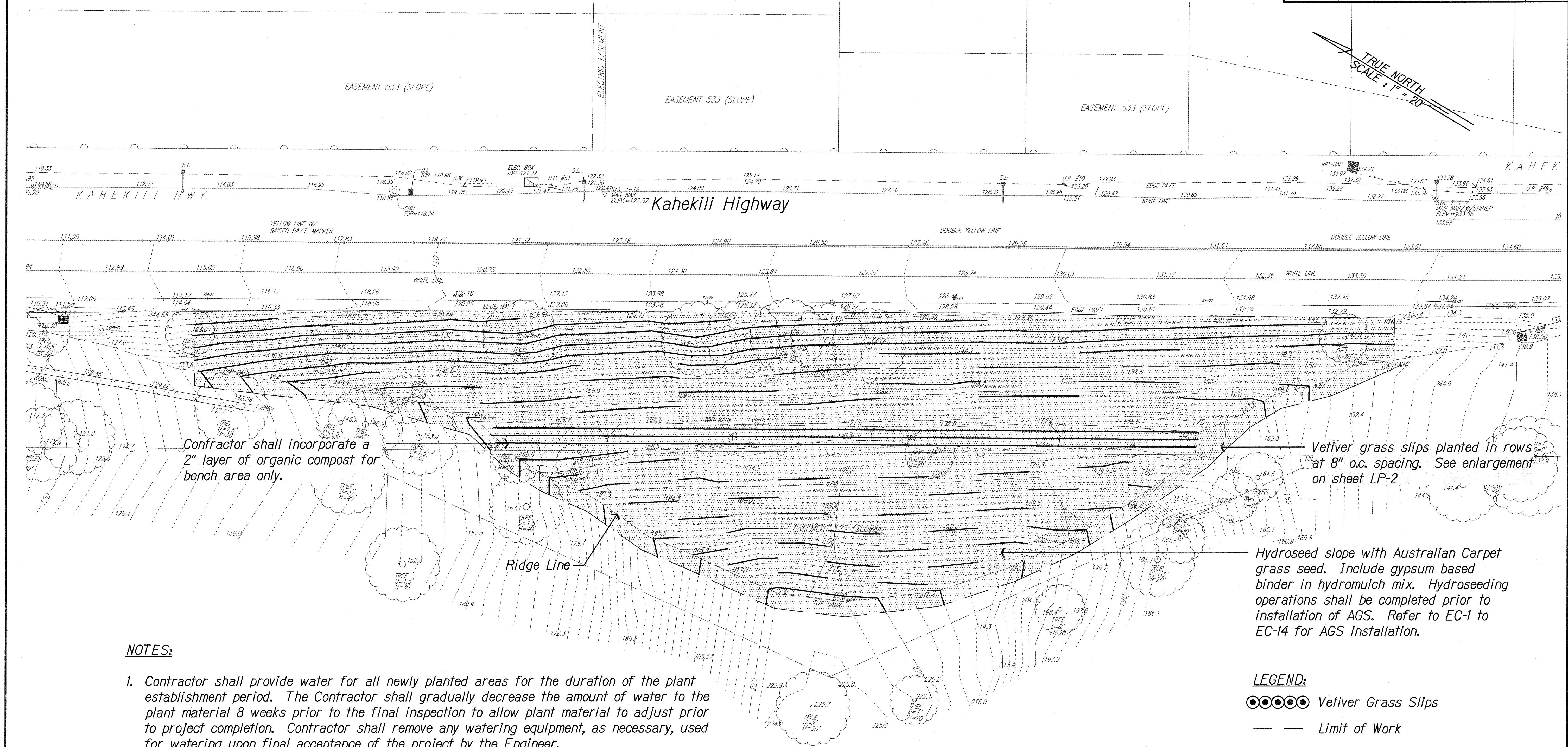


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-09M	2009	C.O. 60	65



NOTES:

- Contractor shall provide water for all newly planted areas for the duration of the plant establishment period. The Contractor shall gradually decrease the amount of water to the plant material 8 weeks prior to the final inspection to allow plant material to adjust prior to project completion. Contractor shall remove any watering equipment, as necessary, used for watering upon final acceptance of the project by the Engineer.
- The Contractor's method of watering shall not cause erosion of existing or new planting areas. The Contractor shall immediately repair any areas damaged due to the watering method at no additional cost to the State.
- Contractor shall not disturb or damage the Anchored Grid System (AGS) as a result of planting operations.
- Contractor shall provide and incorporate a 2 inch layer of organic compost on bench area only. No other excavation will be allowed on the slope except for 2 inch diameter X 12 inch deep holes for planting Vetiver grass on slope areas. Planting holes for Vetiver grass shall maintain a minimum of 14 inches clearance around all AGS anchors. See sheet LP-5.
- Contractor shall backfill Vetiver planting holes on slopes with compost when planting Vetiver.

