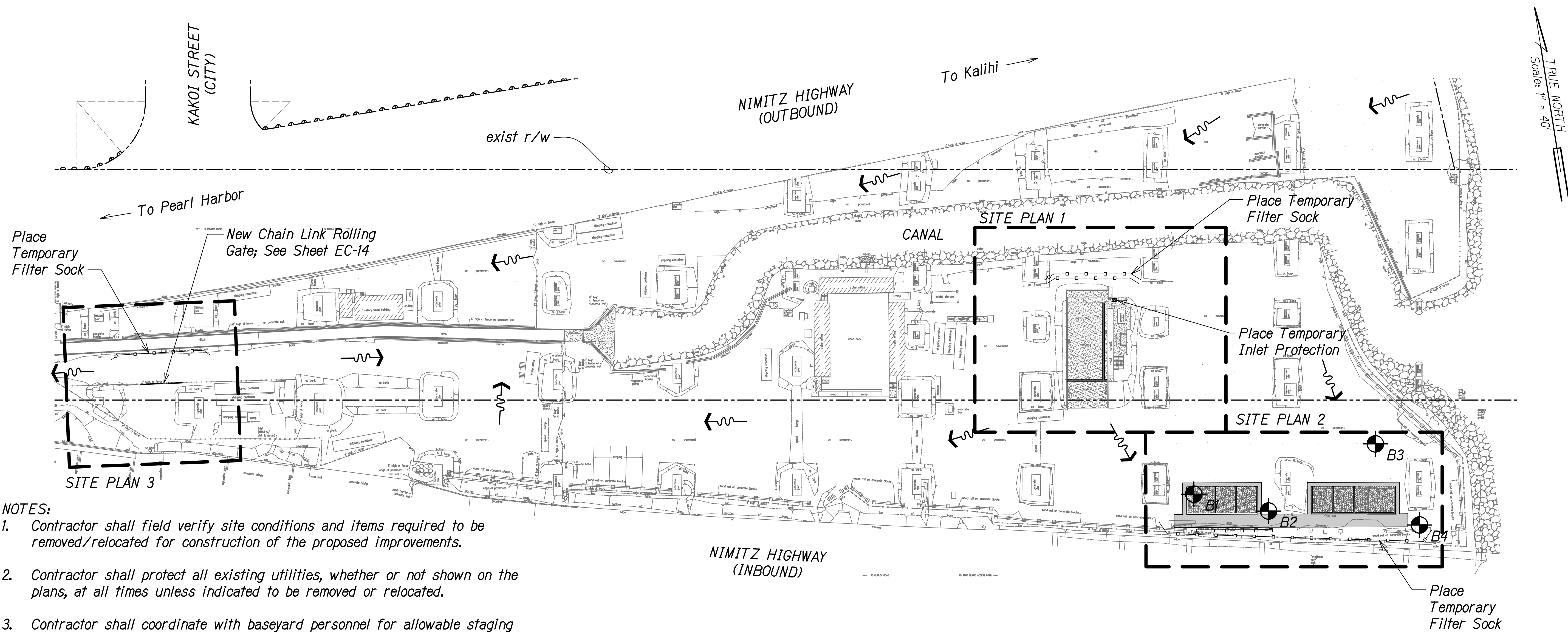


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-02-21	2022	12	25



- NOTES:**
- Contractor shall field verify site conditions and items required to be removed/relocated for construction of the proposed improvements.
  - Contractor shall protect all existing utilities, whether or not shown on the plans, at all times unless indicated to be removed or relocated.
  - Contractor shall coordinate with baseyard personnel for allowable staging area. Allowable work hours are Monday through Friday, 7:00 am to 2:30 pm, excluding holidays.
  - All demolition/excavated material shall be removed from the site no later than 60 days after demolition/excavation occurs. See General Notes for disposal requirements.
  - The Contractor shall contact the Department of Health, Office of Hazard Evaluation and Emergency Response (HEER) at (808)-586-4249 and submit "Notification of Construction Activities" e-permitting form via DOH Form Finder at least 90 days prior to surface and subsurface disturbing activities.
  - Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMP requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMP's based upon their means and methods considering site conditions, expected run off flows, and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100; Installation, Maintenance, Monitoring, and Removal of BMP.

**GENERAL SITE AND TEMPORARY EROSION CONTROL PLAN**  
Scale: 1" = 40'

**LEGEND**

- |  |                             |  |                            |
|--|-----------------------------|--|----------------------------|
|  | AC Pavement Reconstruction  |  | Direction of Flow Runoff   |
|  | Temporary Filter Sock       |  | Temporary Inlet Protection |
|  | Approximate Boring Location |  |                            |



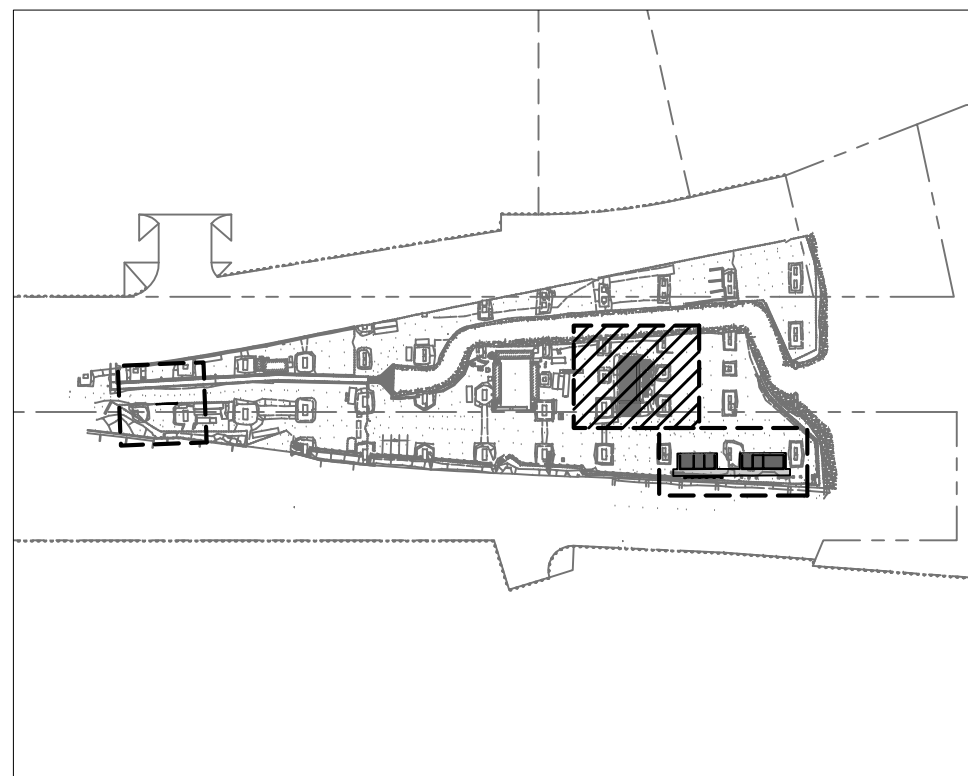
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

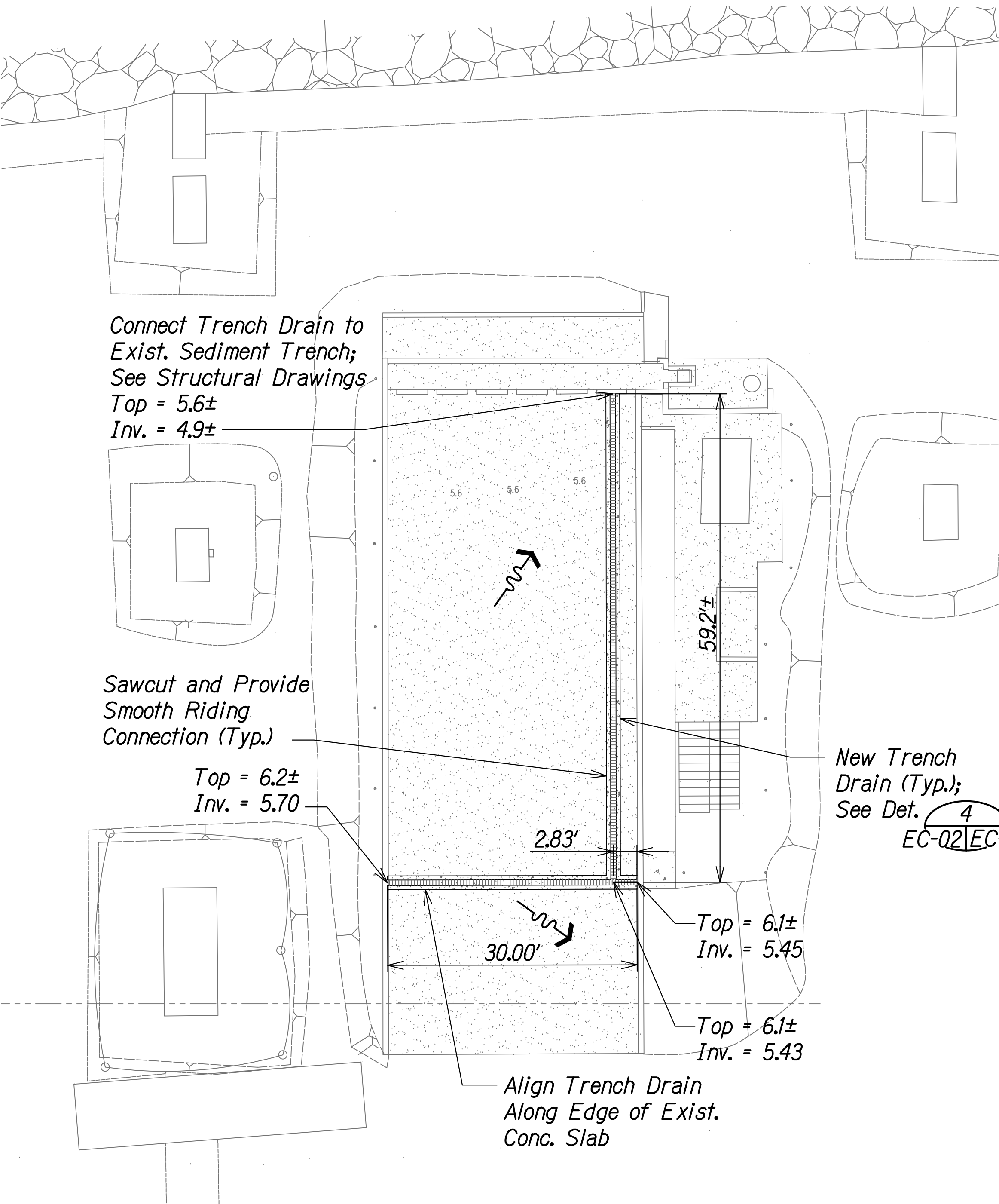
**GENERAL SITE AND TEMP EC PLAN**

EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM  
WATER PERMIT COMPLIANCE PHASE 2  
Project No. HWY-O-02-21  
Scale: 1" = 40' Date: April 2022

