PROJECT DESIGN FEATURES TO PROTECT NATIONAL FOREST RESOURCES

Table 1: Project Design Features Included in Proposed Action

#	Area	Design Feature/Conservation Measure
1	ESA Fish Protection	Block nets will be installed, fish will be captured and relocated, streamflow will be diverted around the project area and block nets will be removed in the same day. Very rare occasions may require block nets remain in stream overnight when the capture and diversion activities require additional time to complete.
2	ESA Fish Protection	Fish will be salvaged from construction site (600' upstream and downstream) prior to work site isolation.
3	ESA Fish Protection	Install block nets at up and downstream locations outside of the construction zone to exclude fish from entering the project area. Leave nets secured to the stream channel bed and banks until construction activities within the stream channel are complete. If block nets or traps remain in place more than one day, monitor the nets and or traps on a daily basis to ensure they are secured to the banks and free of organic accumulation and to minimize fish predation in the trap.
4	ESA Fish Protection	All projects will be conducted during low flow conditions, to minimize effect to or delay movement of ESA-listed species.
5	ESA Fish Protection	Handling of fish will be conducted by or under the direction of a fisheries biologist, using methods directed by the following; NMFS Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act, Idaho Department of Fish and Game Scientific Collection Permit, and NMFS 10a collection permits, if applicable
6	ESA Fish Protection	All handled fish will be held in oxygenated 5-gallon buckets filled with stream water for a period only long enough to transport fish to an appropriate release site or live well. Buckets will likely be placed into the water and slowly inverted to allow captured fish to move into the selected release sites.
7	Excavation	Minimize bank and riparian area excavation during construction to the extent practicable.
8	Excavation	Balance cuts and fills to minimize disposal needs.
9	Excavation	Construction limits during excavation and installation will be defined prior to construction beginning. The limits will accommodate equipment access and stream dewatering/bypass systems to facilitate construction in the dry.
10	Excavation	Excess fill material will be disposed of outside of riparian management zones and waterbodies. Stockpile and staging areas will be identified prior to implementation and flagged.
11	Excavation	Native materials (e.g. substrate, riparian vegetation, rock, woody debris) excavated on-site, will be conserved and stockpiled for later use in channel reconstruction, filling of

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		culverts, or other site rehabilitation and will be kept separate from other stockpiled material which is not native to the site.
12	Flow Reintroduction	Flow reintroduction into new channel will be done slowly to not introduce large amounts of sediment into the channel and downstream. Turbidity will be monitored during re-watering to ensure that plume does not continue more than 600' downstream and complies with State water quality standards
13	Flow Reintroduction	Stream channels will be re-watered in a manner to minimize a sudden increase in turbidity
14	Flow Reintroduction	When flow is reintroduced, the Forest will monitor turbidity. Turbidity will be monitored outside the project area (to establish background), and 600 feet downstream from the point of discharge during re-watering. The Forest will monitor downstream turbidity every hour, and will continue until values have decreased below the state NTU standard or for 4 hours, whichever is achieved first. The NTU values should not exceed 50 NTUs over background 1.5 hours after re-watering.
15	Hazardous Materials	Place pumps in approved containment cells with absorbent pads. All pumps and fuel setup within an adequate and appropriate containment system able to contain 110% volume of the largest fuel container used. In the event of a fuel spill, the Operator would notify the Forest Service within twenty-four hours and the contaminated material would be removed and transported to an authorized location.
16	Hazardous Materials	Any spills over 25 gallons will be reported to the IDEQ (1-800-632-800) and cleanup will be initiated within 24 hours of the spill.
17	Hazardous Materials	Maintain appropriate spill response kits at the active operating area(s) and within each vehicle. Ensure spill kits are appropriately sized for a potential spill of at least 25 gallons.
18	Hazardous Materials	Refueling of equipment would occur at least 100 feet away from live water. Fuel storage will occur in designated staging areas and at least 100 feet away from live water.
19	Hazardous Materials	All motorized equipment would have working mufflers, spark arrestors and secondary containment. Electrical equipment must be properly insulated. Adequate fire protection is required and includes at least one handheld implement (shovels and axes) per person and one fire extinguisher per vehicle.
20	Hazardous Materials	All equipment, including chainsaws and other hand power tools, will be fueled and serviced in an established staging area. When not in use, vehicles will be stored in the designated staging area that includes spill prevention measures adequate so that the staging area will not deliver fuel, oil, etc. to streams. Oil-absorbing floating booms, or other equipment such as pads and absorbent —peanuts will be available on-site during all phases of construction and placed in a location that facilitates an immediate response to potential petroleum leakage.

