

Storm Water Post-Construction Best Management Practices Manual



State of Hawaii
Department of Transportation
Highways Division
February 2022

Storm Water Post-Construction Best Management Practices Manual Updates

2023 Protect Our Water Conference
November 14, 2023

Vijaya Tummala, P.E.



PROTECT OUR WATER
- MĀLAMA I KA WAI -
HDOT Highways Maui District

Jason Lau, P.E.



STORM WATER POST-CONSTRUCTION BMP MANUAL

Old Manual - Effective 10/27/2015 thru 6/30/2022

Revised Manual - Effective Date is July 1, 2022



Applies to all projects planned or designed thru June 30, 2022

The cover of the old manual features a photograph of a modern building with a landscaped area containing a stormwater management structure. Below the photo is a white box with the text 'Applies to all projects planned or designed thru June 30, 2022'. The bottom half of the cover is white with a blue header that reads 'Storm Water Permanent Best Management Practices Manual'. It includes the 'PROTECT OUR WATER' logo, the Hawaiian phrase 'MĀLAMA I KA WAI', the website 'www.stormwaterhawaii.com', and publication details: 'Hawaii State Department of Transportation Highways Division Storm Water Management Program NPDES Permit No. HI 5000001 April 2015'.

Storm Water Permanent Best Management Practices Manual



Hawaii State Department of Transportation
Highways Division
Storm Water Management Program
NPDES Permit No. HI 5000001
April 2015



Storm Water Post-Construction Best Management Practices Manual

Applies to all projects planned or designed on or after July 1, 2022

The cover of the revised manual has a blue header with the title 'Storm Water Post-Construction Best Management Practices Manual'. Below this is a white box with the text 'Applies to all projects planned or designed on or after July 1, 2022'. The cover features the 'PROTECT OUR WATER' logo, the Hawaiian phrase 'MĀLAMA I KA WAI', and the Department of Transportation logo. At the bottom, it states 'State of Hawaii Department of Transportation Highways Division February 2022'.

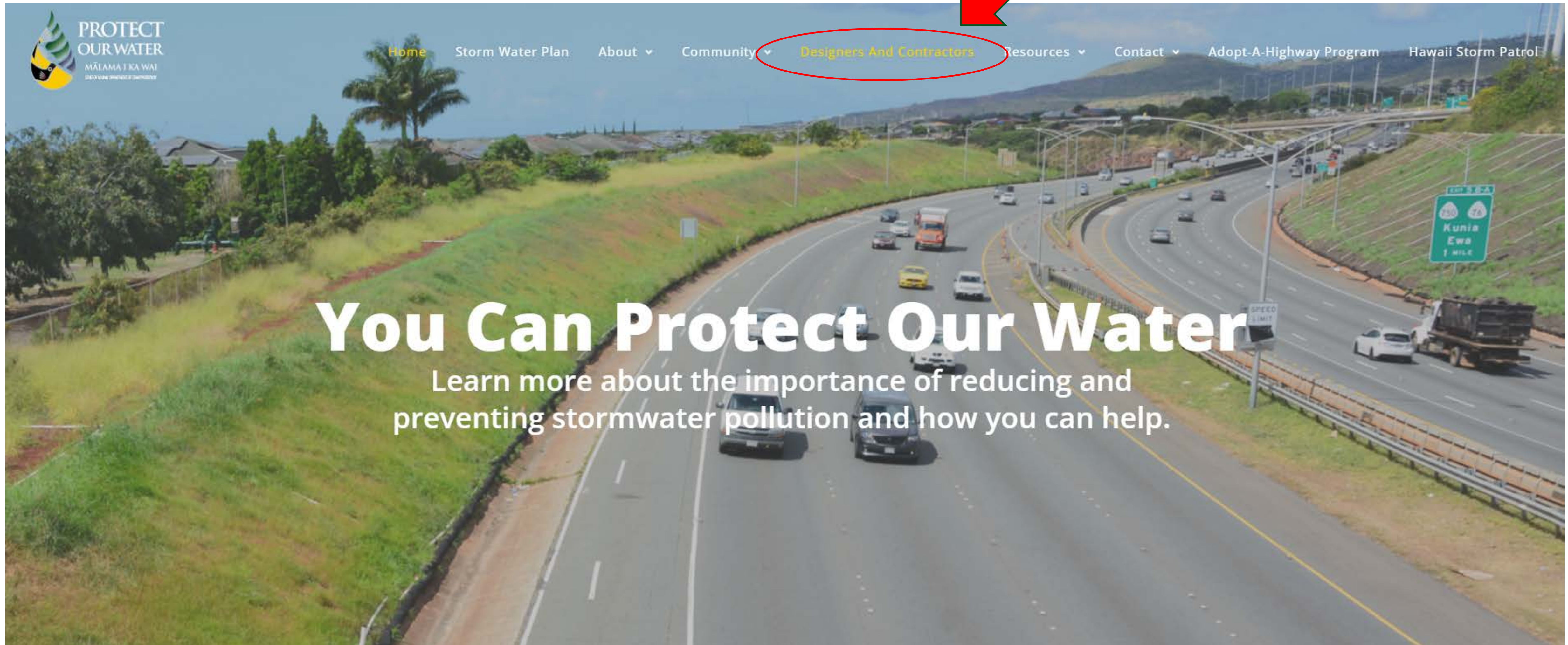
Applies to all projects planned or designed on or after July 1, 2022



State of Hawaii
Department of Transportation
Highways Division
February 2022

www.stormwaterhawaii.com

“Designers and Contractors”



2022 Post-Construction BMP Workshop

To learn more about our Permanent BMP criteria, download the presentation from our 2022 Post-Construction BMP Workshop.

[DOWNLOAD 2022 POST-CONSTRUCTION BMP WORKSHOP PRESENTATION](#)

[DOWNLOAD 2022 POST-CONSTRUCTION BMP MANUAL Q&A SESSION](#)

[VIEW 2022 POST-CONSTRUCTION BMP MANUAL WORKSHOP PRESENTATION VIDEO](#)

[VIEW 2022 POST-CONSTRUCTION BMP MANUAL Q&A SESSION VIDEO](#)

2022 Post-Construction (Permanent) Best Management Practices Materials (for projects initiated on or after July 1, 2022)

- [2022 Storm Water Post-Construction \(Permanent\) Best Management Practices Manual](#)
- [2022 Post Construction \(Permanent\) BMP Review Checklist for MS4 Areas](#)
- [2022 Post Construction \(Permanent\) BMP Review Checklist for Non-MS4 Areas](#)
- [2022 Post-Construction \(Permanent\) BMP Alternative Compliance Guide and Worksheet](#)

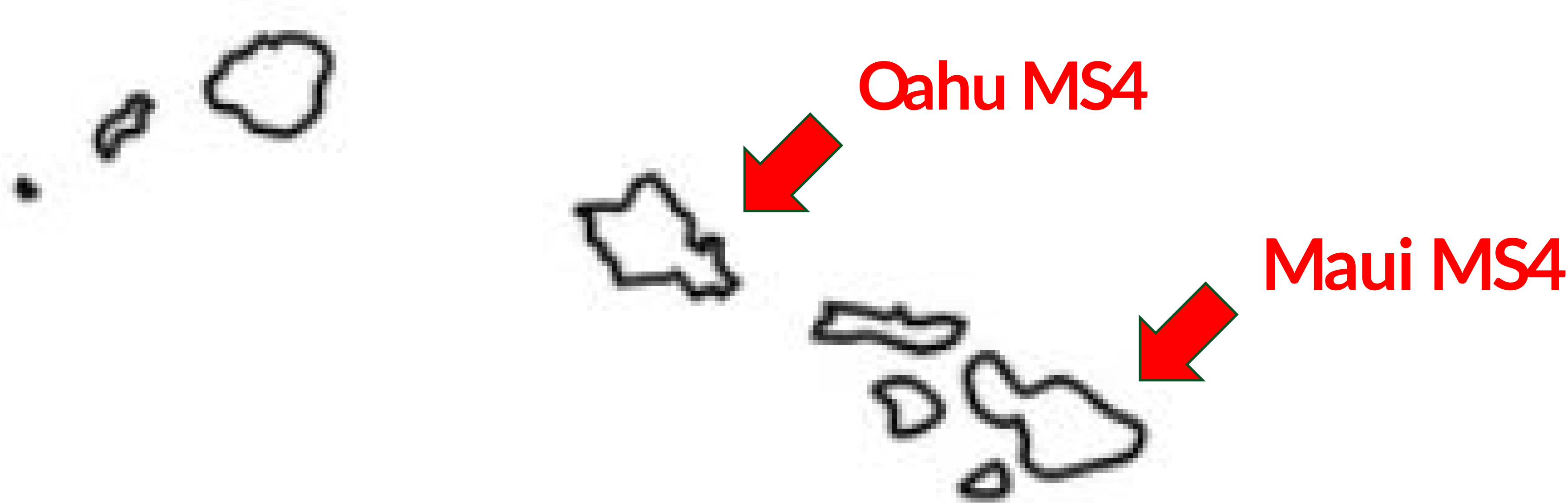
- [Post-Construction BMP Manual](#)
- [Post-Construction BMP Review Checklists](#)
- [Alternative Compliance Guide and Worksheet](#)
- [2022 Post-Construction BMP Workshop and Q&A Presentation](#)
- [Videos](#)

