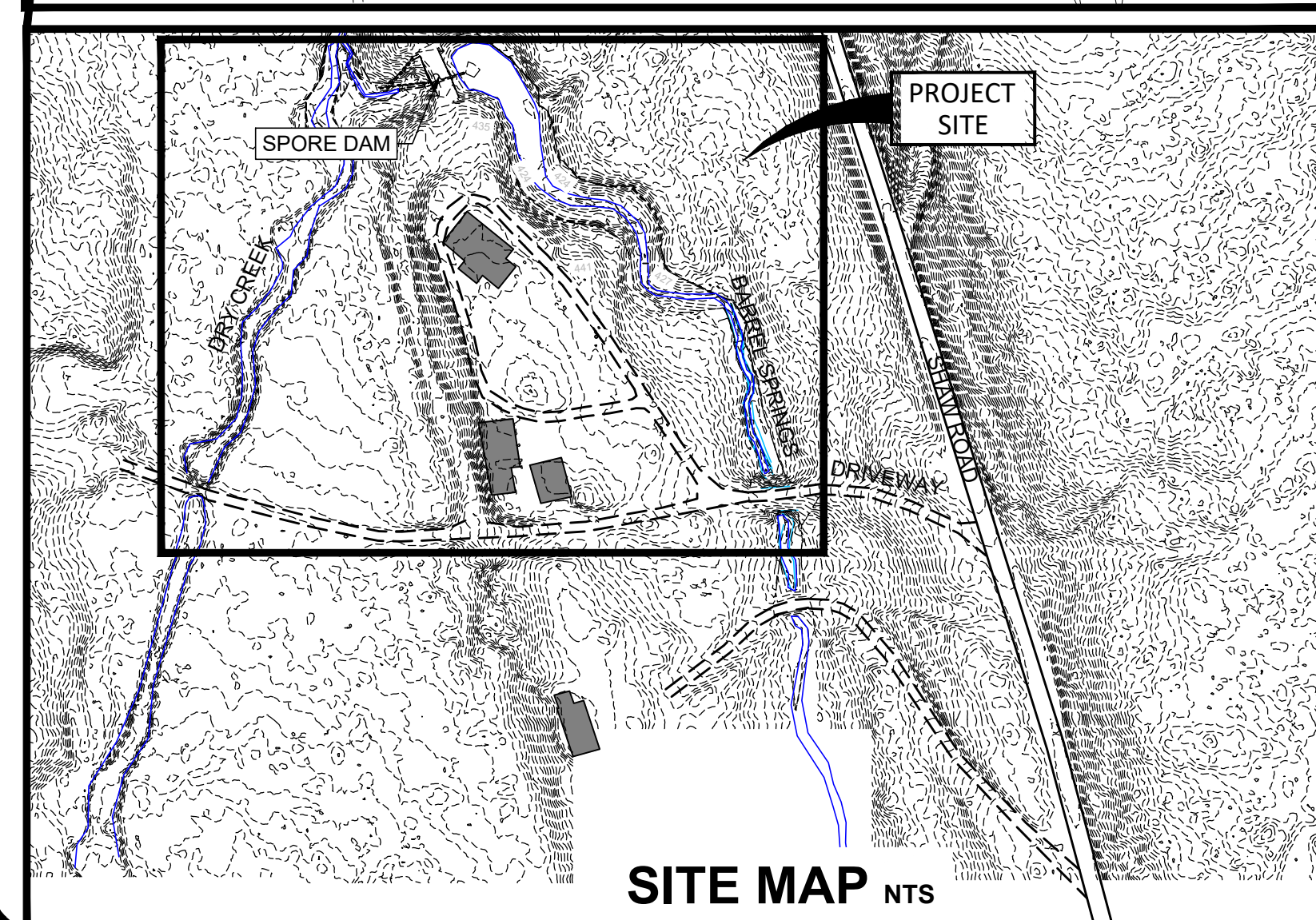
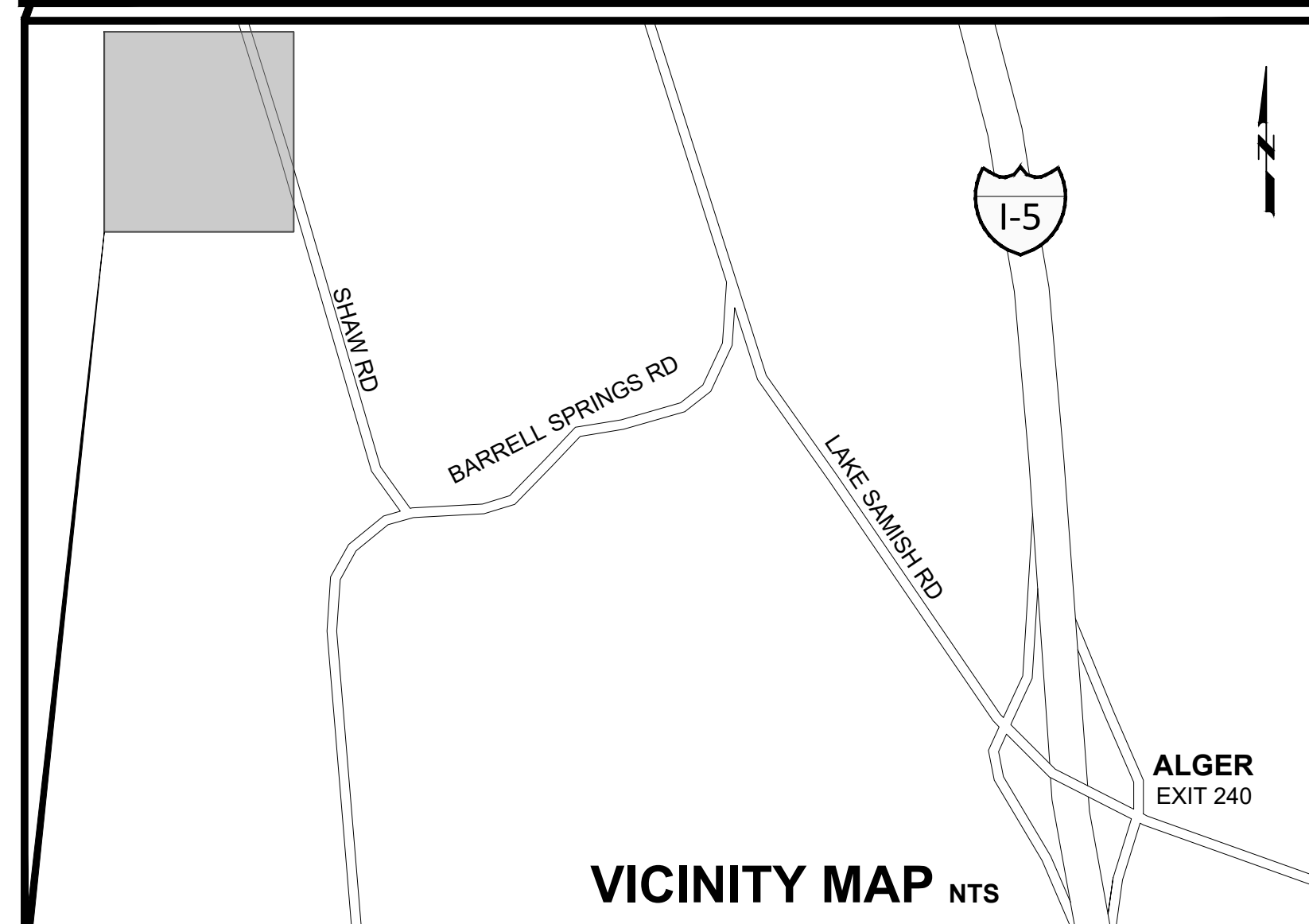
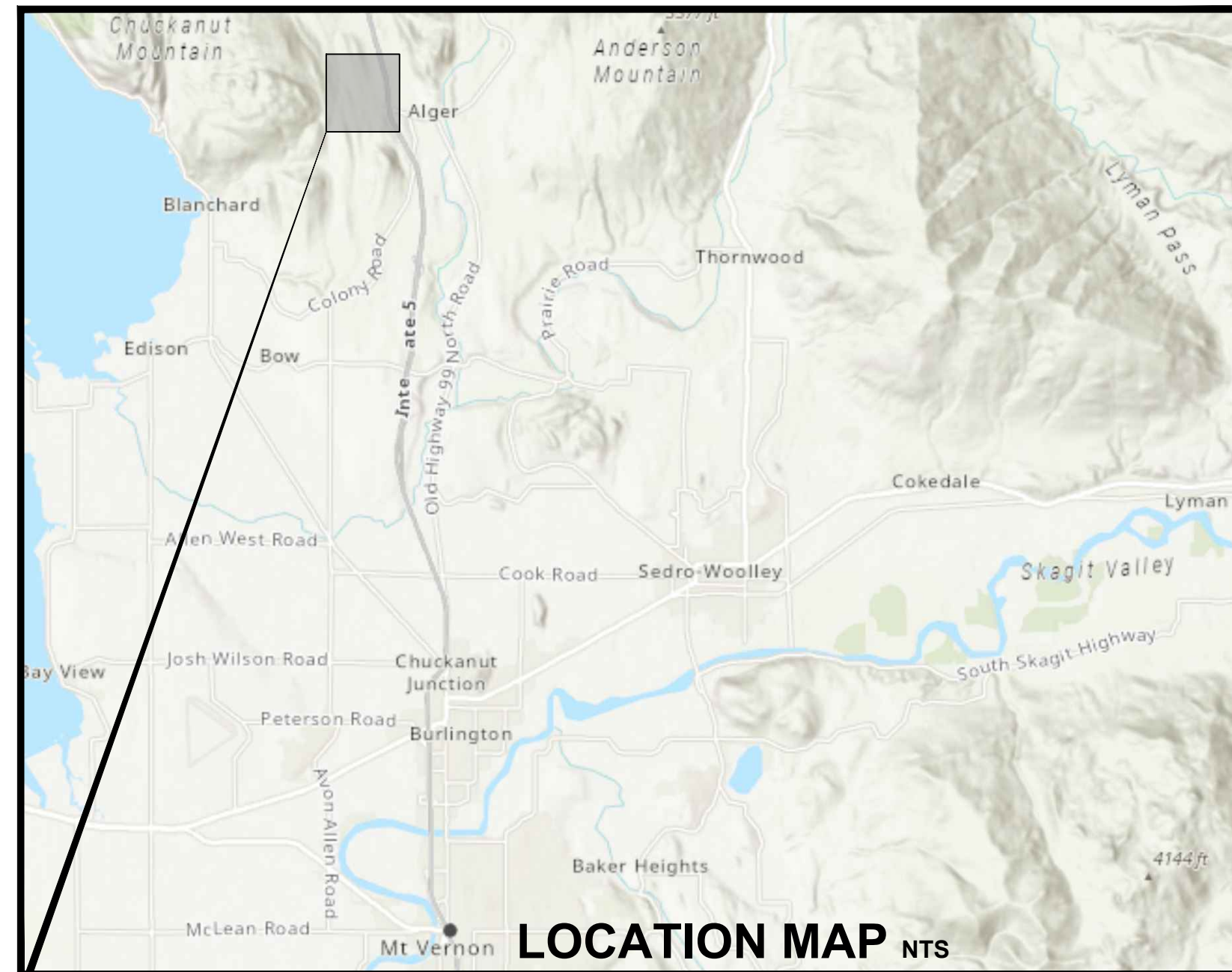