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21	Invasives	All equipment, construction vehicles, and tools will be cleaned and decontaminated in order to eliminate or minimize the risk of introducing weeds and aquatic nuisance species into the project area. All tools, waders, and boots shall be decontaminated with a quaternary compound disinfectant (such as Super HDQ Neutral by Spartan Chemicals) or washed with high-pressure water source. Equipment will be available for inspection by Forest Service staff prior to entering NFS lands
22	Invasives	Prior to entry onto National Forest lands, operators and contractors are required to clean and remove mud, dirt or debris that may contain weed seeds or reproductive propagules from the undercarriage and tires/tracks/skids of exploration equipment and submit to the Forest Service for inspection.
23	Pre-Project Planning	The project will comply with all applicable State and Federal permitting requirements. Permits will be issued prior to work commencing, and will be provided to project implementer or Forest Service.
24	Pre-Project Planning	A communication plan will be developed prior to work commencing to allow time to notify public, permittees, etc.
25	Pre-Project Planning	Signage associated with construction will be the responsibility of the contractor.
26	Pre-Project Planning	All projects will be conducted during low flow conditions, which typically occur from late summer through fall, to minimize effect to or delay of movement for ESA-listed species. Avoid scheduling activities during periods of the year where heavy precipitation and runoff are likely to occur.
27	Pre-Project Planning	All in-stream and channel rehabilitation activities will be completed within one work season.
28	Site Preparation	Identify suitable areas offsite or away from waterbodies for disposal sites before beginning operations.
29	Site Preparation	Clearly delineate excavation construction limits, staging areas, stockpile areas prior to any ground disturbing activities. Sensitive areas, such as wetlands, riparian management zones, etc. will be flagged and delineated to reduce effects to streams and riparian areas.
30	Site Preparation	Locate access and staging areas outside of work area boundaries, riparian management zones, wetlands, and sensitive soil areas. Excess fill or excavated material will be located outside of the floodplain and riparian management areas.
31	Site Preparation	Refuel and service equipment only in designated staging areas and/or in construction areas if approved by the USFS
32	Site Preparation	Inventory and treat weeds at the project area and areas to be used by project personnel (force account, contractors or partners), including staging areas.

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33	Site Preparation	Limit the amount of exposed or disturbed soil at any one time to the minimum necessary to complete construction operations.
34	Site Preparation	Stage construction operations as needed to limit the extent of disturbed areas without installed stabilization measures.
35	Site Preparation	Retain or enhance maximum native vegetation in and around the project area, consistent with project objectives to promote pollinator habitat, suppress weeds and to prevent weed establishment, growth, and spread.
36	Site Preparation	Trees that are removed in order to facilitate structure placement, will be stockpiled for use in stream channel or floodplain rehabilitation or maintenance.
37	Site Preparation	Existing disturbed areas, such as road prisms, will be utilized whenever possible. Areas of minimally sufficient size would be cleared if staging or stockpile areas do not exist.
38	Site Preparation	Avoid or minimize unacceptable damage to existing vegetation, especially plants that are stabilizing the bank of the waterbody.
39	Site Preparation	Trees will be retained at project sites wherever possible. Trees (greater than 8 inches diameter at breast height [dbh]) will not be felled in the riparian area for site rehabilitation purposes unless necessary for safety. If necessary for safety, trees may be felled toward the stream and left in place, or placed in the stream channel or floodplain
40	Site Preparation	Whenever possible, woody shrubs that need to be removed as part of the project will be excavated with root ball intact, retained on site, and replanted as part of the site rehabilitation.
41	Site Preparation	Such materials may be salvaged from the project site or hauled in from offsite but cannot be taken from streams, wetlands, or other sensitive areas.
42	Site Preparation-Sediment/Erosion Control	Install sediment and stormwater controls before initiating surface-disturbing activities to the extent practicable. Install suitable stormwater and erosion control measures to stabilize disturbed areas and waterways before seasonal shutdown of project operations or when severe or successive storms are expected. Maintain controls throughout the duration of the project to ensure they are functioning properly. .
43	Site Preparation-Sediment/Erosion Control	Erosion control practices, such as staked straw bales, sediment fences, erosion control matting, seeding, and woody re-vegetation will be used and maintained to minimize delivery of additional sediment from the channel. The only sediment in the channel within the construction site will be the naturally occurring streambed sediments that would be moved and reworked to form a natural, yet stable streambed.
44	Site Preparation-Sediment/Erosion Control	Erosion control products must be made from 100% biodegradable non-plastic materials that either does not contain netting, or netting is non-plastic and loose-weave. Erosion control blankets and wattles must be manufactured of wood fiber. Erosion control products will be approved by FS prior to purchase.

