

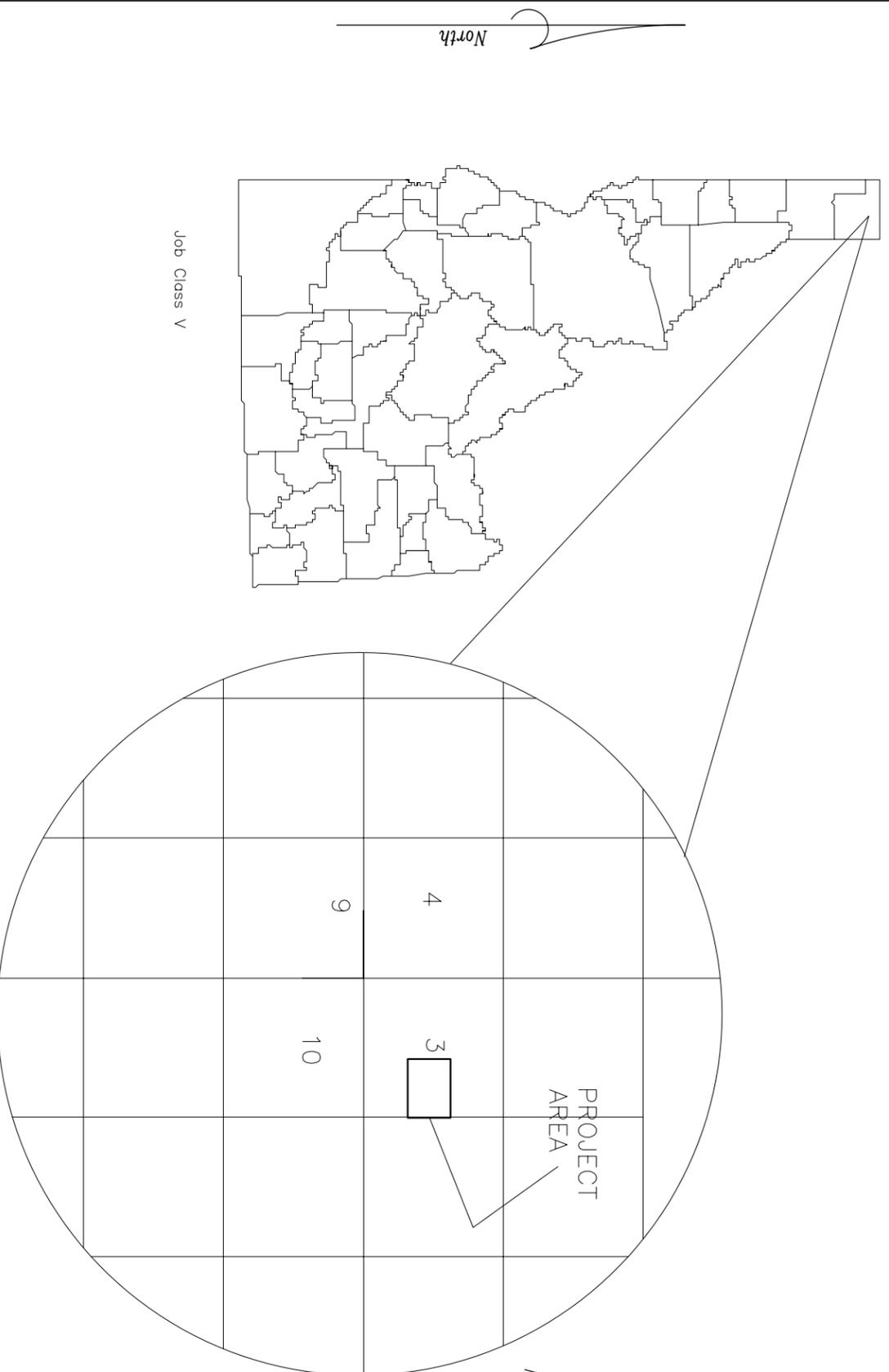
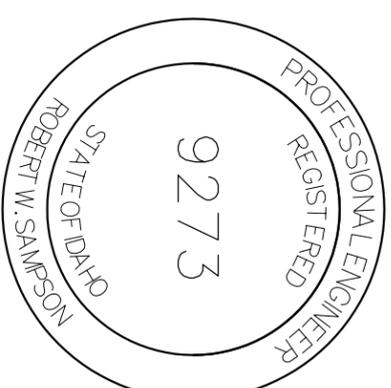
# Hell Roaring Fish Passage Project

By  
Bonner Soil Conservation District

In partnership with:

NRCS, AVISTA Corporation, USFWS, and  
Idaho Office of Species of Concern.

Project Location: SEC. 3 TWS. 59 NO.  
RNG. 2 EA.



## INDEX OF DRAWINGS

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I agree to construct this project or to have it constructed in accordance with these plans. Construction shall follow the inspection plan (if developed) and shall be in accordance with the design drawings, construction specifications, and all pertinent federal, state, or local requirements. Construction specifications included in these plans are attached in a specification packet.

I will ensure that required permits or easements are obtained prior to construction. I will ensure all underground and overhead public utilities within the work area(s) are located and protected. I will contact Dig Line at 1-800-342-1585 for utility locations.

During installation, particular attention shall be paid to the presence of cultural resources. If cultural resources are encountered, all work shall cease and an NRCS representative shall be contacted.

If any changes to these approved plans and specifications are proposed, I agree to obtain approval from an NRCS representative prior to construction/installation.

