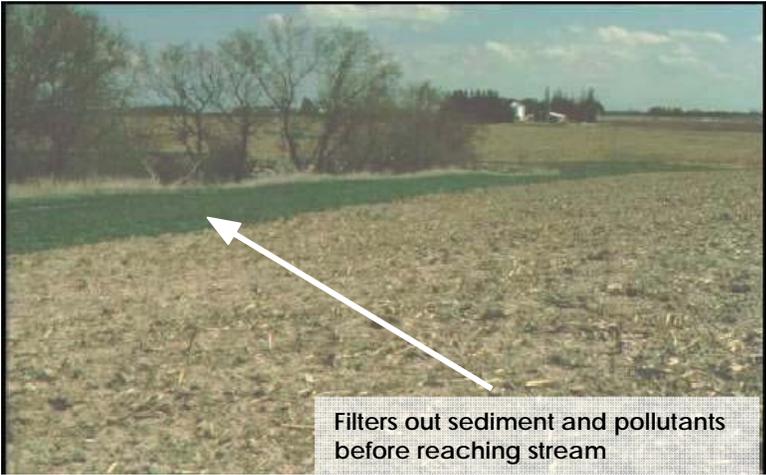


Conservation Practice	Description
<p><b>Practices 1-9 primarily address excessive surface erosion with the goal of preventing sediment and other pollutants from entering waterways. Many are installed in uplands.</b></p>	
<p><b>1. Access Road Improvements (560)</b></p>	<p>Improvement of an existing agricultural access road used for moving livestock, produce, and/or equipment for proper property management while controlling runoff to prevent erosion and maintain or improve water quality.</p> <p>An example of this practice might include re-grading, outsloping, or the addition of a rolling dip to a road so that water is less erosive as it travels across the road. This practice may also be used for repair or removal of culverts from non-fish bearing streams associated with access road improvements.</p> <p>Access road improvements typically involve multiple installations spread out over a long reach of road.</p> <p><u>Additional Conditions</u></p> <ul style="list-style-type: none"> <li>▪ This practice is used only to regrade, resurface, relocate, and/or provide drainage improvements on existing access roads, <b>not to construct new roads</b>. Under this provision, access roads may be relocated to provide a setback from a stream corridor in order to plant riparian vegetation as part of a stream corridor restoration plan or for other natural resource protecting purpose.</li> <li>▪ This practice will not serve or be related to new development or construction purposes.</li> <li>▪ Road improvements are modeled in the <i>Handbook for Forest and Ranch Roads: A Guide for planning, designing, constructing, reconstructing, maintaining and closing wildland roads</i>, by Weaver and Hagens. This manual contains descriptions of sound methods and designs to improve and maintain rural roads to correct problems associated with poor road placement and design that cause excessive runoff and erosion.</li> <li>▪ Improvements carried out under this practice will not be done for the purpose of accommodating future non-agricultural development or as a precursor to intensification of land use.</li> </ul>

	<ul style="list-style-type: none"> <li>All roads described under this category shall meet San Luis Obispo County standards for agricultural roads.</li> </ul> <p><u>Size Limitations</u> <sup>/2</sup></p> <table border="1" data-bbox="412 369 1495 516"> <thead> <tr> <th rowspan="2">Length (ft)</th> <th rowspan="2">Width (ft)</th> <th rowspan="2">Area of Practice (ac)</th> <th rowspan="2">Volume<sup>/1</sup> (cy)</th> <th colspan="3">Additional Limitations</th> </tr> <tr> <th>Quantity</th> <th>Unit</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>5280</td> <td>30</td> <td>15</td> <td>3000</td> <td>4</td> <td>miles</td> <td>Work performed over 4 miles</td> </tr> </tbody> </table> <p><u>Environmental Benefits</u></p> <ul style="list-style-type: none"> <li>Improves water quality by decreasing erosion and sedimentation to streams</li> <li>Restores historic flow paths</li> <li>Decreases flooding</li> <li>Improves habitat for fish and other aquatic species</li> <li>Decreases loss of vegetation and soil</li> </ul>	Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>/1</sup> (cy)	Additional Limitations			Quantity	Unit	Notes	5280	30	15	3000	4	miles	Work performed over 4 miles
Length (ft)	Width (ft)					Area of Practice (ac)	Volume <sup>/1</sup> (cy)	Additional Limitations										
		Quantity	Unit	Notes														
5280	30	15	3000	4	miles	Work performed over 4 miles												
<p><b>2. Diversion (Upland Flow Interceptors) (362)</b></p>	<p>Construction of an earthen channel across a slope to slow and redirect excessive surface flow.</p> <p>This is an upland practice primarily performed on cultivated land as part of a resource management system to break up concentrations of water on long slopes, reduce runoff damages from upland runoff, and divert water away from active gullies or critically eroding areas.</p> <p>This practice is often used to deliver water to a sediment basin or a flat, vegetated area where flow velocities are slowed before discharging into a stream channel.</p> <p><u>Additional Conditions</u></p> <ul style="list-style-type: none"> <li>This practice <b>does not</b> involve the diversion of water from a waterway or redirection of flow to a different waterway.</li> </ul>																	

