

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-09	2023	192	231

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. Prior to excavating for tree, shrub, or ground cover planting pits, all tree and shrub 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.

4. Notify Engineer of any discrepancies in plant locations.

5. 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.

6. The Engineer will inspect plants at the place of growth and after delivery to the project.

7. Plants shall meet size indicated. 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.

8. 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.

9. 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 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 minimum 7 days prior to tree pruning. The cost for arborist services shall be considered incidental to Specification Section 619 - Planting.

10. 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. For slopes flatter than 3H:1V, till top six-inches of soil to evenly incorporate fertilizer and amendments. For slopes steeper than 3H:1V, no tilling is required.

11. 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. 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. Contractor shall prepare separate soil samples and analysis results for each site. Refer to Specification Section 618 - Soil Preparation.

12. 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.
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 shall be provided and installed by the Contractor for the duration of the project. Refer to Specification Sections 619.03(Q), 619.03(R), 641.03(B) and 641.03(C). Temporary irrigation system shall be considered incidental to Specification Sections 619 - Planting and 641 - Hydro-Mulch Seeding.

16. Contractor shall be responsible for weeding throughout the 9-month plant establishment period. Refer to Specifications Section 619 - Planting.

17. Tree roots greater than 2 inches in diameter shall not be disturbed. Cutting of tree 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. Contractor shall 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.

ORIGINAL PLAN	SURVEY DICTATED BY	DATE

NOTE BOOK	DRAWN BY	_____

No.	DESIGNED BY	_____

	QUANTITIES BY	_____

MARC K. SHIMAZU


LICENSED PROFESSIONAL LANDSCAPE ARCHITECT

No. 13602

HAWAII, U.S.A.

4/30/24

EMP. DATE



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STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

LANDSCAPE

NOTES

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS

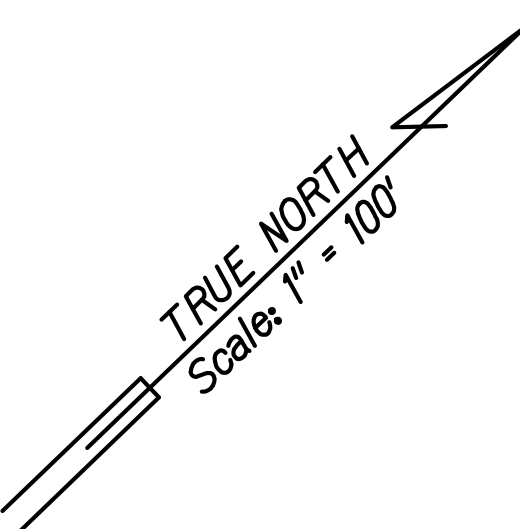
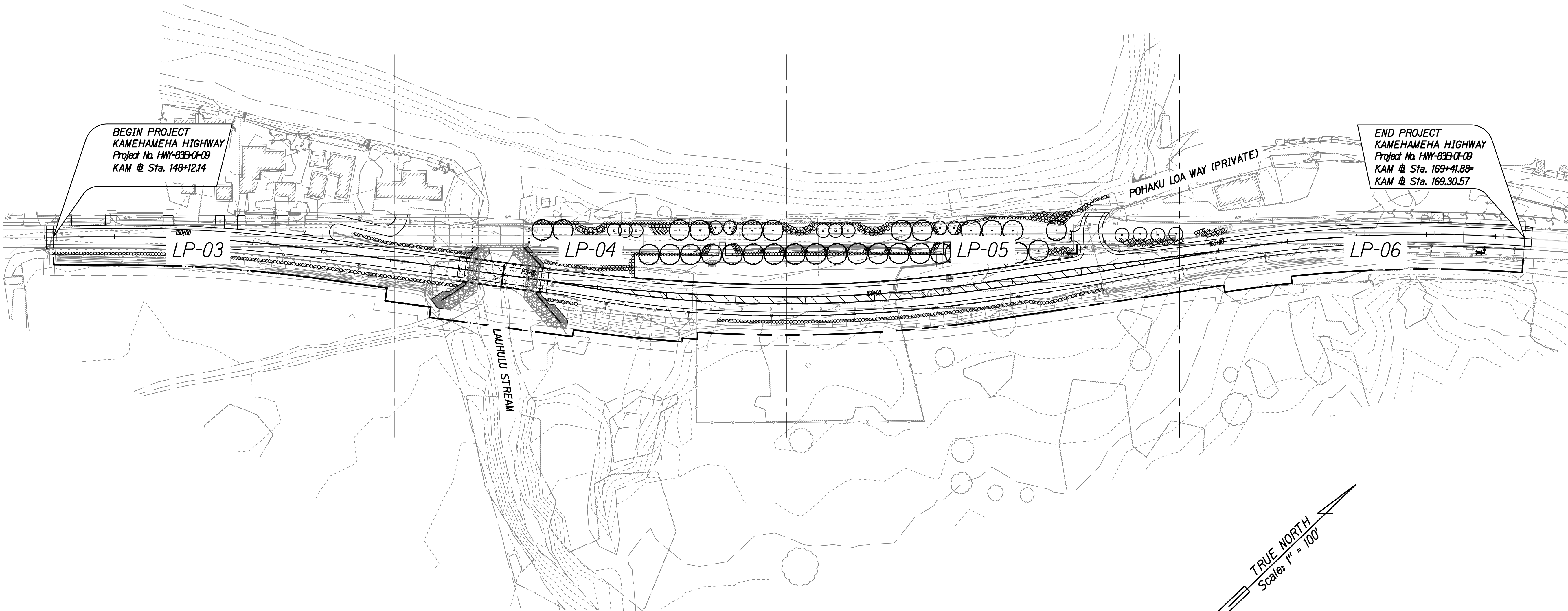
Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)