Cooperator \_\_\_\_\_

Date \_\_\_\_\_

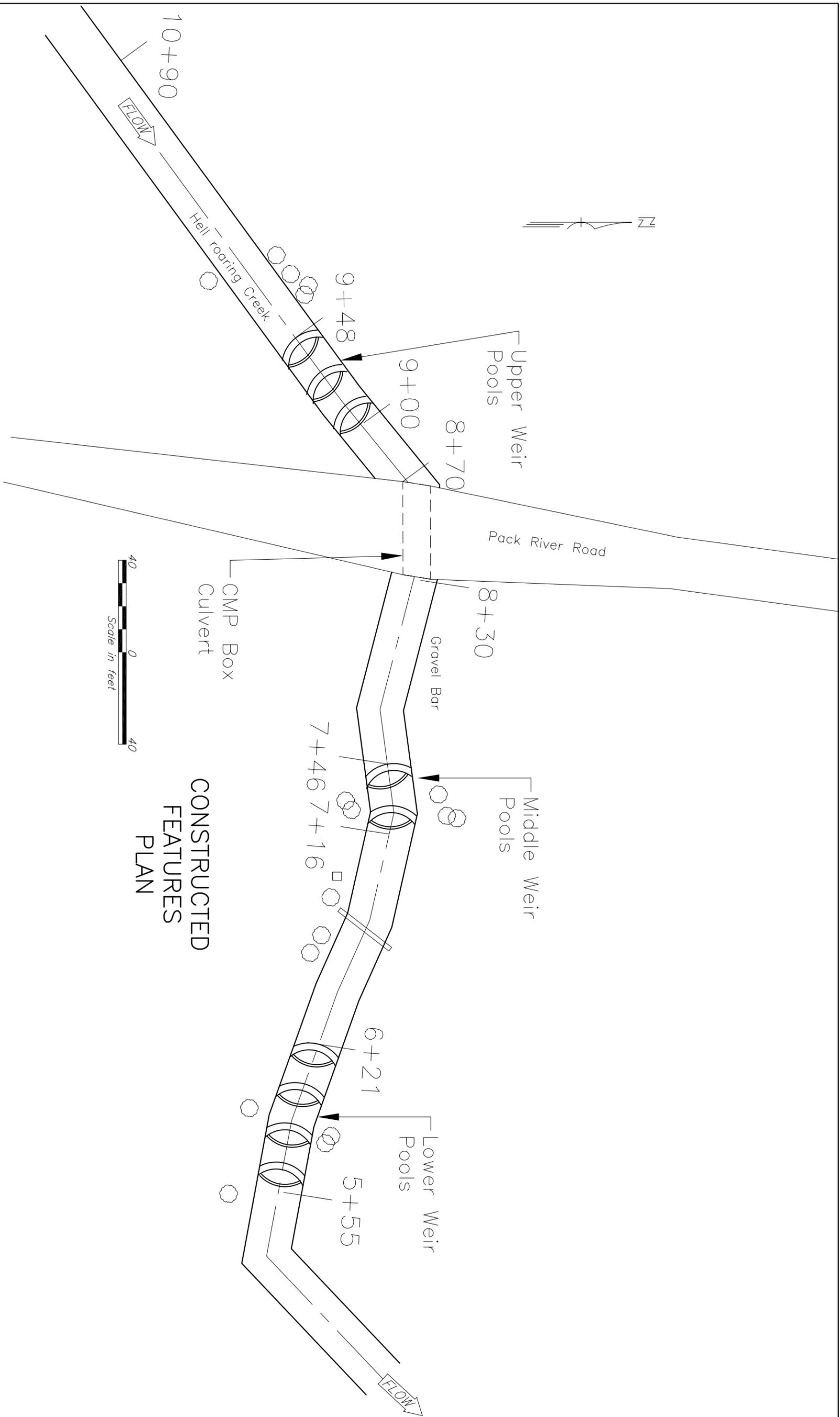
NRCS Representative \_\_\_\_\_

Date \_\_\_\_\_

Designed	R.Sampson	6/06	Date
Drawn	Trace	8/2006	
Checked	_____	_____	
Approved	_____	_____	

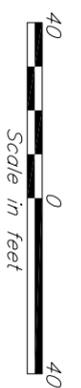
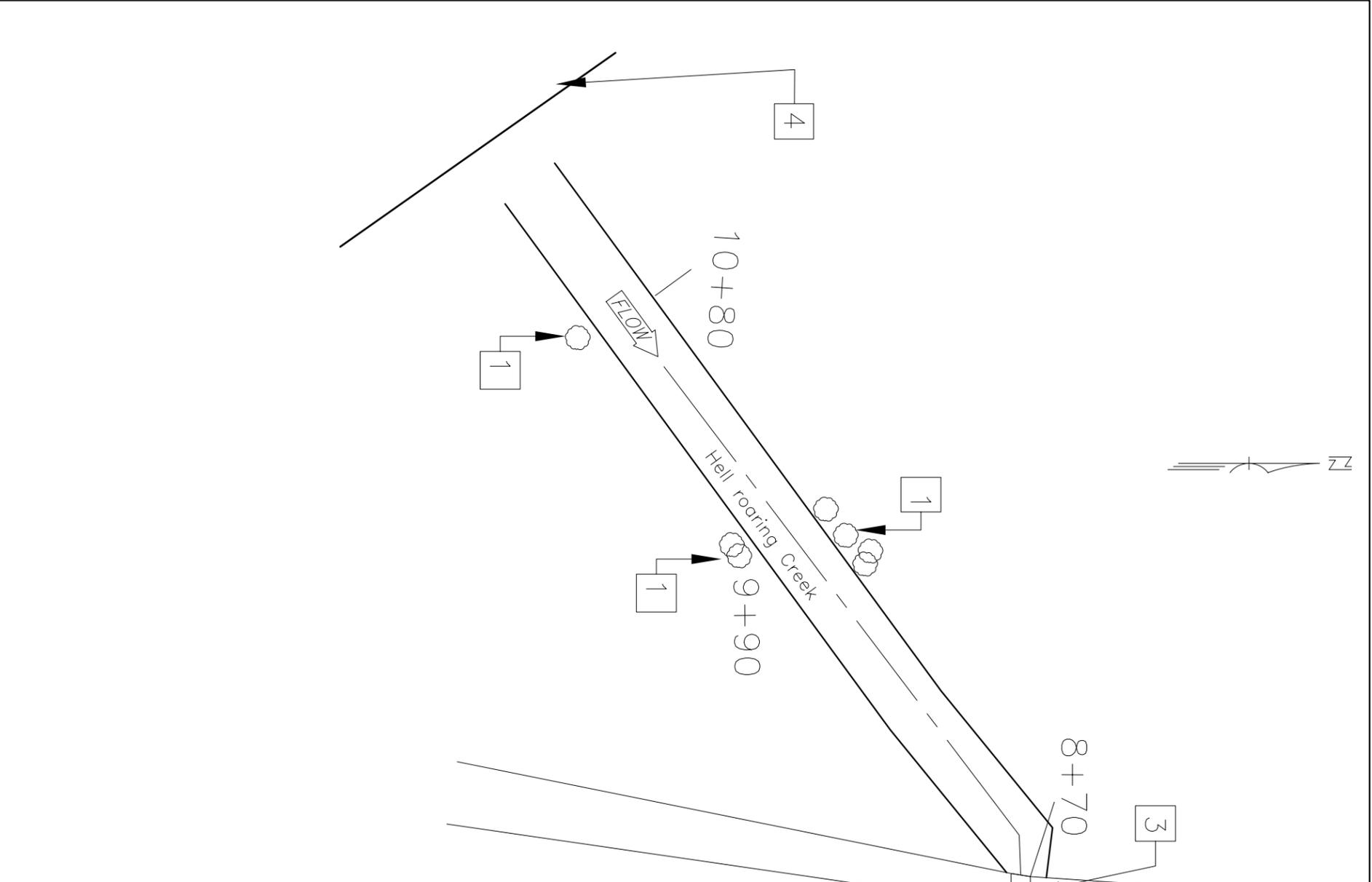
Hell Roaring Creek  
Fish Passage Project  
Bonner SCD Bonner Co. Id.





**CONSTRUCTED  
FEATURES  
PLAN**

 <b>NRC</b> <small>Natural Resources Conservation Service United States Department of Agriculture</small>	<p>Hell Roaring Creek          Constructed features Plan Details          Bonner SWCD      Bonner Co. Idaho</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-bottom: 1px solid black; padding: 2px;">Designed</td> <td style="border-bottom: 1px solid black; padding: 2px;">R.Sampson</td> <td style="border-bottom: 1px solid black; padding: 2px; text-align: right;">Date</td> </tr> <tr> <td style="border-bottom: 1px solid black; padding: 2px;">Drawn</td> <td style="border-bottom: 1px solid black; padding: 2px;">Trace</td> <td style="border-bottom: 1px solid black; padding: 2px; text-align: right;">8/2006</td> </tr> <tr> <td style="border-bottom: 1px solid black; padding: 2px;">Checked</td> <td style="border-bottom: 1px solid black; padding: 2px;"></td> <td style="border-bottom: 1px solid black; padding: 2px; text-align: right;"></td> </tr> <tr> <td style="border-bottom: 1px solid black; padding: 2px;">Approved</td> <td style="border-bottom: 1px solid black; padding: 2px;"></td> <td style="border-bottom: 1px solid black; padding: 2px; text-align: right;"></td> </tr> </table>	Designed	R.Sampson	Date	Drawn	Trace	8/2006	Checked			Approved		
Designed	R.Sampson	Date												
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Approved														
File Name Drawing Name														
Sheet 2 of 14														