	<ul style="list-style-type: none"> <li>This practice <b>does not</b> result in a change in volume of flow or flow reduction to surface waters.</li> <li>Diversion of upland water <b>will not</b> prevent entry into a wetland or convert a wetland by changing the hydrology.</li> <li>Each diversion must have a safe and stable outlet that conveys runoff to a point where outflow will not cause damage. Vegetative outlets or sediment basins, when used, will be installed and established prior to installation of a diversion.</li> <li>If a diversion outlets directly into a natural drainage, appropriate energy dissipaters will be designed and installed to avoid erosion.</li> <li>Where possible, angular rocks or vegetation should be added to channels to reduce erosion.</li> </ul> <p><u>Size Limitations</u> <sup>/3</sup></p> <table border="1"> <thead> <tr> <th rowspan="2">Length (ft)</th> <th rowspan="2">Width (ft)</th> <th rowspan="2">Area of Practice (ac)</th> <th rowspan="2">Volume<sup>1</sup> (cy)</th> <th colspan="3">Additional Limitations</th> </tr> <tr> <th>Quantity</th> <th>Unit</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>20</td> <td>1</td> <td>3000</td> <td>20</td> <td>cfs<sup>4</sup></td> <td>Upland applications only</td> </tr> </tbody> </table> <p><u>Environmental Benefits</u></p> <ul style="list-style-type: none"> <li>Reduces the amount of sediment and related pollutants delivered to surface waters</li> <li>Helps prevent gully formation</li> </ul>	Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations			Quantity	Unit	Notes	2000	20	1	3000	20	cfs <sup>4</sup>	Upland applications only
Length (ft)	Width (ft)					Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations										
		Quantity	Unit	Notes														
2000	20	1	3000	20	cfs <sup>4</sup>	Upland applications only												
<p><b>3. Filter Strip (393)</b></p>	 <p>A strip of herbaceous vegetation located between cropland, grazing land, or other disturbed land and environmentally sensitive areas.</p> <p>This practice applies when planned as part of a conservation management system and is used at the lower edges of fields to remove sediment, organic matter, and other pollutants from runoff prior to entering streams. Overland flow entering the filter strip is primarily sheet flow.</p> <p>Filter strips are also used to provide permanent herbaceous vegetation to enhance habitat for wildlife and beneficial insects, and/or to maintain or enhance watershed function.</p> <p><u>Additional Conditions</u></p>																	

	<ul style="list-style-type: none"> <li>▪ Seed mixes containing non-invasive, non-native plant species may be used for filter strips; non-natives to be sterile such as sterile barley; invasive non-native plants are not permitted. <u>Non-natives used will not persist past the first year of establishment. In no case would non-native vegetation species be used by themselves for vegetation purposes.</u></li> </ul> <p><u>Size Limitations</u></p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Length (ft)</th> <th>Width (ft)</th> <th>Area of Practice (ac)</th> <th>Volume<sup>1</sup> (cy)</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>50</td> <td>2.5</td> <td>50</td> </tr> </tbody> </table> <p><u>Environmental Benefits</u></p> <ul style="list-style-type: none"> <li>▪ Prevents and minimizes sediment and attached pollutants from entering waterways</li> <li>▪ Reduces erosion on the area on which they are installed</li> <li>▪ Enhances wildlife habitat and provide habitat for beneficial insects</li> <li>▪ Enhances watershed function</li> </ul>	Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	2000	50	2.5	50
Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)						
2000	50	2.5	50						

**4. Grassed Waterway (412)**



A natural or constructed earthen channel or swale that is shaped or graded to required dimensions and established with suitable vegetation for the stable movement of excess runoff.

This practice is used to convey runoff from diversions, terraces, or other concentrated water sources, to reduce gully erosion, reduce sediment delivered to receiving waters, and improve water quality downstream.

Grassed waterways are usually installed on cultivated land and field ditches adjacent to cultivated land. Grassed waterways may also be used to move runoff from agricultural lands into riparian or wetland areas or move excess runoff from ponds to riparian areas.

Additional Conditions

- Grassed waterways will not divert water out of the natural sub-watershed.

Size Limitations

Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations	
				Quantity	Unit
2000	20	1	5000	20	cfs <sup>4</sup>

Environmental Benefits

- Prevents and minimize sediment and attached pollutants from entering waterways, riparian habitat, and/or wetlands
- May be used as a connective feature to other habitat types such as riparian areas and wetlands

**5. Irrigation System & Tailwater Recovery (447)**



A practice designed to capture irrigation water, provide temporary water storage for agricultural uses, and redistribute water back to the system for reuse.

This practice may be applied as part of a conservation management system to conserve irrigation water and improve offsite water quality.

Additional Conditions

- Nutrient and pest management measures for crops will be planned and implemented to limit chemical-laden tailwater as much as practical.
- Storage basins will be sized to provide adequate retention time for the breakdown of chemicals contained in runoff.
- Seepage of chemical-laden water from a storage facility will be controlled to the extent possible by using natural soil liners, commercial liners or other approved methods.
- This practice will not be installed where reduction in downstream flows could impact wetland hydrology.