2022 POST-CONSTRUCTION BMP MANUAL REFRESHER

- MS4 vs. Non-MS4 areas
- HDOT criteria for Post-Construction BMPs
- Definition of “Disturbance”
- Public vs. Private projects
- Exemptions
- Alternative Compliance



MS4 vs. Non-MS4 Permit Areas



<p><u>MS4 Permit Areas</u></p> <p>Oahu, Maui</p>	<p><u>Non-MS4 Permit Areas</u></p> <p>Hawaii, Kauai, Molokai, Lanai</p>
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When are Post-Construction BMPs required?

	HDOT Post-Construction BMP Criteria
MS4 Permit Areas (Oahu, Maui)	All public construction projects that result in one (1) acre or more of disturbed area are required to implement LID BMPs
Non-MS4 Permit Areas (Hawaii, Kauai, Molokai, Lanai)	All public construction projects that result in one (1) acre or more of new impervious area are required to implement LID BMPs

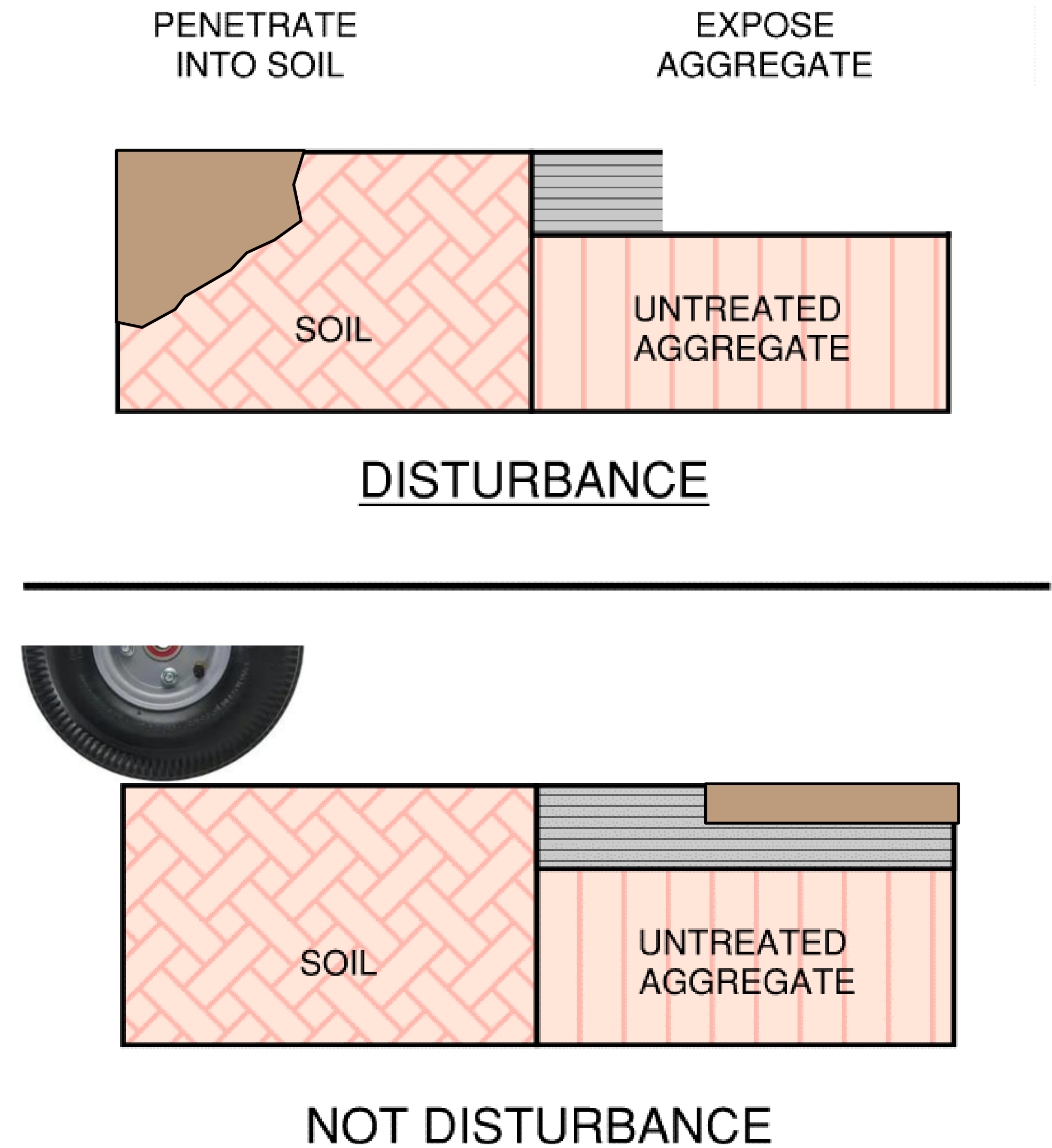
How is “Disturbance” defined?

Construction activity that results in the penetration, turning, or moving of soil

- Roadway construction and demolition
- Grading and grubbing
- Reconstruction of pavement which exposes the underlying base course or bare soil.

Excludes

- Clearing that leaves soil intact
- Operation of vehicles, staging, and storage of materials and equipment on paved surfaces



How is “Disturbance” defined?

What about for large projects?

- Disturbance area is for the **total** project and not just the portion within HDOT right-of-way

What about for phased projects?

- Depends on the proposed timing of the phases
- Intent is to comply with the Post-Construction BMP Manual criteria
- At the discretion of DOT-HWYS



Public vs. Private Construction Projects

PUBLIC

- Funded by DOT-HWYS, designed either by DOT-HWYS personnel or engineering consultant firms, and constructed by DOT-HWYS or a private contractor
- Includes contract construction projects and maintenance construction projects
- May be located within DOT-HWYS right-of-way or a parcel owned by DOT-HWYS
- Includes traditional design-bid-build projects or design-build projects

PRIVATE

- Not under the authority (funding) of or administered by DOT-HWYS
- Not necessarily a privately-funded project; also includes projects funded by the City and County of Honolulu and other counties or public agencies
- Located within or adjacent to DOT-HWYS right-of-way and drains to the DOT-HWYS right-of-way

How much treatment is required?

NEW DEVELOPMENT (ND)

Construction of any **new impervious surface intended for vehicular use.**

Excludes impervious surfaces intended for **non-vehicular uses**

- Bike paths
- Sidewalks
- Shared use paths

REDEVELOPMENT (RD)

Construction, reconstruction, alteration, or improvement on **existing impervious surfaces in which the underlying untreated aggregate or pervious subgrade is exposed or penetrated.**

Excludes pavement preservation treatments

- Pavement overlays
- Crack sealing
- Pavement resurfacing
- Cold planing (mill and fill)
- Slurry seals

How much treatment is required?

Required Treatment Area (A_T)

$$A_T = ND + (RD \times F) - A_{TE}$$



Where A_T = Required Treatment Area (acres)

ND = New Development resulting in new **impervious** surface (acres)

RD = Redevelopment of existing **impervious** surface (acres)

F = **Redevelopment Treatment Fraction**

= 0.25 for MS4 Permit areas

= 0 for non-MS4 Permit areas

A_{TE} = **Area Treated by Existing BMPs** (acres)

What type of treatment is required?



● Match pre-development hydrology

● Filtration Sedimentation

● Manufactured BMPs



How is Post-Construction BMP treatment measured?

- Measured in units of “treatment area”
- Projects that treat **more** than what is required will generate a **CREDIT**
- Projects that treat **less** than what is required will generate a **DEBIT**



What if Required Treatment Area is not met?