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-02-21	2022	13	25



KEY MAP  
Scale: NTS



SITE PLAN - 1  
Scale: 1" = 10'

LEGEND

←~ Direction of Flow Runoff

- Notes:
1. Trench drain dimensions shown are measured to center of trench drain.



GRAPHIC SCALE: 1"=10'

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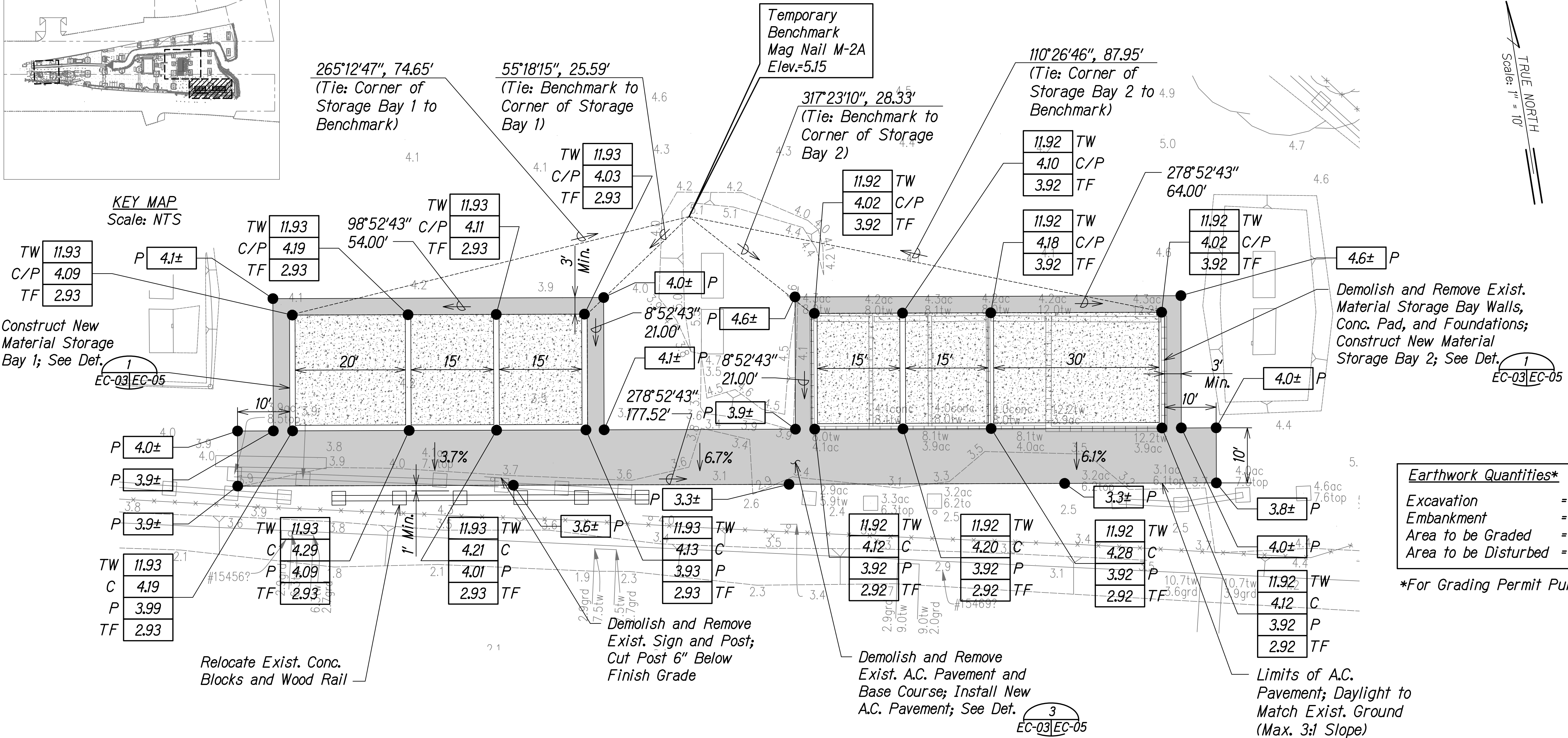
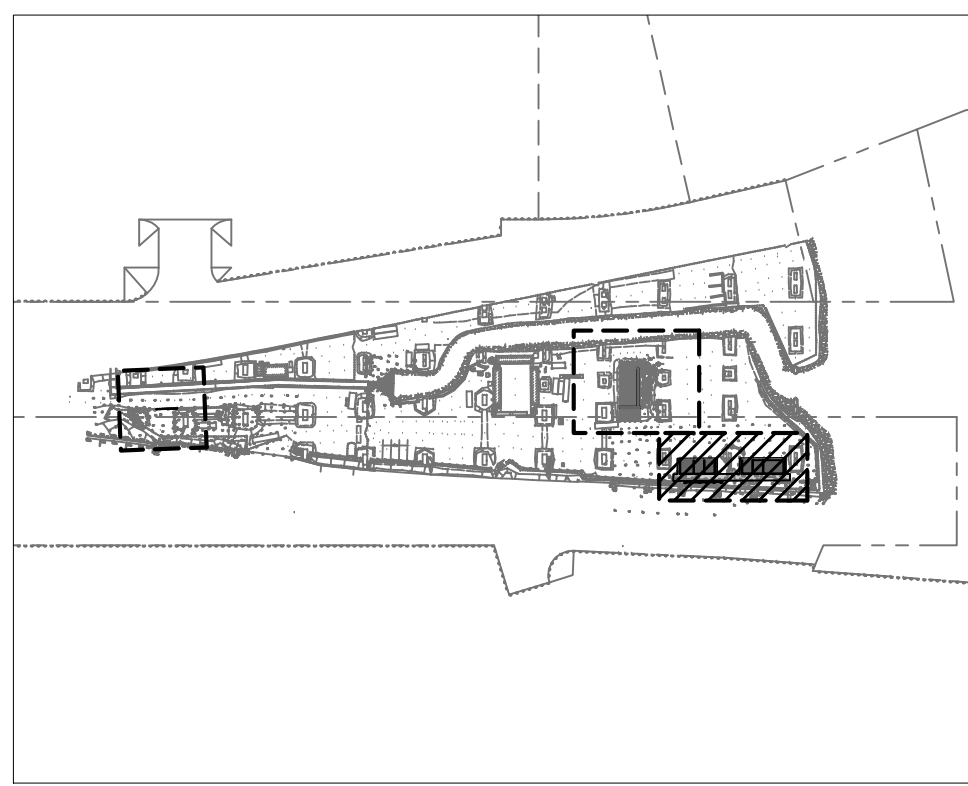
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SITE PLAN - 1**

EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM  
WATER PERMIT COMPLIANCE PHASE 2  
Project No. HWY-O-02-21  
Scale: 1" = 10' Date: April 2022



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-02-21	2022	14	25



Earthwork Quantities*	
Excavation	= 58 C.Y.
Embankment	= 63 C.Y.
Area to be Graded	= 0.07 Acres
Area to be Disturbed	= 0.57 Acres

\*For Grading Permit Purposes Only

Legend

- Direction of Flow Runoff
- Existing Contour
- Existing Chain Link Fence
- Existing Wood Rail on Concrete Box

- 6.44 TW Top of Wall Elevation
- 3.88 TF Top of Footing Elevation
- 4.8± C Top of Pad Elevation
- 4.88 P Pavement Elevation

Notes:

- Restore damaged A.C. pavement to meet or exceed existing pavement thickness.
- Existing concrete barriers shall be removed or relocated as required for construction of new storage bays.

