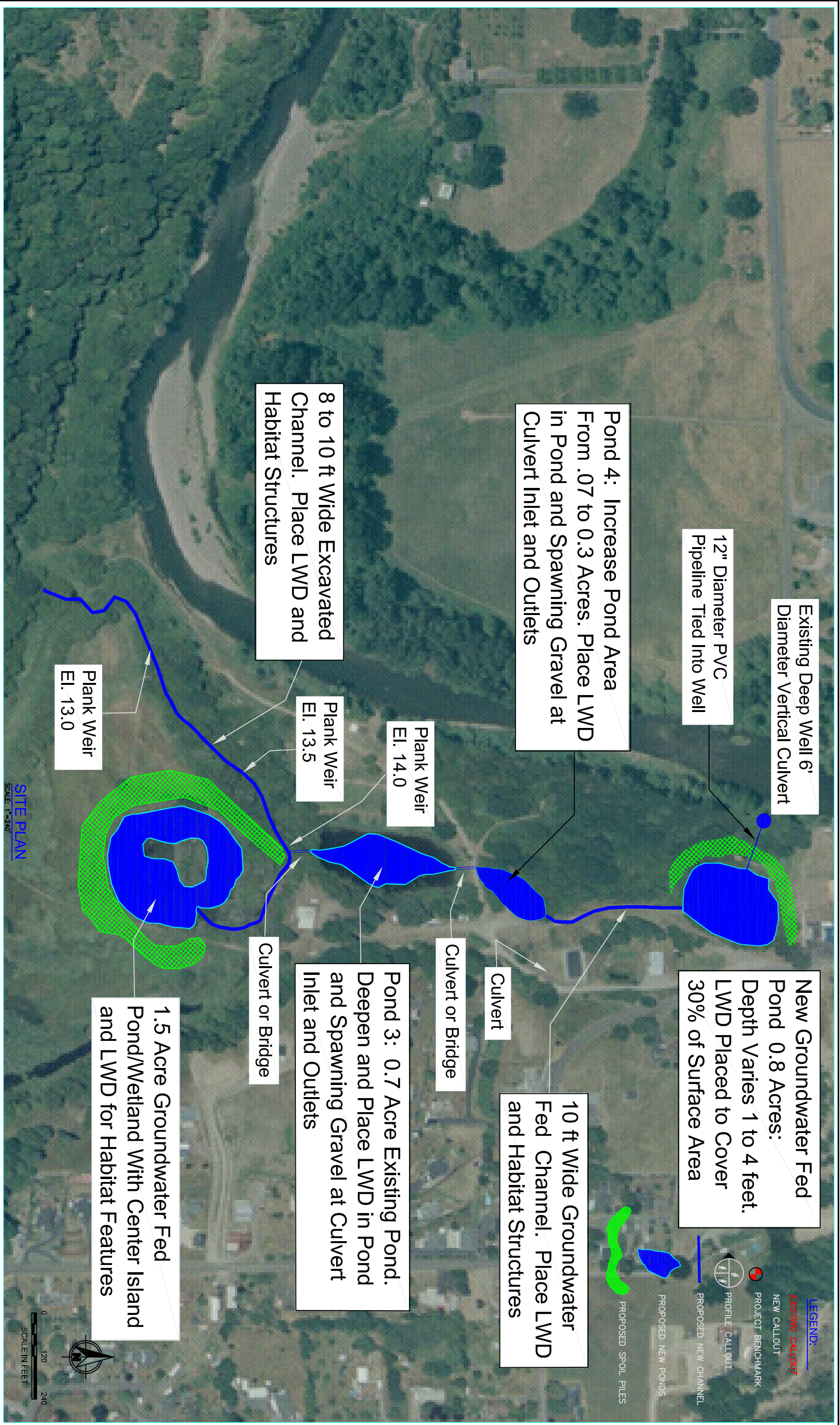


## APPENDIX G. CONCEPTUAL DESIGN DRAWINGS AND COST ESTIMATES

*1.0 Ledgett Groundwater Channel*





Existing Deep Well 6' Diameter Vertical Culvert  
 12" Diameter PVC Pipeline Tied Into Well

Pond 4: Increase Pond Area From .07 to 0.3 Acres. Place LWD in Pond and Spawning Gravel at Culvert Inlet and Outlets

New Groundwater Fed Pond 0.8 Acres: Depth Varies 1 to 4 feet. LWD Placed to Cover 30% of Surface Area

10 ft Wide Groundwater Fed Channel. Place LWD and Habitat Structures

8 to 10 ft Wide Excavated Channel. Place LWD and Habitat Structures

Pond 3: 0.7 Acre Existing Pond. Deepen and Place LWD in Pond and Spawning Gravel at Culvert Inlet and Outlets

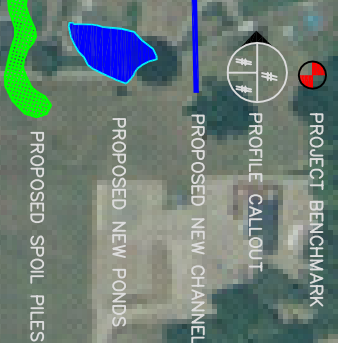
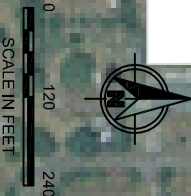
Plank Weir El. 13.0

Plank Weir El. 13.5

Plank Weir El. 14.0

1.5 Acre Groundwater Fed Pond/Wetland With Center Island and LWD for Habitat Features

SITE PLAN  
 SCALE: 1"=240'



Lower Kalama Off Channel  
 Habitat Design

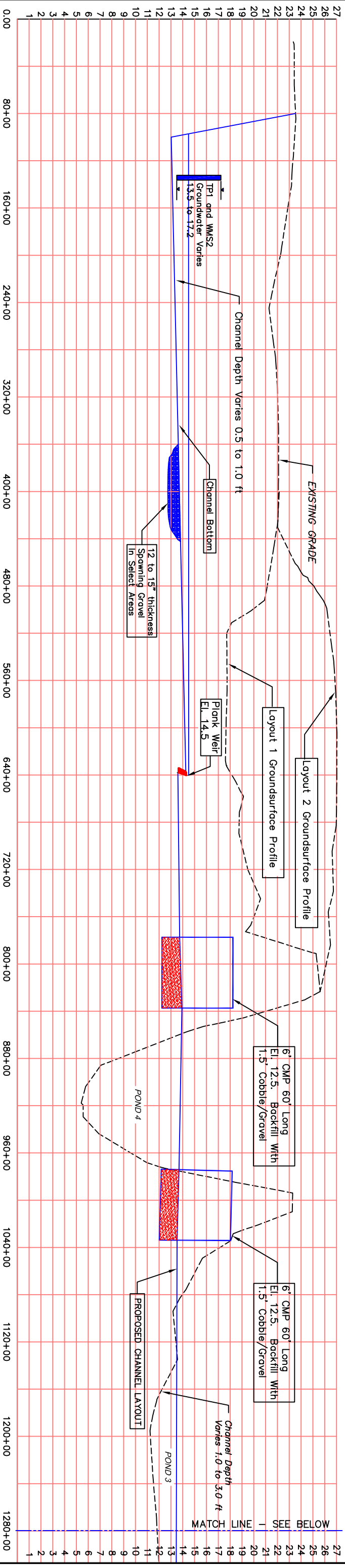
30% DESIGN  
 NOT FOR  
 CONSTRUCTION

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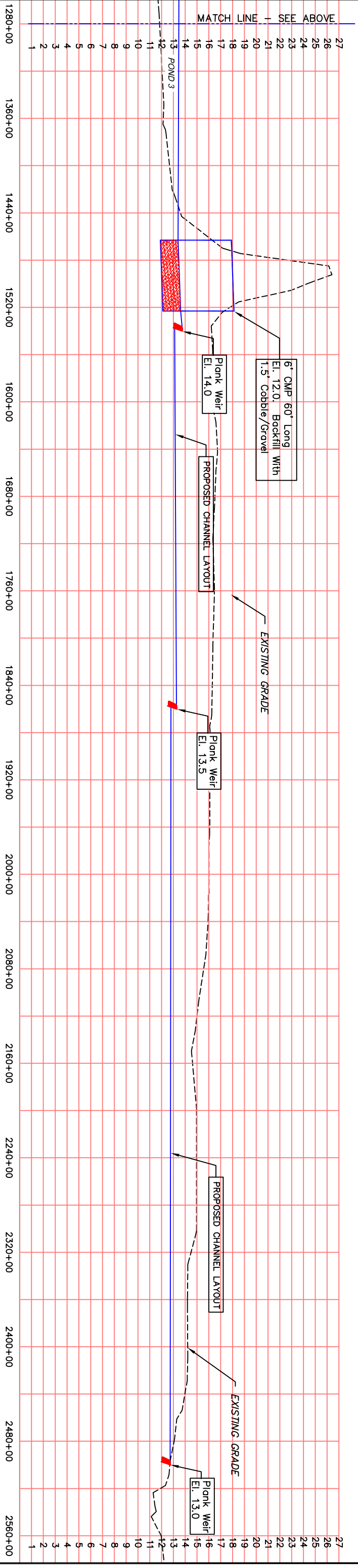
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|--|
| DESIGNED BY: Waverill Engineering        |
| DRAWN BY: Dimensions Drafting and Design |
| CHECKED BY: -                            |
| APPROVED BY: -                           |
| FILE: NOTED                              |
| DATE: 12/01/2008                         |

