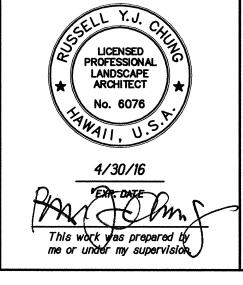
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-07-14M	2014	35	51

### PLANT NOTES:

- 1. Contractor shall field verify all plant quantities and dimensions prior to installation. Contractor shall determine quantities of plant materials to be provided. In all cases, Contractor shall install plant material on all areas affected by construction.
- 2. Contractor shall be responsible for locating and protecting existing utilities.
- 3. Do not perform planting operations until ground has been prepared, required amendments have been placed, site is neat, orderly, and the Engineer accepts site for planting.
- 4. Notify Engineer of any discrepancies in plant locations.
- 5. Plants shall meet size indicated 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.
- 6. 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 4:68:1 or the 'Federal Noxious Weed List' as defined in Title 7 of the Code of Federal Regulations (CFR), parts 360 and 361.
- 7. 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.
- 8. 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 slurry, 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.
- 9. Representative samples of soil from project site shall be submitted to the University of Hawaii Agricultural Extension Service or laboratory acceptable to the Engineer for analysis of required soil amendments. Test results and fertilization schedule shall be presented to the Engineer for review and acceptance before placing planting soil or amending existing soil. Uniformly distribute fertilizer and amendments over planting areas as recommended by the soil analysis report. For slopes flatter than 3H:1V, till top six-inches of soil to evenly incorporate fertilizer and amendments. For slopes steeper than 3H:1V, fertilizer and amendments shall be applied in such a way that no tilling is required.
- 10. Guy wires, flagging, stakes, windbreakers, etc. shall be maintained and replaced if necessary by the Contractor until the tree/shrub is able to stand by itself. The Contractor shall remove and dispose of these items at the end of plant establishment period.

- 13. Any planting that obstructs sight distance, signs or traffic lights shall be relocated or removed as determined by the Engineer.
- 14. Provide water for all plant material for the duration of the project, including plant establishment period. Water trees, shrubs, ground cover and all grassed areas. Water for planting shall not cause erosion damage to the slopes. The Contractor shall be responsible for repairing any damage cause 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.
- 15. Temporary irrigation system shall be provided and installed by the Contractor for the duration of the project. Refer to Specification Sections 641.03(D) and 641.03(E). Temporary irrigation system shall be considered incidental to Specification Section 641 - Hydro-Mulch Seeding. The Contractor shall be responsible for locating and procuring the water source for the temporary irrigation system. The Contractor shall provide and maintain all equipment required to deliver water to the project site. Contractor shall also be responsible for obtaining all necessary permits and agreements for the source of water for the temporary irrigation system.