PLAN - SITE 1
Scale: 1" = 20'-0"

LEGEND:

- Vetiver Grass Slips
- — — Limit of Work

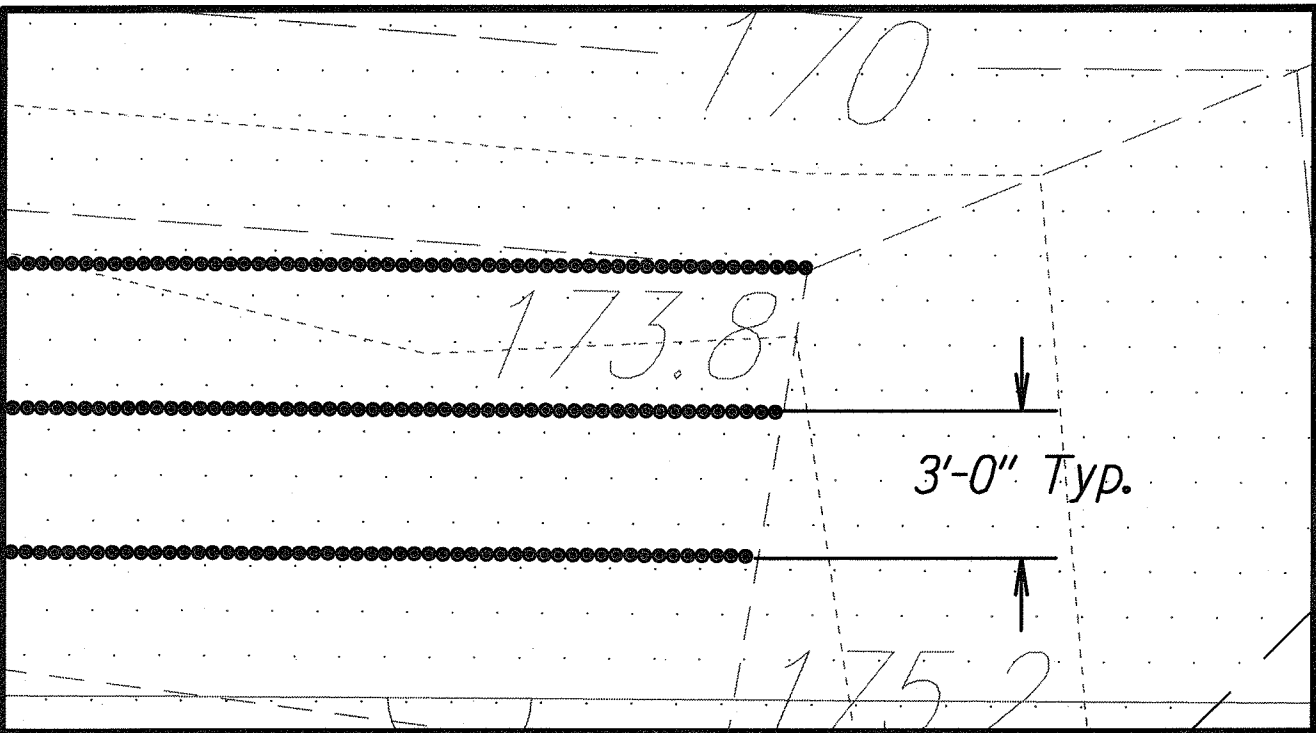
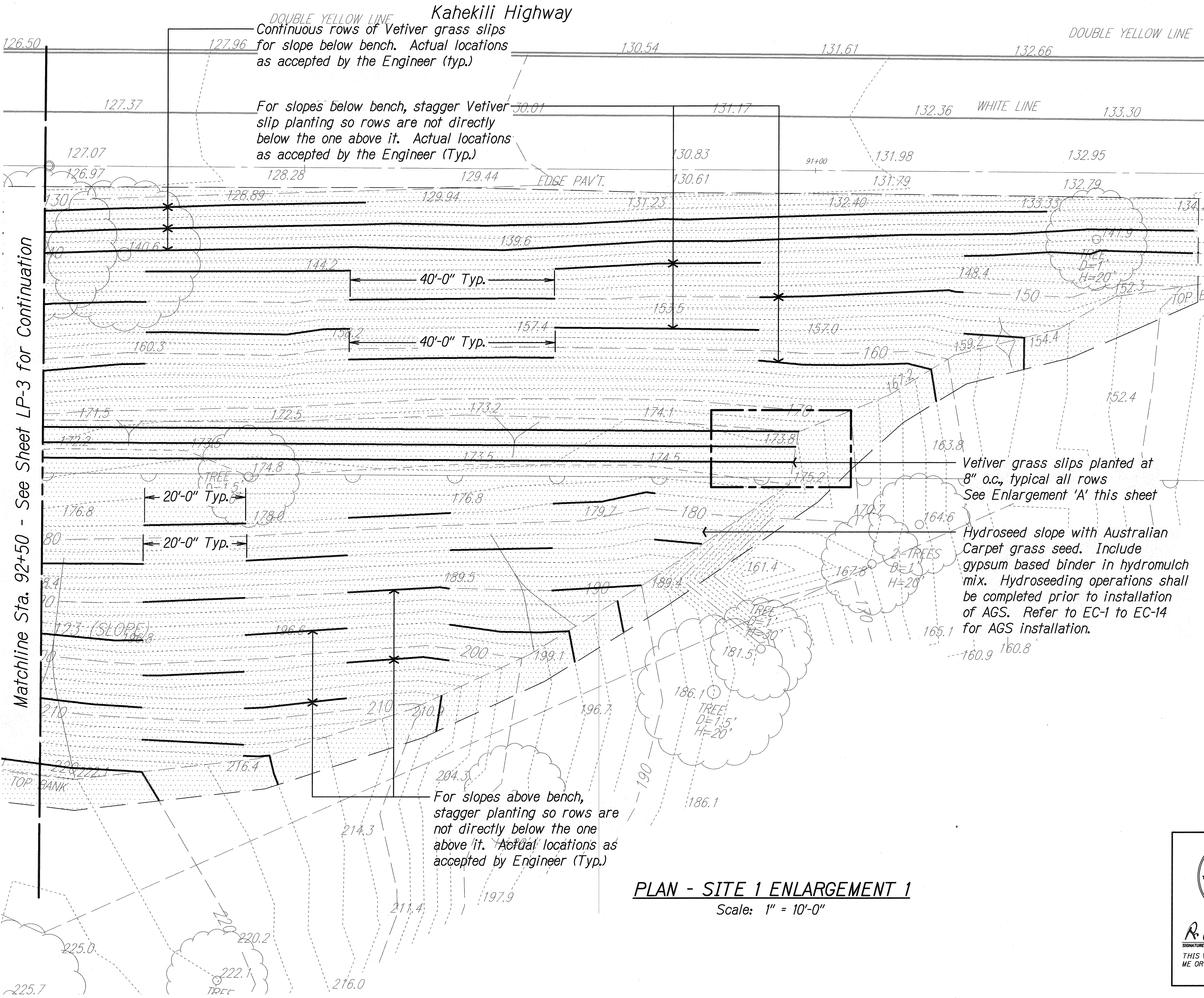
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

