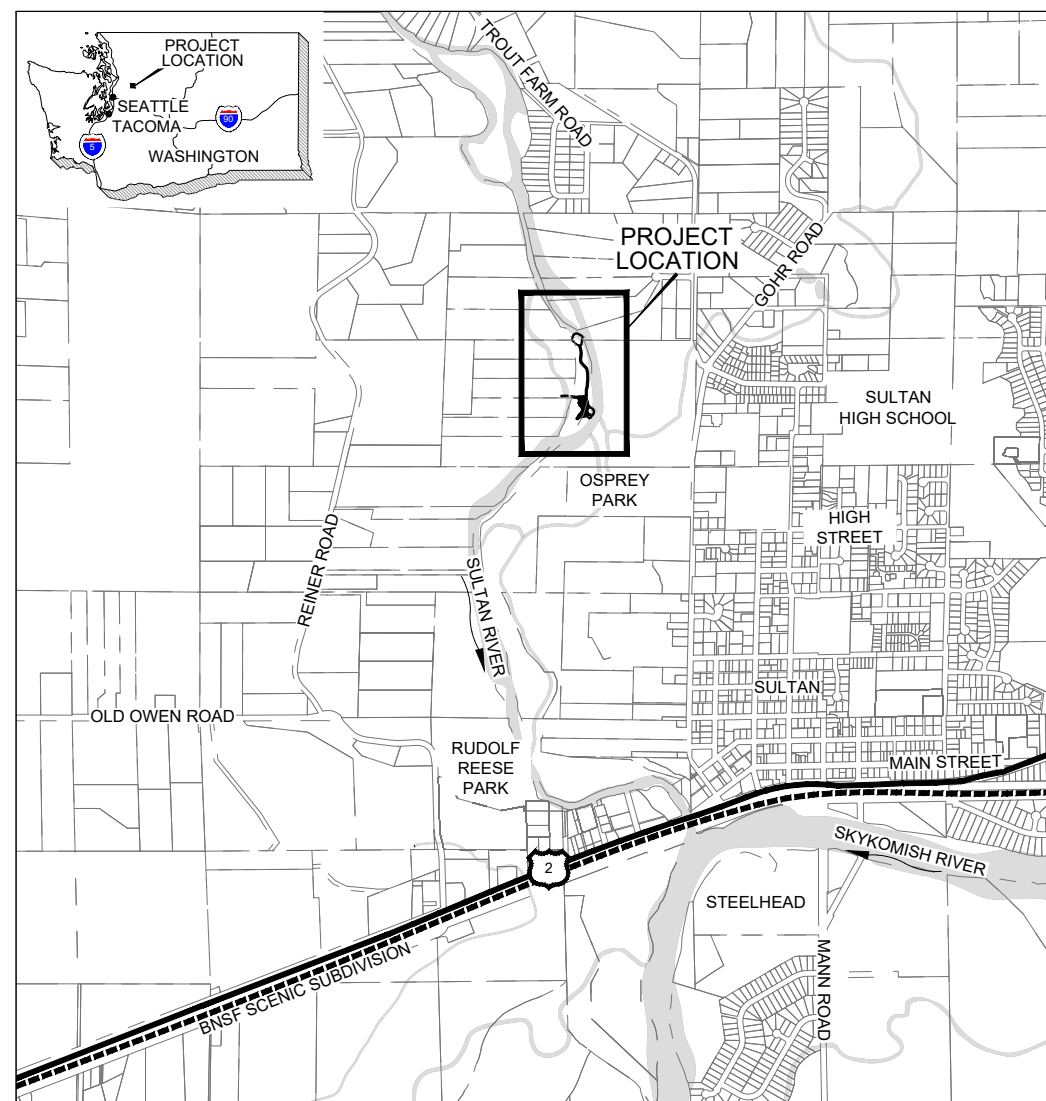


SULTAN RIVER

ENGINEERED LOG JAM 9 & 10 PROJECT

PERMIT LEVEL DESIGN



VICINITY MAP

Sheet List Table	
Sheet Number	Sheet Title
01	COVER SHEET
02	EXISTING SITE PLAN
03	PROPOSED SITE PLAN
04	TEMPORARY WETLAND AND BUFFER IMPACTS
05	WETLAND AND BUFFER RESTORATION AREAS
06	ELJ 9
07	ELJ 9 LAYERING PLAN
08	ELJ 10
09	ELJ 10 LAYERING PLAN
10	LAYERING DETAILS
11	PLANTING SCHEDULE, NOTES AND DETAILS

DISTRICT PROJECT LEAD:

SNOHOMISH COUNTY PUD NO. 1
KYLE LEGARE
P.O. BOX 1107
EVERETT, WA 98206-1107

(425) 783-1841
KJLEGARE@SNOPUD.COM

ENGINEER:

SHANNON & WILSON
GUS KAYS, P.E.
400 N 34TH ST
SEATTLE, WA 98103

(206) 695-6941
GUS.KAYS@SHANWIL.COM

REFERENCE NO:

APPLICANT:

ADJACENT PROPERTY OWNERS:

SNOHOMISH COUNTY PUD #1

SEE JARPA 5H

LOCATION:

LAT/LONG:

DATE:
SHEET:

NEAR 138TH PLACE SE

47.8730 N / -121.8254 W

APRIL 2026
01 OF 11

PROPOSED PROJECT:

IN:

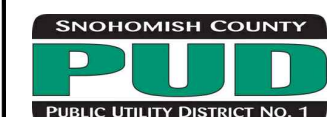
NEAR:
COUNTY:
STATE:

CONSTRUCT 2 ELJS

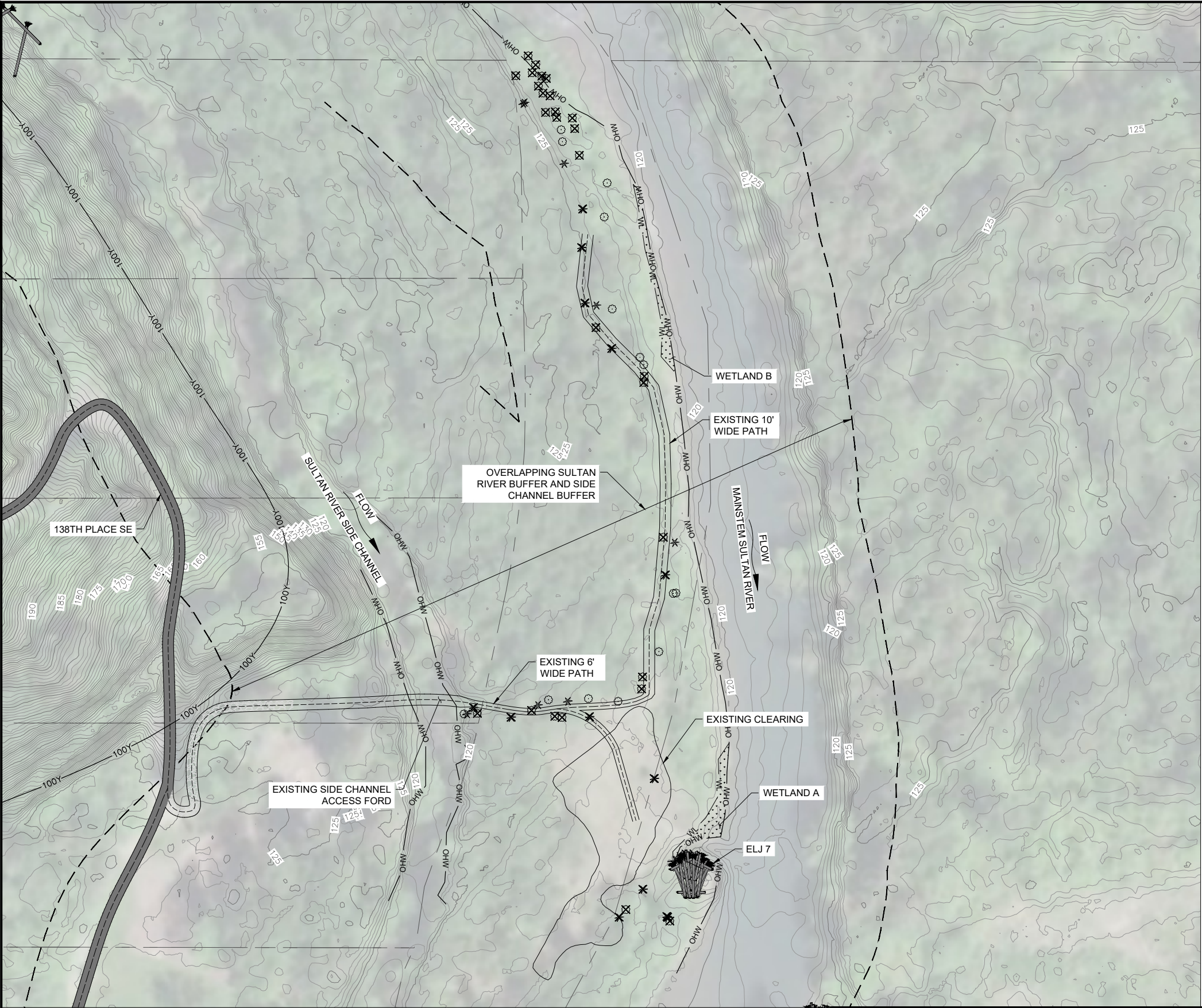
SULTAN RIVER, SULTAN RIVER SIDE
CHANNEL 2, WETLAND A

SULTAN
SNOHOMISH
WASHINGTON

SHANNON & WILSON



SNOHOMISH PUBLIC UTILITIES DISTRICT NO. 1
ATTN: MANAGER OF NATURAL RESOURCES
P.O. BOX 1107, EVERETT, WA 98201
PHONE: 425-783-1841



GENERAL NOTES:

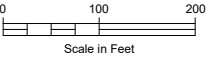
- 1. CONTOURS ARE DERIVED FROM LIDAR AND DO NOT REFLECT BELOW WATER ELEVATIONS.
- 2. WETLANDS AND OHW LINES PROVIDED BY HERRERA INC.
- 3. ALL UPLANDS AND WETLANDS WITHIN THE 100-YEAR FLOODPLAIN ARE DESIGNATED AS RURAL CONSERVANCY SHORELINE.

LEGEND:

- EXISTING CONTOURS
- PARCEL BOUNDARY
- PROPOSED CONSTRUCTION ACCESS ROAD
- EXISTING ROAD
- EXISTING DRIVEWAY
- WETLAND BOUNDARY
- ORDINARY HIGH WATER
- 150' STREAM BUFFER
- FEMA 100-YEAR FLOODPLAIN
- SILT FENCE
- CONIFER TREE
- DECIDUOUS TREE
- CONIFER TREE TO BE REMOVED
- DECIDUOUS TREE TO BE REMOVED

TREE REMOVAL INVENTORY:

TYPE	TREE SIZE			
	< 9"	9 - 15"	15 - 21"	> 21"
DECIDUOUS	14	10	0	0
CONIFER	9	4	2	1



SHANNON & WILSON



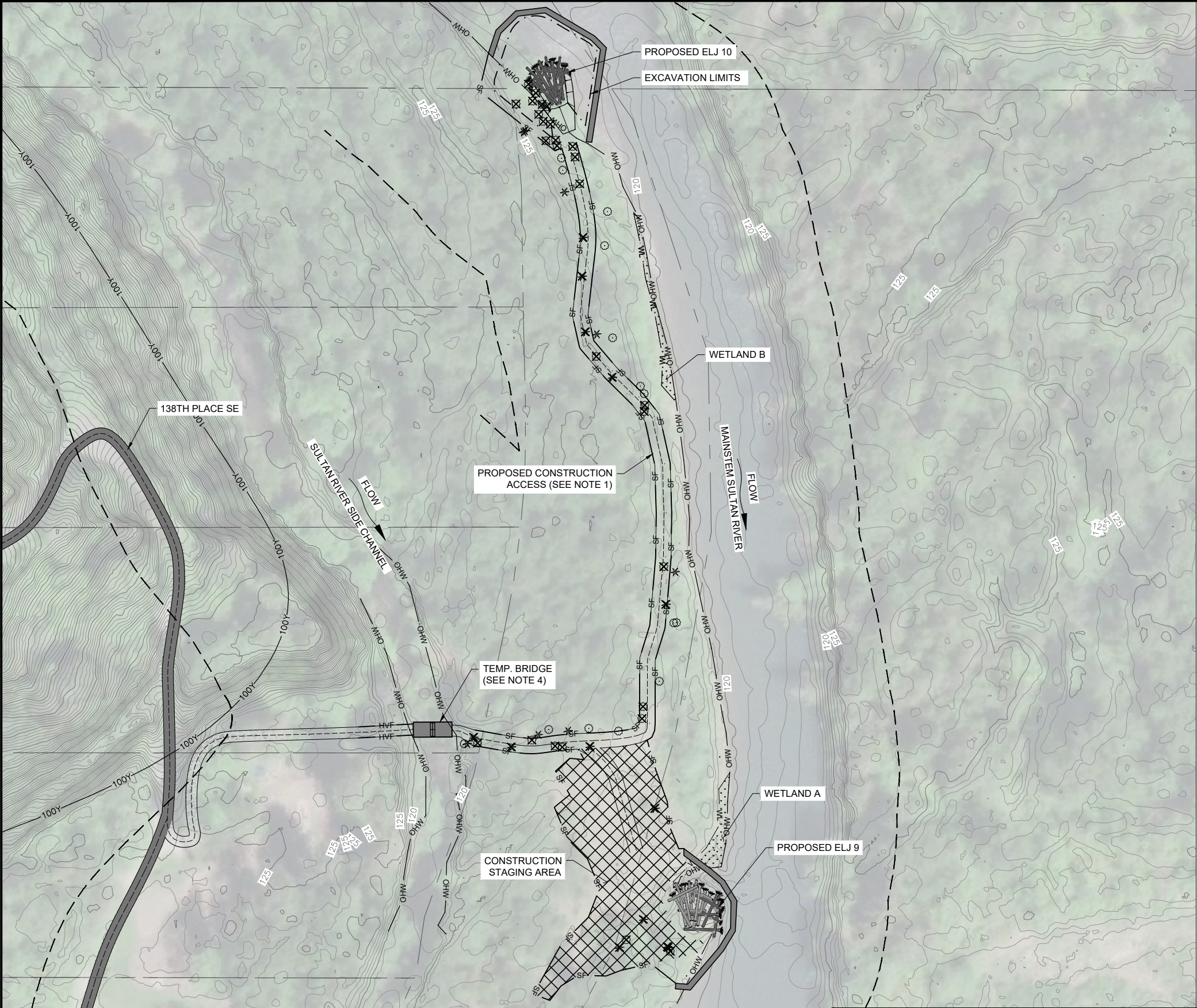
SNOHOMISH PUBLIC UTILITIES DISTRICT NO. 1
ATTN: MANAGER OF NATURAL RESOURCES
P.O. BOX 1107, EVERETT, WA 98201
PHONE: 425-783-1841

EXISTING SITE PLAN

C-02

REFERENCE NO:
APPLICANT: SNOHOMISH COUNTY PUD #1
PROPOSED PROJECT: CONSTRUCT 2 ELJS
LOCATION: NEAR 138TH PLACE SE

SHEET: 02 OF 11 DATE: APRIL 2026



GENERAL NOTES:

- 1. ACCESS TO ELJ 9 TO FOLLOW EXISTING PRIMITIVE ACCESS ROUTE.
- 2. ACCESS CORRIDOR TO ELJ 10 IS ALIGNED TO MINIMIZE TREE AND BUFFER DISTURBANCE. WHERE POSSIBLE ACCESS SHALL BE ALIGNED ALONG COBBLE BAR BANKS.
- 3. ACCESS ROUTE SHALL BE MARKED IN THE FIELD PRIOR TO GROUND DISTURBANCE.
- 4. CONTOURS ARE DERIVED FROM LIDAR AND DO NOT REFLECT BELOW WATER ELEVATIONS.
- 5. TEMPORARY BRIDGE SHALL SPAN THE WETTED WIDTH FOR THE CONSTRUCTION PERIOD. REVIEW FORECASTS AND REMOVE TEMPORARY BRIDGE / BULK BAGS IF HIGH FLOWS THAT WOULD INUNDATE OR DAMAGE THESE FACILITIES ARE ANTICIPATED WITHIN 48 HOURS. ANY MODIFICATIONS TO THE BANK SHALL BE OUTSIDE OF THE WETTED WIDTH AND RESTORED TO MATCH THE EXISTING SIDE CHANNEL FORD. IF TEMPORARY BRIDGE INSTALLATION REQUIRES GRADING OF THE EXISTING FORD, SILT FENCE OR STRAW WATTLES SHALL BE INSTALLED TO PROTECT WATER QUALITY.

LEGEND:

- EXISTING CONTOURS
- PARCEL BOUNDARY
- PROPOSED CONSTRUCTION ACCESS ROAD
- EXISTING ROAD
- EXISTING DRIVEWAY
- STAGING AREA
- WETLAND BOUNDARY
- ORDINARY HIGH WATER
- SILT FENCE
- HIGH VISIBILITY FENCE
- 150' STREAM BUFFER
- FEMA 100-YEAR FLOODPLAIN
- BULK BAG ISOLATION DAM
- CONIFER TREE
- DECIDUOUS TREE
- CONIFER TREE TO BE REMOVED
- DECIDUOUS TREE TO BE REMOVED

CUT AND FILL VOLUME:

	WETLAND A	RIVER	BUFFER	
CUT	0	1453	127	CY
TEMPORARY FILL (BULK BAGS AND ECOLOGY BLOCKS)	5	216	5	CY
PERMANENT FILL (BACKFILL AND LWM)	0	458	93	CY



SHANNON & WILSON



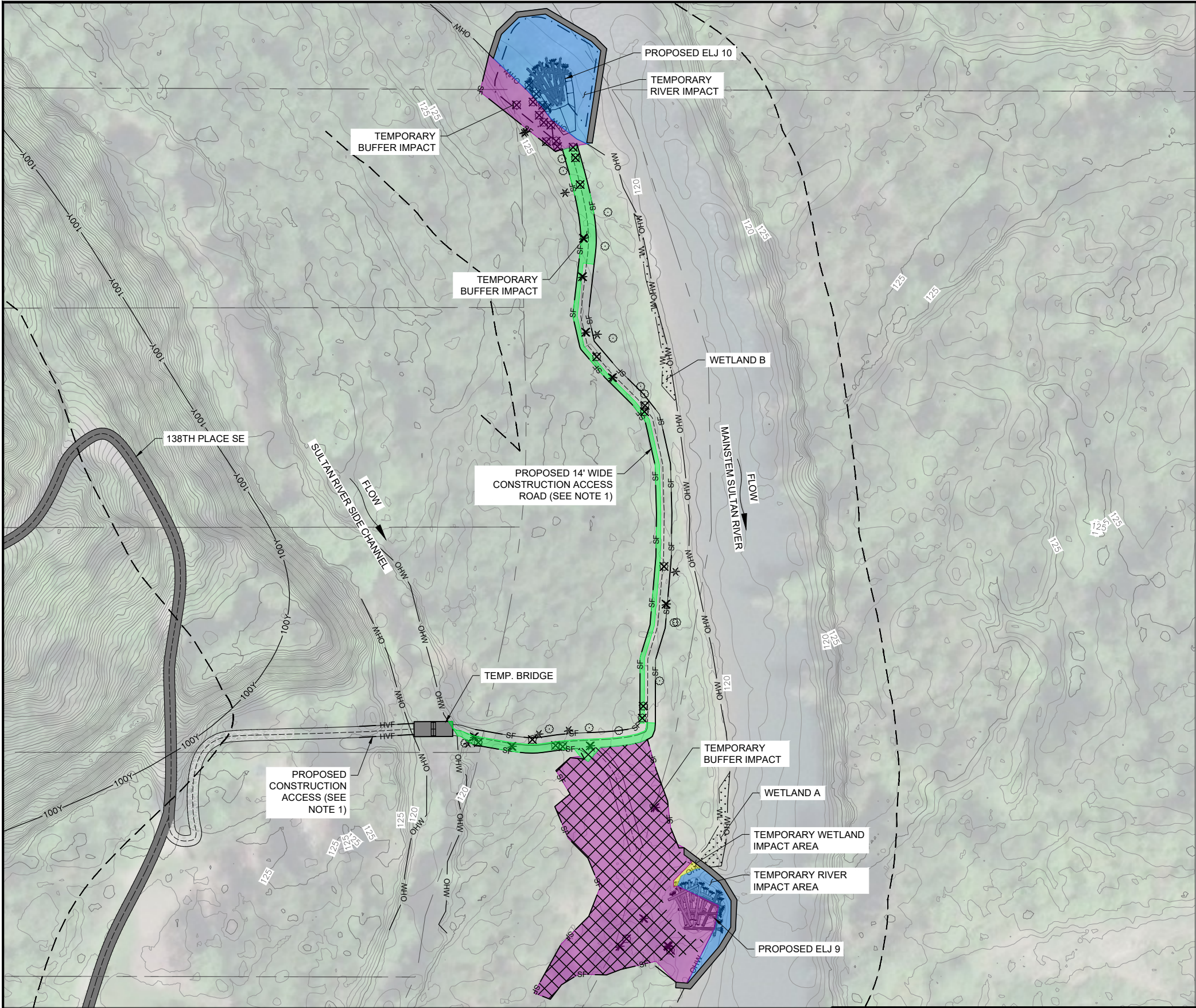
SNOHOMISH PUBLIC UTILITIES DISTRICT NO. 1
ATTN: MANAGER OF NATURAL RESOURCES
P.O. BOX 1107, EVERETT, WA 98201
PHONE: 425-783-1841

PROPOSED SITE PLAN

C-03

REFERENCE NO:
APPLICANT: SNOHOMISH COUNTY PUD #1
PROPOSED PROJECT: CONSTRUCT 2 ELJS
LOCATION: NEAR 138TH PLACE SE

SHEET: 03 OF 11 DATE: APRIL 2026

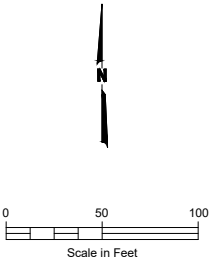


GENERAL NOTES:

1. ACCESS TO ELJ 9 TO FOLLOW EXISTING PRIMITIVE ACCESS ROUTE. EXISTING ROUTE TO BE WIDENED TO 14' FOR CONSTRUCTION DURATION AND RESTORED TO 10' WIDTH POST CONSTRUCTION OF ELJ 9.
2. ACCESS TO ELJ 10 SHALL MINIMIZE DISTURBANCE AND TREE REMOVAL. WHERE POSSIBLE ACCESS SHALL BE ALIGNED ALONG COBBLE BAR BANKS.
3. ACCESS ROUTE SHALL BE MARKED IN THE FIELD PRIOR TO GROUND DISTURBANCE.
4. CONTOURS ARE DERIVED FROM LIDAR AND DO NOT REFLECT BELOW WATER ELEVATIONS.
5. REVIEW FORECASTS AND REMOVE TEMPORARY BRIDGE / BULK BAGS IF HIGH FLOWS ARE ANTICIPATED WITHIN 48 HOURS. ANY MODIFICATIONS TO THE BANK SHALL BE RESTORED.

