Erosion Control Plan

North Umpqua Hydroelectric Project
(FERC Project No. 1927)

Volume 3 – Appendix B
Erosion Control and Aquatic Connectivity Maps

Prepared by:
Washington Group International
Bellevue, Washington
and
PacifiCorp
Portland, Oregon

In Consultation With:

USDA Forest Service, Pacific Northwest Region, Umpqua National Forest
NOAA National Marine Fisheries Service (NOAA Fisheries)
USDI Bureau of Land Management, Roseburg District
USDI Fish and Wildlife Service
Oregon Department of Environmental Quality
Oregon Department of Fish and Wildlife
Oregon Water Resources Department

April 26, 2004

VOLUME 3

PACIFICORP

North Umpqua Hydroelectric Project (FERC 1927)

Erosion Control and Aquatic Connectivity

Map prepared by: VESTRA MapMaker, Redding, CA May 10, 2004

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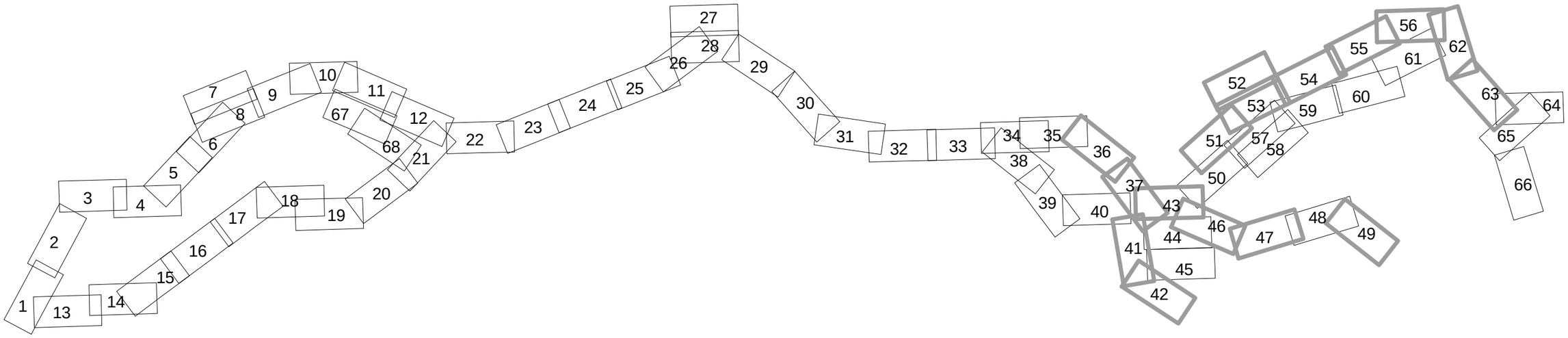

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Sheets With Identified Erosion Control Sites

North Umpqua Hydroelectric Project

N

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North Umpqua Hydroelectic Project
Erosion Control and Aquatic Connectivity
May 10, 2004

PACIFICORP

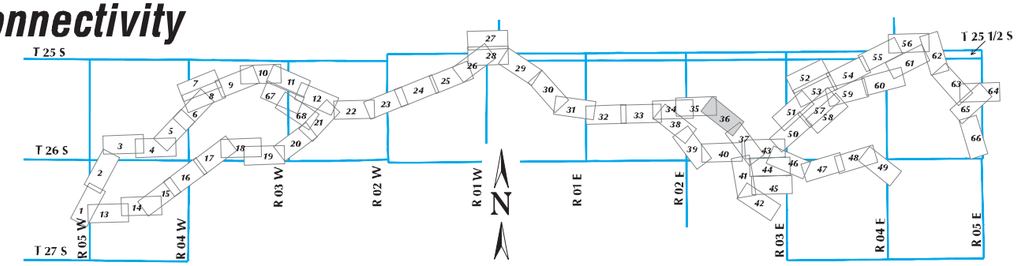
Legend

- Erosion Site Assessment
  - LM2-12 High Risk
  - Moderate Risk
- Aquatic/Riparian Habitat Connectivity Sites
  - Priority 1
  - L23 Priority 2
  - Re-Evaluate
- Culvert
- Fish Bearing Culvert
- Flume
- Bridge
- Gate
- Berm
- USDI-BLM
- USDA-FS
- USDA-FS(Wilderness)
- Private Ownership
- Accessible Pole
- Inaccessible Pole

