

LEGEND
 --- EXISTING GROUND PROFILE
 --- 40 CFS WATER SURFACE PROFILE
 --- STEP POOL PROFILE

CONTROL POINTS

POINT NUMBER	EASTING	NORTHING	POINT ELEVATION	RAW DESCRIPTION
24	1914061.7106'	478060.5166'	1053.410'	SET PIN
62	1913114.9526'	478449.2110'	1140.637'	SET PIN
63	1912997.1634'	478481.9999'	1153.350'	SET PIN

SURVEY DATA

CONTROL PROVIDED BY COFFMAN ENGINEERS INC., SPOKANE, WA, PROJ. NO. 201824, OKANOGAN BASIN TOPOGRAPHIC SURVEY, SHEET V01 DATED 12/10/2020. ACCURACY STATEMENT: SURVEY PERFORMED USING A LEICA TCRP 1203 ONE SECOND ROBOTIC TOTAL STATION, A LEICA MS-60 ONE SECOND ROBOTIC MULTI STATION AND A JAVAD TRIUMPH-1M GPS BASE STATION AND A JAVAD TRIUMPH-LS ROVER. FIELD TRAVERSE METHODS PER WAC 332-130-090 PART C.

TOPOGRAPHIC DATA PROVIDED BY ELEVATE INC., PORTLAND, OR. DATA COLLECTION DATE: 11/10/2021. ACCURACY STATEMENT: SURVEY PERFORMED USING AN M300 RTK AIRCRAFT USING A ROCKROBOTIC R2A. THREE GROUND CONTROL POINT (GCP) TARGETS WERE LAID OUT ACROSS THE AOI TO ENSURE HORIZONTAL AND VERTICAL ACCURACY. VERTICAL ACCURACY TESTED TO 0.49 FEET RMS FOR CONTROL AND 0.83 FT FOR ALL GROUND CHECKPOINTS.

HORIZONTAL DATUM: SURVEY IS BASED ON THE WASHINGTON STATE PLANE COORDINATE SYSTEM, NAD83, NORTH ZONE. U.S. FOOT. GROUND COORDINATES HAVE BEEN OBTAINED BY CREATING AN ADJUSTED STATE PLANE COORDINATE SYSTEM SCALED AROUND GRID POINT # 90. THE SCALE FACTOR OF 1.000102116 WAS APPLIED TO ALL THE GRID COORDINATES TO OBTAIN THE GROUND COORDINATES.

ELEVATION DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). GEOID 12B

CONSTRUCTION SEQUENCE

- ESTABLISH SITE ACCESS AND STAGING AREAS.
- DEPLOY CONSERVATION MEASURES (SEE DRAWING 10.0).
- DEVELOP MATERIAL BORROW SOURCES AND TEMPORARILY STOCKPILE MATERIAL IN DESIGNATED LOCATIONS.
- SALVAGE EXISTING HIGH QUALITY SHRUBS AND TREES AND PLACE IN TEMPORARY NURSERY.
- DIVERT FLOW AWAY FROM CONSTRUCTION. BULK BAGS FILLED WITH SAND AND FINES WILL BE USED TO CONSTRUCT THE INLET COFFER DAMS, TEMPORARY SUPPORTS FOR THE BYPASS PIPE AND OUTLET STILLING BASIN. ALL BYPASS PIPES WILL BE SECURED WITH BULK BAGS FILLED WITH A MIXTURE OF SAND AND FINES AT ALL JOINTS AND CHANGES IN DIRECTION. CONSTRUCT OUTLET STILLING BASIN PRIOR TO DIVERTING WATER INTO THE PIPE.
- EXCAVATE ALLUVIAL MATERIAL FROM EXISTING CHANNEL AND STOCKPILE FOR USE IN CHANNEL FILL MATERIAL.
- BEGINNING AT DOWNSTREAM END OF EACH SITE, FILL EXISTING CHANNEL TO SUBGRADE ELEVATION USING APPROVED SUBGRADE FILL MATERIAL. COMPACT SUBGRADE FILL USING EXCAVATOR BUCKET AND/OR TRACK PACKING TO ENSURE VOID SPACES ARE ELIMINATED FROM FILL.
- BEGINNING AT UPSTREAM END OF EACH SITE, CONSTRUCT POOLS AND WEIRS USING BOULDERS AND/OR LOGS AS DIRECTED BY ENGINEER. FOLLOWING CONSTRUCTION OF EACH POOL, PLACE AND COMPACT FLOODPLAIN FILL ADJACENT TO EACH POOL.
- INSTALL FLOODPLAIN ROUGHNESS TREATMENTS AND PLACE NATIVE SEED MIX PRIOR TO CONSTRUCTING NEXT POOL DOWNSTREAM. IN ORDER TO FACILITATE EQUIPMENT ACCESS, FLOODPLAIN ROUGHNESS TREATMENTS AND SEEDING FOR THE AREA ALONG THE TEMPORARY BYPASS PIPE MAY BE COMPLETED FOLLOWING REMOVAL OF THE PIPE AND PLACEMENT OF THE CONTENTS OF THE BULK BAGS FILLED WITH SAND AND FINES INTO THE STREAM CHANNEL. FLOODPLAIN ROUGHNESS TREATMENTS FOR THESE AREAS SHOULD BE COMPLETED FROM UPSTREAM TO DOWNSTREAM AFTER THE STEP POOL SEQUENCE IS COMPLETE AS EQUIPMENT ACCESS TO THE UPSTREAM AREAS WILL BE HINDERED BY THESE TREATMENTS.
- FOLLOWING CONSTRUCTION OF ALL POOLS AND PLACEMENT OF ALL FLOODPLAIN FILL, REMOVE TEMPORARY DIVERSION DAM AND TURN WATER INTO CHANNEL. SEAL CHANNEL BY WASHING IN FINES AS NECESSARY TO PREVENT WATER FROM FLOWING THROUGH GAPS OR SPACES IN CONSTRUCTED STEP POOLS.
- TRANSPLANT TREES AND SHRUBS.
- REMOVE TEMPORARY BYPASS PIPE AND EMPTY CONTENTS OF BULK BAGS INTO STEP-POOL CHANNEL TO ASSIST IN SEALING VOID SPACES.
- REMOVE BMP'S AND REMEDIATE STAGING AREAS.
- SEED AND REVEGETATE DISTURBED AREAS.
- DEMobilize EQUIPMENT AND MATERIALS.

