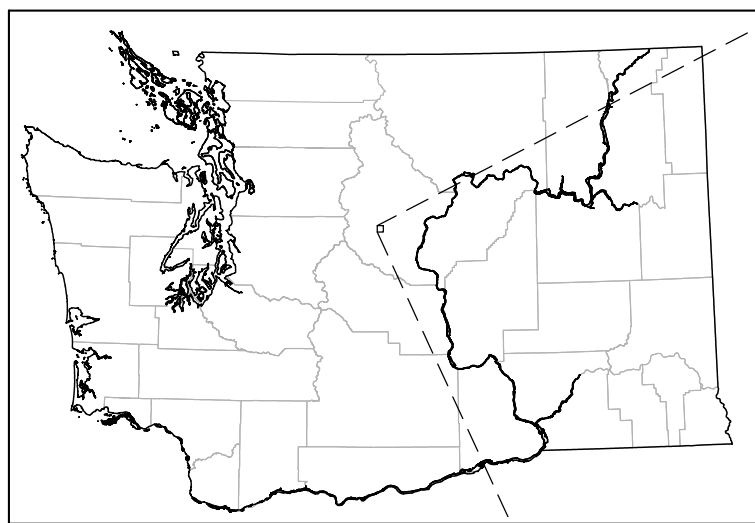


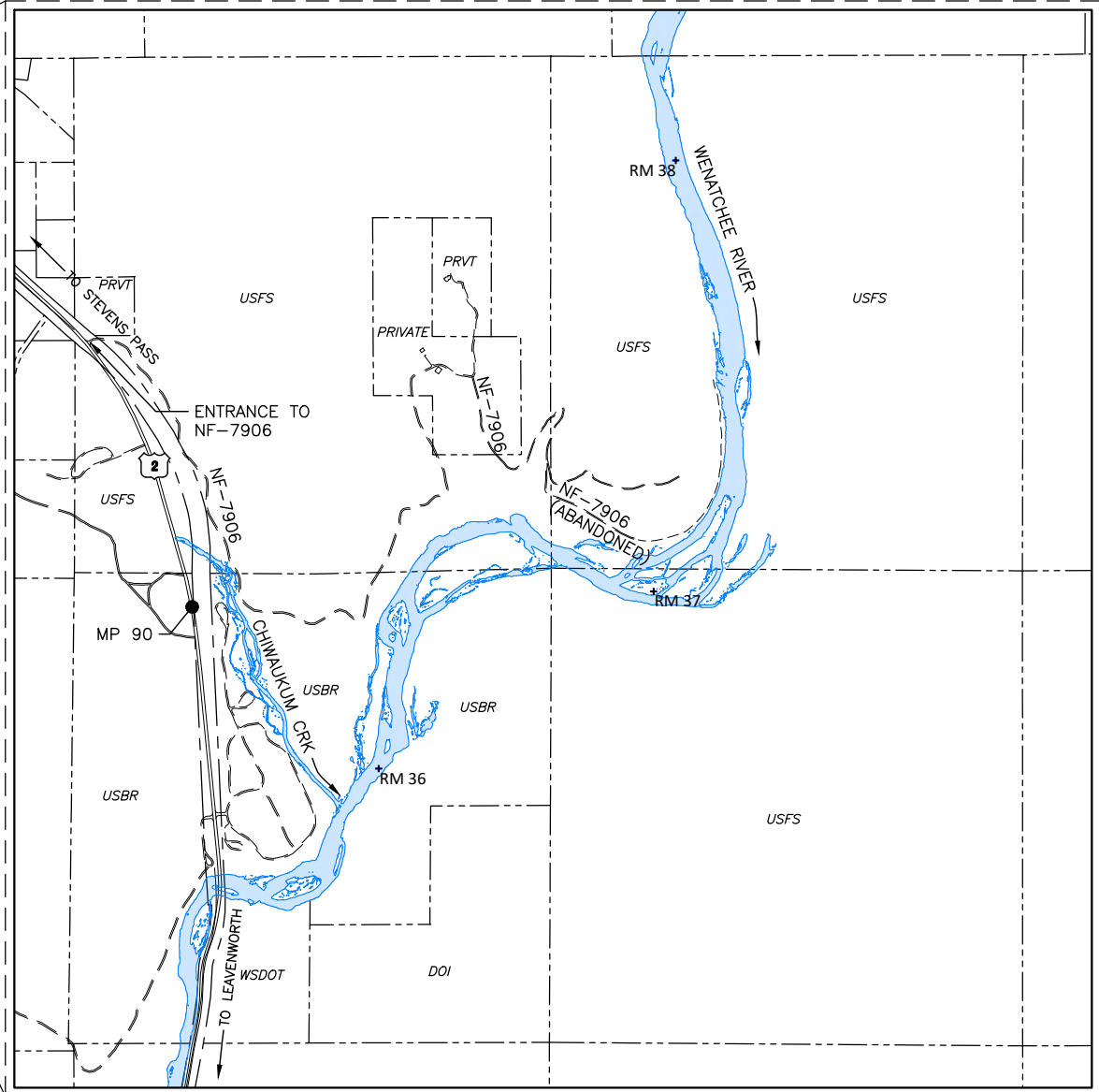
# UPPER WENATCHEE RIVER - RIVER MILE 37

## HABITAT RESTORATION PROJECT - HELICOPTER SUPPORT

### CHELAN COUNTY NATURAL RESOURCE DEPARTMENT



**LOCUS MAP**  
SCALE: 1" = 50 MILES



**PROJECT LOCATION**  
SCALE: 1" = 1000'

**DRAWING LIST**

SHEET NO.	SHEET TITLE
1	COVER
2	GENERAL NOTES
3	LEGEND
4	SITE ACCESS
5	PROJECT OVERVIEW
6	PROPOSED PLAN
7	PROPOSED PLAN
8	PROPOSED PLAN
9	HABITAT TREE DETAILS
10	BOULDER CLUSTER DETAILS

**CONTACT INFORMATION**

NATURAL SYSTEMS DESIGN, INC

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

CHELAN COUNTY NATURAL RESOURCE DEPARTMENT

411 WASHINGTON STREET, SUITE 201  
WENATCHEE, WA 98801  
PHONE (509) 667-6533

11/8/2023

11/8/2023



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



**NSD CGS**  
Natural Systems Design  
+ Coastal Geologic Services

NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED NT	LATITUDE 47°41'32"N
CHECKED RLE	LONGITUDE 120°42'38"W
DRAWN DBS	TN/SC/RG T25N/S03/R17E
CHECKED GD	DATE 07/15/23

**UPPER WENATCHEE RM 37 RESTORATION - HELICOPTER SUPPORT**

COVER

1  
SHEET 1 OF 10

P:\PROJECTS\CHELAN COUNTY\UPPER WENATCHEE\_RM\_36\DESIGN\CAD\_DWG - CURRENT\HELICOPTER\_PLANS\HELL\_COVER\_SHEET.DWG No. 11/8/2023 10:29:56 AM

Nov 08, 2023 FINAL DESIGN - FOR CONSTRUCTION

GENERAL NOTES

1. THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF CHELAN COUNTY NATURAL RESOURCE DEPARTMENT, HEREAFTER REFERRED TO AS "CONTRACTING AGENCY" 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 CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY.
5. EXISTING UTILITY HAVE NOT BEEN IDENTIFIED AND ANY UTILITY LOCATIONS REPRESENTED SHALL BE CONSIDERED APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR BECOMING FAMILIAR WITH THE PROJECT AREA, ANTICIPATED FLIGHT LINES, ALL UTILITIES, RESIDENCES, AND OTHER INFRASTRUCTURE WHICH MAY BE IMPACTED FROM WORK INCLUDED IN THIS CONTRACT. THE CONTRACTOR BEARS FULL RESPONSIBILITY FOR PROTECTING ALL UTILITIES AND INFRASTRUCTURE AND FOR ENSURING THE SAFETY OF THE PUBLIC.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND COMPLYING WITH ALL APPLICABLE LAWS, RULES, AND REGULATIONS GOVERNING MANNED AIRCRAFT OPERATION, INCLUDING ANY LOCAL REQUIREMENTS THAT APPLY.