BARREL SPRINGS DAM REMOVAL AND STREAM RESTORATION PROJECT

WA402222



SITE LOCATION:
 LATITUDE: 48.630299°
 LONGITUDE: -122.372860°
 SKAGIT COUNTY, WASHINGTON
 T36N R03E SECTION12NE
 WATERBODY: BARREL SPRINGS
 TRIBUTARY OF: SAMISH RIVER



SKAGIT COUNTY OFFICIALS

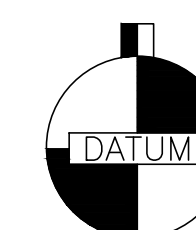
- BOARD OF COMMISSIONERS
- RON WESEN, CHAIR
 - LISA JANICKI, COMMISSIONER
 - PETER BROWNING, COMMISSIONER
- PUBLIC WORKS
- GRACE K. KANE P.E., DIRECTOR/COUNTY ENGINEER

SUMMARY OF QUANTITIES

Item Number	Spec Section	Item Description	Unit	Quantity
GENERAL REQUIREMENTS				
1	1-05.18 (SP)	RECORD DRAWINGS	LS	1
2	1-07.15	SPCC PLAN	LS	1
3	1-09.6	FORCE ACCOUNT	LS	1
4	1-09.7	MOBILIZATION/DEMOBILIZATION	LS	1
5	1-08.3	TYPE B PROGRESS SCHEDULE	LS	1
6	1-10	TEMPORARY TRAFFIC CONTROL	LS	1
EARTHWORK				
7	2-01	CLEARING AND GRUBBING	AC	0.83
8	2-02	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1
9	2-05 (SP)	REMOVE AND SALVAGE WHOLE TREE	EA	25
10	2-10 (SP)	CHANNEL GRADING	CY	1600
11	2-11	TRIMMING AND CLEANUP	LS	1
BASES				
12	4-04	CRUSHED SURFACING TOP COURSE	TN	93
MISCELLANEOUS CONSTRUCTION				
13	8-01	ESC LEAD	DAY	30
14	8-01.3(2)B	TEMPORARY SEEDING - WETLAND	AC	0.12
15	8-01.3(2)B	TEMPORARY SEEDING - UPLAND	AC	0.55
16	8-01.3(2)D	TEMPORARY MULCHING	AC	0.67
17	8-01.3(9)A2	SILT FENCE	LF	80
18	8-02.3(4)B	TOPSOIL TYPE B	CY	110
19	8-26 (SP)	STREAMBED GRAVEL	CY	40
20	8-27 (SP)	STREAMBED LOG	LS	1
21	8-31	TEMPORARY STREAM DIVERSION	LS	1
22	8-32 (SP)	SOIL DEWATERING	LS	1

PLAN SHEET INDEX

SHEET	TITLE
1	COVER, SHEET INDEX & VICINITY MAP
2	GENERAL NOTES
3	SITE OVERVIEW
4	SPORE DAM - EXISTING CONDITIONS
5	SPORE DAM - PROPOSED CONDITIONS
6	SWPPP
7	SWPPP DETAILS
8	DEWATERING PLAN
9	GRADING PLAN & PROFILE
10	GRADING CROSS SECTIONS
11	TYPICAL DETAILS
12	REVEGETATION PLAN



NAVD 88 1-800-424-5555

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 Hood River, OR 97031
 541.386.9003
 www.interfluve.com

SKAGIT COUNTY PUBLIC WORKS

1800 CONTINENTAL PLACE
 MOUNT VERNON, WA 98273-5825
 (360) 416-1400 FAX (360) 416-1405

NO.	REVISIONS	DATE

ENGINEER OF RECORD
 COUNTY ENGINEER

PROJECT NO.: WA402222
 FED. AID NO.: ----
 DESIGNED BY: MM
 CHECKED BY: MM
 DRAWN BY: MM
 APPROVED BY: MM
 PROJECT LOCATED NEAR:
 ALGER, WA
 T36N R03E SECTION12NE

BARREL SPRINGS DAM REMOVAL AND STREAM RESTORATION PROJECT

COVER, SHEET INDEX & VICINITY MAP

1 INCH SCALE BAR
 ADJUST SCALE ACCORDINGLY

SHEET
1 OF 12

GENERAL NOTES

- THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF SKAGIT COUNTY PUBLIC WORKS (SCPW), HEREAFTER REFERRED TO AS "OWNER" AND "CONTRACTOR" AND THEIR AUTHORIZED AGENTS.
- THE LOCATION OF ALL FEATURES SHOWN IS APPROXIMATE. MINOR MODIFICATIONS ARE EXPECTED TO SUIT JOB SITE DIMENSIONS OR CONDITIONS. SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
- 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.
- 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 FOR CONSTRUCTION OF ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, CURRENT EDITION UNLESS NOTED OTHERWISE. ALL REFERENCES TO THE "STANDARD SPECIFICATIONS" SHALL MEAN THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF LOCAL STREETS AND ROADS, 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.
- THE COUNTY WILL HOST A PRE-BID ON-SITE MEETING FOR THE CONTRACTOR AND SUBCONTRACTOR(S) TO EXAMINE THE PROJECT SITE PRIOR TO BIDDING SO THAT THE CONTRACTOR CAN BECOME FAMILIAR WITH THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED SUCH AS: THE NATURE AND LOCATION OF THE WORK; 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.
- THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE CONTRACT DOCUMENTS AND FOR ALL SUBMITTALS REQUIRED TO THE OWNER FOR REVIEW AND ACCEPTANCE.

PERMIT NOTES

- 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.
- ALL WORK WILL 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, UNDERSTAND AND COMPLY WITH ALL PERMIT CONDITIONS.
- 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 HYDRAULIC WORK PERMITS.
- 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.
- 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.
- 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

- 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.
- EXISTING CONDITIONS SURFACE FOR THIS PROJECT CONSISTS OF TOPOGRAPHIC SURVEY DATA COLLECTED BY INTERFLUVE IN 2021 SUPPLEMENTED WITH A 2017 LIDAR SURFACE OBTAINED FROM THE WASHINGTON DEPARTMENT OF NATURAL RESOURCES LIDAR PORTAL. THE VERTICAL DATUM IS NAVD88 (FT). THE HORIZONTAL DATUM IS WASHINGTON STATE PLANE NORTH, NAD83 (FT).