Size Limitations <sup>/11</sup>

Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations	
				Quantity	Unit
N/A	N/A	0.5	2000	2	cfs

Environmental Benefits

- Conserves limited water supplies
- Improves downstream water quality by decreasing sediment and sediment-attached pollutants carried by runoff

**6. Pipeline  
(516)**



A pipeline used for conveying water from a source of supply to points of use.

This practice is used on agricultural lands to shift livestock to constructed water sources away from streams to reduce bank erosion, sediment yield, and manure entering watercourses.

Generally, buried pipelines are installed in upland areas. Occasionally, a pipeline may cross a stream; when this is necessary, pipelines will be buried to an appropriate depth to maintain channel and bank stability, and will avoid riparian habitat. In areas where channels are deeply incised and the substrate does not allow burying pipe easily (boulder/cobble), pipelines may be suspended across a channel and attached to posts on the banks; posts will be placed to avoid impacts in the riparian zone.

Size Limitations /10

Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations		
				Quantity	Unit	Notes
200	20	0.1	N/A			In riparian areas only

Environment Benefits

- Limits cattle access to riparian areas which reduces bank erosion, sediment inputs, and deposit of animal waste directly into streams, and enhances riparian vegetation establishment and health

**7. Pond Improvements (378)**



Restoration and maintenance of existing off-channel agricultural water impoundments made by constructing an embankment or by excavating a pit or dugout.

This practice serves as part of a grazing management system that provides alternative water sources for livestock away from sensitive riparian areas.

Pond restoration primarily involves removing sediment and repairing spillways and embankments. These activities do not include any increase in the original storage capacity of a pond. Without appropriate pond maintenance, ponds no longer serve their intended purposes, do not provide habitat essential to the recovery of California tiger salamanders, and when embankments eventually fail, large amounts of sediment are delivered to downstream receiving waters.

Additional Conditions

- This practice will only be used on existing ponds, **not to construct new ponds.**

Size Limitations

Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations		
				Quantity	Unit	Notes
N/A	N/A			5	ac-ft	Only sediment removal and maintenance of existing ponds

Environmental Benefits

- Reduces soil erosion and sedimentation in riparian areas
- Improves riparian habitat quality and provides long-term riparian habitat protection
- Enhances habitat for California tiger salamanders and red-legged frogs

**8. Sediment Basin  
(350)**



A basin constructed to collect and store debris or sediment. This practice applies where physical conditions or land ownership preclude treating the sediment source by installing erosion control measures to keep soil in place.

Sediment basins will trap sediment, sediment associated pollutants, and other debris and prevent undesirable deposition on bottomlands and in streams. Basins are generally located at the base of agricultural lands adjacent to a natural drainage, and may outlet directly into a natural drainage. Periodic removal of sediment will be required as part of a maintenance plan.

This practice may also be used to construct a sediment trapping forebay within the dimensions of an existing, permitted pond. This structure will function to extend the life of the open water habitat of the pond by creating a small area where routine maintenance can be effectively performed.

Additional Conditions

- Sediment basins **will not be constructed in a stream channel** or other permanent water body except as a modification to an existing permitted pond.
- Basins will be placed **outside of the riparian zone** except as a modification to an existing permitted pond.
- Basins are designed to release water at a slower than storm flow rate.
- The design of spillways, **inlets** and outlet works will include water control structures to prevent scouring at the point of discharge.
- A filter strip of vegetation 12 feet wide shall be established around a perimeter of the basin to further reduce pollution.
- **This filter strip shall be maintained by the landowner using measures approved by NRCS and/or RCD.**

Size Limitations

Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations		
				Quantity	Unit	Notes
N/A	N/A	0.5	3500	2	ac-ft	Capacity of Basin

Environmental Benefits

- Prevents excessive sediment and sediment-attached pollutants from entering streams and wetlands
- Increases habitat diversity by revegetation with native species
- Increases life expectancy of open water habitat in ponds

**9. Underground Outlet (620)**



A conduit installed underground to collect excess surface water and carry it to a suitable outlet.

This practice is applied generally to agricultural lands where a system is needed to dispose of excess water without causing erosion or flooding.

Underground outlets are often installed as part of a water management system with upland diversions, terraces, and sediment basins. Location, size, and number of inlets are determined to collect excess runoff and prevent erosive surface flow. This runoff is then discharged into a sediment basin or grassed waterway, whenever possible, where high velocity runoff is calmed, and suspended sediment is trapped prior to releasing water into a natural drainage channel.

Additional Conditions

Where a pipe outlets directly into a stream, appropriate energy dissipaters are installed to slow velocities and prevent scour.

Size Limitations /5

Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations		
				Quantity	Unit	Notes
50	20	0.1	70	40	cfs <sup>4</sup>	Energy dissipator at outlet

Environmental Benefits

- Essential part of a water management system to prevent or repair sheet and rill erosion and prevent excess water and sediment from entering waterways.