**DEPARTMENT OF TRANSPORTATION** HIGHWAYS DIVISION

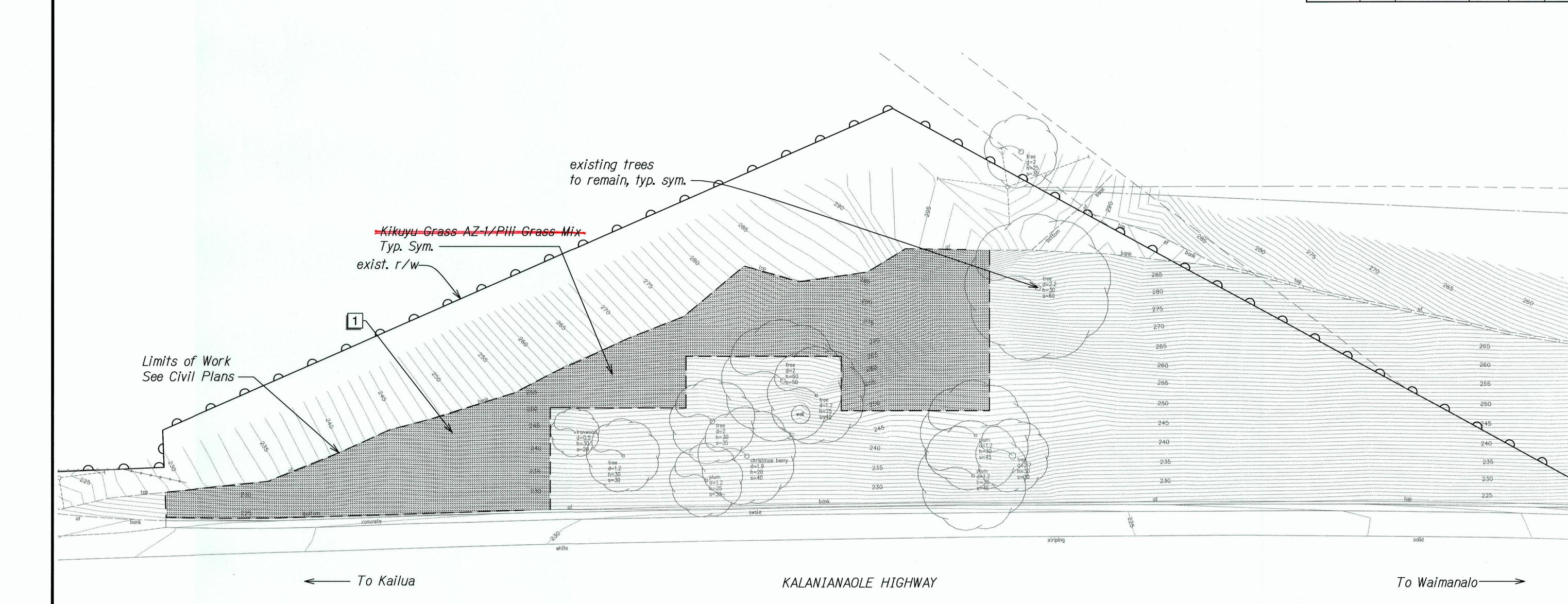
<u>LANDSCAPE</u> NOTES

KAWAINUI WATERSHED STORM WATER BEST MANAGEMENT PRACTICES ON OAHU Project No. HWY-0-07-14M

Scale: None

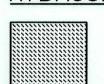
Date: April 2014 SHEET No. LP-01 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOT SHE
HAWAII	HAW.	HWY-O-07-14M	2014	36	5



## PLANT SCHEDULE PID 125

HYDROSEED BOTANICAL NAME



-Pennisetum clandestinum Heteropogon contortus

COMMON NAME

Bermuda Kikuyu Grass AZ-1 Annual Rye +# Grass

#### REFERENCE NOTES SCHEDULE PID 125

<u>SYMBOL</u>

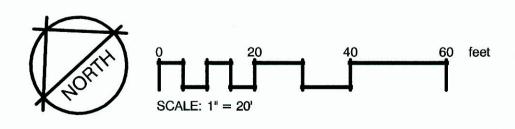
<u>DESCRIPTION</u>

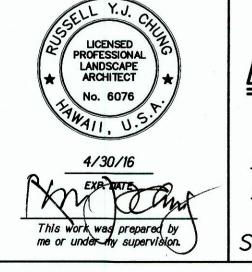
1

Install erosion control matting per manufacturer's instructions and recommendations. See erosion control plans for details and exact limits.

## Notes:

- 1. Contractor shall clear areas within the Limits of Work Only. Existing vegetation located outside the Limits of Work shall remain.
- 2. Existing trees shown are to remain and be protected throughout construction.
- 3. Notify the Engineer if trees with 3" caliper trunks or greater are discovered during clearing operations prior to removal. Contractor shall obtain the approval of the Engineer prior to removal of trees.





STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

## LANDSCAPE PLANTING PLAN

PID 125

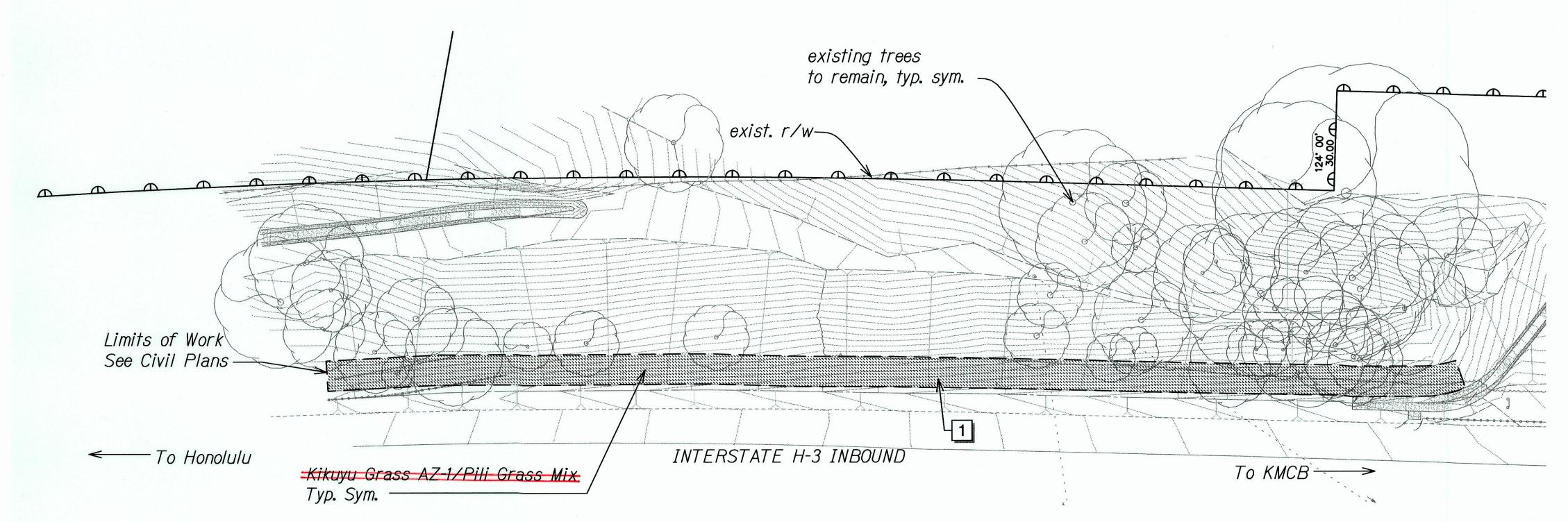
KAWAINUI WATERSHED STORM WATER BEST MANAGEMENT PRACTICES ON OAHU Project No. HWY-0-07-14M
Scale: 1" = 20'-0" Date: Ap Date: April 20

SHEET No. LP-02 OF 9 SHEETS

LANDSCAPE PLANTING PLAN PID 125

Scale: 1" = 20'-0"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAI SHEET
HAWAII	HAW.	HWY-O-07-14M	2014	37	51



## PLANT SCHEDULE PID 214

<u>HYDROSEED</u> <u>BOTANICAL NAME</u>

COMMON NAME



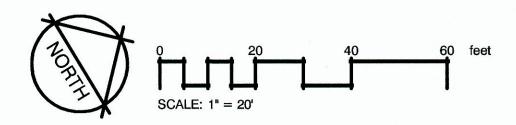
Pennisetum clandestinum -Heteropogon contortus

-Kikuyu Grass <u>AZ-1</u> Annual Rye <del>-Pili</del> Grass

## REFERENCE NOTES SCHEDULE PID 214

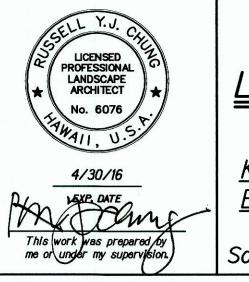
<u>SYMBOL</u> **DESCRIPTION** 

Vegetated wall (see Civil plans)
Erosion Control Matting



LANDSCAPE PLANTING PLAN PID 214

Scale: 1" = 20'-0"



DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

## LANDSCAPE PLANTING PLAN

PID 214

KAWAINUI WATERSHED STORM WATER

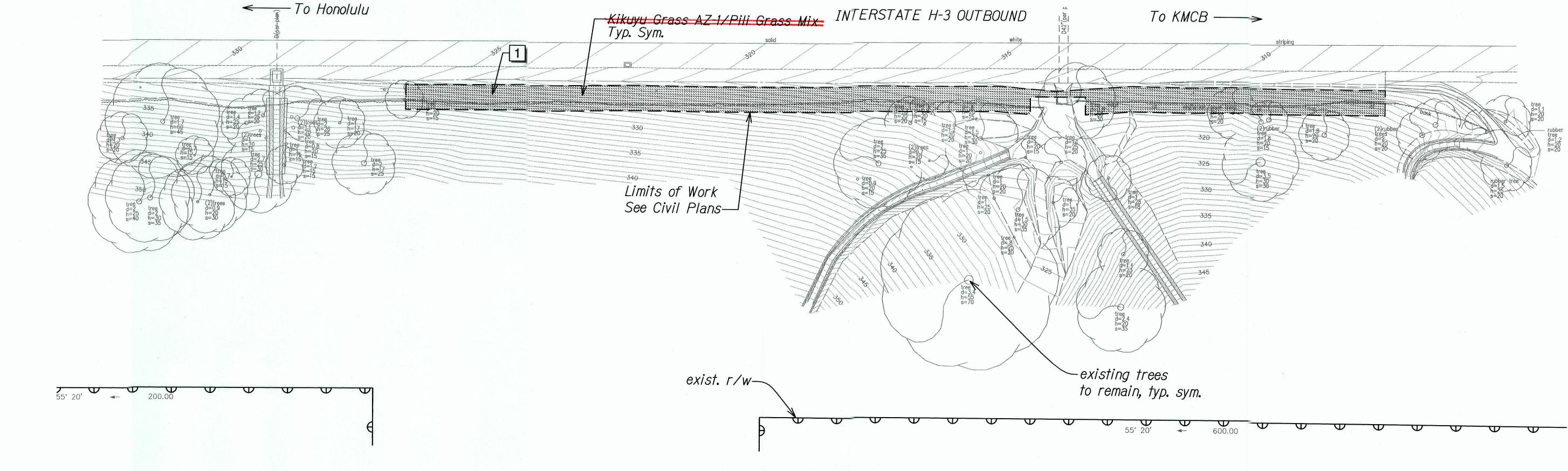
BEST MANAGEMENT PRACTICES ON OAHU

Project No. HWY-O-07-14M

Scale: 1" = 20'-0" Date: April 2014

SHEET No. LP-03 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TC
HAWAII	HAW.	HWY-O-07-14M	2014	38	



## PLANT SCHEDULE PID 215

HYDROSEED BOTANICAL NAME

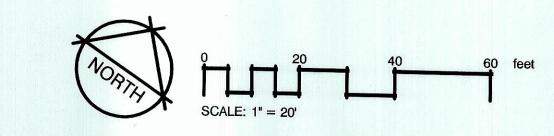
Pennisetum clandestinum Heteropogon contortus

COMMON NAME Bermuda -Kikuyu Grass AZ-1 Annual Rye-Pitt Grass

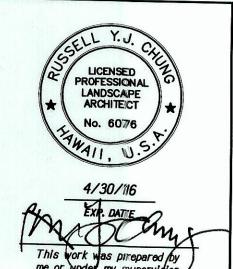
## REFERENCE NOTES SCHEDULE PID 215

<u>SYMBOL</u> <u>DESCRIPTION</u>

1 -Vegetated wall (see Civil plans) Erosion Control Matting



LANDSCAPE PLANTING PLAN PID 215 Scale: 1" = 20'-0"