LEGEND:

	EXISTING CONTOURS
	PARCEL BOUNDARY
	PROPOSED CONSTRUCTION ACCESS ROAD
	EXISTING ROAD
	EXISTING DRIVEWAY
	STAGING AREA
	WETLAND BOUNDARY
	ORDINARY HIGH WATER
	SILT FENCE
	HIGH VISIBILITY FENCE
	150' STREAM BUFFER
	FEMA 100-YEAR FLOODPLAIN
	BULK BAG ISOLATION DAM
	TEMPORARY RIVER IMPACT
	TEMPORARY BUFFER IMPACT
	TEMPORARY BUFFER IMPACT (ROAD)
	TEMPORARY WETLAND IMPACT
	CONIFER TREE
	DECIDUOUS TREE
	CONIFER TREE TO BE REMOVED
	DECIDUOUS TREE TO BE REMOVED



SHANNON & WILSON

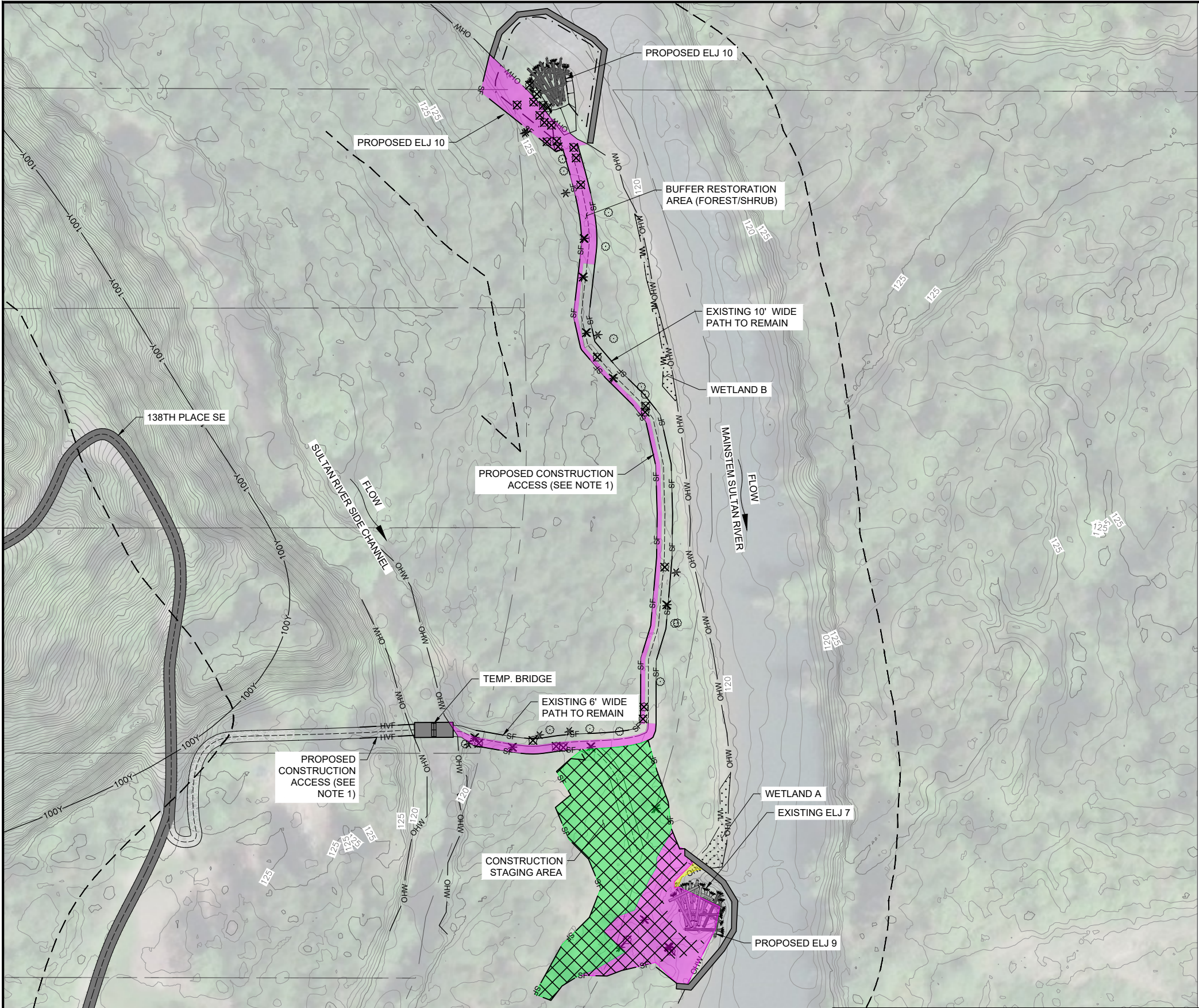


SNOHOMISH PUBLIC UTILITIES DISTRICT NO. 1
ATTN: MANAGER OF NATURAL RESOURCES
P.O. BOX 1107, EVERETT, WA 98201
PHONE: 425-783-1841

TEMPORARY WETLAND AND BUFFER IMPACTS C-04

REFERENCE NO:
APPLICANT: SNOHOMISH COUNTY PUD #1
PROPOSED PROJECT: CONSTRUCT 2 ELJS
LOCATION: NEAR 138TH PLACE SE

SHEET: 04 OF 11 DATE: APRIL 2026



GENERAL NOTES:

1. ACCESS TO ELJ 9 TO GENERALLY FOLLOW EXISTING PRIMITIVE ACCESS ROUTE EXCEPT WHERE REALIGNMENT RESULTS IN REDUCED CLEARING.
2. ACCESS TO ELJ 10 SHALL MINIMIZE DISTURBANCE AND TREE REMOVAL. WHERE POSSIBLE ACCESS SHALL BE ALIGNED ALONG COBBLE BAR BANKS.

LEGEND:

	EXISTING CONTOURS
	PARCEL BOUNDARY
	PROPOSED CONSTRUCTION ACCESS ROAD
	EXISTING ROAD
	EXISTING DRIVEWAY
	STAGING AREA
	WETLAND BOUNDARY
	ORDINARY HIGH WATER
	SILT FENCE
	HIGH VISIBILITY FENCE
	150' STREAM BUFFER
	FEMA 100-YEAR FLOODPLAIN
	BULK BAG ISOLATION DAM
	BUFFER RESTORATION AREA (FOREST/SHRUB)
	BUFFER RESTORATION AREA (HYDROSEED)
	WETLAND RESTORATION AREA
	CONIFER TREE
	DECIDUOUS TREE
	CONIFER TREE TO BE REMOVED
	DECIDUOUS TREE TO BE REMOVED

SHANNON & WILSON

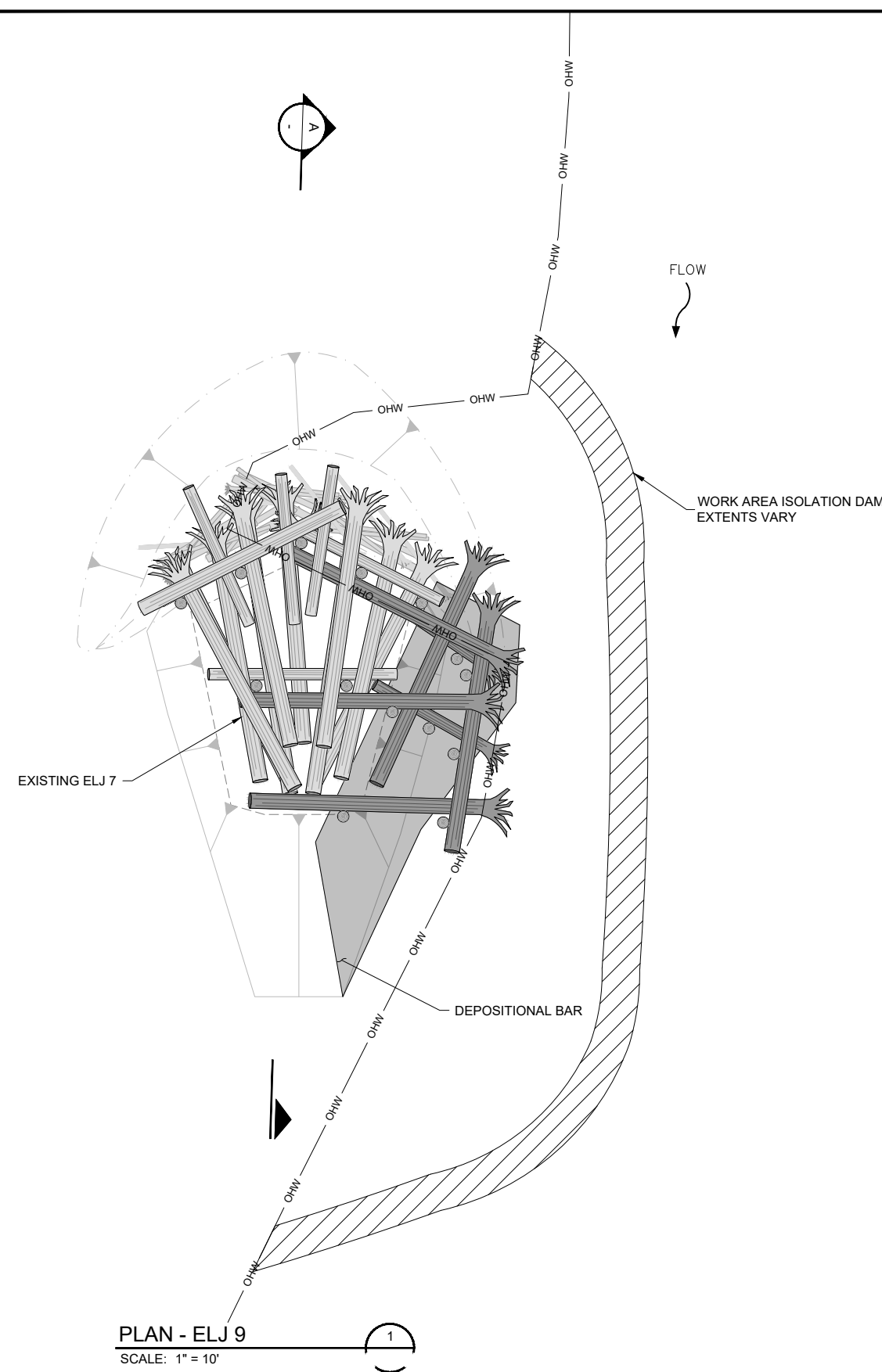


SNOHOMISH PUBLIC UTILITIES DISTRICT NO. 1
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WETLAND AND BUFFER RESTORATION AREAS C-05

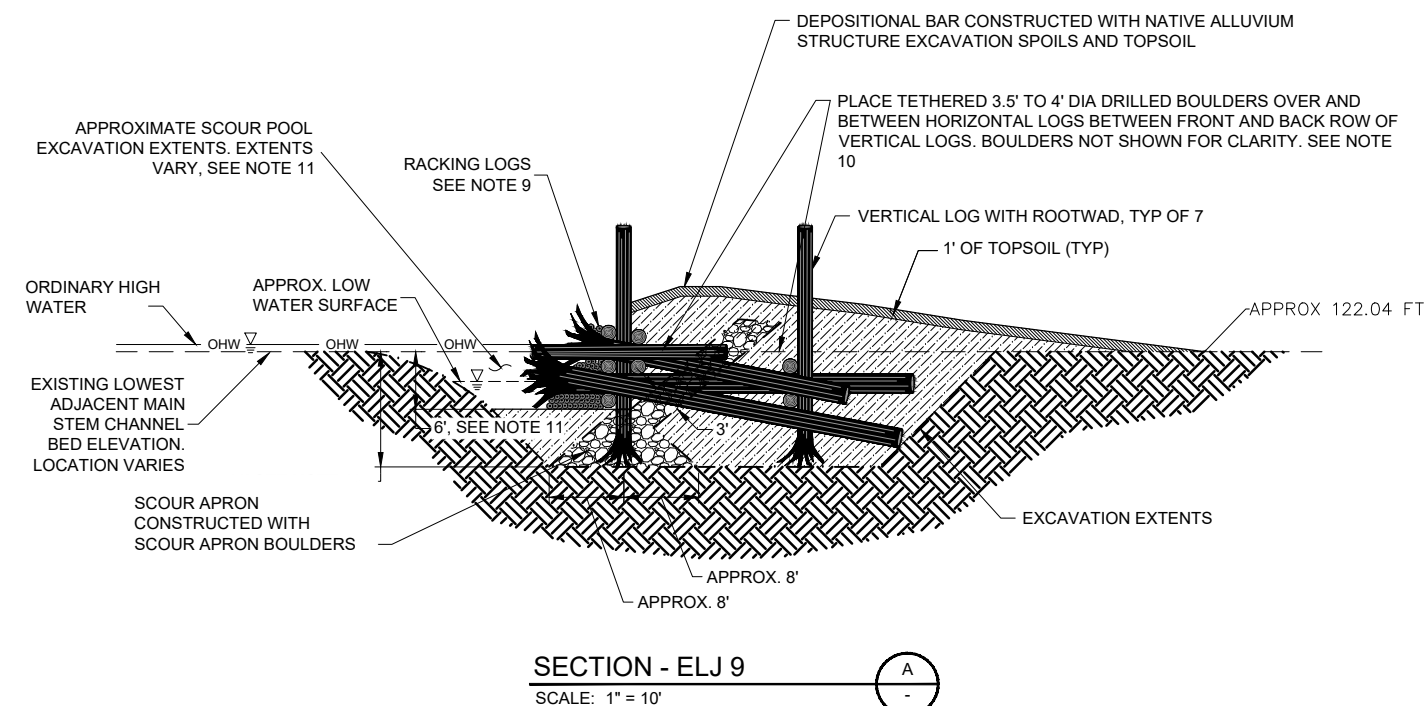
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APPLICANT: SNOHOMISH COUNTY PUD #1
PROPOSED PROJECT: CONSTRUCT 2 ELJS
LOCATION: NEAR 138TH PLACE SE