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. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE COPIES OF ALL PERMITS ON THE JOB SITE, UNDERSTAND AND COMPLY WITH ALL PERMIT CONDITIONS.
3. 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.
4. 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 WITH THE APPROVAL OF THE ONSITE ENGINEER, REFLECTING THE AS-CONSTRUCTED MODIFICATIONS.
3. LIDAR FOR THIS PROJECT WAS PROVIDED TO THE ENGINEER BY THE CONTRACTING AGENCY AND IS REPRESENTATIVE OF 2022 TOPOGRAPHY AND BATHYMETRIC CONDITIONS. ADDITIONAL TOPOGRAPHIC INVESTIGATION WAS CONDUCTED BY THE ENGINEER IN 2021. THE VERTICAL DATUM IS NAVD88 (FT). THE HORIZONTAL DATUM IS NAD 83 WASHINGTON STATE PLANE NORTH (FT).

CONSTRUCTION NOTES

1. CONSTRUCTION HOURS SHALL BE WEEKDAYS BETWEEN 7:00 A.M. AND 6:30 P.M. UNLESS PRIOR APPROVAL IS RECEIVED FROM THE OWNER.
2. MATERIAL TO BE TRANSPORTED AND PLACED VIA HELICOPTER WILL BE FURNISHED, PREPARED, AND NEATLY STOCKPILED AT THE HELICOPTER STAGING AREA SHOWN ON THE PLANS.
3. THE CONTRACTOR SHALL EXERCISE CARE WHEN TRANSPORTING ALL MATERIAL TO AVOID DAMAGE. WOODY MATERIAL WITH ROOTWADS AND/OR BRANCHES SHALL BE PLACED IN A MANNER THAT MINIMIZES DAMAGE TO BRANCHES, ROOTS, LIMBS, AND TREE TOPS.
4. THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, ROADWAYS, DRAINAGE WAYS, BRIDGES, CULVERTS, AND VEGETATION UNTIL SUCH ITEMS ARE TO BE DISTURBED OR REMOVED AS INDICATED ON THE CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL KEEP THE JOB SITE CLEAN AND HAZARD FREE. UPON COMPLETION OF WORK, CONTRACTOR SHALL REMOVE ALL MATERIAL AND EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY.
6. ACTIVITIES SHALL BE IMPLEMENTED TO AVOID AND MINIMIZE ADVERSE IMPACTS TO WATERS OF THE UNITED STATES TO THE MAXIMUM EXTENT PRACTICABLE, INCLUDE ACTIONS THAT MINIMIZE THE NUMBER AND EXTENT OF IN-WATER WORK AND EQUIPMENT CROSSINGS OF WETTED CHANNELS.

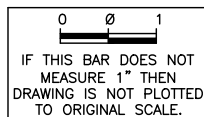
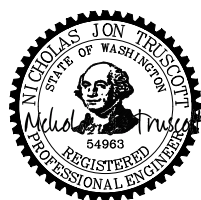
SUMMARY OF QUANTITIES

ITEM #	ITEM DESCRIPTION	QUANTITY	UNIT
1	MOBILIZATION	1	LS
2	TRANSPORT OF WOODY MATERIAL	1	LS
3	PLACEMENT OF WHOLE HABITAT TREES	1	LS
4	BOULDER CLUSTER PLACEMENT	1	LS

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11/8/2023

11/8/2023



Natural Systems Design  
+ Coastal Geologic Services

NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED NT	LATITUDE 47°41'32"N
CHECKED RLE	LONGITUDE 120°42'38"W
DRAWN DBS	TN/SC/RG T25N/S03/R17E
CHECKED GD	DATE 07/15/23

UPPER WENATCHEE RM 37  
RESTORATION – HELICOPTER  
SUPPORT

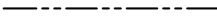





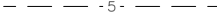

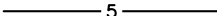
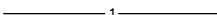
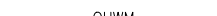







GENERAL NOTES

2









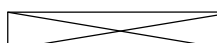


SHEET 2 OF 10

Nov 08, 2023 FINAL DESIGN – FOR CONSTRUCTION










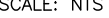
**GENERAL LEGEND**

-  PROPERTY LINE
-  RIGHT OF WAY LINE
-  EXISTING ROAD
-  ACCESS ROAD
-  CUT
-  LIMIT OF EXCAVATION
-  EXISTING MAJOR CONTOUR
-  EXISTING MINOR CONTOUR
-  PROPOSED MAJOR CONTOUR
-  PROPOSED MINOR CONTOUR
-  EXISTING OHWM
-  EXISTING WETLAND
-  LOW FLOW CHANNEL (~980 CFS)
-  EXISTING CONIFEROUS TREE
-  EXISTING DECIDUOUS TREE
-  CONTROL POINT LOCATION
-  BOULDER CLUSTER
-  HABITAT TREE

**TEMPORARY EROSION CONTROL LEGEND**

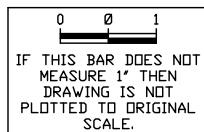
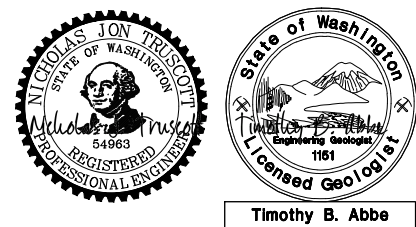
-  SB SILT BOOM
-  BN BLOCK NETS
-  SF SILT FENCE
-  SW STRAW WATTLE
-  DEWATERING LINE DISCHARGE
-  PROPOSED STAGING AREA
-  BULK BAG COFFERDAM
-  TEMPORARY ACCESS ROAD
-  TEMPORARY ACCESS BRIDGE
-  PUMP DISCHARGE OUTLET
-  DEWATERING PUMP

**DETAIL AND SECTION REFERENCING**

-  NOTE REFERENCING NUMBER
-  4  
6
-  6
-  (TYP)
-  A  
L
-  A<sub>32</sub>  
J
-  SECTION A-A
-  32
-  SECTION A-A IS SHOWN ON SHEET 32
-  SCALE: NTS

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11/8/2023      11/8/2023



**NSD**  
**CGS**  
Natural Systems Design  
+ Coastal Geologic Services

NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED: NT	LATITUDE: 47°41'32"N
CHECKED: RLE	LONGITUDE: 120°42'38"W
DRAWN: DBS	TN/SC/RG: T29N/S03/R17E
CHECKED: GD	DATE: 07/15/23