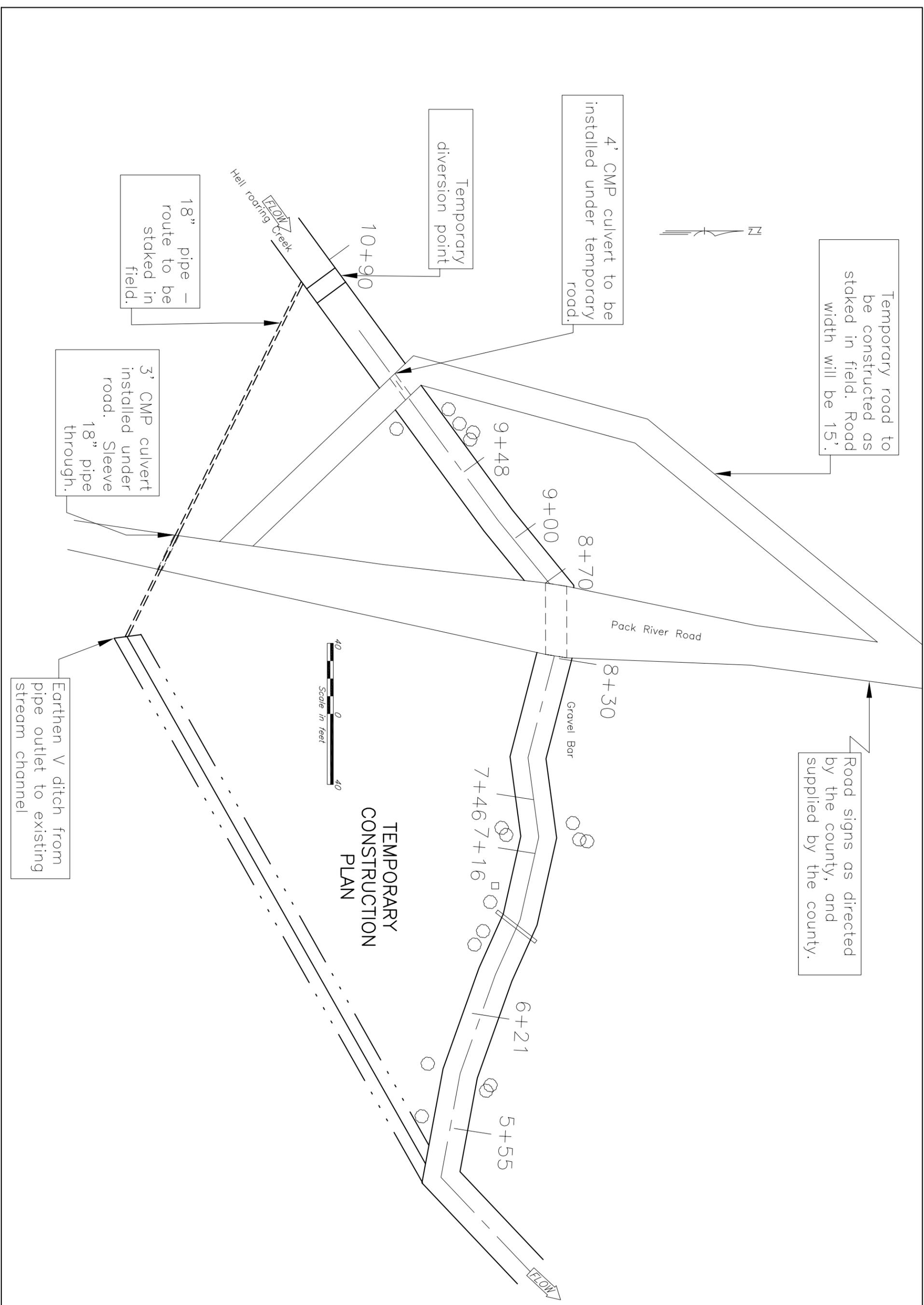
**CONSTRUCTION  
FEATURES  
PLAN**

Legend	
Number	Construction Requirements:
1	Trees to keep intact during construction
2	Trees to remove and use if possible
3	Culvert and head wall to be removed and disposed.
4	Utilities to be located and avoided during construction.
5	Concrete slabs in channel to be removed and disposed.
6	Remove and dispose of concrete weir and pipes.

Designed	<u>R.Sampson</u>	<u>6/06</u>
Drawn	<u>Trace</u>	<u>8/2006</u>
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Hell Roaring Creek  
Construction Features Plan Details  
Bonner SWCD Bonner Co. Idaho



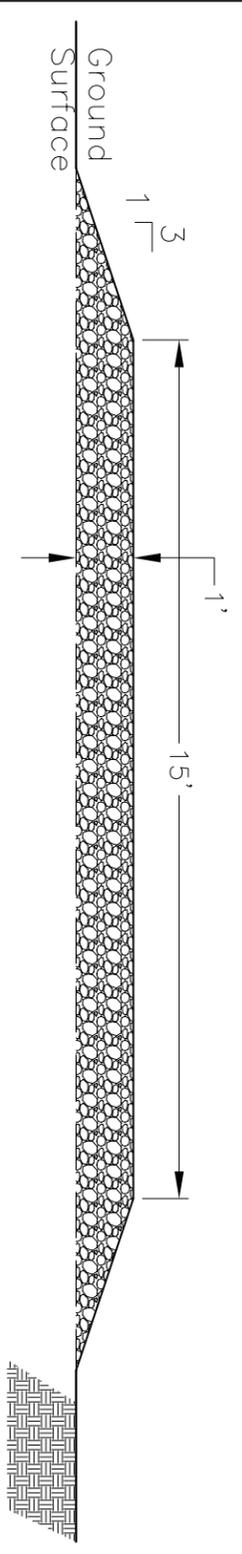


TEMPORARY  
CONSTRUCTION  
PLAN

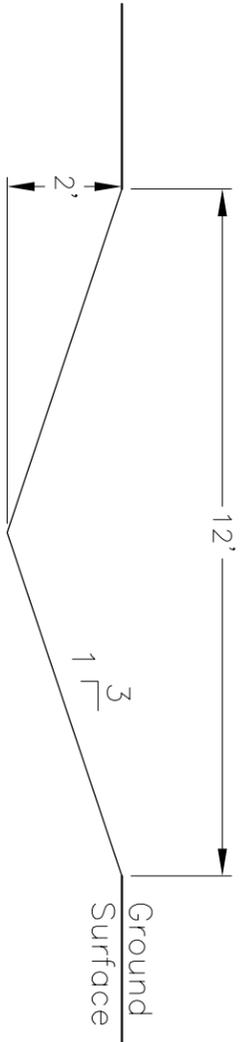
40  
0  
40  
Scale in feet

 <p>Natural Resources Conservation Service United States Department of Agriculture</p>	<p>Hell Roaring Creek Temporary Construction Plan Details Bonner SWCD Bonner Co. Idaho</p>		<p>Designed <u>R.Sampson</u> <u>6/06</u> <small>Date</small></p>
	<p>File Name</p>	<p>Drawn <u>Trace</u> <u>8/2006</u></p>	<p>Checked _____</p>
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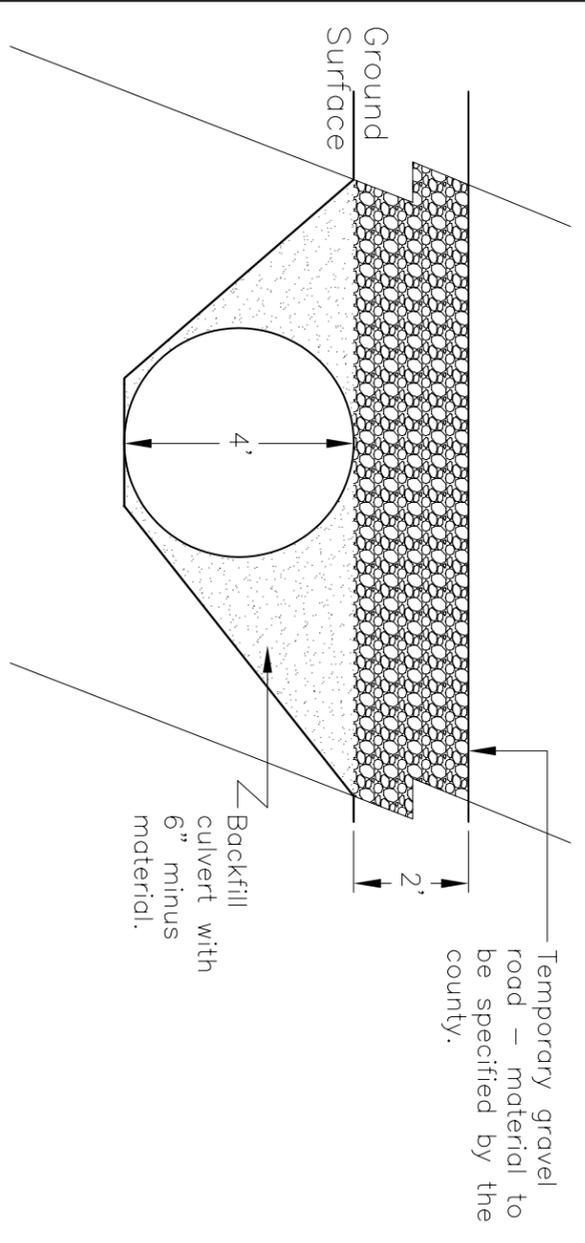
Temporary road details



