



REVISION:	DATE:	BY:	DESC:

PRELIMINARY

DETAILS

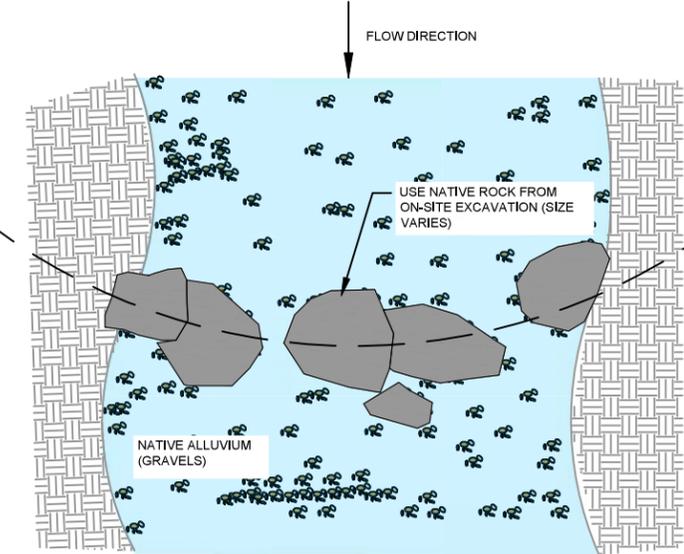
MADISON SIDE CHANNEL RESTORATION
MADISON COUNTY, MT

DATUM: NAD83
PROJECTION: MT831F
DRAWN BY: JNE
DESIGNED BY: GEUM
DATE: 10.31.2025

SHEET
D.1

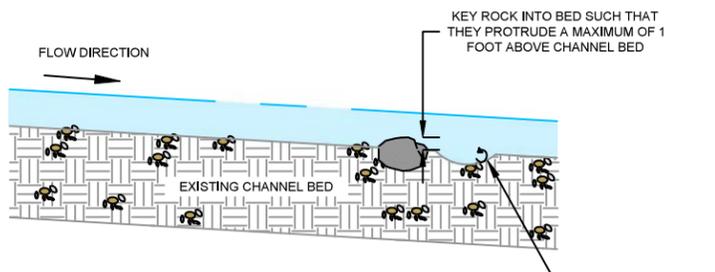
ROCK RIB DESCRIPTION

ROCK RIBS WILL BE CONSTRUCTED USING EXISTING ON-SITE MATERIAL TO PROVIDE CHANNEL BED COMPLEXITY AND LOWER THE OVERALL SIDE CHANNEL GRADIENT. THIS TREATMENT IS DESIGNED TO WORK WITH THE FLOW REGIME AT HEBGEN DAM TO CREATE SIDE CHANNEL HABITAT WITH PERENNIAL FLOW.



ROCK RIB
PLAN VIEW

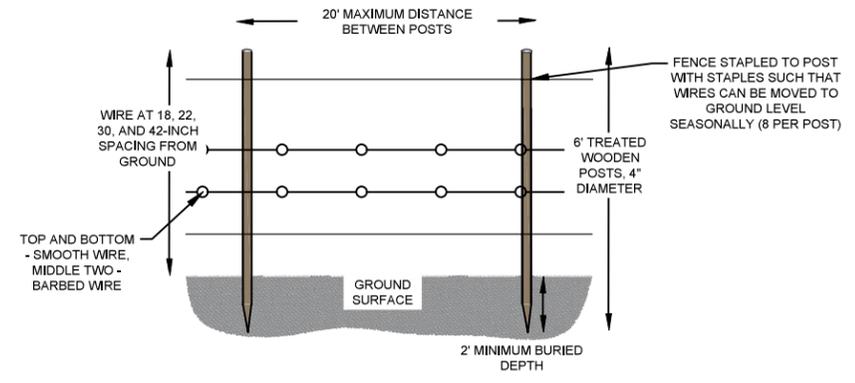
ROCK RIBS MAY BE ORIENTED SUCH THAT FLOW SPREADS TO CHANNEL BANKS AND FLOODPLAIN TO DISSIPATE ENERGY AND ENCOURAGE FLOODPLAIN ACTIVATION OR; ROCK RIBS MAY BE ORIENTED OPPOSITE TO CONCENTRATE FLOWS AND ENCOURAGE POOL FORMATION - FIELD FIT



ROCK RIB
PLAN VIEW

LIVESTOCK FENCE DESCRIPTION

WILDLIFE FRIENDLY LIVESTOCK FENCE WILL BE INSTALLED TO PROTECT THE RIPARIAN CORRIDOR FROM LIVESTOCK DAMAGE SUCH AS BROWSE AND COMPACTION OR TRAMPLING. THIS FENCE WILL BE A 'DROP DOWN' FENCE SO WIRES CAN BE MOVED TO GROUND LEVEL TO ALLOW FOR WILDLIFE MOVEMENT ACROSS FENCE LINE DURING CERTAIN PORTIONS OF THE YEAR.