KRL2.5 Ledgett Groundwater Channel  
 Main Project Features on Aerial  
 Layout 2





P1 CHANNEL PROFILE  
2 | 3 SCALE: 1"=80' HORIZONTAL - 1"=8' VERTICAL



P1 CHANNEL PROFILE - CONTINUED  
2 | 3 SCALE: 1"=80' HORIZONTAL - 1"=8' VERTICAL

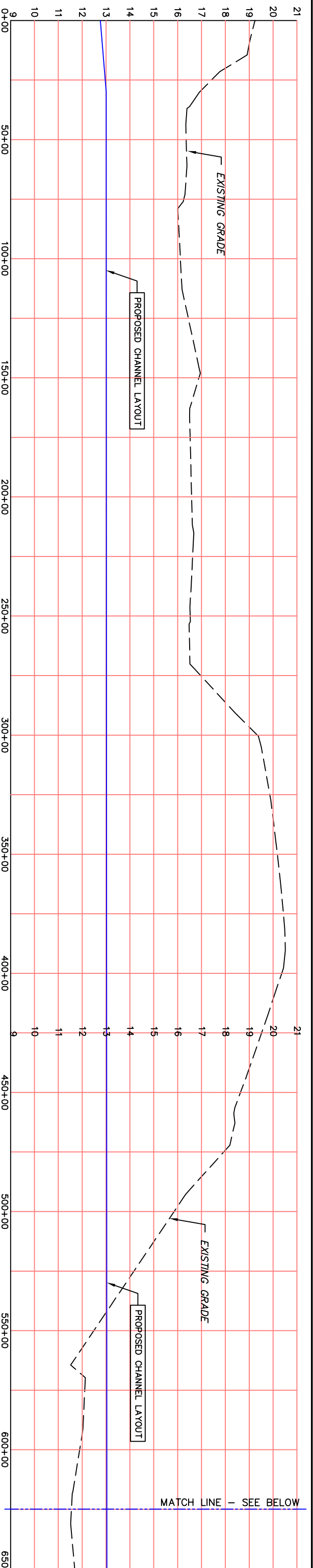
# Lower Kalama Off Channel Habitat Design

30% DESIGN  
NOT FOR  
CONSTRUCTION

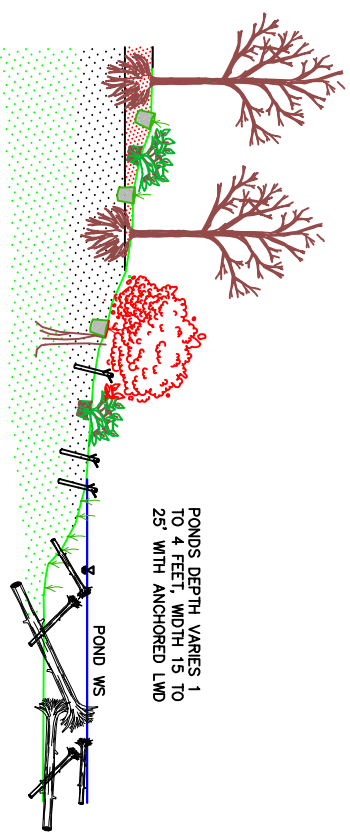
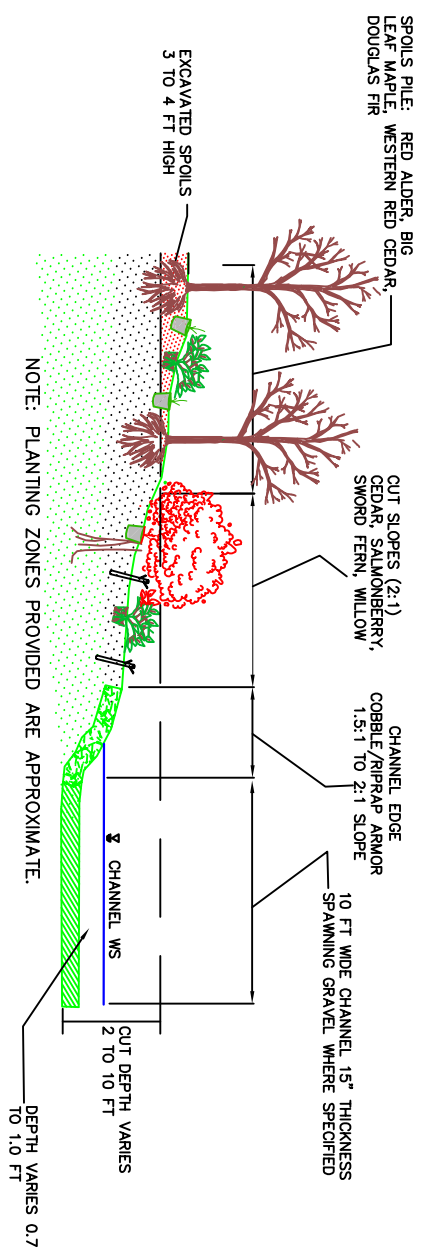
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DESIGNED BY: Waterfall Engineering  
DRAWN BY: Dimensions Drafting and Design  
CHECKED BY: -  
APPROVED BY: -  
FILE: NOTED  
DATE: 08/02/2008

KRL2.5 Ledgett Groundwater Channel  
CHANNEL PROFILE



**P2** CHANNEL PROFILE CONNECTION TO POND 1  
 SCALE: 1"=40' HORIZONTAL - 1"=4' VERTICAL



**TYPICAL POND SECTION**  
 NOT TO SCALE

# Lower Kalama Off Channel Habitat Design

30% DESIGN  
 NOT FOR  
 CONSTRUCTION

| REV | DATE | BY | APP'D | DESCRIPTION |
|-----|------|----|-------|-------------|
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DESIGNED BY: Waterfall Engineering  
 DRAWN BY: Dhrubanshu Dattaj and Dattaj  
 CHECKED BY: -  
 APPROVED BY: -  
 FILE: NOTED  
 DATE: 07/23/2008

KRL2.5 Ledgett Groundwater Channel

PROFILE AND TYPICAL  
 SECTIONS

## Ledgett Groundwater Channel - Layout 1

Date: February 22, 2009

Design Level: 30%

Project Description: Construct 800 ft of groundwater fed channel, 2 acre pond with LWD

| Description                     | Unit  | Qty  | Cost        | Amount   | Sub Total        | Comments                               |
|---------------------------------|-------|------|-------------|----------|------------------|--|
| <b>Channels and Ponds</b>       |       |      |             |          | <b>\$306,800</b> |  |
| Mobilization                    | L.S.  | 1    | \$40,000.00 | \$40,000 |                  | Typically 10% of construction costs    |
| Water Management                | L.S.  | 1    | \$4,000.00  | \$4,000  |                  | Pumps                                  |
| Utilities                       | L.S.  | 1    | \$2,000.00  | \$2,000  |                  | Assumes some relocation and replacment |
| Pond 3 and 4 Channel Excavation | C.Y.  | 7000 | \$12.00     | \$84,000 |                  |  |
| Disposal                        | C.Y.  | 5000 | \$6.00      | \$30,000 |                  | Spoil on site                          |
| Pond 1 Channel Excavation       | C.Y.  | 4000 | \$12.00     | \$48,000 |                  |  |
| Disposal                        | C.Y.  | 4000 | \$6.00      | \$24,000 |                  | Spoil on site                          |
| Large Woody Debris              | L.S.  | 1    | \$20,000.00 | \$20,000 |                  |  |
| Spawning Gravel                 | C.Y.  | 320  | \$65.00     | \$20,800 |                  |  |
| Plank Weirs                     | ea.   | 4    | \$2,000.00  | \$8,000  |                  |  |
| Toe Protection Rock             | C.Y.  | 400  | \$65.00     | \$26,000 |                  |  |
| <b>Culverts</b>                 |       |      |             |          | <b>\$119,675</b> |  |
| Excavation                      | C.Y.  | 1200 | \$12.00     | \$14,400 |                  |  |
| Disposal                        | C.Y.  | 1200 | \$6.00      | \$7,200  |                  |  |
| Dispose of Culverts             | ea.   | 3    | \$300.00    | \$900    |                  |  |
| Bedding                         | L.S.  | 50   | \$60.00     | \$3,000  |                  |  |
| 72" Culvert                     | ft    | 180  | \$105.00    | \$18,900 |                  |  |
| Install Culvert                 | ea.   | 3    | \$1,000.00  | \$3,000  |                  |  |
| Gravel Backfill                 | C.Y.  | 35   | \$65.00     | \$2,275  |                  |  |
| Riparian Plantings              | acre  | 3    | \$10,000.00 | \$30,000 |                  |  |
| <b>Restoration</b>              |       |      |             |          |                  |  |
| Restoration                     | acre  | 4    | \$10,000.00 | \$40,000 |                  |  |
| <b>Sub Total</b>                |       |      |             |          | <b>\$426,475</b> |  |
| Contingency                     | 15%   |      |             |          | \$63,971         |  |
| Sales Tax                       | 7.7%  |      |             |          | \$37,800         |  |
| <b>Construction Total</b>       |       |      |             |          | <b>\$528,200</b> |  |
| <b>Admin and Engineering</b>    | 20.0% |      |             |          | \$105,600        |  |
| <b>Project Total</b>            |       |      |             |          | <b>\$633,800</b> |  |

