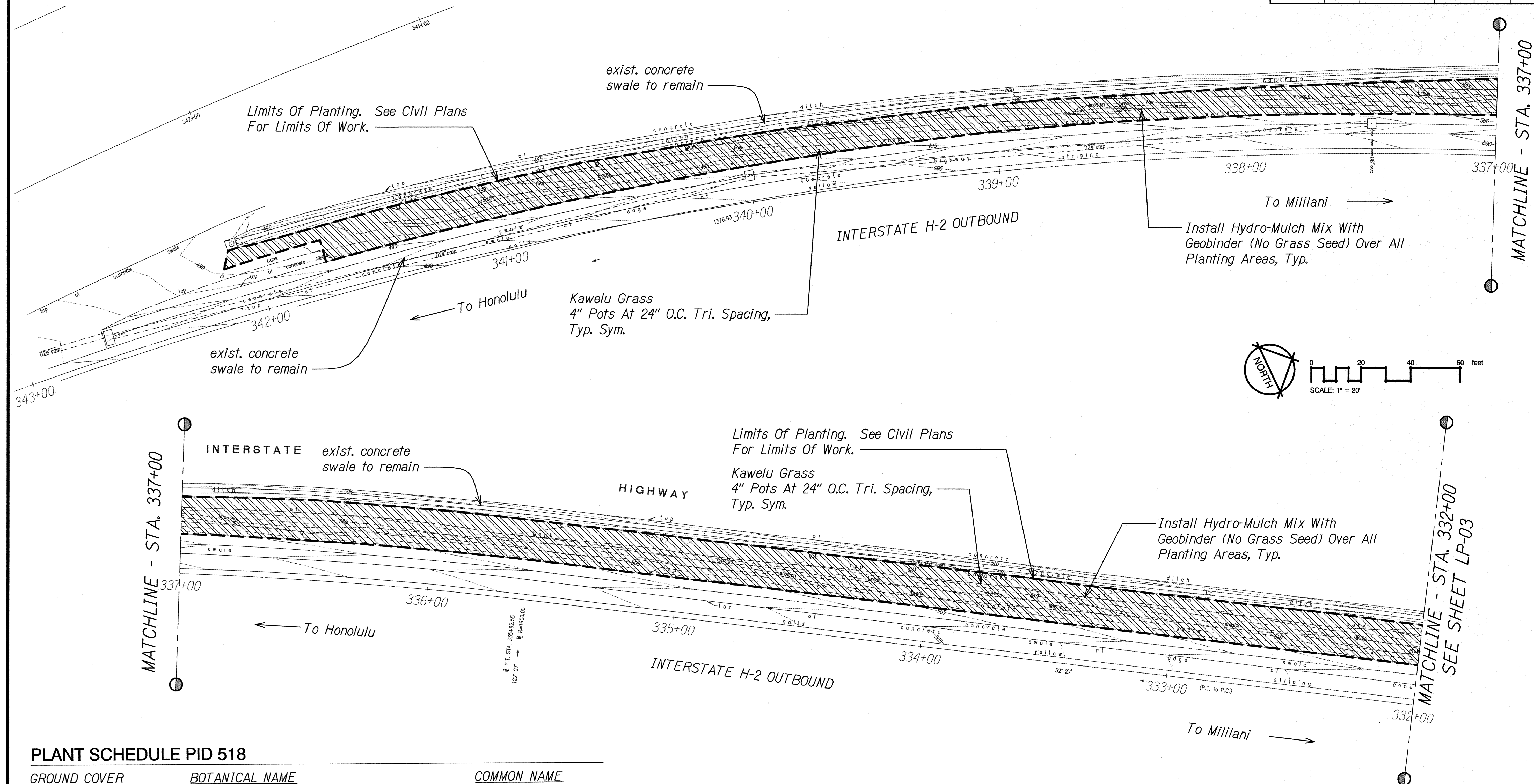


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-16	2016	33	60



PLANT SCHEDULE PID 518

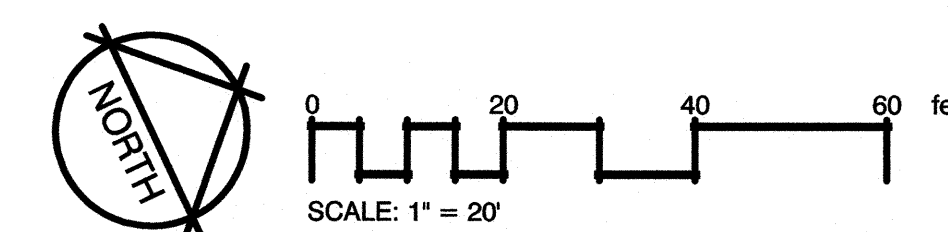
GROUND COVER	BOTANICAL NAME	COMMON NAME
	<i>Eragrostis variabilis</i>	Kawelu Grass

Notes:

1. Install erosion control matting on slopes greater than 3H:1V (see Civil plans). Install per manufacturer's instructions and recommendations. See Civil plans for details and project limits.
2. Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.

LANDSCAPE PLANTING PLAN PID 518

Scale: 1" = 20'-0"



4/30/16
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

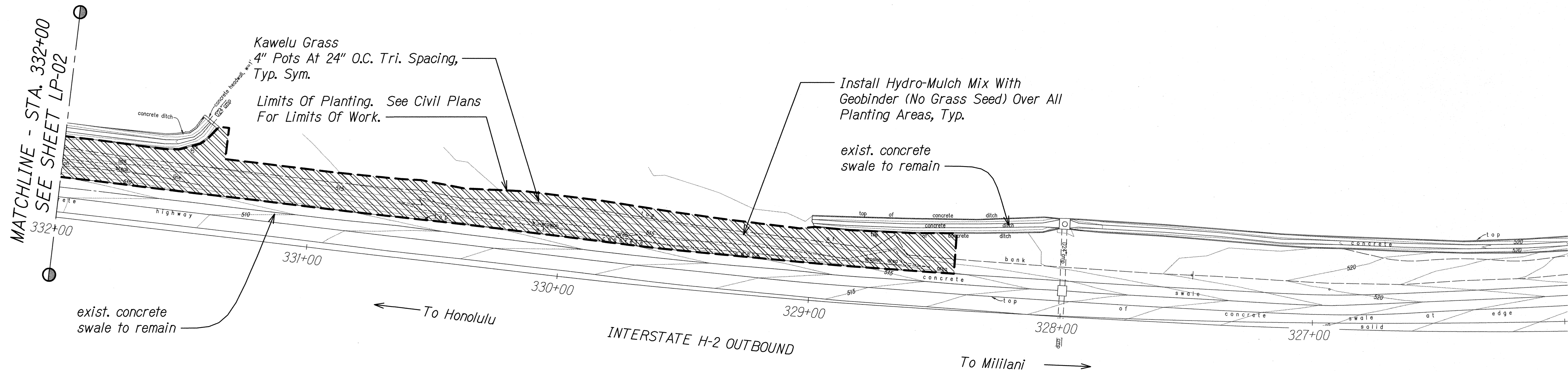
LANDSCAPE PLANTING PLAN
PID 518

SLOPE IMPROVEMENTS FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU, PHASE 7


Project No. HWY-O-04-16
Scale: 1" = 20'-0" Date: April 2016

SHEET No. LP-02 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-16	2016	34	60

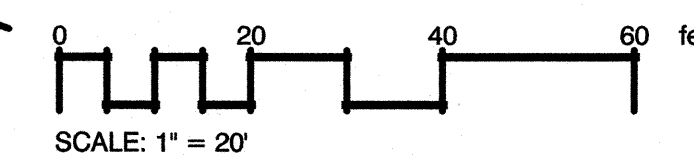
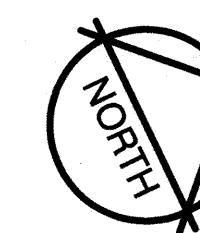


PLANT SCHEDULE PID 518

GROUND COVER	BOTANICAL NAME	COMMON NAME
	<i>Eragrostis variabilis</i>	Kawelu Grass

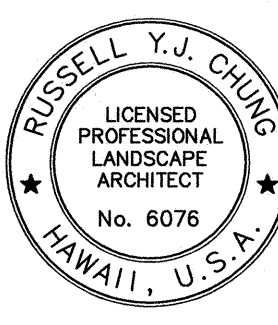
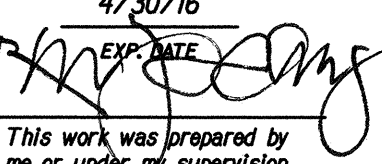
Notes:

1. Install erosion control matting on slopes greater than 3H:1V (see Civil plans). Install per manufacturer's instructions and recommendations. See Civil plans for details and project limits.
2. Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.



