DIRECTOR'S LETTER OF INSTRUCTION

LAND DEVELOPMENT

SUBJECT: STORMWATER MANAGEMENT AND REQUIREMENTS ON DEVELOPER AND SINGLE FAMILY GRADING PERMITS—CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs)

PURPOSE:

These guidelines are for use by Land Development staff in the inspection of developer and single-family grading permits and other construction activities. Changes were made to address Jurisdictional Urban Runoff Management Plan (JURMP) requirements; to reflect the recently adopted County Watershed Protection, Stormwater Management, and Discharge Control Ordinance (WPO); and to more clearly distinguish wet season versus non-wet season requirements and procedures.

INSTRUCTIONS:

Land Development staff shall inspect permitted construction sites to assure that all conditions related to grading, erosion control, stormwater Best Management Practices (BMPs), and discharges from the site are met.

Minimum performance standards to control pollution from any operations falling under a County permit are:

- Installation and maintenance of BMPs to prevent construction pollutants from contacting storm water and with the intent of keeping products of erosion from moving off site into receiving waters.
- No discharges of pollutants (including sediment) from the site.

Every permittee is responsible and required to meet these performance standards and to certify that selected BMPs will be installed, monitored, maintained or revised as appropriate to ensure effectiveness. BMPs must be installed in accordance with industry recommended standards (e.g. Caltrans or California Stormwater BMP handbooks, etc.). If the project owner/developer desires to use a BMP not listed herein, written approval from the County is required before installation.

WEATHER RELATED OPTIONS:

Year-Round Implementation Requirements

Because of the ever present threat of sediment discharge on active construction sites, certain pollution control practices must be implemented year-round. At a minimum, DPW has determined these certain pollution control practices shall be adequately implemented and maintained year-round on all open permitted projects including perimeter control, wind erosion control, tracking control, non-storm water control, stockpile management, waste management, and materials pollution control.

The State Municipal Stormwater Permit (Order 2007-0001) stipulates the "wet season" for San Diego County as October 1 through April 30 of each year.

The active disturbed soil area of the project site shall be not more than 50 acres for an individual grading permit or a combination of grading permits under associated Tentative or Final Maps (i.e. TM XXXX-1 through 3). The Land Development DPW Manager may approve, on a case-by-case basis, expansions of the active disturbed soil area limit. Soil stabilization and sediment control materials shall be maintained on site sufficient to protect the disturbed soil area.

Disturbed soil areas shall be considered active whenever the soil disturbing activities have occurred, continues to occur or will occur during the ensuing 10 days. Non-active areas shall be protected within 10 days of cessation of soil disturbing activities or prior to the onset of precipitation, whichever occurs first.

Non Wet Season - Weather Triggered Action Plan Option

During the non-wet season from May 1 through September 30, the Developer may opt to employ "weather triggered" action plans in lieu of fully deployed BMPs. When allowed and the Developer opts to employ a "weather triggered" action plan it must be approved by the Inspector and have the ability to deploy standby BMPs as needed to completely protect the exposed portion of the project site within 48 hours of a predicted storm event.

The National Weather Service weather forecast shall be monitored and used by the Developer on a daily basis. If precipitation is predicted (50% chance of ½ inch or more of rain), the necessary water pollution control practices shall be deployed within 48 hours and prior to the onset of the precipitation. A minimum of 125% of the material needed to install weather triggered BMPs necessary to completely protect the exposed portions of the site from erosion, and to prevent sediment discharges, must be stored on site. Areas that have already been

protected from erosion using physical stabilization or established vegetation stabilization BMPs as determined by the County are not considered to be "exposed" for purposes of this requirement. Developers must ensure physical stabilization erosion control is implemented for all unplanted finished slopes.

At a minimum, the weather triggered action plan shall include water pollution control drawings (WPCDs) that illustrate the locations, applications, inspection frequency, staff availability, and deployment of the BMPs proposed.

Wet Season Requirements

Soil stabilization and sediment control practices as described in this DLI shall be deployed throughout the wet season. Implementation of required soil stabilization and sediment control practices for non-active disturbed soil areas shall be fully deployed prior to the beginning of each wet season. All exposed disturbed areas including all flat areas and slopes shall have soil stabilization and sediment control practices properly installed. Construction activities beginning during the wet season shall implement applicable soil stabilization and sediment control practices.

