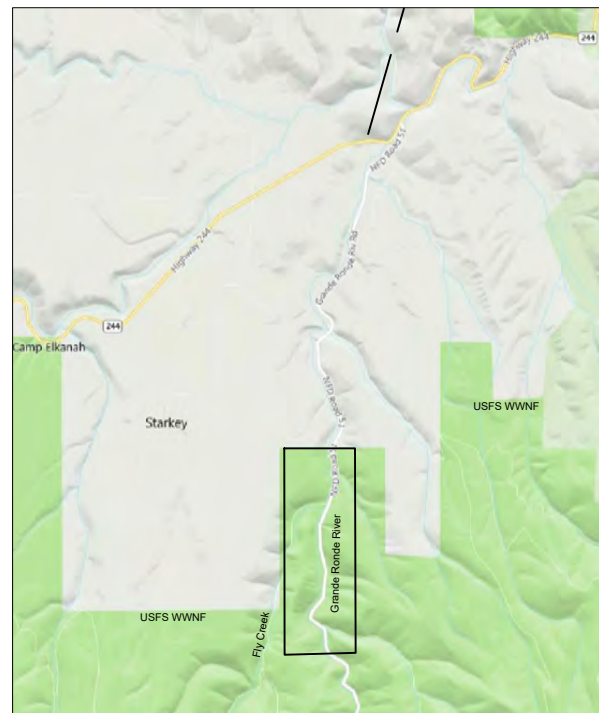
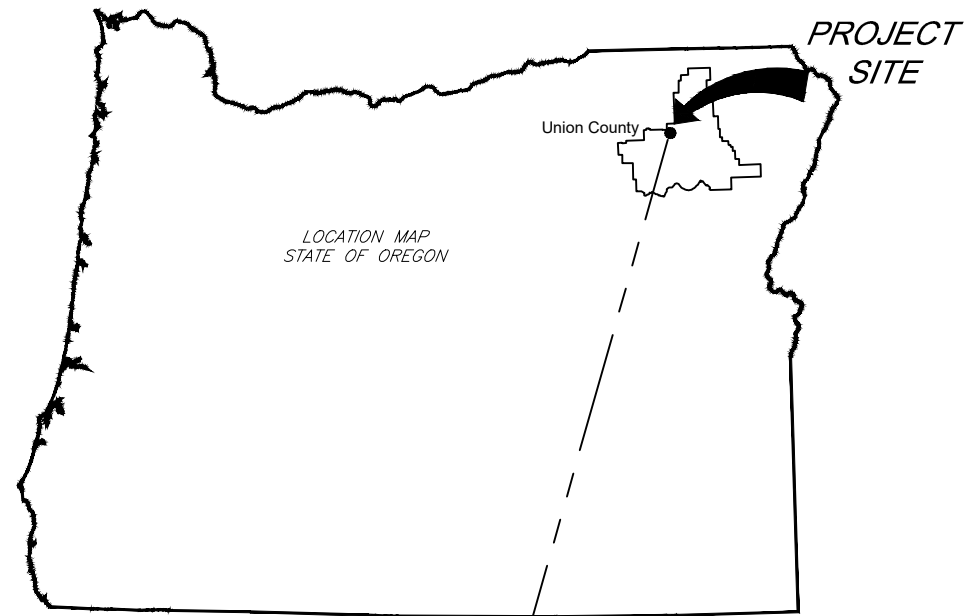


# GRANDE RONDE SUBBASIN FISH HABITAT ENHANCEMENT

MIDDLE UPPER GRANDE RONDE RIVER, PHASE I  
Large Wood Structure Anchor and Boulder Additions 2021  
Construction Drawings



## PROJECT LOCATION MAP

Township 4 South, Range 35  $\frac{1}{2}$  East  
SECTIONS: 14, 23, 26, & 35  
Township 5 South, Range 35  $\frac{1}{2}$  East  
Sections 1, 2, & 13  
Township 5 South, Range 36 East  
Section 18  
0450935 N, 1182247 W  
USGS Quadrangle: Little Beaver Creek, OR 45118-83  
Project Area Elevation  
3,431 to 4,022 Feet Above Mean Sea Level  
UNION COUNTY, OREGON

6th Field HUC, Upper Grande Ronde River #17060104



## PROJECT DESCRIPTION

The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) Grande Ronde Basin Fish Habitat Program and U.S. Forest Service, Wallowa-Whitman National Forest, LaGrande Ranger District seek to enhance and restore fish habitat and floodplain process and function to benefit fishery resources along an 8 mile reach in the Middle Upper Grande Ronde River in the Upper Grande Ronde River Basin. Phase 1 of the project was constructed in 2019 along the lower 2 mile planning reach.

