



# R & E Grant Application 13 Biennium

Project #:  
13-112,15-001

## *Sandy River Mainstem Floodplain Reconnection*

### ***Project Information***

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**R&E Project Request:** \$107,719.00  
**Match Funding:** \$396,257.00  
**Total Project:** \$503,976.00  
**Start Date:** 3/6/2015  
**End Date:** 10/15/2015  
**Project Email:** bill@sandyriver.org  
**Project Biennium:** 13 Biennium  
**Organization:** Sandy River Basin Watershed Council (Tax ID #: 93-1294148)

### ***Fiscal Officer***

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**Name:** Steve Wise  
**Address:** PO Box 868  
Sandy, OR 97055  
**Telephone:** 503-622-9134  
**Email:** swise@sandyriver.org

### ***Applicant Information***

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**Name:** William Weiler  
**Address:** PO Box 868  
Sandy, OR 97055  
**Telephone:** 509-668-1423  
**Email:** william.weiler8@gmail.com

### ***Past Recommended or Completed Projects***

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This applicant has no previous projects that match criteria.

### ***Project Summary***

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This project is NOT part of ODFW's 25 Year Angling Plan.

**Activity Type:** Habitat

**Summary:** The Sandy River Mainstem Floodplain Reconnection will restore side channel flow and enhance channel complexity and wild salmon habitat in a priority reach with intensive residential and infrastructure development. Project actions include removal of 300' of historic levee installed following the record floods of 1964, which isolated the floodplain from all but the most intense flood flows and intensified downstream erosion and channel migration. Construction of formidable log jams at

a restored side channel inlet will guide flow into the 2,900-foot side channel and currently isolated 30-acre floodplain, acquired in 2007 for conservation management by Columbia Land Trust. Project designs grew from a multi-year community dialog to develop Restorative Flood Response approaches using habitat restoration to reduce risk of channel migration and bank erosion in areas impacted by 2011 and other recent floods.

**Objectives:** The Sandy River Mainstem Floodplain Reconnection will implement three actions to restore approximately 2900' of side channel and floodplain habitat in a priority reach. Removal of 300 feet of a post-1964 levee, construction of engineered log jams at a side channel inlet, and grading to connect a historic channel as a backwater refugia will relieve identified limiting factors for listed salmonids, increasing the frequency of flow into the channel by a factor of 10, and increasing habitat complexity.

**Fishery Benefits:** Sandy River Basin Characterization Report (Sandy River Basin Partners 2005) and Ecosystem Diagnosis and Treatment Model Based Analysis (Sandy River Basin Partners 2001) plans both specifically describe fish use and limiting factors for salmonids in the Sandy River watershed. The middle and upper Sandy River reaches provide habitat for Spring Chinook, Coho, and Winter Steelhead and serve as important migration corridors for adults and juveniles moving to the Zigzag River, Clear Fork of the Sandy, Still Creek and other highly productive tributaries. Our proposed project will benefit these salmonids and other aquatic species through providing additional habitat features, side channel rearing refugia. Improving floodplain connectivity will enhance productivity and survival of salmonids, and expand spawning, rearing and migration habitat.

**Watershed Benefits:**

Regional assessments and prioritizations have consistently recognized the relative importance of the Sandy River basin as habitat for spring Chinook, coho, and winter steelhead. Riparian and upland vegetation restoration proposed with this project is being conducted in conjunction with the broader efforts of the Sandy River Basin Partners ([www.sandyriverpartners.org](http://www.sandyriverpartners.org)) to restore priority aquatic and terrestrial habitats for recovery of the basin's four threatened fish populations.

The Lower Columbia River Conservation and Recovery Plan For Oregon Populations Of Salmon And Steelhead 1 identifies the Sandy basin as a high restoration priority, and the related Lower Columbia River Conservation & Recovery Plan for Salmon and Steelhead: 3-Year Implementation Schedule (2013) anticipates implementation of restoration in mainstem side channel in 2015-16. The Lower Columbia Plan cites impaired physical habitat quality and habitat access for Sandy River basin coho, spring and fall Chinook, and winter steelhead due to stream cleaning, straightening and channelization, diking, wetland filling, and lack of large wood recruitment as key threats. Recommended actions include restoring off- channel habitat and/or access to off-channel habitat, particularly side-channels, wetlands, and floodplains.<sup>2</sup> The Plan identifies key management actions of reconnecting side channels and off-channel habitats, restoring natural channel form, increasing stream habitat complexity through the placement of large wood and restoring natural riparian vegetative communities. All four actions are noted as having a high positive influence on VSP parameters. Because of its species diversity, historic productivity, and potential for successful restoration actions (relative to other populations in the ESU that are at higher risk with a more daunting gap between current and recovery levels), the Plan views the Sandy as key to species recovery and eventual de-listing of the Lower Columbia ESU.

**Current Situation:**

The 30-acre CLT floodplain site was the subject of preliminary analysis during the Middle Sandy Restoration Prioritization, and as part of RFR Phase I. CLT floodplain contains intact riparian forest, much of it dating since the 1964 flood and subsequent removal of vegetation from river banks. The air photo record shows that the main channel alignment was at the right edge of the active floodplain and was subsequently realigned to its pre-flood position in conjunction with levee construction. The post-1964 flood alterations greatly reduced channel complexity. While some of that complexity has returned as the river has mobilized portions of historically graded surfaces, a substantial 2,900-foot side channel as well as a secondary 1,400-foot channel remain isolated. The side channel and floodplain are connected to the mainstem Sandy, and thus available as fish habitat, only during the highest flows, less than 30 days per year in an average year. Partially removing historic levee structure and increasing flow frequency into the side channel to recover a portion of historic habitat value.

**Alternatives:**

Design consultants Natural Systems Design (NSD) evaluated a range of potential interventions in 1.3 mile reach from the CLT property downstream to the lower extent of the Timberline Rim neighborhood (River Mile 41). The levee at the upstream end of the 30 acre CLT property reduced channel complexity on this

parcel, which encompasses about a mile of riverfront and hundreds of lineal feet of historic side channel habitat. This site is in a transition zone between heavily impacted/developed river banks and prime habitat on public lands upstream. Near term action is part of a broader long-term overall restoration strategy. Initial steps in this project call for removal of only the lower 1/3 (approx.. 300 ft) of the levee. The design plan will lower the right bank along the downstream 300 feet of the levee and construct Engineered Logjams (ELJs) along the bank. The two priority locations for ELJ placement are staggered on opposite sides of an existing side channel that flows northerly about 2,900 feet along the western boundary of the CLT property to partition flow from the mainstem Sandy into the side channel as well as creating pool and cover habitat. ELJ construction also envisions widening and deepening the inlet to this side channel.

**Designer:** Dr. Tim Abbe, Natural Systems Design (NSD) Principal Geomorphologist and his staff in collaboration with the Sandy River Partners.

**Methods:** Specific Project Design Methods include:

- Levee partial removal – Removal of the lower 300' of the existing levee allows reconnection between mainstem flows and the side channel and floodplain, removing confinement to enhance habitat but avoiding flow along the terrace at river right that could cause bank erosion and channel migration into existing residential properties.
- Side channel Inlet - Activation at a slightly sub-bankfull stage and capacity for 100 year flood event. Extended seasonal flows through the channel are designed to induce scour and add complexity within the side channel.
- Engineered log jams at side channel – Placement of approximately 140 large wood pieces in two log jams at either side of inlet to increase complexity, induce pool formation, and provide cover and food production for migrating juvenile salmonids
- Side channel enhancements – Grading and large wood placement to increase connectivity with 1.1 acre “beaver pond” remaining from 1964 channel, as a backwater alcove to the reconnected channel and refugia for migrating juvenile salmonids.

Enhancements have been designed with the Sandy's dynamic, high energy, high debris-transporting geomorphic behavior in mind. The material size and type, anchoring strategy, and ballast size and proportions are particularly aimed to account for the Sandy's potential energy and rapid change. Inlet large wood structures are designed to accumulate additional material during future high water events. The increased flow from additional connectivity at the inlet should help keep the inlet and side channel scoured of sediment that currently deposits, preserving the long-term value of the restoration work.

Engineered log jams are designed with the Sandy's dynamic hydrology, steep grade, and particular geomorphic history that has created a floodplain on layers of unconsolidated lahars. Structures are anchored with posts and boulder ballast of

sufficient scale to resist 100-year flood level flows and accumulate large wood over time. Analysis for this project paid particular attention to local history of channel migration in the project reach, as well as the potential vulnerability of existing residences, water and sewer lines that cross the river at the lower end of the project reach, roads and related infrastructure.

Modeling examined the downstream effects of current and post-project surface flow elevation, both to avoid contributing to streambank erosion and anticipate effects of integrated potential future restoration actions throughout the reach. Analysis also sought to account for modeled climate change effects, which recognize a large potential increase in the intensity and frequency of large storm events.

The Sandy River Basin Characterization Report(Sandy River Basin Partners 2005) and Ecosystem Diagnosis and Treatment ModelBased Analysis(Sandy River Basin Partners 2001) plans both specifically describe fish use and limiting factors for salmonids in the Sandy River watershed.

**Inspector:** Dr. Tim Abbe, Sandy River Watershed Council staff, and Ian Sinks from the Columbia Land Trust

**Funding Elements:** In our two stage ODFW Restoration and Enhancement grant proposal, 2013-15 biennial funds will be used for materials, specifically logs and boulders, which we will need to acquire and stage by June, 2015 prior to project implementation. In the 2015-17 biennium, R & E funds would be needed for construction services to partially remove the levee and build log habitat structures in the restored channel.