**Practices 10-18 primarily address excessive stream erosion and deposition, with the goal of maintaining or restoring natural stream corridor stability and enhancing native plant communities and fish and wildlife populations. These practices are usually installed in streams/banks.**

**10. Channel Stabilization (584)**



Measures used to stabilize the bed or bottom of a channel.

This practice applies to stream channels undergoing damaging aggradation or degradation that cannot be reasonably controlled by debris removal and vegetation management, vegetative protection, bank protection, or upstream water control measures. A channel is considered stable if, over long periods, the channel bottom remains essentially at the same elevation.

Channel stabilization measures are designed to avoid detrimental erosion or sedimentation up- and downstream; will not impair floodplain function; will not cause detrimental changes to watershed hydrology and sedimentation; and will not result in adverse affects on stream or stream corridor function.

An assessment of channel stabilization will identify the causes contributing to the instability (e.g. alterations in the watershed resulting in significant changes to discharge or sediment production). The evaluation process will include using the RWQCB's *Primer on Stream and River Protection* decision tree. An interdisciplinary team approach will also be considered for the assessment process. Proper implementation of this channel stabilization practice may include significant channel modification or the installation of physical structures to address historic or cumulative impacts causing the channel instability.

Additional Conditions

- Installation of grade stabilization structures, when required, will be conducted using boulder and/or log and/or brush weirs.
- Structures placed in fish-bearing streams will be designed to accommodate fish passage.
- Removal of accumulated sand or sediment that has caused the channel to become plugged will be permitted one time at any given location. **Routine maintenance**

	<p><b>involving dredging of a waterway is not permitted.</b></p> <ul style="list-style-type: none"> <li>Material removed from a stream shall not be taken offsite and must be spread or stored onsite where appropriate.</li> </ul> <p><u>Size Limitations</u></p> <p><i>Degrading Streams</i></p> <table border="1"> <thead> <tr> <th rowspan="2">Length (ft)</th> <th rowspan="2">Width (ft)</th> <th rowspan="2">Area of Practice (ac)</th> <th rowspan="2">Volume<sup>1</sup> (cy)</th> <th colspan="3">Additional Limitations</th> </tr> <tr> <th>Quantity</th> <th>Unit</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>N/A</td> <td>2</td> <td>500</td> <td></td> <td></td> <td>Channel modification to improve geomorphic function</td> </tr> </tbody> </table> <p><i>Aggrading Streams</i></p> <table border="1"> <thead> <tr> <th rowspan="2">Length (ft)</th> <th rowspan="2">Width (ft)</th> <th rowspan="2">Area of Practice (ac)</th> <th rowspan="2">Volume<sup>1</sup> (cy)</th> <th colspan="3">Additional Limitations</th> </tr> <tr> <th>Quantity</th> <th>Unit</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>300</td> <td>N/A</td> <td>2</td> <td>3000</td> <td></td> <td></td> <td>Channel modification to improve geomorphic function</td> </tr> </tbody> </table> <p><u>Environmental Benefits</u></p> <ul style="list-style-type: none"> <li>Stable stream channels/corridors result in improved water quality to downstream areas, including wetlands</li> <li>Improved riparian habitat and associated wildlife benefits such as nesting sites and movement corridors.</li> </ul>	Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations			Quantity	Unit	Notes	2000	N/A	2	500			Channel modification to improve geomorphic function	Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations			Quantity	Unit	Notes	300	N/A	2	3000			Channel modification to improve geomorphic function
Length (ft)	Width (ft)					Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations																											
		Quantity	Unit	Notes																															
2000	N/A	2	500			Channel modification to improve geomorphic function																													
Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations																															
				Quantity	Unit	Notes																													
300	N/A	2	3000			Channel modification to improve geomorphic function																													
<p><b>11. Grade Stabilization Structure (410)</b></p>	<div style="display: flex; justify-content: space-around;">   </div> <p>Before</p> <p>After</p> <p>A structure used to control the grade and prevent head cutting in natural or artificial channels.</p> <p>This practice applies where the concentration and flow velocity of water require structures to stabilize the grade in channels or to control gully erosion. Special attention is given to maintaining or improving habitat for fish and wildlife.</p>																																		

Grade stabilization structures installed in streams function to accommodate vertical elevation changes in the stream bed. Typical structures can be constructed from boulders, logs or brush.

Grade stabilization structures installed in upland areas function to prevent continued erosion from migrating headcuts. Typical structures can be constructed from earthen embankments, rocks, logs, willows and brush.

Additional Conditions

- Grade stabilization structures installed in fish-bearing streams will be designed to accommodate fish passage.
- Structures will not impede wildlife movement.
- Structures will be installed only when other channel stabilization measures are not feasible.

Size Limitations

Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations		
				Quantity	Unit	Notes
1000	N/A	1.5	N/A	10 <sup>6</sup>	ea	In non-fish bearing streams, primarily for gully repair

Environmental Benefits

- Structures, if required, are part of an integrated channel stabilization plan
- Structures placed in upland gullies prevent continued excessive sediment to streams

**12. Stream Habitat Improvement and Management (395)**



Example of old concrete crossing blocking steelhead passage

Maintain, improve, or restore the physical, chemical, and biological functions of a stream.

