

PROJECT LOCATION MAP

Township 4 South, Range 35 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

GRANDE RONDE SUBBASIN FISH HABITAT ENHANCEMENT MIDDLE UPPER GRANDE RONDE RIVER, PHASE I Large Wood Structure Anchor and Boulder Additions 2021

Construction Drawings









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 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.

- 1.
- PROJECT OVERVIEW 2.
- 3. GENERAL NOTES
- **PROJECT QUANTITIES** 4. PROPOSED CONDITIONS Station 0+00 to 24+50 5.
- PROPOSED CONDITIONS Station 24+50 to 48+50 6.
- 7.
- 8.
- 9.

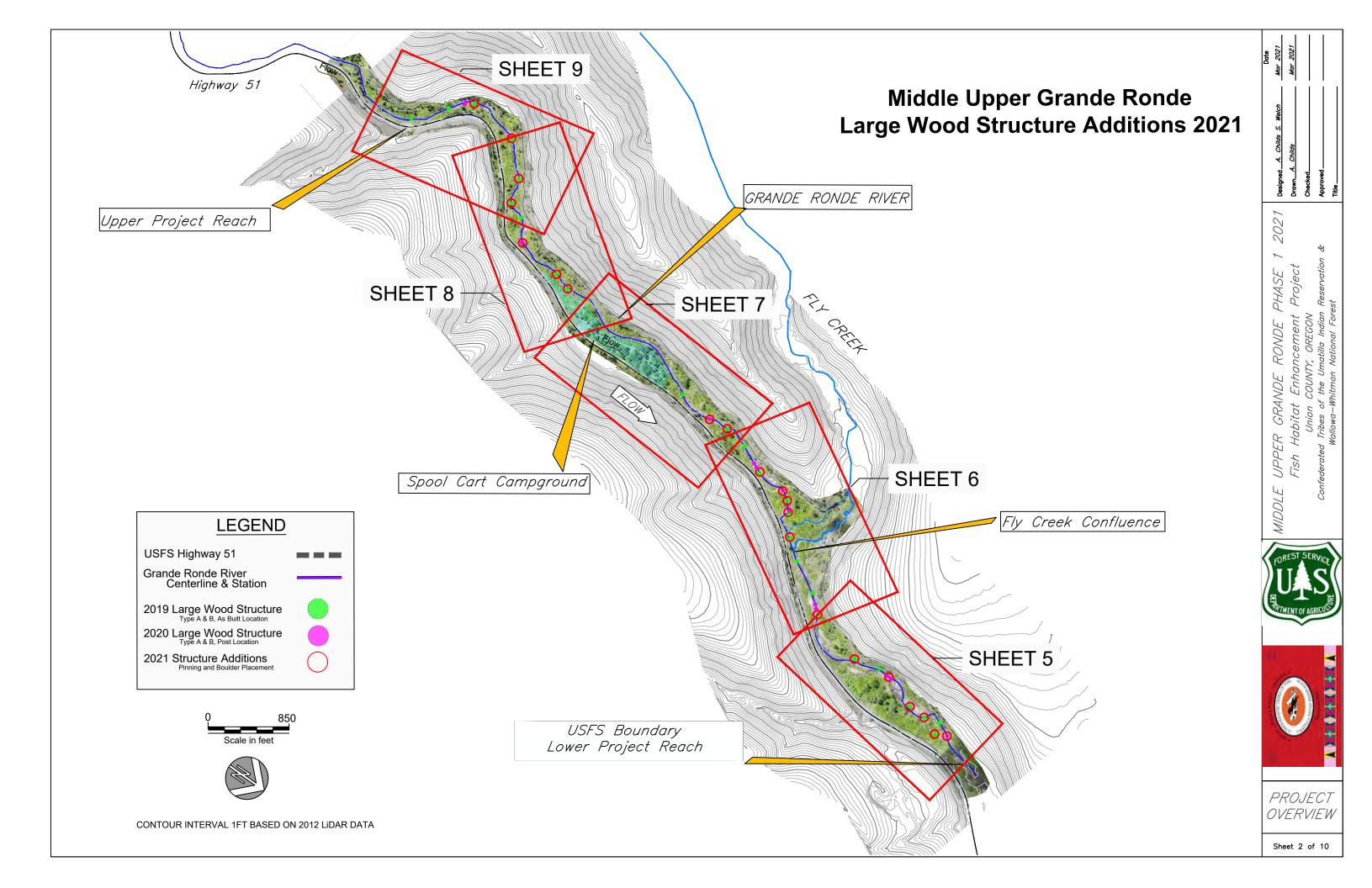


INDEX OF DRAWING SHEETS

COVER, LOCATION, & SHEET INDEX

- PROPOSED CONDITIONS Station 48+50 to 71+50 PROPOSED CONDITIONS Station 71+50 to 94+50 PROPOSED CONDITIONS Station 94+50 to 106+00
- 10. LARGE WOOD STRUCTURE ADDITIONS





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 CTUII during boulder additions.

Project site may include presence of freshwater mussels which will be surveyed prior to project construct 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. Contract coordinate closely on equipment access and staging areas to minimize impacts on existing vegetation. Access construction sites will be reviewed onsite by Contractor and CO to define access and flag vegetation that need

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 ar confidentiality of the site. Follow procedures listed in the USDA Forest Service Inadvertent Discovery Procedure 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 comply with the provisions of ORS 757.541 to 757.571. Contractor will be liable for any damage resulting from 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 materials acquisition and delivery to designated material stockpile locations. Materials acquisition plan will be a Contracting Officer.

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

Project design drawings and specifications represent the construction documents. Any deviations from these of associated specifications without written approval from the Contracting Officer may result in this project not me 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 s directed by the Contracting Officer.

