



Mitigation is not proposed for bridge shading impacts. Bridge shading impacts are predominantly to mudflat habitat. Because the mudflat habitat will not be significantly altered by shading, no mitigation is proposed.

## **AVOIDANCE AND MINIMIZATION**

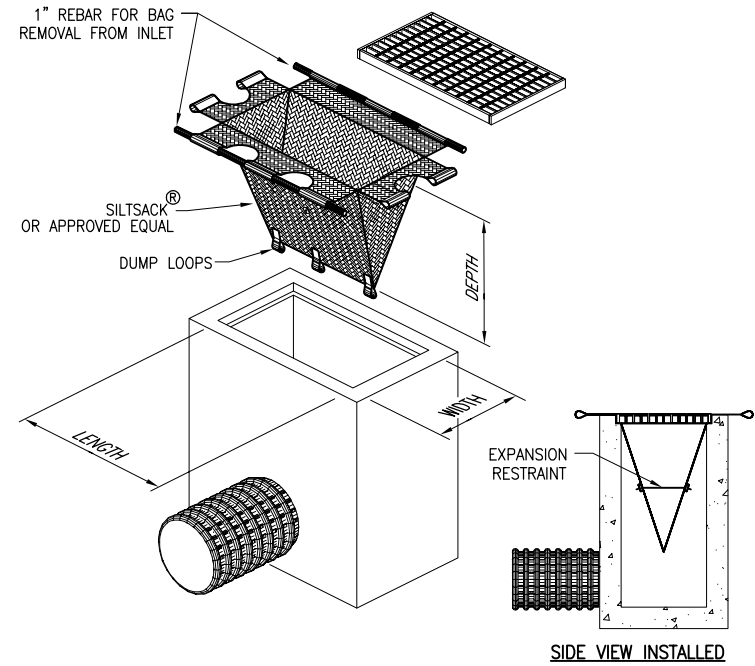
The proposed project will minimize the effect on riparian vegetation and wetlands by implementing the Conservation Measures outlined in the Natural Environment Study (Attachment 11) and Environmental Commitment Record (Attachment 5). In addition, a SWPPP will be prepared by a QSD prior to construction. Avoidance and minimization measures for impacts to riparian vegetation and wetlands are summarized as follows:

- The width of the construction disturbance will be minimized through careful pre-construction planning.
- To avoid unnecessary effects, exclusionary fencing shall be installed along the boundaries of all riparian areas to be avoided to ensure that impacts to riparian vegetation outside of the construction area are minimized.
- All pedestrian and vehicular traffic into the avoided areas delineated by the fencing shall be prohibited during construction.
- To the maximum extent practicable, activities that increase the erosion potential in the project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. If these activities must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.
- Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance and limited to only those areas that have been approved.
- Within 10 days of completion of construction in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon completion of the day's activities. Soils shall not be left exposed during the rainy season.
- Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities.
- If spoil sites are used, they shall be located such that they do not drain directly into a surface water feature, if possible. If a spoil site drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Spoil sites shall be graded and vegetated to reduce the potential for erosion.
- Sediment control measures shall be in place prior to the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated.

- A site-specific spill prevention plan shall be implemented for potentially hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching surface water features.
- Equipment and hazardous materials shall be stored 50 ft away from surface water features.
- Vehicles and equipment used during construction shall receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling shall be conducted in an area at least 50 ft away from waterways or within an adequate fueling containment area.

## **References**

Winzler and Kelly. 2010. Wetland and habitat mitigation and monitoring plan for City of Arcata rail-with-trail connectivity project---Updated by City of Arcata, October 2014.



NOTES:

1. BIOBAGS FILL MATERIAL SHALL BE CLEAN 100% RECYCLED WOOD PRODUCT WASTE. SIZE OF BAG SHALL BE GENERALLY 18" X 6" X 30" PLASTIC MESH BAGS WITH 1/2" OPENINGS AND WEIGH APPROXIMATELY 45 POUNDS.
2. INSPECT BIOBAGS ON A REGULAR BASIS. BIOBAGS SHALL BE REPLACED ONCE THEY BECOME CLOGGED.
3. REPAIR ANY DAMAGED BALES, AREAS OF END RUNS, AND UNDERCUTTING BENEATH BALES. REPAIRS TO BALES OR BARRIERS SHALL BE MADE AS SOON AS POSSIBLE.
4. REMOVE SEDIMENT DEPOSITS WHEN THEY REACH APPROXIMATELY ONE THIRD THE HEIGHT OF THE BARRIER.
5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE IN UNPAVED AREAS AFTER THE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE AND SEEDED.

