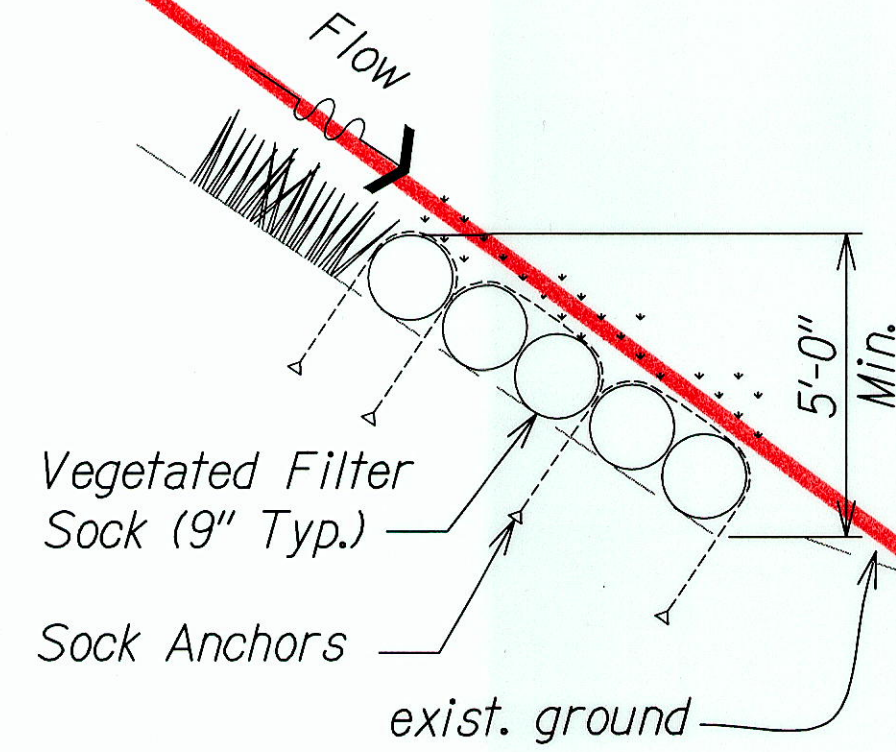


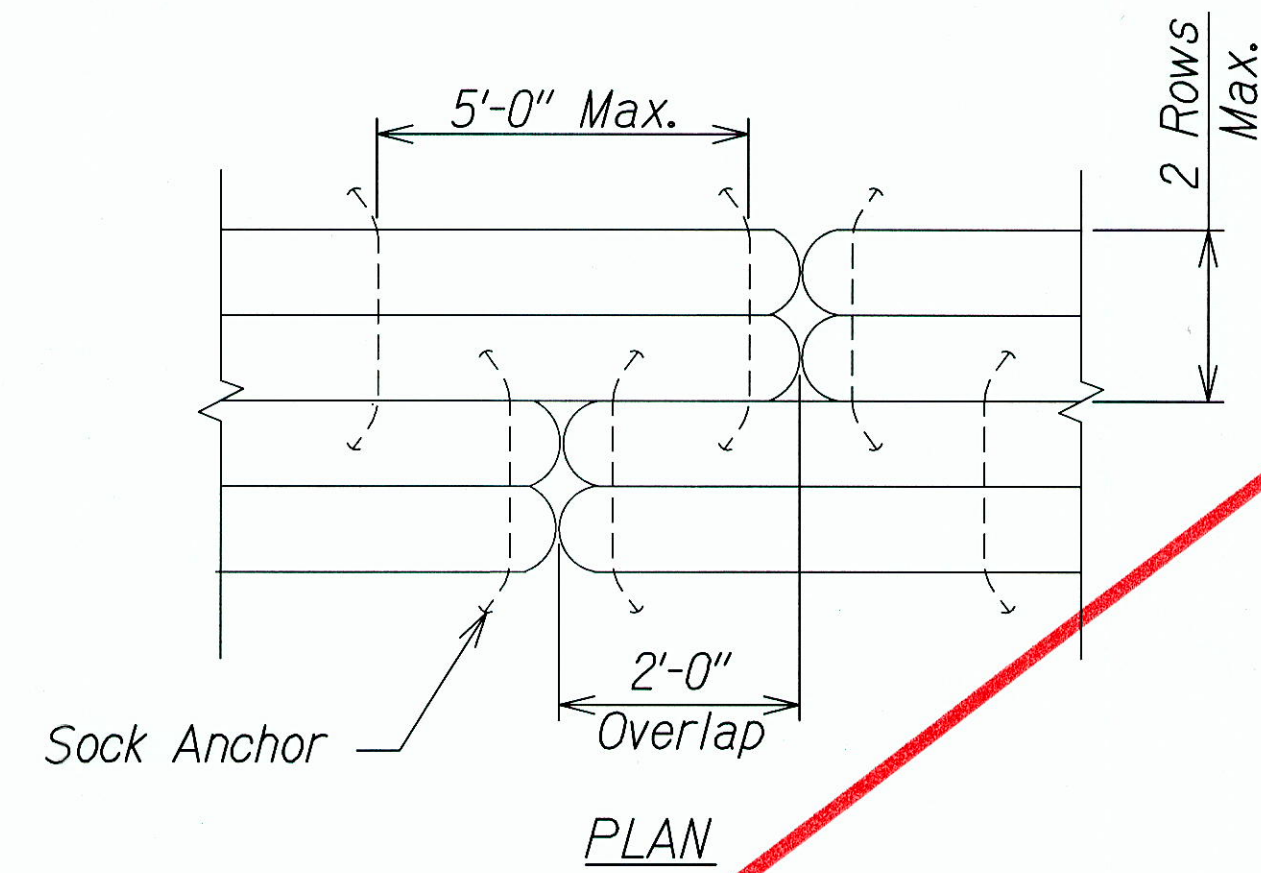
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-07-14M	2014	16	51

#### Notes:

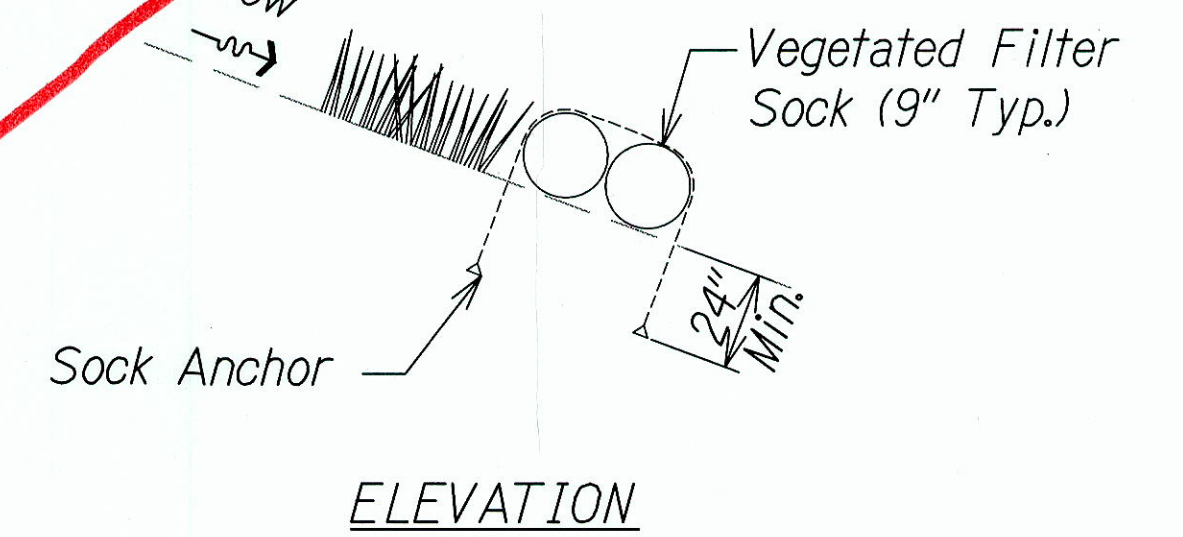
1. Filtration media to meet specifications.
2. Slope on top of vegetated filter sock to be hydro-seeded per Landscape plans and specifications.
3. Sock anchors shall be made of materials suitable to resist corrosion and ultraviolet (UV) degradation. Anchors shall be installed per det. <sup>2</sup> EC-01/EC-01
4. Where feasible, the Contractor shall place the vegetated filter sock around obstacles. See det. <sup>3</sup> EC-01/EC-01
5. Where it is not feasible to go around obstacles, the Contractor shall secure the vegetated filter sock as close to the obstacle as possible to prevent runoff flow between the vegetated filter sock and the obstacle. See det. <sup>4</sup> EC-01/EC-01