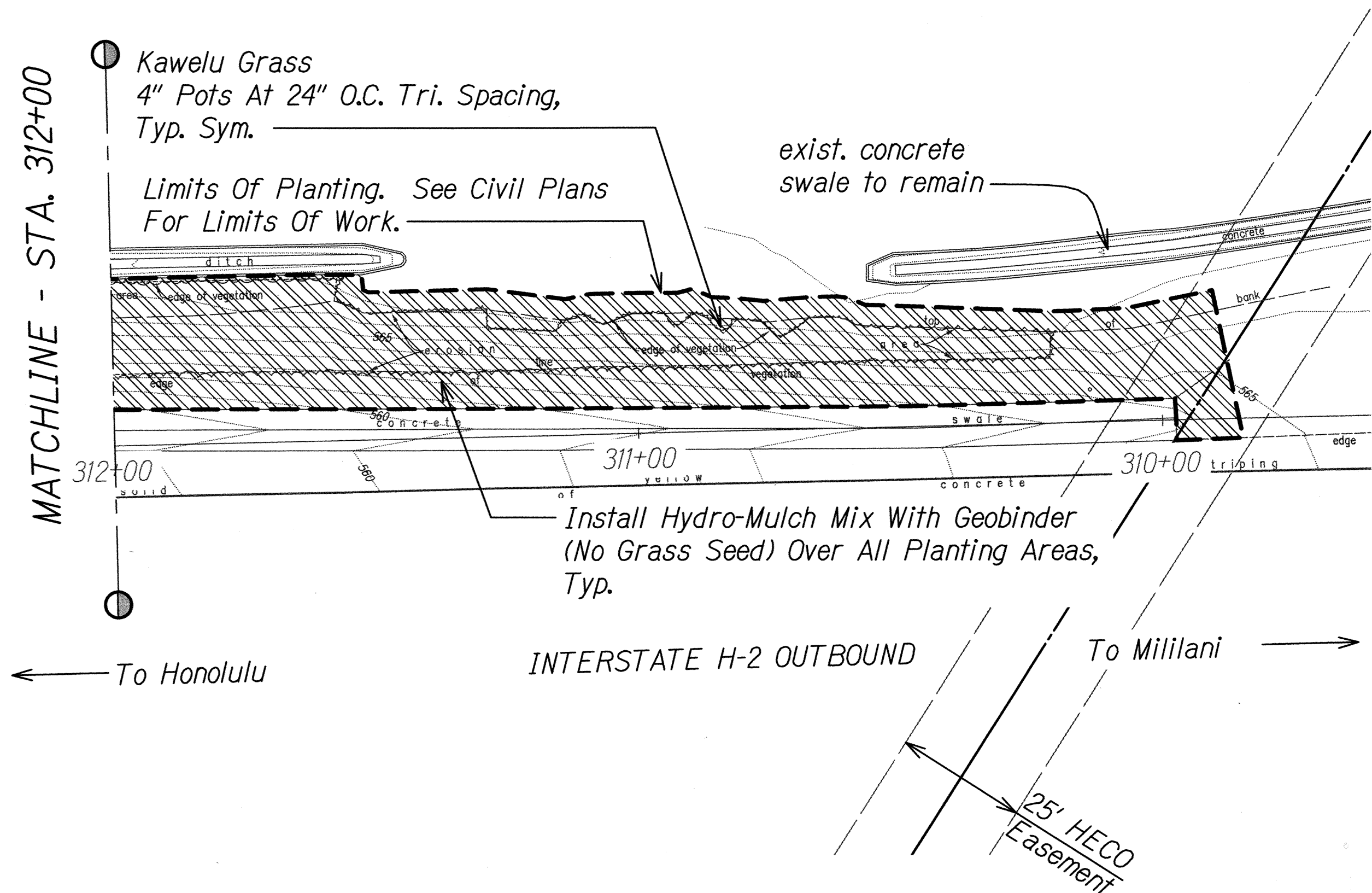
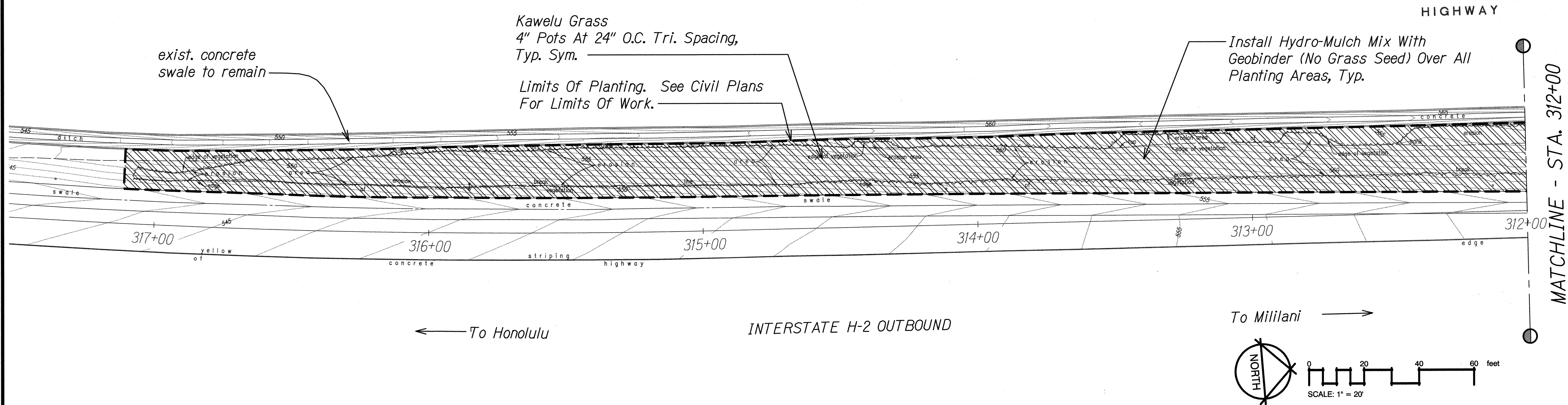
LANDSCAPE PLANTING PLAN PID 518

Scale: 1" = 20'-0"

 4/30/16  <small>This work was prepared by me or under my supervision.</small>	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION LANDSCAPE PLANTING PLAN PID 518 SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 7 Project No. HWY-O-04-16 Scale: 1" = 20'-0" Date: April 2016

SHEET No. LP-03 OF 12 SHEETS

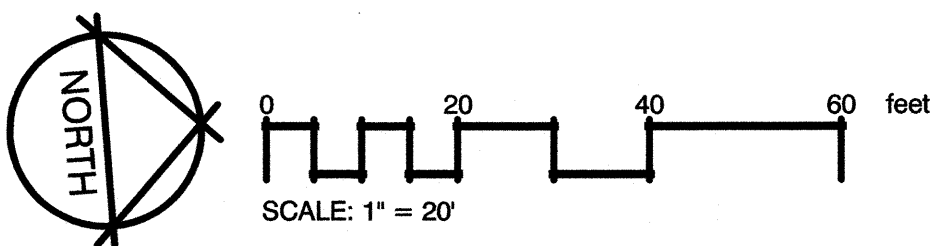
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-16	2016	35	60



PLANT SCHEDULE PID 519

GROUND COVER	BOTANICAL NAME	COMMON NAME
	<i>Eragrostis variabilis</i>	Kawelu Grass

- Notes:**
1. Install erosion control matting on slopes greater than 3H:1V (see Civil plans). Install per manufacturer's instructions and recommendations. See Civil plans for details and project limits.
 2. Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.