NO.	DATE	BY	DESCRIPTION	CHK
1	08/2021	NW	30% DESIGN	CN
2	02/2022	NW	80% DESIGN	CN
	04/2022	NW	FINAL DESIGN	CN

PROJECT NUMBER
RDG-21-027

DRAWING NUMBER
4.0

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M:\Projects\2021\RDG-21-027 Loup Loup Fish Passage\CAD\2022-1-31\Loup Loup 80 percent.dwg

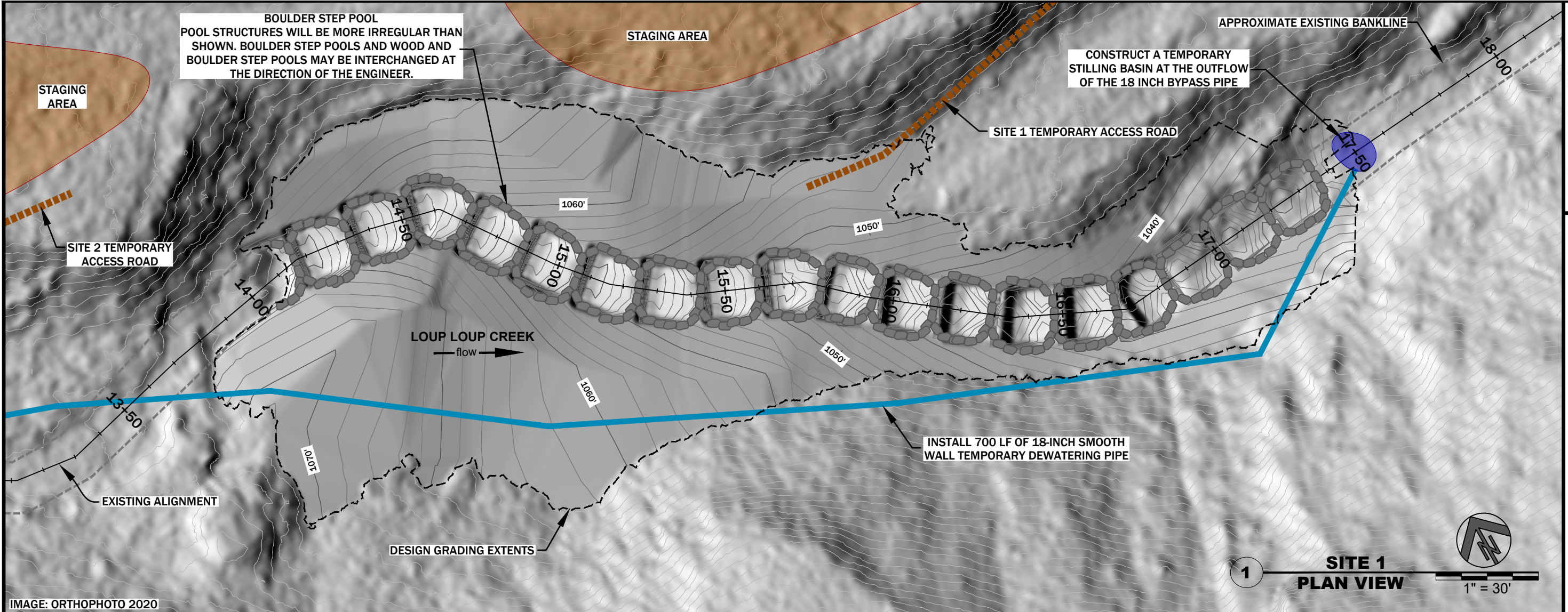
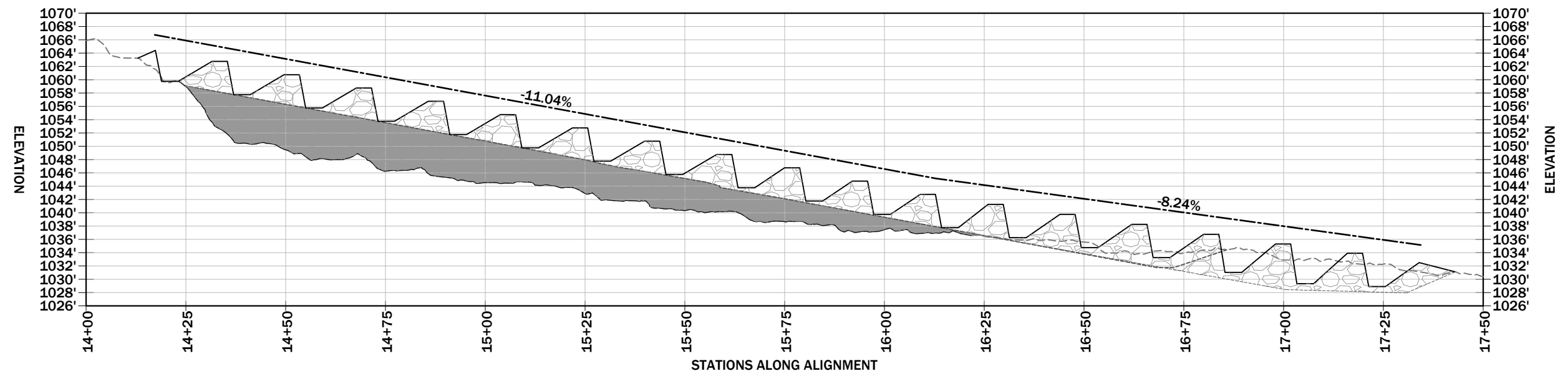


