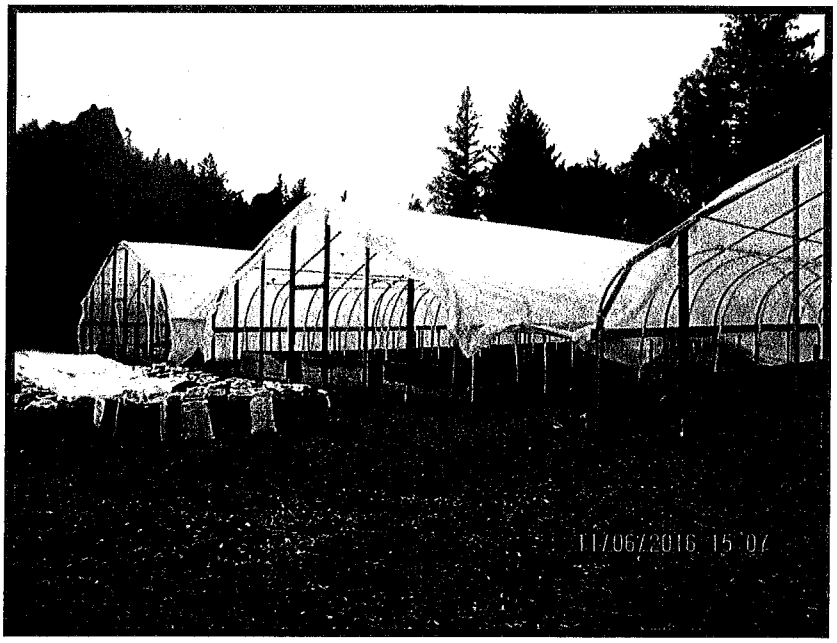
- 550 gallon mixing tank (GPS 954)

Irrigation delivered to three (3) greenhouses

Greenhouse #1: (GPS 932,933,938,939)

- 96' x 30'= 2880 Square feet
- Three raised beds-8' x 90'= 720 sqft x 3= 2160 square feet
- Raised beds handwatered
- For water conservation purposes, weed free straw much or wood chips to be placed around plants





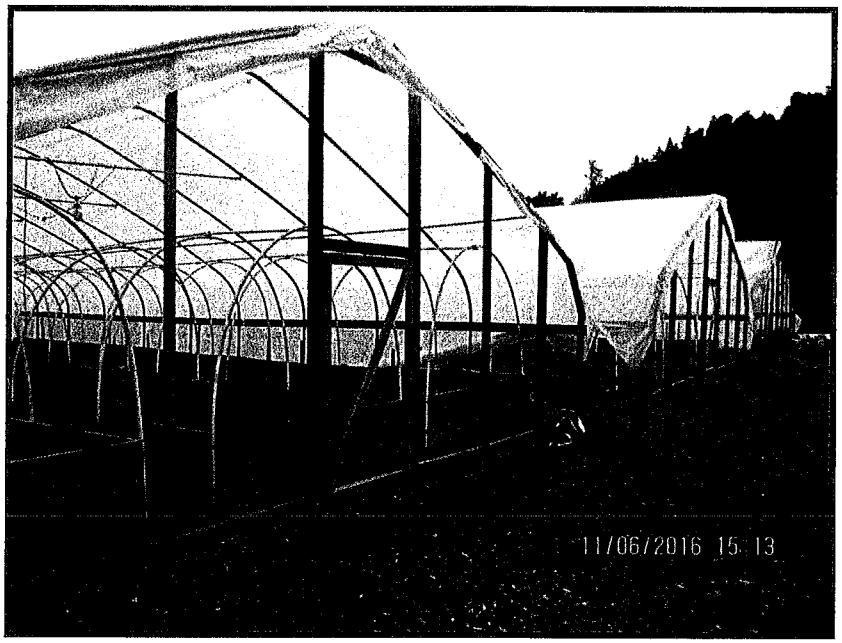
Greenhouse #2: (GPS 934,935,940,941)

- 96' x 30'= 2880 Square feet
- Three raised beds-8' x 90'= 720 sqft x 3= 2160 square feet
- Raised beds handwatered
- For water conservation purposes, weed free straw much or wood chips to be placed around plants

Greenhouse #3: (GPS 936,937,942, 943)