**Partners:** Yes

ODFW: Technical Assistance.,Fish rescue if necessary  
Columbia Land Trust: Landowner  
Timberline Rim: Adjoining Neighborhood Association  
Portland Water Bureau Habitat Fund: Funding (committed)  
OWEB: Funding (requested)  
PGE Habitat Fund Funding (pending)  
Sandy River Partners: Technical Assistance

**Existing Plan:** Yes

The Lower Columbia River Conservation and Recovery Plan for Oregon Populations of Salmon And Steelhead identifies the Sandy basin as a high restoration priority, and the related Lower Columbia River Conservation & Recovery Plan for Salmon and Steelhead: 3-Year Implementation Schedule (2013) anticipates implementation of restoration in mainstem side channel in 2015-16. The Lower Columbia Plan cites impaired physical habitat quality and habitat access for Sandy River basin coho, spring and fall Chinook, and winter steelhead due to stream cleaning, straightening and channelization, diking, wetland filling, and lack of large wood recruitment as key threats. Recommended actions include restoring off-channel habitat and/or access to off-channel habitat, particularly side-channels, wetlands, and floodplains. The Plan identifies key management actions of reconnecting side channels and off-channel habitats, restoring natural channel form, increasing stream habitat complexity through the placement of large wood and restoring natural riparian vegetative communities. All four actions are noted as having a high positive influence on VSP parameters. Because of its species diversity, historic productivity, and potential for successful restoration actions (relative to other populations in the ESU that are at higher risk with a more daunting gap between current and recovery levels), the Plan views the Sandy as key to species recovery and eventual de-listing of the Lower Columbia ESU.

The Sandy River Basin Partners Aquatic Habitat Restoration Strategy (long term strategy) and Short-Term Sandy River Basin Salmon Habitat Conservation and Restoration Strategy (short term strategy) identify both long term and short term strategies for Salmon and Steelhead recovery in the Sandy River basin. The long term strategy specifically identified the Sandy River main-stem corridor as a key area for habitat restoration. The short term strategy described near-term habitat

conservation and restoration strategies and identified priority locations and restoration action types. The main-stem Sandy River (mouth to Zigzag confluence) was identified as a priority watershed for restoration.

Based on the hierarchical framework in Roni et al (2002) the strategy identifies four tiers of restoration actions: Tier 1 – Reconnect Isolated Habitats, Tier 2 – Restore Long Term Processes (Roads, Water Quality, Marine Derived Nutrients), Tier 3 – Restore Long Term Processes (Riparian Vegetation), Tier 4 – Restore Short Term Processes (In –stream Habitat). The proposed project would undertake Tier 1 activities to reconnect isolated habitats including reactivating an existing side channel and actions to enhance habitat complexity, floodplain interaction and expanded pool habitat. In addition Tier 4 actions to restore short term processes including constructing engineered log jams and large wood habitat structures to promote channel scour, pool maintenance, provide adult holding habitat, and achieve large wood targets.

Oregon Department of Fish and Wildlife (ODFW). 2010. Lower Columbia River Conservation and Recovery Plan.

[http://www.dfw.state.or.us/fish/CRP/lower\\_columbia\\_plan.asp](http://www.dfw.state.or.us/fish/CRP/lower_columbia_plan.asp)

Ibid, pp. 104, 118, 131, p. 374 (Action 221-SY), p. 376 (Action 233-SY).

**Affected Contacted:** Yes

**Affected Supportive:** Yes

**Affected Comments:** Bruce Zoelick, BLM Fish Biologist: Technical Assistance. Bruce has reviewed the Sandy Mainstem Floodplain Re-connection plans and participated in project planning meetings.  
Ian Sinks, Columbia Land Trust (CLT) Stewardship Director: Landowner. As project landowner, CLT has lent its full support to the project from the beginning and understands the many salmon habitat restoration merits of the proposal.  
Natural Systems Design Staff --- Engineers. Dr. Tim Abbe, Principal Geomorphologist, Mary Ann Reinhart, Senior Geomorphologist, have provided countless hours on site and in developing the Engineered Designs for the project  
Clackamas County: Permitting. Steve Hanschika, Senior Planner. The Clackamas County Planning Department has been strongly supportive of fish restoration projects in the Middle Reach of the Sandy River.  
Timberline Rim Homeowners Association -- adjoining neighborhood leaders have participated in community Restorative Flood Response dialog and reviewed proposed designs

**Project Schedule/Participants/Funding**

Activity	Date	Participants
Permitting Process	11/15/2014	SRBWC
Staging of Materials (Logs/Boulders)	6/1/2015	Project Contractor
Project Construction (Log Jams/Levee Removal)	7/15/2015	Project Contractor
Project Oversight	7/15/2015	SRBWC/Natural Systems Design
Project Monitoring/Restoration/Maintenance	10/1/2015	SRBWC

**Affected Species:** Chinook Salmon  
Coho Salmon  
Steelhead

**Project Permits**

Name	Issued By	Secured?	Date Secured	Date Expected
Land Use	Clackmas County	No	1/1/0001	2/1/2015
Joint Permit App.	Army Corps of Eng.	No	1/1/0001	5/1/2015
General Authorization	DSL	No	1/1/0001	5/1/2015
State Scenic Waterways	State of Oregon	No	1/1/0001	5/1/2015

**Project Monitoring**

Organization	Address	Activity	Frequency
Sandy River Basin Watershed Council	PO Box 868 Sandy, OR 97055	Photo monitoring/project construction site monitoring	Monthly

**Project Maintenance**

Organization	Address	Activity	Frequency
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Sandy River Basin Watershed Council	PO Box 868 Sandy, OR 97055	Check on log jams/maintenance as needed	Monthly/Frequently during high water events
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**Project Match Funding**

Funding Source	Cash	In-Kind	Other	Description	Total	Secured?	Conditions?	Comments
R&E Request	\$107,719.00	\$0.00	\$0.00	\$79,919 in the current bi-ennium, \$27,800 allocated for the next bi-ennium	\$107,719.00	No	No	
OWEB	\$246,257.00	\$0.00	\$0.00		\$246,257.00	No	No	
Portland Water Bureau	\$120,000.00	\$0.00	\$0.00		\$120,000.00	Yes	No	
PGE Habitat Fund	\$25,000.00	\$0.00	\$0.00		\$25,000.00	No	No	
Columbia Land Trust	\$0.00	\$5,000.00	\$0.00		\$5,000.00	Yes	No	
				Total Match Funding:	\$503,976.00			

## Project Budget

Item	Item Type	Units	Unit Cost	R&E Funds	Match Funds	Total
Project Administration	Administration	396160	\$0.10	\$0.00	\$39,616.00	\$39,616.00
15-17 Side Channel Inlet Log Jams	Contracted Services	1	\$177,241.00	\$27,800.00	\$149,441.00	\$177,241.00
Construction Oversight	Contracted Services	16	\$1,800.00	\$0.00	\$28,800.00	\$28,800.00
Engineered Design	Contracted Services	433	\$150.00	\$0.00	\$64,950.00	\$64,950.00
Mobilization/Demob & Site Prep	Contracted Services	7500	\$8.25	\$0.00	\$61,875.00	\$61,875.00
In-kind Project Oversight/Technical Assistance	Intergovernmental Agreement Services	1	\$10,280.00	\$0.00	\$10,280.00	\$10,280.00
Outreach and Education	Personnel	80	\$26.00	\$0.00	\$2,080.00	\$2,080.00
Project Coordination	Personnel	800	\$30.00	\$0.00	\$24,000.00	\$24,000.00
Project Finances Coordination	Personnel	120	\$45.00	\$0.00	\$5,400.00	\$5,400.00
Outreach and Education	Production Costs	240	\$22.00	\$0.00	\$5,280.00	\$5,280.00
Permits	Production Costs	1	\$3,000.00	\$0.00	\$3,000.00	\$3,000.00
13-15 All thread rod/washers/nuts	Supplies/Materials /Services	200	\$13.00	\$2,600.00	\$0.00	\$2,600.00
13-15 Boulders	Supplies/Materials /Services	24	\$45.00	\$1,080.00	\$0.00	\$1,080.00
13-15 Large Wood	Supplies/Materials /Services	129	\$591.00	\$76,239.00	\$0.00	\$76,239.00
Travel to/from site	Travel	1	\$1,535.00	\$0.00	\$1,535.00	\$1,535.00
					<b>Total Budget:</b>	<b>\$503,976.00</b>

## Project Map

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## Additional Files

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Click a link to view that particular file.