**TYP. VEGETATED WALL DETAIL**  
Scale: Not to Scale <sup>1</sup> EC-01/EC-01

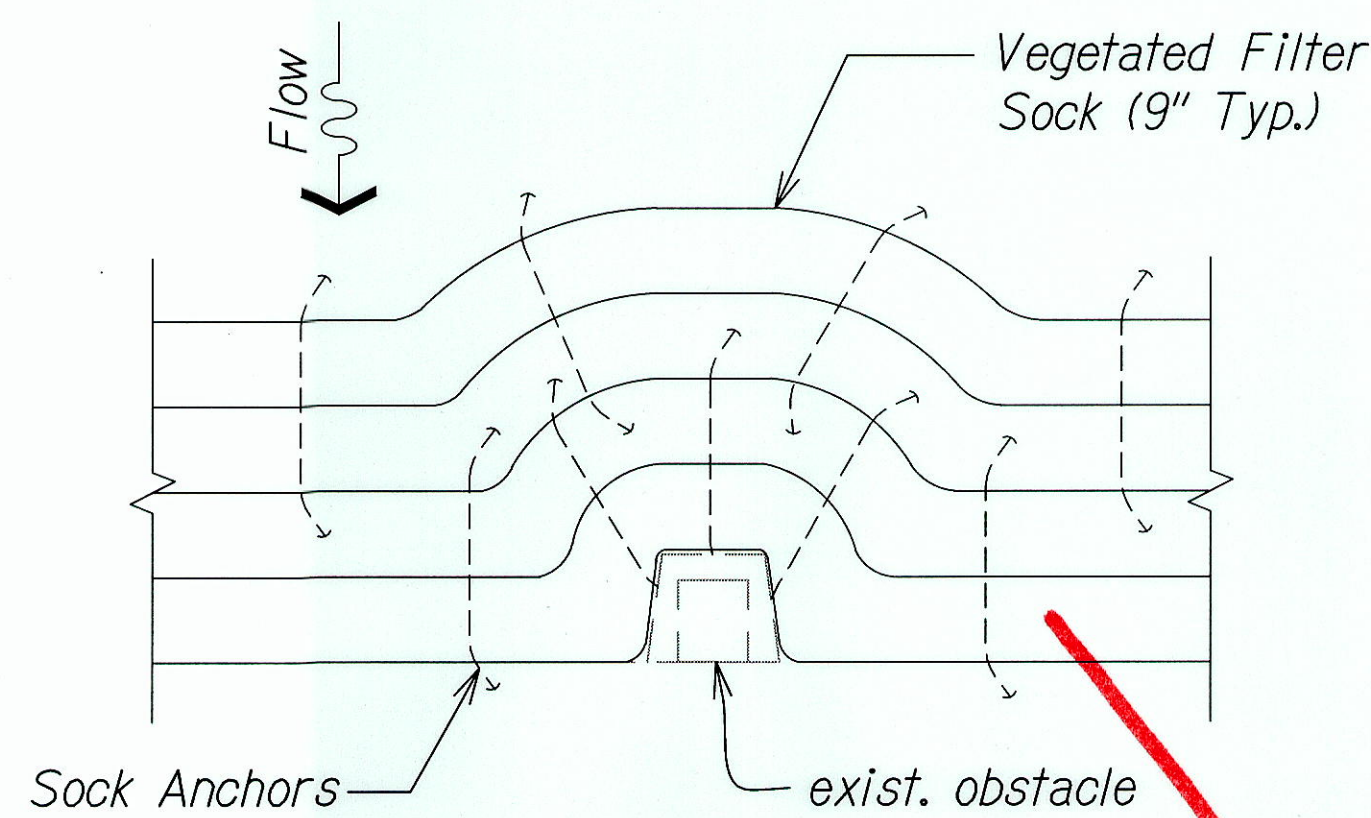


**PLAN**

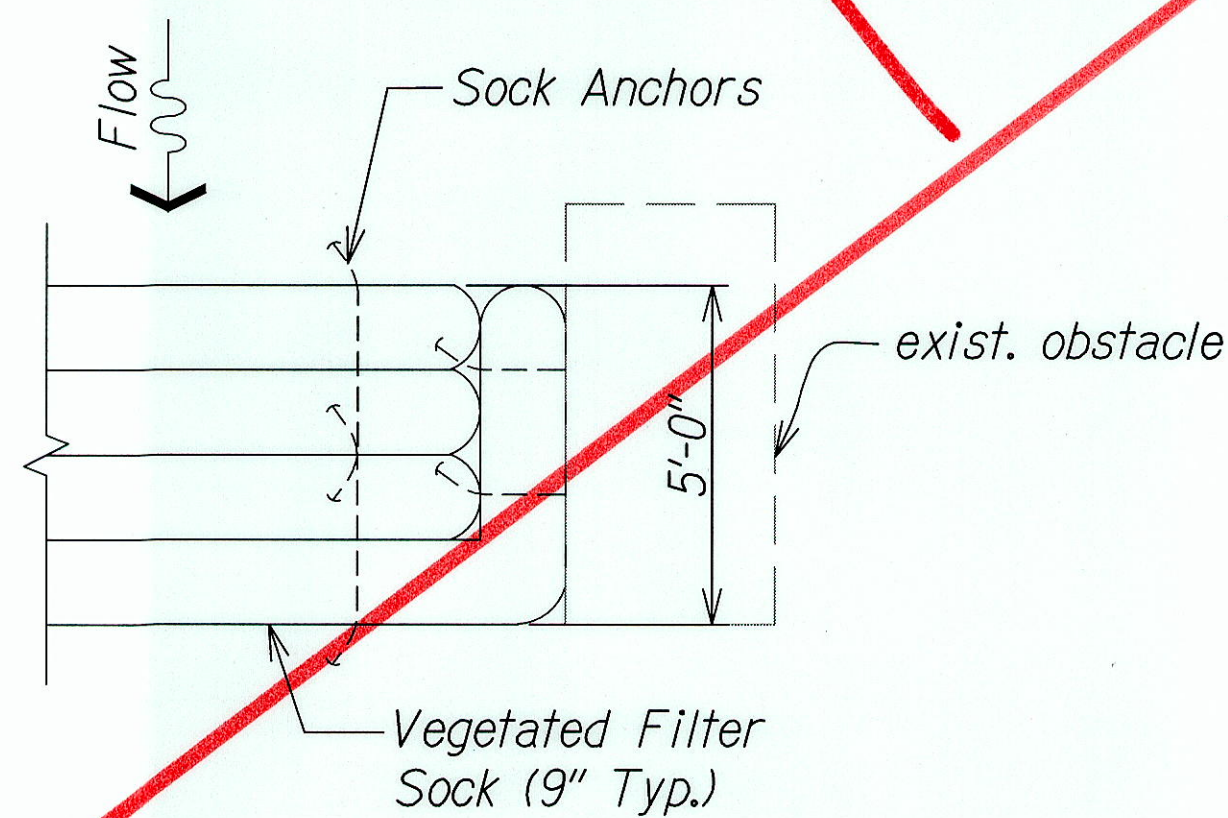


**ELEVATION**

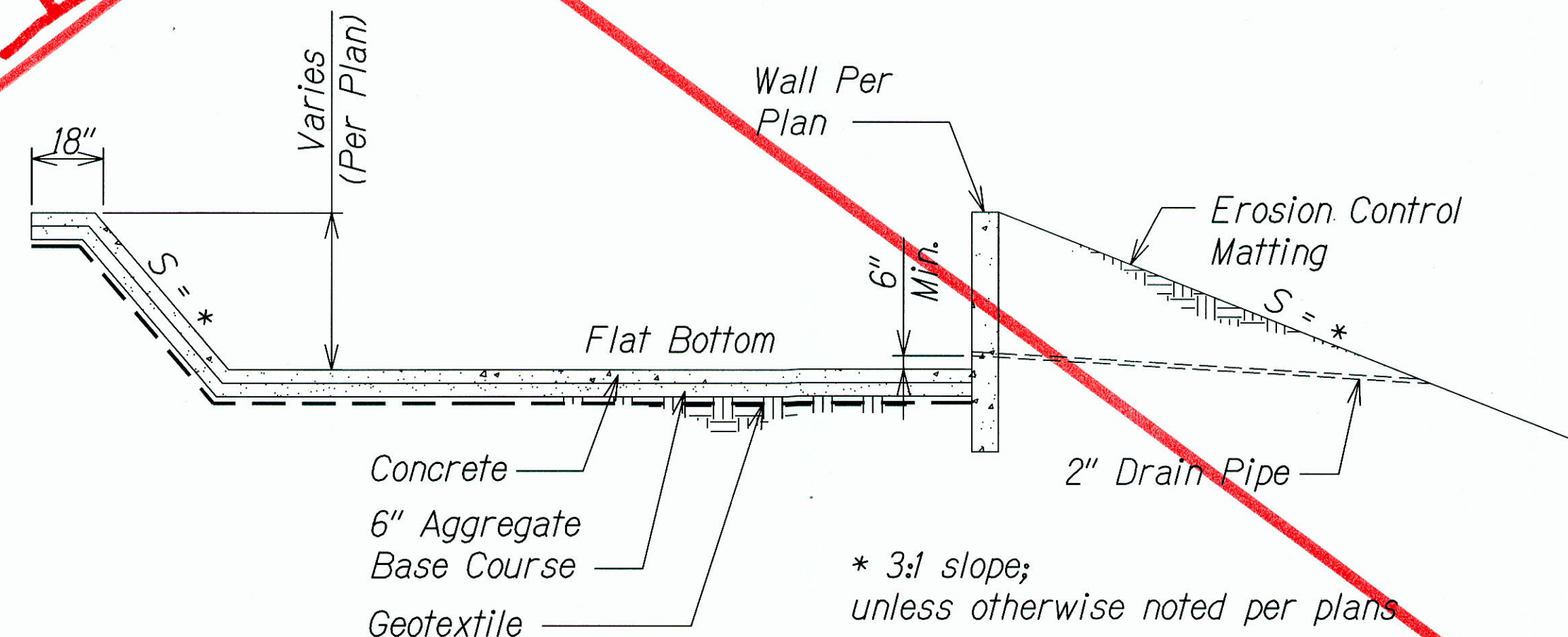
**SOCK ANCHOR DETAIL**  
Scale: Not to Scale <sup>2</sup> EC-01/EC-01



**VEGETATED WALL AROUND OBSTACLE**  
Scale: Not to Scale <sup>3</sup> EC-01/EC-01



**VEGETATED WALL AT OBSTACLE**  
Scale: Not to Scale <sup>4</sup> EC-01/EC-01



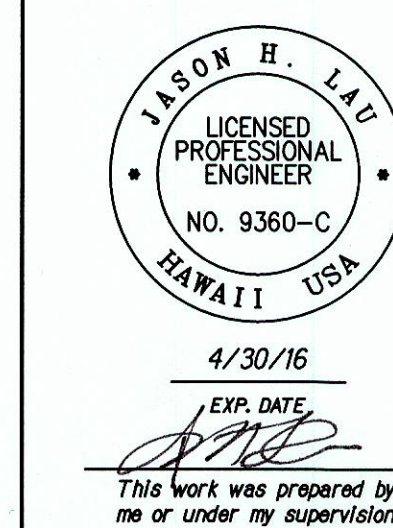
**TYP. CONC. SETTLING BASIN AND SPILLWAY DETAIL**  
Scale: Not to Scale <sup>5</sup> EC-01/EC-01

#### Notes:

1. Sediment shall be removed from the settling basin when it reaches 6 inches in depth.
2. Any damage to the settling basin slopes shall be repaired.
3. For structural details, see Sheet EC-06.