96' x 30'= 2880 Square feet

- Three raised beds-8' x 90'= 720 sqft x 3= 2160 square feet
- Raised beds handwatered
- For water conservation purposes, weed free straw much or wood chips to be placed around plants



Smart Pot Sites: (GPS 944-945,956)

- Seventy five (75) plants
- 65 gallon pots
- Upper Terrace
  - Square footage= 60' x 20'=1200 square feet
- Lower Terrace
  - Square footage= 60' x 4'=240 square feet
- Smart pots hand watered
- For water conservation purposes, weed free straw much or wood chips will be placed around plants

- Smart pots to be moved into greenhouse next season and incorporated into raised bed square footage

Available/Utilized Water

Raised Bed = 2880 square feet per greenhouse x 3 = 8640 square foot

- Plants are watered @ 1.5 gallons per 10 sqft

8640 sqft/10 sqft=864 x 1.5=1296 per watering

1296 gallons x 15 days of watering/month = 19,440 gallons

1296 gallons x 30 days of watering/month = 38,880 gallons

19,440 gallons/month x 6 months= 116,640 gallons

38,880 gallons/month x 6 months= 233,280 gallons

Full Term- Smart Pots

Watering per plant

- 5 gallons per watering
- Approximately 75 plants

5 gallons x 15 days= 75 gallons per month/per plant
5 gallons x 30 days= 150 gallons per month/per plant

75 plants x 75 gallons/month= 5,625 gallons per month
75 plants x 150 gallons/month= 11,250 gallons per month

5625 gallons x 6 months= 33,750 gallons per season
11,250 gallons x 6 months= 67,500 gallons per season

Standard condition is not being met at this time

- Water meter installation is needed
- Irrigation schedule will be documented and reported in 2017

Water Conservation measures include:

Construction of a rain catchment system from permanent structure.

Rain Water Harvest Calculation:

24' x 24' structure=576 sqft
576 square feet x 45" precipitation x .95 (metal roof) x .623 (standard number)= 15,340 gallons/annual

6. Irrigation Runoff

Implementing water conservation measures, irrigating at agronomic rates, applying fertilizers at agronomic rates and applying chemicals according to the label specifications, and maintaining stable soil and growth media should serve to minimize the amount of runoff and the concentration of chemicals in that water. In the event that irrigation runoff occurs, measures shall be in place to treat/control/contain the runoff to minimize the pollutant loads in the discharge. Irrigation runoff shall be managed so that any entrained constituents, such as fertilizers, fine sediment and suspended organic particles, and other oxygen consuming materials are not discharged to nearby watercourses. Management practices include, but are not limited to, modifications to irrigation systems that reuse tailwater by constructing off-stream retention basins, and active (pumping) and or passive (gravity) tailwater recapture/redistribution systems. Care shall be taken to ensure that irrigation tailwater is not discharged towards or impounded over unstable features or landslides.

- The irrigation system for all cultivation sites are hand watered.
- Future water conservation practices includes converting system to a drip irrigation system

- Due to the distance between the greenhouses and watercourses there should be no hydrological connectivity between irrigation and watercourse.
- Refer to irrigation schedule. Additional monitoring and reporting to take place in 2017.

7. Fertilizers and Soil Amendments

Fertilizers, potting soils, compost, and other soils and soil amendments shall be stored in locations and in a manner in which they cannot enter or be transported into surface waters and such that nutrients or other pollutants cannot be leached into groundwater.

Fertilizers and soil amendments shall be applied and used per packaging instructions and/or at proper agronomic rates.

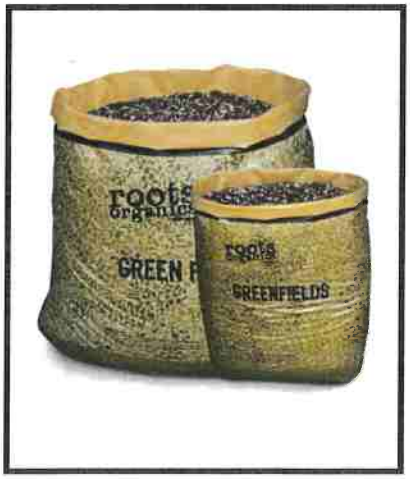
Cultivation areas shall be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.

- Permanent structure (GPS 950) stores all organic fertilizers and soil amendments.