EROSION, SEDIMENT CONTROL AND WATER MANAGEMENT NOTES

- 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.
- A SEDIMENT AND EROSION CONTROL PLAN WILL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL BY OWNER AND/OR THE ENGINEER BEFORE ANY CONSTRUCTION MAY BEGIN. THE SEDIMENT AND EROSION CONTROL PLAN WILL IDENTIFY BEST MANAGEMENT PRACTICES TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
- 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.
- 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.
- IF HIGH WATER LEVEL CONDITIONS THAT CAUSE SILTATION OR EROSION ARE ENCOUNTERED DURING CONSTRUCTION, WORK SHALL STOP UNTIL THE WATER LEVEL SUBSIDES.
- 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.
- CONTRACTOR SHALL LIMIT MACHINERY MOVEMENT TO CONSTRUCTION AREAS DEFINED ON SITE PLAN OR IDENTIFIED AS ACCEPTABLE BY THE ENGINEER OR OWNER.
- ALL EXTERNAL GREASE AND OIL SHALL BE PRESSURE-WASHED OFF THE EQUIPMENT PRIOR TO TRANSPORT TO THE SITE.
- ALL EQUIPMENT OPERATING BELOW OHWM SHALL UTILIZE READILY BIODEGRADABLE VEGETABLE-BASED HYDRAULIC FLUIDS.
- 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.
- THE CONTRACTOR SHALL HAVE AN EMERGENCY SPILL KIT ONSITE AT ALL TIMES.
- NO TREES OR WETLAND VEGETATION SHALL BE REMOVED UNLESS THEY ARE SHOWN AND NOTED TO BE REMOVED ON THE PLANS OR AS DIRECTLY SPECIFIED ON-SITE BY THE PROJECT MANAGEMENT STAFF. ALL TREES CONFLICTING WITH GRADING SHALL BE REMOVED. NO GRADING SHALL TAKE PLACE WITHIN THE DRIP LINE OF TREES NOT TO BE REMOVED UNLESS OTHERWISE APPROVED.
- FOLLOWING CONSTRUCTION, SITE RESTORATION WILL INCLUDE ESTABLISHING LONG-TERM EROSION PROTECTION MEASURES. THESE MEASURES WILL INCLUDE PLANTINGS, EROSION CONTROL FABRIC, SEED, AND MULCH. EQUIPMENT AND EXCESS SUPPLIES WILL BE REMOVED AND THE WORK AREA WILL BE CLEANED. MAINTENANCE ACTIVITIES FOR THE NEWLY CONSTRUCTED RESTORATION PROJECTS ARE ANTICIPATED TO OCCUR PERIODICALLY.

- CONTRACT DOCUMENTS REFER TO THESE PLANS.
- CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE ALL WORK AS INDICATED IN THE CONTRACT DOCUMENTS.
- SOILS AT THE SITE CONTAIN SOFT SILT, CLAY AND HIGH GROUNDWATER AND MAY REQUIRE EQUIPMENT MATS TO SUPPORT CONSTRUCTION EQUIPMENT. CONSOLIDATION OF THE GROUND SURFACE SHOULD BE EXPECTED. CONTRACTOR IS RESPONSIBLE FOR DETERMINING NEED FOR, DESIGNING, PROCURING, INSTALLING, USING AND REMOVING ANY EQUIPMENT MATS NEEDED TO ALLOW FOR EQUIPMENT OPERATION SUFFICIENT TO CONSTRUCT THE PROJECT.
- ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO PROCEEDING WITH THE WORK.
- 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.
- ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
- 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.

CONSTRUCTION NOTES

- CONTRACT DOCUMENTS REFER TO THESE PLANS.
- CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE ALL WORK AS INDICATED IN THE CONTRACT DOCUMENTS.
- SOILS AT THE SITE CONTAIN SOFT SILT, CLAY AND HIGH GROUNDWATER AND MAY REQUIRE EQUIPMENT MATS TO SUPPORT CONSTRUCTION EQUIPMENT. CONSOLIDATION OF THE GROUND SURFACE SHOULD BE EXPECTED. CONTRACTOR IS RESPONSIBLE FOR DETERMINING NEED FOR, DESIGNING, PROCURING, INSTALLING, USING AND REMOVING ANY EQUIPMENT MATS NEEDED TO ALLOW FOR EQUIPMENT OPERATION SUFFICIENT TO CONSTRUCT THE PROJECT.
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- THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, ROADWAY, DRAINAGE WAYS, PRIVATE BRIDGE, CULVERTS, AND VEGETATION UNTIL SUCH ITEMS ARE TO BE DISTURBED OR REMOVED AS INDICATED ON THE CONTRACT DOCUMENTS.
- 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.
- THE PLANS REPRESENT THE PROJECT. THEY DO NOT INDICATE THE METHOD OF ALL CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT STRUCTURES, WORK, THE ENVIRONMENT, AND THE PUBLIC DURING CONSTRUCTION.
- MATERIAL SHALL NOT BE STORED OUTSIDE OF IDENTIFIED STAGING AREAS. THE CONTRACTOR SHALL USE ONLY DESIGNATED SPECIFIC 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.

ABBREVIATIONS

APPROX	APPROXIMATE
CFS	CUBIC FEET PER SECOND
GPM	GALLONS PER MINUTE
LBS	POUNDS
MIN	MINIMUM
MAX	MAXIMUM
FT	FEET
LF	LINEAR FEET
SF	SQUARE FEET
SY	SQUARE YARDS
CY	CUBIC YARDS
AC	ACRES
OC	ON CENTER
PLS	PURE LIVE SEED
CL	CENTERLINE
XS	CROSS SECTION
AVE	AVERAGE OR AVENUE
ST	STREET
NTS	NOT TO SCALE
CS	CONTROL SUVERY
CSRPC	CONTROL SURVEY RED PLASTIC CAP
DISC	SURFACE MONUMENT DISC
CSHT	CHECK SHOT
LT	LEFT
RT	RIGHT
N	NORTHING
E	EASTING
PI	POINT OF INTERSECTION
PVI	POINT OF VERTICAL INTERSECTION
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
SSMH	SANITARY SEWER MANHOLE
TRIB	TRIBUTARY
LWM	LARGE WOODY MATERIAL
OHW	ORDINARY HIGH WATER
WS	WATER SURFACE
RR	RAILROAD
NB	NORTHBOUND
SB	SOUTHBOUND
CNG	CASCADE NATURAL GAS
HVF	HIGH VISIBILITY FENCE
TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
SWPPP	STORMWATER POLLUTION PREVENTION PLAN
COB	CITY OF BELLINGHAM
WCC	WASHINGTON CONSERVATION CORPS
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
B2B	BAY TO BAKER
PSE	Pacific Surveying & Engineering
TYP	TYPICAL
EL	ELEVATION
IE	INVERT ELEVATION
REINF	REINFORCED
CONC	CONCRETE
EXIST	EXISTING

GENERAL LEGEND

- CONTOUR, 1-FT, EXIST
- GRAVEL DRIVEWAY
- - - - - OLD ROADS TO BE UTILIZED
- OHW --- ORDINARY HIGH WATER
- [Green Box] DELINEATED WETLAND
- [Star Symbol] EXISTING TREE
- [Hatched Box] STAGING & STOCKPILE AREA
- [Gravel Box] STREAM GRAVEL
- [Blue Oval] POOL
- [Wood Symbol] LARGE WOOD PLACEMENTS



501 Portway Avenue, Suite 101
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Skagit County Public Works
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400 FAX (360) 416-1405

