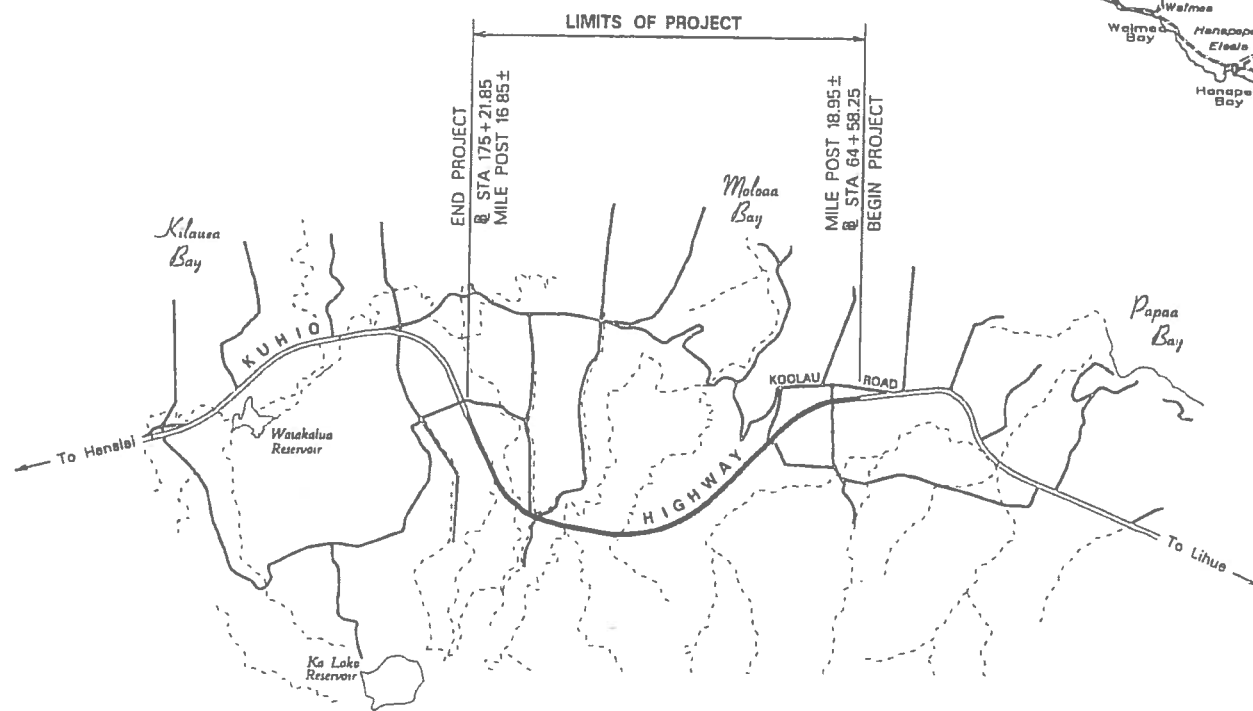


Attachment A-1
Location, Outfall and BMP Maps



LOCATION PLAN



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

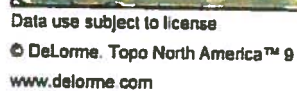
KUHIO HIGHWAY RESURFACING

Vic. of South Koolau Rd. to Kapuna Rd.

Mile Post 16.85 to Mile Post 18.95

District of Kawaihau

Island of Kauai



OUTFALL MAP

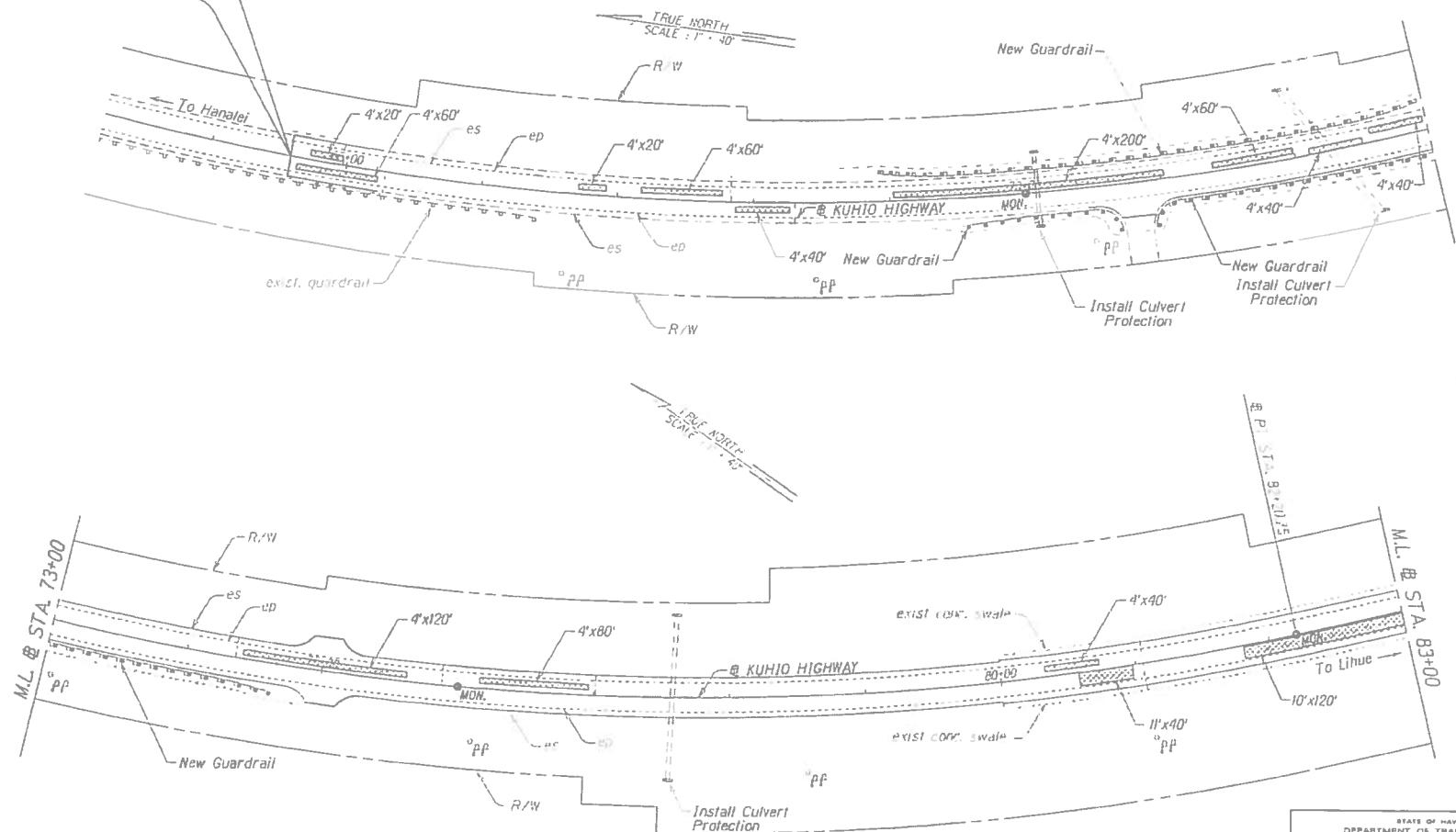
Scale 1 : 34,375

 $1'' = 2,864.6 \text{ ft}$

Data Zoom 12-5

FED ROAD DIST NO	STATE	PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
HAWAII	HAW	56C-01-13M	2013	1	6