SITE PLAN - 2  
Scale: 1" = 10'



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DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SITE PLAN - 2**

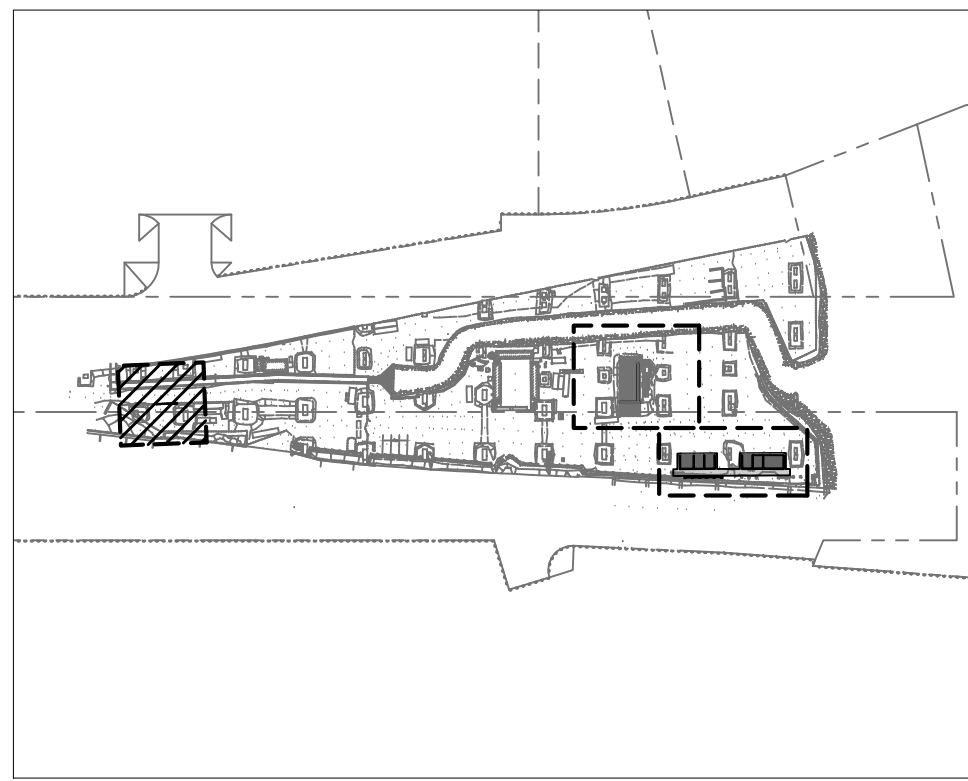
EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM  
WATER PERMIT COMPLIANCE PHASE 2  
Project No. HWY-O-02-21  
Scale: 1" = 10' Date: April 2022

SHEET No. EC-03 OF 14 SHEETS

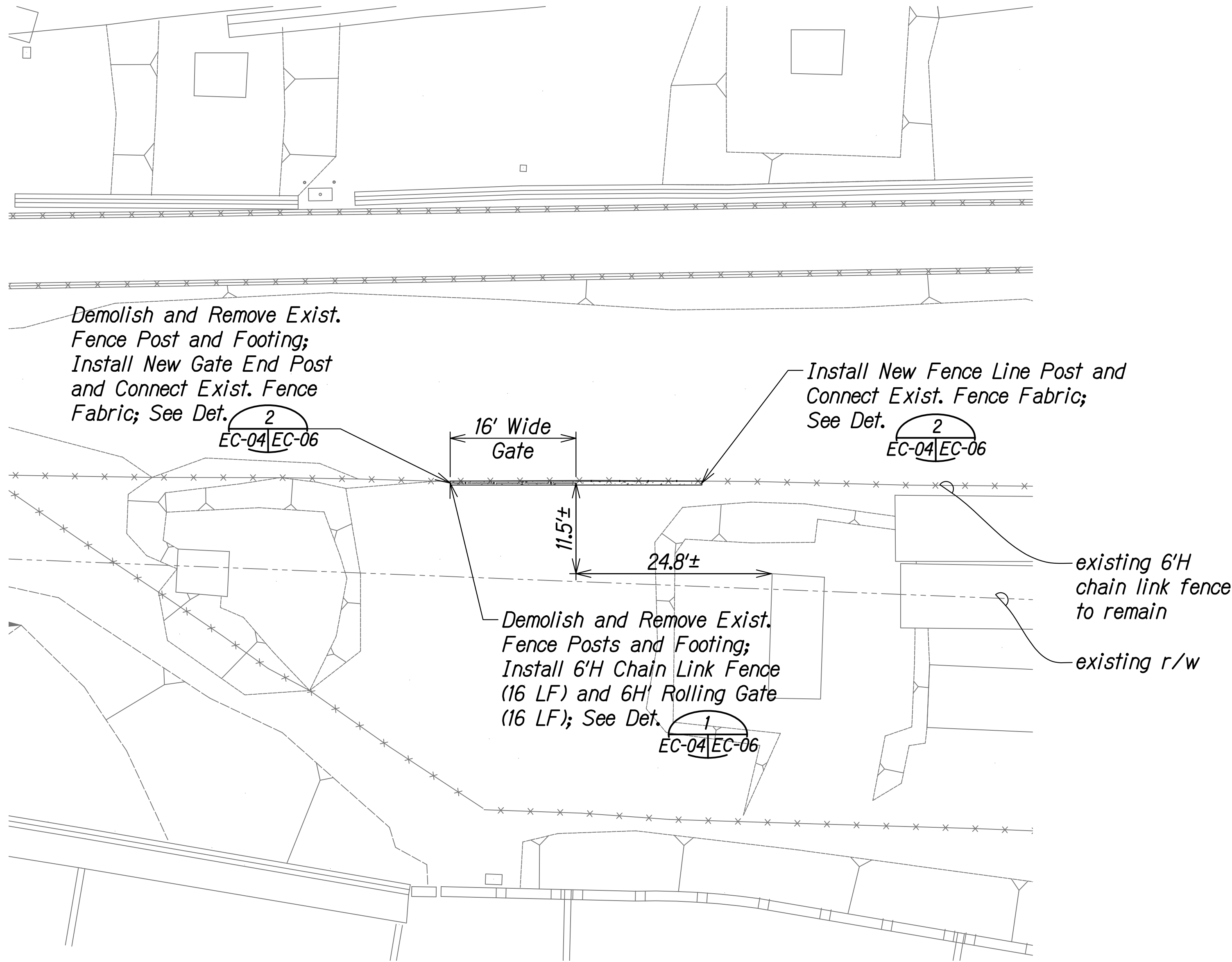
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DRAWN BY: _____	DESIGNED BY: _____
NOTE BOOK: _____	QUANTITIES BY: _____
CHECKED BY: _____	

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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-02-21	2022	15	25



KEY MAP  
Scale: NTS



TRUE NORTH  
Scale: 1" = 10'

SITE PLAN - 3  
Scale: 1" = 10'

- Notes:
- Contractor shall coordinate with Engineer and Baseyard personnel for actual location of gate.

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

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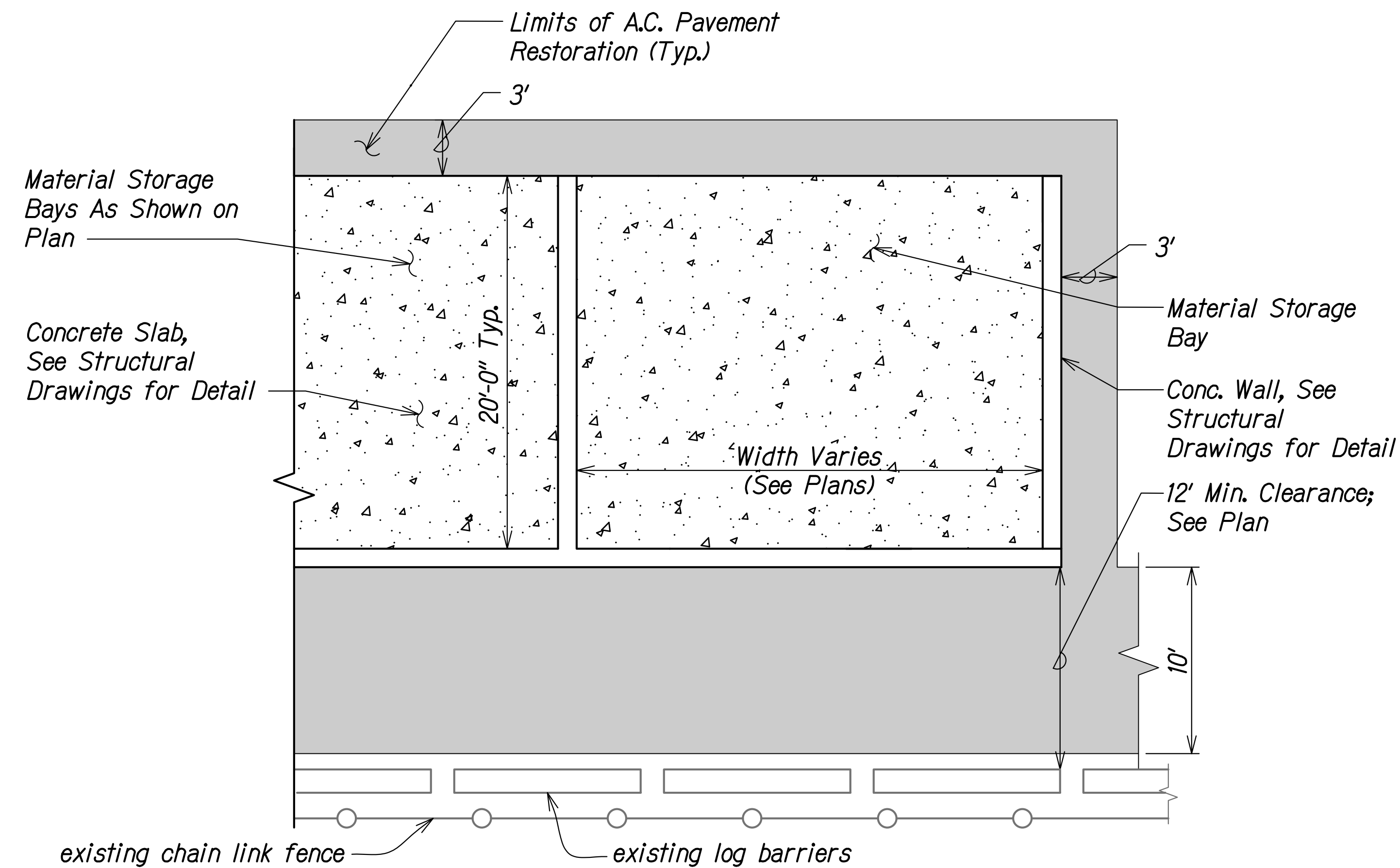
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EXP. DATE  
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

