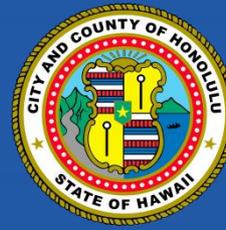


How to Develop an ESCP for Large Projects



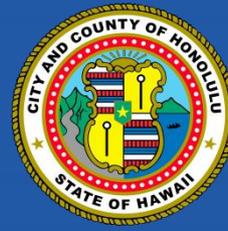


How to Develop an ESCP for Large Projects

Yvonne Turro



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS



Introduction

- Title - Not just for NPDES projects.
- Lessons learned on ESCPs.
- Revision to *Rules*.



Learning Objectives

- ❑ ESCP Categories
- ❑ Requirements for “Large” Projects
- ❑ ESCPs – Part of NPDES requirements
- ❑ Helpful hints – Using [Kahoot.it](#)



References

#1 - Rules Relating to Water Quality (Amend. Aug. 2017)





CITY AND

(b) The ESCP must contain information that is sufficient to allow the Director to evaluate the environmental characteristics and impacts of the Project on the MS4 and Receiving Waters, and include, at a minimum:

REPEAL AND §1-STANDARDS (ADOPTED)

Summary

1. Rules

2. §1-5 Standards

3. Rules Planning

4. Amend the following Definition: "Redevelopment" Require Quality Treatment "Impermeable" Equip BMPs.

5. Repeal August

§20-3-1
§20-3-2
§20-3-3
§20-3-4
§20-3-5
§20-3-6
§20-3-7
§20-3-8

§20-3-9
§20-3-1
§20-3-1
§20-3-1
§20-3-1

§20-3-1
§20-3-1
§20-3-1
§20-3-1

- (1) A location map showing the name, coordinate, and classification (e.g., Class 1, 2, Class A, Class AA waters) of Receiving Waters, as identified through the DOH State Water Quality Map, available at the DOH Clean Water Branch website;
 - (2) A vicinity map showing the location of streams, channels, and drainage Structures located within 100 feet of the Project Site;
 - (3) The location of the 100-year flood plain as shown on the FEMA Map Service Center website;
 - (4) The location of drainage Structures located within 100 feet of the Project Site;
 - (5) Topographic maps showing the existing and finished contours of the Site;
 - (6) Existing and final drainage patterns and Discharge points;
 - (7) Proposed Structures, impervious areas, existing vegetation, final landscaping conditions, and appurtenant improvements;
 - (8) Erosion Control construction notes including non-structural BMPs that cannot be shown on a Site plan;
 - (9) A BMP Site Plan, drawn to scale, which depicts the outline of buildings and Structures, provides a clear delineation of Disturbed Areas, and the approximate location of proposed BMPs;
 - (10) BMP design details and notes clearly identifying temporary BMPs, permanent BMPs, a schedule for BMP implementation, and BMP maintenance activities;
 - (11) A list or table of preconstruction, during construction, and post-construction BMPs; and
 - (12) A statement that the contractor, developer, and/or owner shall obtain written approval from the Director at each stage of Development before proceeding to the next step in Development described in the ESCP; and
 - (13) Any additional information required by the Director.
- (c) ESCPs shall include, at a minimum, BMPs to address and achieve:
- (1) Erosion Control which shall include the following BMPs:
 - (i) Project Planning and Design;
 - (ii) Project Scheduling;
 - (iii) Slope Management and Protection;
 - (iv) Temporary Stabilization;
 - (v) Permanent Stabilization;
 - (vi) Diversion BMPs to divert runoff from upstream areas around Disturbed Areas of the Site;
 - (vii) Velocity Dissipation Devices;
 - (viii) Preserve Existing Vegetation; and
 - (ix) Minimize Soil Compaction;
 - (2) Sediment Control to prevent release of sediment laden waters to the MS4 and Receiving Waters, which shall include the following BMPs:
 - (i) Storm Drain Inlet Protection;





References

#1 - Rules Relating to Water Quality

#2 - CCH Construction BMP Manual (Draft Aug. 2017)





ESCP Categories

1. Need grading permit?
2. Size of Site?
3. Disturbed Area? Height? Slope?



ESCP Categories

If No Grading, Grubbing or Stockpiling Permit

Category	Residential	Commercial
Trenching	---	---
1A	DA < 1,000 sf & s < 15%	s < 15%
1B	1,000 sf < DA < 1 ac.; DA < 1,000 sf & s > 15%	DA < 1 ac
 1C	DA > 1 ac. (NPDES)	DA > 1 ac. (NPDES)

ESCP Categories

w/Grading, Grubbing or Stockpiling Permit

Category	Residential	Commercial
2	Site < 15,000 sf	Site < 7,500 sf
 3	Site > 15,000 sf	Site > 7,500 sf
 4	Total DA > 15,000 sf or Ht > 15 ft	Total DA > 7,500 sf or Ht > 7.5 ft
 5	DA > 1 ac. (NPDES)	DA > 1 ac. (NPDES)

Who Can Prepare an ESCP?

Categories	ESCP Prepared By
1A, 1B, 2 (Small)	Owner/ ESCP Coordinator
1C, 3, 4, 5 (Large)	Professional Engineer (HI) (Not CWPPP*)