BEGIN PROJECT
Project No. 56C-01-13M
@ Sta. 64+58.25



DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE

Legend:
Pavement Reconstruction — [hatched box]
Sediment Control Devices — [dashed line]

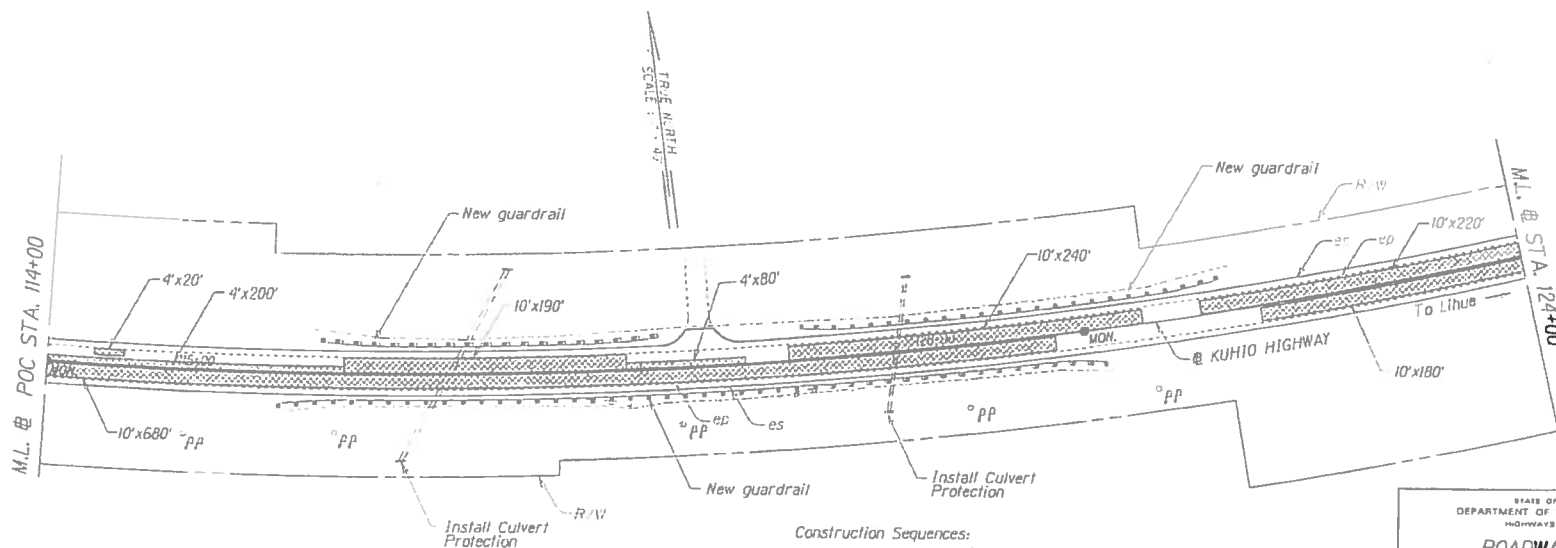
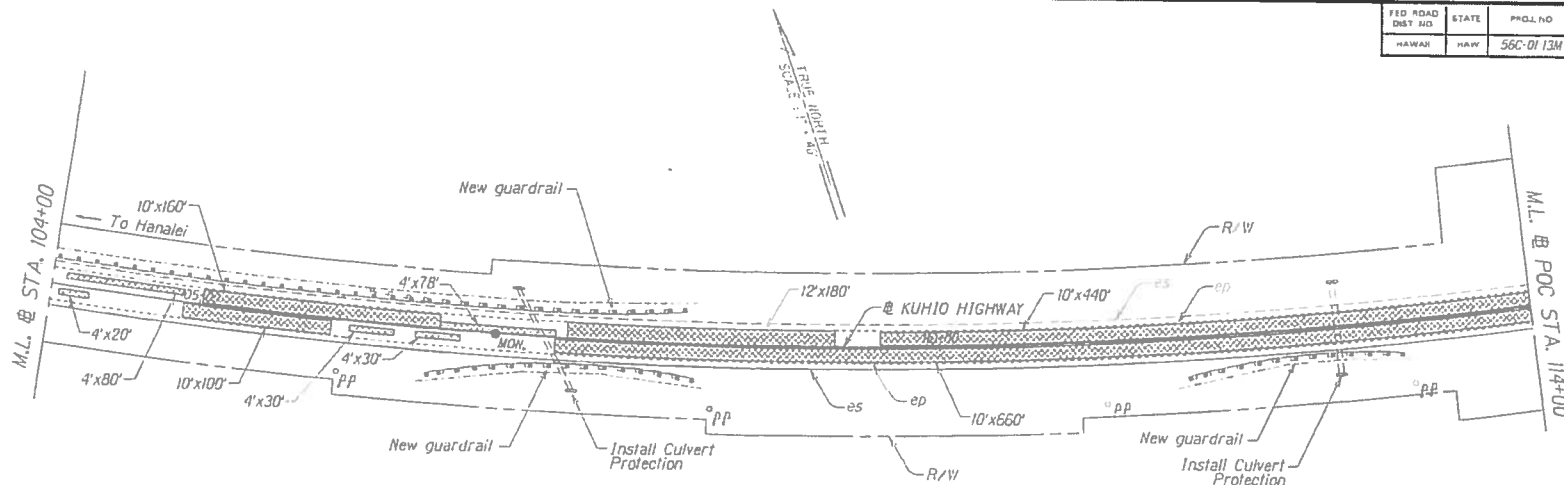
- Construction Sequences:
1. Install culvert protection
 2. Install perimeter sediment control
 3. Reconstruct weakened pavement areas
 4. Install new guardrail
 5. Remove perimeter sediment control after reconstruction areas are established and guardrail are installed
 6. Remove all BMP's

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN
KUHIO HIGHWAY RESURFACING
Vic. of South Koolau Road to Kapuna Road
Mile Post 16.88 to Mile Post 18.95
Project No. 56C-01-13M
Scale: 1" = 40' Date: June 2013

SHEET No. 1 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	56C-01-13M	2013	3	6



Legend:

Pavement Reconstruction — [hatched pattern]

Sediment Control Devices — [dashed line]

Construction Sequences:

1. Install culvert protection
2. Install perimeter sediment control
3. Reconstruct weakened pavement areas
4. Install new guardrail
5. Remove perimeter sediment control after reconstruction areas are established and guardrail are installed
6. Remove all BMP's