SURVEY PLOTTED BY	DATE
DESIGNED BY	
FRACED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

MISC. DETAILS: 4/7/2014 2:38:46 PM



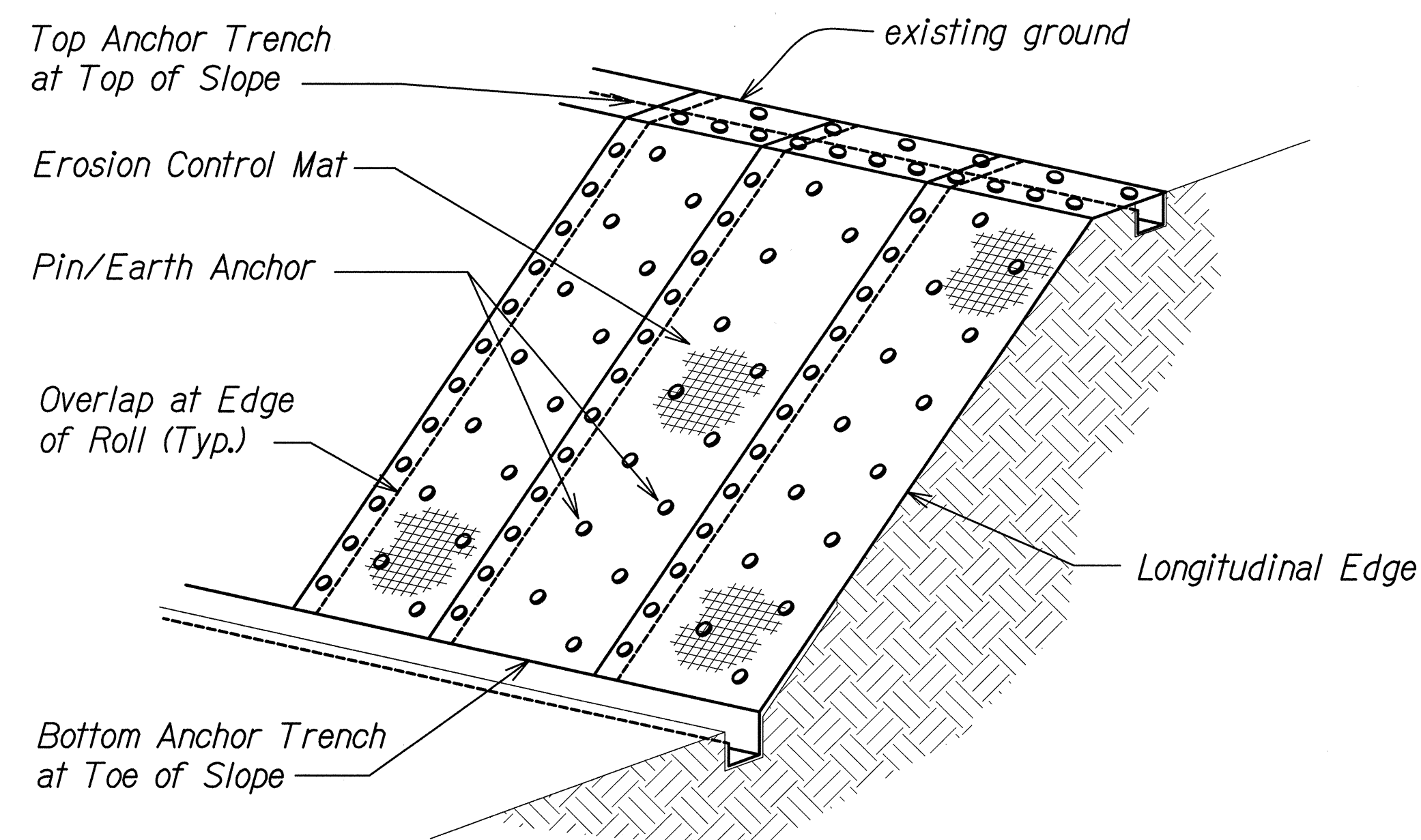
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**VEGETATED WALL AND CONC. SETTLING BASIN DETAILS**  
KAWAINUI WATERSHED STORM WATER  
BEST MANAGEMENT PRACTICES ON OAHU  
Project No. HWY-O-07-14M  
Scale: Not to Scale Date: April 2014

SHEET No. EC-01 OF 19 SHEETS

"AS-BUILT"



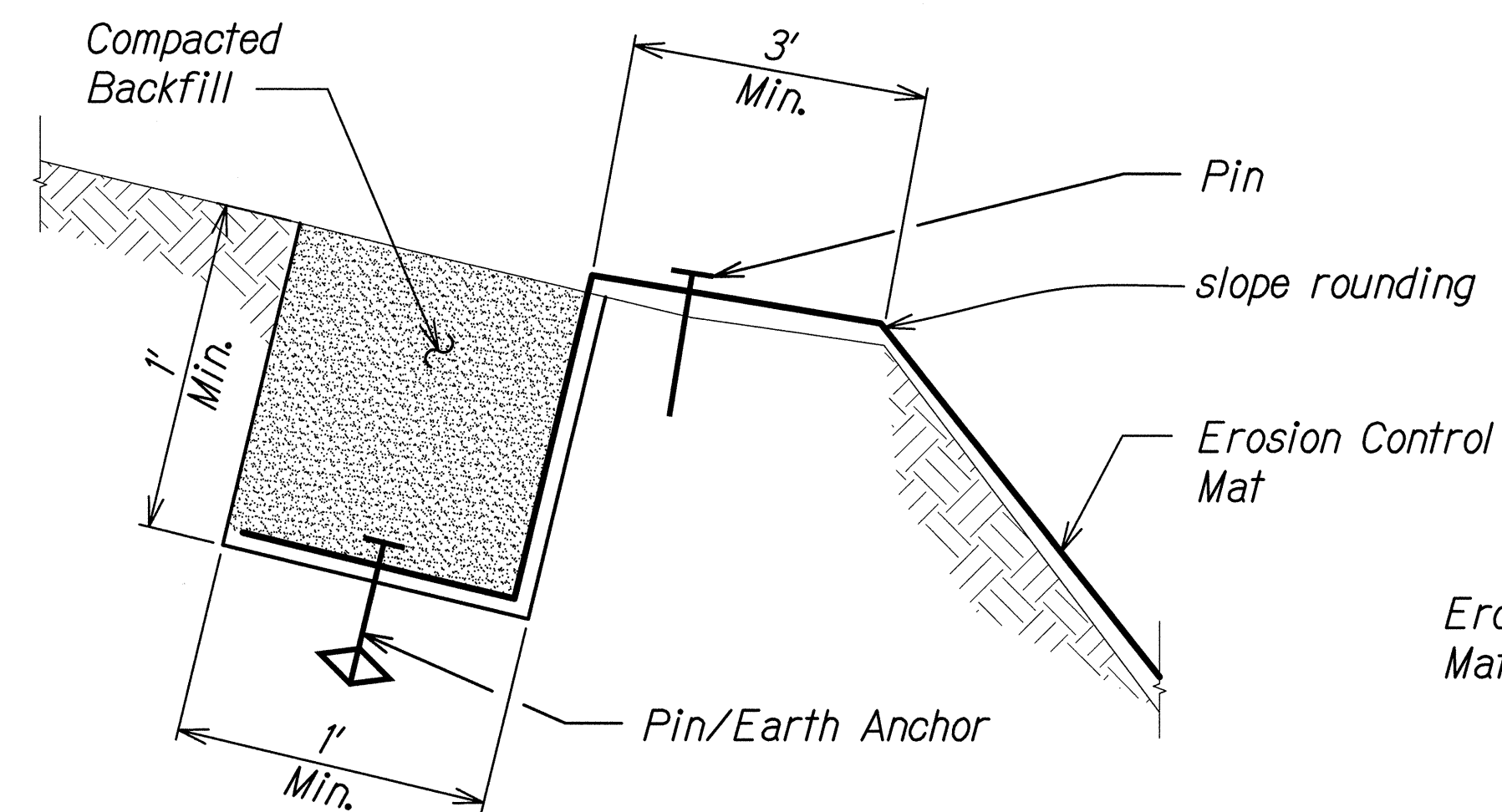
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-07-14M	2014	17	51