### Opinions of Probable Construction Cost

In providing opinions of probable construction cost, the Client understands that the Consultant (Waterfall Engineering, L.L.C.) has no control over the cost or availability of labor, equipment or materials, or over market condition or the Contractor's method of pricing, and the consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgment and experience. The Consultant makes no warranty, express or implied that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.



## Ledgett Groundwater Channel - Layout 2

Date: February 22, 2009

Design Level: 30%

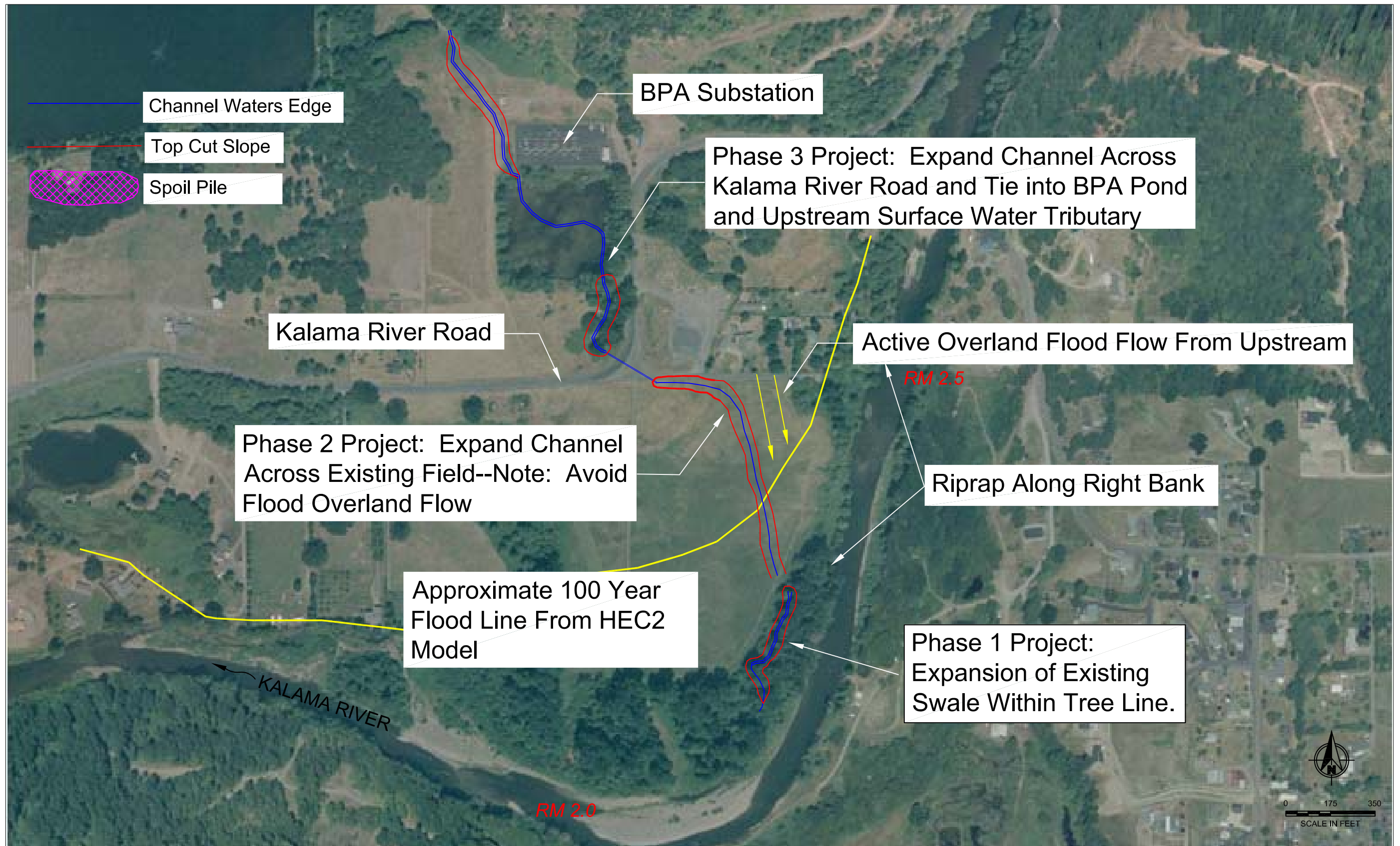
Project Description: Construct 800 ft of groundwater fed channel, 2 acre pond with LWD, expand Pond 4 and 1 acre new pond

| Description                  | Unit  | Qty   | Cost        | Amount    | Sub Total        | Comments                               |
|------------------------------|-------|-------|-------------|-----------|------------------|--|
| <b>Channels and Ponds</b>    |       |       |             |           | <b>\$402,800</b> |  |
| Mobilization                 | L.S.  | 1     | \$40,000.00 | \$40,000  |                  | Typically 10% of construction costs    |
| Water Management             | L.S.  | 1     | \$4,000.00  | \$4,000   |                  | Pumps                                  |
| Utilities                    | L.S.  | 1     | \$2,000.00  | \$2,000   |                  | Assumes some relocation and replacment |
| Pond and Channel Excavation  | C.Y.  | 15000 | \$12.00     | \$180,000 |                  |  |
| Disposal                     | C.Y.  | 5000  | \$6.00      | \$30,000  |                  | Spoil on site                          |
| Pond 1 Channel Excavation    | C.Y.  | 4000  | \$12.00     | \$48,000  |                  |  |
| Disposal                     | C.Y.  | 4000  | \$6.00      | \$24,000  |                  | Spoil on site                          |
| Large Woody Debris           | L.S.  | 1     | \$20,000.00 | \$20,000  |                  |  |
| Spawning Gravel              | C.Y.  | 320   | \$65.00     | \$20,800  |                  |  |
| Plank Weirs                  | ea.   | 4     | \$2,000.00  | \$8,000   |                  |  |
| Toe Protection Rock          | C.Y.  | 400   | \$65.00     | \$26,000  |                  |  |
| <b>Culverts</b>              |       |       |             |           | <b>\$119,675</b> |  |
| Excavation                   | C.Y.  | 1200  | \$12.00     | \$14,400  |                  |  |
| Disposal                     | C.Y.  | 1200  | \$6.00      | \$7,200   |                  |  |
| Dispose of Culverts          | ea.   | 3     | \$300.00    | \$900     |                  |  |
| Bedding                      | L.S.  | 50    | \$60.00     | \$3,000   |                  |  |
| 72" Culvert                  | ft    | 180   | \$105.00    | \$18,900  |                  |  |
| Install Culvert              | ea.   | 3     | \$1,000.00  | \$3,000   |                  |  |
| Gravel Backfill              | C.Y.  | 35    | \$65.00     | \$2,275   |                  |  |
| Riparian Plantings           | acre  | 3     | \$10,000.00 | \$30,000  |                  |  |
| <b>Restoration</b>           |       |       |             |           |                  |  |
| Restoration                  | acre  | 4     | \$10,000.00 | \$40,000  |                  |  |
| <b>Sub Total</b>             |       |       |             |           | <b>\$522,475</b> |  |
| Contingency                  | 15%   |       |             |           | \$78,371         |  |
| Sales Tax                    | 7.7%  |       |             |           | \$46,300         |  |
| <b>Construction Total</b>    |       |       |             |           | <b>\$647,100</b> |  |
| <b>Admin and Engineering</b> | 20.0% |       |             |           | \$129,400        |  |
| <b>Project Total</b>         |       |       |             |           | <b>\$776,500</b> |  |

