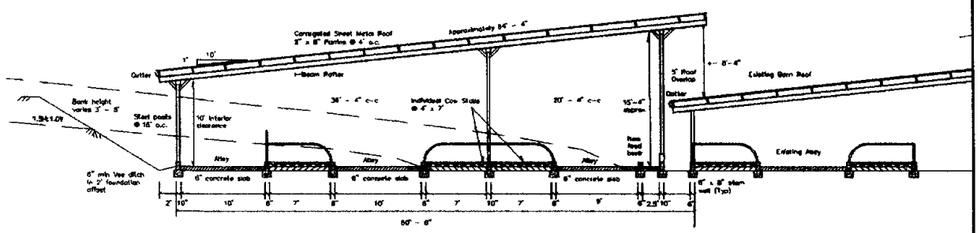
Appendix B

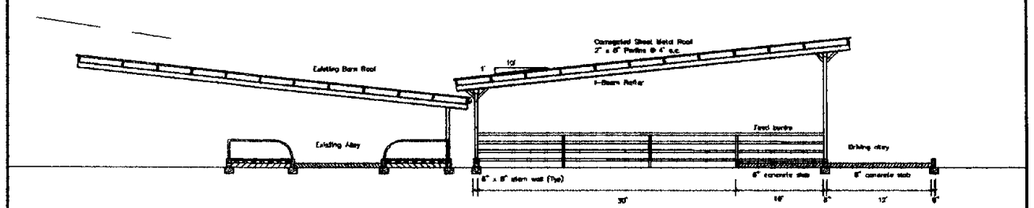
Project Site Plans and Profiles



Barn Addition – Typical Cross Section

Scale: 1" = 8'

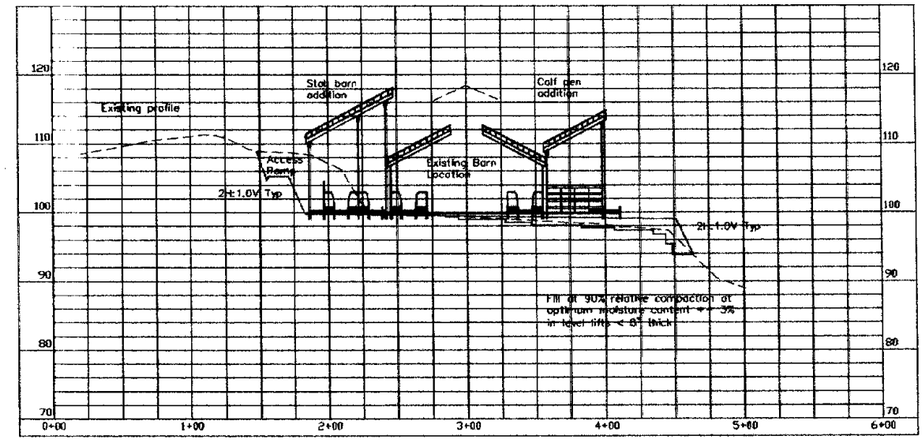
Schematic Design Only– Structural design and detailing to be provided by others



Calf Pen Addition – Typical Cross Section

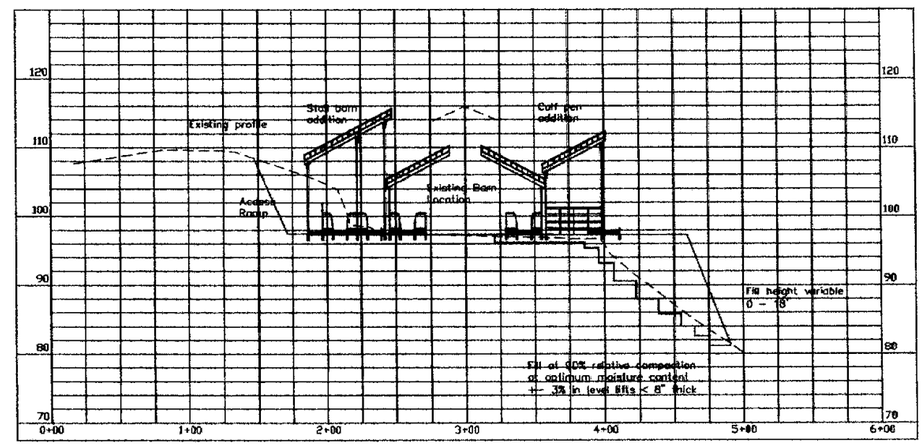
Scale: 1" = 8'