OVERVIEW OF EROSION  
CONTROL MATTING SYSTEM

Scale: Not to Scale

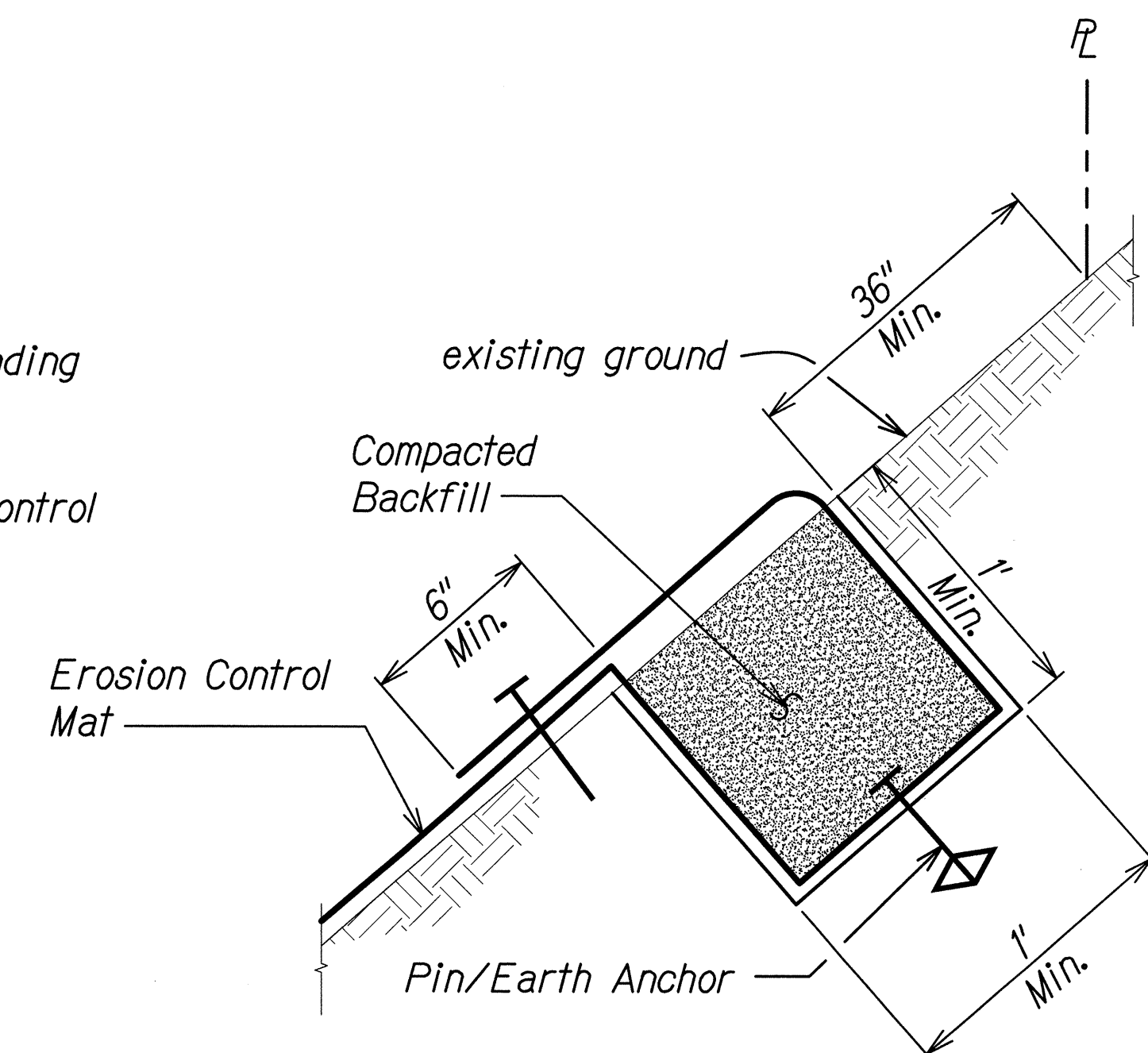
1  
EC-03/EC-03



TOP ANCHOR TRENCH AT  
TOP OF SLOPE DETAIL

Scale: Not to Scale

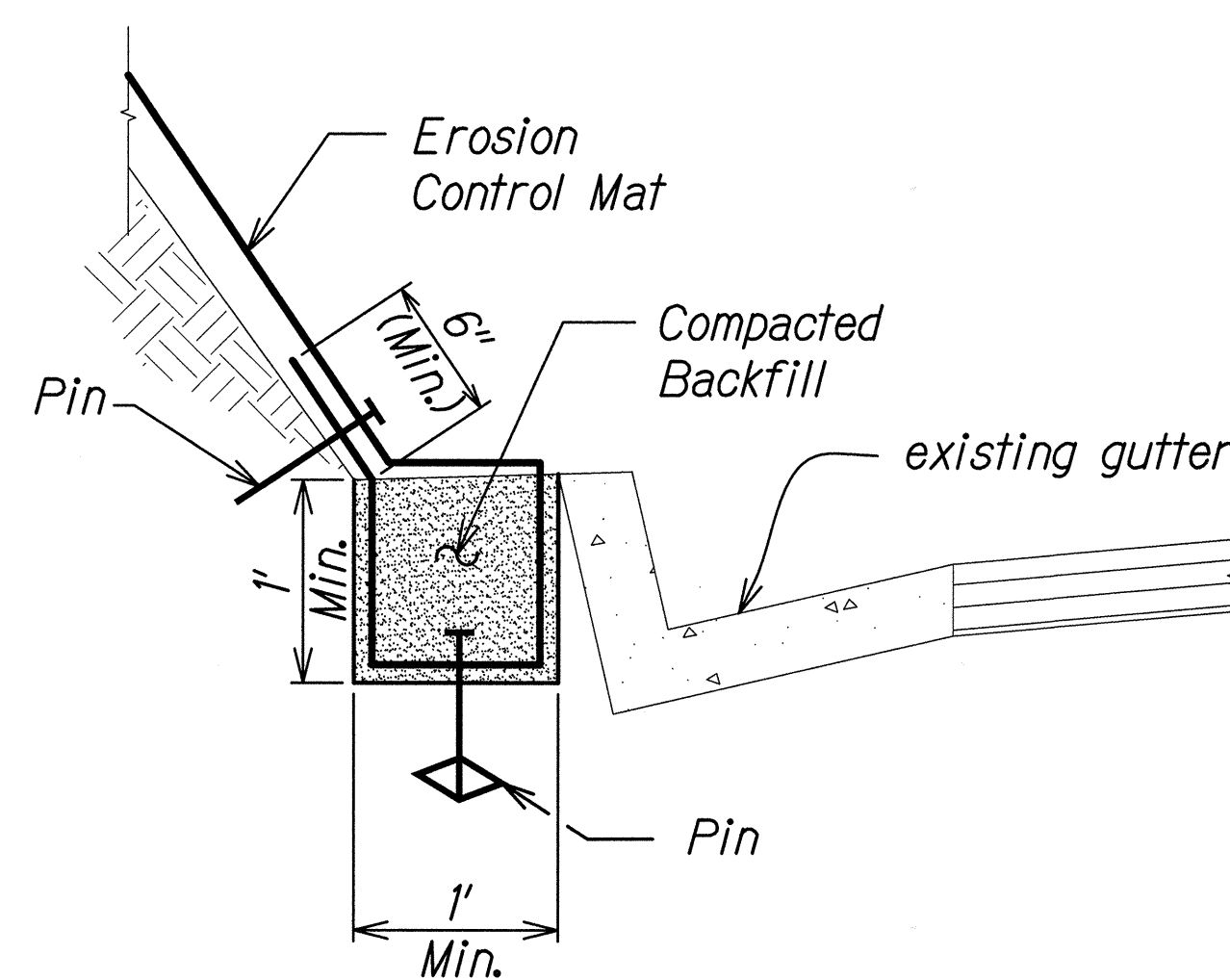
2  
EC-03/EC-03



TOP ANCHOR TRENCH AT  
MID-SLOPE DETAIL

Scale: Not to Scale

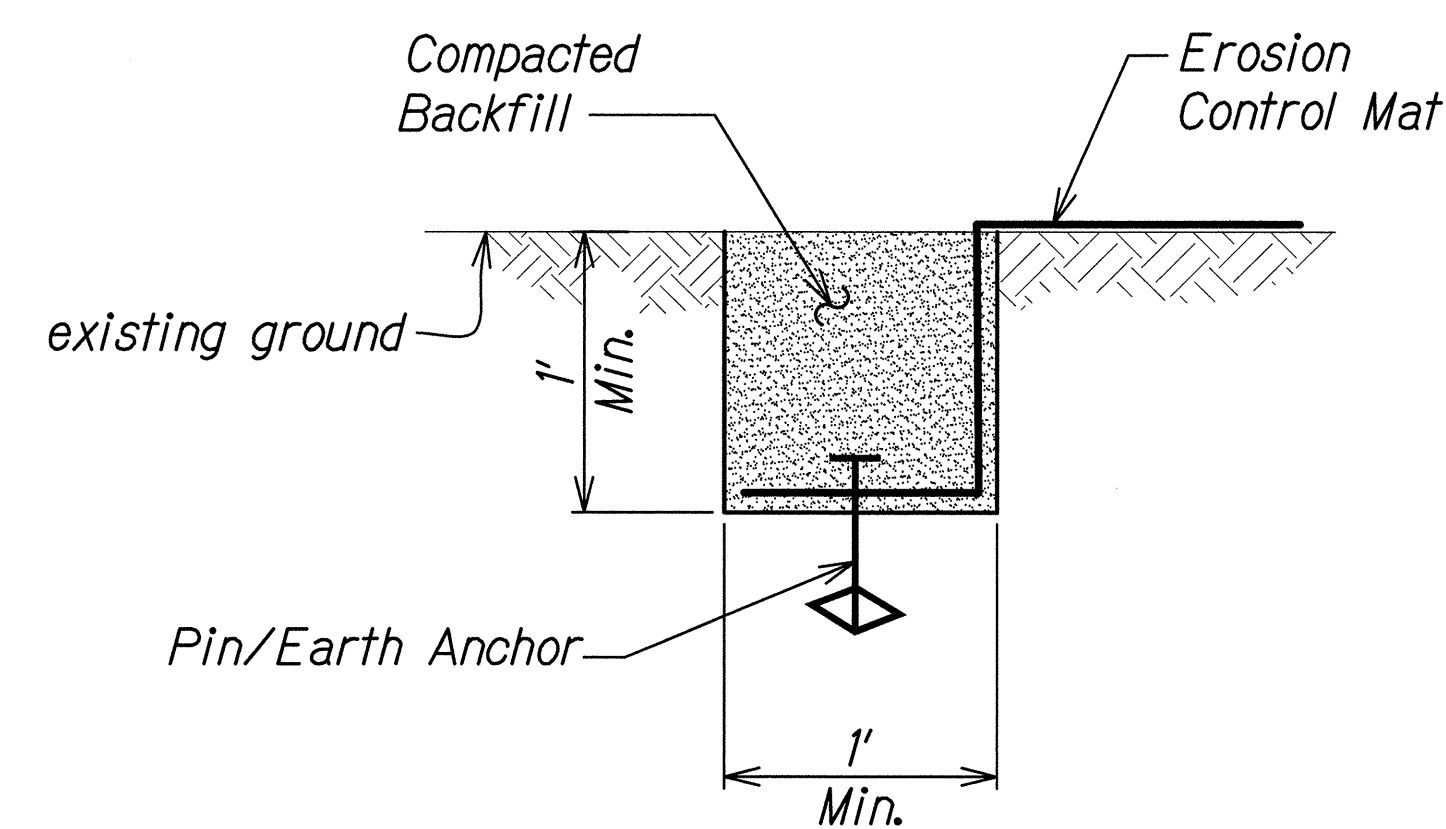
3  
EC-03/EC-03



BOTTOM ANCHOR TRENCH DETAIL

Scale: Not to Scale

4  
EC-03/EC-03



LONGITUDINAL EDGE TRENCH DETAIL

Scale: Not to Scale

5  
EC-03/EC-03

DATE	4/30/16
DESIGNED BY	JASON H. LAU
CHECKED BY	JASON H. LAU
NOTED BY	JASON H. LAU
QUANTITIES BY	JASON H. LAU
ORIGINAL PLAN	JASON H. LAU