NOTES:

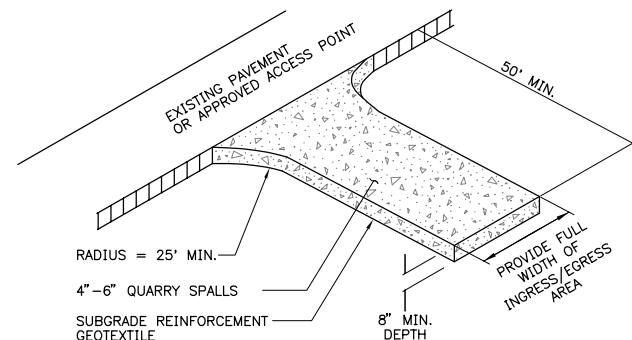
1. MATS/BLANKETS SHALL BE NORTH AMERICAN GREEN'S BIONET S150BN OR APPROVED EQUAL.
2. MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.
3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
4. APPLY PERMANENT SEEDING BEFORE PLACING MATS/BLANKETS.
5. LAY MATS/BLANKETS LOOSELY AND STAKE OR STAPLE PER MANUFACTURERS RECOMMENDATIONS TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

NOTES:

1. THE INLET FILTER SHALL BE MANUFACTURED FROM UV RESISTANT POLYPROPYLENE, NYLON, POLYESTER, OR ETHYLENE FABRIC WITH A MINIMUM TENSILE STRENGTH OF 50 LBS. PER LINEAL FOOT. AN EQUIVALENT OPENING SIZE NOT GREATER THAN A 20 SIEVE AND WITH A MINIMUM FLOW RATE OF 40 GALLONS / MINUTE / SQ. FT.
2. THE INLET FILTER MAY BE SUSPENDED FROM OR HELD IN PLACE BY THE EXISTING INLET GRATE (OR OTHER APPROVED METHOD), PROVIDING NO MODIFICATION OR DAMAGE SHALL BE DONE TO THE INLET GRATE OR FRAME. THE INLET GRATE SHALL NOT BE CAUSED TO REST MORE THAN 1/2" ABOVE THE INLET FRAME.
3. FLOWS SHALL NOT BE ALLOWED TO BYPASS THE INLET FILTER. THE INLET FILTER OR ITS FRAME SHALL CATCH FLOWS AT ALL SIDES OF THE INLET, EXCEPT FOR FLOOD RELEASE.
4. INLET FILTERS SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL DURING THE WET SEASON AND MONTHLY DURING THE DRY SEASON. SEDIMENT AND DEBRIS SHALL BE REMOVED BEFORE ACCUMULATIONS HAVE REACHED ONE THIRD THE DEPTH OF THE BAG. BAGS SHALL BE REPAIRED OR REPLACED AS SOON AS DAMAGE OCCURS.

## 62 BIO-FILTER INLET PROTECTION

TYP. ER-2.0 NTS



NOTES:

1. ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC ROADWAY.
2. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS MUST BE REMOVED IMMEDIATELY.
3. ACCESSES SHALL BE INSPECTED MONTHLY AND AFTER EACH RAINFALL WITH MAINTENANCE PROVIDED AS NECESSARY.

**65 GRAVEL CONSTRUCTION ENTRANCE**

TYP. ER-2.0 NTS

## 63 EROSION BLANKETS/TURF REINFORCEMENT MATS

TYP. ER-2.0 NTS

## 64 INLET FILTER - INLET PROTECTION

TYP. ER-2.0 NTS

SHEET	73	OF	73	ER-2.0	CITY OF ARCATA RAIL WITH TRAIL CONNECTIVITY PROJECT EROSION & SEDIMENT CONTROL EROSION & SEDIMENT CONTROL DETAILS	<div><div><div>REGISTERED PROFESSIONAL ENGINEER ANDREW PERRY No. 26926 STATE OF CALIF. Exp. 01/01/2026</div><div>SEAL</div></div><div><div>RES</div><div>JS</div><div>SUPV</div><div>MP</div></div><div><div>SRN</div><div>CKK</div><div>PK</div></div></div>	WINZLER & KELLY 633 THIRD STREET EUREKA, CA 95501-0417 PH (707) 443-8326 FAX (707) 444-8330 SUBCONSULTANT	FEB. 2011 REVISED	100% SUBMITTAL NOT FOR CONSTRUCTION	SYM.	DESCRIPTION	DATE	APPROVED	REVISIONS