ENGINEER OF RECORD
COUNTY ENGINEER

PROJECT NO.: WA402222
FED. AID NO.: ----
DESIGNED BY: MM
CHECKED BY: MM
DRAWN BY: MM
APPROVED BY: MM

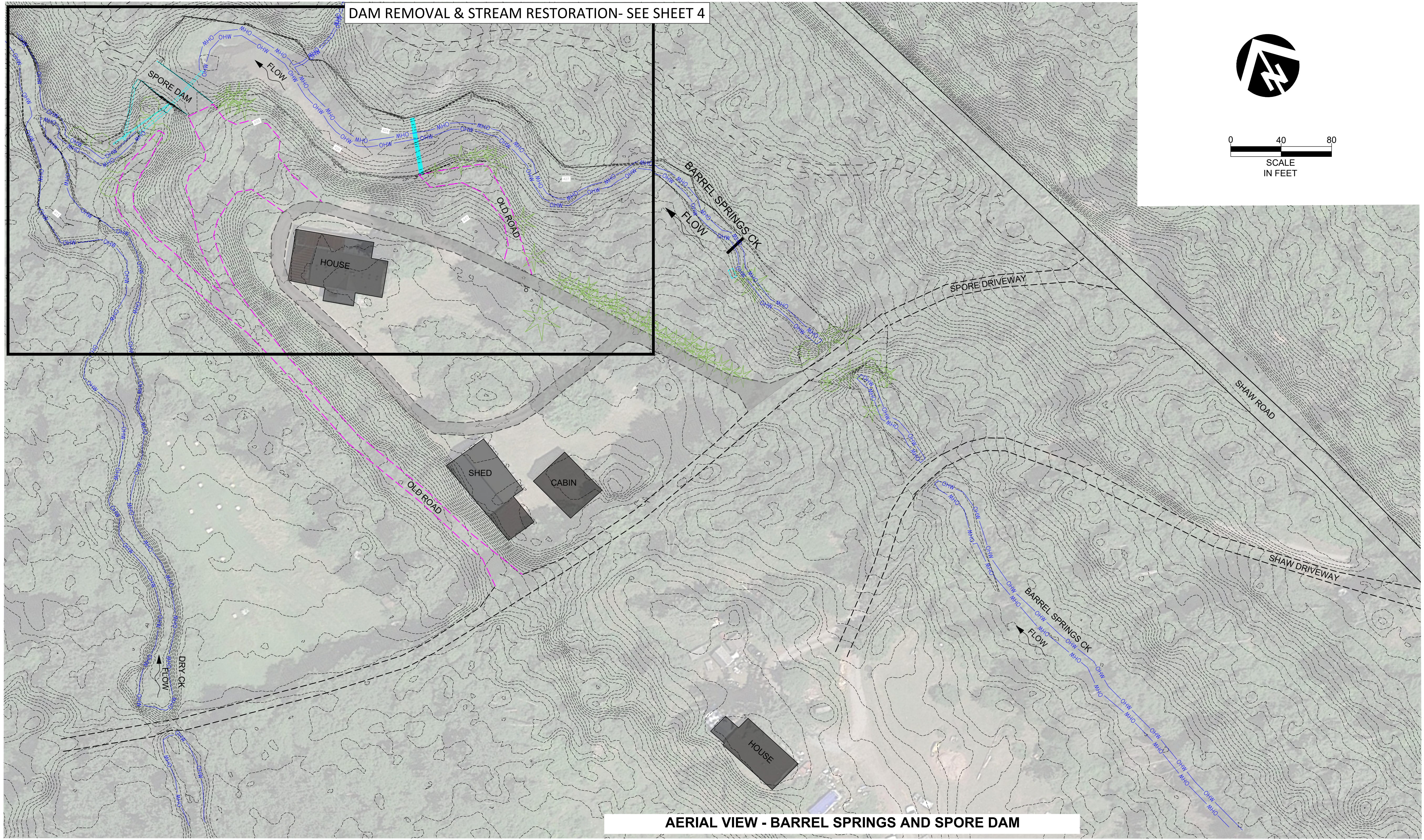
PROJECT LOCATED NEAR:
ALGER, WA

BARREL SPRINGS DAM REMOVAL AND STREAM RESTORATION PROJECT

GENERAL NOTES

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
2 OF 12



TOTAL LAND DISTURBANCE = 0.83 AC

LEGEND

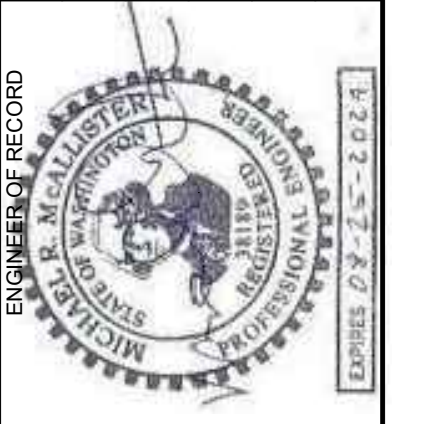
- CONTOUR, 1-FT, EXIST
- - - - GRAVEL DRIVEWAY
- - - - OLD ROADS TO BE UTILIZED
- OHW — ORDINARY HIGH WATER



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NO.	REVISIONS	DATE

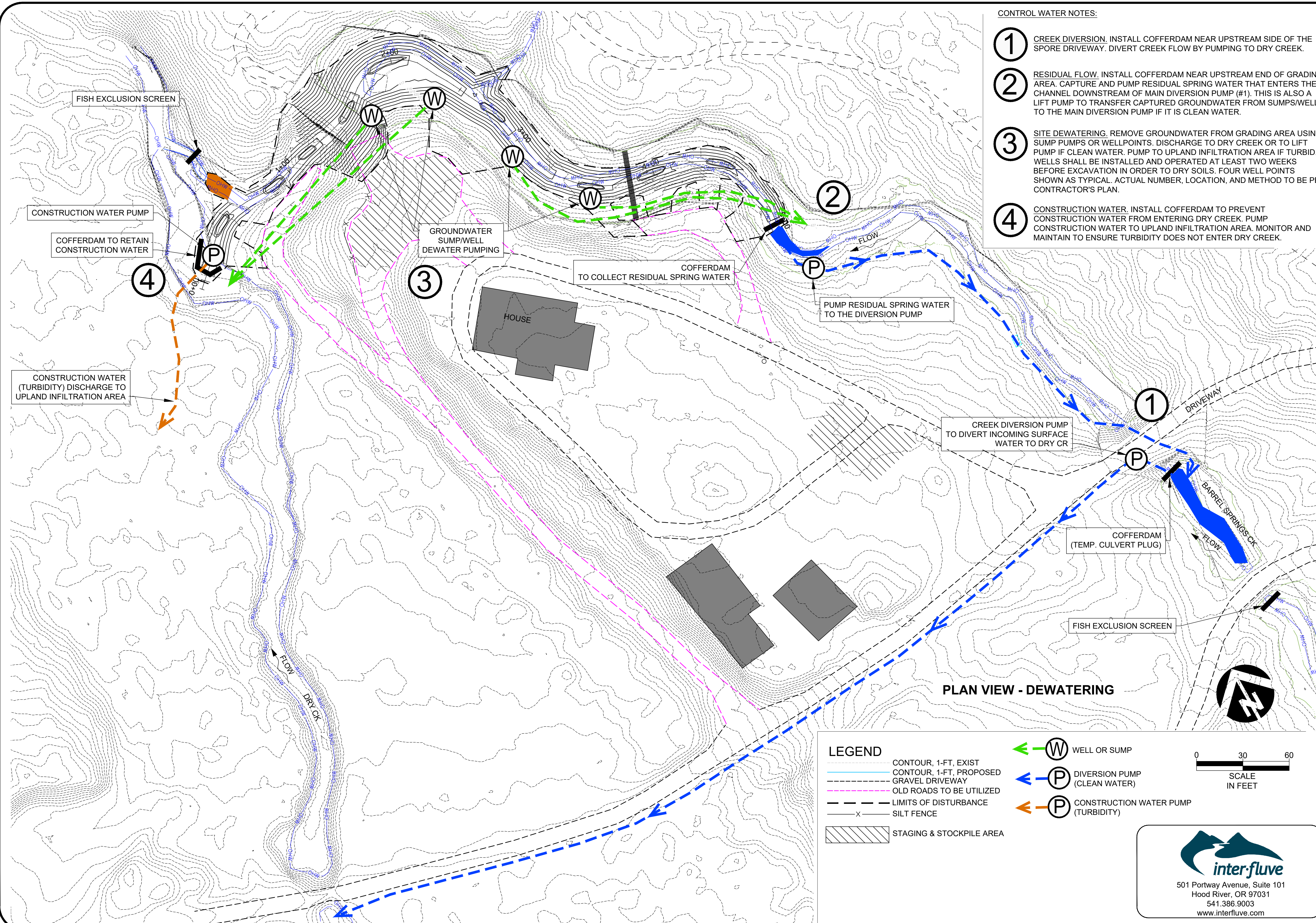


COUNTY ENGINEER
 PROJECT NO.: WA402222
 FED. AID NO.: ----
 DESIGNED BY: MM
 CHECKED BY: MM
 DRAWN BY: MM
 APPROVED BY: MM
 PROJECT LOCATED NEAR:
 ALGER, WA