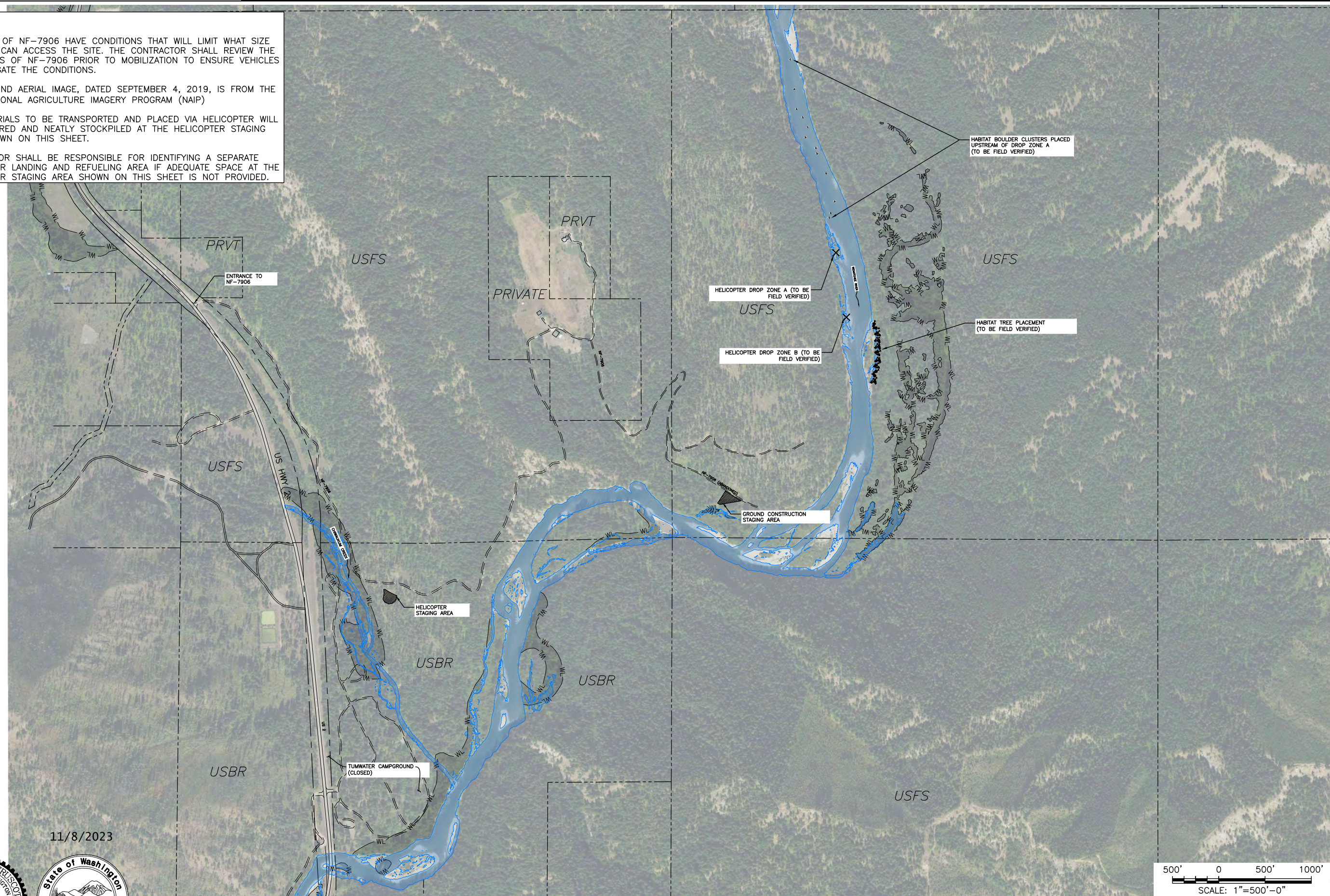
**UPPER WENATCHEE RM 37  
RESTORATION – HELICOPTER  
SUPPORT**

**LEGEND**

**3**  
SHEET 3 OF 10

Nov 08, 2023 FINAL DESIGN – FOR CONSTRUCTION

- NOTES**
1. PORTIONS OF NF-7906 HAVE CONDITIONS THAT WILL LIMIT WHAT SIZE VEHICLES CAN ACCESS THE SITE. THE CONTRACTOR SHALL REVIEW THE CONDITIONS OF NF-7906 PRIOR TO MOBILIZATION TO ENSURE VEHICLES CAN NAVIGATE THE CONDITIONS.
  2. BACKGROUND AERIAL IMAGE, DATED SEPTEMBER 4, 2019, IS FROM THE USDA NATIONAL AGRICULTURE IMAGERY PROGRAM (NAIP)
  3. ALL MATERIALS TO BE TRANSPORTED AND PLACED VIA HELICOPTER WILL BE PREPARED AND NEATLY STOCKPILED AT THE HELICOPTER STAGING AREA SHOWN ON THIS SHEET.
  4. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING A SEPARATE HELICOPTER LANDING AND REFUELING AREA IF ADEQUATE SPACE AT THE HELICOPTER STAGING AREA SHOWN ON THIS SHEET IS NOT PROVIDED.



11/8/2023

11/8/2023



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

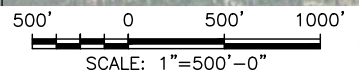


**NSD** Natural Systems Design  
**CGS** + Coastal Geologic Services

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	NT	LATITUDE	47°41'32"N
CHECKED	RLE	LONGITUDE	120°42'38"W
DRAWN	DBS	TN/SC/RG	T25N/S03/R17E
CHECKED	GD	DATE	07/15/23

**UPPER WENATCHEE RM 37 RESTORATION – HELICOPTER SUPPORT**

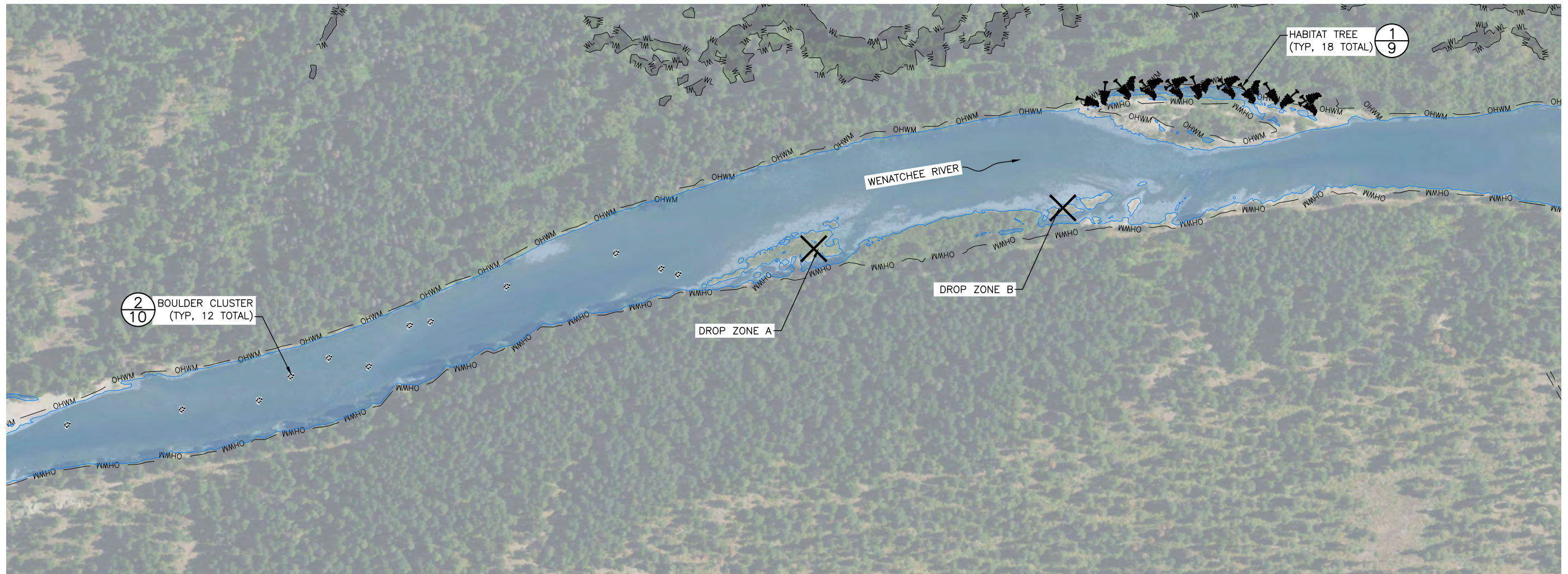
**SITE ACCESS**



4  
 SHEET 4 OF 10

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Nov 08, 2023 FINAL DESIGN – FOR CONSTRUCTION



