

20. EROSION AND SEDIMENT CONTROL

The Contractor is advised that failure to fully comply with the provisions of this Section and/or Section 10-1, "Water Pollution Control," of these Special Provisions, and all requirements listed in the resource agency permits obtained for the project, where applicable, except where amended in writing and signed by the Director of Public Works, shall constitute substantial non-compliance with the requirements of the Clean Water Act and the National Pollution Discharge Elimination System (NPDES) and the Contract.

The County shall provide periodic site monitoring to ensure that the work complies with the requirements specified herein and in any resource agency permits. The County will provide the Contractor with copies of the monitoring reports. Should the work be found to be non-compliant, a follow up site monitoring visit will be conducted to ensure the items have been corrected. The costs associated with any compliance monitoring required beyond a single follow up site monitoring visit shall be deducted from the final payment for all of the Contract work.

20-1. Temporary Silt Fence

Temporary silt fence shall be installed on contour a minimum of ____ feet to the *downstream/downhill* side of any excavation or backfill. Temporary silt fence shall be installed as shown on the plans, with the supporting posts on the creek side of the fence structure. Silt fence lines shall be unbroken, with silt fencing pieces wound together to form a contiguous structure as shown on the plans. No excavation or backfill work shall commence until temporary silt fence has been placed as shown on the plans and as directed by the Engineer. Attention is directed to Section 20-2, "Temporary Erosion Controls," for additional requirements.

The Engineer may require parallel silt fencing if necessary to contain the full limits of excavation and backfill and place silt fence on contour. Parallel silt fence shall overlap the horizontal projection of the primary silt fence by not less than eight (8) linear feet.

No silt fencing shall be placed in or across any flowing stream.

Inspection and Maintenance

Silt fencing shall be inspected and any necessary repairs made by the Contractor at his expense daily prior to any excavation or backfill. The Contractor shall removed any soils or debris contained by the silt fence once they have reached a depth of ½ the above-ground height of the silt fence, and shall be removed and secured in accordance with the provisions under "Stockpiles" in Section __, "Temporary Erosion Control."

Removal and Disposal

Temporary silt fence and any sediment or debris shall be completely removed by the

Contractor at the conclusion of the work. Temporary silt fence and any sediment or debris shall be disposed of outside the highway right of way in accordance with the provisions of Section 7-1.13, "Disposal of Material Outside the Highway Right-of-Way" of the Standard Specifications by the Contractor at his expense. Sediments shall not be scattered or "flaked" within the banks of the stream. The Contractor shall specify in writing the method of removal and disposal for the Engineer's approval not less than 2 working days prior to removing silt fence. No material shall be allowed to enter into the creek.

Payment

The Contract unit price paid per linear foot for temporary silt fence shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in installing temporary silt fence and any parallel silt fencing required by the Engineer, including trenching, securing and backfilling, inspection, maintenance, and removal and disposal outside the highway right of way of silt fencing and any sediment or debris contained by the silt fencing, as shown on the Plans, as specified herein, and as directed by the Engineer, and no additional compensation will be allowed therefore.

20-2. Temporary Erosion Control

The Contractor shall be required to adhere to the provisions of Section 100, "Water Pollution Control," Section 17, "Develop and Apply Water," this Section, and the directions of the Engineer throughout the work.

Temporary erosion controls may consist of straw logs, straw mulch, silt fencing, temporary berms, settling basins or any combination of these or other means acceptable to the Engineer to prevent polluted runoff and/or wind erosion. The Contractor is encouraged to review the Best Management Practices (BMPs) included in the County of San Mateo Maintenance Standards for installation and maintenance recommendations.

Temporary erosion controls shall be applied, maintained and removed by the Contractor as specified herein and as directed by the Engineer. The Contractor shall not commence any excavation, backfilling, grading or stockpiling operations until temporary erosion control materials have been delivered to the work site. The Contractor shall certify in writing that the quantity of temporary erosion control materials at the site is sufficient to protect and/or contain any stockpiles or soils that will be exposed by the work, and shall specify the type of material and intended use in the written certification.

Temporary erosion controls shall be installed at the conclusion of the work week to the satisfaction of the Engineer. The Engineer shall also require the installation of temporary erosion controls at the conclusion of any work day when rain and/or wind is occurring or forecast.

Stockpiles

All soil and/or rock stockpiles shall be protected against wind and rainfall erosion at all times. Plastic sheeting may be used to cover soils (including aggregate base), and shall be securely anchored by sandbags or other suitable means. At no time will any stockpiled materials be allowed to erode into any water body or drainage facility or onto any roadway.

Staging Areas

The Contractor shall contain runoff that may potentially leave any staging area to within the staging area by any suitable means approved by the Engineer. The Contractor may employ straw logs, straw mulch, silt fencing, temporary berms, settling basins or any combination of these or other means acceptable to the Engineer to prevent polluted runoff from staging areas. Attention is directed to the Best Management Practices (BMPs) included in the County of San Mateo Maintenance Standards for installation and maintenance recommendations.

