

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(88):13	1971	114	457

NOTES

- Consolidate the Following Areas Without Sand Drains using a 2 Foot Thick Non-Select Permeable Material Blanket and Surcharge as indicated:
 - Approximate 8-foot Surcharge Route H-1, From Sta. 225+00 to Sta. 227+00
Ramp ES, From Sta. 35+00 to Sta. 35+30, and Sta. 35+80 to Sta. 41+00
 - Approximate 5-foot Surcharge Ramp SE, From Sta. 228+00 to Ramp WE, Sta. 243+00
Ramp WE, From Sta. 240+00 to Sta. 243+00
Ramp P, From Sta. 23+00 to Sta. 26+10, and Sta. 28+25 to Sta. 30+50
Ramp O, From Sta. 11+30 to Sta. 13+50, and Sta. 15+45 to Sta. 18+00
 - Approximate 2-foot Surcharge Ramp O, From Sta. 30+55 to Sta. 32+00
 - No Surcharge Ramp ES, From Sta. 41+00 to 46+00.
- The 2-foot thick Non-select Permeable Material Blanket shall not contain more than 10% by weight of material passing a No. 200 mesh screen.
- See Cross Sections for top of Surcharge Elevations and Cross Slopes.
- 2x10, 11x12, 12x14, 14x16 Indicate Areas and Spacing of Sand Drains. All Sand Drain Spacing to be Staggered. Where Sand Drains are Indicated, a 3-Foot Thick Select Permeable Material Blanket Shall be Placed Over Sand Drains. See Typical Cross Sections, Sheet 118. Also, See Special Provisions for Gradation Size Requirements, For Sequence of Construction of Sand Drains, Embankment and Surcharge See Construction Sequence and Temporary Signing Plans.

LEGEND

- SETTLEMENT PLATFORMS
- Ⓟ PORE PRESSURE MEASURING DEVICES
- ! CONTROL STAKES
- Ⓢ GROUND WATER OBSERVATION WELLS
- DRAINAGE WINDROW — PIPE OUTLET
- Ⓐ APPROXIMATE LOCATION OF EXISTING ARTESIAN WELL
- Ⓐ VERIFIED LOCATION OF EXISTING ARTESIAN WELL

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOIL STABILIZATION DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(88):13

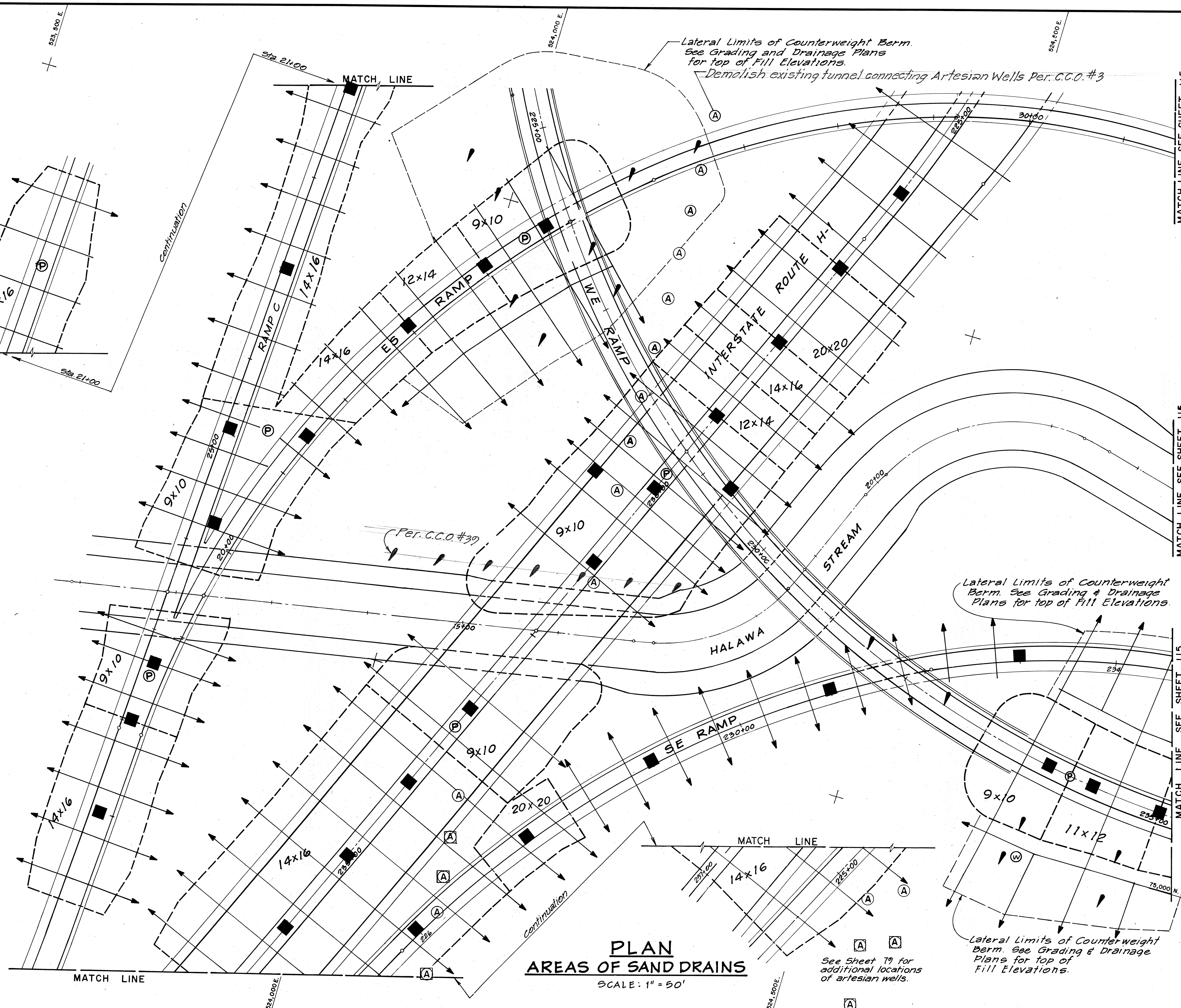
SCALE: 1"=50'

DATE: 7-17-70

SHEET No. 1 OF 17 SHEETS

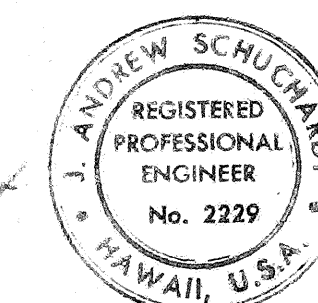
PLAN AREAS OF SAND DRAINS

SCALE: 1"=50'



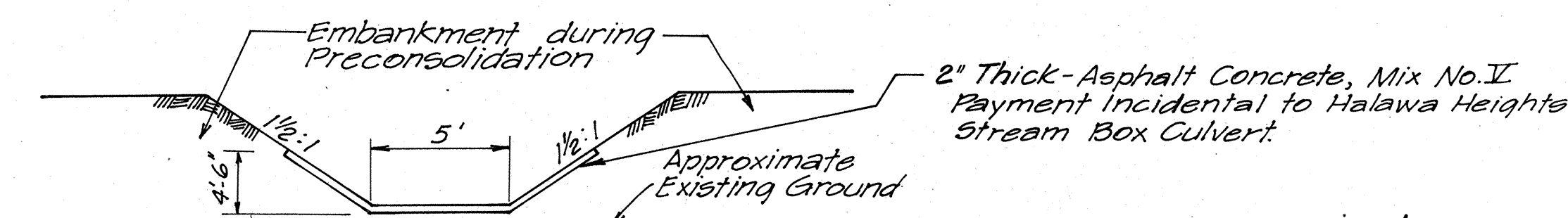
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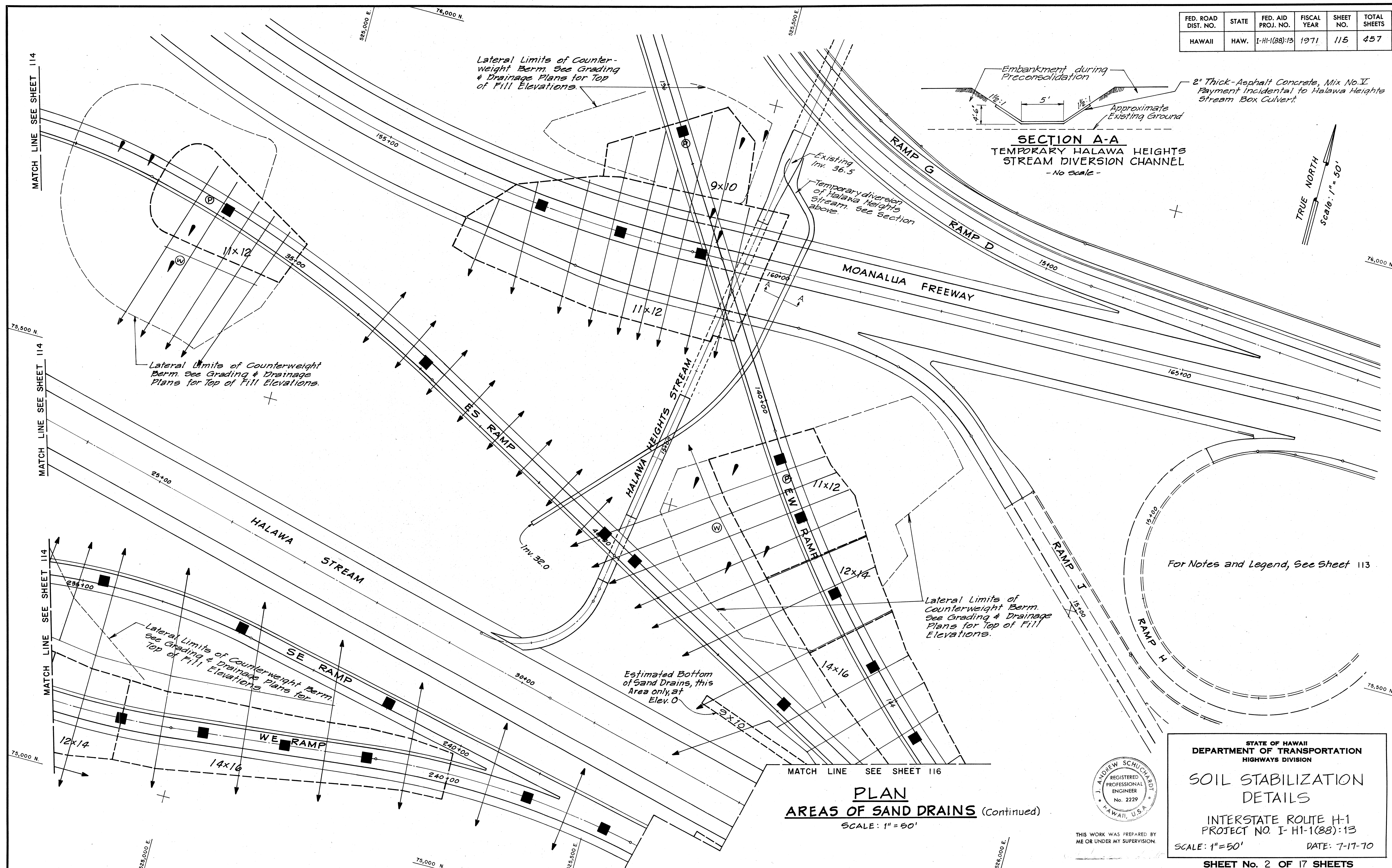
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DRAWN BY	"
TRACED BY	"
CHECKED BY	"
QUANTITIES BY	"
CHECKED BY	"
No.	"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(88):13	1971	115	457



SECTION A-A
TEMPORARY HALAWA HEIGHTS
STREAM DIVERSION CHANNEL

- No scale



For Notes and Legend, See Sheet 113

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

SOIL STABILIZATION DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-H1-1(88):13

SCALE: 1"=50'

DATE: 7-17-70

SHEET No. 2 OF 17 SHEETS

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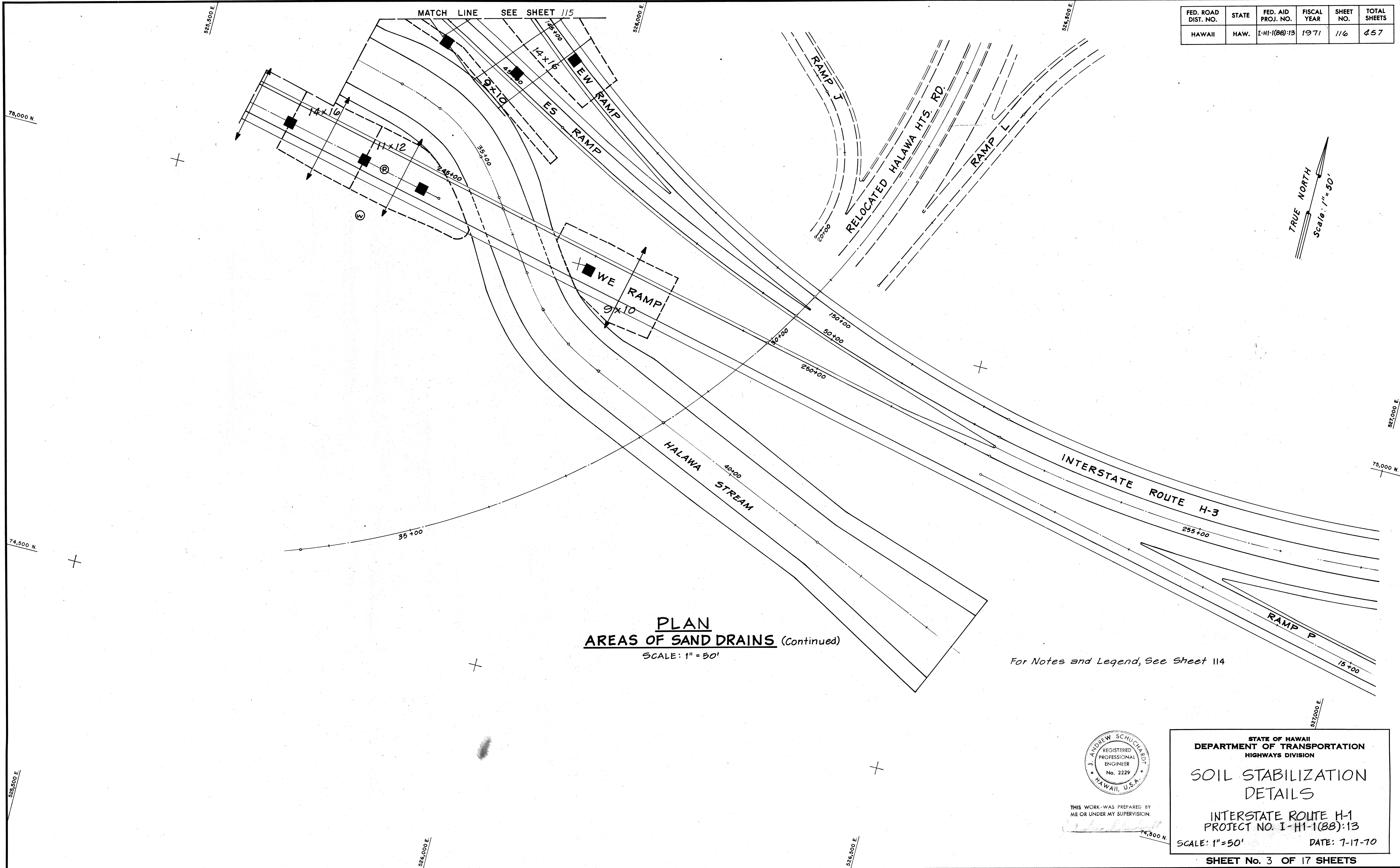
PLAN
AREAS OF SAND DRAINS (Continued)