DROP ZONE A LOG DELIVERY SCHEDULE

LOG ID	DIA/DBH (IN)	LENGTH (FT)	ROOTWAD (Y/N)	QUANTITY(EA)
RD5	20	50	Y	18
D5	20	50	N	3
D4	20	40	N	12
D3	20	30	N	12
E2	16	20	N	12
RACKING BUNDLE	36 TO 48	20 TO 40	Y/N	39

DROP ZONE B LOG DELIVERY SCHEDULE

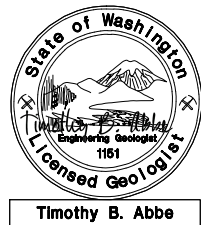
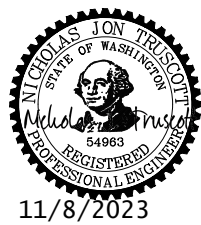
LOG ID	DIA/DBH (IN)	LENGTH (FT)	ROOTWAD (Y/N)	QUANTITY(EA)
RD4	20	40	Y	12
D4	20	40	N	9
D3	20	30	N	9
E2	16	20	N	12
RACKING BUNDLE	36 TO 48	20 TO 40	Y/N	30

NOTES

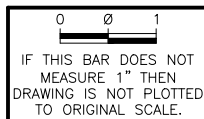
1. PRIOR TO EXECUTION OF WORK IN THIS CONTRACT, LOG SORTING AND STOCKPILING AND BOULDER PREPARATION WILL BE COMPLETED BY OTHERS.
2. MATERIALS TO BE PLACED IN DROP ZONES A AND B SHALL BE STAGED ON EXPOSED BARS. EXACT LOCATIONS TO BE VERIFIED IN THE FIELD BASED ON SITE CONDITIONS.
3. OVERHEAD UTILITIES AND TRANSMISSION LINES ARE NOT SHOWN ON THESE PLANS; CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND AVOIDING DAMAGE TO ALL OVERHEAD UTILITIES.

HABITAT STRUCTURE DELIVERY SCHEDULE

LOG ID	DIA/DBH (IN)	LENGTH (FT)	ROOTWAD (Y/N)	QUANTITY(EA)
HABITAT TREE	VARIES	VARIES	Y	18
BOULDER	TYPE 5/TYP 6			54



11/8/2023



**Natural Systems Design**  
+ **Coastal Geologic Services**

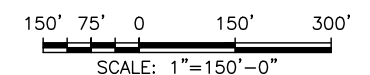
NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED: NT	LATITUDE: 47°41'32"N
CHECKED: RLE	LONGITUDE: 120°42'38"W
DRAWN: DBS	TN/SC/RG: T25N/S03/R17E
CHECKED: GD	DATE: 07/15/23

**UPPER WENATCHEE RM 37 RESTORATION – HELICOPTER SUPPORT**

**PROJECT OVERVIEW**

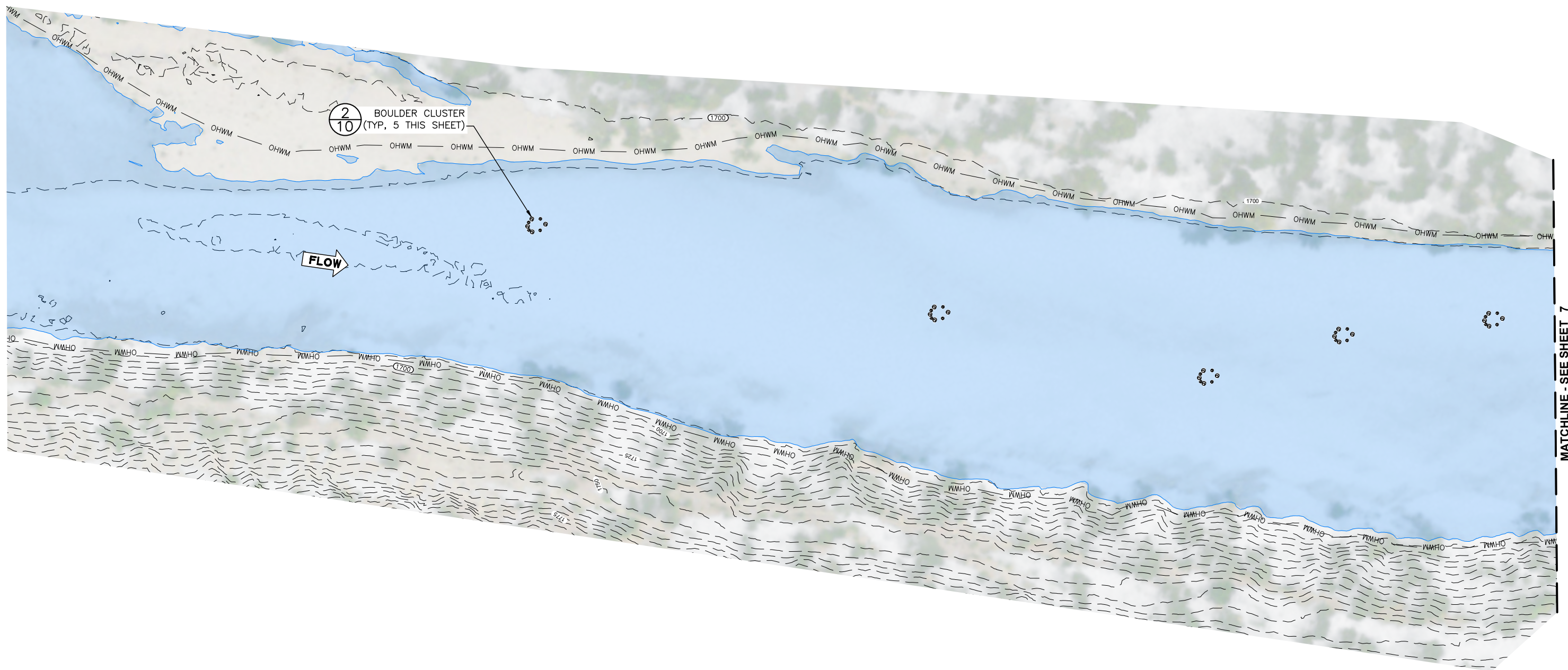
**5**

SHEET **5** OF **10**



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Nov 08, 2023 FINAL DESIGN – FOR CONSTRUCTION

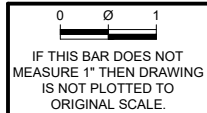


**NOTES**

1. BOULDER CLUSTERS TO BE PLACED VIA HELICOPTER.
2. BOULDER PREPARATION TO BE COMPLETED BY OTHERS PRIOR TO EXECUTION OF WORK IN THIS CONTRACT.
3. BOULDERS SHALL BE HOISTED AND PLACED SUCH THAT NO CABLE OR OTHER LIFTING AIDS REMAIN ATTACHED WHEN PLACED.
4. BOULDERS SHALL NOT BE TOUCHING WHEN PLACED; SEE DETAIL ON SHEET 10.
5. LOCATIONS SHOWN ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER.
6. OVERHEAD UTILITIES AND TRANSMISSION LINES ARE NOT SHOWN ON THESE PLANS; CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND AVOIDING DAMAGE TO ALL OVERHEAD UTILITIES.