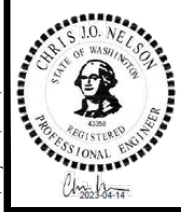
IMAGE: ORTHOPHOTO 2020



SITE 1 - PLAN AND PROFILE
LOUP LOUP CREEK FISH PASSAGE PROJECT
MALOTT, WASHINGTON

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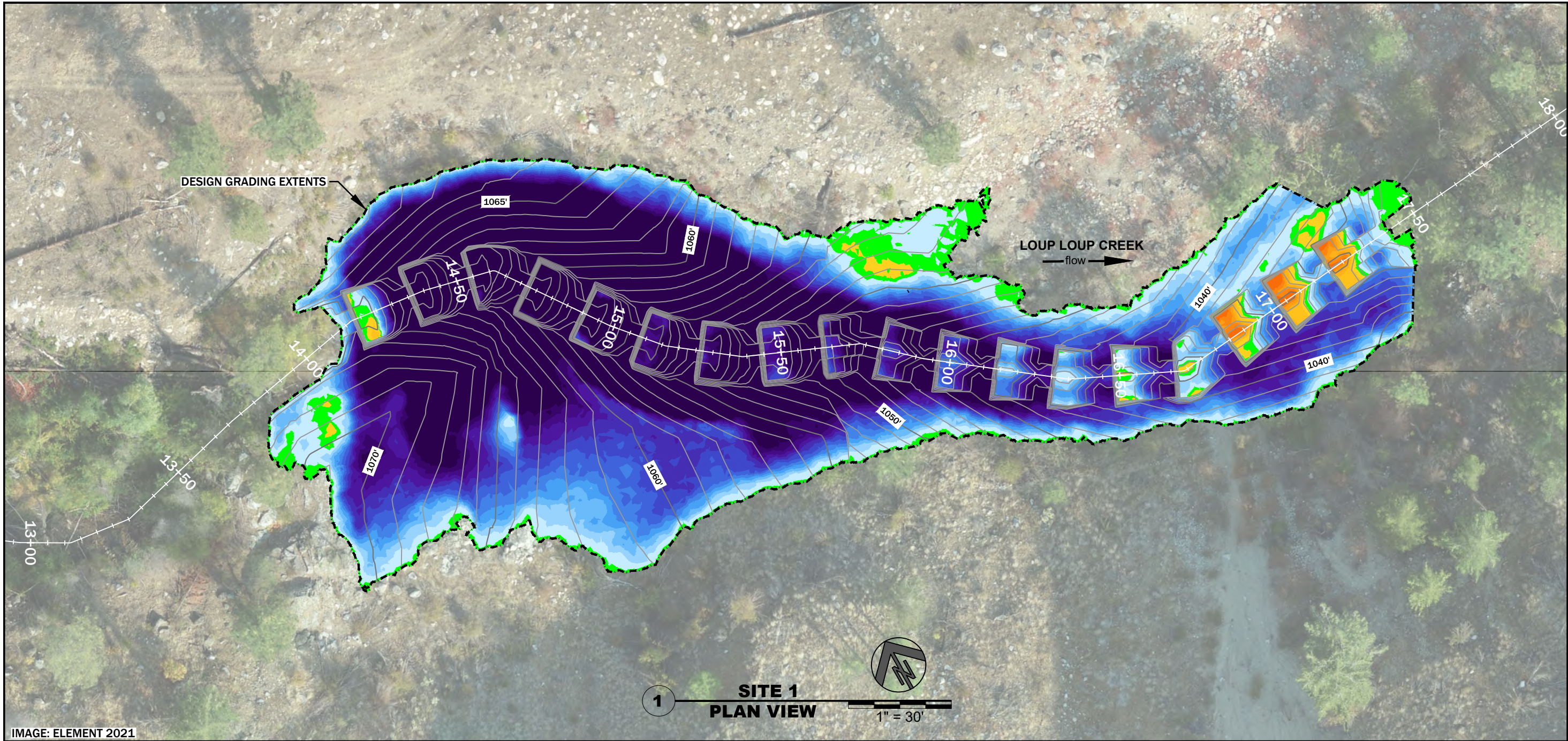
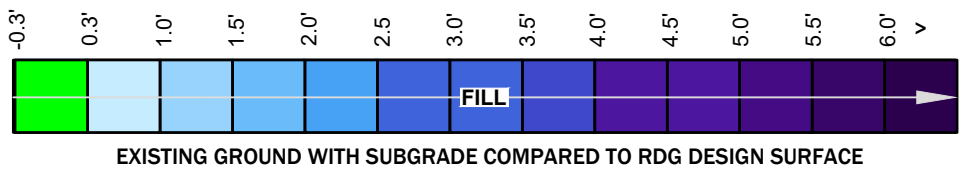


IMAGE: ELEMENT 2021

1 **SITE 1**
PLAN VIEW
1" = 30'