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

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	NOTES
	Sheet 3 of 10

EXISTING DATA AND COORDINATE SYSTEM

- 1. Elevations and distances shown are in feet and decimals.
- 2. Horizontal datum is US State Plane Coordinate System, Oregon North Zone, NAD 83, International Feet. The vertical datum is NAVD 88, feet.
- 3. Topographic mapping along Rock Creek is based on surveys performed with ground survey equipment. Topographic mapping outside of the stream banks is based on ground survey and LIDAR imaging. The geometry of the stream at the time of construction could be different than shown on these plans due to channel evolution.

HELICOPTER FLIGHT SAFETY PLAN

- The project staging, landing, and servicing area is located on U.S. Forest Service land on a compacted and cleared gravel quarry approximately 1.5-2 miles from the project area. Refueling and support truck access to the staging ara is along National Forest Road 5110. It is the responsibility of helicopter contractor to provide security at the helicopter land and staging area.
- 2. Communications between aircraft and ground crew will be via hand held FM radios provided by helicopter contractor.
- Project aircraft shall monitor VHF-AM 122.9 throughout the project. This is a standard FAA aviation frequency used in general airspace for pilots to coordinate with one another. Helicopter technical contact will coordinate and communicate with Blue Mountain Interagency Dispatch Center (BMIDC) regarding daily routine (likely radio communications due to poor cellular phone operation) prior to flight operations.
- 4. Wallow-Whitman radio frequencies for the Emily and Tower radio tower repeaters are listed below:

Group 2: Wallowa-Whitman LaGrande/Whitman Repeaters:

Channel Name	Display	RX Freq	TX Freq	RX Tone	Tx Tone
1 WWF Emily	WWF EMLY	170.5250	164.8000	131.8	167.9
2 WWF Tower	WWF TOWR	170.5250	164.8000	131.8	103.5

5, U.S. Forest Service Coordination coordination contact are:

BMIDC Aircraft Desk 541-975-5401	Mike Hancock Unit Aviation U.S Forest Service Wallowa-Whitman & Umatilla National Forests
BMIDC Main Number	Work: 541-974-5418
541-962-7171	Mobile: 541-786-1357

Email: miles.hancock@usda.gov

- 6. Helicopter contractor will conduct a pre-operation and daily safety meeting with all personnel on the job. Hazards will be addressed and land and stream crews will be given written directions and maps of the project area. Ground crews will conduct their own hazard assessments as they proceed through the work areas. The air crew will be constantly surveying for hazardous conditions and will advise ground crew by radio. Aircraft support equipment includes a flyable Stokes Litter in case of wood injury for emergency. A formal evacuation and emergency safety plan will be prepared before work commences.
- The pre-operations and daily safety meetings will also include the CTUIR's ground based construction contractor that will be responsible for traffic control during project operations. Safety discussions will include review of signage, placement of road guards and communications.

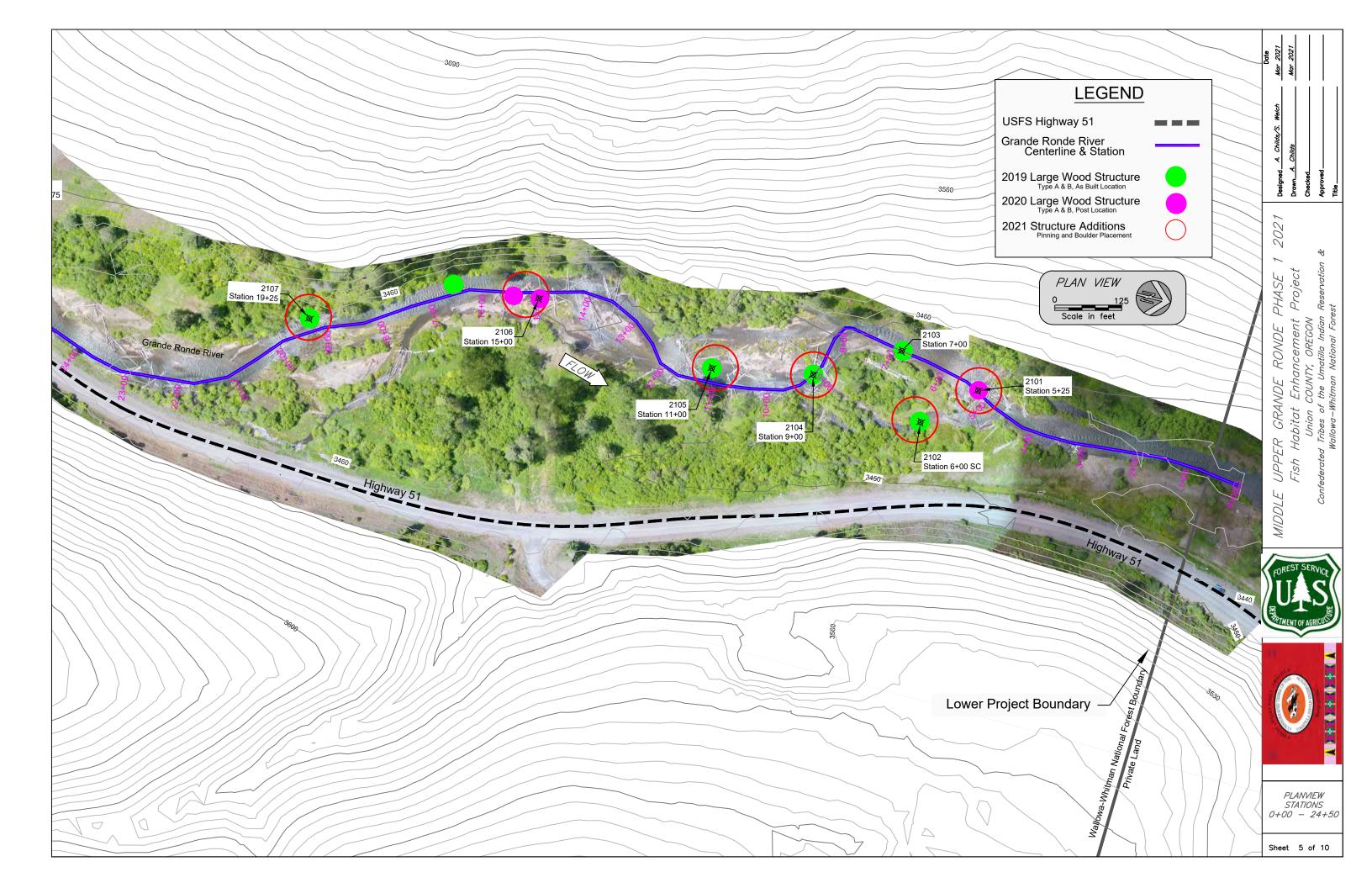
PROJECT MATERIALS SUMMARY

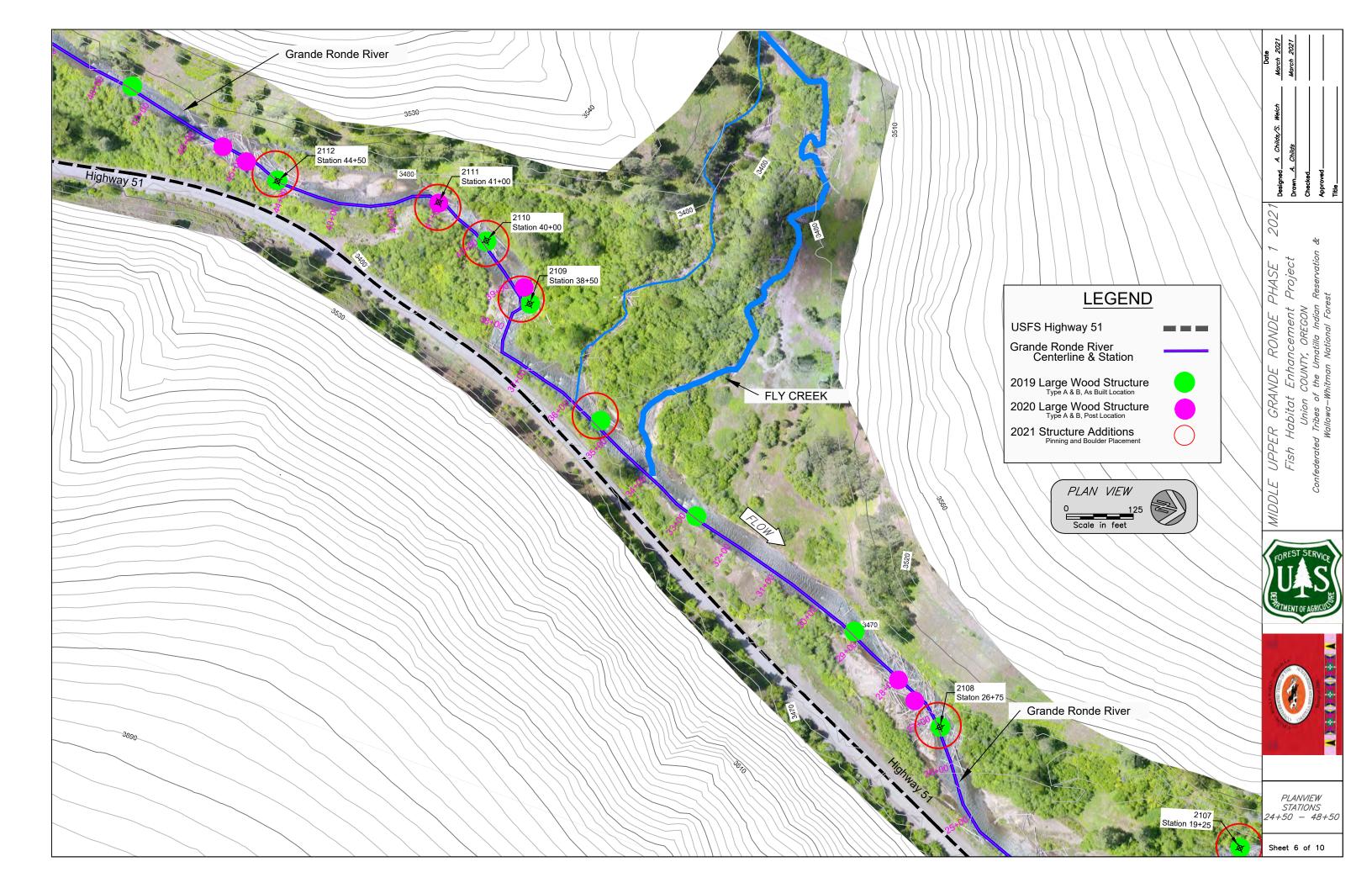
Point Number	Station	PINS	REBAR PINS	BOULDERS
2101	Station 5+25	6	6	10
2102	Station 6+00 SC	0	0	6
2103	Station 7+00	8	8	10
2104	Station 9+00	8	8	10
2105	Station 11+00	4	4	6
2106	Station 15+00	8	8	10
2107	Station 19+25	4	4	6
2108	Staton 26+75	4	4	6
2109	Station 38+50	3	3	4
2110	Station 40+00	3	3	4
2111	Station 41+00	б	6	10
2112	Station 44+50	4	4	6
2113	Station 50+25	3	3	4
2114	Station 52+40	4	4	6
2115	Station 73+50	4	4	6
2116	Station 75+50	4	4	6
2117	Station 80+40	4	4	6
2118	Station 85+00	3	3	4
2119	Station 87+75	3	3	6
2120	Station 91+75	3	3	6
2121	Station 97+75	4	4	8
то	TALS	90	90	14