**BARREL SPRINGS DAM
 REMOVAL AND STREAM
 RESTORATION PROJECT**
 SITE OVERVIEW

1 INCH SCALE BAR
 ADJUST SCALE ACCORDINGLY

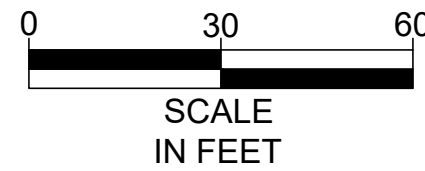
SHEET
3 OF 12



- CONTROL WATER NOTES:**
- ① CREEK DIVERSION. INSTALL COFFERDAM NEAR UPSTREAM SIDE OF THE SPORE DRIVEWAY. DIVERT CREEK FLOW BY PUMPING TO DRY CREEK.
 - ② RESIDUAL FLOW. INSTALL COFFERDAM NEAR UPSTREAM END OF GRADING AREA. CAPTURE AND PUMP RESIDUAL SPRING WATER THAT ENTERS THE CHANNEL DOWNSTREAM OF MAIN DIVERSION PUMP (#1). THIS IS ALSO A LIFT PUMP TO TRANSFER CAPTURED GROUNDWATER FROM SUMPS/WELLS TO THE MAIN DIVERSION PUMP IF IT IS CLEAN WATER.
 - ③ SITE DEWATERING. REMOVE GROUNDWATER FROM GRADING AREA USING SUMP PUMPS OR WELLPOINTS. DISCHARGE TO DRY CREEK OR TO LIFT PUMP IF CLEAN WATER. PUMP TO UPLAND INFILTRATION AREA IF TURBID. WELLS SHALL BE INSTALLED AND OPERATED AT LEAST TWO WEEKS BEFORE EXCAVATION IN ORDER TO DRY SOILS. FOUR WELL POINTS SHOWN AS TYPICAL. ACTUAL NUMBER, LOCATION, AND METHOD TO BE PER CONTRACTOR'S PLAN.
 - ④ CONSTRUCTION WATER. INSTALL COFFERDAM TO PREVENT CONSTRUCTION WATER FROM ENTERING DRY CREEK. PUMP CONSTRUCTION WATER TO UPLAND INFILTRATION AREA. MONITOR AND MAINTAIN TO ENSURE TURBIDITY DOES NOT ENTER DRY CREEK.

LEGEND

- CONTOUR, 1-FT, EXIST
- CONTOUR, 1-FT, PROPOSED
- GRAVEL DRIVEWAY
- OLD ROADS TO BE UTILIZED
- LIMITS OF DISTURBANCE
- x SILT FENCE
- ▨ STAGING & STOCKPILE AREA
- ← (W) WELL OR SUMP
- ← (P) DIVERSION PUMP (CLEAN WATER)
- ← (P) CONSTRUCTION WATER PUMP (TURBIDITY)



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PROJECT NO.: WA402222	DESIGNED BY: MM	DRAWN BY: MM	APPROVED BY:
FED. AID NO.:	CHECKED BY:	PROJECT LOCATED NEAR: ALGER, WA	

BARREL SPRINGS DAM REMOVAL AND STREAM RESTORATION PROJECT

DEWATERING PLAN

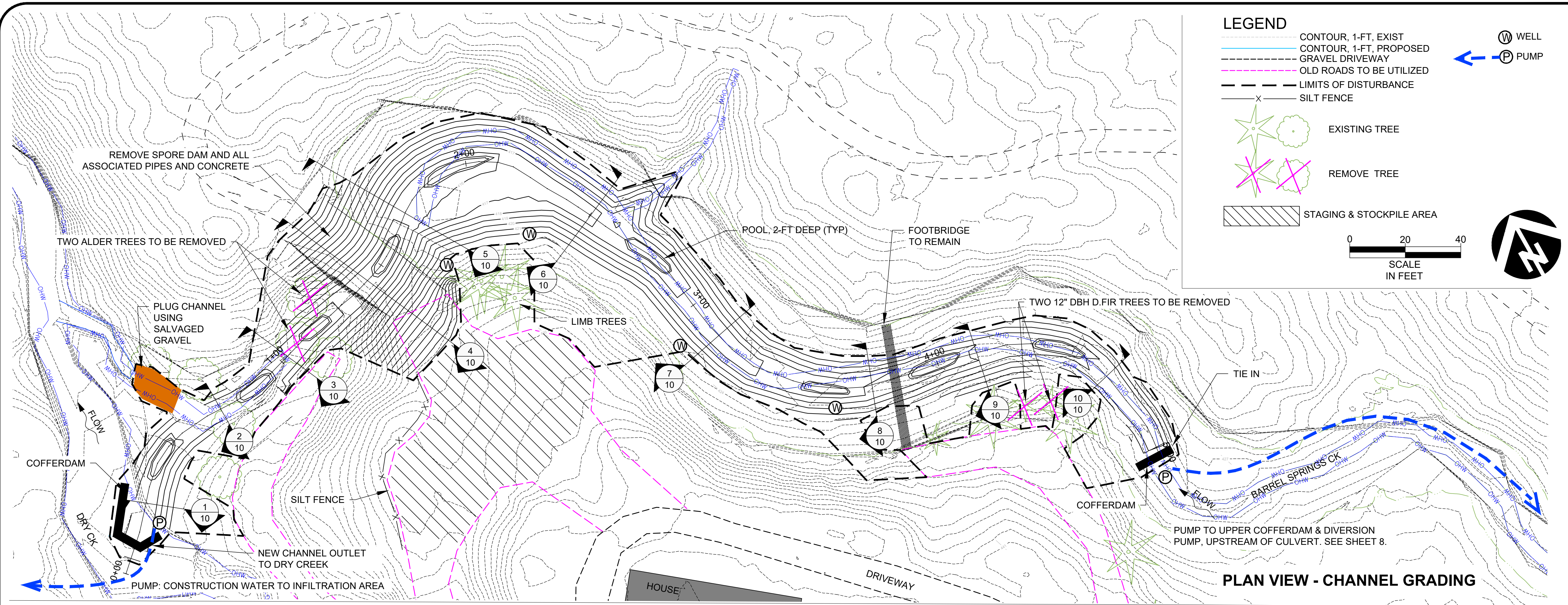
1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
8 OF 12

COUNTY ENGINEER: [Signature]

ENGINEER OF RECORD: [Signature]

NO. REVISIONS DATE



LEGEND

- CONTOUR, 1-FT, EXIST
- CONTOUR, 1-FT, PROPOSED
- GRAVEL DRIVEWAY
- OLD ROADS TO BE UTILIZED
- LIMITS OF DISTURBANCE
- x- SILT FENCE
- ★ EXISTING TREE
- ★ REMOVE TREE
- ▨ STAGING & STOCKPILE AREA

W WELL
P PUMP

SCALE IN FEET: 0, 20, 40

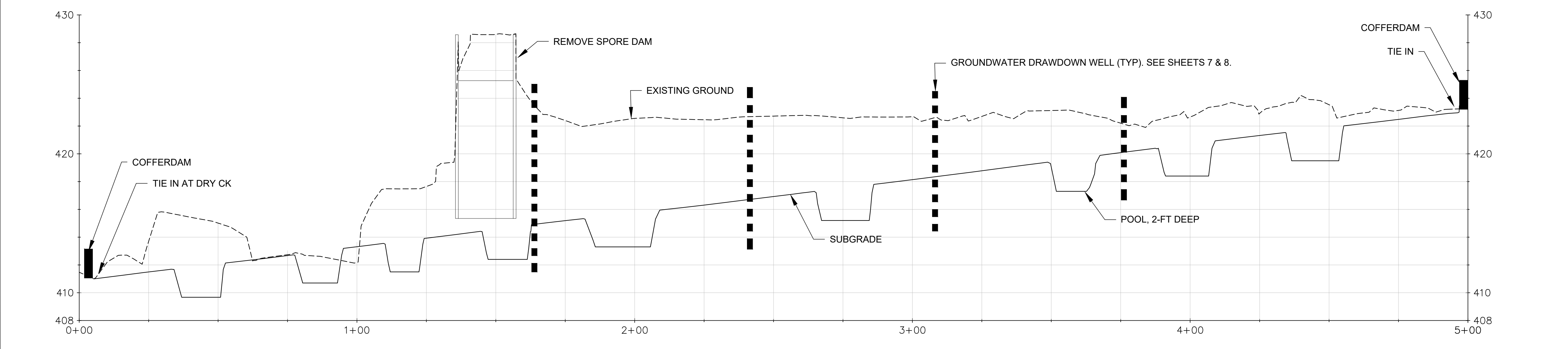
North arrow pointing up-right.