SITE 1 FILL VOLUMES
SUBGRADE FILL = 850 CY
FLOODPLAIN FILL = 3,150 CY
NOTE: REPORTED VOLUMES ARE NEATLINE



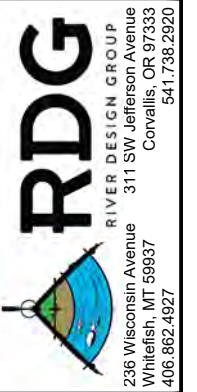
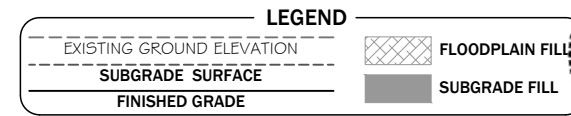
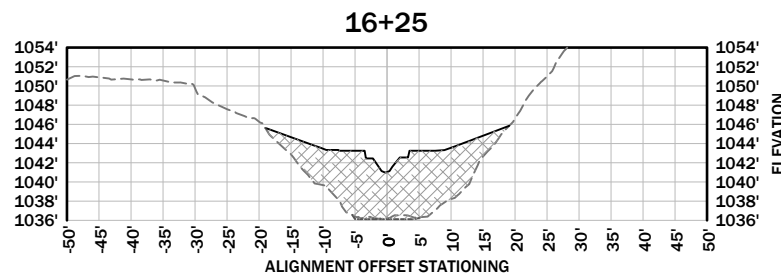
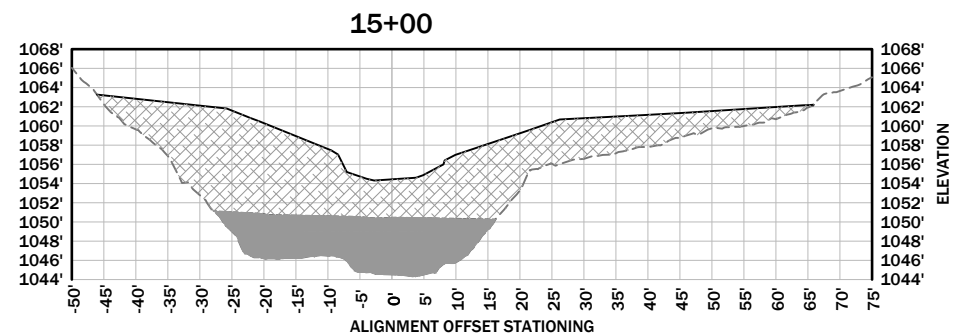