SHEET: 05 OF 11 DATE: APRIL 2026

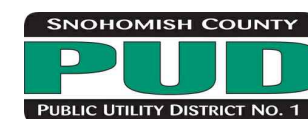


GENERAL NOTES:

1. PLANT DEPOSITIONAL BAR, SEE PLANTING PLAN.
2. DEPOSITIONAL BAR EXTENTS VARY.
3. EXISTING DEPOSITIONAL BAR AND TOP LAYERS OF EXISTING LOGS MAY REQUIRE REMOVAL AND REARRANGEMENT DURING CONSTRUCTION OF ELJ 9.
4. RACKING PLACEMENT SHALL BE COORDINATED WITH LOG LAYER PLACEMENT AND SLASH PLACEMENT TO ENSURE RACKING MEMBERS AND SLASH EXTEND THROUGH RACKING MATERIAL.
5. CAP DEPOSITIONAL BAR WITH 1' OF GRUBBED OR IMPORTED TOP SOIL TO THE EXTENTS SHOWN ON PLANS.
6. EXISTING WOODY DEBRIS SHALL BE CLEARED AND STOCKPILED FOR USE AS RACKING OR SLASH AS SUITABLE.
7. EXCAVATION SPOILS SHALL BE STOCKPILED TO ALLOW LOG LAYER PLACEMENT AND CONSTRUCTION ACCESS.
8. ACCOUNT FOR TEMPORARY EXCAVATION EXTENTS WHEN LOCATION WORK AREA ISOLATION.
9. RACKING LOGS SHOWN IN THE SECTION SHALL BE INSTALLED WITH APPROXIMATELY 1/3 OF THE LOGS ON THE UPSTREAM FACE OF THE ELJ AND PERPENDICULAR TO THE FLOW, 1/3 PARALLEL TO THE FLOW AND EXTENDING INTO THE CORE OF THE STRUCTURE AND 1/3 PLACED IN RANDOM ORIENTATIONS. PLACEMENT SHALL PRODUCE AN INTERLOCKING/WOVEN EFFECT BETWEEN THE LOG MEMBERS, RACKING, AND SLASH WITH MINIMIZED VOIDS.
10. PLACE TETHERED BOULDERS AS SHOWN ON STRUCTURE LAYERING PLAN, SHEET 07.
11. SCOUR POOL EXTENTS WILL VARY FOR EACH STRUCTURE.
12. DEPTH TO TOE OF EXCAVATION SHALL BE MEASURED FROM THE ADJACENT MAINSTEM CHANNEL BOTTOM



SHANNON & WILSON



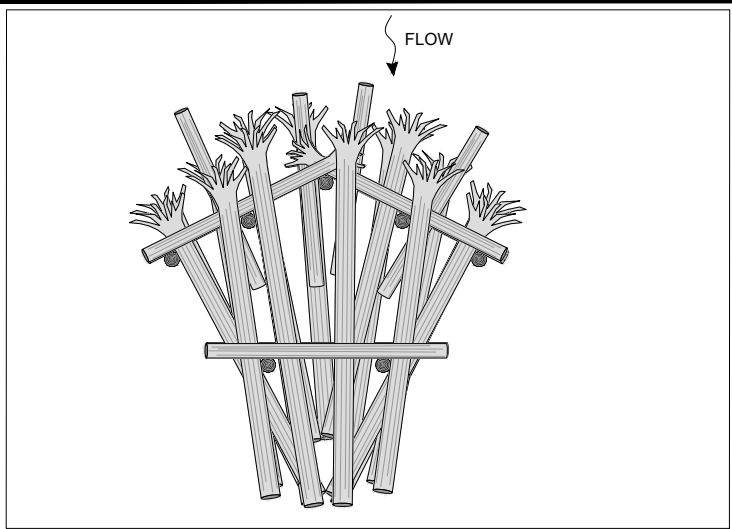
SNOHOMISH PUBLIC UTILITIES DISTRICT NO. 1
ATTN: MANAGER OF NATURAL RESOURCES
P.O. BOX 1107, EVERETT, WA 98201
PHONE: 425-783-1841

ELJ 9

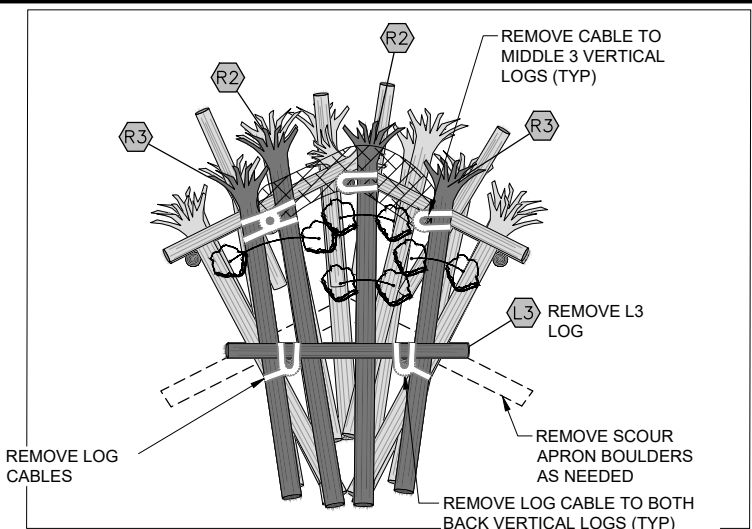
C-06

REFERENCE NO:
APPLICANT: SNOHOMISH COUNTY PUD #1
PROPOSED PROJECT: CONSTRUCT 2 ELJS
LOCATION: NEAR 138TH PLACE SE

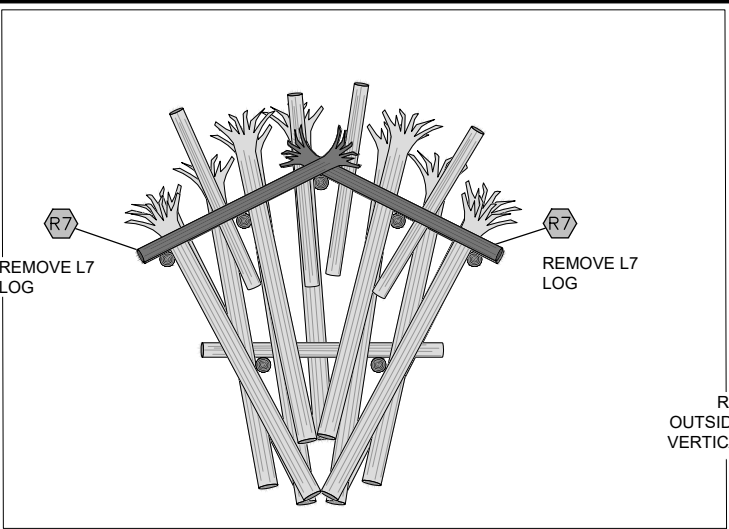
SHEET: 06 OF 11 DATE: APRIL 2026



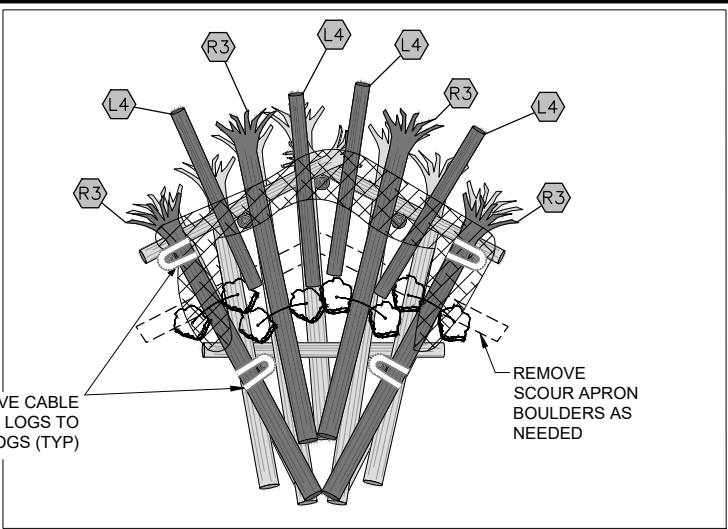
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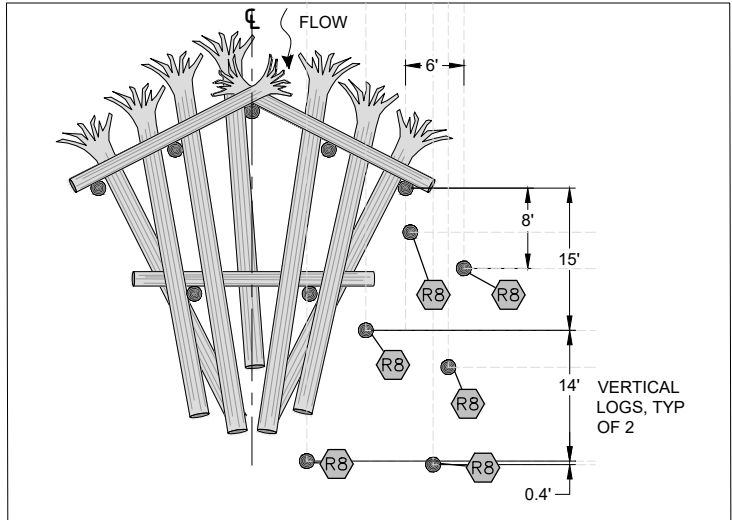
DEMO 1