This practice applies to streams where habitat deficiencies limit survival, growth, reproduction, and/or diversity of aquatic species in relation to the potential of the stream.

Adjoining riparian corridors will be managed with diverse native vegetation suitable to the site conditions and desired ecological benefits (e.g. stream temperature moderation; recruitment of instream wood and fine organic debris; input of riparian nutrients and terrestrial insects;

	<p>streambank stability; flood attenuation).</p> <p>Planned stream habitat improvements will include using the <i>Primer on Stream and River Protection</i> as an assessment tool. This emphasizes the establishment of an ecologically self-sustaining stream-riparian-system consistent with the watershed conditions and geomorphic setting. Design and implementation generally involve restoration of a stable channel corridor relative to the site's potential.</p> <p>Examples of improving stream habitat include establishing soil conservation, nutrient management, and pesticide management practices for nonpoint sources of pollution; reducing or managing excessive runoff; restoring or protecting riparian and floodplain vegetation and associated wetlands; providing physical habitat components important to aquatic species; improving floodplain-to-channel connectivity including off-channel habitats; and providing screens to exclude fish and other aquatic species from unintentional entrapment. When present, livestock will be managed to prevent streambank erosion, bank trampling, over-grazing, and contamination of the stream from livestock waste.</p> <p>This practice may also be used to remove or modify fish migration barriers such as improperly installed or deteriorating culverts or stream crossings. Such modifications will be designed and implemented in accordance with the <i>California Salmonid Stream Habitat and Restoration Manual</i> and in coordination with NOAA Fisheries. Culverts will be consistent with the CA Dept of Fish and Game's <i>Culvert Criteria for Fish Passage</i> (April 2003) and NMFS Southwest Region's <i>Guidelines for Salmonid Passage at Stream Crossings</i> (September 2001).</p> <p><u>Size Limitations</u></p> <table border="1" data-bbox="414 987 1510 1144"> <thead> <tr> <th rowspan="2">Length (ft)</th> <th rowspan="2">Width (ft)</th> <th rowspan="2">Area of Practice (ac)</th> <th rowspan="2">Volume<sup>1</sup> (cy)</th> <th colspan="3">Additional Limitations</th> </tr> <tr> <th>Quantity</th> <th>Unit</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>5280</td> <td>N/A</td> <td>N/A</td> <td>50</td> <td></td> <td></td> <td>Multiple instream structures</td> </tr> </tbody> </table> <p><u>Environmental Benefits</u></p> <ul style="list-style-type: none"> <li>▪ Improves stream stability and function</li> <li>▪ May decrease sediment and attached pollutants from entering waterways</li> <li>▪ Enhances/creates essential habitat for steelhead and other aquatic species</li> </ul>	Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations			Quantity	Unit	Notes	5280	N/A	N/A	50			Multiple instream structures
Length (ft)	Width (ft)					Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations										
		Quantity	Unit	Notes														
5280	N/A	N/A	50			Multiple instream structures												
<p><b>13. Streambank Protection (580)</b></p>	<div style="display: flex; justify-content: space-around;">   </div> <p>Treatments used to stabilize and protect banks of streams or constructed channels.</p>																	

This practice is used to prevent loss of vegetation, soil and land where streambanks are eroding, to reduce the offsite or downstream effects of sediment resulting from bank erosion, and to improve or enhance the stream corridor for fish and wildlife habitat.

A site assessment will determine if the causes contributing to the instability are local (e.g. poor soils, high water table, alignment, obstructions deflecting flows into bank, etc.) or systemic in nature (e.g. deposition from increased sediment delivery, increased runoff from development, channel modifications, etc.). The stream bed grade must be controlled before most permanent types of bank protection can be considered feasible (see *Channel Stabilization* practice). If bank failure is a result of the degradation or removal of riparian vegetation, stream corridor restoration will be implemented, where possible.

All treatments are designed to not cause more natural erosion, not limit stream flow access to the floodplain, and not increase flow levels above those that existed prior to the treatment. All treatments are designed to consider the changes that may occur in the watershed hydrology and sedimentation over the design life of the treatments. The evaluation process will include using the *Primer on Stream and River Protection* decision tree.

Where vegetative measures alone are inadequate to stabilize the bank, channel modifying structures (such as weirs or root wads) or rock rip-rap will be installed. Rock rip-rap should be considered only if the stream corridor condition or critical top of bank structures justify its utilization. Rip rap will be installed only to the minimum elevation practicable for site conditions

Additional Conditions

- Native riparian vegetation and bioengineering structures are the preferred treatments; the use of rock or rock rip-rap will generally be used, when required, between the toe and the ordinary high water mark. If feasible, root wads (anchored into the bank), rock and log weirs, "J" hooks, and similar small toe and channel modifying structures will be used instead of rock rip-rap. Native riparian vegetation appropriate to the site conditions will be planted above the rock and top of bank.
- If rock rip-rap is needed above the ordinary high water mark, the interstitial spaces will be planted with willow and/or cottonwood poles; native riparian vegetation appropriate to the site conditions will be planted above the rock and top of bank.

