

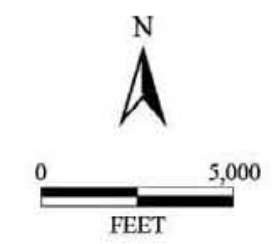


**Index of Biological  
Survey Boundaries  
and Construction Activity  
Sites**

Figure 4.2-1

**LEGEND**

-  Biological Survey Boundary
-  Detail Areas for Construction Activity Impacts



# Biological Resources Documented at North Battle Creek Feeder Diversion Dam

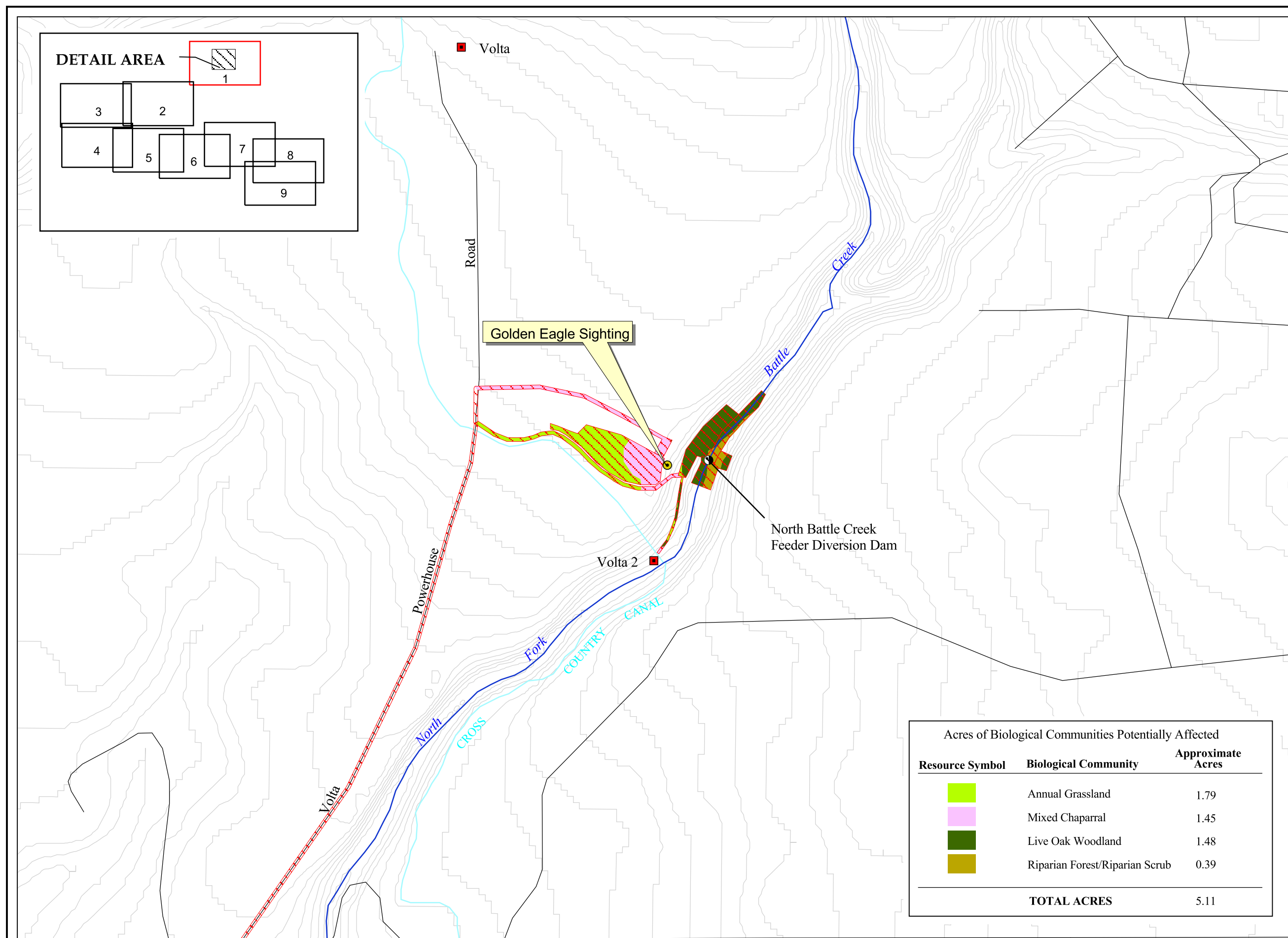
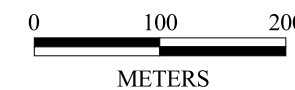
Figure 4.2-2

## LEGEND

- Powerhouse
- Dam
- Road
- Proposed Construction Area/Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters
- Golden Eagle Sighting

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.

Acres of Biological Communities Potentially Affected		
Resource Symbol	Biological Community	Approximate Acres
	Annual Grassland	1.79
	Mixed Chaparral	1.45
	Live Oak Woodland	1.48
	Riparian Forest/Riparian Scrub	0.39
<b>TOTAL ACRES</b>		5.11



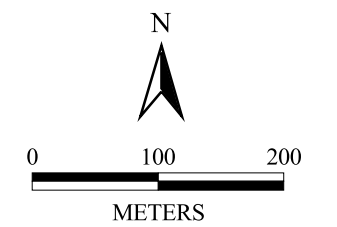
**Waters of the United States Documented at North Battle Creek Feeder Diversion Dam**

Figure 4.2-3

**LEGEND**

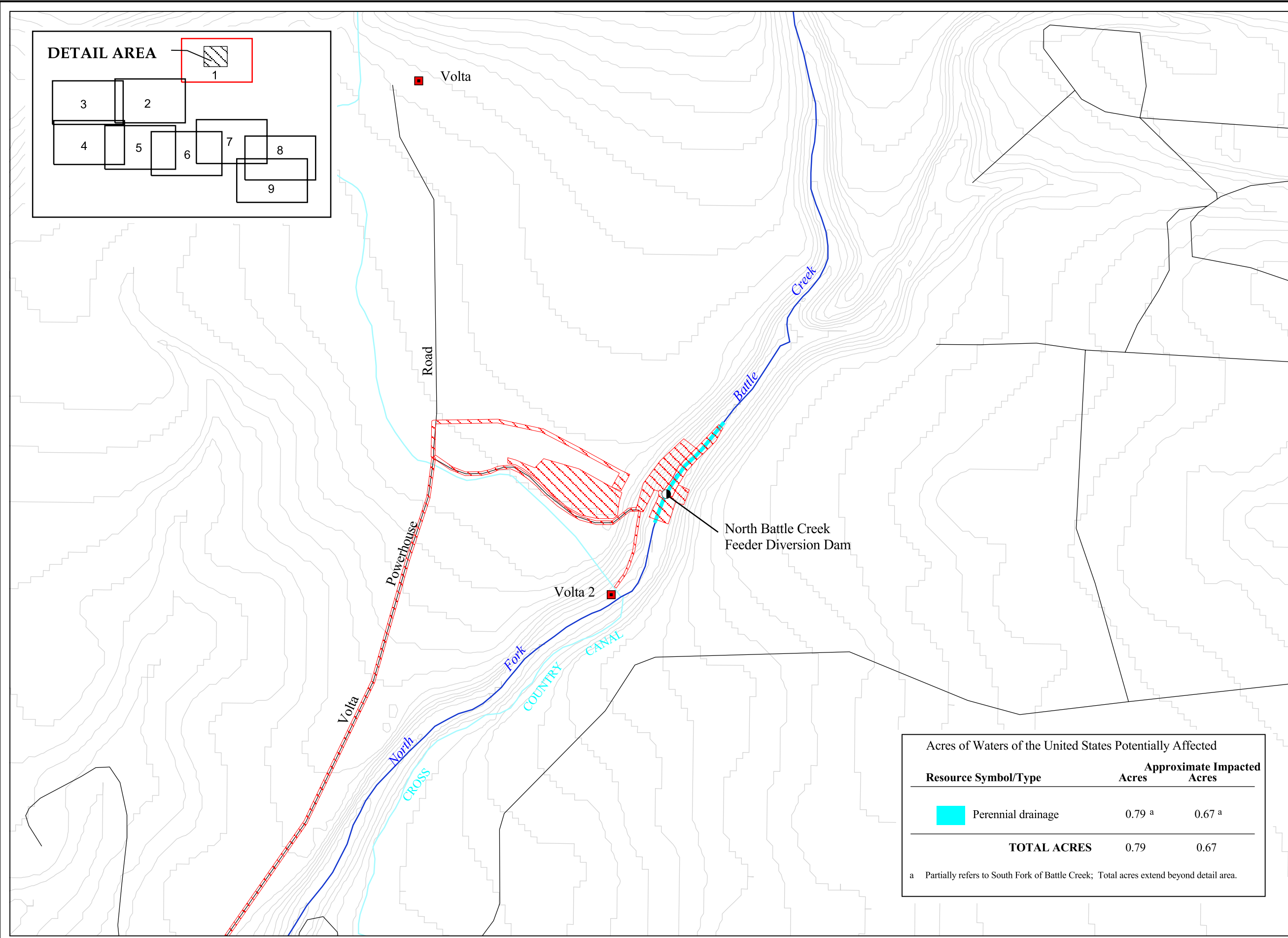
- Powerhouse
- Dam
- Road
- Construction Activity Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



Acres of Waters of the United States Potentially Affected		
Resource Symbol/Type	Acres	Approximate Impacted Acres
<span style="color: cyan;">■</span> Perennial drainage	0.79 <sup>a</sup>	0.67 <sup>a</sup>
<b>TOTAL ACRES</b>	<b>0.79</b>	<b>0.67</b>

<sup>a</sup> Partially refers to South Fork of Battle Creek; Total acres extend beyond detail area.



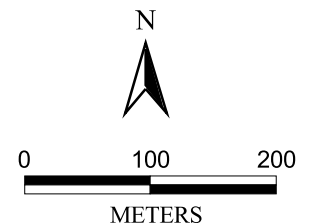
**Biological Resources Documented at Eagle Canyon Diversion Dam**