11/8/2023



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



**NSD**  
**CGS**  
Natural Systems Design  
+ Coastal Geologic Services

NAME OR INITIALS AND DATE
DESIGNED NT
CHECKED RLE
DRAWN DBS
CHECKED GD

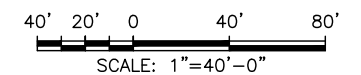
GEOGRAPHIC INFORMATION
LATITUDE 47°41'32"N
LONGITUDE 120°42'38"W
TNCSIRG T25N/S03/R17E
DATE 07/15/23

**UPPER WENATCHEE RM 37  
RESTORATION – HELICOPTER  
SUPPORT**

**PROPOSED PLAN**

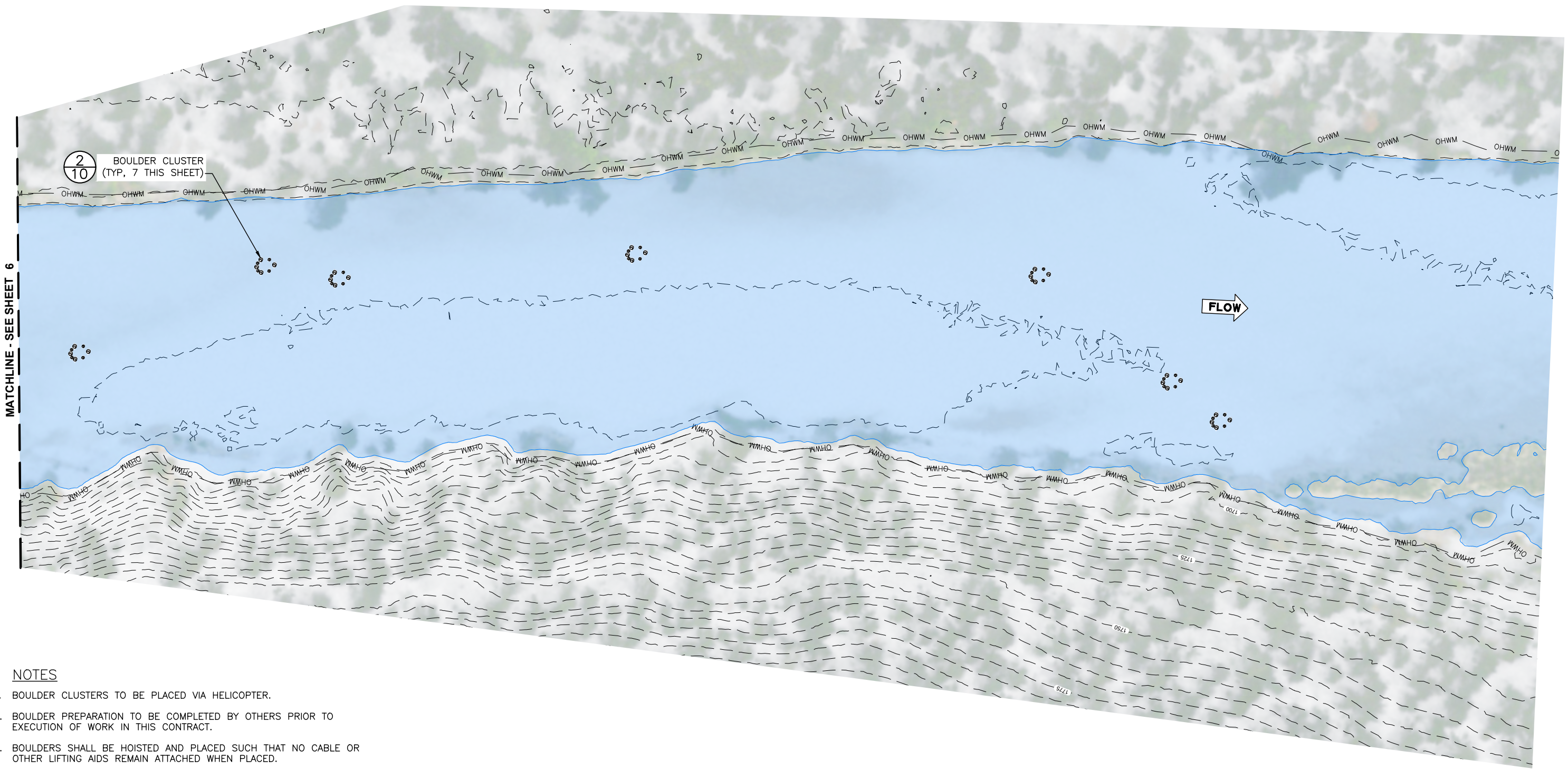
**6**

SHEET **6** OF **10**



MATCHLINE - SEE SHEET 7

Nov 08, 2023 FINAL DESIGN – FOR CONSTRUCTION

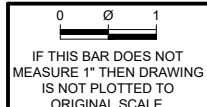


**NOTES**

1. BOULDER CLUSTERS TO BE PLACED VIA HELICOPTER.
2. BOULDER PREPARATION TO BE COMPLETED BY OTHERS PRIOR TO EXECUTION OF WORK IN THIS CONTRACT.
3. BOULDERS SHALL BE HOISTED AND PLACED SUCH THAT NO CABLE OR OTHER LIFTING AIDS REMAIN ATTACHED WHEN PLACED.
4. BOULDERS SHALL NOT BE TOUCHING WHEN PLACED; SEE DETAIL ON SHEET 10.
5. LOCATIONS SHOW ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER.
6. OVERHEAD UTILITIES AND TRANSMISSION LINES ARE NOT SHOWN ON THESE PLANS; CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND AVOIDING DAMAGE TO ALL OVERHEAD UTILITIES.