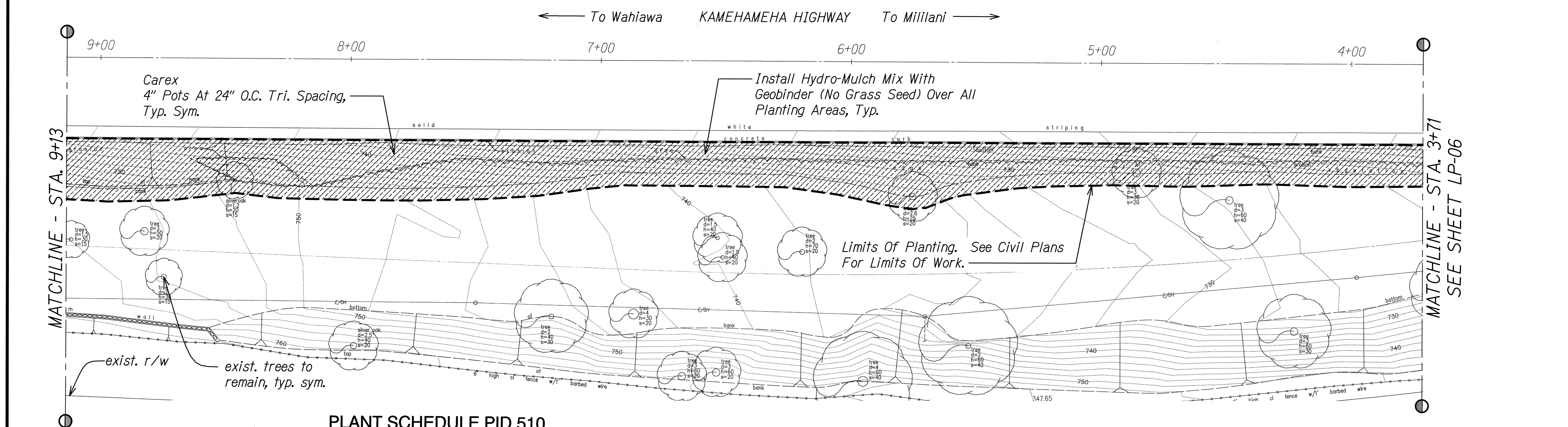
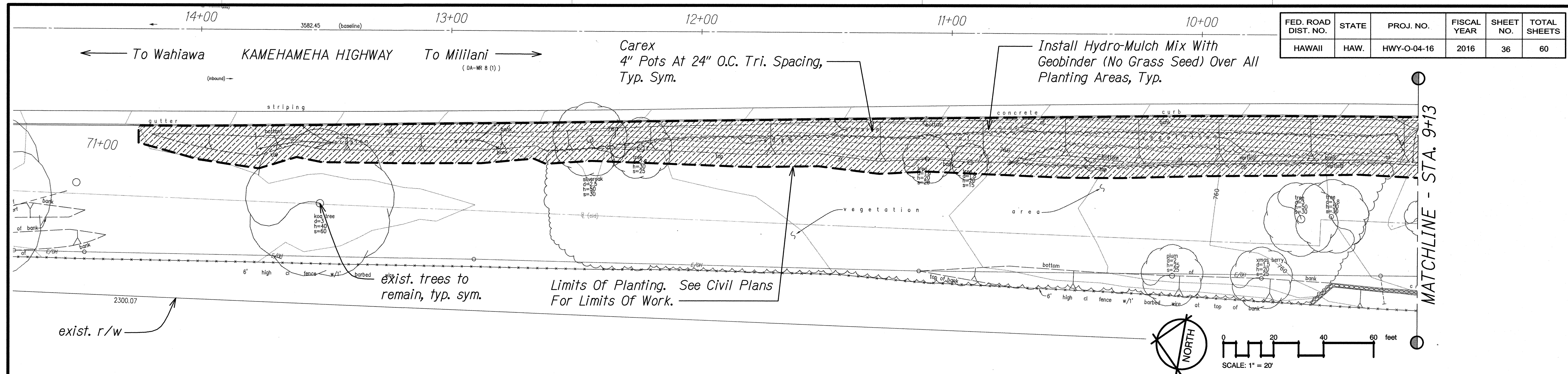
LANDSCAPE PLANTING PLAN PID 519
Scale: 1" = 20'-0"

4/30/16
This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

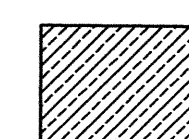
LANDSCAPE PLANTING PLAN
PID 519

SLOPE IMPROVEMENTS FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU, PHASE 7
Project No. HWY-O-04-16
Scale: 1" = 20'-0" Date: April 2016



PLANT SCHEDULE PID 510

GROUND COVER



BOTANICAL NAME

Carex wahuensis

COMMON NAME

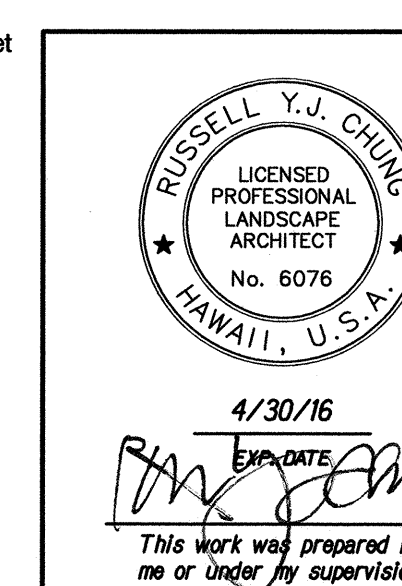
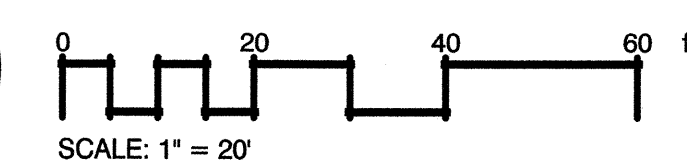
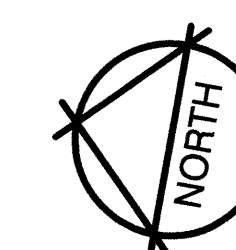
Carex

Notes:

1. Install erosion control matting on slopes greater than 3H:1V (see Civil plans). Install per manufacturer's instructions and recommendations. See Civil plans for details and project limits.
2. Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.

LANDSCAPE PLANTING PLAN PID 510

Scale: 1" = 20'-0"



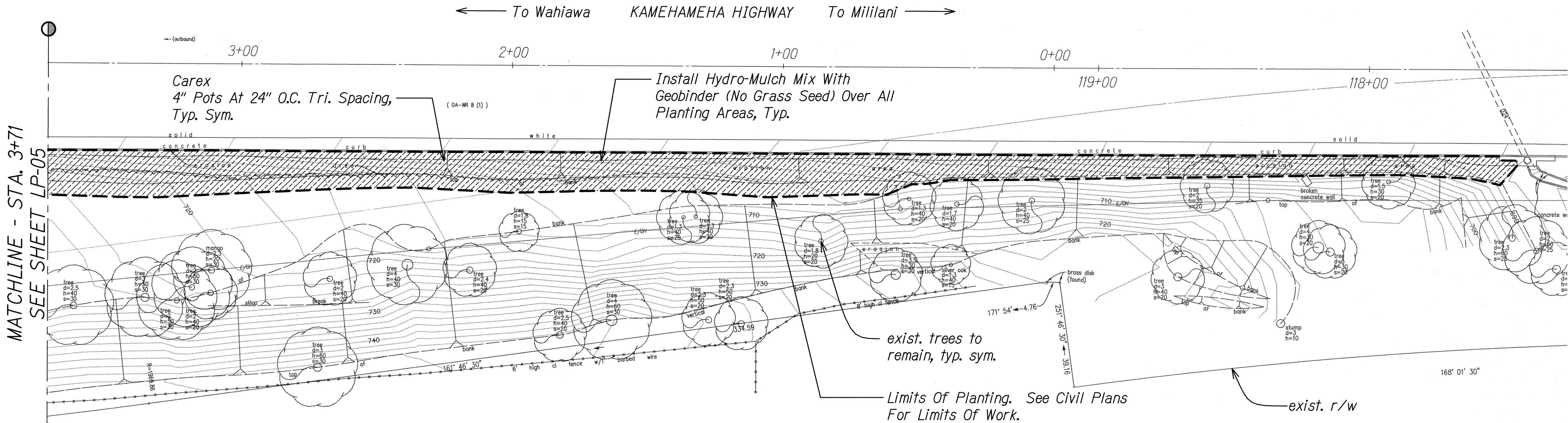
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLANTING PLAN
PID 510

SLOPE IMPROVEMENTS FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU, PHASE 7
Project No. HWY-0-04-16
Scale: 1" = 20'-0" Date: April 2016

SHEET No. LP-05 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-16	2016	37	60



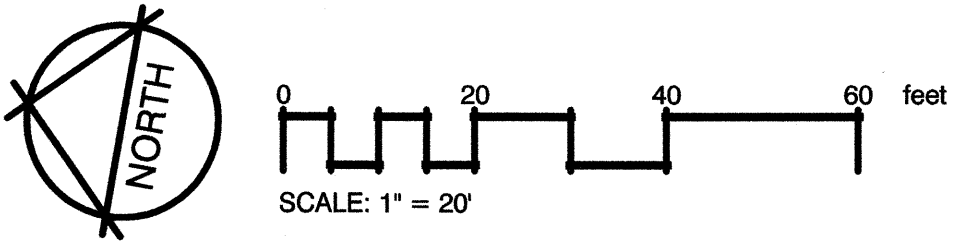
PLANT SCHEDULE PID 510

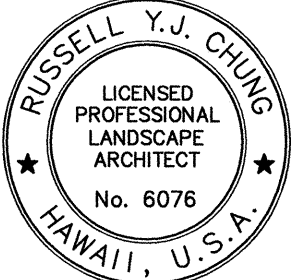
GROUND COVER	BOTANICAL NAME	COMMON NAME
	Carex wahuensis	Carex

- Notes:**
1. Install erosion control matting on slopes greater than 3H:1V (see Civil plans). Install per manufacturer's instructions and recommendations. See Civil plans for details and project limits.
 2. Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.

