

WORK DESCRIPTION FOR WDFW HYDRAULIC PERMIT

Stream crossing feature improvements include the installation of cable concrete mattresses (fords), at six sites; and armoring of crossing features with bank barbs at one site (MPRC SOZ project location). One of the six cable concrete fords (Range 20, Training Area 15) will replace an existing geo-cell ford in need of maintenance. These crossing features and erosion control structures would protect roads during high flow, stabilize and reestablish stream channels along their natural courses, and mitigate bank erosion.

Cable Concrete fords (also known as articulated concrete mats) are proposed for construction at six stream crossings located in Range 20 (in Training Area 15), on Holmes Ranch Road (in the MPRC SDZ; see attached sheet 4 of 24), Range 5 (in Training Area 11), and three locations in Range 15 (in Training Area 12). The Range 20 ford will be constructed within Lmuma Creek, an intermittent stream with perennial portions, located in the Upper Yakima watershed. The Holmes Ranch Road ford will be constructed within Alkali Creek, an intermittent stream with perennial portions, located in the Upper Columbia-Priest Rapids watershed. The Range 5 ford will be constructed within the south fork of Selah Creek, an intermittent stream located in the Upper Yakima watershed. The three Range 15 fords will be constructed on Selah Creek, an intermittent stream with perennial portions, located in the Upper Yakima watershed. All cable concrete ford construction will occur within a 100-year floodplain. All construction will take place in dry, intermittent portions of the streams. The construction crew will use existing roads to access these proposed project areas.

Six Bank Barbs will be constructed within Alkali Creek off of Holmes Ranch Road (in the MPRC SDZ).

Alkali Creek is an intermittent stream with perennial portions located within the Upper Columbia-Priest Rapids watershed. Three banks barbs will be constructed upstream of the cable concrete ford and three bank barbs will be constructed below the ford. All Bank Barb construction will occur within a 100year floodplain. All construction will take place in a dry, intermittent portion of the stream. The construction crew will be using an existing road to access the stream location. (See attached sheet 10 of 24 for bank barb schematics and a photo from a previous bank barb project with a similar stream type).

Bank barbs use large angular rocks 16 to 36 inches in diameter with the base layer toed in at least half the depth of the first rock. Subsequent tiers are placed at a long sloping angle directed upstream as illustrated in the attached bank barb schematics.

Structures would be of a loose rock design to minimize site disturbance.

Bank barbs would be placed outside of the streams meander bends and will take into consideration changes in the stream channel direction.