EC-02 EROSION CONTROL MATTING DETAILS DWG 4/30/2014 9:03:31 AM

JASON H. LAU  
LICENSED PROFESSIONAL ENGINEER  
NO. 9360-C  
HAWAII, USA

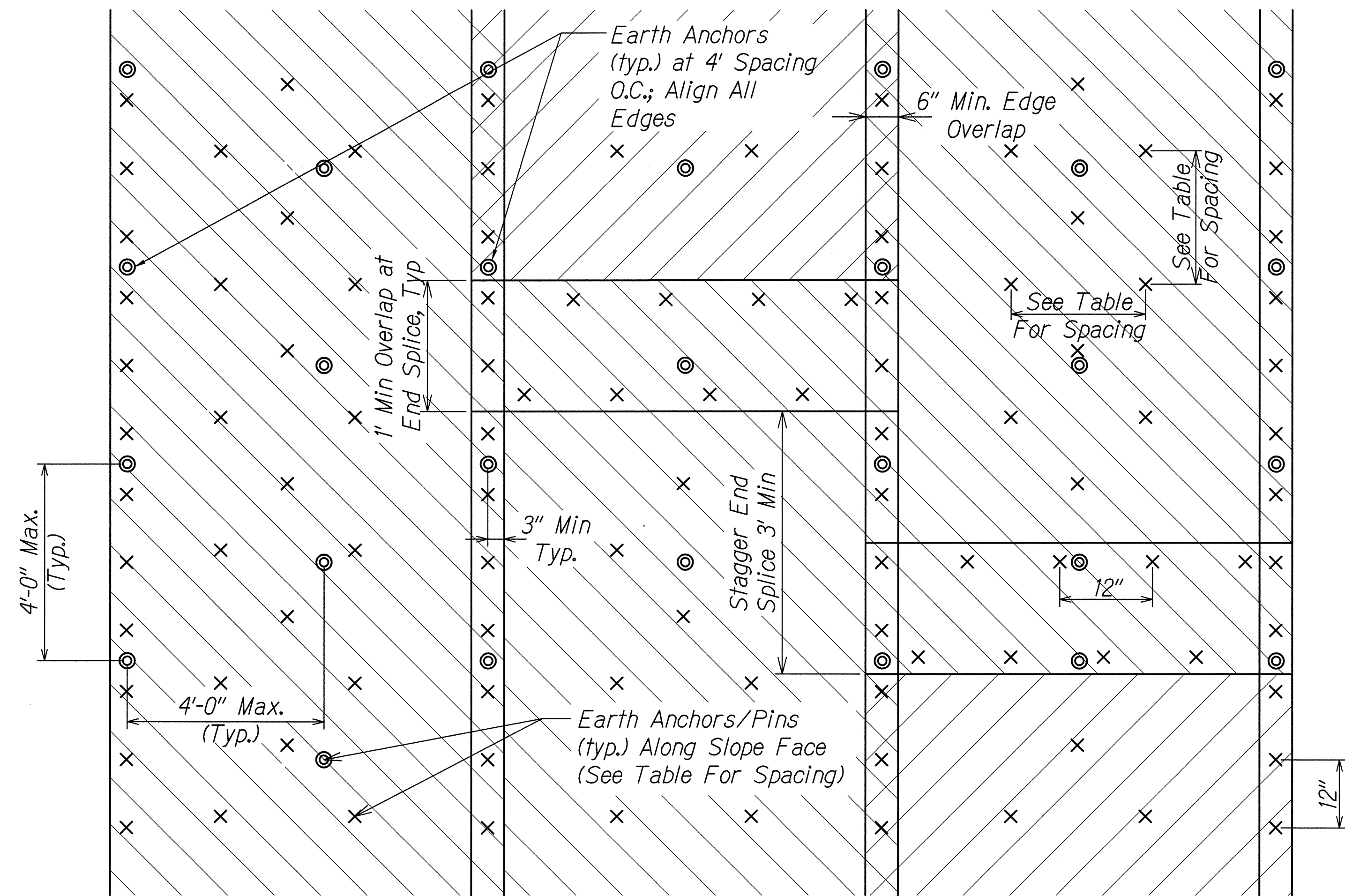
4/30/16  
EXP. DATE  
This work was prepared by  
me or under my supervision.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPICAL DETAILS**  
**EROSION CONTROL MATTING**  
KAWAINUI WATERSHED STORM WATER  
BEST MANAGEMENT PRACTICES ON OAHU  
Project No. HWY-O-07-14M  
Scale: Not to Scale Date: April 2014

SHEET No. EC-02 OF 19 SHEETS

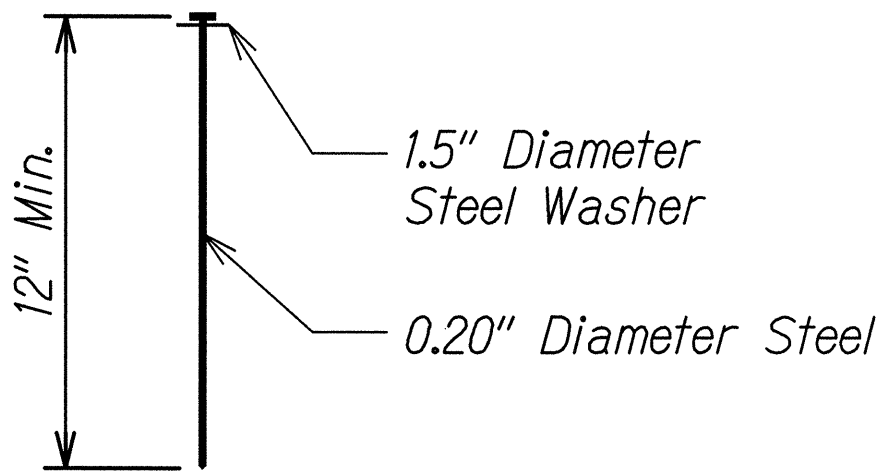
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-07-14M	2014	18	51



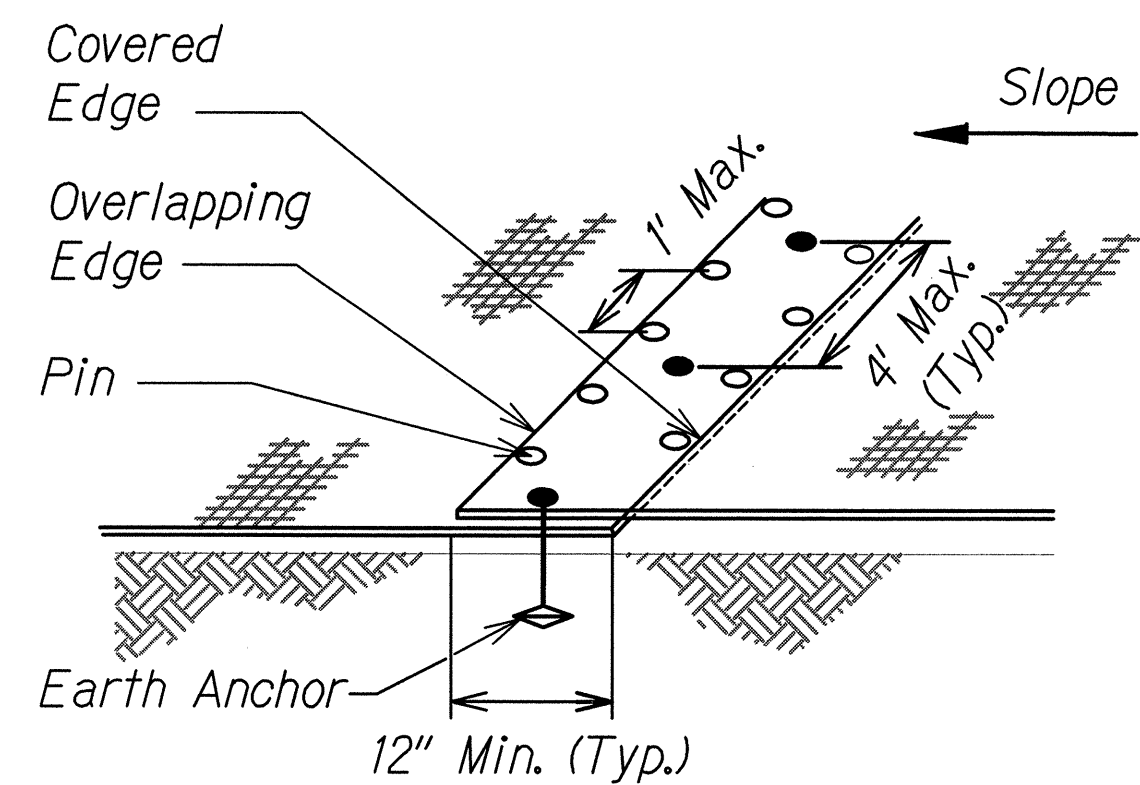
**TYPICAL EROSION CONTROL MAT AND EARTH ANCHOR/PIN LAYOUT**  
Scale: Not to Scale 1  
EC-03/EC-03

Pin/Earth Anchor Spacing		
Fastener Type	Along Slope Face	Top, Bottom & Edge Trenches
Pin	1.5'	1'
Earth Anchor	4'	4'

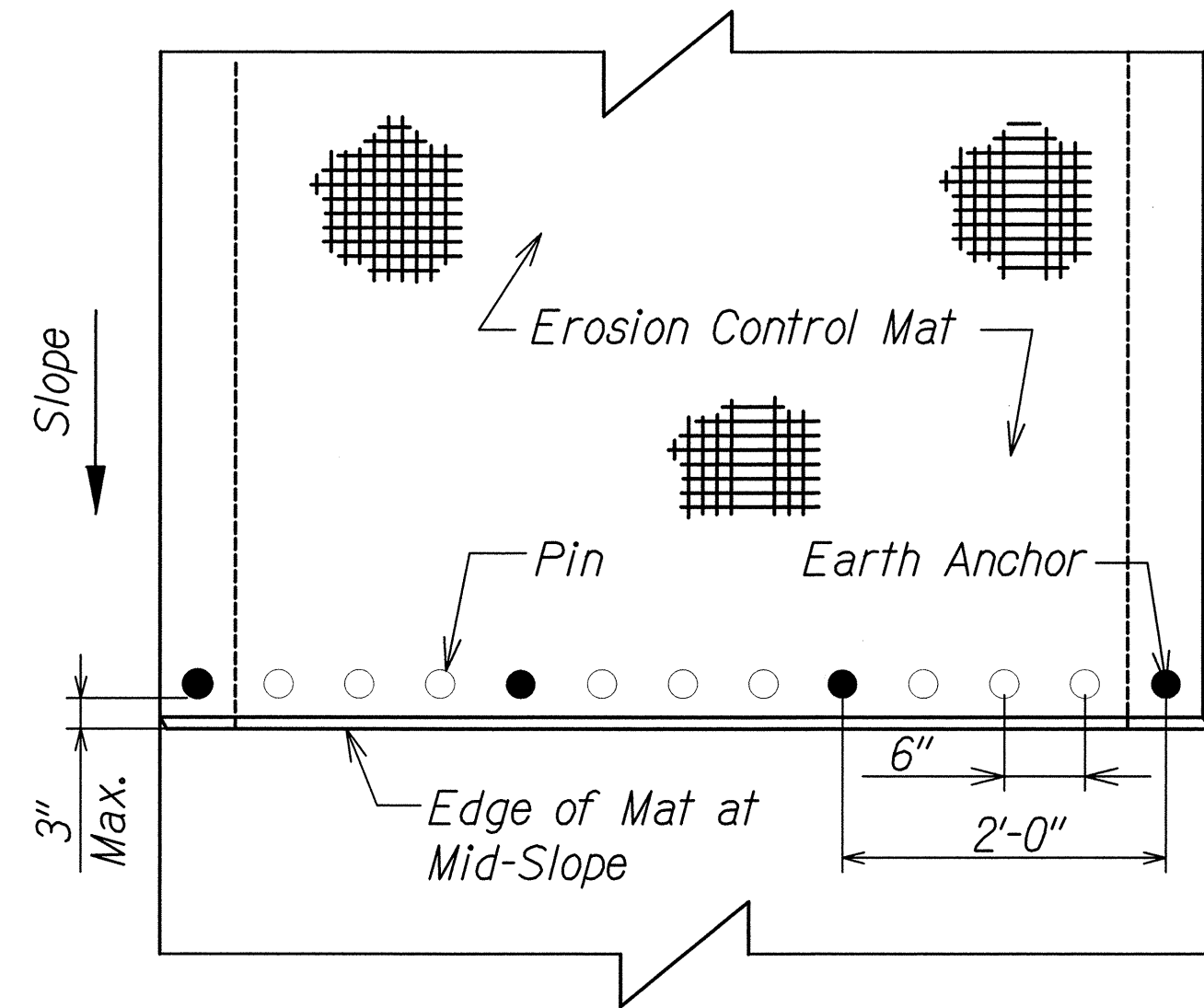
- Notes:**
1. Secure all erosion control mat edges with pins and earth anchors at the spacing indicated.
  2. For slopes 3H:1V or flatter, no ECM required.
  3. Earth anchors in trenches should extend a minimum of depth of 3' from the slope face.
  4. The upper 7 rows of earth anchors shall extend a minimum depth of 10' from the slope face.
  5. The remaining earth anchors shall be installed per row to alternating depths of 4' and 6' respectively.