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

LANDSCAPE PLANTING PLAN PID 510
 Scale: 1" = 20'-0"





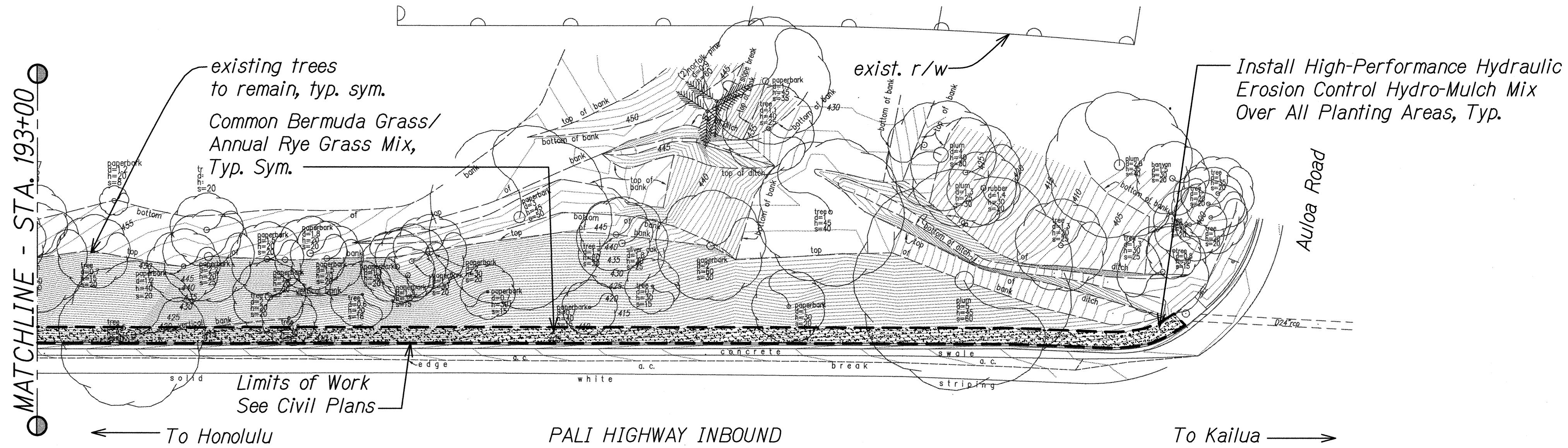
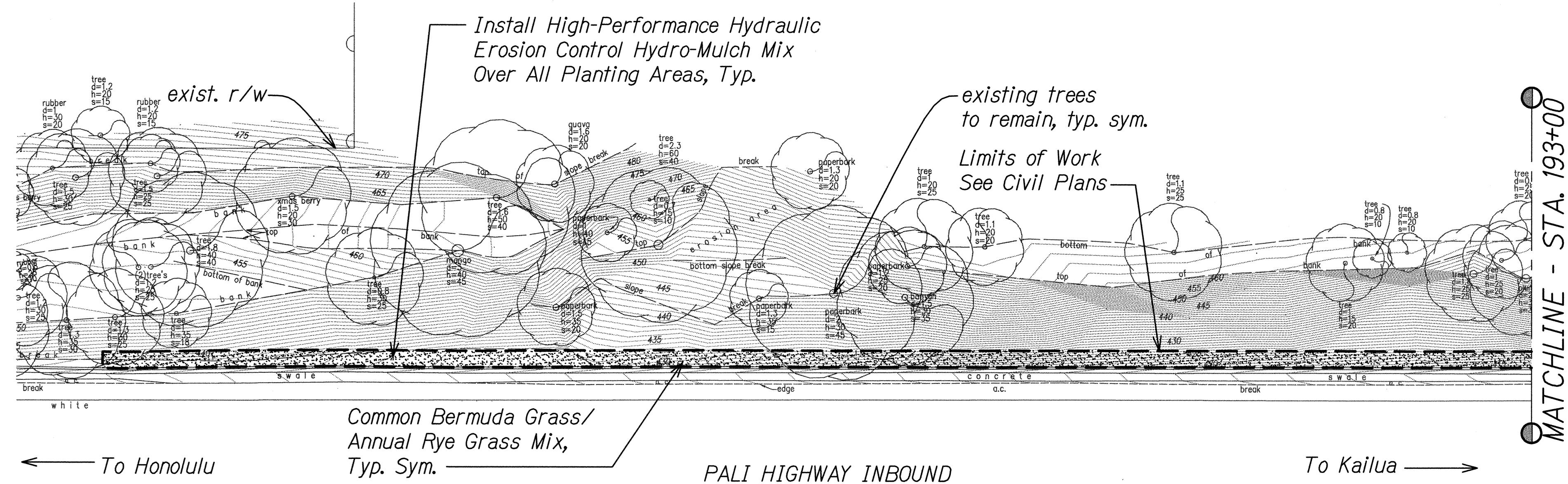
4/30/16
 EXP. DATE
 This work was prepared by me or under my supervision

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

LANDSCAPE PLANTING PLAN
PID 510

SLOPE IMPROVEMENTS FOR EROSION CONTROL
 AT VARIOUS SITES ON OAHU, PHASE 7
 Project No. HWY-O-04-16
 Scale: 1" = 20'-0" Date: April 2016

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-16	2016	38	60



PLANT SCHEDULE PID 474

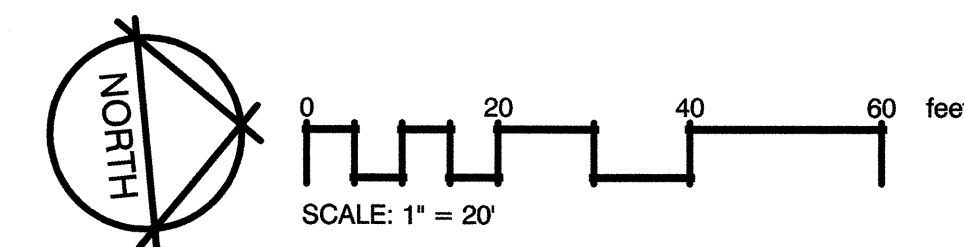
HYDRO-MULCHING	BOTANICAL NAME	COMMON NAME
	<i>Cynodon dactylon</i> <i>Lolium multiflorum</i>	Common Bermuda Grass Annual Rye Grass

Notes:

- Existing trees to remain.
- Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.

LANDSCAPE PLANTING PLAN PID 474

Scale: 1" = 20'-0"



4/30/16
This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

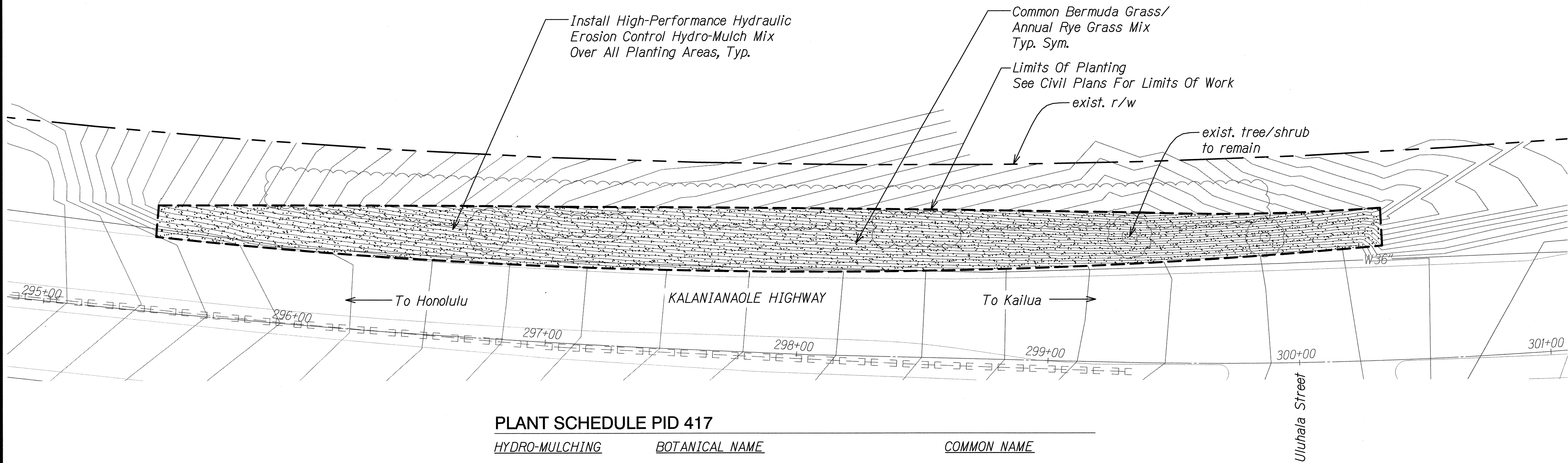
LANDSCAPE PLANTING PLAN
PID 474

SLOPE IMPROVEMENTS FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU, PHASE 7
Project No. HWY-O-04-16
Date: April 2016

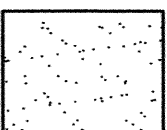
Scale: 1" = 20'-0"

SHEET No. LP-07 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-16	2016	39	60