SEAL OF R. STAN DUNCAN, LICENSED PROFESSIONAL LANDSCAPE ARCHITECT, No. 5815, HAWAII, U.S.A.

SIGNATURE: *R. Stan Duncan* 4/20/10
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

10/7/09	Change plant spacing and qty.
Date	Revision
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PLANTING PLAN SITE 1 OVERALL PLAN	
SLOPE MAINTENANCE FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 3	
Project No. HWY-O-04-09M	
Scale: As Noted	Date: April 2009
SHEET No. LP-1 OF 6 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-09M	2009	C.O. 61	65



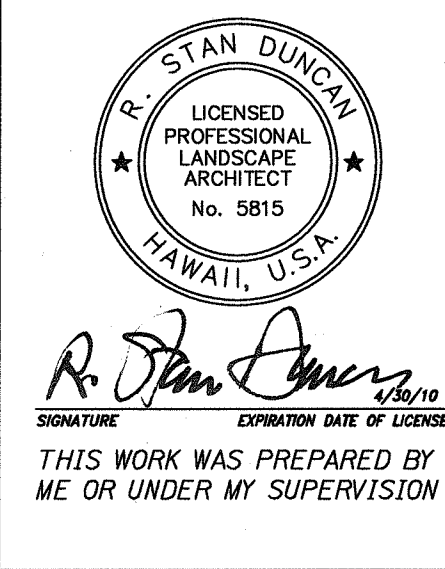
Install Vetiver slips at 8" o.c. in continuous rows 3'-0" apart on bench.