Wood structures were installed by helicopter during July 2019. Environmental permitting restricted planned construction methods additional structural additions are planned to maintain placed large wood along the reach in selection location to achieve habitat and floodplain objectives. Planned actions include wood structure pinning and helicopter boulder placement on 21 large wood structures. Pins will be installed manually. Helicopter operations and boulder staging areas are planned to be staged at the USFS WWNF 5110 rock pit, approximately 1.5 miles from project reach. Other suitable staging areas are being considered, including a local privately owned rock pit adjacent to USFS 51 Road.

Planned actions are intended to reinforce wood structures and maintain structures in locations along the reach to benefit floodplain connection, island braiding, and habitat complexity/diversity.

Targeted fish populations include ESA listed Snake River spring-summer Chinook salmon and summer steelhead. Additional species of interest include bull trout, Pacific lamprey, freshwater mussels, and resident native fish. The project area provides critical spawning and rearing habitat for targeted fish populations.

The Project was designed in accordance with ARBO II, Aquatic Restoration Activities Biological Opinion conservation measures and project design criteria.

## INDEX OF DRAWING SHEETS

1. COVER, LOCATION, & SHEET INDEX
2. PROJECT OVERVIEW
3. GENERAL NOTES
4. PROJECT QUANTITIES
5. PROPOSED CONDITIONS Station 0+00 to 24+50
6. PROPOSED CONDITIONS Station 24+50 to 48+50
7. PROPOSED CONDITIONS Station 48+50 to 71+50
8. PROPOSED CONDITIONS Station 71+50 to 94+50
9. PROPOSED CONDITIONS Station 94+50 to 106+00
10. LARGE WOOD STRUCTURE ADDITIONS



COVER

MIDDLE UPPER GRANDE RONDE PHASE 1 2021  
 Fish Habitat Enhancement Project  
 Union County, OREGON  
 Confederated Tribes of the Umatilla Indian Reservation &  
 Wallowa-Whitman National Forest

Designed	A. Childs S. Welch	Date	Mar. 2021
Drawn	A. Childs		Mar. 2021
Checked			
Approved			
Title			

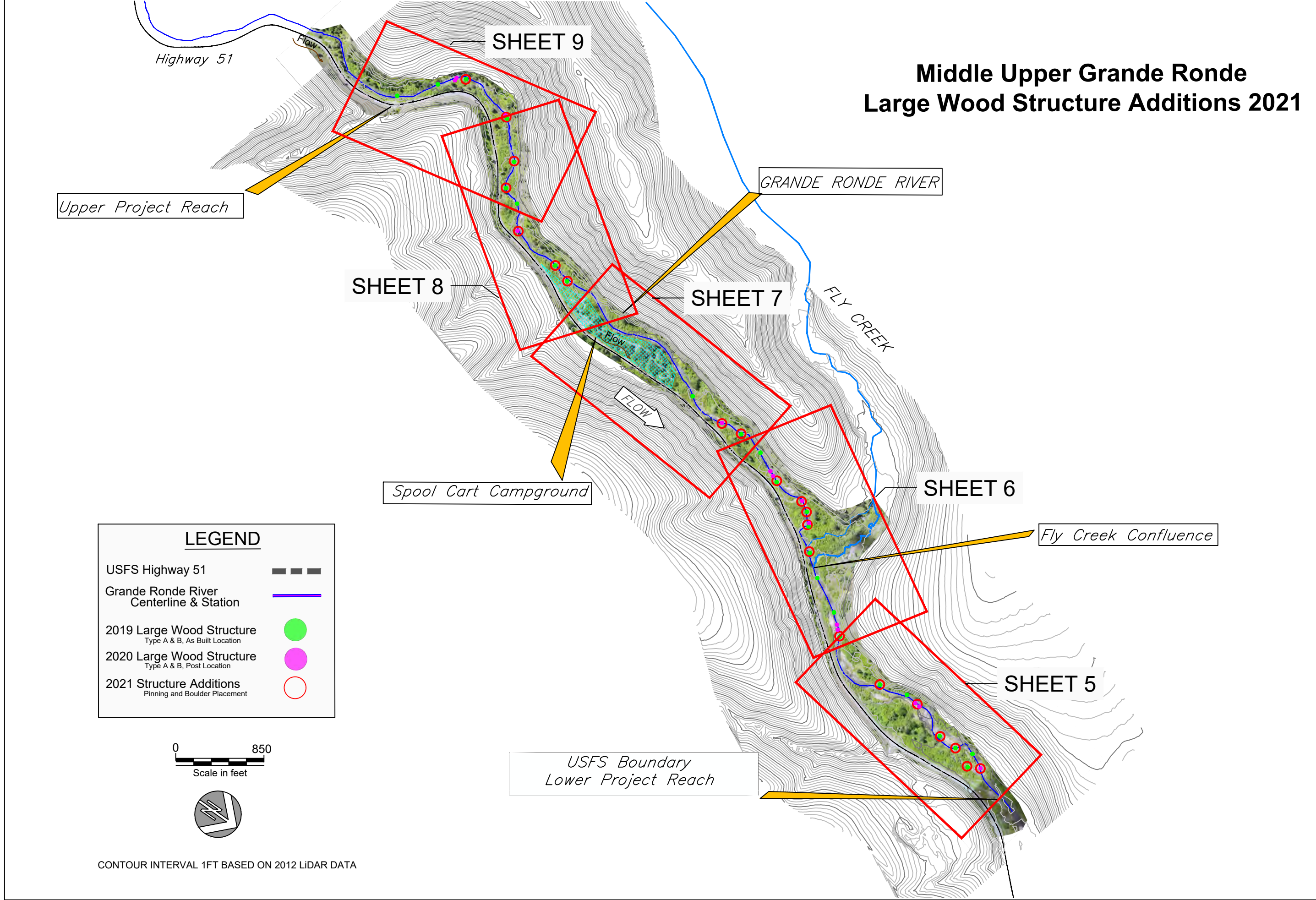
# Middle Upper Grande Ronde Large Wood Structure Additions 2021