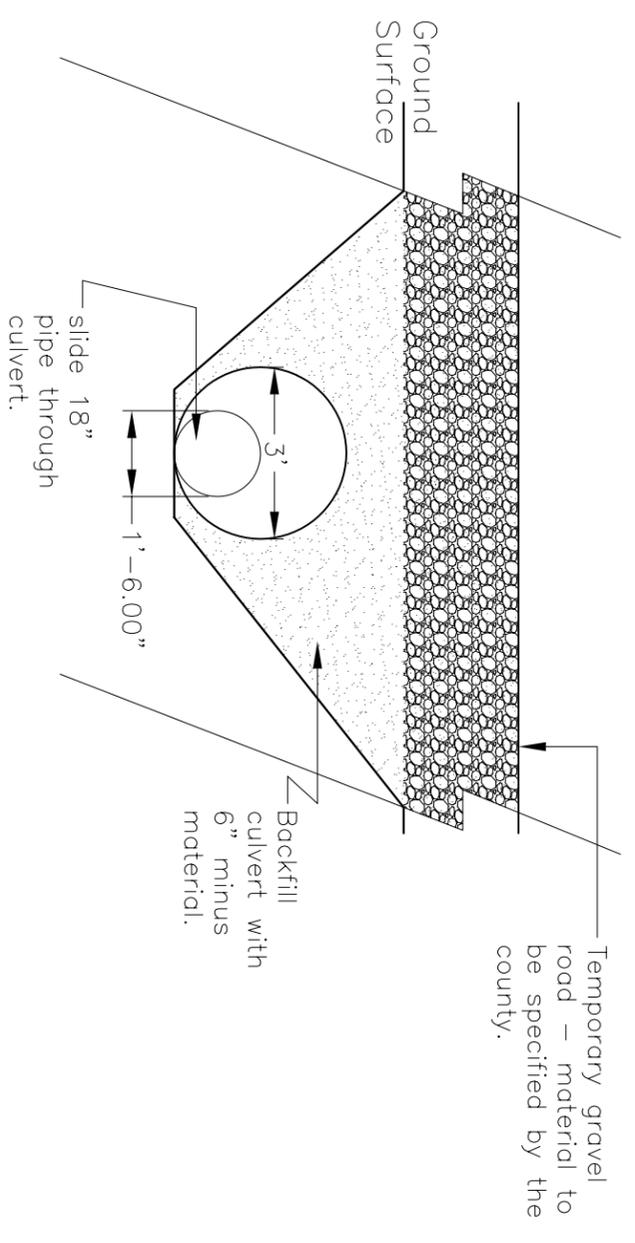
Temporary ditch to Hell Roaring Creek



Temporary culvert in Hell Roaring Creek.



Temporary culvert under Pack River Road



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Hell Roaring Creek  
 Temporary Construction Details  
 Bonner SWCD Bonner Co. Idaho