[Columbia Land Trust letter](#)

[Design plans and model output](#)

[IRS letter](#)

[Match Funding letter](#)

[Signature authorization](#)

[Site Photos](#)

# Sandy River Mainstem Floodplain Reconnection Current Conditions



## Columbia Land Trust Floodplain current conditions:

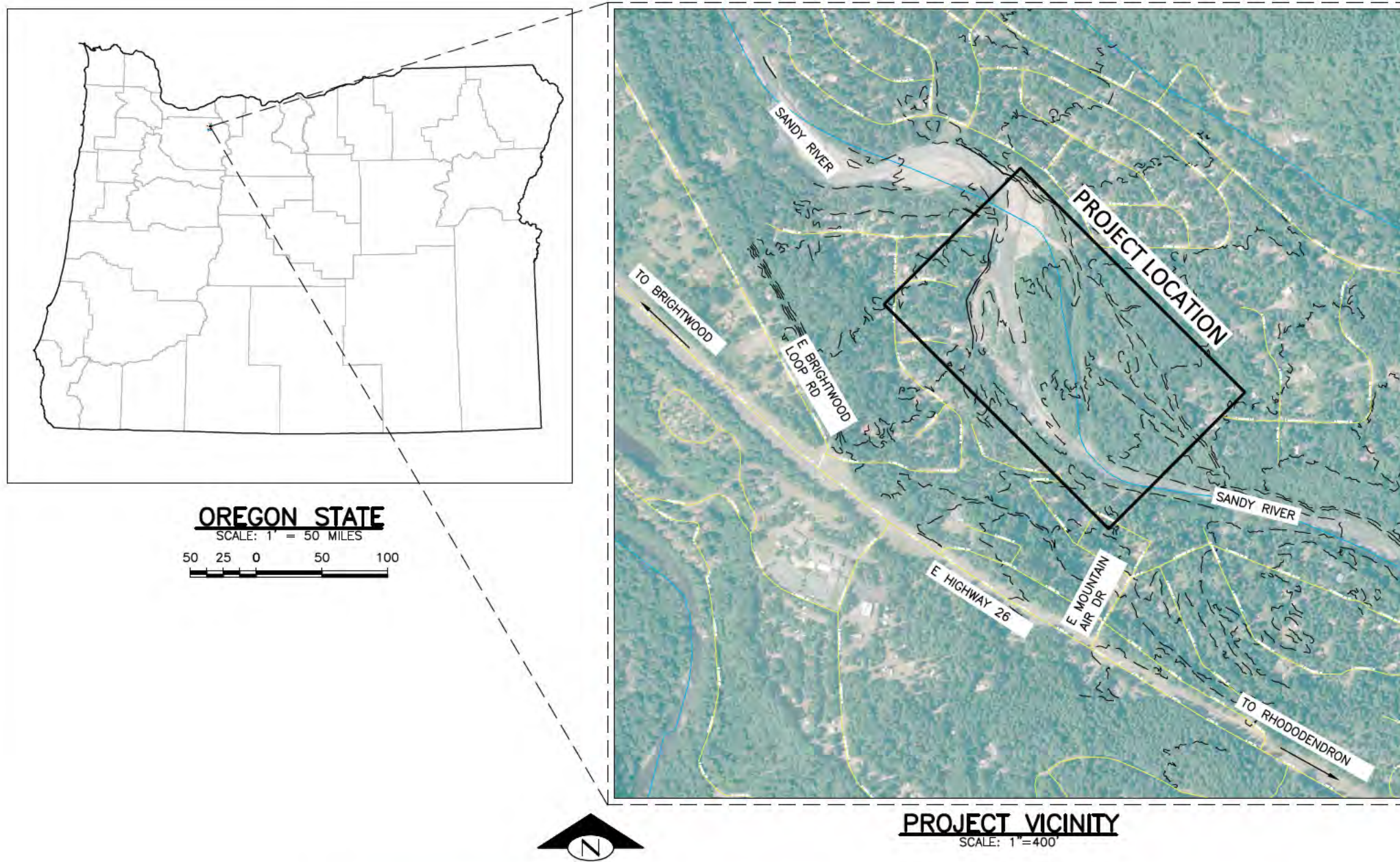
- A) a view of a wide section of the levee
- B) floodplain ponds behind the levee
- C) an example of the erosion challenges faced by residents with homes in the floodplain downstream the CLT property
- D) a view downstream of the river right bar surface, and a home, on the left side of the river, that was reconstructed after it was damaged during the 2006 high water event.



Below left:  
Project partners examining the side channel inlet, looking upstream, with the levee slated for removal at left.

# SANDY RIVER MAINSTEM FLOODPLAIN RECONNECTION

## SANDY RIVER BASIN WATERSHED COUNCIL



DRAWING LIST	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	GENERAL NOTES
3	LEGEND
4	SITE PLAN - EXISTING CONDITIONS
5	SITE PLAN - PROPOSED CONDITIONS
6	TYPE 1 ELJ
7	SITE ACCESS PLAN
8	TESC DETAILS

### CONTACT INFORMATION

SANDY RIVER BASIN WATERSHED COUNCIL

PO BOX 868  
SANDY, OR 97055  
(503) 622-9134

NATURAL SYSTEMS DESIGN, INC

1900 N NORTHLAKE WAY, SUITE 211  
SEATTLE, WA 98103  
(206) 834-0175

NA\PROJECTS\SANDY\_RIVER\_BASIN\_COUNCIL\OREGON\_DESIGN\_LOAD\_DWGSS\_-\_CURRENT\COVER\_SHEET.DWG\_Rev. 10/20/2014\_10:37:59\_AM

0 0 1  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

**Sandy River Basin Watershed Council**  
*Walking together to restore the Sandy River*



Natural Systems Design

NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED DESIGNED BY	LATITUDE 45°21'47.03"N
CHECKED DESIGNED CHECKED BY	LONGITUDE 121°59'36.41"W
DRAWN DRAFTED BY	TN/SC/RG T25/S30/R7E
CHECKED DRAFTED CHECKED BY	DATE

**SANDY RIVER MAINSTEM FLOODPLAIN RECONNECTION**

**COVER SHEET**

1  
SHEET 1 OF 8

Oct 20, 2014 CONCEPT DESIGN: NOT FOR CONSTRUCTION

**GENERAL NOTES**

1. THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF SANDY RIVER BASIN WATERSHED COUNCIL, HEREAFTER REFERRED TO AS "OWNER" AND "CONTRACTOR" AND THEIR AUTHORIZED AGENTS.
2. NATURAL SYSTEMS DESIGN HEREAFTER REFERRED TO AS "ENGINEER" IS RESPONSIBLE FOR THE PREPARATION OF THESE ORIGINAL PLANS AND ASSOCIATED SPECIFICATIONS; AND WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGE, OR USE, OF THESE PLANS WHICH INCLUDES ALTERATION, DELETION, OR EDITING OF THIS DOCUMENT WITHOUT EXPLICIT WRITTEN PERMISSION FROM THE ENGINEER. ANY OTHER UNAUTHORIZED USE OF THIS DOCUMENT IS PROHIBITED.
3. MINOR MODIFICATIONS ARE EXPECTED TO SUIT JOB SITE DIMENSIONS OR CONDITIONS. SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. THE OWNER, ENGINEER AND APPROPRIATE REGULATORY AGENCIES SHALL BE NOTIFIED OF ANY OWNER-AUTHORIZED CHANGE RESULTING IN MORE THAN A 10% DESIGN CHANGE OF PROPOSED FOOTPRINT OR THAT SIGNIFICANTLY AFFECTS THE INTENDED BENEFIT OR FUNCTION OF A PROJECT ELEMENT.
4. THE LOCATION OF ALL FEATURES SHOWN IS APPROXIMATE.
5. THE CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; AND FURTHER AGREES THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS IN ACCORDANCE WITH THE PROVISIONS OUTLINED BY THE PROJECT CONTRACT AND SPECIFICATIONS.
6. ALL IMPROVEMENTS SHALL BE ACCOMPLISHED UNDER THE APPROVAL, INSPECTION, AND TO THE SATISFACTION OF THE OWNER. IMPROVEMENT CONSTRUCTION SHALL COMPLY WITH THESE PLANS AND THE OREGON STATE DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD PLANS FOR CONSTRUCTION OF ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, CURRENT EDITION UNLESS NOTED OTHERWISE. ALL REFERENCES TO THE "STANDARD SPECIFICATIONS" SHALL MEAN THE OREGON STATE DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF LOCAL STREETS AND ROADS, CURRENT EDITION. CONSTRUCTION NOT SPECIFIED ON THESE PLANS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR IS OBLIGATED TO BE FAMILIAR WITH APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS NOT DISCUSSED IN THE GENERAL NOTES. THE CONTRACT SPECIAL PROVISIONS SHALL SUPERSEDE THOSE OF THE STANDARD SPECIFICATIONS WHERE DISCREPANCIES OCCUR.
7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTOR(S) TO EXAMINE THE PROJECT SITE PRIOR TO THE OPENING OF BID PROPOSALS. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED, SUCH AS THE NATURE AND LOCATION OF THE WORK; AND THE GENERAL AND LOCAL CONDITIONS, PARTICULARLY THOSE AFFECTING THE AVAILABILITY OF TRANSPORTATION, THE DISPOSAL, HANDLING, AND STORAGE OF MATERIALS, AVAILABILITY OF LABOR, WATER, ELECTRICITY, ROADS, THE UNCERTAINTIES OF WEATHER, THE CONDITIONS OF THE GROUND, SURFACE AND SUBSURFACE MATERIALS, GROUNDWATER, THE EQUIPMENT AND FACILITIES NEEDED FOR AND DURING THE PERFORMANCE OF THE WORK, AND THE COSTS THEREOF. ANY FAILURE BY THE CONTRACTOR AND SUBCONTRACTOR(S) TO ACQUAINT THEMSELVES WITH ALL THE AVAILABLE INFORMATION WILL NOT RELIEVE THE CONTRACTOR AND SUBCONTRACTOR(S) FROM RESPONSIBILITY FOR PROPERLY ESTIMATING THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK.
8. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE CONTRACT DOCUMENTS AND FOR ALL SUBMITTALS REQUIRED TO THE OWNER FOR REVIEW AND ACCEPTANCE.