Size Limitations <sup>/3</sup>

Type	Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>/1</sup> (cy)
<i>Vegetation</i>	2000	50	5	N/A
<i>Mechanical bank sloping</i> <sup>/7</sup>	500	40	0.5	7500
<i>Mechanical-rock</i> <sup>/8</sup>	500	15	0.2	1000

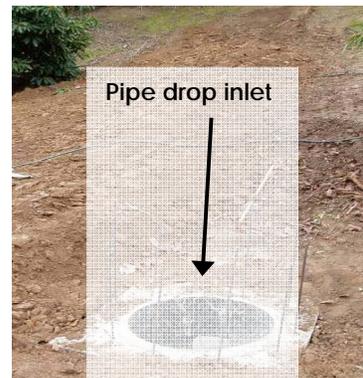
Environmental Benefits

- Reduces excessive sedimentation from bank erosion
- Improves riparian habitat and associated fish and wildlife benefits

**14. Structure for Water Control (587)**



Culvert under access road



Pipe drop inlet

A structure in an irrigation, drainage, or other water management system, including streams and gullies, that conveys water, controls the direction or rate of flow, or maintains a desired surface elevation.

Structures that may be installed under this practice include pipe drop inlets, pump boxes, culverts, and fish screens.

In channels with fish habitat:

- a) This practice may be used to replace or modify existing culverts that are barriers to fish movement.
- b) New culverts may also be installed under this practice if they enhance habitat for fish or wildlife. New culvert work will be designed and implemented in consultation with the DFG. New culvert work will be in accordance with the CA Dept of Fish and Game's *Culvert Criteria for Fish Passage* (April 2003) and NMFS Southwest Region's *Guidelines for Salmonid Passage at Stream Crossings* (September 2001).

Potential effects on water quantity (volume, runoff rates, etc.) and water quality (stream system channel morphology and stability related to erosion and the movement of sediment, solutes, and sediment-attached pollutants carried by runoff) are considered when planning, designing, and installing structures.

Additional Conditions

- Structures will not be installed where they could impact wetlands or water-related wildlife habitats.

Size Limitations

Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations		
				Quantity	Unit	Notes
N/A	N/A	N/A	N/A	50	cfs <sup>4</sup>	

Environmental Benefits

- By controlling the velocity of water running through an area, this practice reduces

	<p>erosion and prevents down cutting of stream channels.</p> <ul style="list-style-type: none"> <li>Removal of barriers allows movement of steelhead and other aquatic species to previously inaccessible habitat.</li> </ul>																	
<p><b>15. Stream Crossing (578)</b></p>	<p>A stable area or structure on agricultural lands constructed across a stream to provide access for people, livestock, equipment, or vehicles.</p> <p>This practice is used to improve water quality by reducing sediment, nutrient, organic, and inorganic inputs to the stream; reduce streambank and streambed erosion; and provide access to another land unit. Types of stream crossings include culverts, bridges, and fords.</p> <p>Planning for stream crossing replacement will emphasize establishment of a stable corridor consistent with the watershed conditions and geomorphic setting. Evaluating crossing replacements will include the <i>Primer on Stream and River Protection</i> as an assessment tool. This evaluation includes potential effects on up and downstream flow conditions that could result in increases in erosion, deposition, or flooding; effects on fish passage and wildlife habitats; and long term goals of riparian vegetation, among others.</p> <p><u>Additional Conditions</u></p> <ul style="list-style-type: none"> <li>This practice will be used to <b>replace existing structures only</b>, not to construct new stream crossings. This may include relocation of the crossing to a better location to reduce erosion potential or improve fish passage as compared to the original location. The original crossing location must be completely abandoned and restored.</li> <li>When the existing structure potentially inhibits fish passage, this practice will include measures to improve fish passage.</li> <li>Bridges are to be used instead of wetted crossings when feasible.</li> <li>No concrete or dirt "Arizona" crossings on anadromous streams.</li> </ul> <p><u>Size Limitations</u> /<sup>9</sup></p> <table border="1" data-bbox="414 1365 1502 1522"> <thead> <tr> <th rowspan="2">Length (ft)</th> <th rowspan="2">Width (ft)</th> <th rowspan="2">Area of Practice (ac)</th> <th rowspan="2">Volume<sup>1</sup> (cy)</th> <th colspan="3">Additional Limitations</th> </tr> <tr> <th>Quantity</th> <th>Unit</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>30</td> <td>0.1</td> <td>500</td> <td></td> <td></td> <td>Improve or replace existing crossing</td> </tr> </tbody> </table> <p><u>Environmental Benefits</u></p> <ul style="list-style-type: none"> <li>Reduces sediment and other pollutant inputs to streams</li> <li>Reduces streambed and bank erosion from eroding crossings</li> <li>Replaces barriers to fish migration with bridges when practical</li> </ul>	Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations			Quantity	Unit	Notes	100	30	0.1	500			Improve or replace existing crossing
Length (ft)	Width (ft)					Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations										
		Quantity	Unit	Notes														
100	30	0.1	500			Improve or replace existing crossing												

**16. Debris  
Removal &  
Vegetation  
Management  
(326)**



Removing snags, drifts, or other obstructions from a channel.