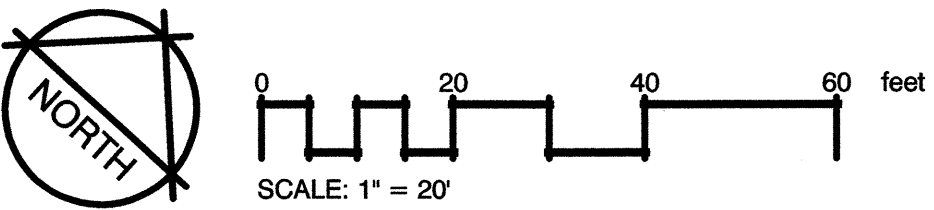


PLANT SCHEDULE PID 417

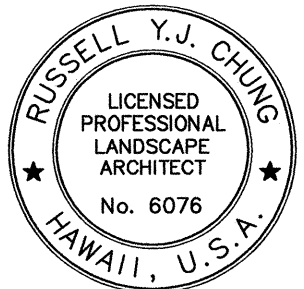
HYDRO-MULCHING	BOTANICAL NAME	COMMON NAME
	<i>Cynodon dactylon</i> <i>Lolium multiflorum</i>	Common Bermuda Grass Annual Rye Grass

- Notes:
- Existing trees to remain.
 - Install Common Bermuda Grass and Annual Rye Grass mix with high-performance hydraulic erosion control product.
 - Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
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LANDSCAPE PLANTING PLAN PID 417
Scale: 1" = 20'-0"



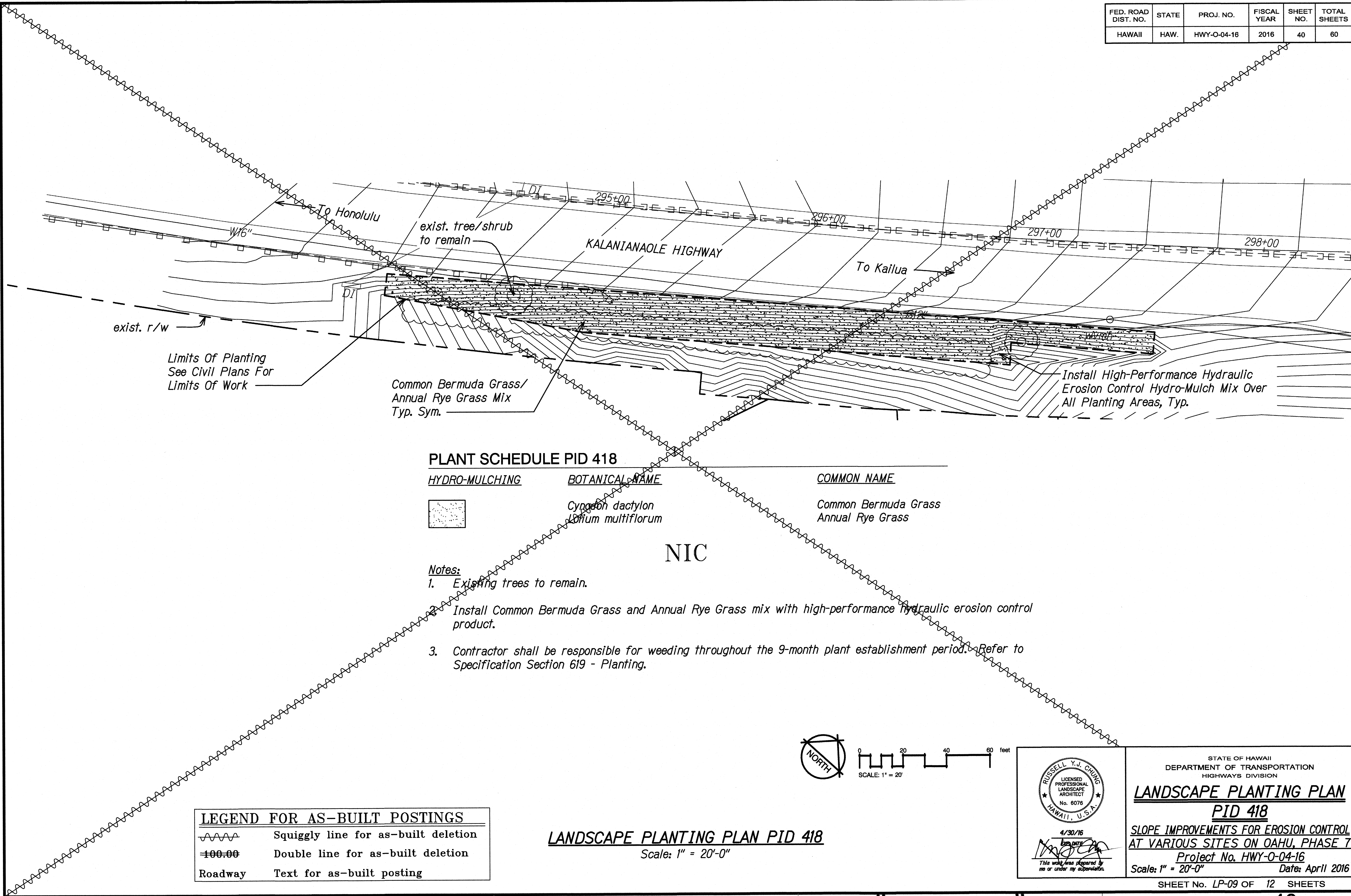
4/30/16
This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLANTING PLAN
PID 417

SLOPE IMPROVEMENTS FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU, PHASE 7
Project No. HWY-O-04-16
Date: April 2016

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-16	2016	40	60



PLANT SCHEDULE PID 418

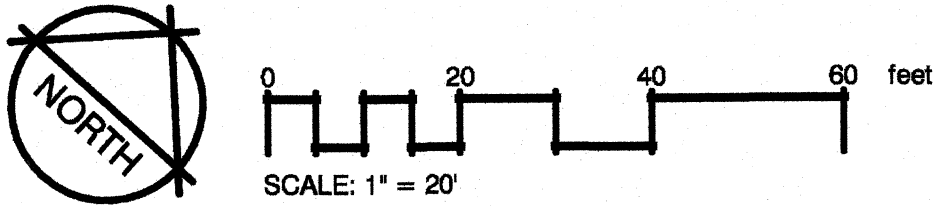
HYDRO-MULCHING	BOTANICAL NAME	COMMON NAME
	Cynodon dactylon Lolium multiflorum	Common Bermuda Grass Annual Rye Grass

- Notes:**
- Existing trees to remain.
 - Install Common Bermuda Grass and Annual Rye Grass mix with high-performance hydraulic erosion control product.
 - Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.

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

LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

LANDSCAPE PLANTING PLAN PID 418
Scale: 1" = 20'-0"



4/30/16
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLANTING PLAN
PID 418

SLOPE IMPROVEMENTS FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU, PHASE 7

Project No. HWY-O-04-16
Scale: 1" = 20'-0" Date: April 2016

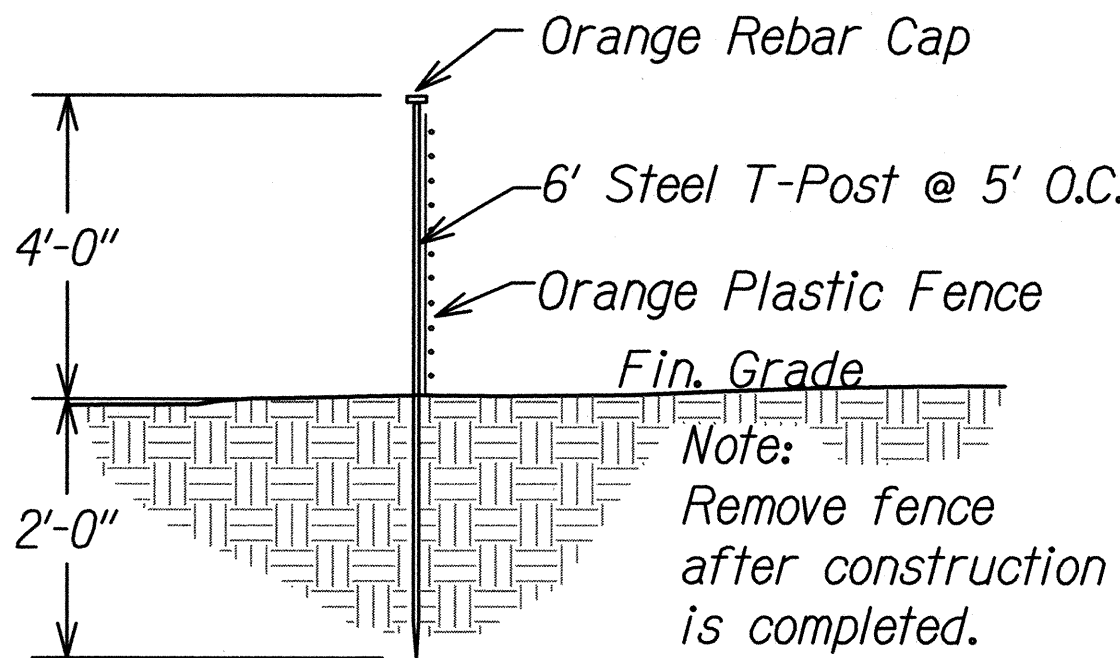
SHEET No. LP-09 OF 12 SHEETS

"AS-BUILT"