Project No. 83B-01-09

Scale: None

Date: Jan 2023

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-09	2023	193	231



GRAPHIC SCALE: 1" = 100'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	• _____
	TRACED BY _____	• _____
	DESIGNED BY _____	• _____
NOTE BOOK	QUANTITIES BY _____	• _____
	CHECKED BY _____	• _____
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4/30/24
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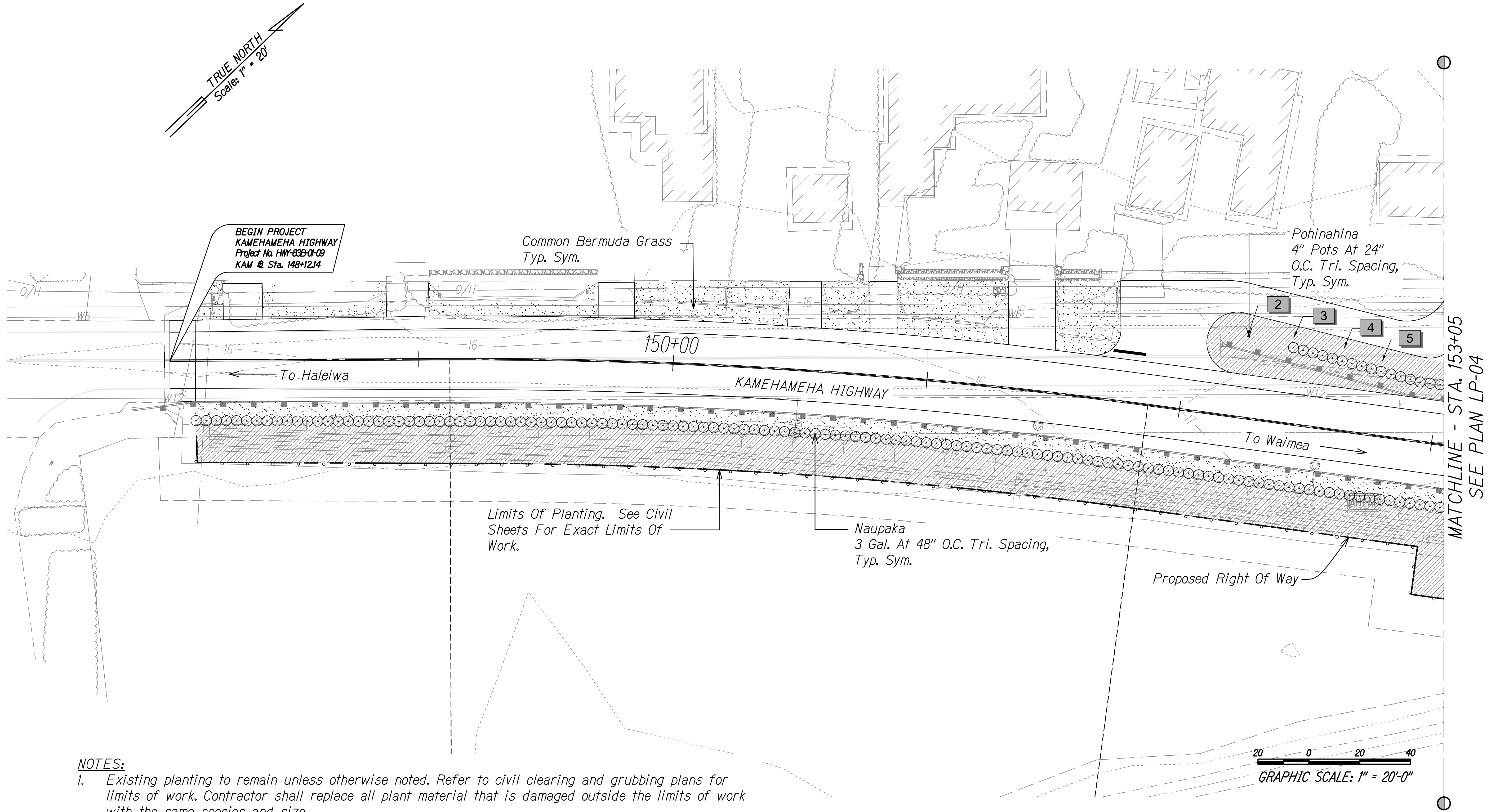
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**OVERALL LANDSCAPE
PLANTING PLAN**

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS
Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)
Project No. 83B-01-09

Scale: 1" = 100'-0" Date: Jan 2023

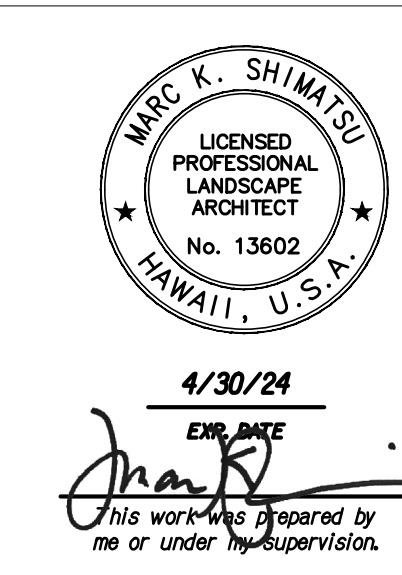
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-09	2023	194	231



NOTES:

- Existing planting to remain unless otherwise noted. Refer to civil clearing and grubbing plans for limits of work. Contractor shall replace all plant material that is damaged outside the limits of work with the same species and size.
- Install root barriers for all trees within 10-feet of paving or underground utilities.
- Provide an automatic temporary irrigation system for all new planting areas.
- Plant and material quantities are provided for convenience only. Contractor is responsible for verifying all quantities and dimensions.
- Install a 4" layer of imported topsoil over all new planting areas.
- Install a 2" layer of wood chip mulch below all shrub and ground cover areas.
- Contractor is responsible for mowing, weeding, pruning, watering, fertilizing, and removal of trash from project area throughout the 3-month planting period and 9-month plant establishment period. Contractor shall remove weeds from all planting areas on a weekly basis and shall inform the contracting officer weekly to confirm weeding work has been completed.