- **Alternative Compliance** program allows storm water treatment to be provided in an alternative watershed
- Requires an approved Variance Request
- DOT-HWYS will identify the alternative watershed and address debit in a future project
- Alternative watershed must have equal or higher priority
- For “public” construction projects only



**PC BMP Manual is a
guideline only**

POST-CONSTRUCTION BMP DESIGN CHECKLIST

STORM WATER POST-CONSTRUCTION BMP DESIGN CHECKLIST FOR MS4 PERMIT AREAS		<input type="checkbox"/> New Submittal
		<input type="checkbox"/> Resubmittal
Project Information		
Project Name: _____		
Project Number: _____	Island: _____	
Project Route Name(s): _____	Milepost Begin/End: _____	
Watershed Location(s): _____		
Disturbance Area* (acres): _____	New Impervious Area* (acres): _____	
(*Note: Areas are for the entire project and not just for the portion within HDOT right-of-way.)		
Applicant Name: _____	Company: _____	
Email: _____	Telephone: _____	

- Use the correct checklist
- DOT-HWYS project number
- Watershed location(s)
- Disturbance and Impervious Areas are for the entire project

POST-CONSTRUCTION BMP DESIGN CHECKLIST

Applicability

1. Check "Yes" if project entirely consists of one or more of the following activities or conditions below. The project may be exempt from Post-Construction BMPs if it includes these exempted activities ONLY . Otherwise, if the project includes other types of improvements not listed below, continue to Step 2.	Yes
a. Total project disturbance is less than 1 acre	<input type="checkbox"/>
b. Project does not result in discharge into the HDOT-HWYS MS4 or state waters	<input type="checkbox"/>
c. Operations and Maintenance activities	
c.1 Structural repairs	<input type="checkbox"/>
c.2 Baseyard maintenance and repairs	<input type="checkbox"/>
c.3 Installation or replacement of pavement striping and pavement markers	<input type="checkbox"/>
i. "Minor" Disturbance Project (i.e., signage, ADA ramps, etc.)	<input type="checkbox"/>
j. Emergency project	<input type="checkbox"/>
k. Temporary project	<input type="checkbox"/>
l. Federal-aid city or county project	<input type="checkbox"/>

If project **ONLY** consists of exempt activities, go to Step 7. Otherwise, continue to Step 2.

- Determine whether project is exempt from Post-Construction BMPs
- MS4 includes swales, gutters, ditches, runoff into HDOT right-of-way
- Only select an item if project **only** consists of work type shown
- If project is not exempt, continue with Step 2

POST-CONSTRUCTION BMP DESIGN CHECKLIST

If project ONLY consists of exempt activities, go to Step 7. Otherwise, continue to Step 2.

2. Is project a private construction project?

Yes; project is outside the DOT-HWYS right-of-way. Post-Construction BMPs must comply with the applicable county storm water requirements. Identify any county-required documentation below. Continue to Step 7.

Yes; project is within **or partially within** DOT-HWYS right-of-way. Post-Construction BMPs may be required if project has the potential to discharge storm water to the DOT-HWYS right-of-way. Continue to Step 3.

No; Continue to Step 3.

3. Does project result in one (1) acre or more of Disturbed Area?

Yes; LID BMPs are required. Continue to Step 6.

No; continue to Step 4.

4. Is project a Priority Project with a high potential for pollutant discharge?

Yes; Post-Construction BMPs may be required at the discretion of DOT-HWYS regardless of the amount of Disturbed Area. Continue to Step 6.

No; continue to Step 5.

5. Is project located within or drain to sensitive receiving waters?

Yes; Post-Construction BMPs may be required at the discretion of DOT-HWYS regardless of the amount of Disturbed Area. Continue to Step 6.

No; continue to Step 7.

6. Does project treat the full Required Treatment Area?

- Continue with Steps 2 through 6 for projects that include non-exempt activities
- Skip ahead where indicated



POST-CONSTRUCTION BMP DESIGN CHECKLIST

- Yes; Post-Construction BMPs may be required at the discretion of DOT-HWYS regardless of the amount of Disturbed Area. Continue to Step 6.
- No; continue to Step 7.

6. Does project treat the full Required Treatment Area?

- Yes; continue to Step 7.
- No; acceptance of water quality treatment to be determined pending DOT-HWYS review. Submit a Variance Request Form. Continue to Step 7.

7. Provide signature and date below. [Prepare and submit Compliance Tracking Spreadsheet which may be downloaded here: Post-Construction BMP Compliance Tracking Spreadsheet](#)

Signature: _____ Date: _____

For Department Use Only:

Does the project adequately address Post-Construction BMP requirements?

- Yes; the project **does not require Post-Construction BMPs**, treats the full Required Treatment Areas, or is designed to the MEP.
- No; the project is not designed to the MEP. Provide additional Post-Construction BMPs.
- No; Alternative Compliance will be required.

Reviewed By: _____ Reviewed Date: _____

- Added link to Compliance Tracking Spreadsheet
- HDOT reviewer will indicate whether project meets Post-Construction BMP requirements

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What We Do: Protect Maui's Stormwater



www.stormwatermaui.com/resources/designers-and-contractors



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DESIGNERS & CONTRACTORS



Post-Construction BMP Requirements

The State of Hawaii, Department of Transportation, Highways Division has developed a manual in 2015 that addresses post-construction BMP requirements to provide procedures and guidelines to ensure that post-construction BMPs are considered and implemented, as applicable, throughout all phases of new development, redevelopment, and private construction projects. This manual was revised in 2022 to prioritize LID BMPs, include separate post-construction BMP criteria for MS4 and non-MS4 areas, revise evaluation process for a variance from LID BMP requirements, and include an alternative compliance process for projects that cannot address the full required treatment area using post-construction BMPs.

2022 Post-Construction BMP Materials – these apply to projects initiated on or after July 1, 2022

- [2022 Storm Water Post-Construction Best Management Practices Manual](#)
- [2022 Storm Water Post-Construction BMP Design Checklist for MS4 Permit Areas](#)
- [2022 Storm Water Post-Construction BMP Design Checklist for Non-MS4 Permit Areas](#)
- [2022 Storm Water Post-Construction BMP Variance Request Form](#)
- [2022 Storm Water Post-Construction BMP Alternative Compliance Guide and Worksheet](#)

Download the presentation from our 2022 Post-Construction BMP Workshop to learn more about our post-construction BMP criteria.

- [Download 2022 Post-Construction BMP Manual Workshop Presentation](#)
- [View 2022 Post-Construction BMP Manual Workshop Presentation Video](#)
- [Download 2022 Post-Construction BMP Manual Q&A Session](#)
- [View 2022 Post-Construction BMP Manual Q&A Session Video](#)