### Opinions of Probable Construction Cost

In providing opinions of probable construction cost, the Client understands that the Consultant (Waterfall Engineering, L.L.C.) has no control over the cost or availability of labor, equipment or materials, or over market condition or the Contractor's method of pricing, and the consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgment and experience. The Consultant makes no warranty, express or implied that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

## *2.0 Port of Kalama Groundwater Channel*



Lower Kalama Off Channel  
Habitat Design

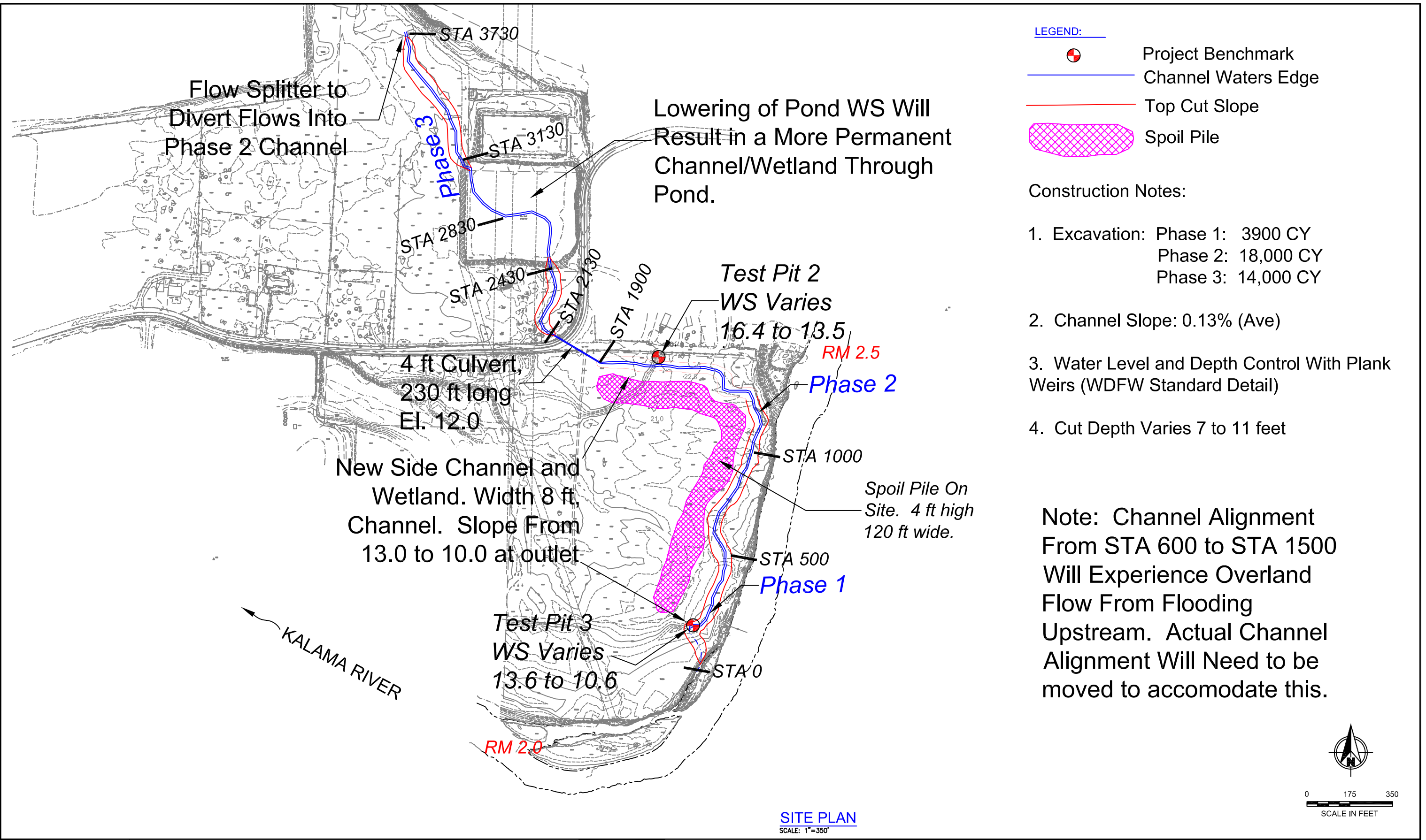
30% DESIGN  
NOT FOR  
CONSTRUCTION

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DESIGNED BY: Waterfall Engineering  
 DRAWN BY: Waterfall Engineering  
 CHECKED BY: -  
 APPROVED BY: -  
 FILE: NOTED  
 DATE: 12/23/08

KRR 2.2 - Port of Kalama Groundwater Channel

2006 Aerial Photo



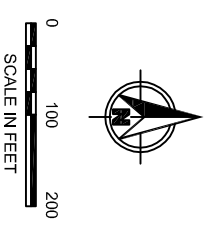
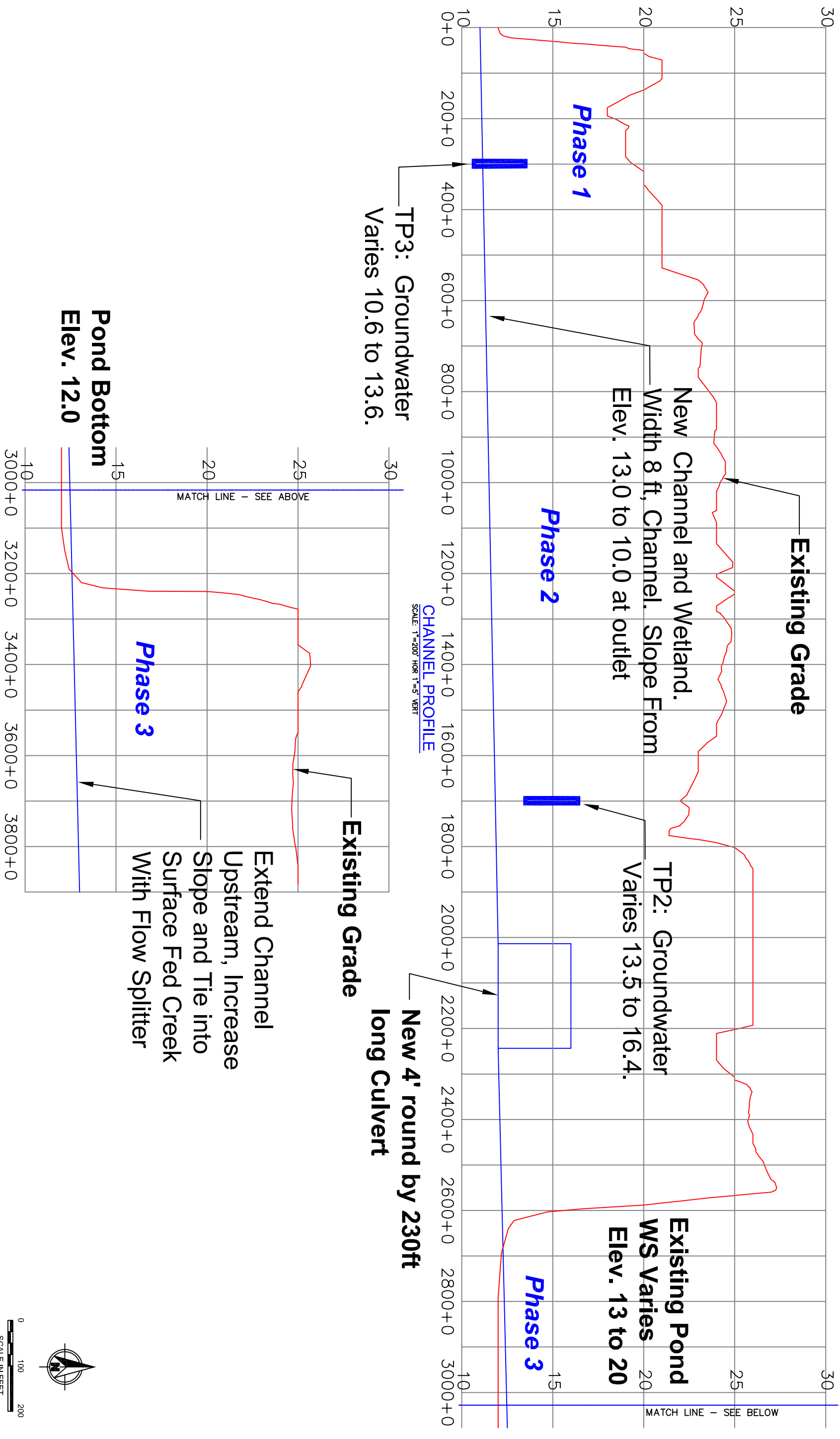
Lower Kalama Off Channel  
Habitat Design