SURVEY PROVIDED BY	DATE
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HIGHWAYS DIVISION

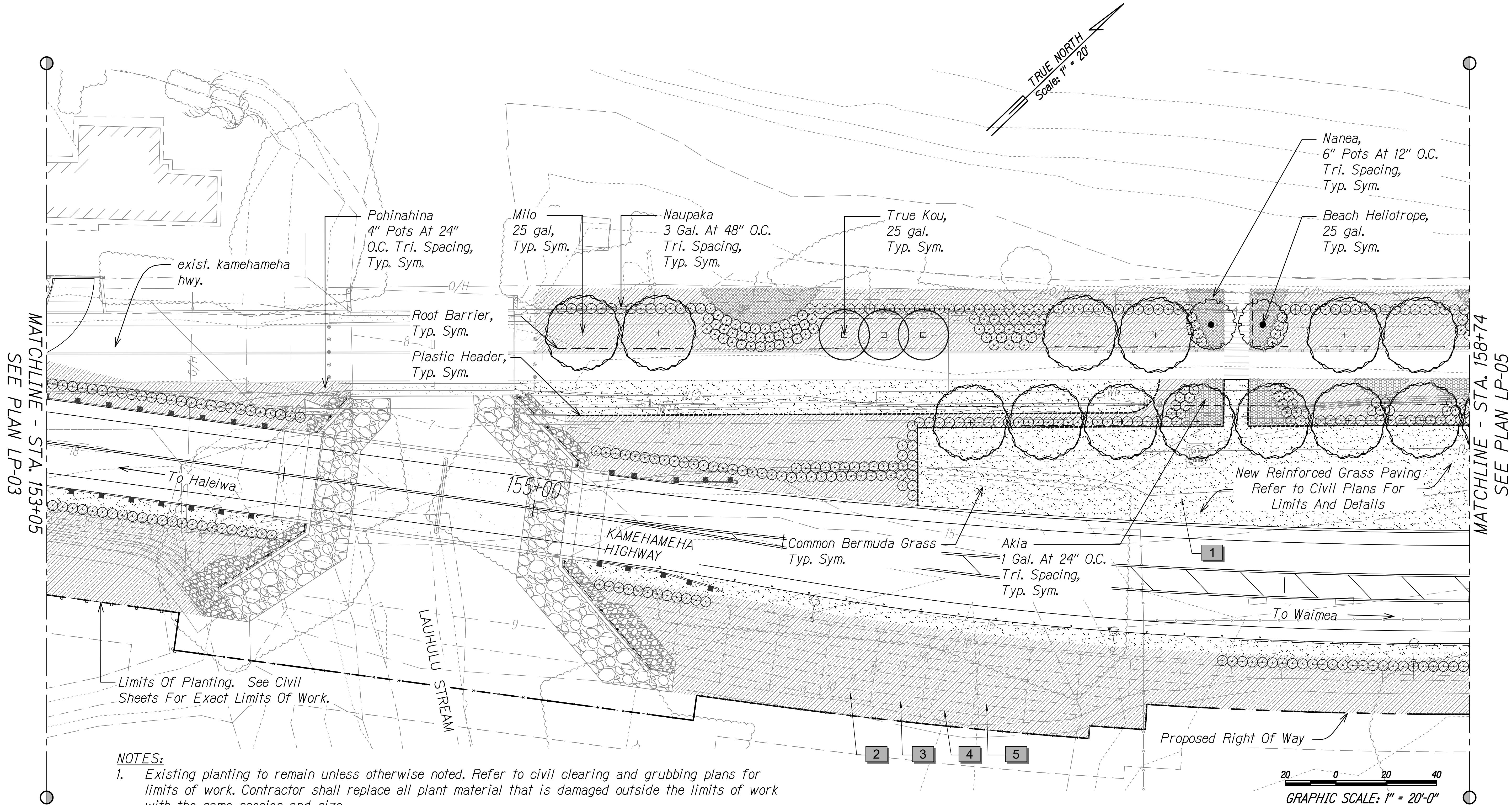
**LANDSCAPE
PLANTING PLAN**

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS
Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)
Project No. 83B-01-09

Scale: 1" = 20'-0" Date: Jan 2023

SHEET No LP-03 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-09	2023	195	231



- NOTES:**
- Existing planting to remain unless otherwise noted. Refer to civil clearing and grubbing plans for limits of work. Contractor shall replace all plant material that is damaged outside the limits of work with the same species and size.
 - Install root barriers for all trees within 10-feet of paving or underground utilities.
 - Provide an automatic temporary irrigation system for all new planting areas.
 - Plant and material quantities are provided for convenience only. Contractor is responsible for verifying all quantities and dimensions.
 - Install a 4" layer of imported topsoil over all new planting areas.
 - Install a 2" layer of wood chip mulch below all shrub and ground cover areas.
 - Contractor is responsible for mowing, weeding, pruning, watering, fertilizing, and removal of trash from project area throughout the 3-month planting period and 9-month plant establishment period. Contractor shall remove weeds from all planting areas on a weekly basis and shall inform the contracting officer weekly to confirm weeding work has been completed.

DATE	_____
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DRAWN BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
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ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____

MARC K. SHIMAZU

LICENSED PROFESSIONAL LANDSCAPE ARCHITECT

No. 13602

HAWAII, U.S.A.

4/30/24

EXP. DATE

[Signature]

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STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

LANDSCAPE PLANTING PLAN

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS

Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)