Figure 4.2-4

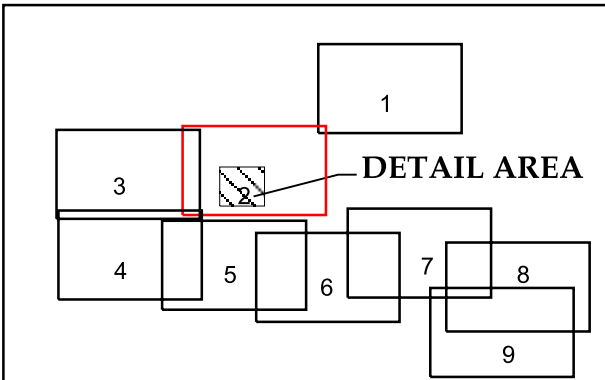
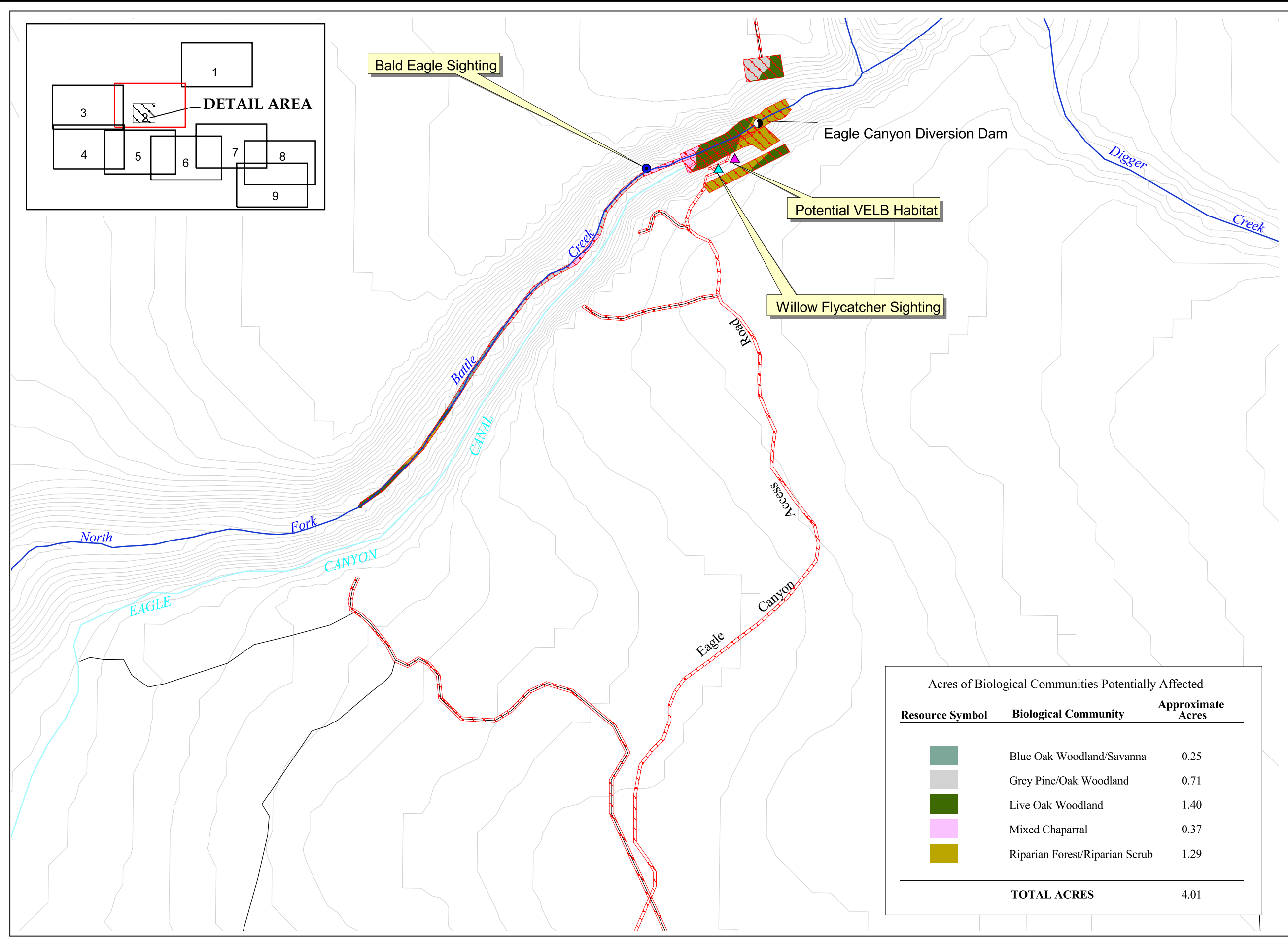
**LEGEND**

- Dam
- Road
- ▨ Proposed Construction Area/Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters
- Bald Eagle Sighting
- ▲ Potential VELB Habitat
- ▲ Willow Flycatcher Sighting

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.









Acres of Biological Communities Potentially Affected		
Resource Symbol	Biological Community	Approximate Acres
	Blue Oak Woodland/Savanna	0.25
	Grey Pine/Oak Woodland	0.71
	Live Oak Woodland	1.40
	Mixed Chaparral	0.37
	Riparian Forest/Riparian Scrub	1.29
<b>TOTAL ACRES</b>		<b>4.01</b>



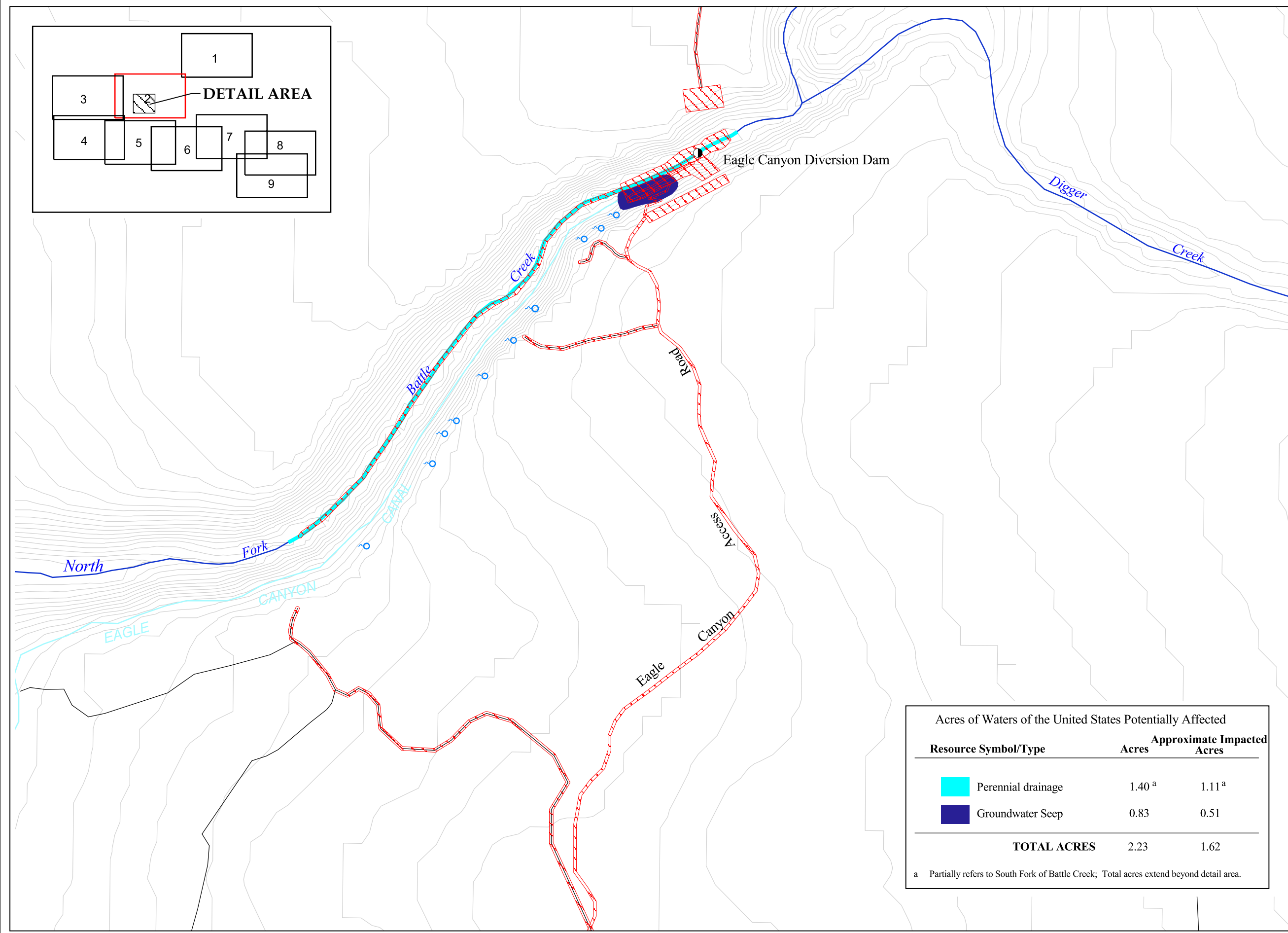
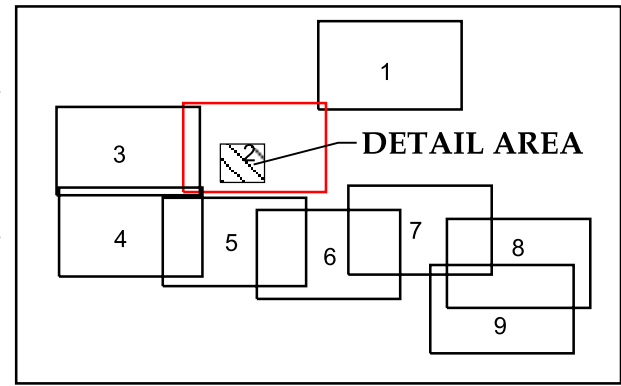
**Waters of the United States Documented at Eagle Canyon Diversion Dam**



Figure 4.2-5

**LEGEND**

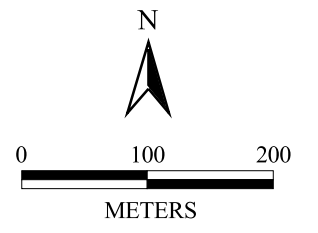
-  Spring
-  Dam
-  Road
-  Construction Activity Physical Disturbance
-  Canal or Tunnel
-  Contour Interval 5 Meters

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



Acres of Waters of the United States Potentially Affected			
Resource Symbol/Type	Acres	Approximate Impacted Acres	
		Acres	Acres
 Perennial drainage	1.40 <sup>a</sup>	1.11 <sup>a</sup>	
 Groundwater Seep	0.83	0.51	
<b>TOTAL ACRES</b>	<b>2.23</b>	<b>1.62</b>	






<sup>a</sup> Partially refers to South Fork of Battle Creek; Total acres extend beyond detail area.



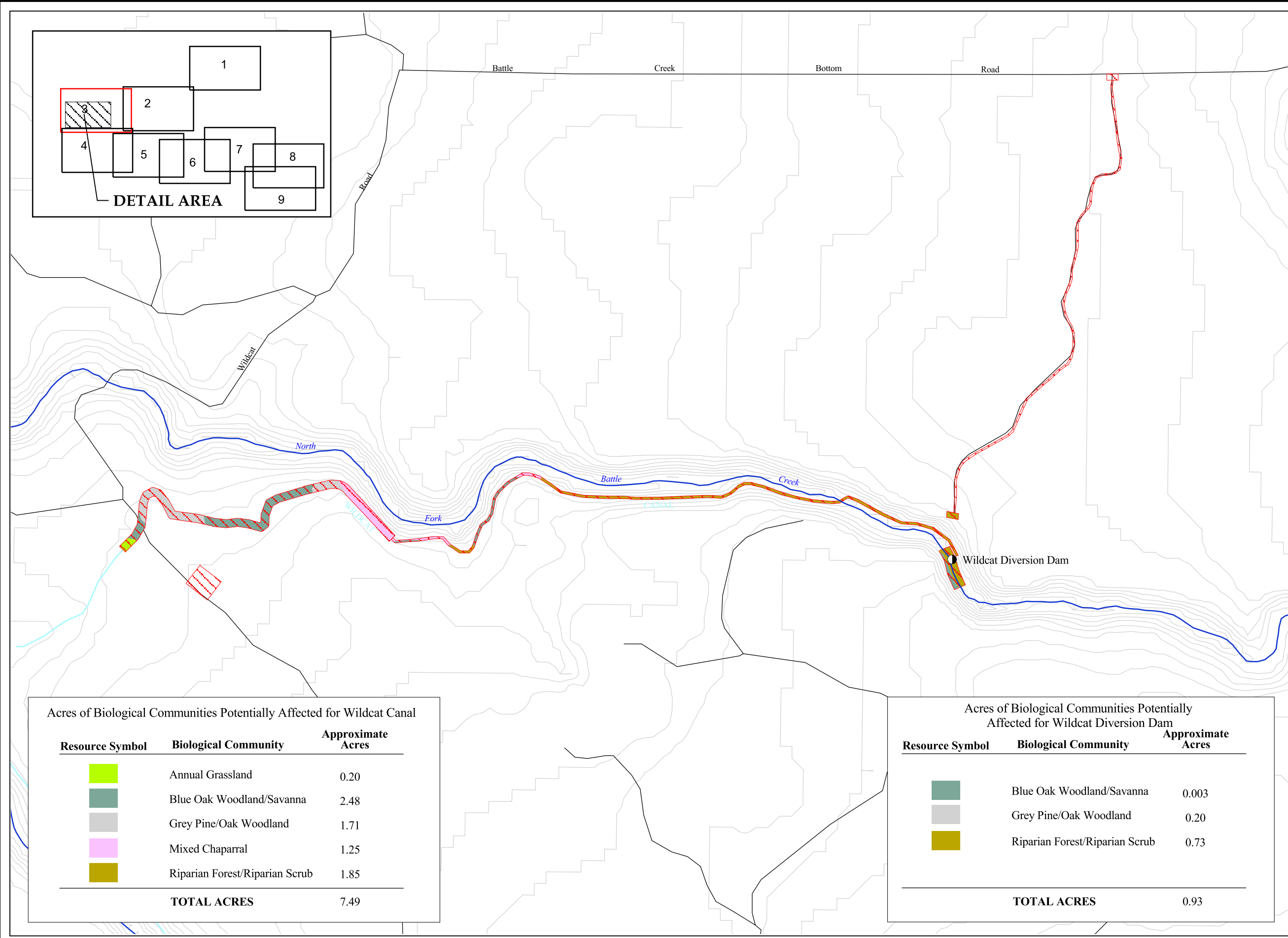
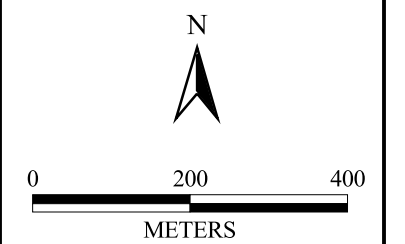
# Biological Resources Documented at Wildcat Diversion Dam