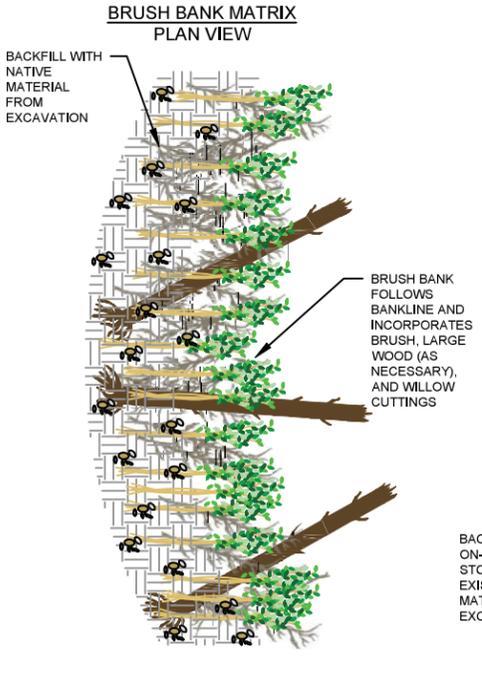


2 FENCE INSTALLATION SECTION VIEW
NTS

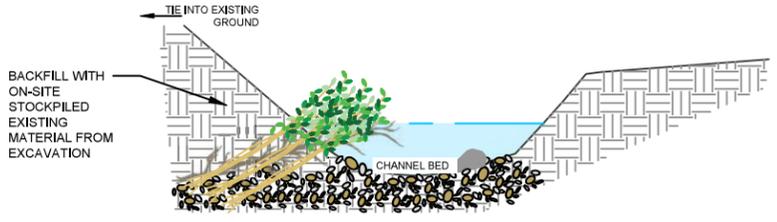
1 ROCK RIB STRUCTURE (TYP.)
NTS

BRUSH BANK MATRIX DESCRIPTION

MATRIX BANKS WILL BE CONSTRUCTED AT SELECT LOCATIONS. THE INTENT OF BRUSH MATRIX BANKS IS TO CREATE A COMPLEX, VEGETATED BANK MARGIN TO DISSIPATE FLOW ENERGY AND PROVIDE HABITAT.



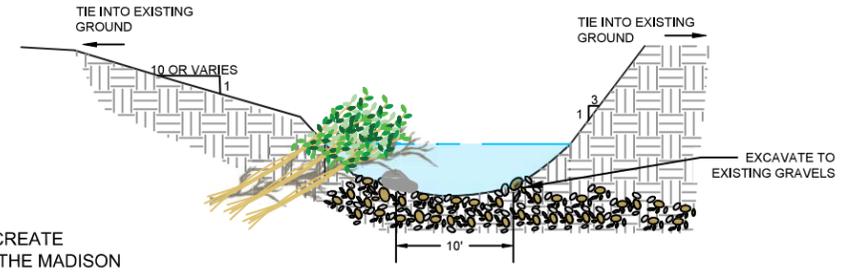
BRUSH BANK MATRIX
SECTION VIEW



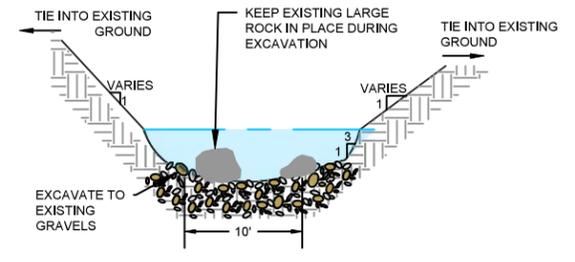
3 BRUSH BANK MATRIX (TYP.)
NTS

SIDE CHANNEL DESCRIPTION

A SIDE CHANNEL WILL BE EXCAVATED TO CREATE SPAWNING AND REARING HABITAT ALONG THE MADISON RIVER. BRUSH BANK MATRICES WITH WILLOW CUTTINGS WILL BE CONSTRUCTED AT SELECT LOCATIONS TO PROVIDE AQUATIC HABITAT AND SUPPORT REVEGETATION. LOW GRADIENT SLOPES WILL BE CONSTRUCTED AT INNER BENDS TO PROMOTE NATURAL WILLOW RECRUITMENT. LARGE ROCK MAY BE LEFT IN PLACE OR RE-ARRANGED TO CREATE ROCK RIB STRUCTURES AT THE ENGINEERS DISCRETION DURING EXCAVATION TO PROVIDE ADDITIONAL CHANNEL COMPLEXITY. THIS TREATMENT IS DESIGNED TO WORK WITH THE FLOW REGIME AT HEBGEN DAM TO CREATE SIDE CHANNEL HABITAT WITH PERENNIAL FLOW.



TYPICAL CROSS SECTION 1



TYPICAL CROSS SECTION 2

4 TYPICAL SIDE CHANNEL CROSS SECTION
NTS