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

KUHIO HIGHWAY RESURFACING

Vic. of South Koolau Road to Kapuna Road

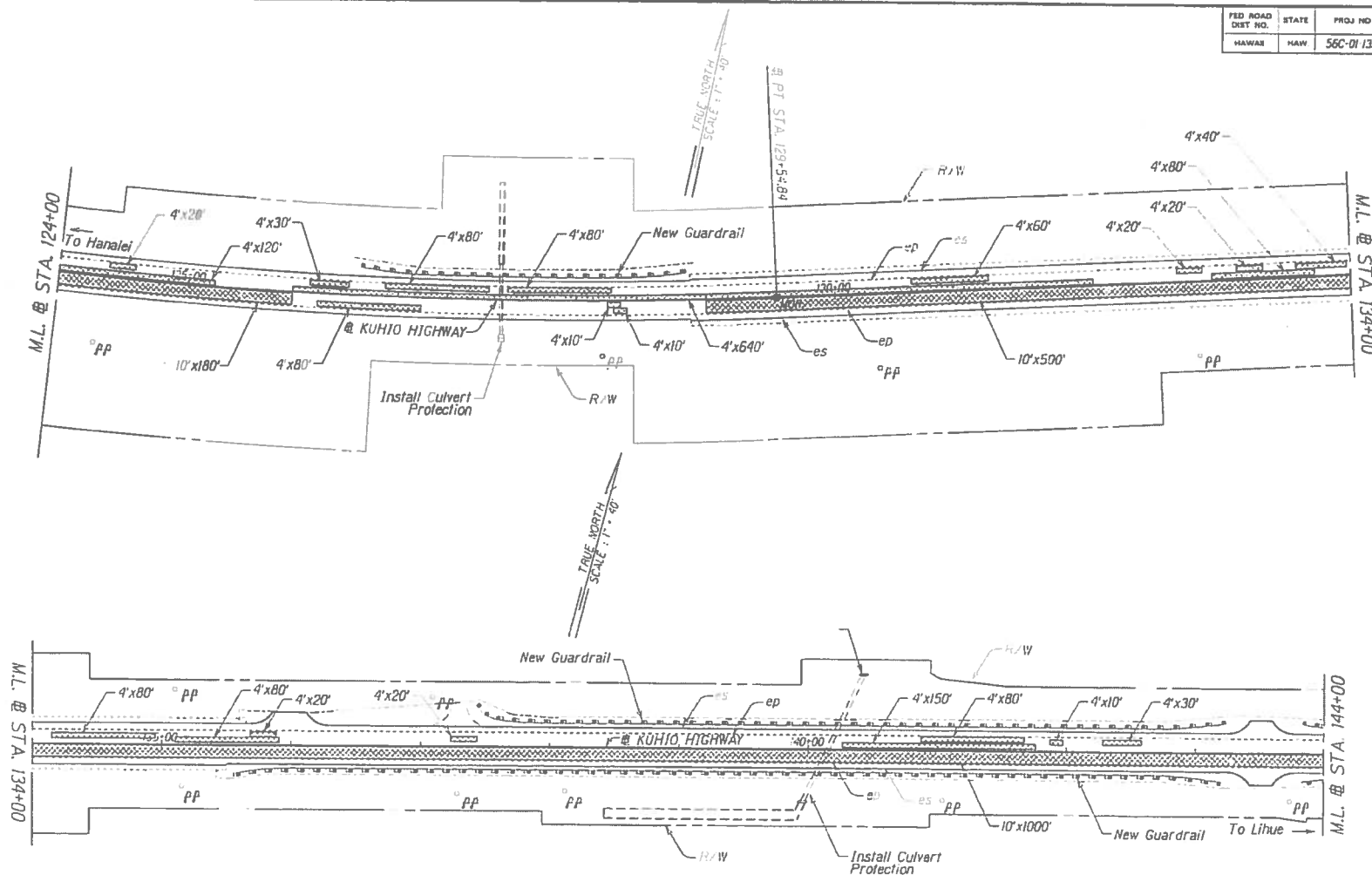
Mile Post 16.88 to Mile Post 18.95

Project No. 56C-01-13M

Scale: 1" = 40' Date: June 2013

SHEET No. 3 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HA	56C-01-13M	2013	4	6



Legend:

Pavement Reconstruction — [hatched pattern]
Sediment Control Devices — [dashed line]

Construction Sequences:

1. Install culvert protection
2. Install perimeter sediment control
3. Reconstruct weakened pavement areas
4. Install new guardrail
5. Remove perimeter sediment control after reconstruction areas are established and guardrail are installed
6. Remove all BMP's

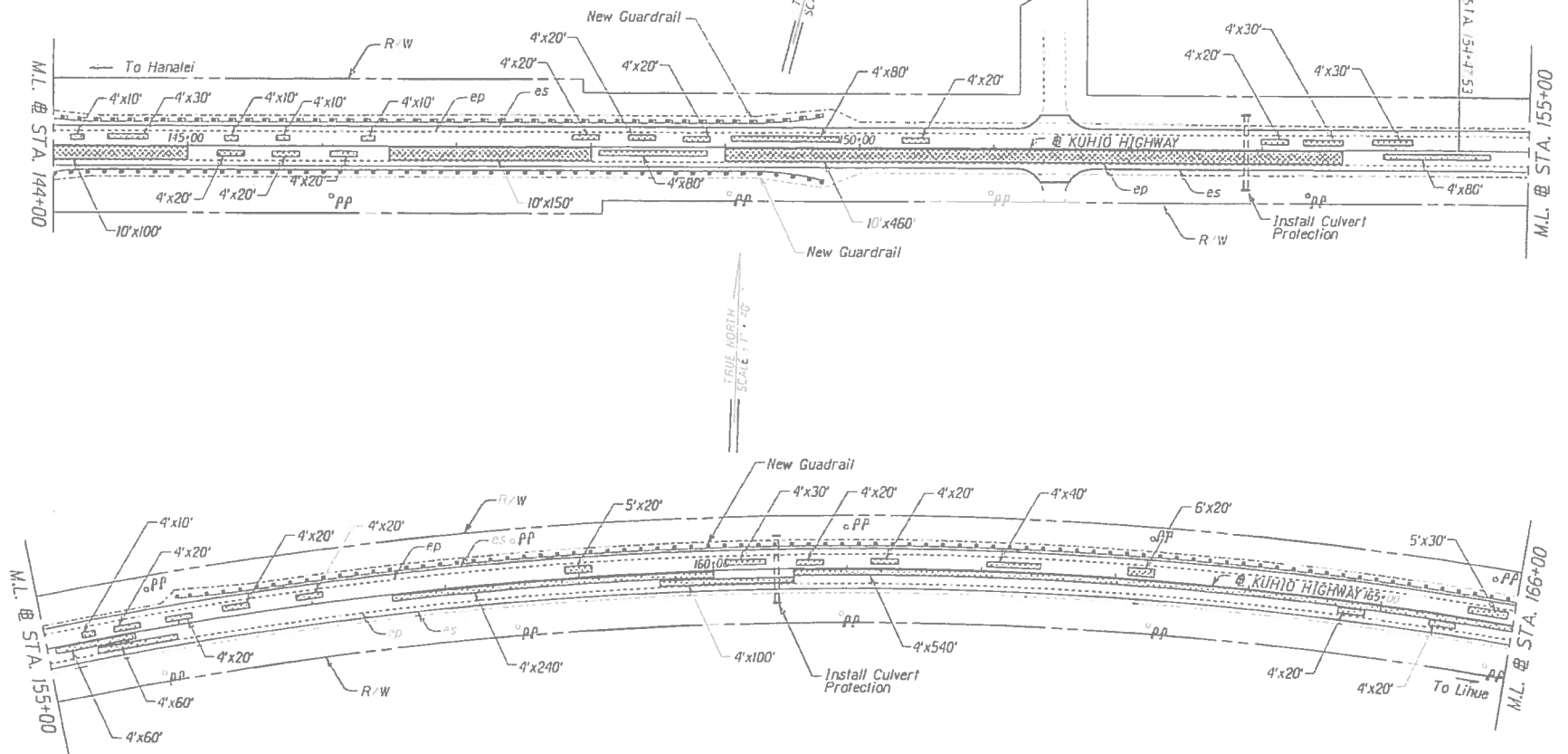
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

