FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	40	65

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 and site is neat, orderly, and the Engineer accepts site for planting.

4. Notify Engineer of any discrepancies in plant locations.

5. The Contractor's submission of a bid shall constitute certification of availability of plants of the required type, size, and quantity. Engineer shall inspect and approve plants at time of delivery and acceptance. 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 have been certified in good standing as an ISA Certified Arborist for at least 10 continuous 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 10 years to the Engineer a minimum of 7 days prior to tree pruning. The cost for arborist services shall be considered incidental to Specification Section 619 - Planting.

8. Representative samples of soil from project site shall be submitted to Crop Nutrient Solutions Inc., the University of Hawaii Agricultural Extension Service, or laboratory acceptable to the Engineer for analysis of required soil amendments, fertilizers, application rates, and application schedules. Collect soil samples of existing soils inside the project limits for each of the individual project sites. Soil sample shall consist of a composite sample of 1 gallon of soil collected from a minimum of 5 holes to a depth of 6-inches from each individual site. Sample hole locations shall be spread evenly throughout the individual site to proved a more accurate representation of the soil present on the site. Contractor shall keep soils from each individual site separate and shall not intermix soils from different sites. The label for the composite sample from each individual site shall correspond to the individual project site from which it was taken. Samples shall only be collected in accordance with the procedures described by the "Methods of Soil Analysis" by the Soil Science Society of America. A separate soil analysis and recommendations shall be provided for each individual site. Soil analysis shall be performed in accordance with the "Methods of Soil Analysis" by the Soil Science Society of America. The soil analysis for each site shall include particle size analysis, percentage organic carbon, chemical analysis, moisture content, Cation Exchange Capacity (CEC) per EPA Method 9081, Bulk Density, and soluble salts, sieve analysis per ASTM D422M, total nitrogen per ASTM D3590-17 and EPA Method 353.2, total phosphorus per EPA Method 365.3, and major cations (K^+, Ca^{++}, and Mg^{++}) per EPA Method 6010. The soil analysis results shall also include a summary of the findings and recommendations to correct soil deficiencies including, but not limited to, types of amendment and fertilizers to be added, application rates for amendments and fertilizers, and a schedule for applying amendments and fertilizers at pre-planting, planting, and plant establishment periods. Recommendations to correct soil deficiencies shall be specific to each individual site. The list of proposed amendments and recommendations for correcting soil deficiencies shall be limited to those which can be applied to the soil surface without tilling for sloped areas of all sites where tilling is not allowed. 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, loosen soil by turning to depth of 18-inches and till top 6-inches of soil to evenly incorporate fertilizer and amendments. For slopes steeper than 3H:1V, no tilling is required. Refer to Specification Section 618 - Soil Preparation for additional requirements for soil analysis and site preparation.

9. 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.

10. Guy wires, flagging, stakes, windbreakers, etc. shall be maintained and replaced if necessary by the Contractor until acceptance by Engineer. The Contractor shall remove and dispose of these items at the end of plant establishment period.

11. 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.

12. Temporary irrigation shall be provided and installed by the Contractor for the duration of the project. Temporary irrigation system shall be considered incidental to Specification Section 641 - Hydro-Mulch Seeding. Refer to Specification Sections 641.03(C), 641.03(D), and 641.03(E). The Contractor shall be responsible for locating, determining, and establishing the water source and delivery method of the water to the project site. Contractor shall be responsible for obtaining and maintaining all necessary permits and agreements for the source of water for the irrigation system as well as ensuring water is delivered to the site for the duration of the project. Replace watering equipment that cause erosion or runoff. Water will be considered an incidental cost to the project. 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. Contractor shall remove and dispose of temporary irrigation system components upon final acceptance or as directed by the Engineer.

13. Contractor shall be responsible for weeding throughout the 9-month plant establishment period. All removed weeds shall be immediately placed in plastic bags to minimize the spread of weed seeds. Contractor shall keep all new planting areas at least 90 percent free of weeds and grass considered undesirable by the Engineer. Keeping new planting areas at least 90 percent free of weeds and grass considered undesirable by the Engineer is required as a condition of acceptance for the planting period, plant establishment period, and final acceptance. Refer to Specification Sections 641.03(D), 641.03(E) and 641.03(F).

14. Tree roots greater than 2 inches in diameter shall not be disturbed. Cutting of trees roots larger than 2 inches in diameter must be approved by an ISA Certified Arborist with a minimum of 10 years of continuous licensure and experience, and, accepted by the Engineer. Contractor to submit arborist's qualifications and a tree root assessment report to the Engineer for approval prior to cutting tree roots. Root pruning shall be done in conformance with ANSI a300 (Part 8) latest edition. Root pruning shall take place under the supervision of the approved arborist at all times.

15. Sites contain stands of koa haole (Leucaena leucocephala). Contractor shall demolish, remove, and dispose of koa haole in such a way as to minimize the spread of koa haole seeds. Contractor shall present a demolition and removal plan to the Engineer for review and acceptance prior to clearing and grubbing operations. Demolition and removal plan shall be reviewed through HWY-DL for assurance of disposal and demolition in accordance with the HDOT S.N.I.P.P. (Statewide Noxious and Invasive Pest Program) recommendations for koa haole (Leucaena leucocephala).

16. The Contractor may procure plant material after Contract Award and prior to the agreed Notice To Proceed with approval of the Engineer. The Contractor shall present the list of plant material for procurement to the Engineer for review and acceptance before procuring plants. Plants not conforming to contract document requirements will be rejected.

17. Any planting that obstructs sight distance, signs, or traffic lights shall be pruned, relocated, or removed as determined by the Engineer, at no expense to the State.

18. Unless specifically identified to remain, Contractor shall demolish and remove invasive and/or non-native trees and shrubs, within the project limits, with trunk caliper of less than 8-inches.

ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY: DATE:
DRAWN BY:
TRACED BY:
DESIGNED BY:
QUANTITIES BY:
CHECKED BY:
No.

RUSSELL Y.J. CHUNG
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 6076
HAWAII, U.S.A.
4/30/18
This work was prepared by me or under my supervision.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