SCALE: 1" = 50'

115

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(88):13	1971	116	457

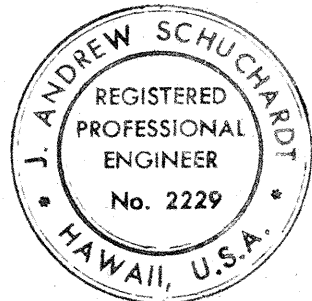
TRUE NORTH
Scale: 1" = 50'



PLAN
AREAS OF SAND DRAINS (Continued)
SCALE: 1" = 50'

For Notes and Legend, See Sheet 114

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



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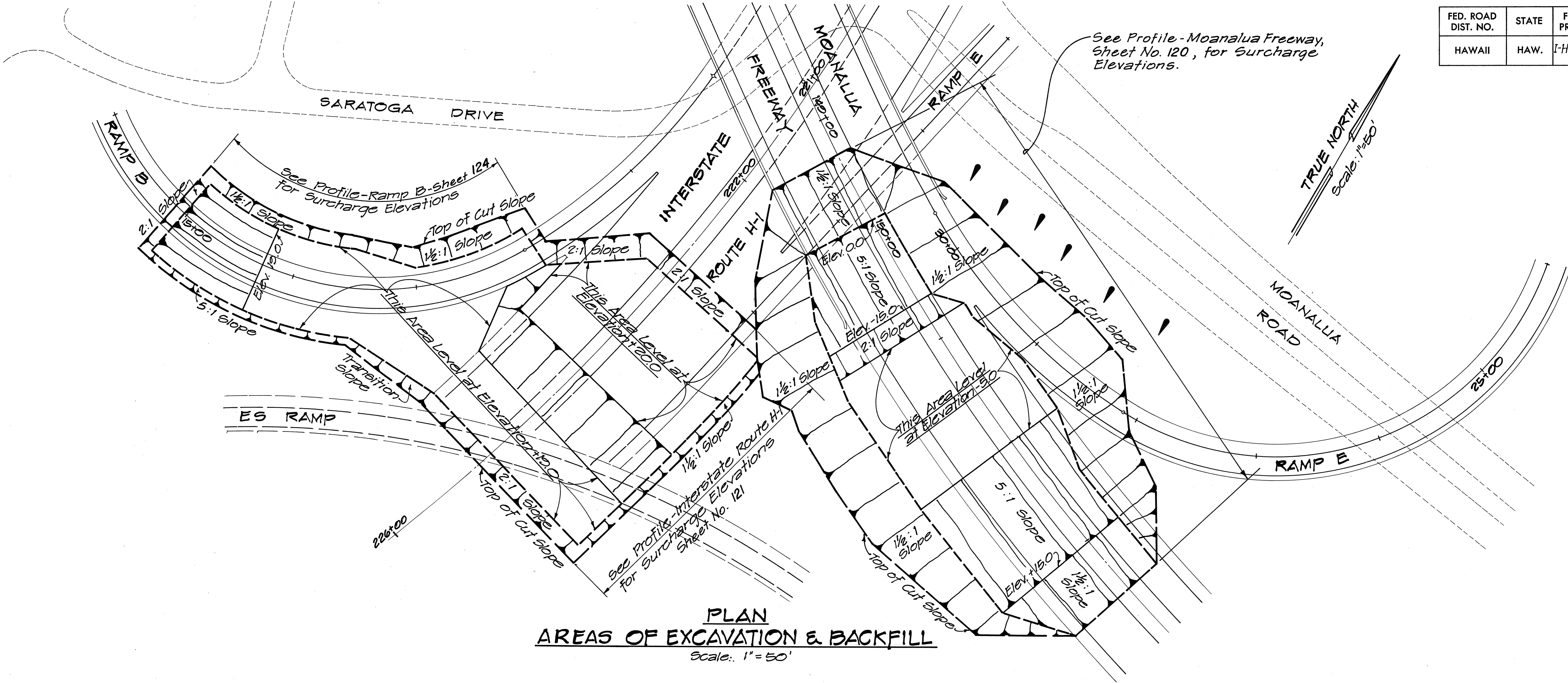
**SOIL STABILIZATION
DETAILS**

INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(88):13

SCALE: 1" = 50' DATE: 7-17-70

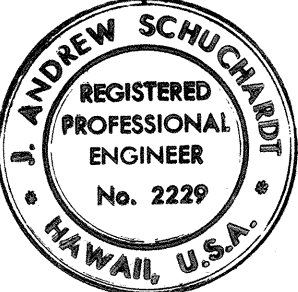
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(88):13	1971	117	457



ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
QUANTITIES BY	
NO.	

For Notes and Legend, See Sheet 114



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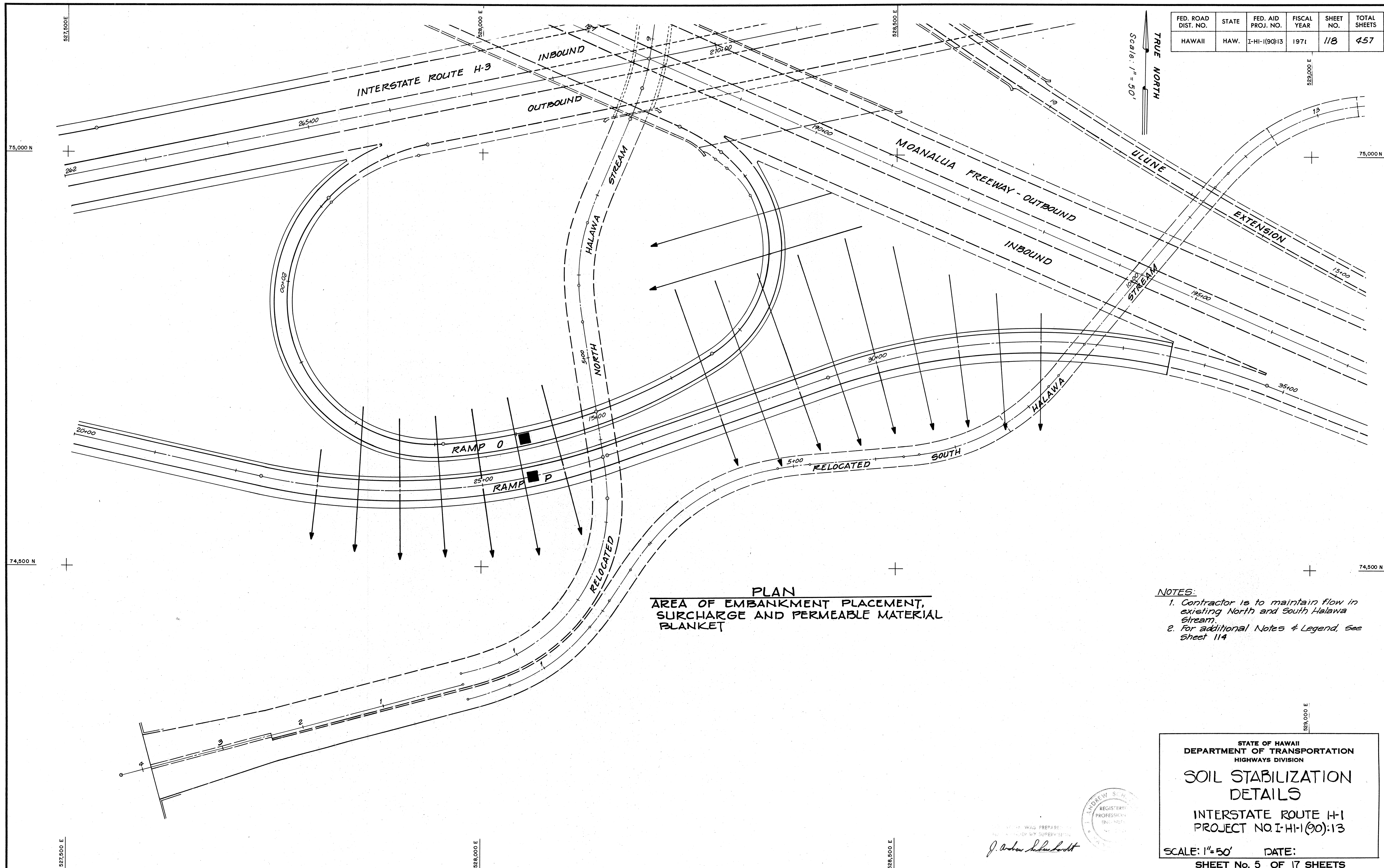
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOIL STABILIZATION
DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(88):13

SCALE: AS NOTED DATE: 7-17-70

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(90):13	1971	118	457



PLAN
AREA OF EMBANKMENT PLACEMENT,
SURCHARGE AND PERMEABLE MATERIAL
BLANKET

NOTES:

1. Contractor is to maintain flow in existing North and South Halawa Stream.
2. For additional Notes & Legend, See Sheet 114

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

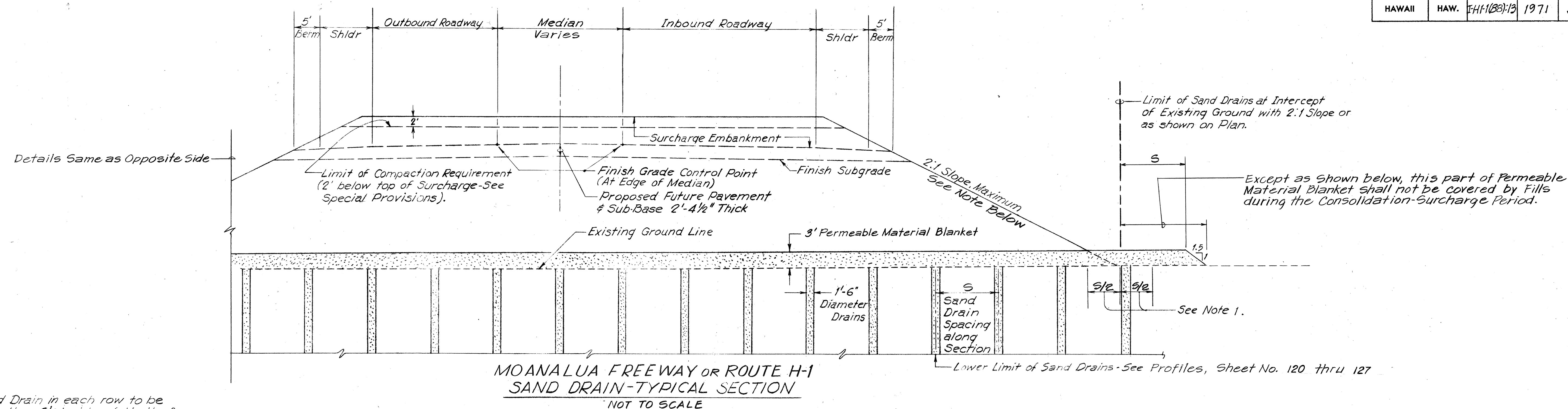
SOIL STABILIZATION DETAILS

INTERSTATE ROUTE I-1
PROJECT NO. I-H-1(90):13

SCALE: 1"=50' DATE: _____
SHEET No. 5 OF 17 SHEETS

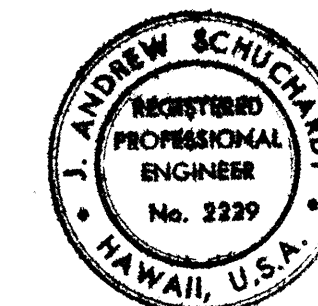
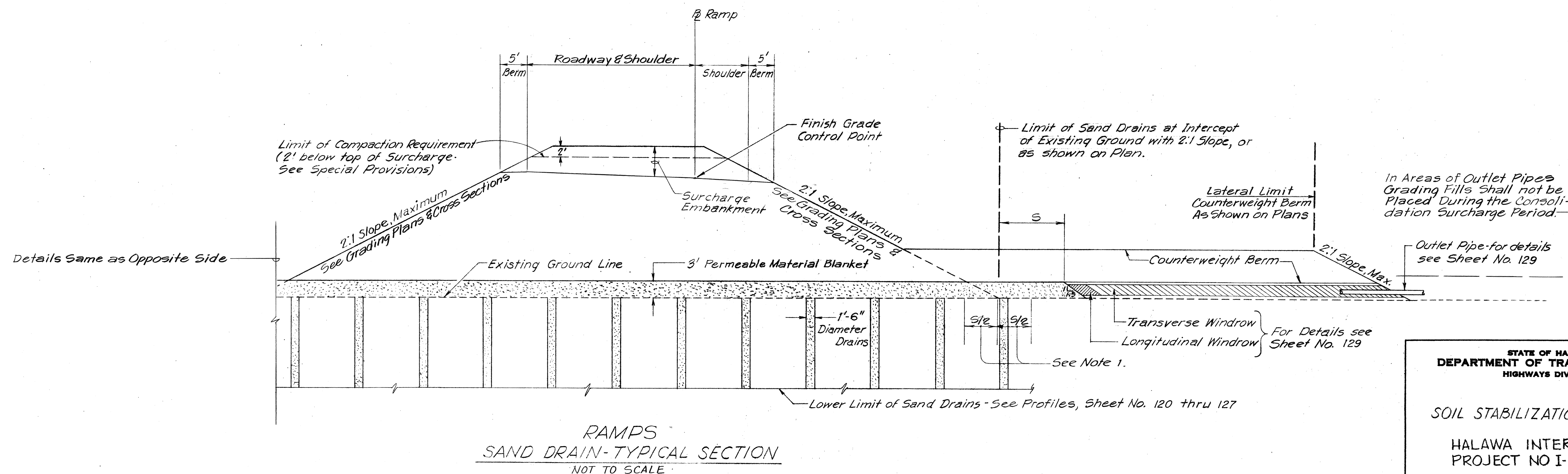
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(88)-13	1971	110	457