**PIN DETAIL**  
Scale: Not to Scale 2  
EC-03/EC-03



**OVERLAP END DETAIL**  
Scale: Not to Scale 3  
EC-03/EC-03



**EDGE OF MAT AT MID-SLOPE**  
Scale: Not to Scale 4  
EC-03/EC-03

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
IN CHARGE	
NOTED BY	
DATE	

EC-03 EROSION CONTROL MATTING DETAILS ZING 4/22/2014 15:43:33 AM

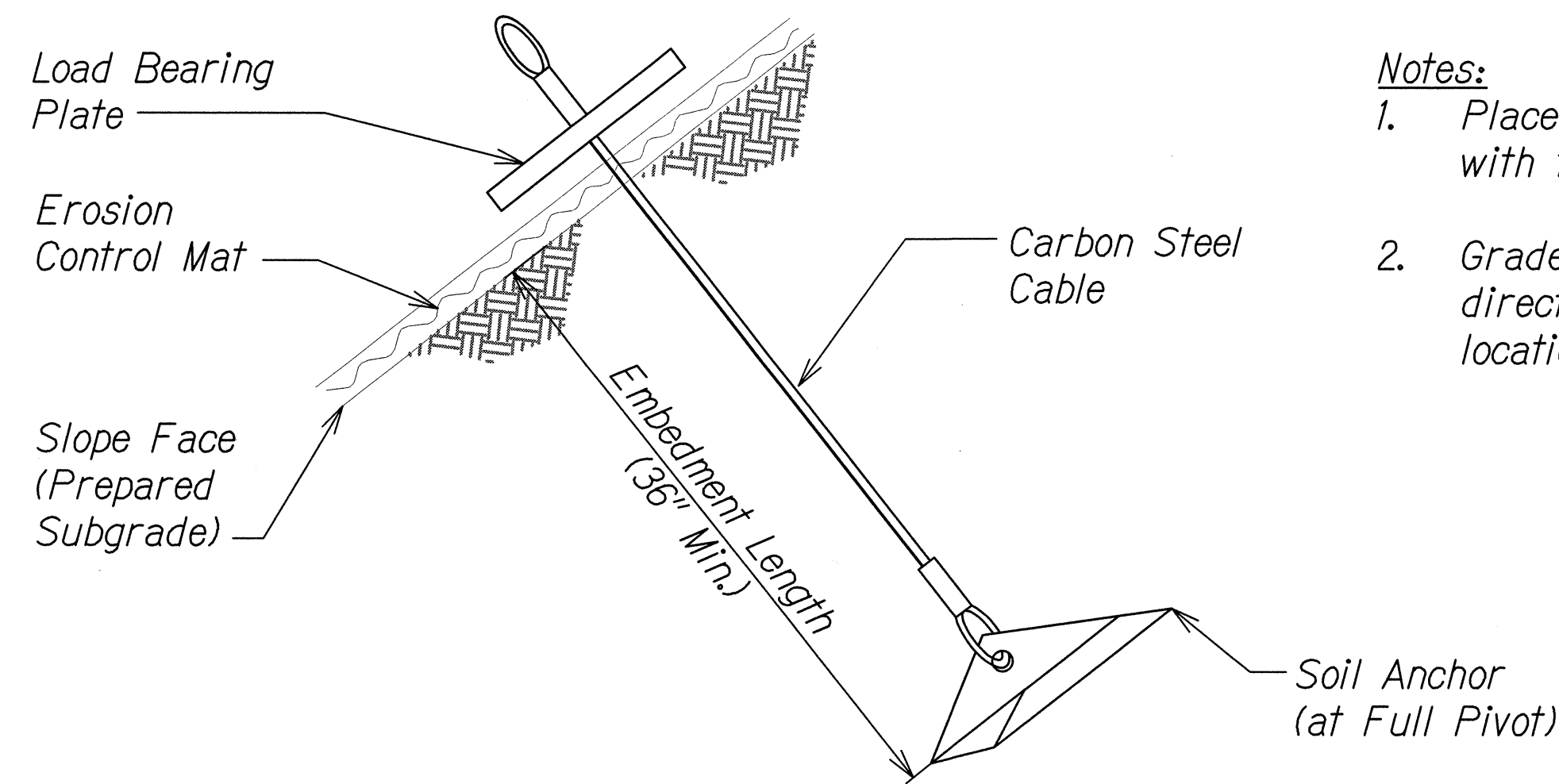
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**EROSION CONTROL  
MATTING DETAILS**

KAWAINUI WATERSHED STORM WATER  
BEST MANAGEMENT PRACTICES ON OAHU  
Project No. HWY-O-07-14M  
Scale: Not to Scale Date: April 2014

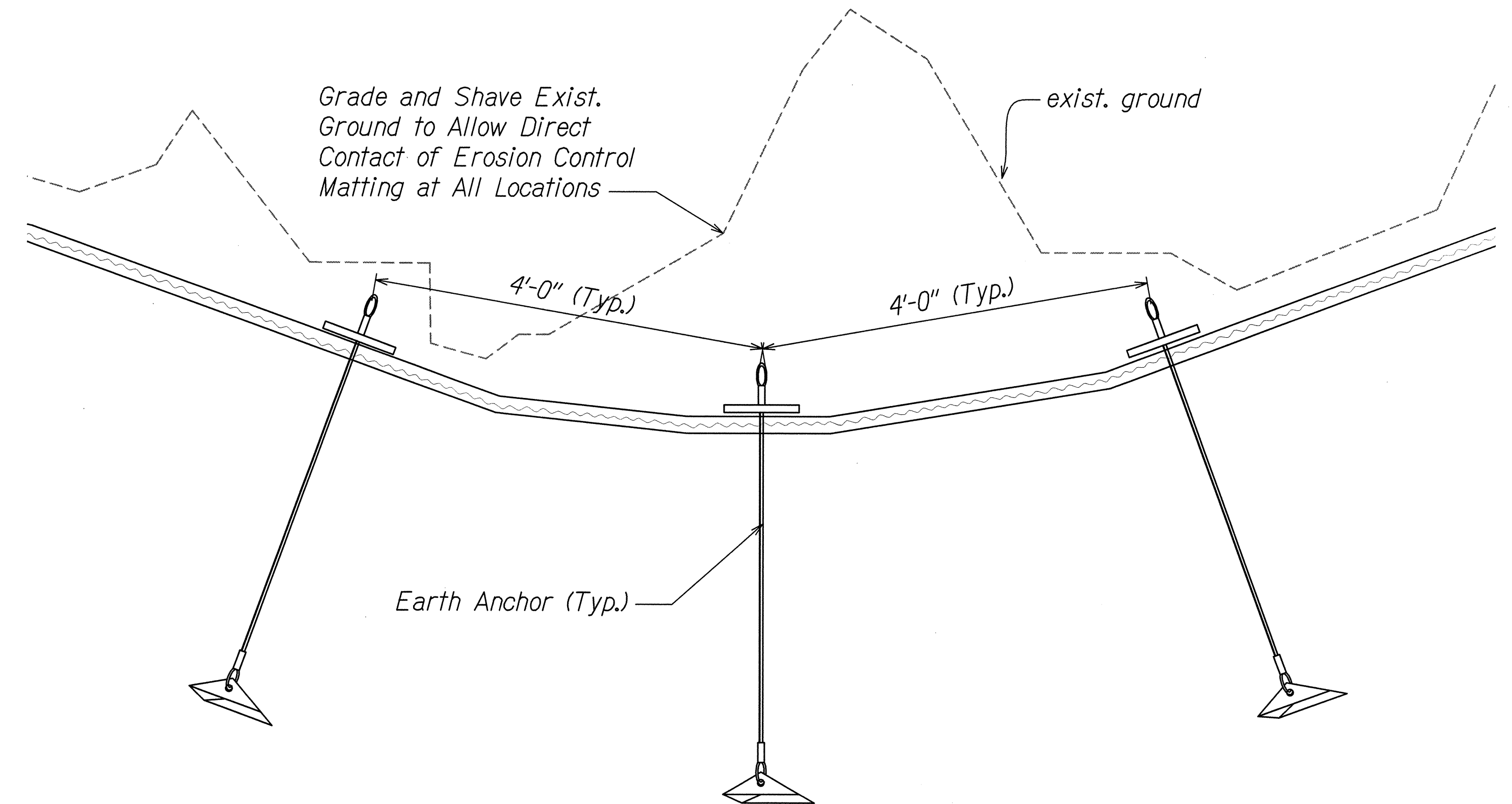
SHEET No. EC-03 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-07-14M	2014	19	51



- Notes:**
1. Place erosion control mat in direct contact with finish grade.
  2. Grade and shave existing ground to allow direct contact of erosion control mat at all locations.