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

## LANDSCAPE PLANTING PLAN

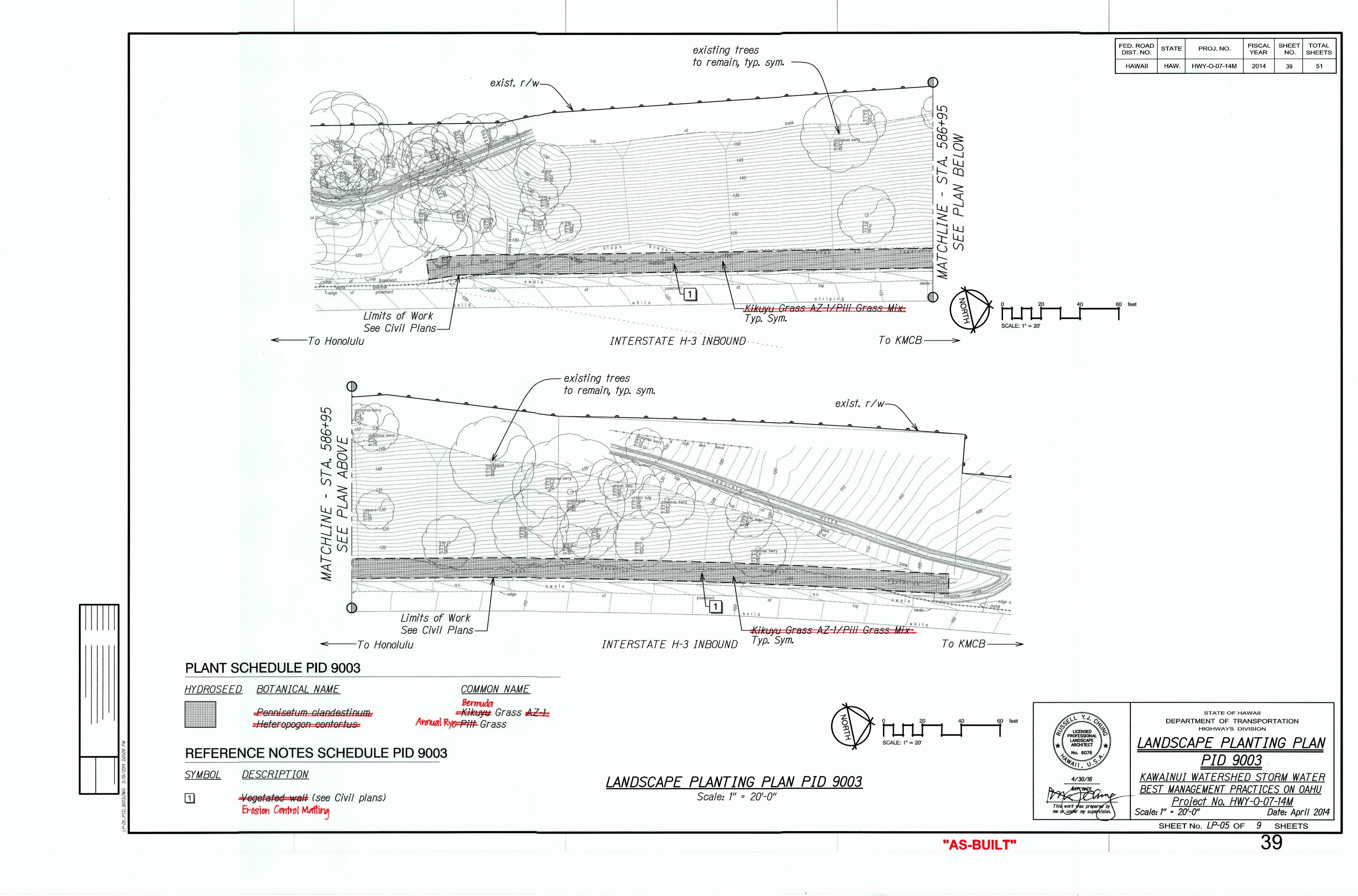
PID 215

KAWAINUI WATERSHED STORM WATER BEST MANAGEMENT PRACTICES ON OAHU Scale: 1" = 20'-0"

