

Instructions for 10/04/06 Draft IMPLEMENTATION checklist  
**SB – BIOENGINEERED STREAMBANK STABILIZATION**

*To be used for streambank stabilization features utilizing live plant materials.*

**APPROVED** means as stated in the contract, specified in the design, or verbally agreed upon by contract manager.

**Y** = Yes - as approved, no deviations. **P** = Partially - minor deviations/deficiencies, include comment. **N** = No - not as approved, include comment. **D** = Don't know - answer unknown and cannot be found; preferable to blank. **A** = Not Applicable - the question or sub-question does not pertain to feature or the component in question was not part of the approved contract.

*See Manual Part III and XI for guidance. See below for 3-letter code key; see glossary for definitions.*

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EACH FEATURE AND ITS “**TREATMENT AREA**” MUST BE IDENTIFIED USING THE PROTOCOL FOR DOCUMENTING THE LOCATION OF HABITAT RESTORATION FEATURES. IF PRE-TREATMENT MONITORING HAS BEEN COMPLETED, DELINEATE THE PERIMETER OF EACH FEATURE THE SAME WAY IT IS DELINEATED ON THE PRE-PROJECT CHECKLIST WHENEVER POSSIBLE; EXPLAIN NECESSARY CHANGES. REVEGETATION FEATURES SHOULD BE DELINEATED BASED ON THEIR LOCATION, I.E. LEFT BANK, RIGHT BANK, FLOODPLAIN, OR UPSLOPE. EACH FEATURE SHOULD ENCOMPASS ONLY ONE OF THESE LOCATIONS.

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*Questions refer to the as-built **FEATURE**.*

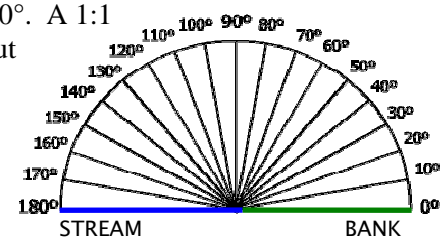
1. **Was the length of bank treated the same as approved?** Refers to length of bank that was actually treated, not intended to be treated.
    - a. *Actual length of feature: (ft)* Measure the length of the feature along, not across, the channel. If multiple structures are being evaluated as one feature (e.g. baffles) describe the structures in the comments.
    - b. *Area of the feature installed within bankfull channel: (ft<sup>2</sup>)* Permit reporting requirement. Estimate the amount of area where something was installed; consider only area within the bankfull channel.
    - c. *Length of aquatic habitat disturbed during implementation: (ft)* Permit reporting requirement.
    - d. *Length of bank stabilized by the feature: (ft)* Performance measure, enter streambank length treated.
  2. **Feature condition:** Specify the current structural condition of feature: *EXCL* = (Excellent) The treatment is intact and structurally sound. *GOOD* = the treatment is intact and generally sound but some wear or undermining is evident. Components may have shifted slightly, but the treatment is intact. *FAIR* = the treatment position or condition has been altered significantly. *POOR* = the treatment is visible but has suffered significant movement or damage. *FAIL* = (Fail) The treatment is not visible or remnants are not in any form of designed configuration.
  3. **Are problems with the feature visible?** Refers to visual evidence of structure malfunction or lack of structural integrity.
    - a. *Type:* Enter all that apply. Explain problems in comments.
  4. **Was the feature placed in the approved location and position?** Refers to location of the structure linearly AND the position of the structure laterally in the channel.
    - a. *Position:* Enter only one. The position LBK and RBK are determined looking downstream.
  5. **Was the feature oriented as approved?** Refers to orientation of the structure in relation to the stream channel.
    - a. *Orientation:* Enter only one.
  6. **Were the sizes of materials used the same as approved?** Refers to materials of approved type, quality and origin.
    - a. *Materials:* Actual materials used to construct the feature. Enter all that apply.
  7. **Were the sizes of materials used the same as approved?** Refers to size of materials specified in contract or design specifications.
  8. **Was the feature anchored as approved?** If the feature was not supposed to be anchored i.e. unanchored LWD, enter A.
    - a. *Anchoring:* Actual methods used to anchor structure. Enter all that apply.
  9. **If applicable, was the approved bank excavation carried out?** Applies to bank or channel excavation.
    - a. *Were spoils placed where they cannot deliver sediment to a stream?* Refers to fine sediment removed from the bank that should not be reintroduced to the stream. If moving materials within the channel, enter A.
  10. **Were approved erosion control measures applied to disturbed areas?** Refers to erosion control measures applied to areas disturbed during construction and does not include streambank stabilization structures.
    - a. *Type:* Enter all that apply. If planting occurred, complete a Revegetation Treatment checklist.
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*Question pertains to features that involve “laying back” the **BANK**.*