Figure 4.2-6






## LEGEND

-  Dam
-  Road
-  Proposed Construction Area/Physical Disturbance
-  Canal or Tunnel
-  Contour Interval 5 Meters




NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



Acres of Biological Communities Potentially Affected for Wildcat Canal

Resource Symbol	Biological Community	Approximate Acres
	Annual Grassland	0.20
	Blue Oak Woodland/Savanna	2.48
	Grey Pine/Oak Woodland	1.71
	Mixed Chaparral	1.25
	Riparian Forest/Riparian Scrub	1.85
<b>TOTAL ACRES</b>		<b>7.49</b>

Acres of Biological Communities Potentially Affected for Wildcat Diversion Dam

Resource Symbol	Biological Community	Approximate Acres
	Blue Oak Woodland/Savanna	0.003
	Grey Pine/Oak Woodland	0.20
	Riparian Forest/Riparian Scrub	0.73
<b>TOTAL ACRES</b>		<b>0.93</b>

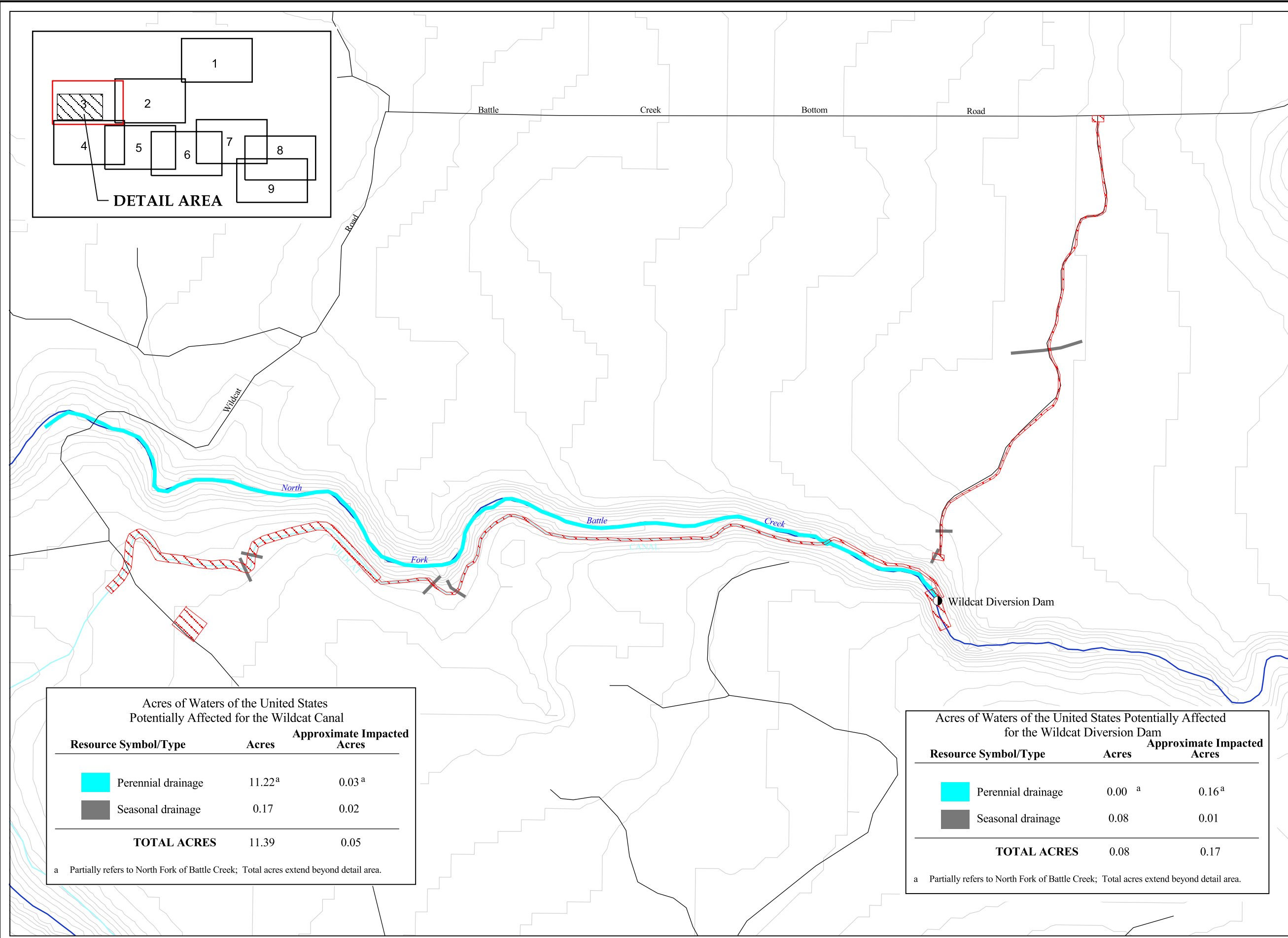
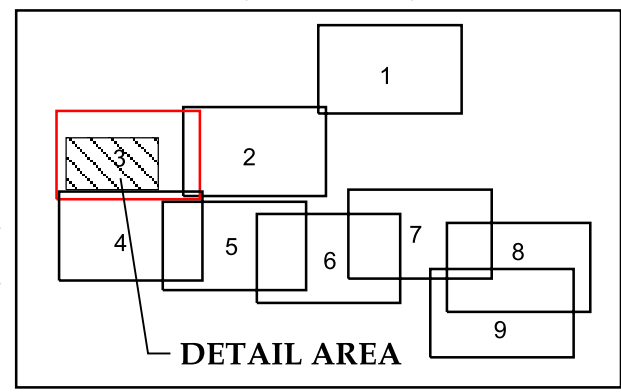
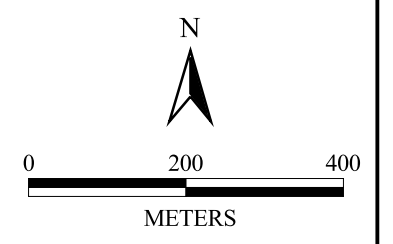
# Waters of the United States Documented at Wildcat Diversion Dam

Figure 4.2-7

## LEGEND

- Powerhouse
- Dam
- Road
- Construction Activity Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



Acres of Waters of the United States Potentially Affected for the Wildcat Canal		
Resource Symbol/Type	Acres	Approximate Impacted Acres
<span style="color: cyan;">■</span> Perennial drainage	11.22 <sup>a</sup>	0.03 <sup>a</sup>
<span style="color: gray;">■</span> Seasonal drainage	0.17	0.02
<b>TOTAL ACRES</b>	<b>11.39</b>	<b>0.05</b>

<sup>a</sup> Partially refers to North Fork of Battle Creek; Total acres extend beyond detail area.

Acres of Waters of the United States Potentially Affected for the Wildcat Diversion Dam		
Resource Symbol/Type	Acres	Approximate Impacted Acres
<span style="color: cyan;">■</span> Perennial drainage	0.00 <sup>a</sup>	0.16 <sup>a</sup>
<span style="color: gray;">■</span> Seasonal drainage	0.08	0.01
<b>TOTAL ACRES</b>	<b>0.08</b>	<b>0.17</b>

<sup>a</sup> Partially refers to North Fork of Battle Creek; Total acres extend beyond detail area.

**Biological Resources Documented at Coleman Diversion Dam/Inskip Powerhouse**

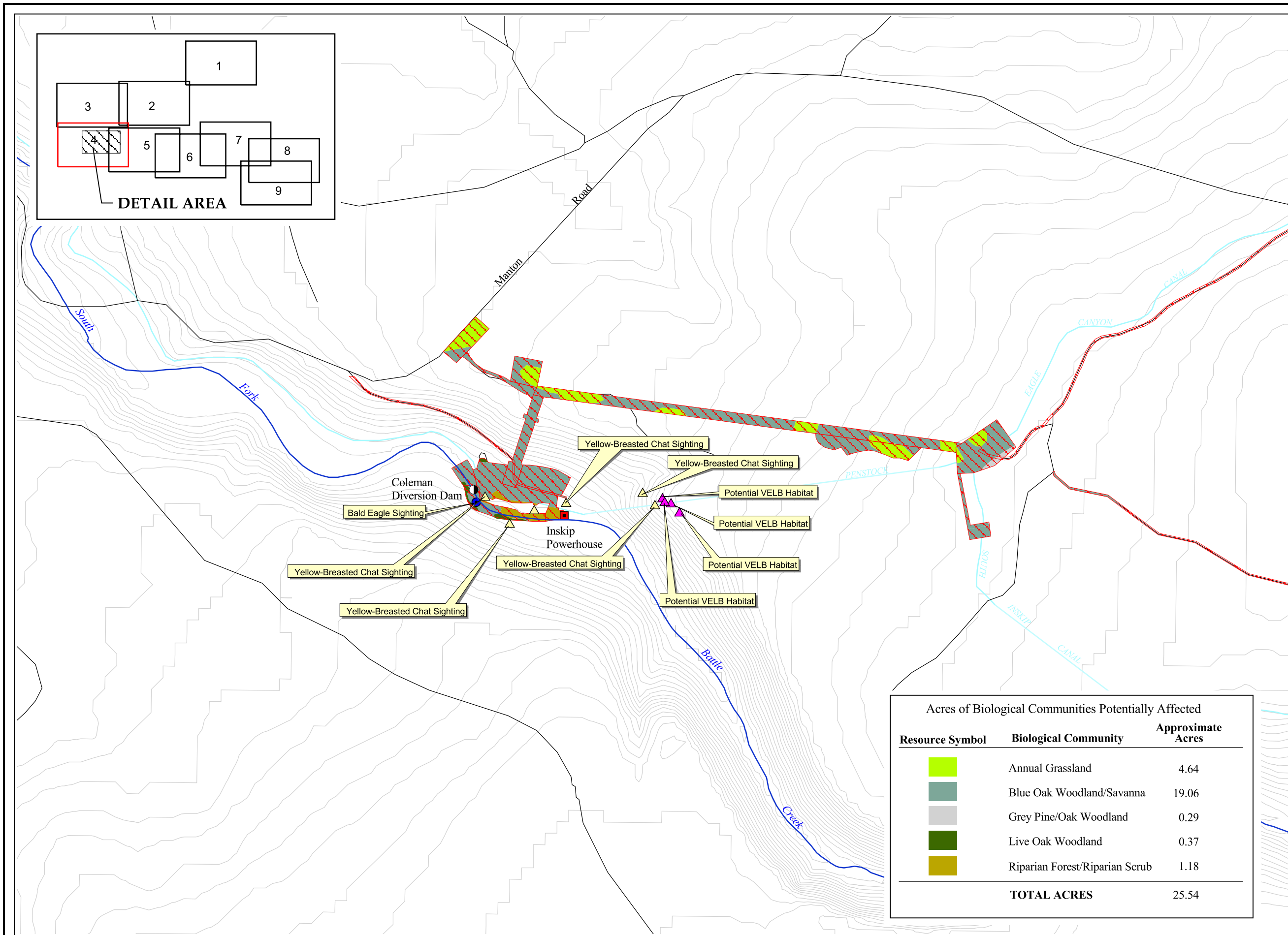
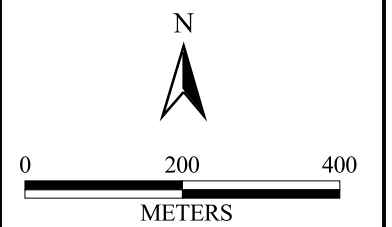
Figure 4.2-8

**LEGEND**

- Powerhouse
- Dam
- Road
- Proposed Construction Area/Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters
- Bald Eagle Sighting
- ▲ Potential VELB Habitat
- ▲ Yellow-Breasted Chat Sighting

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.