STANDARDS:
Erosion Control

The Developer must implement the following minimum Physical Stabilization BMPs or Vegetation Stabilization BMPs, or both, to prevent erosion from exposed slopes and flat areas (less than 3%). The County will not accept: tracking, mulch, wood chips, hydro seeding without watering as a means to protect exposed slopes from erosion, but such measures may be used to protect disturbed soil areas that are flat (less than 3% slope).

1. Prior to the wet season, the Developer must remove or secure any significant accumulations of eroded soils from slopes previously disturbed by clearing or grading, if those eroded soils could otherwise enter the stormwater conveyance system or receiving waters during the wet season.

2. Physical Stabilization through use of geotextiles, mats, jute mesh, fiber rolls, Bonded Fiber Matrix (BFM), Stabilized Fiber Matrix (SFM) or soil sealant, or other material approved by the County for stabilizing slopes, or Vegetation Stabilization may be used.

    A. If Physical Stabilization is to be used it must be fully deployed prior to and throughout the wet season. Between May 1 and September 30, the Developer may elect to have a weather triggered action

plan in lieu of full deployment. From October 1, the Developer must provide slope protection for all finished slopes that have not been planted and for which vegetation will not be established before October 1. Some Physical Stabilization BMPs have slope limitations, which are noted in 3 below.

B. If Vegetation Stabilization is proposed to stabilize slopes, slope irrigation must be in place and operable and vegetation must be watered and established prior to October 1. The Developer shall implement a contingency physical BMP by October 1, if vegetation establishment does not occur by that date. If landscaping is proposed and/or required, erosion control measures and physical stabilization that will not inhibit growth (i.e. SFM) must also be used while landscaping is being established. Established vegetation shall have a subsurface mat of intertwined mature roots with a uniform vegetative coverage of 70 percent of the natural vegetative coverage or more on all disturbed areas.

C. If jute mesh is proposed as a physical stabilization, it can only be used in conjunction with either a BFM or SFM.

3. Slope Limitations:

A. Slopes 2 to 1 (horizontal to vertical) and flatter may use the BMPs listed in 2 above.

B. Slopes 3 to 1 and flatter may use BMPs listed in 3A above and in addition hydro mulch with a Guar, straw mulch, Gypsum or similar binder may be used.

C. During the wet season flat areas of less than 3% (like building pads, parking areas, and leach fields) shall have 100% protection using BMPs listed in 2 or 3B above. In addition, tracking and soil stabilizers/binders, temporary seeding, mulch/wood chips, or jute matting may be used. During the non-wet season the Developer may elect to have a weather triggered action plan in lieu of full deployment. These requirements will be waived if full sediment control is provided through Standard Lot Perimeter Protection Detail or constructed and maintained desiltation basins at project discharge points.

4. During the wet season areas of graded pads that must remain unobstructed to allow ongoing construction may be protected by rolled plastic as part of a weather-triggered action plan until the structure's roof

has been completed. During the non-wet season a weather-triggered action plan may be used and include an erosion control measures identified above or use of a desilting basin. If a desilting basin is used, then a weather-triggered action plan is not required for a graded pad.

5. Unpaved roads, pathways, sidewalks, and traveled ways within contractor's onsite yards are exempt from the 100% protection requirement but shall be protected with gravel bag chevrons or an alternative equally effective BMP.

6. Permitted projects located in the Colorado River Basin, as defined by the State Water Resources Control Board's Region 7, that are greater than one mile from the Waters of the State are exempt from the above section, unless the Director of Public Works deems the site conditions warrant the need for Erosion Control BMPs. This exemption is based on the fact that projects in the desert that are greater than one mile from receiving water have a reduced probability for runoff to enter the receiving water.

Sediment Control

At all times, the Developer must provide protection of the grading site perimeter, environmentally sensitive areas, watercourses and at operational internal inlets to the storm drain system. Protection shall be accomplished through use of filtration devices, silt fencing, straw, coconut fiber or wood fiber-rolls, gravel bag barriers, or gravel inlet filters. Capture of sediment and dust shall also be accomplished through use of storm-drain inlet protection and construction road stabilization.