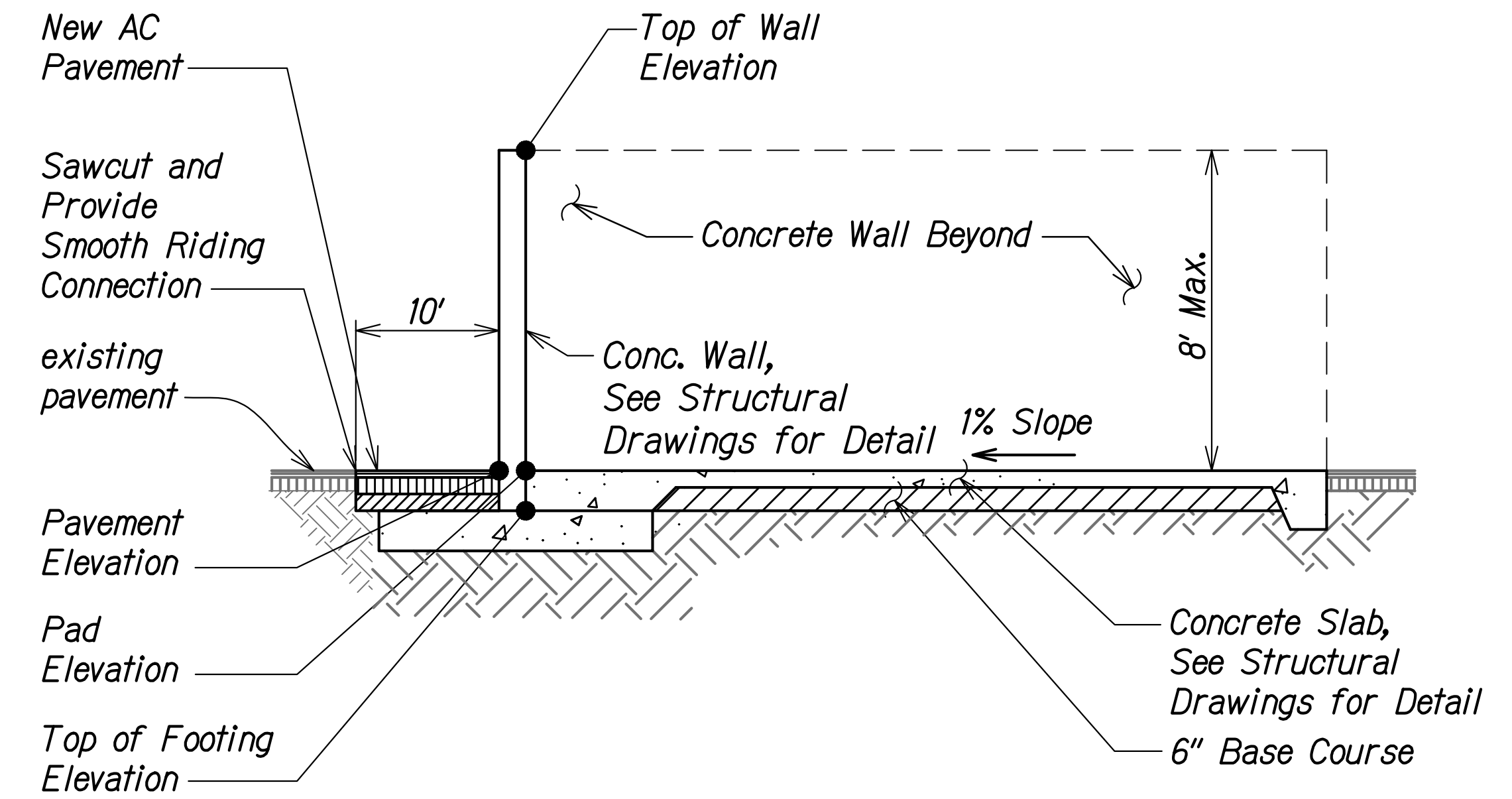
**SITE PLAN - 3**

EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM  
WATER PERMIT COMPLIANCE PHASE 2  
Project No. HWY-O-02-21  
Scale: 1" = 10' Date: April 2022

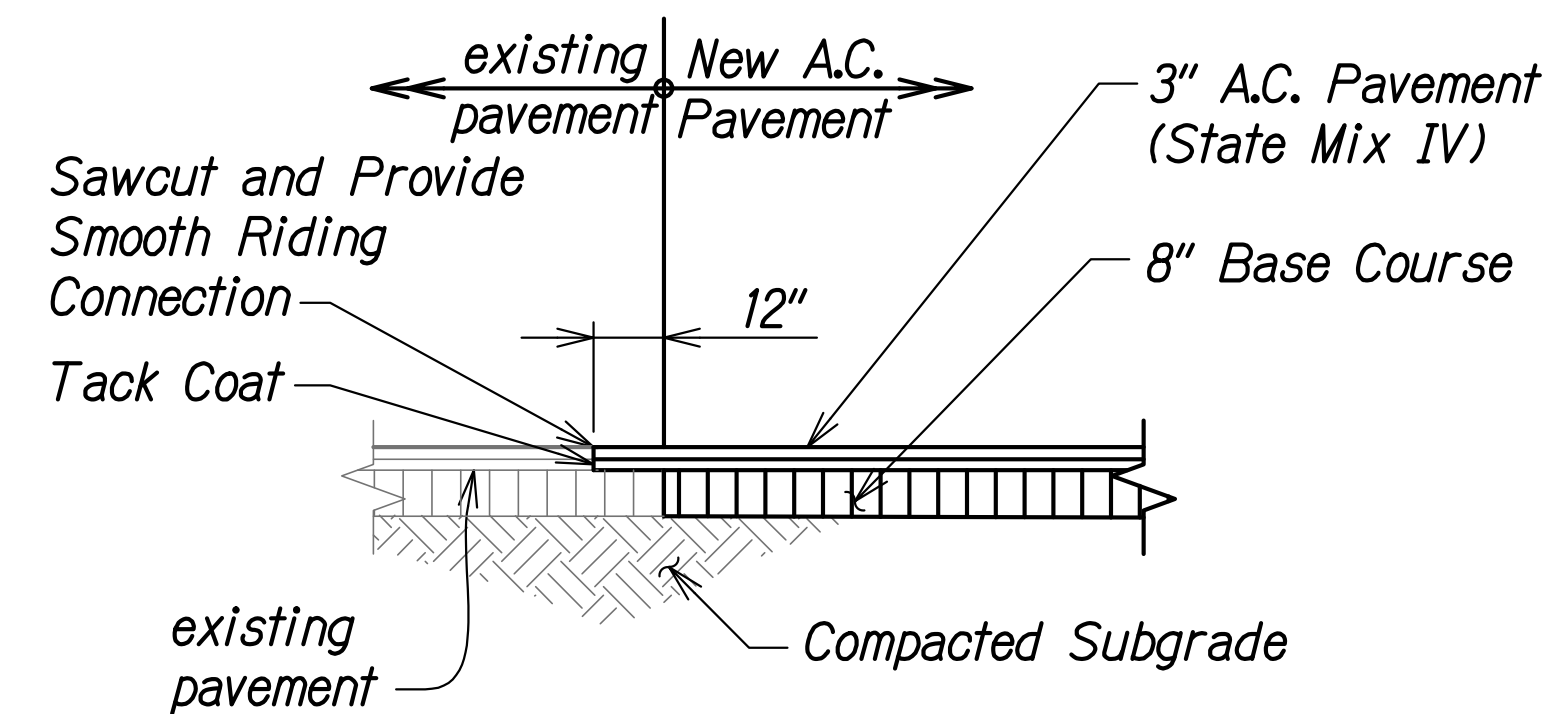
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HAWAII	HAW.	HWY-O-02-21	2022	16	25



