

2-2.8 Erosion Control

Drafting Standards

Use acronyms, symbols and abbreviations shown on the Standard Plans to prepare project plans. Non-standard acronyms, symbols, and abbreviations must be shown on the first sheet of the applicable plan series (e.g. EC-1 and ECL-1). Refer to Section 2-1.2 “Drafting Standards” for further information.

Utility Policy

Caltrans Utility Policy requires that all utilities be shown on the advertised contract plans sheets for every project (unless a utility exception is granted by the Chief, HQ Division of Design) whether Caltrans owned or utilities owned by others (public or private). Every project must have a completed Utility Policy Certification signed by a licensed civil engineer. Usually the same engineer will produce and be responsible for the utility plans.

As a convenience and reminder to the contractor and/or subcontractor, utility facilities may be shown on erosion control plans when there may be a potential conflict with project work. When utility facilities are shown a second (2nd) time (in addition to them being shown on the utility plan sheets) the line weight may be reduced to de-emphasize the utility line in comparison to project work. Refer to Section 2-2.13 “Utility Facilities” for further information.

Right of Way

The defined right of way may be shown on the erosion control plans (in addition to being shown on the roadway layouts) when it is determined that erosion control work is located near the right of way. Refer to Section 2-1.1 “Right of Way” for further information.

Master Files

The background for erosion control plan view sheets utilizes the base map. The base map consists of two (2) separate files:

- Master Topographic file
- Master Design file

The Master Topographic file (“**bb**” file) is developed and maintained by the Surveys and Photogrammetry units in the district. The “**bb**” file includes existing features that are always dropped out on plan view sheets.

The Master Design file (“**aa**” file) is developed and maintained by the roadway design unit in the district. The “**aa**” file contains the new permanent design features that are shown solid on plan view sheets. The right of way and alignment may be new or existing, but they are shown solid on plan view sheets.

Master files may contain a lot of information, but only the necessary information needed for any specific contract plan sheet is to be merged into that contract plan sheet (active file). Plan view sheets must maintain the state plane coordinates from the master files. The roadbed is always shown. Refer to Section 3.8 “Master Files” of the CADD User’s Manual for further information.

Composition of Project Plans

Do not call out roadway bid items on erosion control plans. Do not include plan sheets that have no work. Use break lines in place of match lines between plan sheets that are not contiguous. The number of erosion control plans may not correspond numerically to the roadway layout or planting plan sheets. A key map may be necessary to eliminate confusion on the number of each type of plan view sheet. Refer to Section 2-1.1 “Composition of Project Plans and General Preparation Procedures” for further information.

Erosion Control Plan

Erosion control plans provide a visual representation in plan view of new erosion control work in relation to highway facilities.

Erosion control plans typically show locations of the following:

- Erosion control types
- Fiber rolls
- Compost socks
- Mulches

For each contiguous erosion control area or linear item on each sheet, a callout must identify the representative symbol for each erosion control type, fiber roll, or compost sock shown per direction of travel or quadrant area. The erosion control type callout will include either the erosion control type and the area in square feet, or the erosion control type and a location number (in a circle) that refers to information included in the erosion control quantity table. For fiber rolls and compost socks include a callout

such as “Fiber Roll” either with a quantity or location number referring to information included in the erosion control quantity table.

Depending on the size and type of project, the erosion control work may be identified with an erosion control quantity table by stationing or post miles and other dimensions as needed (e.g. setback, offset, width, limit of existing vegetation, etc.). The erosion control quantity table must be supported by erosion control typical details and showing disturbed soil area locations on the roadway layout plans as needed to identify the limits of erosion control work.

If a project includes both erosion control and planting work, do not duplicate callouts for the exact same construction on both the erosion control and planting plans. Erosion control work can be shown on the planting plans.

Erosion Control Legend

The erosion control legend utilizes tables to show the erosion control types, seed mixtures, and other erosion control work such as fiber rolls, compost socks, and mulches.

For each erosion control type, the erosion control type table describes the:

- Bid items (compost, straw, incorporate materials, fiber roll, RECP, hydroseed, hydromulch)
- Sequence of application
- Material (compost, straw, seed, fiber, tackifier, netting)

- Material Type (coarse, rice, wood, guar, Type A (respective to material))
- Application rate or depth (for incorporate material)

For each seed mix, the seed mix table describes the:

- Botanical name
- Common name
- Minimum required percent germination
- Application rate (pounds of pure live seed per acre)

The seed mix table may also include notes that restrict the seed source to a particular part of the state, bio-region, county, or elevation range. Verify seed source availability before adding these restrictions.