0 1000 2000 Feet

Scale 1:9,000

Map Prepared by Vestra MapMaker, Redding, CA



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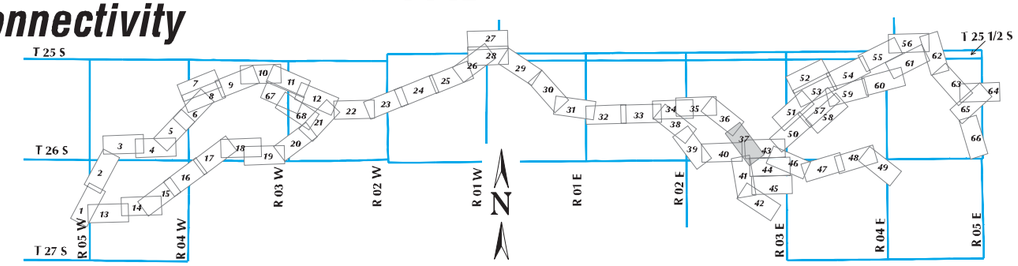
0 1000 2000 Feet

Scale 1:9,000

Map Prepared by Vestra MapMaker, Redding, CA



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0 1000 2000 Feet

Scale 1:9,000

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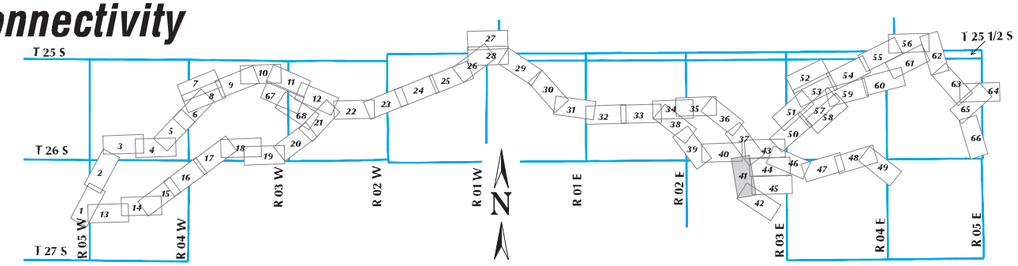

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Sheet 41

Toketee Airstrip

DEC_3701221-SPUR

DEC_UPPER FC CANAL

3701310

U-33

U-32

3701000

3701000

3701220

3701210

FC-10

F7

F6

F-5

F5

FC-9

F-4

FC-8

F4

FC-7

DEC_3701210-SPUR

Fish Creek

3701220

Fish Creek

FC-6

F3

FC-5

3701210

FC-3

3701210

U-31

F2

3701211

FC-2

F1

Fish Dam Road

FC-1

F-1

U-30

3701220

Fish Creek Diversion Dam

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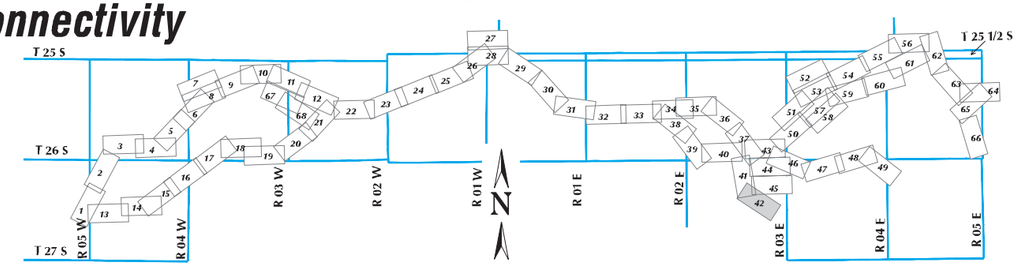
0 1000 2000 Feet

Scale 1:9,000



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Map Prepared by Vestra MapMaker, Redding, CA

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0 1000 2000 Feet

Scale 1:9,000

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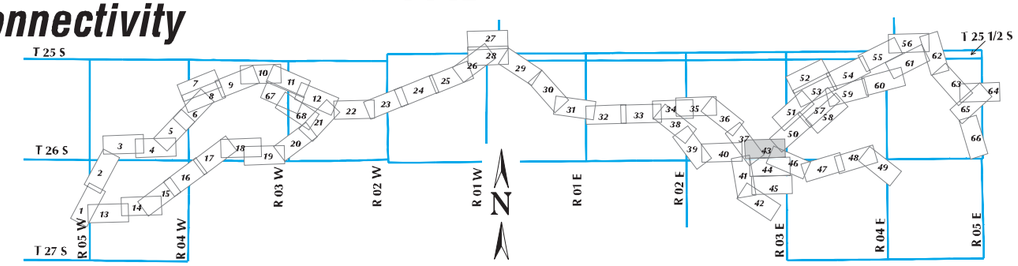

