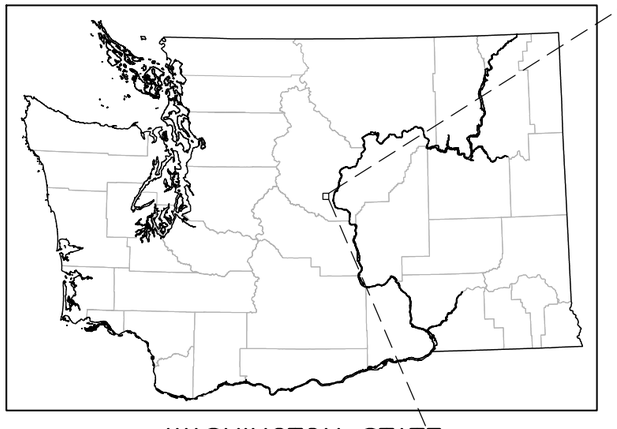
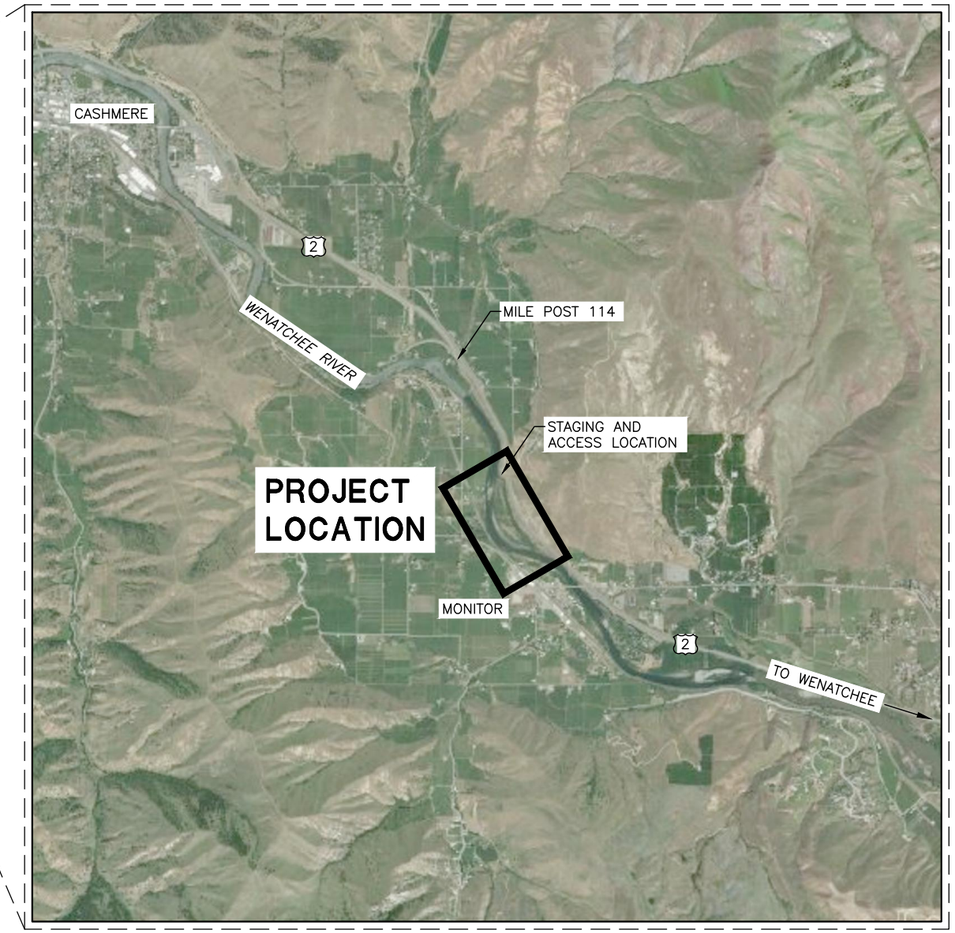
MONITOR SIDE CHANNEL RESTORATION

CHELAN COUNTY NATURAL RESOURCES DEPARTMENT



WASHINGTON STATE
SCALE: 1"=50 MILES



VICINITY MAP
SCALE: 1" = 1 mile

SHEET LIST	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	GENERAL NOTES
3	LEGEND
4	PROPOSED CONDITIONS – OVERALL PLAN
5	PROPOSED CONDITIONS – SITE 1
6	PROPOSED CONDITIONS – SITE 2
7	TYPE 1 ELJ
8	TYPE 1 ELJ LAYERING PLANS 1
9	TYPE 1 ELJ LAYERING PLANS 2
10	TYPE 2 ELJ
11	TYPE 2 ELJ LAYERING PLANS 1
12	TYPE 2 ELJ LAYERING PLANS 2
13	TYPE 3 ELJ
14	TYPE 3 ELJ LAYERING PLANS 1
15	TYPE 3 ELJ LAYERING PLANS 2
16	TYPE 4 ELJ
17	TYPE 4 ELJ LAYERING PLANS 1
18	TYPE 4 ELJ LAYERING PLANS 2
19	ELJ DETAILS 1
20	ELJ DETAILS 2
21	ACCESS, STAGING, AND DEWATERING PLAN
22	SITE ACCESS AND DEWATERING 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

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21903
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

COVER SHEET

1

SHEET 1 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN COUNTY\MONITOR SIDE CHANNEL\DESIGN\CAD DWGS – CURRENT\COVER SHEET.DWG Nic 3/26/2021 4:28:19 PM

GENERAL NOTES

1. THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF CHELAN COUNTY NATURAL RESOURCES DEPARTMENT, HEREAFTER REFERRED TO AS "OWNER" AND THEIR AUTHORIZED AGENTS. THE OWNER WILL DESIGNATE A REPRESENTATIVE, HEREAFTER REFERRED TO AS "CONTRACTING OFFICER", TO REPRESENT THE OWNER AND TO INTERACT WITH THE CONTRACTOR ON THEIR BEHALF. THE CONTRACTING OFFICER WILL BE ON-SITE DURING CONSTRUCTION AND WILL BE RESPONSIBLE FOR FACILITATING ADMINISTRATION OF THE CONSTRUCTION CONTRACT BETWEEN THE OWNER AND THE CONTRACTOR.

2. NATURAL SYSTEMS DESIGN HEREAFTER REFERRED TO AS "DESIGN 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 DESIGN 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, DESIGN 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 WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD PLANS. ALL REFERENCES TO THE "STANDARD SPECIFICATIONS" SHALL MEAN THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, 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 SHALL 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, AND TO 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 PROJECT 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. LIDAR FOR THIS PROJECT WAS COLLECTED IN 2015. THE VERTICAL DATUM IS NAVD88 AND THE HORIZONTAL DATUM IS NAD83 (2011). ALL ELEVATIONS AND DISTANCES SHOWN ARE U.S. SURVEY FEET.

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 TEMPORARY EROSION AND SEDIMENT CONTROL PLAN SHALL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL BY OWNER BEFORE ANY CONSTRUCTION MAY BEGIN. THE SEDIMENT AND EROSION CONTROL PLAN SHALL 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 CONTRACTING OFFICER.

8. ALL EXTERNAL GREASE AND OIL SHALL BE PRESSURE-WASHED OFF THE EQUIPMENT PRIOR TO TRANSPORT TO THE SITE.

9. 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.

10. THE CONTRACTOR SHALL HAVE AN EMERGENCY SPILL KIT ON-SITE AT ALL TIMES.

11. NO TREES OR WETLAND VEGETATION SHALL BE REMOVED UNLESS THEY ARE FLAGGED FOR REVIEW AND SUBSEQUENTLY APPROVED FOR REMOVAL BY THE CONTRACTING OFFICER. ALL TREES CONFLICTING WITH GRADING SHALL BE REMOVED. NO GRADING SHALL TAKE PLACE WITHIN THE DRIP LINE OF TREES TO REMAIN UNLESS OTHERWISE APPROVED.

12. FOLLOWING CONSTRUCTION SEEDING, MULCHING, AND PLANTING WILL BE COMPLETED BY OTHERS. THIS DOES NOT RELEASE THE CONTRACTOR FROM THE RESPONSIBILITY OF APPLICABLE STABILIZATION MEASURES IDENTIFIED IN THE PLANS, SPECIFICATIONS, OR THE APPROVED TESC PLAN.

CONSTRUCTION NOTES

1. CONTRACT DOCUMENTS INCLUDE 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. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO PROCEEDING WITH THE WORK.

5. 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.

6. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

7. 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.

8. THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, ROADWAYS, DRAINAGE WAYS, PRIVATE BRIDGES, CULVERTS, AND VEGETATION UNTIL SUCH ITEMS ARE TO BE DISTURBED OR REMOVED AS INDICATED ON THE CONTRACT DOCUMENTS.

9. 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.

10. NOTES AND DETAILS ON THE PLANS SHALL TAKE PRECEDENCE OVER GENERAL NOTES HEREIN.

11. DIMENSIONAL CALLOUTS SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON THE PLANS.

12. 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.

13. MATERIAL SHALL NOT BE STORED OUTSIDE OF IDENTIFIED STAGING AREAS. THE CONTRACTOR SHALL USE ONLY DESIGNATED 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.

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21903
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

GENERAL NOTES

2

SHEET 2 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN COUNTY\MONITOR SIDE CHANNEL\DESIGN\CAD DWGS - CURRENT\NOTES.DWG Nic 3/26/2021 4:28:26 PM

GENERAL LEGEND

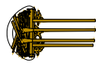
- PROPERTY LINE
- EXISTING ROAD
- CL — CL — CLEARING LIMIT
- GL — GL — GRADING LIMIT
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 1 — PROPOSED MAJOR CONTOUR
- 5 — PROPOSED MINOR CONTOUR
- LOW FLOW CHANNEL
- OHWM — EXISTING OHWM
- OHWM — PROPOSED OHWM
- DEMOLITION/REMOVAL AREA
- OH — OH — EXISTING OVERHEAD POWER LINE
- CONTROL POINT LOCATION
- FILL SLOPE LINE
- EXCAVATION SLOPE LINE

RESTORATION LEGEND

TYPE 1 ELJ 1/7

TYPE 2 ELJ 1/10

TYPE 3 ELJ 1/13



TYPE 4 ELJ 1/16

BOULDER CLUSTER 4/19

WILLOW TRENCH 5/19

TEMPORARY EROSION CONTROL LEGEND

- SF — SF — SILT FENCE
- SW — SW — STRAW WATTLE
- DEWATERING LINE DISCHARGE
- STAGING AREA
- TEMPORARY ACCESS ROUTE 1/22
- TEMPORARY LOG CROSSING 2/22
- TEMPORARY ACCESS BRIDGE 3/22
- BULK BAG COFFERDAM 4/22
- SAND BAG COFFERDAM 5/22
- (O) PUMP DISCHARGE OUTLET
- (P) DEWATERING PUMP

DETAIL AND SECTION REFERENCING

(1) NOTE REFERENCING NUMBER

4/6 — DETAIL REFERENCE NUMBER; SHEET ON WHICH DETAIL APPEARS

(TITLE) (SCALE) 4/2 — DETAIL REFERENCE NUMBER; SHEET FROM WHICH DETAIL WAS TAKEN

(TYP) SPECIFIES THAT DETAIL IS UNIFORMLY TYPICAL THROUGHOUT PROJECT EXCEPT WHERE OTHERWISE NOTED

(VAR) SPECIFIES THAT DETAIL WAS TAKEN FROM SEVERAL SHEETS

A — A32 SECTION A–A IS SHOWN ON SHEET 32

SECTION A–A 32 SECTION A–A IS SHOWN ON SHEET 32
SCALE: NTS

NICHOLAS JON TRUSCOTT — STATE OF WASHINGTON — 51903 — REGISTERED PROFESSIONAL ENGINEER — 3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

LEGEND

SHEET 3 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS — CURRENT\LEGEND.DWG Nic 3/26/2021 4:28:34 PM

SITE 1

SITE 2

SIDE CHANNEL

FLOW

5 4/19 BOULDER CLUSTER

TYPE 2 ELJ 1/10 2

TYPE 4 ELJ 1/16 4

1 1/7 TYPE 1 ELJ

6 WILLOW TRENCHES 5/19

TYPE 3 ELJ 1/13 3

WENATCHEE RIVER

FLOW

NOTES:

1. CONSTRUCT TYPE 1 ELJ, 4 TOTAL.
2. CONSTRUCT TYPE 2 ELJ, 2 TOTAL.
3. CONSTRUCT TYPE 3 ELJ, 2 TOTAL.
4. CONSTRUCT TYPE 4 ELJ, 1 TOTAL.
5. CONSTRUCT BOULDER CLUSTER, 6 TOTAL.
6. CONSTRUCT WILLOW TRENCH, WHERE INDICATED.
7. SEE SHEETS 5 AND 6 FOR SITE PLAN DETAILS.

100' 50' 0 100' 200'

SCALE: 1"=100'-0"

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21903
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

0 Ø 1

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

PROPOSED CONDITIONS – OVERALL PLAN

SHEET 4 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN COUNTY\MONITOR SIDE CHANNEL\DESIGN\CAD FILES\ - CURRENT\PROPOSED CONDITIONS PLANS.DWG Nic 3/26/2021 4:29:16 PM

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21983
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

PROPOSED CONDITIONS – SITE 1

5

SHEET 5 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN COUNTY\MONITOR SIDE CHANNEL\DESIGN\CAD DWGS — CURRENT\PROPOSED CONDITIONS PLANS.DWG Nic 3/26/2021 4:29:30 PM

P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS_-_CURRENT\PROPOSED_CONDITIONS_PLANS.DWG Nic 3/26/2021 4:29:44 PM

Mar 26, 2021 FINAL DESIGN

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21963
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

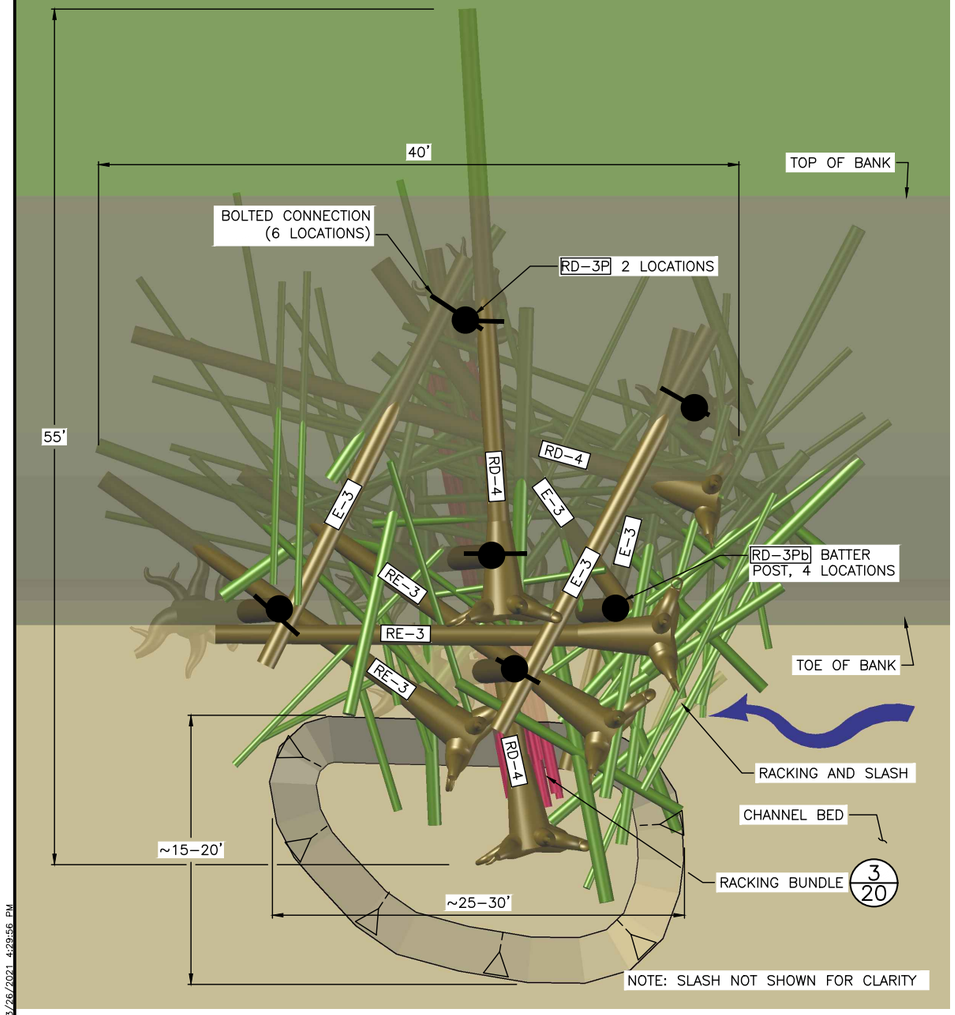
0 Ø 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

PROPOSED CONDITIONS – SITE 2

SHEET 6 OF 22

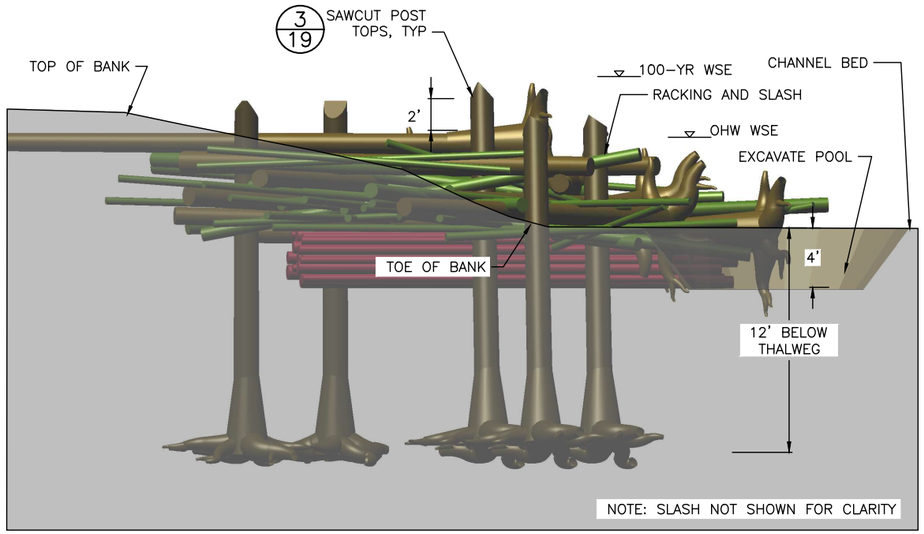


TYPE 1 ELJ PLAN

SCALE: 1" = 5'

