

DRAFT

SCOPE OF WORK

ISLAND COMPLEX RECREATIONAL AREA PLANTING AND IRRIGATION PROJECT

PREPARED FOR

WASHINGTON STATE DEPARTMENT OF ECOLOGY



AND

WASHINGTON CONSERVATION CORPS



PREPARED BY



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RIDOLFI Inc.

April 10, 2007

1.1 PROJECT BACKGROUND

The Washington State Department of Ecology (Ecology) is conducting remedial actions at the Island Complex Recreational Area in Spokane County, Washington. Historical mining practices in the Coeur d'Alene basin in Idaho resulted in sediment and soil contamination along the shoreline of the Island Complex and at other shoreline sites in the Spokane River in Washington, between the Washington – Idaho state line and Upriver Dam. The primary contaminants of concern include lead, arsenic, cadmium, zinc that occur in concentrations that exceed human health- and ecological-based criteria.

The remedial design for the Island Complex site will include stabilization of portions of the downstream bank to minimize the re-distribution of contaminants in the river; enhancement and capping of trail sections and stable banks to prevent contact with contaminated soil; installation of signage, vegetation or physical barriers, such as boulders or fencing, to better define the trails; and enhancement (or avoidance of disturbance) to the uplands, riparian, and aquatic habitat.

The Washington Conservation Corps (WCC) will be responsible for planting new vegetation in specified capped and uncapped areas and installing drip irrigation to water the new plants. Water will be piped or otherwise provided to the project area by Ecology.

1.2 PROJECT LOCATION

The Island Complex recreational area is located at approximate river mile 95.0 about 1.0 mile west of the Idaho State line in Spokane County, Washington (Figure 1). The site is located on land owned by the State of Washington and managed by the Washington Department of Natural Resources (DNR), and can be accessed via a 0.5-mile trail through parkland owned by Spokane County. The trailhead is located at a parking lot adjacent to the river near Exit 299 on I-90.

1.3 SCOPE OF WORK

- A. In October/November 2007, depending on river levels, the WCC will perform planting in the upland and riparian vegetation in the Chevron Area as well as the upper bank (Zone 2) along the Back Channel as described in the project Drawings (see Sheets C3, C4A and G1).
- B. In late spring 2008, WCC will design and install a drip irrigation system that will serve the Chevron Area and Zone 2 of the Back Channel. WCC will design and install the irrigation system consistent with the notes and specifications on Sheet C6 in the project Drawings or approved equal.
- C. Beginning in the Summer of 2008, the WCC will implement the long-term irrigation and maintenance plan, as developed by Ecology, for the Chevron area and Back Channel planting areas.

1.4 MATERIALS

- A. Preparation of planting areas, including placement and compaction of topsoil materials, will be conducted by Others and will not be the responsibility of WCC.
- B. Ecology will purchase all plants and arrange for delivery to the site. WCC will be required to transfer the plants from the on-site staging area to the appropriate planting area.
- C. The following information on plant material is provided to WCC for informational purposes only. All plants will be supplied and delivered to the site by Others. WCC should notify Ecology immediately if the plants delivered to the site do not meet the requirements described below:
 - 1. All plants shall be nursery grown, or normal habit of growth, healthy, vigorous and free of disease, insect eggs and larvae. Plants shall not be pruned prior to delivery. Plants shall have all leaders and buds intact. Plants shall be well rooted with soil cohesive and root hairs common around the outside of the rootball.
 - 2. Grading of plant material and root ball/container sizes shall be in accordance with the code of standards of the American Association of Nurserymen. Nomenclature shall conform to Hortus Third, latest edition. Names not present in this listing shall conform to accepted nomenclature in the nursery trade.
 - 3. Trees with multiple leaders, unless specified or typical for their species, will be rejected. Trees with a damaged or crooked leader, bark abrasions, sunscald, disfiguring knots, insect damage, or cuts of limbs over three quarter (3/4) inch in diameter that are not completely closed will be rejected.
 - 4. No less than ten (10) percent of each variety and/or species of plant delivered to the project shall be accurately labeled. Whether or not labeled, any plants, which do not conform to the Plant Schedule and/or Planting Plan, shall be replaced immediately with plants conforming. Plant material labels shall be durable, legible labels stating the correct plant name.
 - 5. Nursery to provide the number of plants shown on the Drawings or listed on the Plant Schedule, whichever is greater, or to cover at specified spacing.
 - 6. Collected plant material may be used ONLY when approved by Ecology's Representative.