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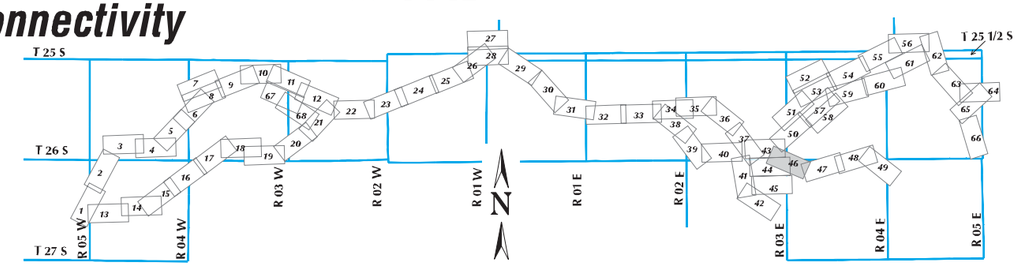
0 1000 2000 Feet

Scale 1:9,000

Map Prepared by Vestra MapMaker, Redding, CA



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0 1000 2000 Feet

Scale 1:9,000

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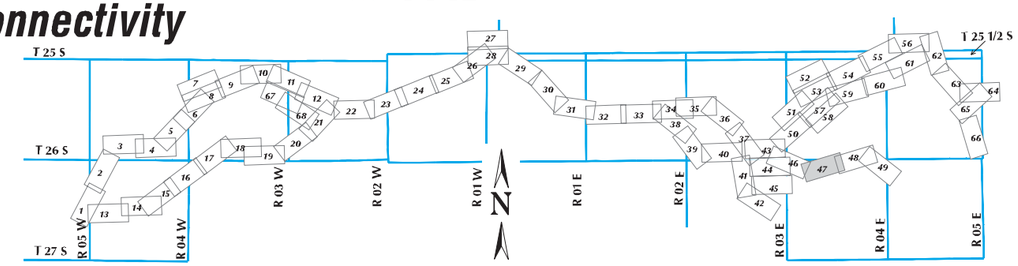

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Mowich Park

C2

6035

6030

6070

6065

6050

4776010

4776061

4776010

4780000

4776063

4776065

6045 C1

6040

4780000

Clearwater 1

4776010

Canal

1335

4700630

4700630

DEC_4700640

DEC_4700641

Clearwater

Stump Lake

SR 138

Trap

Creek

Ri

3800

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North Umpqua Hydroelectic Project
Erosion Control and Aquatic Connectivity
May 10, 2004

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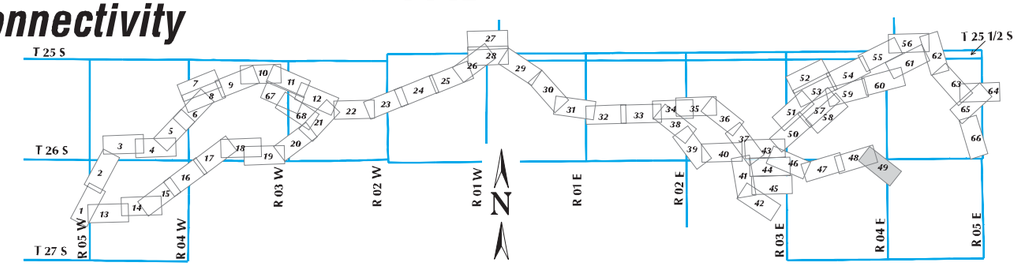
0 1000 2000 Feet

Scale 1:9,000



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Map Prepared by Vestra MapMaker, Redding, CA

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Thorne Creek Diversion
Structure Removal Priority
Aquatic Sites Shown in Sch
10.6 of the SA

Thorne Creek

Mill Creek Diversion
Structure Removal Priority 1
Aquatic Sites Shown in Schedule
10.6 of the SA

F-25

L41

L42

L43

L44

F-26

L45

Lemolo 2 Canal

L46

3400071

L47

L48

3402000

F-27

Lem. No2 C.G.