Soil Mix

1) Black Gold Natural Organic Potting Soil

- Purchased by the bag
- Combination of organic matter and drainage enhancers. Includes sphagnum peat moss, compost and finely ground forest products for water retention. Coarse perlite and pumice are incorporated for a moist, yet aerated root zone.



2) Roots Organic Green Fields

- Purchased by the bag
- Ocean-nutrient-based growing mix designed for both the vegetative-and flowering phases of mature plants.
- Composted Forest Material, Peat Moss, Perlite, Coco Fiber, Pumice, Worm Castings, Crab Meal, Feather Meal, Fish Meal, Bat Guano, Soybean Meal, Fish Bone Meal, Kelp Meal

Liquid Organic Fertilizers

- Five hundred fifty (550) gallon storage tank is used for mixing tank.

Cutting Edge Hydroponic Nutrients-Micro:

Comprised of a high quality Nitrogen and Calcium base, fortified with micro nutrients. **Micro** is to be used throughout the entire growth cycle of a plant, regardless of vegetative or flowering cycles.

N 6.00% – P 0.00% – K 0.00%

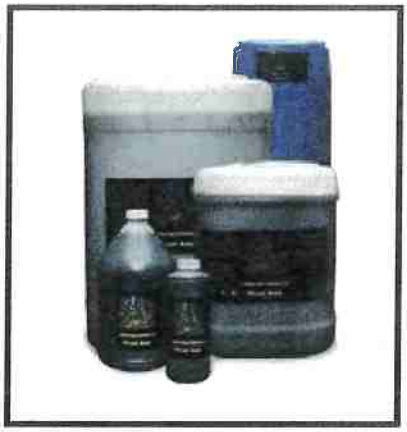
Grow

To be used in the vegetative stage, adds more Nitrogen for growth, and Potassium to enhance the plant's photosynthetic rate and energy transfer throughout the plant.

N 2.00% – P 1.00% – K 6.00%

Bloom is the second component of the base three part blooming formula, to be used in conjunction with the **micro**. Bloom is a Phosphorus heavy formula for enhancing flower production, as well as to encourage a plant to shift it's hormonal signals from vegetative to flowering. Bloom also contains Potassium to enhance the plant's photosynthetic rate and energy transfer throughout the plant.

N 0.00% – P 6.00% – K 5.00%



Plant Amp

Calcium is the basis of cell wall development in a plant and the organic Calcium in Plant AMP is extremely soluble, providing an easily utilized source of Calcium.

350 ml in combination with Mag-Amped per 100 gallons

Mag-Amped is a Magnesium product, proprietary, proven formula, is readily available and easy for the plant to uptake, with an excellent overall solubility.

Magnesium is essential for chlorophyll production in plants, turn chlorophyll is the component in photosynthesis, essentially starting the process through collection of light energy.

in

350 ml in combination with Plant Amp per 100 gallons

PHUP

pH Up is a strong alkali formula for raising pH.

N0.00% – P0.00% – K45.00%

Earth Juice SeaBlast- Bloom

N3.00% – P26.00% – K22.00%

Water-Soluble Plant Food with seaweed, fossilized guano, steamed bone meal and micronutrients.

Flowering and fruiting plants

Earth Juice Sugar Peak Grand Finale

N0.00% – P6.00% – K4.00%

Natural- molasses based liquid formulations

Finishing/Ripening formula that will assist and serve to maximize the production of essential oils, resins, fragrances and yields of determinate flowering and fruiting plants.

Botanicare Pure Blend Pro-Bloom

N 2.0% – P 3.0% – K 5.0%

Derived from fish meal, composted seabird guano, kelp, rock phosphate, Potassium carbonate, Magnesium carbonate and calcium carbonate

Botanicare Liquid Karma

Derived from Kelp Seaweed extract

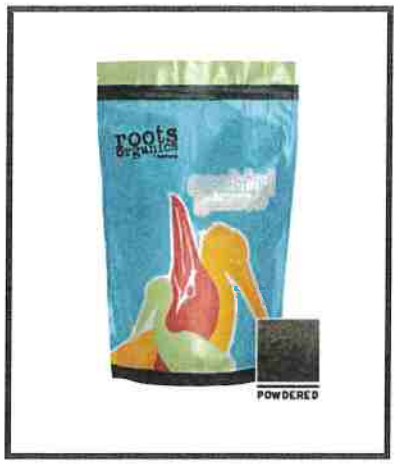
N 0.10% – P 0.10% – K 0.50%

Also contains:

.5% humic acid derived from Leonardite

.01 Yucca extract

Dry Amendments



Roots Organics-Seabird Guano

N1.00% – P0.00% – K12.00%

Source of phosphate and calcium

Glacial Mineral Dust

Calcium(Ca)1.4%
Magnesium(Mg)0.562%
Cobalt(CO)0.00234%
Iron(Fe).0.95%
Sodium (Na) 1.25%

Natural mineral product, which is produced over many thousands of years by piedmont glacial action.