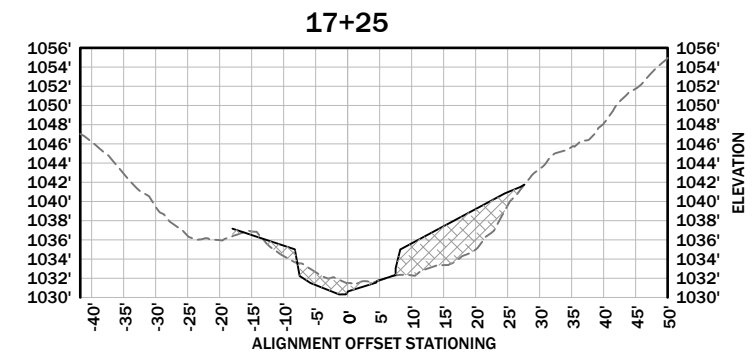
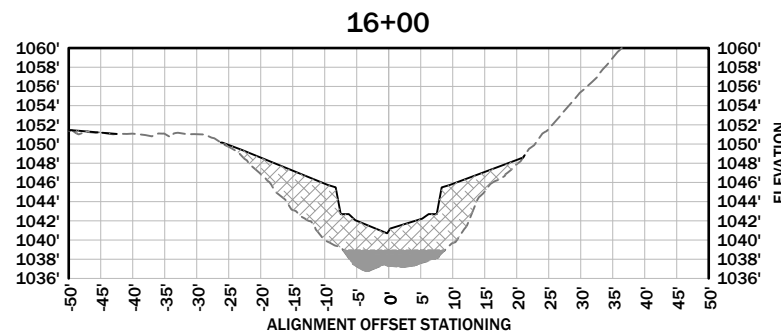
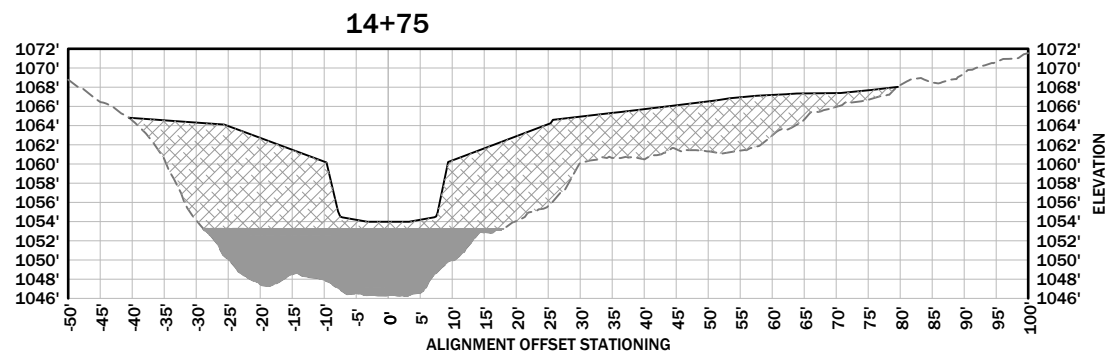
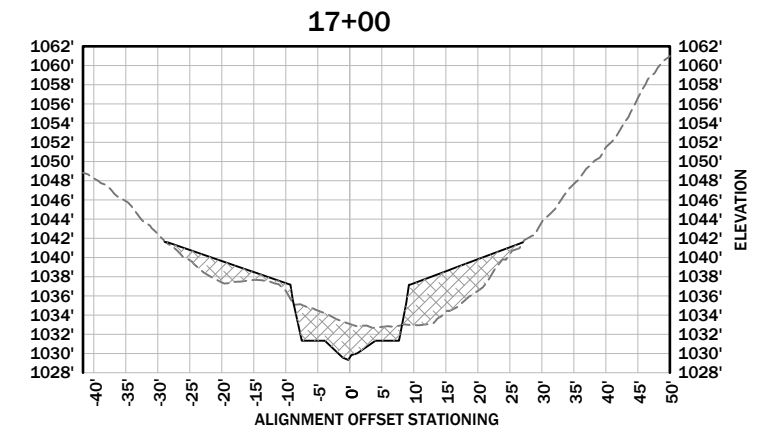
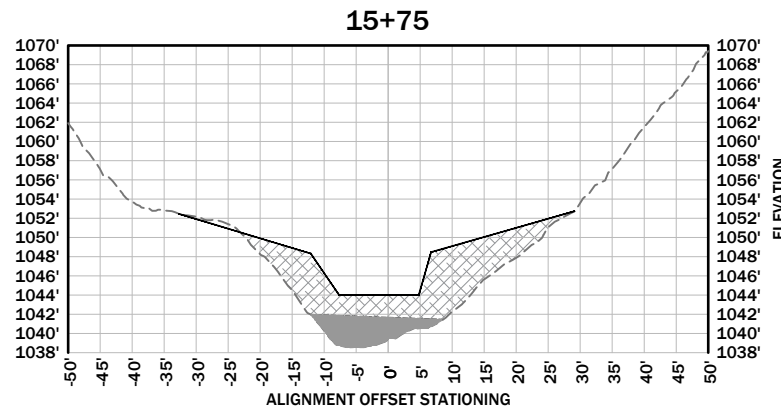
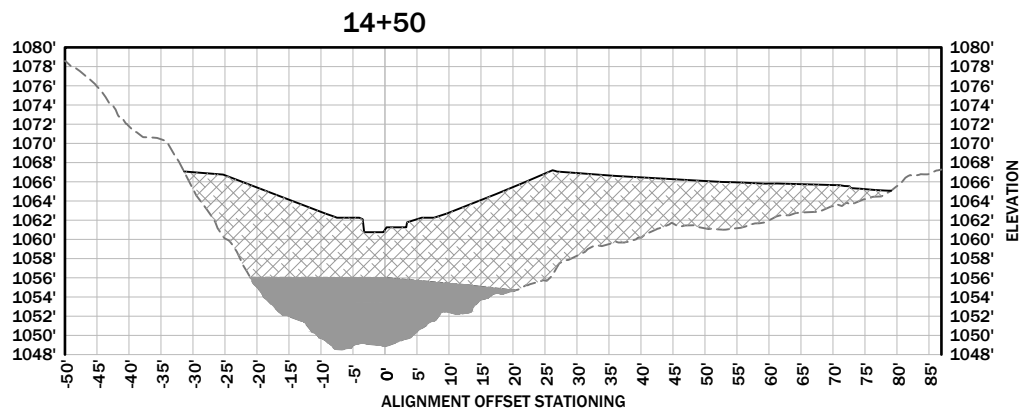
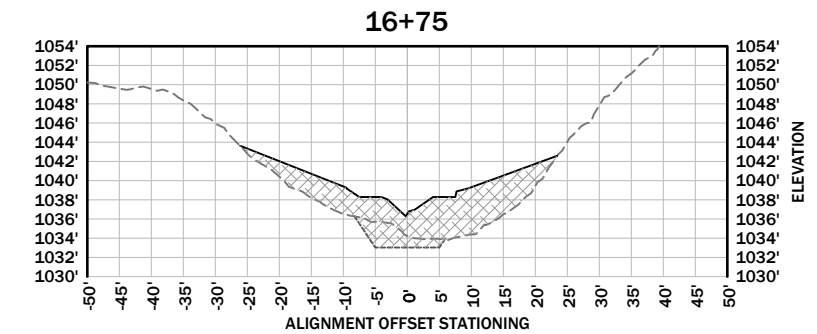