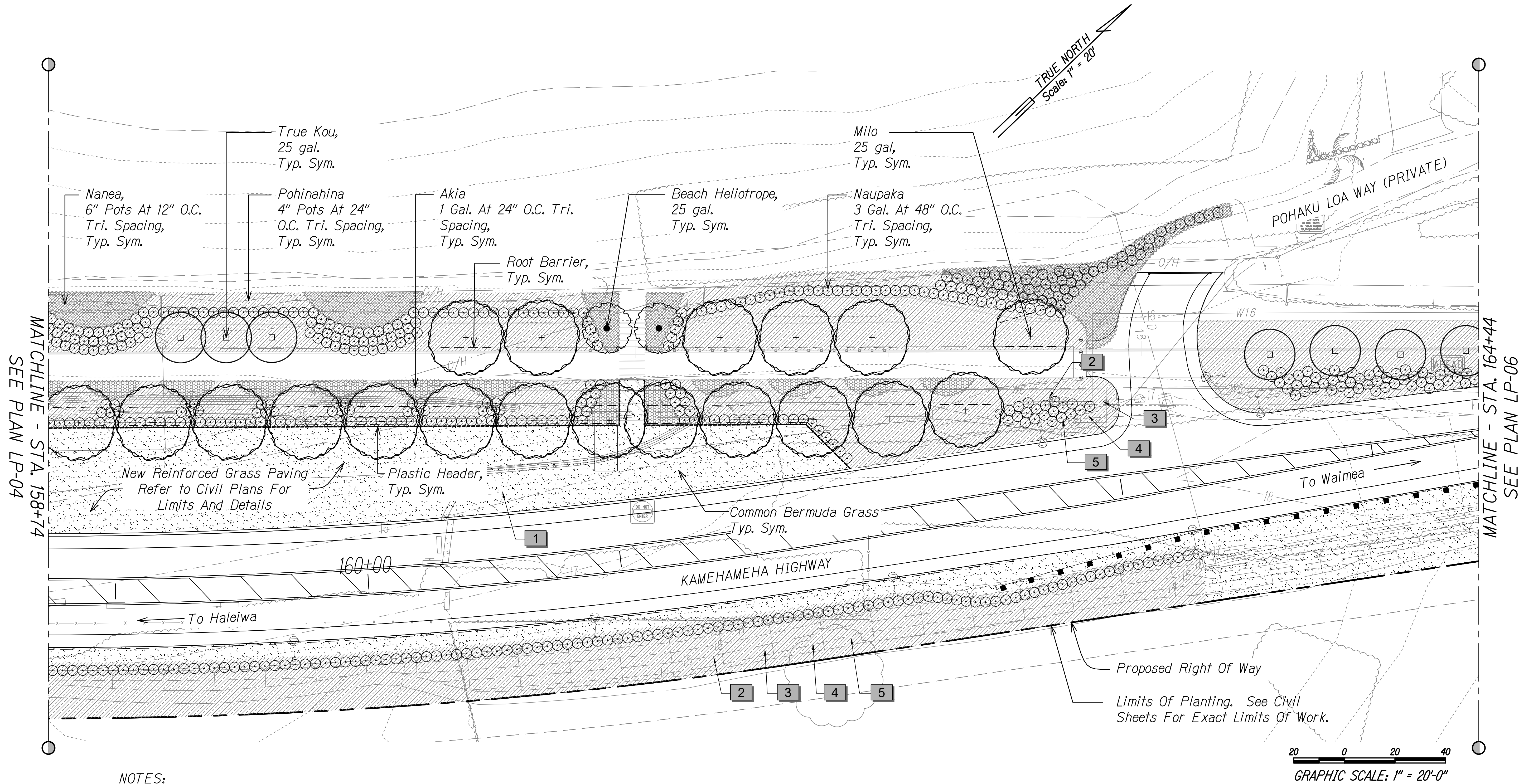
Project No. 83B-01-09

Scale: 1" = 20'-0"

Date: Jan 2023

SHEET No LP-04 OF 10 SHEETS

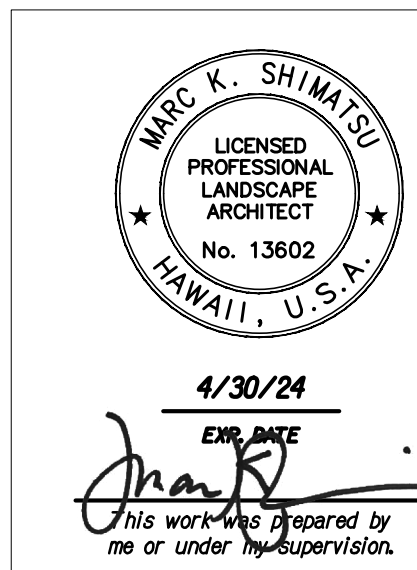
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-09	2023	196	231



NOTES:

- Existing planting to remain unless otherwise noted. Refer to civil clearing and grubbing plans for limits of work. Contractor shall replace all plant material that is damaged outside the limits of work with the same species and size.
- Install root barriers for all trees within 10-feet of paving or underground utilities.
- Provide an automatic temporary irrigation system for all new planting areas.
- Plant and material quantities are provided for convenience only. Contractor is responsible for verifying all quantities and dimensions.
- Install a 4" layer of imported topsoil over all new planting areas.
- Install a 2" layer of wood chip mulch below all shrub and ground cover areas.
- Contractor is responsible for mowing, weeding, pruning, watering, fertilizing, and removal of trash from project area throughout the 3-month planting period and 9-month plant establishment period. Contractor shall remove weeds from all planting areas on a weekly basis and shall inform the contracting officer weekly to confirm weeding work has been completed.

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STATE OF HAWAII
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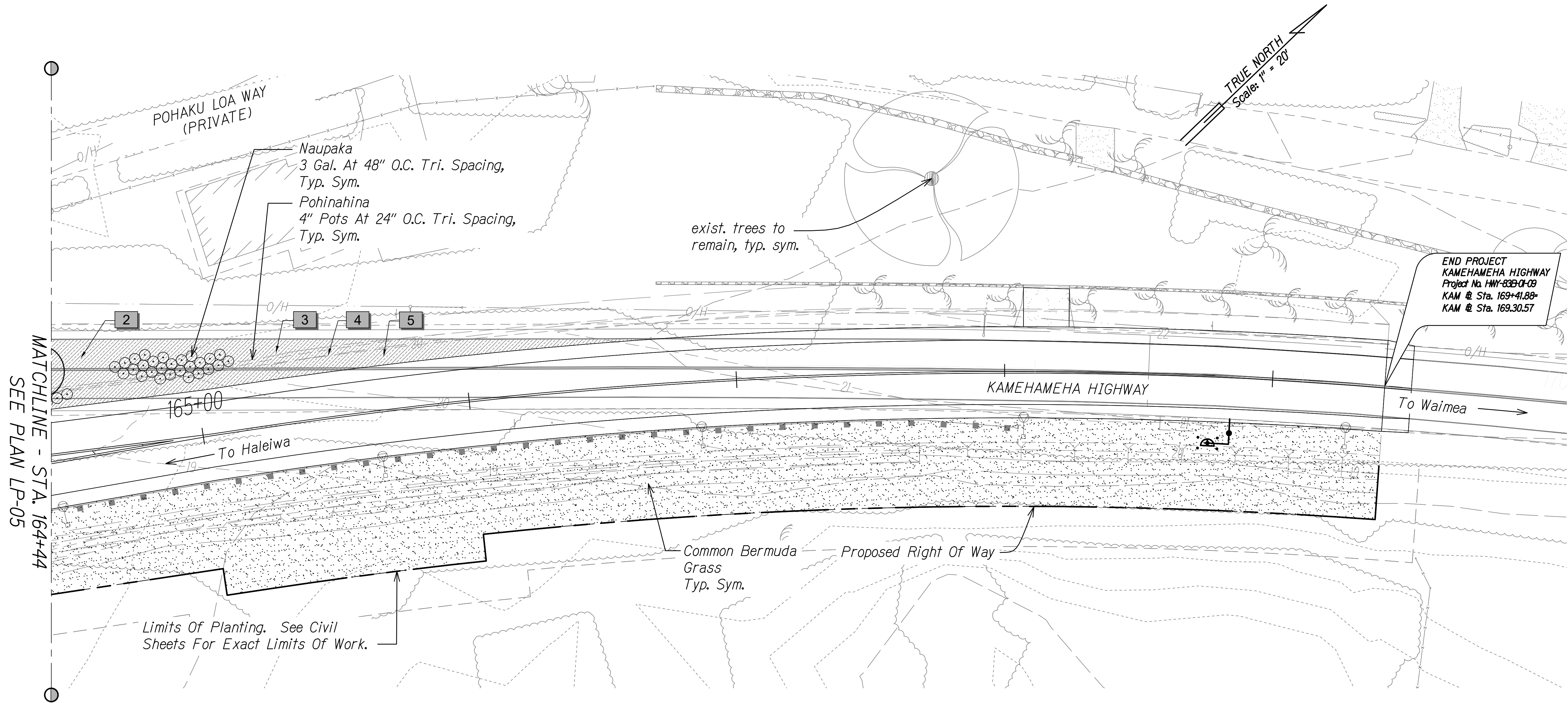
**LANDSCAPE
PLANTING PLAN**