NOTES:

1. Last Sand Drain in each row to be not more than $\frac{5}{16}$ inside of Limit of Sand Drains, or not more than $\frac{9}{16}$ outside of Limit of Sand Drains.
2. For Roadway, Median and Shoulder Widths, See Alignment Plans.



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HIGHWAYS DIVISION

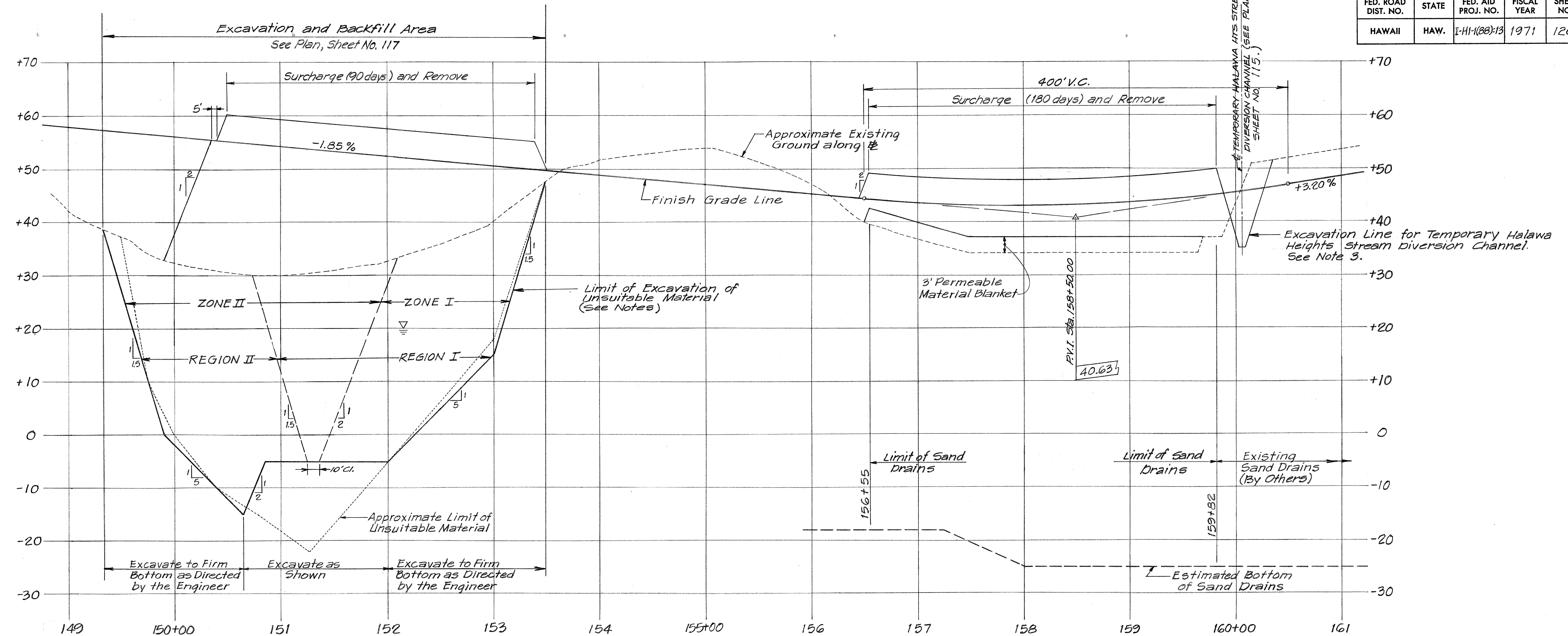
SOIL STABILIZATION DETAILS

HALAWA INTERCHANGE
PROJECT NO I-HI-1(88)-13

SCALE: AS SHOWN DATE: 7/17/70

SHEET No. 6 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(88)-13	1971	120	457



NOTES FOR MOANALUA FREEWAY EXCAVATION & BACKFILL AREA

- For Fill placed below elevation +20± (Approximate Water Table) See Special Provisions.
- Sequence of Excavation and Backfill shall be as follows:
 - Excavate REGION I to a 1.5:1 slope.
 - Fill ZONE I to a 2:1 slope to Elev. +20 (Allow 10 foot space between toe of REGION I cut and toe of ZONE I fill to allow for material sloughing off the 2:1 fill slope).
 - Excavate REGION II.
 - Fill ZONE II to Elev. +20.
 - Complete Fill.
- Control stakes shall be placed in the locations shown on the Plan, and prior to Excavation Operations, to observe existing Moanalua Road during the excavation. For Stations and Offsets of Control Stakes See Sheet 130.
- Unsuitable material to be disposed of in accordance with Section 203 of the Special Provisions.

PROFILE - MOANALUA FREEWAY

Scales: Horiz. 1" = 50'
Vert. 1" = 10'

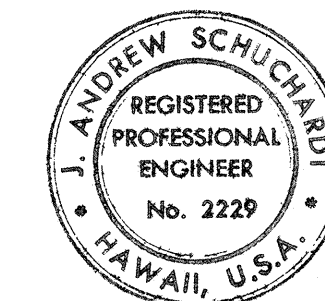
NOTES FOR SAND DRAINS AND SURCHARGE FOR MOANALUA FREEWAY

- Placement of Embankment and Surcharge for adjacent Moanalua Freeway is to precede placement of approach Embankments for Structure No. 7 (EW Ramp).
- Upon completion of consolidation period, removal of excess Surcharge from EW Ramp is to precede removal of excess Surcharge on Moanalua Freeway.
- Payment for Excavation, Backfill, and Paving of Temporary Halawa Heights Stream Diversion Channel to be Incidental to Halawa Heights Stream Box Culvert.

GENERAL NOTES - ALL PROFILES

- For Top of Surcharge Elevations and Cross Slopes See Cross Sections.
- For Sequence of Construction of Sand Drains, Embankment and Surcharge See Construction Sequence and Temporary Signing Plans.
- Where Consolidation is to be Accomplished without the Use of Sand Drains a 2-foot Non-Select Permeable Material Blanket has been Specified. This Blanket shall not be Exposed to Contamination by Unsuitable Material before the first lift of Embankment is placed on it. The Edge of the 2-foot Blanket shall Extend 5 feet beyond the Embankment Toe of Slope and shall remain open to Drain.

DATE	_____
SURVEY PLOTTED BY	_____
DESIGNED BY	_____
TRACED BY	_____
NOTE BOOK	_____
CHECKED BY	_____
NO.	_____



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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOIL STABILIZATION
DETAILS

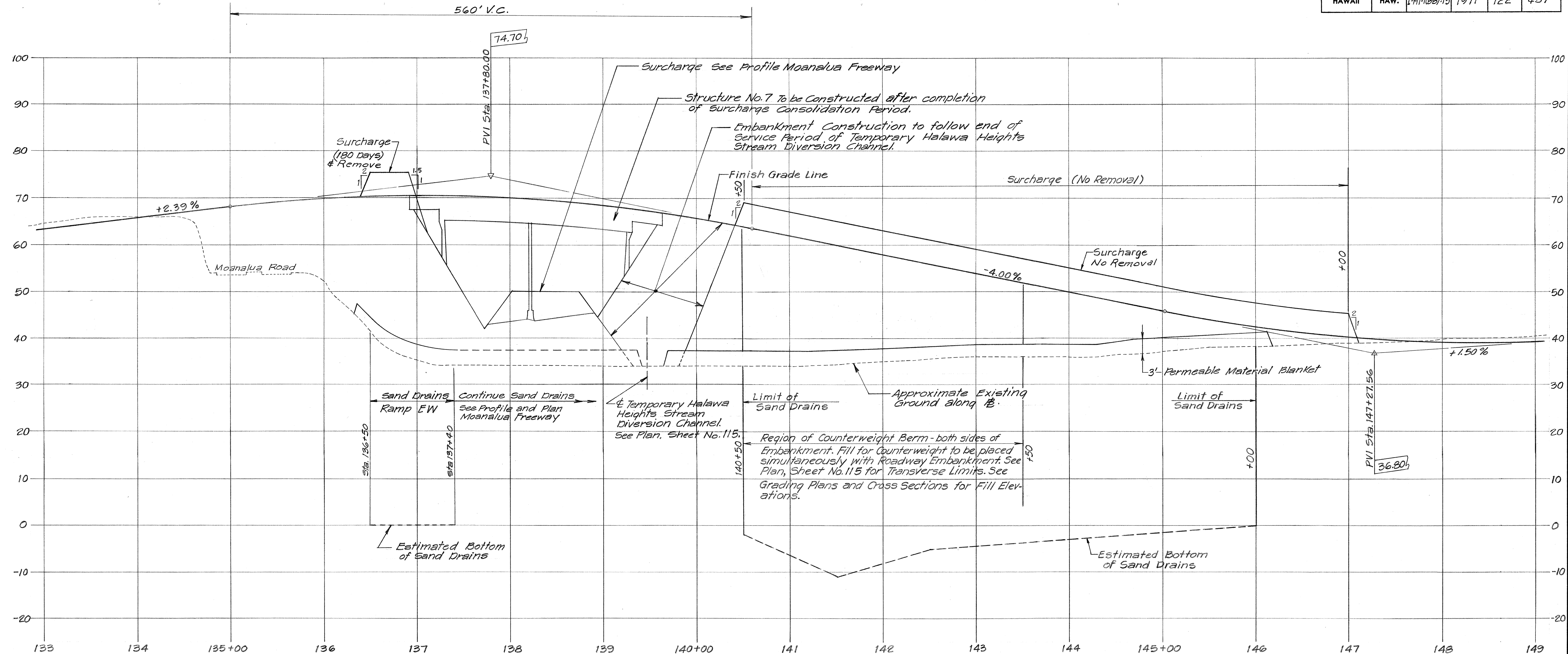
INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(88)-13

SCALE: AS SHOWN DATE: 7-17-70

SHEET No. 7 OF 17 SHEETS

120

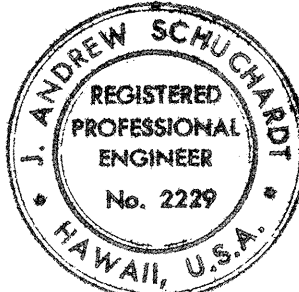
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(88):13	1971	122	457



PROFILE - EW RAMP
Scales: Horiz. 1" = 50'
Vert. 1" = 10'

For General Notes for Profiles see Sheet No. 120.