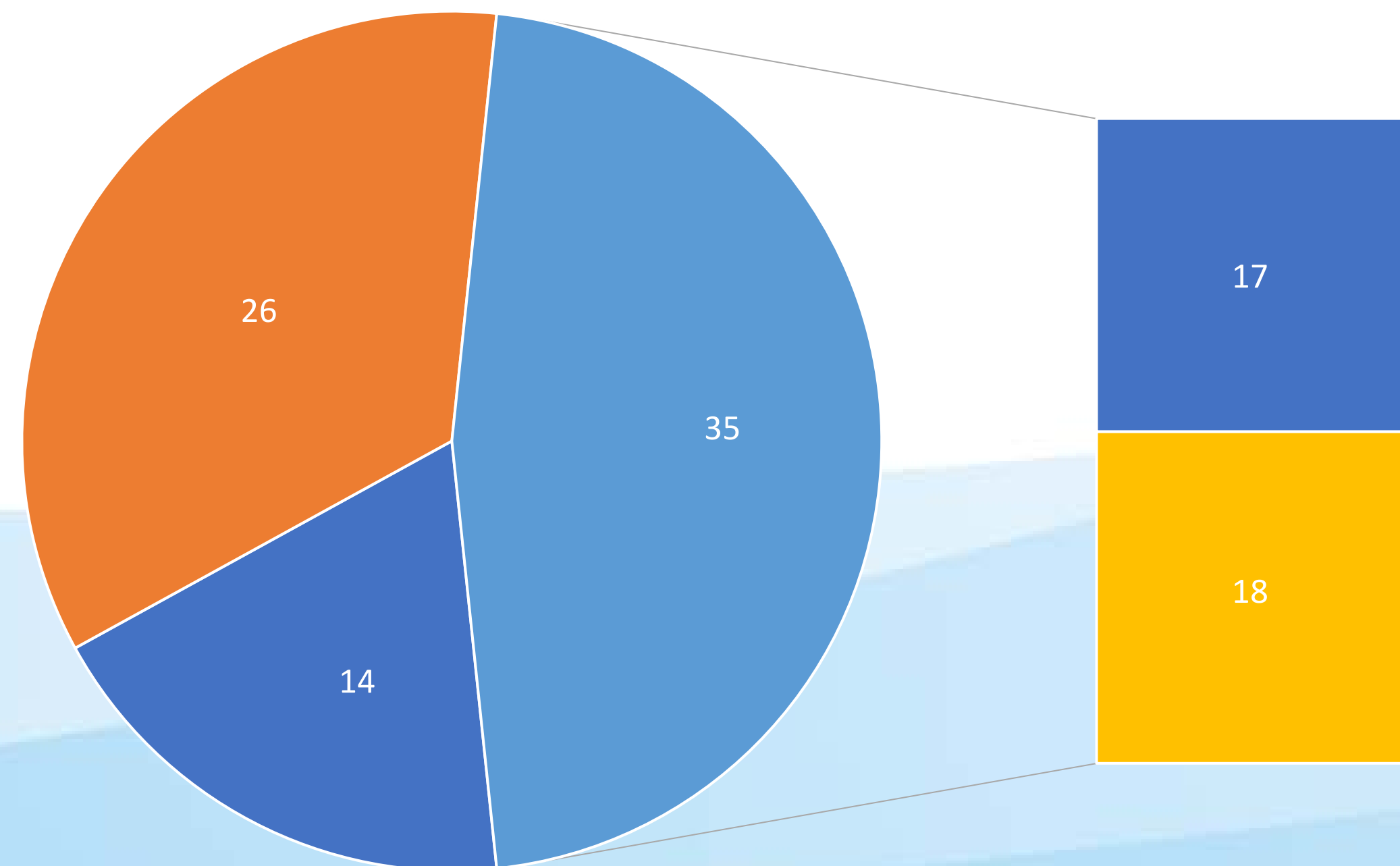
2015 Permanent BMP Materials – these apply to projects initiated prior to July 1, 2022

- [2015 Storm Water Permanent Best Management Practices Manual](#)
- [2015 Stormwater Design Checklist Tool](#)

- Post-Construction BMP Manuals (2022 & 2015)
- Post-Construction BMP Design Review Checklists (2022 & 2015)
- Variance Request Form
- Alternative Compliance Guide and Worksheet
- 2022 Post-Construction BMP Workshop and Q&A Presentation
- Videos

HDOT Highways Maui District PCBMP Manual Implementation

- HDOT Highways Maui District completed 74 plan reviews for projects initiated after the 2022 Manual became effective (July 1, 2022)
 - 30 public projects
 - 17 public permit projects
 - 44 private projects
 - 18 private permit projects



Public Private Permit - Public Permit - Private



HDOT Highways Maui District PCBMP Manual Implementation

- Of the 74 plan reviews
 - 58 projects are exempt from PCBMP requirements
 - 1 project implemented LID PCBMPs*
 - 16 currently under review
 - Of these, 2 private projects requiring PCBMPs requested a Variance – under review
- Reasons for exemptions from PCBMP requirements
 - Permit projects related to test pits, utility installation or relocation, access connections, etc.
 - Private projects did not discharge to State MS4, did not disturb more than an acre
 - Public projects were maintenance and emergency repairs



HDOT Highways Maui District Projects to Implement LID PCBMPs

- Erosion at Maui Police Department addressed by Kaahumanu Avenue Drainage System Improvements, Vicinity of Mahalani St, Project No. 32A-03-22M
- Erosion at Stable Road and Hana Highway addressed by Stable Road PCBMP, Project No. HWY-M-04-23



Erosion at Maui Police Department

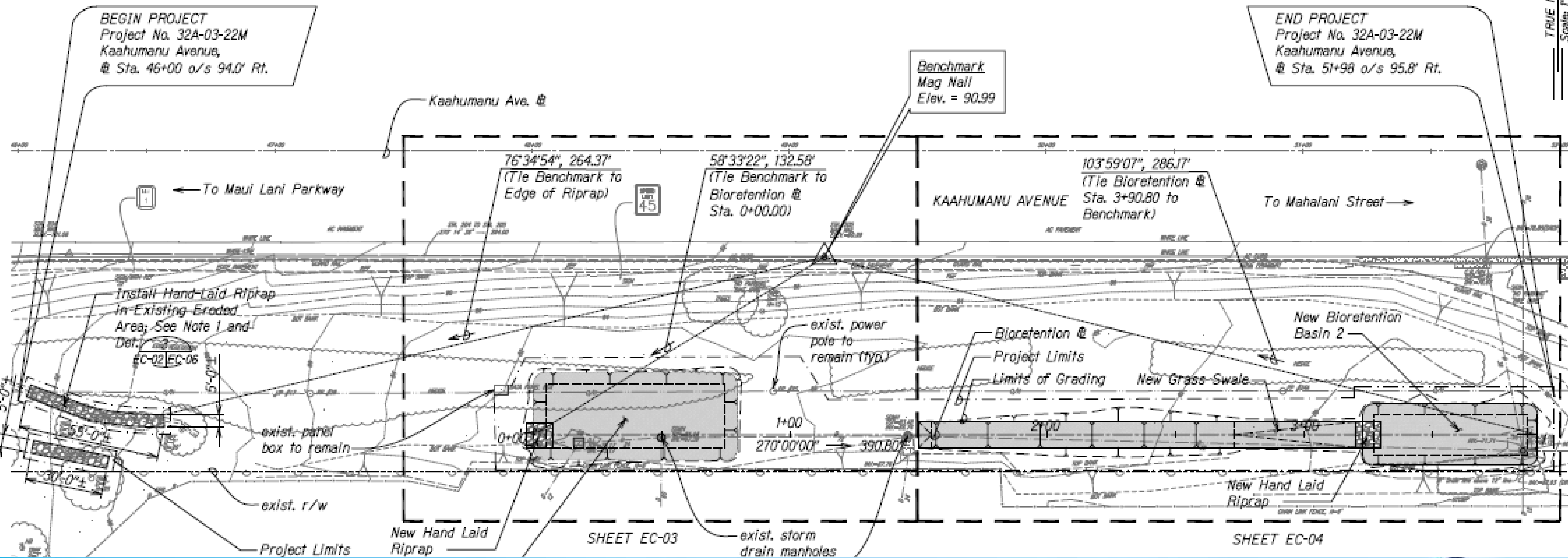


Kaahumanu Ave, Drainage System Improvements, Vicinity of Mahalani St, Project No. 32A-03-22M

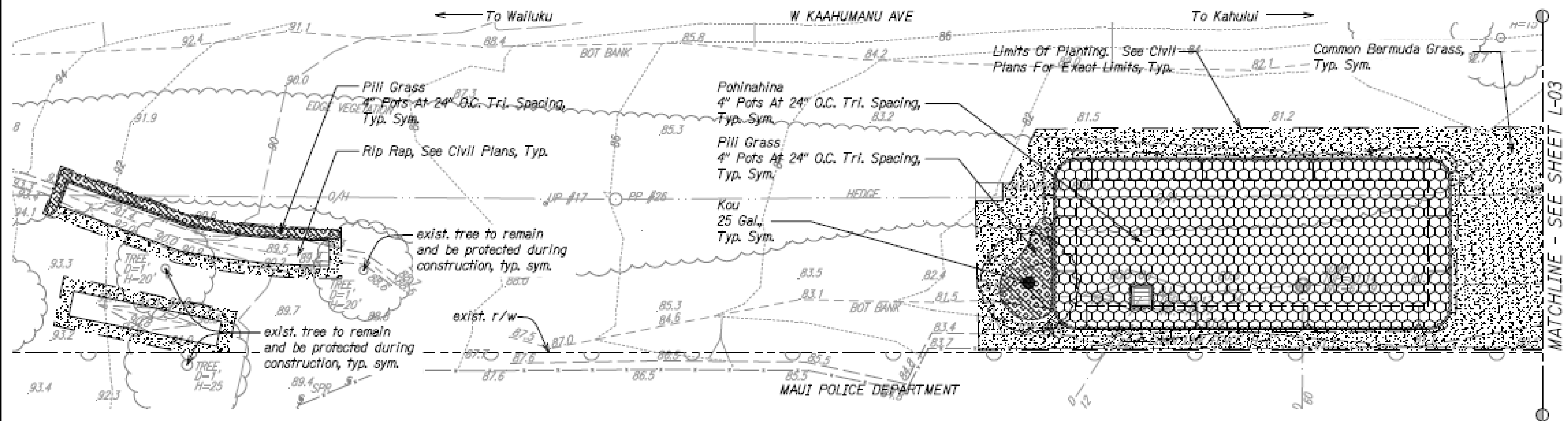
- Scope of work includes site grading, retrofit of existing drainage structures, construction of bioretention basins and grass swale, installation of temporary irrigation system, soil amendments, and landscaping