KUHIO HIGHWAY RESURFACING
Vic. of South Koolau Road to Kapuna Road
Mile Post 16.88 to Mile Post 18.95
Project No. 56C-01-13M
Scale: 1" = 40' Date: June 2013

SHEET No. 4 OF 6 SHEETS

FED ROAD DIST NO	STATE	PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
HAWAII	HAW	56C-01-13M	2013	5	6



Legend:

Pavement Reconstruction = [Pattern]

Sediment Control Devices = [Pattern]

Construction Sequences:

1. Install culvert protection
2. Install perimeter sediment control
3. Reconstruct weakened pavement areas
4. Install new guardrail
5. Remove perimeter sediment control after reconstruction areas are established and guardrail are installed
6. Remove all BMP's

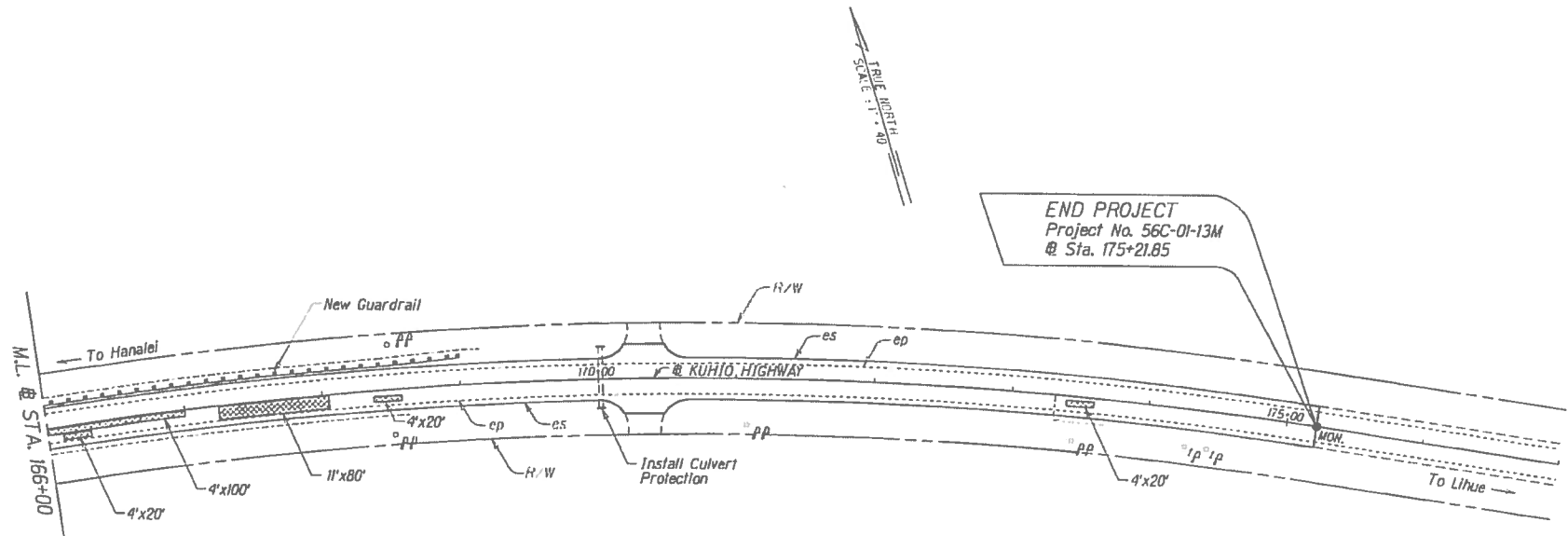
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

KUHIO HIGHWAY RESURFACING
Vic. of South Koolau Road to Kapuna Road
Mile Post 16.88 to Mile Post 18.95
Project No. 56C-01-13M
Scale: 1" = 40' Date: June 2013

SHEET No. 5 OF 6 SHEETS

FED ROAD DIST NO	STATE	PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
HAWAII	HAW	56C-01-13M	2013	6	6



Construction Sequences:

1. Install culvert protection
2. Install perimeter sediment control
3. Reconstruct weakened pavement areas
4. Install new guardrail
5. Remove perimeter sediment control after reconstruction areas are established and guardrail are installed
6. Remove all BMP's

Legend:

- Pavement Reconstruction — [hatched pattern]
Sediment Control Devices — [dashed line]

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

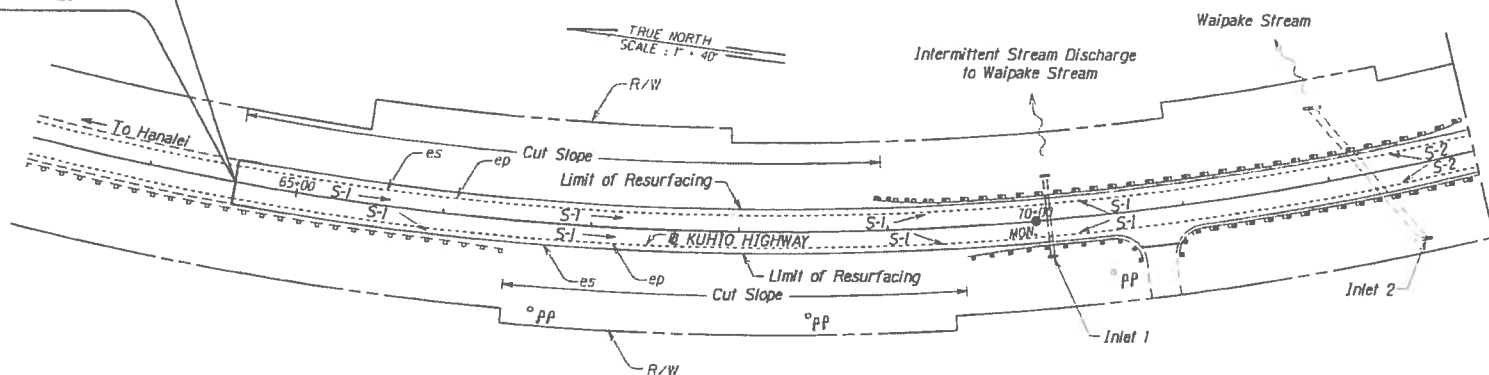
ROADWAY PLAN

KUHIO HIGHWAY RESURFACING
Vic. of South Koolau Road to Kapuna Road
Mile Post 16.88 to Mile Post 18.95
Project No. 56C-01-13M
Scale: 1" = 40' Date: June 2013

