1. LOG POLE, 1.5' DIA., 20' L
2. LOG POLE, 1.25' DIA., 20' L
3. STEEL EYE BOLT, FOR LIFTING, 3/4"-10 THREAD, 3" L
4. CHAIN COUPLING LINKS, FIGURE-EIGHT STYLE, 1/2-INCH DIA, FOR 3/8-INCH CHAIN, 3/8-INCH TRADE SIZE, GRADE 40/43

**PROPOSED LEGEND**

SUGGESTED STAGING AREA
SUGGESTED CONST. ACCESS ROUTE
ROCK PLACEMENT AREA
SINGLE (L) UID
ROOTWAD-REFUGE AND RETENTION (JR) LWD
BANK BARB (BB) LWD
BAR APEX (BA) ELJ
BAR APEX (BA) ELJ
CHANNEL GRADING (CG) LWD
CHANNEL BARB (CB) ELJ

**GENERAL CONSTRUCTION NOTES:**

1. CONTRACT DOCUMENTS INCLUDE THESE DRAWINGS AND PROJECT SPECIFICATIONS.
2. CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE ALL WORK AS INDICATED ON THE CONTRACT DOCUMENTS.
3. CONTRACTOR SHALL VISIT THE JOB SITE AND BE RESPONSIBLE FOR ALL WORK NOT INCLUDED IN THE CONTRACT DOCUMENTS, FIELD CONDITIONS, AND DIMENSIONS AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION.
4. CONTRACTOR SHALL BE AWARE OF THE LOCATION OF EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ALL CLAIMS ARISING FROM ANY DAMAGE TO EXISTING UTILITIES.
5. CONTRACTOR SHALL NOTIFY THE CONTRACTING AGENCY PRIOR TO PROCEEDING WITH THE WORK.
6. THE CONTRACTOR SHALL DECEIVE, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THIS CONTRACT, SPECIFICATIONS, AND CONTRACT DOCUMENTS; UNLESS OTHERWISE SPECIFIED. 
8. WOOD REINFORCEMENT AND MATERIALS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
9. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION. CONTRACTOR SHALL TAKE PRECEDENCE OVER GENERAL NOTES HEREON.
10. CONTRACTOR SHALL REMOVE ALL MATERIAL AND EQUIPMENT NOT SPEFICIED AS REMAINING WITHIN THE PROJECT AREA.

**UTILITY NOTES:**

1. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS ARE APPROXIMATE. THE LOCATIONS OF EXISTING UTILITIES HAVE NOT BEEN FIELD VERIFIED.
2. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO THE PERIOD OF EXCAVATION. THE CONTRACTOR MAY USE ACCESS TO THE UTILITIES.
3. ALL ABANDONED UTILITIES WHICH INTERFERE WITH THE EXECUTION OF THE WORK SHALL BE PROCEDURES FOR THE WORK CREW PRIOR TO STARTING THE PROJECT.
4. THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROVIDE ACCESS TO THE UTILITIES, UNLESS OTHERWISE NOTED.
5. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN FIELD VERIFIED. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO DISTURBING THE UTILITIES. ONLY AFTER THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO DISTURBING THE UTILITIES.
6. THE WORK SHALL BE VERIFIED BY THE CONTRACTING OFFICER AND THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROVIDE ACCESS TO THE UTILITIES, UNLESS OTHERWISE NOTED.
7. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN FIELD VERIFIED. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO DISTURBING THE UTILITIES. ONLY AFTER THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO DISTURBING THE UTILITIES.

**SURVEY NOTES:**

1. TOPOGRAPHIC DATA FROM 2013 AERIAL IMAGE, PROVIDED BY SERB.
2. HORIZONTAL DATUM IS WASHINGTON STATE PLANE NORTH 2000 F.E.
4. 2013 AERIAL PHOTO PROVIDED BY SERB.
5. PROJECT STATIONSING IS 6 IN FEET FROM RIVER MILE 7.5.

**PROJECT INFORMATION:**

- **PROJECT LOCATION:** TUCANNON PROJECT AREA 24
- **CONTACT AGENCY:** WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
- **ENGINEER:** ANCHOR Q&A, LLC
- **PHONE:** (206) 283-4773
- **CONTACT:** TERRY BRUEBAM
- **ADDRESS:** 605 E MAIN AVE A, SPOKANE, WA 99202
- **PHONE:** (509) 733-4311
- **CONTACT:** TRACY GRADY, P.E.

