GOALS AND OBJECTIVES:
1. Accumulate sediment and woody debris in former main channel
2. Raise the grade of the former main channel
3. Provide channel roughness and hydraulic complexity
4. Provide hydraulic refuge for juvenile salmonids and other fish species during high flows.

LOG SPECIFICATIONS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>DBH (IN.)</th>
<th>ROOT LENGTH (FT.)</th>
<th>ROOTWAD DIA. (IN.)</th>
<th>SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RootWad Log</td>
<td>18</td>
<td>40</td>
<td>54</td>
<td>Ponderosa Pine/Douglas Fir</td>
</tr>
<tr>
<td>RootWad Log</td>
<td>18</td>
<td>30</td>
<td>54</td>
<td>Ponderosa Pine/Douglas Fir</td>
</tr>
<tr>
<td>Log Poles</td>
<td>15</td>
<td>15</td>
<td>None</td>
<td>Ponderosa Pine/Douglas Fir</td>
</tr>
<tr>
<td>Log Pole Piles</td>
<td>12</td>
<td>15</td>
<td>None</td>
<td>Ponderosa Pine/Douglas Fir</td>
</tr>
</tbody>
</table>

CONSTRUCTION NOTES:
1. Install the log piles in the locations shown
2. Place the first layer of RootWad Logs flush with the existing grade; excavating as necessary for the RootWad mass
3. Place the log poles spanning between the layer 1 RootWad Logs
4. Place the second layer of RootWad Logs
5. Secure the RootWad Logs and log poles together and to the log piles using a limited amount of Manila fiber rope routed to minimize visibility.
**GOALS AND OBJECTIVES:**

1. Accumulate woody debris on the structure.
2. Sort and deposit sediment for spawning.
3. Provide channel roughness and hydraulic complexity.
4. Provide cover and hydraulic refuge for juvenile salmonids and other fish species during low and high flows.

**CONSTRUCTION NOTES:**

1. Install the log piles in the locations shown.
2. Place the first layer of rootwood logs flush with the existing grade, excavating a small depression as necessary for the rootwood mass.
3. Place the second layer of rootwood logs.
4. Secure the rootwood logs together and to the log piles using a limited amount of manila fiber rope routed to minimize visibility.

**LOG SPECIFICATIONS**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>DBH (IN.)</th>
<th>LENGTH (FT.)</th>
<th>ROOTWOOD DIA. (IN.)</th>
<th>SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rootwood Log</td>
<td>18</td>
<td>15</td>
<td>54</td>
<td>Ponderosa Pine/Douglas Fir</td>
</tr>
<tr>
<td>Rootwood Log</td>
<td>18</td>
<td>45</td>
<td>54</td>
<td>Ponderosa Pine/Douglas Fir</td>
</tr>
<tr>
<td>Log Pole Piles</td>
<td>12</td>
<td>15</td>
<td>None</td>
<td>Ponderosa Pine/Douglas Fir</td>
</tr>
</tbody>
</table>

**FLOW DIRECTION**

TYP. ORDINARY HIGH WATER

**BANK BARB PILE (BBp) FEATURE TYPICAL PROFILE (A-A')**

**BANK BARB PILE (BBp) FEATURE TYPICAL PLAN**

**BANK BARB PILE (BBp) FEATURE TYPICAL SECTION (B-B')**

**POTENTIAL SPAWNING GRAVEL DEPOSITION**

**HYDRAULIC REFUGE IN VOIDS & LEE OF ROOTWOOD (JUVENILES)**

**LOG POLE PILES**

**7.0**

---

**CONTRACTOR:** ANCHOR QEA

**DRAWN BY:** J. GAFFNEY

**PROPOSED MAIN CHANNEL SPECIFIC BANK BARB PILE (BBp) FEATURE**

**TUCANNON PROJECT AREA 15**

**30% DESIGN**

**DATE:** Feb 12, 2013

**SCALE:** 1" = 10'

**SHEET NO. OF:**

**NOT FOR CONSTRUCTION**
CHANNEL SPANNING ELJ TYPICAL SECTION (A-A')

EXISTING GRADE

LOGS EXTEND IN TO BANK

SILL LOG

FLOW DIRECTION

LOGS EXTEND IN TO BANK

CHANNEL SPANNING ELJ TYPICAL PROFILE (B-B')

EXISTING GRADE

PROPOSED MAIN CHANNEL

PROPOSED MAIN CHANNEL

FORMER MAIN CHANNEL

LOGS SECURED TO BOULDERS FOR BALLAST

VOIDS FILLED WITH SLASH FROM CHANNEL CLEARING

Boulder, TYP.