Date	Mar 2021
Designed	A. Childs S. Welch
Drawn	A. Childs
Checked	
Approved	
Title	

MIDDLE UPPER GRANDE RONDE PHASE 1 2021  
 Fish Habitat Enhancement Project  
 Union COUNTY, OREGON  
 Confederated Tribes of the Umatilla Indian Reservation &  
 Wallowa-Whitman National Forest



PROJECT OVERVIEW



Upper Project Reach

SHEET 9

GRANDE RONDE RIVER

SHEET 8

SHEET 7

FLY CREEK

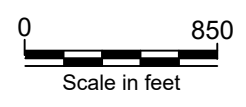
Spool Cart Campground

SHEET 6

Fly Creek Confluence

**LEGEND**

- USFS Highway 51
- Grande Ronde River Centerline & Station
- 2019 Large Wood Structure Type A & B, As Built Location
- 2020 Large Wood Structure Type A & B, Post Location
- 2021 Structure Additions Pinning and Boulder Placement



CONTOUR INTERVAL 1FT BASED ON 2012 LiDAR DATA

USFS Boundary  
Lower Project Reach

SHEET 5

**GENERAL CONTRACTOR REQUIREMENTS**

Work shown on these plans will be performed for the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), herein referred to as "Contracting Agency." Contact information for Contracting Agency's representative is included on these construction drawings. Contracting Agency's representative (or other persons assigned by Contracting Agency to act as Contracting Agency's representative) are herein referred to as the "Contracting Officer."

The Contractor shall conduct stream enhancement construction in accordance with the plans stamped "Approved for Construction." These plans will be provided to the Contractor by the Contracting Agency prior to construction. Work shall not be done without the current set of approved construction plans.

The project designs depicted herein are approximate and are intended to express the overall design intent of the project. These designs may need to be adjusted in the field during construction in order to meet the specific site conditions and intended function. Adjustments are to be authorized by the Contracting Officer.

The Contractor shall pursue work in a continuous and diligent manner to ensure timely completion of the project per construction subcontract.

The Contractor shall be responsible for the general safety during construction, and all work shall conform to pertinent safety regulations and codes. The Contractor shall be solely and completely responsible for compliance with all applicable provisions of OSHA and OAR Chapter 437, in the construction practices for all employees directly engaged in the construction of this project.

All material and workmanship furnished on or for this project must meet the minimum requirements of project permits, approving agencies, specifications as set forth herein, or whichever is more restrictive.

Contractor shall be responsible for obtaining, at Contractor's expense, all construction permits as required by local, state and federal agencies. Contractor shall provide all material, labor, and equipment required to comply with all applicable permit conditions and requirements.

Prior to commencement of work, Contractor shall provide the Contracting Agency with a detailed construction schedule and work plan for approval. The Contractor shall not begin any construction work until the construction schedule and work plan is approved by the Contracting Officer.

Project design drawings and specifications represent the construction documents. Any deviations from these drawings and associated specifications without written approval from the Contracting Officer may result in this project not meeting specifications and may affect the terms and conditions of the construction contract.

All existing conditions are to be verified in the field prior to construction and any adjustments to the drawings shall be made as directed by the Contracting Officer.

**Existing Data & Coordinate System**

Elevations and distances shown are in feet and decimals.

Horizontal datum is US State Plane Coordinate System, Oregon North Zone, NAD 83, International Feet. The vertical datum is NAVD 88, feet.

Topographic mapping along the Grande Ronde River is based on LIDAR and CHAMPs Survey Data. The geometry of the stream at the time of construction could be different than shown on these plans due to channel evolution.

**Aquatic Restoration Activities Biological Opinion II in States of Oregon and Washington (ARBO II)**

**TERMS AND CONDITIONS AND BEST MANAGEMENT PRACTICES**

The Contractor will comply with the General Aquatic Conservation Measures and Project Design Criteria in the NOAA Fisheries ARBO II that requires the utmost care is taken when construction activity is taking place in or near the waterway.