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
ORIGINAL	_____
PLAN	_____
NOTE BOOK	_____
No.	_____



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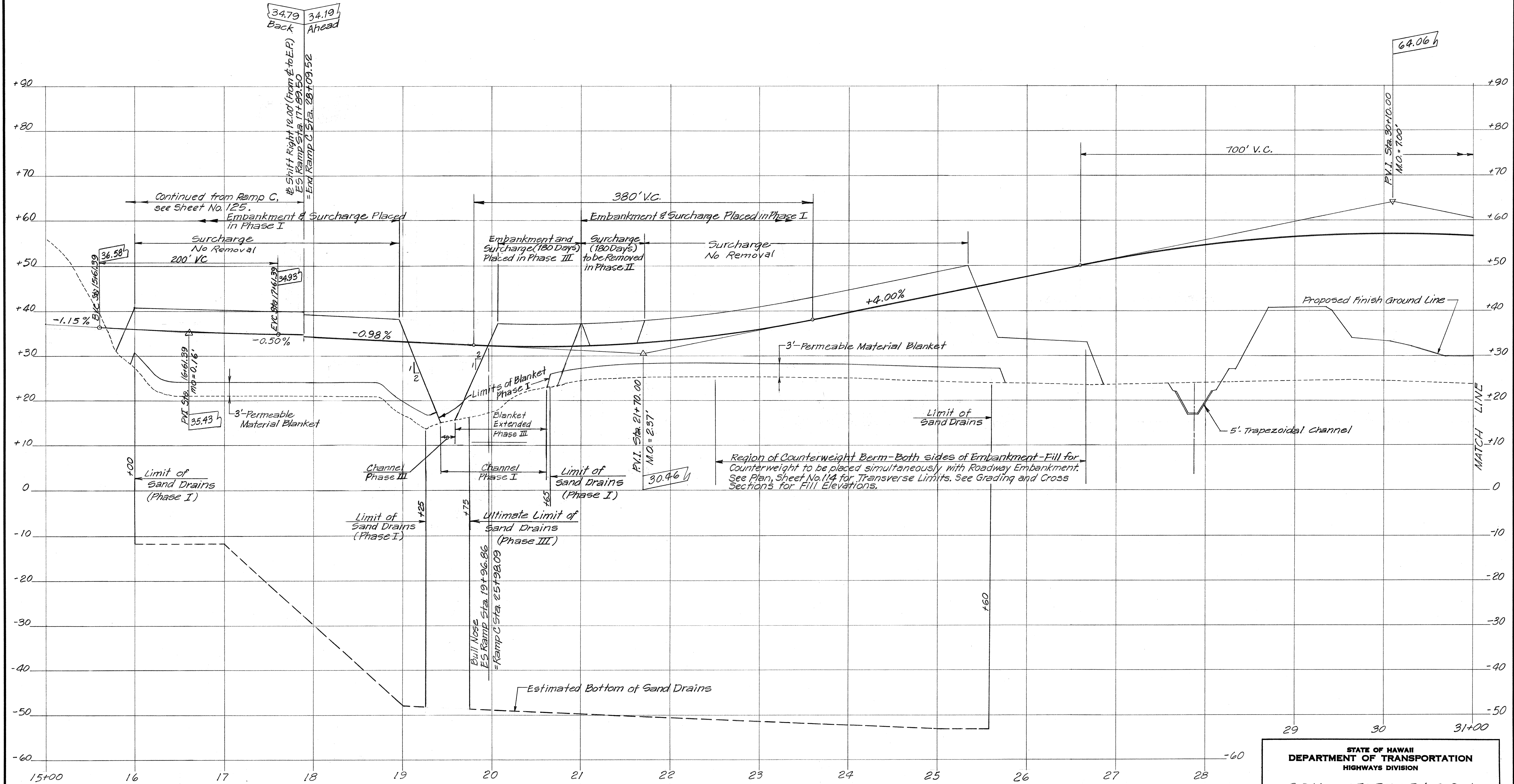
STATE OF HAWAII
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HIGHWAYS DIVISION

SOIL STABILIZATION
DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(88):13
SCALE: AS SHOWN DATE: 7-17-70

SHEET No. 9 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(88):13	1971	123	457



DATE	_____
DESIGNED BY	_____
DRAWN BY	_____
CHECKED BY	_____
NOTED BY	_____
QUANTITIES BY	_____
REVISIONS	_____

PROFILE - ES RAMP
 Scale: Horiz. 1" = 50'
 Vert. 1" = 10'

For General Notes for Profiles see Sheet No. 120.

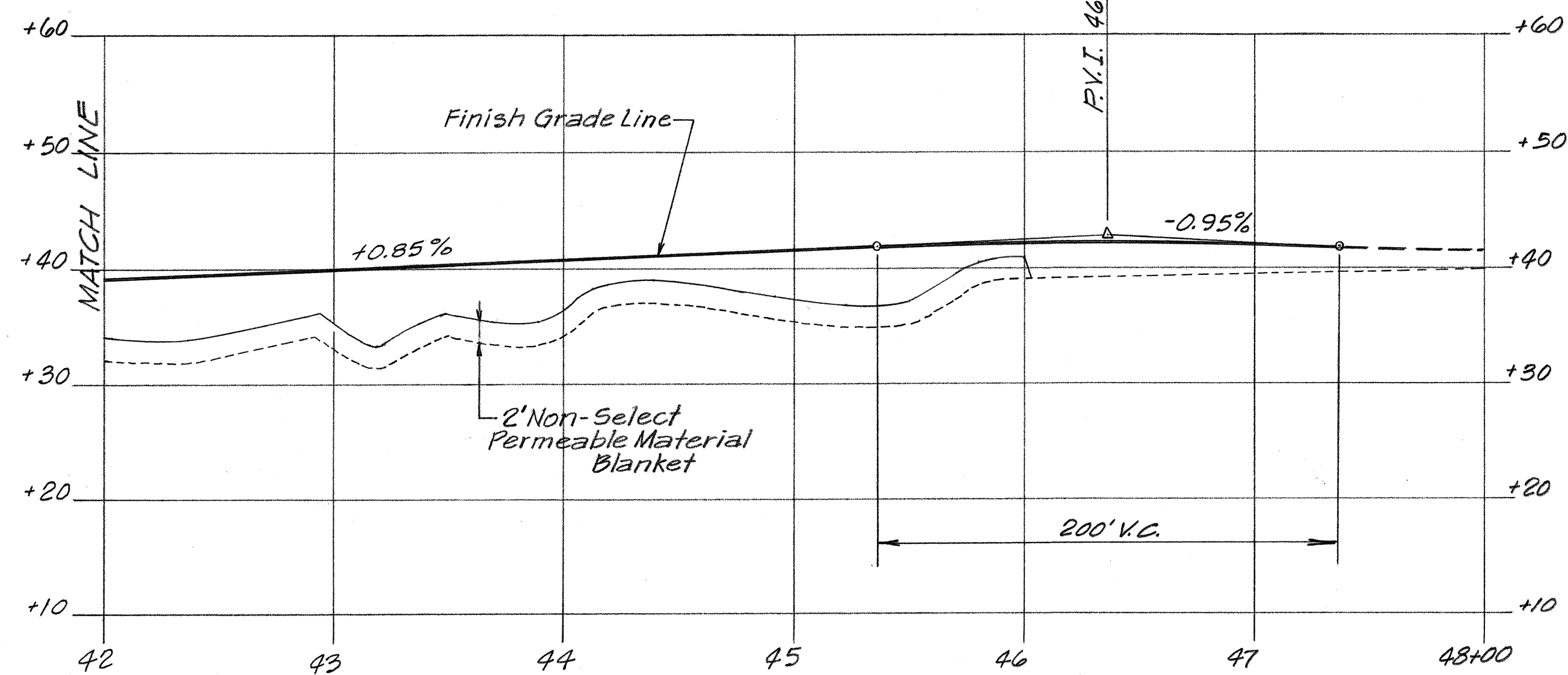
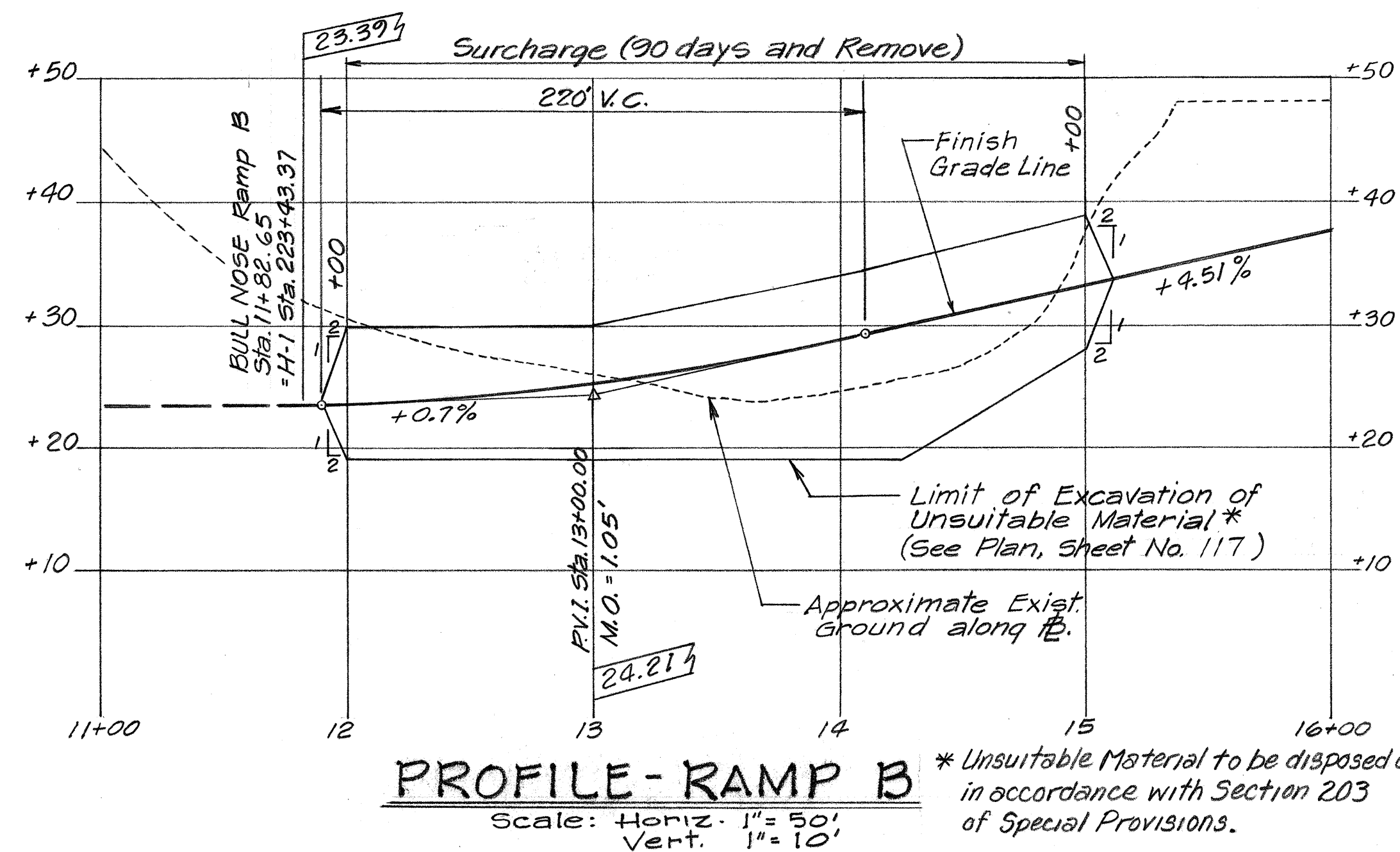
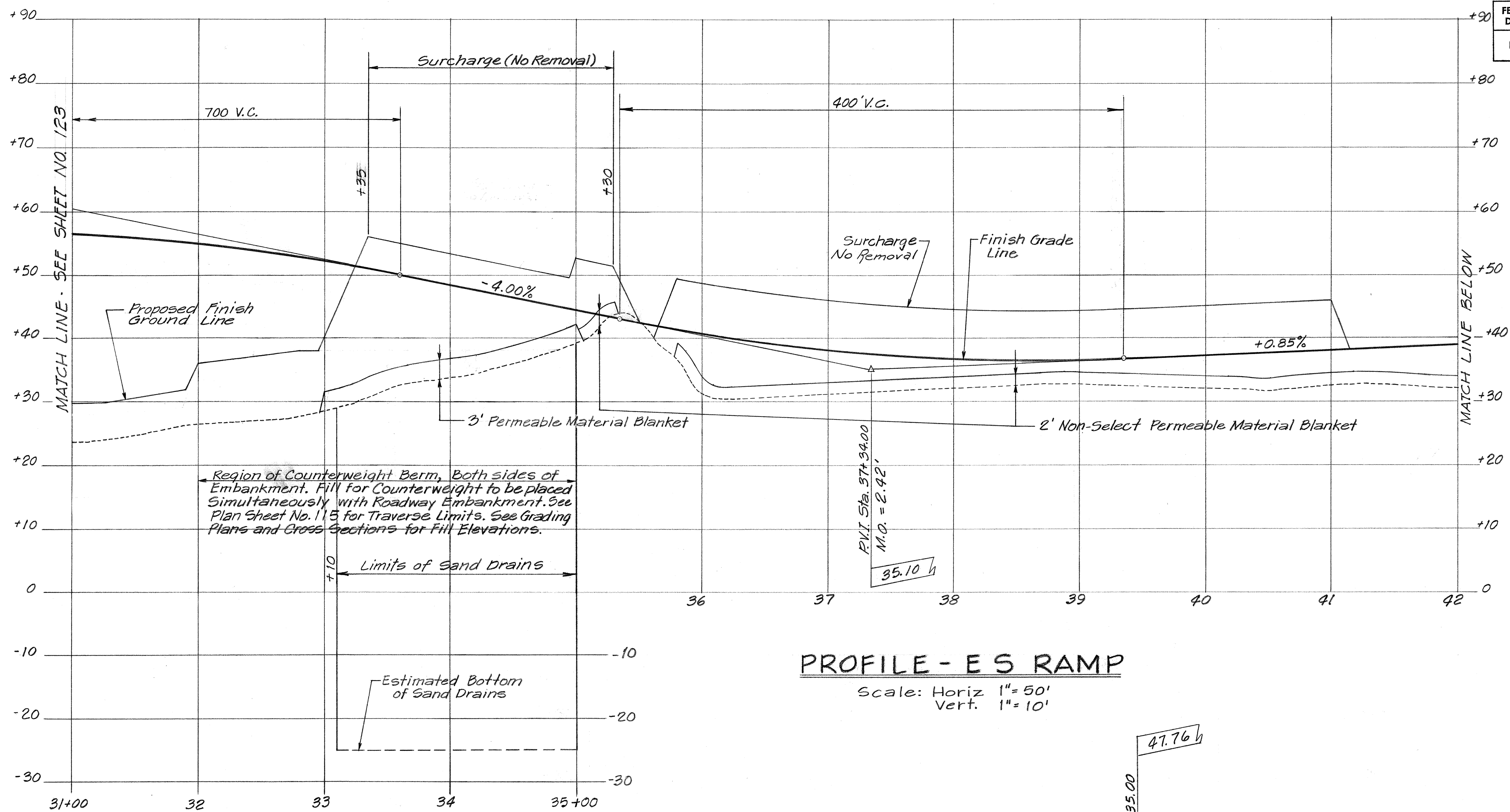
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[Signature]
 REGISTERED PROFESSIONAL ENGINEER
 No. 2229
 HAWAII, U.S.A.