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS
Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)
Project No. 83B-01-09

Scale: 1" = 20'-0" Date: Jan 2023

SHEET No LP-05 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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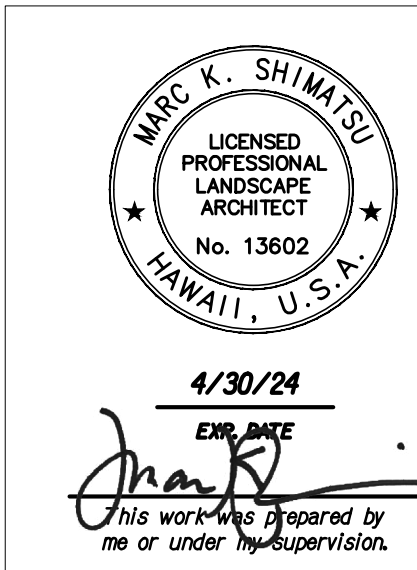


NOTES:

- Existing planting to remain unless otherwise noted. Refer to civil clearing and grubbing plans for limits of work. Contractor shall replace all plant material that is damaged outside the limits of work with the same species and size.
- Install root barriers for all trees within 10-feet of paving or underground utilities.
- Provide an automatic temporary irrigation system for all new planting areas.
- Plant and material quantities are provided for convenience only. Contractor is responsible for verifying all quantities and dimensions.
- Install a 4" layer of imported topsoil over all new planting areas.
- Install a 2" layer of wood chip mulch below all shrub and ground cover areas.
- Contractor is responsible for mowing, weeding, pruning, watering, fertilizing, and removal of trash from project area throughout the 3-month planting period and 9-month plant establishment period. Contractor shall remove weeds from all planting areas on a weekly basis and shall inform the contracting officer weekly to confirm weeding work has been completed.

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GRAPHIC SCALE: 1" = 20'-0"

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STATE OF HAWAII
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**LANDSCAPE
PLANTING PLAN**

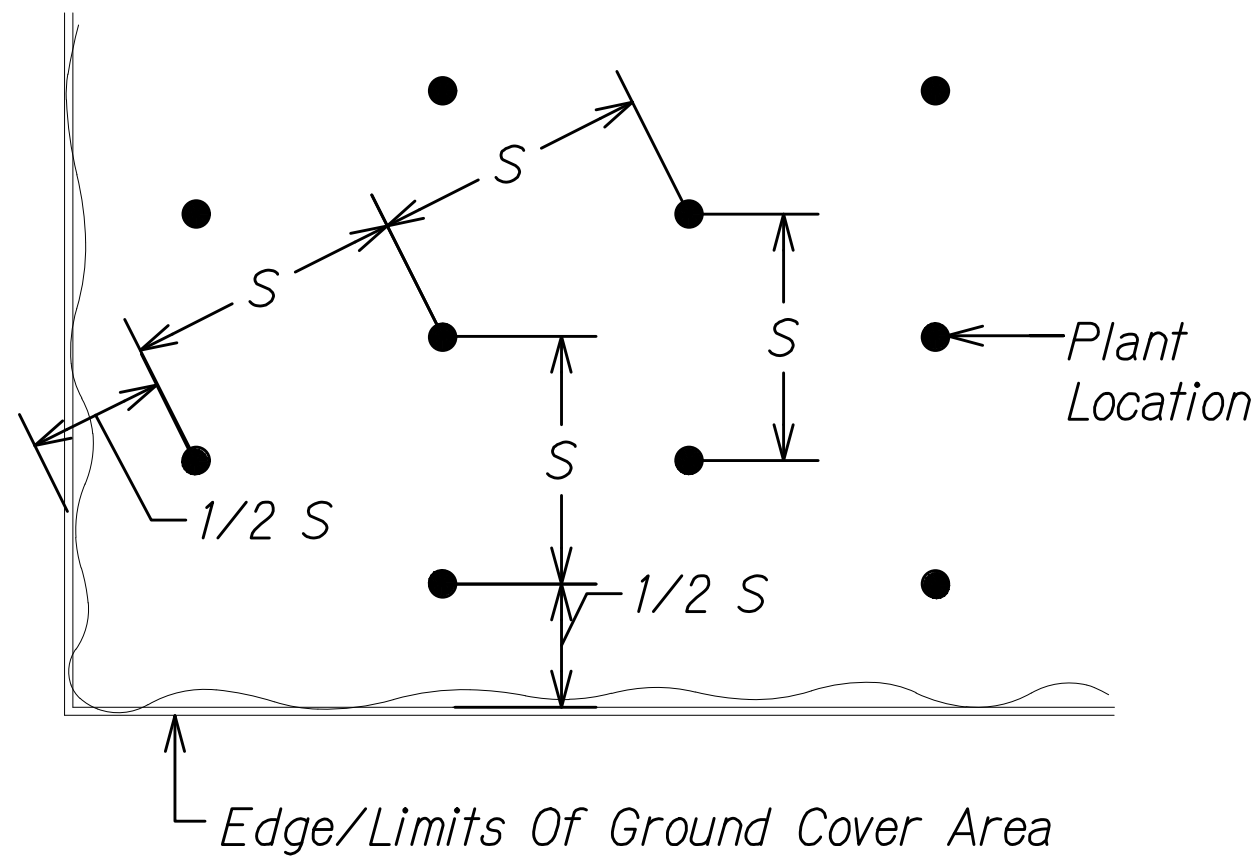
KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS
Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)
Project No. 83B-01-09

Scale: 1" = 20'-0" Date: Jan 2023

SHEET No LP-06 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-09	2023	198	231