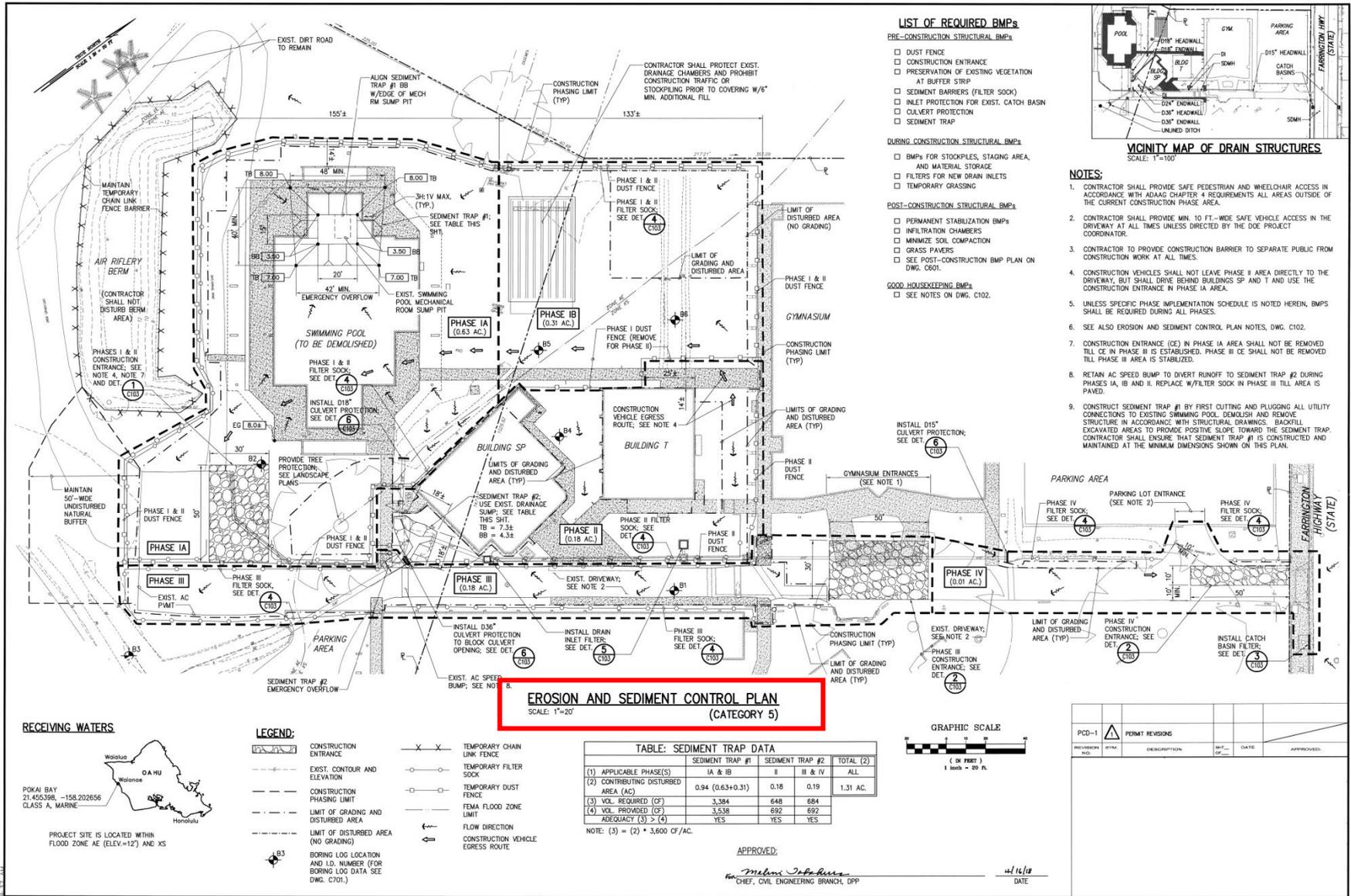
*CWPPP is required for PCBMPs; not ESCPs.

Revision Alert!! “ESCP Preparer”



Preparing an ESCP for Large Projects





LIST OF REQUIRED BMPs

PRE-CONSTRUCTION STRUCTURAL BMPs

- DUST FENCE
- CONSTRUCTION ENTRANCE
- PRESERVATION OF EXISTING VEGETATION AT BUFFER STRIP
- SEDIMENT BARRIERS (FILTER SOCK)
- INLET PROTECTION FOR EXIST. CATCH BASIN
- CULVERT PROTECTION
- SEDIMENT TRAP

DURING CONSTRUCTION STRUCTURAL BMPs

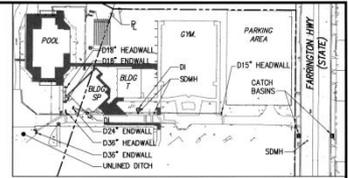
- BMPs FOR STOCKPILES, STAGING AREA, AND MATERIAL STORAGE
- FILTERS FOR NEW DRAIN INLETS
- TEMPORARY GRASSING

POST-CONSTRUCTION STRUCTURAL BMPs

- PERMANENT STABILIZATION BMPs
- INFILTRATION CHAMBERS
- MINIMIZE SOIL COMPACTION
- GRASS FRAMES
- SEE POST-CONSTRUCTION BMP PLAN ON DWG. C601.

GOOD HOUSEKEEPING BMPs

- SEE NOTES ON DWG. C102.



VICINITY MAP OF DRAIN STRUCTURES
SCALE: 1"=100'

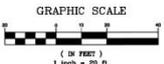
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 2. CONTRACTOR SHALL PROVIDE MIN. 10 FT.-WIDE SAFE VEHICLE ACCESS IN THE DRIVEWAY AT ALL TIMES UNLESS DIRECTED BY THE DOE PROJECT COORDINATOR.
 3. CONTRACTOR TO PROVIDE CONSTRUCTION BARRIER TO SEPARATE PUBLIC FROM CONSTRUCTION WORK AT ALL TIMES.
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 6. SEE ALSO EROSION AND SEDIMENT CONTROL PLAN NOTES, DWG. C102.
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 9. CONSTRUCT SEDIMENT TRAP #1 BY FIRST CUTTING AND PLUGGING ALL UTILITY CONNECTIONS TO EXISTING SWIMMING POOL. DEMOLISH AND REMOVE STRUCTURE IN ACCORDANCE WITH STRUCTURAL DRAWINGS. BACKFILL EXCAVATED AREAS TO PROVIDE POSITIVE SLOPE TOWARD THE SEDIMENT TRAP. CONTRACTOR SHALL ENSURE THAT SEDIMENT TRAP #1 IS CONSTRUCTED AND MAINTAINED AT THE MINIMUM DIMENSIONS SHOWN ON THIS PLAN.

EROSION AND SEDIMENT CONTROL PLAN
SCALE: 1"=20'

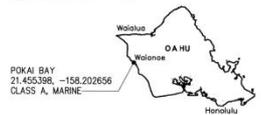
TABLE: SEDIMENT TRAP DATA

(1) APPLICABLE PHASE(S)	SEDIMENT TRAP #1		SEDIMENT TRAP #2		TOTAL (2)
	IA & IB	II	III & IV	ALL	
(2) CONTRIBUTING DISTURBED AREA (AC)	0.94 (0.63+0.31)	0.18	0.19	1.31 AC.	
(3) VOL. REQUIRED (CF)	3,384	648	684		
(4) VOL. PROVIDED (CF)	3,538	692	692		
ADEQUACY (3) > (4)	YES	YES	YES		

NOTE: (3) = (2) * 3,600 CF/AC.