11/8/2023



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



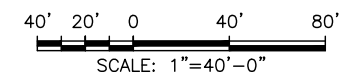
**NSD CGS**  
Natural Systems Design  
+ Coastal Geologic Services

NAME OR INITIALS AND DATE	
DESIGNED	NT
CHECKED	RLE
DRAWN	DBS
CHECKED	GD

GEOGRAPHIC INFORMATION	
LATITUDE	47°41'32"N
LONGITUDE	120°42'38"W
TNCSIRG	T25N/S03/R17E
DATE	07/15/23

**UPPER WENATCHEE RM 37  
RESTORATION – HELICOPTER  
SUPPORT**

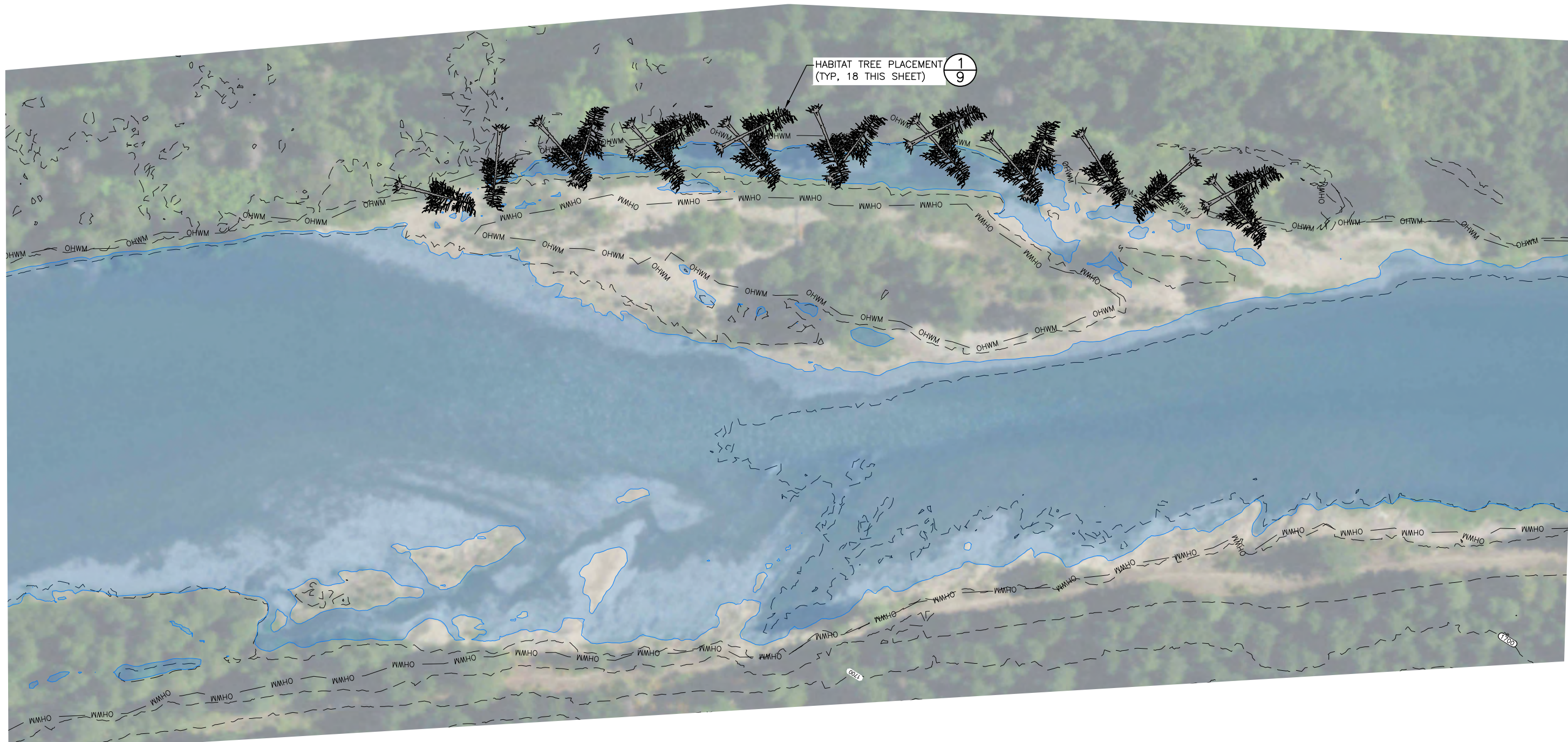
**PROPOSED PLAN**



**7**  
SHEET 7 OF 10

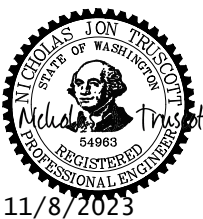
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Nov 08, 2023 FINAL DESIGN – FOR CONSTRUCTION



**NOTES**

1. HABITAT TREES TO BE PLACED VIA HELICOPTER.
2. HABITAT TREE PREPARATION TO BE COMPLETED BY OTHERS PRIOR TO EXECUTION OF WORK IN THIS CONTRACT.
3. LOCATIONS SHOW ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER.
3. PLACE TREES TO MAXIMIZE ENTANGLEMENT WITH EXISTING STABLE VEGETATION AND TREES. WHERE POSSIBLE, PLACE TREES BETWEEN EXISTING TREES TO RESIST MOBILIZATION IN MULTIPLE DIRECTIONS.
4. TREES SHALL BE PLACED AS TO MINIMIZE DISTURBANCE TO EXISTING VEGETATION; SEE DETAIL ON SHEET 9.
5. OVERHEAD UTILITIES AND TRANSMISSION LINES ARE NOT SHOWN ON THESE PLANS; CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND AVOIDING DAMAGE TO ALL OVERHEAD UTILITIES.