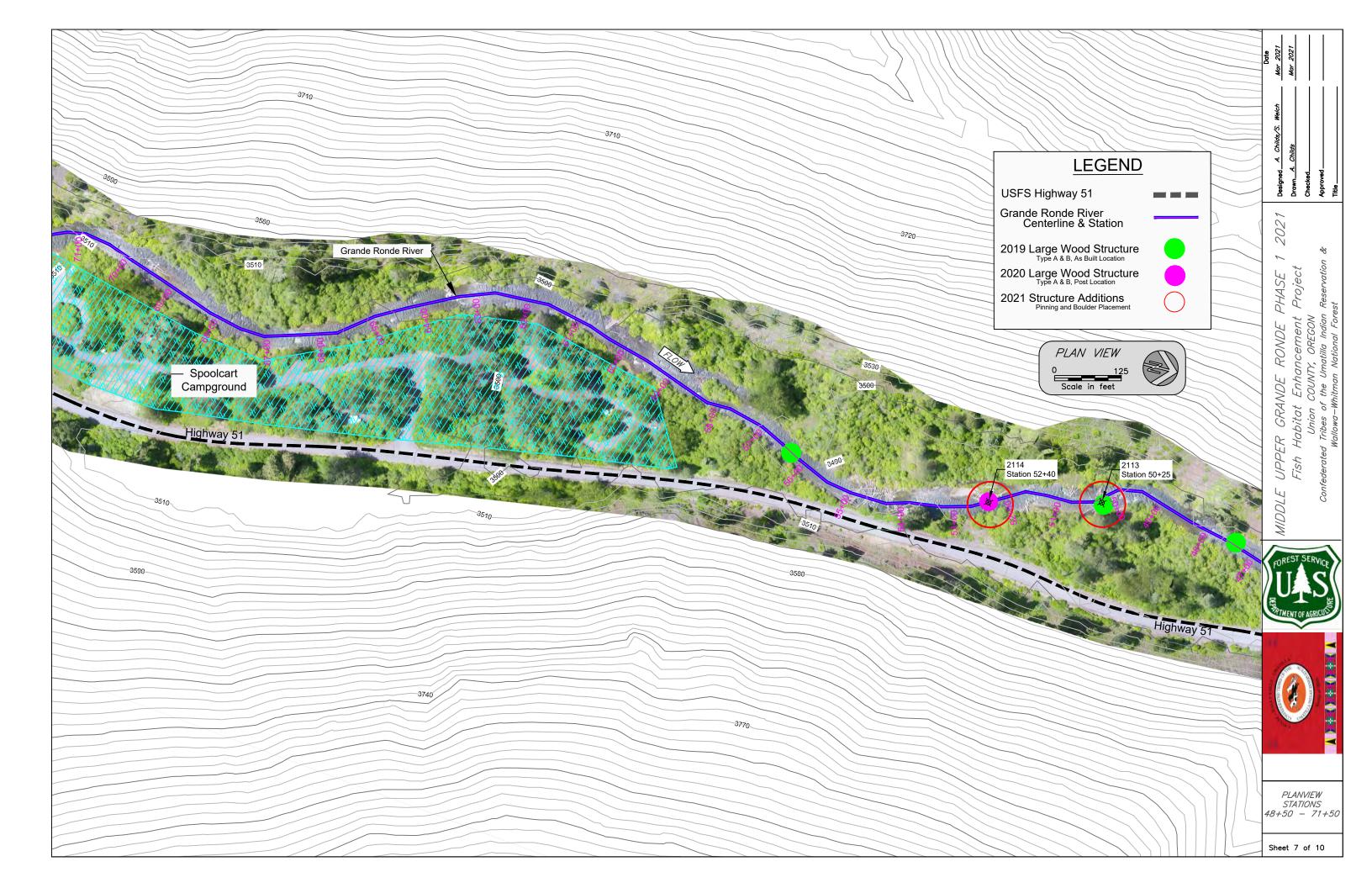
WOOD STRUCTURE PIN AND BOULDER ADDITONS LOCATIONS

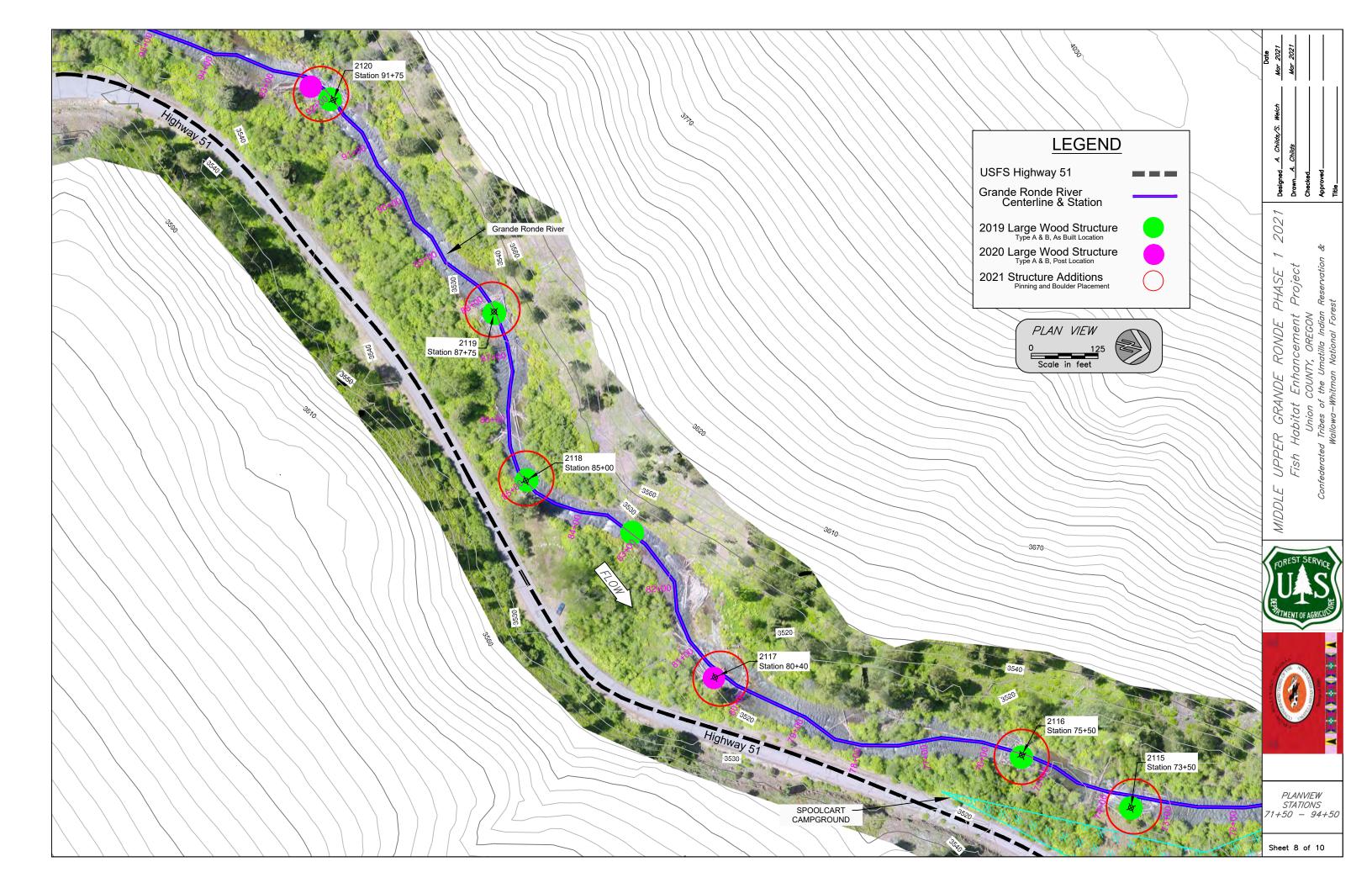
Point Number	Northing	Easting	Station
2101	572209.03	8744801.49	Station 5+25
2102	572121.07	8744885.92	Station 6+00 SC
2103	572052.84	8744767.21	Station 7+00
2104	571905.61	8744852.79	Station 9+00
2105	571720.41	8744890.14	Station 11+00
2106	571376.32	8744849.00	Station 15+00
2107	570974.30	8744996.58	Station 19+25
2108	570373.80	8744980.95	Staton 26+75
2109	569384.50	8744509.98	Station 38+50
2110	2110 569268.31 8744427.95		Station 40+00
2111	569160.43	8744392.50	Station 41+00
2112	568865.68	8744459.99	Station 44+50
2113	568291.66	8744406.10	Station 50+25
2114	568094.03	8744479.13	Station 52+40
2115	566097.42	8744696.57	Station 73+50
2116	565910.45	8744679.40	Station 75+50
2117	565423.16	8744732.24	Station 80+40
2118	8 565042.28 8744548.92 Static		Station 85+00
2119	2119 564905.04 8744321.12 S		Station 87+75
2120	564557.18	8744100.72	Station 91+75
2121	564007.21	8744145.05	Station 97+75