3402053

3402000

3402052

3402051

U-16

U-17

Lemolo 2
Forebay

3402071

3402071

Upper Mountain Meadows

Sediment
Disposal

3400071

3400052

3400053

3400000

3402000

Sediment
Disposal

BURN PILE
ACCESS

3402071

3400000

3400034

3400000

3400000

3401000

T.L.# 53

TL53_01/3

DEC_TL53_01/3

TL53_03/3

3400000

ML 3

ML 5

TL53_04/3

3400050

Deer Creek

Upper Mountain M

Legend

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North Umpqua Hydroelectic Project
Erosion Control and Aquatic Connectivity
May 10, 2004

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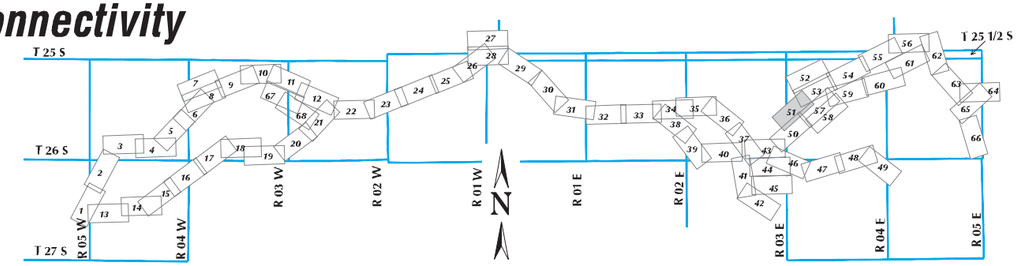
0 1000 2000 Feet

Scale 1:9,000



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Map Prepared by Vestra MapMaker, Redding, CA

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Deer Creek Diversion
Structure Removal Priority 1
Aquatic Sites Shown in Schedule
10.6 of the SA

Karen Creek Diversion
Structure Removal Priority 1
Aquatic Sites Shown in Schedule
10.6 of the SA

Spotted Owl Creek Diversion
Structure Removal Priority 1
Aquatic Sites Shown in Schedule
10.6 of the SA

Deer Creek
Spotted Owl Creek
3600
4000
4400
3800
1260
1250
5405
5400
5395
2335
2330
2325
2320
2315
2340
2345
1255
LM2-4
3400090
F-21
U-14
L35
Spotted Owl Cr. Spur
F-22
L36
3400086
3400085
F-20
L38
L37
L39
3400071
U-15
3400090
Lem. No2. Canal Spur
3400071

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N

0 1000 2000 Feet

Scale 1:9,000

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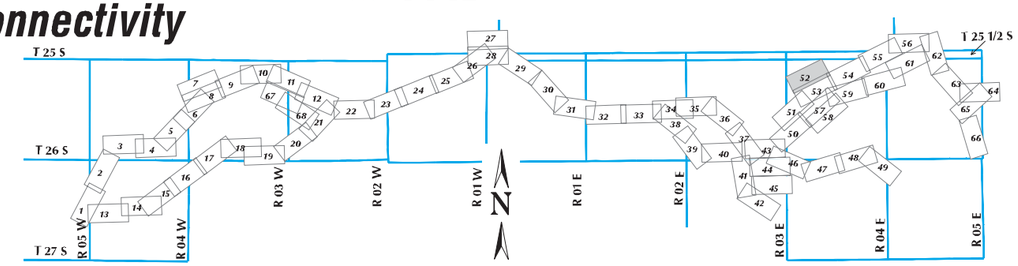