11/8/2023

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



**Natural Systems Design + Coastal Geologic Services**

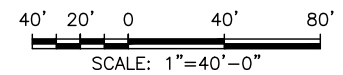
NAME OR INITIALS AND DATE
DESIGNED NT
CHECKED RLE
DRAWN DBS
CHECKED GD

GEOGRAPHIC INFORMATION
LATITUDE 47°41'32"N
LONGITUDE 120°42'38"W
TNSCRG T25N/S03/R17E
DATE 07/15/23

**UPPER WENATCHEE RM 37 RESTORATION – HELICOPTER SUPPORT**

**PROPOSED PLAN**

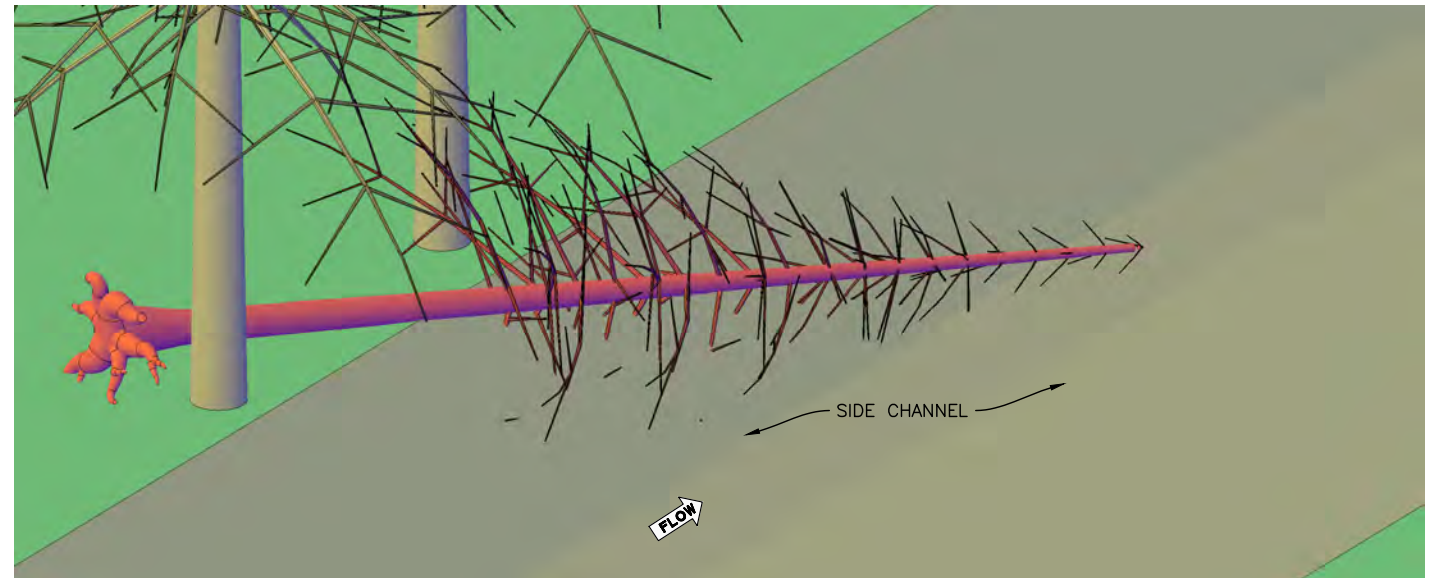
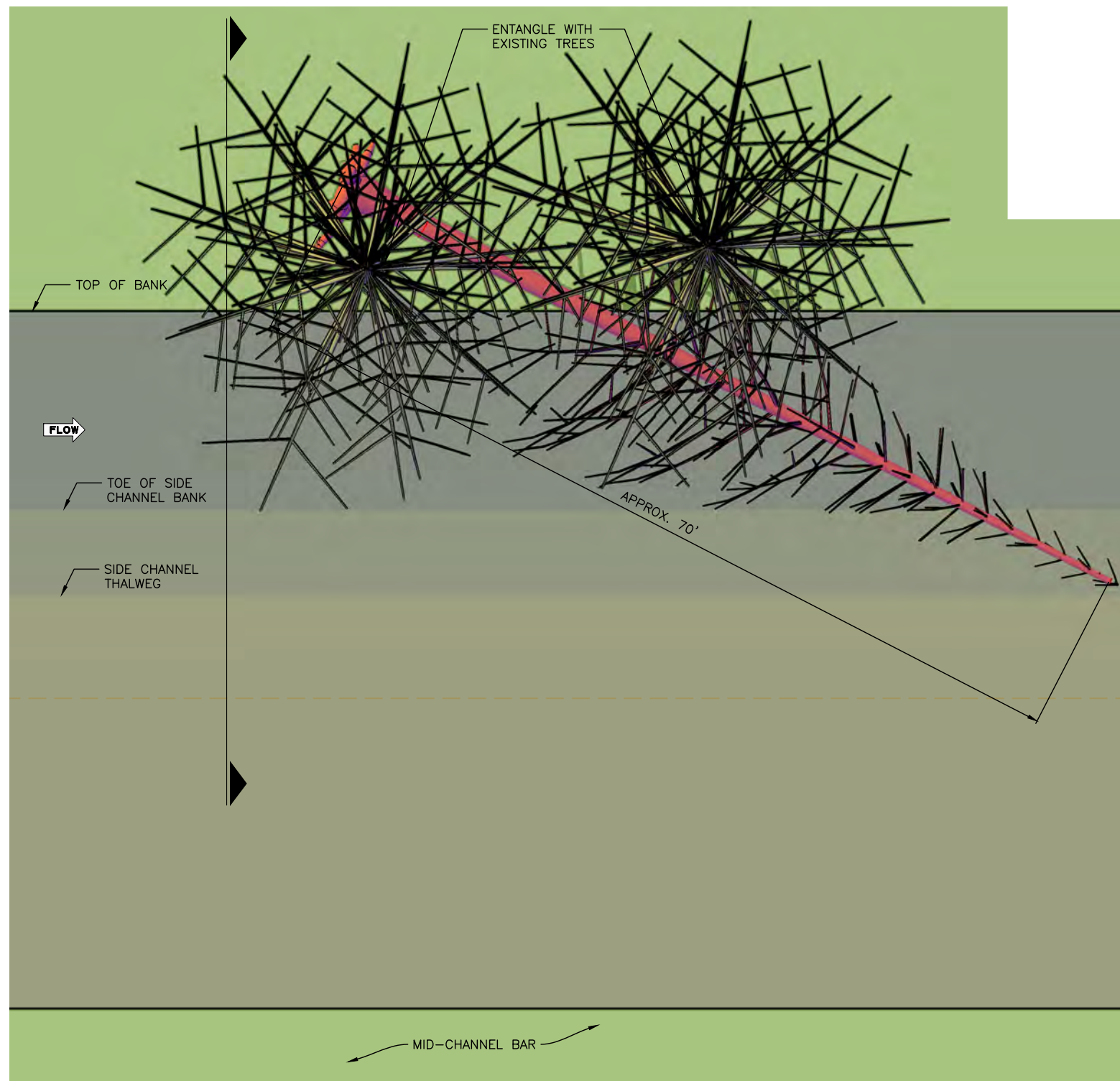
**8**  
SHEET 8 OF 10



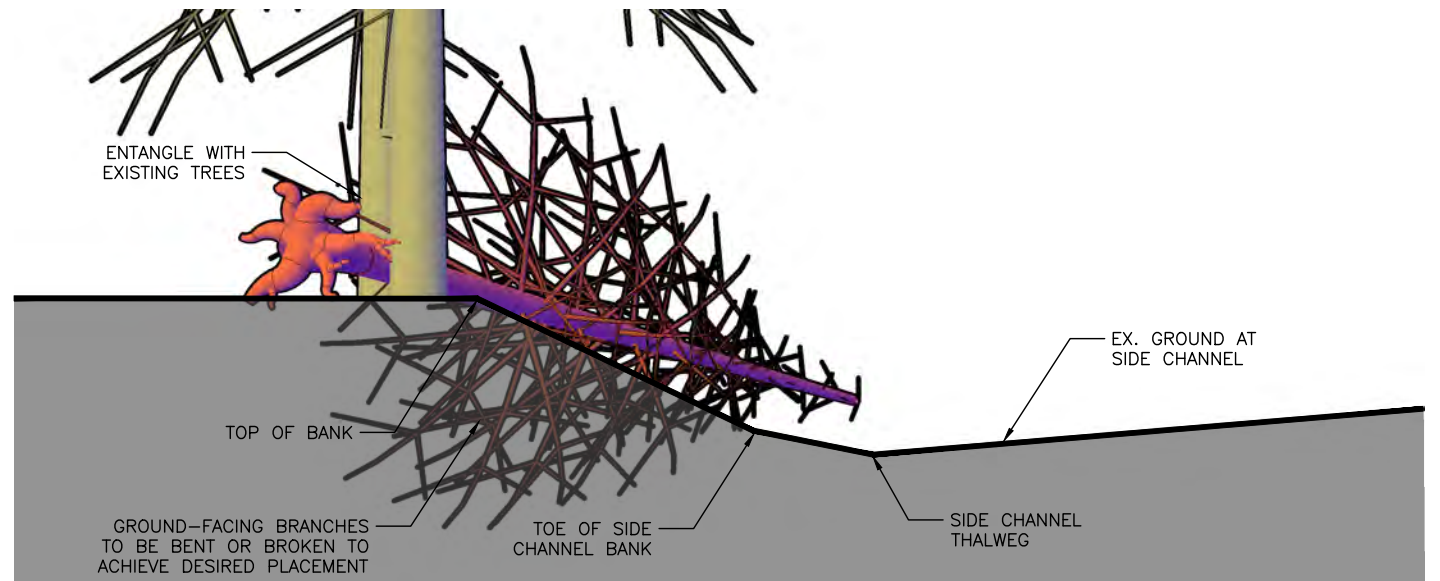
PROJECT: CHAN COUNTY UPPER WENATCHEE RM 37 RESTORATION HELICOPTER PLANS SHEET PROCESSED PL AND DWG NO. 11/8/2023 10:32:47 AM