Kaahumanu Ave, Drainage System Improvements, Vicinity of Mahalani St, Project No. 32A-03-22M



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	32A-03-22M	2023	21	26



PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	HEIGHT
	<i>Cordia Subcordata</i>	True Kou	25 Gal.	1.5" - 2" Cal. Min.	6' - 8' Brown Trunk Ht.
GROUND COVERS	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
	<i>Heteropogon contortus</i>	Pili Grass	4" Pot.	24" O.C.	Tri. Spacing
	<i>Vitex rotundifolia</i>	Pohinahina	4" Pot	24" O.C.	Tri. Spacing
	<i>Cynodon dactylon</i>	Common Bermuda Grass	Seed	minimum	80 pounds per acre,

Notes:

- Existing planting to remain and be protected during construction unless otherwise noted. Contractor shall repair/replace all plant material that is damaged outside the limits of work due to construction activities.
- Provide and install 4" layer of imported topsoil over all new planting areas. Provide and incorporate compost and soil amendments recommended by the soil analysis report.
- Provide and install a temporary automatic irrigation system for all new planting areas. Contractor will be responsible for watering throughout the 3-month planting period and 9-month plant establishment period.
- Contractor will be responsible for weeding throughout the 3-month planting period and 9-month plant establishment period.
- Refer to Civil drawings for rip-rap and bioretention plans and details.



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

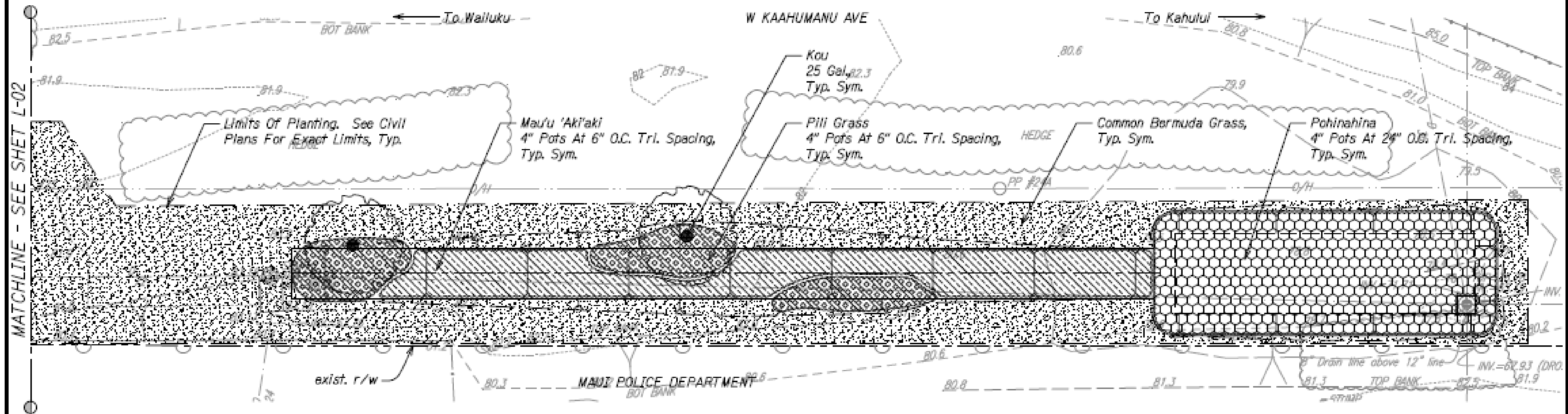
LANDSCAPE PLANTING PLAN

KAAHUMANU AVENUE, DRAINAGE SYSTEM IMPROVEMENTS,
VICINITY OF MAHALANI STREET
Project No. 32A-03-22M
Scale: 1" = 10'-0" Date: August 2023

SHEET No. LP-02 OF 6 SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	32A-03-22M	2023	22	26

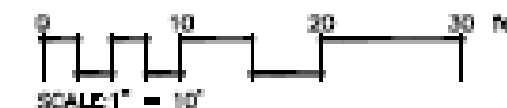
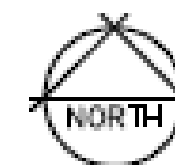


PLANT SCHEDULE

<u>TREES</u>	<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>SIZE</u>	<u>CONT.</u>	<u>HEIGHT</u>
	<i>Cordia Subcordata</i>	True Kou	25 Gal.	1.5" - 2" Cal. Min.	6' - 8' Brown Trunk Ht.
<u>GROUND COVERS</u>	<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>SIZE</u>	<u>SPACING</u>	<u>REMARKS</u>
	<i>Heteropogon contortus</i>	Pili Grass	4" Pot.	24" O.C.	Tri. Spacing
	<i>Vitex rotundifolia</i>	Pohinahina	4" Pot	24" O.C.	Tri. Spacing
	<i>Cynodon dactylon</i>	Common Bermuda Grass	Seed	minimum	80 pounds per acre,

Notes:

- Existing planting to remain and be protected during construction unless otherwise noted. Contractor shall repair/replace all plant material that is damaged outside the limits of work due to construction activities.
- Provide and install 4" layer of imported topsoil over all new planting areas. Provide and incorporate compost and soil amendments recommended by the soil analysis report.
- Provide and install a temporary automatic irrigation system for all new planting areas. Contractor will be responsible for watering throughout the 3-month planting period and 9-month plant establishment period.
- Contractor will be responsible for weeding throughout the 3-month planting period and 9-month plant establishment period.
- Refer to Civil drawings for rip-rap and bioretention plans and details.



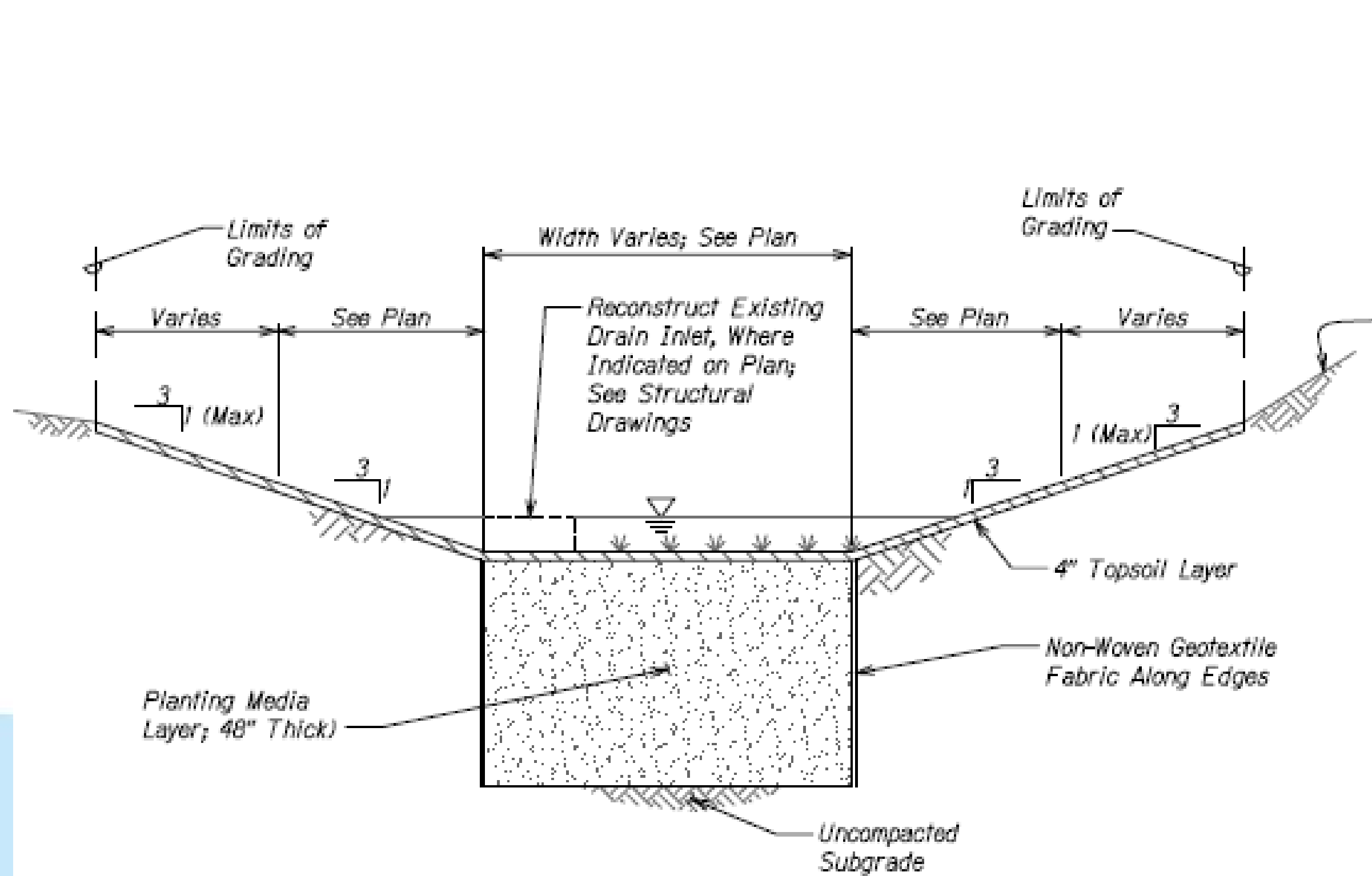
LANDSCAPE PLANTING PLAN
Scale: 1" = 20'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