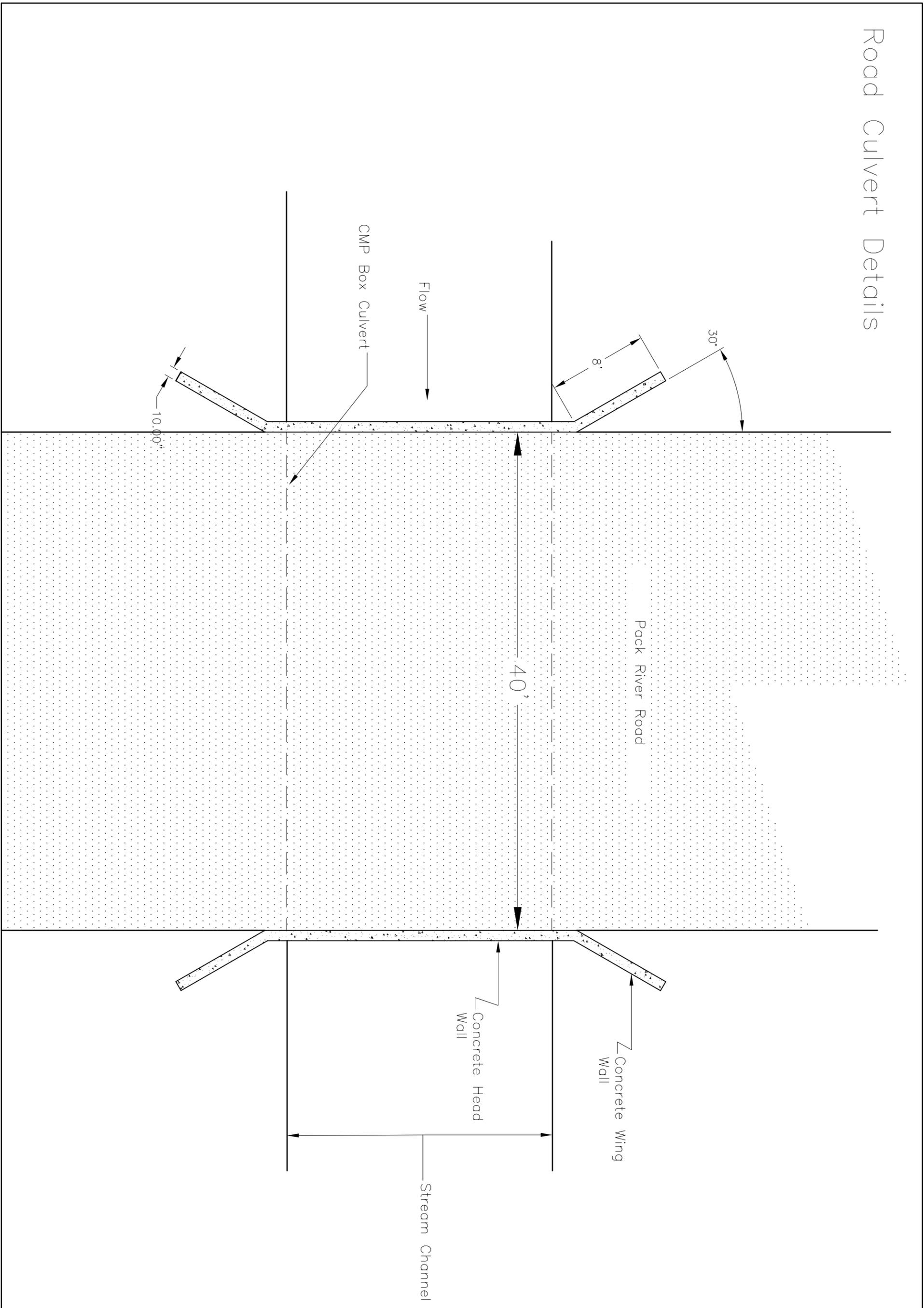


# Hell Roaring Creek

## Planned and Existing Profiles

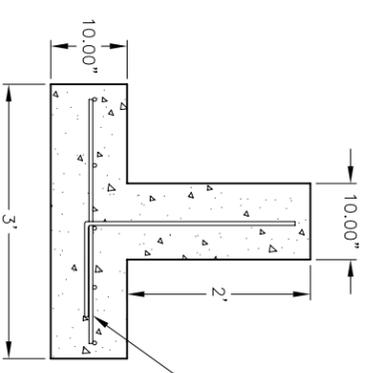


# Road Culvert Details



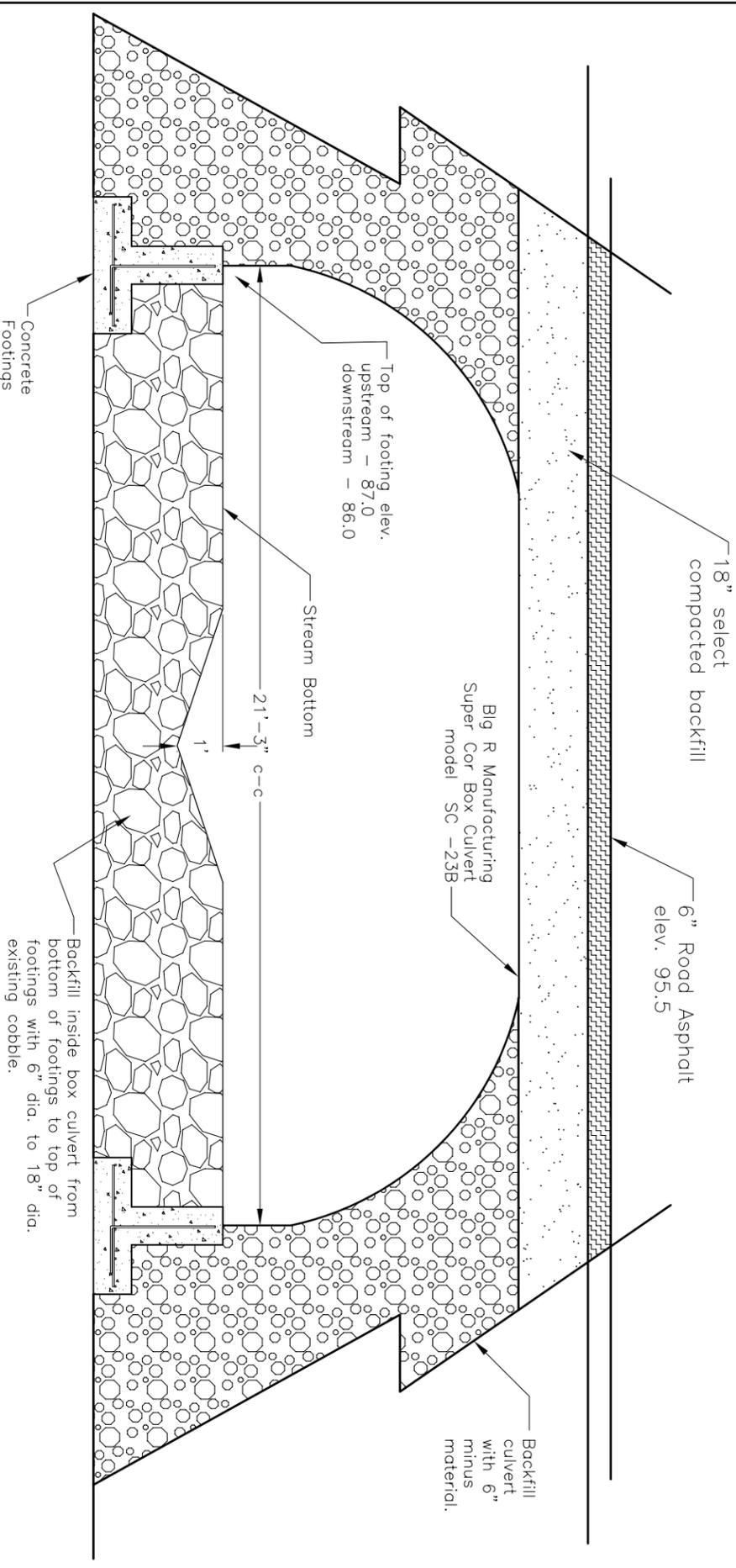
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		<p>Drawn <u>Trace</u> <u>8/2006</u></p>		
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		<p>Approved _____</p>		
		<p>Sheet 7 of 14</p>		

# Concrete Footing Details

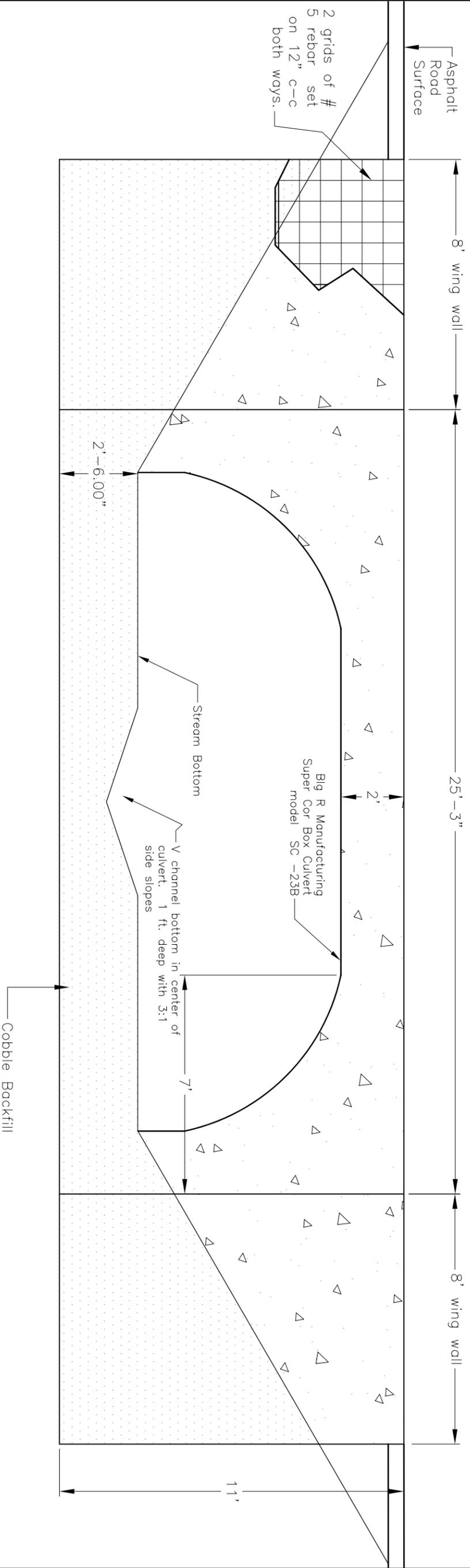


# 5 rebar on 12" c-c both ways. Splice length is 30 bar diameters

# Box Culvert Backfill Details



# Box Culvert Headwall Details



2 grids of # 5 rebar set on 12" c-c both ways.

Asphalt Road Surface

8' wing wall

25'-3"

8' wing wall

2'-6.00"