Acres of Biological Communities Potentially Affected		
Resource Symbol	Biological Community	Approximate Acres
<span style="color: green;">■</span>	Annual Grassland	4.64
<span style="color: teal;">■</span>	Blue Oak Woodland/Savanna	19.06
<span style="color: grey;">■</span>	Grey Pine/Oak Woodland	0.29
<span style="color: darkgreen;">■</span>	Live Oak Woodland	0.37
<span style="color: olive;">■</span>	Riparian Forest/Riparian Scrub	1.18
<b>TOTAL ACRES</b>		<b>25.54</b>





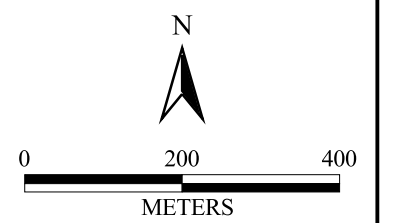
**Waters of the United States Documented at Coleman Diversion Dam/ Inskip Powerhouse**

Figure 4.2-9

**LEGEND**

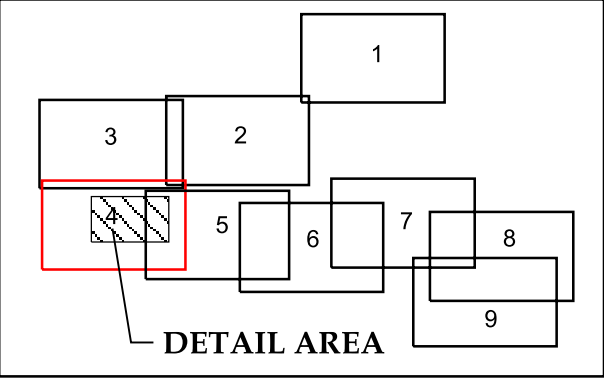
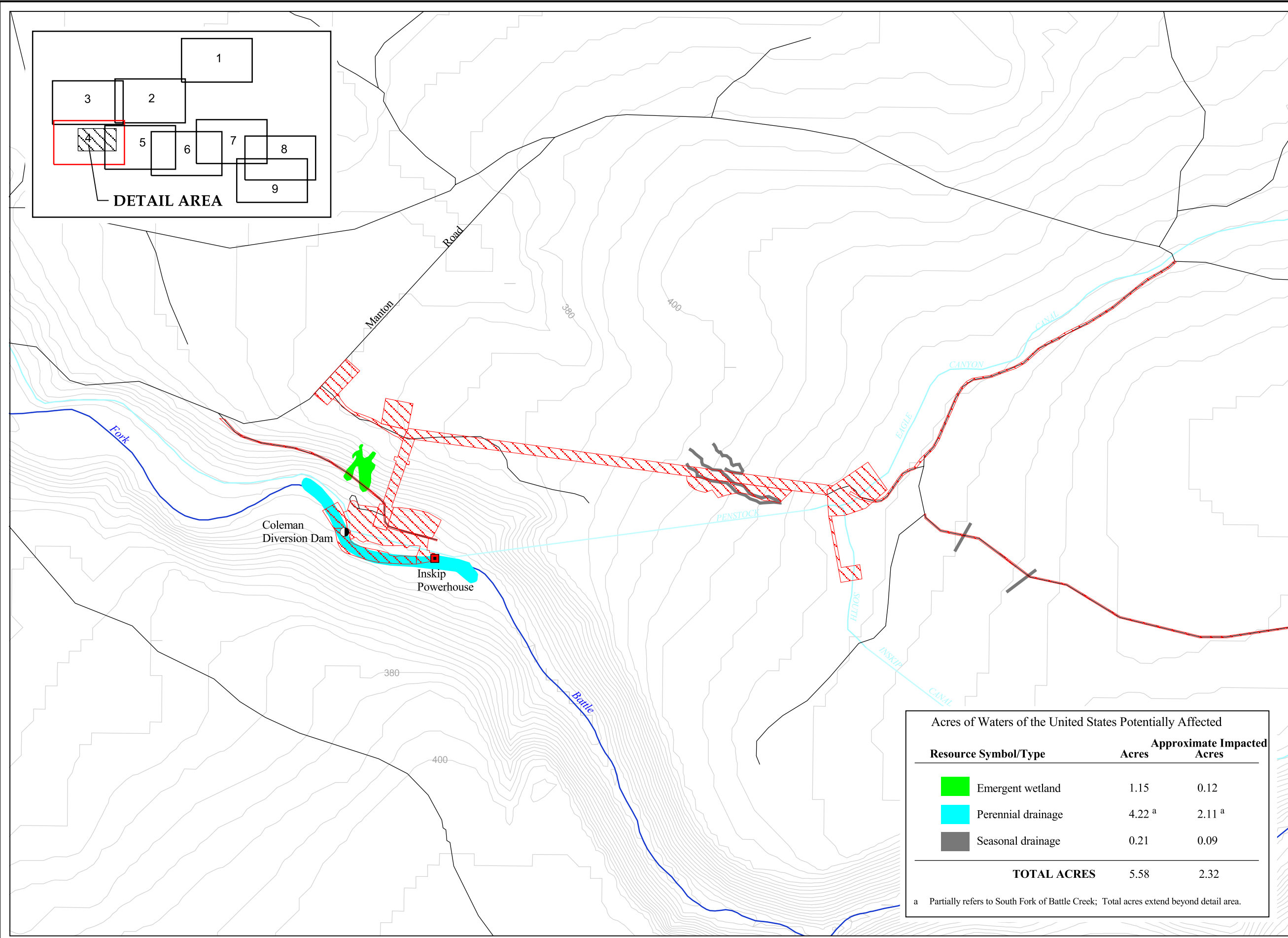
- Powerhouse
- Dam
- Road
- Construction Activity Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



Acres of Waters of the United States Potentially Affected			
Resource Symbol/Type	Acres	Approximate Impacted Acres	
		Acres	Acres
<span style="color: green;">■</span> Emergent wetland	1.15	0.12	
<span style="color: cyan;">■</span> Perennial drainage	4.22 <sup>a</sup>	2.11 <sup>a</sup>	
<span style="color: gray;">■</span> Seasonal drainage	0.21	0.09	
<b>TOTAL ACRES</b>	<b>5.58</b>	<b>2.32</b>	










<sup>a</sup> Partially refers to South Fork of Battle Creek; Total acres extend beyond detail area.



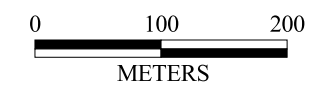
**Biological Communities Documented at Lower Ripley Creek Feeder**


Figure 4.2-10

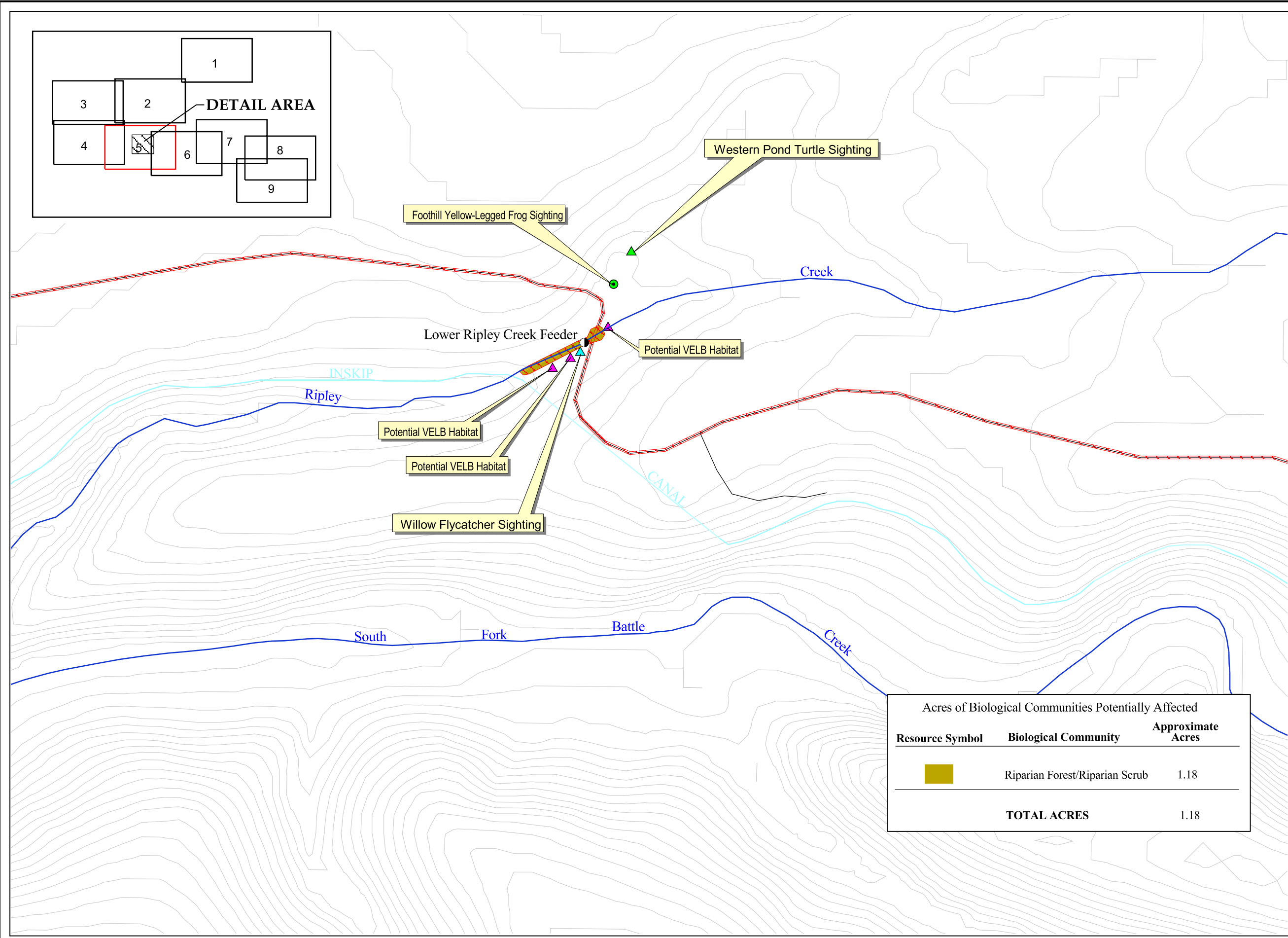
**LEGEND**

-  Dam
-  Road
-  Construction Activity Physical Disturbance
-  Canal or Tunnel
-  Contour Interval 5 Meters
-  Foothill Yellow-Legged Frog Sighting
-  Potential VELB Habitat
-  Western Pond Turtle Sighting
-  Willow Flycatcher Sighting