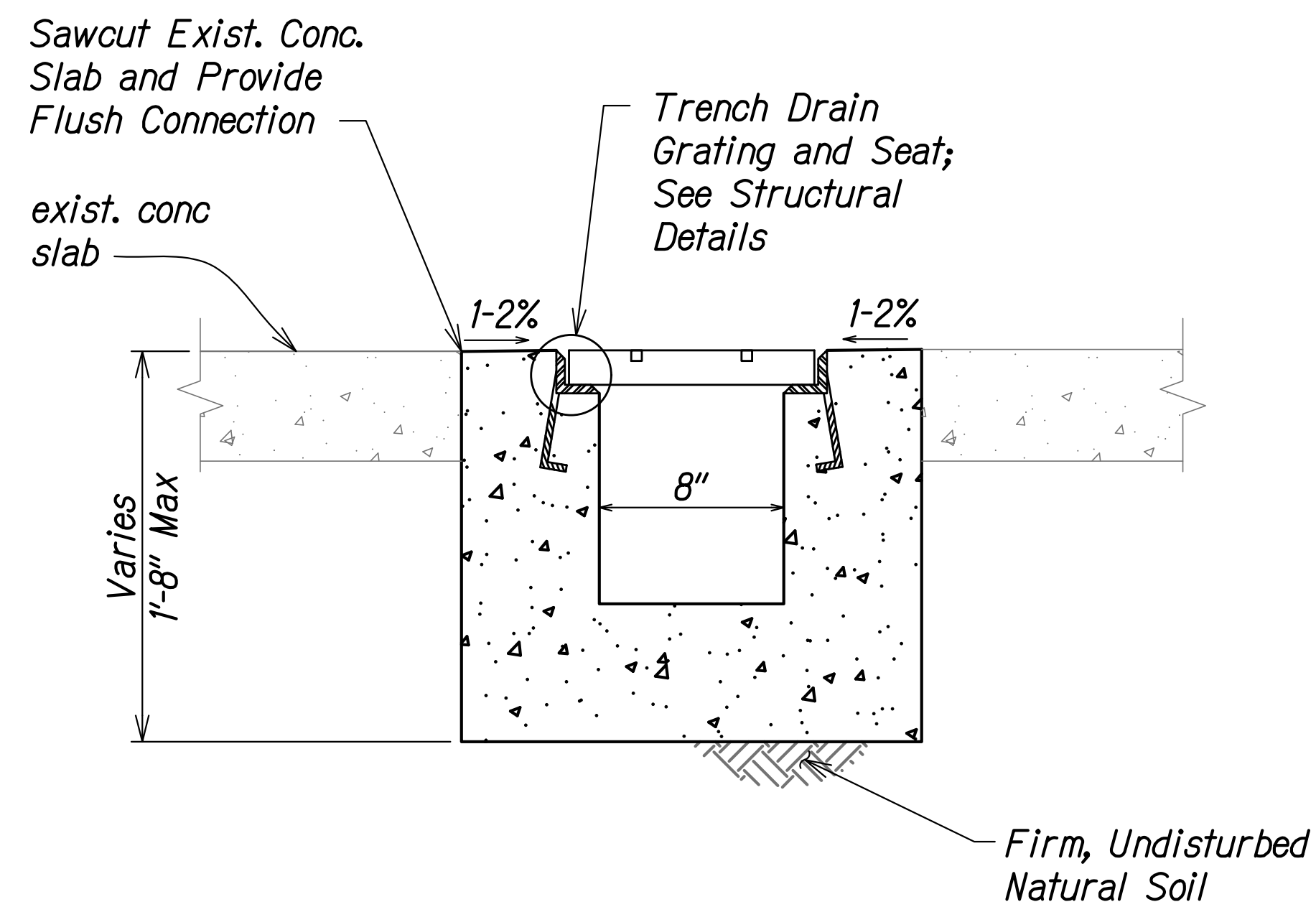
**MATERIAL STORAGE BAY DETAIL**  
Scale: Not to Scale  
1  
EC-03/EC-05



**TYPICAL STORAGE BAY SECTION**  
Scale: Not to Scale  
2  
EC-05/EC-05



**A.C. PAVEMENT RECONSTRUCTION DETAIL**  
Scale: Not to Scale  
3  
EC-03/EC-05



**TRENCH DRAIN DETAIL**  
Scale: Not to Scale  
4  
EC-02/EC-05

	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
	<b>DETAILS</b>
	EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM WATER PERMIT COMPLIANCE PHASE 2 Project No. HWY-O-02-21 Scale: Not to Scale Date: April 2022
	SHEET No. EC-05 OF 14 SHEETS





General:

- A. Workmanship and materials shall conform to the Hawaii Standard Specifications For Road & Bridge Construction (2005 Edition) & Special Provisions. However, where reference is made to performance conforming to other standards the more stringent shall apply.
- B. The Contractor shall compare all the contract documents with each other and report in writing to the Engineer all inconsistencies and omissions.
- C. The Contractor shall take field measurements and verify field conditions and shall compare such field measurements and conditions with the drawings before commencing work. Report in writing to the Engineer all inconsistencies and omissions.
- D. The Contractor shall be responsible for methods of construction, workmanship and job safety. The Contractor shall provide temporary shoring and bracing as required for stability of structural members and systems.
- E. Construction loading shall not exceed design live load unless special shoring is provided. Allowable loads shall be reduced in areas where the structure has not attained full design strength.
- F. The Contractor shall be responsible for protection of the adjacent properties, structures, streets and utilities during the construction period.
- G. Details noted as typical on the structural drawings shall apply in all conditions unless specifically shown or noted.
- H. The General Contractor and his Subcontractors must submit in writing any requests for modifications to the plans and specifications.

Foundation:

- A. Foundation design is based on Geotechnical investigation by Hirata & Associates, Inc. and memo dated March 15, 2021.
- B. Contractor shall provide for de-watering of excavation from surface water, ground water or seepage.
- C. Contractor shall provide for design and installation of all cribbing, sheeting, and shoring necessary to preserve excavations and earth banks.
- D. Footings shall bear on undisturbed in-situ firm soils or properly compacted structural fill. structural fill shall consist of select granular material. bottom of footings shall be moisture conditioned to about 2 percent above optimum moisture content, and compacted to a minimum 90 percent compaction as determined by ASTM D 1557. Any loose material should be cleaned from the re-compacted subgrade prior to placement of reinforcing steel and concrete.
- E. The slab-on-grade subgrade shall be scarified to a minimum depth of 6 inches, moisture conditioned to about 2 percent above optimum moisture content, and compacted to a minimum 90 percent compaction as determined by ASTM D 1557. the base course should be compacted in lifts to a minimum of 95 percent compaction as determined by ASTM D 1557.
- F. Site preparation - the proposed cmu material bin areas shall be cleared of all vegetation and other deleterious material. prior to placement of the aggregate base course under the bin slabs-on-grade, the exposed subgrade should be scarified to a minimum depth of 6 inches, moisture conditioned to about 2 percent above optimum moisture content, and compacted to a minimum 90 percent compaction as determined by ASTM D 1557.

Foundation: (cont'd)

- G. Any underlying soft and loose soils, indicated by pumping conditions, shall be over excavated to a depth of approximately 12 inches, and replaced with approved onsite granular fills or imported granular structural fill. in the event of soft or wet soil conditions are exposed at the bottom of the 12 inch over excavation, geotextile fabric shall be placed at the bottom of over excavation to facilitate compaction of the 12 inch granular fill layer.
- H. Onsite fill material - onsite granular fills are acceptable for reuse in compacted fills and backfills, except in the aggregate base section located below all concrete slabs-on-grade. all rock fragments larger than 3 inches in maximum dimension shall be removed from the onsite granular fills prior to reuse.
- I. Imported fill material - imported structural fill should be well-graded, non-expansive granular material. specifications for imported granular structural fill shall indicate a maximum particle size of 3 inches, and state that between 8 and 20 percent of soil by weight shall pass the #200 sieve. in addition, the plasticity index of that portion of soil passing the #40 sieve shall not be greater than 10. imported structural fill shall have a cbr expansion value no greater than 1.0 percent and a minimum cbr value of 15 percent, when tested in accordance with ASTM D 1883.
- J. Compaction - all compacted fill and backfill should be placed in horizontal lifts restricted to eight inches in loose thickness and compacted to a minimum 90 percent compaction as determined by ASTM D 1557.
- K. Contractor shall brace or protect all walls below grade from lateral loads until attaching floors are completely in place and have attained their full design strength.
- L. The Contractor shall retain and pay for the services of the Geotechnical Engineer during construction to observe and perform testing for the site preparation, placement of fill and backfill, and footing and slab subgrade excavations, compaction, and preparation.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-02-21	2022	18	25

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

KEEHU BASEPAD CONSTRUCTION - 1/6/2022 84430.Plt

ERIC S. TOMISHIMA


LICENSED PROFESSIONAL ENGINEER

No. 16572-S

HAWAII U.S.A.

4/30/24

EXP. DATE



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STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

STRUCTURAL NOTES - 1

EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM WATER PERMIT COMPLIANCE, VARIOUS LOCATIONS ON OAHU; Phase 2

Project No. HWY-O-02-21

Scale: As Shown

Date: April 2022




Concrete:

- Concrete (Cont'd):

- Reinforcing Steel (Cont'd):

- Epoxied Anchor Installations:

- Inspection of Work and Materials:

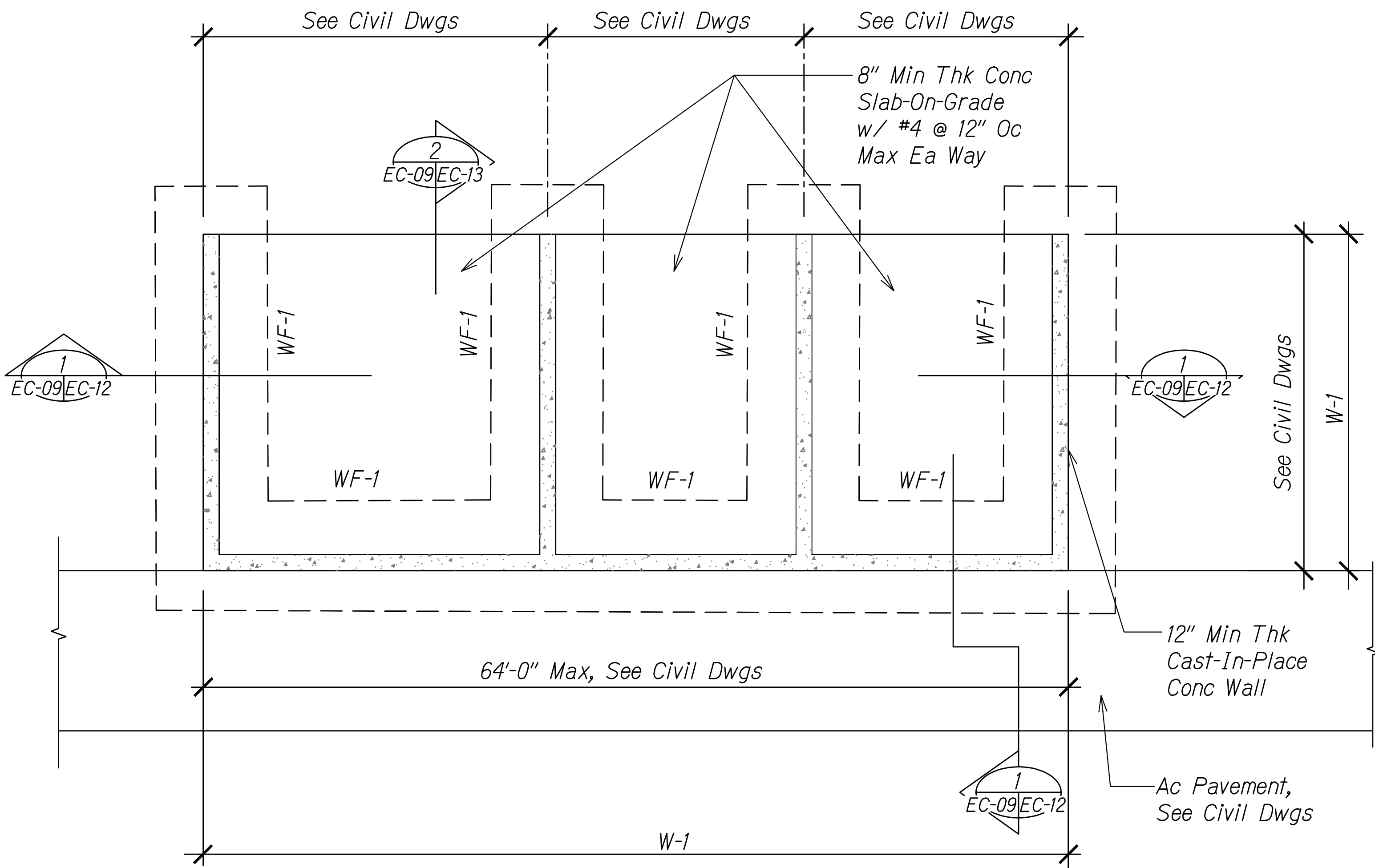
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|---|---|
|  | STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION  |
|   | <u><b>STRUCTURAL NOTES - 2</b></u>  |
|   | <u><b>EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM<br/>WATER PERMIT COMPLIANCE, VARIOUS LOCATIONS ON OAHU; Phase 2</b></u><br><u><b>Project No. HWY-O-02-21</b></u><br><b>Scale: As Shown</b> <span style="float: right;"><b>Date: April 2022</b></span> |