This practice applies to channels where removal of debris, fallen trees, and other obstructions is needed to restore flow capacity and prevent detrimental bank erosion or structural failure. Often, this practice is necessary before installing other conservation practices and will only be implemented in combination with another practice authorized under the permit coordination program, as with critical area planting, for example

The need and efficacy for this practice will be evaluated by the RCD/NRCS before implementation. This practice will be used primarily to remove dead, uprooted vegetation from a channel which may accumulate in large amounts after a storm, plugging a channel or deflecting water towards banks. Occasionally, selective trimming of willows and other vegetation (often occurring in clumps within a channel) may be needed to install other practices or prevent bank erosion.

This practice may also be used to remove non-native invasive plant species that are obstructing a channel, causing bank erosion, degrading the natural habitat, and/or limiting installation of other practices. This practice will also promote late stages of seral vegetation.

Debris removal and vegetation management will not impair channel stability or result in streambank erosion; the potential effects on downstream and upstream reaches will be analyzed using appropriate stream and channel geomorphic procedures, including the *Primer on Stream and River Protection*.

Additional Conditions

- This practice **will not be used for routine flood control purposes**.
- Only hand tools will be used to remove debris or perform selective trimming, if required; heavy equipment in a channel will only be used to remove large objects such as cars, appliances, or other obstructions when access is not possible from the top of the bank.
- This practice will be limited to accumulated small woody debris up to 6 ft. in length that cannot be repositioned and utilized for habitat improvement, selective basal cutting of willows under 6 inches dbh growing within the bankfull channel, and the pruning of willows on streambanks by limbing up (or pruning growth) on the lower trunks to encourage canopy development.
- This practice **will not remove native vegetation from streambanks**.
- This practice **will not remove sediment from stream channels**.
- This practice **will not encourage channel straightening and/or acceleration of flows**.
- Habitat forming elements that provide cover, food, pools, and water turbulence, when

	<p>present, will be retained or replaced to the extent possible.</p> <p><u>Size Limitations</u> /<sup>3</sup></p> <table border="1" data-bbox="412 323 1507 590"> <thead> <tr> <th rowspan="2">Length (ft)</th> <th rowspan="2">Width (ft)</th> <th rowspan="2">Area of Practice (ac)</th> <th rowspan="2">Volume<sup>1</sup> (cy)</th> <th colspan="3">Additional Limitations</th> </tr> <tr> <th>Quantity</th> <th>Unit</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>2500</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>2</td> <td>reaches</td> <td>Selective pruning for habitat enhancement and large woody debris</td> </tr> </tbody> </table> <p><u>Environmental Benefits</u></p> <ul style="list-style-type: none"> <li>▪ Decreases sediment inputs from eroding streambanks</li> <li>▪ Improves fish habitat and barrier removal</li> </ul>	Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations			Quantity	Unit	Notes	2500	N/A	N/A	N/A	2	reaches	Selective pruning for habitat enhancement and large woody debris
Length (ft)	Width (ft)					Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations										
		Quantity	Unit	Notes														
2500	N/A	N/A	N/A	2	reaches	Selective pruning for habitat enhancement and large woody debris												
<p><b>17. Critical Area Planting</b> <b>(342)</b></p>	<div data-bbox="657 835 1279 1291" data-label="Image"> </div> <p>Establishing permanent vegetation on erodable and/or degraded areas.</p> <p>This practice is used to stabilize the soil, reduce damage from sediment and runoff to downstream areas, and improve wildlife habitat and visual resources.</p> <p>This practice is often used for post-construction planting work or to restore degraded sites such as gullies or deep rills.</p> <p>Within stream and river channels, plantings are generally installed above the bankfull elevation.</p> <p><u>Additional Conditions</u></p> <ul style="list-style-type: none"> <li>▪ Pursuant to proper erosion control methods, when installing or maintaining this practice above the bankfull elevation, a filter fabric fence, fiber rolls, straw mulch, brush revetment and/or other erosion control materials will be used, if needed, to keep sediment from flowing into the adjacent water body. When vegetation is sufficiently mature to provide erosion control, temporary erosion control structures may be</li> </ul>																	