All work within the actively flowing Grande Ronde River and Fly Creek channels shall occur only within designated in-water work window (July 1 – July 31) unless otherwise modified.

Anytime work occurs within the actively flowing channel, the Contractor shall monitor in-stream turbidity once per hour at a location 100 feet downstream of the construction activity using turbidity monitoring equipment provided by the Contracting Officer.

In-stream turbidity shall be limited to levels listed in permits and specifications, and the Contractor shall modify work procedures if necessary comply with specifications. The Contracting Officer will assist the Contractor during initial measurements to ensure testing equipment is used correctly. The Contractor will be responsible for all measurements and maintain a log that documents date, time, and turbidity level of all measurements taken.

The Contractor shall install and maintain appropriate sediment control devices throughout the project site, including the construction staging area and stockpile area if there is potential for impacting waters of the State. Temporary construction and permanent erosion control measures shall be designed, constructed and maintained in accordance with all applicable local, state and federal regulations.

Discharges entering active streams on site shall satisfy all state and federal standards and project permit requirements for contaminants and turbidity.

**Work Area Isolation, Fish Rescue and Avoidance**

In-water work will be completed during in-water work window identified above or as otherwise modified.

No work area isolation is necessary for planned actions. Block netting and seining may be performed by CTUIR at individual sites during boulder additions.

Project site may include presence of freshwater mussels which will be surveyed prior to project construction. Documented mussel beds will be avoided where feasible and salvaged/transplanted as necessary to construct project.

Contractor and CO will coordinate during construction on fish and in-water work related considerations.

**Site and Resource Protection**

Construction will be proceed with emphasis on minimizing damage to riparian and wetland vegetation. Contractor and CO will coordinate closely on equipment access and staging areas to minimize impacts on existing vegetation. Access, staging, and construction sites will be reviewed onsite by Contractor and CO to define access and flag vegetation that needs to be cleared .

**Cultural Resources Inadvertent Discovery**

- If construction work comes into contact with any of the following cultural resources:
- Native American cultural artifacts (flakes, arrowheads, stone tools, bone tools, pottery, etc.)
- Historic era artifacts (building foundations, homesteads, mining camps, etc)
- Human skeletal remains and bone fragments:

Ground disturbing construction in the area must immediately discontinue. Do not touch or move the objects and maintain the confidentiality of the site. Follow procedures listed in the USDA Forest Service Inadvertent Discovery Procedure and await further direction from USDA Forest Service Cultural Resource Staff.

**Utilities**

The CTUIR makes no representation as to the existence or non-existence of utilities. It is the responsibility of Contractor to comply with the provisions of ORS 757.541 to 757.571. Contractor will be liable for any damage resulting from disruption of service caused by construction activities. The telephone number for utility locates is 1-800-424-5555.

**Project Material Notes and Specifications**

Prior to commencement of work, Contractor shall provide the Contracting Agency with a detailed schedule and work plan for materials acquisition and delivery to designated material stockpile locations. Materials acquisition plan will be approved by Contracting Officer.

Contractor shall confirm the access point, route(s), and locations of temporary staging and storage areas with the Contracting Officer prior to transporting materials and equipment to the project site.

Project design drawings and specifications represent the construction documents. Any deviations from these drawings and associated specifications without written approval from the Contracting Officer may result in this project not meeting specifications and may affect the terms and conditions of the construction contract.

All existing conditions are to be verified in the field prior to construction and any adjustments to the drawings shall be made as directed by the Contracting Officer.

All excess materials to be placed at location identified by the Contracting Officer in coordination with the contractor.

Date	Mar 2021
Designed	A. Childs S. Welch
Drawn	A. Childs
Checked	
Approved	
Title	

MIDDLE UPPER GRANDE RONDE PHASE 1 2021  
 Fish Habitat Enhancement Project  
 Union County, OREGON  
 Confederated Tribes of the Umatilla Indian Reservation &  
 Wallowa-Whitman National Forest



NOTES





**LEGEND**

- USFS Highway 51
- Grande Ronde River Centerline & Station
- 2019 Large Wood Structure Type A & B, As Built Location
- 2020 Large Wood Structure Type A & B, Post Location
- 2021 Structure Additions Pinning and Boulder Placement

**PLAN VIEW**

0 125  
Scale in feet

Date	Mar 2021
Designed	A. Childs/S. Welch
Drawn	A. Childs
Checked	
Approved	
Title	

MIDDLE UPPER GRANDE RONDE PHASE 1 2021  
 Fish Habitat Enhancement Project  
 Union County, OREGON  
 Confederated Tribes of the Umatilla Indian Reservation &  
 Wallowa-Whitman National Forest



PLANVIEW  
 STATIONS  
 0+00 - 24+50



### LEGEND

USFS Highway 51	
Grande Ronde River Centerline & Station	
2019 Large Wood Structure Type A & B, As Built Location	
2020 Large Wood Structure Type A & B, Post Location	
2021 Structure Additions Pinning and Boulder Placement	