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HIGHWAYS DIVISION

SOIL STABILIZATION
DETAILS
INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(88):13
SCALE: AS SHOWN
DATE: 7-17-70

SHEET No. 10 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(88):13	1971	124	457



For General Notes for Profiles See Sheet No. 120.

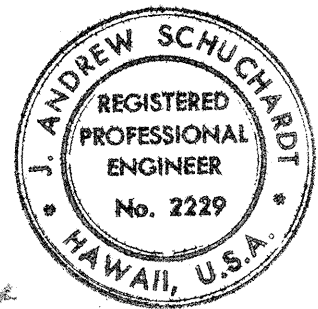
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOIL STABILIZATION
DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(88):13

SCALE: AS SHOWN DATE: 7-17-70

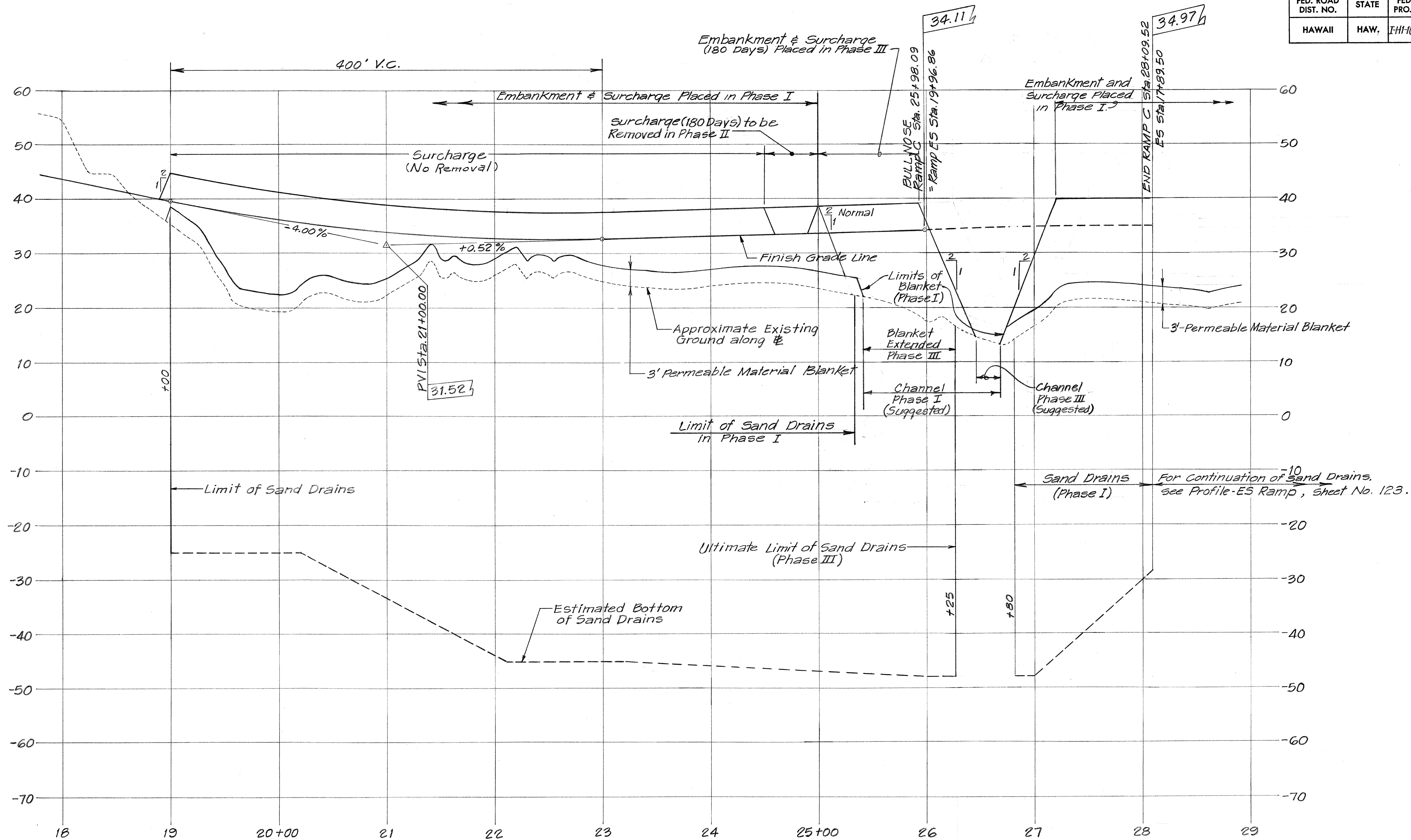
SHEET No. 11 OF 17 SHEETS



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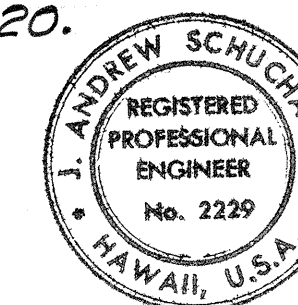
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HAWAII	HAW.	IHI-1(88)-13	1971	125	457



PROFILE - RAMP C

Scales: Horiz. 1" = 50'
Vert. 1" = 10'

For General Notes for Profiles see Sheet No. 120.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOIL STABILIZATION DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I- H1-1(88)-13

SCALE: AS SHOWN

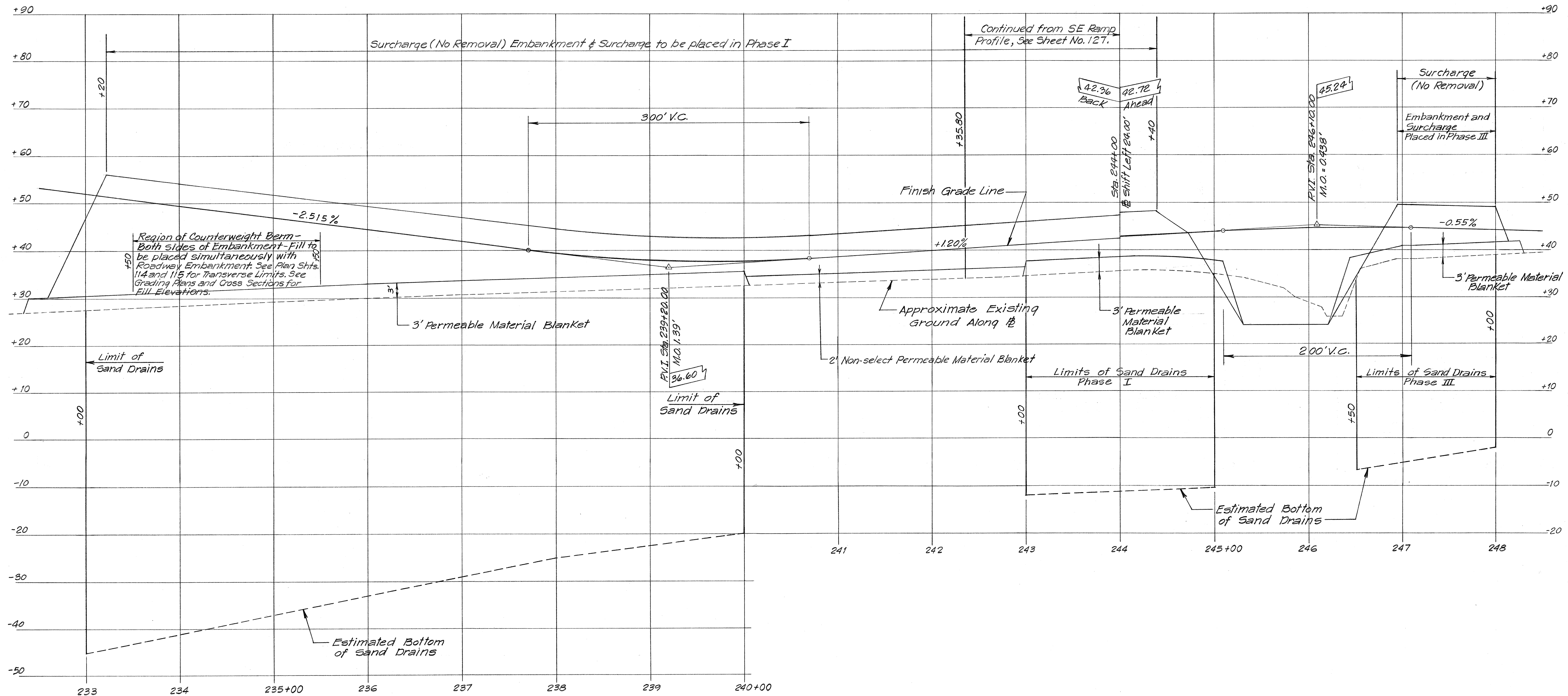
DATE: 7-17-70

SHEET No. 12 OF 17 SHEETS

125

DATE	
SURVEY PLOTTED BY	
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ORIGINAL PLAN	
NOTE BOOK	
No.	

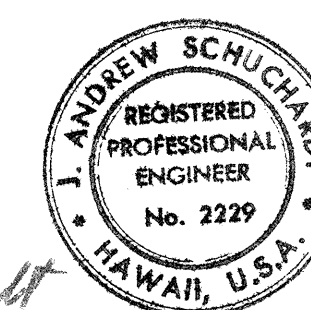
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(88):13	1971	126	457



PROFILE - WE RAMP

Scale: Horiz. 1" = 50'
Vert. 1" = 10'

For General Notes for Profiles see Sheet No. 120.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOIL STABILIZATION
DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I- H-1(88):13

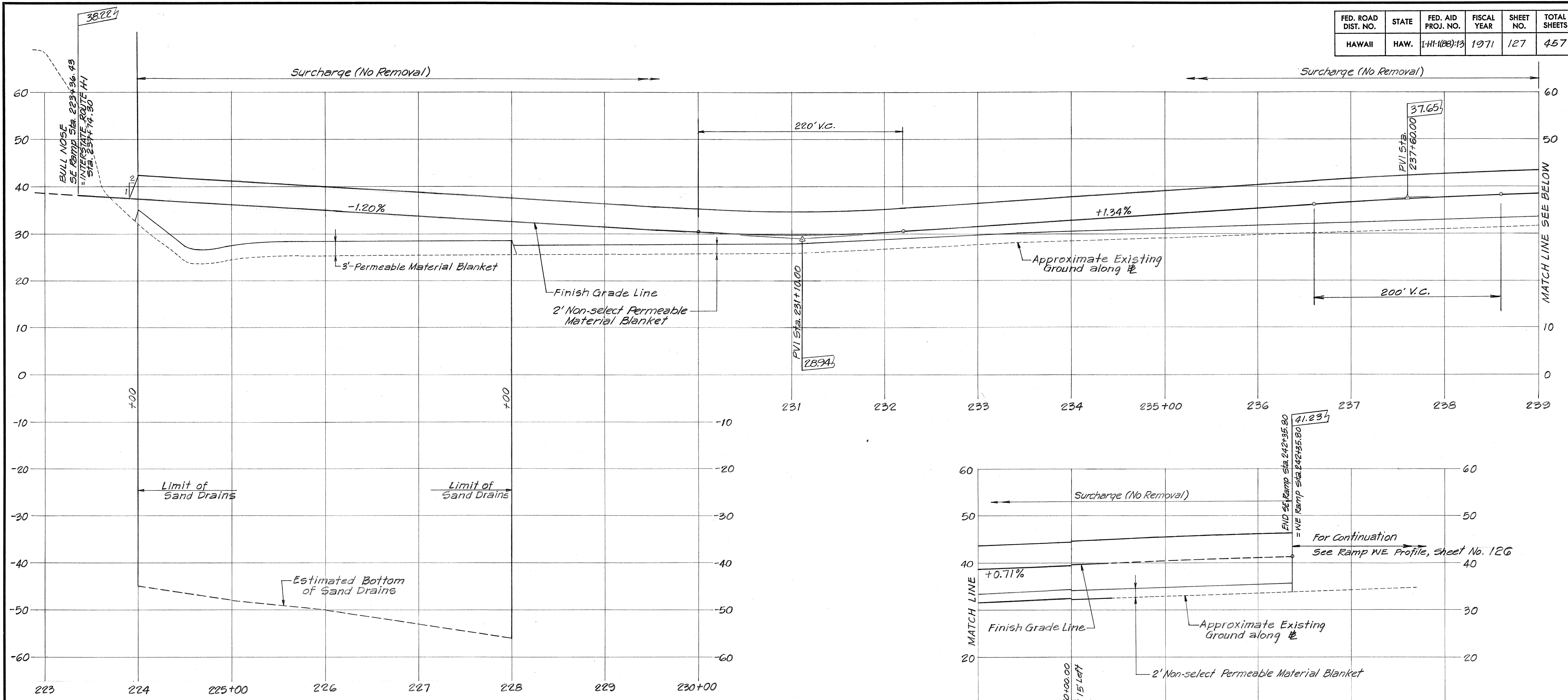
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SHEET No. 13 OF 17 SHEETS