RECEIVING WATERS



PROJECT SITE IS LOCATED WITHIN FLOOD ZONE AE (ELEV.=12') AND XS

LEGEND:

- CONSTRUCTION ENTRANCE
- EXIST. CONTOUR AND ELEVATION
- CONSTRUCTION PHASING LIMIT
- LIMIT OF GRADING AND DISTURBED AREA
- LIMIT OF DISTURBED AREA (NO GRADING)
- BORING LOG LOCATION AND I.D. NUMBER (FOR BORING LOG DATA SEE DWG. C701.)
- X X X TEMPORARY CHAIN LINK FENCE
- O --- TEMPORARY FILTER SOCK
- O --- TEMPORARY DUST FENCE
- F --- FEMA FLOOD ZONE LIMIT
- FLOW DIRECTION
- CONSTRUCTION VEHICLE EGRESS ROUTE

APPROVED:
Melvin S. Kure
CHEF, CIVIL ENGINEERING BRANCH, DPP

4/16/18
DATE

REVISION NO.	BY	DESCRIPTION	DATE	APPROVED
PCD-1		PERMIT REVISIONS		

L:\PROJECTS\70 - WHITESPACE\7066 - WAIANAE HS SP\DESIGN\DRAWINGS\DEVELOPMENT AND ECP\DWG 4/12/2018

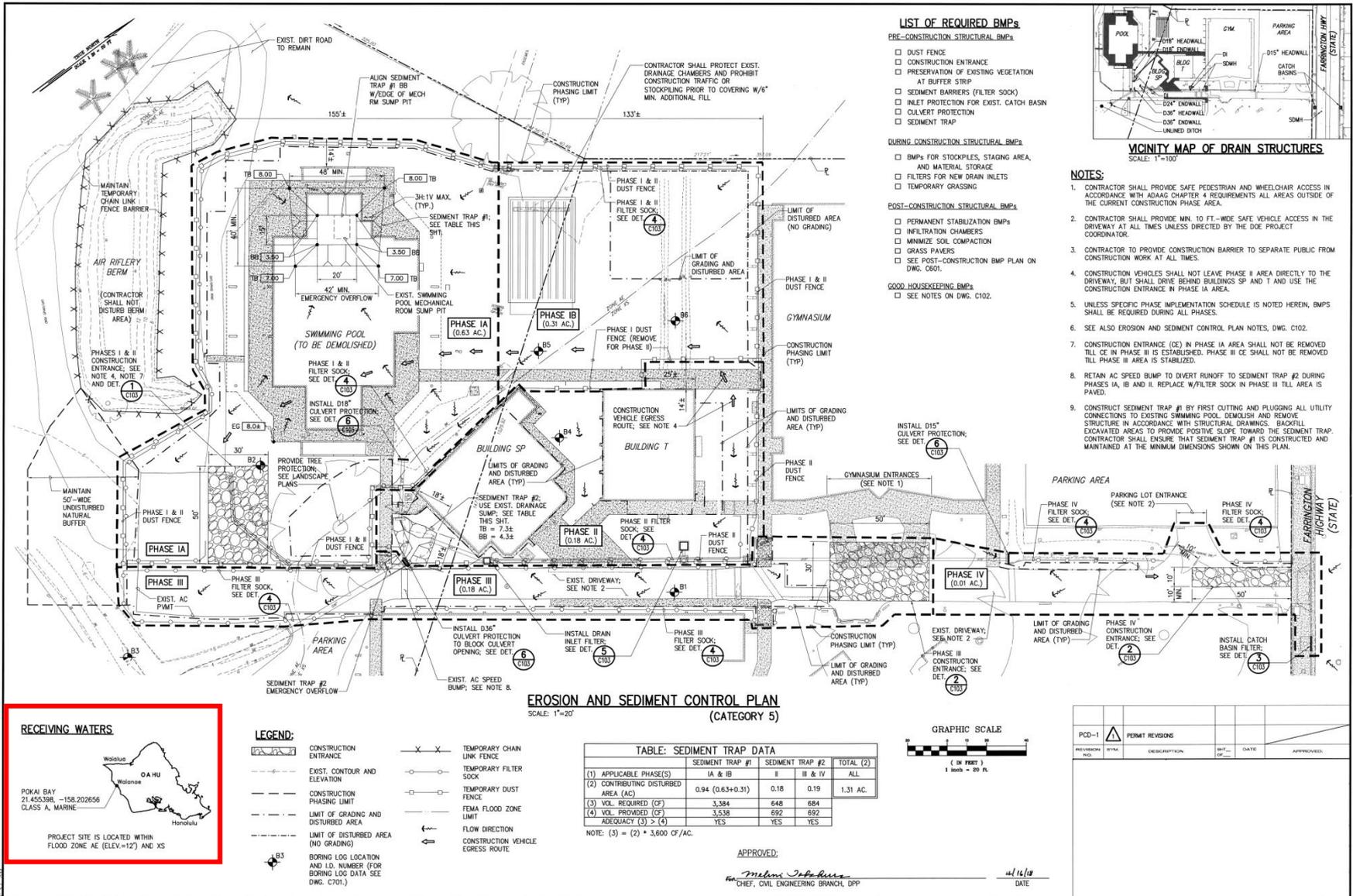
Sheet Title

EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=20'

(CATEGORY 5)

- “ESCP” only; nothing else.
- Add CATEGORY.



LIST OF REQUIRED BMPs

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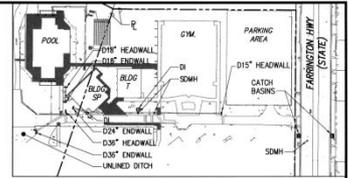
- BMPs FOR STOCKPILES, STAGING AREA, AND MATERIAL STORAGE
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- TEMPORARY GRASSING

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- MINIMIZE SOIL COMPACTION
- GRASS FRAMES
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GOOD HOUSEKEEPING BMPs

- SEE NOTES ON DWG. C102.

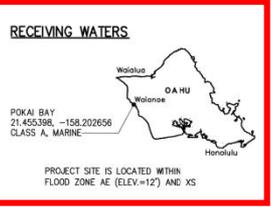


VICINITY MAP OF DRAIN STRUCTURES
SCALE: 1"=100'

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EROSION AND SEDIMENT CONTROL PLAN (CATEGORY 5)
SCALE: 1"=20'



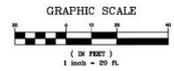
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- EXIST. CONTOUR AND ELEVATION
- CONSTRUCTION PHASING LIMIT
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- LIMIT OF DISTURBED AREA (NO GRADING)
- BORING LOG LOCATION AND I.D. NUMBER (FOR BORING LOG DATA SEE DWG. C701.)
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- FEMA FLOOD ZONE LIMIT
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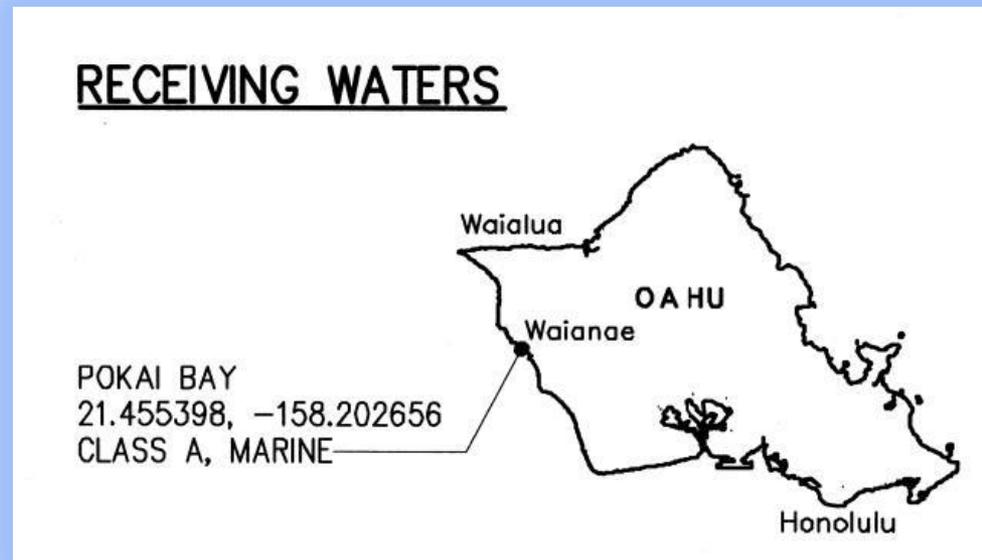
APPROVED:

Melvin S. Kura
CHIEF, CIVIL ENGINEERING BRANCH, DPP

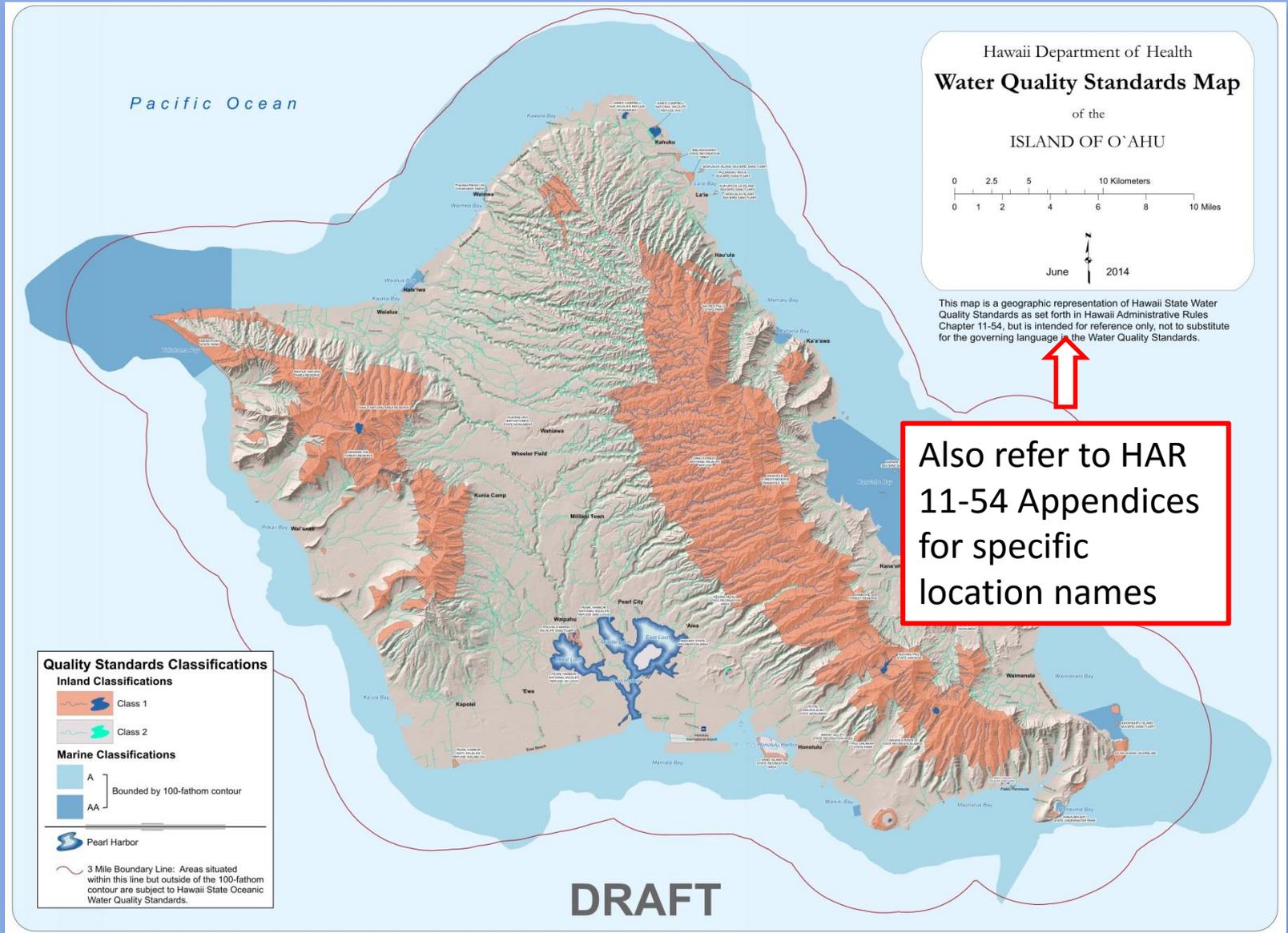
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DATE