**PERMIT NOTES**

1. EVERY REASONABLE EFFORT SHALL BE MADE TO CONDUCT THE ACTIVITIES SHOWN IN THESE PLANS, IN A MANNER THAT MINIMIZES THE ADVERSE IMPACT ON WATER QUALITY, FISH AND WILDLIFE, AND THE NATURAL ENVIRONMENT.
2. ALL WORK WILL BE IN COMPLIANCE WITH PERMIT CONDITIONS ISSUED BY PERTINENT REGULATORY AGENCIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE COPIES OF ALL PERMITS ON THE JOB SITE, UNDERSTAND AND COMPLY WITH ALL PERMIT CONDITIONS.
3. ALL WORK THAT DISTURBS THE SUBSTRATE, BANK, OR SHORE OF A WATERS OF THE STATE THAT CONTAINS FISH LIFE SHALL BE CONDUCTED ONLY DURING THE WORK PERIOD FOR THAT WATERBODY AS ALLOWED BY RELEVANT HYDRAULIC WORK PERMITS. THOSE PORTIONS OF THE PROJECT WORK THAT OCCUR OUTSIDE OR ABOVE THE ORDINARY HIGH WATER MARK (ABOVE THE USACE JURISDICTIONAL LINE) ARE NOT SUBJECT TO THE WORK PERIODS DESCRIBED ABOVE UNLESS SPECIFIED IN THE RELEVANT PERMITS.
4. ALL ACTIVITIES THAT INVOLVE WORK ADJACENT TO, OR WITHIN THE WETTED CHANNEL SHALL, AT ALL TIMES, REMAIN CONSISTENT WITH ALL APPLICABLE WATER QUALITY STANDARDS; EFFLUENT LIMITATION; AND STANDARDS OF PERFORMANCE, PROHIBITIONS, PRETREATMENT STANDARDS, AND MANAGEMENT PRACTICES ESTABLISHED PURSUANT TO THE CLEAN WATER ACT OR PURSUANT TO APPLICABLE STATE AND LOCAL LAW.
5. IF AT ANY TIME, AS A RESULT OF PROJECT ACTIVITIES, FISH ARE OBSERVED IN DISTRESS, A FISH KILL OCCURS, OR WATER QUALITY PROBLEMS DEVELOP (INCLUDING EQUIPMENT LEAKS OR SPILLS), OPERATIONS SHALL CEASE AND THE OWNER SHALL BE NOTIFIED IMMEDIATELY.

6. IF, DURING CONSTRUCTION, ARCHAEOLOGICAL REMAINS ARE ENCOUNTERED, CONSTRUCTION IN THE VICINITY SHALL BE HALTED, AND THE STATE OFFICE OF HISTORIC PRESERVATION AND THE OWNER SHALL BE NOTIFIED IMMEDIATELY.

**SURVEY NOTES**

1. UNLESS NOTED OTHERWISE ON THE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN A SET OF PLANS ON THE JOB SHOWING "AS-CONSTRUCTED" CHANGES MADE TO DATE. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUPPLY TO OWNER A SET OF PLANS, MARKED UP TO THE SATISFACTION OF THE OWNER, REFLECTING THE AS-CONSTRUCTED MODIFICATIONS.
3. ELEVATIONS SHOWN ON THE PLANS FOR PIPE INVERTS, TOPS OF BANKS, THALWEG, GRADE CONTROLS, ETC., ARE BASED UPON THE TOPOGRAPHIC INFORMATION SHOWN ON THE PLANS. THE CONTRACTOR SHALL VERIFY ALL NECESSARY SURFACE ELEVATIONS IN THE FIELD AND NOTIFY THE OWNER OF ANY DISCREPANCIES, WHICH MIGHT AFFECT PROPER OPERATION OF THE NEW FACILITIES BEFORE BREAKING GROUND AND PRIOR TO FACILITY INSTALLATION. THE OWNER SHALL BE CONTACTED IN THE EVENT ELEVATIONS ARE INCORRECT SO THAT THE PROPER ADJUSTMENTS CAN BE MADE BY ENGINEER PRIOR TO THE INSTALLATION OF THE FACILITIES, AS SET FORTH IN THE SPECIAL PROVISIONS.
4. LIDAR DATA FOR THIS PROJECT WAS OBTAINED FROM THE OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES (DOGAMI) AND IS REPRESENTATIVE OF 2011 - 2012 CONDITIONS. THE VERTICAL DATUM IS NAVD88 (FT). THE HORIZONTAL DATUM IS NAD83 OREGON STATE PLANE NORTH ZONE (FT).

**EROSION, SEDIMENT CONTROL AND WATER MANAGEMENT NOTES**

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING ALL TEMPORARY EROSION CONTROL MEASURES. THE EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND PERFORMANCE OF THE TEMPORARY EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE PROJECT.
2. A SEDIMENT AND EROSION CONTROL PLAN WILL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL BY OWNER AND/OR THE ENGINEER BEFORE ANY CONSTRUCTION MAY BEGIN. THE SEDIMENT AND EROSION CONTROL PLAN WILL IDENTIFY BEST MANAGEMENT PRACTICES TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
3. ACTIVITIES SHALL BE DESIGNED AND CONSTRUCTED TO AVOID AND MINIMIZE ADVERSE IMPACTS TO WATERS OF THE UNITED STATES TO THE MAXIMUM EXTENT PRACTICAL THROUGH THE USE OF PRACTICAL ALTERNATIVES. ALTERNATIVES THAT SHALL BE CONSIDERED INCLUDE THOSE THAT MINIMIZE THE NUMBER AND EXTENT OF IN-WATER WORK AND EQUIPMENT CROSSINGS OF WETTED CHANNELS.
4. AT NO TIME SHALL SEDIMENT-LADEN WATER BE DISCHARGED OR PUMPED DIRECTLY INTO THE SUBJECT RIVER, STREAM, OR WETLAND. WATER SHALL BE DISCHARGED IN ACCORDANCE WITH REQUIREMENTS SET FORTH IN THE PROJECT PERMITS AND / OR SPECIFICATIONS.
5. IF HIGH WATER LEVEL CONDITIONS THAT CAUSE SILTATION OR EROSION ARE ENCOUNTERED DURING CONSTRUCTION, WORK SHALL STOP UNTIL THE WATER LEVEL SUBSIDES.
6. PERMIT CONDITIONS CONTAIN SPECIFIC REQUIREMENTS FOR THE CONTROL OF EROSION AND TURBIDITY FROM PROJECT OPERATIONS. TURBIDITY WILL BE MONITORED ON A FREQUENT BASIS BY THE PROJECT MANAGEMENT AND INSPECTION STAFF ON-SITE. TURBIDITY AMOUNTS IN EXCESS OF THE PERMITTED CONCENTRATIONS AND/OR DURATIONS WILL CAUSE WORK TO BE STOPPED UNTIL IMPROVED PRACTICES ARE IN EFFECT AND THE PROBLEMS CONTROLLED. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR ANY PROJECT DELAYS THAT OCCUR BY NATURE OF THIS FAILURE TO ADEQUATELY CONTAIN SEDIMENT ON-SITE.
7. CONTRACTOR SHALL LIMIT MACHINERY MOVEMENT TO CONSTRUCTION AREAS DEFINED ON SITE PLAN OR IDENTIFIED AS ACCEPTABLE BY THE ENGINEER OR OWNER.
8. ALL EXTERNAL GREASE AND OIL SHALL BE PRESSURE-WASHED OFF THE EQUIPMENT PRIOR TO TRANSPORT TO THE SITE.
9. ALL EQUIPMENT OPERATING BELOW OHWM SHALL UTILIZE READILY BIODEGRADABLE VEGETABLE-BASED HYDRAULIC FLUIDS.
10. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT NO PETROLEUM PRODUCTS, HYDRAULIC FLUID, SEDIMENTS, SEDIMENT-LADEN WATER, CHEMICALS, OR ANY OTHER TOXIC OR DELETERIOUS MATERIALS ARE ALLOWED TO ENTER OR LEACH INTO THE SUBJECT RIVER, STREAM, OR WETLAND.
11. THE CONTRACTOR SHALL HAVE AN EMERGENCY SPILL KIT ONSITE AT ALL TIMES.
12. NO TREES OR WETLAND VEGETATION SHALL BE REMOVED UNLESS THEY ARE SHOWN AND NOTED TO BE REMOVED ON THE PLANS OR AS DIRECTLY SPECIFIED ON-SITE BY THE PROJECT MANAGEMENT STAFF. ALL TREES CONFLICTING WITH GRADING SHALL BE REMOVED.

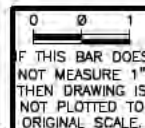
NO GRADING SHALL TAKE PLACE WITHIN THE DRIP LINE OF TREES NOT TO BE REMOVED UNLESS OTHERWISE APPROVED.

13. FOLLOWING CONSTRUCTION, SITE RESTORATION WILL INCLUDE ESTABLISHING LONG-TERM EROSION PROTECTION MEASURES. THESE MEASURES WILL INCLUDE PLANTINGS, EROSION CONTROL FABRIC, SEED, AND MULCH. EQUIPMENT AND EXCESS SUPPLIES WILL BE REMOVED AND THE WORK AREA WILL BE CLEANED. MAINTENANCE ACTIVITIES FOR THE NEWLY CONSTRUCTED RESTORATION PROJECTS ARE ANTICIPATED TO OCCUR PERIODICALLY.