High in natural silica and provides an excellent source of calcium, iron, magnesium and potassium, and trace elements and micronutrients.

Crab Meal
N 4.00% – P 3.00% – K 0.00%

Derived from Dungeness crab meal

Organic nutrients, including nitrogen, phosphorous and calcium

Bone Meal
N 2.00% – P 11.00% – K 0.00%

Bone meal fertilizer is used to increase phosphorus.

8. Pesticides/Herbicides

At the present time, there are no pesticides or herbicides registered specifically for use directly on cannabis and the use of pesticides on cannabis plants has not been reviewed for safety, human health effects, or environmental impacts. Under California law, the only pesticide products not illegal to use on cannabis are those that contain an active ingredient that is exempt from residue tolerance requirements and either registered and labeled for a broad enough use to include use on cannabis or exempt from registration requirements as a minimum risk pesticide under FIFRA section 25(b) and California Code of Regulations, title 3, section 6147. For the purpose of compliance with conditions of this Order, any uses of pesticide products shall be consistent with product labeling and any products on the site shall be placed, used, and stored in a manner that ensures that they will not enter or be released into surface or ground waters.

- Pesticides are applied once a week from June through August.
- Applied once a week up to the day of harvest.

1) Greenclean Spider Mite Killer and Powdery Mildew Fungicide

- **Triple-action spider mite killer spray coats, suffocates, burns and dehydrates mites and eggs**
- **Dehydrates powdery mildew and coats spores to limit reproduction**
- **Safe and non-toxic for plants consumed by people; for use on fruits and flowers through harvest**
- **All natural and rated as "minimum risk pesticide" and exempt from EPA regulation**

- Kills spider mites, broad mites, russet mites, powdery mildew and other soft-bodied pests and fungus

2) Prosidic

- Agricultural bactericide and fungicide compound
- Used as a preventative against mildew and mold
- Spray application during rainy days

Alternate with:

3) OxiDate 2.0

- Environmentally friendly broad-spectrum Bactericide and Fungicide
- Active Ingredients:
  Hydrogen Dioxide:.....27.1%
  Peroxyacetic Acid:.....2.0%
  Other ingredients:.....70.9%

4) Azotrel

- Biological Insecticide, Repellent, Antifeedant and Insect Growth Regulator
- OMRI listed

- Standard condition is being met at this time.

9. Petroleum products and other chemicals

Petroleum products and other liquid chemicals, including but not limited to diesel, biodiesel, gasoline, and oils shall be stored so as to prevent their spillage, discharge, or seepage into receiving waters. Storage tanks and containers must be of suitable material and construction to be compatible with the substance(s) stored and conditions of storage such as pressure and temperature.

Above ground storage tanks and containers shall be provided with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation.

Dischargers shall ensure that diked areas are sufficiently impervious to contain discharged chemicals.

Discharger(s) shall implement spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.

Underground storage tanks 110 gallons and larger shall be registered with the appropriate County Health Department and comply with State and local requirements for leak detection, spill overflow, corrosion protection, and insurance coverage.

- Honda 2000 Generator
- Gas tanks and generator stored under roof of residence
- Provide spill trays for all generators and gas containers

10. Cultivation-related wastes

Cultivation-related wastes including, but not limited to, empty soil/soil amendment/ fertilizer/pesticide bags and containers, empty plant pots or containers, dead or harvested plant waste, and spent growth medium shall, for as long as they remain on the site, be stored[8] at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwater.

- Standard condition is being met at this time

11. Refuse and human waste

Disposal of domestic sewage shall meet applicable County health standards, local agency management plans and ordinances, and/or the Regional Water Board's Onsite Wastewater Treatment System (OWTS) policy, and shall not represent a threat to surface water or groundwater.