Schematic Design Only– Structural design and detailing to be provided by others



Profile on Section B – B'

Scale: 1" = 50' H 1" = 10' V



Profile on Section A – A'

Scale: 1" = 50' H 1" = 10' V

Prismoidal Volume Results

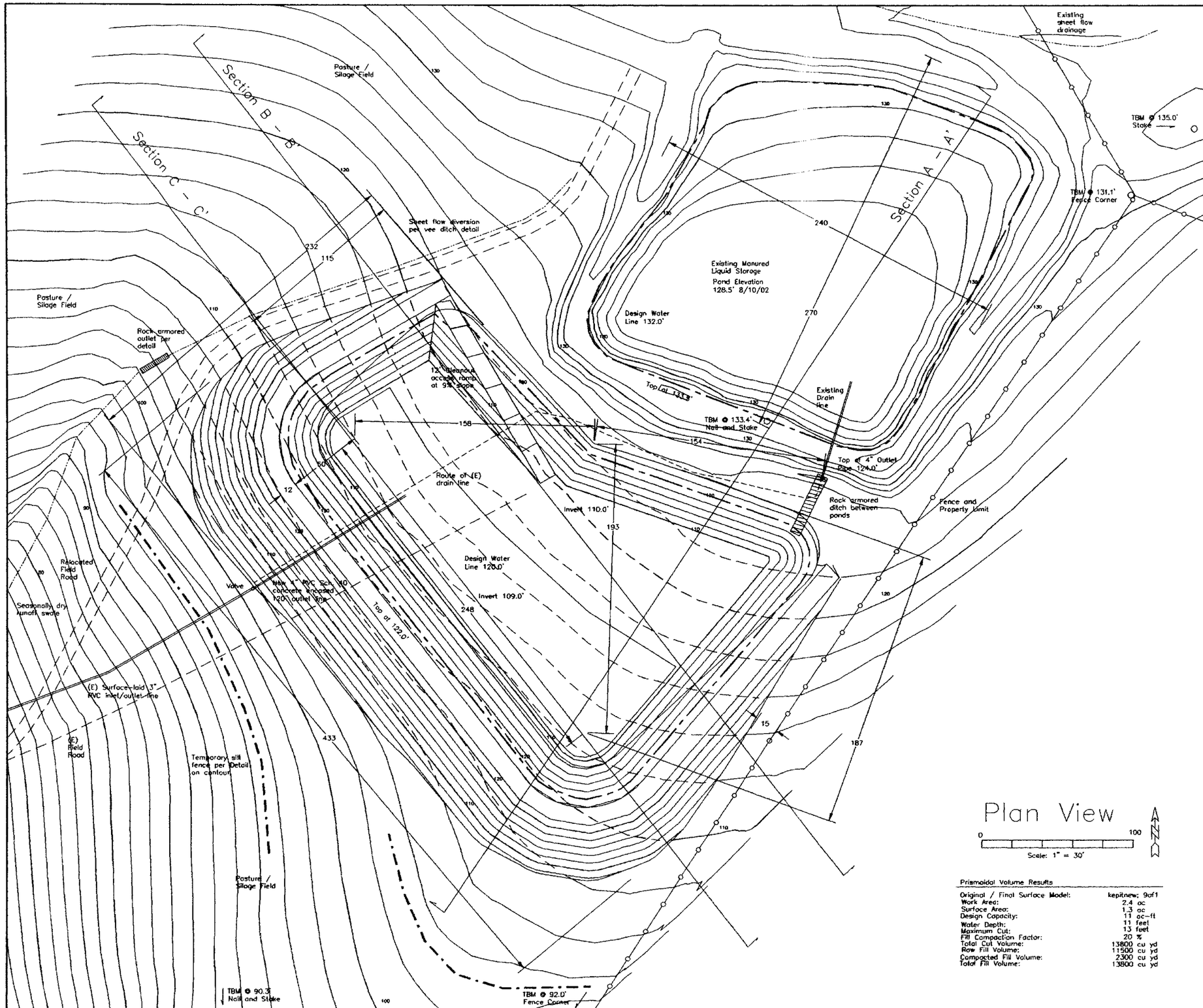
Original Surface Model:	Barn Combined
Final Surface Model:	eastpad, westpad
Total Cut Volume:	3500 cu yd
Total Fill Volume:	3500 cu yd