PLAN VIEW

Scale in feet

Date	March 2021
Designed	A. Childs/S. Welch
Drawn	A. Childs
Checked	
Approved	
Title	

MIDDLE UPPER GRANDE RONDE PHASE 1 2021  
 Fish Habitat Enhancement Project  
 Union COUNTY, OREGON  
 Confederated Tribes of the Umatilla Indian Reservation &  
 Wallowa-Whitman National Forest



PLANVIEW  
STATIONS  
24+50 - 48+50



**LEGEND**

- USFS Highway 51
- Grande Ronde River Centerline & Station
- 2019 Large Wood Structure Type A & B, As Built Location
- 2020 Large Wood Structure Type A & B, Post Location
- 2021 Structure Additions Pinning and Boulder Placement

PLAN VIEW

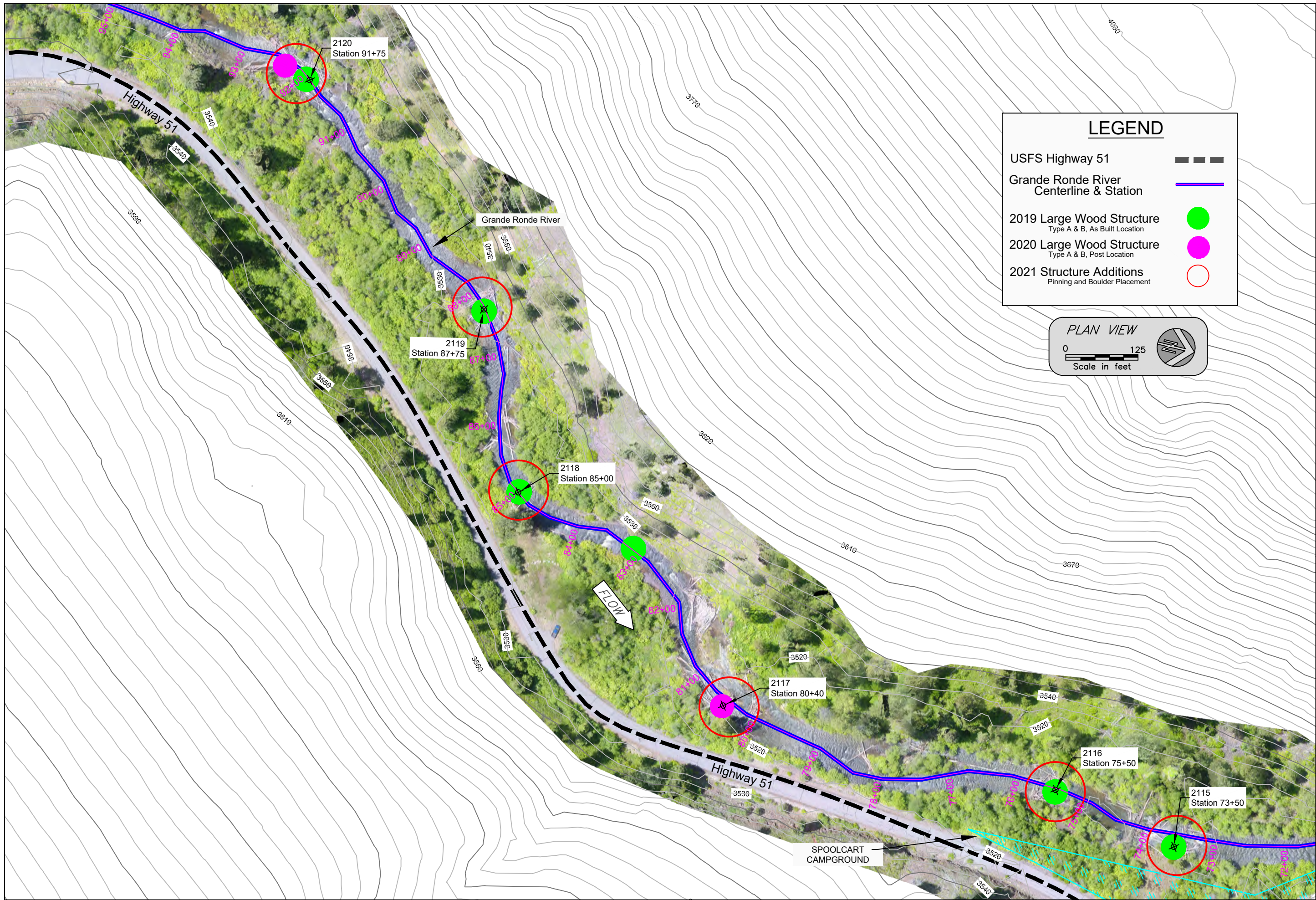
0 125  
Scale in feet

Date	Mar 2021
Designed	A. Childs/S. Welch
Drawn	A. Childs
Checked	
Approved	
Title	