**ABBREVIATIONS:**

- **R**: REV
- **FT**: FOOT OR FEET
- **MIN**: MINUTE
- **IN**: INCH
- **F.G.**: FINISHED GRADE
- **EX**: EXISTING
- **EL**: ELEVATION
- **TD**: TYPICAL ORDINARY HIGH WATER LINE
- **WSEL**: WASHINGTON DEPARTMENT OF TRANSPORTATION
- **WDFW**: WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
- **WSDOT**: WASHINGTON DEPARTMENT OF TRANSPORTATION
- **FGER**: FISH AND WILDLIFE RECOVERY BOARD
- **WSP**: WASHINGTON STATE POLICE
- **STA.**: STATION
- **PG**: POLYVINYL CHLORIDE
- **SF**: SQUARE YARD
- **MD**: METRIC
- **PC**: PIPE
- **BS**: BASE
- **G**: GRADE
- **F**: FOOT
- **SD**: SPLIT DRAINAGE
- **B**: BANK
- **L**: LENGTH
- **H**: HEIGHT
- **TCP**: TYPICAL CONSTRUCTION TECHNIQUE
- **B**: BANK
- **L**: LENGTH
- **H**: HEIGHT
- **MIN**: MINUTE
- **IN**: INCH
- **F.G.**: FINISHED GRADE
- **EX**: EXISTING
- **EL**: ELEVATION
- **TD**: TYPICAL ORDINARY HIGH WATER LINE
- **WSEL**: WASHINGTON DEPARTMENT OF TRANSPORTATION
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- **SD**: SPLIT DRAINAGE
- **B**: BANK
- **L**: LENGTH
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- **MIN**: MINUTE
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- **WSP**: WASHINGTON STATE POLICE
- **STA.**: STATION
- **PG**: POLYVINYL CHLORIDE
- **BS**: BASE
- **G**: GRADE
- **F**: FOOT
- **SD**: SPLIT DRAINAGE
- **B**: BANK
- **L**: LENGTH
- **H**: HEIGHT
NOTES:
1. CONTOUR INTERVAL IS 1 FT.
2. 2010 AERIAL PHOTO PROVIDED BY COLUMBIA CONSERVATION DISTRICT.

EXISTING ARMOR ROCK ON BANK.
ADDITIONAL ROCK STORED ON
ADJACENT FLOODPLAIN AREA.

EXISTING WEIR.
NOTES:
1. CONTOUR INTERVAL IS 1 FT.
2. 2010 AERIAL PHOTO PROVIDED BY COLUMBIA CONSERVATION DISTRICT.

SEE SHEET C-01
SEE SHEET C-03

EXISTING CONDITIONS (2 OF 3)

EXISTING LEVEE
EXISTING LEVEE
EXISTING LEVEE
EXISTING LEVEE
EXISTING ARMORED LEVEE/KNICK
EXISTING SIDE CHANNEL
EXISTING DEPRESSED PLANT SITE
DISCONNECTED LOW-LYING FLOODPLAIN AREAS

SCALE IN FEET
0 50 100

Columbia Conservation District

FOR CONSTRUCTION
TUCANNON PROJECT AREA 24
EXISTING CONDITIONS (2 OF 3)

C-02
NOTES:

1. CONTOUR INTERVAL IS 5 FT.
2. SITE ACCESS, STAGING, AND CARE OF WATER PLAN SHOWN IS A RECOMMENDATION AND MAY NOT CONTAIN ALL NECESSARY MEASURES TO MEET CONSTRUCTION PERMIT CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR DEVELOPMENT OF A FINAL PLAN THAT SATISFIES ALL PERMIT REQUIREMENTS.
3. RECOMMENDED ACCESS ROUTES ARE SHOWN THROUGH THE FLOODPLAIN AND ACROSS THE RIVER IN SOME LOCATIONS. ACCESS MAY BE PERMITTED UP AND DOWN THE CHANNEL EITHER ON GRAVEL BARS OR IN FLOWING WATER. REFER TO PERMIT CONDITIONS FOR SPECIFIC REQUIREMENTS FOR IN-WATER WORK.
4. FISH RESCUE AND RECOVERY REQUIRED IN ALL IN-WATER WORK AREAS. TO BE COMPLETED BY CONTRACTING AGENCY AND/OR ITS AUTHORIZED AGENTS (SEE SPECIFICATIONS).
5. DISCHARGE Dewatering WATER IN VEGETATED BUFFERS FOR INFILTRATION IN ACCORDANCE WITH APPROVED PLANS.
6. EXCAVATION MAY ENCOUNTER BEDROCK WITHIN THE PROJECT AREA. CONTRACTOR SHALL IMMEDIATELY NOTIFY CONTRACTING OFFICER UPON ENCOUNTERING BEDROCK THAT IMPEDS THE PROGRESS OF WORK USING NORMAL CONSTRUCTION METHODS. WORK MUST BE STopped IMMEDIATELY AND A NEW PLAN SUBMITTED TO MEET THE CONTRACT REQUIREMENTS.
7. CLEARING LIMITS SHALL NOT EXCEED THE EXTENTS NECESSARY TO COMPLETE THE WORK, AND NOT GREATER THAN 14' IN WIDTH FOR ACCESS ROUTES. CLEARING OF VEGETATION ESPECIALLY TREES, SHALL REQUIRE PRIOR APPROVAL BY THE CONTRACTING OFFICER.
8. NO TREES GREATER THAN 3 INCHES IN DIAMETER WILL BE REMOVED TO ESTABLISH STAGING AREAS.
**Proposed Conditions (3 of 3)**

**Description:**
- **Structure**
  - **# of Locations**
  - **Bottom Elevation**
  - **Top Elevation**

**Note:**
1. **Soil Elevation** is the bottom of the lowermost layer.
2. **Top Elevation** is the top of the uppermost layer.

<table>
<thead>
<tr>
<th>Structure</th>
<th># of Locations</th>
<th>Bottom Elevation</th>
<th>Top Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA-1</td>
<td>1</td>
<td>1526.8</td>
<td>1597.8</td>
</tr>
<tr>
<td>BA-2</td>
<td>2</td>
<td>1517.2</td>
<td>1594.2</td>
</tr>
<tr>
<td>BA-3</td>
<td>1</td>
<td>1516.3</td>
<td>1593.3</td>
</tr>
<tr>
<td>BA-4</td>
<td>1</td>
<td>1515.3</td>
<td>1592.3</td>
</tr>
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<td>BA-5</td>
<td>1</td>
<td>1513.3</td>
<td>1591.3</td>
</tr>
<tr>
<td>CB-1</td>
<td>1</td>
<td>1511.6</td>
<td>1592.6</td>
</tr>
<tr>
<td>CB-2</td>
<td>2</td>
<td>1509.5</td>
<td>1590.5</td>
</tr>
</tbody>
</table>

**Drawn By:** JG, AB, EP, TD
**Designed By:** JG, AB
**Approved By:** JG, AB
**Checked By:** EP, TD

**Scale:** 1" = 50' (1 inch at full size, if not one inch scale accordingly)

**Date:** December 2014

**Project Area 24**

**Tucannon Project Area 24**

**For Construction**

**Columbia Conservation District**

**Snake River Salmon Recovery Board**
**TABLE NOTES:**

1. LENGTHS ARE REPORTED FOR MATERIAL PROCUREMENT PURPOSES. ALL LWM SHALL BE CUT TO FIT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2. ROOTWAD LOG LENGTHS DO NOT INCLUDE THE LENGTH OF THE ROOTWAD MASS.
3. ROOTWAD LOG DIAMETER IS MEASURED AT BREAST HEIGHT.
4. LOG POLE DIAMETER IS MEASURED AT THE MID POINT ALONG THE LENGTH OF THE LOG.
5. SEE SPECIFICATIONS FOR DIAMETER TOLERANCES AND TAPER RATES.

**CONSTRUCTION NOTES:**

1. LWD WILL BE FIELD LOCATED AT TIME OF CONSTRUCTION BY THE ENGINEER.
2. EXCAVATE TRENCH FOR LOG.
3. PLACE ROOTWAD LOG IN TRENCH AND BACKFILL TO EXISTING GRADE. PLACE EXCESS MATERIAL IN LEE OF STRUCTURE.
4. ALTERNATIVELY, LOG MAY BE PLACED BETWEEN EXISTING TREES AND SECURED IN PLACE.
4.1. USE 11/16" Dia. SYNTHETIC MANILA ROPE AND APPROVED KNOTS LISTED IN THE SPECIFICATIONS.
5. DISTANCE BETWEEN TREES MAY VARY BETWEEN 10 AND 25 FEET.