ENLARGEMENT A

LEGEND:

- Vetiver Grass Slips
- Limit of Work

10/7/09	Change plant spacing and qty.
Date	Revision



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PLANTING PLAN SITE 1
ENLARGEMENT 1**

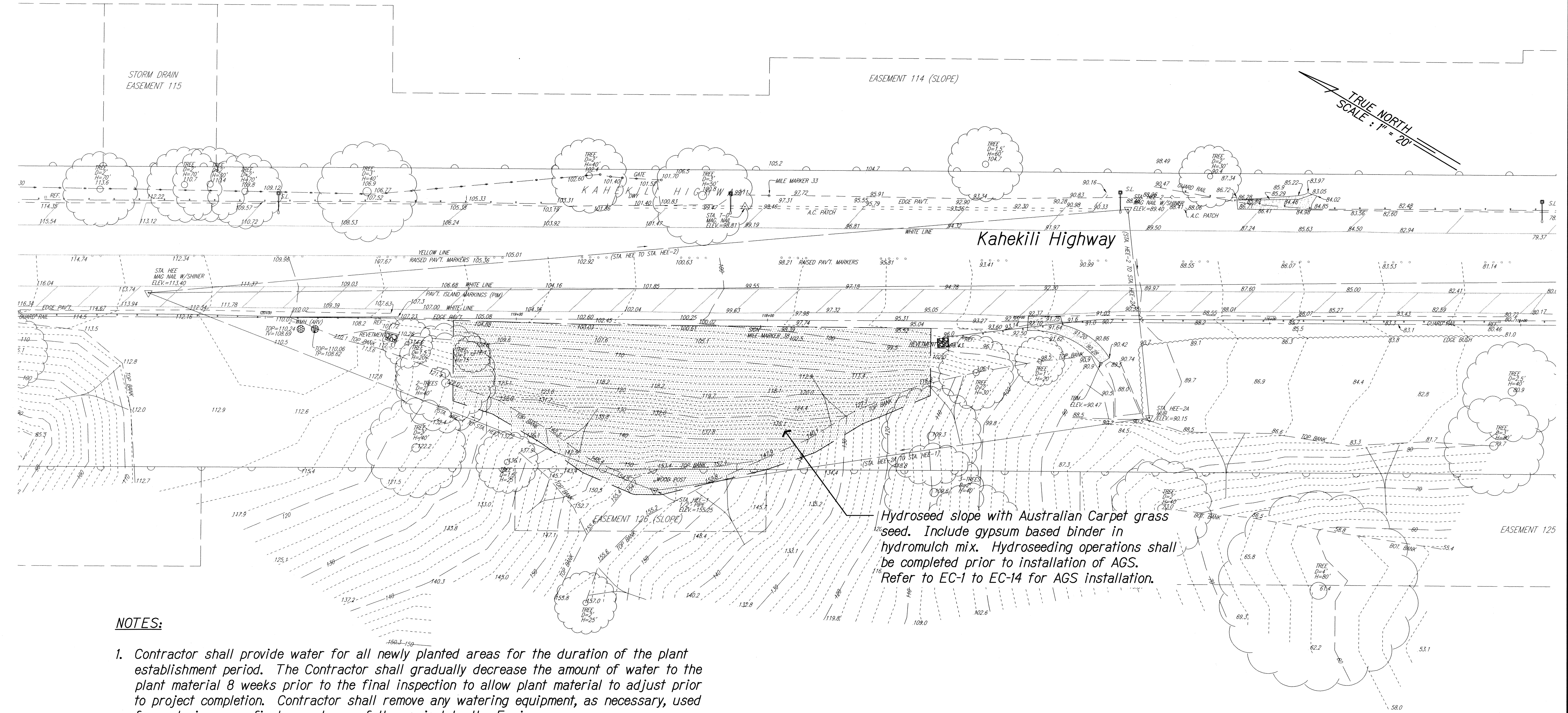
SLOPE MAINTENANCE FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU, PHASE 3

Project No. HWY-0-04-09M

Scale: As Noted Date: April 2009

SHEET No. LP-2 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-09M	2009	63	65