**EARTH ANCHOR DETAIL**  
Scale: Not to Scale  
EC-04 EC-04



**TYPICAL LONGITUDINAL VIEW OF RILLS AND GULLIES**  
Scale: Not to Scale  
EC-04 EC-04

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

EC-04 EARTH ANCHOR DETAILS.DWG 4/24/2013 8:57:14 AM

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

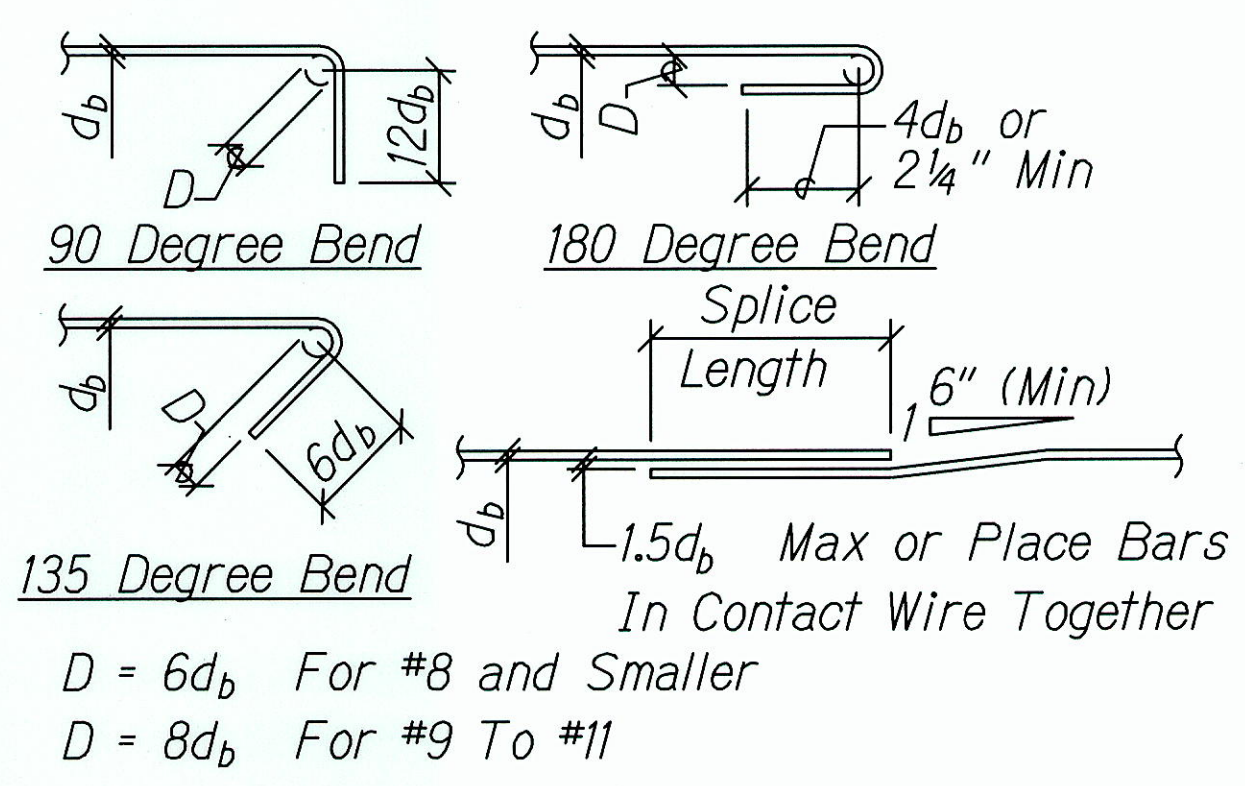
**TYPICAL DETAILS**  
**EARTH ANCHOR**

KAWAINUI WATERSHED STORM WATER  
BEST MANAGEMENT PRACTICES ON OAHU  
Project No. HWY-O-07-14M  
Scale: Not to Scale Date: April 2014



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-O-07-14M	2014	C.O. 20	51

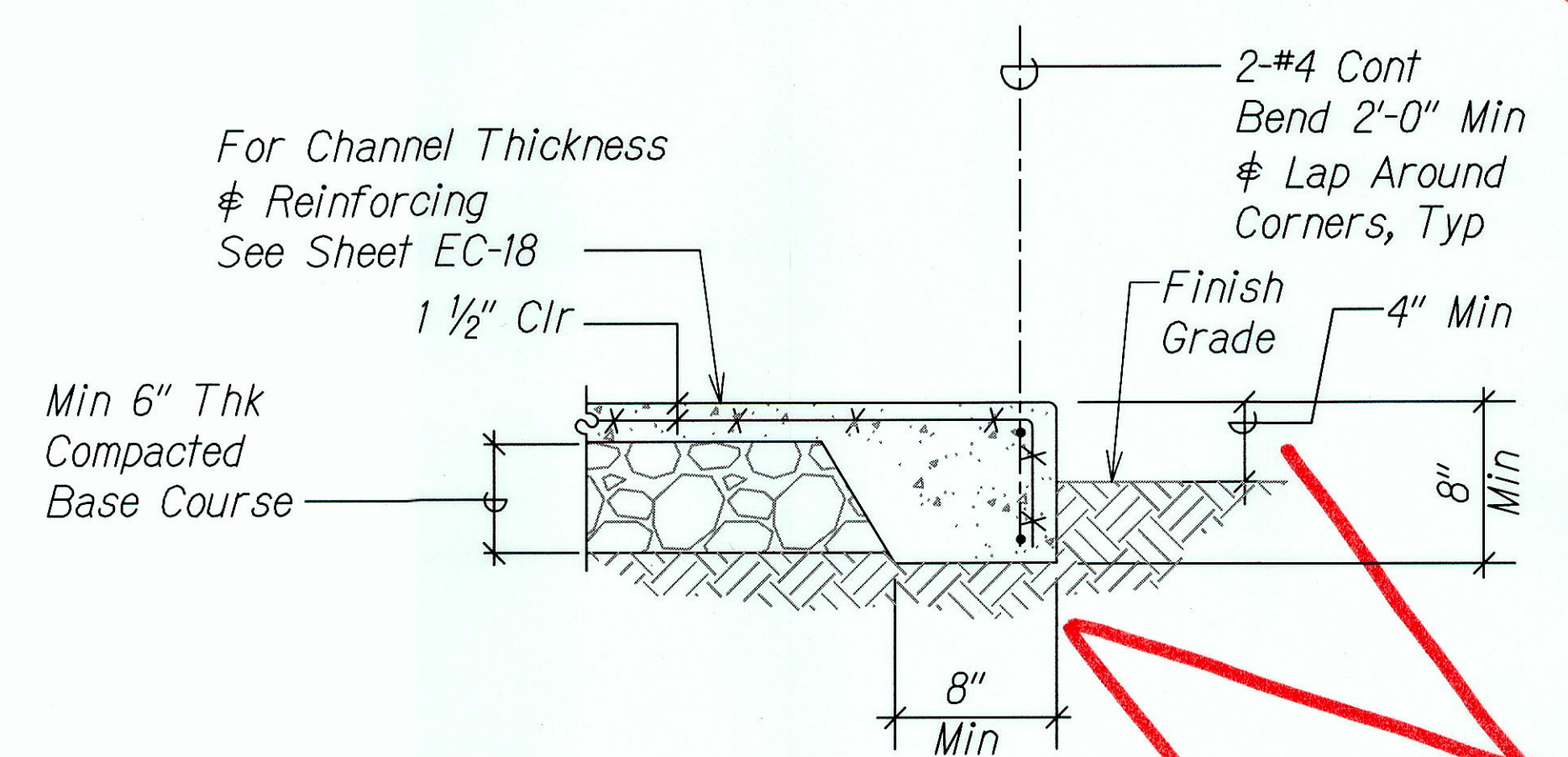
Minimum Splice & Embedment Lengths					
Bar Size	Lap Splice		Embedment		
	Bot Bar Or Wall Bar	Top Bar	Straight		w/ Std Hook
			Bot Bar Or Wall Bar	Top Bar	
#3, #4	29"	38"	22"	29"	11"
#5	36"	47"	28"	36"	14"
#6	43"	56"	33"	43"	17"
#7	63"	82"	48"	63"	20"
#8	72"	94"	55"	72"	22"
#9	81"	106"	62"	81"	25"
#10	91"	119"	70"	91"	28"
#11	101"	132"	78"	101"	31"



1. 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.
2. "Top Bars" Are Horizontal Bars With 12" Or More Of Concrete Cast Below.

TYPICAL REBAR SPLICE & EMBEDMENT LENGTH SCHEDULE  
 Scale: Not To Scale

1  
 EC-05/EC-05



Notes: Welded wire fabric reinforcement shall be chaired to maintain proper concrete clear cover throughout the slab.

AT THICKENED CHANNEL EDGE

TYPICAL CONC CHANNEL DETAIL  
 Scale: Not To Scale

2  
 EC-05/EC-05

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

X-BDR-KAWAINUI.DWG 10/29/2012 3:35:45 PM

4/30/16  
 EXP. DATE  
*Ron E. Iwamoto*  
 This work was prepared by me or under my supervision.

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**TYPICAL STRUCTURAL  
 DETAILS - 1**

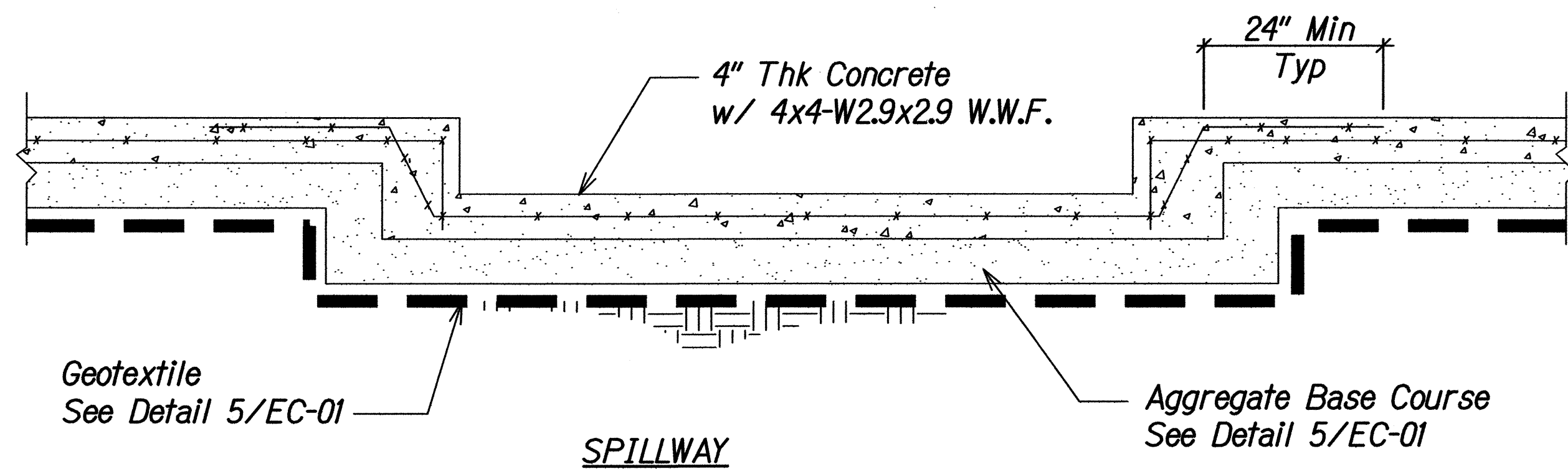
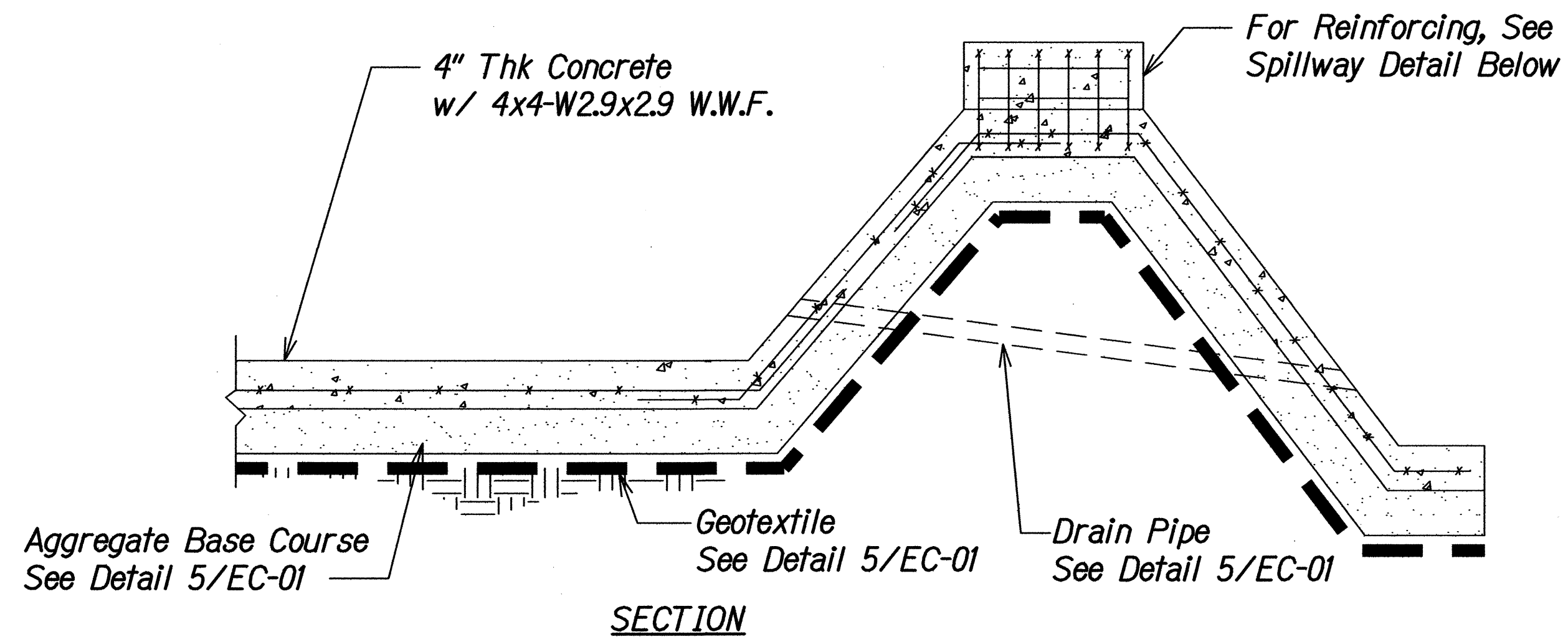
KAWAINUI WATERSHED STORM WATER  
 BEST MANAGEMENT PRACTICES ON OAHU  
 Project No. HWY-O-07-14M  
 Scale: As Shown Date: April 2014