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



Acres of Biological Communities Potentially Affected		
Resource Symbol	Biological Community	Approximate Acres
	Riparian Forest/Riparian Scrub	1.18
<b>TOTAL ACRES</b>		1.18



Foothill Yellow-Legged Frog Sighting

Western Pond Turtle Sighting

Lower Ripley Creek Feeder

Potential VELB Habitat

Potential VELB Habitat

Potential VELB Habitat

Willow Flycatcher Sighting

INSKIP Ripley

CANAL

South Fork Battle Creek

Creek

DETAIL AREA

3

2

1

4

5

6

7






8

9

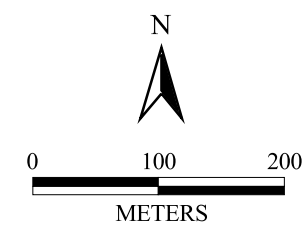
**Waters of the United States Documented at Lower Ripley Creek Feeder**


Figure 4.2-11

**LEGEND**

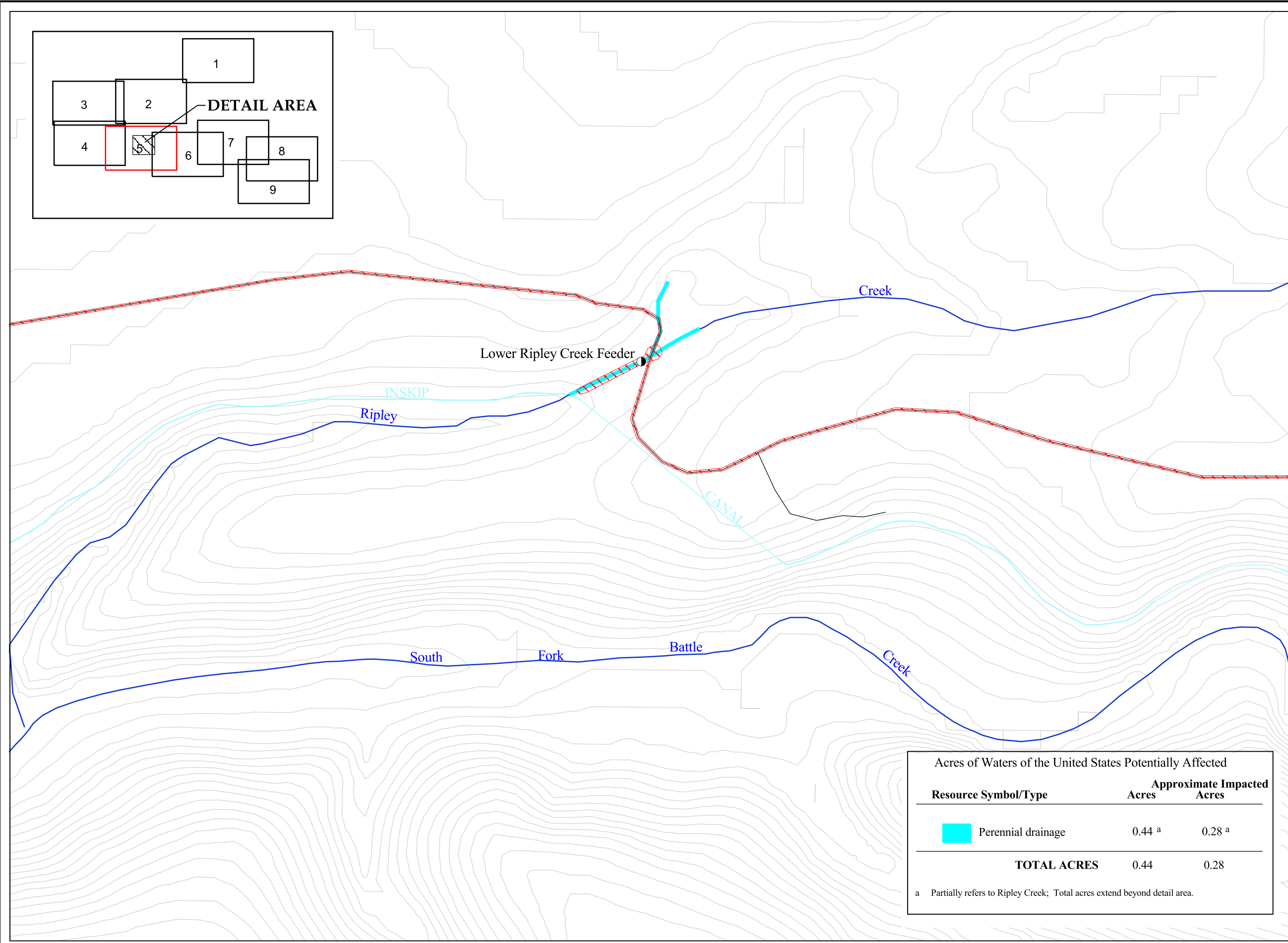
-  Dam
-  Road
-  Construction Activity Physical Disturbance
-  Canal or Tunnel
-  Contour Interval 5 Meters

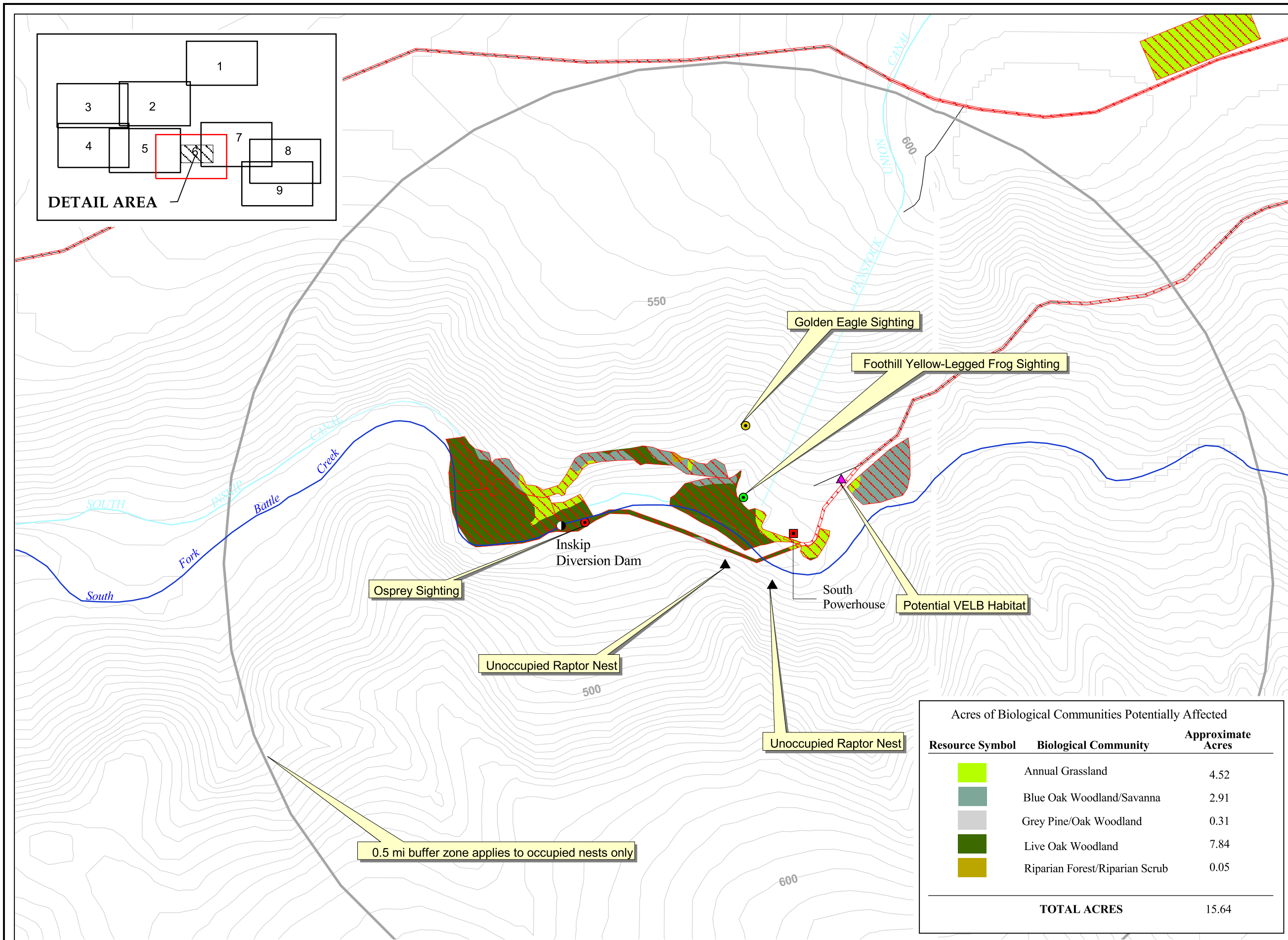
NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



Acres of Waters of the United States Potentially Affected		
Resource Symbol/Type	Approximate Impacted Acres	
	Acres	Acres
 Perennial drainage	0.44 <sup>a</sup>	0.28 <sup>a</sup>
<b>TOTAL ACRES</b>	<b>0.44</b>	<b>0.28</b>

<sup>a</sup> Partially refers to Ripley Creek; Total acres extend beyond detail area.





**Biological Communities Documented at Inskip Diversion Dam-South Powerhouse**

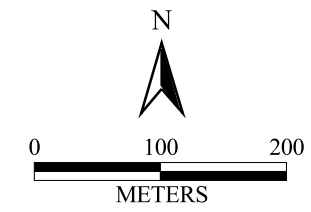
Figure 4.2-12

**LEGEND**

- Powerhouse
- Dam
- Road
- Proposed Construction Area/Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters
- Foothill Yellow-Legged Frog Sighting
- Golden Eagle Sighting
- Osprey Sighting
- Potential VELB Habitat
- Unoccupied Raptor Nest
- 0.5 mi Buffer for Unoccupied Raptor Nest

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.