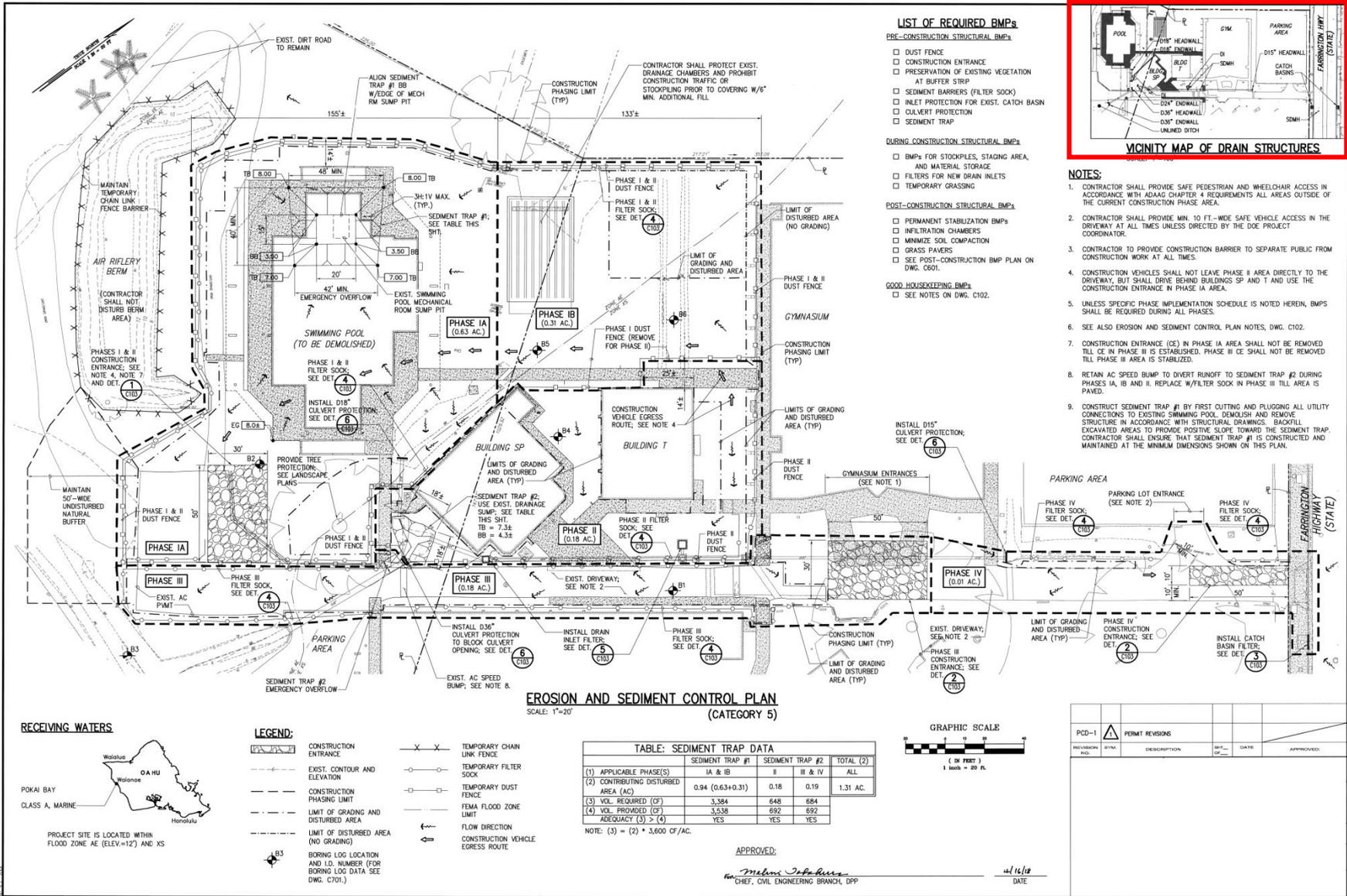
REVISION NO.	DATE	DESCRIPTION	BY	DATE	APPROVED
PCD-1		PERMIT REVISIONS			

(1) Location Map of Receiving Waters



- Name of State Water
- Coordinates
- Classification





LIST OF REQUIRED BMPs

PRE-CONSTRUCTION STRUCTURAL BMPs

- DUST FENCE
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- PRESERVATION OF EXISTING VEGETATION AT BUFFER STRIP
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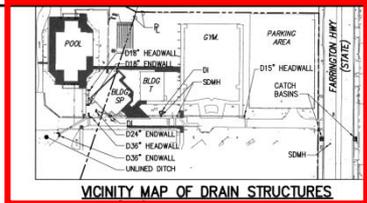
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- TEMPORARY GRASSING

POST-CONSTRUCTION STRUCTURAL BMPs

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- INFILTRATION CHAMBERS
- MINIMIZE SOIL COMPACTION
- GRASS PAVING
- SEE POST-CONSTRUCTION BMP PLAN ON DWG. C601.

GOOD HOUSEKEEPING BMPs

- SEE NOTES ON DWG. C102.



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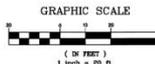
EROSION AND SEDIMENT CONTROL PLAN (CATEGORY 5)

SCALE: 1"=20'

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(4) VOL. PROVIDED (CF)	3,338	692 692	
ADEQUACY (3) > (4)	YES	YES YES	

NOTE: (3) = (2) * 3,600 CF/AC.



APPROVED:

 MICHAEL JOHNSON
 CHEF, CIVIL ENGINEERING BRANCH, DEP
 4/16/18
 DATE

RECEIVING WATERS

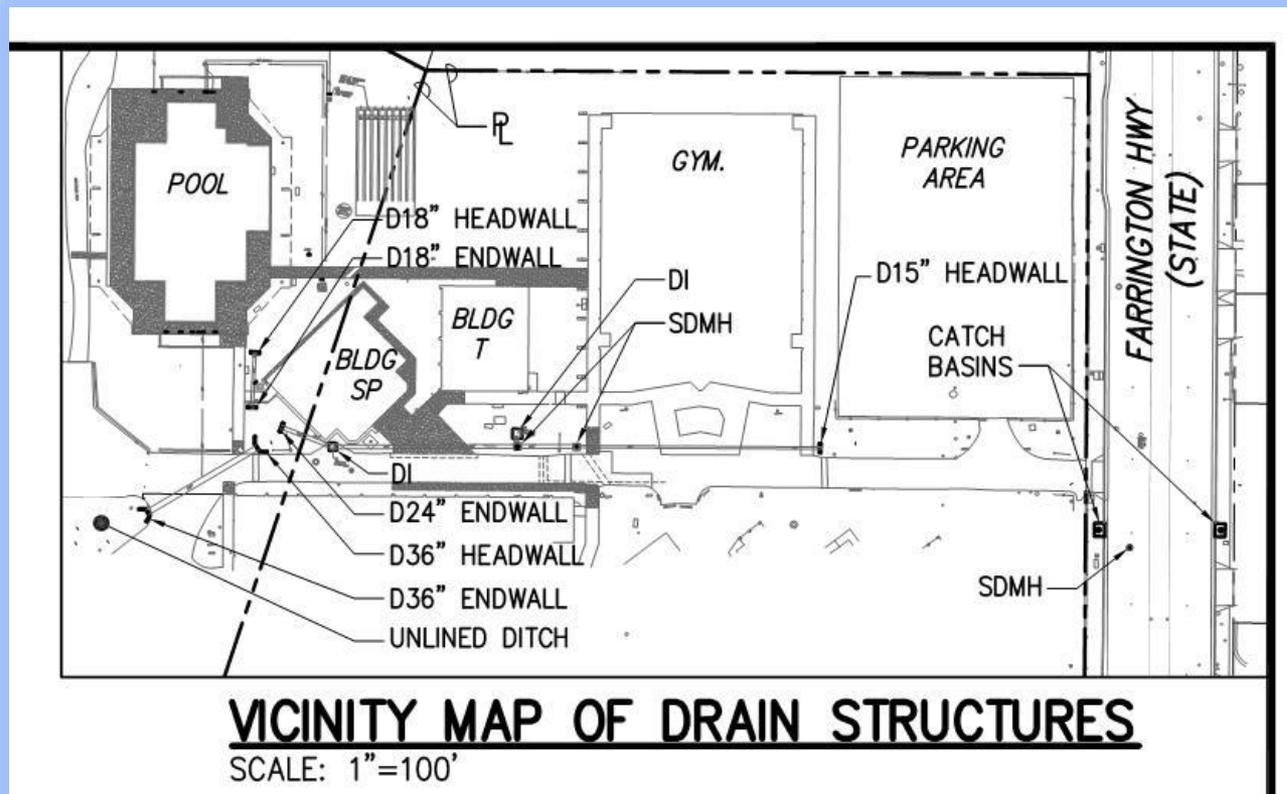


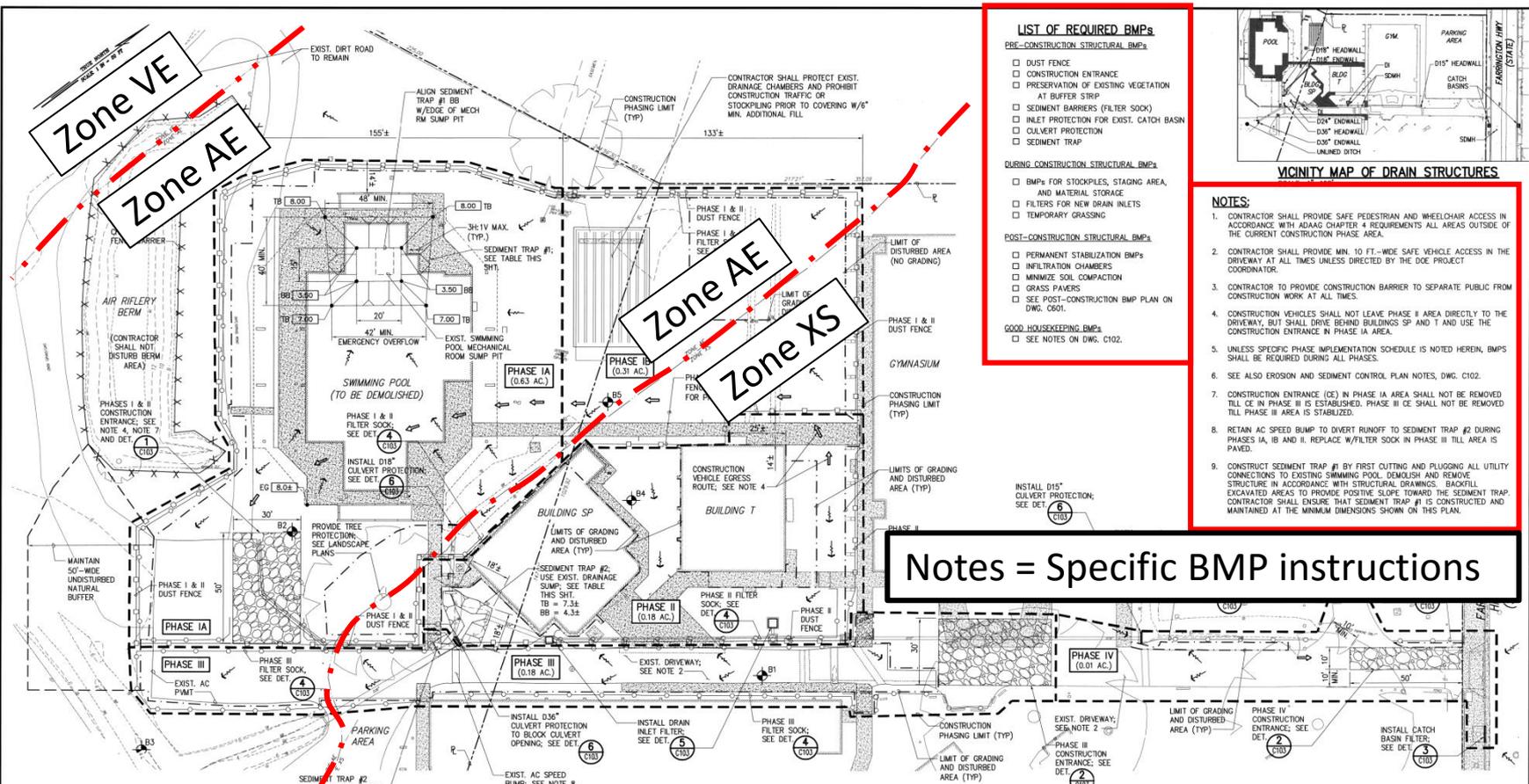
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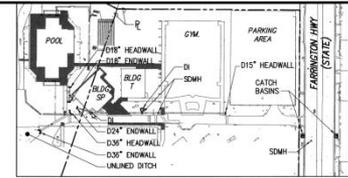
N:\PROJECTS\17056 - WAIAIAE HS SP/DESIGN\DRAWINGS\DEMOLITION AND ECP\DWG. 4/17/2018
 PROJECT(S) 17056 - WAIAIAE HS SP/DESIGN\DRAWINGS\DEMOLITION AND ECP\DWG. 4/17/2018

(2) Vicinity Map of Streams, Channels & Drains





- LIST OF REQUIRED BMPs**
- PRE-CONSTRUCTION STRUCTURAL BMPs**
- DUST FENCE
 - CONSTRUCTION ENTRANCE
 - PRESERVATION OF EXISTING VEGETATION AT BUFFER STRIP
 - SEDIMENT BARRIERS (FILTER SOCK)
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 - SEDIMENT TRAP
- DURING CONSTRUCTION STRUCTURAL BMPs**
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 - FILTERS FOR NEW DRAIN INLETS
 - TEMPORARY GRASSING
- POST-CONSTRUCTION STRUCTURAL BMPs**
- PERMANENT STABILIZATION BMPs
 - INFILTRATION CHAMBERS
 - MINIMIZE SOIL COMPACTION
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- GOOD HOUSEKEEPING BMPs**
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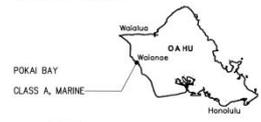


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Notes = Specific BMP instructions

EROSION AND SEDIMENT CONTROL PLAN
SCALE: 1"=20'

RECEIVING WATERS



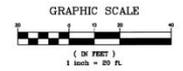
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TABLE: SEDIMENT TRAP DATA

	SEDIMENT TRAP #1	SEDIMENT TRAP #2	TOTAL (2)
(1) APPLICABLE PHASE(S)	IA & IB	II	III & IV
(2) CONTRIBUTING DISTURBED AREA (AC)	0.94 (0.63+0.31)	0.18	0.19
(3) VOL. REQUIRED (CF)	3,384	648	684
(4) VOL. PROVIDED (CF)	3,338	692	692
ADEQUACY (3) > (4)	YES	YES	YES

NOTE: (3) = (2) * 3.60 CF/AC.