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY _____ *
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No. _____	CHECKED BY _____

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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-02-21	2022	20	25



- Legend:
- Indicates Full Height Conc Wall
  - WF-1 Indicates Wall Footing Type, See Sections On Sheet EC-12
  - W-1 Indicates Conc Wall Type, See Section On Sheet EC-12. All Conc Walls Shall Be Type W-1 Unless Otherwise Noted.

KEEHI BASEYARD - MATERIAL STORAGE BIN 1 FOUNDATION PLAN  
 Scale: 3/16" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DRAWN BY	DRAWN BY	
NOTED BY	NOTED BY	
CHECKED BY	CHECKED BY	
DATE	DATE	

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ERIC S. TOMISHIMA  
 LICENSED PROFESSIONAL ENGINEER  
 No. 16572-S  
 HAWAII U.S.A.

4/30/24  
 EXP. DATE

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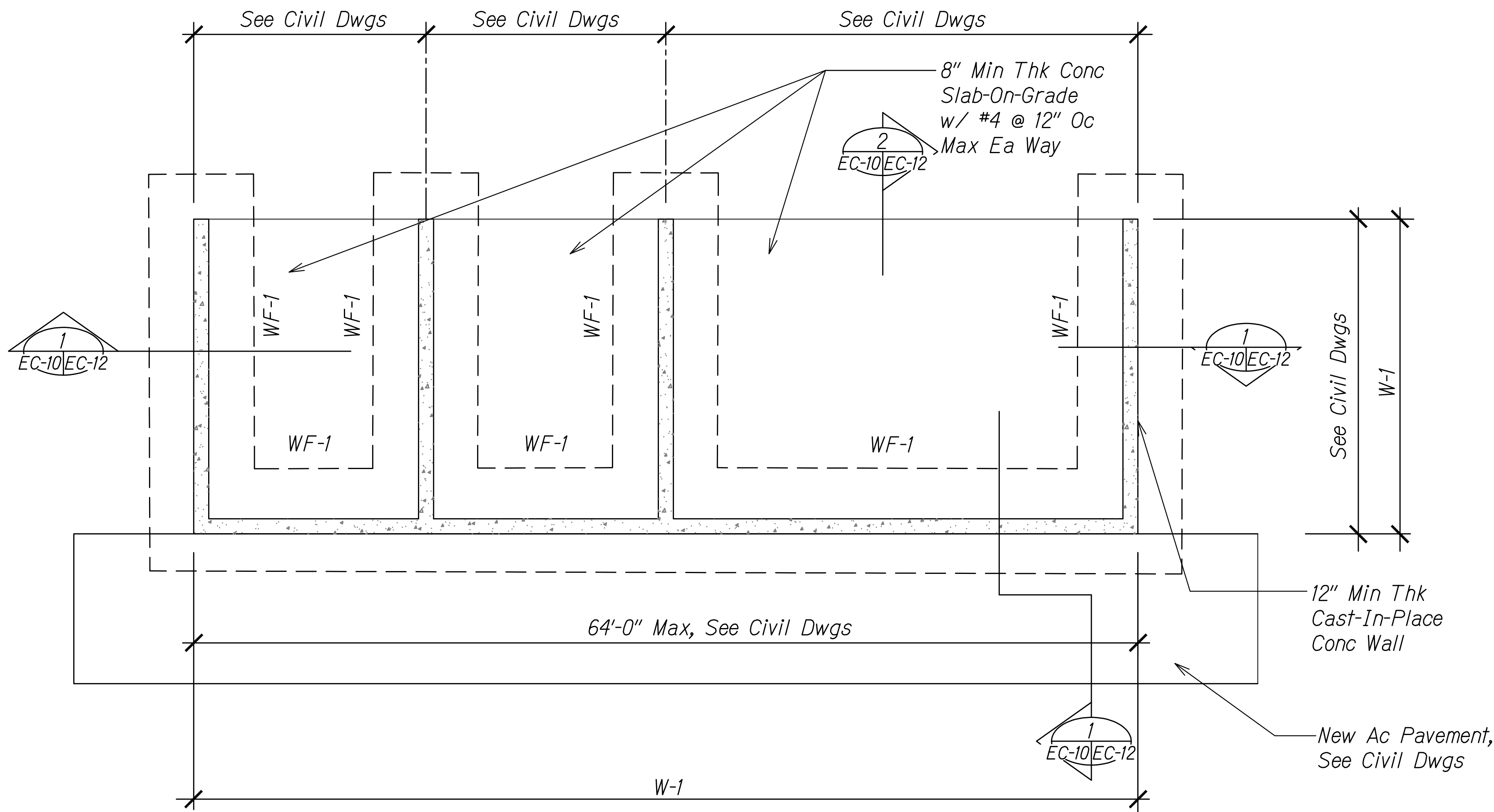
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**KEEHI BASEYARD -  
 MATERIAL STORAGE BIN 1  
 FOUNDATION PLAN**


EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM  
 WATER PERMIT COMPLIANCE, VARIOUS LOCATIONS ON OAHU; Phase 2

Project No. HWY-O-02-21  
 Scale: 3/16" = 1'-0" Date: April 2022

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-02-21	2022	21	25



Legend:

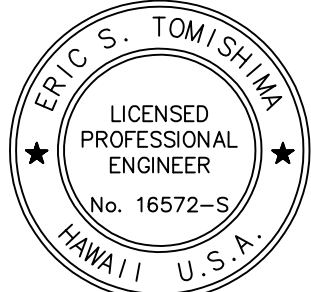
-  Indicates Full Height Conc Wall
- WF-1 Indicates Wall Footing Type, See Sections On Sheet EC-12
- W-1 Indicates Conc Wall Type, See Section On Sheet EC-12.  
All Conc Walls Shall Be Type W-1 Unless Otherwise Noted.

KEEHI BASEYARD - MATERIAL STORAGE BIN 2 FOUNDATION PLAN

Scale: 3/16" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DRAWN BY	DATE	
NOTED BY	DATE	
CHECKED BY	DATE	
DATE		