Staging area BMPs shall be maintained throughout the duration of the work. Staging area BMPs shall be completely removed and disposed of outside the highway right of way in accordance with the provisions of Section 7-1.13, "Disposal of Material Outside the Highway Right-of-Way" of the Standard Specifications, by the Contractor at his expense at the conclusion of the work. Attention is directed to Section 100, "Water Pollution Control," for provisions relating to tracking of mud from staging areas.

Winterization

Should the Contractor fail to complete the work within the specified number of working days with any time extensions allowed by the Engineer and the permitting agencies, the Contractor shall be required to winterize the sites and any staging areas at his expense as specified herein and as directed by the Engineer.

Winterization shall include, at a minimum, removal or securing, at the Engineer's option, of any stockpiled materials; removing equipment from the vicinity; restoring the staging area for winter use by the County's Road Maintenance Division as specified under "Permanent Erosion Control – Staging Area Finish" below; covering any vertical excavation faces with plastic sheeting secured with sandbags and not extending below the ordinary high water line; mulching all other excavations with rice straw as specified under "Permanent Erosion Control – Mulching" below; and ensuring positive drainage through the work sites.

Payment

Full payment for conformance with this Special Provision shall be considered as included in the Contract price paid for Water Pollution Control, and no additional compensation will be allowed therefore.

OR

The contract lump sum price paid for temporary erosion control shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for performing all the work involved in temporary erosion control, including delivery of the materials to the site prior to excavation, backfill, grading or stockpiling work, certification, maintenance, removal, hauling and disposal outside the highway right of way, as shown on the plans and as directed by the Engineer, and no additional compensation will be allowed therefor.

20-3. Revegetation

Revegetation shall be performed as shown on the Plans and as specified herein.

Revegetation work shall consist of ... *(specific to project)*

Trees shall be planted by hand into on-site material, and backfilled by hand with container potting soil as shown on the Plans. The Contractor shall apply sufficient water to secure the planting. No fertilizer shall be applied.

A landscaping flag shall be inserted into the ground near each newly planted tree/plant for visual identification.

The revegetated area shall be mulched as specified in Section ___, "Permanent Erosion Control," below.

The Contractor shall/shall not be required to water or maintain the trees/plants or flagging following the conclusion of work at this site.

The Contract unit price paid per tree/plant for revegetation shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in revegetation, including initial watering and landscape flagging as shown on the Plans, as specified herein, and as directed by the Engineer, and no additional compensation will be allowed therefore.

20-4. Permanent Erosion Control

Permanent erosion control shall encompass mulching and staging area finish work as specified herein. *(NOTE: other permanent erosion controls such as turf reinforcement mats, erosion control blankets, etc. may apply.)*

Mulching

The Contractor shall mulch all finished soil surfaces at the conclusion of the work and as

part of any winterization as shown on the Plans, as specified herein and as directed by the Engineer.

Mulch shall consist of a uniform application of rice straw to a depth of not less than two (2) inches. Straw bales and flakes shall be broken apart and loosely spread prior to crimping. Mulch shall be manually crimped into the soil surface using rakes, pitchforks or other appropriate means. Mulch shall not be track-walked using heavy equipment.

The Contractor may propose in writing an alternate type of straw mulch. Any type of proposed straw shall be certified by the manufacturer as weed-free and seed-free. The Contractor may also propose to use locally collected redwood duff (fallen dried redwood leaves, seeds and seed pods, small twigs, etc.) in addition to or instead of rice straw. Written proposals for alternate straw or redwood duff shall include identification of the source of the material, including written permission from the property owner to collect redwood duff, if applicable. Proposals to use alternate types of straw or redwood duff will be submitted to the Engineer for his approval not less than three (3) working days in advance of placing mulch. The Engineer reserves the right to reject alternate proposals and require the use of rice straw mulch.

The Contractor shall avoid mulching over newly-planted trees/plants. Mulch shall not be applied below the ordinary high water line of any water body.

The Contract unit price paid per square yard for mulching shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in mulching as shown on the Plans, as specified herein, and as directed by the Engineer, and no additional compensation will be allowed therefore.

Staging Area Finish

The Contractor shall finish all staging areas as specified herein and as directed by the Engineer.

All stockpiles, debris and exclusion fencing shall be completely removed and disposed of outside the highway right of way by the Contractor at the conclusion of construction operations. Staging area surfaces shall be smoothed and contoured to drain in the same manner as prior to their use. The smoothed and contoured surface shall be covered with not less than six (6) inches and not more than twelve (12) inches of three-inch (3") uncompacted drain rock. Any adjacent areas disturbed by the Contractor's operations shall be smoothed and treated with rice straw mulch as specified in Section ____, "Temporary Erosion Control."

Full compensation for conformance with this Section shall be considered as included in the Contract unit price paid for mobilization, and no additional compensation will be allowed therefor.

owed therefor.”