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45	Site Preparation-Sediment/Erosion Control	A supply of surplus sediment barriers will be kept on hand, to respond to unanticipated events that have the potential to deliver sediment to stream channels.
46	Site Preparation-Sediment/Erosion Control	In the event of local precipitation events or high flows, all project operations will cease, except efforts to minimize storm damage or excessive erosion, and to ensure sediment control devices are functioning.
47	Site Preparation-Sediment/Erosion Control	In-channel sediment abatement barriers, such as Sedimat, will be used, to capture sediment that is liberated during rewatering of dewatered channels.
48	Site Rehabilitation	The areas disturbed during the project will be rehabilitated and re-vegetated.
49	Site Rehabilitation	Trees (greater than 8 inches dbh) will not be felled in the riparian area for site rehabilitation purposes unless necessary for safety.
50	Stream Simulation/Channel Reconstruction	Materials needed for stream channel reconstruction, backfill of culvert, and road fill will be sourced on-site and limited to the location of the culvert excavation and road fill removal. If additional materials are needed (footing base, stream simulation gradations, etc.), they will be sourced from a Forest Service approved location and certified weed-free.
51	Stream Simulation/Channel Reconstruction	Construction of stream channel and placement of stream simulation material, habitat features, and key pieces will be monitored by a Forest Service representative.
52	Stream Simulation/Channel Reconstruction	Stream channel and floodplain will be reconstructed in a manner which matches channel dimension, pattern, and profile for the stream type above and below the crossing
53	Structure Installation	Pre-cast abutments would be placed outside of the bankfull channel, and compacted fill protected by rip rap slopes if necessary to achieve project objectives. No pile driving is allowed.
54	Structure Installation	Exposed riprap shall not be placed within the bankfull channel unless necessary to achieve passage objectives, maintain channel features, and protect structures.
55	Temporary Stream Crossings for Construction	Existing roadways or travel paths will be used to cross the stream during project implementation. Use of temporary crossings should be minimized to the maximum extent necessary to complete a project. Dagger Creek will not require stream crossings in live water. Moyer Creek project may need up to 6 passes with equipment on the existing ford crossing. No new crossings will be constructed or utilized during implementation.
56	Temporary Stream Crossings for Construction	Rubber matting, temporary bridges, or other means, will be utilized if the stream channel needs further protection.

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57	Work Site Isolation	Contractor will provide dewatering plan to Forest Service for approval no later than 2 weeks prior to work commencing.
58	Work Site Isolation	Project sites will be dewatered and completely bypassed prior to excavation.
59	Work Site Isolation	Dewatering will be accomplished slowly to capture and move stranded fish and other aquatic organisms to the extent possible. Pumps will have a fish screen installed, and operated and maintained in accordance with NMFS fish screen criteria
60	Work Site Isolation	Diversion dams will not be constructed with material mined from the stream or floodplain.
61	Work Site Isolation	Prior to constructing a water diversion, a fisheries biologist will conduct or direct an inspection of the stream and identify the appropriate means necessary to minimize the potential for fish to enter a constructed diversion and associated dewatering conveyance. Flow diversion around project site will be constructed using non-erodible material, such as a pipe, plastic to line a channel, or revegetated abandoned stream channel of appropriate size to accommodate peak flows that may be expected during construction may be used (including storm events).
62	Work Site Isolation	If streamflow is rerouted to one side of the existing channel, diversion structures, such as sandbags, cofferdams, or portable bladders constructed of non-erodible materials will be used
63	Work Site Isolation	If diversion inlet is not screened, the diversion outlet will be placed in a location that facilitates safe reentry of fish into the stream channel. If appropriate, water from the dewatering activities may be pumped to a temporary storage/treatment site, or into upland areas, and allowed to filter through vegetation prior to water reentering the stream channel.
64	Work Site Isolation	If a diversion channels is excavated, material will be stored at designated stockpile areas, for use in rehabilitating the excavated channel.