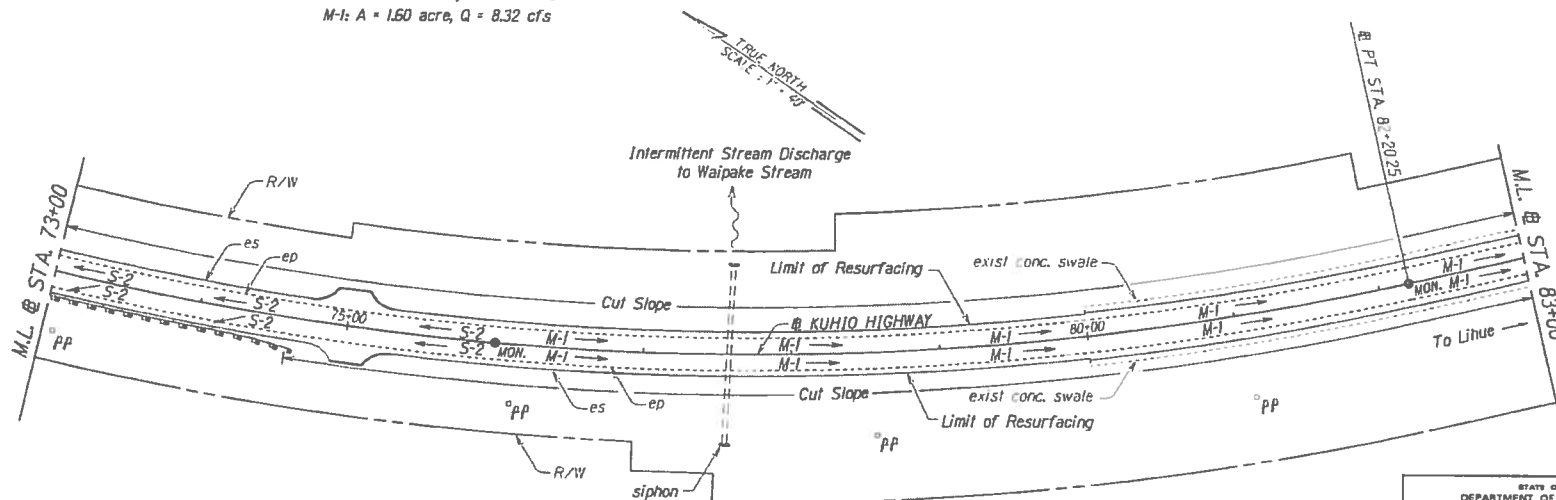
SHEET No. 6 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56C-01-13M	2013	1	6

BEGIN PROJECT
Project No. 56C-01-13M
@ Sta. 64+58.25



S-1: A = 0.92 acre, Q = 4.79 cfs
S-2: A = 0.50 acre, Q = 2.60 cfs
M-1: A = 1.50 acre, Q = 8.32 cfs



LEGEND:

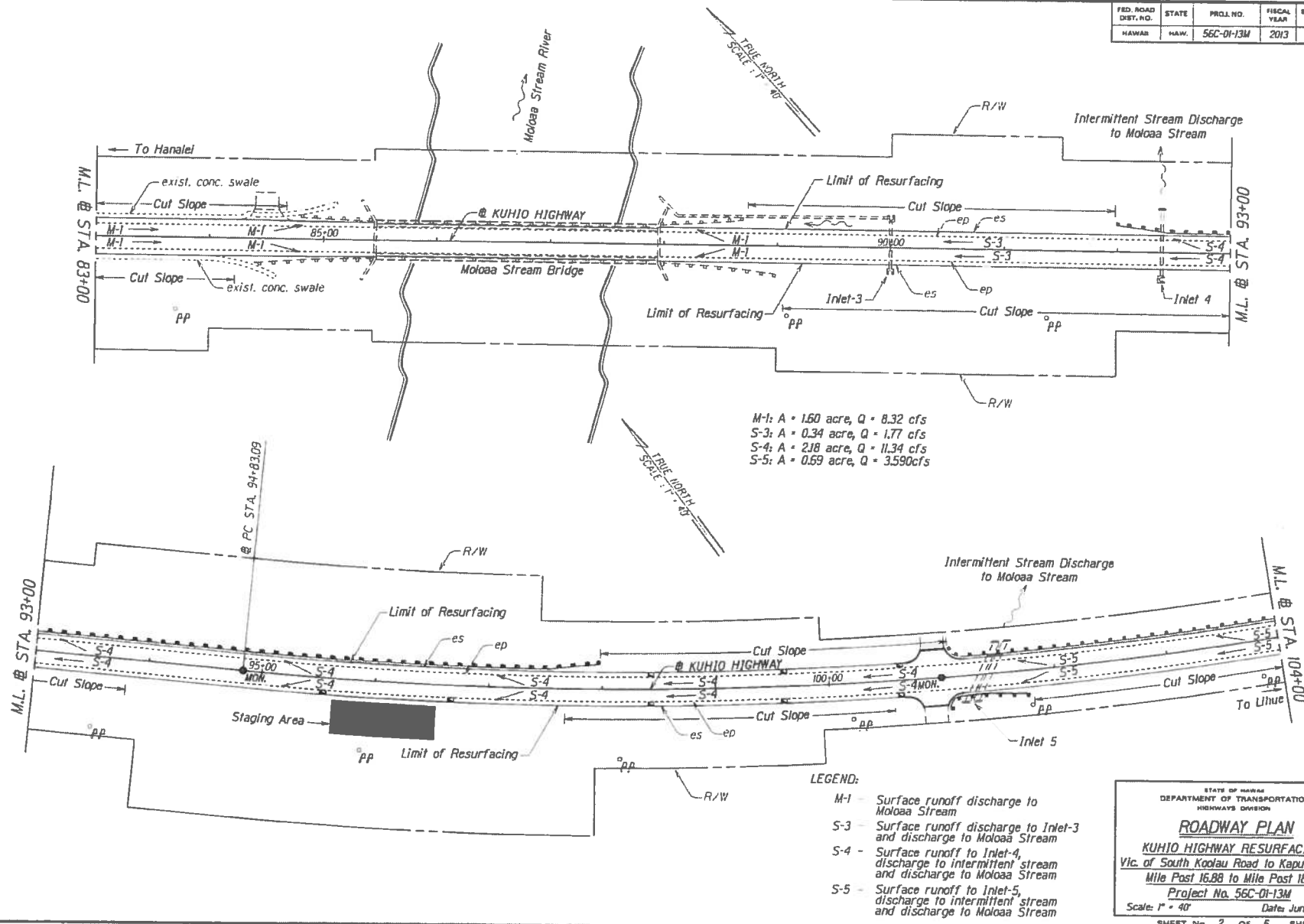
- S-1 - Surface runoff to Inlet-1, discharge to Waipake Stream (discharge point # 4)
- S-2 - Surface runoff to Inlet-2, discharge to Waipake Stream
- M-1 - Surface runoff discharge to Molokai Stream