**CONSTRUCTION NOTES**

1. CONTRACT DOCUMENTS REFER TO THESE PLANS.
2. CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE ALL WORK AS INDICATED IN THE CONTRACT DOCUMENTS.
3. CONSTRUCTION HOURS SHALL BE WEEKDAYS BETWEEN 7:00 A.M. AND 6:30 P.M. UNLESS PRIOR APPROVAL IS RECEIVED FROM THE OWNER.
4. SOILS AT THE SITE CONTAIN SOFT SILT, CLAY AND HIGH GROUNDWATER AND MAY REQUIRE EQUIPMENT MATS TO SUPPORT CONSTRUCTION EQUIPMENT. CONSOLIDATION OF THE GROUND SURFACE SHOULD BE EXPECTED. CONTRACTOR IS RESPONSIBLE FOR DETERMINING NEED FOR, DESIGNING, PROCURING, INSTALLING, USING AND REMOVING ANY EQUIPMENT MATS NEEDED TO ALLOW FOR EQUIPMENT OPERATION SUFFICIENT TO CONSTRUCT THE PROJECT.
5. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO PROCEEDING WITH THE WORK.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE BY THE OWNER OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
7. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
8. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST SKILLS AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THIS CONTRACT.
9. THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, ROADWAY, DRAINAGE WAYS, PRIVATE BRIDGE, CULVERTS, AND VEGETATION UNTIL SUCH ITEMS ARE TO BE DISTURBED OR REMOVED AS INDICATED ON THE CONTRACT DOCUMENTS.
10. THE CONTRACTOR SHALL KEEP THE JOB SITE CLEAN AND HAZARD FREE. CONTRACTOR SHALL DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH FOR THE DURATION OF THE WORK. UPON COMPLETION OF WORK, CONTRACTOR SHALL REMOVE ALL MATERIAL AND EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY.
11. NOTES AND DETAILS ON THE PLANS SHALL TAKE PRECEDENCE OVER GENERAL NOTES HEREIN.
12. DIMENSIONS CALLOUTS SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON THE PLANS.
13. THE PLANS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF ALL CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURES, WORKS, AND THE PUBLIC DURING CONSTRUCTION.
14. MATERIAL SHALL NOT BE STORED OUTSIDE OF IDENTIFIED STAGING AREAS. THE CONTRACTOR SHALL USE ONLY DESIGNATED SPECIFIC SITES FOR STORAGE OF EQUIPMENT AND MATERIALS AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF ALL EQUIPMENT AND MATERIALS.

\\PROJECTS\SANDY\_RIVER\_BASIN\_COUNCIL\_OREGON\DESIGN\CAI\_LINWIS - CURRENT NOTES CURRENT.DWG, 2014.10.20.2014.10.20.04 AM



NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED DESIGNED BY	LATITUDE 45°21'47.03"N
CHECKED DESIGNED CHECKED BY	LONGITUDE 121°59'36.41"W
DRAWN DRAFTED BY	TM/SC/RG T25/S30/R7E
CHECKED DRAFTED CHECKED BY	DATE

**SANDY RIVER MAINSTEM FLOODPLAIN RECONNECTION**

**GENERAL NOTES**

Oct 20, 2014 CONCEPT DESIGN: NOT FOR CONSTRUCTION

**GENERAL LEGEND**

- PROPERTY LINE
- PHASE LINE
- RIGHT OF WAY LINE
- EXISTING ROAD
- ACCESS ROAD
- CLEARING LIMIT
- GRADING LIMIT
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- LOW FLOW CHANNEL
- EXISTING FLOW
- EXISTING OHWM
- PROPOSED OHWM
- MEAN HIGHER HIGH WATER
- MEAN HIGH WATER
- MEAN LOWER LOW WATER
- 2-YEAR FLOOD BOUNDARY
- 100-YEAR FLOOD BOUNDARY
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WETLAND
- PROPOSED WETLAND
- EXISTING WATER
- PROPOSED WATER
- DEMOLITION/REMOVAL AREA
- EXISTING FENCE
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- CONTROL POINT LOCATION
- PHOTO POINT LOCATION

- RACKING AND SLASH MATERIAL
- LARGE WOOD PIECE
- ENGINEERED LOGJAM (ELJ)  
(PHASE\_ TYPE\_ NUMBER)
- NATIVE ALLUVIUM
- STREAMBED GRAVEL
- RIPRAP
- BOULDER CLUSTER
- STEEL CABLE

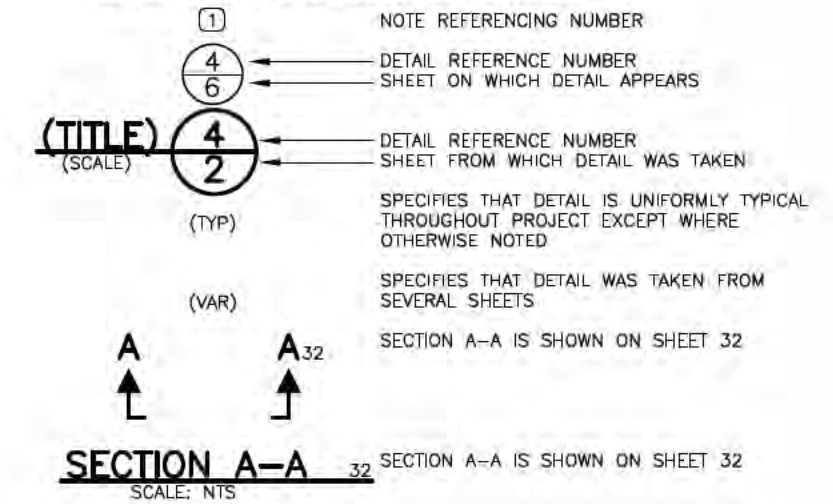
**RESTORATION LEGEND**

- FILL SLOPE LINE
- EXCAVATION SLOPE LINE
- WEST FORK SWALE
- UPLAND FLOODPLAIN MOUNDS
- FLOODPLAIN DEPRESSIONS
- TRAIL EDGE
- FLOODPLAIN 1
- RIPARIAN
- FLOODPLAIN 2
- UPLAND UNDERPLANTING
- WETLAND UNDERPLANTING
- UPLAND FILL SITE

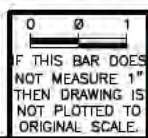
**TEMPORARY EROSION CONTROL LEGEND**

- SB — SB — SILT BOOM
- BN — BN — BLOCK NETS
- SF — SF — SILT FENCE
- SW — SW — STRAW WATTLE
- PROPOSED STREAM BYPASS
- PROPOSED STAGING AREA
- BULK BAG COFFERDAM
- TEMPORARY ACCESS ROAD
- PUMP OUTLET LOCATION
- TEMPORARY ACCESS BRIDGE

**DETAIL AND SECTION REFERENCING**



\\PROJECTS\SANDY\_RIVER\_BASIN\_COUNCIL\_CREGGON\DESIGN\CAI\_TOWNS\_-\_CURRENT\LEGEND.DWG Date: 10/20/2014 10:38:08 AM



NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED DESIGNED BY:	LATITUDE 45°21'47.03"N
CHECKED DESIGNED CHECKED BY:	LONGITUDE 121°59'36.41"W
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**SANDY RIVER MAINSTEM FLOODPLAIN RECONNECTION**

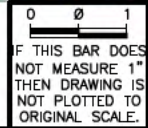
**LEGEND**

Oct 20, 2014 CONCEPT DESIGN: NOT FOR CONSTRUCTION



NA PROJECT/SANDY RIVER BASIN COUNCIL OREGON DESIGN/CD.DWG - CURRENT SITE PLAN - EXISTING CONDITIONS.DWG - 10/20/2014 10:36:30 AM