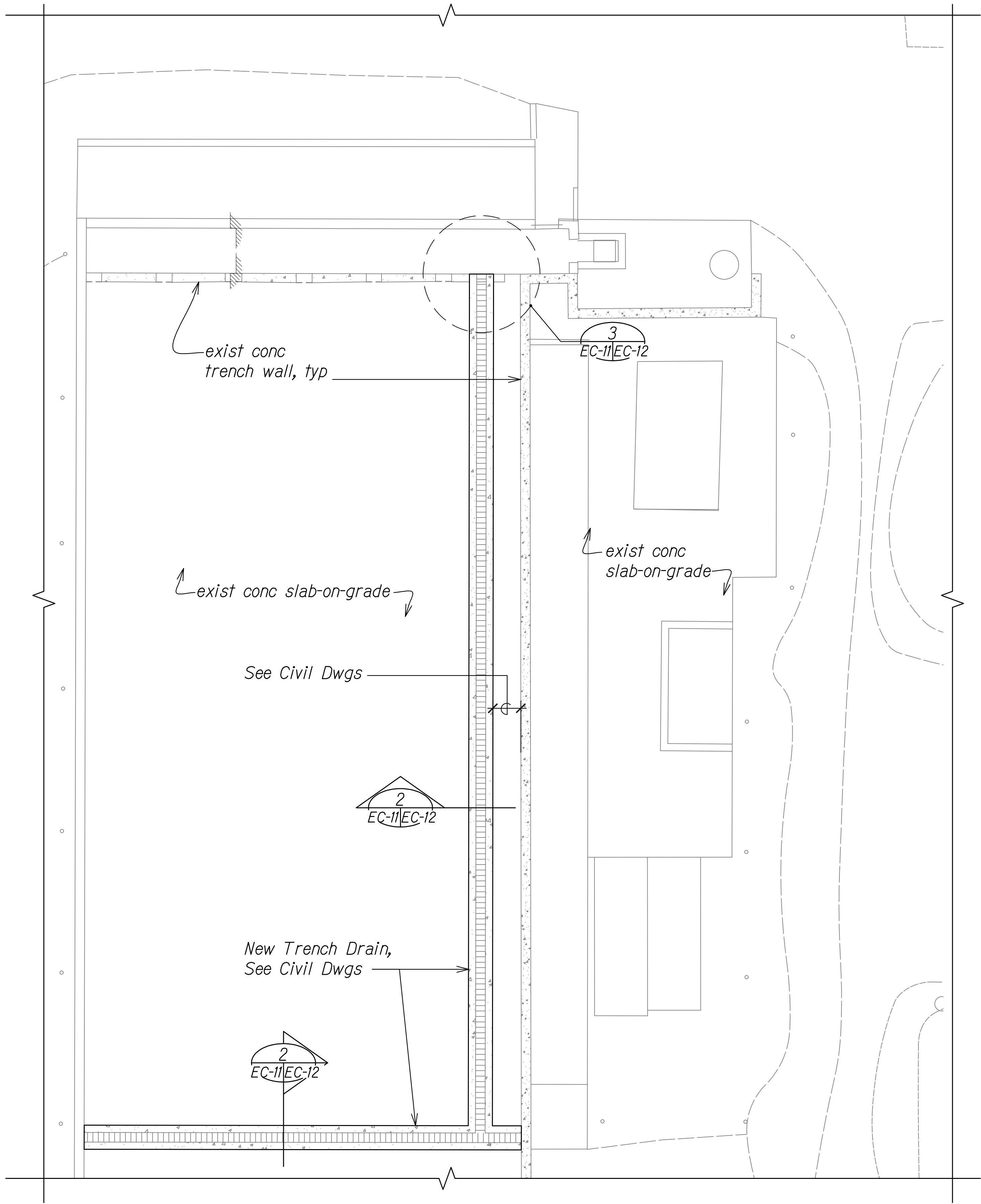
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DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**KEEHI BASEYARD -  
MATERIAL STORAGE BIN 2  
FOUNDATION PLAN**  
EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM  
WATER PERMIT COMPLIANCE, VARIOUS LOCATIONS ON OAHU; Phase 2  
Project No. HWY-O-02-21  
Scale: 3/16" = 1'-0" Date: April 2022

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-02-21	2022	22	25



KEEHI BASEYARD - EXIST WASHPAD FOUNDATION RETROFIT PLAN  
Scale: 3/16" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DRAWN BY	DATE	
DESIGNED BY	DATE	
NOTE BOOK	QUANTITIES BY	
CHECKED BY		
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DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**KEEHI BASEYARD -  
EXISTING WASHPAD FOUNDATION  
RETROFIT PLAN**  
EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM  
WATER PERMIT COMPLIANCE, VARIOUS LOCATIONS ON OAHU; Phase 2  
Project No. HWY-O-02-21  
Scale: 3/16" = 1'-0" Date: April 2022





FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-02-21	2022	24	25

Minimum Splice & Embedment Lengths For Concrete					
Bar Size	Lap Splice		Embedment		
	Bot Bar Or Wall Bar	Top Bar	Straight Bot Bar Or Wall Bar	Top Bar	w/ Std Hook
#3, #4	29"	38"	22"	29"	11"
#5	36"	47"	28"	36"	14"
#6	43"	56"	33"	43"	17"

- 90 Degree Bend      180 Degree Bend

135 Degree Bend      Splice Length 6" (Min)

1.5db Max or Place Bars In Contact Wire Together

D = 6db For #8 and Smaller  
D = 8db For #9 To #11
- Lengths Are For Concrete Beams & Columns With Rebar Spaced 1 Bar Diameter Min O.C. And Concrete Walls with Rebars Spaced 2 Bar Diameters Min O.C. Increase Bar Length 50% For Bars Spaced Closer Than Minimums Specified.
  - "Top Bars" Are Horizontal Bars With 12" Or More Of Concrete Cast Below.

TYPICAL REBAR & SPLICE EMBEDMENT LENGTH SCHEDULE

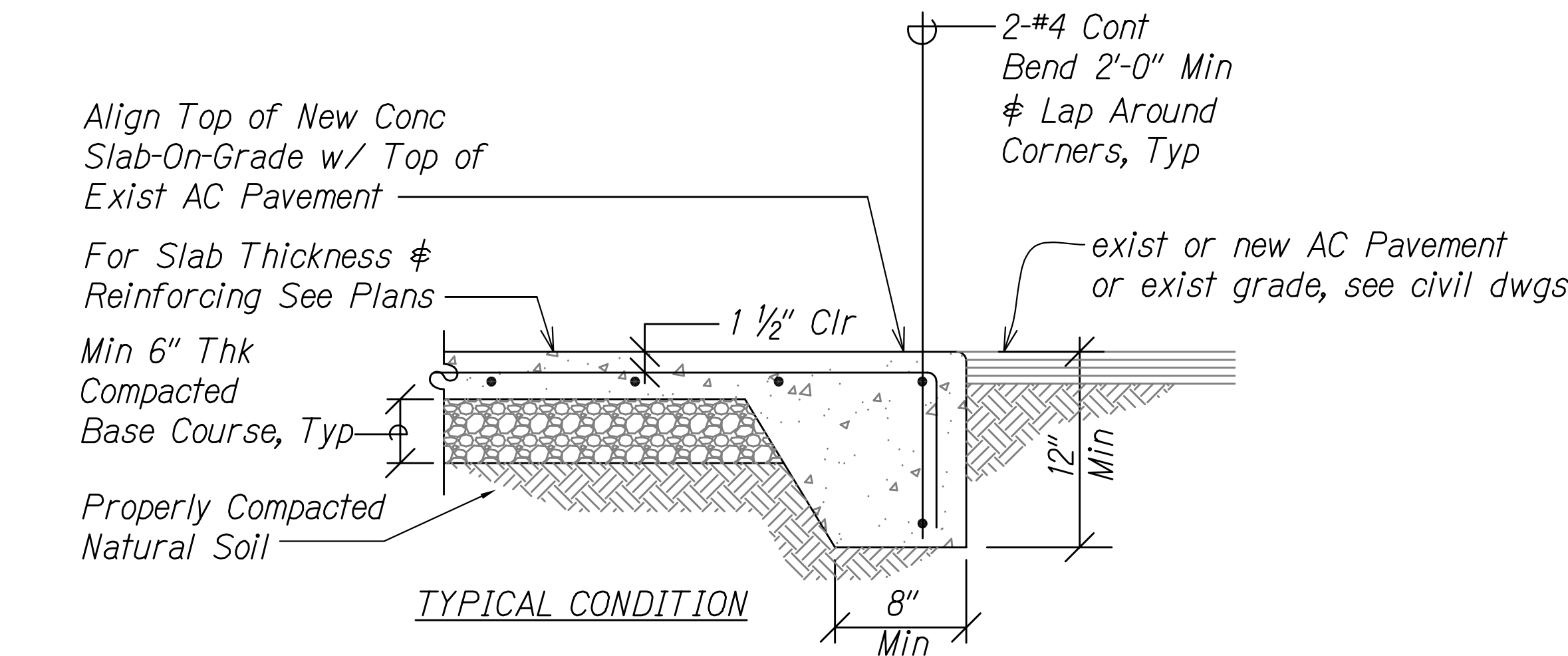
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1  
EC-13/EC-13