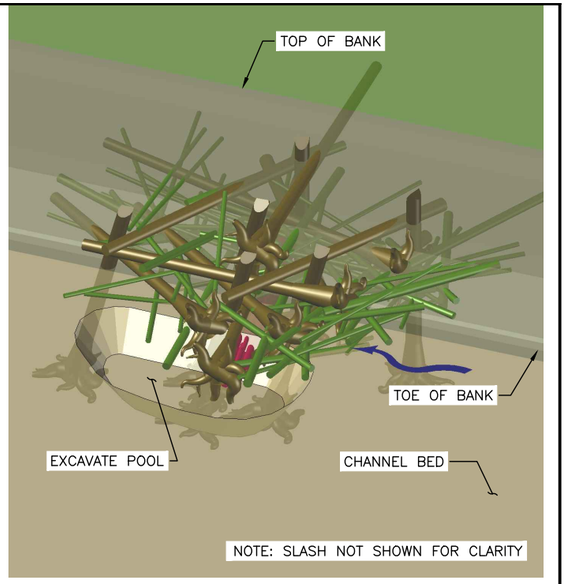
5' 0 5' 10'

SCALE: 1"=5'-0"



TYPE 1 ELJ PROFILE

SCALE: 1" = 5'



TYPE 1 ELJ PERSPECTIVE

NOT TO SCALE

NOTES

1. ALL LOGS SHALL BE DOUGLAS FIR, PONDEROSA PINE, WESTERN RED CEDAR, OR WESTERN LARCH TREES.
2. ALL POSTS SHALL BE DOUGLAS FIR. POSTS SHALL BE FREE FROM DEFECTS, CRACKS, AND SPLITTING AT THE TIME OF INSTALLATION. POSTS SHALL HAVE A MINIMUM DBH OF 20 INCHES EXCLUDING BARK.
3. LOGS WITH ROOTWADS SHALL HAVE A DIAMETER AS SHOWN MEASURED AT DBH.
4. THE CONTRACTOR SHALL PLACE LOGS AS ILLUSTRATED ON THIS SHEET UNLESS DIRECTED OTHERWISE BY THE CONTRACTING OFFICER.
5. SOIL EXCAVATED DURING CONSTRUCTION SHALL BE TEMPORARILY STOCKPILED AND BACKFILLED AS NECESSARY DURING CONSTRUCTION. EXCESS MATERIAL SHALL BE EVENLY DISTRIBUTED IN THE LEE OF THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER.
6. RACKING LOGS SHALL CONSIST OF TREES WITH BRANCHES HAVING A BASE DIAMETER OF 6-12 INCHES AND A LENGTH OF 20-40 FT. TOTAL NUMBER OF RACKING LOGS PER STRUCTURE SHALL BE 60 PIECES. RACKING MATERIAL SHALL BE PLACED AS SPECIFIED IN THE CONSTRUCTION SEQUENCE TO ENSURE THAT RACKING MATERIAL EXTENDS THROUGH THE STRUCTURE AND IS PINNED BY SUBSEQUENT LAYERS. SLASH MATERIAL SHALL CONSIST OF LIMBS AND BRANCHES AND A BASE DIAMETER BETWEEN 1 AND 3 INCHES. TOTAL SLASH MATERIAL QUANTITY SHALL BE 20 CUBIC YARDS. SLASH MATERIAL SHALL BE PLACED AS DIRECTED BY THE CONTRACTING OFFICER.
7. EXTENT AND LOCATION OF THE SCOUR POOL IS APPROXIMATE AND TO BE ADJUSTED IN THE FIELD BY THE CONTRACTING OFFICER.
8. EXISTING WOODY MATERIAL AT THE STRUCTURE CONSTRUCTION SITE SHALL BE MOVED OR PROTECTED FROM CONSTRUCTION ACTIVITIES AND THEN INCORPORATED INTO THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER.
9. FOR ROOTWAD DIMENSIONING REQUIREMENTS SEE 2/20.

TYPE 1 ELJ MATERIALS SCHEDULE

LOG ID	DIA (INCHES)	LENGTH * (FEET)	ROOTWAD (Y/N)	QUANTITY PER STRUCTURE	NOTES
RD-4	20-22	40	Y	3	
RD-3P	20 MIN	30	Y	2	VERTICAL POST
RD-3Pb	20 MIN	30	Y	4	BATTER POST INSTALLED 15 TO 20 DEGREES FROM VERTICAL
RE-3	16-18	30	Y	3	
E-3	16-18	30	N	4	
RACKING BUNDLE	48	30		1	
RACKING	6-12	20-40	Y/N	60	
SLASH				20 CY	

* TOTAL LENGTH INCLUDING ROOTWAD

TYPE 1 ELJ DETAILS 1/4

SCALE: AS NOTED

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21963
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

0 Ø 1

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

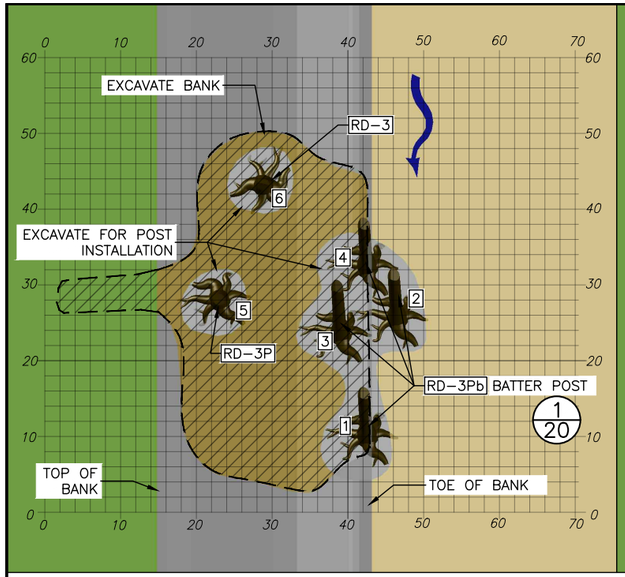
MONITOR SIDE CHANNEL RESTORATION

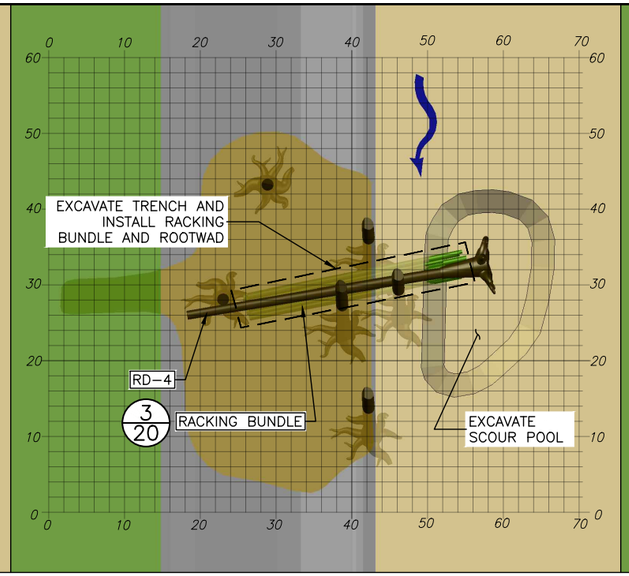
TYPE 1 ELJ

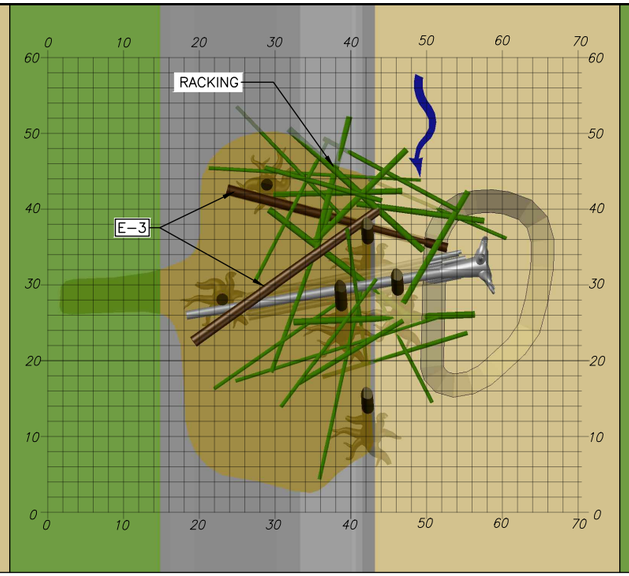
SHEET 7 OF 22

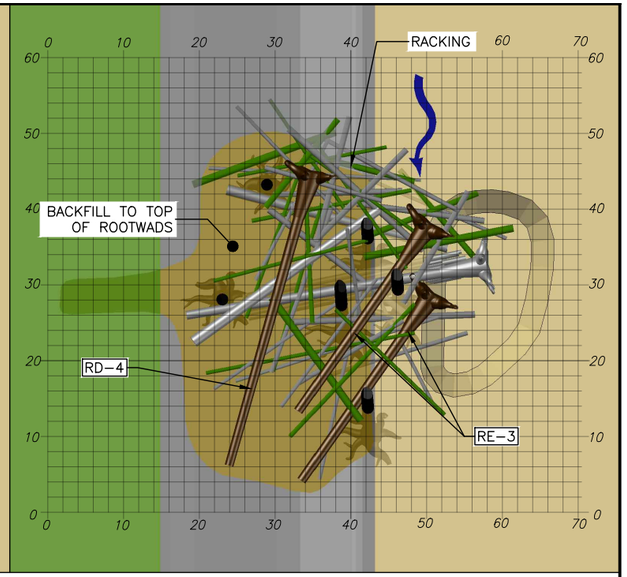
Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN COUNTY\MONITOR SIDE CHANNEL\DESIGN\CAD DWGS — CURRENT\TYPE 1 ELJ.DWG Nic 3/26/2021 4:23:56 PM



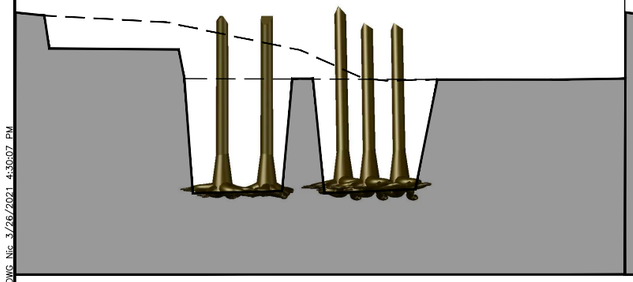
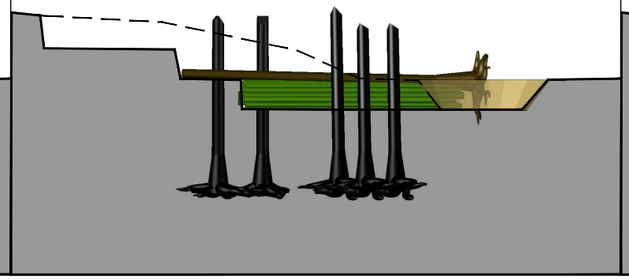
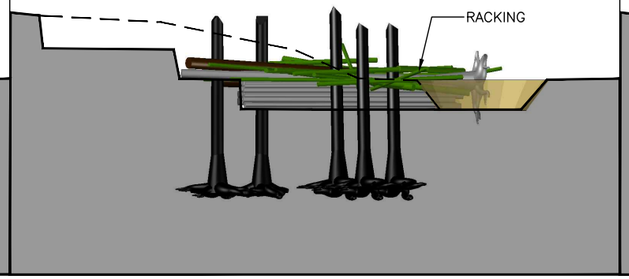
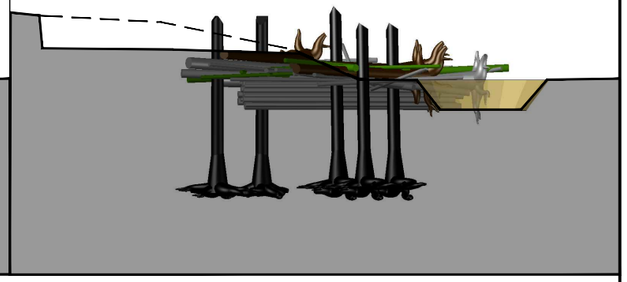






PLAN VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'–0"

LAYER 0	LAYER 1	LAYER 2	LAYER 3
			
1. EXCAVATE FOOTPRINT DOWN TO APPROXIMATE CHANNEL BED ELEVATION. EXCAVATION FOR LOGS MAY BE PERFORMED LATER AS LOGS ARE INSTALLED. 2. EXCAVATE ADDITIONAL PITS FOR POST INSTALLATION AT POSTS 1 TO 6. 3. INSTALL POSTS 1–6. POSTS 1–4 TO BE INSTALLED ON A BATTER AS DIRECTED BY CONTRACTING OFFICER. BACKFILL POSTS TO APPROXIMATE CHANNEL ELEVATION.	1. EXCAVATE SCOUR POOL INCLUDING TRENCH FOR RACKING BUNDLE. 2. PLACE RACKING BUNDLE. 3. PLACE RD–4 ROOTWAD RESTING ON TOP OF RACKING BUNDLE.	1. EXCAVATE AS NECESSARY TO PLACE LOGS. 2. PLACE TWO E–3 LOGS; BOTTOM OF UPSTREAM LOG SHALL SIT AT APPROXIMATE CHANNEL BED ELEVATION. TOP E–3 LOG SHALL REST ON PREVIOUSLY PLACED LOGS. 3. PLACE APPROXIMATELY ⅓ OF THE RACKING MATERIAL. 4. BACKFILL TO TOP OF E–3 LOGS.	1. EXCAVATE AS NECESSARY TO PLACE LOGS HORIZONTALLY. EXCAVATION MAY BE DONE AT AN EARLIER STAGE. 2. PLACE TWO RE–3 AND ONE RD–4 ROOTWAD AS SHOWN, RESTING HORIZONTALLY ON PREVIOUSLY PLACED LOGS. 3. PLACE APPROXIMATELY ⅓ OF THE RACKING MATERIAL. 4. BACKFILL TO TOP OF BOLES FOR PLACED ROOTWADS.

SECTION VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'–0"

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21963
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

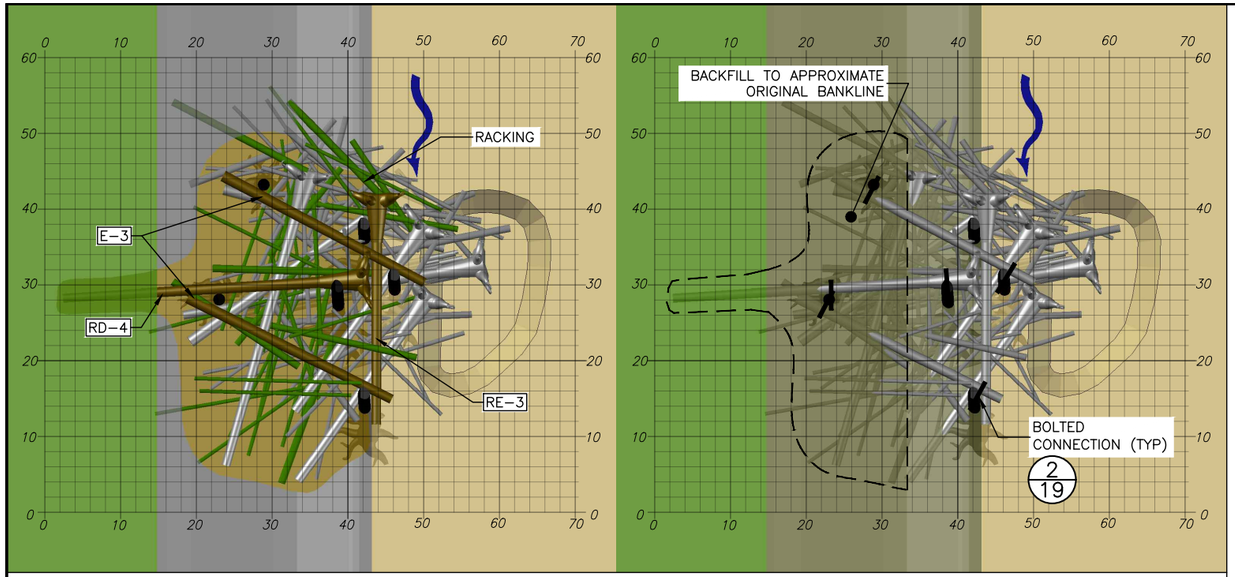
MONITOR SIDE CHANNEL RESTORATION

TYPE 1 ELJ LAYERING PLANS 1

SHEET 8 OF 22

Mar 26, 2021 FINAL DESIGN

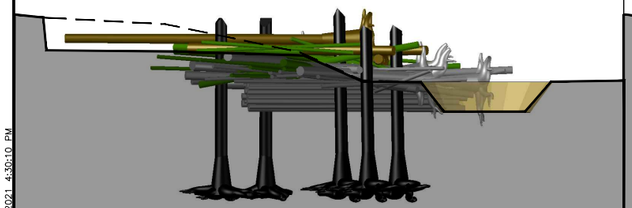
P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS - CURRENT\TYPE 1 ELJ LAYERING PLANS.DWG Nic 3/26/2021 4:30:07 PM



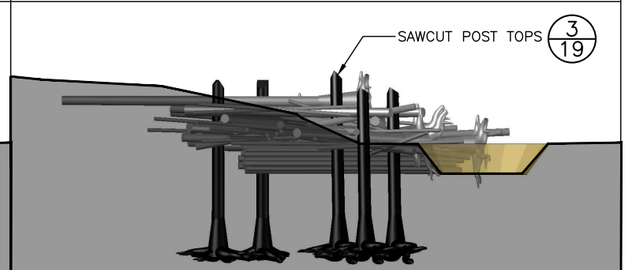
PLAN VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'-0"