30% DESIGN  
NOT FOR  
CONSTRUCTION

| REVISIONS |      |    |      |             |
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| DESIGNED BY: Waterfall Engineering |
| DRAWN BY: Waterfall Engineering    |
| CHECKED BY: -                      |
| APPROVED BY: -                     |
| FILE: NOTED                        |
| DATE: 12/23/08                     |

|   |
|---|
| <b>KRR 2.2 - Port of Kalama Groundwater Channel</b> |
| SITE PLAN   |



REVISIONS

SCALE: 1"=200' HOR 1"=5' VERT

CHANNEL PROFILE

**Lower Kalama Off Channel  
Habitat Design**

30% DESIGN  
NOT FOR  
CONSTRUCTION

| REV | DATE | BY | APPD | DESCRIPTION |
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DESIGNED BY: Wardell Engineering  
 DRAWN BY: Dimensions Drafting and Design  
 CHECKED BY: -  
 APPROVED BY: -  
 FILE: NOTED  
 DATE: 2/22/2019

**KRR 2.2 - Port of Kalama Groundwater Channel**

CHANNEL PROFILE

SHEET NO. 3 OF 3

**Port of Kalama Groundwater Channel**

Date: February 22, 2009  
 Stream: Kalama River  
 Design Level: Conceptual  
 Assumed Construction Time: 2011

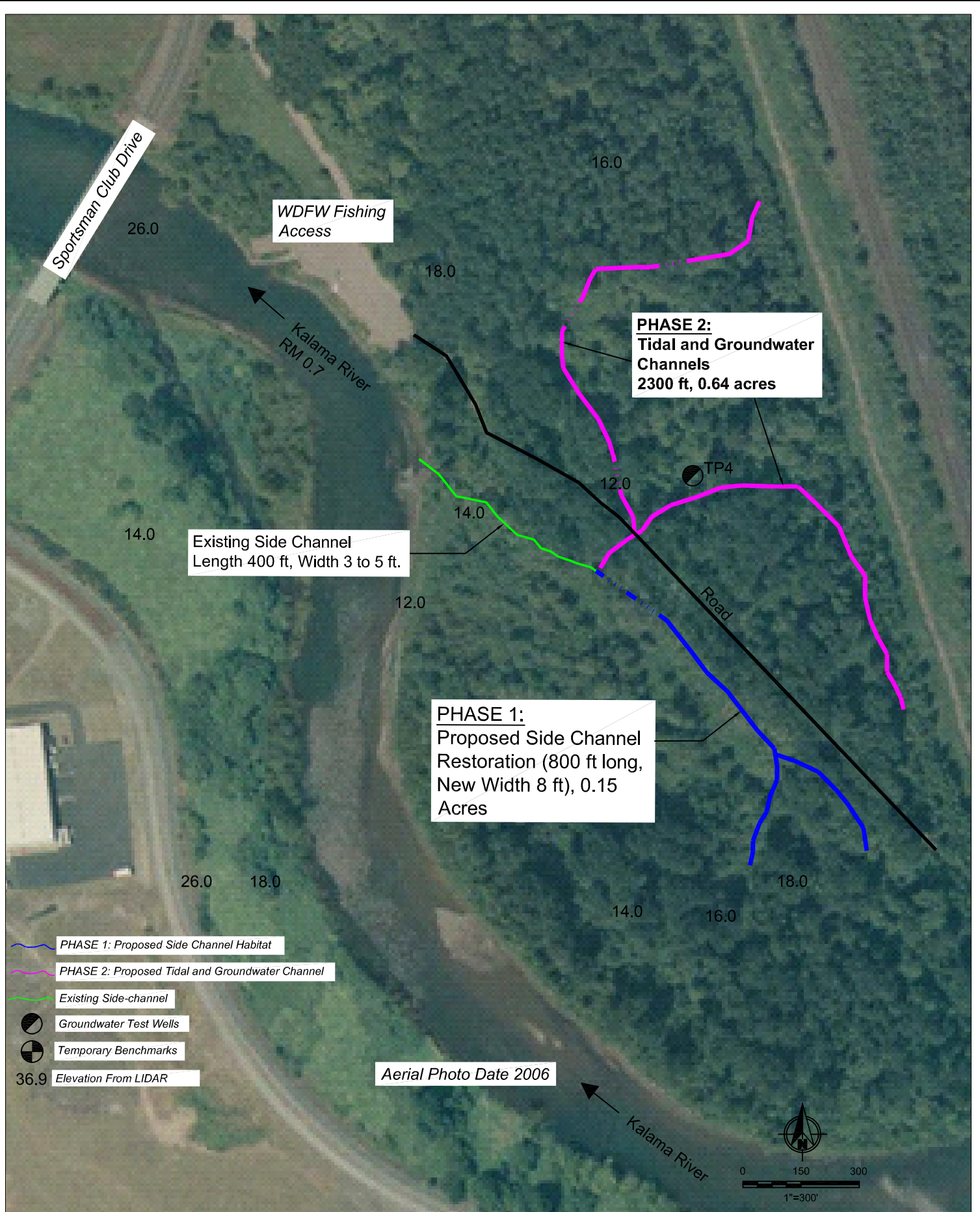
**Project Description: Construct 3700 feet of groundwater fed rearing channel and wetland habitat which will outlet into an existing active side channel on the right bank of the Kalama River.**

| Description   | Unit  | Qty   | Cost        | Amount    | Sub Total          | Comments                                 |
|---|-------|-------|-------------|-----------|--------------------|--|
| <b>Phase 1: 500 Feet of Channel</b>                                 |       |       |             |           | <b>\$104,392</b>   |  |
| Mobilization  | L.S.  | 1     | \$9,000.00  | \$9,000   |                    | Typically 10% of construction costs      |
| Water Management  | L.S.  | 1     | \$2,000.00  | \$2,000   |                    | Pumps                                    |
| Excavation  | C.Y.  | 4000  | \$12.00     | \$48,000  |                    |  |
| Disposal  | C.Y.  | 4000  | \$6.00      | \$24,000  |                    | Spoil on site                            |
| Utilities   | L.S.  | 1     | \$1,000.00  | \$1,000   |                    |  |
| Spawning Gravel   | C.Y.  | 50    | \$65.00     | \$3,250   |                    | Assumes 1/4 of Channel with added gravel |
| Large Woody Debris  | L.S.  | 1     | \$5,000.00  | \$5,000   |                    |  |
| Plant Removal/Control   | acre  | 0.5   | \$2,084.00  | \$1,042   |                    | Assumes 30 wide riprap strip each side   |
| Riparian Plant Installation   | sq ft | 22000 | \$0.05      | \$1,100   |                    | planted with conifers                    |
| Site maintenance  | L.S.  | 1.5   | \$3,333.00  | \$5,000   |                    |  |
| Restoration   | ea.   | 1     | \$5,000.00  | \$5,000   |                    |  |
| <b>Phase 2: 1400 Feet of Channel</b>                                |       |       |             |           | <b>\$363,918</b>   |  |
| Mobilization  | L.S.  | 1     | \$30,000.00 | \$30,000  |                    | Typically 10% of construction costs      |
| Water Management  | L.S.  | 1     | \$2,000.00  | \$2,000   |                    | Pumps                                    |
| Excavation  | C.Y.  | 18000 | \$12.00     | \$216,000 |                    |  |
| Disposal  | C.Y.  | 18000 | \$4.00      | \$72,000  |                    | Spoil on site                            |
| Utilities   | L.S.  | 1     | \$1,000.00  | \$1,000   |                    |  |
| Spawning Gravel   | C.Y.  | 200   | \$65.00     | \$13,000  |                    | Assumes 1/4 of Channel with added gravel |
| Large Woody Debris  | L.S.  | 1     | \$5,000.00  | \$5,000   |                    |  |
| Plank Weirs   | ea.   | 5     | \$1,000.00  | \$5,000   |                    | To provide depth and grade control       |
| Plant Removal/Control   | acre  | 2.6   | \$2,084.00  | \$5,418   |                    | Assumes 30 wide riprap strip each side   |
| Riparian Plant Installation   | sq ft | 90000 | \$0.05      | \$4,500   |                    | planted with conifers                    |
| Site maintenance  | L.S.  | 1.5   | \$3,333.00  | \$5,000   |                    |  |
| Restoration   | ea.   | 1     | \$5,000.00  | \$5,000   |                    |  |
| <b>Phase 2: 1600 Feet of Channel With Culvert and Flow Splitter</b> |       |       |             |           | <b>\$529,126</b>   |  |
| Mobilization  | L.S.  | 1     | \$7,000.00  | \$7,000   |                    | Typically 10% of construction costs      |
| Water Management  | L.S.  | 1     | \$1,500.00  | \$1,500   |                    | Pumps                                    |
| Excavation  | C.Y.  | 14000 | \$12.00     | \$168,000 |                    |  |
| Disposal  | C.Y.  | 14000 | \$4.00      | \$56,000  |                    | Spoil on site                            |
| Utilities   | L.S.  | 1     | \$10,000.00 | \$10,000  |                    | Assumes some relocation and replacement  |
| Streambed Gravel  | C.Y.  | 50    | \$65.00     | \$3,250   |                    |  |
| LWD   | L.S.  | 1     | \$5,000.00  | \$5,000   |                    |  |
| Gravel Placement  | C.Y.  | 200   | \$30.00     | \$6,000   |                    |  |
| Culvert   | ft    | 230   | \$1,100.00  | \$253,000 |                    |  |
| Plant Removal/Control   | acre  | 2.2   | \$2,084.00  | \$4,585   |                    | Assumes 30 wide riprap strip each side   |
| Riparian Plant Installation   | sq ft | 95832 | \$0.05      | \$4,792   |                    | planted with conifers                    |
| Site maintenance  | L.S.  | 1.5   | \$3,333.00  | \$5,000   |                    |  |
| Restoration   | ea.   | 1     | \$5,000.00  | \$5,000   |                    |  |
| <b>Sub Total</b>  |       |       |             |           | <b>\$997,435</b>   |  |
| Contingency   |       | 15%   |             |           | \$149,615          |  |
| Sales Tax   |       | 7.7%  |             |           | \$88,300           |  |
| <b>Construction Total</b>   |       |       |             |           | <b>\$1,235,400</b> |  |
| <b>Admin and Engineering</b>  |       | 20.0% |             |           | \$247,100          |  |
| <b>Project Total</b>  |       |       |             |           | <b>\$1,482,500</b> |  |