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLAN
KUHIO HIGHWAY RESURFACING
Vic. of South Koolau Road to Kapuna Road
Mile Post 16.88 to Mile Post 18.95
Project No. 56C-01-13M
Scale: 1" = 40' Date: June 2013

SHEET No. 1 OF 6 SHEETS

DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56C-01-13M	2013	2	6



M-1: A = 1.60 acre, Q = 8.32 cfs
 S-3: A = 0.34 acre, Q = 1.77 cfs
 S-4: A = 2.18 acre, Q = 11.34 cfs
 S-5: A = 0.69 acre, Q = 3.590 cfs

- LEGEND:
- M-1 - Surface runoff discharge to Molokaa Stream
 - S-3 - Surface runoff discharge to Inlet-3 and discharge to Molokaa Stream
 - S-4 - Surface runoff to Inlet-4, discharge to intermittent stream and discharge to Molokaa Stream
 - S-5 - Surface runoff to Inlet-5, discharge to intermittent stream and discharge to Molokaa Stream

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ROADWAY PLAN

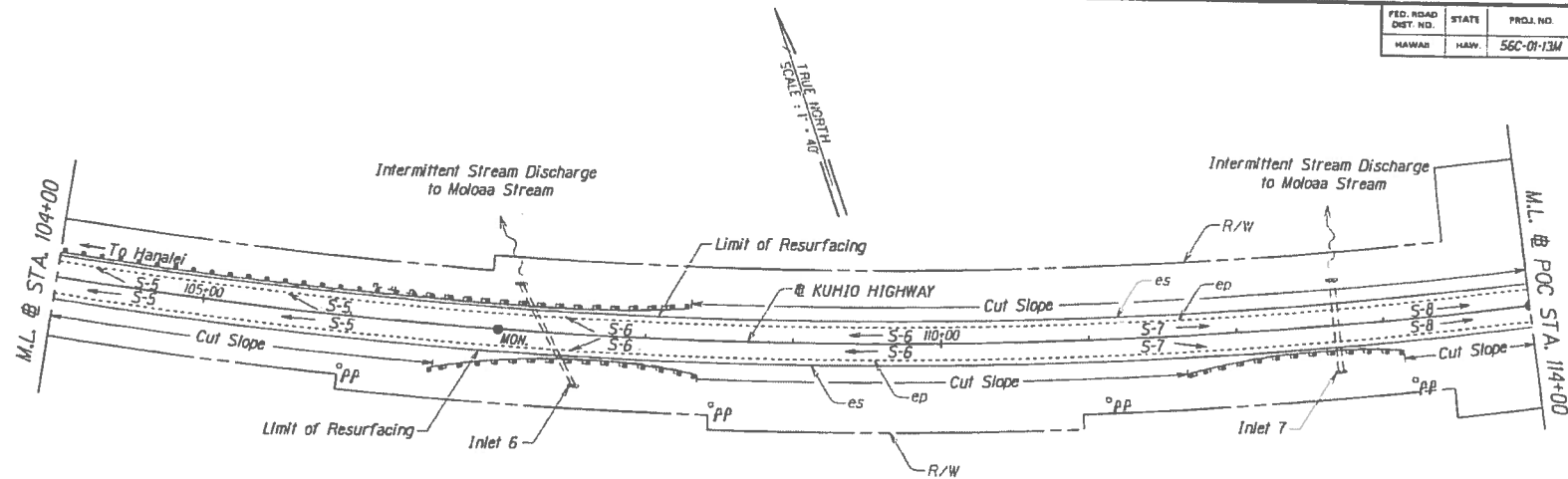
KUHIO HIGHWAY RESURFACING

Vic. of South Koolau Road to Kapuna Road
 Mile Post 16.88 to Mile Post 18.95
 Project No. 56C-01-13M
 Scale: 1" = 40' Date: June 2013

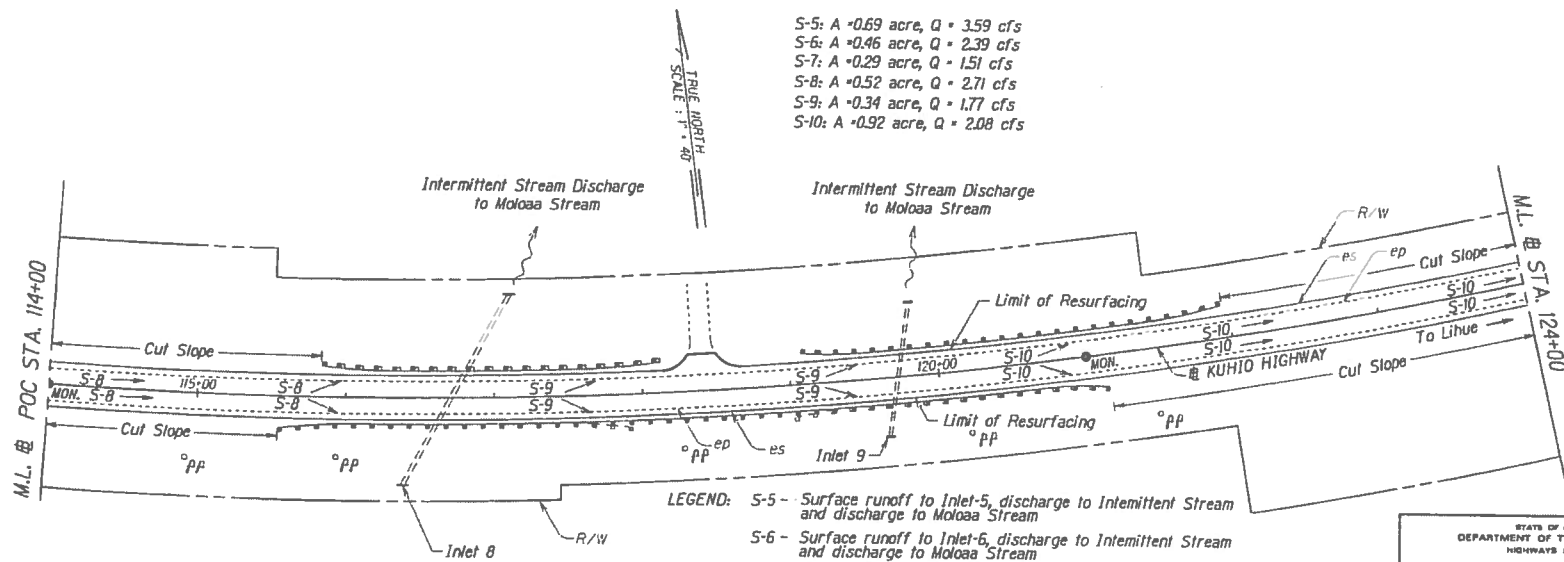
SHEET No. 2 OF 6 SHEETS

DESIGNED BY	DATE
CHECKED BY	
APPROVED BY	
IN CHARGE	
PROJECT NO.	
SHEET NO.	
TOTAL SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	56C-01-13M	2013	3	6