LAYER 4



LAYER 5



SECTION VIEWS

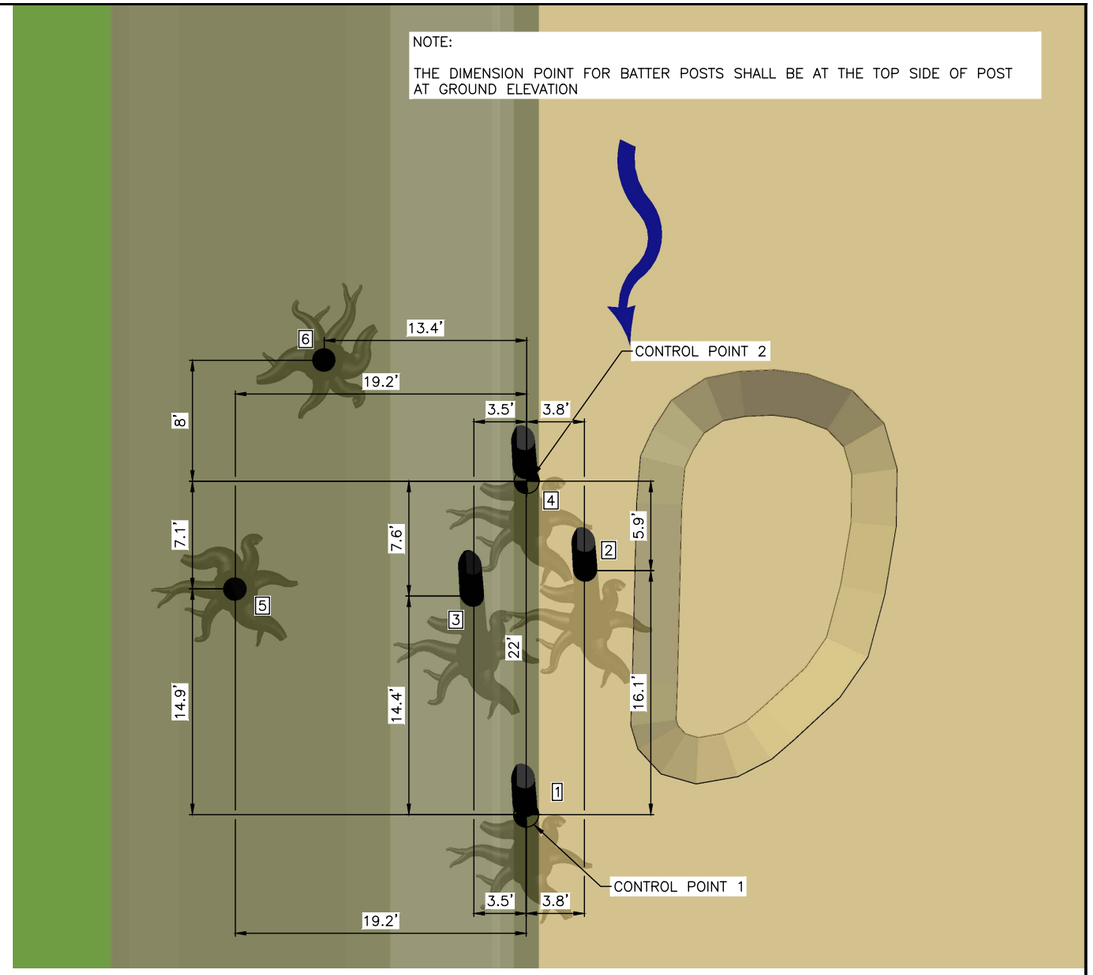
10' 5' 0 10' 20'
SCALE: 1"=10'-0"

1. PLACE ROOTWAD RE-3 AS SHOWN.
2. PLACE TWO E-3 LOGS.
3. PLACE REMAINING RACKING MATERIAL.
4. EXCAVATE AS NECESSARY TO PLACE RD-4 ROOTWAD AS SHOWN. PLACE RD-4 ROOTWAD.

1. INSTALL 6 BOLTED CONNECTIONS (SHOWN IN PLAN ONLY).
2. BACKFILL TO ORIGINAL GROUND LINE.
3. SAWCUT TOPS OF POSTS.

NOTE:

THE DIMENSION POINT FOR BATTER POSTS SHALL BE AT THE TOP SIDE OF POST AT GROUND ELEVATION



TYPE 1 ELJ POST DIMENSIONING PLAN 1/9
SCALE: 1" = 5'

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21943
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

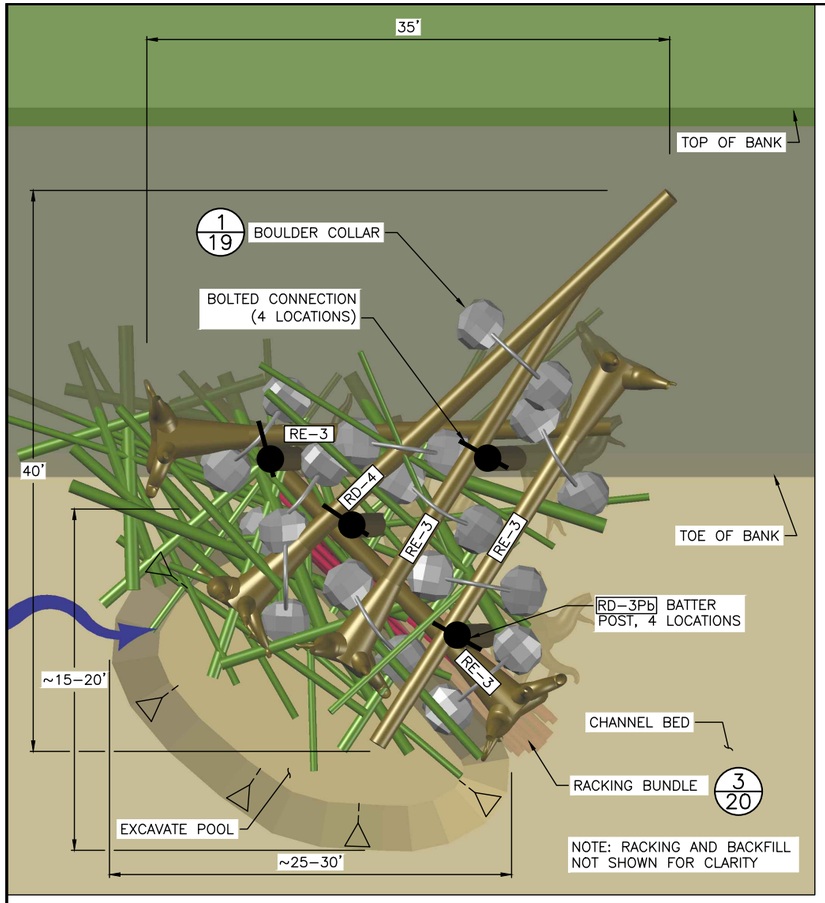
TYPE 1 ELJ LAYERING PLANS 2

9

SHEET 9 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN COUNTY\MONITOR SIDE CHANNEL\DESIGN\CAD FILES\ -- CURRENT\TYPE 1 ELJ LAYERING PLANS.DWG Nic 3/26/2021 4:30:10 PM

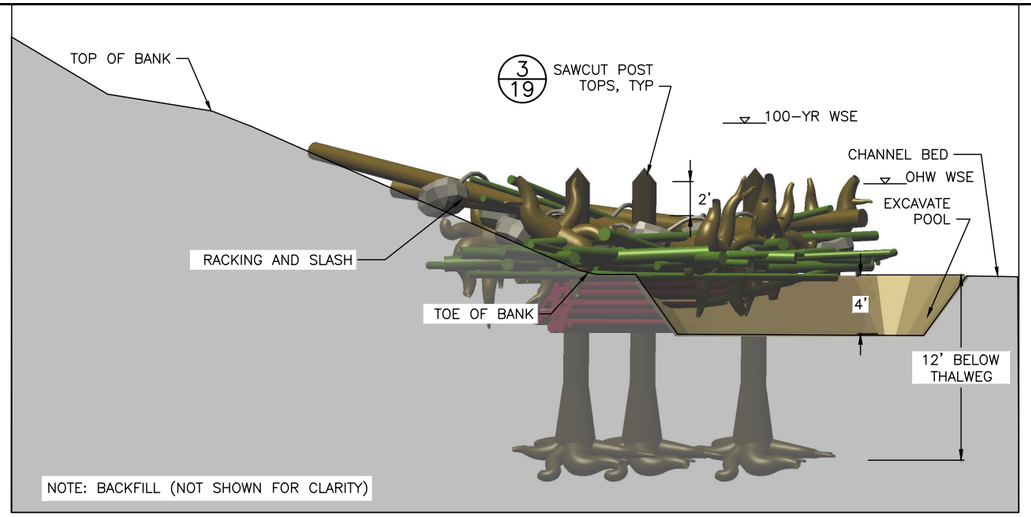


TYPE 2 ELJ PLAN

SCALE: 1" = 5'

5' 0 5' 10'

SCALE: 1"=5'-0"

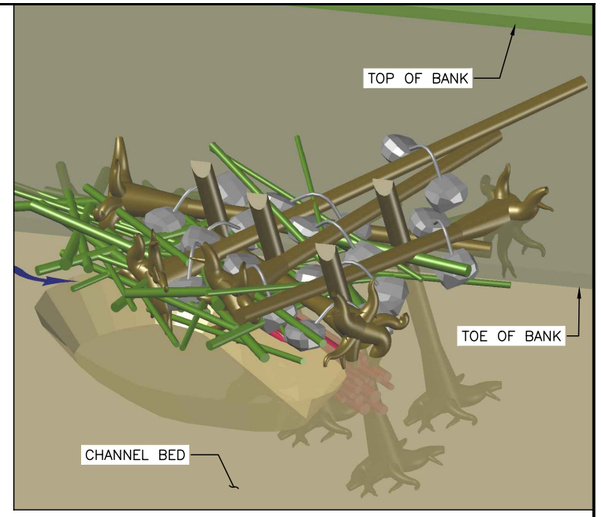


TYPE 2 ELJ PROFILE

SCALE: 1" = 5'

5' 0 5' 10'

SCALE: 1"=5'-0"



TYPE 2 ELJ PERSPECTIVE

NOT TO SCALE

NOTES

1. ALL LOGS SHALL BE DOUGLAS FIR, PONDEROSA PINE, WESTERN RED CEDAR, OR WESTERN LARCH TREES.
2. ALL POSTS SHALL BE DOUGLAS FIR. POSTS SHALL BE FREE FROM DEFECTS, CRACKS, AND SPLITTING AT THE TIME OF INSTALLATION. POSTS SHALL HAVE A MINIMUM DBH OF 20 INCHES EXCLUDING BARK.
3. LOGS WITH ROOTWADS SHALL HAVE A DIAMETER AS SHOWN MEASURED AT DBH.
4. THE CONTRACTOR SHALL PLACE LOGS AS ILLUSTRATED ON THIS SHEET UNLESS DIRECTED OTHERWISE BY THE CONTRACTING OFFICER.
5. SOIL EXCAVATED DURING CONSTRUCTION SHALL BE TEMPORARILY STOCKPILED AND BACKFILLED AS NECESSARY DURING CONSTRUCTION. EXCESS MATERIAL SHALL BE EVENLY DISTRIBUTED IN THE LEE OF THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER.
6. RACKING LOGS SHALL CONSIST OF TREES WITH BRANCHES HAVING A BASE DIAMETER OF 6-12 INCHES AND A LENGTH OF 20-40 FT. TOTAL NUMBER OF RACKING LOGS PER STRUCTURE SHALL BE 60 PIECES. RACKING MATERIAL SHALL BE PLACED AS SPECIFIED IN THE CONSTRUCTION SEQUENCE TO ENSURE THAT RACKING MATERIAL EXTENDS THROUGH THE STRUCTURE AND IS PINNED BY SUBSEQUENT LAYERS. SLASH MATERIAL SHALL CONSIST OF LIMBS AND BRANCHES AND A BASE DIAMETER BETWEEN 1 AND 3 INCHES. TOTAL SLASH MATERIAL QUANTITY SHALL BE 20 CUBIC YARDS. SLASH MATERIAL SHALL BE PLACED AS DIRECTED BY THE CONTRACTING OFFICER.
7. EXTENT AND LOCATION OF THE SCOUR POOL IS APPROXIMATE AND TO BE ADJUSTED IN THE FIELD BY THE CONTRACTING OFFICER.
8. EXISTING WOODY MATERIAL AT THE STRUCTURE CONSTRUCTION SITE SHALL BE MOVED OR PROTECTED FROM CONSTRUCTION ACTIVITIES AND THEN INCORPORATED INTO THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER.
9. FOR ROOTWAD DIMENSIONING REQUIREMENTS SEE 2/20.

TYPE 2 ELJ MATERIALS SCHEDULE

LOG ID	DIA (INCHES)	LENGTH * (FEET)	ROOTWAD (Y/N)	QUANTITY PER STRUCTURE	NOTES
RD-4	20-22	40	Y	1	
RE-3	20-22	30	Y	4	
RD-3Pb	20 MIN	30	Y	4	BATTER POST INSTALLED 15 TO 20 DEGREES FROM VERTICAL
RACKING BUNDLE	48	30		1	
RACKING	6-12	20-40	Y/N	60	
SLASH				20 CY	
BOULDER COLLAR	36			10 EA	

* TOTAL LENGTH INCLUDING ROOTWAD

TYPE 2 ELJ DETAILS 1/4

SCALE: AS NOTED

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21963
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

0 Ø 1

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

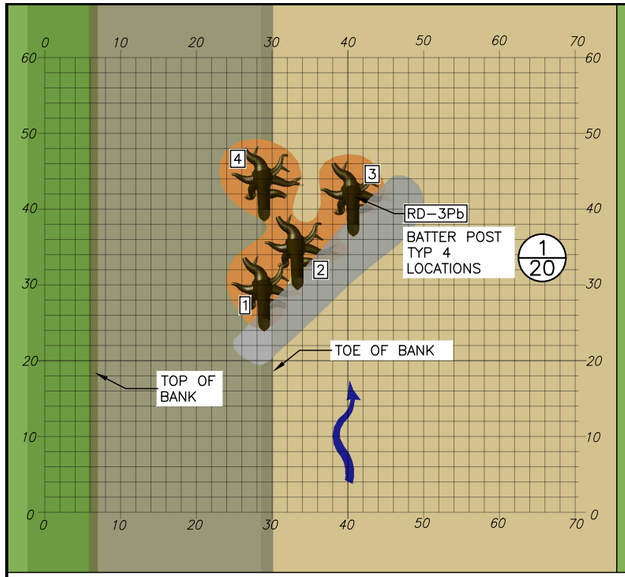
TYPE 2 ELJ

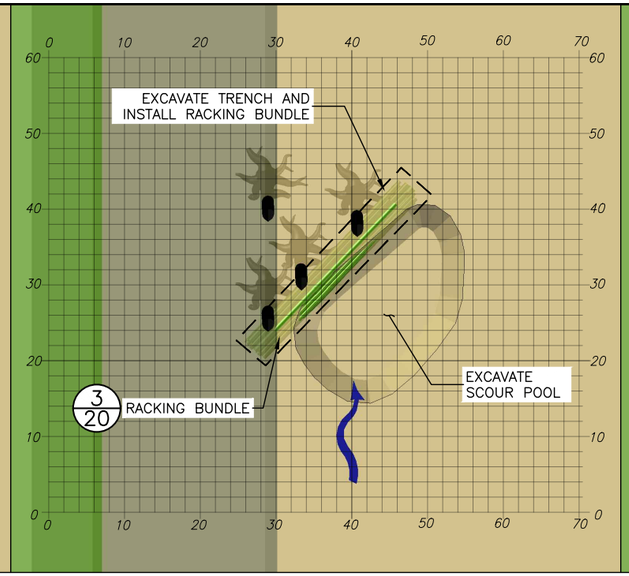
10

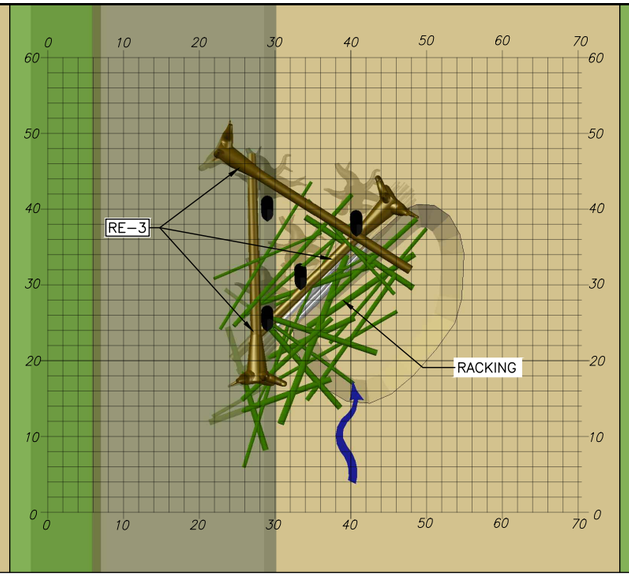
SHEET 10 OF 22

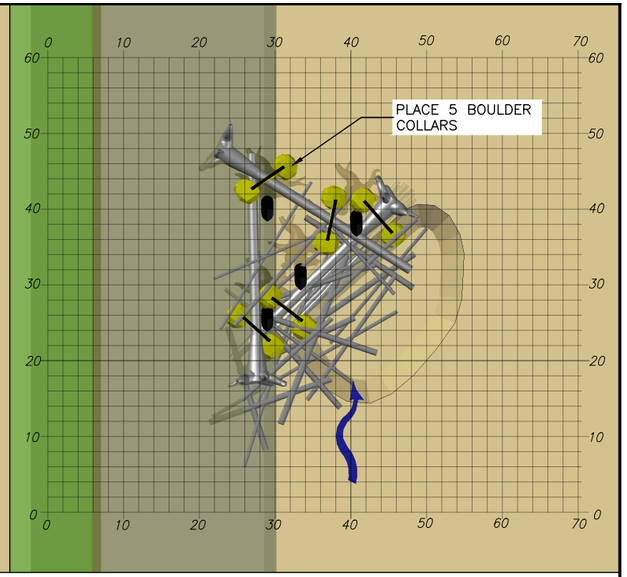
Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN COUNTY\MONITOR SIDE CHANNEL\DESIGN\CAD DWGS - CURRENT\TYPE 2 ELJ.DWG Nic 3/26/2021 4:30:21 PM



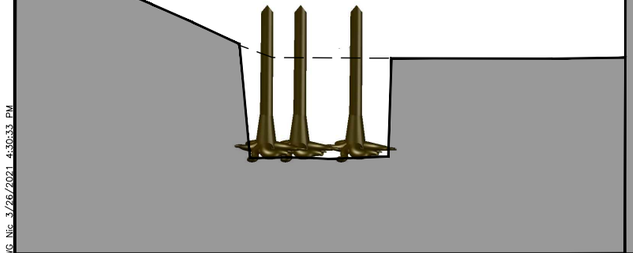
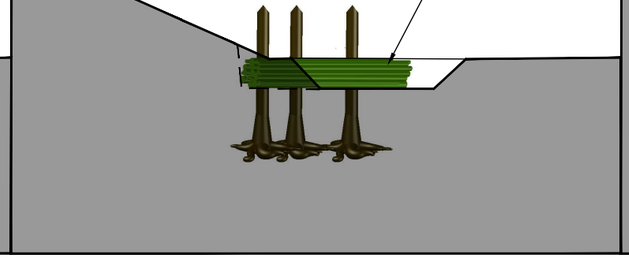
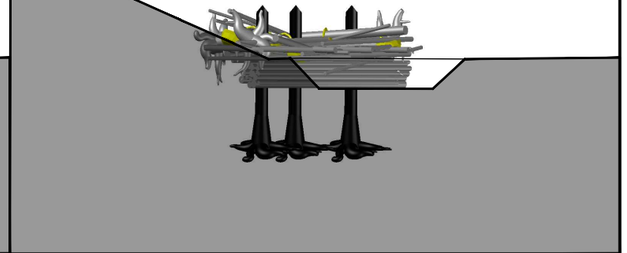






PLAN VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'–0"

LAYER 0	LAYER 1	LAYER 2	LAYER 3
			

SECTION VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'–0"

LAYER 0	LAYER 1	LAYER 2	LAYER 3
1. EXCAVATE AS NECESSARY TO INSTALL POSTS 1 TO 4 ON A BATTER AS DIRECTED BY CONTRACTING OFFICER. BACKFILL TO EXISTING GROUND.	1. EXCAVATE SCOUR POOL AND TRENCH FOR RACKING BUNDLE. 2. PLACE RACKING BUNDLE AND BACKFILL BANK IF NECESSARY.	1. PLACE 3 RE–3 ROOTWADS. 2. PLACE APPROXIMATELY 1/2 OF THE RACKING MATERIAL.	1. PLACE 5 BOULDER COLLARS.