Refuse and garbage shall be stored in a location and manner that prevents its discharge to receiving waters and prevents any leachate or contact water from entering or percolating to receiving waters.

Garbage and refuse shall be disposed of at an appropriate waste disposal location.

- Bathroom facility consists of seasonal port a potty that is brought on site during seasonal use.
- In order to meet standards, waste disposal system will either need to permitted or an engineer will need to document that it can be permitted.
- Garbage and refuse is regularly hauled to Eureka Recology

[8] Plant waste may also be composted, subject to the same restrictions cited above for cultivation-related waste storage.

12. Remediation/Cleanup/Restoration

Remediation/cleanup/restoration activities may include, but are not limited to, removal of fill from watercourses, stream restoration, riparian vegetation planting and maintenance, soil stabilization, erosion control, upgrading stream crossings, road outsloping and rolling dip installation where safe and suitable, installing ditch relief culverts and overside drains, removing berms, stabilizing unstable areas, reshaping cutbanks, and rocking native-surfaced roads. Restoration and cleanup conditions and provisions generally apply to Tier 3

sites, however owners/operators of Tier 1 or 2 sites may identify or propose water resource improvement or enhancement projects such as stream restoration or riparian planting with native vegetation and, for such projects, these conditions apply similarly. Appendix B accompanying this Order includes environmental protection and mitigation measures that apply to cleanup activities such as: temporal limitations on construction; limitations on earthmoving and construction equipment; guidelines for removal of plants and revegetation; conditions for erosion control, limitations on work in streams, riparian and wetland areas; and other measures.

Mitigation measures are listed in the Water Resource Protection Plan and also noted above in the Remediation table.

Recommended Seed Mix

1. Bromus carinatus, Ca Brome	**12 lbs.**
2. Festuca idahoensis, Idaho Fescue	**8 lbs**
3. Nassella pulchra, Purple Needlegrass	**5 lbs.**
4. Danthonia californica, Ca Oatgrass	**5 lbs.**
5. Poa secunda, Pine Bluegrass	**3 lbs.**
Total	**36 lbs/acre**

Because of the slow germination rates associated with native perennial grasses, it is necessary to apply a nurse crop in order to protect the soil surface and compete with introduced species. Quick germinating species such as Regreen is recommended.