11. **If applicable, was the bank constructed to the approved angle?** Refers to physically altering the bank (e.g., excavating and laying back the bank to a 2:1 slope). If there was no bank re-shaping, enter A.
  - a. *As-built bank angle: (degrees)* The average bank angle at the treatment site reported in departure from

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- 11a. horizontal with 0° on the bank, regardless of which bank. A vertical bank is 90°. A 1:1 slope is 45°. A 1½ : 1 slope is 33.69°. And, a 2:1 slope is 26.65°. For undercut banks, also record the horizontal distance undercut in the comments.



*Questions pertain to live VEGETATION used for the feature.*

12. **Live plant material used in the feature: SALIZ, POBAT, POFRF3, etc.** List all species planted, use comments if necessary. Always use the species code when referring to plant species. Common plant materials used are willow sp. (SALIX), Black Cottonwood (POBAT), and Fremont Cottonwood (POFRF3). Plant information is found in *Restoration Manual* Part XI, codes are found on the CREMP “Plant\_codes” list. If species does not appear on the list, look up the species code at the USDA website (<http://plants.usda.gov/index.html>).
13. **Minimum adequate survival of vegetation: (%)** Enter the minimum adequate percent survival of planted vegetation specified in contract. If not specified, enter 80%.
14. **Will vegetation be irrigated?** If irrigation methods were not as approved, specify deviations in the comments section. Enter A if project was approved with no irrigation.
- Irrigation method:* Enter methods used. If OTH, specify in comments.
  - Is there an agreement to insure irrigation completion & maintenance?* If an irrigation agreement is in place, record the type of agreement (written or verbal) in the comments. Enter P if an agreement is in place, but does not address both completion *and* maintenance. Enter A if no irrigation provisions were proposed.
  - Number of years the feature will be irrigated: (yrs)* Record the number of years the plantings will be irrigated. Enter A if no provisions were proposed or there is no agreement in place.

**IMPLEMENTATION questions are feature-specific.**

15. **Does the feature meet design, contract & permit specifications?** Standard CDFG approved design referenced in contract or another design described in the contract. If not answered Yes, a comment and appropriate documentation of deviation from the approved design are required - whether the change is beneficial or detrimental.
- If not, were modifications beneficial to performance?* A if implemented as approved.
  - Is non-compliance significant enough to jeopardize performance?* A if implemented as approved.
  - Are corrections needed?* Y or P if the contractor will be asked to make the corrections. A if implemented as approved.
16. **Would a different treatment or design have been preferable? If Y, comment.** Yes to this question will be given serious consideration and requires a comment.
17. **Feature Implementation Rating.** Rate the implementation of the feature, not the structural condition. Use the following definitions and rate according to how well the contract was executed and how closely the as-built matches the design. (To be better defined)
- **EXCL- (Excellent)** Installation of the project feature meets all requirements.
  - **GOOD** –There are some deficiencies in the project feature, but these will not affect its overall effectiveness. Deficiencies are not enough to lead to failure.
  - **FAIR** – There are some deficiencies in the project feature, and these may cause problems in the future. Some characteristics of project feature, although not enough to cause corrective action at this time, require further scrutiny. The feature will probably hold up.
  - **POOR** – Implementation was not done correctly. There are deficiencies in the project feature, and these are enough to cause problems in the future. Remedial action is required.
  - **FAIL – (Failed)** Implementation was not done correctly. Deficiencies in the project feature have already caused enough problems that its objectives will not be met. Remedial action is required.

### Code Key

ANC	Anchor failure	LBK	Left bank	PRP	Perpendicular to stream	STR	Stranded out of active channel (horizontally)
BBB	Buried by bedload	MAT	Materials failure	RBK	Right bank		
BUR	Buried or “keyed in”	NON	None	REB	Rebar	SWA	Stranded out of water (vertically)
CBL	Cable	NTM	Native mulching	SEE	Seeding		
CRF	Cable/rebar failure	NTR	Native rock	SHF	Structure shifted	TIE	Tied
DNS	Downstream	OFR	Off-site rock	SLF	Silt fence	UND	Undercut/ undermined
FAB	Fabric	OTH	Other	STK	Staked	UNS	Undersized/ under-built
HAN	Hand watering	PLN	Planting	STM	Straw mulching	UPS	Upstream
IRS	Irrigation system	PRL	Parallel to stream	WSH	Washed out	VEG	Vegetation