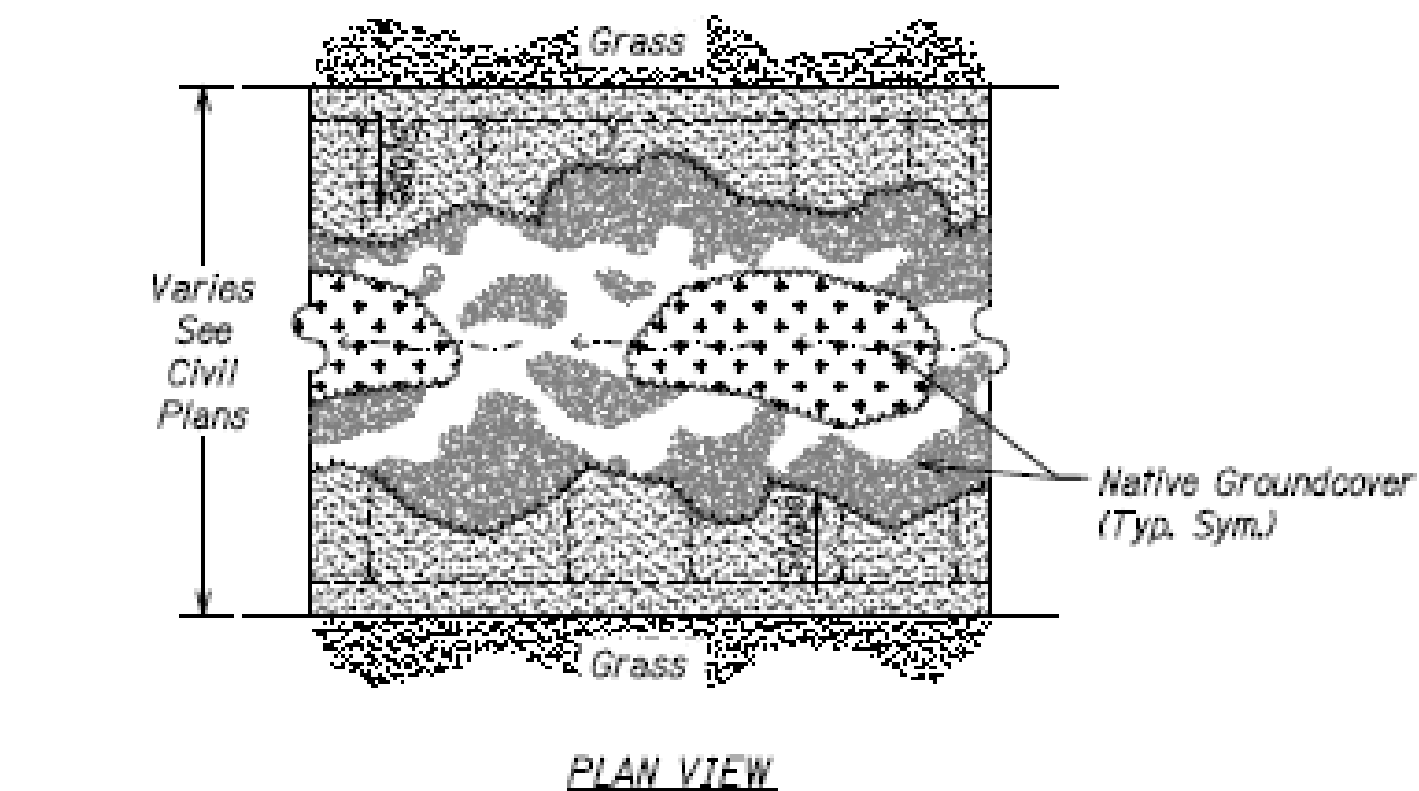
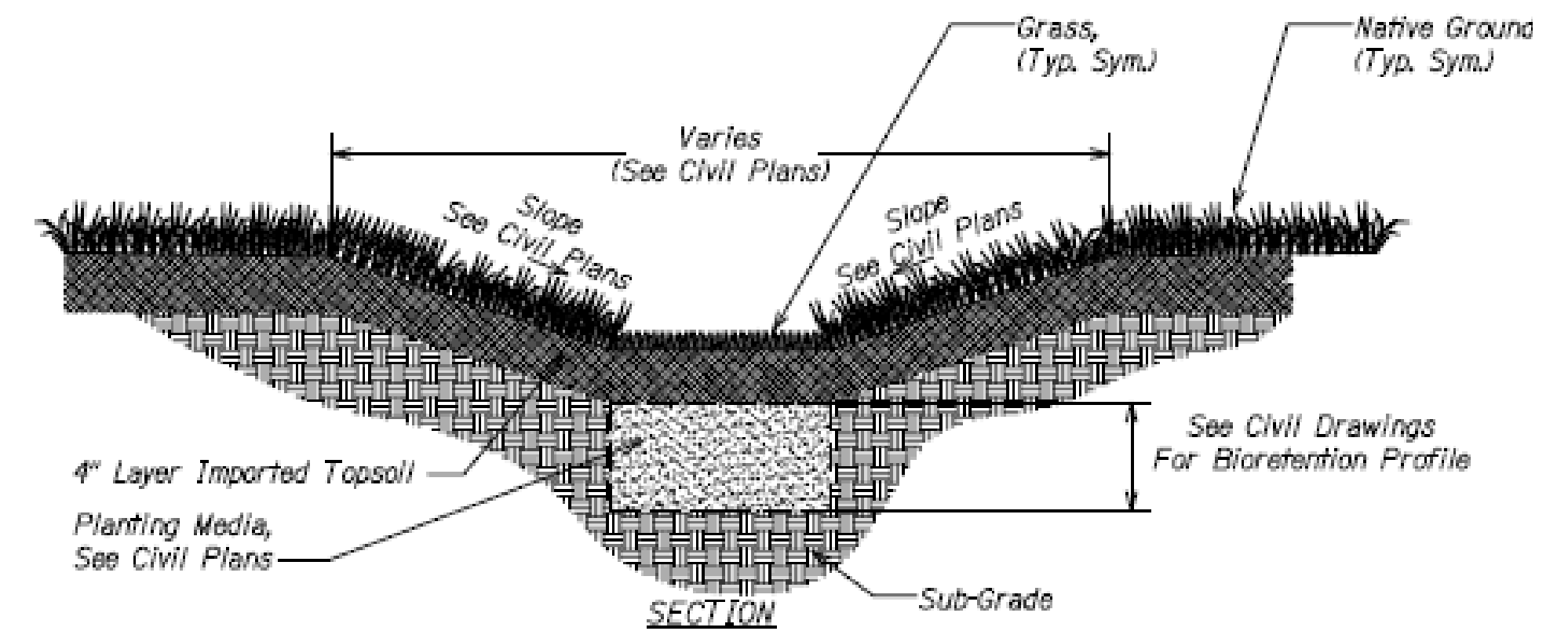
LANDSCAPE PLANTING PLAN