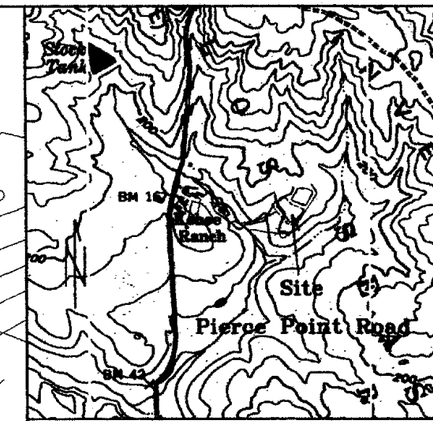
Date: August 20, 2002
Revised:
Scale: Noted
By: LRE
Sheet: 3 of 6

Erickson Engineering Inc.
Valley Ford CA 94972-0446
707-795-2498 Voice/Fax

Stall Barn Expansion
Profile and Details
APN 109-040-001

Kehoe Dairy
6150 Pierce Point Road
Inverness CA 95437





Location Sketch

USGS 7.5-min Quad map: Tomales
Scale: 1" = 1000' 20' Contours

Site topography based on intermittent data points collected using EDM equipment by EEI Spring 2002. Benchmark elevation assumed. North by magnetic compass. Contours by linear interpolation of intermittent data points. Field verify critical elevations and dimensions at time of construction.

LEGEND

- APPROXIMATE PROPERTY LINE
- UTILITY POLE W/ANCHOR
- PAVED ROAD
- UNPAVED ROAD
- FENCE
- DRAINAGE
- VEE SWALE
- SUBSURFACE DRAIN
- ROCK ARMOR
- FIBER ROLL
- BUILDING
- 500 / 525 CONTOURS
- GdE, GdF, HkF, HkG SOILS
- CULVERT
- SILT FENCE
- WATER BAR
- DROP INLET

Plan View

0 — 100

Scale: 1" = 30'

Prismoidal Volume Results

Original / Final Surface Model:	kepitnew; 9of1
Work Area:	2.4 ac
Surface Area:	1.3 ac
Design Capacity:	11 ac-ft
Water Depth:	11 feet
Maximum Cut:	13 feet
Fill Compaction Factor:	20 %
Total Cut Volume:	13800 cu yd
Raw Fill Volume:	11500 cu yd
Compacted Fill Volume:	2300 cu yd
Total Fill Volume:	13800 cu yd

REGISTERED PROFESSIONAL ENGINEER
Lee R. Erickson
AE 468
CE 45660
Expires 12/02
Agricultural Civil
STATE OF CALIFORNIA

Erickson Engineering Inc.
Valley Ford CA 94972-0446
707-795-2498 Voice/Fax

Date: August 20, 2002
Revised:
Scale: Noted
By: LRE
Sheet: 4 of 6

Manure Storage Expansion
11 Acre-foot Pond - Plan View
APN 109-040-001

Kehoe Dairy
6150 Pierce Point Road
Inverness CA 95437

Erosion and Sediment Control Plan – Design and Construction Notes

General

1. Construction general provisions, materials, and methods shall be governed by the appropriate County Ordinances, Building Codes, and the Uniform Building Code, as applicable.
2. Temporary and permanent work shall conform to requirements and methodologies contained in the Erosion and Sediment Control Field Manual, California Water Quality Control Board, incorporated herein by reference.
3. Grading and drainage work may occur after October 15, providing that a County–approved Erosion Control Plan is in place, that good weather prevails, that the work area is small enough to be closed quickly, and that emergency supplies beyond minimum Plan requirements are on hand for storm water management if needed.
4. Landowner is responsible for locating property lines and for obtaining any easements and permits. Comply with requirements of all applicable County, State, Federal and other regulatory agency permits.
5. The Landowner or his/her designated vineyard manager is responsible for implementing and maintaining the erosion control measures in accordance with County, Agency and Plan requirements. Work shall conform to components of the Erosion Control Plan, including Time Line and Erosion Control System Maintenance Checklist.