Stormwater discharges from the site may not contain sediments that differ in composition or in amounts in excess of the sediments that would have been discharged from the site in an undisturbed condition. Monitoring of turbidity and suspended solids at similar undisturbed sites under similar storm conditions may be used to establish baselines for applying this standard. This monitoring would apply to projects that directly discharge into or 200 feet upstream of a sediment impaired water body as described in the Clean Water Act Section 303d List of Water Quality Segments (available at the San Diego Regional Water Quality Control Board or at the State Water Resource Control Website http://www.swrcb.ca.gov/tmdl/docs/303dlists2006/approved/r9_06_303d_reqtmdls.pdf).

Offsite and Onsite Sediment Control

The Developer must eliminate off-site sediment tracking through use of stabilized construction entrances/exits and sweeping year round. Developers must

eliminate sediment movement from unpaved to paved areas that drain to a MS4 facility by implementing stabilized construction entrances; installing fiber rolls, silt fences, or other devices approved by the Director, and limit access into/out of dirt areas.

Velocity Reduction

The Developer must provide velocity reduction for all runoff leaving the site, and onsite runoff that could cause erosion, through appropriate outlet protection year round. Velocity reduction BMPs shall be designed and constructed for the precipitation intensity from the 10-year, 6-hour rain event. Runoff shall be calculated using Q=C x I x A where Q is the discharge rate measured in cubic feet per second; C is the runoff coefficient; I is the precipitation intensity for the 10-year, 6-hour rain event; and A is the area draining into the sediment basin in acres.

Stockpile Management

Stockpiles are to be covered (i.e. plastic or a comparable material) or protected with a soil stabilization measure and a temporary perimeter barrier (i.e. fiber roll or silt fencing). They are to be protected year round. During non-wet season as part of a Weather Triggered Plan, the stockpile can remain uncovered until triggering rain events requires action plan to be implemented. All stockpiles of cold mix asphalt or other chemically treated materials shall also be placed on plastic or comparable material.

Materials Management

Waste handling and material storage shall be designated and waste-handling methods identified. Trash cans are required on site year round and are required to have solid lids to completely cover and enclose the trash. Methods for handling Solid waste, Sanitary waste, Concrete waste, and Hazardous waste shall be shown. Porta-potties are required to be placed behind the curb and outside of the street once paved, unless otherwise approved. Temporary concrete washout facilities shall be lined with a plastic lining material that is at a minimum, 10-mil polyethylene sheeting, and shall be free of holes, tears or other defects that compromises the impermeability of the material. Material storage methods proposed, including storage of emergency BMP materials, shall be implemented year round.

Structural BMP Sizing

If a project chooses to rely on desiltation basins for treatment purposes, the following shall apply in addition to those requirements set forth in Section A.8 of the Statewide General Construction Permit (99-08-DWQ):

1. At a minimum, all non-standard desiltation basins shall be designed by a registered civil engineer and be designed as follows:

   A. Have at least a capacity equivalent to 3,600 cubic feet of storage per acre drained.

   B. The length of any basin, as measured from inlet to outlet, shall be more than twice the width whenever practical;

   C. The depth must not be less than three feet nor greater than five feet for safety reasons and maximum efficiency.

   D. The basin(s) shall be located on the site where it can be maintained on a year-round basis, and have a means for dewatering by no later than 5 calendar days following a storm event.

   E. Basins should be fenced if safety (worker or public) is a concern, and shall be maintained at least once before October 1 and as needed to retain a minimum of two feet of capacity at all times.

Standard Basin Design & Limitations
The below described standard design may only be used for drainage areas <u>less than one acre</u>.

1. The use of a basin requires regular maintenance to remove silt deposits and may require protective fencing, and both should be identified on grading plans. Basins are not to be located in live streams. Sediment basin should be constructed prior to the wet season and prior to any other construction activities.

   A. Basin shall be located: (1) where a low embankment can be constructed across a swale or excavation, (2) where failure would not cause loss of life or property damage, and (3) in areas accessible for maintenance work, including sediment removal and sediment stockpiling in a protected area.