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21963
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

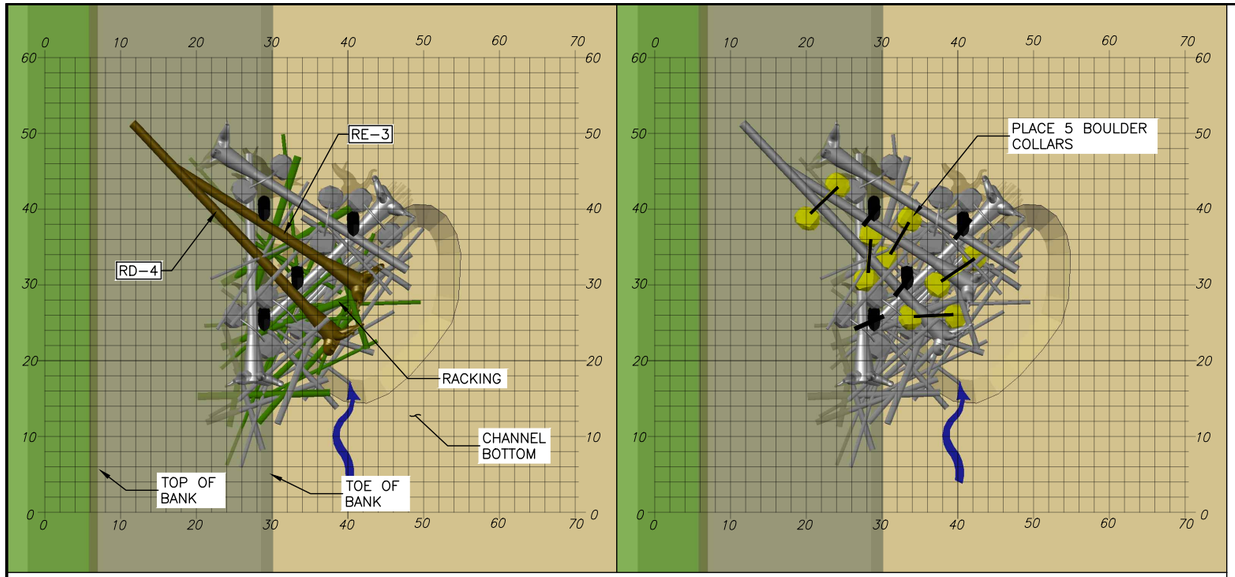
MONITOR SIDE CHANNEL RESTORATION

TYPE 2 ELJ LAYERING PLANS 1

SHEET 11 OF 22

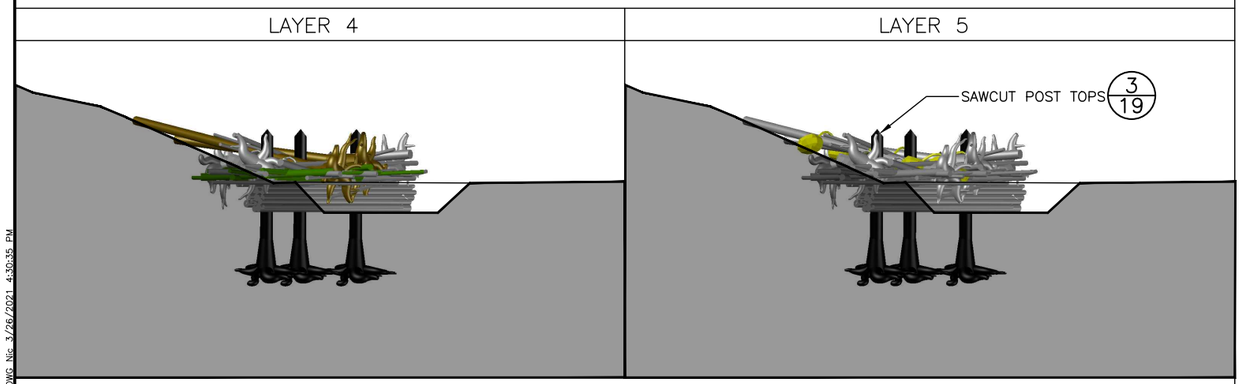
Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS – CURRENT\TYPE 2 ELJ LAYERING PLANS.DWG Nic 3/26/2021 4:30:33 PM



PLAN VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'–0"

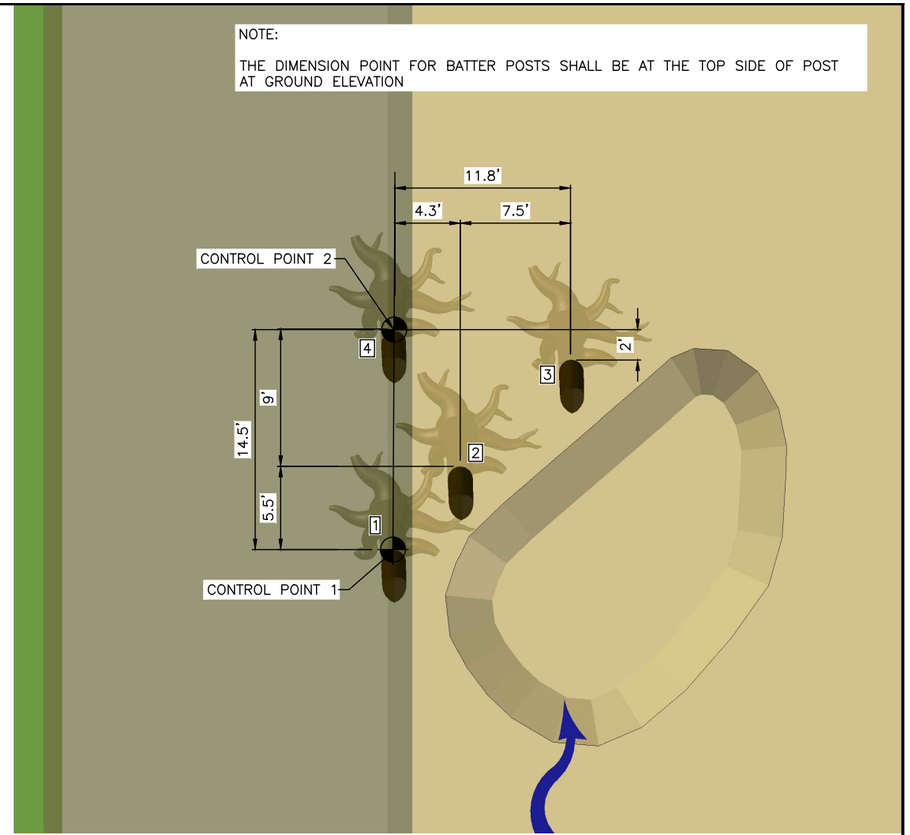


SECTION VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'–0"

1. PLACE 2 ROOTWADS AS SHOWN, PLACING THE RE–3 ROOTWAD FIRST, THEN THE RD–4 ROOTWAD.
2. PLACE REMAINING RACKING MATERIAL.

1. PLACE 5 BOULDER COLLARS.
2. INSTALL 4 BOLTED CONNECTIONS (SHOWN IN PLAN ONLY).
3. SAWCUT POST TOPS.



TYPE 2 ELJ POST DIMENSIONING PLAN 1/11
SCALE: 1" = 5'

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21963
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

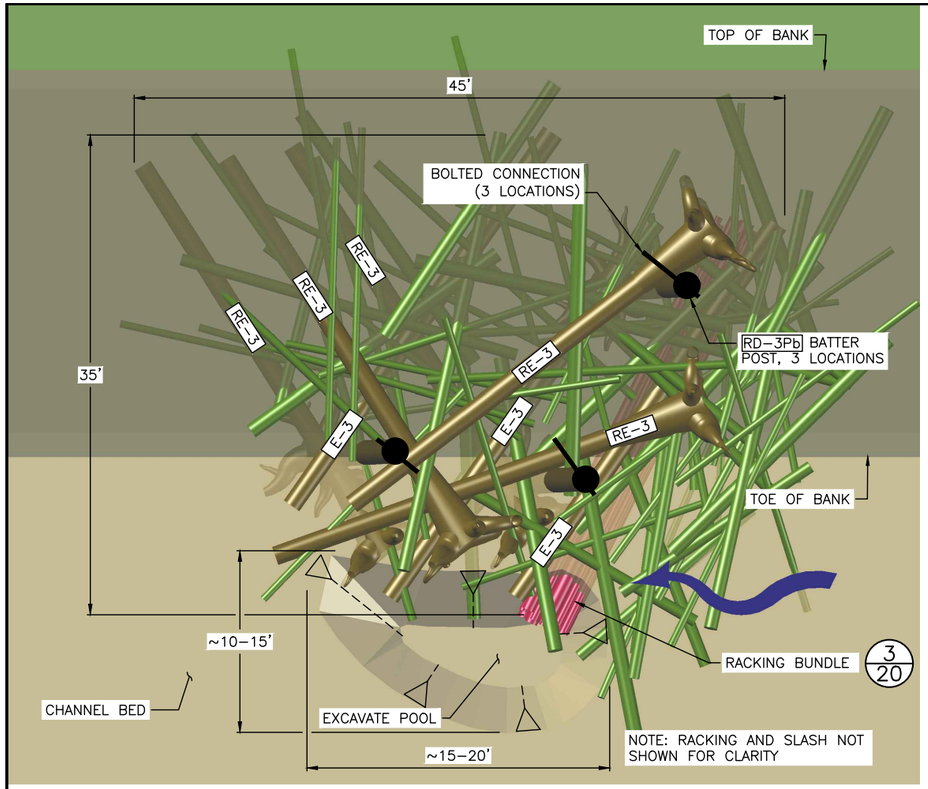
TYPE 2 ELJ LAYERING PLANS 2

12

SHEET 12 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS – CURRENT\TYPE 2_ELJ_LAYERING_PLANS.DWG Nic 3/26/2021 4:30:35 PM

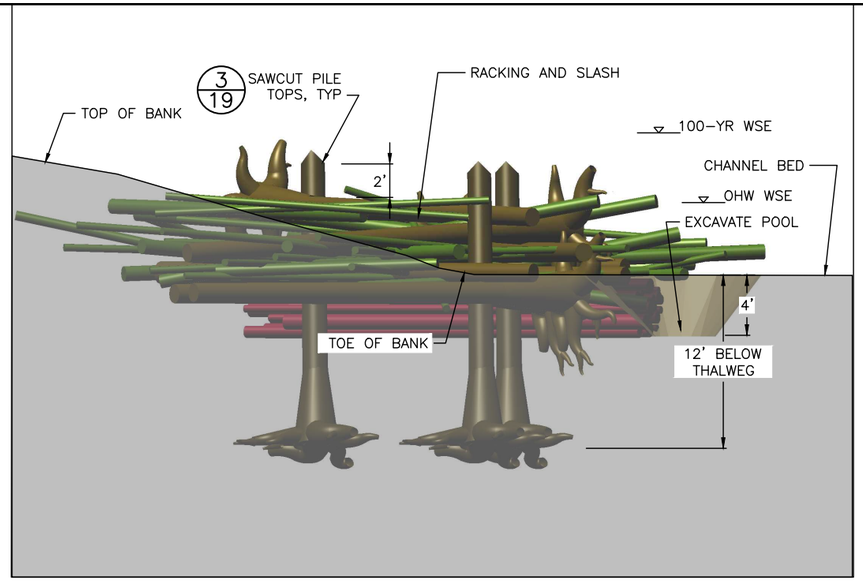


TYPE 3 ELJ PLAN

SCALE: 1" = 5'

5' 0 5' 10'

SCALE: 1"=5'-0"

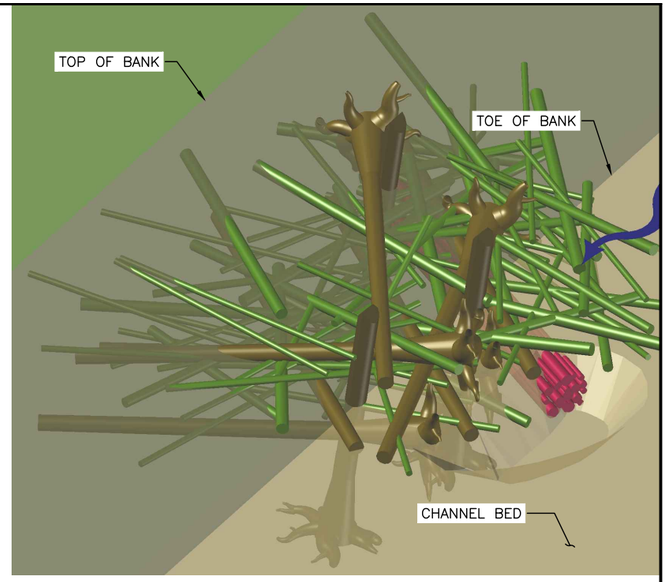


TYPE 3 ELJ PROFILE

SCALE: 1" = 5'

5' 0 5' 10'

SCALE: 1"=5'-0"



TYPE 3 ELJ PERSPECTIVE

NOT TO SCALE

NOTES

1. ALL LOGS SHALL BE DOUGLAS FIR, PONDEROSA PINE, WESTERN RED CEDAR, OR WESTERN LARCH TREES.
2. ALL POSTS SHALL BE DOUGLAS FIR. POSTS SHALL BE FREE FROM DEFECTS, CRACKS, AND SPLITTING AT THE TIME OF INSTALLATION. POSTS SHALL HAVE A MINIMUM DBH OF 20 INCHES EXCLUDING BARK.
3. LOGS WITH ROOTWADS SHALL HAVE A DIAMETER AS SHOWN MEASURED AT DBH.
4. THE CONTRACTOR SHALL PLACE LOGS AS ILLUSTRATED ON THIS SHEET UNLESS DIRECTED OTHERWISE BY THE CONTRACTING OFFICER.
5. SOIL EXCAVATED DURING CONSTRUCTION SHALL BE TEMPORARILY STOCKPILED AND BACKFILLED AS NECESSARY DURING CONSTRUCTION. EXCESS MATERIAL SHALL BE EVENLY DISTRIBUTED IN THE LEE OF THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER.
6. RACKING LOGS SHALL CONSIST OF TREES WITH BRANCHES HAVING A BASE DIAMETER OF 6-12 INCHES AND A LENGTH OF 20-40 FT. TOTAL NUMBER OF RACKING LOGS PER STRUCTURE SHALL BE 40 PIECES. RACKING MATERIAL SHALL BE PLACED AS SPECIFIED IN THE CONSTRUCTION SEQUENCE TO ENSURE THAT RACKING MATERIAL EXTENDS THROUGH THE STRUCTURE AND IS PINNED BY SUBSEQUENT LAYERS. SLASH MATERIAL SHALL CONSIST OF LIMBS AND BRANCHES AND A BASE DIAMETER BETWEEN 1 AND 3 INCHES. TOTAL SLASH MATERIAL QUANTITY SHALL BE 15 CUBIC YARDS. SLASH MATERIAL SHALL BE PLACED AS DIRECTED BY THE CONTRACTING OFFICER.
7. EXTENT AND LOCATION OF THE SCOUR POOL IS APPROXIMATE AND TO BE ADJUSTED IN THE FIELD BY THE CONTRACTING OFFICER.
8. EXISTING WOODY MATERIAL AT THE STRUCTURE CONSTRUCTION SITE SHALL BE MOVED OR PROTECTED FROM CONSTRUCTION ACTIVITIES AND THEN INCORPORATED INTO THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER.
9. FOR ROOTWAD DIMENSIONING REQUIREMENTS SEE 2/20.