KAHUMANU AVENUE, DRAINAGE SYSTEM IMPROVEMENTS,
VICINITY OF MAHALANI STREET
Project No. 32A-03-22M
Scale: 1" = 10'-0" Date: August 2023

Kaahumanu Ave, Drainage System Improvements, Vicinity of Mahalani St, Project No. 32A-03-22M



BIORETENTION BASIN DETAIL 
 Scale: Not to Scale EC-03, EC-04, EC-06



TYPICAL BIORETENTION PLANTING DETAIL 
 Scale: Not to Scale L-05, L-06



Kaahumanu Ave, Drainage System Improvements, Vicinity of Mahalani St, Project No. 32A-03-22M

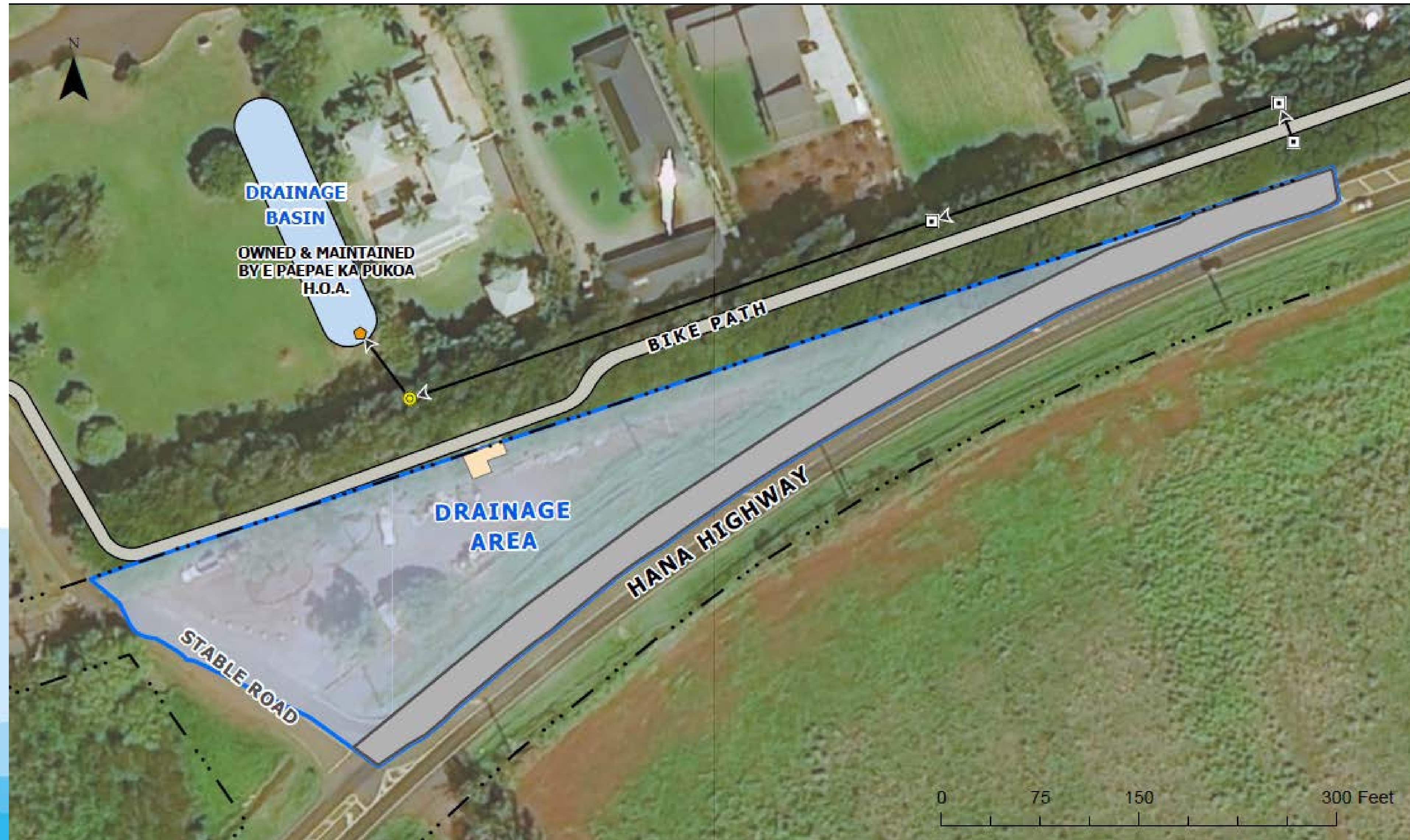
- Pre-Bid Meeting was held on November 2, 2023
- Deadline to submit RFI questions and substitution requests is at 2 pm on November 13, 2023
- Deadline to submit Bids is at 2 pm on November 27, 2023



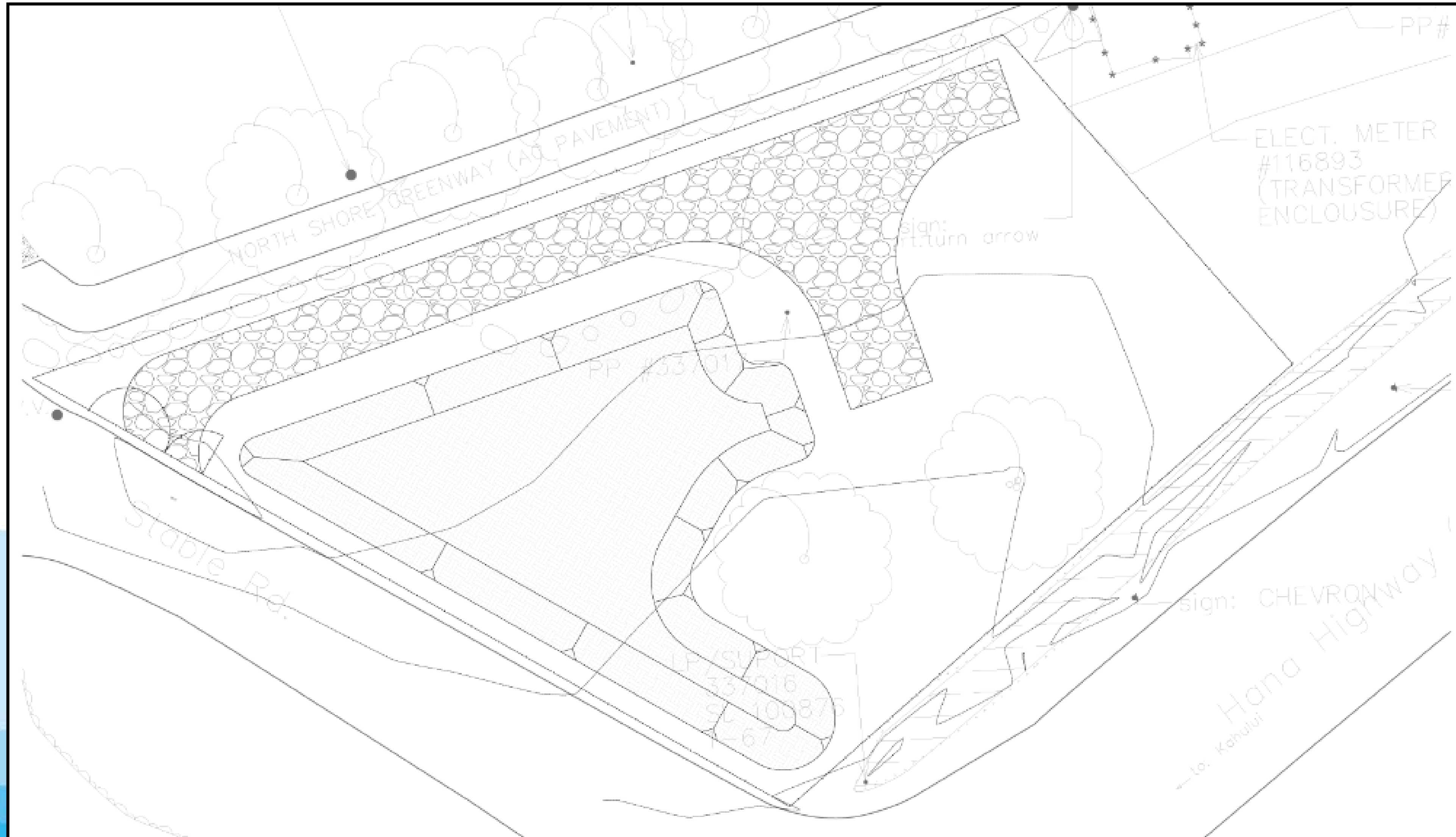
Erosion at the intersection of Stable Road and Hana Highway