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(360) 416-1400 FAX (360) 416-1405

NO.	REVISIONS	DATE

COUNTY ENGINEER: [Signature]

PROJECT NO.: WA402222
FED. AID NO.: ---
DESIGNED BY: MM
DRAWN BY: MM
CHECKED BY: ---
APPROVED BY: ---
PROJECT LOCATED NEAR: ALGER, WA
T36N R03E SECTION 12NE



PROFILE VIEW - SUBGRADE AT CHANNEL CENTERLINE

- NOTES:**
- THIS SHEET DEPICTS GRADING TO REMOVE IMPOUNDED SEDIMENTS AND TO BUILD NEW CHANNEL. THE INVERT OF GRADING SHALL CREATE SUBGRADE FOR THE CHANNEL, WHICH WILL BE BUILT UP BY LOGS AND STREAMBED GRAVEL AS SHOWN ON OTHER SHEETS.
 - ACCESS ROUTES SHALL UTILIZE EXISTING DRIVEWAYS, AS WELL AS HISTORIC ROADS AND TRAILS THAT HAVE GROWN OVER WITH SHRUBS.
 - TREES NOT DESIGNATED FOR REMOVAL SHALL BE AVOIDED TO THE DRIPLINE.
 - REMOVED TREES SHALL BE SALVAGED FOR RE-USE IN STREAM BUILDING.
 - SPORE DAM AND ALL ASSOCIATED CONCRETE, PIPES, SCREENS AND OTHER DELETERIOUS MATERIALS SHALL BE REMOVED FROM THE SITE.
 - THE FOOTBRIDGE SHALL REMAIN.

SEE SHEETS 7 & 8 FOR DIVERSION AND DEWATERING DETAILS.

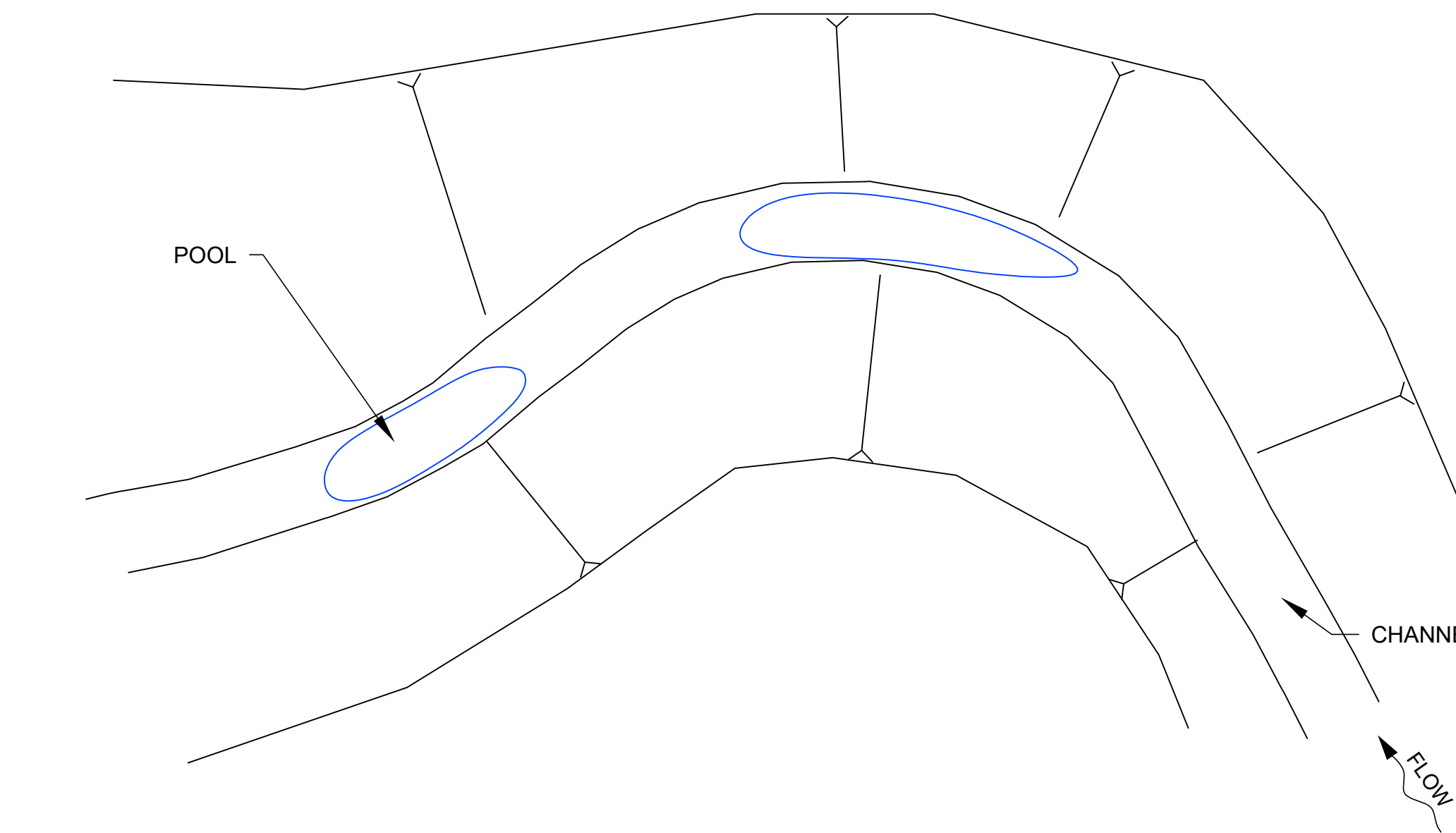
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BARREL SPRINGS DAM REMOVAL AND STREAM RESTORATION PROJECT

GRADING PLAN & PROFILE

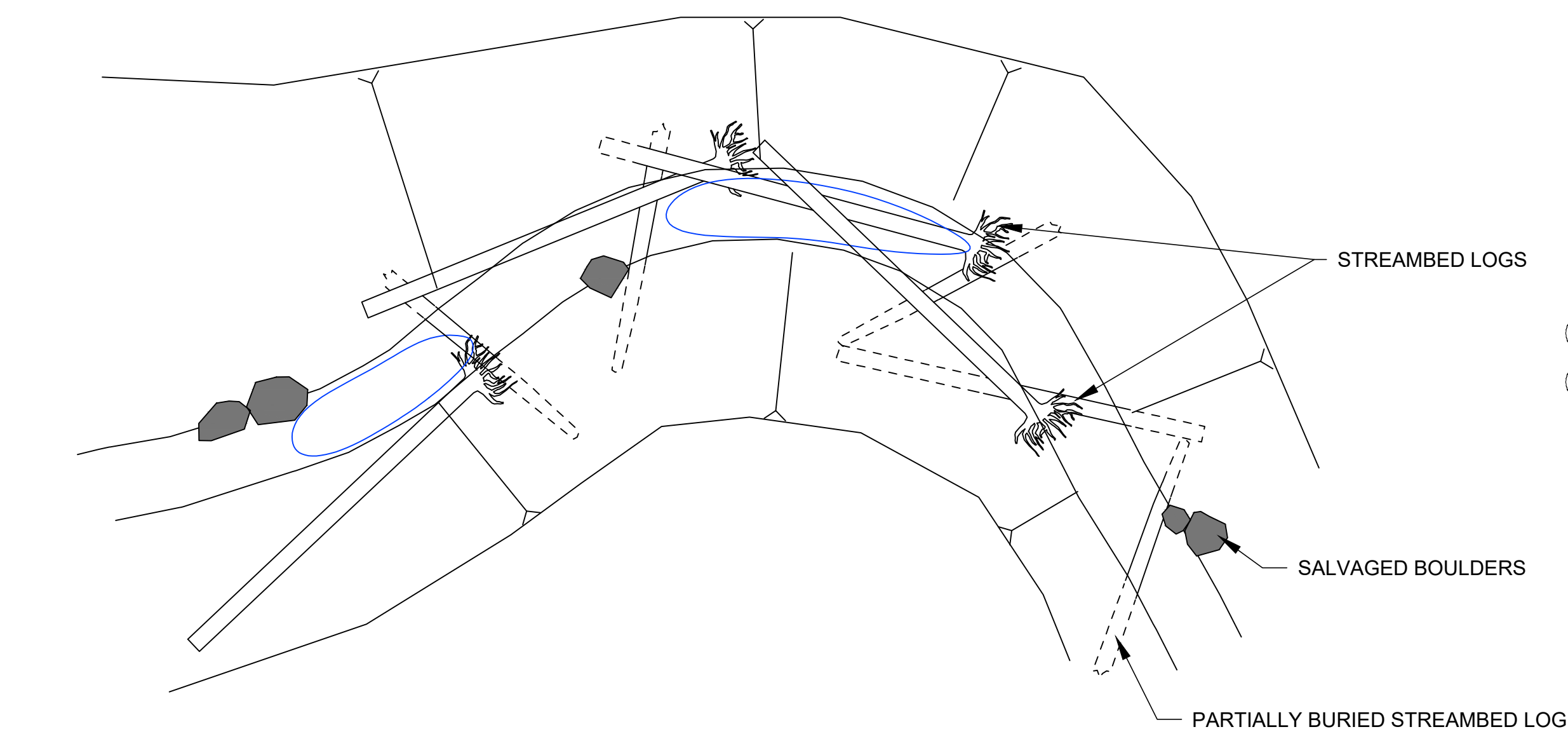
1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET **9 OF 12**