Acres of Biological Communities Potentially Affected		
Resource Symbol	Biological Community	Approximate Acres
	Annual Grassland	4.52
	Blue Oak Woodland/Savanna	2.91
	Grey Pine/Oak Woodland	0.31
	Live Oak Woodland	7.84
	Riparian Forest/Riparian Scrub	0.05
<b>TOTAL ACRES</b>		15.64



0.5 mi buffer zone applies to occupied nests only

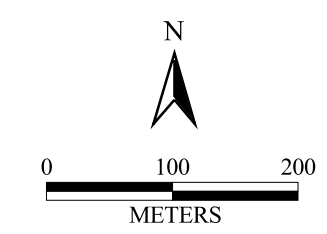
**Waters of the United States Documented at Inskip Diversion Dam-South Powerhouse**

Figure 4.2-13

**LEGEND**

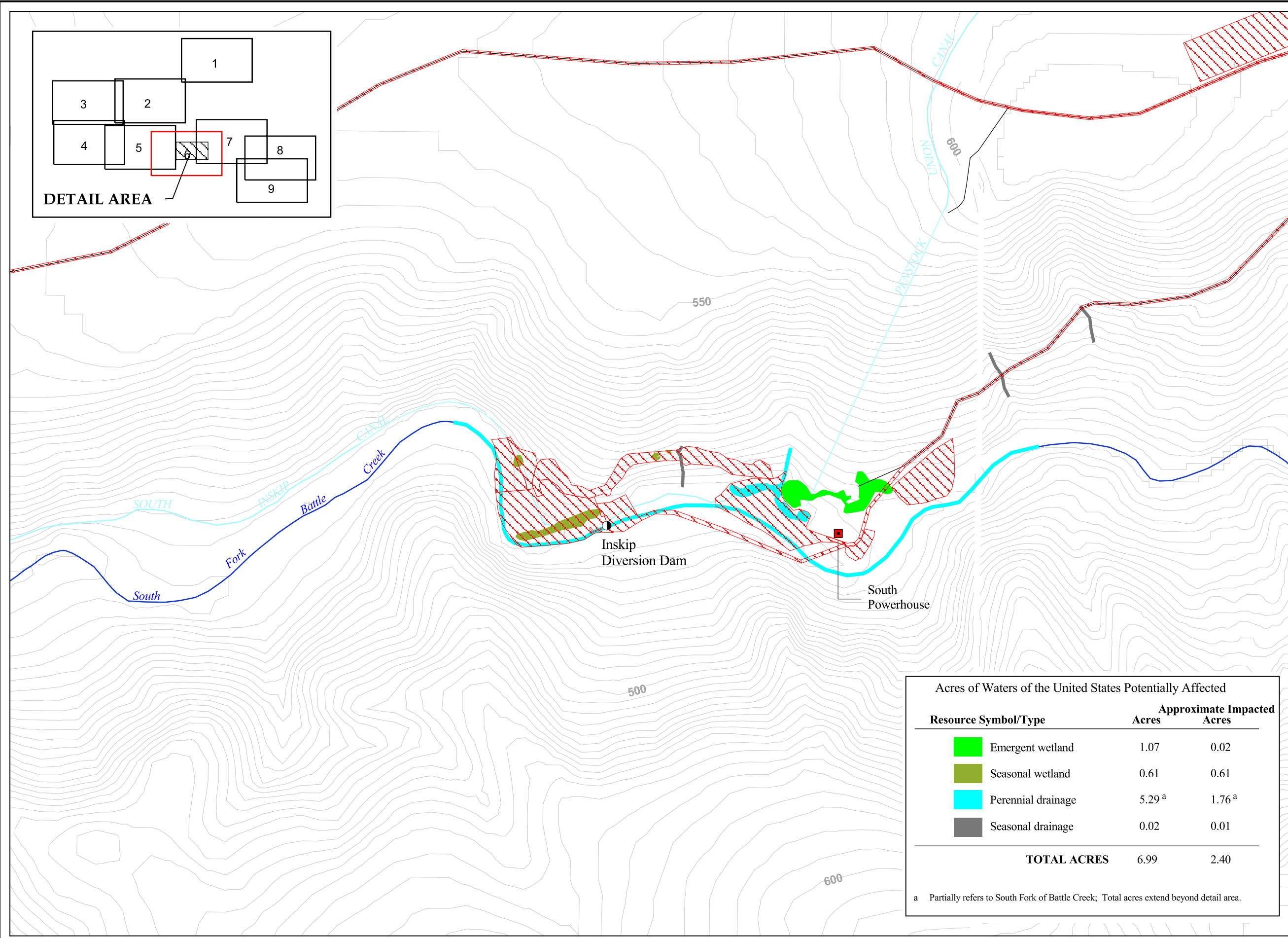
- Powerhouse
- Dam
- Road
- ▨ Construction Activity Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



Resource Symbol/Type	Acres of Waters of the United States Potentially Affected	
	Acres	Approximate Impacted Acres
<span style="color: green;">■</span> Emergent wetland	1.07	0.02
<span style="color: olive;">■</span> Seasonal wetland	0.61	0.61
<span style="color: cyan;">■</span> Perennial drainage	5.29 <sup>a</sup>	1.76 <sup>a</sup>
<span style="color: grey;">■</span> Seasonal drainage	0.02	0.01
<b>TOTAL ACRES</b>	<b>6.99</b>	<b>2.40</b>




<sup>a</sup> Partially refers to South Fork of Battle Creek; Total acres extend beyond detail area.



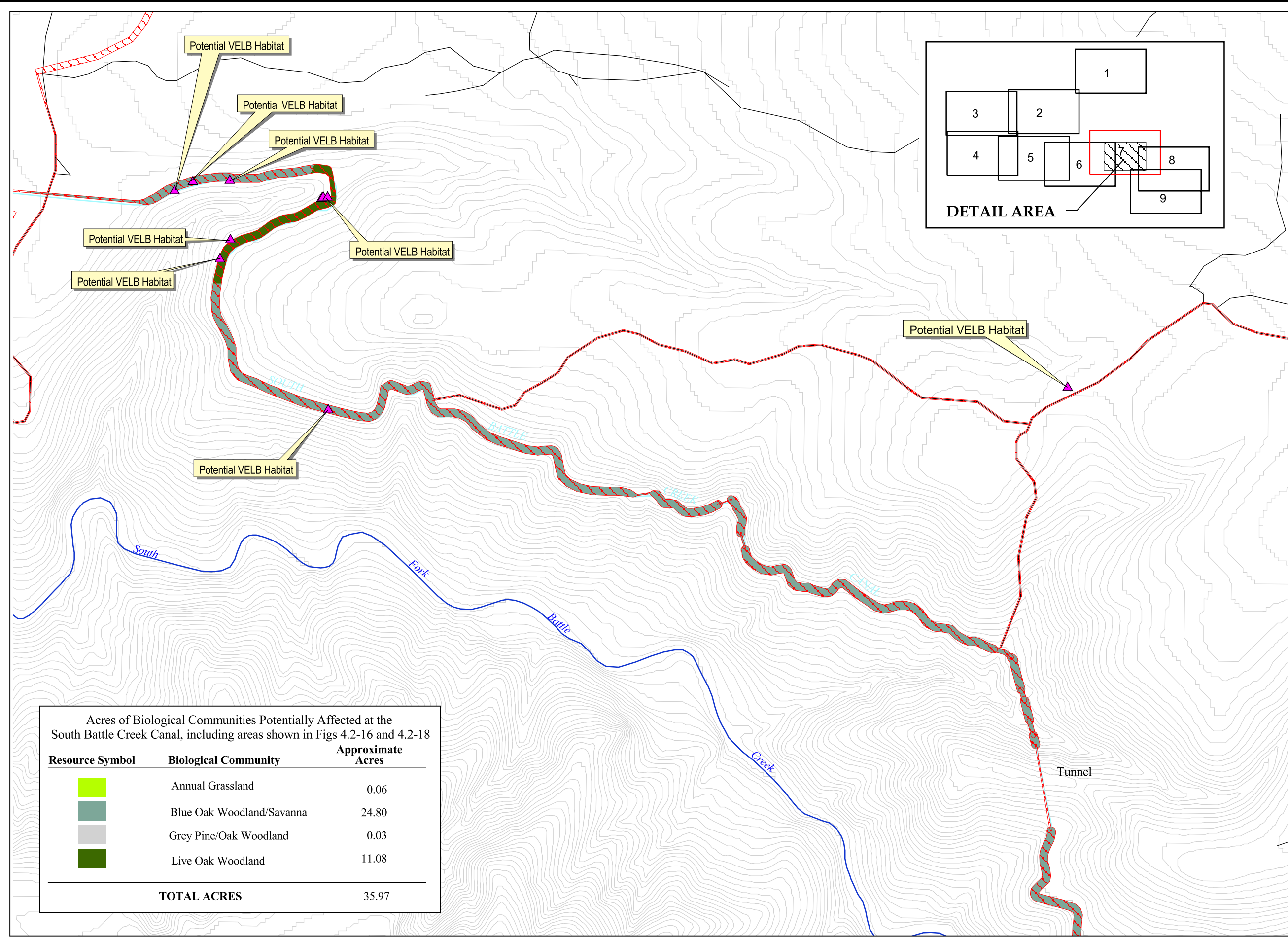
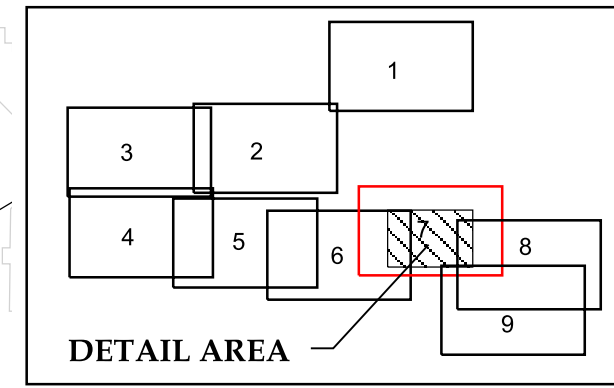
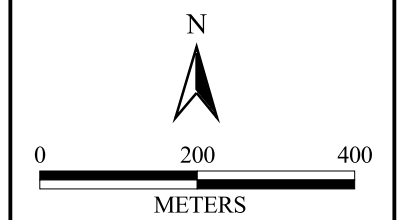
**Biological Communities Documented at South Battle Creek Canal**

Figure 4.2-14





**LEGEND**

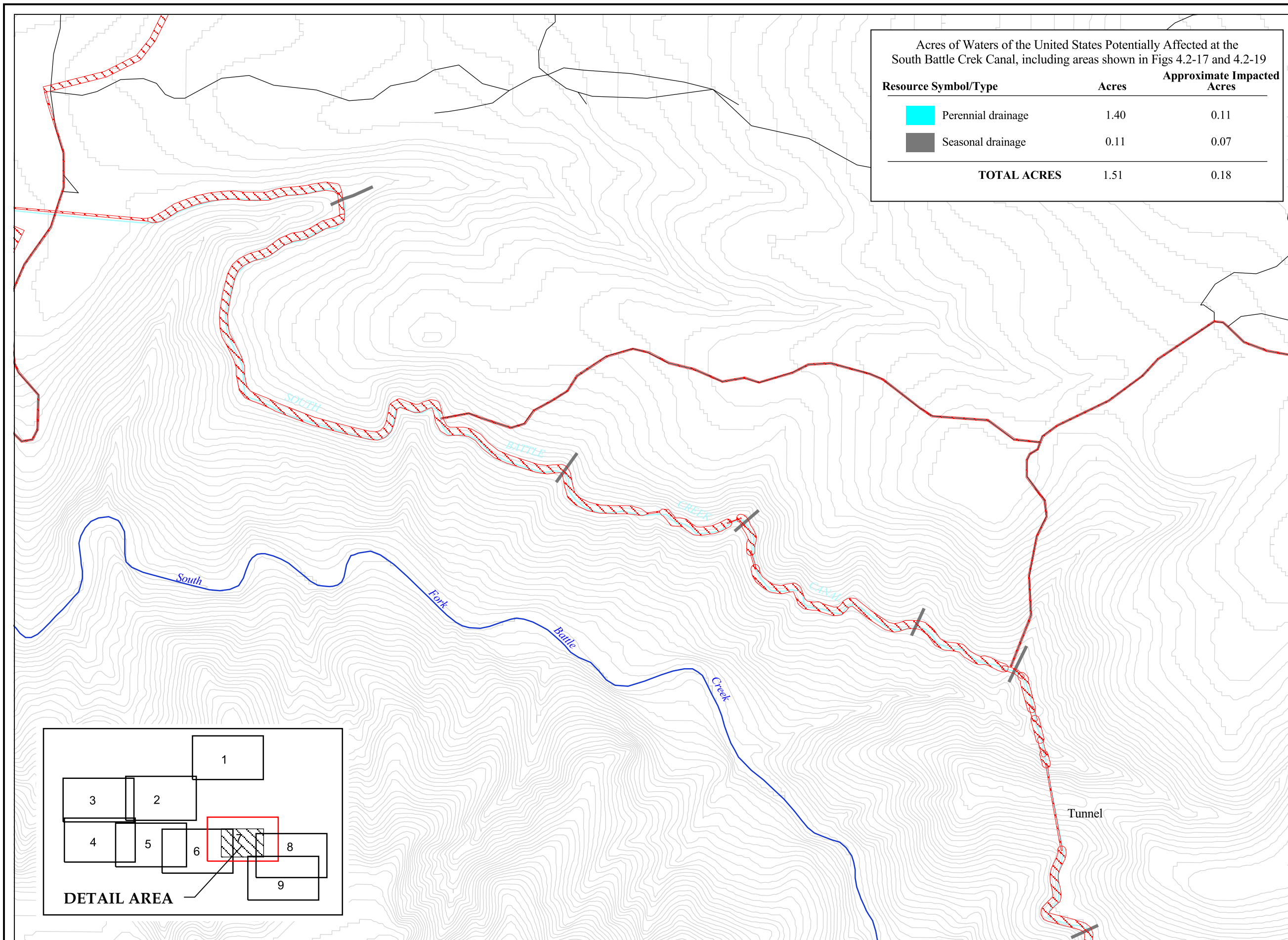
- Road
-  Construction Activity Physical Disturbance
-  Canal or Tunnel
- Contour Interval 5 Meters
-  Potential VELB Habitat