Stable Road PCBMP, Project No. HWY-M-04-23



Stable Road PCBMP, Project No. HWY-M-04-23



PCBMP Compliance Tracking Spreadsheet

- Previously known as the Alternative Compliance Guide and Worksheet
- Currently being used by DOT to track project reviews and credit/deficit
- Changed name to clear any confusion related to use

HAWAII STATE DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 POST-CONSTRUCTION BMP ALTERNATIVE COMPLIANCE

Hawaii State Department of Transportation, Highways Division
 Alternative Compliance Worksheet
 (Required for Projects initiated on or after July 1, 2022)

Project Name: _____
 Project No.: _____
 Island: _____
 Date: _____

Project Watershed	NEW DEVELOPMENT			REDEVELOPMENT		TOTAL REQUIRED TREATMENT AREA (acres) (C + E) = F	NEW TREATMENT PROVIDED		CREDIT OR DEFICIT (acres) (G - F) = H
	Existing Impervious Area Removed (acres) A	New Impervious Area Added (acres) B	Required Treatment Area for New Development (acres) (B - A) = C	Redevelopment Impervious Area (acres) D	Required Treatment Area for Redevelopment (acres) (D X 0.25) = E		Primary BMP Type Used for Treatment	Impervious Area Treated (acres) G	
<i>TOTALS</i>									

Guidance for completing this worksheet for projects in Hawaii

- Provide the project name, number and location.
- In the "Project Watershed" column, list the project location. If your project is located in additional watershed(s) in the county, list the watershed(s) and treatment areas will be calculated. Determine the watershed that will be used to determine the credit/deficit. A map located here: <https://geoplatform.gov/>
- Fill in the boxes in the "New Development" column for "Existing Impervious Area Removed" and "New Impervious Area Added". Calculate the "Required Treatment Area for New Development" as the difference between "Existing Impervious Area Removed" and "New Impervious Area Added".
- Fill in the box for "Redevelopment Impervious Area" and "Required Treatment Area for Redevelopment". Calculate the "Required Treatment Area for Redevelopment" as the "Redevelopment Impervious Area" multiplied by 0.25.
- Calculate the "Total Required Treatment Area" as the sum of "Required Treatment Area for New Development" and "Required Treatment Area for Redevelopment".
- Fill in the boxes in the "New Treatment Provided" column for "Primary BMP Type Used for Treatment" and "Impervious Area Treated". If the "Impervious Area Treated" is greater than the "Total Required Treatment Area", then your project may receive credit. If not, then your project may have a deficit.

EXAMPLE

Project Watershed	NEW DEVELOPMENT			Required Treatment Area for New Development (acres) (B - A) = C
	Existing Impervious Area Removed (acres) A	New Impervious Area Added (acres) B		
Example Watershed	0.30	2.30	2.00	

Note: In the example above the project results in a deficit of 2.00 acres. The deficit must be accounted for in a separate project (alternative compliance).


PCBMP Compliance Tracking Spreadsheet

- Split into separate files one for the designer to provide calculations and the other for DOT to track all MS4 permit area projects
- Guidance tab added to both spreadsheets
- Maui watersheds included to enable designers to select the Maui watersheds and to enable DOT to track compliance for MS4 permit areas




PCBMP Compliance Tracking Sheet for Designers

- Require Designers to submit PCBMP Compliance Tracking Spreadsheet for all MS4 permit area projects including exempt projects



Storm Water Post-Construction Best Management Practices Manual



Compliance Tracking Spreadsheet for MS4 Permit Areas

Overview

This tracking spreadsheet is to be completed by the designer for all projects in MS4 Permit Areas that require review and approval by DOT-HWYS. The purpose of the spreadsheet is to determine the Required Treatment Area for a project and whether the project's proposed post-construction BMPs meet the treatment requirement.

Projects that result in water quality treatment in excess of what is required will generate a **credit**. Projects that result in water quality treatment below what is required will generate a **deficit**. Credits and deficits are tracked per watershed as part of the program's Alternative Compliance strategy.

References

*Storm Water Post-Construction Best Management Practices Manual, 2022.
Refer to the DOT-HWYS storm water website for more information.

Designer to fill out project information in this spreadsheet. If project is exempt from post-construction BMPs, indicate exemption type.

Hawaii State Department of Transportation, Highways Division
PCBMP Compliance Tracking Spreadsheet
 (Required for Projects Initiated on or after July 1, 2022)

Project : _____	FOR MS4 TRACKING PURPOSES: Required Treatment Area due to New Development (acres) = 0.00 Required Treatment Area due to Redevelopment (acres) = 0.00 Net Credit/Debit to WQ Bank (acres) = 0.00
Proj. No.: _____	
Island: _____ Project Type: _____ ("Public" or "Private")	
PCBMP Checklist Filing Date: _____	

Is project exempt from PC BMPs? If yes, indicate exemption type: _____

*Complete information below **ONLY** if project is required to implement post-construction BMPs. If project is exempt, leave columns C-J blank, and populate columns A-B and K-M as appropriate.*

Project Watershed	Project Watershed Priority	NEW DEVELOPMENT			REDEVELOPMENT		EXISTING TREATMENT		TOTAL REQUIRED TREATMENT AREA (acres)	NEW TREATMENT PROVIDED		CREDIT OR DEFICIT (acres)
		Existing Impervious Area Removed (acres)	New Impervious Area Added (acres)	Required Treatment Area for New Development (acres)	Redevelopment Area (acres)	Required Treatment Area for Redevelopment (acres)	Existing Treatment of Redev Area to Remain (acres)	Existing Treatment of Redev Area Lost (acres)		Primary BMP Type Used for Treatment	Impervious Area Treated (acres)	
Watershed Tab				ND		RD			A _T			(M-K)
									#VALUE!			
									#VALUE!			
									#VALUE!			
									#VALUE!			
									#VALUE!			
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									#VALUE!			
									#VALUE!			
									#VALUE!			
									#VALUE!			
									#VALUE!			
									#VALUE!			
									#VALUE!			
TOTAL				0.00		0.00			0.00			0.00

VARIABLE	COLUMN	
Project Watershed	A	Enter project watershed name
Project Watershed Priority	B	Rankin waters
Existing Impervious Area Removed	C	Area of existing impervious area removed
New Impervious Area Added	D	Area of new impervious area added

Fill out the yellow cells and use drop down menus. Yellow cells = user-defined cell (e.g., #VALUE!).

PCBMP Compliance Tracking Sheet for Designers

- Guidance Tab
- Design Data tab
- How to find your watershed?
- Example



Upcoming changes to the PCBMP Manual

- Storm Water Post-Construction BMP Design Checklist
- Post-Construction BMP Compliance Tracking Spreadsheet for Designers
- Flowcharts – Update the flowcharts to clarify the processes since they do not include every scenario



QUESTIONS?

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Post-Construction BMP Design FAQs

Which projects need to comply with the 2022 Post-Construction BMP Manual?

- All projects initiated after July 1, 2022



Post-Construction BMP Design FAQs

Which projects need to submit a Post-Construction BMP Design Checklist?

- All projects including exempt projects need to submit a PCBMP Design Checklist
- Designer or project proponent needs to complete and submit a PCBMP Design Checklist



Post-Construction BMP Design FAQs

Which projects need to submit a Post-Construction BMP Compliance Tracking Spreadsheet?

- All projects including exempt projects will be required to submit a Post-Construction BMP Compliance Tracking Spreadsheet
- Exempt projects can complete the Post-Construction BMP Compliance Tracking Spreadsheet as appropriate



Post-Construction BMP Design FAQs

Why are LID BMPs prioritized over other devices?

- LID BMPs are designed to match pre-development hydrology
- Reduces risk of flooding and erosion downstream
- Recharges the groundwater
- Reduces urban heat island effects via vegetation and reduced impervious surfaces
- Improves aesthetics of neighborhoods and common spaces



Post-Construction BMP Design FAQs

Who is responsible for maintaining post-construction BMPs?

- Post-construction BMPs within private property should always be maintained by the private owner
- Post-construction BMPs within HDOT right-of-way are typically maintained by HDOT
- However, post-construction BMPs installed within the HDOT right-of-way as part of a private project are maintained by the private owner



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