8 Locs

SILL LOG

FLOW DIRECTION

GOALS AND OBJECTIVES:
1. DIRECT FLOW DOWN PROPOSED MAIN CHANNEL
2. MINIMIZE THE RISK OF AN AVULSION BACK INTO THE FORMER MAIN CHANNEL.
3. PROVIDE BANK ROUGHNESS AND HYDRAULIC COMPLEXITY
4. PROVIDE HYDRAULIC REFUGE FOR JUVENILE SALMONIDS AND OTHER FISH SPECIES.
5. INCREASE LOCAL FLOODPLAIN CONNECTIVITY AND PROMOTE LEFT OVER BANK FLOW PATH DEVELOPMENT.

CONSTRUCTION NOTES:
1. EXCAVATE TO PLACE THE SILL LOG
2. PLACE THE FIRST LAYER OF ROOTWAD LOGS
3. PLACE THE BOULDERS
4. NOTCH THE ADJACENT BANKS AND PLACE THE SECOND LAYER OF LOG POLES
5. PLACE THE SECOND LAYER OF ROOTWAD LOGS
6. PLACE THE THIRD LAYER OF LOG POLES
7. SECURE THE STRUCTURE TOGETHER AND TO THE BOULDERS USING A LIMITED AMOUNT OF WIRE ROPE AND ASSOCIATED HARDWARE ROUTED TO MINIMIZE VISIBILITY.

LOG SPECIFICATIONS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>CBM (m³)</th>
<th>LENGTH (ft.)</th>
<th>ROOTTWO DIA. (IN.)</th>
<th>SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rootwad Log</td>
<td>30-50</td>
<td>30-90</td>
<td>Ponderosa Pine/ Douglas Fir</td>
<td></td>
</tr>
<tr>
<td>Rootwad Log</td>
<td>24-40</td>
<td>40-72</td>
<td>Ponderosa Pine/ Douglas Fir</td>
<td></td>
</tr>
<tr>
<td>Log Pole</td>
<td>18-30</td>
<td>30</td>
<td>None</td>
<td>Ponderosa Pine/ Douglas Fir</td>
</tr>
</tbody>
</table>

SCALE: 1"=10'
LOG SPECIFICATIONS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>DBH (IN)</th>
<th>LENGTH (FT.)</th>
<th>SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROOTWAD LOG</td>
<td>24</td>
<td>50</td>
<td>PONDEROSA PINE/Douglas FIR</td>
</tr>
<tr>
<td>LOG POLE</td>
<td>24</td>
<td>40</td>
<td>NONE</td>
</tr>
</tbody>
</table>

GOALS AND OBJECTIVES:
1. Accumulate sediment and woody debris in the main channel upstream of the structure.
2. Allow sediment to be transported past the structure during high flows.
3. Raise the grade of the main channel.
4. Provide channel roughness and hydraulic complexity.
5. Increase the local floodplain connectivity and promote over bank flow path development.
6. Provide hydraulic refuge for juvenile salmonids and other fish species during low and high flows.

CONSTRUCTION NOTES:
1. Place rootwad logs parallel to flow, excavate as necessary to place flush with the bed.
2. Place the boulders in the locations shown. Log piles may be used in place of boulders as an alternative method for securing the structure in place.
3. Place the log poles across the rootwad logs as shown.
4. Secure the rootwads and log poles to the boulders (or piles if used) using a minimum amount of wire rope routed to minimize visibility.

BOULDER SPECIFICATIONS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>INTERMEDIATE DIA. (IN.)</th>
<th>MIN. DRY WEIGHT (LB)</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOULDER</td>
<td>4.0</td>
<td>5,000</td>
<td>6</td>
</tr>
</tbody>
</table>