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



Acres of Biological Communities Potentially Affected at the South Battle Creek Canal, including areas shown in Figs 4.2-16 and 4.2-18

Resource Symbol	Biological Community	Approximate Acres
	Annual Grassland	0.06
	Blue Oak Woodland/Savanna	24.80
	Grey Pine/Oak Woodland	0.03
	Live Oak Woodland	11.08
<b>TOTAL ACRES</b>		<b>35.97</b>



Acres of Waters of the United States Potentially Affected at the South Battle Creek Canal, including areas shown in Figs 4.2-17 and 4.2-19

Resource Symbol/Type	Acres	Approximate Impacted Acres
<span style="color: cyan;">■</span> Perennial drainage	1.40	0.11
<span style="background-color: gray;">■</span> Seasonal drainage	0.11	0.07
<b>TOTAL ACRES</b>	<b>1.51</b>	<b>0.18</b>

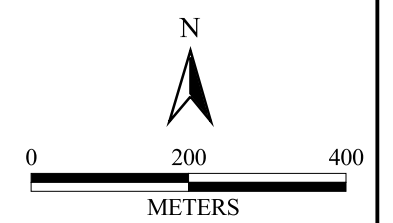
### Waters of the United States Documented at South Battle Creek Canal

Figure 4.2-15

#### LEGEND

- Road
- Construction Activity
- Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters







NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



**Biological Communities Documented at South Battle Creek Canal/ Soap Creek Feeder**

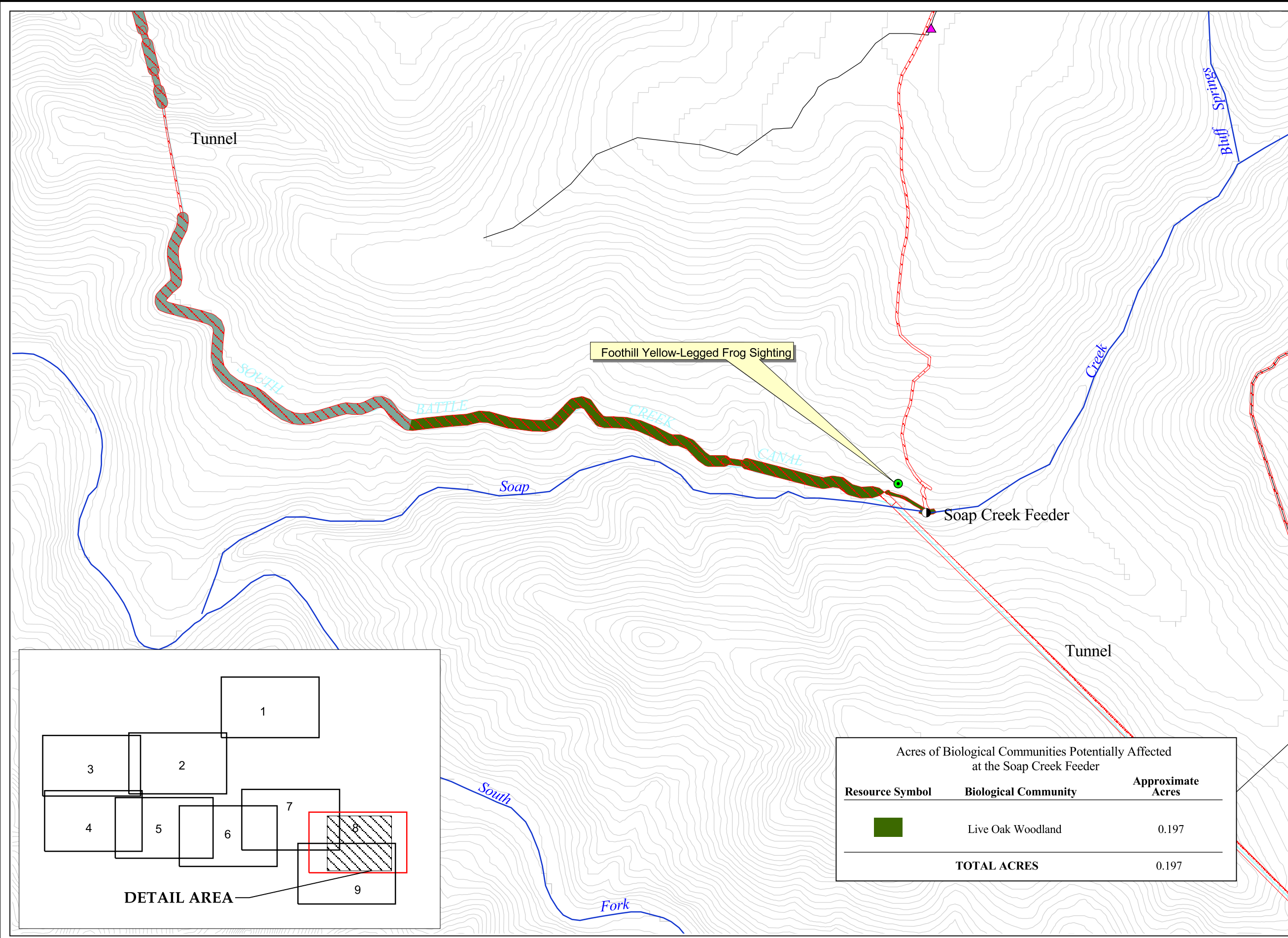
Figure 4.2-16


**LEGEND**

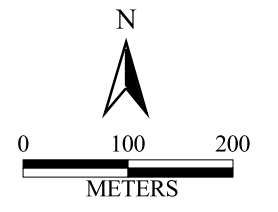
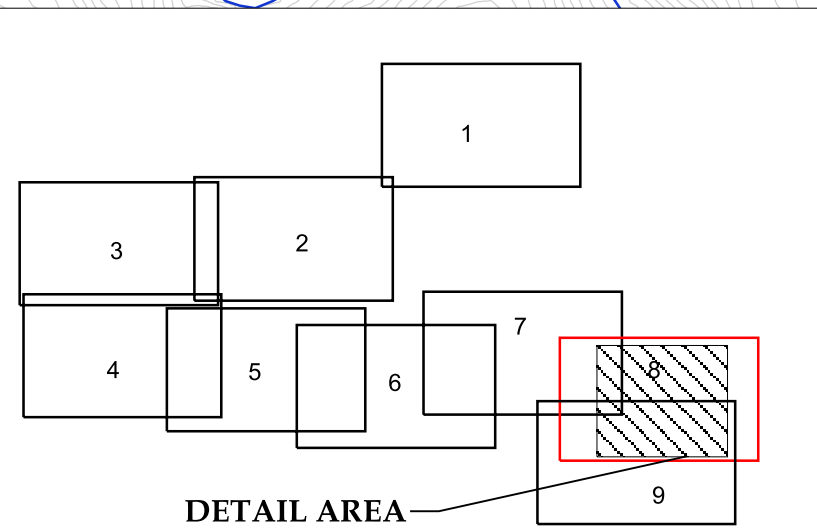
-  Dam
-  Road
-  Proposed Construction Area/Physical Disturbance
-  Canal or Tunnel
-  Contour Interval 5 Meters
-  Foothill Yellow-Legged Frog Sighting

NOTE: Acreage values for South Battle Creek Canal are shown in the table on Figure 4.2-14.

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.




Acres of Biological Communities Potentially Affected at the Soap Creek Feeder		
Resource Symbol	Biological Community	Approximate Acres
	Live Oak Woodland	0.197
<b>TOTAL ACRES</b>		<b>0.197</b>










Acres of Waters of the United States Potentially Affected at the South Battle Creek Canal, including areas shown in Figs 4.2-17 and 4.2-19

Resource Symbol/Type	Acres	Approximate Impacted Acres
 Perennial drainage	0.112	0.022
<b>TOTAL ACRES</b>	<b>0.112</b>	<b>0.022</b>

**Waters of the United States Documented at South Battle Creek Canal/ Soap Creek Feeder**

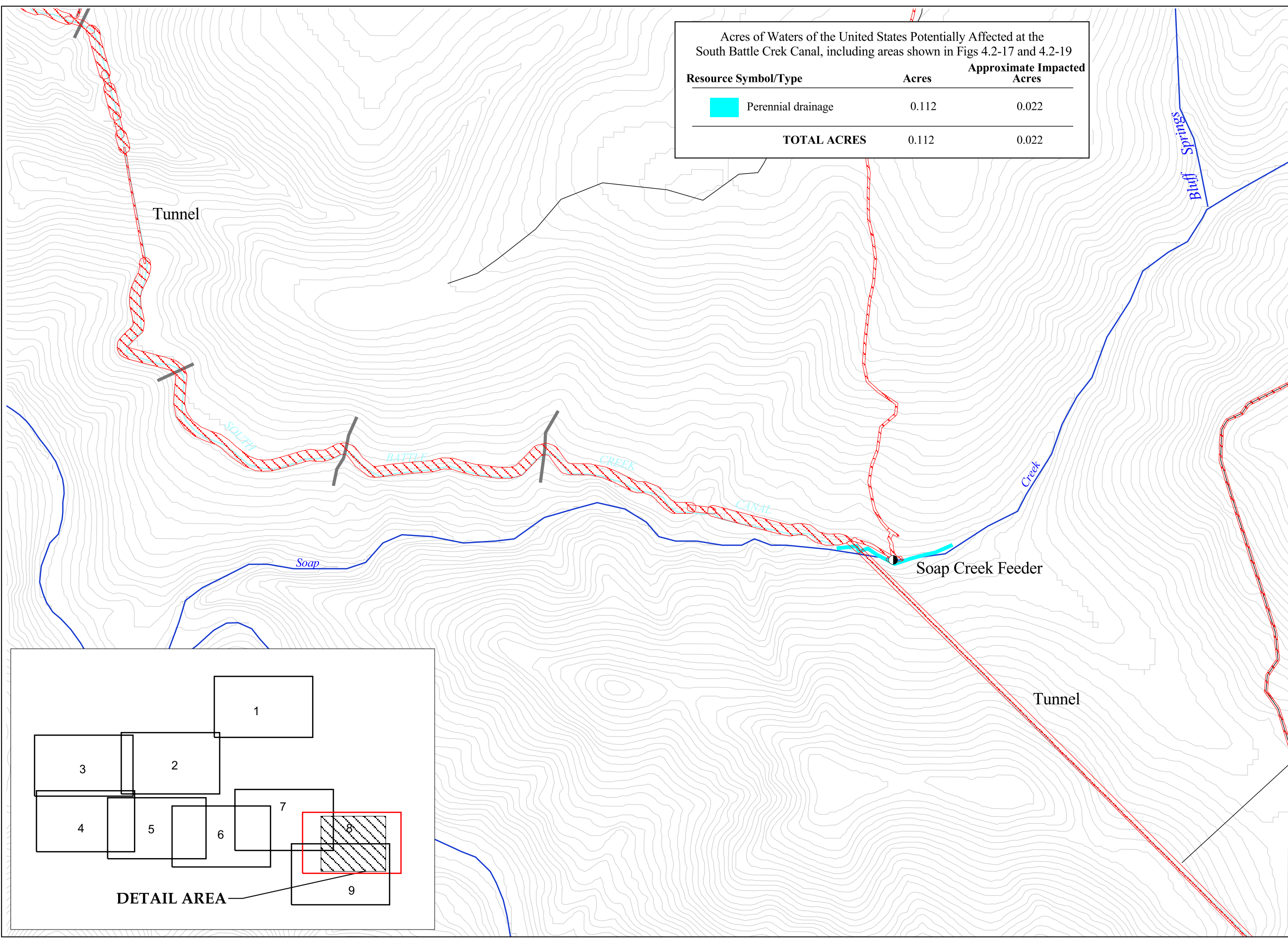
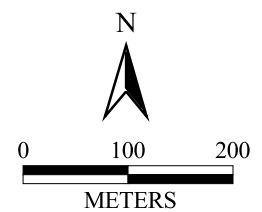
Figure 4.2-17