S-5: A = 0.69 acre, Q = 3.59 cfs
 S-6: A = 0.46 acre, Q = 2.39 cfs
 S-7: A = 0.29 acre, Q = 1.51 cfs
 S-8: A = 0.52 acre, Q = 2.71 cfs
 S-9: A = 0.34 acre, Q = 1.77 cfs
 S-10: A = 0.92 acre, Q = 2.08 cfs

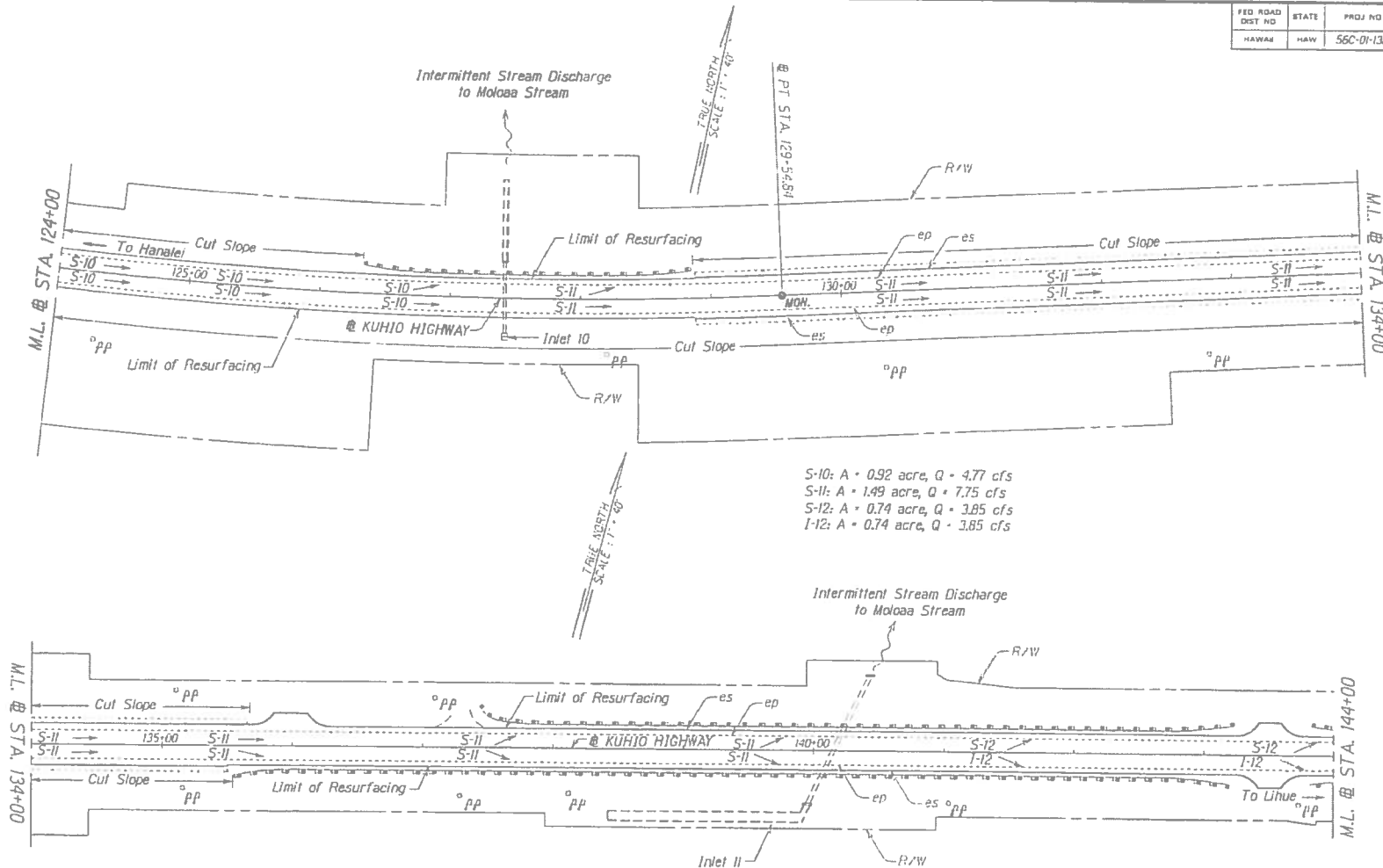


LEGEND: S-5 - Surface runoff to Inlet-5, discharge to Intermittent Stream and discharge to Moloaa Stream
 S-6 - Surface runoff to Inlet-6, discharge to Intermittent Stream and discharge to Moloaa Stream
 S-7 - Surface runoff to Inlet-7, discharge to Intermittent Stream and discharge to Moloaa Stream
 S-8 - Surface runoff to Inlet-8, discharge to Intermittent Stream and discharge to Moloaa Stream
 S-9 - Surface runoff to Inlet-9, discharge to Intermittent Stream and discharge to Moloaa Stream
 S-10 - Surface runoff to Inlet-10, discharge to Intermittent Stream and discharge to Moloaa Stream

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
APPROVED BY	

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
ROADWAY PLAN
KUHIO HIGHWAY RESURFACING
 Vic. of South Koolau Road to Kapuna Road
 Mile Post 16.88 to Mile Post 18.95
 Project No. 56C-01-13M
 Scale: 1" = 40' Date: June 2013
 SHEET No. 3 OF 6 SHEETS

FED ROAD DIST NO	STATE	PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
HAWAII	HAW	56C-01-13M	2013	4	6



S-10: A = 0.92 acre, Q = 4.77 cfs
 S-11: A = 1.49 acre, Q = 7.75 cfs
 S-12: A = 0.74 acre, Q = 3.85 cfs
 I-12: A = 0.74 acre, Q = 3.85 cfs

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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ROADWAY PLAN