APPROVED:
Melvin S. Johnson
CHEF, CIVIL ENGINEERING BRANCH, DEP
DATE: 4/16/18

PCD-1 PERMIT REVISIONS

REVISION NO.	SYMBOL	DESCRIPTION	DATE	APPROVED

N:\PROJECTS\17056 - WAIAIAE HS SP DESIGN\DRAWINGS\DEMOLITION AND ECP.DWG 4/17/2018

List of table of Required BMPs (Pre-, During and Post-Construction)

LIST OF REQUIRED BMPs

PRE-CONSTRUCTION STRUCTURAL BMPs

- DUST FENCE
- CONSTRUCTION ENTRANCE
- PRESERVATION OF EXISTING VEGETATION
AT BUFFER STRIP
- SEDIMENT BARRIERS (FILTER SOCK)
- INLET PROTECTION FOR EXIST. CATCH BASIN
- CULVERT PROTECTION
- SEDIMENT TRAP

DURING CONSTRUCTION STRUCTURAL BMPs

- BMPs FOR STOCKPILES, STAGING AREA,
AND MATERIAL STORAGE
- FILTERS FOR NEW DRAIN INLETS
- TEMPORARY GRASSING

POST-CONSTRUCTION STRUCTURAL BMPs

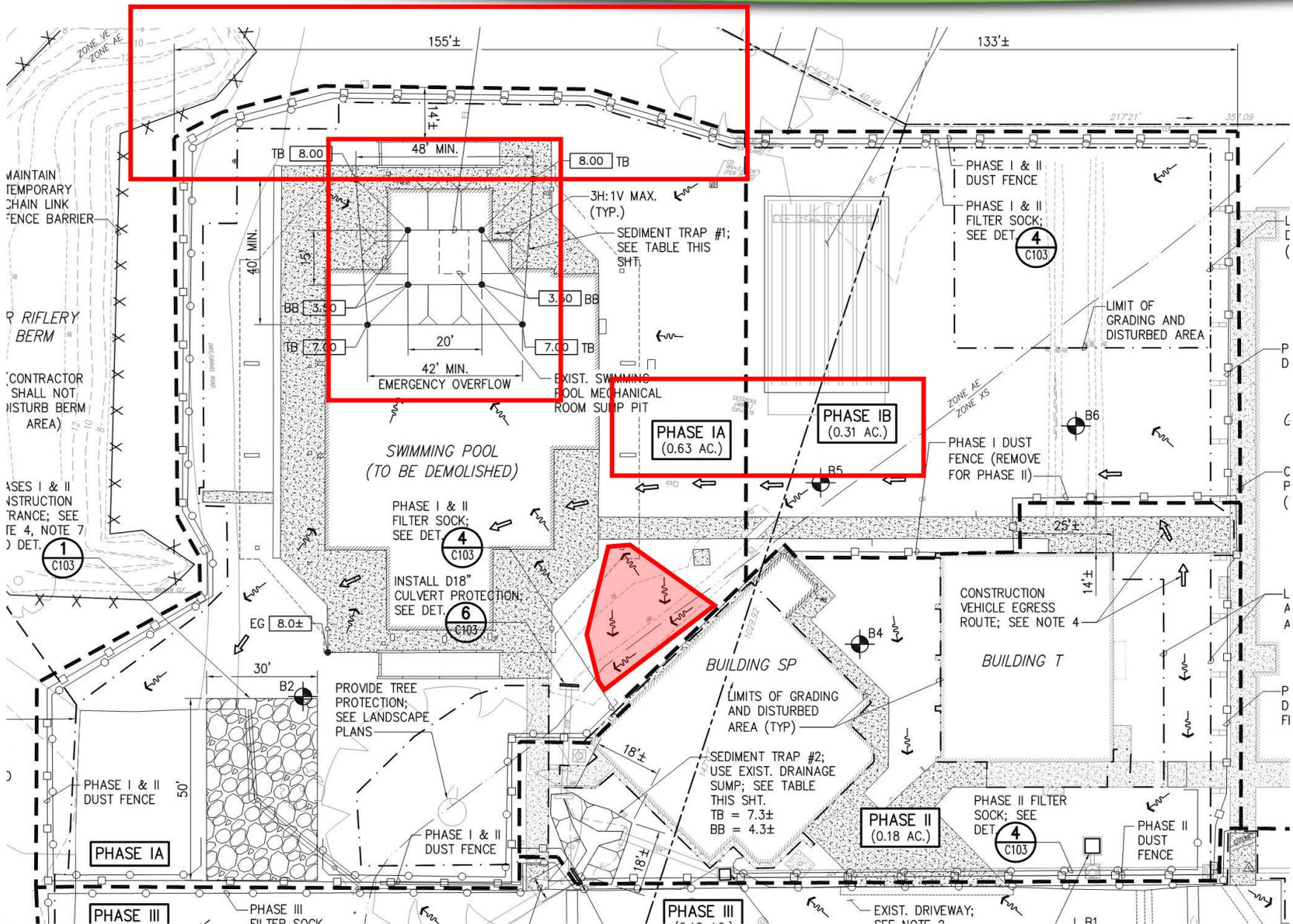
- PERMANENT STABILIZATION BMPs
- INFILTRATION CHAMBERS
- MINIMIZE SOIL COMPACTION
- GRASS PAVERS
- SEE POST-CONSTRUCTION BMP PLAN ON
DWG. C601.

GOOD HOUSEKEEPING BMPs

- SEE NOTES ON DWG. C102.



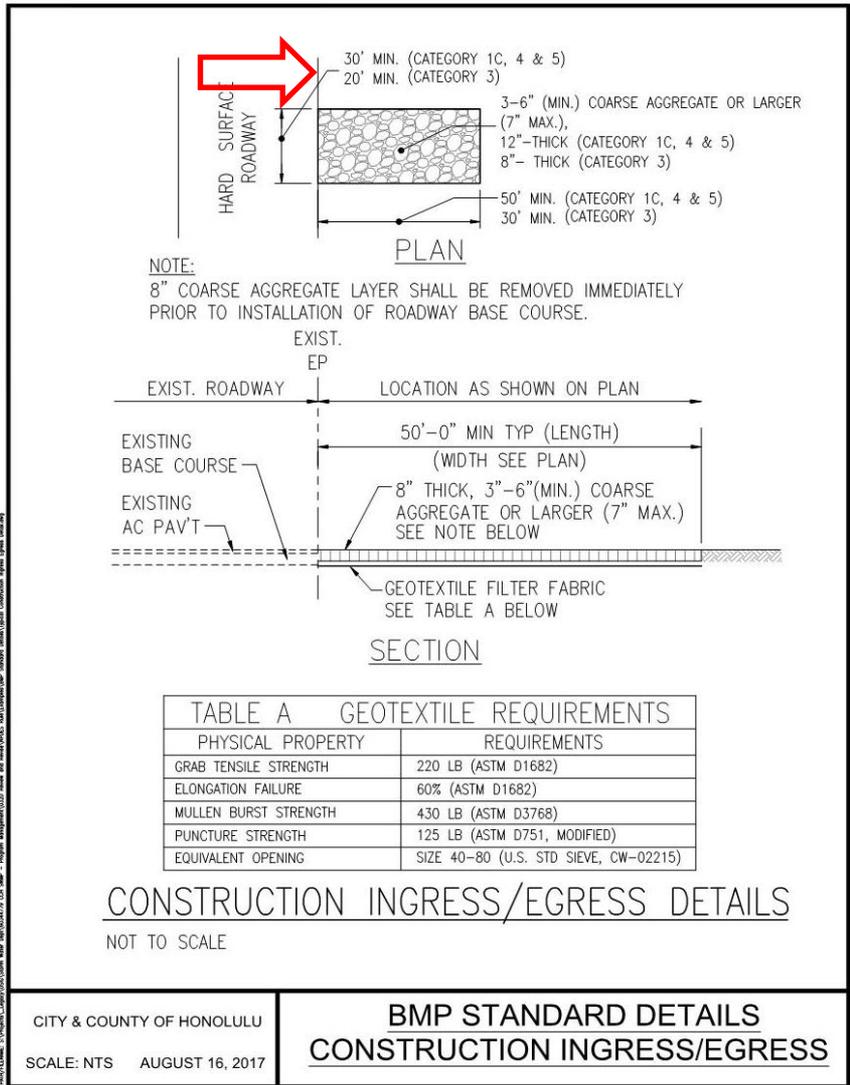
Also add reference to
Good Housekeeping
BMP Notes.