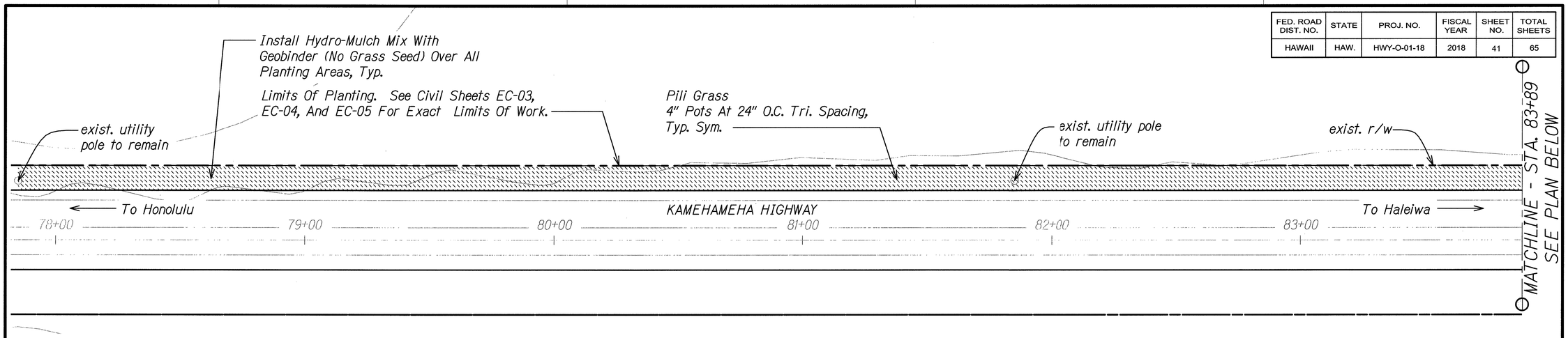
LANDSCAPE NOTES

SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18

Scale: None Date: April 2018

SHEET No. LP-01 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	41	65



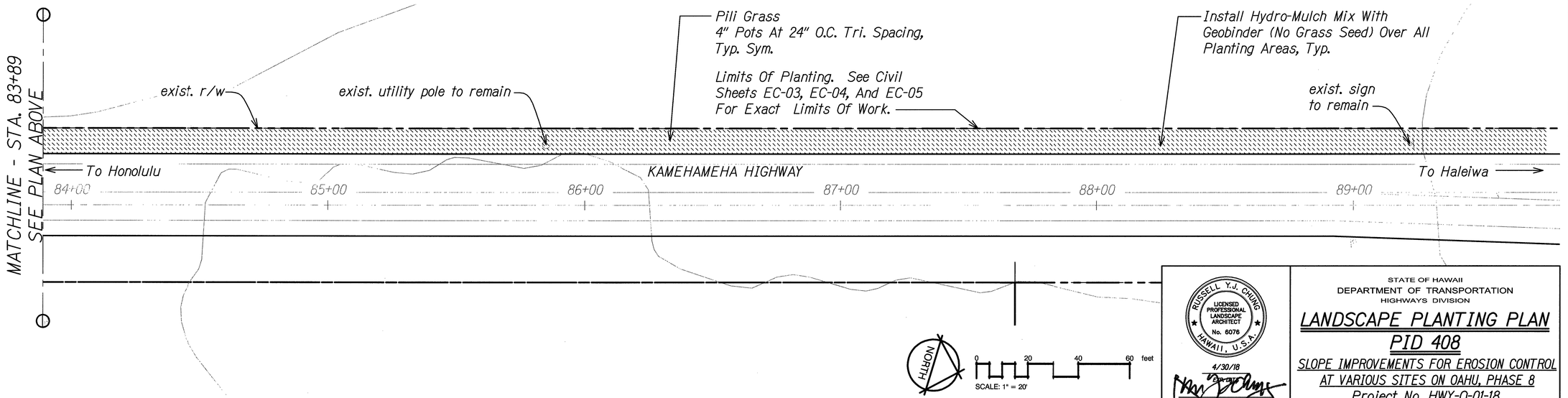
PLANT SCHEDULE PID 408

GROUND COVER	BOTANICAL NAME	COMMON NAME	CONT
	Heteropogon contortus	Pili Grass	4" Pot

Notes:

1. Provide and incorporate soil amendments as recommended by the soil analysis report. Refer to Specification Section 618 - Soil Preparation for soil preparation procedures.
2. Install hydro-mulch mix with geobinder (no grass seed) over all pili grass planting areas. Refer to Specification Section 209 - Temporary Water Pollution, Dust, And Erosion Control for installation sequence of erosion control matting, hydro-mulch, and plantings.
3. Contractor will be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.
4. Refer to Civil drawings for erosion control matting plans and details.

NORTH
0 20 40 60 feet
SCALE: 1" = 20'



NORTH
0 20 40 60 feet
SCALE: 1" = 20'

SURVEY PLOTTED BY _____ DATE _____
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DESIGNED BY _____
QUANTITIES BY _____
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NOTE BOOK _____ No. _____

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HIGHWAYS DIVISION

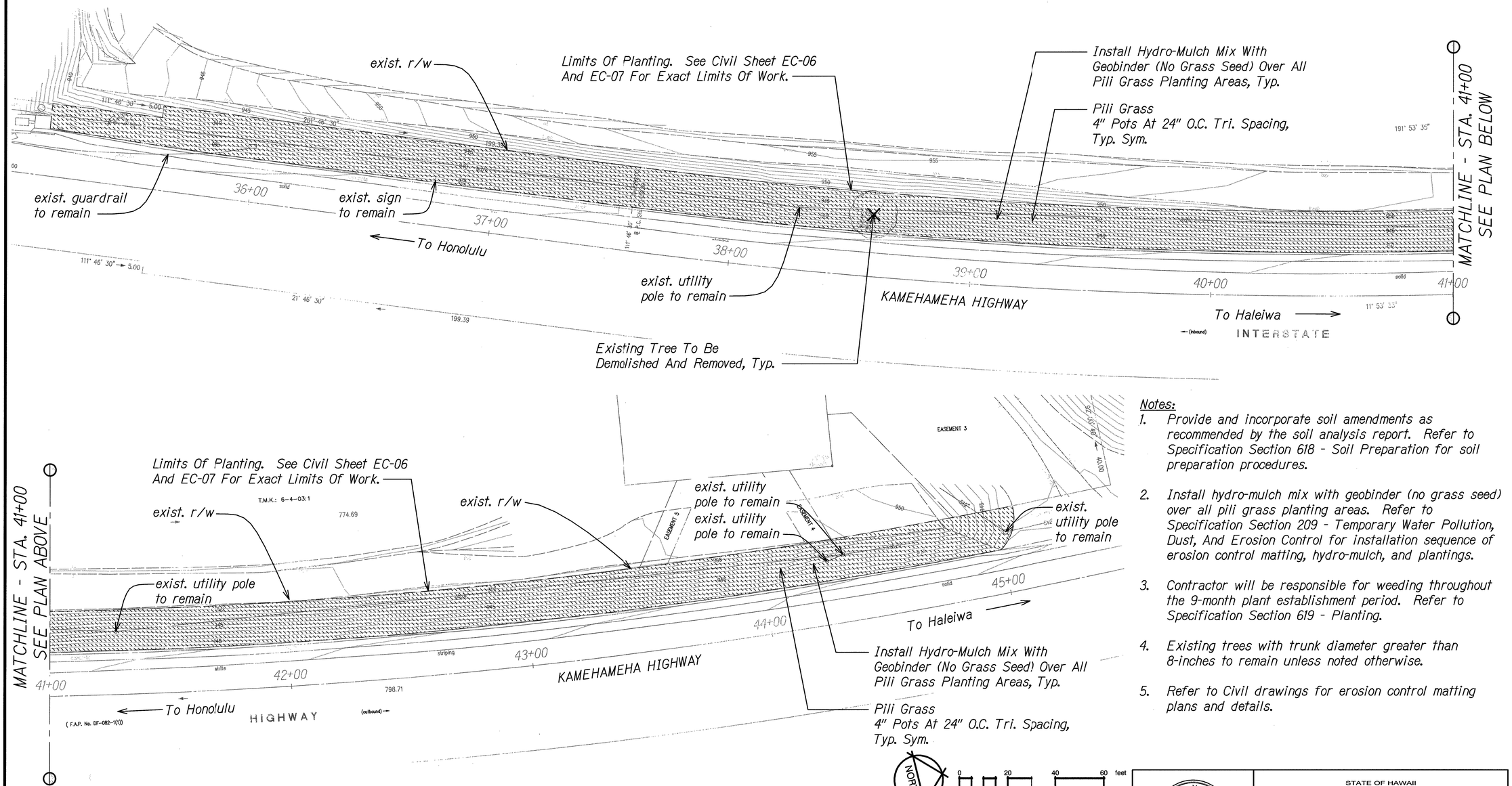
LANDSCAPE PLANTING PLAN
PID 408

SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18

Scale: 1" = 20'-0" Date: April 2018

SHEET No. LP-02 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	42	65



PLANT SCHEDULE PID 502

GROUND COVER	BOTANICAL NAME	COMMON NAME	CONT
	Heteropogon contortus	Pili Grass	4" Pot

Notes:

1. Provide and incorporate soil amendments as recommended by the soil analysis report. Refer to Specification Section 618 - Soil Preparation for soil preparation procedures.
2. Install hydro-mulch mix with geobinder (no grass seed) over all pili grass planting areas. Refer to Specification Section 209 - Temporary Water Pollution, Dust, And Erosion Control for installation sequence of erosion control matting, hydro-mulch, and plantings.
3. Contractor will be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.
4. Existing trees with trunk diameter greater than 8-inches to remain unless noted otherwise.
5. Refer to Civil drawings for erosion control matting plans and details.