**GRADING NOTES:**

1. 1 FOOT CONTOURS ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY, EXISTING TOPOGRAPHY VARIES, SEE PLAN.
2. POOL EXCAVATION AND GRADING MAY VARY DEPENDING ON SITE CONDITIONS.
CONSTRUCTION NOTES:

FOR BOULDER-SUPPORTED LWD

1. INSTALL ROCK ANCHORS AND EYE BOLTS, ONE EACH PER BOULDER
2. PLACE BOULDERS AT LOCATIONS SHOWN WITH EYE BOLTS NEAR THE TOP OF THE BOULDER
3. PLACE ROOTWAD LOGS AS SHOWN.
4. ATTACH ROOTWAD LOG TO BOULDERS PER DETAIL 3 ON SHEET S-1.
5. ADD SLASH AS AVAILABLE TO FILL VOID SPACE AROUND STRUCTURE.

LWM QUANTITIES

<table>
<thead>
<tr>
<th>LAYER</th>
<th>ITEM</th>
<th>LOG DIA. (IN)</th>
<th>ROOTWAD DIA. (IN)</th>
<th>LOG LENGTH (FT)</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UVH2780</td>
<td>12</td>
<td>4</td>
<td>25</td>
<td>3</td>
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</tbody>
</table>

TABLE NOTES:

1. LENGTHS ARE REPORTED FOR MATERIAL PROCUREMENT PURPOSES. ALL LWM SHALL BE CUT TO FIT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2. ROOTWAD LOG LENGTHS DO NOT INCLUDE THE LENGTH OF THE ROOTWAD MASS.
3. ROOTWAD LOG DIAMETER IS MEASURED AT BREAST HEIGHT.
4. SEE SPECIFICATIONS FOR DIAMETER TOLERANCES AND TAPER RATES.

BOULDER QUANTITIES

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ITEM</th>
<th>MIN. S.G.</th>
<th>AVG. DRY WEIGHT (LB)</th>
<th>QUANTITY</th>
<th>SEE TOTAL WEIGHT (LB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS SHOWN</td>
<td>BOULDER</td>
<td>2.9</td>
<td>5,000 (+/- 1,000)</td>
<td>6</td>
<td>30,000</td>
</tr>
</tbody>
</table>

GRADING NOTES:

1. 1 FOOT CONTOURS ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY, EXISTING TOPOGRAPHY VARIES, SEE PLAN.
2. POOL EXCAVATION AND GRADING MAY VARY DEPENDING ON SITE CONDITIONS.
CONSTRUCTION NOTES:
1. See excavation support details to place the layer 1 log poles level at elevation shown on plans. Contractor responsible for excavation support and protection.
2. Notice the bank for log ends as shown in preparation for the placement of additional layers.
3. See connection detail 1 on sheet 5 for connections in this structure.
4. Place log poles in layer 1 with bottom at design elevation shown.
5. Place logs in layers 2 through 5 making continuous chain connections at the locations shown. Finish connections at the top of layer 6.
6. Place logs in layers 6 through 8 making continuous chain connections with layer 5 at the locations shown. Finish connections at the top of layer 9.
7. Place log poles in layer 9 through 15 making continuous chain connections between layers 9 through 10 at the locations shown. Finish connections at the top of layer 10.
8. Staple chains to the sides of logs at a minimum of every other layer beginning with layer 1.
9. Excavate pool to finished grade as shown.
10. Place small woody debris and slash within void spaces along front interior, sides, and front of structure, or as approved by the engineer. Placement shall occur throughout the layer construction process, provided it does not interfere with the backfilling, log fitment, and connections.

TABLE NOTES:
1. Lengths are reported for material procurement purposes. All LWM shall be cut TO TT in accordance with the plans and specifications.
2. Rootwad log lengths do not include the length of the rootwad mass.
3. Rootwad log diameter is measured at breast height.
4. Log pole diameter is measured at the mid point along the length of the log.
5. See specifications for diameter tolerances and taper rates.