Stream Bottom

Blg R Manufacturing Super Cor Box Culvert model SC-23B

V channel bottom in center of culvert. 1 ft. deep with 3:1 side slopes

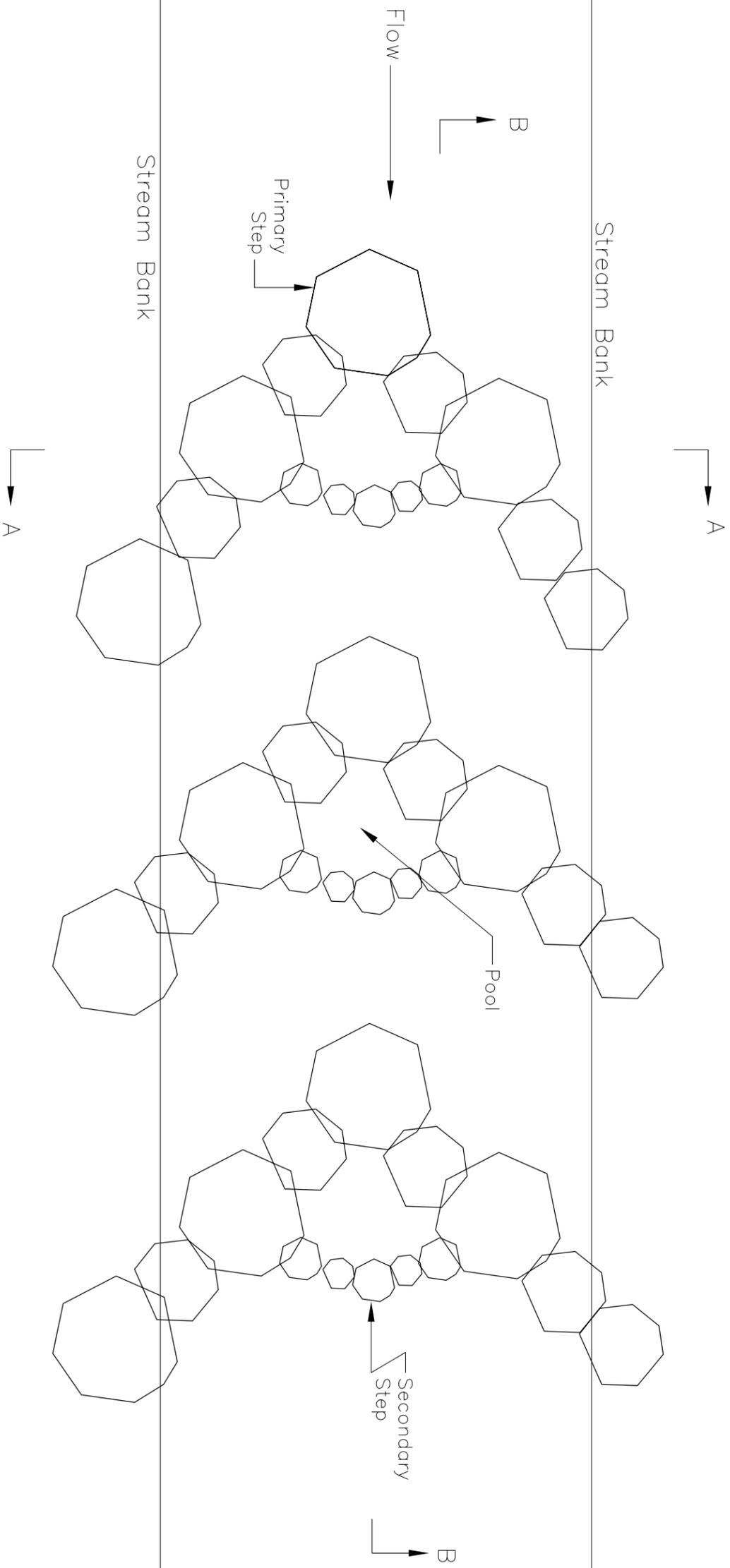
Cobble Backfill



Hell Roaring Creek Road Culvert Details  
Bonner SWCD Bonner Co. Idaho

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Upper Step Pool Weir Structure Plan Details.



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Drawn	<u>Trace</u>	<u>8/2006</u>	
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Approved	_____	_____	

Hell Roaring Creek  
Upper Weir Details  
Bonner SWCD      Bonner Co. Idaho

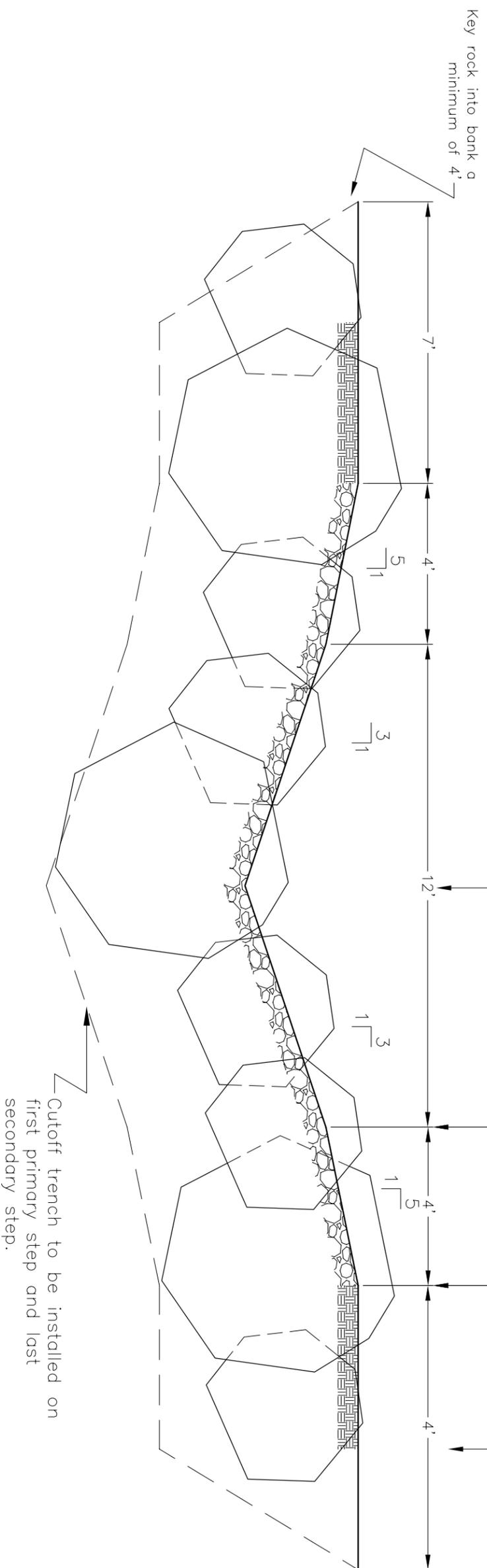


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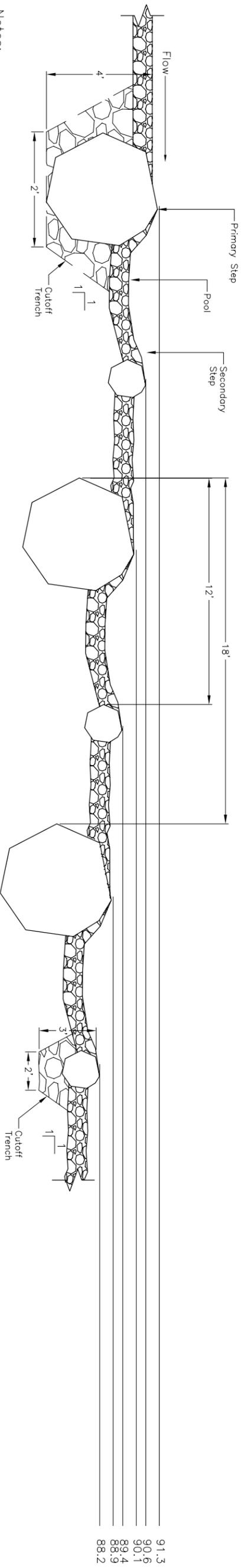
Drawing Name

Sheet 9 of 14

Primary Step – X Section  
Section A–A



Upper Step Pool Weir Structure  
Section B–B



Notes:

1. The primary stones are 24" to 36" in diameter with existing cobble interfill (approx. 24 Cu.Yds./ step).
2. The secondary stones are 18" to 24" with existing cobble interfill. (Approx. 20 Cu. Yds./ step).
3. The pool is filled with 7" to 12" cobble either existing or imported. (Approx. 5 Cu. Yds./pool)
4. After all steps and pools have been placed, the entire structure will be pressure washed with approx. 2 Cu. Yds. of  $\frac{3}{4}$ " minus to seal the structure.
5. Pool depth was designed at 12"
6. A cutoff trench will be installed on the first primary step and the last secondary step. The trench will extend 3' below the designed stream bed and will be constructed with a 1:1 side slope. The trench shall be backfilled with rock and capped with cobble.