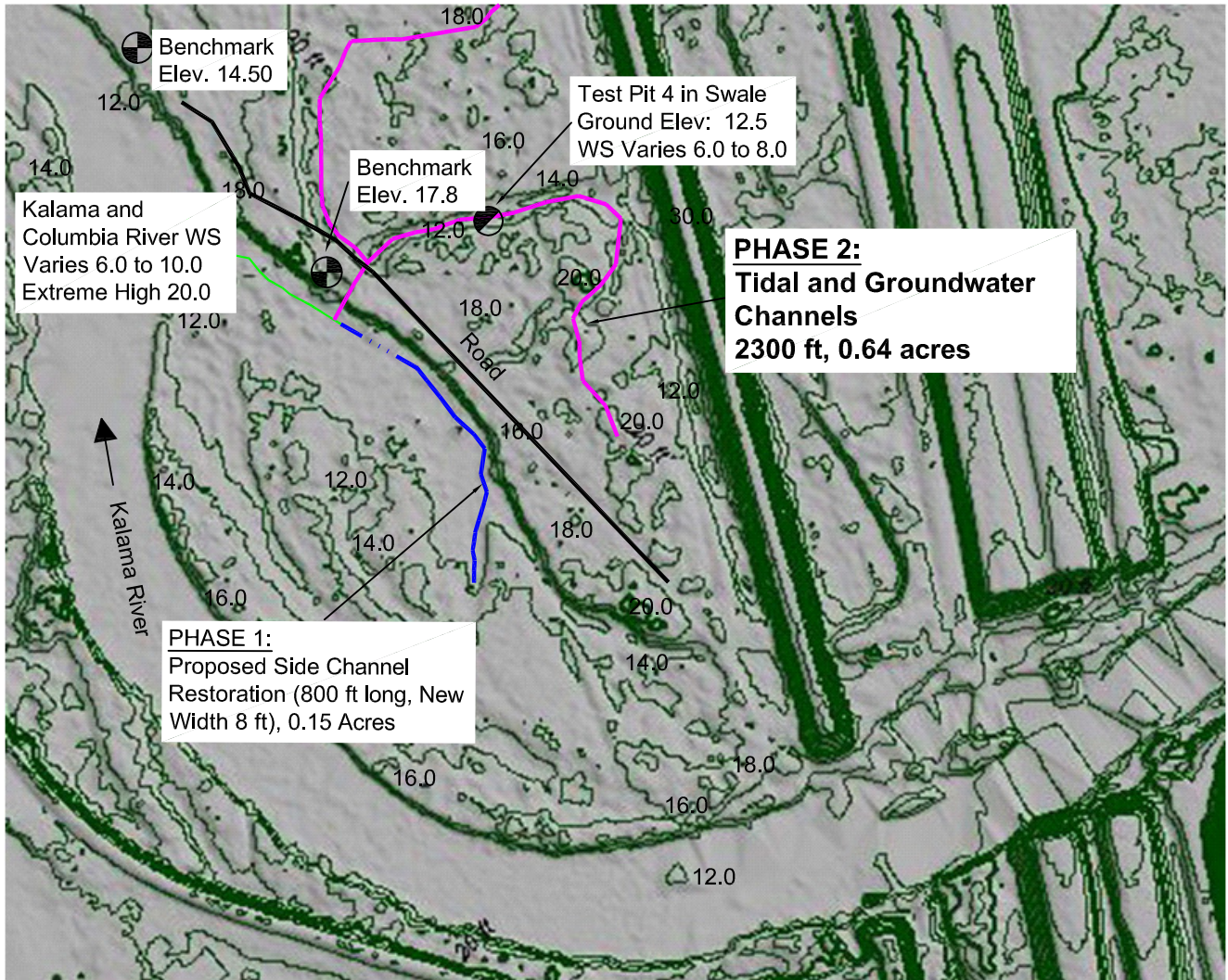
**Opinions of Probable Construction Cost**






In providing opinions of probable construction cost, the Client understands that the Consultant (Waterfall Engineering, L.L.C.) has no control over the cost or availability of labor, equipment or materials, or over market condition or the Contractor's method of pricing, and the consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgment and experience. The Consultant makes no warranty, express or implied that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

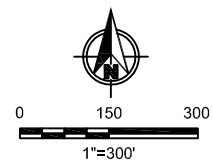
### *3.0 WDFW Tidal and Groundwater Channel*