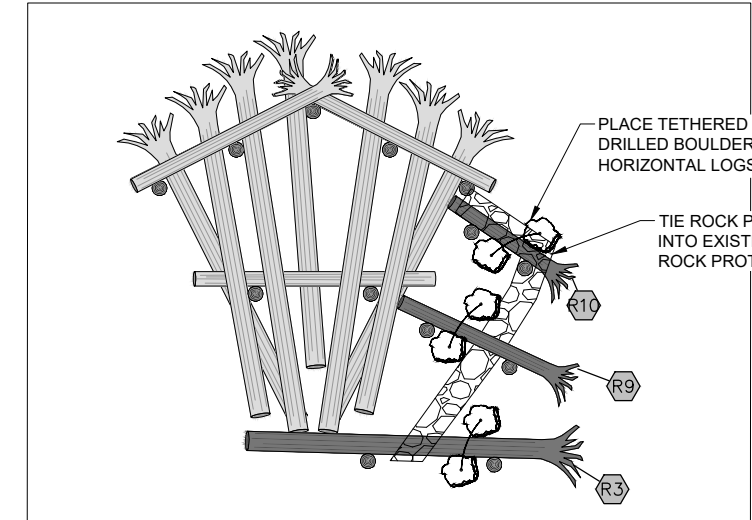
DEMO 2



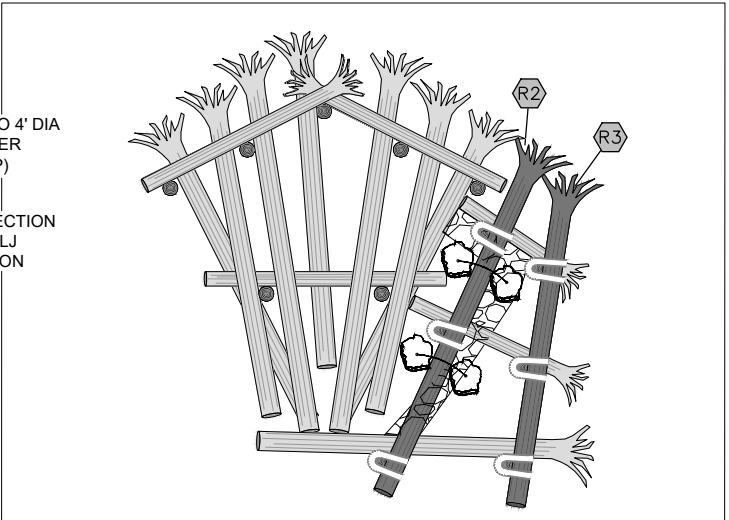
DEMO 3



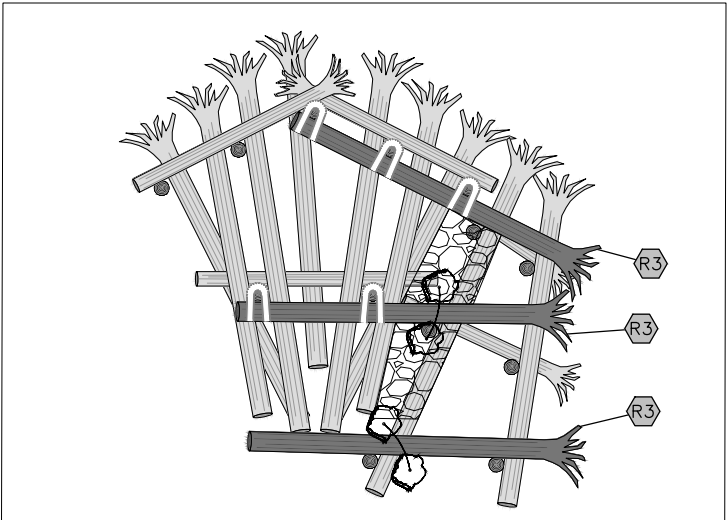
RECONSTRUCTION LAYER 1



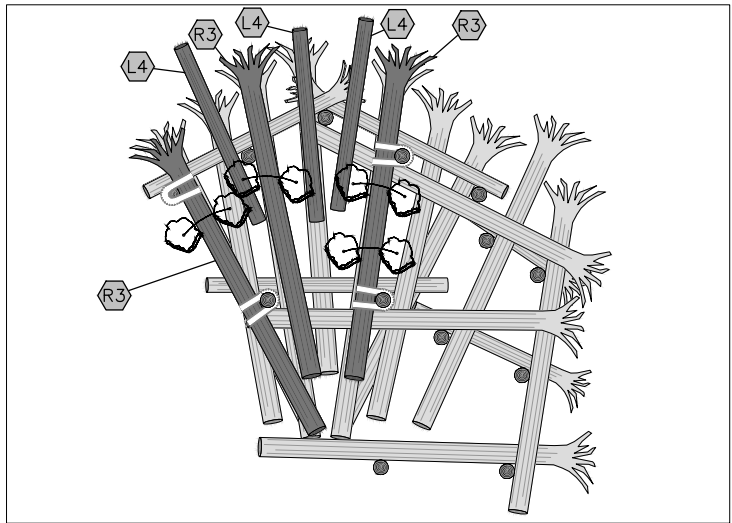
RECONSTRUCTION LAYER 2



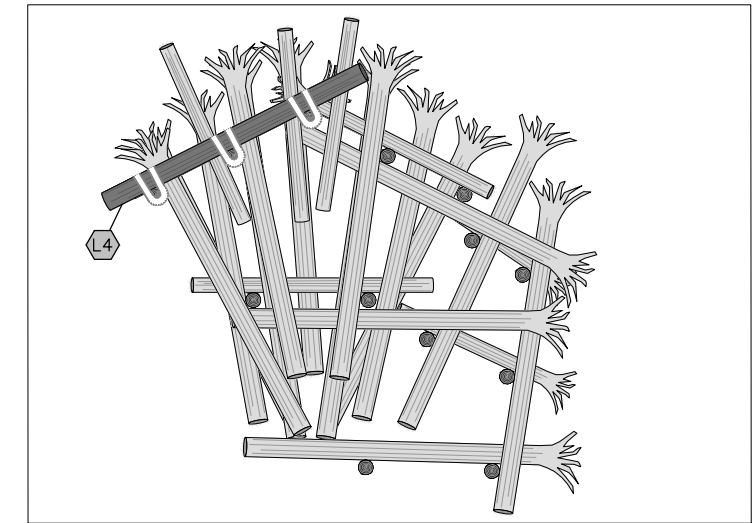
RECONSTRUCTION LAYER 3



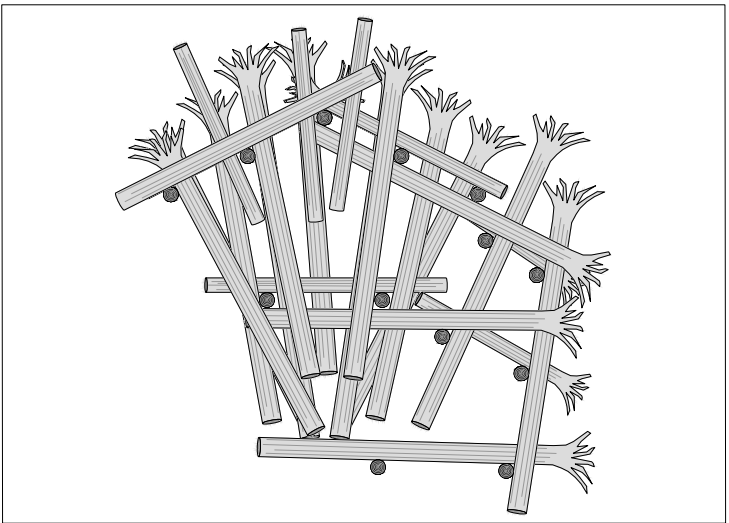
RECONSTRUCTION LAYER 4



RECONSTRUCTION LAYER 5



RECONSTRUCTION LAYER 6



COMPLETE

GENERAL NOTES:

1. SEE SHEET 09 FOR GENERAL NOTES
2. PROJECT REPRESENTATIVE WILL ASSESS THE CONDITION OF THE REMOVED EXISTING LOGS AND REPLACE WITH IMPORTED LOGS WHEN THE LOG CONDITIONS ARE DETERMINED TO BE UNSATISFACTORY.



SHANNON & WILSON



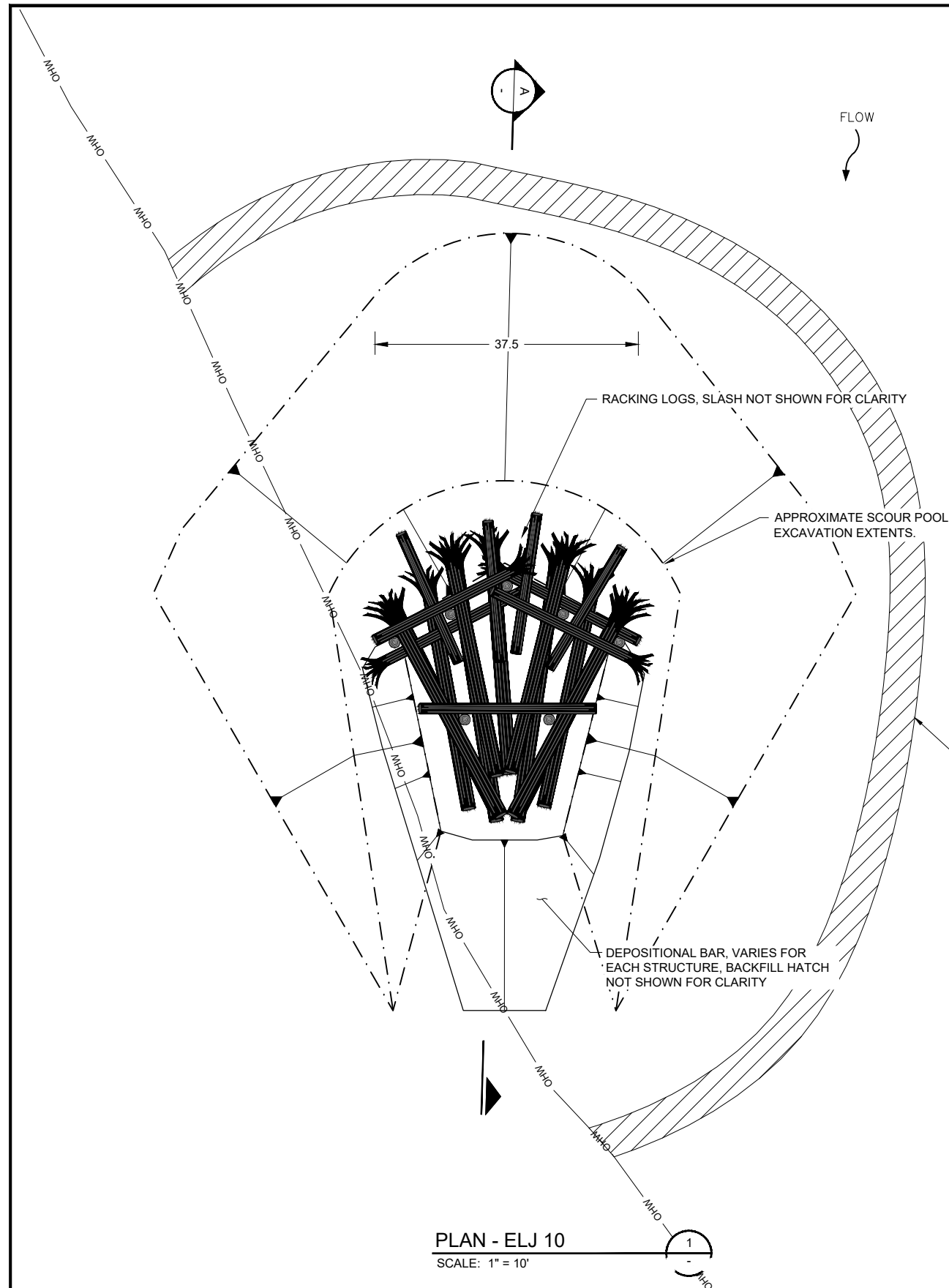
SNOHOMISH PUBLIC UTILITIES DISTRICT NO. 1
ATTN: MANAGER OF NATURAL RESOURCES
P.O. BOX 1107, EVERETT, WA 98201
PHONE: 425-783-1841

ELJ 9 LAYERING PLAN

C-07

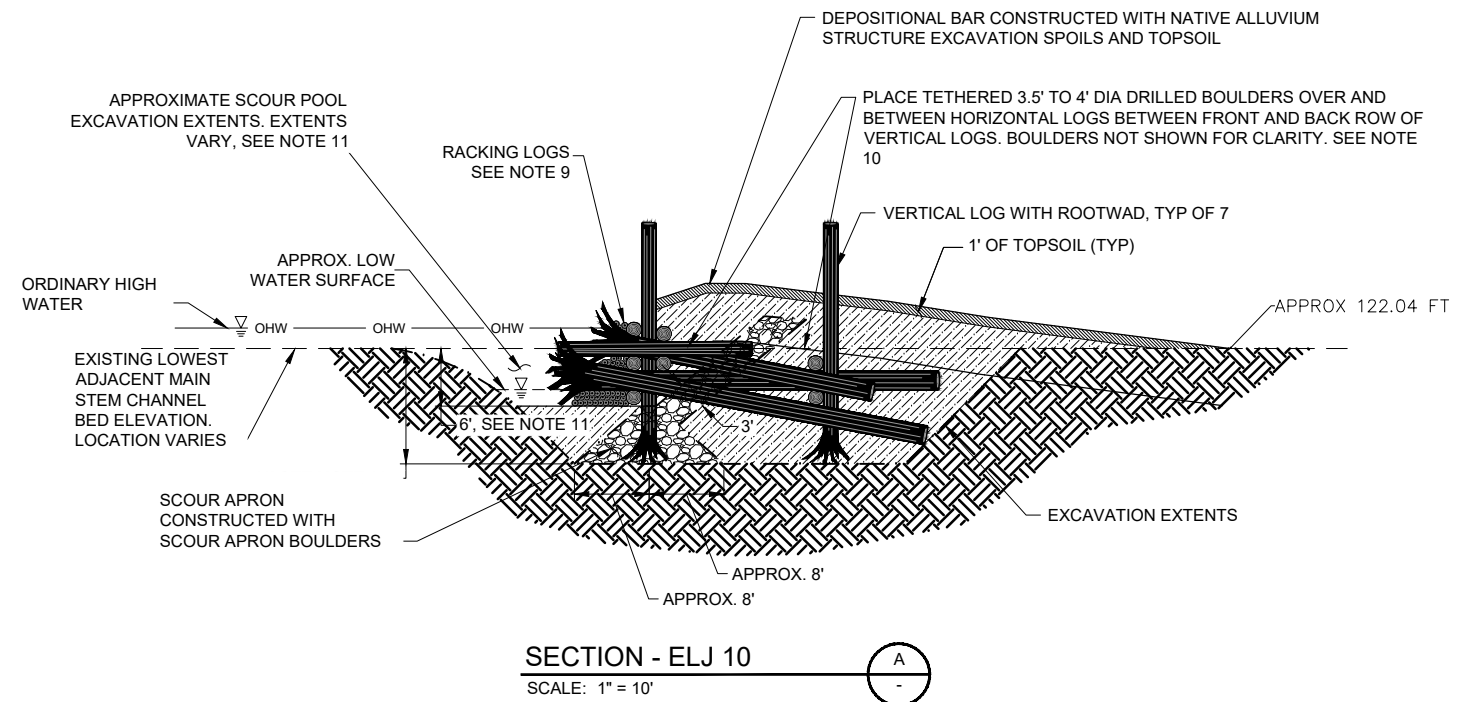
REFERENCE NO:
APPLICANT: SNOHOMISH COUNTY PUD #1
PROPOSED PROJECT: CONSTRUCT 2 ELJS
LOCATION: NEAR 138TH PLACE SE