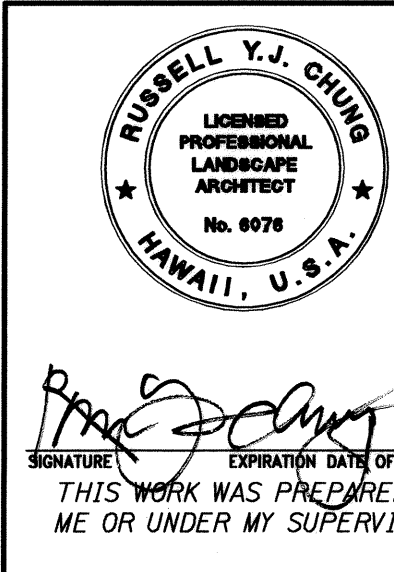


NOTES:

- Contractor shall provide water for all newly planted areas for the duration of the plant establishment period. The Contractor shall gradually decrease the amount of water to the plant material 8 weeks prior to the final inspection to allow plant material to adjust prior to project completion. Contractor shall remove any watering equipment, as necessary, used for watering upon final acceptance of the project by the Engineer.
- The Contractor's method of watering shall not cause erosion of existing or new planting areas. The Contractor shall immediately repair any areas damaged due to the watering method at no additional cost to the State.
- Contractor shall not disturb or damage the Anchored Grid System (AGS) as a result of planting operations.

PLAN - SITE 2

Scale: 1" = 20'-0"



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**PLANTING PLAN SITE 2
OVERALL PLAN**

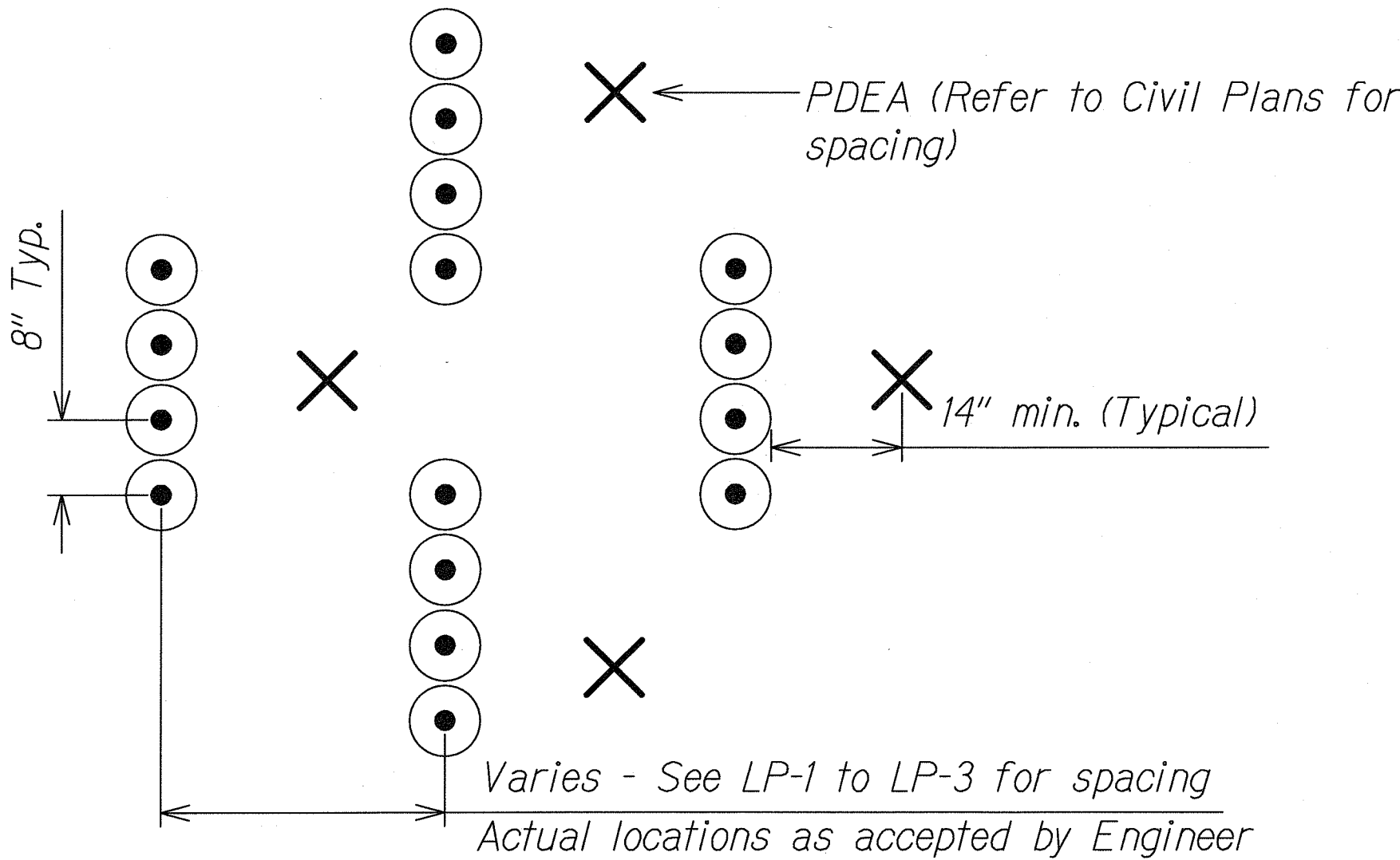
SLOPE MAINTENANCE FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU, PHASE 3