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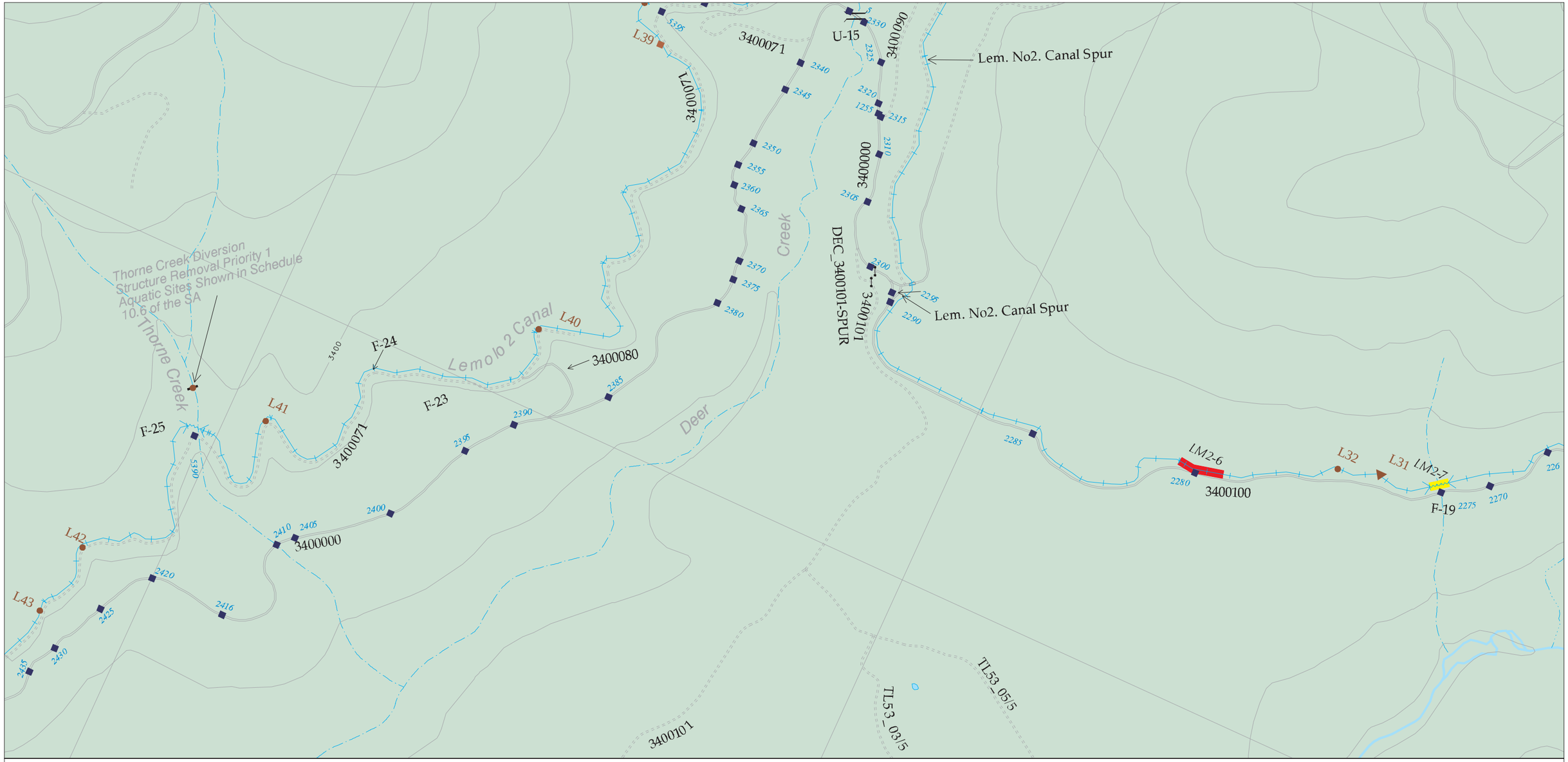

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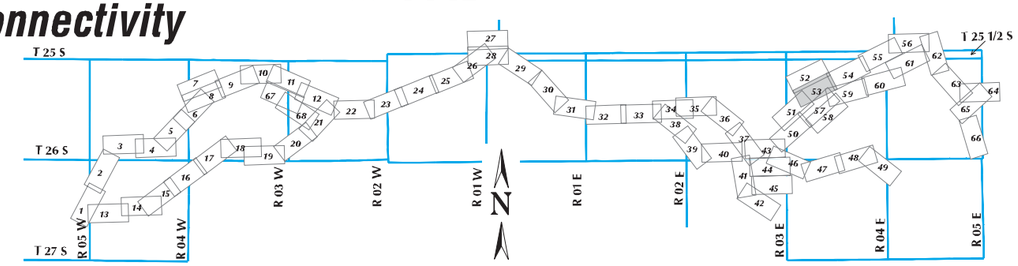

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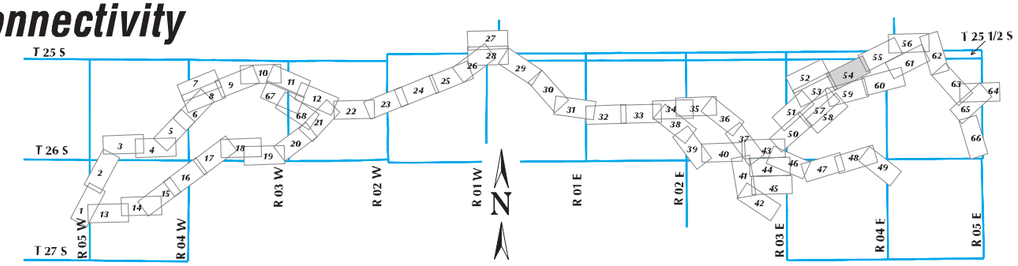