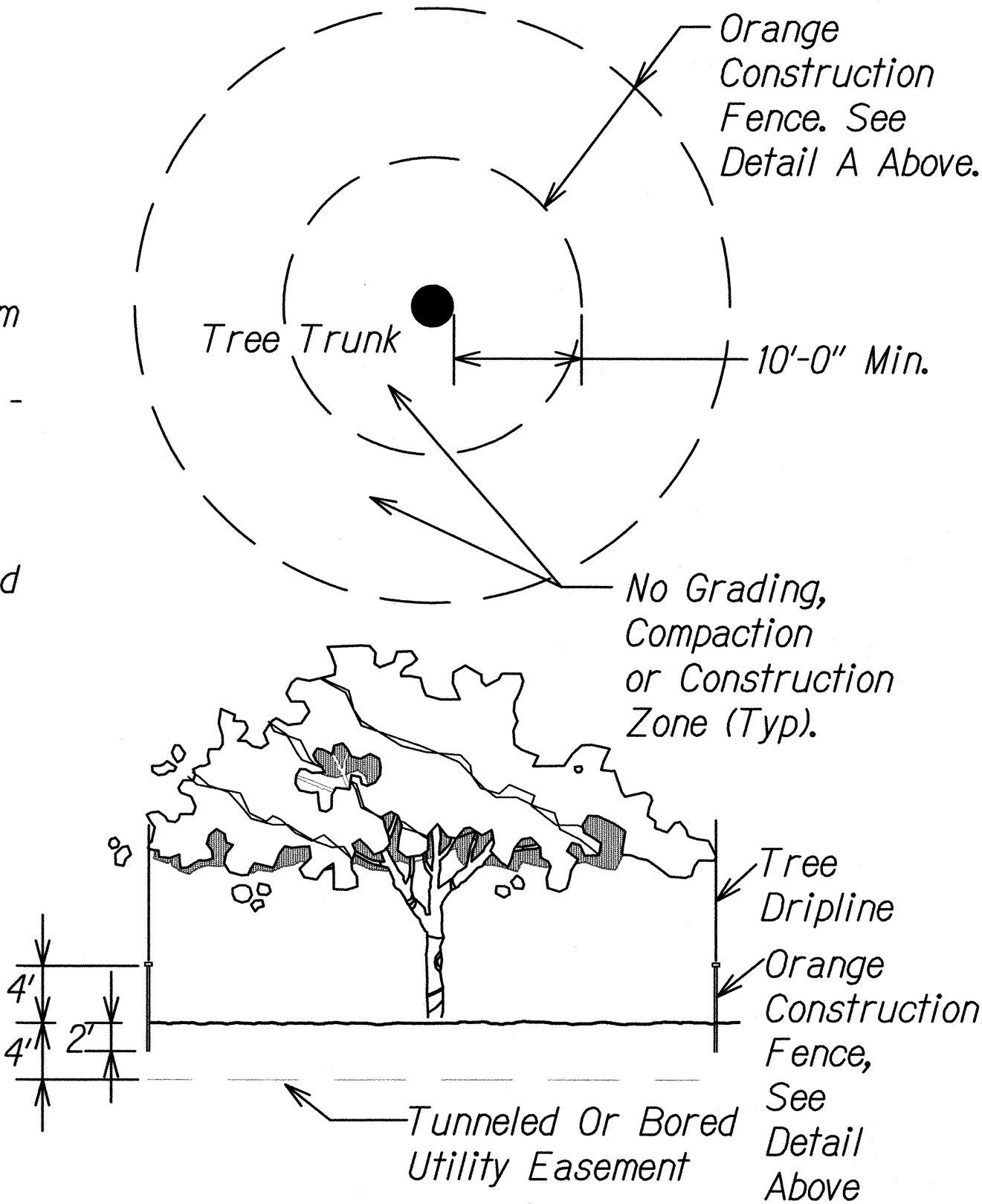
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-16	2016	41	60

TREE PROTECTION ZONE:

- All trees identified on the plans to be protected unless noted otherwise. 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. Fence location may be adjusted as directed by the Engineer.
- 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 at 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 [LTPZ] - 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 or 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; and
 - 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.



DETAIL A - ORANGE CONSTRUCTION FENCE
NOT TO SCALE



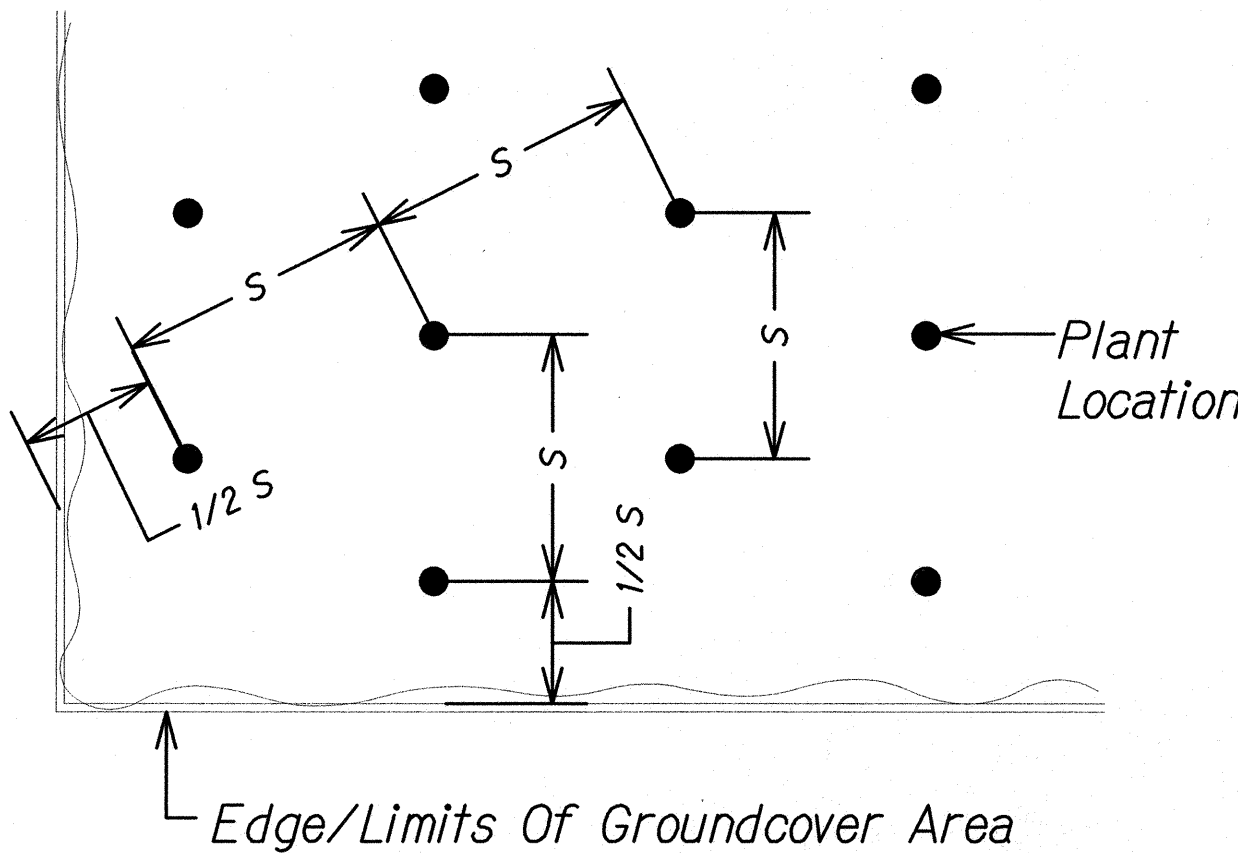
TREE PROTECTION

Scale: Not to Scale

1
LP-10/LP-10

Note:

- S = Spacing, (refer to plant list for spacing)
- Use spacing layout for shrubs, groundcovers, and annuals



TRIANGULAR SPACING

Scale: Not to Scale

2
LP-10/LP-10

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

4/30/16

[Signature]