Earthwork and Construction

1. Minor earthwork and shaping may occur in small lowland swale areas to smooth locations where tree root removal has occurred or to facilitate installation of drainage improvements. Minor volumes of earthwork associated with vee ditching and pipe trenching are expected.
2. For any cut and fill operations as shown on the plans, the following shall apply:
   A. Salvage and stockpile the upper 12" sod from the work areas and borrow disposal areas. Materials shall be spread on finished cut and fill surfaces and compacted by trackwalking at completion of other work. Borrow limits are within the work area. Maintain minimum 2' offset plus half the heights of cuts or fills from any property line. Remove tree roots, limbs, and other organic matter down to 1" diameter from borrow materials.
   B. Earthwork fill: Use level lifts not to exceed 12" in thickness. Organic materials and rocks greater than 8" diameter are not permitted in the fill.
   C. Compaction requirements:
      * None for non–engineered topsoil fill with depths less than 3'. Placement using dozer and track walking for compaction is permissible.
      * 90% ASTM D1557 at optimum moisture content plus or minus 3% for engineered fill.
   D. Maximum side slopes 2.0H:1.0V for terraces, cut and fill slopes, and vee ditches.
   E. Trim all finished slopes to neat uniform appearance prior to installation of erosion control vegetation.

Temporary Storm Water and Sediment Control Components

1. Provide temporary erosion and drainage controls as required during construction and the first season of operation to prevent surface runoff from disturbed areas. Required temporary controls may include but are not limited to straw mulch and seeding, geotextile silt control fencing, straw bale check dams, fiber roll checks, jute netting, plastic sheeting, corrugated plastic pipes, and similar materials and assemblies. Monitor and maintain temporary measures on an as–needed basis to ensure satisfactory performance.
2. Temporary cover crops shall be installed on all disturbed areas and slopes in excess of 15% with less than 2 tons/acre residual dry matter. slopes shall be scarified prior to installation by disc, chisel, or tracked equipment leaving tool marks parallel to slope. Seed, fertilizer, and mulch application rates shall be as noted in the Materials Specifications.
3. Silt control fencing shall be installed per manufacturer's recommendation. Place fencing at downslope perimeter of all disturbe areas during construction and development efforts. Place fabric on uphill side of stakes. Key bottom of fabric into 6" x 6" trench backfilled with local soil. Silt fence is inappropriate for use as vee ditching or water diversion on midslope areas.
4. Fiber rolls shall be installed per manufacturer's recommendations. Place on steep slopes at 50' on center, in swales, or other concentrated flow areas. Rolls should generally be on contour, with slight upslope concavity to provide for sediment retention. Secure in shallow shovel trench for underflow control, with placement stakes installed per specification.
5. Silt control fences, fiber rolls, and hay bale check dams are not appropriate for use in gullies or swales where significant runoff volume is expected. Use pipes, ditches armored with rock, jute, or synthetic matting, or other appropriate means for water conveyance, erosion control, and sediment retention when flow volumes are expected to be significant.
6. Temporary plastic sheeting used for rainfall exclusion or surface water control shall be constrained by perimeter trenching and intermittent sand bags, rocks, or other appropriate weights or methods. sheeting shall be closely monitored and maintained. It shall be replaced if photodegraded, ripped, wind damaged, or otherwise incapable of providing the required performance.
7. If permanent drainage improvements will not be installed prior to onset of winter rains, temporary sheet flow controls consisting of low–slope vee ditches discharging to surface laid drain pipes are required in all disturbed areas.
   * Temporary and permanent hillside diversions, vee ditches, and other flow control devices shall be staked and place with aid of hand level and tape or transit.
   * Maximum ditch slopes shall not exceed 5%, except in limited areas where unavoidable. Maximum tributary areas shall be on the order of 1/2 acre, with attention paid to limiting maximum sheet flow runs to 60' – 80' on slope perpendicular to contours.
   * Temporary surface–laid drain lines shall be located in swales or areas of flow concentration. Lines shall be sized according to procedures required for permanent pipe installations. They shall have water tight inlets secured with a combination of soil berms, stakes, hay bales, sand bags, fiber rolls, or other appropriate means. The lines shall be secured using intermittent metal posts along the route. Pipes shall discharge in a non–erosive manner over plastic sheeting, rock riprap, or erosion–resistant natural features to a natural drainage way or sediment collection basin, as appropriate.