   B. Minimum dimensions are specified in table below:

Basin Dimensions (Feet)	**1 Acre Lot**	**½ Acre Lot**	**¼ Acre Lot**
Length	40	30	25
Width	20	15	12
<u>Depth</u>	5	4	3

C. Basin inlets shall be located to maximize travel distance to the basin outlet. Rock, vegetation or plastic sheeting shall be used to protect the basin inlet and slopes against erosion. An emergency spillway shall be constructed using plastic sheeting or rock lining over undisturbed material.

D. Outlet shall consist of a 4" perforated drainpipe riser and an inlet grate attached to the top of the riser. Attach riser to a 4" HDPE horizontal pipe (barrel) with a 90° elbow. The horizontal pipe shall extend through the embankment to toe of fill. Place outlet structure on firm, smooth foundation with base securely anchored with gravel jacket or other means to prevent floatation. Compact fill over outlet pipe. Use outlet protection (1" size rock/gravel minimum) at the pipe outlet.

E. Safety fencing is recommended on all applications, but if basin is within 300 feet of an existing residence or is visible from an existing residence, safety fence must be provided to prevent unauthorized entry to the basin unless a perimeter fence already protects site.

Standard Lot Perimeter Protection Design
Flat areas that have a slope no greater than 3% may be configured as described below to provide a desilting function, thus eliminating the need for other protection.

1. The following requirements control the use of this option:

A. Maximum holding time is 72 hours.

B. Maximum size for using Lot Perimeter Protection is 1 acre of disturbed area.

C. Basin shall be sized for the entire pad. Each pad shall be treated separately.

D. A berm with a minimum height of one foot shall be placed and compacted along the outlet side. A berm, with a minimum height of 6 inches, shall be installed and compacted around the remaining perimeter of the pad.

E. A rock filter shall be placed at the outlet location to slowly release the captured flows. For basins sized from 1 to 0.75 acre the rock filter shall be 6 feet in length. For basins that are sized less than 0.75 acre but greater than 0.10 acre the rock filter shall be 4 feet in

length. For basins that are less than or equal to 0.10 acre the rock filter shall be 2 feet in length.

F. The rock filter shall have a minimum width of 1 foot.

G. The minimum height of the rock filter shall be 1 foot.

H. The rock size shall be between 1 to 3 inches in diameter.

I. Fiber roll with the equivalent length of the rock filter shall be properly placed 1 foot downstream of the rock filter.

J. Access to the pad shall be restricted to prevent tracking off of the pad or appropriate tracking control installed.

K. A sketch of this option is included as attachment A of this DLI.

2. Maintenance and Inspection of all Desiltation Basins

A. Inspect all basins before and after rainfall events and weekly during the rest of the wet season. During extended rainfall events, inspect at least every 24 hours. Examine basin banks for seepage and structural soundness. Repair banks as needed.

B. Check outlet structure and spillway for any damage or obstructions. Repair damages and remove obstructions as needed. Check outlet area for erosion and stabilize, if required.

C. Remove accumulated sediment when the depth has reached one-third the original basin depth.

3. Additional Responsibilities

A. Illicit connections must be eliminated (even if the connection was established pursuant to a valid permit and was legal at the time it was constructed), and illegal discharge practices eliminated.

B. Owners/Developers of property where soil-disturbing activities occur may have other responsibilities to the State Water Resources Control Board.

Permit-Exempt Grading
The Developer conducting grading activities that do not require a County permit or other approval (and which are not part of larger project that requires such

approval) must select and implement at least one BMP in each of the following areas, from the associated BMPs: graded slope erosion control, Lot Perimeter Protection erosion control, runoff velocity control; sediment control; and offsite tracking of sediment.

GRADING INSPECTION FOR BEST MANAGEMENT PRACTICES
Inspection Procedures

Construction projects shall be regularly inspected by the Supervising Engineer, County inspectors, or other County contract staff with enforcement authority to verify that the construction activities are being performed in accordance with the project plans, building and grading permits, and applicable codes, special provisions, regulations and ordinances. If the inspected site does not meet the County minimum water quality protection requirements or there is a discharge related to construction activities, County inspectors will direct compliance and conduct follow-up inspections as necessary to confirm that compliance is attained. Additional inspections will be conducted as project scope dictates the need for modified and/or additional BMPs.