6.Triticum aestivum, Regreen -Wheat x wheatgrass hybrid	**10 lb. per acre**

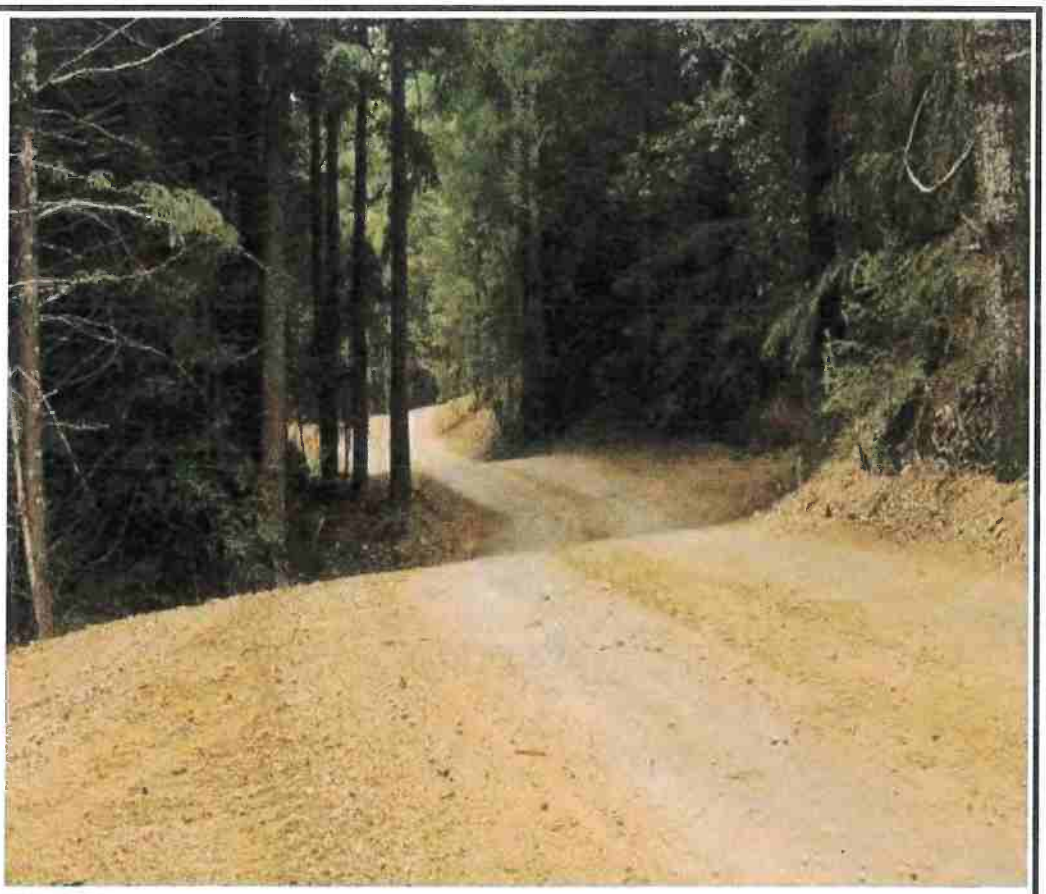


FIGURE 28. *Well built, outsloped road displaying minimum cut, smooth free draining surface, and no outside berm. The road contours the topography and its rolling grade and rolling dips disperse surface runoff.*

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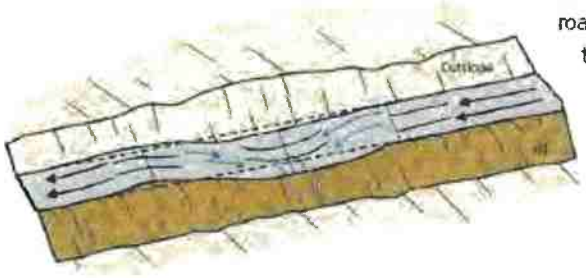
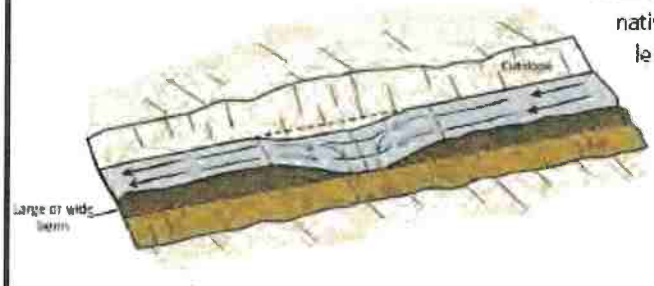
Type 1 Rolling Dip
(Standard)



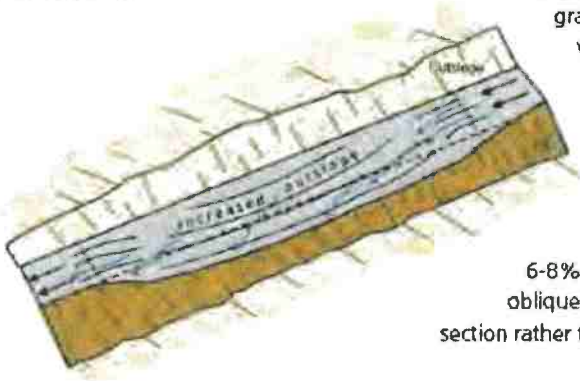
Type 1 rolling dips are used where road grades are less than about 12-14% and road runoff is not confined by a large through cut or berm. The axis of the dip should be perpendicular to the road alignment and sloped at 3-4% across the road tread. Steep roads will have longer and more abrupt dip dimensions to develop reverse grade through the dip axis. The road tread and/or the dip outlet can be rocked to protect against erosion, if needed.

Type 2 Rolling Dip
(Through-cut or thick berm road reaches)



Type 2 rolling dips are constructed on roads up to 12-14% grade where there is a through cut up to 3 feet tall, or a wide or tall berm that otherwise blocks road drainage. The berm or native through cut material should be removed for the length of the dip, or at least through the axis of the dip, to the extent needed to provide for uninterrupted drainage onto the adjacent slope. The berm and slope material can be excavated and endhauled, or the material can be sidecast onto native slopes up to 45%, provided it will not enter a stream.