MIDDLE UPPER GRANDE RONDE PHASE 1 2021  
 Fish Habitat Enhancement Project  
 Union COUNTY, OREGON  
 Confederated Tribes of the Umatilla Indian Reservation &  
 Wallowa-Whitman National Forest



PLANVIEW STATIONS  
 48+50 - 71+50



### LEGEND

USFS Highway 51	
Grande Ronde River Centerline & Station	
2019 Large Wood Structure Type A & B, As Built Location	
2020 Large Wood Structure Type A & B, Post Location	
2021 Structure Additions Pinning and Boulder Placement	

PLAN VIEW

Scale in feet

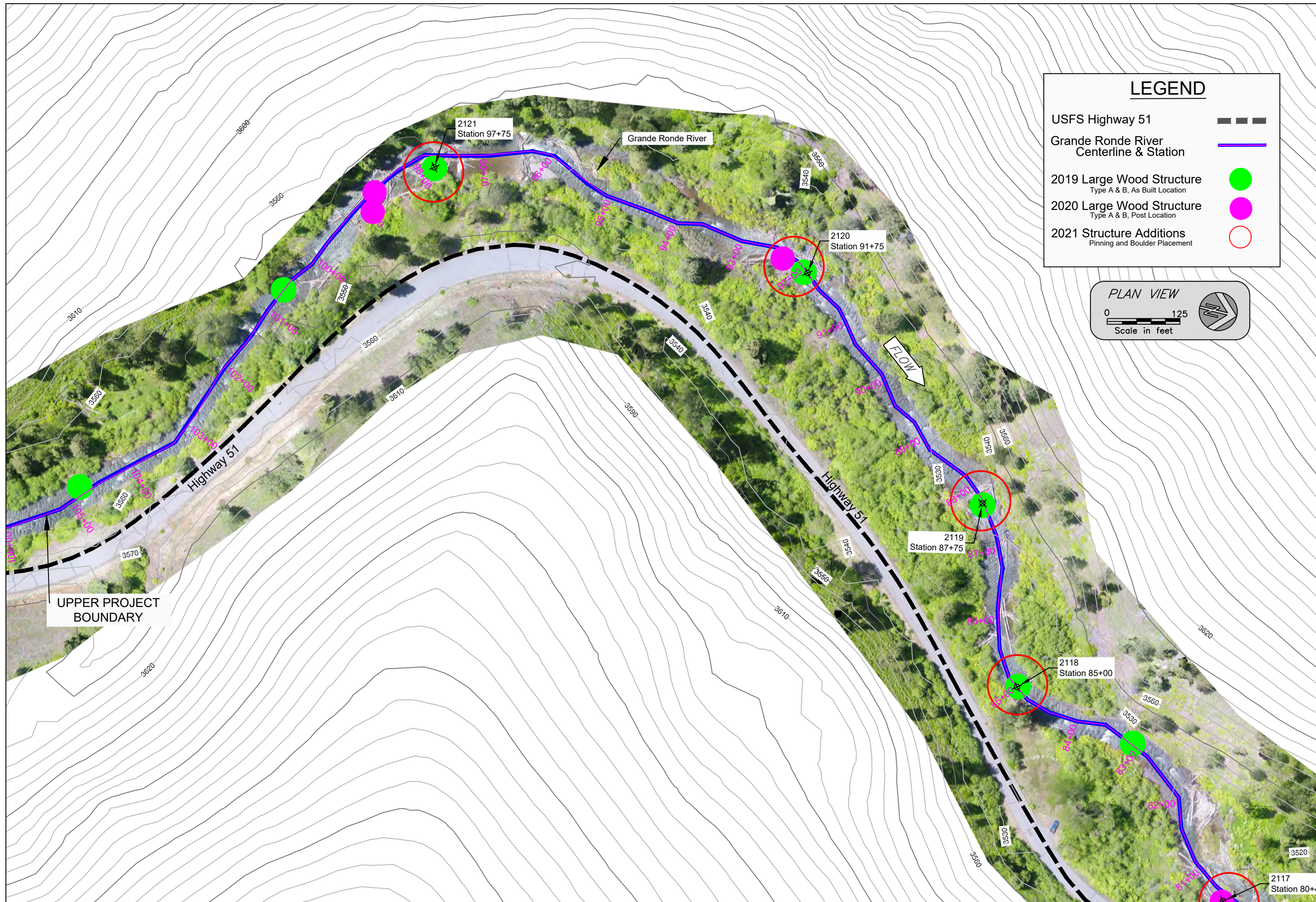
Date	Mar 2021
Designed	A. Childs/S. Welch
Drawn	A. Childs
Checked	
Approved	
Title	

MIDDLE UPPER GRANDE RONDE PHASE 1 2021  
Fish Habitat Enhancement Project  
Union COUNTY, OREGON  
Confederated Tribes of the Umatilla Indian Reservation &  
Wallowa-Whitman National Forest