7. Plants are required to be from stock acclimated to Project Site environmental conditions, having been consistently cultivated and grown under these conditions.
- D. WCC to handle all plants carefully to prevent damage. Tie branches as necessary. Use burlap bags to protect bark from rope chafing. Do not drag plant material.
- E. Plant at once, all plant material delivered and accepted. Plants that cannot be planted within one (1) day after arrival to the project site shall be “heeled-in” in accordance with accepted horticultural practice and the following requirements:
1. Protect rootball of balled and burlapped plants with moist earth, sawdust or other acceptable material, preferably material specified for later use on the project.
 2. Protect plant materials at all times from extreme weather conditions and keep rootballs moist and shaded.
 3. WCC will provide cool storage for all plants that are not planted immediately.
 4. WCC is responsible for providing, or making arrangements with Ecology to provide, adequate water to maintain stored and newly installed plants in healthy condition during construction, installation and post-installation until river flows rise prohibiting access to the island or until the irrigation system is installed and functioning.
 5. The irrigation system for this project shall be a NETAFIM drip irrigation system or approved equal.

1.5 EXECUTION

- A. Staking and Layout:
1. Staking and layout refers to locating and verifying all planting locations. The contractor shall verify that the locations of the irrigation lines and emitters have been laid out with chalk/paint lines and pin flags prior to layout of any plants.
 2. All plant locations shall be laid out generally in the locations shown on the drawings and then adjusted to coordinate with the irrigation system. All plants shall be located immediately adjacent to an emitter when possible, and in no case farther than six (6) inches from an emitter.
- B. Tree, Shrub, and Groundcover Installation:
1. All new planting areas to receive tree, shrub, and groundcover planting shall be cleared of all debris before plant installation if required.

2. Exercise care when installing plant material next to existing vegetation scheduled to remain to prevent damage to the root systems of the existing vegetation.
3. Dig pits for trees, shrubs and groundcover as indicated on drawings and consistent with good horticultural practice. If the WCC encounters clay soil or any unusual condition that may be detrimental to the new planting, WCC shall notify Ecology's Representative immediately.
4. Soak the root balls of all plants thoroughly prior to planting. Slash roots vertically with a sharp knife along outside of ball in three places minimum before planting. Plant balled and burlapped or container tree or shrub to conform to planting details. Fill hole with water and allow the soil to settle. Complete backfill and tamp firmly. When installed, top of rootball shall be approximately level with the adjacent finished grade. All plant material shall be watered on the same day as planted until the backfill soil around the roots of each plant is thoroughly saturated. No more plants shall be planted on any day than can be watered on that day.
5. All shrubs shall be installed as indicated on the drawings to achieve an approximate 4 foot distance from tree trunks.
6. Weeds in the top of the rootballs must be removed prior to planting.
7. Install irrigation system after all plants have been installed. Remove all pin flags and other layout materials from the site.
8. Drip system laterals in the Back Channel shall be zip tied or otherwise secured (as approved by Ecology's Representative) to installed rooted stock plantings.

1.6 MAINTENANCE

A. General:

1. Maintenance activities will include, but are not limited to, watering, weeding, pruning, fertilizing, and any other maintenance requirements (per standard trade practices) to keep the plant materials in a normal healthy growing condition for a period of time to be negotiated with Ecology.

B. Watering:

1. Ecology will develop a water plan for Island Complex. The plan will include a watering schedule that should be followed as closely as possible with modifications as required by weather conditions and discussions with Ecology.