Type 3 Rolling Dip
(Steep road grade)



Type 3 rolling dips are utilized where road grades are steeper than about 12% and it is not feasible to develop a reverse grade that will also allow passage of the design vehicle (steep road grades require more abrupt grade reversals that some vehicles may not be able to traverse without bottoming out).

Instead of relying on the dip's grade reversal to turn runoff off the roadbed, the road is built with an exaggerated outslope of 6-8% across the dip axis. Road runoff is deflected obliquely across the dip axis and is shed off the outsloped section rather than continuing down the steep road grade.

FIGURE 36. *Rolling dip types*

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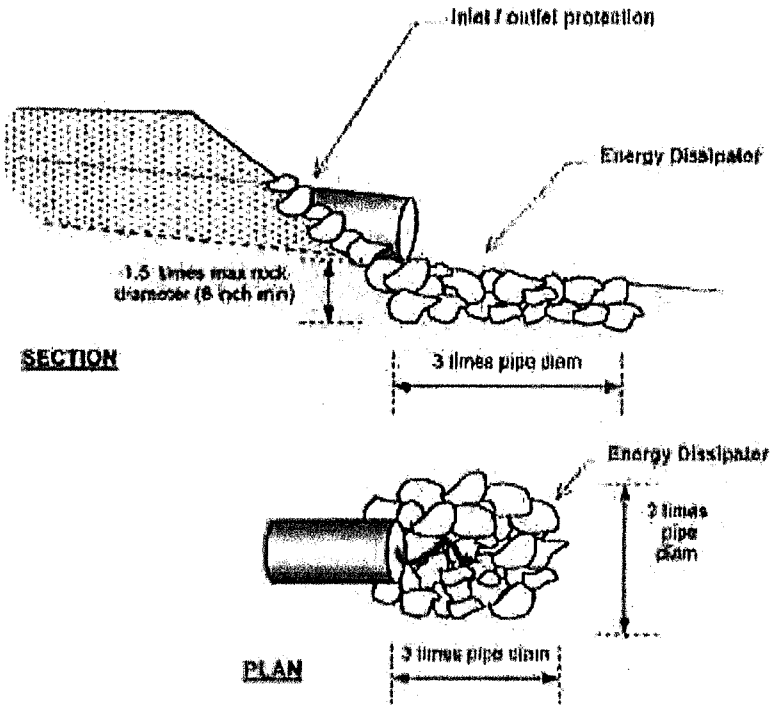


FIGURE 78. *Riprap as outlet energy dissipation (Best, 2013).*

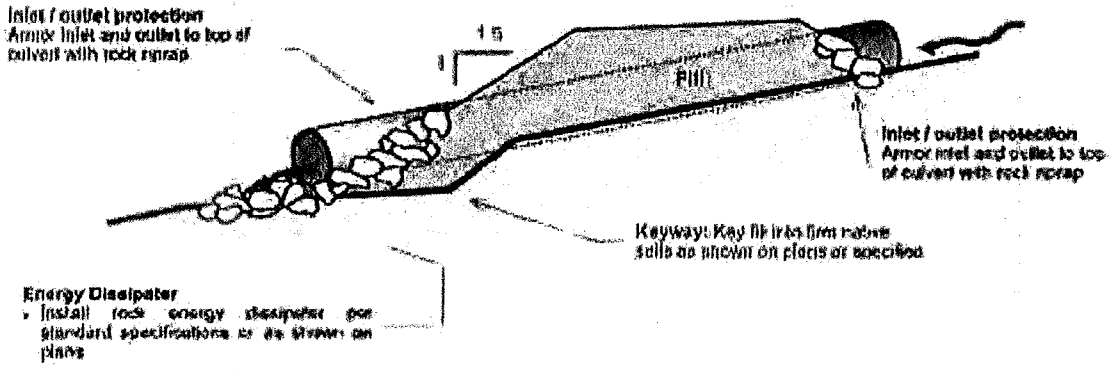
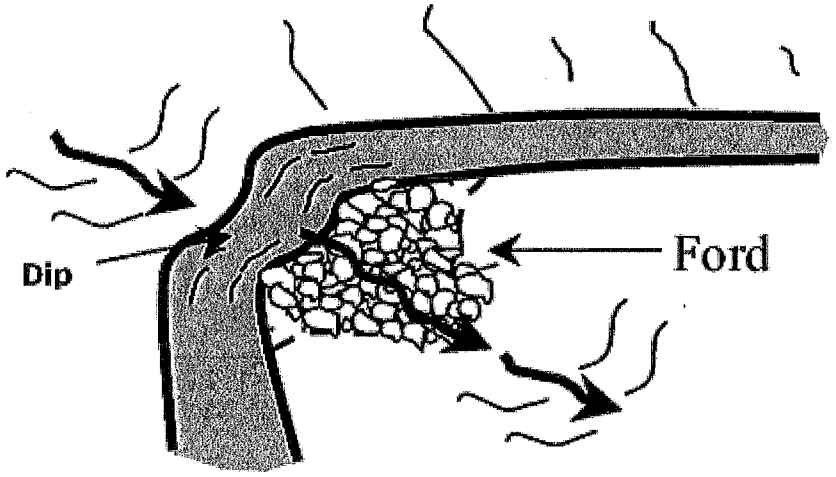