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE DETAILS

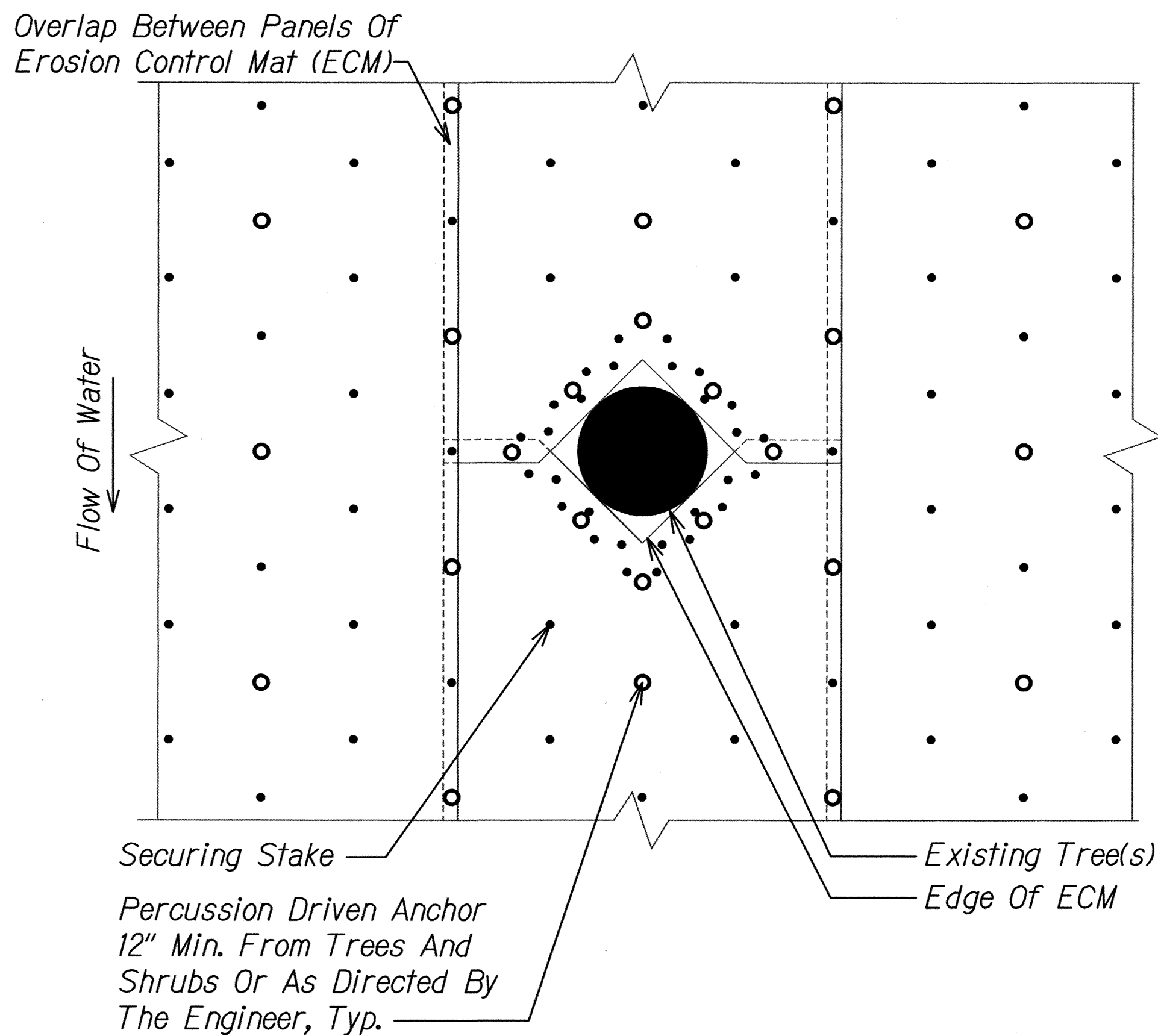
SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 7

Project No. HWY-O-04-16

Scale: As Shown Date: April 2016

SHEET No. LP-10 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-04-16	2016	42	60

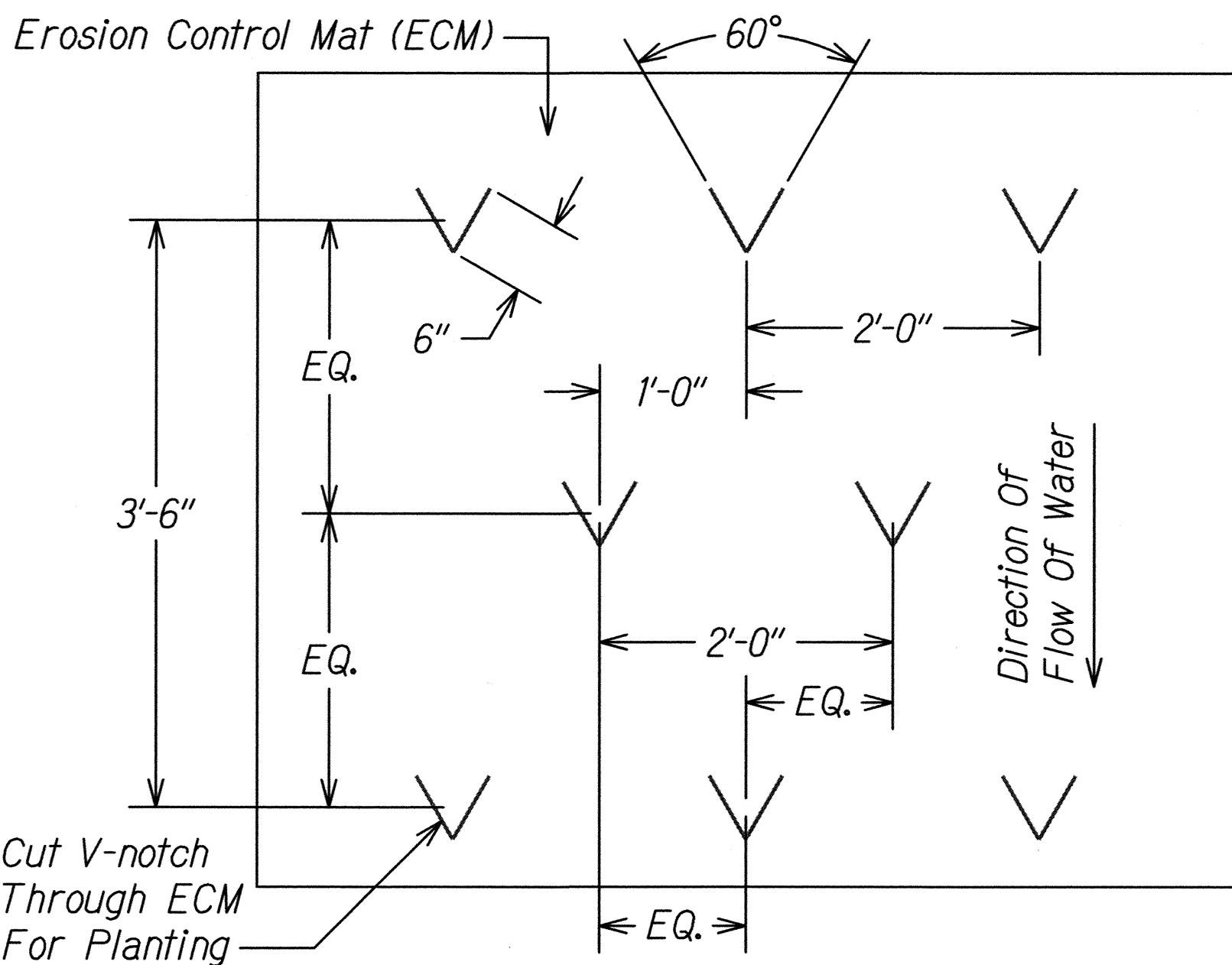


- Notes:**
- Contractor Shall Join Overlapping Sections Of Erosion Control Mat (ECM) In Accordance With The Contract Documents.
 - Contractor Shall Create An Opening Around The Circumference Of Each Existing Tree To Ensure ECM Maintains Direct Contact With The Ground Surface. For Densely Growing Trees, ECM Openings May Be Created To Encompass Multiple Trees. Contractor Shall Create Opening In ECM Using Methods Approved Or Recommended By The Manufacturer.
 - Contractor Shall Secure ECM With Combination Of Stakes And Percussion Anchors. Stake Placement May Require Modification In The Field Due To Root Location, Trunk Structure, Or Other Obstacles. Contractor Shall Install Additional Stakes And/Or Anchors To Ensure ECM Maintains Direct Contact With Ground Surface. Refer To Erosion Control Plans For Stake And Anchor Placement.
 - When Placing Matting Between Clusters Of Existing Trees, Contractor May Install ECM Around Cluster If Spacing Between Trees Is 12 Inches Or Less With Engineer's Approval. Contractor Shall Plant Ground Cover Where Space Permits Between Trees Or As Directed By The Engineer.

TYPICAL ECM INSTALLATION AROUND EXISTING TREES

Scale: Not to Scale

1
LP-11/LP-11



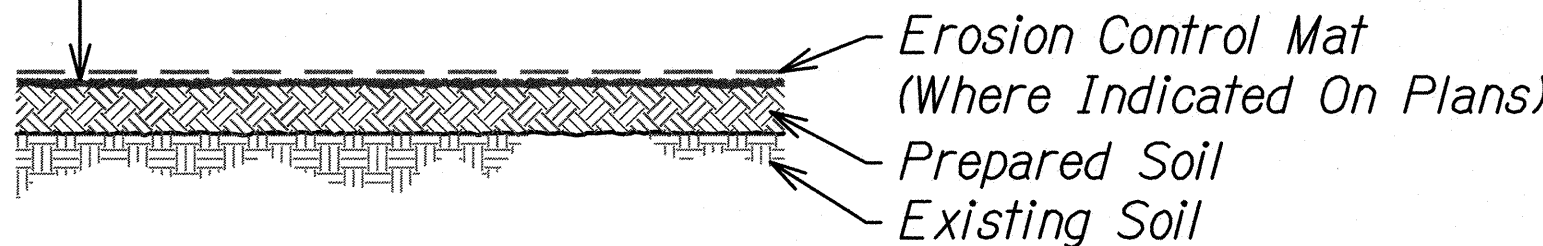
- Notes:**
- Install Erosion Control Mat (ECM) In Accordance With The Contract Documents Or Per Manufacturer's Standard Guidelines for Trenching, Overlaps, And Stapling. Consult The ECM Manufacturer's Installation Guidelines For Full Installation Details.
 - Install The Live Plant Material Using A V-notch Design Approved Or Recommended By The ECM Manufacturer.
 - Contractor Shall Remove Soil Material From V-Shaped Opening For Planting Pit.
 - After Placing Tree, Shrub, Or Ground Cover In Planting Pit, Backfill Pit And Compact Soil. Secure ECM Flaps Back Down To The Soil With Securing Stakes Per ECM Manufacturer's Recommendations.