SHEET: 07 OF 11 DATE: APRIL 2026

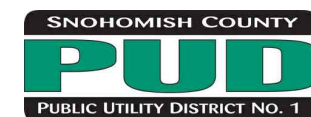


GENERAL NOTES:

1. PLANT DEPOSITIONAL BAR, SEE PLANTING PLAN.
2. DEPOSITIONAL BAR EXTENTS VARY.
3. CONTRACTOR SHALL IDENTIFY FINAL GRADING EXTENTS 3 DAYS PRIOR TO COMPLETION OF GRADING ACTIVITIES.
4. RACKING PLACEMENT SHALL BE COORDINATED WITH LOG LAYER PLACEMENT AND SLASH PLACEMENT TO ENSURE RACKING MEMBERS AND SLASH EXTEND THROUGH RACKING MATERIAL.
5. CAP DEPOSITIONAL BAR WITH 1' OF GRUBBED OR IMPORTED TOP SOIL TO THE EXTENTS SHOWN ON PLANS.
6. EXISTING WOODY DEBRIS SHALL BE CLEARED AND STOCKPILED FOR USE AS RACKING OR SLASH AS SUITABLE.
7. EXCAVATION SPOILS SHALL BE STOCKPILED TO ALLOW LOG LAYER PLACEMENT AND CONSTRUCTION ACCESS.
8. CONTRACTOR SHALL USE SHORING OR EXTRA EXCAVATION AS REQUIRED FOR LOCAL SOIL CONDITIONS ENCOUNTERED. SHORING EXTENTS MAY VARY DEPENDING ON CONSTRUCTION TECHNIQUES USED AND LOCAL SOIL PROPERTIES ENCOUNTERED.
9. RACKING LOGS SHOWN IN THE SECTION SHALL BE INSTALLED WITH APPROXIMATELY 1/3 OF THE LOGS ON THE UPSTREAM FACE OF THE ELJ AND PERPENDICULAR TO THE FLOW, 1/3 PARALLEL TO THE FLOW AND EXTENDING INTO THE CORE OF THE STRUCTURE AND 1/3 PLACED IN RANDOM ORIENTATIONS. PLACEMENT SHALL PRODUCE AN INTERLOCKING/WOVEN EFFECT BETWEEN THE LOG MEMBERS, RACKING, AND SLASH WITH MINIMIZED VOIDS.
10. PLACE TETHERED BOULDERS AS SHOWN ON STRUCTURE LAYERING PLAN, SHEET 09.
11. SCOUR POOL EXTENTS WILL VARY.
12. DEPTH TO TOE OF EXCAVATION SHALL BE MEASURED FROM THE ADJACENT MAINSTEM CHANNEL BOTTOM



SHANNON & WILSON



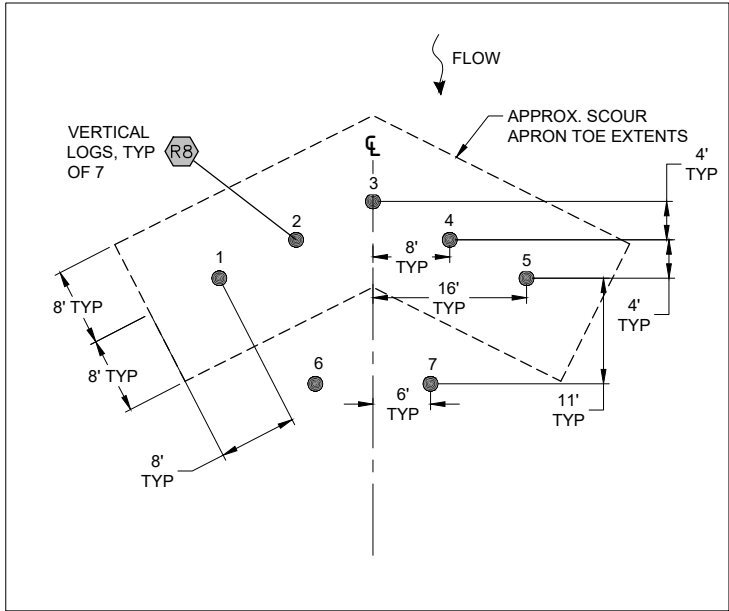
SNOHOMISH PUBLIC UTILITIES DISTRICT NO. 1
ATTN: MANAGER OF NATURAL RESOURCES
P.O. BOX 1107, EVERETT, WA 98201
PHONE: 425-783-1841