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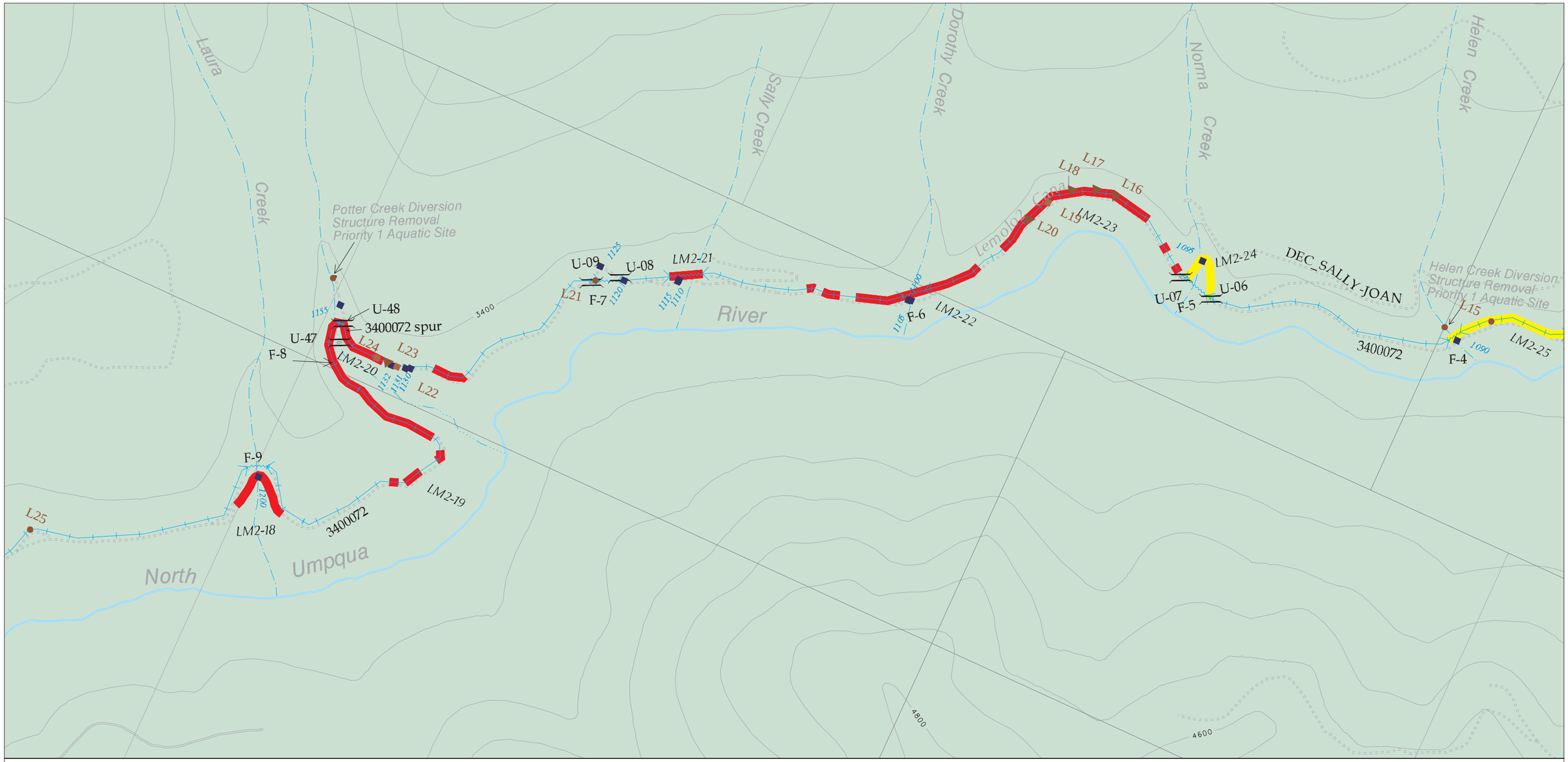

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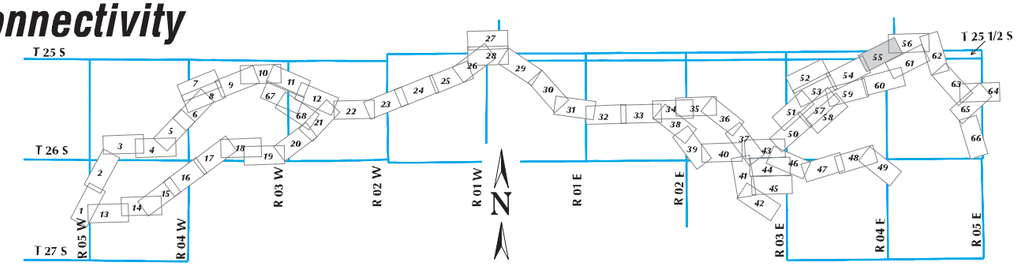
0 1000 2000 Feet