SCALE: 1" = 20'

LANDSCAPE PLANTING PLAN PID 502

Scale: 1" = 20'-0"

ORIGINAL PLAN
NOTE BOOK
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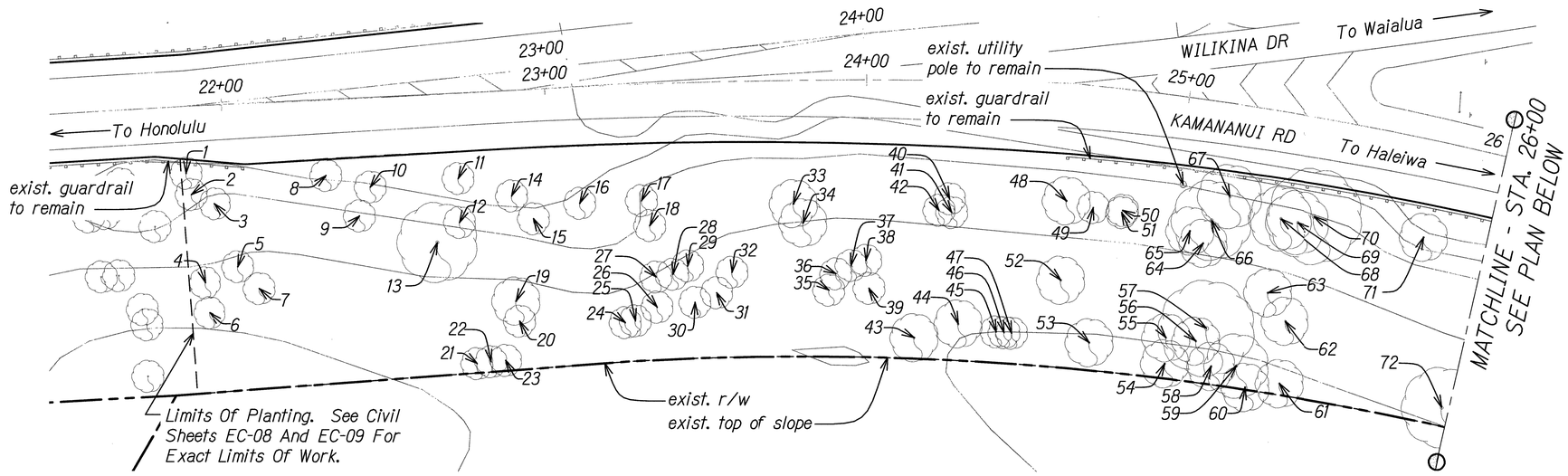
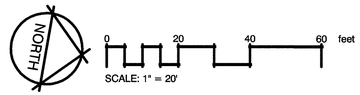
LANDSCAPE PLANTING PLAN PID 502

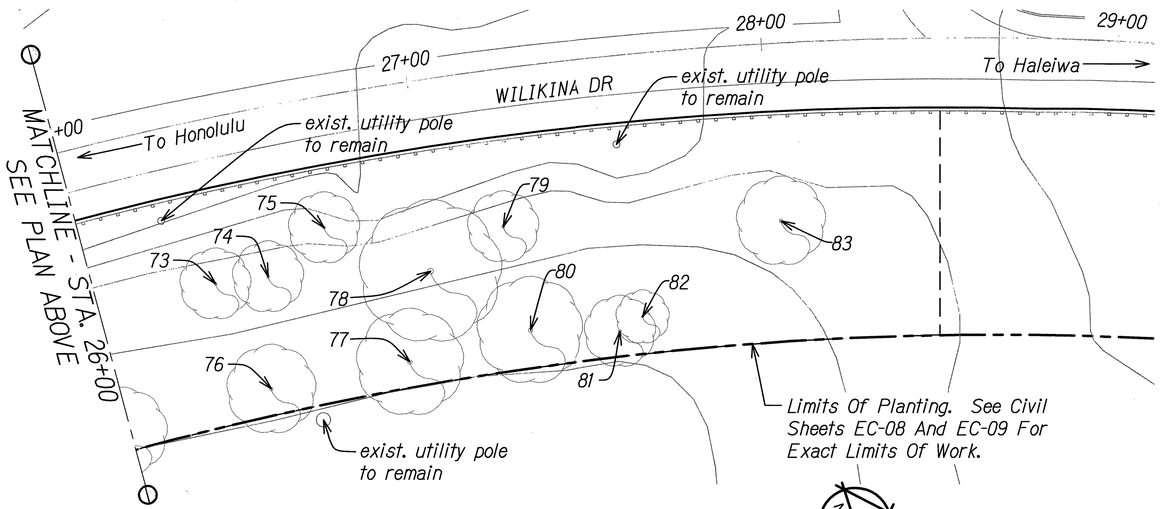
SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18
Scale: 1" = 20'-0" Date: April 2018

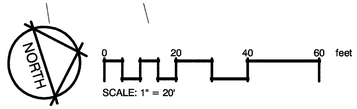
SHEET No. LP-03 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	43	65









TREE DEMOLITION PLAN PID 521

Scale: 1" = 20'-0"

Notes:

1. Demolish and remove all invasive and/or non-native trees and shrubs within project limits. Refer to Sheet LP-05 for summary table of trees to be demolished with caliper greater than 8-inches. Table is provided for convenience only. Contractor is responsible for verifying existing site conditions.
2. Refer to Sheet LP-06 for landscape planting plan.
3. Trees shall be cut as close as possible to finish grade. Angle of cut shall match angle of slope. Removal of tree roots will not be required.
4. Immediately upon cutting of tree, liberally apply undiluted, State Department of Agriculture approved chemical herbicide (containing either or both glyphosate and cacodylic acid) to the ring of cambium at the cut line around the circumference of the tree just beneath the bark. Re-cut the stump to fresh wood if tree has been cut longer than 4-hours before chemical herbicide is applied. Continue to cut all new growth from tree stump immediately or as directed by the Engineer.
5. Areas of rock will be encountered. Contractor shall provide all equipment necessary to perform the work required for the project.

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

RUSSELL Y.J. CHUNG
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4/30/18
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STATE OF HAWAII
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HIGHWAYS DIVISION

TREE DEMOLITION PLAN
PID 521

SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18

Scale: 1" = 20'-0" Date: April 2018

SHEET No. LP-04 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	44	65

TREE NUMBER	TREE TYPE	APPROX. TRUNK DIAMETER (FEET)	APPROX. CANOPY SPREAD (FEET)	APPROX. HEIGHT (FEET)
1	African Tulip	0.7	10	20
2	Eucalyptus	0.9	25	40
3	Christmas Berry	0.7	10	20
4	Eucalyptus	0.7	25	30
5	Eucalyptus	1.0	25	30
6	Eucalyptus	0.9	25	30
7	Eucalyptus	0.7	25	30
8	Eucalyptus	0.9	15	30
9	Eucalyptus	0.7	25	30
10	Eucalyptus	0.7	15	30
11	Eucalyptus	0.7	25	30
12	Eucalyptus	0.7	25	30
13	Eucalyptus	1.2	30	40
14	Eucalyptus	0.7	25	30
15	Eucalyptus	1.1	25	30
16	Eucalyptus	0.9	25	30
17	Eucalyptus	1	25	30
18	Eucalyptus	1.7	25	30
19	Eucalyptus	2.3	35	30
20	Eucalyptus	0.7	15	30
21	Eucalyptus	0.7	25	30
22	Eucalyptus	0.7	25	30
23	Eucalyptus	0.7	25	30
24	Christmas Berry	0.7	15	20
25	Christmas Berry	0.7	15	15
26	Silk Oak	1.2	20	30
27	Christmas Berry	0.7	15	15
28	Christmas Berry	0.7	15	15
29	Christmas Berry	0.7	15	15
30	Christmas Berry	1.2	20	40
31	Christmas Berry	1.2	20	20
32	Christmas Berry	1.2	20	20
33	Christmas Berry	1	15	15
34	Silk Oak	1	15	30
35	Silk Oak	2	30	30
36	Christmas Berry	0.7	15	15
37	Christmas Berry	0.9	15	15
38	Christmas Berry	0.9	15	15
39	Silk Oak	0.9	20	25
40	Christmas Berry	0.7	20	15
41	Christmas Berry	0.7	20	15
42	Christmas Berry	0.7	20	15