Oct 20, 2014 CONCEPT DESIGN: NOT FOR CONSTRUCTION



**Sandy River Basin  
Watershed Council**  
*Working together to restore the Sandy River*



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CHECKED BY	DATE

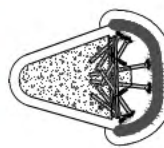


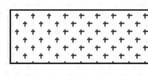

**SANDY RIVER MAINSTEM  
FLOODPLAIN RECONNECTION**

**SITE PLAN -  
EXISTING CONDITIONS**

4  
 SHEET 4 OF 8

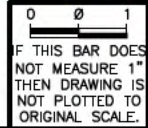


**LEGEND**

-  ELJ
-  POOL
-  SIDE CHANNEL WOOD COMPLEX
-  MINOR GRADING FOR ENHANCEMENT OF FLOODPLAIN CONNECTIVITY
-  LEVEE REMOVAL

NA PROJECT/SANDY RIVER BASIN COUNCIL OREGON DESIGN/CD DWGS - CURRENT SITE PLAN/DWG. GRC\_10/20/2014\_12:41:54 PM

Oct 20, 2014 CONCEPT DESIGN: NOT FOR CONSTRUCTION



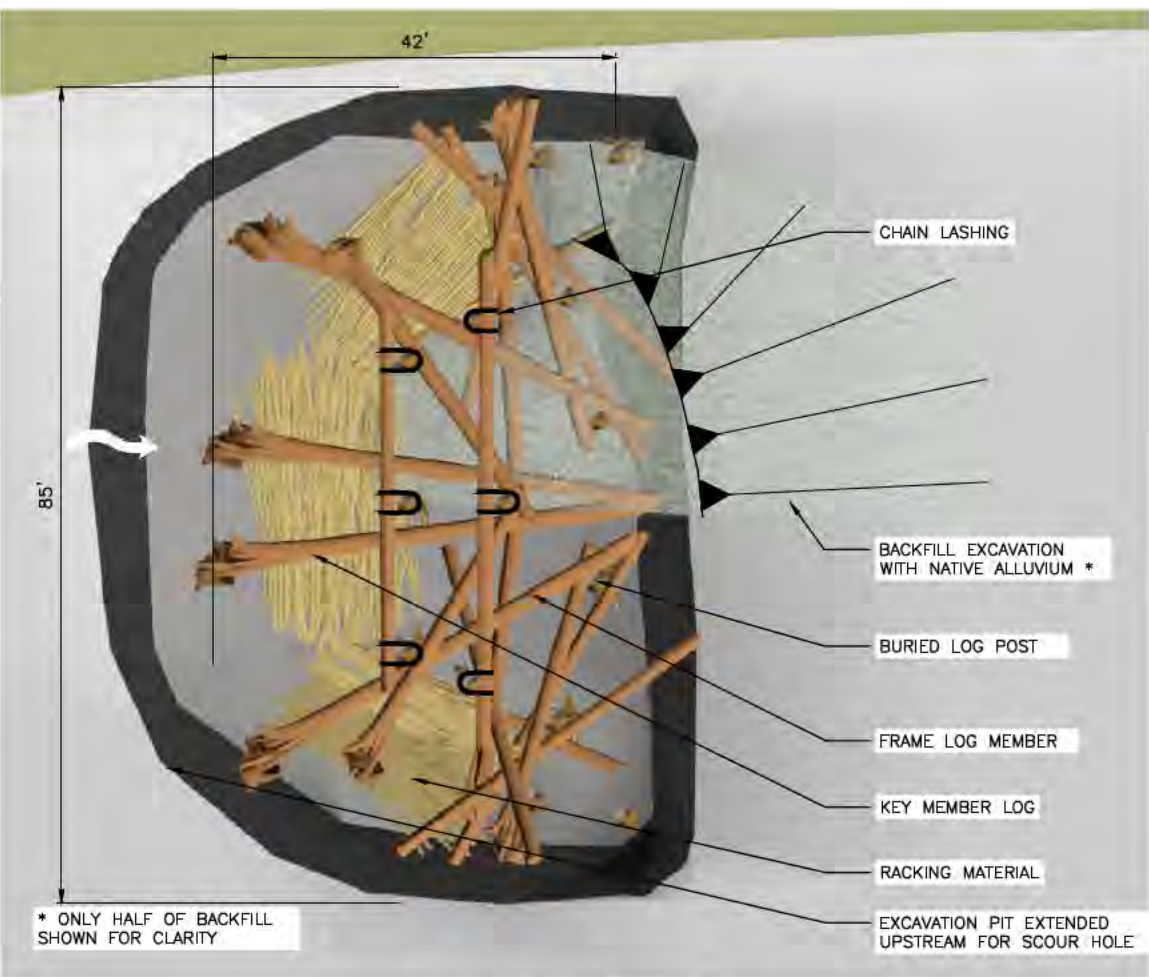
**Sandy River Basin Watershed Council**  
Working together to restore the Sandy River



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CHECKED DESIGNED CHECKED BY	LONGITUDE 121°59'36.41"W
DRAWN DRAFTED BY	TN/SC/RG T25/S30/R7E
CHECKED DRAFTED CHECKED BY	DATE

**SANDY RIVER MAINSTEM FLOODPLAIN RECONNECTION**

**SITE PLAN - PROPOSED CONDITIONS**



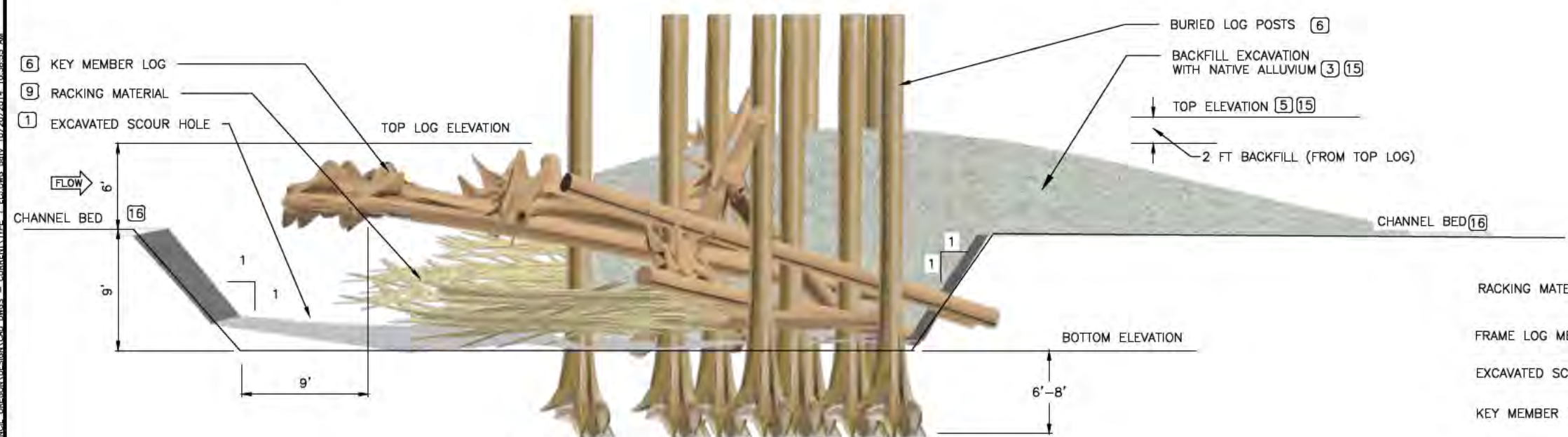
**TYPE 1 ELJ PLAN**  
SCALE: 1"=10'

TYPE 1 ELJ STRUCTURE SCHEDULE						
STRUCTURE LABEL*						
STRUCTURE WIDTH, (ft)	85					
STRUCTURE LENGTH, (ft)	100					
SCOUR DEPTH, (ft)	6					
MINIMUM FRAME LOG DIAMETER, (in)	18					
MINIMUM KEY LOG DIAMETER, (in)	24					
TIMBER POST DIAMETER, (in)	18					
GROUND ELEVATION AT STRUCTURE, (ft-NAVD88)						
STRUCTURE BOTTOM ELEVATION, (ft-NAVD88)						
TOP LOG ELEVATION, (ft-NAVD88)						
STRUCTURE TOP ELEVATION, (ft-NAVD88)						
MINIMUM PILE TIP ELEVATIONS, (ft-NAVD88)						
AVERAGE SEPTEMBER WATER SURFACE ELEVATION (ft-NAVD 88)						

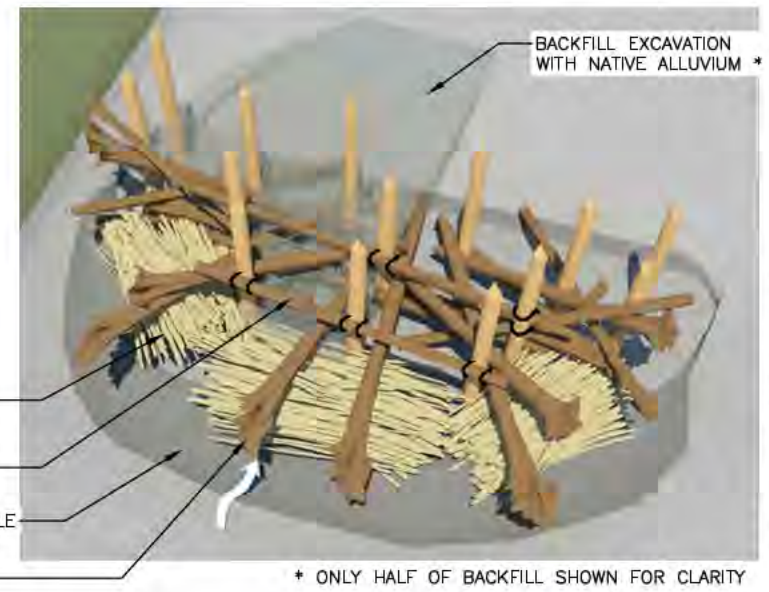
\* Label format, Phase-ELJ Type-ELJ Number