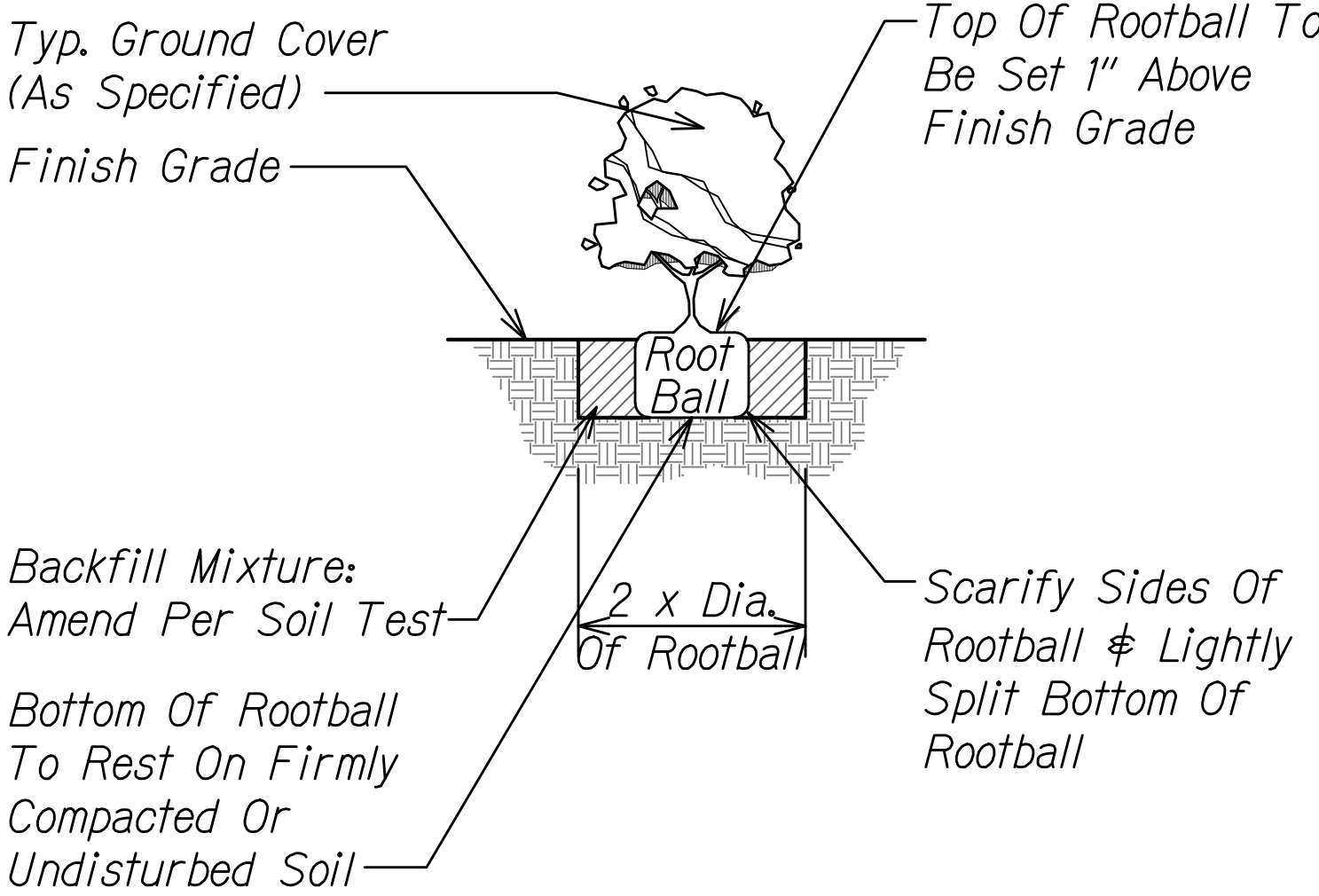
- Note:
1. S = Spacing, (refer to plant list for spacing)
 2. Use spacing layout for shrubs, ground covers, and annuals



TRIANGULAR SPACING
Scale: Not to Scale

1
LP-07/LP-07

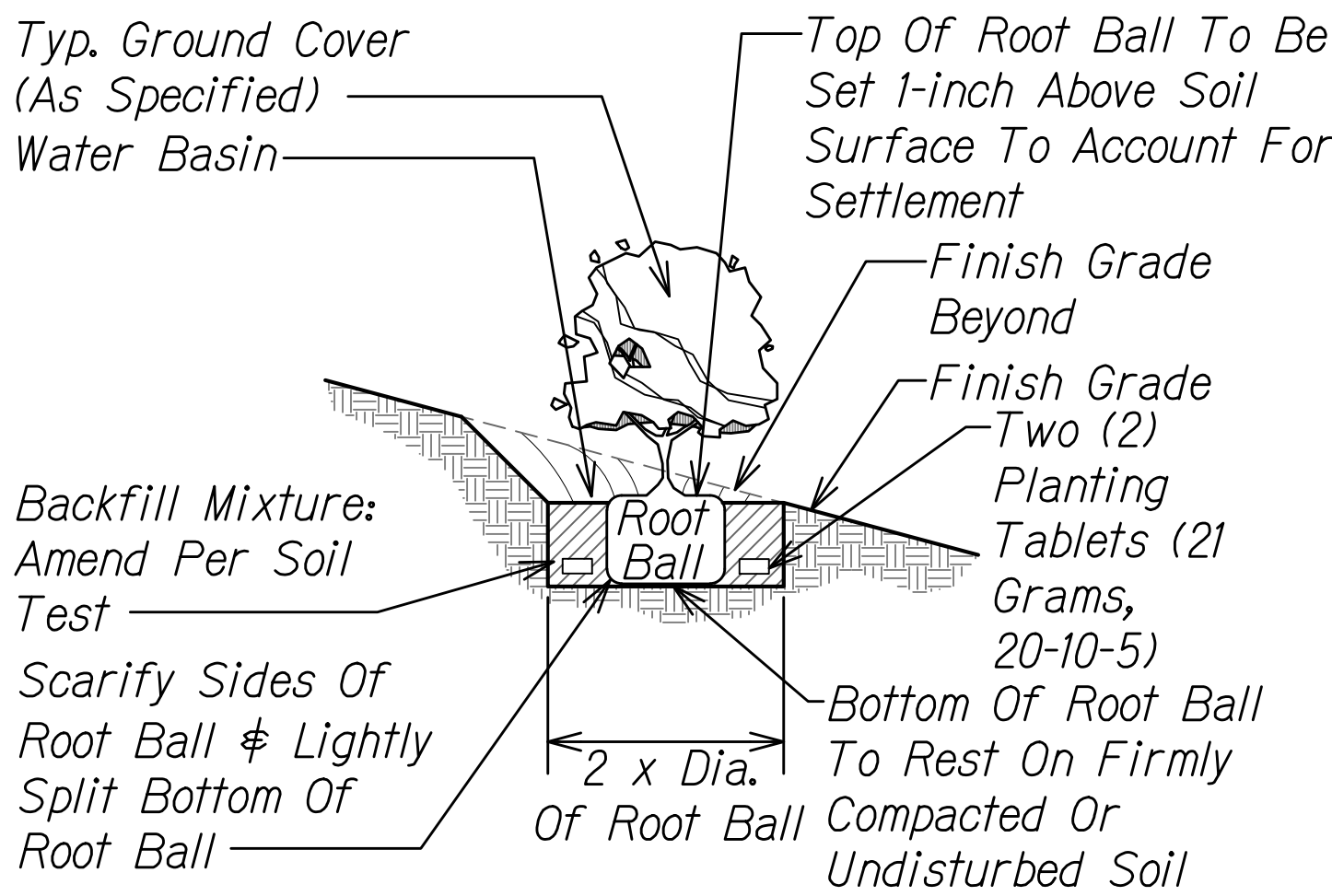
- Notes:
1. Ground covers shall be plumb. If ground cover is leaning at the end of the plant establishment period, it shall be replaced at the contractor's expense.
 2. Immediately after planting, water heavily to ensure soil settles around roots.