KUHIO HIGHWAY RESURFACING

Vic. of South Koolau Road to Kapuna Road

Mile Post 16.88 to Mile Post 18.95

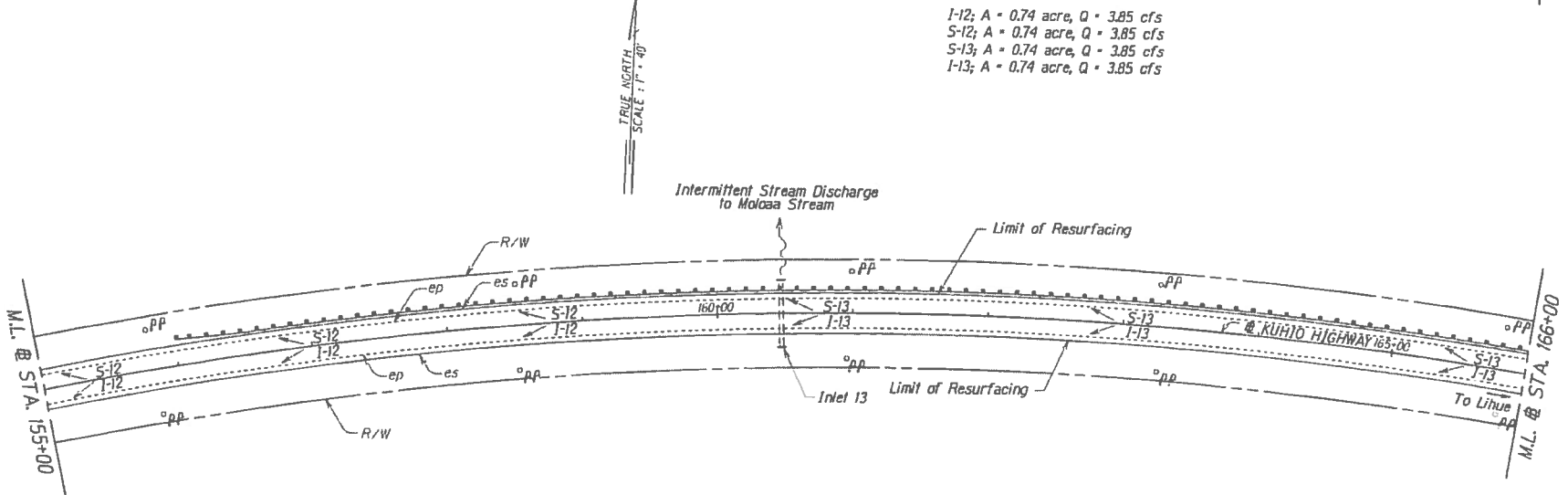
Project No. 56C-01-13M

Scale: 1" = 40' Date: June 2013

SHEET No. 4 OF 6 SHEETS

Plan view of proposed road improvement project from STA 144+00 to STA 150+00. The drawing shows a cross-section of the road with various lanes and shoulders. Key features include:

- Directional Labels:** "To Hanalei" pointing left, "To Kihuna" pointing right, and "Intermittent Stream Ditch to Molokaa Street" pointing right.
- Stationing:** "M.L. @ STA. 144+00" on the left and "150+00" in the middle.
- Lane Markings:** "S-12" and "I-12" markings are shown on the road surface.
- Shoulders and Limits:** "R/W" (Right of Way) lines, "ep" (Edge of Pavement) lines, "es" (Edge of Shoulder) lines, and "Limit of Resurfacing" lines are indicated.
- Infrastructure:** A bridge structure is shown crossing the road near STA 150+00.
- Scale and Orientation:** "TRUE NORTH" and "SCALE: 1" = 40'" are indicated in the upper right.



LEGEND:

- I-12 - Surface runoff to Inlet-12, discharge to Intermittent Stream and discharge to Molokaa Stream
- S-12 - Surface runoff to discharge point # 2, (along unnamed intermittent stream)
- S-13 - Surface runoff to discharge point # 3, (along Molokaa Stream)
- I-13 - Surface runoff to Inlet-13, discharge to Intermittent Stream and discharge to Molokaa Stream

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

KUHIO HIGHWAY RESURFACING

Vic. of South Koolau Road to Kapuna Pt.
 Mile Post 16.88 to Mile Post 18.95
 Project No. 56C-01-13M

Scale: 1" = 40'
Date: June 2013

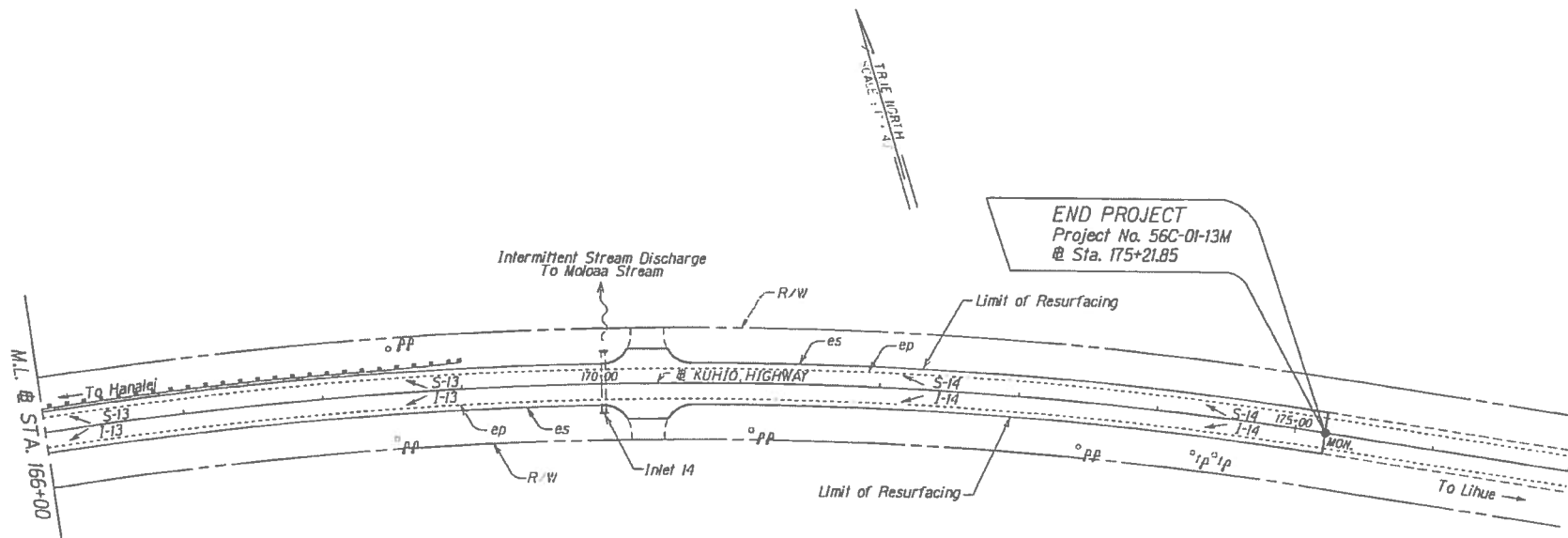
SHEET No. 5 OF 6 SHEETS

LEGEND:

- I-12 - Surface runoff to Inlet-12, discharge to Intermittent Stream and discharge to Moloka Stream
- S-12 - Surface runoff to discharge point # 2, (along unnamed intermittent stream)
- S-13 - Surface runoff to discharge point # 3, (along Moloka Stream)
- I-13 - Surface runoff to Inlet-13, discharge to Intermittent Stream and discharge to Moloka Stream

SHEET No. 5 OF 6 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	56C-01-13M	2013	6	6



S-13; A = 0.74 acre, Q = 3.85 cfs
 S-14; A = 0.34 acre, Q = 1.77 cfs
 I-14; A = 0.34 acre, Q = 1.77 cfs

LEGEND:

- I-13 - Surface runoff to Inlet-13, discharge to Intermittent Stream and discharge to Moloaa Stream
- S-13 - Surface runoff to discharge point # 13, (along Moloaa Stream)
- S-14 - Surface runoff to discharge point # 14, (along Moloaa Stream)
- I-14 - Surface runoff to Inlet-14, discharge to Intermittent Stream and discharge to Moloaa Stream

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ROADWAY PLAN

KUHIO HIGHWAY RESURFACING
 Vic. of South Koolau Road to Kapuna Road
 Mile Post 16.88 to Mile Post 18.95
 Project No. 56C-01-13M
 Scale: 1" = 40' Date: June 2013

SHEET No. 6 OF 6 SHEETS