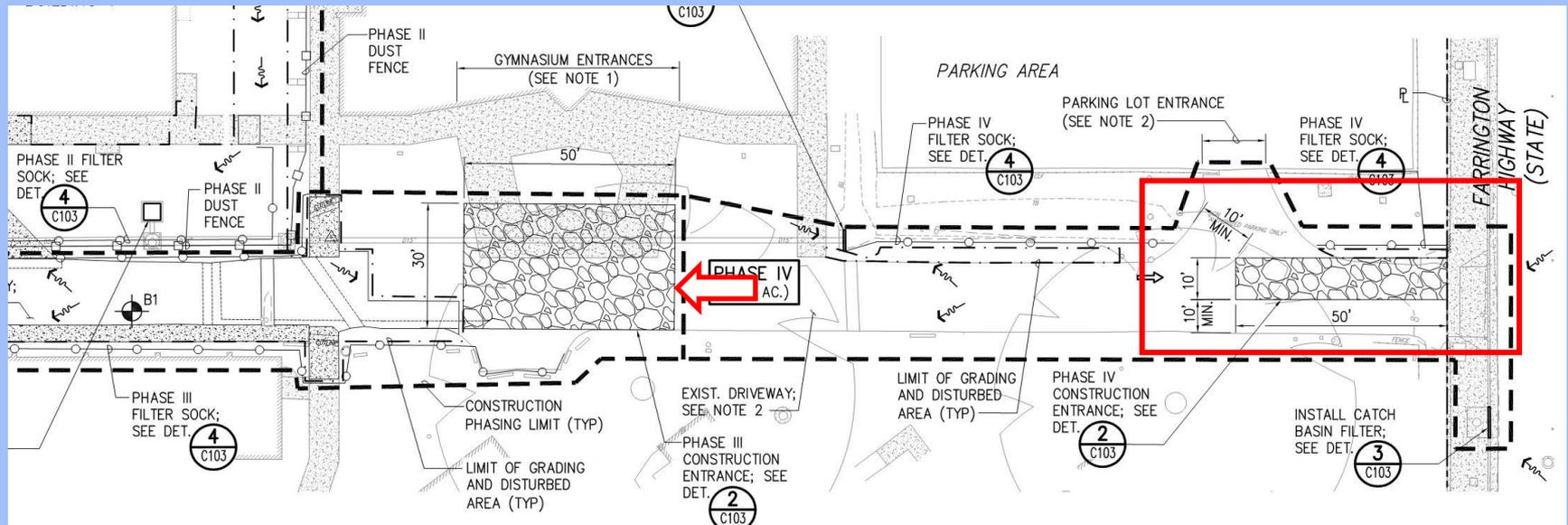
Sediment Trap Sizing Chart

TABLE: SEDIMENT TRAP DATA				
	SEDIMENT TRAP #1	SEDIMENT TRAP #2		TOTAL (2)
(1) APPLICABLE PHASE(S)	IA & IB	II	III & IV	ALL
(2) CONTRIBUTING DISTURBED AREA (AC)	0.94 (0.63+0.31)	0.18	0.19	1.31 AC.
(3) VOL. REQUIRED (CF)	3,384	648	684	
(4) VOL. PROVIDED (CF)	3,538	692	692	
ADEQUACY (3) > (4)	YES	YES	YES	

NOTE: (3) = (2) * 3,600 CF/AC.



Sample of Variance to BMP



Justification for Omitted/Variance to BMPs



March 30, 2018

Mr. Steven Young
Department of Planning and Permitting, CEB
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, HI 96813

**Re: Erosion and Sediment Control Plan Variance Request
Waianae High School – Connection of Buildings SP and T
TMKs: 8-5-002:018 and 8-5-015:001
DPP-CEB Log No. 2018/CP-009**

Dear Steven,

We request your consideration to allow the use of a 10-foot wide Construction Entrance (CE) in our Erosion and Sediment Control Plan (ESCP) in lieu of the standard 30-foot wide CE as delineated in the Rules Relating to Water Quality §20-3-44 (b) for a Category 5 Project. We believe that the narrower construction entrance is sufficient to provide positive tracking control for the following reasons:

1. The non-conforming CE is anticipated to be used during the summer months for less than 1-month.
A construction phasing plan has been incorporated into the ESCP which minimizes the amount of time a non-conforming CE is scheduled to be used. The majority of the construction work will occur during Phases IA, IB, II and III when a standard-sized CE will be maintained in the corresponding construction areas.

The non-conforming CE will only be installed during the final phase, Phase IV. The work involved in Phase IV is limited to the installation of two narrow areas (approximately 300 sf total) of grass pavers along the driveway entrance at Farrington Highway. We anticipate that Phase IV will take no longer than one (1) month to complete and is scheduled to occur in the summer of 2019.
2. Existing physical constraints and need for shared use.
The width of the existing driveway is restricted by existing physical constraints including chain link fence, gate posts, guard rails, a utility pole and guy wires as shown in the following Google Street Views image. The Department of Education (DOE) has stipulated that this driveway must remain open to other traffic during regular business hours since it is the only vehicular access to the buildings and parking area in this portion of the school campus.

Due to the driveway's surrounding physical constraints and DOE's requirement for regular vehicles to share of the use of this driveway, the width of the CE is limited to 10-feet in this area.

1622 Kanakani Street • Honolulu, Hawaii 96817
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Waianae High School– Connection of Building SP and T
March 30, 2018
Page 2



Photo: Existing Driveway Entrance as Viewed from Farrington Highway
(Google Street View, image captured June 2011)

Since the total disturbed area in Phase IV will be minimal and will be a narrow strip alongside existing paved areas, we believe the construction vehicles used during this construction phase will need minimal tracking control and that a 10-foot wide CE can sufficiently address offsite vehicle tracking.

Thank you for your consideration of this variance request. I'd be glad to meet with you should you need any further information.

Best regards,
The Limtiaco Consulting Group, Inc.

Yvonne M. Turro, P.E.
Project Manager
yvonne@lccohawaii.com

Attachment: Waianae High School Connection of Buildings SP and T - Erosion and Sediment Control Plan, Drawing C101



ESCP and NDPES

1. Site Maps = ESCP
2. Sequence of Construction Activities
3. Buffer Documentation, etc.



It's time to...



- Go to www.Kahoot.it or use their app.
- Please kokua w/data.