ELJ 10

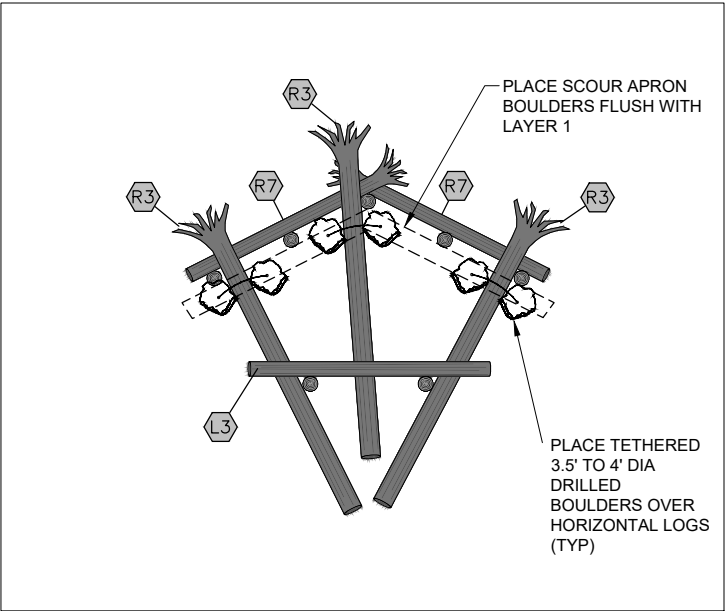
C-08

REFERENCE NO:
APPLICANT: SNOHOMISH COUNTY PUD #1
PROPOSED PROJECT: CONSTRUCT 2 ELJS
LOCATION: NEAR 138TH PLACE SE

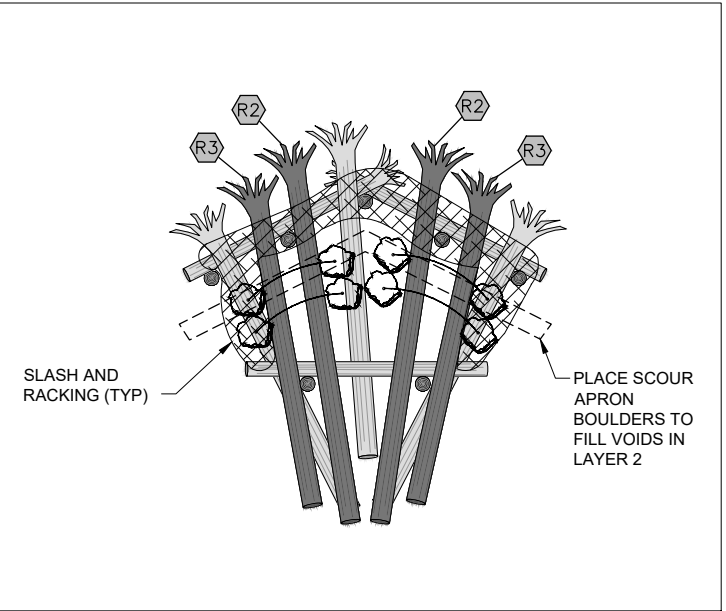
SHEET: 08 OF 11 DATE: APRIL 2026



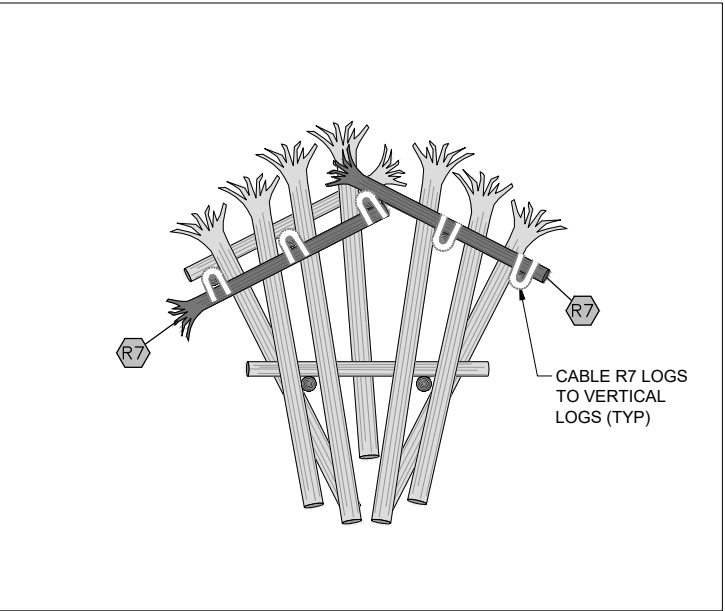
VERTICAL LOGS AND SCOUR APRON



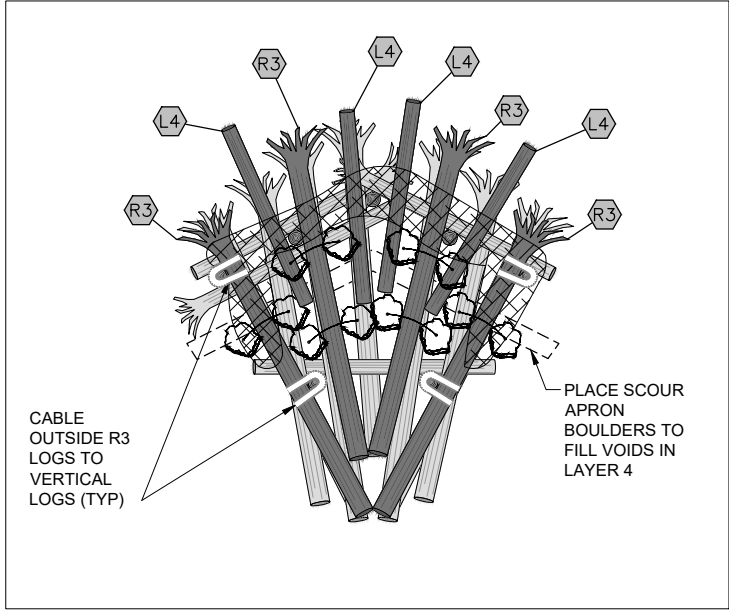
LAYER 1



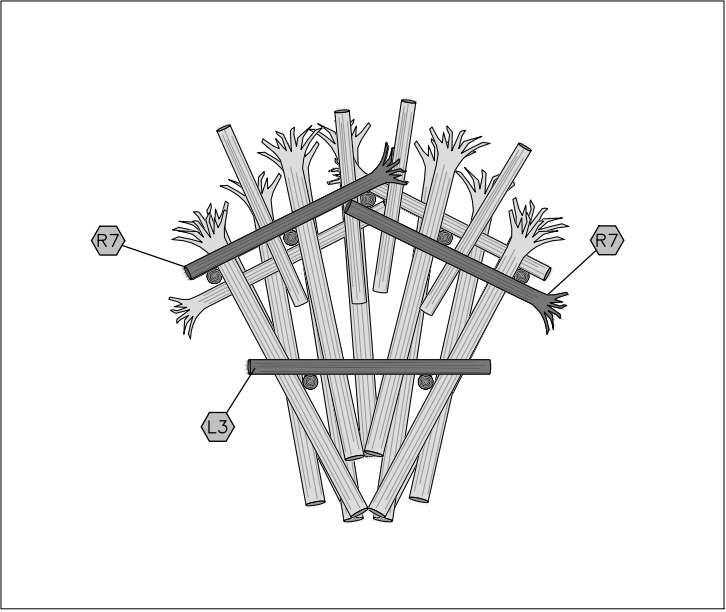
LAYER 2



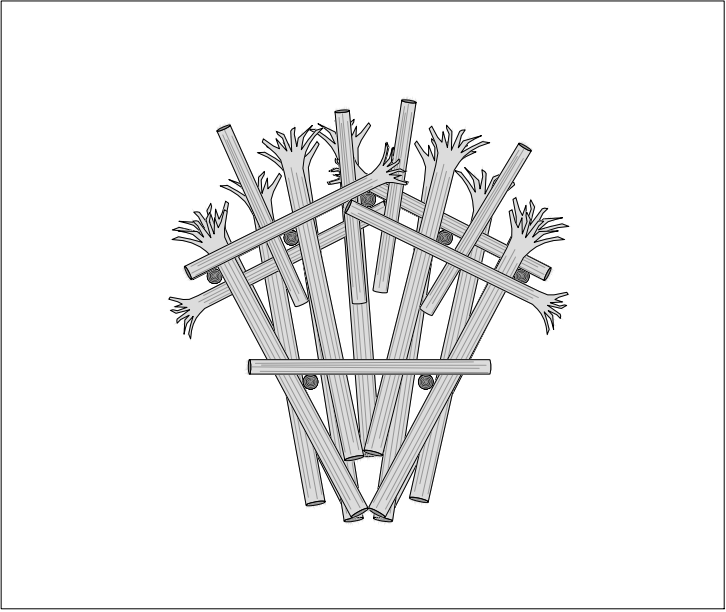
LAYER 3



LAYER 4



LAYER 5



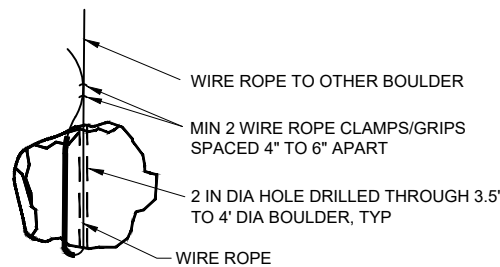
COMPLETE

GENERAL NOTES:

- ENGINEER SHALL STAKE 1) LOCATION OF TWO VERTICAL LOGS, OR 2) OFFSETS FOR TWO VERTICAL LOGS IF LOCATION IS NOT ACCESSIBLE. STAKES SHALL INDICATE WHICH PILE THE STAKE REFERS TO. CONTRACTOR SHALL CONFIRM LOCATION OF VERTICAL LOGS WITH ENGINEER PRIOR TO BEGINNING ELJ CONSTRUCTION ACTIVITIES.
- LOG MATERIALS SHALL BE PLACED AT THE LOCATIONS, ELEVATIONS AND ORIENTATIONS SPECIFIED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER. TRIM LOGS TO FIT AS REQUIRED.
- PLACE SLASH OVER AND BETWEEN KEY LOGS AND PILES AS SHOWN FOR EACH LAYER FOLLOWING PLACEMENT OF KEY LOGS AND RACKING LOGS. PLACE APPROXIMATELY 2' TO 3' OF NATIVE ALLUVIUM OVER 1/2 THE WIDTH OF SLASH TO SECURE IN PLACE SUCH THAT SLASH IS VISIBLE FOLLOWING CONSTRUCTION. COORDINATE WITH ENGINEER PRIOR TO PLACING RACKING AND SLASH.
- CABLE VERTICAL LOGS AT CONTACT POINTS. CABLE LASHING SYSTEM SHALL BE PUT IN TENSION TO 1/4 OF ITS WORKING LOAD LIMIT AND MAINTAINED DURING CABLE CLAMPING.
- LOCATION OF TETHERED BOULDERS SHOWN IS APPROXIMATE AND WILL VARY BASED ON ROCK SIZE AND LOG DIAMETER. PLACE TETHERED BOULDERS AS CLOSE TO LOCATION SHOWN ON THESE LAYERING PLANS, OR AS DIRECTED BY THE ENGINEER IF THEIR LOCATION DIFFERS SIGNIFICANTLY THAN AS SHOWN. ENGINEER TO APPROVE OF FINAL LOCATION.
- WIRE ROPE LENGTH REQUIRED WILL VARY BASED ON LOG SIZES USED.

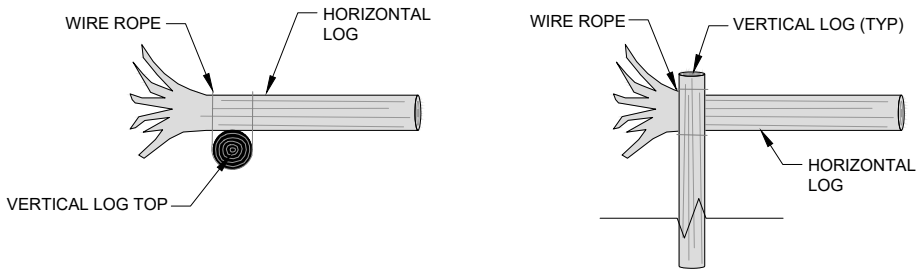


	ELJ 10 LAYERING PLAN C-09	
SNOHOMISH PUBLIC UTILITIES DISTRICT NO. 1 ATTN: MANAGER OF NATURAL RESOURCES P.O. BOX 1107, EVERETT, WA 98201 PHONE: 425-783-1841	REFERENCE NO: APPLICANT: SNOHOMISH COUNTY PUD #1 PROPOSED PROJECT: CONSTRUCT 2 ELJS LOCATION: NEAR 138TH PLACE SE	
	SHEET: 09 OF 11 DATE: APRIL 2026	



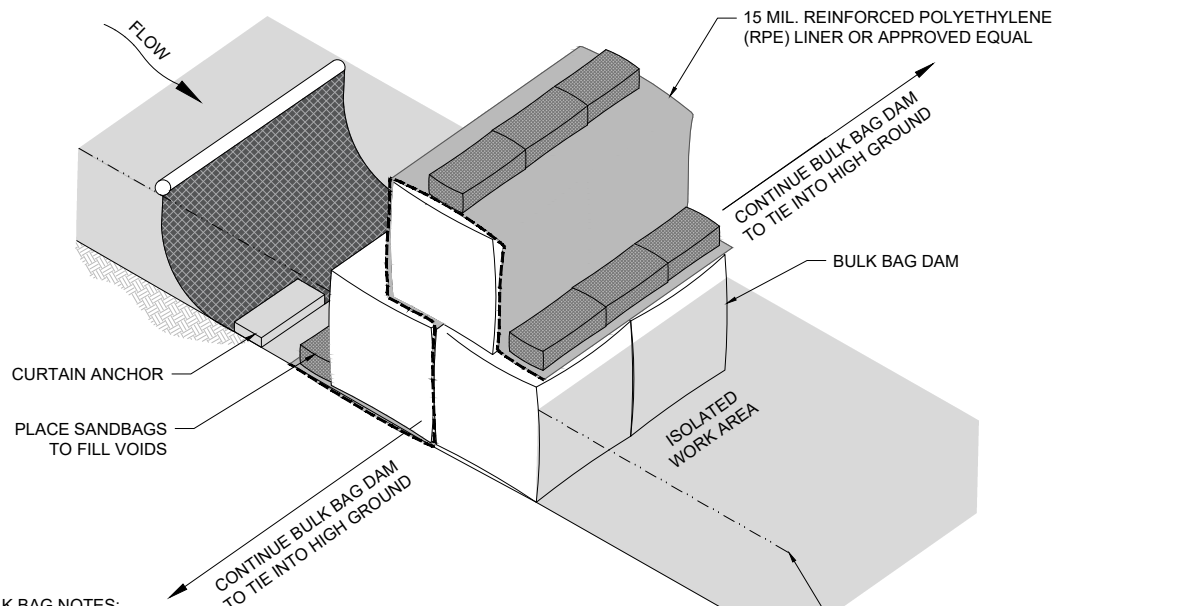
DETAIL - TETHERED 3.5' TO 4' DIA
DRILLED BOULDER

SCALE: NTS



DETAIL - LASHING

SCALE: NTS



STACKED BULK BAG NOTES:

1. MINIMUM 1FT FREEBOARD. CONTRACTOR SHALL CONSTRUCT ISOLATION DAM HEIGHT TO MAINTAIN FREEBOARD BASED ON WEATHER AND STREAM/RIVER FORECASTS AND PER MEANS AND METHODS.

DETAIL - STACKED BULK BAG

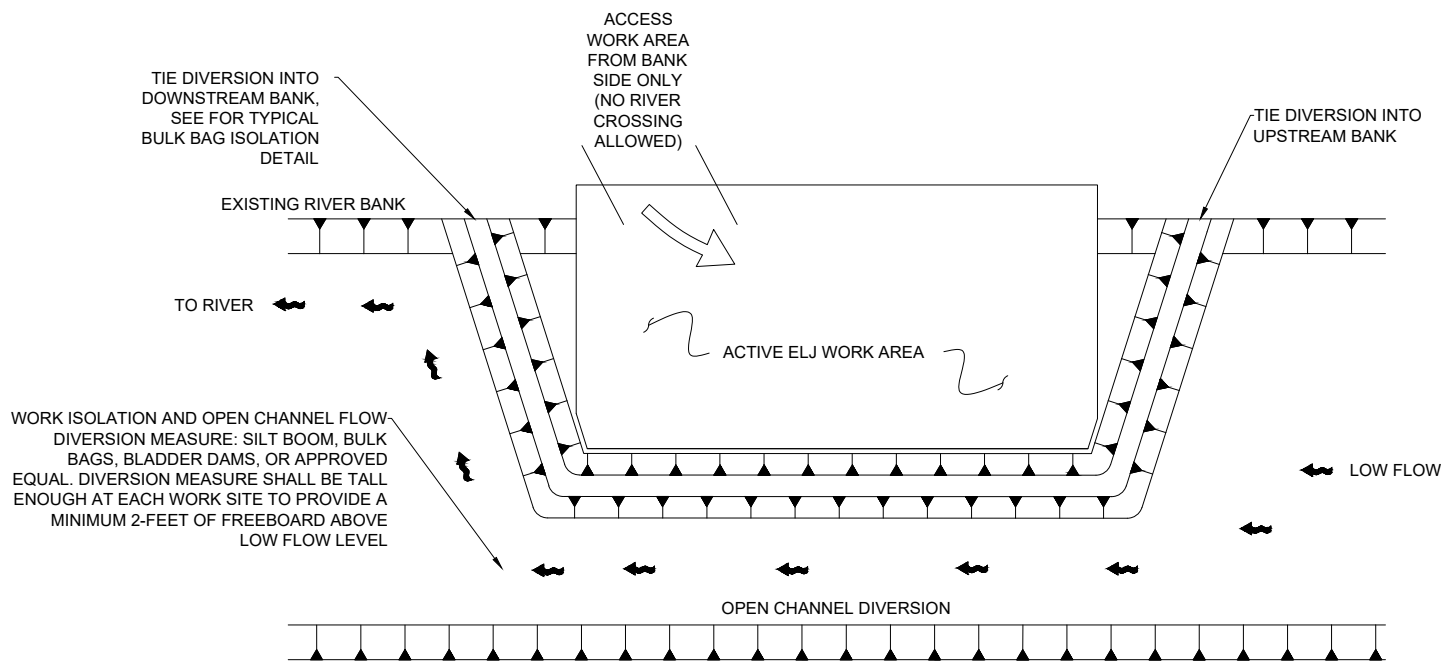
SCALE: NTS

LOG SCHEDULE - ELJ 9:

LOG TYPE	MINIMUM DIAMETER (IN)	LENGTH (FT)	ROOTWAD	TOTAL QTY PER ELJ
R2	24+	40	YES	3
R3	24+	35	YES	14
R7	12-24	25	YES	2
R8	18-24	25	YES	6
R9	18-24	20	YES	1
R10	18-24	15	YES	1
L3	16-24	25	NO	1
L4	16-24	20	NO	8
RACKING	4-16	15-30	OPTIONAL	60
SLASH				120 CY

LOG SCHEDULE - ELJ 10:

LOG TYPE	MINIMUM DIAMETER (IN)	LENGTH (FT)	ROOTWAD	TOTAL QTY PER ELJ
R2	24+	40	YES	2
R3	24+	35	YES	9
R7	12-24	25	YES	6
R8	18-24	25	YES	7
L3	16-24	25	NO	2
L4	16-24	20	NO	4
RACKING	4-16	15-30	OPTIONAL	60
SLASH				120 CY



DETAIL - ELJ WORK AREA ISOLATION SCHEMATIC

SCALE: NTS

ELJ WORK AREA ISOLATION NOTES:

1. DIVERSION OF WATER AND HANDLING OF STREAM FLOW WILL BE REQUIRED DURING CONSTRUCTION. THE PLANS ON THIS DRAWING SHOW A SUGGESTED METHOD FOR THE CONTRACTOR TO ROUTE WATER AROUND THE WORK SITE. ACTUAL SITE CONDITIONS MAY REQUIRE ADJUSTMENTS TO THE PLANS SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING AND SUBMITTING A TEMPORARY STREAM FLOW DIVERSION PLAN TO ALLOW CONSTRUCTION TO BE PERFORMED IN THE DRY.
2. THE ACTUAL DIVERSION PLAN (BY THE CONTRACTOR) SHALL BE DESIGNED TO ALLOW PASSAGE OF STREAM FLOW WITHOUT OVERTOPPING THE UPSTREAM DAM. THE CONTRACTOR SHALL CHOOSE THE LEVEL OF PROTECTION.
3. ANY DAMAGE TO THE WORK RESULTING FROM FAILURE OR INADEQUACY OF THE DIVERSION SYSTEM SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL NOT BE ENTITLED TO ANY ADDITIONAL PAYMENT FOR COSTS ASSOCIATED WITH FAILURE OF THE DIVERSION SYSTEM.