LWM QUANTITIES

<table>
<thead>
<tr>
<th>LAYER</th>
<th>ITEM</th>
<th>LOG DIA. (IN)</th>
<th>LQM</th>
<th>MAX LOG LENGTH (FT)</th>
<th>QUANTITY</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>LMP</td>
<td>15</td>
<td>8</td>
<td>14-20</td>
<td>3</td>
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<tr>
<td>2</td>
<td>LMP</td>
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<td>14-20</td>
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<tr>
<td>3</td>
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<td>8</td>
<td>14-20</td>
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<td>14-20</td>
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<tr>
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<td>8</td>
<td>14-20</td>
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<td>6</td>
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<td>10</td>
<td>LMP</td>
<td>15</td>
<td>8</td>
<td>14-20</td>
<td>3</td>
</tr>
</tbody>
</table>
CONSTRUCTION NOTES:

1. NOTCH BANK AND BED TO PLACE LAYER 1 ROOTWAD LOGS IN CONTINUOUS CONTACT WITH THE GROUND AND AT ROUGHLY THE SAME ELEVATION AS APPROVED BY THE ENGINEER.
2. PLACE NATIVE BACKFILL OR BOULDERS WITHIN THE STRUCTURE FLUSH WITH THE TOP OF LAYER 2 AND AS APPROVED BY THE ENGINEER.
3. PLACE AND CONNECT LOGS IN LAYERS 3 AS SHOWN OR AS APPROVED BY THE ENGINEER.
4. PLACE AND CONNECT LOGS IN LAYERS 4 AND 5 AS SHOWN OR AS APPROVED BY THE ENGINEER.
5. PLACE NATIVE BACKFILL OR BOULDERS WITHIN THE STRUCTURE FLUSH WITH THE TOP OF LAYER 6 AS APPROVED BY THE ENGINEER.
6. PLACE LOGGING SLASH AND SMALL WOODY DEBRIS IN FRONT OF STRUCTURE AND IN GAPS BETWEEN LAYERS OR AS APPROVED BY THE ENGINEER. PLACE SLASH (NOTE 9) THROUGHOUT THE LAYER CONSTRUCTION PROCESS PROVIDED IT DOES NOT INTERFERE WITH LOG FITMENT AND ROPE CONNECTIONS.

TABLE NOTES:

1. LENGTHS ARE REPORTED FOR MATERIAL PROCUREMENT PURPOSES. ALL LWM SHALL BE CUT TO FIT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2. ROOTWAD LOG LENGTHS DO NOT INCLUDE THE LENGTH OF THE ROOTWAD MASS.
3. LOG POLE DIAMETER IS MEASURED AT BREAST HEIGHT.
4. LOG POLE DIAMETER IS MEASURED AT THE MID POINT ALONG THE LENGTH OF THE LOG.
5. SEE SPECIFICATIONS FOR DIAMETER TOLERANCES AND TAPER RATES.
1. Typo contours are shown for illustrative purposes only. Existing topography varies. See plan.
2. Pool excavation and grading may vary depending on site conditions.

**Construction Notes:**
- See connection detail 1 on sheet 5-1 for connections in this structure.
- Place log poles in layer 1 with bottom at design elevation as shown.
- Place logs in layers 2 through 11 as shown, making continuous support and protection.
- Staple chain to the sides of logs at a minimum of every other layer beginning with layer 1.
- Backfill within structure as shown. Native backfill placement shall be no more than 2 layers below the working layer at all times.
- Finish connection at the top of the uppermost layer.
- Excavate pool to finished grade as shown.
- Backfill within structure as shown to flush with the top of the last layer with native material.
- Place excess native material from excavation behind structure as shown.
- See specifications for diameter tolerances and taper rates.
- Layers 1 and 11 will not be placed on BA-1 and BA-2 to achieve the design elevation.

**Table Notes:**
- Lengths are reported for material procurement purposes. All LVM shall be cut to fit in accordance with the plans and specifications.
- Rootwash log lengths do not include the length of the log pole.
- Rootwash log diameter is measured at breast height.
- Log pole diameter is measured at the mid-point along the length of the log.
- See specifications for diameter tolerances and taper rates.

**Item** | **Log Dia. (IN.)** | **Rootwash Dia. (IN.)** | **Length (FT.)** | **Quantity**
--- | --- | --- | --- | ---
| 1 | 22 | NA | 20 | 2
| 2 | 18 | NA | 26 | 3
| 3 | 18 | NA | 26 | 1
| 4 | 18 | NA | 26 | 3
| 5 | 18 | NA | 26 | 4
| 6 | 18 | NA | 26 | 3
| 7 | 18 | NA | 26 | 4
| 8 | 18 | NA | 26 | 3
| 9 | 18 | NA | 26 | 2
| 10 | 18 | NA | 26 | 3