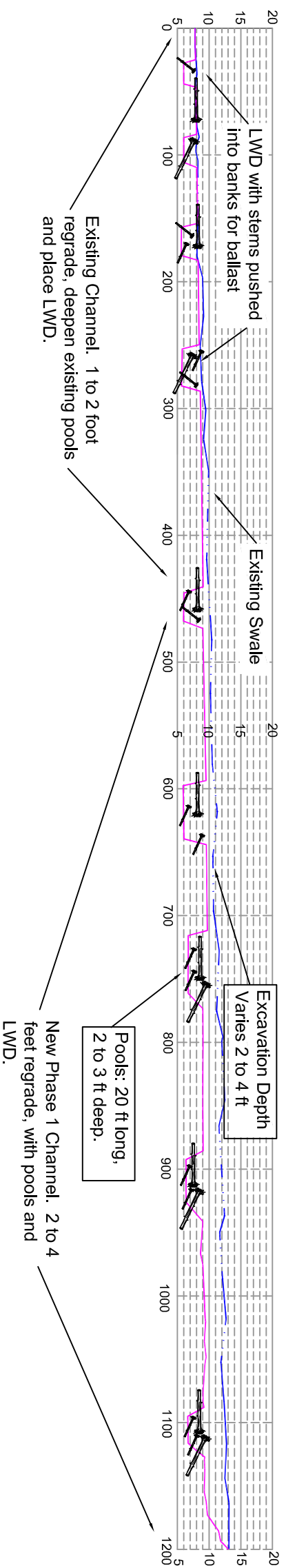






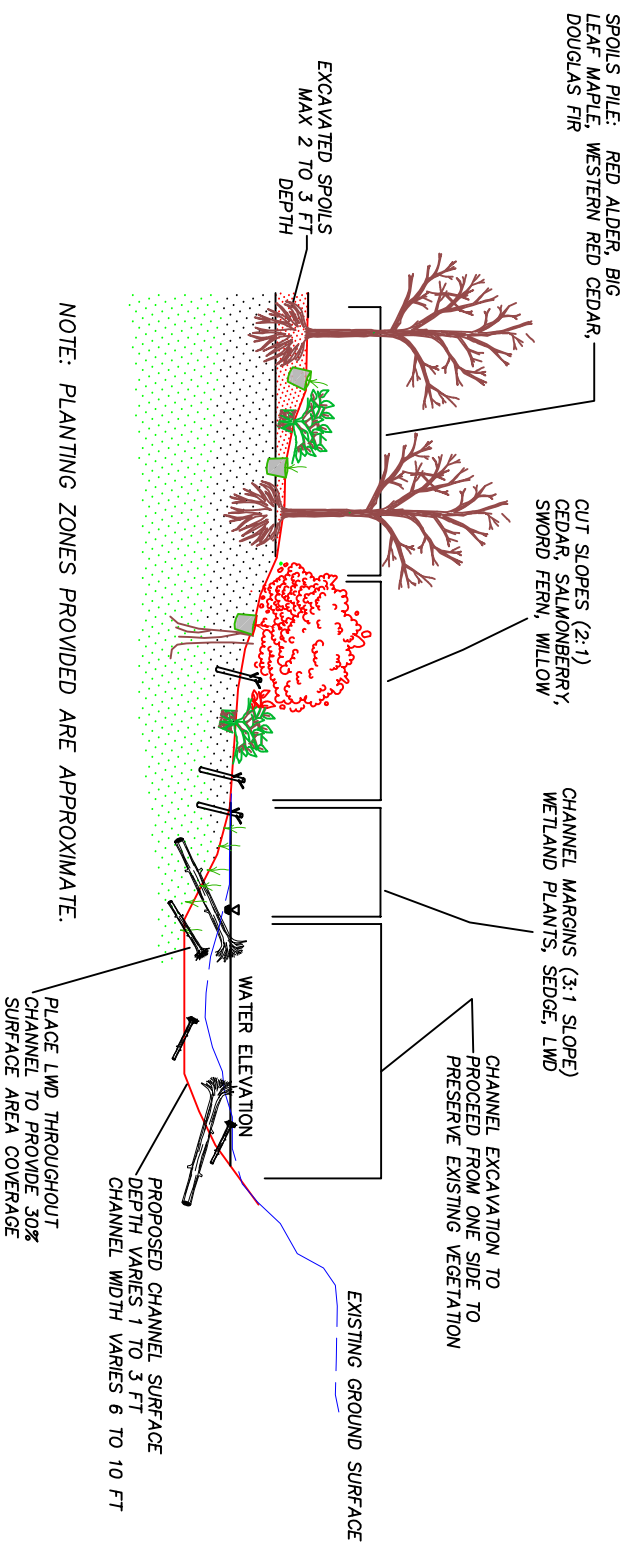
-  PHASE 1: Proposed Side Channel Habitat
  -  PHASE 2: Proposed Tidal and Groundwater Channel
  -  Existing Side-channel
  -  Groundwater Test Wells
  -  Temporary Benchmarks
- 36.9 Elevation From LIDAR





**Proposed Channel Profile: PHASE 1**

**Vertical Scale 1" = 20 ft**  
**Horizontal Scale 1" = 100 ft**



**Typical Channel Section:  
Not to Scale**

REVISIONS

| REV | DATE | BY | APP'D | DESCRIPTION |
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DESIGNED BY: **Waterfall Engineering**  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 FILE: **12/23/08**  
 DATE: **12/23/08**

**Profile and Section**

**WDFW Tidal and Groundwater Channel Cost Estimate**

Date: Jan-09  
 Design Level: 10%  
 By: Waterfall Engineering

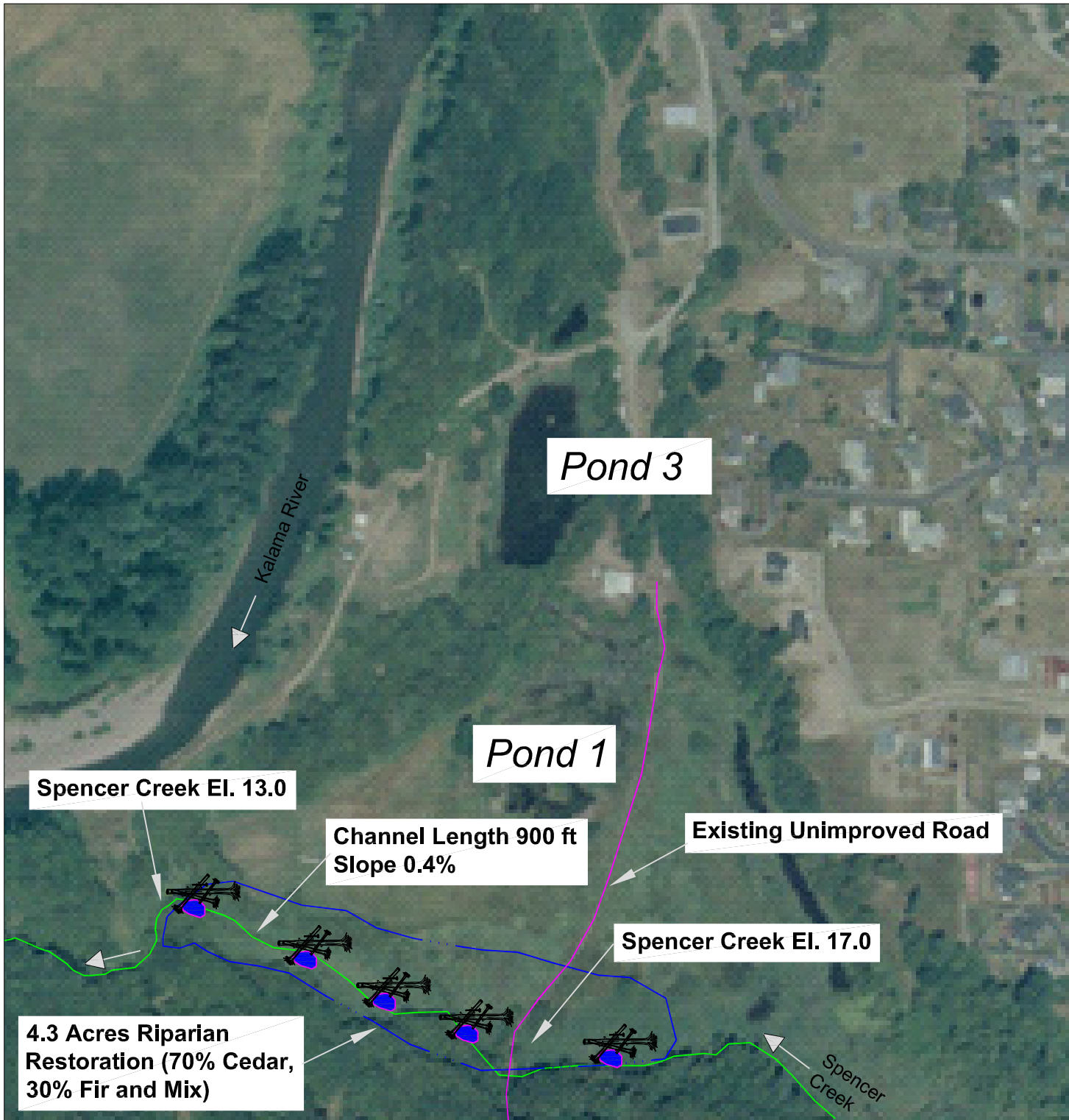
Project Description: 3100 ft of tidal and groundwater fed channels with ponds and LWD


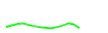
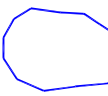
| Description                  | Unit  | Qty     | Cost       | Amount    | Sub Total        | Comments                            |
|------------------------------|-------|---------|------------|-----------|------------------|-------------------------------------|
| <b>Phase 1</b>               |       |         |            |           | <b>\$102,152</b> |                                     |
| Mobilization                 | L.S.  | 1       | \$5,000.00 | \$5,000   |                  | Typically 10% of construction costs |
| Water Management             | L.S.  | 1       | \$1,000.00 | \$1,000   |                  | Pumps                               |
| Pond and Channel Excavation  | C.Y.  | 3500    | \$12.00    | \$42,000  |                  |                                     |
| Disposal                     | C.Y.  | 3500    | \$6.00     | \$21,000  |                  | Spoil on site                       |
| Large Woody Debris           | L.S.  | 1       | \$5,000.00 | \$5,000   |                  |                                     |
| Spawning Gravel              | C.Y.  | 20      | \$65.00    | \$1,300   |                  |                                     |
| Plank Weirs                  | ea.   | 4       | \$2,000.00 | \$8,000   |                  |                                     |
| Toe Protection Rock          | C.Y.  | 200     | \$65.00    | \$13,000  |                  |                                     |
| Plant Removal/Control        | acre  | 0.2     | \$2,084.00 | \$417     |                  |                                     |
| Riparian Plant Installation  | sq ft | 8712    | \$0.05     | \$436     |                  |                                     |
| Site maintenance             | L.S.  | 1       | \$5,000.00 | \$5,000   |                  |                                     |
| <b>Phase 2</b>               |       |         |            |           | <b>\$201,928</b> |                                     |
| Mobilization                 | L.S.  | 1       | \$5,000.00 | \$5,000   |                  | Typically 10% of construction costs |
| Water Management             | L.S.  | 1       | \$2,000.00 | \$2,000   |                  | Pumps                               |
| Pond and Channel Excavation  | C.Y.  | 9000    | \$12.00    | \$108,000 |                  |                                     |
| Disposal                     | C.Y.  | 9000    | \$4.00     | \$36,000  |                  | Spoil on site                       |
| Large Woody Debris           | L.S.  | 1       | \$8,000.00 | \$8,000   |                  |                                     |
| Spawning Gravel              | C.Y.  | 80      | \$65.00    | \$5,200   |                  |                                     |
| Plank Weirs                  | ea.   | 2       | \$2,000.00 | \$4,000   |                  |                                     |
| Toe Protection Rock          | C.Y.  | 400     | \$65.00    | \$26,000  |                  |                                     |
| Plant Removal/Control        | acre  | 0.64    | \$2,084.00 | \$1,334   |                  |                                     |
| Riparian Plant Installation  | sq ft | 27878.4 | \$0.05     | \$1,394   |                  |                                     |
| Site maintenance             | L.S.  | 1       | \$5,000.00 | \$5,000   |                  |                                     |
| <b>Sub Total</b>             |       |         |            |           | <b>\$296,352</b> |                                     |
| Contingency                  | 10%   |         |            |           | \$29,635         |                                     |
| Sales Tax                    | 7.7%  |         |            |           | \$25,100         |                                     |
| <b>Construction Total</b>    |       |         |            |           | <b>\$351,100</b> |                                     |
| <b>Admin and Engineering</b> | 20.0% |         |            |           | \$70,200         |                                     |
| <b>Project Total</b>         |       |         |            |           | <b>\$421,300</b> |                                     |