Permanent Storm Water Control Components

1. Install drain lines with minimum 12" cover according to manufacturer's requirements. Drain line depth may need to be greater to accomodate tillage and agronomic needs within the vineyard. Pipes shall be placed in uniformly sloped trenches. Backfill shall be moisture conditioned and placed of optimum plus or minus 3% to a density equal to pre excavation conditions or 90% ASTM D698 using hand or mechanical methods. Mound trench soil to allow for settlement. Install inlets, connectors, outlets, rock armor, collars, trash screens, and similar essential elements according to manufacturer's requirements, industry standard practices, and Plan details.
2. Install a sediment trap at individual drop inlet per Plan details. Install outfall sediment traps where noted at pipe outlets. Provide rock armor at pipe outlet locations and at ditch or swale discharge points. The pipe outlet invert elevation shall be above design water elevation of downstream improvements. Provide year–round site access for equipment necessary to clean and maintain capacity of inlets, pipes, and sediment traps.

Road and Field Avenue Components

1. Crown permanent roads with minimum 2% side slope for direct sheet flow into roadside ditches. Provide gravel or other appropriate armored wear surface of sufficient quality and thickness to prevent rutting and potholing during winter months.
2. Install seasonal rolling dips or water bars on all unimproved roads, spaced at a maximum of 100' on center. Spacing should be reduced to 50' on center in areas where the road is steeper than 20%.
3. Outslope roads where feasible or practical to minimize accumulation of concentrated flows in vee ditching. Where outsloping is not appropriate, install vee ditching on the inboard side of the road. Provide rock armored ditches where slope, invert materials, or water velocity creates significant scour potential. Provide intermittent permeable rock checks in steeper or larger ditches to minimize velocity and increase capture of sediment.
4. Provide intermittent culverts for diversion of vee ditch flows to natural drainage ways. Minimum culvert size: per construction plans with d min. = 12" CMP. HDPE n=.012 may be used where minimum 12" cover can be achieved. Slope all culverts at minimum 5% to outfall.
5. Provide rock armor at culvert outfall for a distance of 5d diameters using d50 rock size of 0.75 d in a bed thickness of d inches.

Permanent Erosion Control Measures

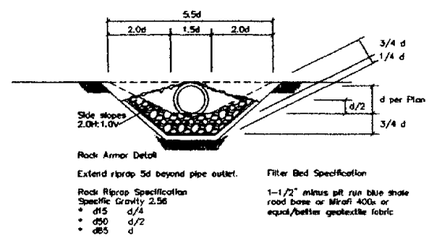
1. Provide permanent erosion control, sediment retention, and drainage controls as required by the site–specific Erosion Control Plan. Plan components are shown on the drawings and may include but are not limited to: permanent cover crops, hillside contour ditches, surface and subsurface drainage lines, drop inlet structures, armored vee ditches and channels, sediment detention basins, vegetated filter strips, and similar components.
2. Permanent cover crops shall be installed on all disturbed areas and on slopes in excess of 15% with less than 2 tons/acre residual dry matter. Seed, fertilizer, and mulch application rates shall be as noted in the Materials Specifications.
3. Permanent erosion and storm water control systems shall be installed in conjunction with vineyard development and shall be in place by time of vineyard planting.
4. Developer shall restore worksite around construction and staging areas to original conditions at completion of construction and erosion control activities. Cleanup shall include placing of any salvaged sod and topsoil, finish grading, and revegetation of disturbed areas in a neat and workmanlike manner.