GROUND COVER PLANTING
Scale: Not to Scale

3
LP-07/LP-07

- 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

4
LP-07/LP-07

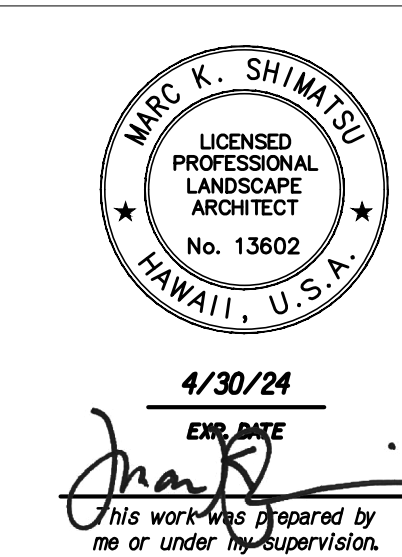
Hydro-Mulch:
Mulch Shall Be Specifically Processed Fiber Containing No Growth Or Germination Inhibiting Factors. It Shall Be Such That After Addition And Agitation In The Hydraulic Equipment With Seeds, Fertilizer, Water, Geobinders, And Other Additives Not Detrimental To Plant Growth, The Fibers Will 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

2
LP-07/LP-07

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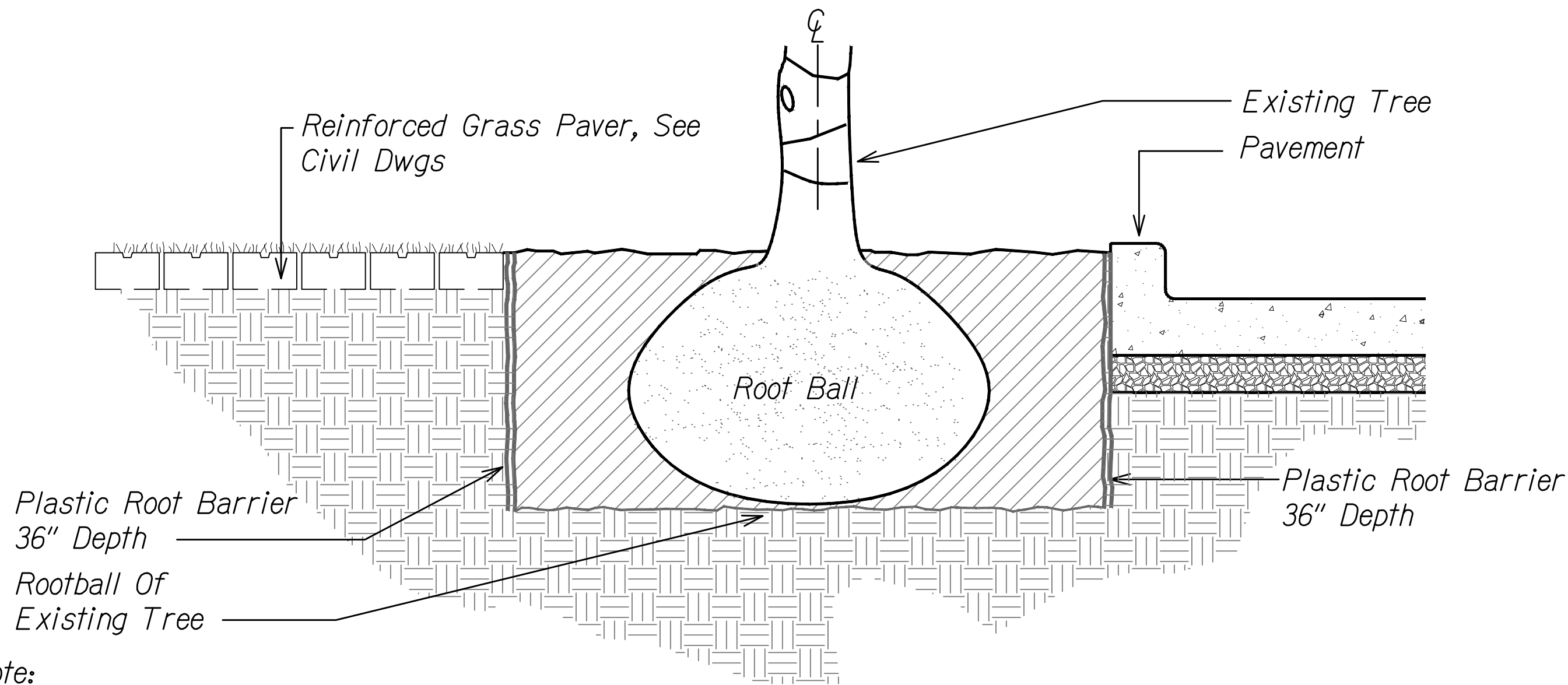
**PLANTING
DETAILS - 1**

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS
Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)
Project No. 83B-01-09