	<p>removed.</p> <p><u>Size Limitations</u></p> <table border="1" data-bbox="412 323 1507 474"> <thead> <tr> <th rowspan="2">Length (ft)</th> <th rowspan="2">Width (ft)</th> <th rowspan="2">Area of Practice (ac)</th> <th rowspan="2">Volume<sup>1</sup> (cy)</th> <th colspan="3">Additional Limitations</th> </tr> <tr> <th>Quantity</th> <th>Unit</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>N/A</td> <td>4</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>Restoration of project areas</td> </tr> </tbody> </table> <p><u>Environmental Benefits</u></p> <ul style="list-style-type: none"> <li>▪ Resulting vegetation cover reduces the amount of soil and nutrients washed into surface waters or leached into ground water</li> <li>▪ Established vegetation provides habitat for wildlife</li> </ul>	Length (ft)	Width (ft)	Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations			Quantity	Unit	Notes	N/A	N/A	4	N/A	N/A	N/A	Restoration of project areas
Length (ft)	Width (ft)					Area of Practice (ac)	Volume <sup>1</sup> (cy)	Additional Limitations										
		Quantity	Unit	Notes														
N/A	N/A	4	N/A	N/A	N/A	Restoration of project areas												
<p><b>18. Restoration and Management of Declining Habitats (643)</b></p>	<div style="display: flex; justify-content: space-around;"> <div data-bbox="418 709 987 1087">  <p>Arundo removal using hand crews</p> </div> <div data-bbox="993 709 1518 1087">  <p>Fencing</p> </div> </div> <p style="text-align: center;">Coastal sage scrub</p> <p>Restoring and conserving rare or declining native plant communities and associated wildlife species.</p> <p>This practice is used to restore land or aquatic habitats degraded by human activity; provide habitat for rare and declining wildlife species by restoring and conserving native plant communities; increase native plant community diversity; and management of unique or declining native habitats.</p>																	

	<p>This practice may be used to remove invasive plant species and replace with native plant species in the same place as removed invasive in sensitive resource areas in order to improve the quality of the adjacent aquatic habitat as part of a stream channel restoration plan.</p> <p>This practice may also include elements of an integrated prescribed grazing management system such as stockwater development, fencing, and pond construction designed to protect riparian habitat quality and benefit targeted species.</p> <p><u>Additional Conditions</u></p> <ul style="list-style-type: none"> <li>▪ This practice will permit the removal of noxious weeds in stream channels by hand (i.e. not the use of large mechanical equipment).</li> <li>▪ Where hand removal cannot remove the noxious weeds permanently, herbicides that are approved for use by the Department of Fish and Game may be used under the strict direction and supervision of persons qualified for the use of said chemicals along stream banks.</li> </ul> <p><u>Size Limitations</u></p> <table border="1"> <thead> <tr> <th rowspan="2">Length (ft)</th> <th rowspan="2">Width (ft)</th> <th rowspan="2">Area of Practice (ac)</th> <th rowspan="2">Volume/ 1 (cy)</th> <th colspan="3">Additional Limitations</th> </tr> <tr> <th>Quantity</th> <th>Unit</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>N/A</td> <td>5</td> <td>N/A</td> <td></td> <td></td> <td>Will include removal of exotic vegetation</td> </tr> </tbody> </table> <p><u>Environmental Benefits</u></p> <ul style="list-style-type: none"> <li>▪ Restores native plant communities and associated fish and wildlife</li> <li>▪ Limits cattle access to riparian areas and reduces bank erosion, sediment inputs, and deposit of animal waste directly into streams, as well as enhances riparian vegetation establishment and health</li> <li>▪ Creates and/or enhances essential habitat features for California tiger salamanders (ponds), California red-legged frogs (ponds and riparian areas) and other aquatic species</li> </ul>	Length (ft)	Width (ft)	Area of Practice (ac)	Volume/ 1 (cy)	Additional Limitations			Quantity	Unit	Notes	N/A	N/A	5	N/A			Will include removal of exotic vegetation
Length (ft)	Width (ft)					Area of Practice (ac)	Volume/ 1 (cy)	Additional Limitations										
		Quantity	Unit	Notes														
N/A	N/A	5	N/A			Will include removal of exotic vegetation												

**General Notes:**

**Stream Channel:** Any stream or river channel in which there are perennial, intermittent, or ephemeral flows of water. Channels which carry **only** storm flows are referred herein as gullies or dry washes.

**Native Plants:** Plants that occur naturally in the Central Coast area and not as a result of the direct or indirect consequences of non-indigenous people's activities.

**Size Limitations:** The practice limitations indicated in the table are only for projects that initially require a permit from any permitting agency, whether local, State of California, or Federal and do not apply to projects that otherwise would not require a permit.

**Footnotes:**

/1 Volume of soil is based on practice installation and represents the volume of soil excavated and used as fill or removed from site, or soil imported as fill.

/2 Access road improvements will typically involve multiple installations spread out over a four mile reach of road.

/3 This practice is used in conjunction with the practice standard Critical Area Planting. Revegetation will include native species.

/4 This quantity refers to the maximum allowable engineering design flow rate for the specified practice.

/5 Area of practice within riparian area includes a 50 foot length and a 20 foot wide work area for equipment. Volume of soil is based on a 6 foot wide trench 50 feet long with a trench depth of 6 feet.

/6 A maximum of 10 structures will be placed within a reach length of 1000 feet.

/7 Numbers provided are based on sloping back a 500 foot long stretch of embankment with a 20 foot vertical bank to a 2:1 slope (40 feet deep).

/8 Numbers provided refer to actual areas and volume of rock placed only.

/9 The 100 foot length refers to the portion of the crossing that is perpendicular to the direction of stream flow.

/10 Area of Practice includes a 100 foot stream width with 50 feet on either side of stream (total length 200 feet) and a 20 foot wide potential work area for equipment.

/11 This practices requires a pump with a maximum flow rate of 2 cfs and a recovery basin with a maximum capacity of 1 ac-ft and excavated volume of 2,000 CY.