TREE NUMBER	TREE TYPE	APPROX. TRUNK DIAMETER (FEET)	APPROX. CANOPY SPREAD (FEET)	APPROX. HEIGHT (FEET)
43	Silk Oak	0.9	25	30
44	Christmas Berry	0.7	25	30
45	Autograph	0.7	20	15
46	Autograph	0.7	20	15
47	Autograph	0.7	20	15
48	Ironwood	0.7	10	20
49	Ironwood	1.5	20	50
50	Eucalyptus	1.1	15	35
51	Eucalyptus	1.1	15	35
52	Eucalyptus	0.8	15	30
53	Christmas Berry	0.7	15	20
54	Eucalyptus	0.7	15	20
55	Eucalyptus	0.7	15	20
56	Eucalyptus	0.7	15	20
57	Eucalyptus	1.4	40	30
58	Eucalyptus	0.7	15	20
59	Eucalyptus	0.7	15	20
60	Eucalyptus	0.7	15	20
61	Christmas Berry	0.7	15	20
62	Eucalyptus	1.0	25	30
63	Eucalyptus	0.9	20	30
64	Eucalyptus	0.7	15	20
65	Eucalyptus	0.7	15	20
66	Eucalyptus	0.9	20	20
67	Silk Oak	1.0	15	20
68	Eucalyptus	0.9	20	40
69	Eucalyptus	0.7	20	30
70	Eucalyptus	0.9	20	40
71	Eucalyptus	1.4	30	40
72	Christmas Berry	0.7	15	15
73	Silk Oak	0.7	15	20
74	Ironwood	0.7	15	20
75	Eucalyptus	1.0	20	40
76	Christmas Berry	0.7	20	15
77	Christmas Berry	0.8	20	15
78	Eucalyptus	2.2	30	25
79	Eucalyptus	0.7	20	20
80	Eucalyptus	1.1	30	40
81	Eucalyptus	0.9	20	40
82	Eucalyptus	0.7	15	25
83	Eucalyptus	1.0	25	40

Note:

1. Demolish and remove all invasive and/or non-native trees and shrubs within project limits. Table is provided for convenience only. Contractor is responsible for verifying existing site conditions.

TREE DEMOLITION TABLES PID 521

Scale: None

ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
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QUANTITIES BY
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RUSSELL Y.J. CHUNG
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 6076
HAWAII, U.S.A.
4/30/18
Date
This work was prepared by me or under my supervision

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

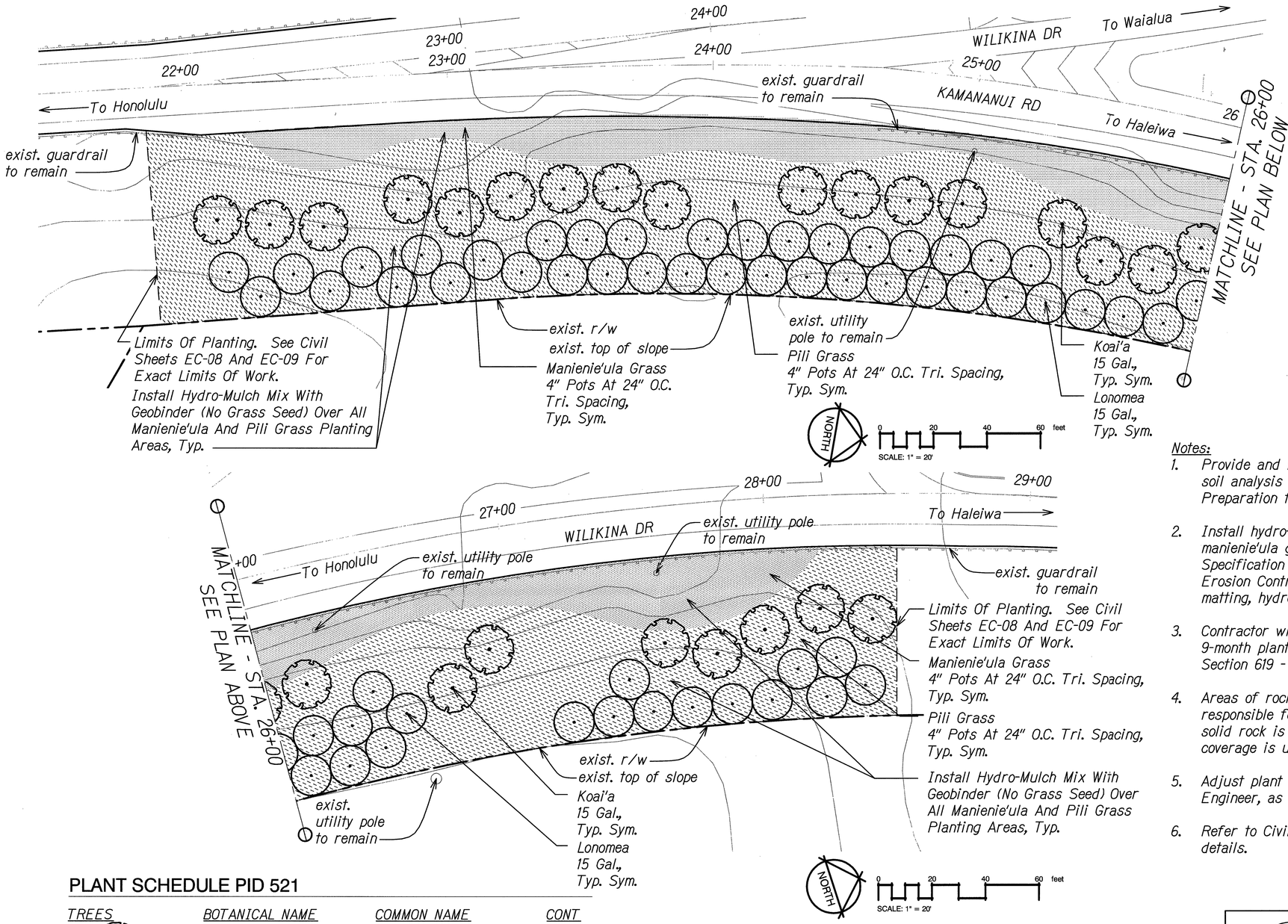
TREE DEMOLITION TABLES PID 521

SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18

Scale: None Date: April 2018

SHEET No. LP-05 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	45	65



PLANT SCHEDULE PID 521

TREES	BOTANICAL NAME	COMMON NAME	CONT
	Acacia koaia	Koai'a	15 Gal
	Sapindus oahuensis	Lonomea	15 Gal
GROUND COVER	**BOTANICAL NAME**	**COMMON NAME**	**CONT**
	Chrysopogon aciculatus	Manienie'ula Grass	4" Pot
	Heteropogon contortus	Pili Grass	4" Pot

LANDSCAPE PLANTING PLAN PID 521

Scale: 1" = 20'-0"

Notes:

1. Provide and incorporate soil amendments as recommended by the soil analysis report. Refer to Specification Section 618 - Soil Preparation for soil preparation procedures.
2. Install hydro-mulch mix with geobinder (no grass seed) over all manienie'ula grass and pili grass planting areas. Refer to Specification Section 209 - Temporary Water Pollution, Dust, And Erosion Control for installation sequence of erosion control matting, hydro-mulch, and plantings.
3. Contractor will be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.
4. Areas of rock will be encountered. Contractor will not be responsible for establishing plant material over areas where solid rock is encountered or where the Engineer determines that coverage is unattainable by the means used in this contract.
5. Adjust plant locations, with acceptance or direction of the Engineer, as required to avoid conflict with existing tree roots.
6. Refer to Civil drawings for erosion control matting plans and details.