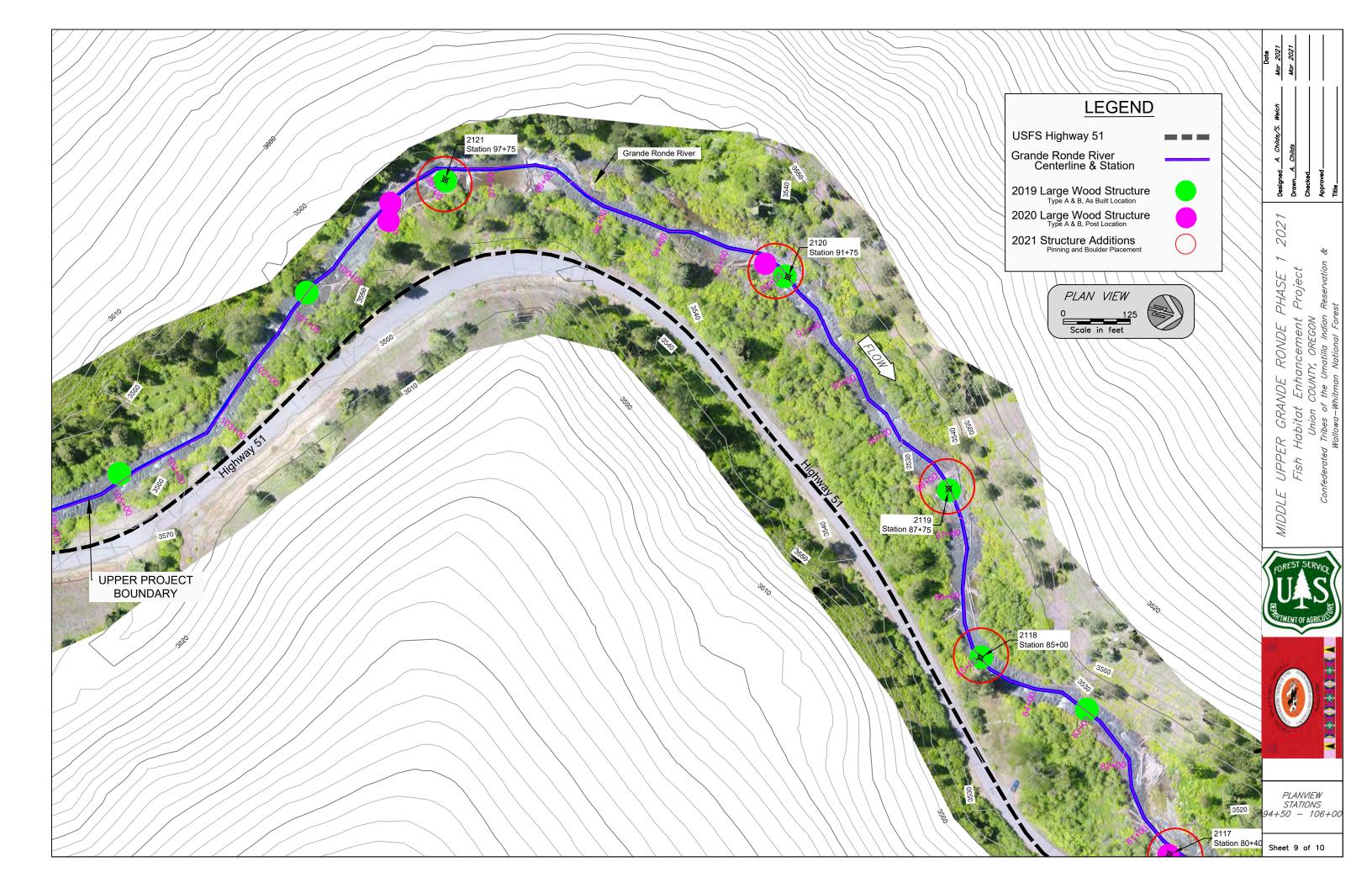
	Date Date March Mar 2021		Drawn A. Childs Mar 2021	Checked	Approved	Title
F		MIDDLE OFFER GRANDE RONDE FRASE / 2021 USSIGNED TO THE	Fish Habitat Enhancement Project	Union COUNTY, OREGON	Confederated Tribes of the Umatilla Indian Reservation &	Wallowa-Whitman National Forest
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LARGE 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.
- 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. Roads 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