1. The following framework is utilized when conducting an inspection:

   A. Determine if BMPs are being used in accordance with manufacturers' recommendations, industry recommended standards and approved plans;

   B. Determine whether BMPs are effectively being implemented and maintained properly; and

   C. Determine whether Developer is making appropriate adjustment when ineffective BMPs are found.

   D. If BMPs are either lacking or being implemented improperly, the inspector will require remediation within a reasonable time frame and may implement the County Administrative Citation process or other corrective process.

Grading Inspection for BMPs

Initial BMP Inspection

2. This inspection shall occur after the area to be graded is brushed or cleared, but prior to the start of grading operations. The following stormwater items are required to pass this inspection:

A. Perimeter Sediment Control BMPs and Offsite and Onsite Sediment Control BMPs shall be installed as per the approved grading plan.

B. For weather-triggered BMP action plans, 125% of all needed BMP materials shall be stored onsite to allow full deployment and installation within 48 hours or less.

C. Required fencing installed along or around any environmentally sensitive areas.

Ongoing and Rough Grade Inspections

3. The following stormwater items are required to pass inspections:

A. All items from the initial BMP inspection shall be in place.

B. Erosion Control BMPs shall be installed as soon as the finished slopes and flat areas are complete, or when slopes and flat areas have not been actively graded for 10 workdays. From May 1st to September 15th vegetation stabilization may be installed. If vegetation stabilization is used, a slope irrigation system shall be in place and operable. If the vegetation is not established by October 1, then additional physical or hydraulic erosion control BMPs are also required. In the event the Developer has elected to employ a weather-triggered BMP action plan during the non-wet season, 125% of all needed BMP materials shall be stored onsite to allow full deployment and installation within 48 hours or less.

C. Flat area protection may be waived if site discharges through a properly designed desiltation basin(s).

D. No rills or gullies larger than 3" wide or deep shall be allowed, and must be repaired as soon as it is safe to do so.

E. All deployed BMPs shall be maintained in proper working condition.

F. The SWPPP or Site Erosion Control Plan shall reflect current site conditions and deployment of BMPs.

G. No construction runoff other than stormwater will discharge into a stormwater conveyances or receiving waters.

Final Grade Inspection

4. The following stormwater items are required to pass this inspection:

   A. All BMPs shall be in place and in proper working condition.

   B. No rills or gullies larger than 3" wide or deep shall be present.

   C. Vegetation shall be established on all manufactured slopes greater than 3 feet in height and slopes less than 3 feet must be protected through either vegetation or other approved erosion control BMP. Special cases where lack of vegetation establishment is the sole reason occupancy is being withheld are to be presented to the DPW Manager responsible for inspection activities.

   D. Flat areas shall be protected by either vegetation or other approved BMP unless site discharges through a properly designed desiltation basin(s).

   E. No construction runoff will discharge into a stormwater conveyance or receiving waters.

<u>Inspection Frequencies and Responsibilities</u>

5. The County evaluates inspection frequencies on a regular basis, particularly when grading activities are being conducted during the State's official wet season (October 1 through April 30). The need for additional inspections may vary depending upon several factors including:

   A. Active construction activity;

   B. Site conditions;

   C. Previous violations;

   D. History of contractor's past performance;

   E. Weather patterns; and

   F. Priority of construction site

Priority of Construction Site

6. For the purpose of evaluating BMP implementation, a high priority construction site, at a minimum, is defined as a site meeting either of the following criteria or equivalent criteria:

   A. The site will include grading greater than 5000 cubic yards;

   B. Construction sites with disturbed areas of 5 acres or greater; or

   C. The site has received a Notice of Violation from the Regional Board.

7. The County has chosen not to use the low priority designation, and instead has labeled all non-high priorities as medium priority. Projects that are not high priority based on the volume, area, or permit factors listed above will be prioritized as high or medium based on the consideration of the factors listed below. Additional factors will be considered as necessary based on:

   A. Site Slope

   B. Project Size

   C. Sensitivity of Receiving Water Bodies

   D. Project Area

   E. Other Permits

8. County inspectors will conduct at least monthly inspections of all active Construction Projects during the County's wet season (October 1 through April 30). If a construction project has been designated as "high priority" site and active grading is in progress (200 cy per week) or if discharges have occurred, the County will have weekly inspections conducted.