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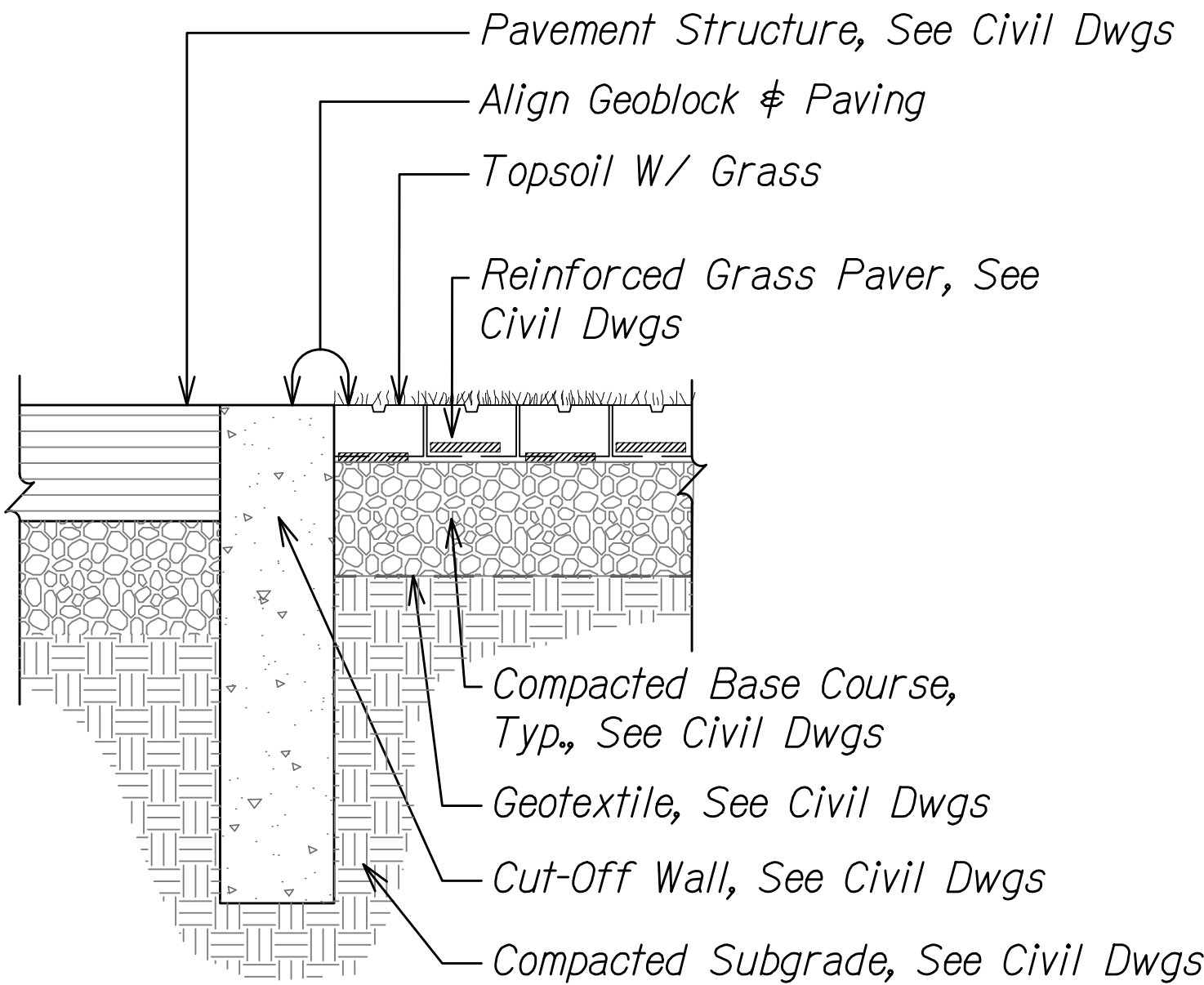
SHEET No LP-07 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-09	2023	200	231



Note:
 Root Control Barriers Shall Be High Density, High Impact Polypropylene With Ultraviolet Inhibitor. Barriers Shall Have Minimum Thickness Of 0.06 Inch, Raised Vertical Ribs, And Locking Strips Made Of Same Material. Bio-chemical Root Control Barriers Are Allowable As Alternative If Acceptable To Engineer.

ROOT CONTROL BARRIER DETAIL 1
 Scale: Not to Scale LP-09LP-09



REINFORCED GRASS PAVER 2
 Scale: Not to Scale LP-09LP-09

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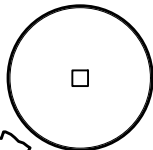
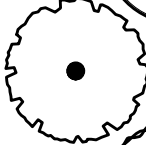
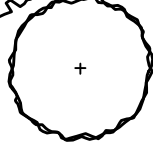

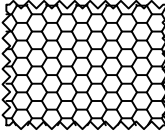

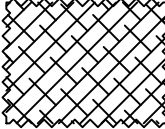
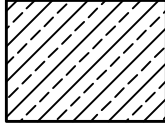
PLANTING
DETAILS - 3

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS
 Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)
 Project No. 83B-01-09





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SHEET No. LP-09 OF 10 SHEETS


PLANT SCHEDULE

<u>Trees</u>	<u>Qty</u>	<u>Botanical Name</u>	<u>Common Name</u>	<u>Cont</u>	<u>Cal</u>	<u>Size</u>	<u>SPD</u>	<u>Remarks</u>
	10	<i>Cordia subcordata</i>	True Kou	25 gal	1.5" - 2" cal.	6'-8' clear trunk height	4'-6'	
	4	<i>Heliotropium foertherianum</i>	Beach Heliotrope	25 gal	1.5" - 2" cal.	6'-8' clear trunk height	4'-6'	
	32	<i>Thespesia populnea</i>	Milo	25 gal	1.5" - 2" cal.	6'-8' clear trunk height	4'-6'	
<u>Shrubs</u>	<u>Qty</u>	<u>Botanical Name</u>	<u>Common Name</u>	<u>Cont</u>	<u>Spacing</u>	<u>Remarks</u>		
	1,050	<i>Scaevola taccada</i>	Beach Naupaka	1 gal	30" o.c.	Bushy, 24" height min, with ground cover and 2" layer wood mulch below, typ.		
<u>Shrub Areas</u>	<u>Qty</u>	<u>Botanical name</u>	<u>Common name</u>	<u>Cont</u>	<u>Spacing</u>	<u>Remarks</u>		
	532	<i>Wikstroemia uva-ursi</i>	Akia	1 gal	24" o.c.	2" Layer wood mulch below, typ.		
<u>Ground Covers</u>	<u>Qty</u>	<u>Botanical Name</u>	<u>Common name</u>	<u>Cont</u>	<u>Spacing</u>	<u>Remarks</u>		
	55,900 sf	<i>Cynodon dactylon</i>	Bermuda Grass	Hydroseed				
	3,850 sf	<i>Vigna marina</i>	Nanea	6" pots	12" o.c.	2" Layer wood mulch below, typ.		
	71,050 sf	<i>Vitex rotundifolia</i>	Pohinahina	4" pots	24" o.c.	2" Layer wood mulch below, typ.		

REFERENCE NOTES SCHEDULE

<u>Symbol</u>	<u>Description</u>	<u>Qty</u>
	4" Layer Imported Topsoil	1,545 cy
	2" Layer Soil Amendments	124,900 sf
	2" Layer Imported Compost	124,900 sf
	2" Layer Wood Mulch Below All Shrubs And Groundcovers	525 cy
	Root Barrier	1,400 lf

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PLANT SCHEDULE

KAMEHAMEHA HIGHWAY DRAINAGE AND SAFETY IMPROVEMENTS
Vicinity of Laniakea Beach (MP 3.06 to MP 3.54)
Project No. 83B-01-09

Scale: none Date: Jan 2023

SHEET No. LP-10 OF 10 SHEETS