Project No. HWY-O-04-09M

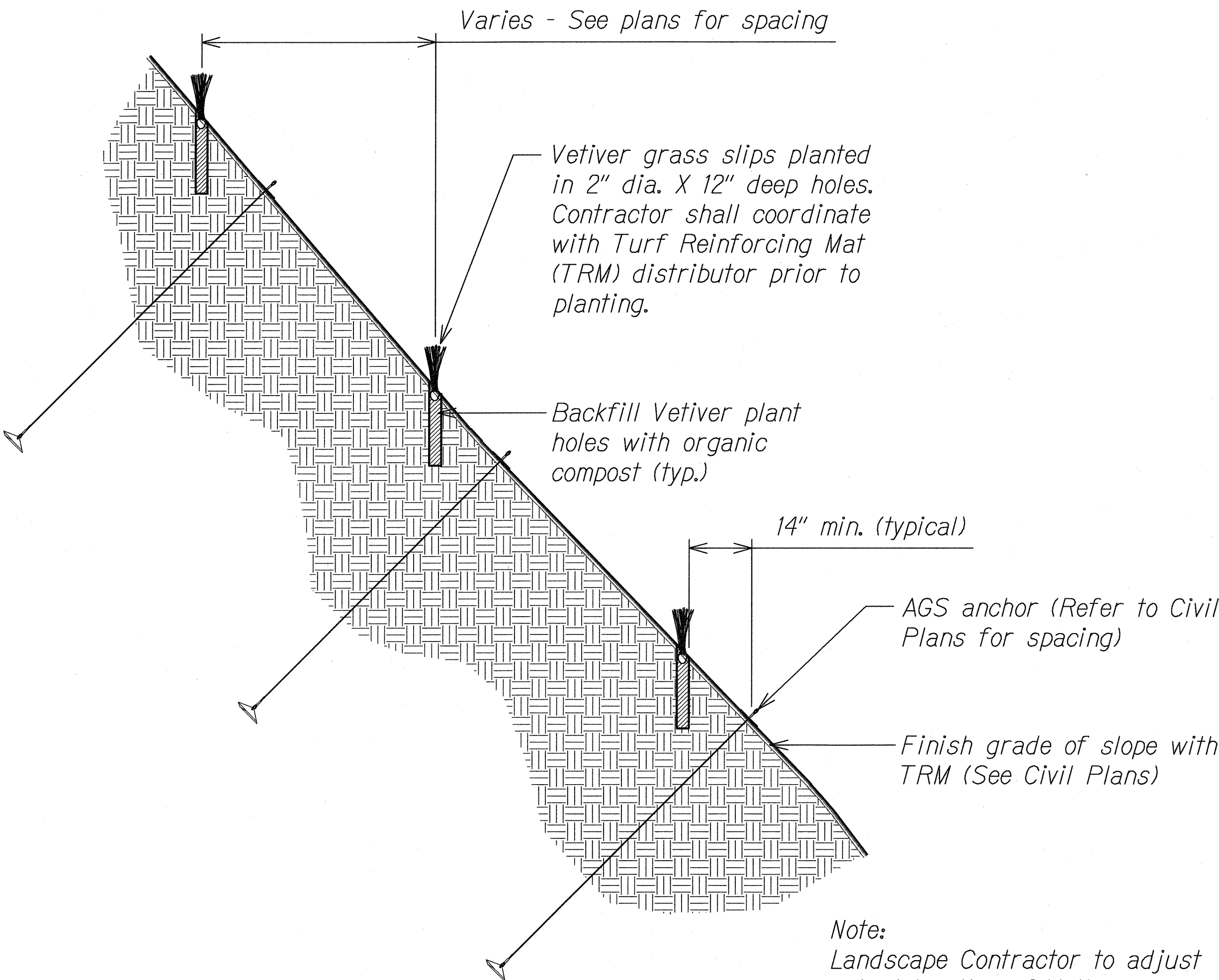
Scale: As Noted Date: April 2009

SHEET No. LP-4 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-09M	2009	C.O. 64	65