PLANVIEW STATIONS  
71+50 - 94+50





### LEGEND

- USFS Highway 51 ---
- Grande Ronde River Centerline & Station —
- 2019 Large Wood Structure Type A & B, As Built Location ●
- 2020 Large Wood Structure Type A & B, Post Location ●
- 2021 Structure Additions Pinning and Boulder Placement ○

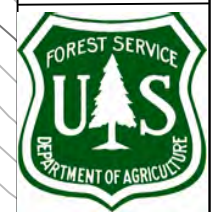
PLAN VIEW

0  125

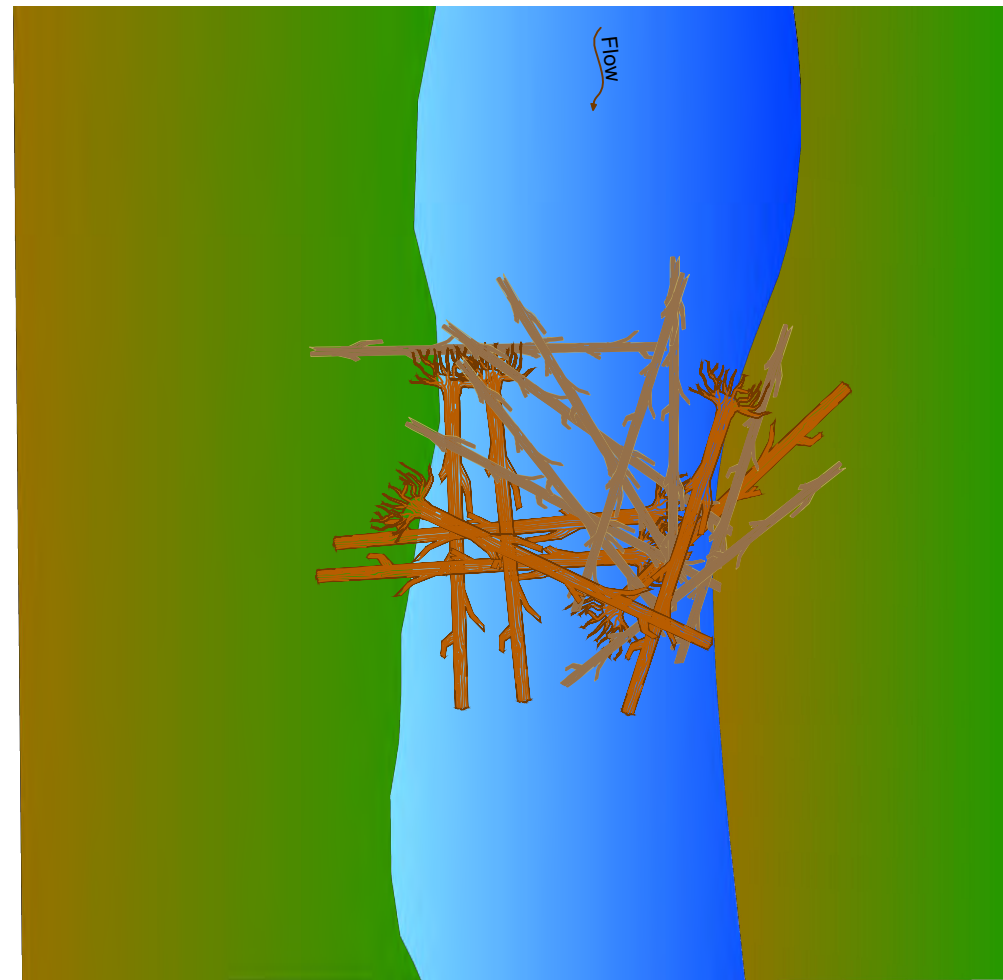
Scale in feet

Date	Mar 2021				
Designed	A. Childs/S. Welch	Checked		Approved	
Drawn	A. Childs	Checked		Approved	
Checked		Approved		Title	