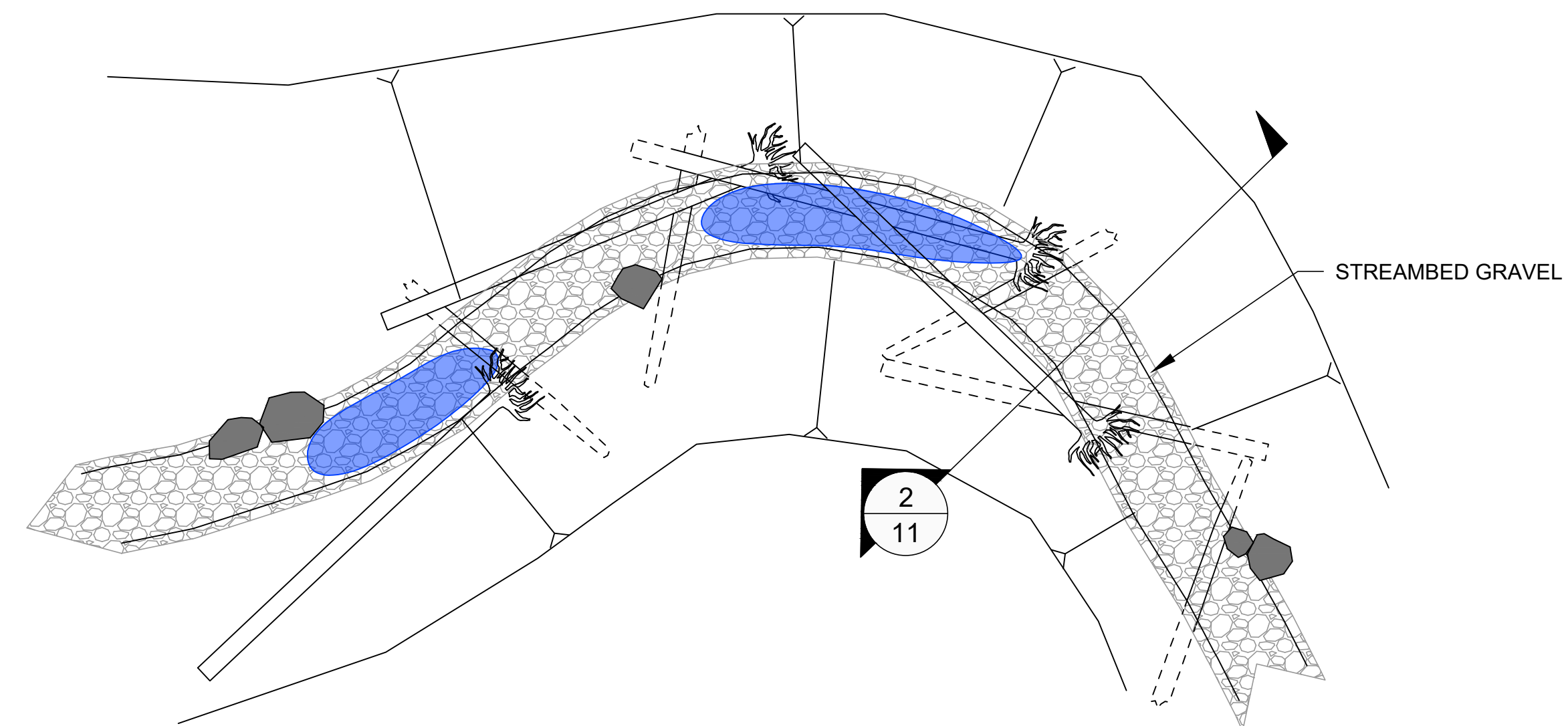


- 1 EXCAVATE NEW SLOPES AND STREAMBED SUBGRADE
- 2 EXCAVATE POOLS
- 3 SALVAGE BOULDERS

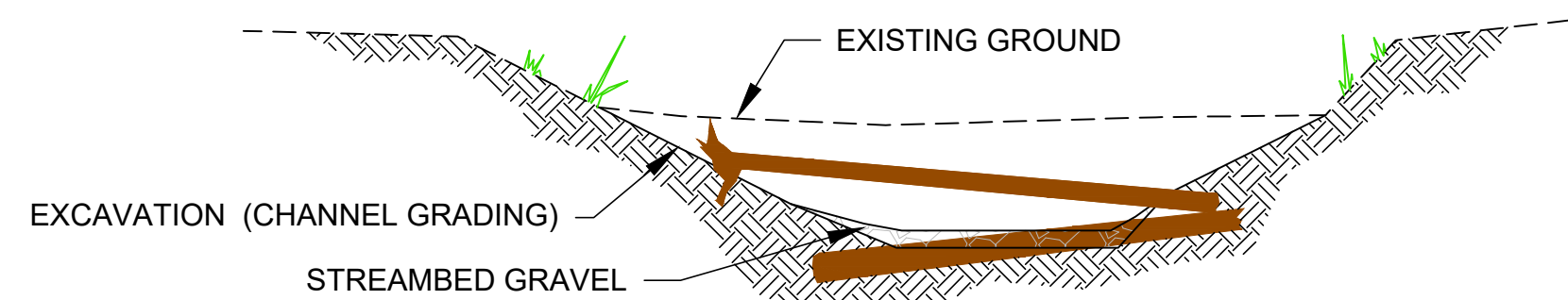
STREAMBED GRAVEL SHALL BE A MIX COMPRISED OF WSDOT STREAMBED AGGREGATES WITH THE FOLLOWING RATIOS (BY VOLUME):
 30% 4" STREAMBED COBBLES, 9-03.11(2)
 50% STREAMBED SEDIMENT, 9-03.11(1)
 20% STREAMBED SAND.



- 4 INSTALL STREAMBED LOGS, PARTIALLY BURYING INTO STREAMBED AND SLOPES
- 5 UTILIZE SALVAGED BOULDERS



- 6 INSTALL BLANKET OF STREAMBED GRAVEL AS ~4" LAYER AND DRAPE UP BANKS ~6" HIGH
- 7 APPLY TEMPORARY SEED MIXES TO BANKS AND SLOPES. COVER WITH 4" LAYER OF TEMPORARY MULCH (SEE SHEET 12).



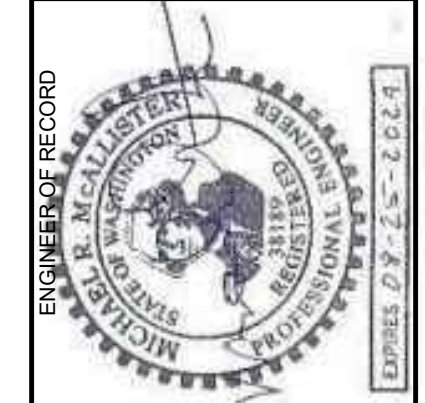
1
11 PLAN VIEW - NEW STREAM - TYPICAL CONSTRUCTION SEQUENCE
NOT TO SCALE

2
11 SECTION VIEW - NEW STREAM (TYPICAL)
NOT TO SCALE

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PUBLIC WORKS**
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 MOUNT VERNON, WA 98273-5625
 (360) 416-1400 FAX (360) 416-1405