9. Supervised grading projects (per Grading Ordinance, Sec. 87.420) will have inspections by the private civil engineer supervising the grading. In addition to general supervision and coordinating all field surveys and setting of grade stakes in conformance with the plans, sufficient site

inspections will be made during grading operations to allow the civil engineer to file reports with the County as follows:

A. Weekly during all times when grading operations is active on the site;

B. Monthly at all other times; and

C. At any time when requested in writing to do so by the County.

D. Reports shall include information concerning project BMPs and discharges. County inspection staff shall review all such reports as soon as they are received to identify any issues of non-compliance. County inspectors shall conduct at least monthly inspections to confirm that the reports reflect current site conditions.

10. If a County inspector observes non-compliance at a project, they will take immediate action. Cases of minor deficiencies in BMP installation or operation will be documented with an Administrative Citation Warning along with a reasonable compliance date as determined by the inspector. Serious BMP deficiencies, discharges and failure to correct minor BMP deficiencies will be documented with an Administrative Citation or if appropriate a Notice to Stop Work may be issued. The inspector is encouraged to contact his or her supervisor by telephone if there are questions as to whether to issue an Administration Citation. The inspector will notify their supervisor immediately of any documented discharges or serious erosion problems. Copies of the Administrative Citation/Warning will be provided to the person in charge of the site. The inspector will complete a written inspection report within 2 working days of the incidence of noncompliance, and shall include evidence such as notes, photographs, and log sheets for use in any enforcement action. The inspector will conduct follow-up inspections to ensure that the deviations are either corrected or additional compliance actions are taken.

A. The inspector's supervisor will review all Administrative Citations and determine if further actions are warranted including issuance of a Notice to Stop Work. The supervisor shall contact DPW's Stormwater Manager for any documented discharges or serious erosion problems. DPW Stormwater Manager or Land Development DPW Manager will make the determination to inform the RWQCB (as warranted) of such violations.

B. DEFINITIONS:

a. Bonded Fiber Matrix (BFM) –A hydraulically applied erosion control matrix comprised of wood fibers and stabilizing emulsion. The matrix shall be pre-mixed and pre-packaged by the manufacturer and composed of 90 percent wood fiber, with a minimum 25 percent of the fibers averaging 10 mm long and 10 percent blended Guar based binder, all by weight. Fibers shall be colored with a water-soluble, non-toxic dye. The fibers shall be joined together by a high strength non-toxic Guar adhesive to create a continuous three-dimensional blanket that adheres to the soil surface. The matrix shall disperse rapidly in water and remain in uniform suspension under agitation to form homogeneous slurry.