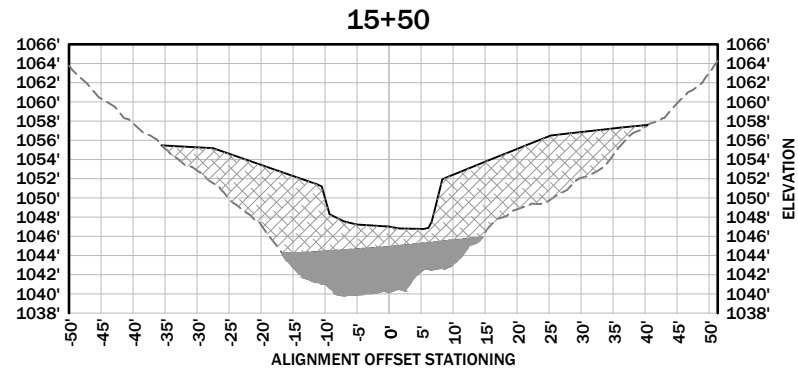
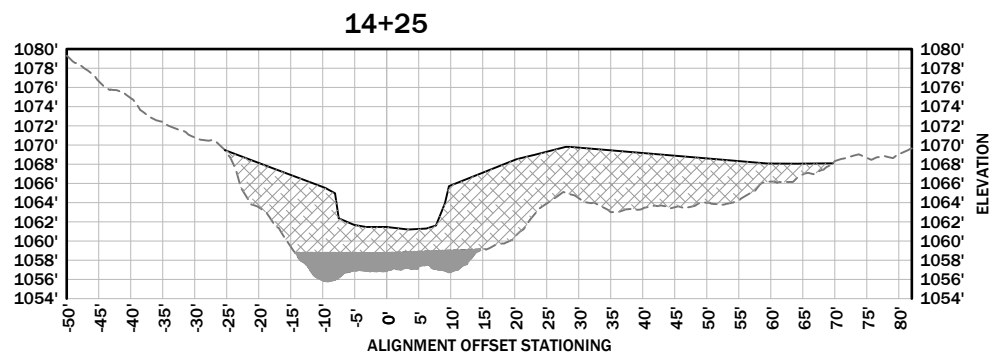
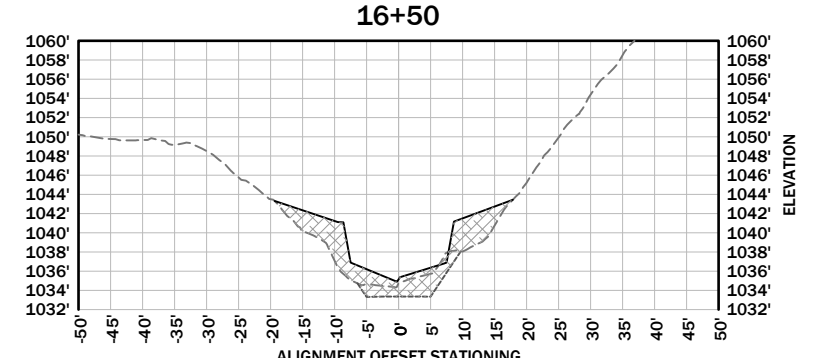
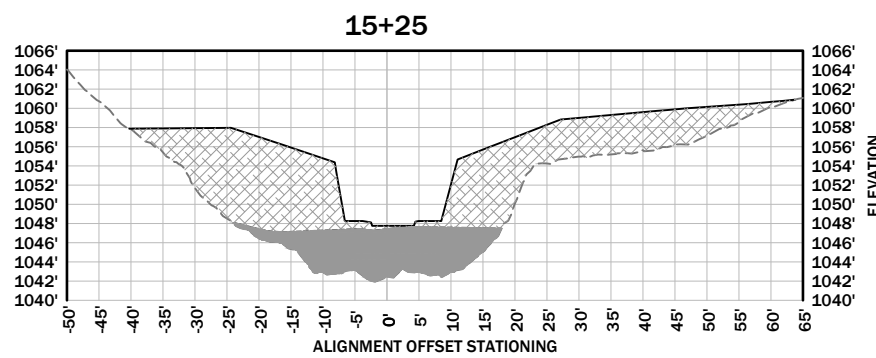
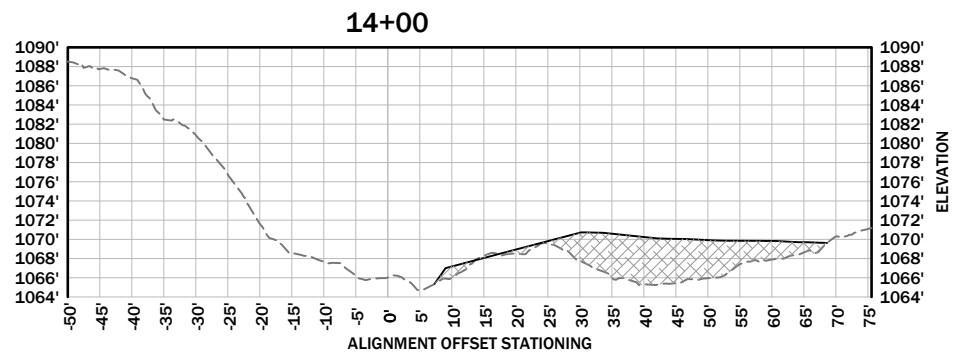
SITE 1 - GRADING PLAN
LOUP LOUP CREEK FISH PASSAGE PROJECT
MALOTT, WASHINGTON