SHEET No. EC-05 OF 19 SHEETS

"AS-BUILT"



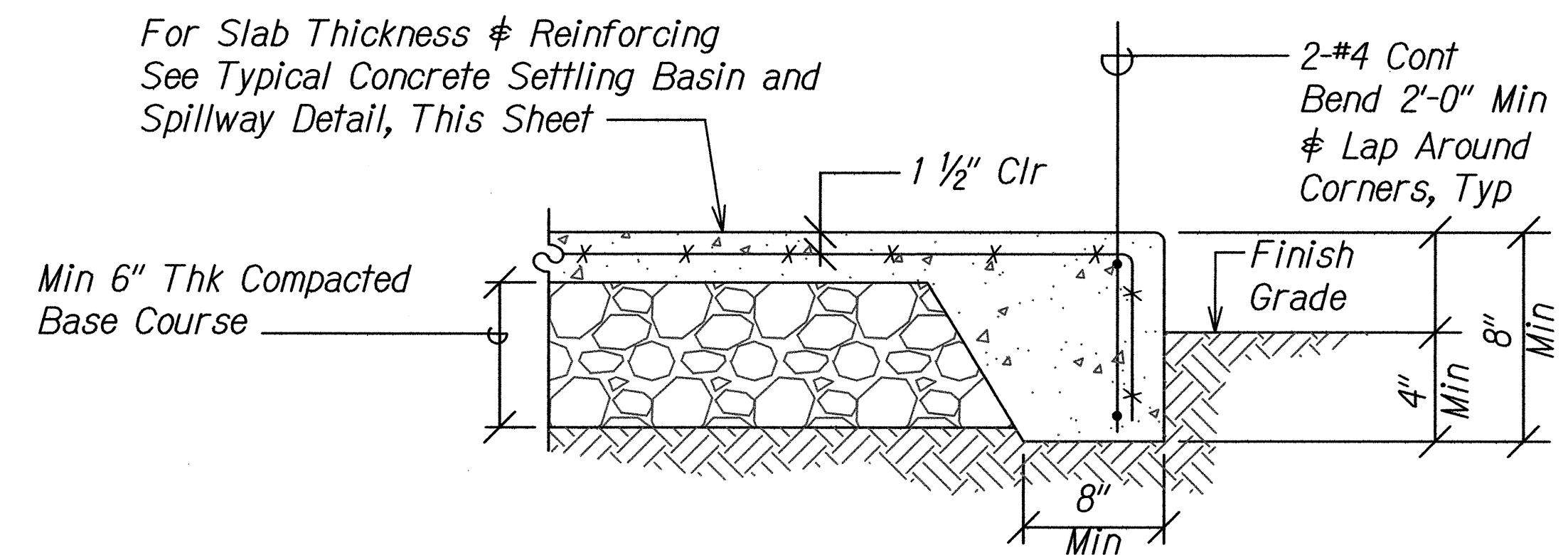
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-07-14M	2014	21	51



- Notes:**
1. For balance of information, See Detail 5 on Sheet EC-01.
  2. Contractor shall provide thickened slab edges. See Typical Slab-On-Grade Detail At Thickened Slab Edge, this sheet.

**TYPICAL CONC SETTLING BASIN AND SPILLWAY REINFORCING DETAIL**  
Scale: Not To Scale

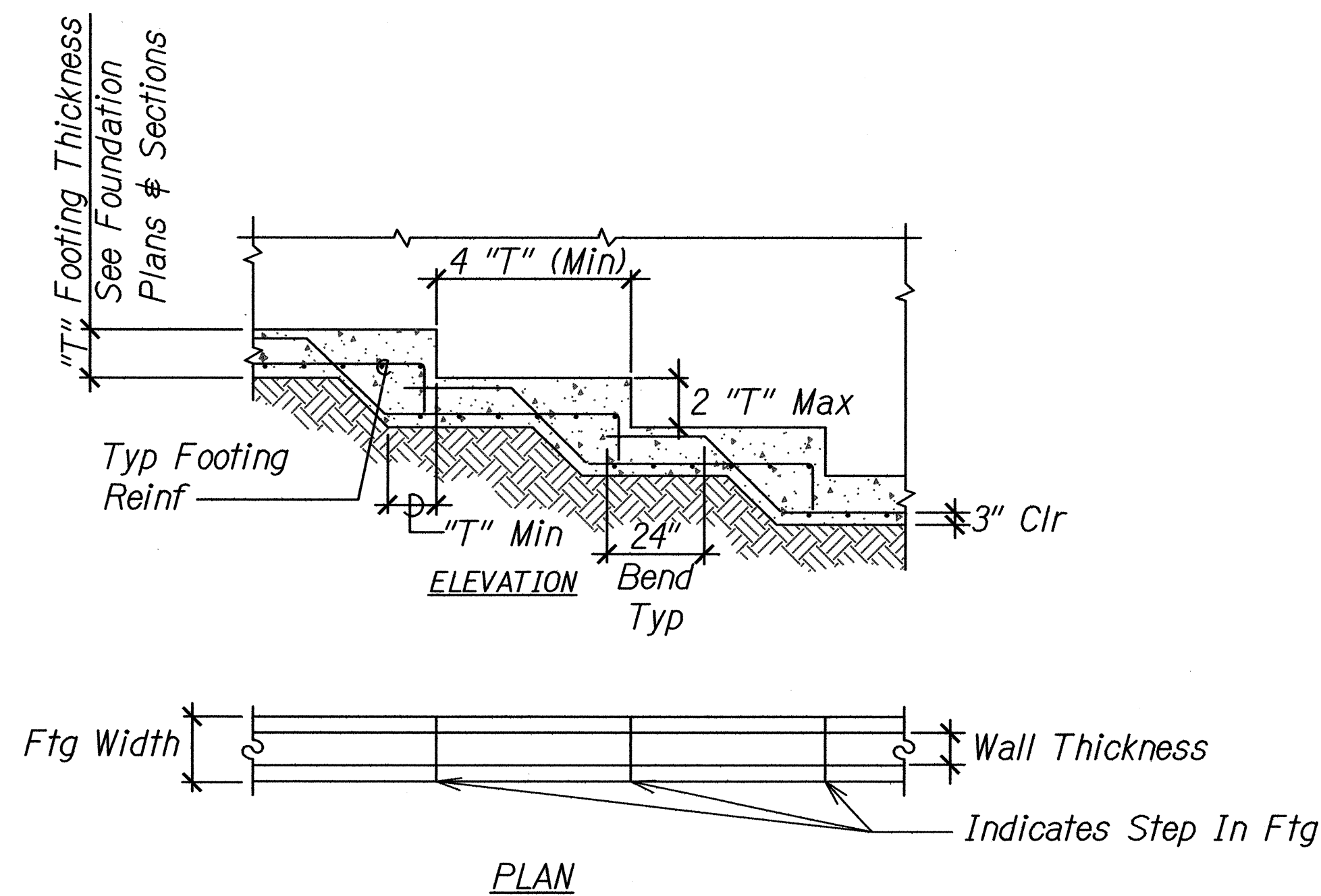
EC-06EC-06



**Notes:** Welded wire fabric reinforcement shall be chaired to maintain proper concrete clear cover throughout the slab.

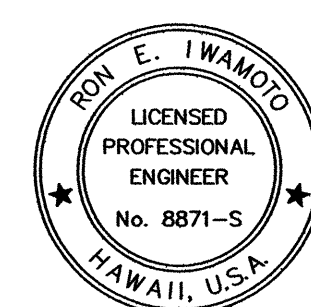
**TYPICAL SLAB-ON-GRADE DETAIL AT THICKENED SLAB EDGE**  
Scale: Not To Scale

EC-06EC-06



**TYPICAL STEPPED FOOTING DETAIL**  
Scale: As Shown

EC-06EC-06



4/30/16  
EXP. DATE  
4/4/14  
This work was prepared by me or under my supervision.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**TYPICAL STRUCTURAL  
DETAILS - 2**

**KAWAINUI WATERSHED STORM WATER  
BEST MANAGEMENT PRACTICES ON OAHU**

Project No. HWY-0-07-14M  
Scale: As Shown Date: April 2014

SHEET No. EC-06 OF 19 SHEETS