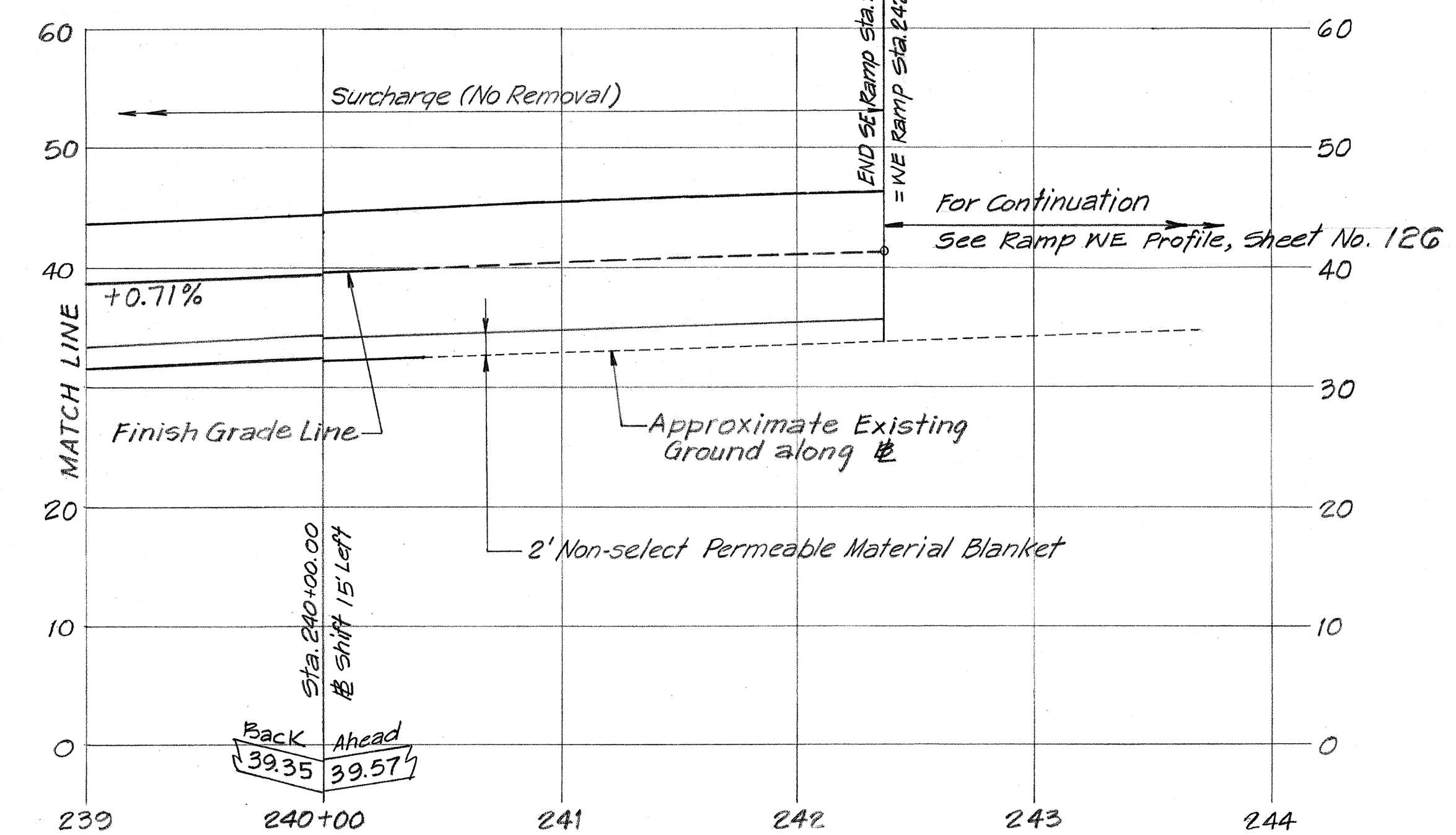
126

ORIGINAL PLAN	DATE
SURVEYED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(88):13	1971	127	457

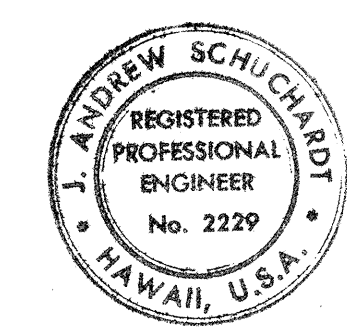


PROFILE - SE RAMP
 Scales: Horiz. 1" = 50'
 Vert. 1" = 10'



For General Notes for Profiles see Sheet 120.

DATE	_____
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NO.	_____



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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

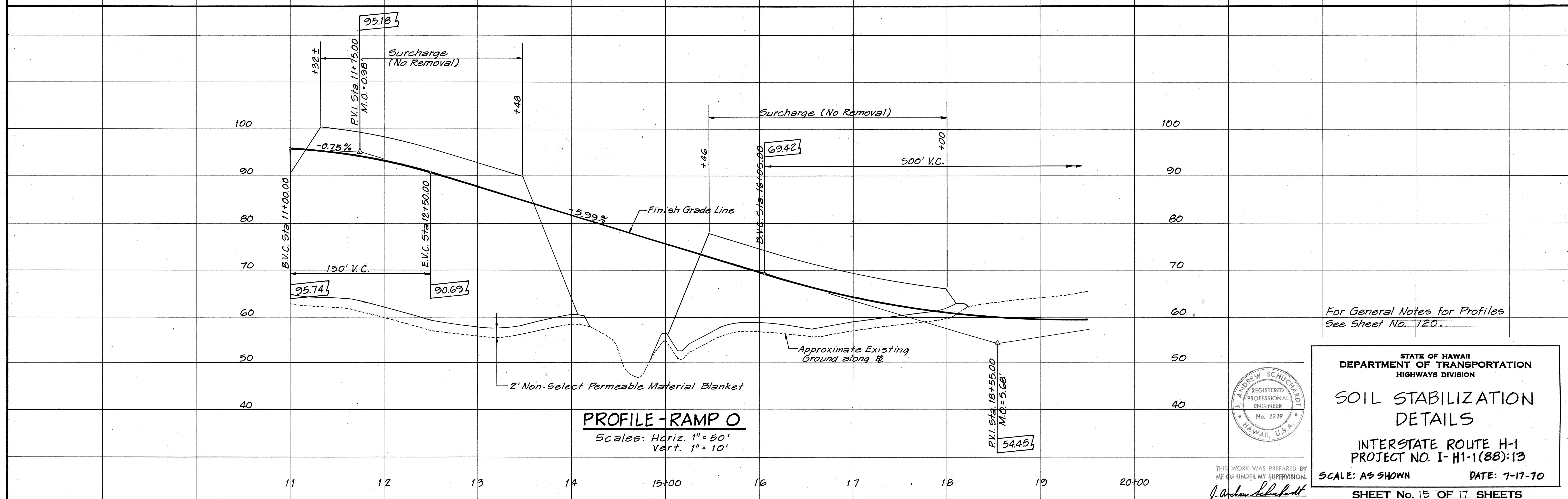
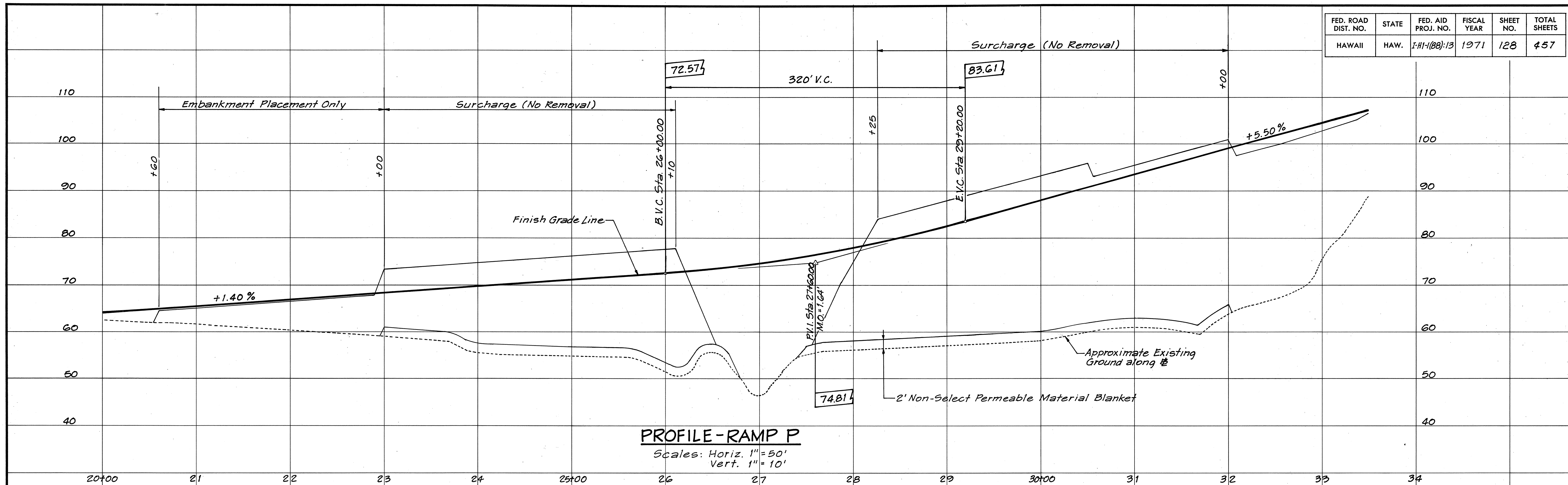
**SOIL STABILIZATION
 DETAILS**

INTERSTATE ROUTE H-1
 PROJECT NO. I- H-1-(88):13

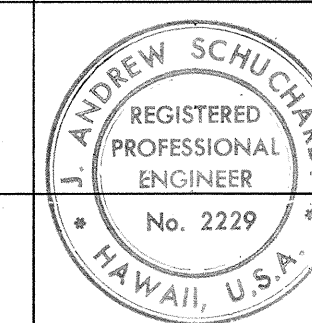
SCALE: AS SHOWN DATE: 7-17-70

SHEET No. 14 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(88):13	1971	128	457



For General Notes for Profiles
 See Sheet No. 120.



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

SOIL STABILIZATION DETAILS

INTERSTATE ROUTE H-1
 PROJECT NO. I-H-1(88):13

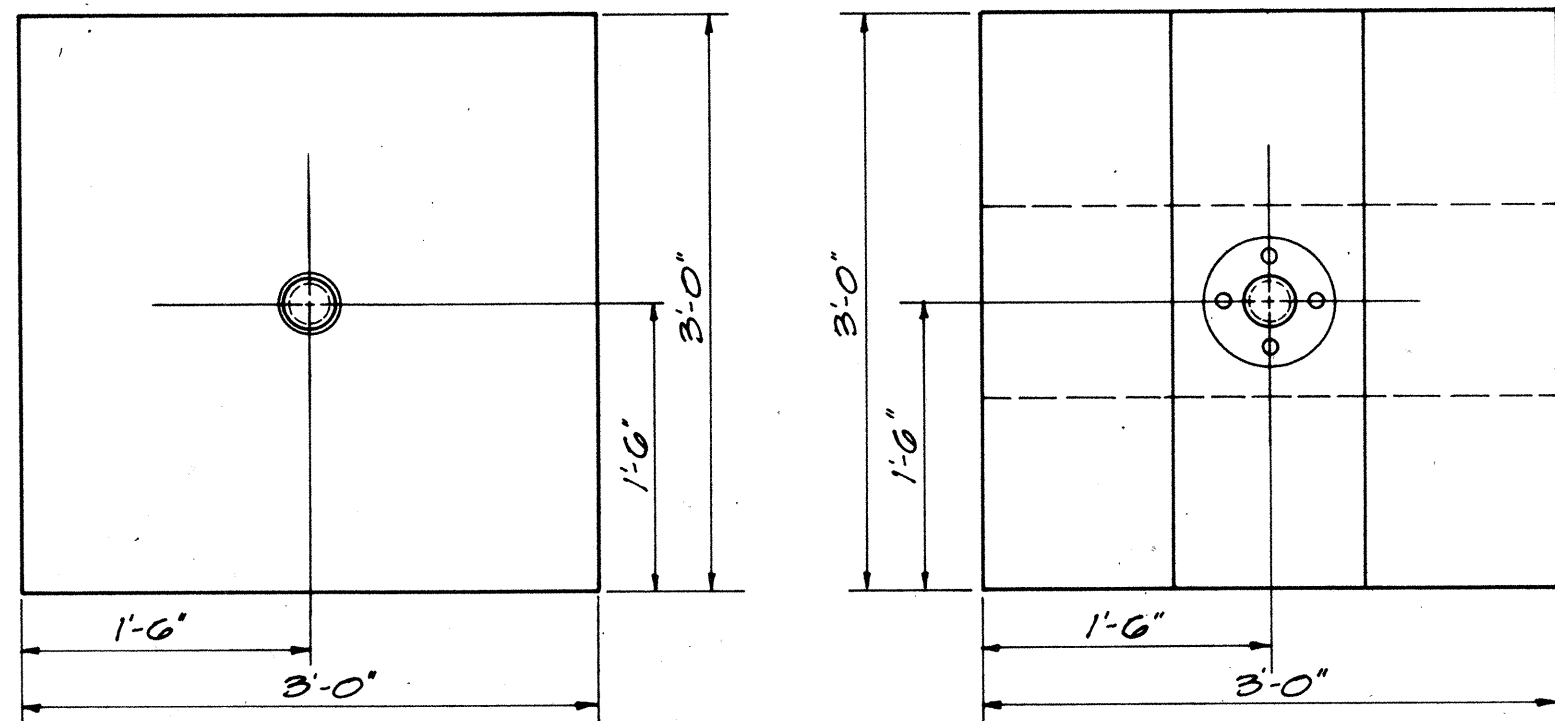
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SHEET No. 15 OF 17 SHEETS