**LEGEND**

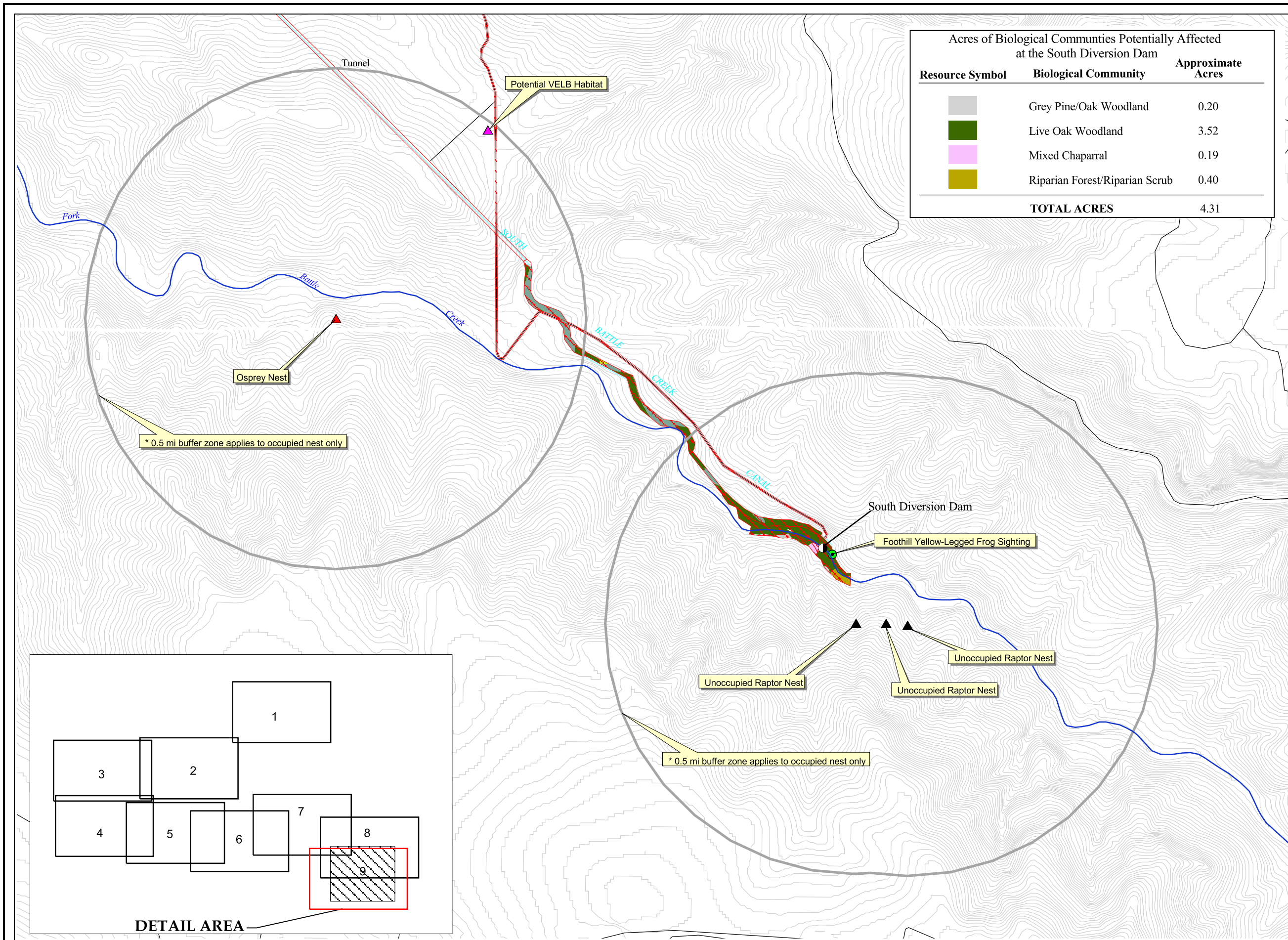
-  Dam
-  Road
-  Proposed Construction Area/ Physical Disturbance
-  Canal or Tunnel
-  Contour Interval 5 Meters

NOTE: Acreage values for South Battle Creek Canal are shown in the table on Figure 4.2-15.

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



**DETAIL AREA**



Acres of Biological Communities Potentially Affected at the South Diversion Dam		
Resource Symbol	Biological Community	Approximate Acres
	Grey Pine/Oak Woodland	0.20
	Live Oak Woodland	3.52
	Mixed Chaparral	0.19
	Riparian Forest/Riparian Scrub	0.40
<b>TOTAL ACRES</b>		<b>4.31</b>

### Biological Communities Documented at South Battle Creek/South Diversion Dam

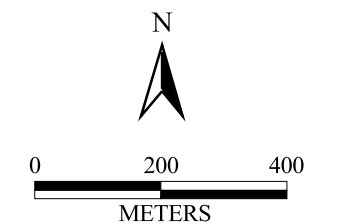
Figure 4.2-18

#### LEGEND

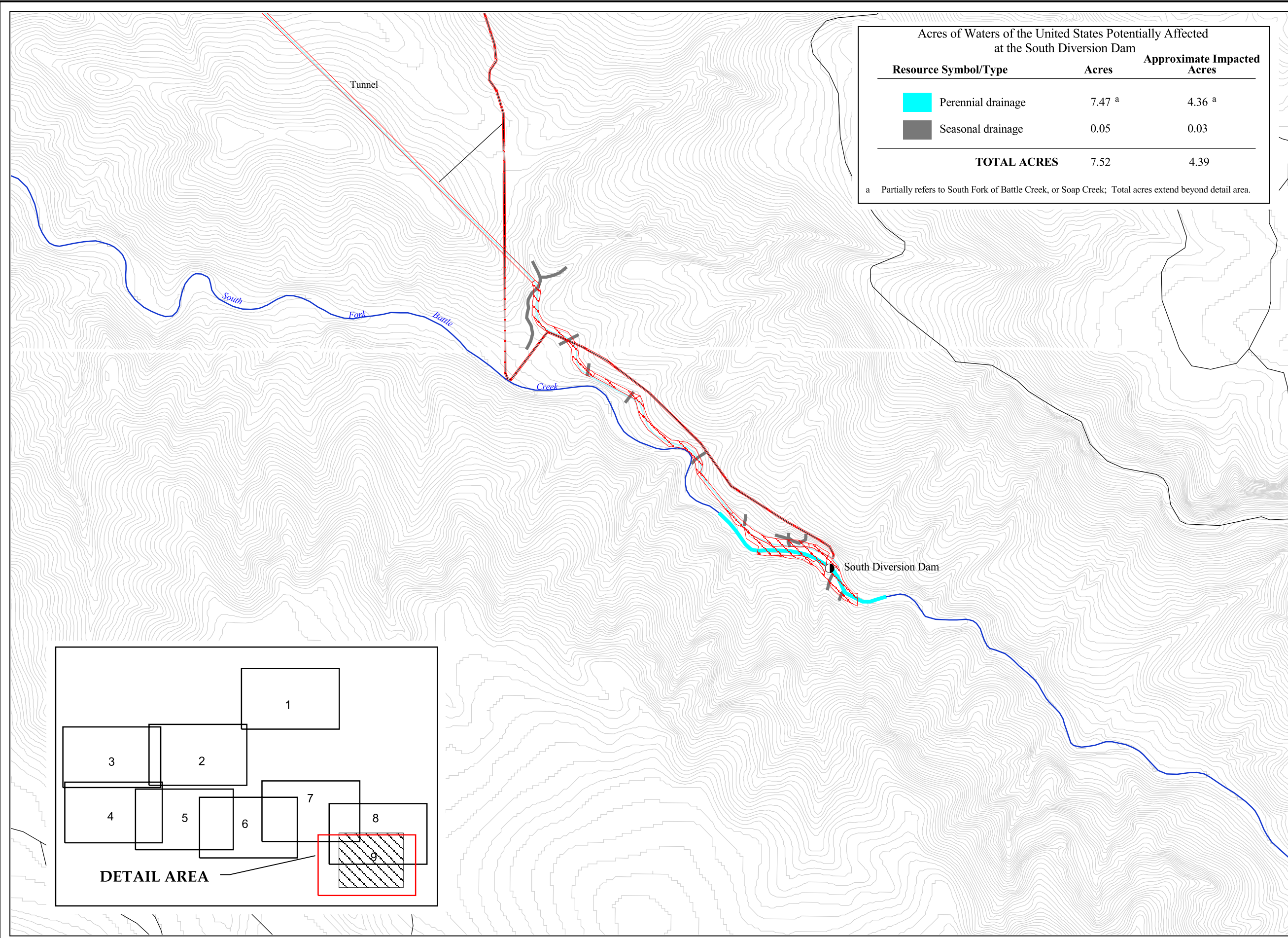
- Dam
- Road
- Proposed Construction Area/Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters
- 0.5 Mile Buffer for Old Raptor Nest\*
- Foothill Yellow-Legged Frog Sighting
- Osprey Nest
- Potential VELB Habitat
- Unoccupied Raptor Nest

NOTE: Acreage values on this sheet are for the South Diversion Dam only; other acreage values are shown in the table on Fig. 4.2-14.

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.



DETAIL AREA



**Acres of Waters of the United States Potentially Affected at the South Diversion Dam**

Resource Symbol/Type	Acres	Approximate Impacted Acres
Perennial drainage	7.47 <sup>a</sup>	4.36 <sup>a</sup>
Seasonal drainage	0.05	0.03
<b>TOTAL ACRES</b>	<b>7.52</b>	<b>4.39</b>

a Partially refers to South Fork of Battle Creek, or Soap Creek; Total acres extend beyond detail area.

**Waters of the United States Documented at South Battle Creek/ South Diversion Dam**

Figure 4.2-19

**LEGEND**

- Dam
- Road
- Construction Activity Physical Disturbance
- Canal or Tunnel
- Contour Interval 5 Meters

NOTE: Acreage values on this sheet are for the South Diversion Dam only; other acreage values are shown in the table on Fig. 4.2-15.

NOTE: Affected area represents the Five Dam Removal Alternative (Proposed Action). Other alternatives may have greater or lesser areas affected by the project.