TYPE 3 ELJ MATERIALS SCHEDULE

LOG ID	DIA (INCHES)	LENGTH * (FEET)	ROOTWAD (Y/N)	QUANTITY PER STRUCTURE	NOTES
RD-3Pb	20 MIN	30	Y	3	INSTALL BATTER POSTS AT 15 TO 20 DEGREES FROM VERTICAL
RE-3	16-18	30	Y	5	
E-3	16-18	30	N	3	
RACKING BUNDLE	48	30		1	
RACKING	6-12	20-40	Y/N	40	
SLASH				15 CY	

* TOTAL LENGTH INCLUDING ROOTWAD

TYPE 3 ELJ DETAILS 1/4

SCALE: AS NOTED

NICHOLAS JON TRUSCOTT STATE OF WASHINGTON 51903 REGISTERED PROFESSIONAL ENGINEER 3-26-2021

0 Ø 1

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

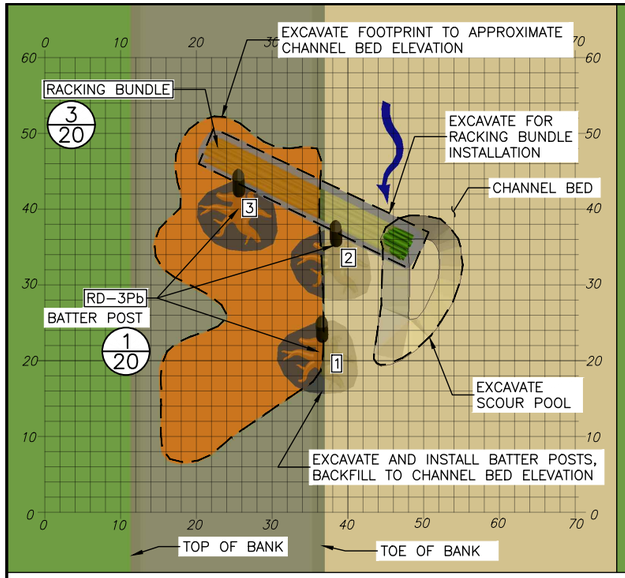
TYPE 3 ELJ

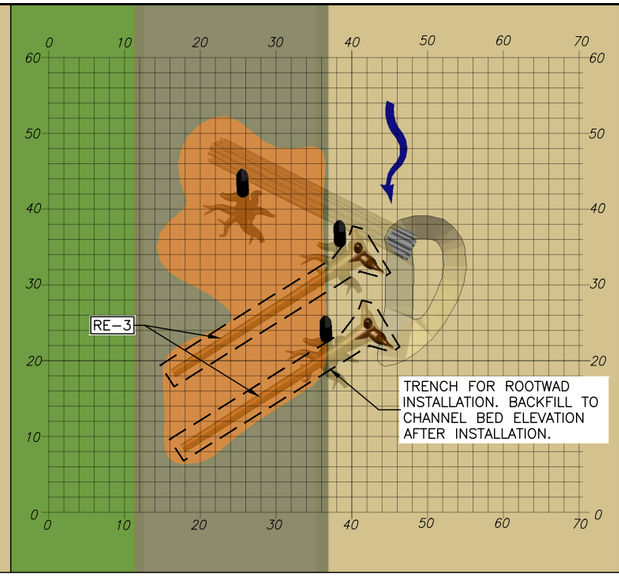
13

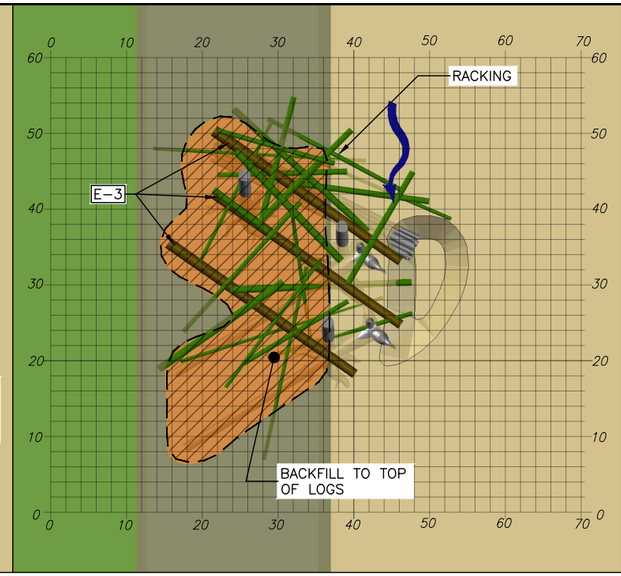
SHEET 13 OF 22

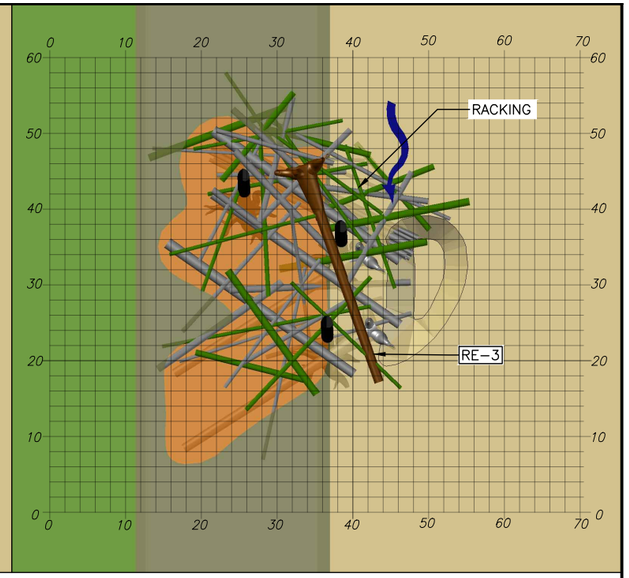
Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN COUNTY\MONITOR SIDE CHANNEL\DESIGN\CAD DWGS - CURRENT\TYPE 3 ELJ.DWG Nic 3/26/2021 4:30:45 PM



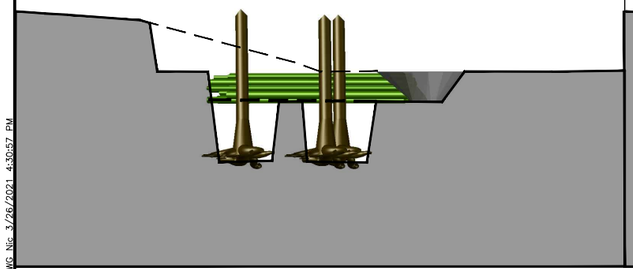
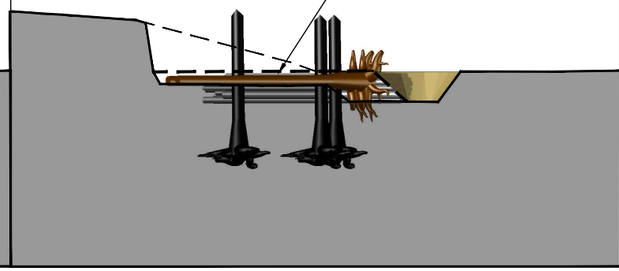
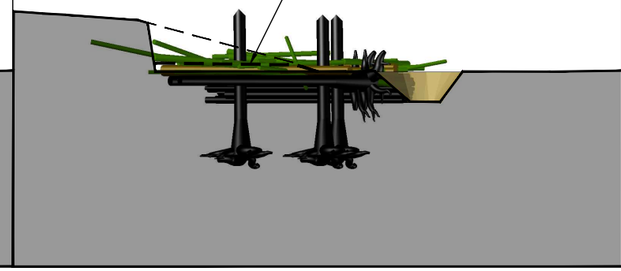
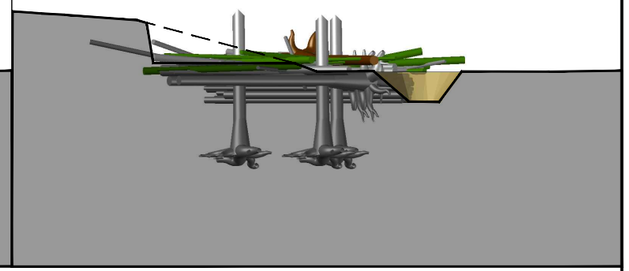






PLAN VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'-0"

LAYER 0	LAYER 1	LAYER 2	LAYER 3
			
1. EXCAVATE FOOTPRINT DOWN TO APPROXIMATE CHANNEL BED ELEVATION. EXCAVATION FOR LOGS MAY BE PERFORMED LATER AS LOGS ARE INSTALLED. 2. EXCAVATE ADDITIONAL PITS FOR POST INSTALLATION AT POSTS 1 TO 3 AND BACKFILL TO APPROXIMATE CHANNEL BED ELEVATION FOLLOWING POST INSTALLATION. 3. EXCAVATE TRENCH FOR AND INSTALL RACKING BUNDLE. 4. EXCAVATE REMAINING PORTION OF SCOUR POOL.	1. EXCAVATE TRENCHES FOR 2 ROOTWADS. 2. PLACE 2 RE-3 ROOTWADS SO THAT TOP OF EACH LOG SITS AT CHANNEL BED ELEVATION. 3. BACKFILL TO TOP OF BOLES FOR PLACED ROOTWADS.	1. PLACE 3 E-3 LOGS AS SHOWN, RESTING HORIZONTALLY. 2. PLACE APPROXIMATELY ⅓ OF THE RACKING MATERIAL. 3. BACKFILL TO TOP OF LOGS.	1. PLACE RE-3 ROOTWAD AS SHOWN, SITTING HORIZONTALLY. 2. PLACE APPROXIMATELY ⅓ OF THE RACKING MATERIAL.

SECTION VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'-0"

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21943
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

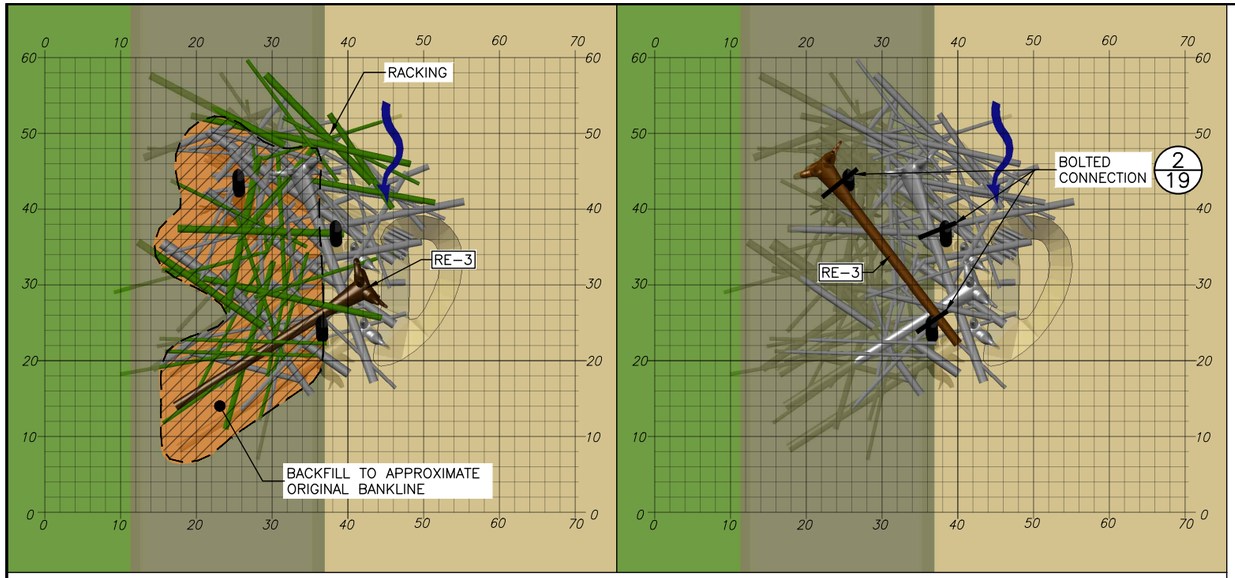
TYPE 3 ELJ LAYERING PLANS 1

14

SHEET 14 OF 22

Mar 26, 2021 FINAL DESIGN

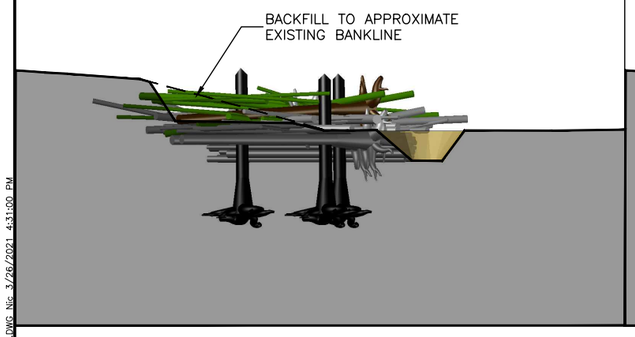
P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS - CURRENT\TYPE 3_ELJ_LAYERING_PLANS.DWG Nic 3/26/2021 4:30:57 PM



PLAN VIEWS

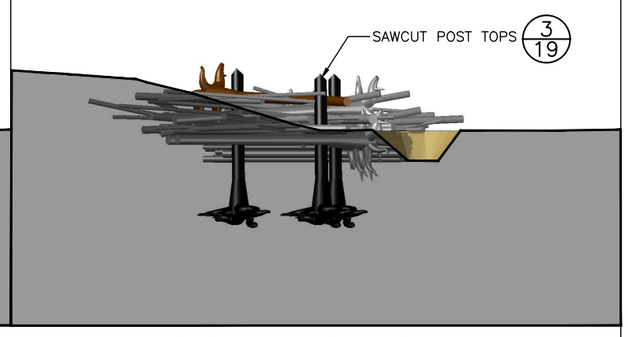
10' 5' 0 10' 20'
SCALE: 1"=10'-0"

LAYER 4



1. PLACE RE-3 ROOTWAD AS SHOWN, RESTING IT ON PREVIOUSLY PLACED LOGS.
2. PLACE REMAINING RACKING MATERIAL.
3. BACKFILL TO APPROXIMATE ORIGINAL BANKLINE.

LAYER 5



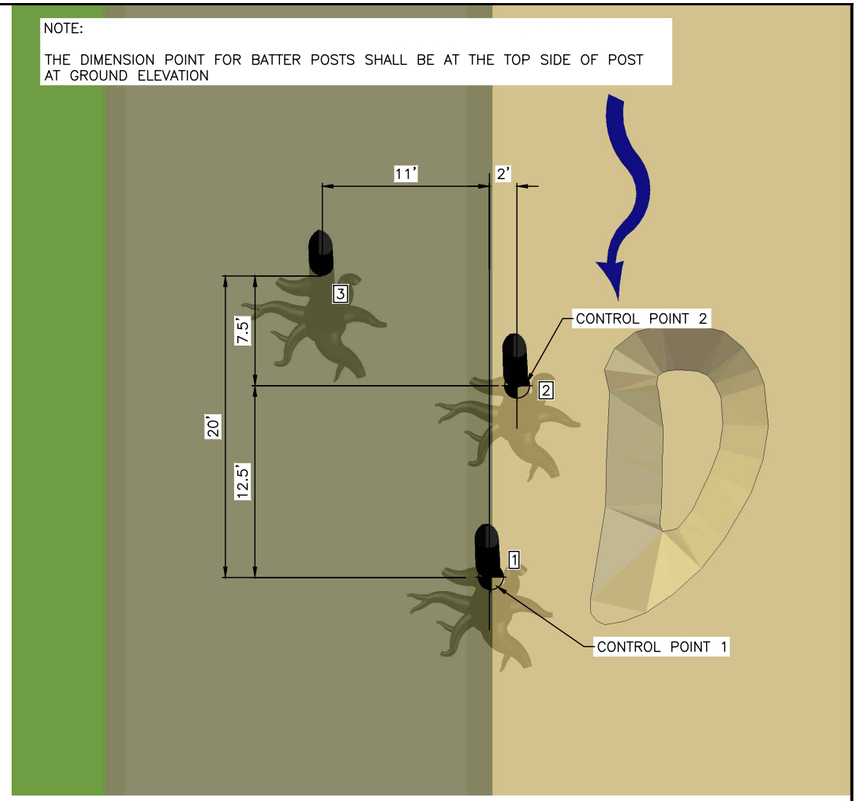
1. PLACE ROOTWAD RE-3 AS SHOWN, RESTING IT ON PREVIOUSLY PLACED LOGS.
2. INSTALL 3 BOLTED CONNECTIONS.
3. SAWCUT POST TOPS.