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PROJECT NUMBER
RDG-21-027
DRAWING NUMBER
5.1
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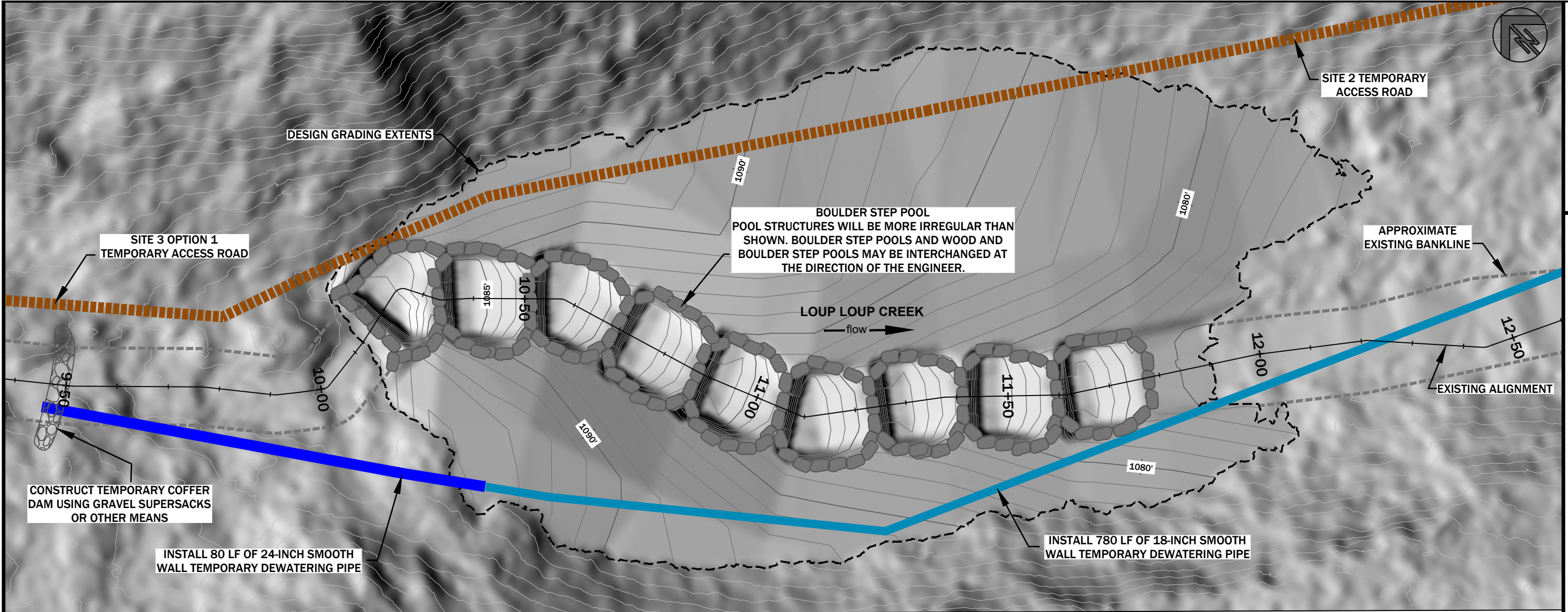
SITE 1 - CROSS SECTIONS
LOUP LOUP CREEK FISH PASSAGE PROJECT
MALOTT, WASHINGTON