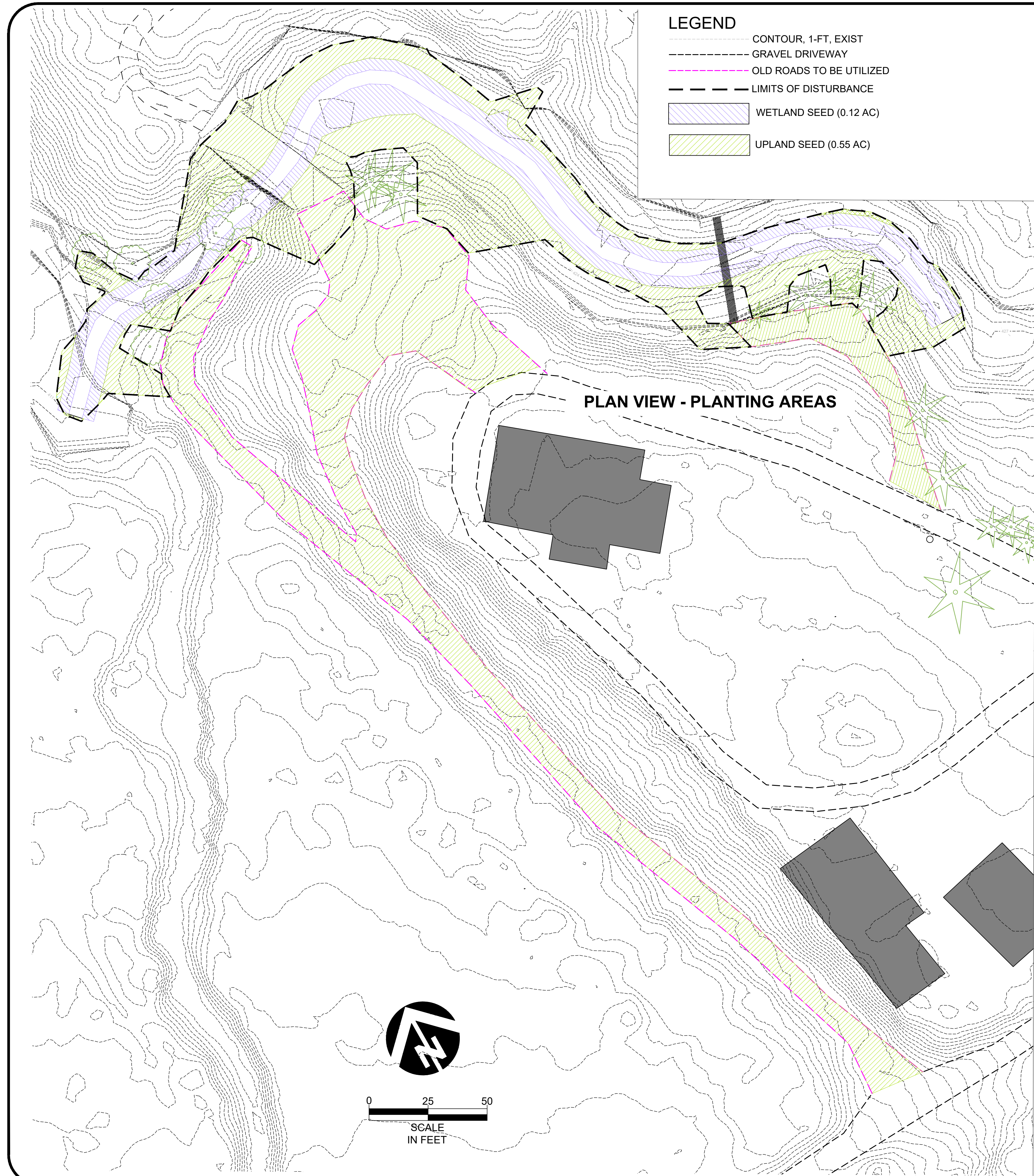
NO.	REVISIONS	DATE



COUNTY ENGINEER
 PROJECT NO.: WA402222
 FED. AID NO.: ----
 DESIGNED BY: MM
 CHECKED BY: MM
 DRAWN BY: MM
 APPROVED BY: MM
 PROJECT LOCATED NEAR:
 ALGER, WA

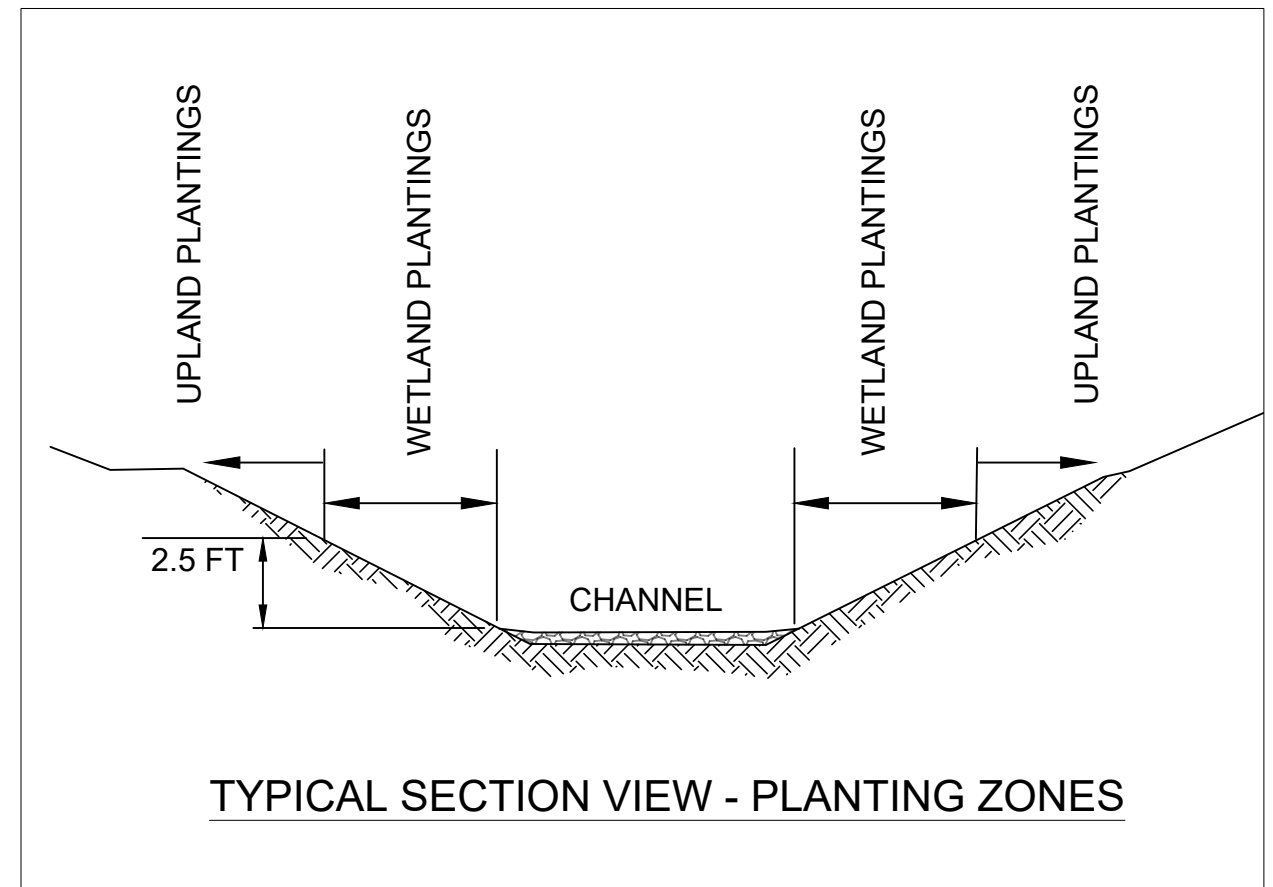
**BARREL SPRINGS DAM
REMOVAL AND STREAM
RESTORATION PROJECT**
 TYPICAL DETAILS

1 INCH SCALE BAR
 ADJUST SCALE ACCORDINGLY
 SHEET
11 OF 12



LEGEND

- CONTOUR, 1-FT, EXIST
- - - GRAVEL DRIVEWAY
- - - OLD ROADS TO BE UTILIZED
- - - LIMITS OF DISTURBANCE
- ▨ WETLAND SEED (0.12 AC)
- ▨ UPLAND SEED (0.55 AC)



SEED MIX

Wetland Seed Mix - 43 lbs PLS/acre			5.2	LBS
COMMON NAME	SCIENTIFIC NAME	% by weight		
Blue Wildrye	<i>Elymus glaucus</i>	40		
Native Red Fescue	<i>Festuca rubra rubra</i>	30		
Rice cutgrass	<i>Leersia oryzoides</i>	14		
Tufted Hairgrass	<i>Deschampsia cespitosa</i>	12		
Western mangrass	<i>Glyceria occidentalis</i>	2		
American sloughgrass	<i>Beckmannia syzigachne</i>	2		
Total % by weight		100.0		

Upland Seed Mix - 43 lbs PLS/acre			22.4	LBS
COMMON NAME	SCIENTIFIC NAME	% by weight		
Blue Wildrye	<i>Elymus glaucus</i>	50		
Native red fescue	<i>Festuca rubra rubra</i>	30		
California Brome	<i>Bromus carinatus</i>	10		
Spike bentgrass	<i>Agrostis exarata</i>	10		
Total % by weight		100.0		

- NOTES:**
1. APPLY EROSION CONTROL MULCH OVER SEEDED GROUND.
 2. CERTIFIED WEED FREE STRAW MULCH (2 TONS/ACRE) OR WOOD CELLULOSE FIBER HYDROMULCH (2,600 LBS/ACRE).

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NO.	REVISIONS	DATE

ENGINEER OF RECORD
COUNTY ENGINEER

PROJECT NO.: WA402222
FED. AID NO.: ----
DESIGNED BY: MM
DRAWN BY: MM
CHECKED BY: MM
APPROVED BY: MM
PROJECT LOCATED NEAR:
ALGER, WA

BARREL SPRINGS DAM REMOVAL AND STREAM RESTORATION PROJECT
REVEGETATION PLAN

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
12 OF 12