SECTION VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'-0"

NOTE:

THE DIMENSION POINT FOR BATTER POSTS SHALL BE AT THE TOP SIDE OF POST AT GROUND ELEVATION



TYPE 3 ELJ POST DIMENSIONING PLAN 1/15
SCALE: 1" = 5'

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
51963
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

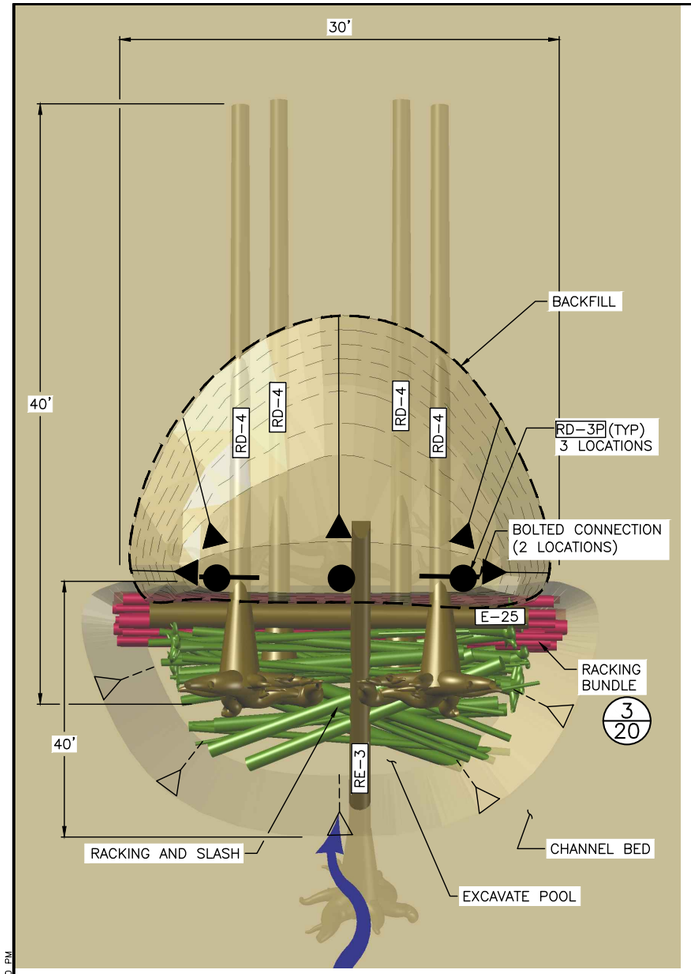
TYPE 3 ELJ LAYERING PLANS 2

15

SHEET 15 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS_-_CURRENT\TYPE_3_ELJ_LAYERING_PLANS.DWG Nic 3/26/2021 4:31:00 PM

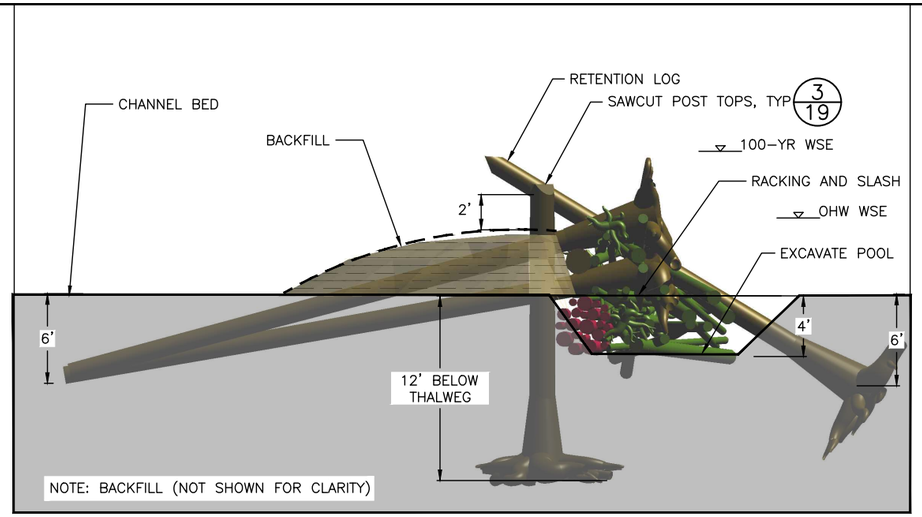


TYPE 4 ELJ PLAN

SCALE: 1" = 5'

5' 0 5' 10'

SCALE: 1"=5'-0"

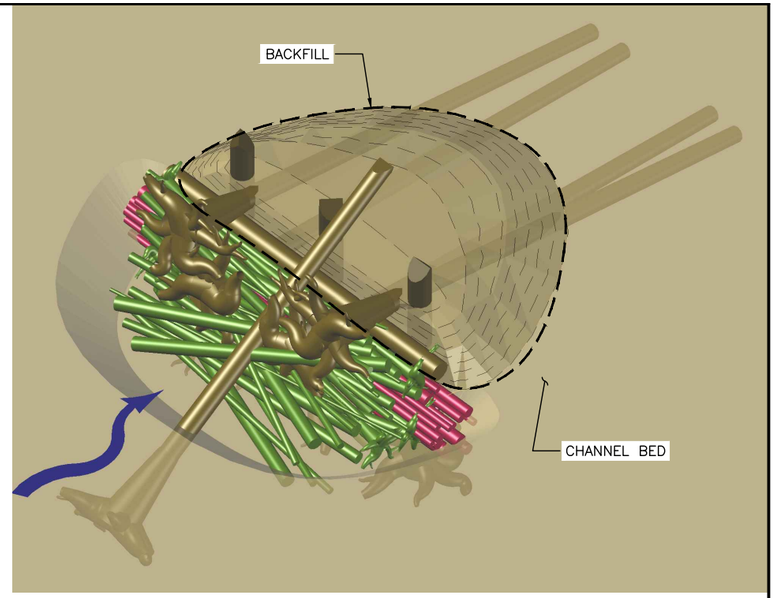


TYPE 4 ELJ PROFILE

SCALE: 1" = 5'

5' 0 5' 10'

SCALE: 1"=5'-0"



TYPE 4 ELJ PERSPECTIVE

NOT TO SCALE

NOTES

1. ALL LOGS SHALL BE DOUGLAS FIR, PONDEROSA PINE, WESTERN RED CEDAR, OR WESTERN LARCH TREES.
2. ALL POSTS SHALL BE DOUGLAS FIR. POSTS SHALL BE FREE FROM DEFECTS, CRACKS, AND SPLITTING AT THE TIME OF INSTALLATION. POSTS SHALL HAVE A MINIMUM DBH OF 20 INCHES EXCLUDING BARK.
3. LOGS WITH ROOTWADS SHALL HAVE A DIAMETER AS SHOWN MEASURED AT DBH,
4. THE CONTRACTOR SHALL PLACE LOGS AS ILLUSTRATED ON THIS SHEET UNLESS DIRECTED OTHERWISE BY THE CONTRACTING OFFICER.
5. SOIL EXCAVATED DURING CONSTRUCTION SHALL BE TEMPORARILY STOCKPILED AND BACKFILLED AS NECESSARY DURING CONSTRUCTION. EXCESS MATERIAL SHALL BE EVENLY DISTRIBUTED IN THE LEE OF THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER.
6. RACKING LOGS SHALL CONSIST OF TREES WITH BRANCHES HAVING A BASE DIAMETER OF 6-12 INCHES AND A LENGTH OF 20-40 FT. TOTAL NUMBER OF RACKING LOGS PER STRUCTURE SHALL BE 50 PIECES. RACKING MATERIAL SHALL BE PLACED AS SPECIFIED IN THE CONSTRUCTION SEQUENCE TO ENSURE THAT RACKING MATERIAL EXTENDS THROUGH THE STRUCTURE AND IS PINNED BY SUBSEQUENT LAYERS. SLASH MATERIAL SHALL CONSIST OF LIMBS AND BRANCHES AND A BASE DIAMETER BETWEEN 1 AND 3 INCHES. TOTAL SLASH MATERIAL QUANTITY SHALL BE 10 CUBIC YARDS. SLASH MATERIAL SHALL BE PLACED AS DIRECTED BY THE CONTRACTING OFFICER.
7. EXTENT AND LOCATION OF THE SCOUR POOL IS APPROXIMATE AND TO BE ADJUSTED IN THE FIELD BY THE CONTRACTING OFFICER.
8. EXISTING WOODY MATERIAL AT THE STRUCTURE CONSTRUCTION SITE SHALL BE MOVED OR PROTECTED FROM CONSTRUCTION ACTIVITIES AND THEN INCORPORATED INTO THE STRUCTURE AS DIRECTED BY THE CONTRACTING OFFICER.
9. FOR ROOTWAD DIMENSIONING REQUIREMENTS SEE 2/20.

TYPE 4 ELJ MATERIALS SCHEDULE

LOG ID	DIA (INCHES)	LENGTH * (FEET)	ROOTWAD (Y/N)	QUANTITY PER STRUCTURE	NOTES
RD-4	20-22	40	Y	4	
RE-3	16-18	30	Y	1	
RD-3P	20-22	30	Y	3	VERTICAL POST
E-25	16-18	25	N	1	
RACKING BUNDLE	48	30		1	
RACKING	6-12	20-40	Y/N	50	
SLASH				10 CY	
* TOTAL LENGTH INCLUDING ROOTWAD					

TYPE 4 ELJ DETAILS 1/4

SCALE: AS NOTED

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21963
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

0 Ø 1

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

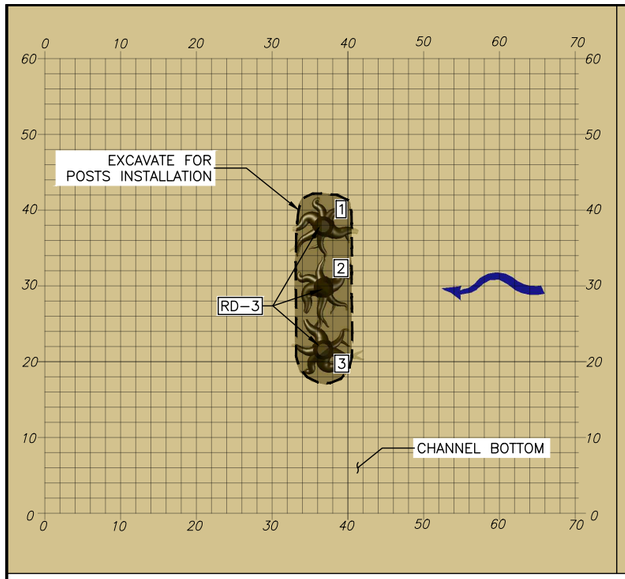
TYPE 4 ELJ

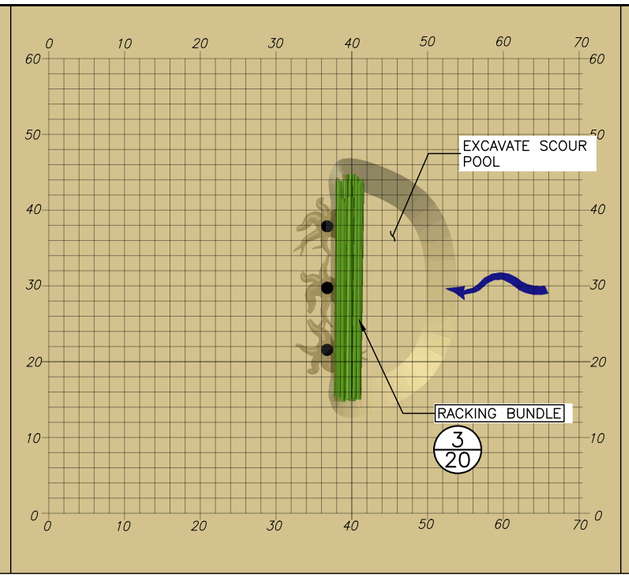
16

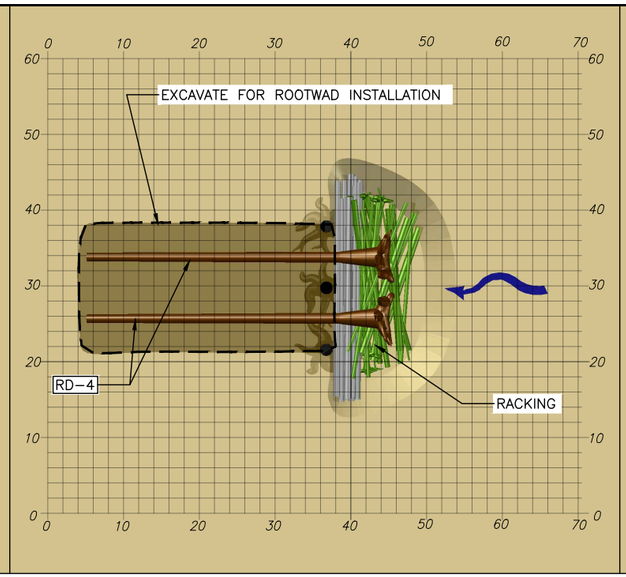
SHEET 16 OF 22

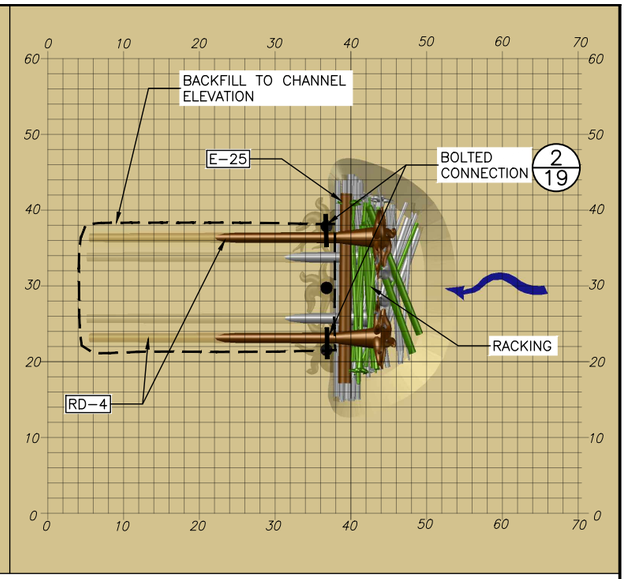
Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN COUNTY\MONITOR SIDE CHANNEL\DESIGN\CAD DWGS - CURRENT\TYPE 4 ELJ.DWG Nic 3/26/2021 4:31:10 PM



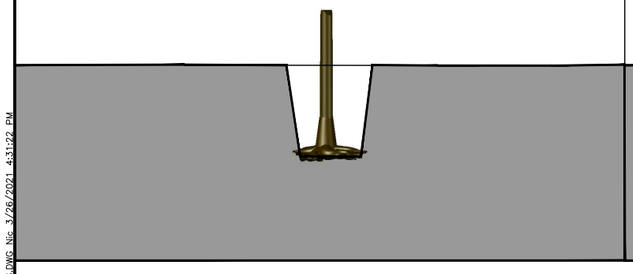
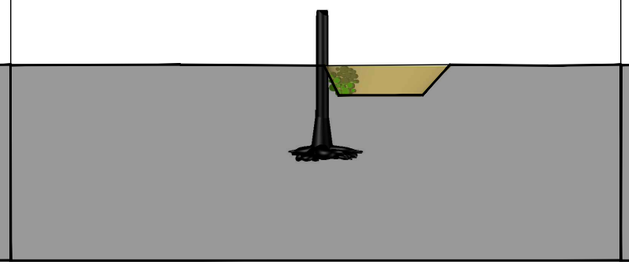
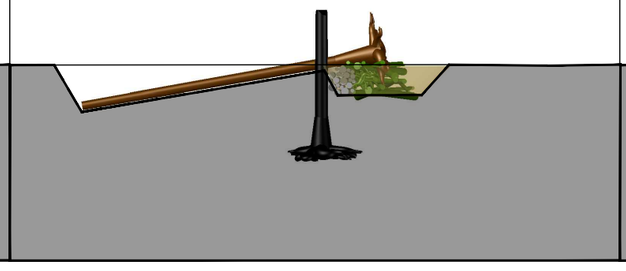
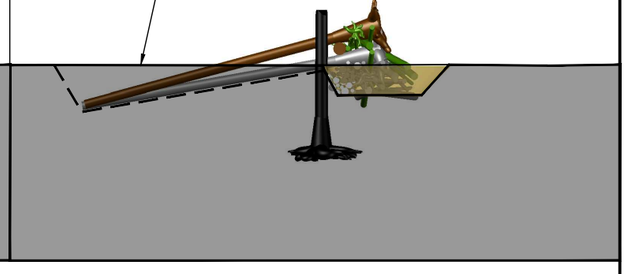






PLAN VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'–0"

LAYER 0	LAYER 1	LAYER 2	LAYER 3
			
1. EXCAVATE FOR POST INSTALLATION AT POSTS 1 TO 3. 2. INSTALL POSTS 1 TO 3 AND BACKFILL TO APPROXIMATE CHANNEL ELEVATION.	1. EXCAVATE SCOUR POOL INCLUDING TRENCH FOR RACKING BUNDLE. 2. PLACE RACKING BUNDLE.	1. EXCAVATE AS NECESSARY TO PLACE TWO RD–4 ROOTWADS. 2. PLACE 2 ROOTWADS AS SHOWN; BOTTOM OF TRENCH AT BUTT OF ROOTWAD LOGS SHALL BE A MINIMUM OF 6 FEET BELOW THE CHANNEL BED ELEVATION. 3. PLACE APPROXIMATELY ½ OF THE RACKING MATERIAL.	1. PLACE LOG E–25 AS SHOWN. 2. PLACE 2 RD–4 ROOTWADS AS SHOWN. 3. BACKFILL ROOTWADS ON DOWNSTREAM SIDE TO APPROXIMATE CHANNEL BED ELEVATION. 4. PLACE REMAINDER OF THE RACKING. 5. INSTALL 2 BOLTED CONNECTIONS.

SECTION VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'–0"

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21963
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

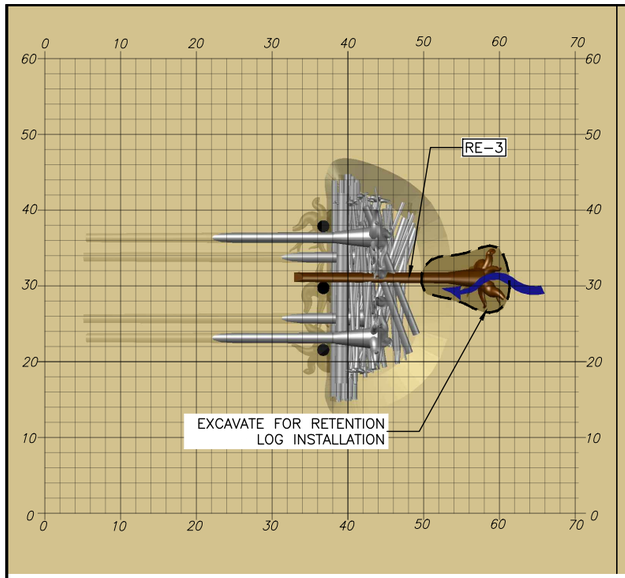
TYPE 4 ELJ LAYERING PLANS 1

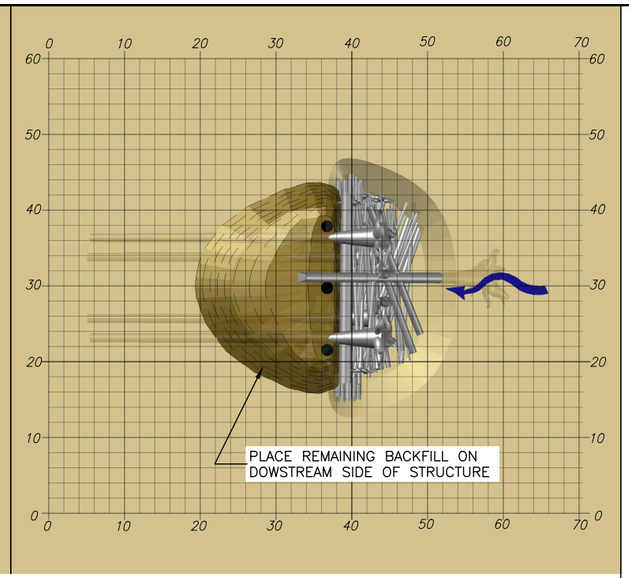
17

SHEET 17 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN COUNTY\MONITOR SIDE CHANNEL\DESIGN\CAD DWGS — CURRENT\TYPE 4 ELJ LAYERING PLANS.DWG Nic 3/26/2021 4:31:22 PM

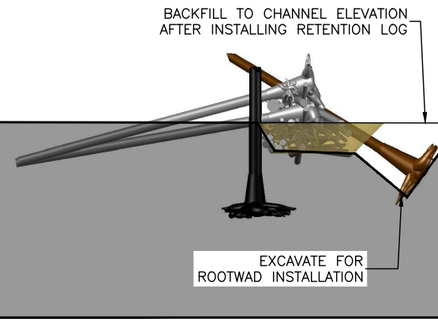




PLAN VIEWS

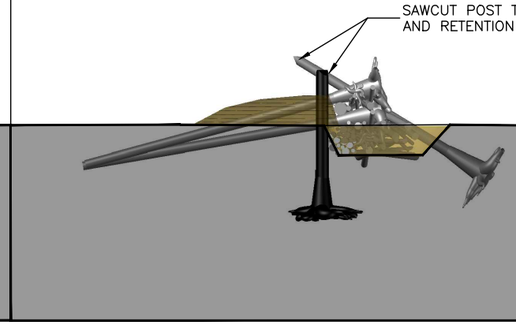
10' 5' 0 10' 20'
SCALE: 1"=10'-0"

LAYER 4



1. EXCAVATE FOR UPSTREAM RETENTION LOG.
2. INSTALL RE-3 ROOTWAD AS UPSTREAM RETENTION LOG AND BACKFILL TO CHANNEL ELEVATION. SEE (1/20).