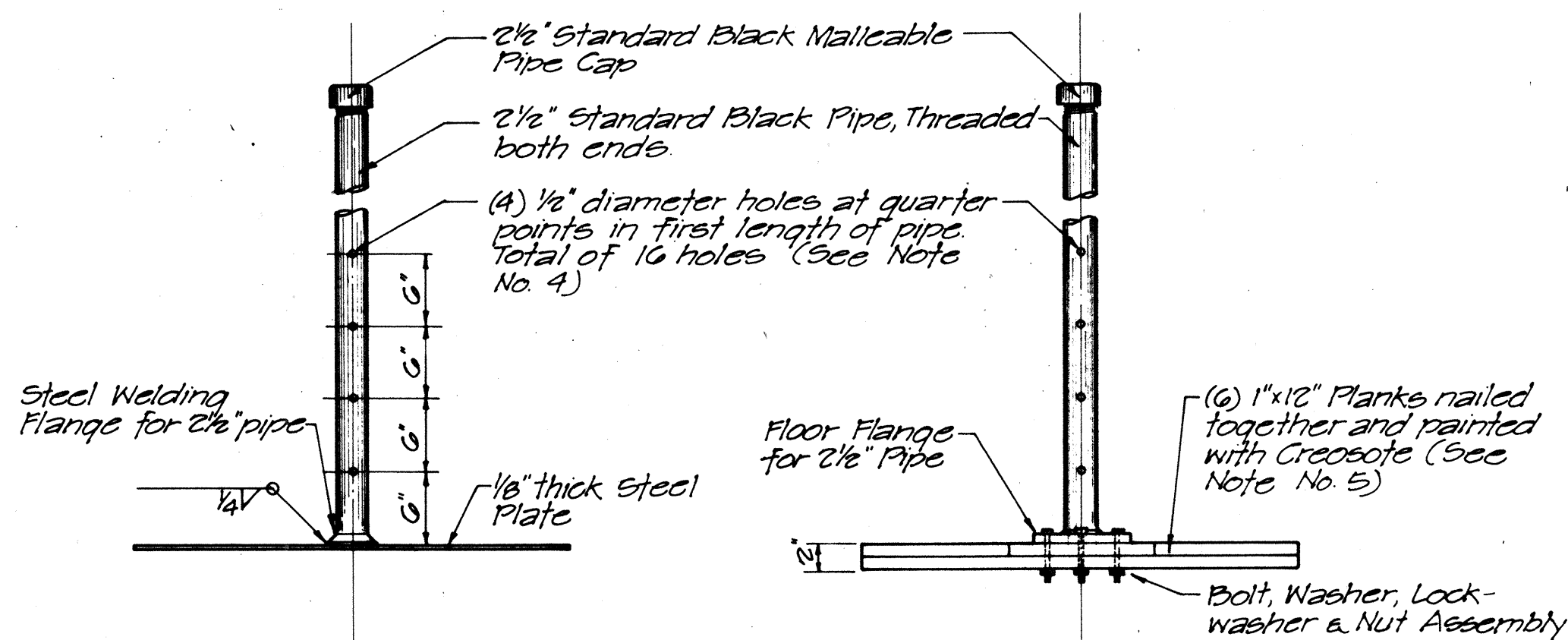
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SURVEY PLOTTED BY	DATE
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QUANTITIES BY	
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(88)-13	1971	129	457



PLAN



ELEVATION
STEEL BASE PLATFORM

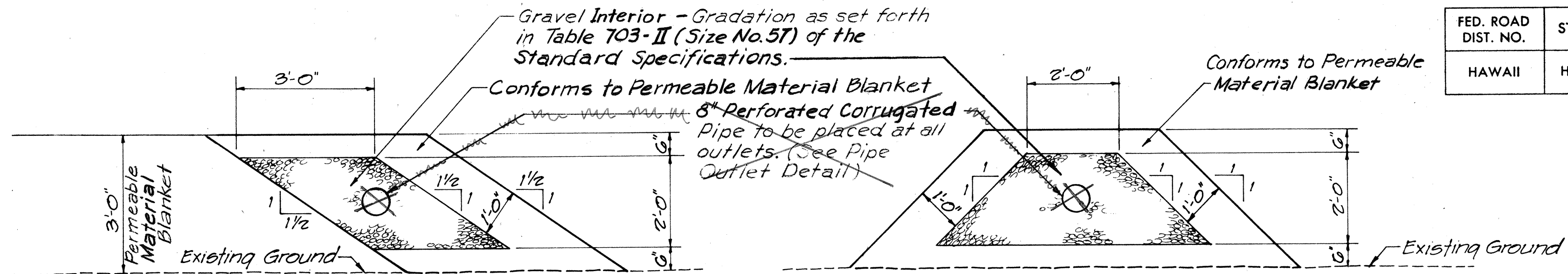
ELEVATION
WOOD BASE PLATFORM

SETTLEMENT PLATFORM DETAIL

Scale: 1"=1'-0"

SETTLEMENT PLATFORM NOTES:

1. The use of either the Steel or Wood Base Settlement Platforms shall be the Contractor's option.
2. Contractor to furnish material and labor to extend pipe up through fill.
3. All vertical pipes of Settlement Platforms shall be accurately and consecutively numbered in one foot intervals measured from the bottom of the Settlement Platform base. The numbering and graduations shall be marked on the vertical pipe in durable yellow paint by the Contractor immediately after each section of pipe is added.
4. Holes to be drilled in first length of pipe, if specified.
5. Sound lumber must be used for the Wood Base Platform.

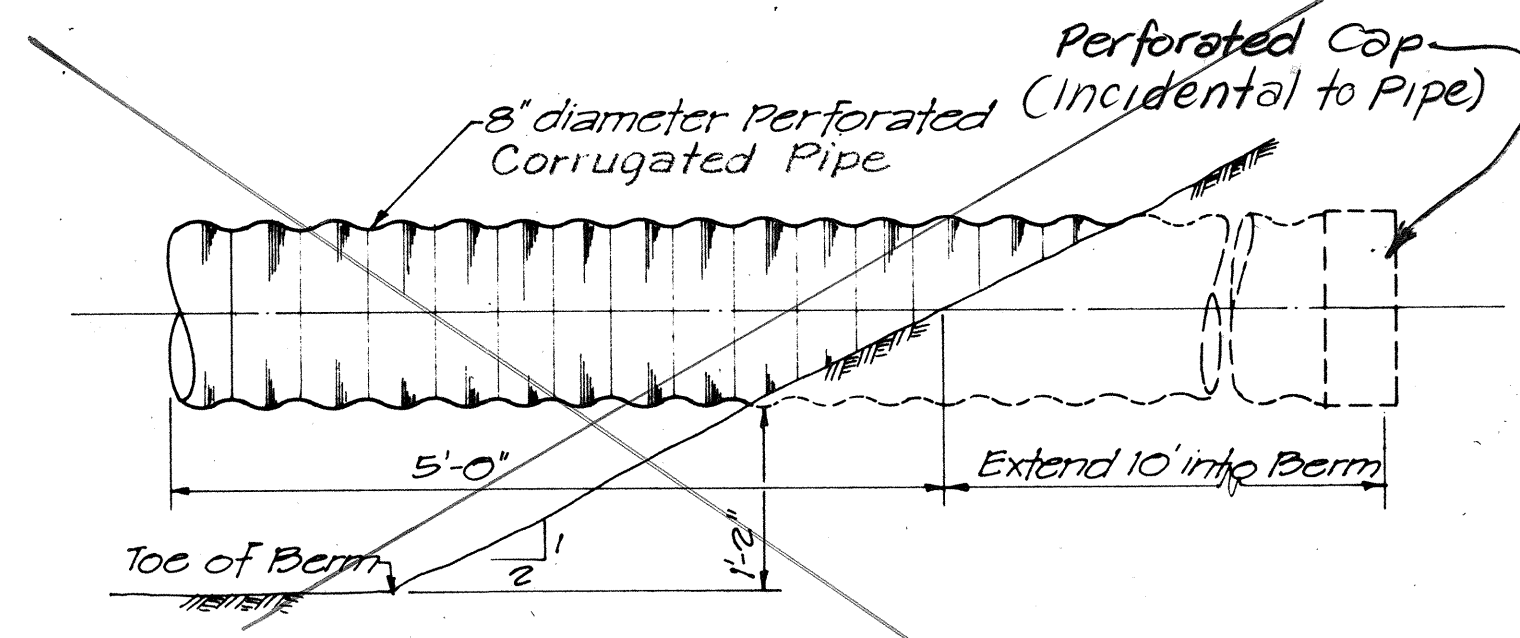


LONGITUDINAL WINDROW

TRANSVERSE WINDROW

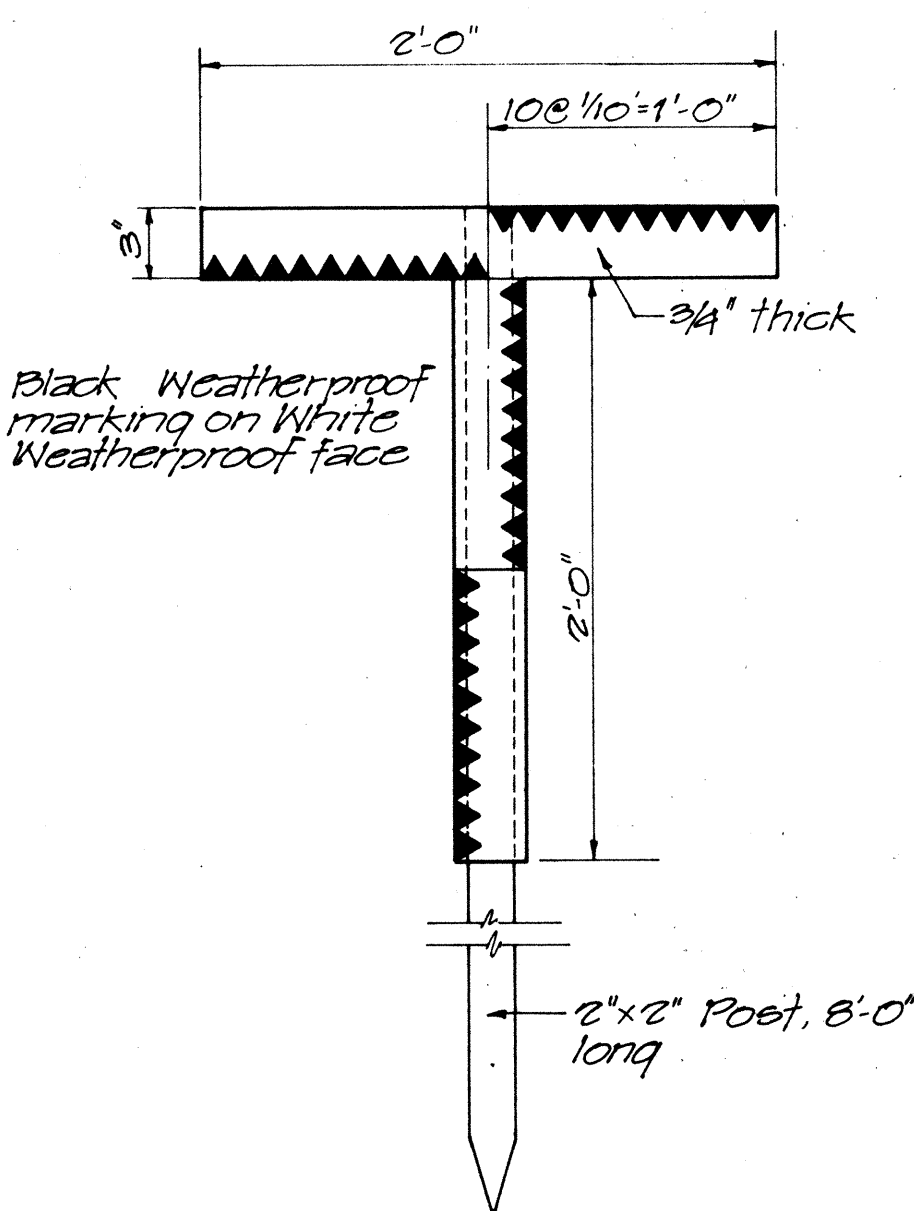
DRAINAGE WINDROW DETAIL

Scale: 1"=2'-0"