**TYPE 1 ELJ STRUCTURE NOTES**

- EXCAVATE IN FRONT OF LOGJAM FOR PLACEMENT OF RACKING MATERIAL. EXCAVATION AREA SHALL NOT BE BACKFILLED WITH ALLUVIUM, BUT LEFT AS A SCOUR HOLE.
- EXCAVATION SPOILS SHALL BE STAGED ACCORDING TO THE SWPPP. SPOILS SHALL ALSO BE STOCKPILED TO ALLOW LOG LAYER PLACEMENT AND CONSTRUCTION ACCESS.
- BACKFILL EXTENTS MAY VARY AND TO BE CONSTRUCTED WITH NATIVE ALLUVIUM FROM EXCAVATION SPOILS.
- BACKFILL EACH STRUCTURE LAYER WITH NATIVE ALLUVIUM FLUSH WITH THE CURRENT LAYER PRIOR TO PLACEMENT OF THE SUBSEQUENT LAYER.
- FINAL ELJ HEIGHT TO BE ACHIEVED AS SPECIFIED REGARDLESS OF ACTUAL LOG DIAMETERS USED OR STACKING ARRANGEMENT.
- ALL LARGE WOOD DIMENSIONS DO NOT INCLUDE BARK THICKNESS.
- COVER TOP OF BACKFILL AREA AND BASE OF STRUCTURES 6-12 INCHES WITH LOOSE WOOD DEBRIS AND CHIPS.
- RACKING MATERIAL SHALL CONSIST OF APPROXIMATELY 150 CU. YDS PER STRUCTURE WITH 6" - 12" DIA DBH AND A MINIMUM OF 5- FEET LENGTH. RACKING PLACEMENT SHALL OCCUR WITH EACH LAYER PLACEMENT TO ENSURE RACKING MATERIAL EXTENDS THROUGH STRUCTURE AND PINNED IN PLACE BY SUBSEQUENT LAYERS.
- THE CONTRACTOR SHALL FIELD VERIFY WITH THE OWNER REPRESENTATIVE OR ENGINEER ALL STRUCTURE LOCATIONS, PILE LOCATIONS, LENGTHS, WIDTHS AND ELEVATIONS PRIOR TO EXCAVATION, ASSEMBLY AND INSTALLATION OF EACH STRUCTURE.
- LOCATIONS FOR ALL STRUCTURE PLACEMENTS WILL BE STAKED IN FIELD BY THE ENGINEER OR OWNER REPRESENTATIVE PRIOR TO START OF CONSTRUCTION.
- EXCAVATION LIMITS SHALL BE FIELD VERIFIED BY THE OWNER REPRESENTATIVE OR ENGINEER PRIOR TO EXCAVATION COMMENCING AND PLACEMENT OF ANY LARGE WOOD.
- LOG TYPE IDENTIFICATION SHALL BE PAINTED ON ALL LOGS BY THE CONTRACTOR IN A PLACE VISIBLE FOR FIELD VERIFICATION PRIOR TO PLACEMENT WITH LEAD-FREE, BLAZE-ORANGE SURVEY MARKING PAINT.
- THE WOOD LAYER PLACEMENT IN EACH LOGJAM LAYER SHALL BE FIELD VERIFIED BY ON-SITE OWNER REPRESENTATIVE PRIOR TO BACKFILLING.
- BACKFILL NOT TO EXCEED TOP ELEVATION. EXCESS BACKFILL TO BE PLACED DOWNSTREAM OF FINISHED ELJ.
- CHANNEL BED ELEVATION IS REPRESENTATIVE OF A LOCAL AVERAGE CHANNEL BED AT RIFFLES. CHANNEL BED ELEVATION SHOULD NOT BE TAKEN IN POOLS.

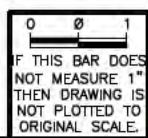


**TYPE 1 ELJ PROFILE**  
SCALE: 1"=5'



**TYPE 1 ELJ PERSPECTIVE**

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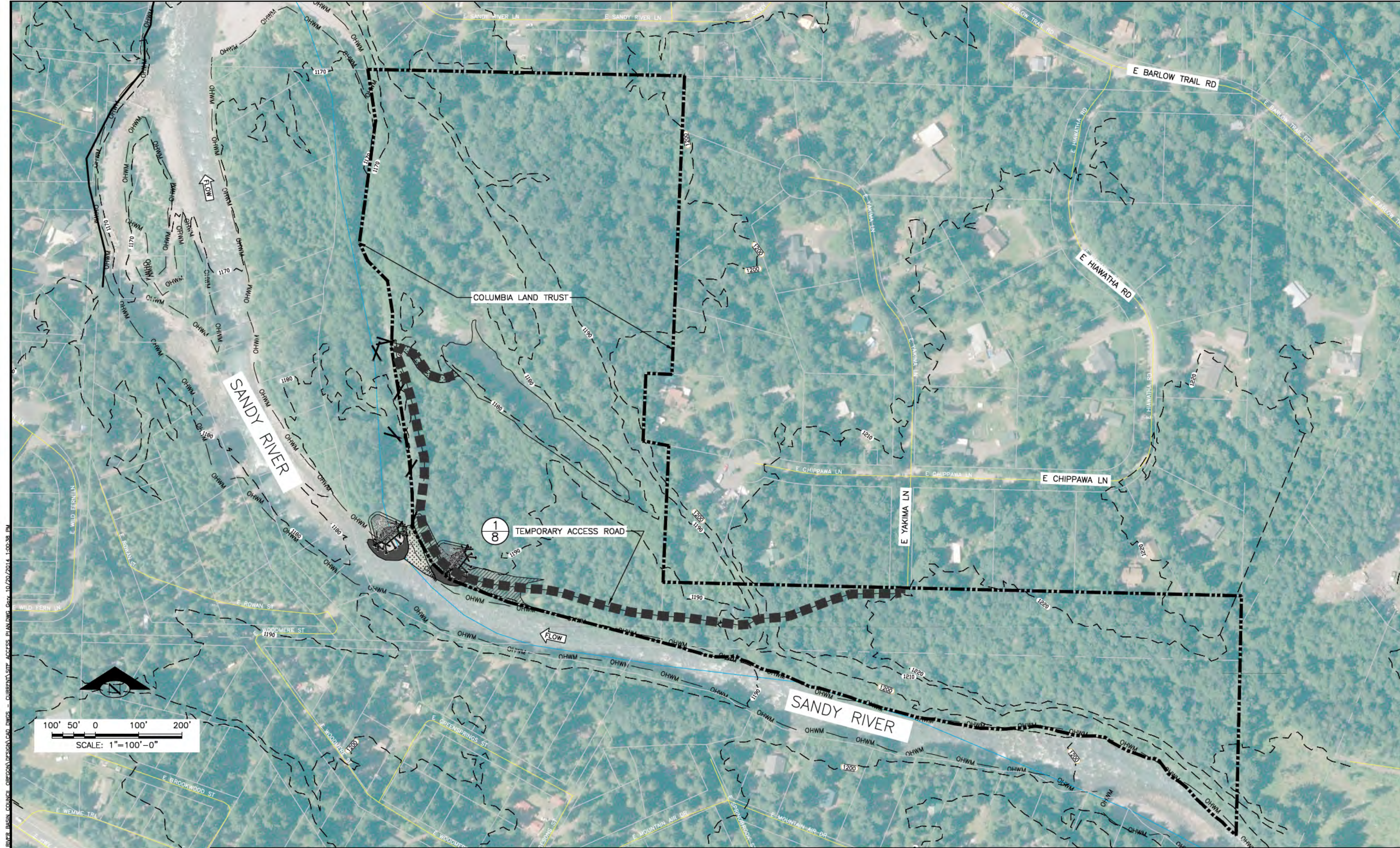


NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
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CHECKED BY	LONGITUDE 121°59'36.41"W
DRAWN BY	TN/SC/RG T25/S30/R7E
CHECKED BY	DATE

**SANDY RIVER MAINSTEM FLOODPLAIN RECONNECTION**

**TYPE 1 ELJ**

Oct 20, 2014 CONCEPT DESIGN: NOT FOR CONSTRUCTION



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Oct 20, 2014 CONCEPT DESIGN: NOT FOR CONSTRUCTION

100' 50' 0 100' 200'  
 SCALE: 1"=100'-0"

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**Sandy River Basin Watershed Council**  
*Working together to restore the Sandy River*

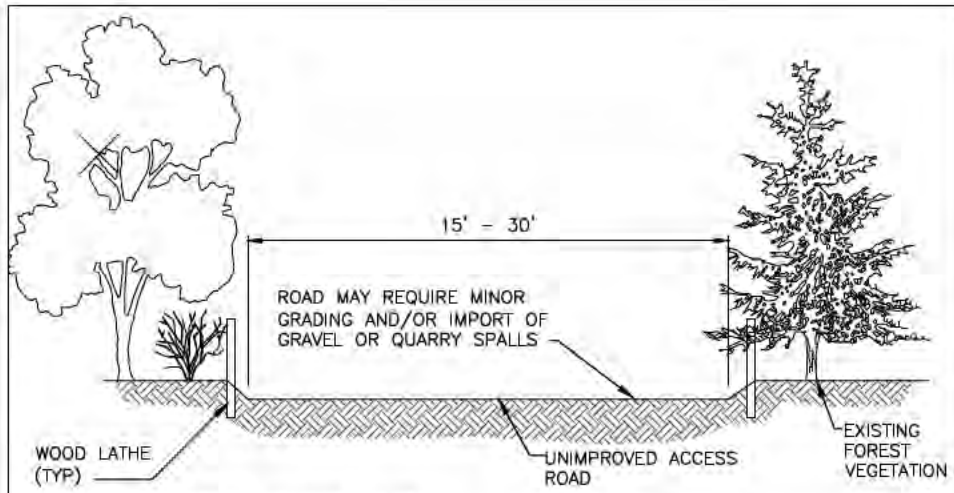


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 LONGITUDE 121°59'36.41"W  
 TN/SC/RG T25/S30/R7E  
 DATE

**SANDY RIVER MAINSTEM FLOODPLAIN RECONNECTION**

**SITE ACCESS PLAN**



**NOTES FOR TEMPORARY CLEARED ACCESS**

1. CLEARED ACCESS TO BE ROUTED TO MINIMIZE VEGETATION DISTURBANCE AND FOREST CLEARING.
2. CONTRACTOR SHALL MARK CLEARING LIMITS WITH FLAGGING. CLEARING LIMITS TO BE APPROVED BY ENGINEER PRIOR TO ANY CLEARING ACTIVITIES.
3. ANY TREES GREATER THAN 18" Ø SHALL BE REMOVED W/ ROOTWADS INTACT AND STOCKPILED FOR USE IN LOGJAM CONSTRUCTION.
4. TREES AND SHRUBS WITH 6"-18" Ø SHALL BE STOCKPILED FOR USE AS RACKING MATERIAL IN LOGJAM CONSTRUCTION.
5. REMAINDER OF VEGETATION AND ORGANIC SOIL SHALL BE GRUBBED, STOCKPILED AND BROADCASTED ON ROAD ALIGNMENT FOLLOWING TERMINATION OF WORK.
6. ACCESS SHALL BE MAINTAINED BY MINOR GRADING AND IMPORTATION OF WOOD CHIPS, GRAVEL AND/OR QUARRY SPALLS.
7. CLEARED ACCESS SHALL BE SCARIFIED AND DECONSTRUCTED TO PREVENT FUTURE ACCESS AT THE TERMINATION OF WORK.
8. REVEGETATION ROAD ALIGNMENT FOLLOWING CONSTRUCTION WILL BE PERFORMED BY CONTRACTOR.
9. ALL GRAVEL OR QUARRY SPALLS PLACED SHALL BE UNDERLAIN WITH A GEOTEXTILE AND REMOVED AT TERMINATION OF WORK IF UTILIZED.