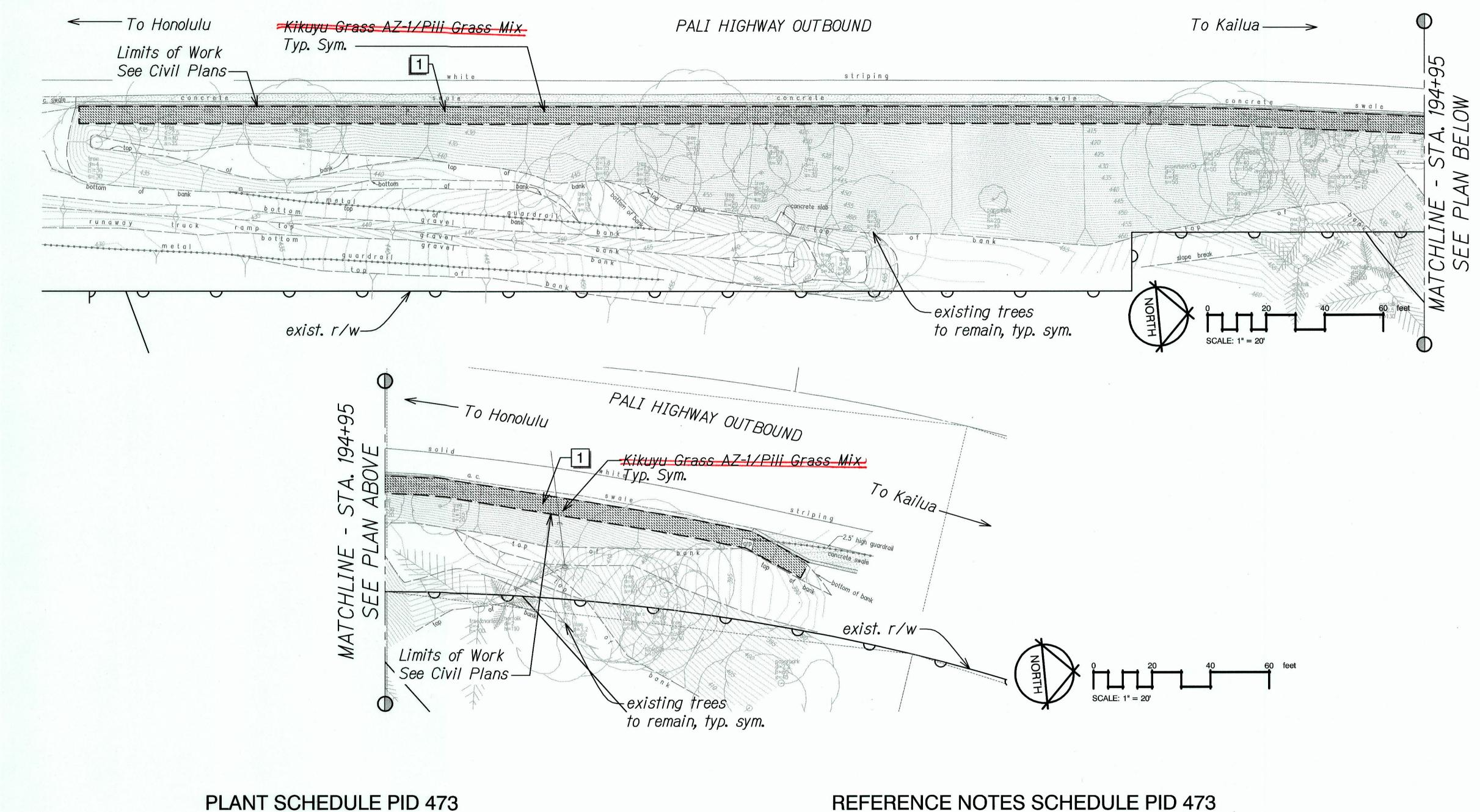
Project No. HWY-0-07-14M

Date: An

Date: April 2014 SHEET No. LP-04 OF 9 SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TO'
HAWAII	HAW.	HWY-O-07-14M	2014	40	ŧ



HYDROSEED BOTANICAL NAME



Pennisetum clandestinum Heteropogon contortus

COMMON NAME

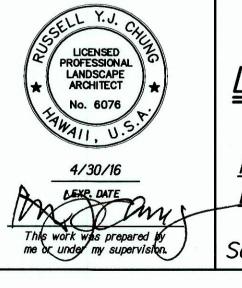
Bermuda Kikuyu Grass <u>AZ-1</u> Annual Rye ## Grass

<u>DESCRIPTION</u> <u>SYMBOL</u>

> Vegetated wall (see Civil plans) Erosion Control Matting



Scale: 1" = 20'-0"