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | NOTE BOOK | No.

RUSSELL Y.J. CHUNG
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No. 6076
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4/30/18
SIGNATURE DATE
This work was prepared by me or under my supervision.

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

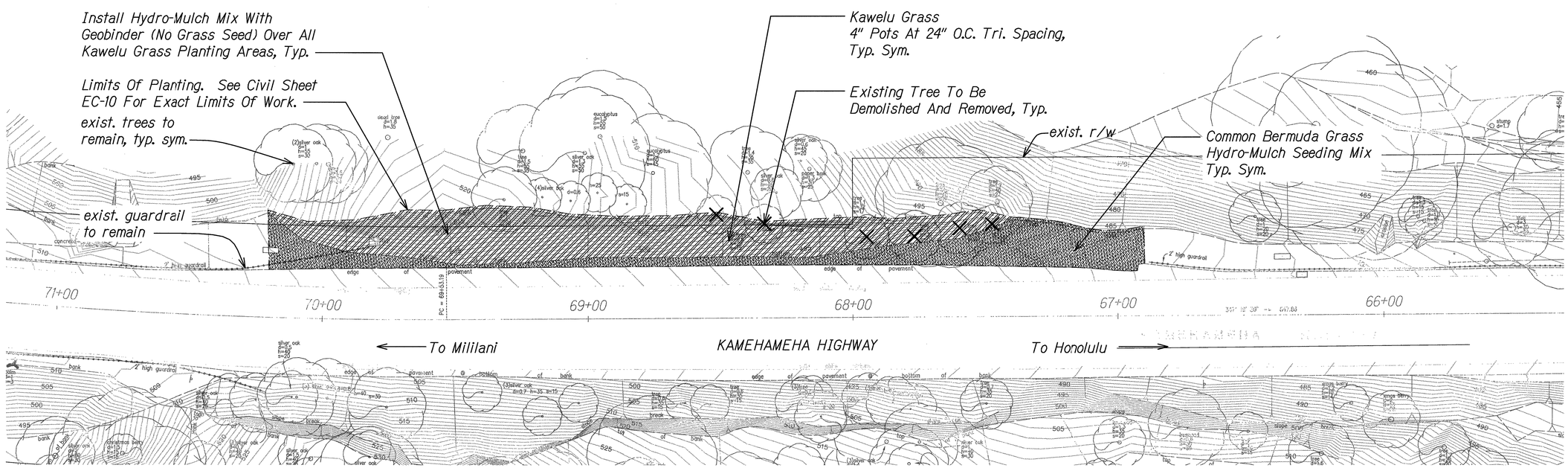
LANDSCAPE PLANTING PLAN PID 521

SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18

Scale: 1" = 20'-0" Date: April 2018

SHEET No. LP-06 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	46	65



Notes:

1. *Contractor will be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.*
2. *Install hydro-mulch seeding mix over all common bermuda grass planting areas.*
3. *Install hydro-mulch mix with geobinder (without grass seed) over all kawelu grass planting areas. Refer to Specification Section 209 - Temporary Water Pollution, Dust, And Erosion Control for installation sequence of erosion control matting, hydro-mulch, and plantings.*
4. *Provide and incorporate soil amendments as recommended by the soil analysis report. Refer to Specification Section 618 - Soil Preparation for soil preparation procedures.*
5. *Existing trees with trunk diameter greater than 8-inches to remain unless otherwise noted.*
6. *Refer to Civil drawings for erosion control matting plans and details.*
7. *Areas of rock will be encountered. Contractor will not be responsible for establishing plant material over areas where solid rock is encountered or where the Engineer determines that coverage is unattainable by the means used in this contract.*

PLANT SCHEDULE PID 149

GROUND COVER	BOTANICAL NAME	COMMON NAME	CONT
	Eragrostis variabilis	Kawelu Grass	4" Pot

HYDRO-MULCH SEEDING	BOTANICAL NAME	COMMON NAME	CONT
	Cynodon dactylon	Common Bermuda Grass	Seed

NORTH

0 20 40 60 feet

SCALE: 1" = 20'

LANDSCAPE PLANTING PLAN PID 149

Scale: 1" = 20'-0"

ORIGINAL PLAN — NOTE BOOK — N.

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLANTING PLAN PID 149

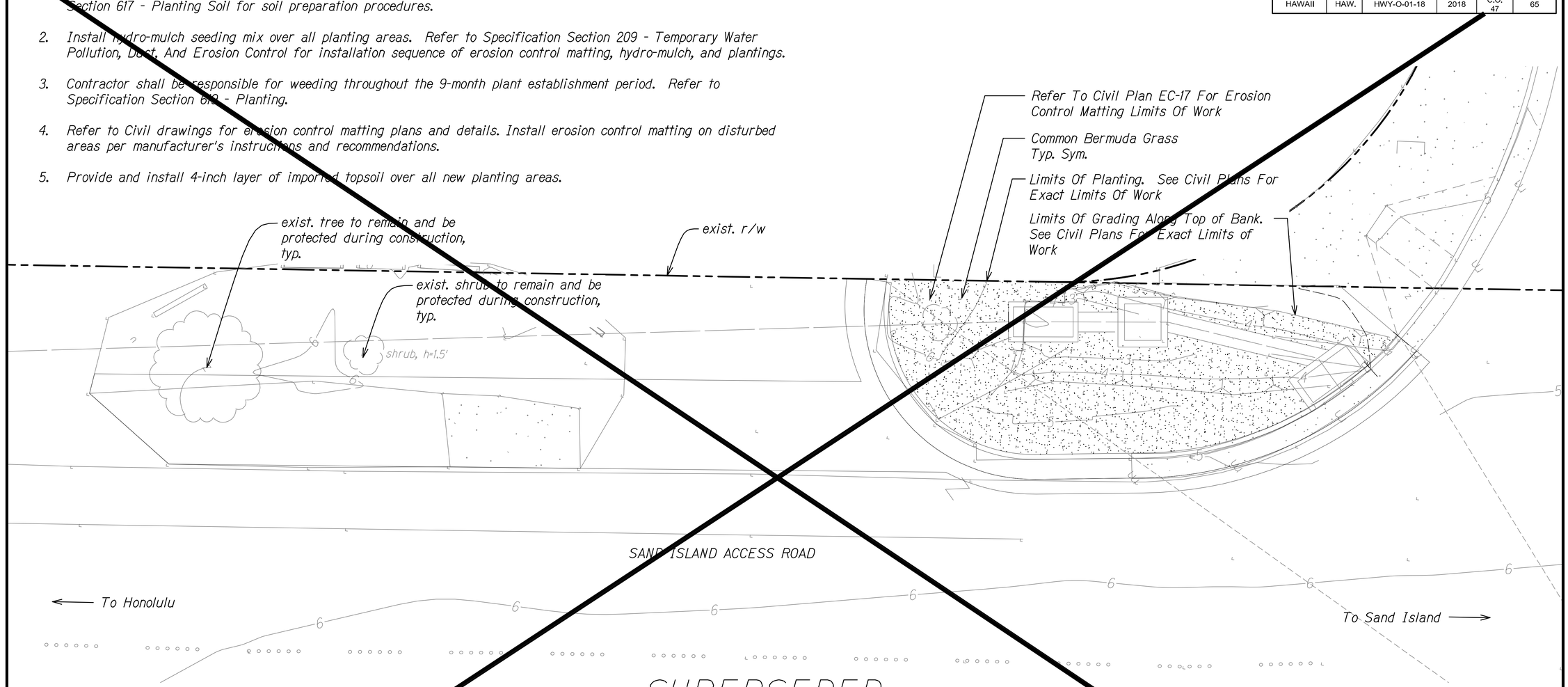
SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18
Scale: 1" = 20'-0" Date: April 2018