2. Plants will be irrigated to assure that adequate water is applied to the root zone to encourage deep plant root systems in all automatic irrigation areas.
- C. Regular Maintenance:
1. WCC shall perform maintenance in addition to watering a minimum of three times per year for a period to be negotiated with Ecology. Maintenance visits shall occur every three months beginning no sooner than three (3) months after planting or as soon as river flow levels allow access to the island. The maintenance schedule may be modified as necessary to respond to actual site conditions, based on consultation between Ecology and WCC.
 2. WCC shall inspect the new plants, record and remove dead plant material, record the general condition of the planted areas, remove all weeds and invasive plants in project areas and verify proper operation of the irrigation system during each maintenance visit
- D. Insect, Weed, and Disease Control:
1. The WCC shall be responsible to monitor the site conditions on each visit to determine if any insect, weeds or disease problems exist. The WCC shall identify the insect, weeds or disease, as well as the host plant, and then suggest a method of treatment to Ecology.
- F. Litter and Debris Clean-Up:
1. All litter or debris deposited within planting areas or noted during regular maintenance shall be removed and disposed of off-site.

1.7 PROTECTION

- A. All planting materials shall be properly protected against harm from normal weather conditions and the public. Maintenance of all the planted areas until shall include, but not be limited to, watering, weeding, and pruning as well as replacement of any plants that appear to be in distress. Planting shall occur in spring or fall of year when weather conditions are favorable. Special planting techniques, defoliating, wilt proofing or spray misting may be required should unseasonable planting conditions occur. No work shall be performed in, over or adjacent to planting areas without approved protection and safeguards.

1.8 CLEANUP

- A. All work areas are to be kept clean during progress of work and until completion. Water, dirt and rubbish are to be kept off of all paved areas. Remove surplus

materials and rubbish from planting areas, rake planting areas neatly to an even, fine grade around all plants and wash clean all paved areas. Leave project in first quality condition.

END OF SCOPE OF WORK

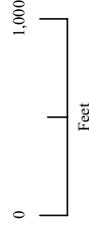


Figure 1
Island Complex
Site Location Map

Island Complex Recreation Area
Spokane River, WA

April 2007



CHEVRON AREA CONSTRUCTION SEQUENCE:

1. SCARIFY EMBANKMENT.
2. INSTALL ANGULAR QUARRY SPALLS.
3. INSTALL GRAVEL MATERIALS.
4. ANCHOR COR FOR LIFT (INSTALL COR ROLLS IN DOWNSLOPE DIRECTION).
5. INSTALL TOPSOIL AND WRAP LIFT.
6. ANCHOR LIFT AS SPECIFIED AND SHOWN IN DRAWINGS.

CHEVRON AREA CONSTRUCTION NOTES:

1. USE WOVEN COR FABRIC/UNITED NIT-PIPING MATERIAL MINIMUM C70/C90 DENSITY. SEE SPECIFICATIONS FOR ON COR MATERIAL REQUIREMENTS.
2. SECURE ALONG TOP EDGE OF COR FABRIC USING 12" MINIMUM LENGTH, ANGLE CUT, 2"x4" STAKES OR EQUAL AT 3' O.C., DRIVEN LEVEL TO GROUND SURFACE.
3. SECURE COR FABRIC FIELD AT MINIMUM SPACING OF 6' O.C. USING 12" MINIMUM LENGTH, ANGLE CUT 2"x4" STAKES OR EQUAL, DRIVEN LEVEL TO SURFACE OF COR LIFT.
4. HAND PLACE TOPSOIL IN COR LIFT. COMPACT TOPSOIL SUFFICIENTLY TO SUPPORT PLANT GROWTH.
5. CONSTRUCTION ACTIVITIES MUST LIMIT DAMAGE TO EXISTING VEGETATION. NO EXISTING PLANT REMOVAL IS PERMITTED. COR LIFTS MUST BE PLACED AROUND EXISTING VEGETATION.
6. PLANTING BY OTHERS

BACK CHANNEL POLE PLANTING SEQUENCE:

- TYPICAL INSTALLATION SEQUENCE IS EXPECTED TO INCLUDE (SEE SPECIFICATIONS AND DESIGN DRAWINGS FOR MORE DETAILS):
1. CONTRACTOR TO HAVE PREVIOUSLY INSTALLED AND TESTED BACK CHANNEL, ZONE 1 IRRIGATION SYSTEM. (SEE DESIGN DRAWINGS FOR MORE DETAILS).
 2. DRILLING CONTRACTOR INSTALLS 8" TO 11" DEEP HOLE USING A 6" I.D. (NOMINAL) HOLLOW-STEM AUGER.
 3. CONTRACTOR FILLS AUGER ANNUAL SPACE WITH WATER.
 4. WORKING AS QUICKLY AS POSSIBLE, CONTRACTOR REMOVES ONE COTTONWOOD ROOTED POLE FROM TEMPORARY COOL STORAGE AND 4-INCH PVC GROWTH CONTAINER AND INSERTS POLE INTO AUGER OPENING UNTIL APPROXIMATELY 6 INCHES REMAINS ABOVE THE GROUND SURFACE.
 5. CONTRACTOR INSERTS A SECTION OF 1/2-INCH PVC PIPE INTO THE HOLLOW-STEM AUGER TO THE FULL DEPTH OF THE AUGERED HOLE. THE 1/2-INCH PVC PIPE SHALL BE CAPPED AT THE BOTTOM END AND HAVE 5/32-INCH HOLES DRILLED EVERY 1-FOOT ALONG ITS LENGTH AND CAP.
 6. CONTRACTOR INSERTS TWO ROOTED WILLOW POLES INTO HOLLOW-STEM AUGER SUCH THAT APPROXIMATELY 6 INCHES OF THE WILLOWS REMAIN ABOVE THE GROUND SURFACE.
 7. CONTRACTOR FILLS REMAINING SPACE WITHIN HOLLOW-STEM AUGER WITH TOPSOIL, ENSURING THAT THE HOLE IS COMPLETELY FILLED WITH SOIL (I.E. NO AIR POCKETS).
 8. DRILLING CONTRACTOR CAREFULLY RETRIEVES THE HOLLOW-STEM AUGER, TAKING CARE NOT TO PULL THE ROOTED POLES, SOIL OR PVC PIPE FROM THE GROUND. AS THE AUGER IS RETRIEVED, THE NATIVE SOIL IS ALLOWED TO COLLAPSE AROUND THE ROOTED POLES. BACKFILL HOLE WITH TOPSOIL TO GROUND SURFACE AS NECESSARY.
 9. CONTRACTOR IMMEDIATELY CONNECTS THE 1/2-INCH PVC PIPE TO THE BACK CHANNEL ZONE 1 IRRIGATION SYSTEM. CONTRACTOR COMPLETES THE 6-INCH PORTIONS OF THE ROOTED POLES WITH SHADE Cloth, AND INSTALLS BEAVER PROTECTION MEASURES (SEE DESIGN DRAWINGS FOR MORE DETAILS).

LEGEND

- TOPSOIL
- QUARRY SPALLS
- CRUSHED ROCKS
- RIVER ROCKS
- NO NEW TRAIL CONSTRUCTION
- TRAIL ENHANCEMENT WITH GRAVEL/ROCK AND GEOTEXTILE FABRIC. SEE SHEET C3, DETAIL 1 FOR DETAIL
- BOULDER, SIGNS OR OTHER TRAIL MARKERS

PLANTING LEGEND

- TREES:**
- PONDEROSA PINE (12' O.C.)
 - BLACK COTTONWOOD (12' O.C.)
 - MOUNTAIN ALDER (10' O.C.)
 - DOUGLAS' HEMLOCK (10' O.C.)
- SHRUBS (6' O.C.):**
- SERVICEBERRY
 - CHOKECHERRY
 - WOODS' ROSE
 - CREeping OREGON GRAPE
 - SNOWBERRY
 - PLANTING CLUSTER: BEBB'S WILLOW, COYOTE WILLOW, GREY HULL PINE, BLACK COTTONWOOD (TALL)
 - LIVE WILLOW STAKE
 - CHOKECHERRY
- HERBACEOUS/GROUNDCOVER:**
- BLISS GRASS
 - ARROWLEAF BANSPOOT
 - IDAH0 FESCUE, SILKY LUPINE, WESTERN YARROW, KINKIFRUIT

Drawing No.	G1					
	Project No.					
501C						
GENERAL CONSTRUCTION NOTES						
90% DESIGN SUBMITTAL						
SPOKANE RIVER METALS SITES						
ISLAND COMPLEX RECREATIONAL AREA						
REMEDIAL ACTION						
SPOKANE COUNTY, WASHINGTON						
Date of Issue:	March 2007					
Designed By:	ACS					
Drawn By:	SKC					
Checked By:	SKF					
Approved By:	CMH					
						
REV.	DATE	DESCRIPTION	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
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