DEPARTMENT OF TRANSPORTATION

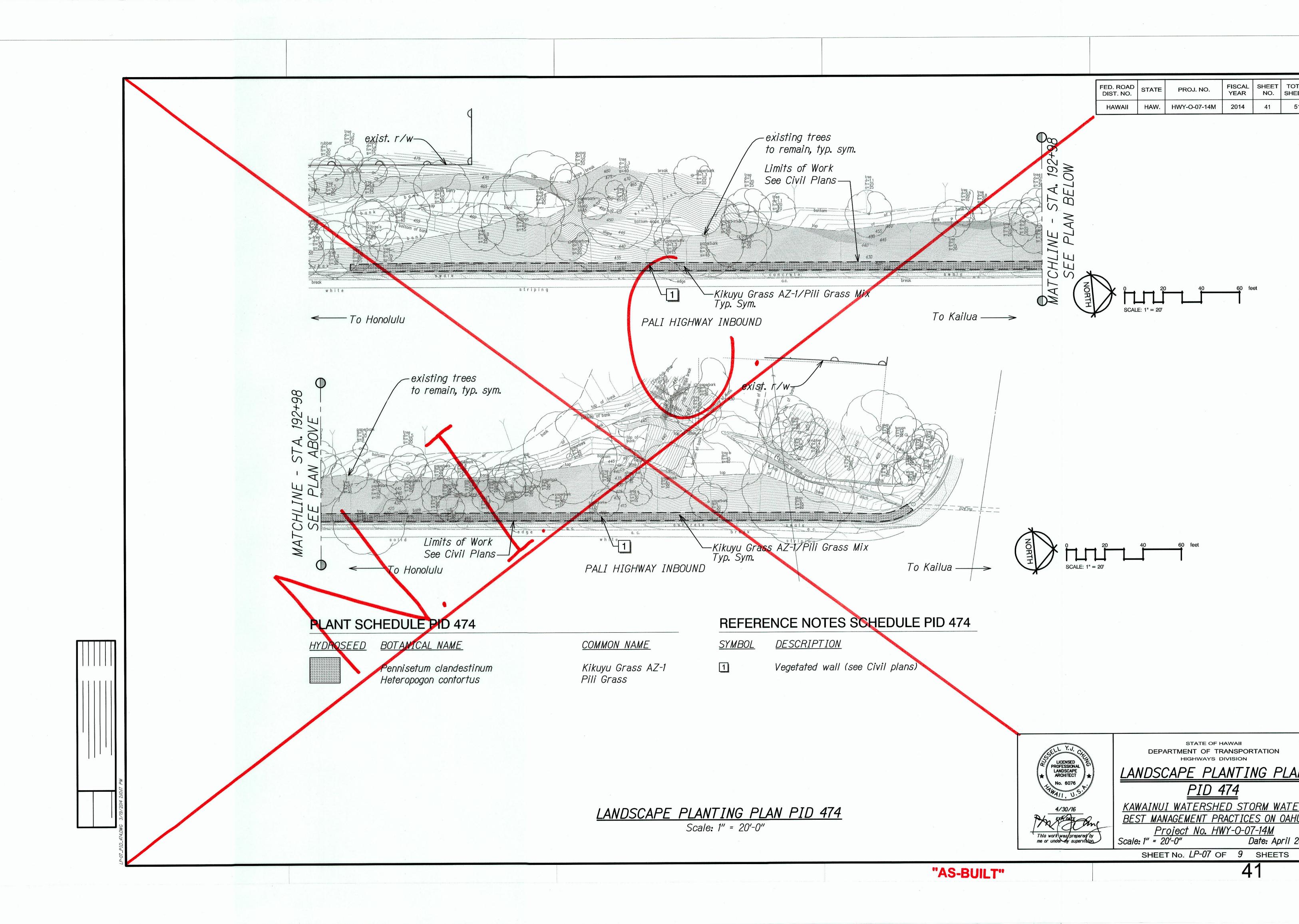
LANDSCAPE PLANTING PLAN

HIGHWAYS DIVISION

PID 473

KAWAINUI WATERSHED STORM WATE BEST MANAGEMENT PRACTICES ON OAHL <u>Project No. HWY-0-07-14M</u> Scale: 1" = 20'-0" Date: April 2

SHEET No. LP-06 OF 9 SHEETS

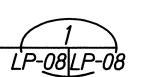


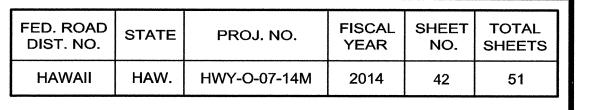
#### TREE PROTECTION ZONE:

- All trees identified on the plans to be protected. All trees 24" caliper or greater (as measured at 4½ feet height) shall be protected. If trees other than those designated for removal are damaged beyond survival condition as determined by the Engineer, the Contractor shall remove such trees and replace with a tree of the same species and size and maintain for the duration of the construction or 12 months whichever is greater at no cost to the State.
- The recommended tree protection zone should be located at the outer drip line of the canopy of the tree. However, the minimum protection zone around a tree should be at least 10 feet from the external surface of the tree's trunk. For all palms, the minimum protection zone should be at least 10 feet from the external surface of the palm's trunk.
- All underground utilities and irrigation lines should be routed outside of the tree protection zone. If utilities must traverse the tree protection zone, they shall be tunneled or bored at a depth of 4 feet or greater within the tree protection zone.
- All protected trees shall be listed on the demolition, landscape, grading and utilities plans. If there is a discrepancy with all plans, Contractor shall contact Engineer immediately.
- Protective fences shall be erected around trees identified on plan to remain and/or trees with a trunk diameter greater than 24 inches (as measured at a height of 4 ½ feet.) Protective fence shall be 4 feet high orange plastic mesh or approved equivalent supported on steel T-post a minimum of 6 feet long. Protective fence shall surround tree at a minimum of 10 feet from tree trunk with steel T-post at a minimum of 5 feet on center. Fence shall be installed prior to any demolition work and shall remain in place until site work is completed. Signs shall be posted on all four sides to read "TREE PROTECTION ZONE [TPZ] -NO GRADE CHANGE, STORAGE OR EQUIPMENT PERMITTED WITHIN TPZ."
- For the duration of construction within the drip line of the trees to remain there must be:
  - No changes, alteration or disturbance to the grade by adding fill, excavating or scraping except as noted on plans;
  - No storage on construction materials or equipment;
  - No stockpiling of any construction materials or excavated materials;
  - No disposal of any liquids (e.g. concrete slurry, gas, oil, paint);
  - No vehicular traffic, equipment er excessive pedestrian traffic;
  - No attachment of any wires, ropes, lights or any other such attachment other than those of a protective nature to any tree to be preserved;
  - No cleaning of equipment or material under the canopy of any tree or group of trees to be preserved
- Auger tunneling, not trenching, shall be used where possible for utility placement within the drip line of the tree. If trenching is necessary it shall be hand dug within the drip line of the tree.