SHEET No. LP-07 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	C.O. 47	65

Notes:

1. *Provide and incorporate soil amendments as recommended by the soil analysis report. Refer to Specification Section 617 - Planting Soil for soil preparation procedures.*
2. *Install hydro-mulch seeding mix over all planting areas. Refer to Specification Section 209 - Temporary Water Pollution, Dust, And Erosion Control for installation sequence of erosion control matting, hydro-mulch, and plantings.*
3. *Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 670 - Planting.*
4. *Refer to Civil drawings for erosion control matting plans and details. Install erosion control matting on disturbed areas per manufacturer's instructions and recommendations.*
5. *Provide and install 4-inch layer of imported topsoil over all new planting areas.*



SUPERSEDED

PLANT SCHEDULE PID 467

HYDRO-MULCH SEEDING	BOTANICAL NAME	COMMON NAME	CONT
	Cynodon dactylon	Common Bermuda Grass	Seed

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

RUSSELL Y.J. CHUNG
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 6076
HAWAII, U.S.A.
4/30/18
EXP. DATE
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLANTING PLAN PID 467

SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18
Scale: 1" = 5'-0" Date: April 2018

SHEET No. LP-08 OF 12 SHEETS

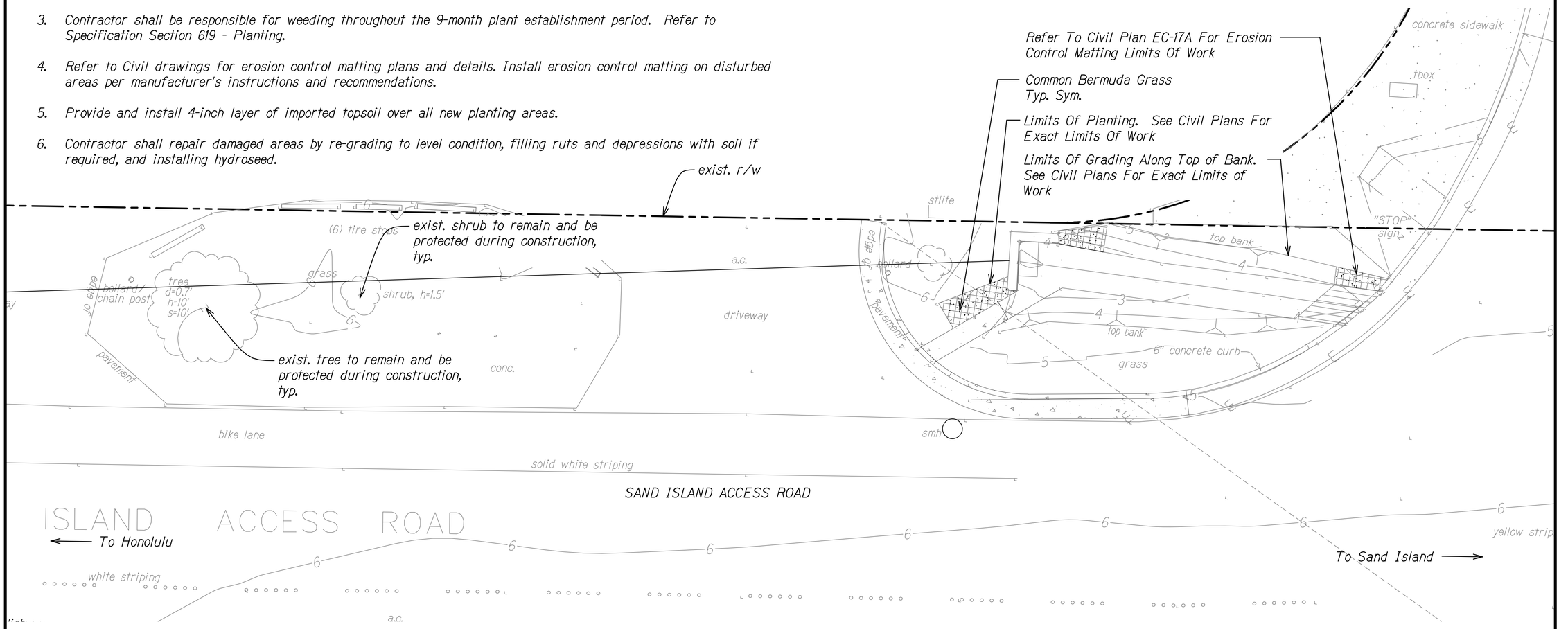
LANDSCAPE PLANTING PLAN PID 467
Scale: 1" = 5'-0"

C.O. 47

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	C.O. 47S-1	65

Notes:

1. *Provide and incorporate soil amendments as recommended by the soil analysis report. Refer to Specification Section 617 - Planting Soil for soil preparation procedures.*
2. *Install hydro-mulch seeding mix over all planting areas. Refer to Specification Section 209 - Temporary Water Pollution, Dust, And Erosion Control for installation sequence of erosion control matting, hydro-mulch, and plantings.*
3. *Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specification Section 619 - Planting.*
4. *Refer to Civil drawings for erosion control matting plans and details. Install erosion control matting on disturbed areas per manufacturer's instructions and recommendations.*
5. *Provide and install 4-inch layer of imported topsoil over all new planting areas.*
6. *Contractor shall repair damaged areas by re-grading to level condition, filling ruts and depressions with soil if required, and installing hydroseed.*



PLANT SCHEDULE PID 467

HYDRO-MULCH SEEDING	BOTANICAL NAME	COMMON NAME	CONT
	Cynodon dactylon	Common Bermuda Grass	Seed

NORTH

SCALE: 1" = 5'

LANDSCAPE PLANTING PLAN PID 467

Scale: 1" = 5'-0"

DATE	REVISION
01/31/19	Revised Improvements for PID 467

RUSSELL Y.J. CHUNG
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No. 6076
HAWAII, U.S.A.

4/30/20
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STATE OF HAWAII
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HIGHWAYS DIVISION

LANDSCAPE PLANTING PLAN PID 467

SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18

Scale: 1" = 5'-0" Date: April 2018

SHEET No. LP-08A OF 12 SHEETS

C.O. 47S-1

LP-08_PID-467.DWG 2/14/2019 11:36:35 AM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	48	65

TREE PROTECTION ZONE:

1. All trees 8-inch caliper or greater (as measured at 4½-feet height) shall be protected unless noted otherwise. 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.

2. 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.

3. 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.

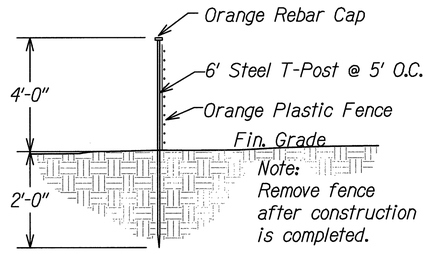
4. All protected trees shall be listed on the demolition, landscape, grading and utilities plans. If there is a discrepancy with all plans, Contractor shall contact Engineer immediately.

5. Protective fences shall be erected around trees identified on plan to remain and/or trees with a trunk diameter greater than 8-inches (as measured at a height of 4½-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 in the presence of a Certified Arborist and accepted by the Engineer prior to any demolition work and shall remain in place until site work is completed. Signs shali be posted on all four sides to read "TREE PROTECTION ZONE [TPZ] - NO GRADE CHANGE, STORAGE OR EQUIPMENT PERMITTED WITHIN TPZ."