**Opinions of Probable Construction Cost**

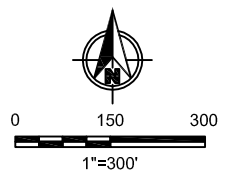
In providing opinions of probable construction cost, the Client understands that the Consultant (Waterfall Engineering, L.L.C.) has no control over the cost or availability of labor, equipment or materials, or over market condition or the Contractor's method of pricing, and the consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgment and experience. The Consultant makes no warranty, express or implied that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

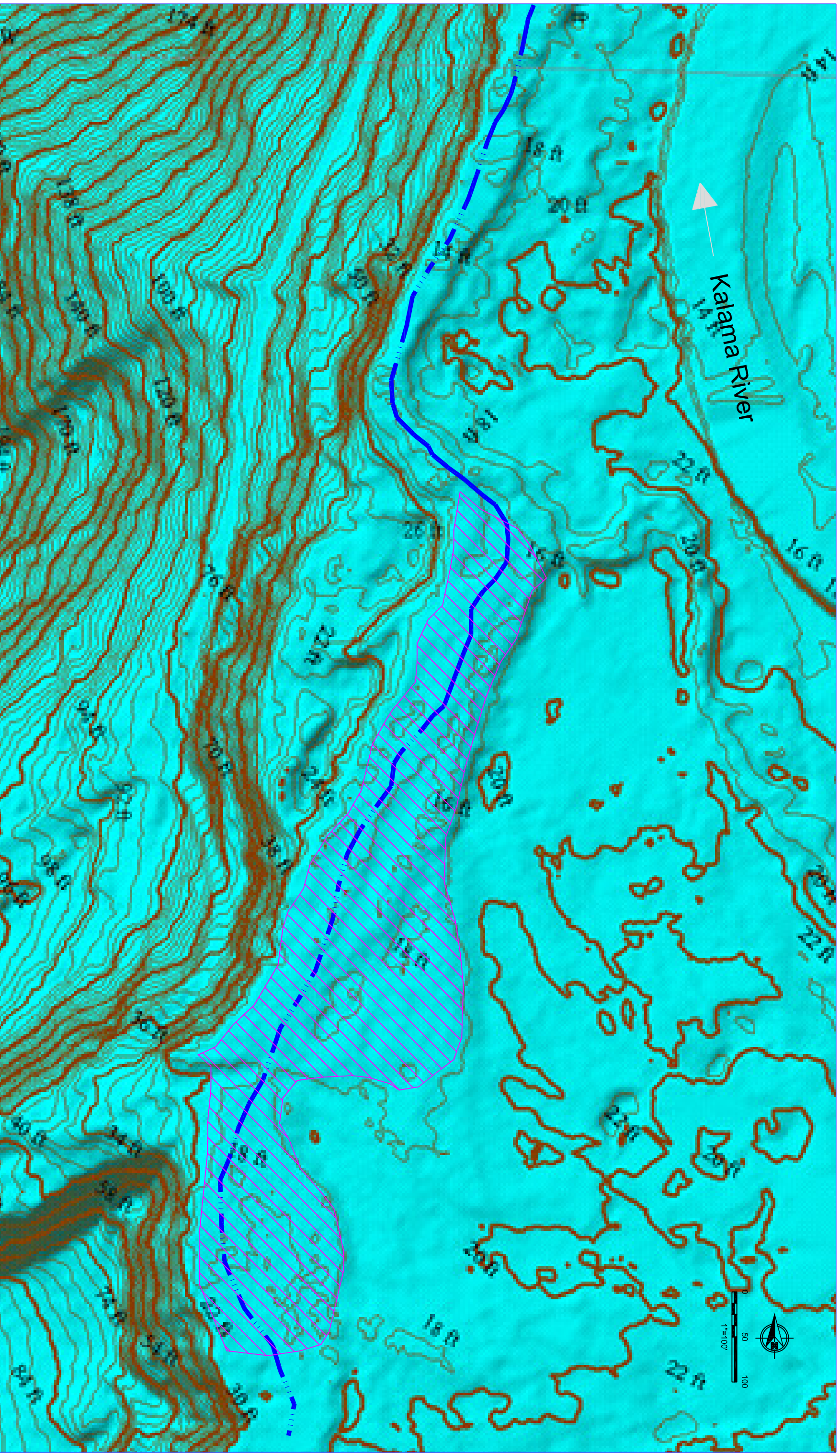
#### ***4.0 Spencer Creek Riparian and LWD***



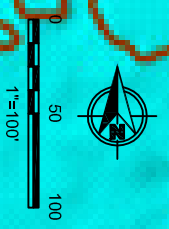
-  Small Rearing Pools and LWD
-  Spencer Creek
-  Proposed Riparian Restoration

Aerial Photo Date 2006





Kalama River



**SC0.5 - Spencer Creek Riparian  
Restoration and LWD**

REVISIONS

| REV | DATE | BY | APP'D | DESCRIPTION |
|-----|------|----|-------|-------------|
|     |      |    |       |             |
|     |      |    |       |             |
|     |      |    |       |             |
|     |      |    |       |             |
|     |      |    |       |             |

DESIGNED BY: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 FILE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

**Lidar - PlanView**

**Spencer Creek Riparian and LWD**

Date: December 18, 2008

Design Level: 10%

Project Description: A 4.3 acre riparian restoration and LWD placement project.

| Description                  | Unit  | Qty    | Cost       | Amount   | Sub Total       | Comments                            |
|------------------------------|-------|--------|------------|----------|-----------------|-------------------------------------|
| <b>Channels and Ponds</b>    |       |        |            |          | <b>\$65,355</b> |                                     |
| Mobilization                 | L.S.  | 1      | \$5,000.00 | \$5,000  |                 | Typically 10% of construction costs |
| Water Management             | L.S.  | 1      | \$500.00   | \$500    |                 | Pumps                               |
| Pond Excavation              | C.Y.  | 150    | \$15.00    | \$2,250  |                 |                                     |
| Disposal                     | C.Y.  | 150    | \$6.00     | \$900    |                 | Spoil on site                       |
| Large Woody Debris           | ea.   | 5      | \$3,000.00 | \$15,000 |                 |                                     |
| Spawning Gravel              | C.Y.  | 40     | \$65.00    | \$2,600  |                 |                                     |
| Plank Weirs                  | ea.   | 5      | \$1,500.00 | \$7,500  |                 |                                     |
| Plant Removal/Control        | acre  | 4.6    | \$2,084.00 | \$9,586  |                 |                                     |
| Riparian Plant Installation  | sq ft | 200376 | \$0.05     | \$10,019 |                 |                                     |
| Site maintenance             | L.S.  | 1      | \$7,000.00 | \$7,000  |                 |                                     |
| Restoration                  | ea.   | 1      | \$5,000.00 | \$5,000  |                 |                                     |
| <b>Sub Total</b>             |       |        |            |          | <b>\$65,355</b> |                                     |
| Contingency                  | 10%   |        |            |          | \$6,536         |                                     |
| Sales Tax                    | 7.7%  |        |            |          | \$5,500         |                                     |
| <b>Construction Total</b>    |       |        |            |          | <b>\$77,400</b> |                                     |
| <b>Admin and Engineering</b> | 20.0% |        |            |          | \$15,500        |                                     |
| <b>Project Total</b>         |       |        |            |          | <b>\$92,900</b> |                                     |

**Opinions of Probable Construction Cost**

In providing opinions of probable construction cost, the Client understands that the Consultant (Waterfall Engineering, L.L.C.) has no control over the cost or availability of labor, equipment or materials, or over market condition or the Contractor's method of pricing, and the consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgment and experience. The Consultant makes no warranty, express or implied that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.