TYPICAL PLANTING THROUGH ECM

Scale: Not to Scale

2
LP-11/LP-11

Hydro-Mulch Mix:
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 Seed, Fertilizer, Water, Geobinders, 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.

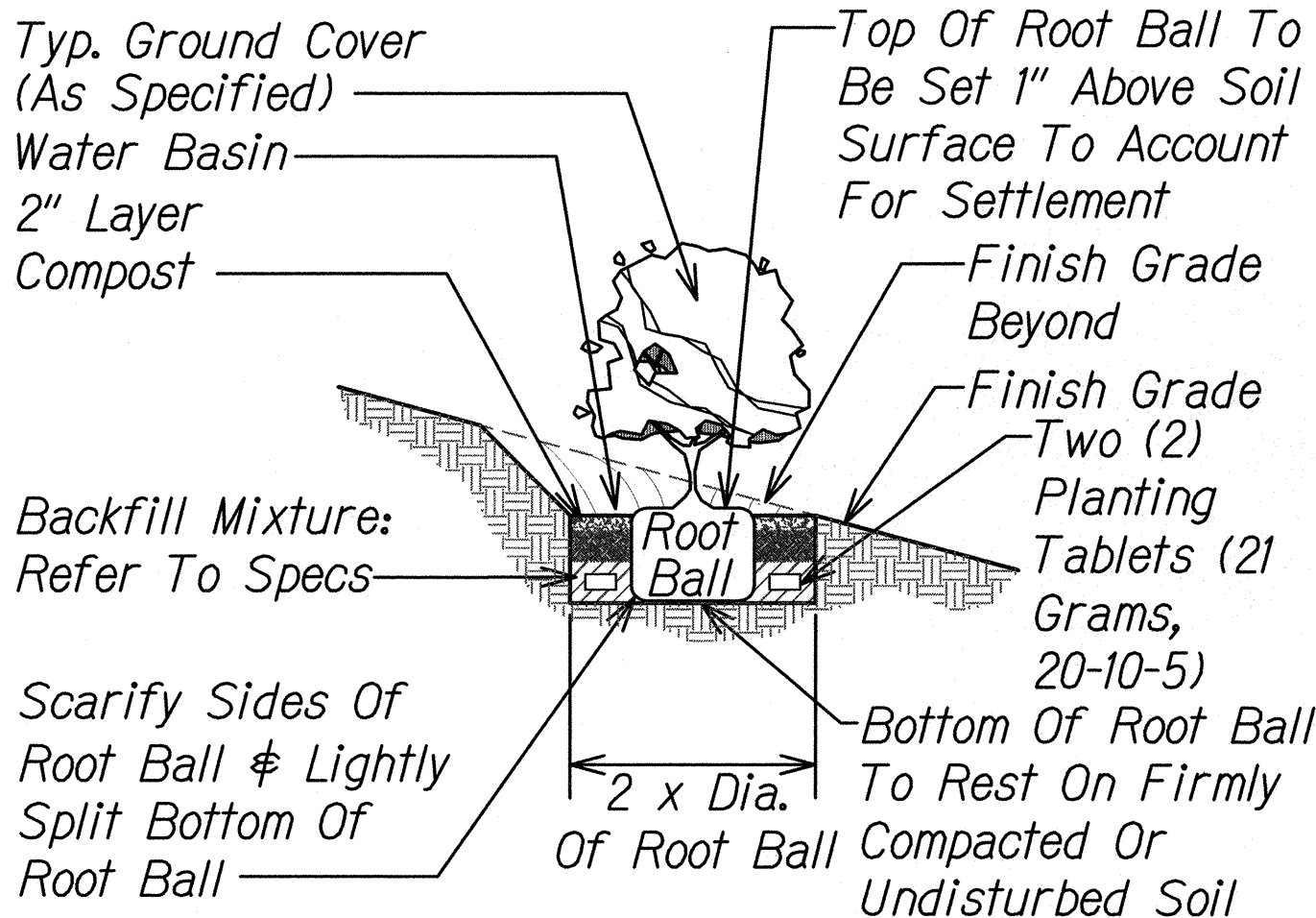


HYDRO-MULCH DETAIL

Scale: Not to Scale

3
LP-11/LP-11

- Notes:**
- Single stem ground cover shall be plumb. If shrub is leaning at the end of the plant establishment period, it shall be replaced at the contractor's expense.
 - Immediately after planting, water heavily to ensure soil settles around roots.



GROUND COVER PLANTING ON SLOPE

Scale: Not to Scale

4
LP-11/LP-11

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
TRACED BY	DRAWN BY	
NOTE BOOK	QUANTITIES BY	
NO.	CHECKED BY	

RUSSELL Y.J. CHUNG
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 6076
HAWAII, U.S.A.

4/30/16
EXP. DATE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE DETAILS

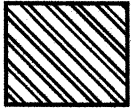
SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 7

Project No. HWY-O-04-16


Scale: As Shown Date: April 2016

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-16	2016	43	60

PLANT SCHEDULE PID 518

GROUND COVER	QTY	BOTANICAL NAME	COMMON NAME	CONT	REMARKS
	6,120 Each	Eragrostis variabilis	Kawelu Grass	4" Pot	24" O.C. Triangular Spacing Ensure No Conflict With ECM Stakes And Anchors. Install Hydro-Mulch Mix With Geobinder (No Grass Seed) Over All Planting Areas


PLANT SCHEDULE PID 519

GROUND COVER	QTY	BOTANICAL NAME	COMMON NAME	CONT	REMARKS
	4,565 Each	Eragrostis variabilis	Kawelu Grass	4" Pot	24" O.C. Triangular Spacing Ensure No Conflict With ECM Stakes And Anchors. Install Hydro-Mulch Mix With Geobinder (No Grass Seed) Over All Planting Areas


PLANT SCHEDULE PID 510

GROUND COVER	QTY	BOTANICAL NAME	COMMON NAME	CONT	REMARKS
	9,140 Each	Carex wahuensis	Carex	4" Pot	24" O.C. Triangular Spacing Ensure No Conflict With ECM Stakes And Anchors. Install Hydro-Mulch Mix With Geobinder (No Grass Seed) Over All Planting Areas


PLANT SCHEDULE PID 474

HYDRO-MULCHING	QTY	BOTANICAL NAME	COMMON NAME	CONT	REMARKS
	510 SY 510 SY	Cynodon dactylon Lolium multiflorum	Common Bermuda Grass Annual Rye Grass	Seed Seed	See Specs For Grass Seeding Rate

PLANT SCHEDULE PID 417

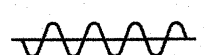
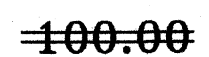
HYDRO-MULCHING	QTY	BOTANICAL NAME	COMMON NAME	CONT	REMARKS
	1,490 SY 1,490 SY	Cynodon dactylon Lolium multiflorum	Common Bermuda Grass Annual Rye Grass	Seed Seed	See Specs For Grass Seeding Rate

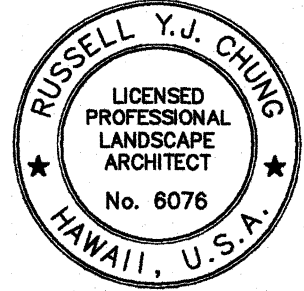
PLANT SCHEDULE PID 418

HYDRO-MULCHING	QTY	BOTANICAL NAME	COMMON NAME	CONT	REMARKS
	940 SY 940 SY	Cynodon dactylon Lolium multiflorum	Common Bermuda Grass Annual Rye Grass	Seed Seed	See Specs For Grass Seeding Rate

SURVEY PLOTTED BY _____	DATE _____
DRAWN BY _____	DESIGNED BY _____
NOTED BY _____	CHECKED BY _____
ORIGINAL PLAN _____	NOTE BOOK _____
N. _____	

LEGEND FOR AS-BUILT POSTINGS

	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting



4/30/16
This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLANT SCHEDULE
PID 518, 519, 510, 474, 417 & 418
SLOPE IMPROVEMENTS FOR EROSION CONTROL
AT VARIOUS SITES ON OAHU, PHASE 7
Project No. HWY-0-04-16
Scale: As Shown Date: April 2016

SHEET No. LP-12 OF 12 SHEETS

AS-BUILT