**TEMPORARY CLEARED ACCESS ROAD** 1  
NOT TO SCALE

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Oct 20, 2014 CONCEPT DESIGN: NOT FOR CONSTRUCTION

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DRAWN OM	TN/SC/RG T25/S30/R7E
CHECKED RLE	DATE

**SANDY RIVER MAINSTEM FLOODPLAIN RECONNECTION**

**TESC DETAILS**

**8**  
 SHEET **8** OF **8**



Liz Redon  
Program Representative  
OWEB  
775 Summer Street NE  
Salem, OR 97301

Re: Letter of Support for Sandy River Mainstem Floodplain Reconnection Proposal

MAIN OFFICE  
1351 Officers' Row  
Vancouver, WA 98661  
(360) 696-0131  
(503) 224-3601  
Fax (360) 696-1847  
[www.columbialandtrust.org](http://www.columbialandtrust.org)

PORTLAND OFFICE  
1001 SE Water Avenue Ste. 455  
Portland, OR 97214  
(503) 841-5918

ASTORIA OFFICE  
750 Commercial Street, Room 208  
Astoria, OR 97103  
(503) 338-5263  
Fax (503) 338-1277

HOOD RIVER OFFICE  
216 Cascade Avenue, Suite B  
Hood River, OR 97031  
(541) 436-4210

PRESIDENT  
*Carolyn Vogt*

VICE PRESIDENT  
*Betsy Henning*

SECRETARY  
*Jim Thayer*

TREASURER  
*Steve Shields*

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*Jim Hook*

*Gordon King*

*Paul King*

*Paul Lumley*

*Marc Smiley*

EXECUTIVE DIRECTOR  
*Glenn Lamb*

Dear Ms. Redon:

As a conservation landowner in the upper Sandy River Watershed, the Columbia Land Trust has a key interest in upper Sandy River conservation. We have been partnering with the Sandy River Basin Watershed Council regarding their Sandy River Side Channel Design Project, and wish to express our full support for the resulting proposal to restore an upper Sandy River floodplain while demonstrating restorative practices to Timberline Rim neighbors who have witnessed significant bank erosion and channel migration.

CLT acquired this land in 2007, with OWEB support, for its conservation value. Removing constructed levees and restoring floodplain ecological functions meets our management goals for the property, and will enhance its habitat value while continuing its recreational availability to neighbors in the nearby community. The design is also sensitive to the erosion concerns of the community which is essential. The Columbia Land Trust is pleased to grant access to our property to conduct the proposed restoration, and will provide 120 hours of personnel time for project management and review throughout the final design, staging, and implementation, as well as access for post-project inspection and maintenance.

We appreciate OWEB's support for the initial conservation of this property, and hope to work with you and the Sandy River Basin Watershed Council to take the next steps toward the floodplain's restoration as a contribution to the basin-wide restoration in the Sandy.

Thank you for your consideration.

Sincerely,

Ian Sinks  
Stewardship Director





Nick Fish, Commissioner  
David G. Shaff, Administrator

1120 SW 5<sup>th</sup> Avenue, Room 600  
Portland, Oregon 97204-1926  
Information: 503-823-7404  
[www.portlandoregon.gov/water](http://www.portlandoregon.gov/water)



October 28, 2014

Steve Wise  
Sandy River Basin Watershed Council  
Sandy Watershed Learning Center  
Mt. Hood Community College  
26000 SE Stark Street  
Gresham, OR 97030

Dear Steve;

The Bull Run Water Supply Habitat Conservation Plan Habitat Fund (HCP) committee, which includes representatives from the Oregon Department of Fish and Wildlife, the National Marine Fisheries Service, and the Portland Water Bureau, have elected to fund the Sandy River Basin Watershed Council's (Council) proposal for the restorative flood response on the upper Sandy River. The Council will be awarded \$120,000 from the HCP Habitat Fund for this work.

The Council must meet four specific City of Portland (City) requirements to be awarded the Habitat Fund money. First, the Council and the City must complete a Grant Agreement for the proposed work. Second, the Council must provide insurance documentation required by the City. Third, it must provide the City copies of sealed engineering designs demonstrating that the engineered jams would be capable of withstanding a 100-year flood event. And fourth, it must facilitate the completion of an access easement between the City and the landowner that owns the property where the restoration will take place. All these items need to be completed before project activities start on July 1, 2015.

The Habitat Fund dollars will be available to the Council from July 1, 2015 to June 30, 2016. The City expects the restoration work to be done in that time period.

Congratulations on your award of habitat funds. The City looks forward to your successful completion of the project.

Sincerely,

  
Steve Kucas  
Environmental Compliance Manager

Letter re: results of our Advance Ruling  
period

file

INTERNAL REVENUE SERVICE  
P. O. BOX 2508  
CINCINNATI, OH 45201

DEPARTMENT OF THE TREASURY

**APR 11 2002**

Date:

Employer Identification Number:  
93-1294148

DLN:  
17053089779012

SANDY RIVER BASIN WATERSHED COUNCIL  
PO BOX 868  
SANDY, OR 97055

Contact Person:  
GREGORY K OLWINE ID# 31382

Contact Telephone Number:  
(877) 829-5500

Our Letter Dated:  
July 2000

Addendum Applies:  
No

Dear Applicant:

This modifies our letter of the above date in which we stated that you would be treated as an organization that is not a private foundation until the expiration of your advance ruling period.

Your exempt status under section 501(a) of the Internal Revenue Code as an organization described in section 501(c)(3) is still in effect. Based on the information you submitted, we have determined that you are not a private foundation within the meaning of section 509(a) of the Code because you are an organization of the type described in section 509(a)(1) and 170(b)(1)(A)(vi).

Grantors and contributors may rely on this determination unless the Internal Revenue Service publishes notice to the contrary. However, if you lose your section 509(a)(1) status, a grantor or contributor may not rely on this determination if he or she was in part responsible for, or was aware of, the act or failure to act, or the substantial or material change on the part of the organization that resulted in your loss of such status, or if he or she acquired knowledge that the Internal Revenue Service had given notice that you would no longer be classified as a section 509(a)(1) organization.

You are required to make your annual information return, Form 990 or Form 990-EZ, available for public inspection for three years after the later of the due date of the return or the date the return is filed. You are also required to make available for public inspection your exemption application, any supporting documents, and your exemption letter. Copies of these documents are also required to be provided to any individual upon written or in person request without charge other than reasonable fees for copying and postage. You may fulfill this requirement by placing these documents on the Internet. Penalties may be imposed for failure to comply with these requirements. Additional information is available in Publication 557, Tax-Exempt Status for Your Organization, or you may call our toll free number shown above.

If we have indicated in the heading of this letter that an addendum applies, the addendum enclosed is an integral part of this letter.

Letter 1050 (DO/CG)

SANDY RIVER BASIN WATERSHED COUNCIL

Because this letter could help resolve any questions about your private foundation status, please keep it in your permanent records.

If you have any questions, please contact the person whose name and telephone number are shown above.

Sincerely yours,



Steven T. Miller  
Director, Exempt Organizations

## Signature Authorization Page

I hereby make an application for financial assistance under the terms and conditions of the R&E Program as described in my project application.

I understand that if my project is approved for funding, the following will apply:

- All project sponsors must sign a grant agreement containing the terms and conditions on which funding will be released.
- Project expenses which occur before the grant agreement is signed or after the expiration date will not be paid by the R&E Program.
- Copies of all necessary permits must be submitted to the R&E Program.
- Project sponsors must certify compliance with local, state, and federal regulations and laws.
- Landowner, monitoring and maintenance agreements must be submitted to the R&E Program.
- Regular progress reports may be required, and at the end of each project a Completion Report must be submitted.
- Educational products resulting from projects are public domain.
- All information submitted to either party under this application is subject to the federal Freedom of Information Act.

Project Title: SANDY RIVER MAINSTEM FLOODPLAIN  
RECONNECTION

Applicant: SANDY RIVER BASIN WATERSHED COUNCIL

Date: 11-6-14

Fiscal Officer: \_\_\_\_\_

Date: 11-6-14