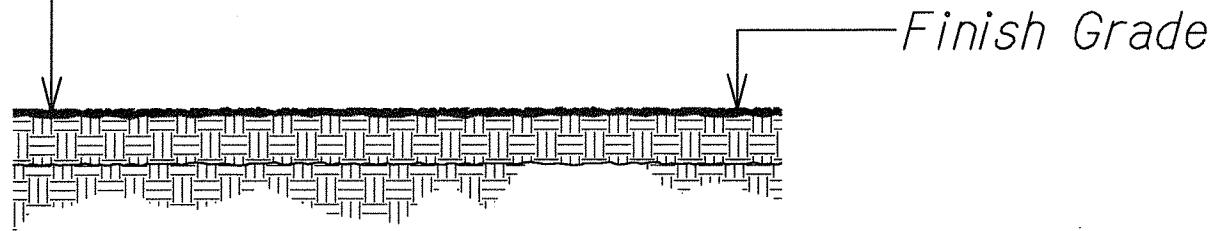
TYPICAL PLAN VIEW



TYPICAL SECTION

VETIVER GRASS PLANTING ON SLOPE
Scale: 3/4"=1'-0"

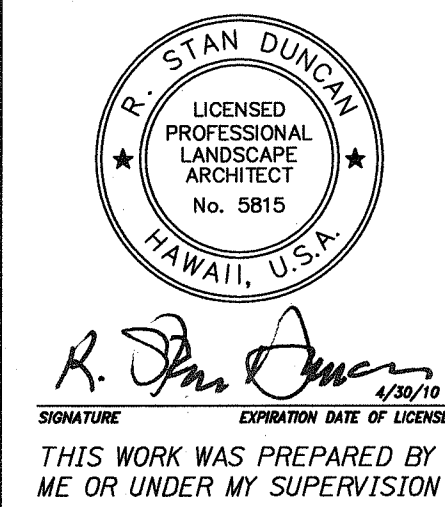
Hydro Seed:
Shall Be Specifically Processed Fiber Containing No Growth Or Germination Inhibiting Factors. It Shall Be Such That After Addition And Agitation In The Hydraulic Equipment With Seeds/Sprigs, Fertilizer, Water And, Other Additives Not Detrimental To Plant Growth. The Fibers Will Form A Homogeneous Slurry. When Hydraulically Sprayed On The Soil, The Fibers Shall Form A Blotter-Like Ground Cover Which Readily Absorbs Water And Allows Infiltration. Complete Coverage Of The Surface Shall Be Attained. A Gypsum Based Binder Shall Be Included In The Mix.



HYDRO-SEED DETAIL
Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

10/7/09	Change plant spacing and qty.
Date	Revision



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLANTING DETAILS

SLOPE MAINTENANCE FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU, PHASE 3

Project No. HWY-0-04-09M

Scale: As Noted Date: April 2009

SHEET No. LP-5 OF 6 SHEETS

PLANT NOTES:

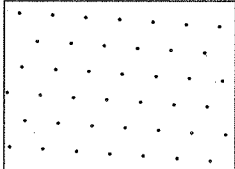
- Contractor shall field verify all plant quantities and dimensions prior to installation. Estimated quantities shown on plant list are for minimum quantities of shrubs and sod/seed that Contractor shall install. Actual quantities of shrubs and sod/seed installed in the field up to 10 percent in excess of the quantities shown on plans will be at no additional cost to the State.
- Contractor shall be responsible for locating and protecting existing utilities.
- Prior to augering shrub hole , all planting locations shall be staked out by Contractor for acceptance by Engineer. Do not plant until ground has been prepared and site is neat, orderly, and the Engineer accepts site for planting.
- Notify Engineer of any discrepancies in plant locations, or plant quantities if quantities will exceed that indicated in Note 1 above.
- Notify Engineer 30 days prior to planting operations for acceptance of all plant material at place of growth. All plant material not accepted by the Engineer will be subject to rejection.
- The Engineer will inspect plants at the place of growth and after the delivery to the project.
- Plants shall meet size indicated by minimum height and spread. Plants shall be straight and uniformly shaped, unless unique or special characteristics are specified, and shall be undamaged, sound, healthy, vigorous and free of disease and insect infestation. Plants not conforming to these requirements on delivery to the project and at the end of the plant establishment period will be rejected.
- Contractor shall be solely responsible for the complete removal and damages resulting from planting any plant species listed on the Hawaii Department of Agriculture 'Noxious Weed Rules' as defined in the statute, Hawaii Administrative Rules 4:68:I or the 'Federal Noxious Weed List' as defined in Title 7 of the Code of Federal Regulations (CFR), parts 360 and 361.
- All tree work must adhere to American National Standard Institute (or ANSI) - a300 Tree Care Standards and ANSI-z133 safety standards for tree work. Work shall be contracted to arborists that has been certified in good standings as an isa certified arborist for at least 5 years to assure that tree work is performed properly and trees are not damaged by practices such as topping, flush cuts, over-thinning, or climbing with spikes. Contractor shall submit a copy of the isa arborist certification of good standing of 5 years to the Engineer minimum 7 days prior to tree pruning.
- For the duration of construction within the drip line of trees to remain there must be: no changes, alterations or disturbance to the grade by adding fill, excavating or scraping except as noted on plans; no storage of construction material or equipment; no stockpiling of any construction material or any excavated material no disposal of any liquids (E.G. Concrete sleuth, gas, oil, paint); no vehicular traffic, equipment or excessive pedestrian traffic no attachment of any wires, ropes, lights, or any other such attachment other than those of protective nature to any tree to be preserved; and no cleaning of equipment or material under the canopy of any tree or group of trees to remain.
- Provide and incorporate a two-inch layer of organic amendmets over bench area only. Representative samples of soil from project site shall be submitted to the University of Hawaii Agricultural Extention Service or laboratory acceptable to the Engineer for analysis of required soil amendmets. Test results and fertilization schedule shall be presented to the Engineer for review and acceptance before placing planting soil. Uniformly distribute fertilizer and amendmets over planting areas as recommended by the soil analysis report. Rototill top four-inches of soil to evenly incorporate fertilizer and amendmets for bench area only.
- Guy wires, flagging, stakes, windbreakers, etc. shall be maintained and replaced if necessary by the Contractor until the shrub is able to stand by itself. The Contractor shall remove and dispose of these items at the end of plant establishment period.

- Any planting that obstructs sight distance, signs or traffic lights shall be relocated or removed as determined by the Engineer.
- Provide water for all plant material for the duration of the project, including plant establishment period. Water vetiver grass rows as well as all grassed areas. Water for planting shall not cause erosion damage to the slopes. The Contractor shall be responsible for repairing any damage caused by the watering of plants. The Contractor shall gradually decrease the amount of water being provided to the plant material 8 weeks prior to final acceptance of plantings.
- Contractor shall not damage the soil stabilization material or PDEA anchor system and will be responsible for the cost of repairing any damaged areas, materials, and PDEA anchors that are caused due to planting operations.
- The Contractor shall maintain a minimum 14 inch clearance around all AGS anchors. Contractor shall backfill vetiver planting holes with organic compost.

PLANT SCHEDULE SITE 1

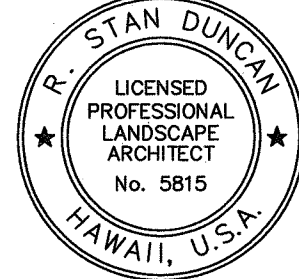

SHRUBS	QTY	BOTANICAL	COMMON	SPACING	REMARKS
	7,000 EA	Chrysopogon zizanioides 'Sunshine'	Sunshine Vetiver Grass	8" O.C.	Install sprigs/slips per supplier recommendations and as shown on plans
SOD/SEED	QTY	BOTANICAL	COMMON	REMARKS	
	36,000 SF	Axonopus affinis	Australian Carpet Grass	Hydromulch shall include a gypsum based binder	

PLANT SCHEDULE SITE 2

SOD/SEED	QTY	BOTANICAL	COMMON	REMARKS
	10,500 SF	Axonopus affinis	Australian Carpet Grass	Hydromulch shall include a gypsum based binder

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-09M	2009	C.O. 65	65

  SIGNATURE EXPIRATION DATE OF LICENSE 4/30/10 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION	10/7/09	Change plant spacing and qty.
	Date	Revision
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
	PLANT LIST AND NOTES SLOPE MAINTENANCE FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 3 Project No. HWY-O-04-09M Scale: As Noted Date: April 2009	