Nov 08, 2023 FINAL DESIGN – FOR CONSTRUCTION





**HABITAT TREE ISOMETRIC**  
SCALE: 1" = 4'



**HABITAT TREE ELEVATION**  
SCALE: 1" = 4'

**NOTES**

1. TREES SHALL BE PLACED BY HELICOPTER, WITH MANUAL GROUND SUPPORT.
2. PLACE TREES TO MAXIMIZE ENTANGLEMENT WITH EXISTING STABLE VEGETATION AND TREES. WHERE POSSIBLE, PLACE TREES BETWEEN EXISTING TREES TO RESIST MOBILIZATION IN MULTIPLE DIRECTIONS.
3. TREES SHALL BE PLACED SINGLY OR IN TANDEM, DEPENDING ON SITE CONDITIONS. PLACE TREES AS SHOWN IN THESE PLANS, OR AS DIRECTED IN THE FIELD.
4. TREES SHALL BE PLACED AS TO MINIMIZE DISTURBANCE TO EXISTING VEGETATION.
5. HABITAT TREES ARE ESTIMATED TO WEIGH UP TO 8,000 POUNDS. IF NECESSARY, TRIMMING OF TREE LIMBS, BRANCHES, AND TOP WILL BE PERFORMED BY OTHERS TO REDUCE WEIGHT BELOW 8,000 POUNDS.

11/8/2023

11/8/2023

**HABITAT TREE PLAN**  
SCALE: 3" = 1'-0" \_XREF

**HABITAT TREE PLACEMENT** ①  
SCALE: AS NOTED



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



**NSD CGS**  
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NAME OR INITIALS AND DATE  
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GEOGRAPHIC INFORMATION  
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LONGITUDE 120°42'38"W  
TNSCRG T25N/S03/R17E  
DATE 07/15/23

**UPPER WENATCHEE RM 37 RESTORATION – HELICOPTER SUPPORT**

**HABITAT TREE DETAILS**

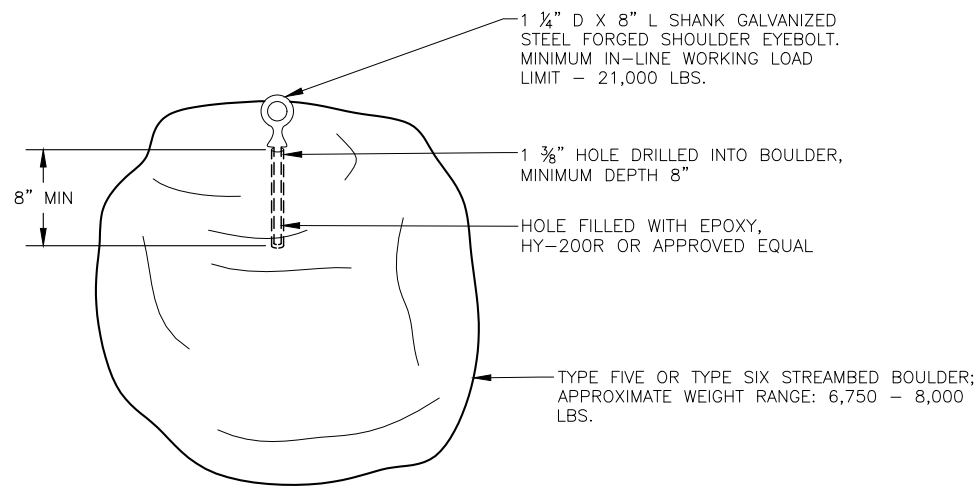
9  
SHEET 9 OF 10

P:\PROJECTS\CHALAN\COUNTY\UPPER WENATCHEE RM 37\DESIGN\CADD\DWGS - CURRENT\HELICOPTER PLANS\HULL FULL TREE.DWG, 11/08/2023 10:33:00 AM

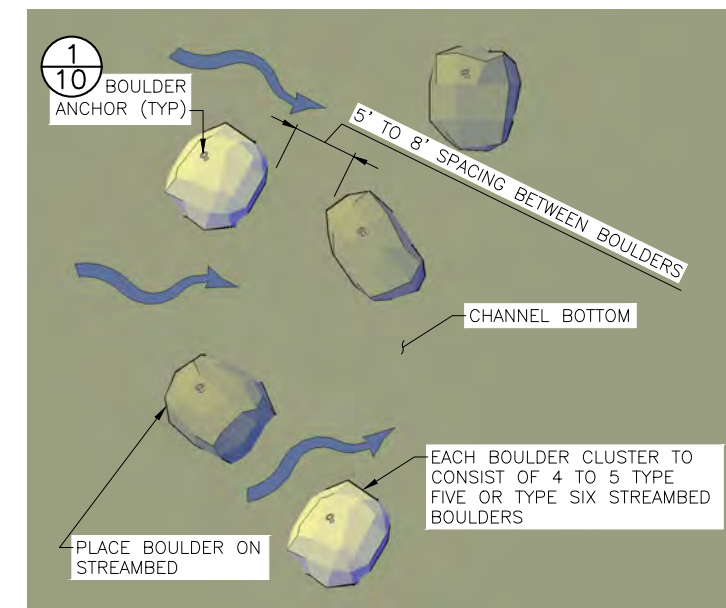
FINAL DESIGN – FOR CONSTRUCTION  
Nov 08, 2023

**NOTES**

1. BOULDER PREPARATION AS SHOWN ON THIS SHEET WILL BE PERFORMED BY OTHERS PRIOR TO EXECUTION OF WORK IN THIS CONTRACT.
2. EACH BOULDER WILL BE TESTED INDIVIDUALLY BY OTHERS TO ENSURE ADEQUATE PREPARATION.
3. BOULDERS SHALL BE HOISTED AND PLACED INDIVIDUALLY. HOIST, TRANSPORT, AND PLACE BOULDERS WITH CARE, AVOIDING SHOCK LOADING TO THE HOIST LINE AND IMPACTS TO THE BOULDER.
4. CONTRACTOR SHALL COORDINATE WITH GROUND SUPPORT CONTRACTOR TO DEVELOP A HOISTING METHOD WHICH ALLOWS USE OF THE PREPARATION METHOD SHOWN ON THIS SHEET, OR ANOTHER METHOD APPROVED BY THE CONTRACTING OFFICER, TO HOIST AND PLACE BOULDERS SUCH THAT NO CABLE OR OTHER LIFTING AIDS REMAIN ATTACHED WHEN PLACED. IF USING EYEBOLT, EYEBOLT MAY REMAIN IN BOULDER.
5. PLACE BOULDERS AS SHOWN ON THIS SHEET, LEAVING APPROXIMATELY 5 TO 8 FEET BETWEEN EACH BOULDER IN ITS FINAL POSITION.
6. LOCATIONS FOR INDIVIDUAL BOULDERS WILL BE IDENTIFIED IN THE FIELD BY THE CONTRACTING OFFICER.



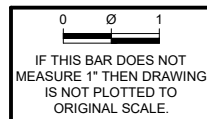
**BOULDER ANCHOR** 1/10  
NOT TO SCALE



**BOULDER CLUSTER** 2/10  
NOT TO SCALE

11/8/2023

11/8/2023



**Natural Systems Design + Coastal Geologic Services**

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CHECKED	GD

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DATE	07/15/23

UPPER WENATCHEE RM 37 RESTORATION – HELICOPTER SUPPORT

BOULDER CLUSTER DETAILS

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