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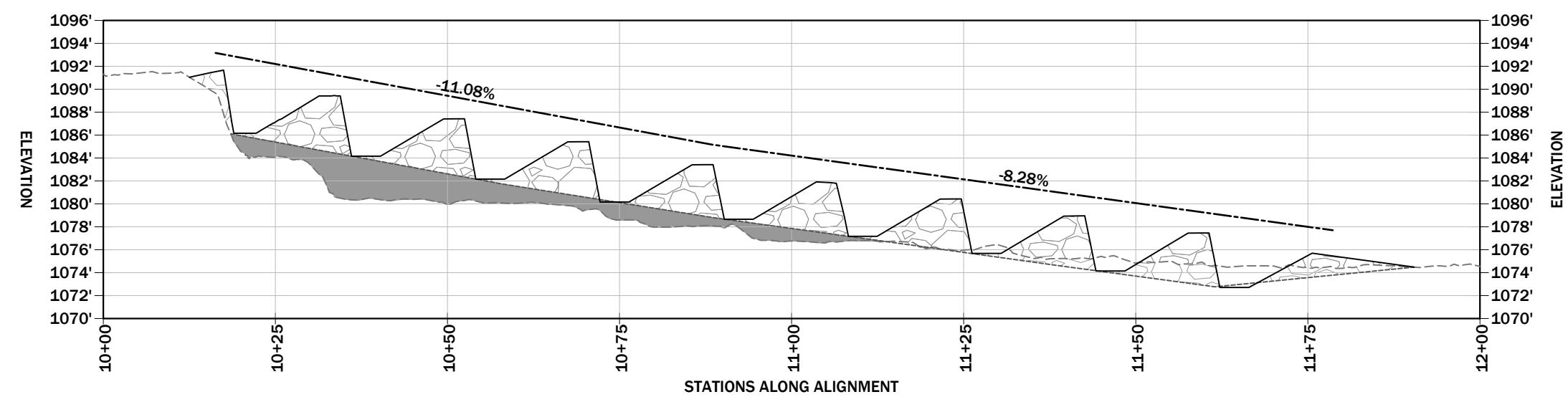
PROJECT NUMBER
RDG-21-027

DRAWING NUMBER
5.2

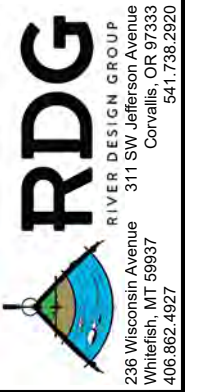
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1 SITE 2 PLAN VIEW
1" = 20'



2 SITE 2 PROFILE VIEW
1" = 20'



SITE 2 - PLAN AND PROFILE
LOUP LOUP CREEK FISH PASSAGE PROJECT
MALOTT, WASHINGTON

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PROJECT NUMBER
RDG-21-027

DRAWING NUMBER
6.0

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