SHANNON & WILSON



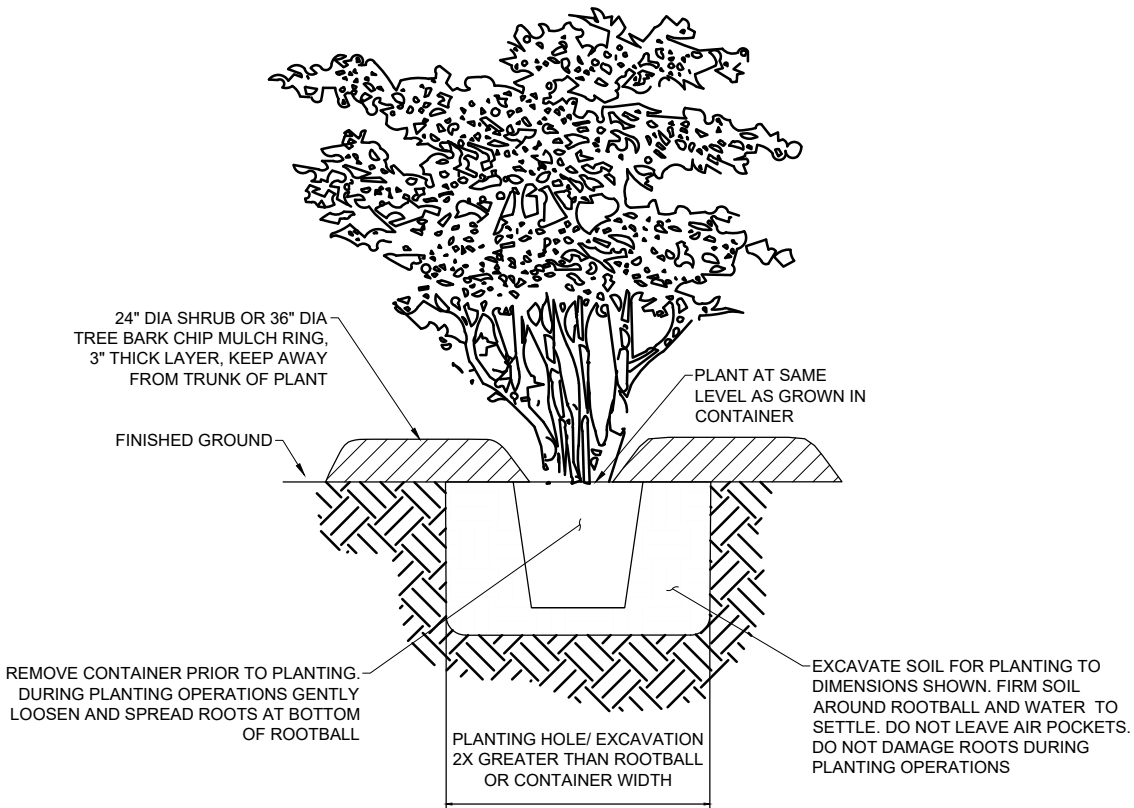
SNOHOMISH PUBLIC UTILITIES DISTRICT NO. 1
ATTN: MANAGER OF NATURAL RESOURCES
P.O. BOX 1107, EVERETT, WA 98201
PHONE: 425-783-1841

LAYERING DETAILS

C-10

REFERENCE NO:
APPLICANT: SNOHOMISH COUNTY PUD #1
PROPOSED PROJECT: CONSTRUCT 2 ELJS
LOCATION: NEAR 138TH PLACE SE

SHEET: 10 OF 11 DATE: APRIL 2026

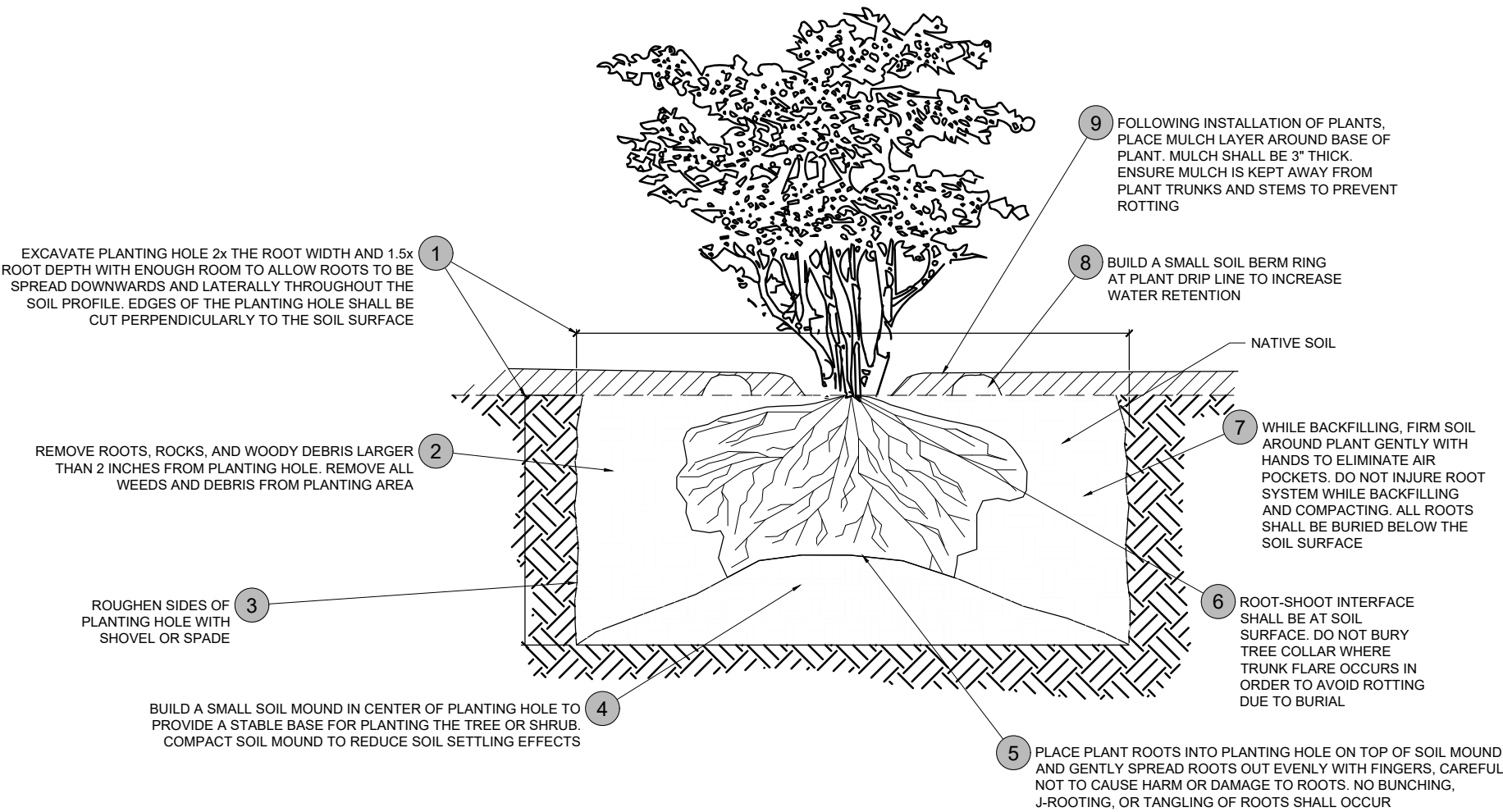


DETAIL - CONTAINER TREE AND SHRUB PLANTING

SCALE: NTS

1
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PLANT SPECIES, SIZE, AND SPACING FOR WETLAND AND RIPARIAN BUFFER		
WETLAND - 190 SQUARE FEET		
SPECIES	SIZE	ON-CENTER SPACING
RED-OSIER DOGWOOD (CORNUS SERICEA)	4-FOOT LIVE STAKE	2 FEET
SITKA WILLOW (SALIX SITCHENSIS)	4-FOOT LIVE STAKE	2 FEET
SLOUGH SEDGE (CAREX OBNUPTA)	9-INCH PLUG	1 FOOT
RIPARIAN BUFFER - 14,700 SQUARE FEET		
SPECIES	SIZE	ON-CENTER SPACING
BLACK COTTONWOOD (POPULUS BALSAMIFERA)	2-GALLON POT	15 FEET
RED ALDER (ALNUS RUBRA)	2-GALLON POT	15 FEET
SALMONBERRY (RUBUS SPECTABILIS)	18-36" BARE ROOT STOCK	6 FEET
NOOTKA ROSE (ROSA NUTKANA)	18-36" BARE ROOT STOCK	6 FEET
COMMON SNOWBERRY (SYMPHORICARPOS ALBUS)	18-36" BARE ROOT STOCK	6 FEET
THIMBLEBERRY (RUBUS PARVIFLORUS)	18-36" BARE ROOT STOCK	6 FEET
HYDROSEEDING MIX FOR STAGING AREA IN BUFFER		
SPECIES	PERCENT PURE LIVE SEED	
YARROW (ACHILLEA MILLEFOLIUM)	20	
SPIKE BENTGRASS (AGROSTIS EXARATA)	15	
CALIFORNIA BROME (BROMUS CARINATUS)	10	
TUFTED HAIRGRASS (DESCHAMPSIA CAESPITOSA)	5	
BLUE WILDRYE (ELYMUS GLAUCUS)	15	
NATIVE RED FESCUE (FESTUCA RUBRA VAR. RUBRA)	15	
MEADOW BARLEY (HORDEUM BRACHYANTHERUM)	15	
STERILE POCO BARLEY (HORDEUM VULGARE VAR. POCO)	5	



DETAIL - BARE ROOT TREE OR SHRUB PLANTING

SCALE: NTS

2
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PLANTING NOTES:

- REFER TO CRITICAL AREAS REPORT AND MITIGATION PLAN (HERRERA 2026) FOR LIST OF TOTAL PLANT SPECIES, SPACING, AND QUANTITIES.
- REMOVE ALL NON-NATIVE/INVASIVE SPECIES WITHIN THE PLANTING AREAS. REMOVE BLACKBERRY ROOTBALLS. DISPOSE OFFSITE.
- DECOMPACT THE PLANTING AREAS WHERE HEAVY EQUIPMENT WAS UTILIZED.
- INSTALL CONTAINER PLANTS BETWEEN FALL AND EARLY SPRING. BAREROOT STOCK MUST BE INSTALLED IN THE WINTER.
- KEEP BAREROOT PLANTS SHADED, COOL AND COVERED AT ALL TIMES PRIOR TO PLANTING. INSTALL LIVE STAKES DURING THE WINTER DORMANT SEASON.
- DO NOT INSTALL PLANTS BELOW THE ORDINARY HIGH WATER MARK.
- FLAG ALL INSTALLED PLANTS WITH BRIGHTLY-COLORED FLAGGING.

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PLANTING SCHEDULE, NOTES AND DETAILS

C-11

REFERENCE NO:
APPLICANT:
PROPOSED PROJECT:
LOCATION:

SNOHOMISH COUNTY PUD #1
CONSTRUCT 2 ELJS
NEAR 138TH PLACE SE

SHEET: 11 OF 11
DATE: APRIL 2026