Materials Specifications

1. Drain lines, pipe connectors and fittings, drop inlets, and drop inlet collars shall be HDPE n=.015 with water tight joints or better, except where noted on the plans.
2. Culverts and drain lines subjected to vehicular traffic shall be HDPE n=.012 dual wall with water tight joints or better with minimum 12" compacted cover.
3. Concrete standpipes or inlets shall be commercially cast reinforced pipe with female end up, grouted in place. Where specified, commercial grated rectangular drop inlets shall be used.
4. Concrete shall be 5.5–sack mix using 3/4" aggregate rated at 3000 psi minimu compressive strength at 28 days.
5. Rock riprap shall be specific gravity 2.56, with size distribution as shown on the drawings.
6. Rock for subsurface drains shall be 3/4" – 2.5" drain rock. 3/8" double washed pea gravel, or 3/4" – 1.5" Iowa rock.
7. Filter bedding where used shall be 1.5" minus pit run blue shale road base. Alternative bedding shall include Mirafi 400x, 500x, 700x or equivalent geotextile fabric.
8. Temporary geotextile silt control fencing shall be Mirafi Silt Control Fence or equal.
9. Temporary plastic sheeting shall be 6 mil or thicker.
10. Fiber rolls shall be minimum 8" diameter. Commercial products or economical functional equivalents fabricated on site using straw mats or jute netting and baled straw are permissible.
11. Straw matting for mulch placement on slopes of 2H:1V or greater shall be North American Green S–75 or equal or better.

Revegetation Materials

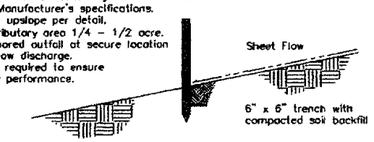
1. The erosion control revegetation mix shall be according to recommendation of the agronomist, with a minimum application rate of 25 lb/ac, increasing to 50 lb/ac on slopes over 25%. 16–20–00 fertilizer at a rate of 150 lb/ac or cow manure at 500 #/ac shall be applied at the time of seeding. Mulch shall be grass hay or rice straw spread at a rate of 2 tons/acre. Crimping, tackifying, replenishment, or other appropriate retention measures may be required to maintain adequate cover during windy periods prior to onset of winter rains.
2. Permanent Erosion Control Blend:
   40% Annual Rye
   30% Rose Clover
   15% Cucamonga Brome
   15% Triticale



Rock Armor Detail
No Scale

Mirafi Silt Control Fence or equal

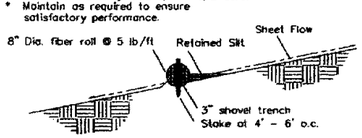
* Install on contour at lower edge of work area.
* Install per Manufacturer's specifications.
* Place fabric upslope per detail.
* Maximum tributary area 1/4 – 1/2 acre.
* Provide armored outfall at secure location for sheet flow discharge.
* Maintain as required to ensure satisfactory performance.



Silt Control Fence
No Scale

Fiber Roll Check

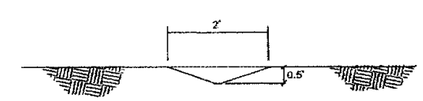
* Install on contour on hill slopes, in swales, or areas of concentrated flow.
* Install commercial products per Manufacturer's specifications.
* May be fabricated from straw and netting material.
* Place ends slightly upslope for silt retention.
* Maximum tributary area 1/4 – 1/2 acre.
* Maintain as required to ensure satisfactory performance.



Fiber Roll Check
No Scale

Vee Ditch Detail

* Side slopes 2.0H:1.0V.
* Install per Plan View requirements
* Maximum tributary area + –1/2 acre.
* For any segments over 10% slope or lengths over 300', install permanent fiber mat armor in ditch invert.
* Maintain as required to ensure satisfactory performance.



Vee Ditch Detail
No Scale

Kehoe Dairy
6150 Pierce Point Road
Inverness CA 94937

Erosion Control Plan
Detail Drawings
Construction Specs

Erickson Engineering Inc.
Valley Ford CA 94972–0446
707/795–2498 Voice/Fax

August 20, 2002
Scale: None