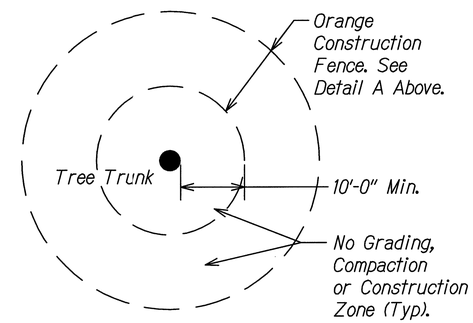
6. For the duration of construction within the drip line of the trees to remain there shall be:
   - No changes, alteration or disturbance to the grade by adding fill, excavating or scraping except as noted on plans;
   - No storage on construction materials or equipment;
   - No stockpiling of any construction 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; and
   - No cleaning of equipment or material under the canopy of any tree or group of trees to be preserved

7. Contractor shall refer to Specification Section 201 - Clearing And Grubbing for additional tree protection instructions.

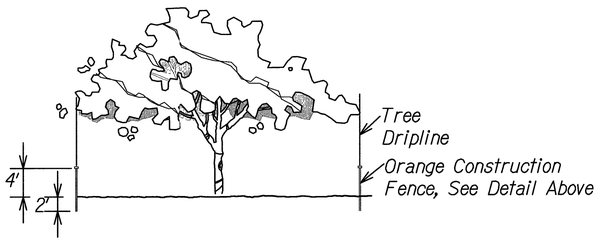
TREE PROTECTION
Scale: Not to Scale
1 LP-09 LP-09



DETAIL A - ORANGE CONSTRUCTION FENCE
Scale: Not To Scale

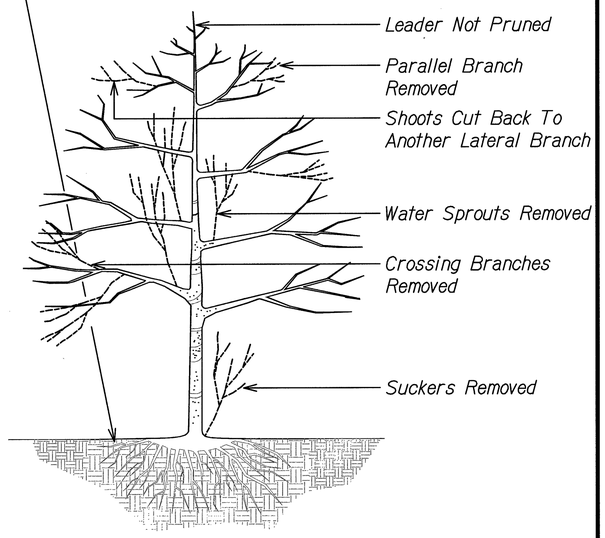


PLAN VIEW
Scale: Not To Scale

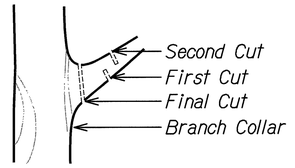


SECTION
Scale: Not To Scale

Tree Roots Shall Not Be Cut Unless Cutting Is Unavoidable. When Root Cutting Is Unavoidable, A Clean, Sharp Cut Shall Be Made To Avoid Shredding Or Smashing. Root Cuts Shall Be Made Back To A Lateral Root Whenever Possible. Roots 2-inches Or Greater In Diameter Shall Be Tunneled Or Bored Under And Shall Be Covered To Prevent Dehydration. Exposed Roots Shall Be Covered Immediately With Soil Or Burlap And Kept Moist. No Roots Larger Than 2-inches Shall Be Cut Unless No Other Alternative Is Feasible, Approved By A Certified Arborist, And Accepted By The Engineer. Fertilize And Water To Minimize Shock As Directed By A Certified Arborist Or Engineer.



Notes:
1. Positions of first and second cuts may be reversed in some cases, particularly when cutting a large branch with a chainsaw.
2. Do not make flush cuts or leave stubs.
3. Do not paint cuts.
4. Remove dead, broken or malformed branches.
5. Remove all vines entwined in the tree or around its trunk.
6. All pruning shall be completed using clean sharp tools. All cuts shall be clean and smooth, with the bark intact with no rough edges or tears.
7. Dispose of all cuttings in accordance with Specification Section 201 - Clearing And Grubbing.
8. Retain the normal shape of the plant.
9. All work shall be done in the presence of an ISA Certified Arborist.



TYPICAL BRANCH REMOVAL
Scale: Not To Scale

TREE PRUNING DETAIL
Scale: Not to Scale
2 LP-09 LP-09

SURVEY PLOTTED BY ____ DATE
DRAWN BY
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QUANTITIES BY
CHECKED BY
ORIGINAL PLAN
NOTE BOOK
No.

RUSSELL Y.J. CHUNG
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 6076
HAWAII, U.S.A.
4/30/18
DATE
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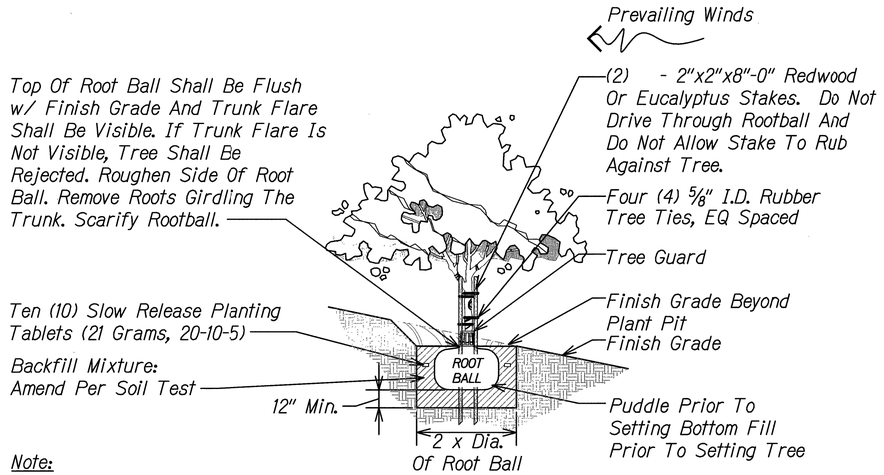
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE DETAILS

SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18
Scale: Not To Scale Date: April 2018

SHEET No. LP-09 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	49	65



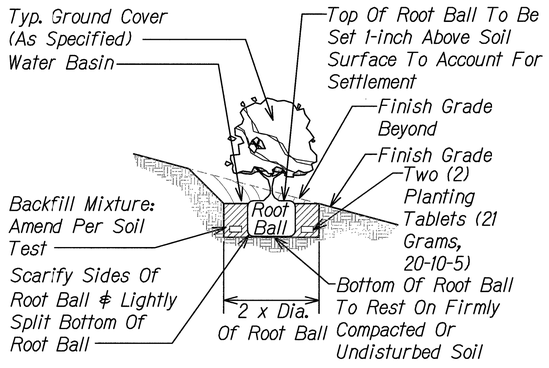
Note:
Trunk must be protected from rope sling burns and abrasions during moving. tree shall be plumb. If tree is leaning at the end of the plant establishment period, the tree shall be replaced at the Contractor's expense.

TREE PLANTING ON SLOPE

Scale: Not to Scale

1 LP-10 LP-10

Notes:
1. Ground covers shall be plumb. If ground cover Is leaning at the end of the plant establishment period, it shall be replaced at the contractor's expense.
2. Immediately after planting, water heavily to ensure soil settles around roots.