Scale: Not to Scale





- Hydro Seed/Hydro Sprig: 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 or vegetated wall. The fibers shall form a blotter-like ground cover which readily absorbs water and allows infiltration. Complete coverage of the surface shall be attained.

Vegetated Wall/ Existing Soil

HYDRO-SEED/SPRIG DETAIL 2

Scale: Not to Scale

Orange Rebar Cap

*──Orange Plastic Fence* 

Fin. Grade

DETAIL A - ORANGE CONSTRUCTION FENCE

4'-0"

2'-0"

NOT TO SCALE

Tree Trunk

-6' Steel T-Post @ 5' O.C.

Note:

Remove fence

is completed.

No Grading,

Compaction

Zone (Typ).

Tunneled Or Bored

Utility Easement

or Construction

Dripline

Construction

√Orange

Fence,

Above

after construction

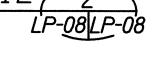
Orange

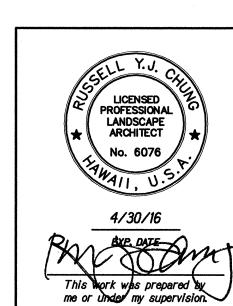
Construction

Detail A Above.

10'-0" Min.

Fence. See





STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LANDSCAPE <u>DETAILS</u> KAWAINUI WATERSHED STORM WATER BEST MANAGEMENT PRACTICES ON OAHU Project No. HWY-0-07-14M

Scale: As Shown Date: April 2014 SHEET No. LP-08 OF 9 SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOT SHE
HAWAII	HAW.	HWY-O-07-14M	2014	43	5

PLANT SC	HEDULE PID 125		*	
<u>HYDROSEED</u>	BOTANICAL NAME	COMMON NAME	<u>CONT</u>	REMARKS
	Pennisetum clandestinum Heteropogon cotortus	Kikuyu Grass AZ-1 Pili Grass	Seed Seed	See spec for grass seeding rates
PLANT SC	HEDULE PID 214			
<u>HYDROSEED</u>	BOTANICAL NAME	COMMON NAME	<u>CONT</u>	REMARKS
	Pennisetum clandestinum Heteropogon contortus	Kikuyu Grass AZ-i Pili Grass	Seed Seed	Apply hydroseed over vegetated wall. See spec for grass seeding rates
PLANT SC	HEDULE PID 215			
<u>HYDROSEED</u>	BOTANICAL NAME	COMMON NAME	CONT	<u>REMARKS</u>
	Pennisetum clandestinum Heteropogon contortus	Kikuyu Grass AZ-1 Pili Grass	Seed Seed	Apply hydroseed over vegetated wall. See spec for grass seeding rates
PLANT SC	HEDULE PID 9003			
<u>HYDROSEED</u>	BOTANICAL NAME	COMMON NAME	<u>CONT</u>	REMARKS
	Pennisetum clandestinum Heteropogon contortus	Kikuyu Grass AZ-1 Pili Grass	Seed Seed	Apply hydroseed over vegetated wall. See spec for grass seeding rates
PLANT SC	CHEDULE PID 473			, or grade dedamy rared
HYDROSEED	BOTANICAL NAME	COMMON NAME	<u>CONT</u>	REMARKS
	Pennisetum clandestinum Heteropogon contortus	Kikuyu Grass AZ-1 Pili Grass	Seed Seed	Apply hydroseed over vegetated wall. See spec for grass seeding rates
PLANTSC	HEDULE PID 474			ror grade dedaring raide
<u>HYDROSEED</u>	BOTANICAL NAME	COMMON NAME	<u>CONT</u>	<u>REMARKS</u>
	Pennisetum clandestinum Heteropogon contortus	Kikuyu Grass AZ-1 Pili Grass	Seed Seed	Apply hydroseed over vegetated wall. See spec for grass seeding rates
				ror grade booding raids



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

# <u>LANDSCAPE PLANT</u> <u>LIST</u>

KAWAINUI WATERSHED STORM WATER
BEST MANAGEMENT PRACTICES ON OAHL
Project No. HWY-0-07-14M
Scale: None Date: April 20

SHEET No. LP-09 OF 9 SHEETS