FIGURE 79. *Riprap as inlet protection and outlet energy dissipation (Modified from Best, 2013).*

FORD: A large dip is graded into the road at the axis of the stream channel. The outside fill face is dished out to form a spillway with large rock. On large watercourses, rock is keyed several feet into firm native soils. The road surface is rocked with 6" of minus rock .



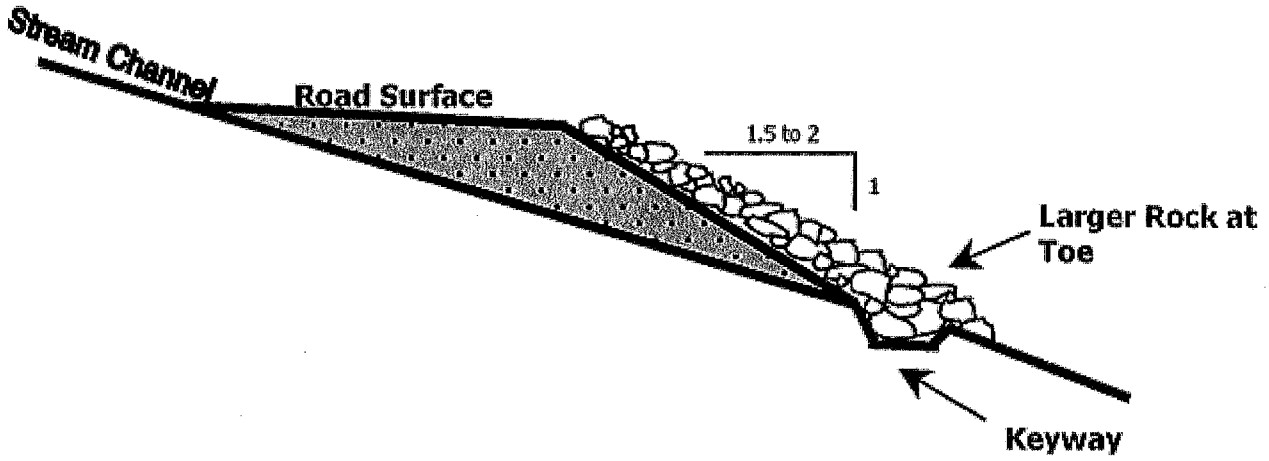


FIGURE 121D. *Well graded rock armor is then backfilled into the structure and spread across the breadth of the U-shaped stream crossing, and about one-third the way up the roadbed, so that streamflow will only flow over or come in contact with resistant armor material. The armor must be spread and compacted across the design width of the expected flood flow channel width so peak flows will not flank the armored structure.*

FIGURE 121E. *Two weeks after this armored fill was constructed, a storm flow event occurred and the structure maintained its function and integrity. The road approaches had not yet been compacted or surfaced with road rock.*

FIGURE 121F. *The same armored fill as it appeared after the first winter flood flows. No maintenance was required to reopen the road. It is also clear that no stream diversion is possible at this stream crossing site, and the volume of fill within the crossing has been reduced to the minimum amount needed to maintain a relatively smooth driving surface on this low volume road.*

FIGURE 120. *This armored fill crossing of a steep, ephemeral stream was constructed to provide a low maintenance crossing. The crossing has been deeply dipped to reduce the volume of road fill and to eliminate the potential for stream diversion. The fill slope has been heavily armored through the axis of the crossing to contain flood flows and prevent down-cutting. Armored fills cannot be used on fish bearing streams.*

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