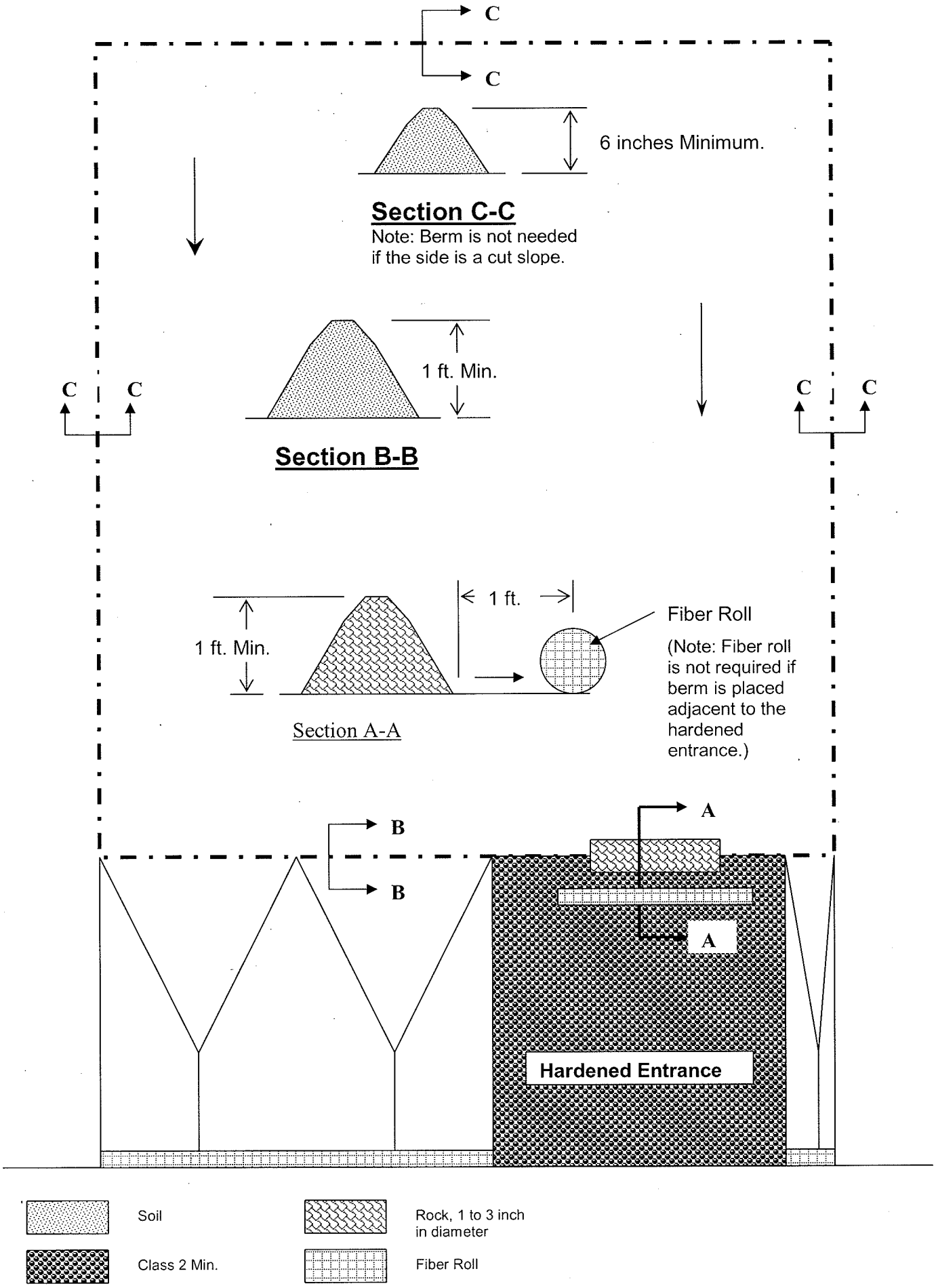
b. Bonded fiber matrix, when applied, shall form a continuous moisture-holding mat with no hole greater than one mm in size, shall have no gaps between mat and soil, and have a water holding capacity of 10 liters per kilograms of matrix. Bonded fiber matrix, when dry, shall not dissolve or disperse upon rewetting. Bonded fiber matrix shall not inhibit seed germination and growth.

c. The ratio of total water to total Bonded Fiber Matrix in the mixture shall be as recommended by the manufacturer. Bonded Fiber Matrix shall not be applied immediately before, during or after rainfall so that the material will have a minimum of 24 hours to dry after application.

d. Stabilized Fiber Matrix (SFM) – A hydraulic matrix composed of water-permeable soil-stabilizing liquid emulsion along with a wood fiber mulch or wood/paper fiber mulch combination. The soil stabilizing emulsion must be a true emulsion consisting of two completely immiscible liquids, in which minute globules of one liquid are dispersed but not dissolved throughout the other liquid. The blend must also be manufactured exclusively with *GENERALLY REGARDED AS SAFE (GRAS)* materials. It shall consist of at least (3) three different linear anionic copolymer of acryl amide/sodium acrylate in water-in-oil emulsions. The blend must be guaranteed to contain 30% (+/- 1%) active polymer, in which all of the active particles are ultra fine in size. The blend shall also be guaranteed to have 100 ppm or less of

residual acrylamide. It shall be nontoxic to plant and animal life. It must also be registered and licensed by the State of California, Department of Food and Agriculture, as an "auxiliary soil amendment."

APPROVED BY: _____
JOHN L. SNYDER, Director

EFFECTIVE DATE: October 18, 2000
REVISION DATE: September 24, 2009
SUNSET DATE: September 24, 2016

Standard Lot Perimeter Protection Detail