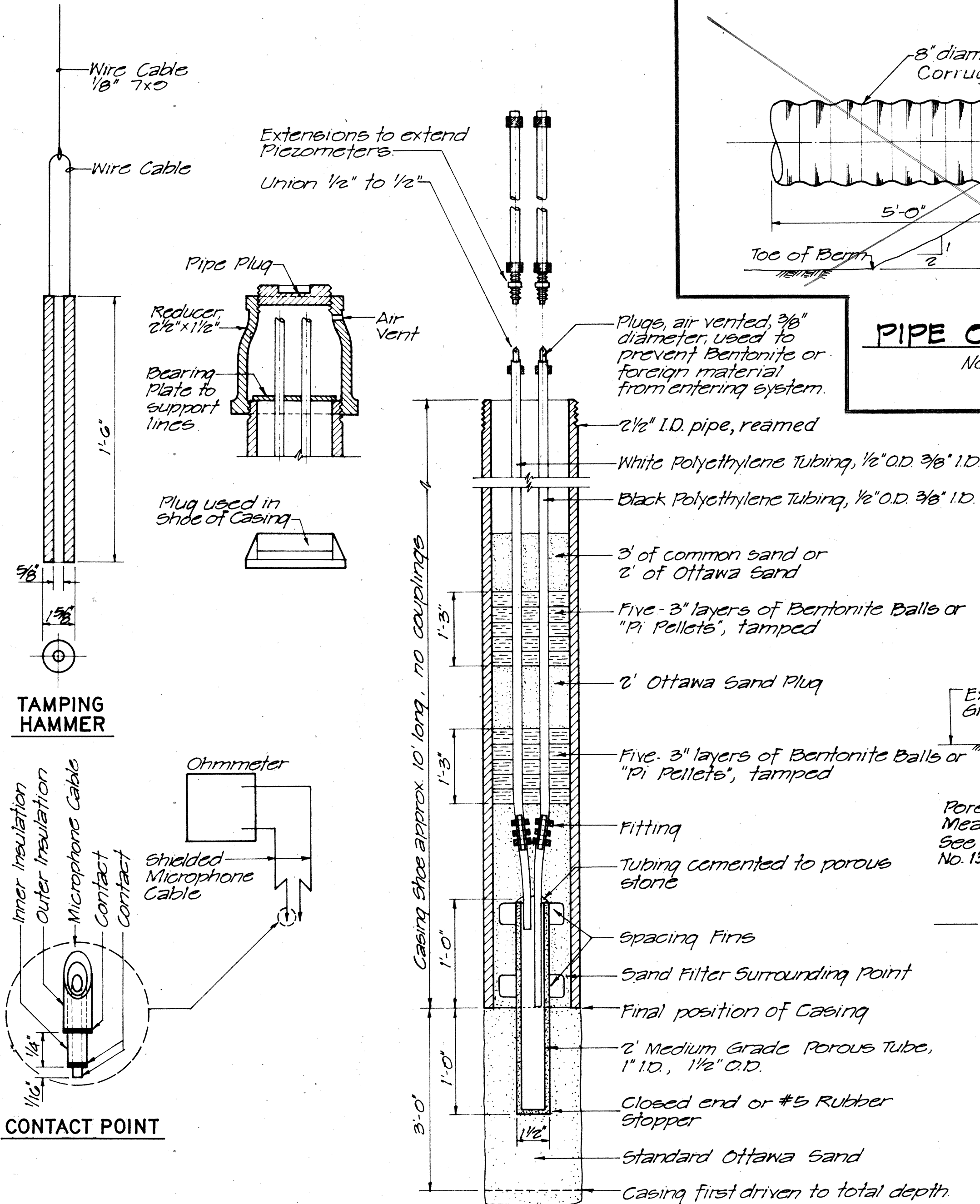
PIPE OUTLET DETAIL

Not to Scale



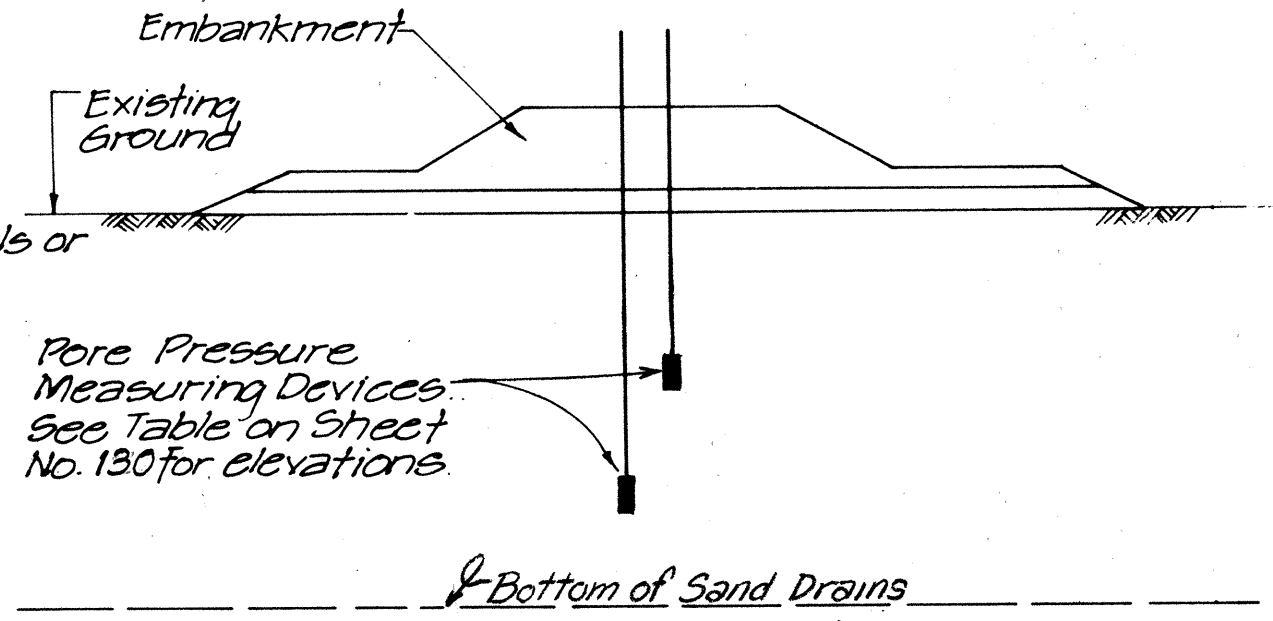
CONTROL STAKE DETAIL

Not to Scale



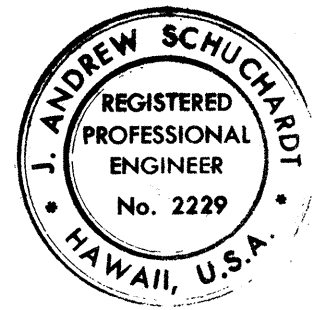
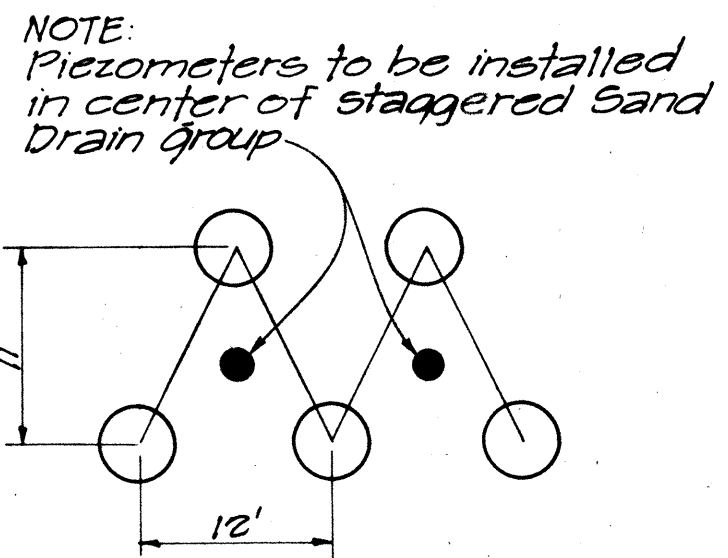
PORE PRESSURE MEASURING DEVICE DETAIL

Not to Scale



TYPICAL PORE PRESSURE MEASURING DEVICE INSTALLATION

Not to Scale



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Andrew Schuchard

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOIL STABILIZATION DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(88)-13

SCALE: AS SHOWN

DATE: 7-17-70

SHEET No. 16 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(88)-13	1971	130	457

⑥ LOCATION OF PORE PRESSURE MEASURING DEVICES TO BE PLACED AFTER SAND DRAINS

STATION	OFFSET	TYPE	POROUS POINT ELEVATION (FT.)
Ramp C 20+00	5' L		+5, -10
Ramp WE 234+00	0		0, -20
244+25	0		+11, 0
Ramp ES 18+50	15' L		-15, -30
21+25	40' L		-15, -40
24+50	10' L		0, -16
33+75	10' L		+2, -10
Route H-1 229+80	0		-10, -35
233+25	0		-10, -30
Ramp EW 136+75	0		+16, +22
141+00	5' R		+12, +1

⑦ LOCATION OF GROUND WATER OBSERVATION WELLS

STATION	OFFSET	LENGTH (FT.)
Ramp EW 141+25	105' R	37±
Ramp WE 233+85	100' R	27±
244+25	60' R	28±
Ramp ES 33+75	75' R	31±

SETTLEMENT PLATFORMS

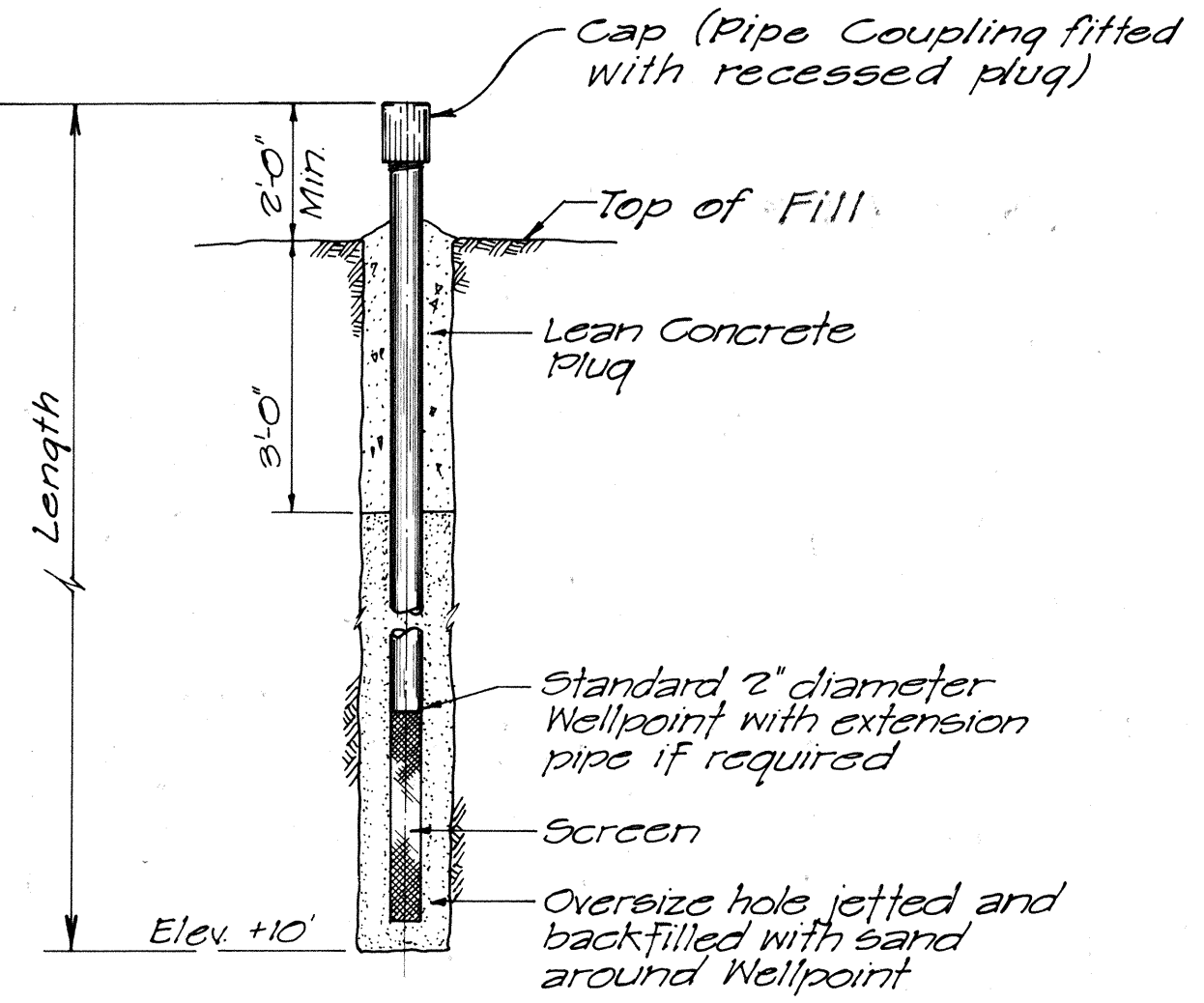
STATION	NO. OF SETTLEMENT PLATFORMS	OFFSETS
Ramp EW 140+75	1	5' R
141+50	1	5' R
142+50	1	5' R
143+50	1	5' R
144+50	2	5' R, 120' R
145+50	1	5' R
136+60	1	0
Ramp WE 233+75	1	0
234+25	1	0
235+00	1	0
236+00	1	0
237+00	1	0
238+00	1	0
239+00	1	0
241+00	1	0
242+00	1	0
243+00	1	0
244+00	1	0
244+75	1	0
247+00	1	20' L
Ramp ES 45+00	1	10' L
43+00	1	10' L
40+00	1	10' L
37+00	1	10' L
34+00	1	10' L
40+45	1	10' L
17+00	1	15' L
18+00	1	15' L
18+60	1	15' L
21+45	1	5' L
23+00	1	10' L
24+00	1	10' L
24+75	1	10' L

CONTROL STAKES

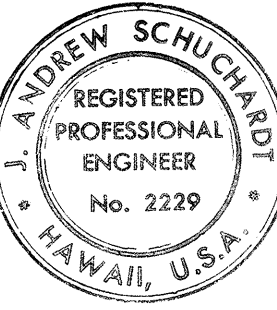
STATIONS	NO. OF STAKES	OFFSETS
Ramp WE 233+75	2	75' R, 115' R
234+75	2	65' R, 115' R
232+50	1	0
231+50	1	0
Ramp ES 33+75	2	40' R, 90' R
32+50	1	10' L
32+90	1	10' L
25+75	1	10' L
26+50	1	10' L
25+00	2	40' R, 90' R
24+00	2	40' R, 90' R
24+50	2	60' L, 110' L
Ramp EW 137+00	2	60' L, 90' L
137+70	1	0
138+00	1	0
140+75	2	65' R, 115' R
141+75	2	65' R, 115' R
Moanalua Freeway		
150+00	1	85' L
150+38	1	90' L
150+65	1	110' L
151+00	1	115' L
151+50	1	125' L
152+00	1	145' L

SETTLEMENT PLATFORMS (CONT'D)

STATION	NO. OF SETTLEMENT PLATFORMS	OFFSETS
Route H-1 226+00	1	0
227+00	1	0
228+00	1	0
229+00	1	0
229+50	1	60' L
230+00	1	0
230+25	1	60' R
231+00	1	0
233+00	1	0
234+00	1	0
235+00	1	0
236+00	1	0
Ramp O 15+90	1	8' L
Ramp SE 226+00	1	5' L
227+50	1	5' L
229+00	1	5' L
231+00	1	5' L
233+00	1	5' L
235+25	1	5' L
237+00	1	5' L
239+00	1	5' L
Ramp P 25+60	1	0
Ramp C 21+00	1	5' L
23+00	1	5' L
24+75	1	5' L
25+75	1	22' L
Moanalua Freeway		
157+00	1	0
158+00	1	0
159+00	1	0



GROUND WATER
OBSERVATION WELL DETAIL
Not to Scale



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J. Andrew Schuchardt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SOIL STABILIZATION
DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(88)-13

SCALE: AS NOTED DATE: 7-17-70

SHEET No. 17 OF 17 SHEETS