**Design Notes:**
- Bypass is sufficient to place the layer 1 log poles level at elevation shown on plans. Contractor responsible for excavation and grading.
- Connection detail 1 on sheet 5-1 for connections in this structure.
- Place log poles in layer 1 with bottom at design elevation as shown.
- Place logs in layers 2 through 11 as shown. Place logs in layers 2 through 11 as shown, making continuous support and protection.
- Staple chain to the sides of logs at a minimum of every other layer beginning with layer 1.
- Backfill within structure as shown. Native backfill placement shall be no more than 2 layers below the working layer at all times.
- Finish connection at the top of the uppermost layer.
- Excavate pool to finished grade as shown.
- Backfill within structure as shown to flush with the top of the last layer with native material.
- Place excess native material from excavation behind structure as shown.
- See specifications for diameter tolerances and taper rates.
- Layers 1 and 11 will not be placed on BA-1 and BA-2 to achieve the design elevation.
CONSTRUCTION NOTES:

1. EXCAVATE TO DEPTH SUFFICIENT TO PLACE THE LAYER 1 LOG POLES LEVEL AT ELEVATION SHOWN ON PLANS. CONTRACTOR RESPONSIBLE FOR EXCAVATION SUPPORT AND PROTECTION.

2. SEE CONNECTION DETAIL 1 ON SHEET S-1 FOR CONNECTIONS IN THIS STRUCTURE.

3. PLACE LOG POLES IN LAYER 1 WITH BOTTOM AT DESIGN ELEVATION SHOWN.

4. PLACE LOGS IN LAYERS 2 THROUGH 6 AS SHOWN MAKING CONTINUOUS CHAIN CONNECTION AT THE LOCATIONS SHOWN.

5. FINISH CONNECTION ON THE TOP OF THE UPPERMOST LAYER.

6. STAPLE CHAIN TO THE SIDES OF LOGS AT A MINIMUM OF EVERY OTHER LAYER BEGINNING WITH LAYER 1.

7. PLACE SMALL WOODY DEBRIS AND SLASH WITHIN VOID SPACES ALONG FRONT INTERIOR, SIDES, AND FRONT OF STRUCTURE, OR AS APPROVED BY THE ENGINEER. PLACEMENT SHALL OCCUR THROUGHOUT THE LAYER CONSTRUCTION PROCESS, PROVIDED IT DOES NOT INTERFERE WITH BACKFILLING, LOG FITMENT, AND CONNECTIONS.

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**TABLE NOTES:**
1. LENGTHS ARE REPORTED FOR MATERIAL PROCUREMENT PURPOSES. ALL LUMS SHALL BE CUT TO FIT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2. ROOTWAD LOG LENGTHS DO NOT INCLUDE THE LENGTH OF THE ROOTWAD MASS.
3. ROOTWAD LOG DIAMETER IS MEASURED AT BREAST HEIGHT.
4. LOG POLE DIAMETER IS MEASURED AT THE MID-POINT ALONG THE LENGTH OF THE LOG.
5. SEE SECTION 02947 FOR DIAMETER TOLERANCES AND TAPER RATES.

**CONSTRUCTION NOTES:**
1. EXCAVATE TO DEPTH SUFFICIENT TO PLACE THE LAYER 1 LOG POLES LEVEL AT ELEVATION SHOWN. CONTRACTOR RESPONSIBLE FOR EXCAVATION SUPPORT AND PROTECTION.
2. SEE CONNECTION DETAIL 1 ON SHEET S-1 FOR CONNECTIONS IN THIS STRUCTURE.
3. PLACE LOG POLES IN LAYER 1 WITH BOTTOM AT DESIGN ELEVATION SHOWN.
4. PLACE LOGS IN LAYERS 2 THROUGH 6 AS SHOWN MAKING CONTINUOUS CHAIN CONNECTION AT THE LOCATIONS SHOWN.
5. FINISH CONNECTION ON THE TOP OF THE UPPERMOST LAYER.
6. PLACE SMALL WOODY DEBRIS AND SLASH WITHIN VOID SPACES ALONG FRONT INTERIOR, SIDES, AND FRONT OF STRUCTURE, OR AS APPROVED BY THE ENGINEER. PLACEMENT SHALL OCCUR THROUGHOUT THE LAYER CONSTRUCTION PROCESS, PROVIDED IT DOES NOT INTERFERE WITH BACKFILLING, LOG FITMENT, AND CONNECTIONS.
TUCANNON PROJECT AREA 24
TYPICAL ARMOR ROCK AND LEVEE REMOVAL SECTIONS (2 OF 4)