TYPICAL REINFORCING AT CONCRETE WALL FOOTING ENDS

Scale: NTS

3  
EC-13/EC-13

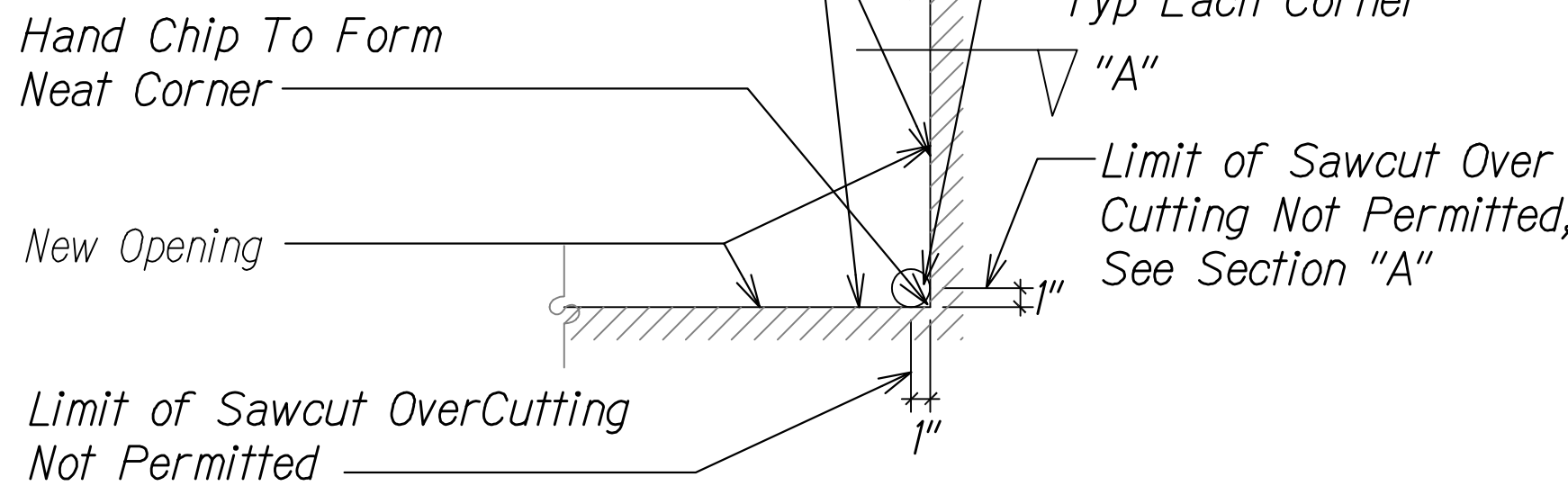


SLAB-ON-GRADE DETAIL AT THICKENED SLAB EDGE

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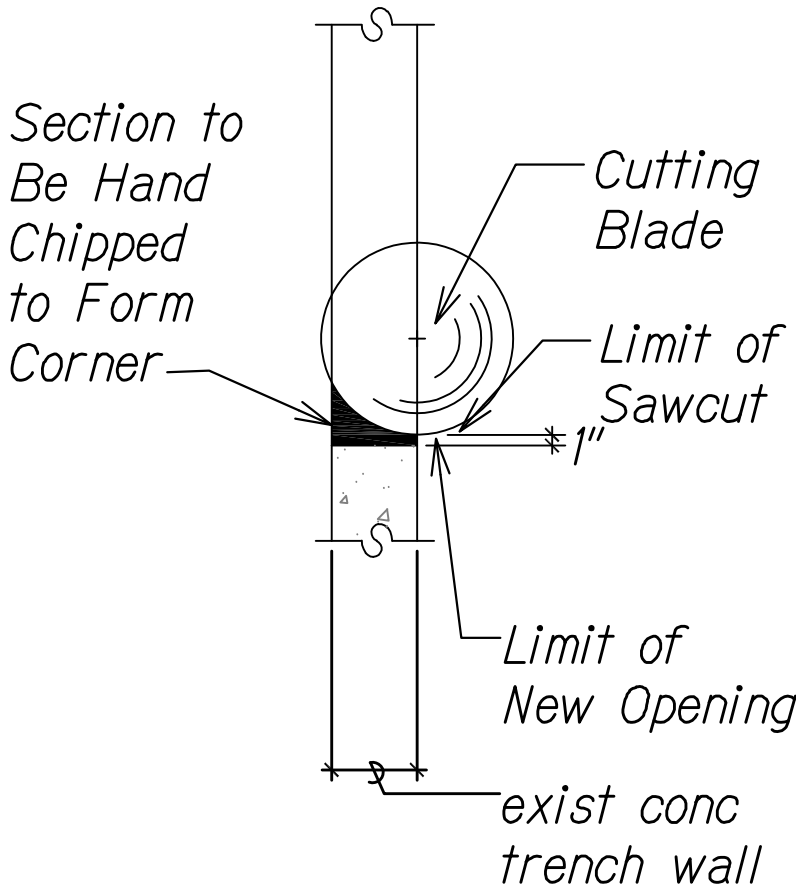
2  
EC-13/EC-13

New Opening Edge Where Indicated on Plans, Surface Shall Be Primed With a Coat of Sika Armatec 110 Epocem, or Approved Equal, And Finished With a Coat of Sikatop 122 Plus, or Approved Equal. Concrete or Masonry Surface Shall Be Prepared According to Manufacturer's Specifications Prior to Application of Each Coating.



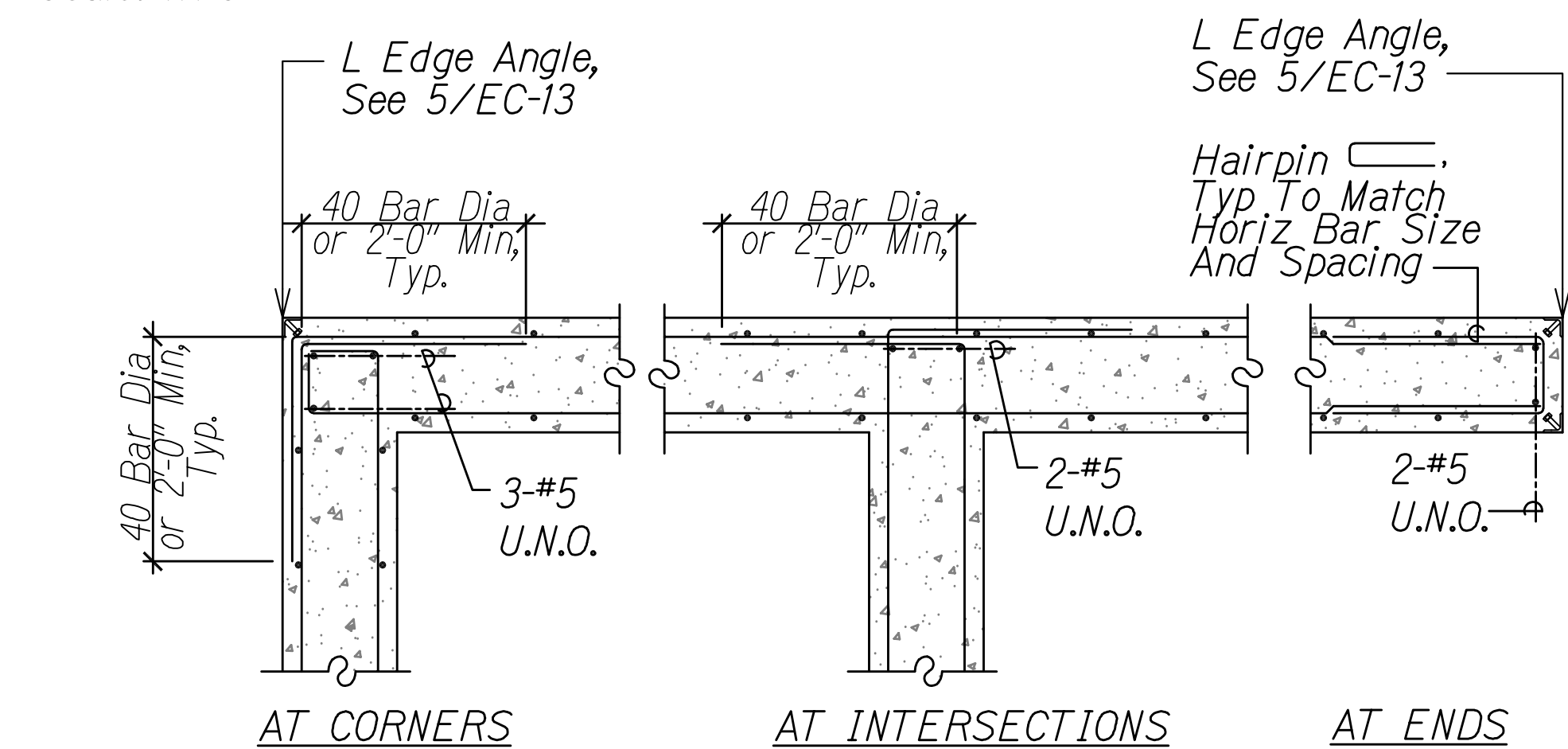
TYPICAL SAWCUT DETAIL

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SECTION "A"

6  
EC-13/EC-13



TYPICAL CONCRETE WALL REINFORCING

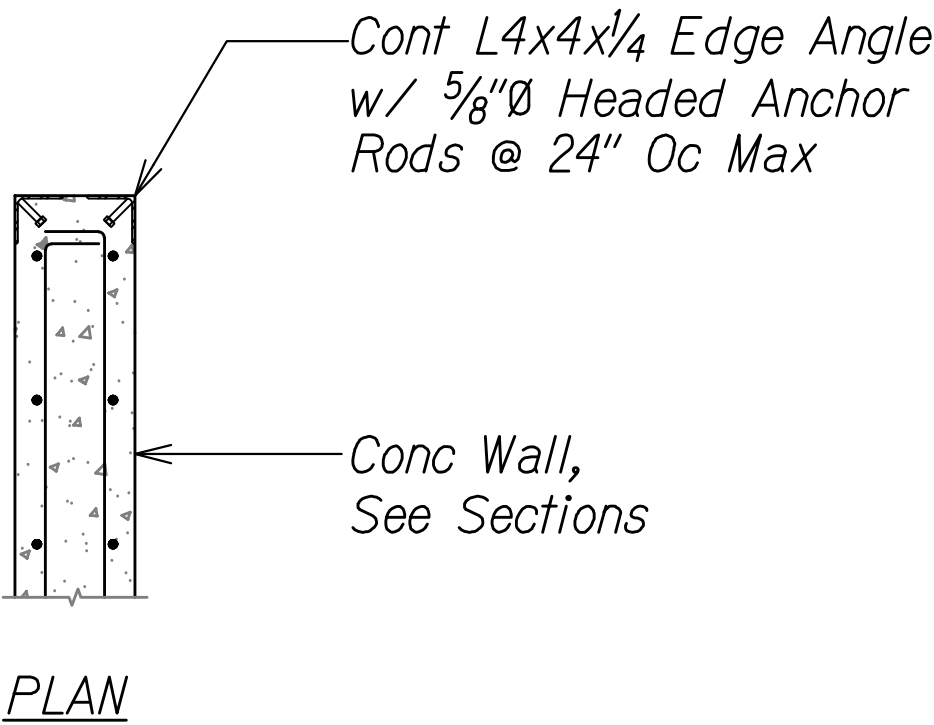
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4  
EC-13/EC-13

CONCRETE WALL EDGE ANGLE

Scale: NTS

5  
EC-13/EC-13



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STRUCTURAL TYPICAL DETAILS**

EROSION CONTROL AND BEST MANAGEMENT PRACTICES FOR STORM WATER PERMIT COMPLIANCE, VARIOUS LOCATIONS ON OAHU; Phase 2

Project No. HWY-O-02-21  
Scale: Not to Scale      Date: April 2022

SHEET No. EC-13 OF 14 SHEETS

ORIGINAL PLAN	DATE
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