	Date
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Hell Roaring Creek  
Upper Weir Details  
Bonner SWCD Bonner Co. Idaho

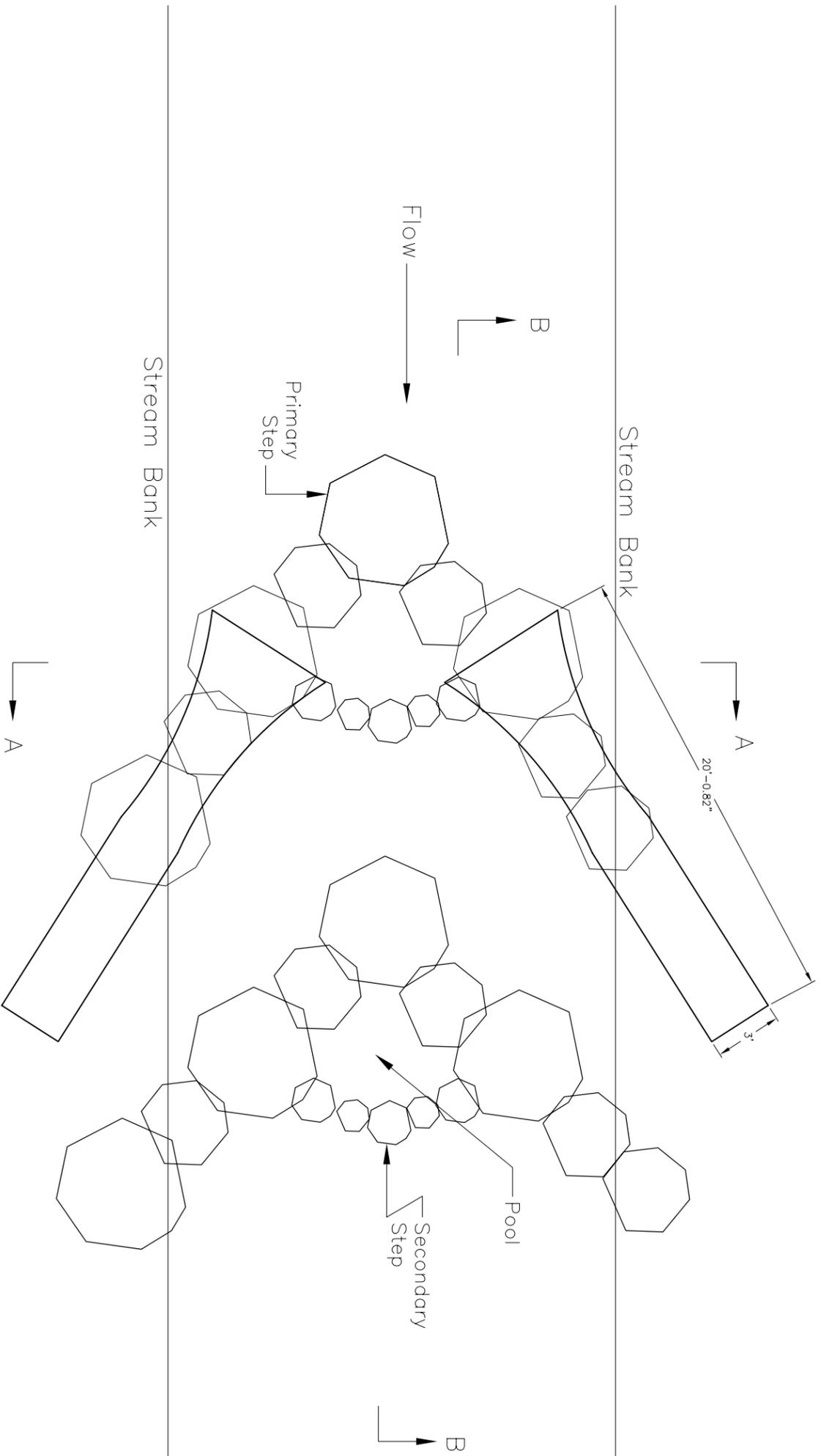


File Name

Drawing Name

Sheet 10 of 14

Middle Step Pool Weir Structure Plan Details.



Designed	<u>R.Sampson</u>	Date	<u>6/06</u>
Drawn	<u>Trace</u>		<u>8/2006</u>
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Hell Roaring Creek  
 Middle Weir Details  
 Bonner SWCD      Bonner Co. Idaho

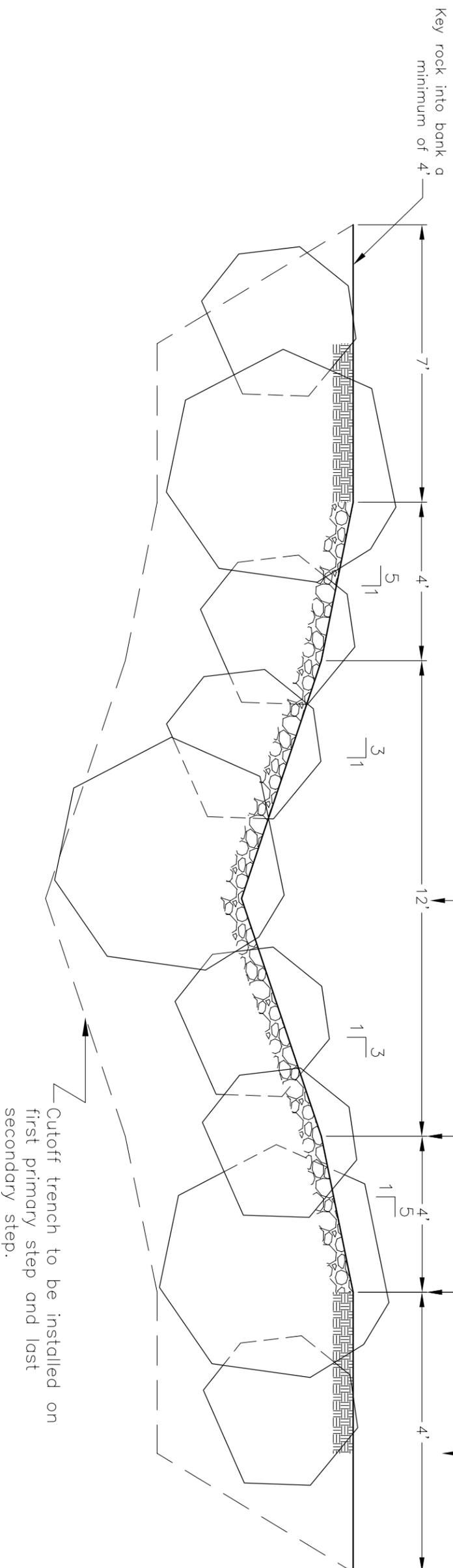


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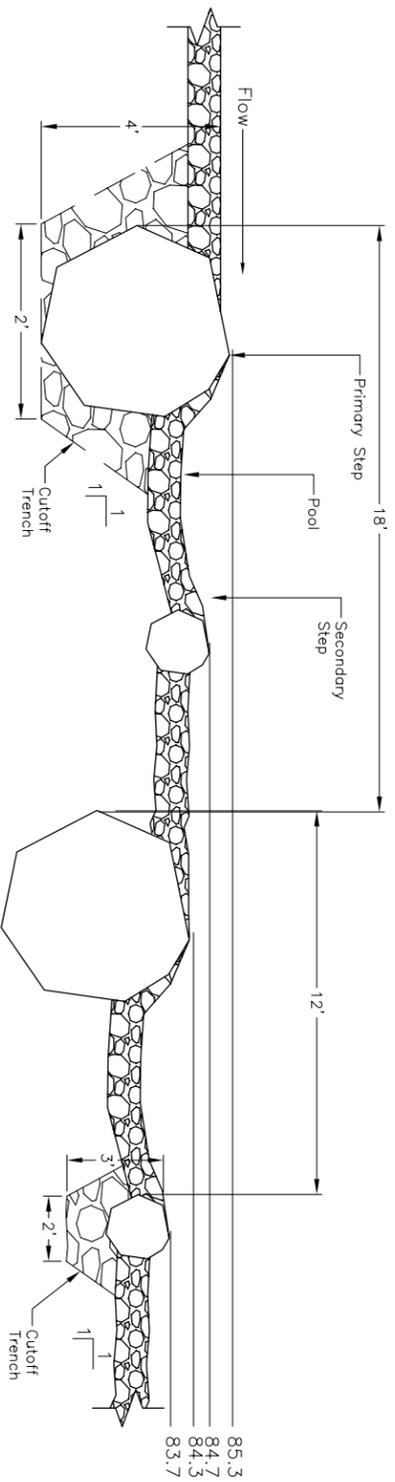
Drawing Name

Sheet 11 of 14

Primary Step – X Section  
Section A–A



Middle Step Pool Weir Structure  
Section B–B



Notes:

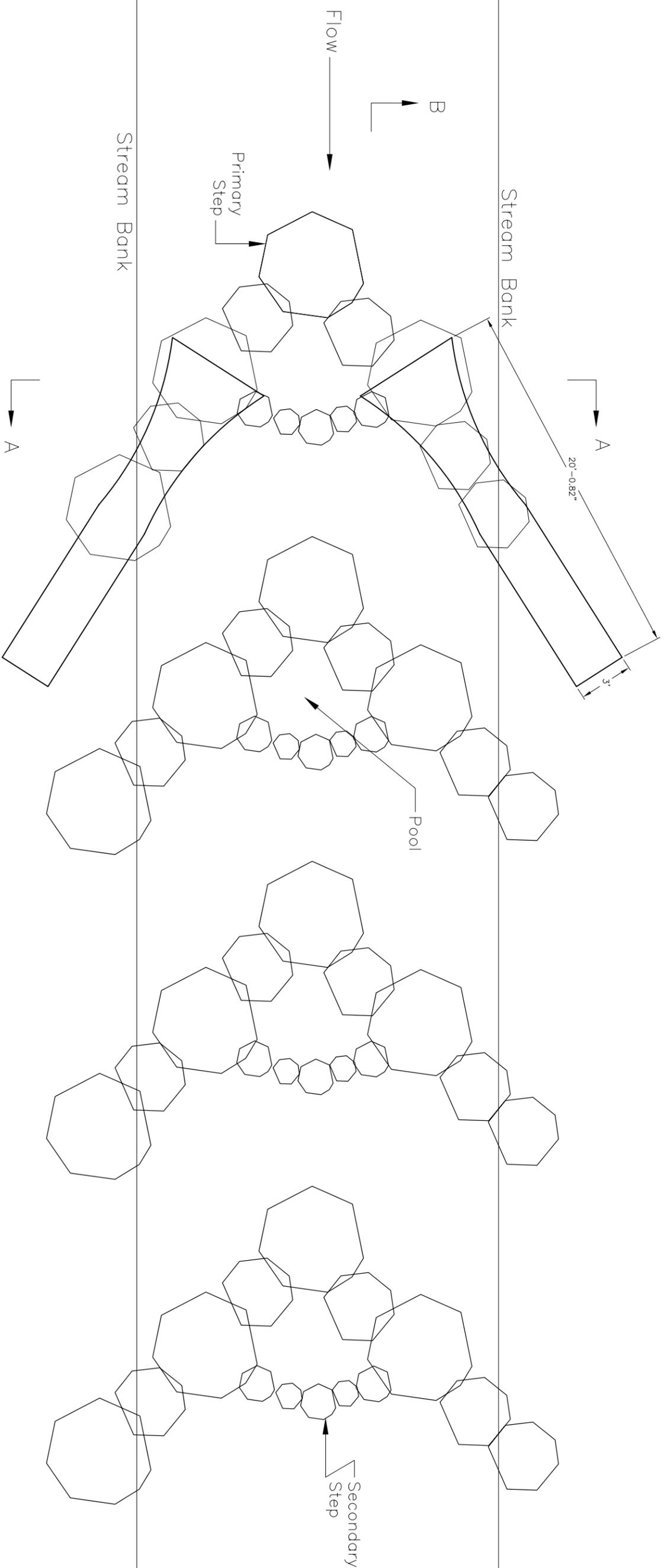
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Drawn	Trace	8/2006	
Checked			
Approved			

Hell Roaring Creek  
Middle Weir Details  
Bonner SWCD Bonner Co. Idaho



Lower Step Pool Weir Structure Plan Details.



Designed	R.Sampson	6/06	Date
Drawn	Trace	8/2006	
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Approved			

Hell Roaring Creek  
 Lower Weir Details  
 Bonner SWCD      Bonner Co. Idaho

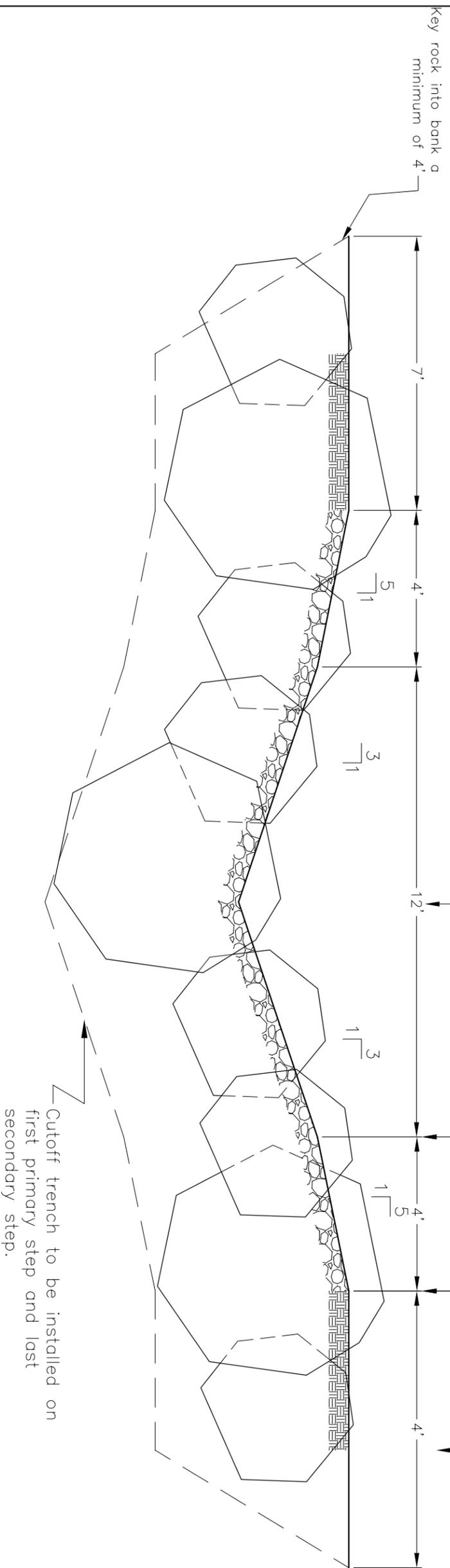


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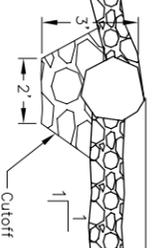
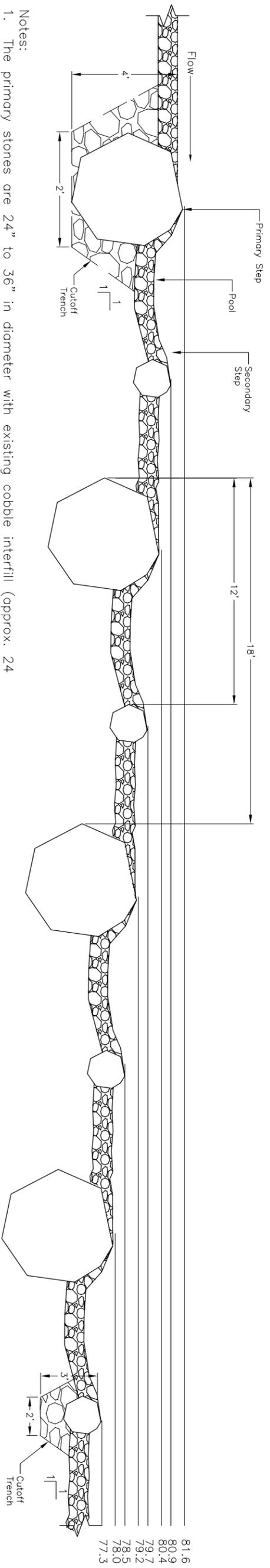
Drawing Name

Sheet 13 of 14

Primary Step – X Section  
Section A-A



Upper Step Pool Weir Structure  
Section B-B



- Notes:
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Hell Roaring Creek  
Lower Weir Details  
Bonner SWCD Bonner Co. Idaho

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Drawn	Trace 8/2006
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