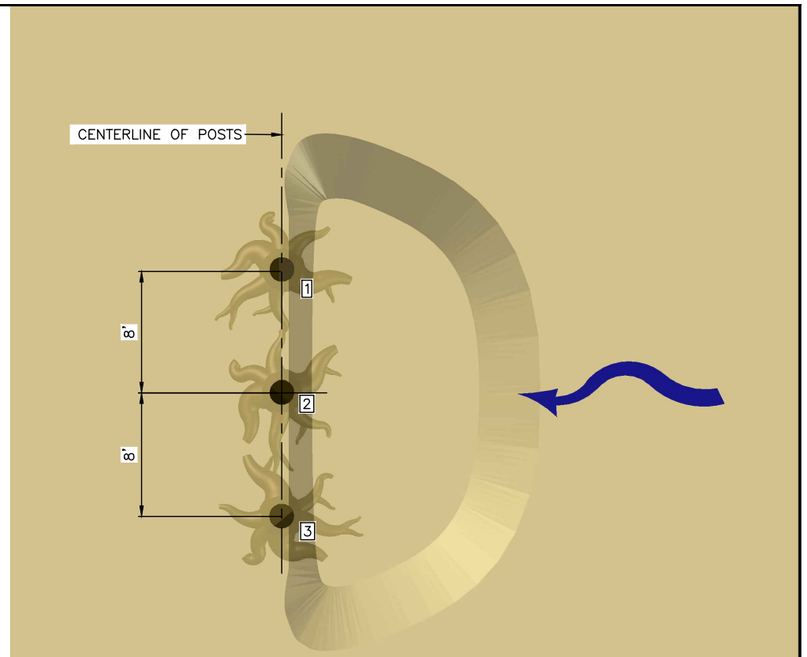
LAYER 5



1. PLACE REMAINING BACKFILL ON DOWNSTREAM SIDE OF STRUCTURE.
2. SAWCUT POST TOPS AND RETENTION LOG.

SECTION VIEWS

10' 5' 0 10' 20'
SCALE: 1"=10'-0"



TYPE 4 ELJ POST DIMENSIONING PLAN (1/18)

SCALE: 1" = 5'

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21963
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

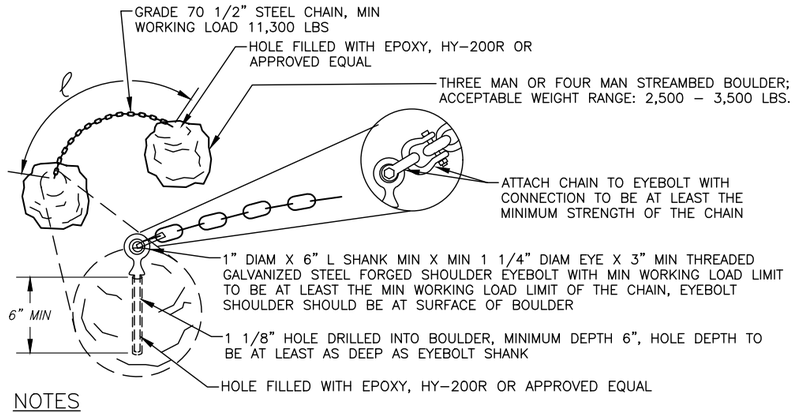
TYPE 4 ELJ LAYERING PLANS 2

18

SHEET 19 OF 22

Mar 26, 2021 FINAL DESIGN

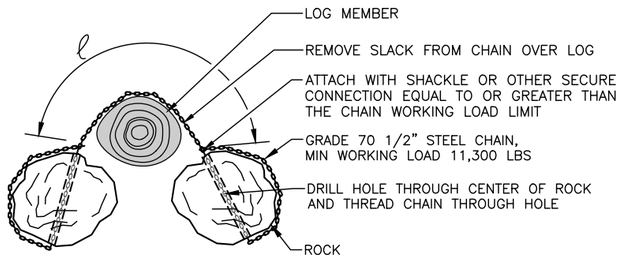
P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS_-_CURRENT\TYPE_4_ELJ_LAYERING_PLANS.DWG Nic 3/26/2021 4:31:25 PM



NOTES

1. THOROUGHLY CLEAN DRILL HOLE AND ALL BONDING SURFACES PRIOR TO APPLICATION OF EPOXY AS DESCRIBED IN SECTION 8-26.3(2)A.
2. THE DRILL HOLE MUST BE FILLED WITH RESIN SO THAT WHEN THE EYEBOLT IS INSERTED, A SMALL AMOUNT OF RESIN WILL OOZE OUT OF THE TOP OF THE HOLE. ONCE THE EYEBOLT IS INSERTED IN THE HOLE, IT SHOULD NOT BE DISTURBED UNTIL THE RESIN HAS CURED.
3. FOLLOW RESIN MANUFACTURING RECOMMENDATIONS FOR USE.
4. FOLLOWING EPOXY CURE, EACH ROCK COLLAR SHALL BE TESTED TO ENSURE PROPER BONDING.
5. BOULDER DIAMETER AVERAGE DIMENSION SHOULD TYPICALLY RANGE FROM 2.5 – 4.0 FT; INDIVIDUAL BOULDER WEIGHT SHALL BE BETWEEN 2,500 AND 3,500 LBS WITH EACH FULLY CONSTRUCTED COLLAR WEIGHING BETWEEN 5,000 AND 6,500 LBS.
6. ALL ROCK COLLARS TO BE WEIGHED AND FLAGGED WITH WEIGHT.
7. LENGTH OF CHAIN BETWEEN BOULDERS SHALL BE DETERMINED IN THE FIELD; LENGTHS WILL GENERALLY RANGE FROM 4 TO 6 FEET.

EPOXY OPTION

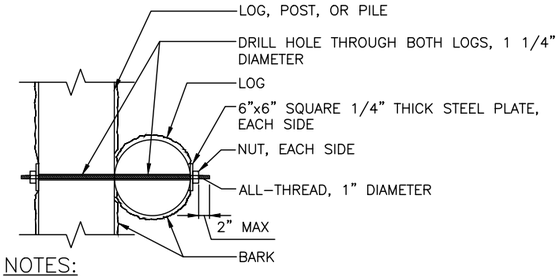


NOTES

1. DRILL HOLE ENTIRELY THROUGH INDIVIDUAL BOULDERS TO ALLOW FOR CHAIN TO PASS THROUGH WITHOUT CATCHING OR BINDING.
2. BOULDERS SHALL REMAIN STRUCTURALLY SOUND AFTER HOLE FOR CHAIN IS DRILLED.
3. BOULDER DIAMETER AVERAGE DIMENSION SHOULD TYPICALLY RANGE FROM 2.5 – 4.0 FT; INDIVIDUAL BOULDER WEIGHT SHALL BE BETWEEN 2,500 AND 3,500 LBS WITH EACH FULLY CONSTRUCTED COLLAR WEIGHING BETWEEN 5,000 AND 6,500 LBS.
4. ALL ROCK COLLARS TO BE WEIGHED AND FLAGGED WITH WEIGHT.
5. LENGTH OF CHAIN BETWEEN BOULDERS SHALL BE DETERMINED IN THE FIELD; LENGTHS WILL GENERALLY RANGE FROM 4 TO 6 FEET.

DRILLED OPTION

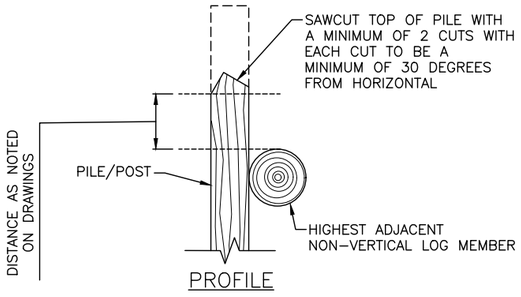
ROCK COLLAR WITH CHAIN 1/19
NOT TO SCALE



NOTES:

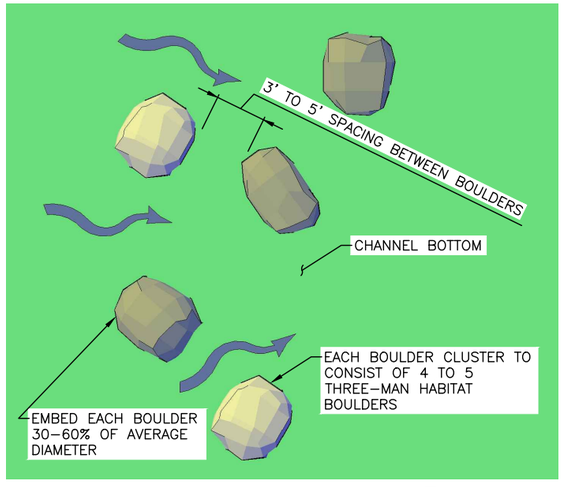
1. REMOVE BARK AT CONNECTION POINTS.
2. DRILL HOLE THROUGH CENTER OF LOGS.
3. TIGHTEN SUFFICIENTLY TO ELIMINATE GAP BETWEEN LOGS BUT NOT CRUSH BOLES. PEEN THREADS OR TACK WELD NUT TO ALL-THREAD FOLLOWING TIGHTENING.
4. ALL-THREAD TO BE ASTM TYPE A 307, GRADE A. LENGTH VARIES BY CONNECTION.
5. MULTIPLE LOG CONNECTIONS AT SAME JOINT WILL USE SINGLE PIECE OF ALL-THREAD TO MINIMIZE HOLES IN POSTS.

BOLTED CONNECTION 2/19
NOT TO SCALE

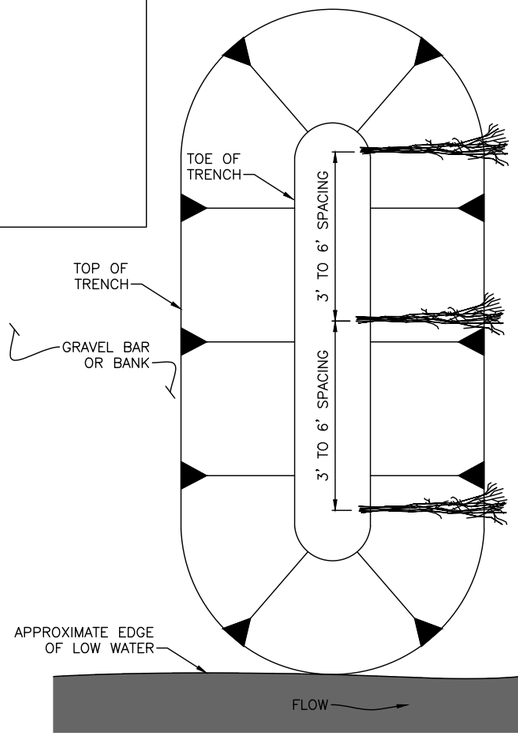


PROFILE

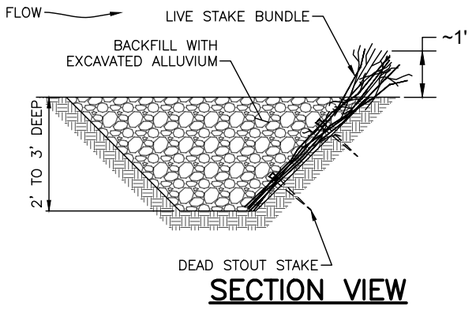
SAWCUT POST TOP 3/19
NOT TO SCALE



BOULDER CLUSTER 4/19
NOT TO SCALE



PLAN VIEW



SECTION VIEW

NOTES:

1. LIVE STAKE BUNDLE ASSEMBLY: USE 4' LENGTH WILLOW LIVE STAKES IN 5 TO 8 STEM BUNDLES. PLACE ALL BUTTS ON ONE END SUCH THAT THEY ARE EVEN ON THE GROUND. TIE BUNDLES WITH SISAL TWINE USING DOUBLE WRAP AT APPROXIMATELY 2 FEET AND 4 FEET ABOVE BOTTOM OF TRENCH.
2. EXCAVATE TRENCH TO APPROXIMATELY 3 FT DEEP.
3. PLACE BUNDLES INTO TRENCH SUCH THAT STAKE BUTTS ARE RESTING ON THE TRENCH BOTTOM AND SECURE AGAINST DOWNSTREAM TRENCH FACE WITH DEAD STOUT STAKE DRIVEN THROUGH BUNDLE AND BETWEEN TWINE WRAPS.
4. BACKFILL TRENCH IN LIFTS OF NO MORE THAN 12 INCHES; WATER IN EACH LIFT, GENTLY COMPACTING WITH THE BUCKET OF AN EXCAVATOR OR SIMILAR MEANS.

WILLOW TRENCH 5/19
NOT TO SCALE

NICHOLAS JON TRUSCOTT — STATE OF WASHINGTON — 51963 — REGISTERED PROFESSIONAL ENGINEER — 3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

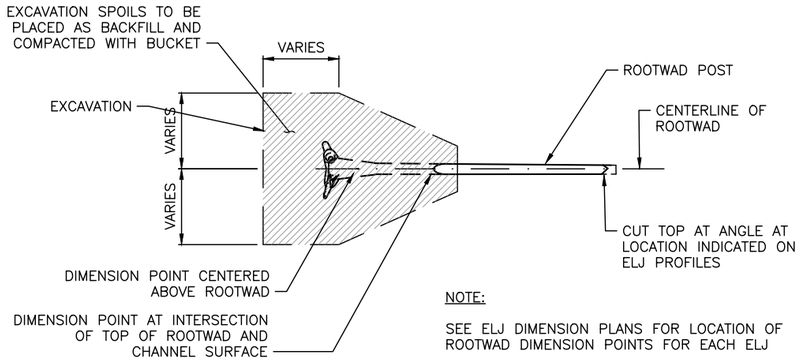
ELJ DETAILS 1

19

SHEET 19 OF 22

Mar 26, 2021 FINAL DESIGN

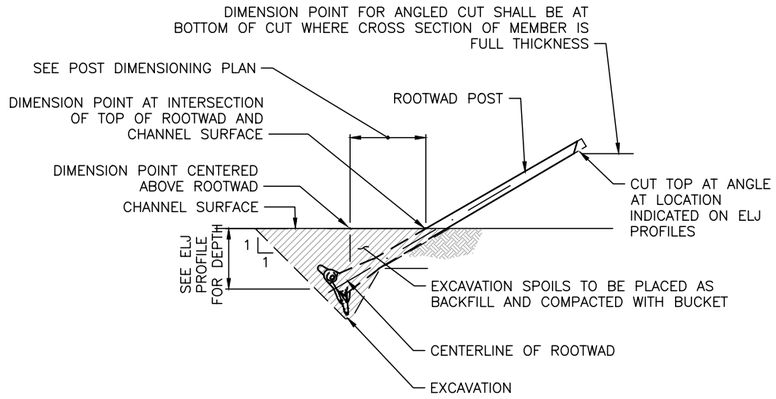
P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS_-_CURRENT\ELJ_DETAILS.DWG Nic 3/26/2021 4:31:28 PM



NOTE:

SEE ELJ DIMENSION PLANS FOR LOCATION OF ROOTWAD DIMENSION POINTS FOR EACH ELJ

PLAN

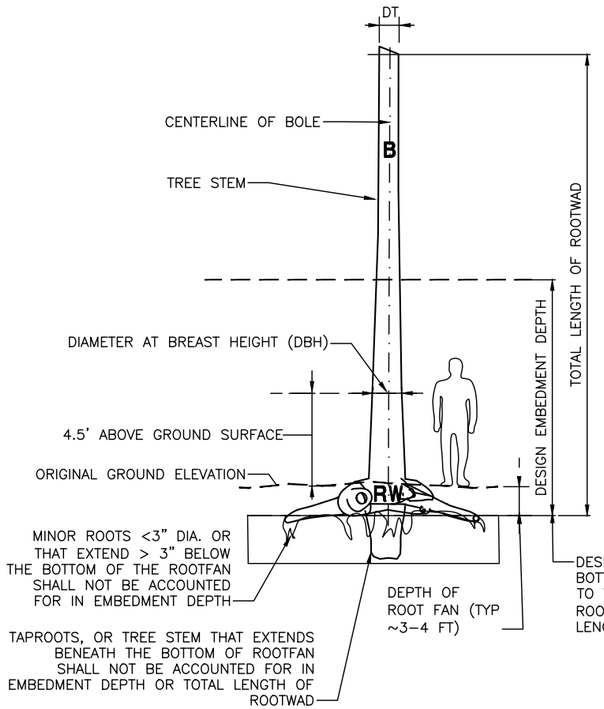


PROFILE

BATTER POST INSTALLATION 1/20

NOT TO SCALE

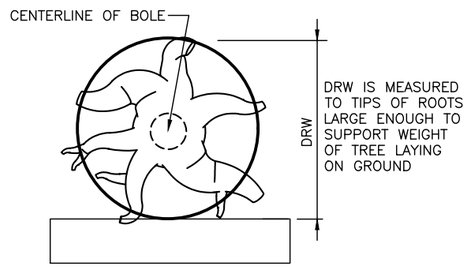
ROOTWAD/ROOTWAD POST



ABBREVIATIONS:

B =BOLE (EG., STEM, TRUNK) OF TREE
RW = ROOTWAD
DRW = DIAMETER OF ROOTWAD
DBH = DIAMETER AT BREAST HEIGHT MEASURED WITH BARK OFF
DT = DIAMETER AT TIP

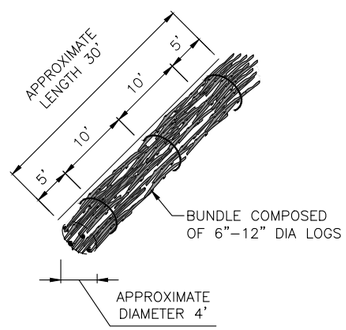
ROOTWAD



DESIGN EMBEDMENT DEPTH SHALL BE MEASURED FROM THE BOTTOM OF THE BOLE WHERE THE ROOTFAN ROOTS ARE SPREAD TO THEIR MAXIMUM DIAMETER, ONLY ACCOUNTING FOR MAJOR ROOTS >3" IN DIAMETER AND DO NOT VARY MORE THAN 3" IN LENGTH BELOW THE BOTTOM OF THE BOLE.