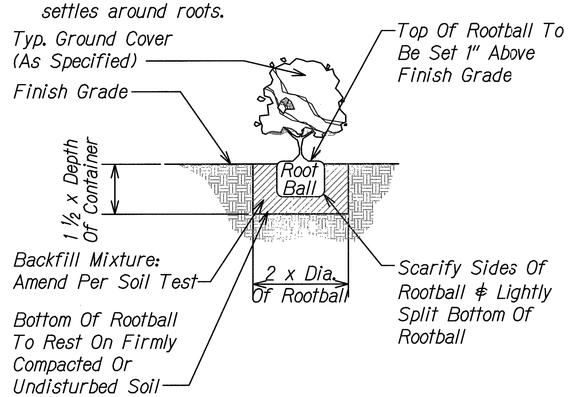


GROUND COVER PLANTING ON SLOPE

Scale: Not to Scale

2 LP-10 LP-10

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

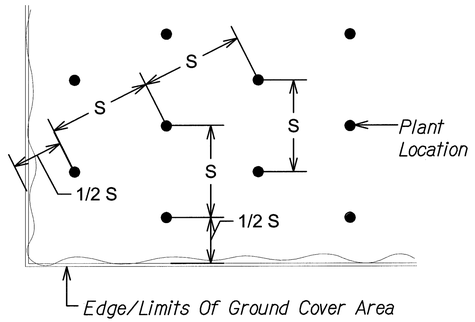


GROUND COVER PLANTING

Scale: Not to Scale

3 LP-10 LP-10

Note:
1. S = Spacing, (refer to plant list for spacing)
2. Use spacing layout for shrubs, ground covers, and annuals



TRIANGULAR SPACING

Scale: Not to Scale

5 LP-10 LP-10

Hydro-Mulch:
Mulch 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, 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-MULCHING DETAIL

Scale: Not to Scale

4 LP-10 LP-10

ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
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RUSSELL Y.J. CHUNG
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No. 6076
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4/30/18
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

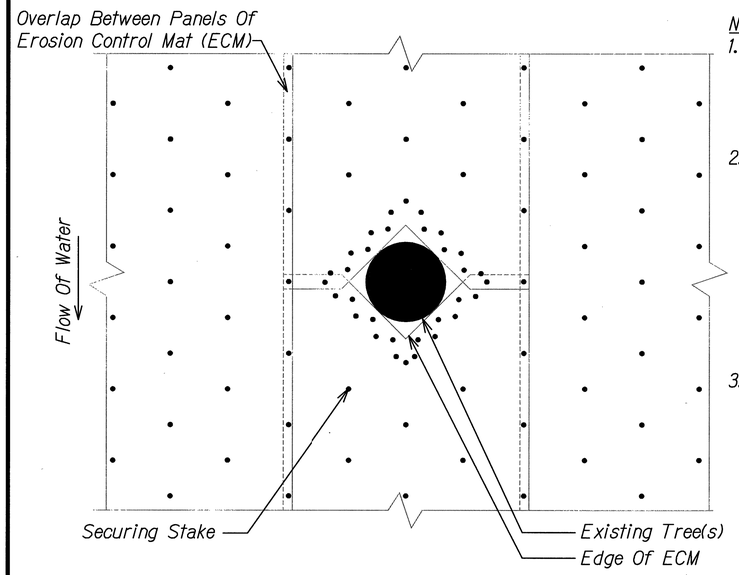
LANDSCAPE DETAILS

SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-O-01-18

Scale: Not To Scale Date: April 2018

SHEET No. LP-10 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-01-18	2018	50	65

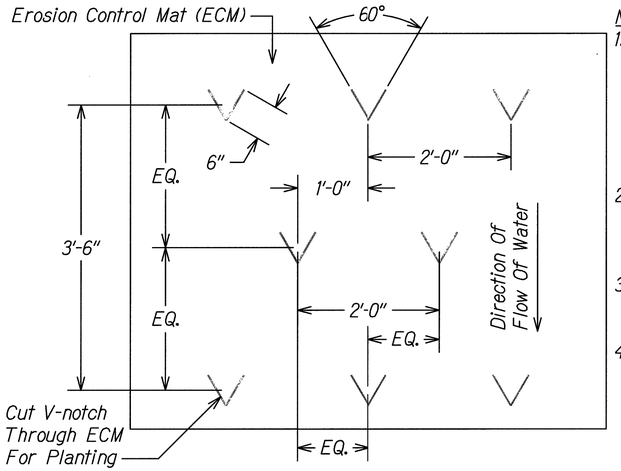


Notes:

1. Contractor shall join overlapping sections of Erosion Control Mat (ECM) in accordance with the contract documents.
2. 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.
3. Contractor shall secure ECM with stakes. Stake placement may require modification in the field due to root location, trunk structure, or other obstacles. Contractor shall install additional stakes to ensure ECM maintains direct contact with ground surface. Refer to erosion control plans for stake placement.
4. 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 (1 LP-11\LP-11)

Scale: Not to Scale



Notes:

1. 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.
2. Install the live plant material using a V-notch design approved or recommended by the ECM manufacturer.
3. Contractor shall remove soil material from V-shaped opening for planting pit.
4. 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. Additional stakes shall be installed around the notch as necessary, or as directed by the Engineer, to ensure the matting maintains direct contact with the ground surface.

TYPICAL PLANTING THROUGH ECM (2 LP-11\LP-11)

Scale: Not to Scale

ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY DATE
DRAFTN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
No.

RUSSELL Y.J. CHUNG
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 6076
HAWAII, U.S.A.
4/30/18
LICENSE EXPIRATION 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 8
Project No. HWY-O-01-18

Scale: Not To Scale Date: April 2018

SHEET No. LP-11 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-18	2018	C.O. 51	65

PLANT SCHEDULE PID 408

GROUND COVER	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING	REMARKS
	14,283 SF	Heteropogon contortus	Pili Grass	4" Pot	24" O.C.	Triangular Spacing Ensure No Conflict With ECM Securing Stakes

PLANT SCHEDULE PID 502

GROUND COVER	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING	REMARKS
	19,935 SF	Heteropogon contortus	Pili Grass	4" Pot	24" O.C.	Triangular Spacing Ensure No Conflict With ECM Securing Stakes

PLANT SCHEDULE PID 521

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CALIPER	SIZE
	25	Acacia koaia	Koai'a	15 Gal	1" Cal Min.	6'-8' Height And 2'-4' Spread Min.
	57	Sapindus oahuensis	Lonomea	15 Gal	1" Cal. Min.	6'-8' Height And 2'-4' Spread Min.

GROUND COVER	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING	REMARKS
	10,625 SF	Chrysopogon aciculatus	Manienie'ula Grass	4" Pot	24" O.C.	Triangular Spacing; Ensure No Conflicts With ECM Securing Stakes
	33,250 SF	Heteropogon contortus	Pili Grass	4" Pot	24" O.C.	Triangular Spacing; Ensure No Conflicts With ECM Securing Stakes

PLANT SCHEDULE PID 149

GROUND COVER	QTY	BOTANICAL NAME	COMMON NAME	CONT	O.C.	REMARKS
	6,030 SF	Eragrostis variabilis	Kawelu Grass	4" Pot	24"	Triangular Spacing Ensure No Conflict With ECM Securing Stakes

HYDRO-MULCH SEEDING	QTY	BOTANICAL NAME	COMMON NAME	CONT	REMARKS
	2,475 SF	Cynodon dactylon	Common Bermuda Grass	Seed	See Specs For Grass Seeding Rate

PLANT SCHEDULE PID 467

HYDRO-MULCH SEEDING	QTY	BOTANICAL NAME	COMMON NAME	CONT	REMARKS
	~~625 SF~~ 40 SF	Cynodon dactylon	Common Bermuda Grass	Seed	See Specs For Grass Seeding Rate

DATE	REVISION
01/31/19	Revised Improvements for PID 467

RUSSELL Y.J. CHUNG
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No. 6076
HAWAII, U.S.A.

4/30/20
EXP. DATE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLANT LIST

SLOPE IMPROVEMENTS FOR EROSION CONTROL AT VARIOUS SITES ON OAHU, PHASE 8
Project No. HWY-0-01-18

Scale: Not To Scale Date: April 2018

SHEET No. LP-12 OF 12 SHEETS

C.O. 51

LP-12_PLANT LIST_PH8_A-TOCJING 2/8/2019 2:53:28 PM