Scale 1:9,000



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Nancy Creek
Beverly Creek
Helen Creek
Joan Creek
Helen Creek Diversion Structure Removal Priority 1 Aquatic Site
DEC_SALLY-JOAN
3400072
F-4
L15
LM2-25
F-3
LM2-26
F-2
L13
LM2-27
L12
L11
LM2-28
F-1
L10
LM2-29
Lemolo 2
L9
L8
LM2-30
3400072
L7
Canal
L6
Umpqua
North
River
TL53-05/12
2610680
U-46
U-04
Lemolo 1
Powerplant
LEMOLO NO1 PH
2610686
2610680
2610686
Penstock
2610680
U-03
2610680
Warm Springs Falls
TL53 04/12
3401702

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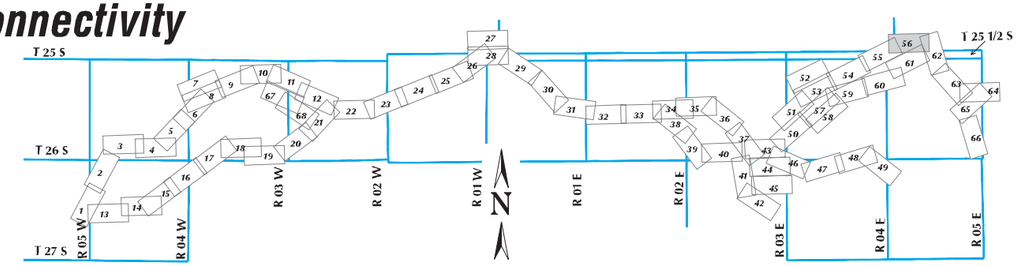
0 1000 2000 Feet

Scale 1:9,000



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Lemolo 1
Forebay Expansion

U-02

2610670

2610680

2610686

2610686

Penstock

2610680

2610686

2610680

2065 2070 2075 2080 2085 2090 2095 2100 2105 2110 2115 2120 2125 2130 2135 2140 2145 2150 2155 2160

L4

L3

1040

2610000

2610672

Lemolo 1 Canal

4000

4200

3800

North Umpqua River

Lemolo Falls

2060

2045

2050

7420 7425 7430 7435 74

3401800

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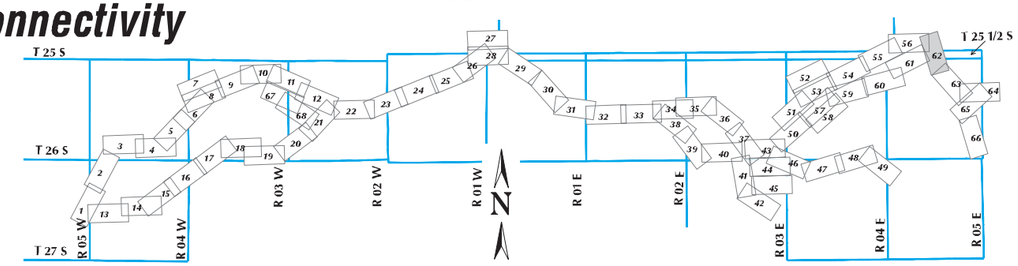

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Scale 1:9,000

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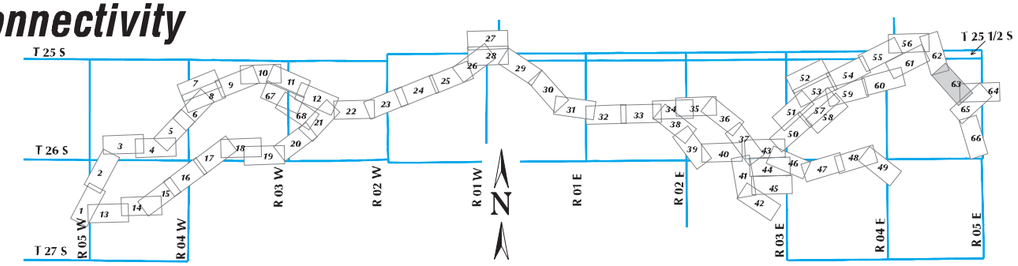