FOR CONSTRUCTION

DESIGNED BY: JG, AB
CHECKED BY: TD
DRAWN BY: TD
APPROVED BY: AS NOTED
DATE: DECEMBER 2014
SCALE: 1" = 20'

SECTION 3
C-06
1" = 5'

SECTION 4
C-06
1" = 5'

OHWL (APPROX.)
EXCAVATE CHANNEL
TOE ROCK PLACEMENT
AREA BETWEEN EX. TREES

OTHER LEVEE

ELEVATION IN FEET
HORIZONTAL DISTANCE IN FEET
4X VERTICAL EXAGGERATION
SECTION A-A':

NOTES:
1. THREAD CHAIN UNDER BOTTOM LAYER AND UP EXTERIOR AND INTERIOR OF CORNER JOINT, FINISH AT THE TOP LAYER OF EACH CONNECTION.
2. FINISH CONNECTION WITH A HAMMER-CLOSE CHAIN CONNECTOR AND STAPLES ON EITHER SIDE, PINNING DOWN CHAIN.
3. ALWAYS COMPLETE THE CONNECTIONS IN A LAYER PRIOR TO INSTALLING ADDITIONAL LAYERS.

HAMMER-CLOSE CHAIN CONNECTOR

STAPLE CHAIN TO LOG IN TWO PLACES AT FINISHED CONNECTION

NUMBER OF LAYERS VARIES, SEE STRUCTURE

SECTION B-B':

GENERAL CONNECTION NOTES:
1. ALL CONNECTIONS SHALL BE APPROVED BY THE ENGINEER.
2. WHERE ROPE IS SPECIFIED USE A KNOT APPROVED BY THE ENGINEER. ACCEPTABLE KNOT TYPES INCLUDE BUT ARE NOT LIMITED TO: RETHREADED FIGURE EIGHT KNOT, WATER KNOT, AND TRUCKER'S HITCH.
3. ROPE SHALL BE SHOWN ON EYE-BOLT. SIZE OF EYE-BOLT, FOR LIFTING, 3/4 IN. - 10 THREAD, SEE SPECIFICATIONS.
4. EXPANSION ANCHORS SHALL BE 4 WAY, 3/4 IN. - 10 INTERNALLY THREADED, ALTERNATIVELY ADHESIVE STYLE ANCHORS MAY BE USED AS APPROVED BY THE ENGINEER, SEE SPECIFICATIONS.
5. HAMMER-CLOSE CONNECTORS SHALL BE STEEL FOR 3/8" CHAIN, GRADE 80, WLL NO LESS THAN 2,800 LB.
6. FIGURE-EIGHT CHAIN COUPLING LINKS SHALL BE STEEL FOR 3/8" CHAIN, FOR LIFTING, GRADE 80, WLL NO LESS THAN 7,100 LB.
7. EXPANSION ANCHORS SHALL BE 4 WAY, 3/4 IN. - 10 INTERNALLY THREADED. ALTERNATIVELY ADHESIVE STYLE ANCHORS MAY BE USED AS APPROVED BY THE ENGINEER, SEE SPECIFICATIONS.
8. EYE BLOTS SHALL BE STEEL FOR LIFTING, 3/4 IN. - 10 THREAD, SEE SPECIFICATIONS.
9. STAPLES SHALL BE STEEL, 1/2" X 6" IN LENGTH, SEE SPECIFICATIONS.
10. ROPE TO FINISH A CONNECTION MAY BE ALL SLACK FROM THE CONNECTION USING MECHANICAL ADVANTAGE. EXCEPT FOR CONNECTIONS MADE TO LIVE TREES, THEN LEAVE 1' MIN. SLACK IN THE CONNECTION TO ALLOW FOR TREE GROWTH AS APPROVED BY THE ENGINEER.
11. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND PRODUCT CUT SHEETS FOR ANY PROPOSED ALTERATIONS TO THE DETAILS SHOWN ON THIS SHEET FOR APPROVAL BY THE ENGINEER. PROPOSED ALTERATIONS TO THE DETAILS SHOWN ON THIS SHEET SHALL BE IN THE OPINION OF THE ENGINEER MEET OR EXCEED THE DESIGN INTENT OF THE CONNECTION.
12. SEE SPECIFICATIONS FOR FURTHER INFORMATION.