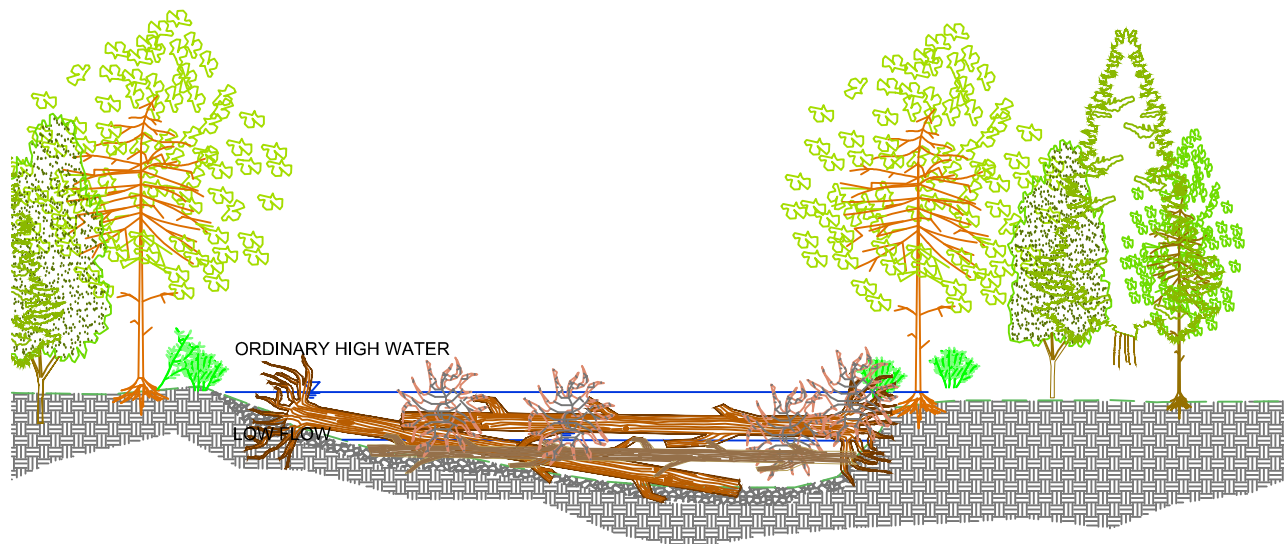
MIDDLE UPPER GRANDE RONDE PHASE 1 2021  
 Fish Habitat Enhancement Project  
 Union County, Oregon  
 Confederated Tribes of the Umatilla Indian Reservation &  
 Wallowa-Whitman National Forest



PLANVIEW STATIONS  
94+50 - 106+00



**1 PLAN VIEW**  
 HORIZ 1" = 30'



**2 SECTION VIEW**  
 HORIZ 1" = 20'

## LARGE WOOD STRUCTURE Boulder and Anchor Additions BIOLOGICAL OBJECTIVES - DESIGN INTENT

- INSTALL ALL-THREAD BOLTED PINS, REBAR PINS, AND BOULDERS ON SELECTED WOOD STRUCTURES INSTALLED IN 2019 TO IMPROVE STRUCTURE STABILITY.
- PURPOSE OF LARGE WOOD STRUCTURES IS TO IMPROVE HABITAT COMPLEXITY, INCREASE WATER SURFACE ELEVATION AND DEPTH, DECREASE WATER VELOCITY, PROMOTE SEDIMENT DEPOSITION AND STORAGE, AND PROMOTE FLOODPLAIN CONNECTIVITY AND INCREASED GROUNDWATER AND HYPORHEIC FUNCTIONS TO IMPROVE WATER TEMPERATURE DIVERSITY AND COLD WATER REFUGE.
- PROMOTES DEVELOPMENT AND MAINTENANCE OF LARGE POOL HABITAT, PROVIDES OVERHEAD COVER, VELOCITY REFUGE, AND ORGANIC NUTRIENTS THAT SUPPORT FOOD WEB PROCESSES.



**3 ASSEMBLY DETAIL & INSTALLATION SEQUENCE**  
 HORIZ 1" = 50'

### PROJECT ELEMENT NOTES

1. Pinning rods, rebar pins, and boulder locations within individual wood structures shall be confirmed by CO.
2. Pinning rods shall be 1-inch diameter fully threaded steel rods (ASTM A193, grade B7 with steel nuts and 4-inch washers (ASTM F436) on each end. Visible portions of hardware shall be grey or other approved neutral color. Rods shall be flush cut at the nuts and sharp edges ground flush.
3. Galvanized materials will not be allowed.
4. Pinning rods can be installed vertically or horizontally, but must be positioned to provide optimum wood structure stability.
5. Rebar pins shall be 1 1/4-inch diameter and a minimum length of 4 feet.
6. Rebar pins will be driven flush with top log.
7. Pinning rod and rebar installation will be manually installed using large wood drill to bore holes and hand or mechanical placement.
8. Boulders will be placed by helicopter.
9. Boulders will be prepared for helicopter transport by pre-drilling a 2-inch bore hole for cable choker installation.
10. Boulders will be placed by helicopter as directed by CO.

APPROXIMATE MATERIAL SCHEDULE (see sheet 4)

ITEM	QUANTITY/STRUCTURE
ALL-THREAD PINS	6
REBAR PINS	4-8
BOULDERS	6-20

Date	Mar 2021
Designed	A. Childs/S. Welch
Drawn	A. Childs
Checked	
Approved	
Title	

MIDDLE UPPER GRANDE RONDE PHASE 1 2021  
 Fish Habitat Enhancement Project  
 Union COUNTY, OREGON  
 Confederated Tribes of the Umatilla Indian Reservation &  
 Wallowa-Whitman National Forest



WOOD STRUCTURE  
 ANCHOR &  
 BOULDER  
 ADDITION DETAIL