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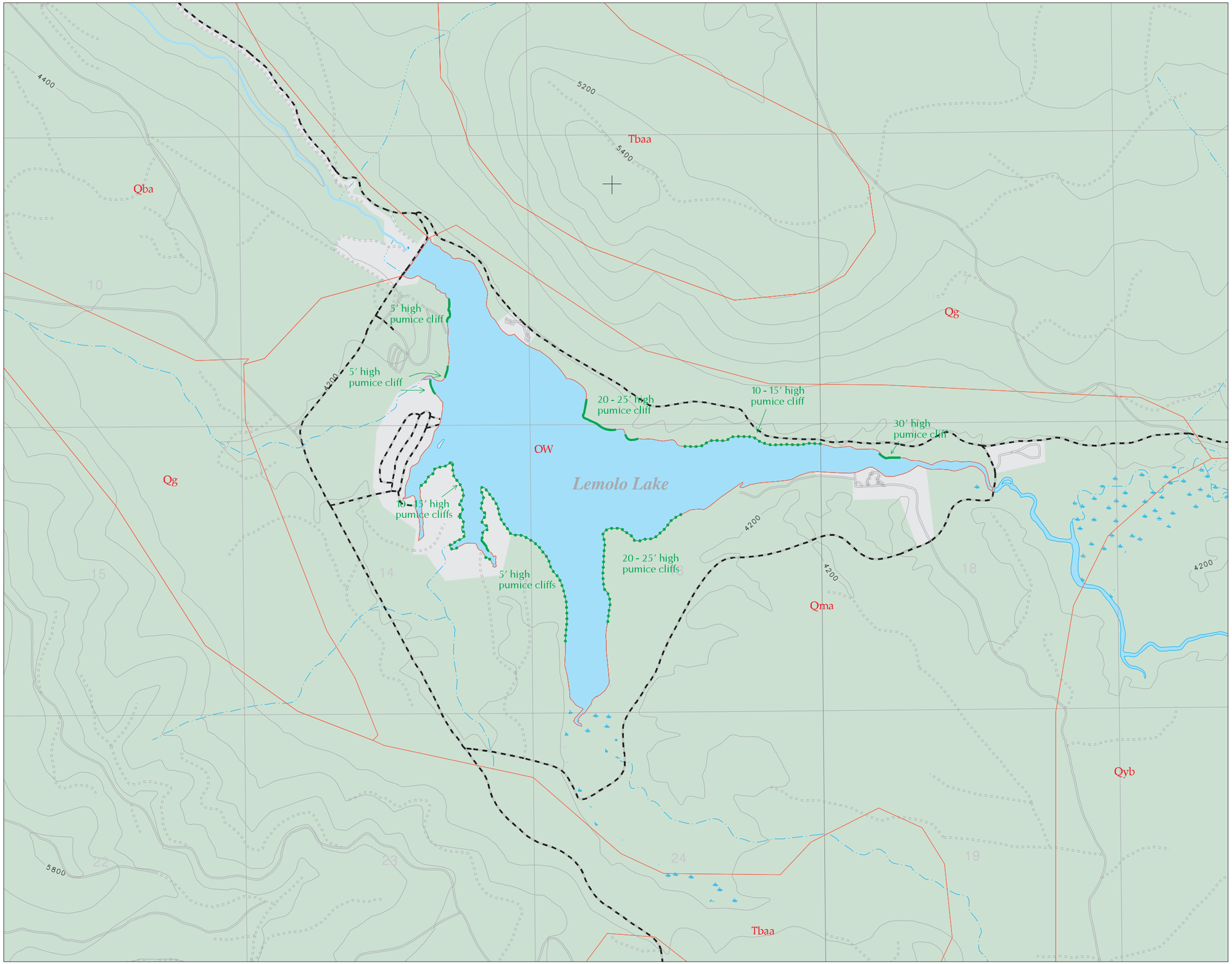
North Umpqua Hydroelectric Project

PACIFICORP

Figure 1
Bank Erosion and Geology of Lemolo Lake



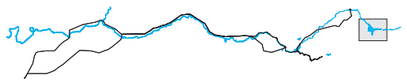
Raveling Throughout Section Entering Waterway

Intermittent Raveling Entering Waterway

Geology

- Qma: Mount Mazama Ash and Pumice
- Qba: Basaltic Andesite
- Qg: Glacial Deposits
- Tbaa: Basalt
- Qyb: Young Basalt and Basaltic Andesite
- OW: Waterbody

source: Sherrod, 1991



NORTH

0 1000 2000 3000 4000 Feet

Map Prepared by VESTRA Resources, Inc. May 10, 2004