ROOTWAD DIMENSIONING REQUIREMENTS 2/20

NOT TO SCALE



NOTES

1. WRAP EACH BUNDLE WITH 1 INCH DIAMETER MANILA ROPE. TEST EACH COMPLETED BUNDLE TO ENSURE ALL INDIVIDUAL PIECES ARE SECURE FOR TRANSPORT.
2. MATERIAL FOR RACKING BUNDLE SHALL BE VARIABLE IN DIAMETER; LENGTHS SHALL BE 30 FT ± 1 FT.

RACKING BUNDLE 3/20

NOT TO SCALE

0 Ø 1

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

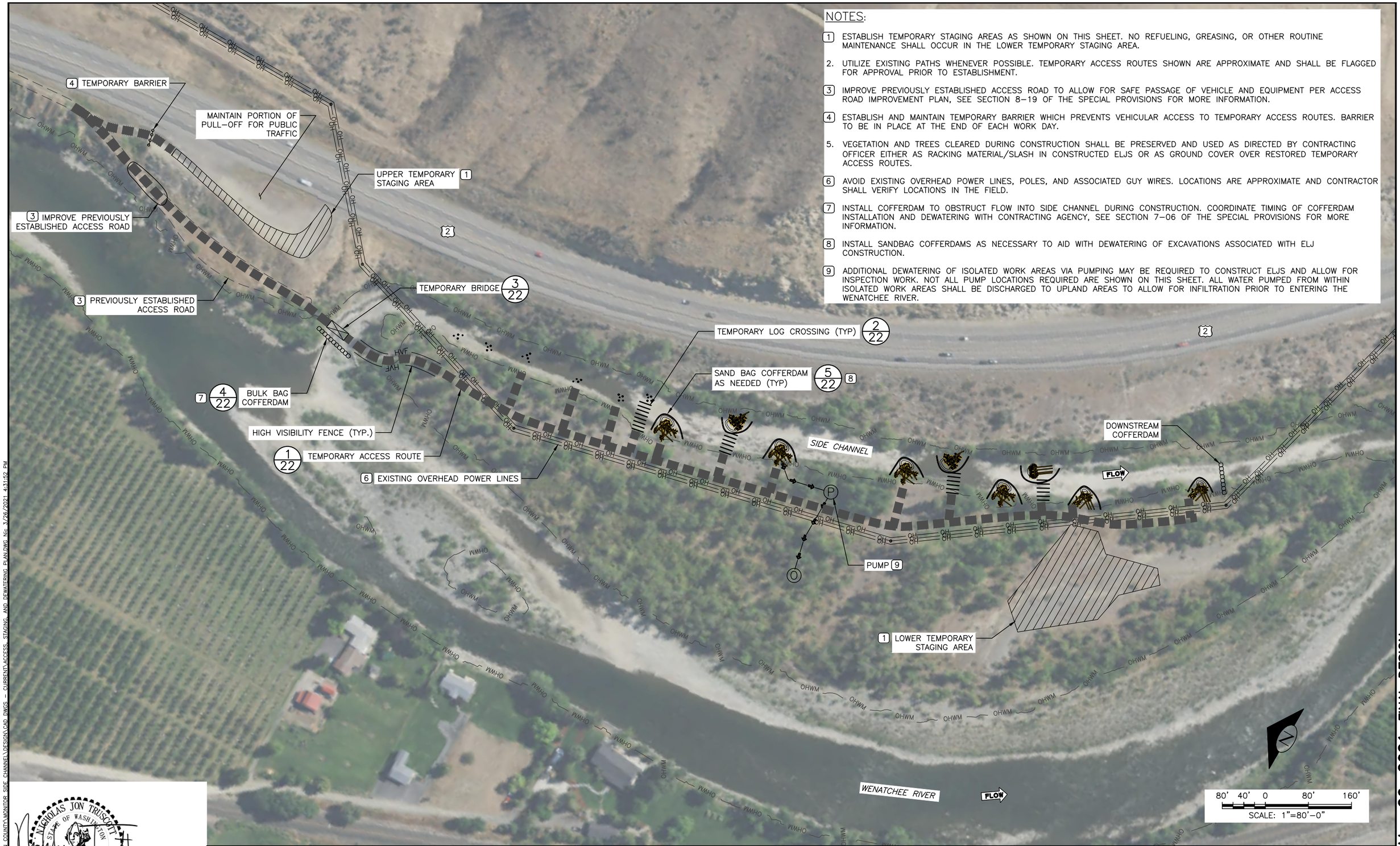
ELJ DETAILS 2

20

SHEET 20 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS - CURRENT\ELJ_DETAILS.DWG Nic 3/26/2021 4:31:30 PM



NOTES:

1. ESTABLISH TEMPORARY STAGING AREAS AS SHOWN ON THIS SHEET. NO REFUELING, GREASING, OR OTHER ROUTINE MAINTENANCE SHALL OCCUR IN THE LOWER TEMPORARY STAGING AREA.
2. UTILIZE EXISTING PATHS WHENEVER POSSIBLE. TEMPORARY ACCESS ROUTES SHOWN ARE APPROXIMATE AND SHALL BE FLAGGED FOR APPROVAL PRIOR TO ESTABLISHMENT.
3. IMPROVE PREVIOUSLY ESTABLISHED ACCESS ROAD TO ALLOW FOR SAFE PASSAGE OF VEHICLE AND EQUIPMENT PER ACCESS ROAD IMPROVEMENT PLAN, SEE SECTION 8-19 OF THE SPECIAL PROVISIONS FOR MORE INFORMATION.
4. ESTABLISH AND MAINTAIN TEMPORARY BARRIER WHICH PREVENTS VEHICULAR ACCESS TO TEMPORARY ACCESS ROUTES. BARRIER TO BE IN PLACE AT THE END OF EACH WORK DAY.
5. VEGETATION AND TREES CLEARED DURING CONSTRUCTION SHALL BE PRESERVED AND USED AS DIRECTED BY CONTRACTING OFFICER EITHER AS RACKING MATERIAL/SLASH IN CONSTRUCTED ELJS OR AS GROUND COVER OVER RESTORED TEMPORARY ACCESS ROUTES.
6. AVOID EXISTING OVERHEAD POWER LINES, POLES, AND ASSOCIATED GUY WIRES. LOCATIONS ARE APPROXIMATE AND CONTRACTOR SHALL VERIFY LOCATIONS IN THE FIELD.
7. INSTALL COFFERDAM TO OBSTRUCT FLOW INTO SIDE CHANNEL DURING CONSTRUCTION. COORDINATE TIMING OF COFFERDAM INSTALLATION AND DEWATERING WITH CONTRACTING AGENCY, SEE SECTION 7-06 OF THE SPECIAL PROVISIONS FOR MORE INFORMATION.
8. INSTALL SANDBAG COFFERDAMS AS NECESSARY TO AID WITH DEWATERING OF EXCAVATIONS ASSOCIATED WITH ELJ CONSTRUCTION.
9. ADDITIONAL DEWATERING OF ISOLATED WORK AREAS VIA PUMPING MAY BE REQUIRED TO CONSTRUCT ELJS AND ALLOW FOR INSPECTION WORK. NOT ALL PUMP LOCATIONS REQUIRED ARE SHOWN ON THIS SHEET. ALL WATER PUMPED FROM WITHIN ISOLATED WORK AREAS SHALL BE DISCHARGED TO UPLAND AREAS TO ALLOW FOR INFILTRATION PRIOR TO ENTERING THE WENATCHEE RIVER.

NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
21943
REGISTERED
PROFESSIONAL ENGINEER
3-26-2021

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

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	N. TRUSCOTT	LATITUDE	47°29'33"N
CHECKED	W.J. SMITH	LONGITUDE	120°25'15"W
DRAWN	G. MATSUMOTO	TN/SC/RG	T23N/S14/R19E
CHECKED	N. TRUSCOTT	DATE	MARCH 26, 2021

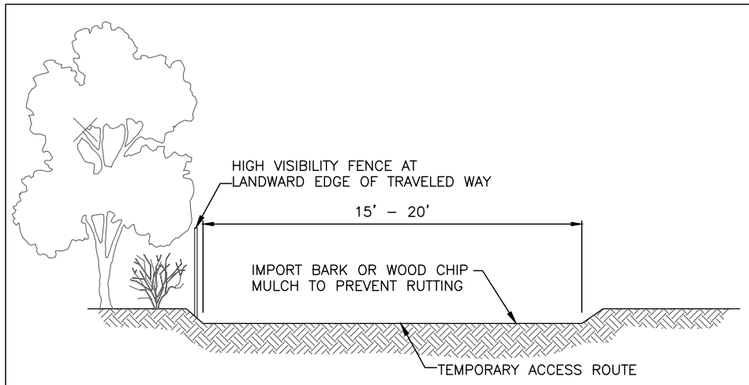
MONITOR SIDE CHANNEL RESTORATION

ACCESS, STAGING, AND DEWATERING PLAN

SHEET 21 OF 22

Mar 26, 2021 FINAL DESIGN

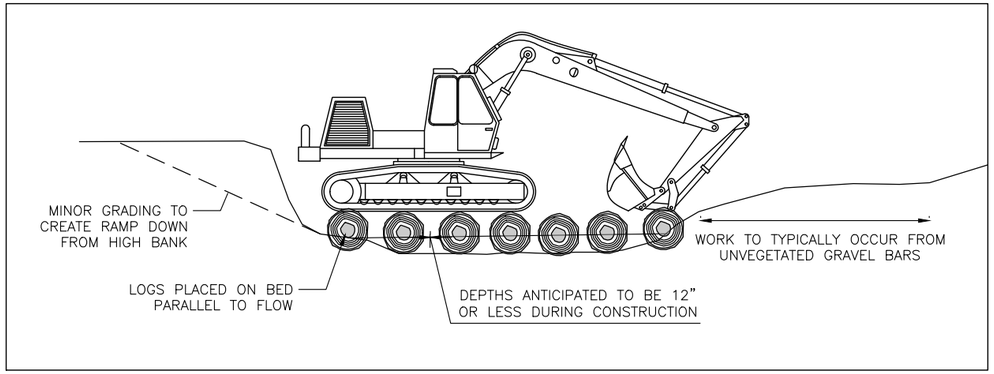
P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_FILES\ - CURRENT\ACCESS_STAGING_AND_DEWATERING_PLAN.DWG Nic 3/26/2021 4:31:52 PM



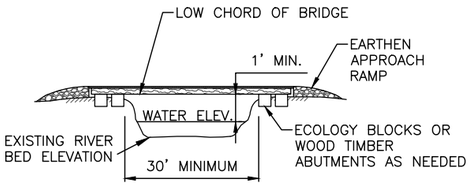
NOTES FOR TEMPORARY CLEARED ACCESS

1. TEMPORARY ACCESS ROUTES TO BE ROUTED TO MINIMIZE VEGETATION DISTURBANCE AND CLEARING.
2. CONTRACTOR SHALL STAKE PROPOSED ROUTES PRIOR TO ESTABLISHMENT. CLEARING LIMITS TO BE APPROVED BY CONTRACTING OFFICER PRIOR TO ANY CLEARING ACTIVITIES.
3. ACCESS SHALL BE MAINTAINED BY MINOR GRADING AND IMPORTATION OF BARK OR WOOD CHIP MULCH.
4. ALL TEMPORARY ACCESS ROUTES OUTSIDE OF PREVIOUSLY ESTABLISHED ACCESS ROADS SHALL BE DECOMPACTED TO A MINIMUM DEPTH OF SIX INCHES.

TEMPORARY ACCESS ROUTES 1/22
NOT TO SCALE

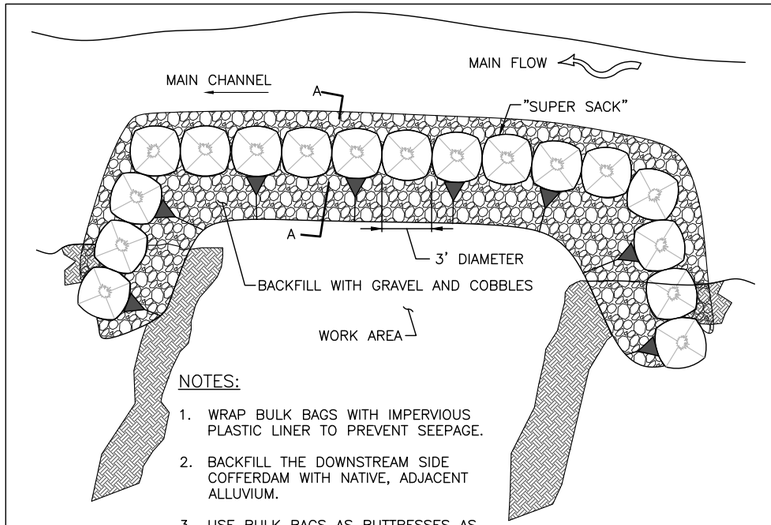


TEMPORARY LOG CROSSING 2/22
NOT TO SCALE

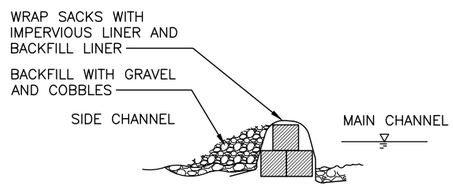


NOTES:
1. CONTRACTOR TO DESIGN TEMPORARY BRIDGE.
2. END OF BRIDGE SHALL BEAR ON HIGH BANKS WITH SUFFICIENT BEARING CAPACITY TO PREVENT SLOUGHING OR COLLAPSE OF SIDE CHANNEL BANKS.
3. CONCRETE ECOLOGY BLOCKS OR WOOD ABUTMENTS MAY BE USED TO SUPPORT ENDS OF TEMPORARY BRIDGE AS NEEDED.
4. BRIDGES MAY BE CONSTRUCTED FROM LOGS, RAIL CAR BEDS OR APPROVED EQUAL AND DECKED WITH STEEL SHEET, WOOD LAGGING OR APPROVED EQUAL.

TEMPORARY BRIDGE 3/22
NOT TO SCALE

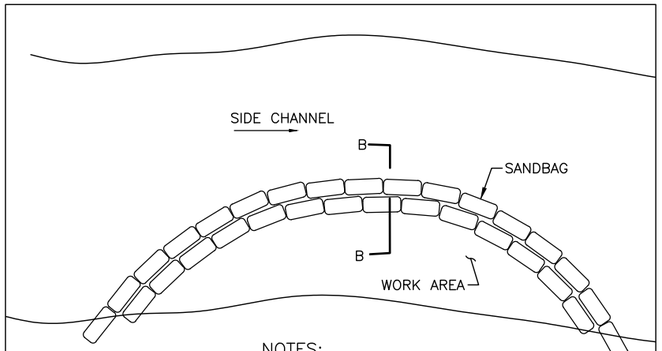


NOTES:
1. WRAP BULK BAGS WITH IMPERVIOUS PLASTIC LINER TO PREVENT SEEPAGE.
2. BACKFILL THE DOWNSTREAM SIDE COFFERDAM WITH NATIVE, ADJACENT ALLUVIUM.
3. USE BULK BAGS AS BUTTRESSES AS REQUIRED.

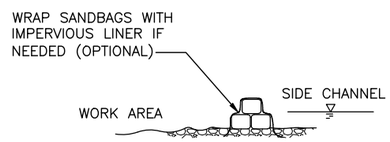


SECTION A–A

BULK BAG COFFERDAM 4/22
NOT TO CALE



NOTES:
1. FILL SANDBAGS WITH CLEAN, ROUNDED GRAVEL.
2. WRAP SANDBAG COFFERDAM WITH IMPERVIOUS BARRIER AS NEEDED.
3. NO MINIMUM HEIGHT OF COFFERDAM REQUIRED.



SECTION B–B

SANDBAG COFFERDAM 5/22
NOT TO CALE

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

NAME OR INITIALS AND DATE	
DESIGNED	N. TRUSCOTT
CHECKED	W.J. SMITH
DRAWN	G. MATSUMOTO
CHECKED	N. TRUSCOTT

GEOGRAPHIC INFORMATION	
LATITUDE	47°29'33"N
LONGITUDE	120°25'15"W
TN/SC/RG	T23N/S14/R19E
DATE	MARCH 26, 2021

MONITOR SIDE CHANNEL RESTORATION

SITE ACCESS AND DEWATERING DETAILS

22

SHEET 22 OF 22

Mar 26, 2021 FINAL DESIGN

P:\PROJECTS\CHELAN_COUNTY\MONITOR_SIDE_CHANNEL\DESIGN\CAD_DWGS – CURRENT\SITE ACCESS AND DEWATERING DETAILS.DWG Nic 3/26/2021 4:32:08 PM