For fiber rolls or compost socks, the fiber roll and compost sock legend describes the:

- Sequence of installation (before or after other work items)
- Material description
- Material type and diameter
- Remarks (installation Type 1 or Type 2)

Erosion Control Details

Detail sheets show project specific details not included in the Standard Plans, or details modified from the Standard Plans. A modified standard plan detail or a combination of standard plan details must be shown and labeled as a modified detail. Provide sufficient dimensioning and callouts for the modified detail so that

quantities involved are calculable. See Section 2- 1.4 “Use of Standard Plans.”

Erosion control detail sheets include project specific details for work shown on the erosion control plan sheets. If the number of details does not warrant an entire sheet they may be shown on the erosion control legend or erosion control plan sheets if there is room.

Erosion Control Quantities

Use the erosion control quantity tables to derive and summarize quantities including but not limited to:

- Hydroseed
- Hydromulch
- Straw
- Compost
- Incorporate materials
- Rolled erosion control products
- Fiber roll
- Compost sock
- Mulches

Quantities summarized in tabular format (at a minimum) must show the bidder, contractor and resident engineer the bid items and their total quantities, their locations within the project limits, and the plan sheets on which they are shown.

Work with its associated quantity that is shown in a quantity table, but is not a separate bid item, shall be noted with an (N). The (N) signifies that the quantity for the work is important enough to show in the quantity table but is included in the payment for one of the bid items. Place the statement: “(N) NOT A SEPARATE BID ITEM” just below the quantity table. For further information on presenting bid

items and quantities in a quantity table, refer to Section 2-2.19 “Summary of Quantities.”

If erosion control work is shown on the planting plans, quantity tables for both types of work are to be combined on planting quantity sheets.

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CHECKLIST FOR EROSION CONTROL PLAN SHEETS

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| <ul style="list-style-type: none"> <input type="checkbox"/> District, county and route <input type="checkbox"/> Post Miles <input type="checkbox"/> Unit and Project Number and Phase <input type="checkbox"/> Signature, date of signature, license number, printed name, and license renewal date. Signature is added as the last step before the project goes to PS&E <input type="checkbox"/> Standard roadway north arrow <input type="checkbox"/> Scale centered below sheet name <input type="checkbox"/> Information on plan sheet development name blocks in left margin of border sheet. See Figures 2-10 and 2-11 in Section 2-1.6 of this manual for additional instructions <input type="checkbox"/> Correct sheet approval statement centered at bottom of sheet (“<i>APPROVED FOR EROSION CONTROL WORK ONLY</i>”) <input type="checkbox"/> The following statement must be shown on each plan sheet where determinate right of way is shown: "FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE" <input type="checkbox"/> Standard abbreviations are to conform to those listed in the Standard Plans <input type="checkbox"/> The first sheet of erosion control plans shall contain project specific notes, legends, symbols and | <ul style="list-style-type: none"> nonstandard abbreviations that are not included in the Standard Plans <input type="checkbox"/> Symbols and abbreviations are consistent on all plan sheets and with those shown in the erosion control legend <input type="checkbox"/> Identify routes within the project limits. Line designations and routes must be identified and are typically placed above the alignment line. Do not use route shields <input type="checkbox"/> Show existing fences and gates dropped out <input type="checkbox"/> City and county limit lines shown <input type="checkbox"/> Utilities are shown on utility plan sheets <input type="checkbox"/> Waterways (stream, creek, river, etc.) and direction of flow <input type="checkbox"/> Do not show extraneous topography (See Section 2-1.1) <input type="checkbox"/> Alignment line and stationing shown solid <input type="checkbox"/> Limit of roadbed shown <input type="checkbox"/> Existing planting is dropped out <input type="checkbox"/> Water source, if used, is identified and labeled as recycled or potable <input type="checkbox"/> Each erosion control area is identified by a call out or location number |
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**CHECKLIST FOR EROSION
CONTROL LEGEND**

- Erosion control types and bid item names are consistent on legend and plan sheets
- Erosion control type table included for each combination of erosion control materials, fiber rolls, and compost socks
 - Item column must identify the applicable bid items
 - Item description for each step in the application must match the bid item description
 - Material column must identify the applicable materials for each bid item
 - Type column must identify the type of each material
 - Application rate column must identify the application rate for each item or material
 - Depth column must indicate the depth in inches for incorporate materials
- Seed mix table must describe the seed mixtures used. Include seed botanical name, common name, minimum percent germination, and application rate measured in pounds of live seed per acre

**CHECKLIST FOR EROSION
CONTROL DETAILS**

- Details are project specific and/or modified Standard Plan Details
- Label sheet(s) “No Scale” but draw details proportionally

**CHECKLIST FOR QUANTITY
SHEET(S)**

- Summarize erosion control quantities with associated locations
- If the quantity tables do not warrant an entire sheet then they may be shown on the erosion control plan sheets

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