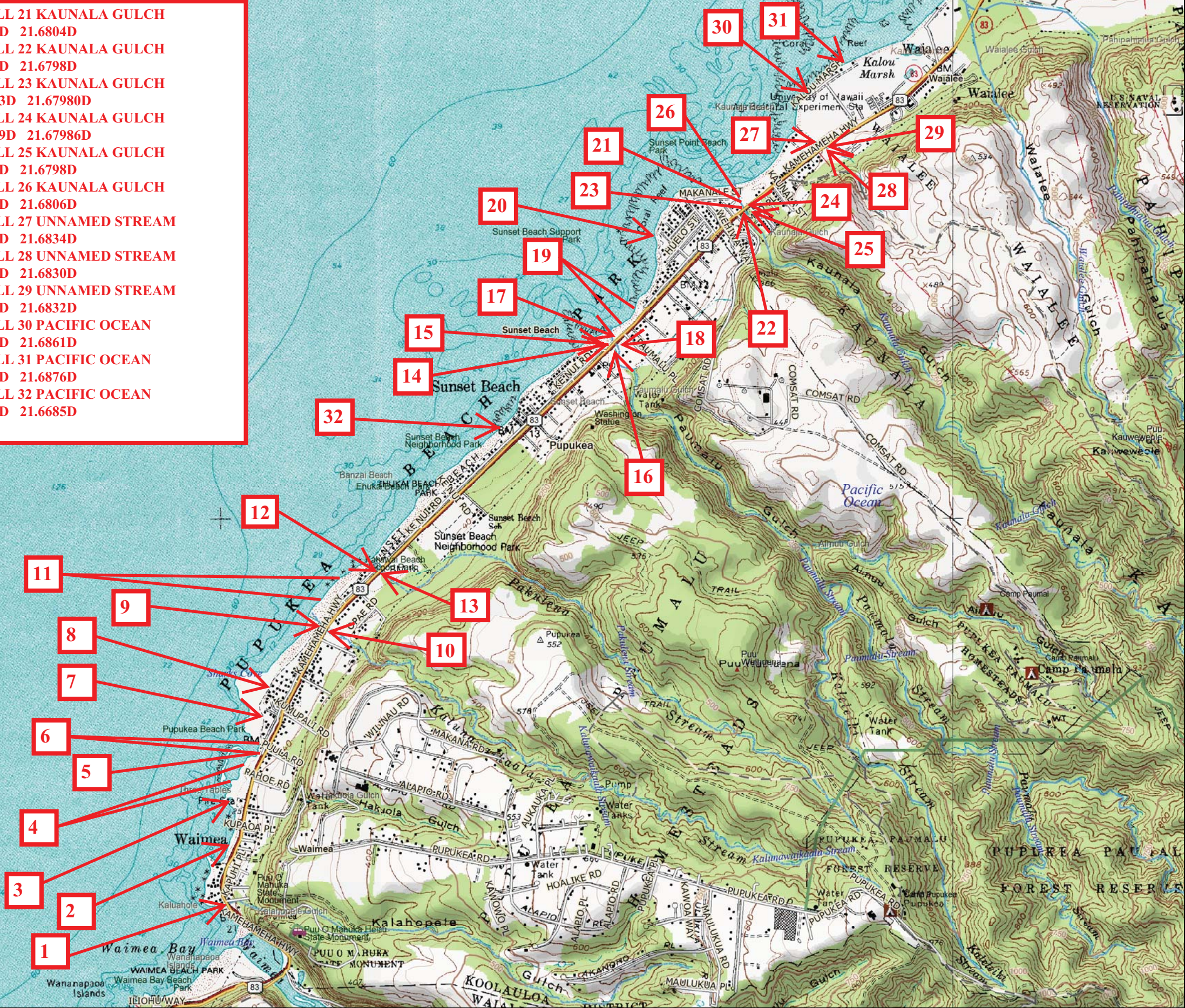


Form C Attachment A-1
Location and Outfall Maps



- OUTFALL 1 KALAHOPELE GULCH
158.0634D 21.6431D
OUTFALL 2 PACIFIC OCEAN
158.0635D 21.6462D
OUTFALL 3 PACIFIC OCEAN
158.0632D 21.6485D
OUTFALL 4 PACIFIC OCEAN (SHEETFLOW)
158.0633D 21.6496D TO
158.0626D 21.6504D
OUTFALL 5 PACIFIC OCEAN
158.0618D 21.6511D
OUTFALL 6 PACIFIC OCEAN
158.0618D 21.6511D TO
158.0617D 21.6515D
OUTFALL 7 PACIFIC OCEAN
158.0615D 21.6530D
OUTFALL 8 PACIFIC OCEAN
158.0611D 21.6546D
OUTFALL 9 KALUNAWAIKAALA STREAM
158.0579D 21.6577D
OUTFALL 10 KALUNAWAIKAALA STREAM
158.0579D 21.6576D
OUTFALL 11 PACIFIC OCEAN (SHEETFLOW)
158.0582D 21.6591D TO
158.0571D 21.6603D
OUTFALL 12 PAKULENA STREAM
158.0547D 21.6608D
OUTFALL 13 PAKULENA STREAM
158.0546D 21.6607D
OUTFALL 14 PAUMALU STREAM
158.04159D 21.67264D
OUTFALL 15 PAUMALU STREAM
158.0416D 21.6727D
OUTFALL 16 PAUMALU STREAM
158.0415D 21.6725D
OUTFALL 17 PAUMALU STREAM
158.0415D 21.6727D
OUTFALL 18 PAUMALU STREAM
158.04145D 21.67256D
OUTFALL 19 PACIFIC OCEAN (SHEETFLOW)
158.0408D 21.6739D TO
158.0403D 21.6746D
OUTFALL 20 PACIFIC OCEAN
158.0391D 21.6784D

- OUTFALL 21 KAUNALA GULCH
158.0343D 21.6804D
OUTFALL 22 KAUNALA GULCH
158.0340D 21.6798D
OUTFALL 23 KAUNALA GULCH
158.03403D 21.67980D
OUTFALL 24 KAUNALA GULCH
158.03399D 21.67986D
OUTFALL 25 KAUNALA GULCH
158.0339D 21.6798D
OUTFALL 26 KAUNALA GULCH
158.0343D 21.6806D
OUTFALL 27 UNNAMED STREAM
158.0300D 21.6834D
OUTFALL 28 UNNAMED STREAM
158.0295D 21.6830D
OUTFALL 29 UNNAMED STREAM
158.0295D 21.6832D
OUTFALL 30 PACIFIC OCEAN
158.0306D 21.6861D
OUTFALL 31 PACIFIC OCEAN
158.0283D 21.6876D
OUTFALL 32 PACIFIC OCEAN
158.0477D 21.6685D



OUTFALL MAP

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-12M	2012	X	X

Outfall 1
Kalahopele Gulch
158.0634 W
21.6431 N

Outfall 2 Pacific
Ocean
158.0635 W
21.6462 N

@ CURVE DATA
 $\Delta = 15^{\circ}08'$
 $R = 2864.90'$
 $T = 329.79'$ See Hydraulics Plans
 $C = 0.000$ for GRP Plans and Details
 $L_c = 656.69'$
 $S.E. = 0.00$ ft/ft

BEGIN PROJECT
 Project No. 83B-01-12M
 @ Sta. 144+20±

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ROADWAY PLANS

KAMEHAMEHA HIGHWAY REHABILITATION
 Vicinity of Kapuhi Street to Waialea Bridge
 Project No. 83B-01-12M

Scale: 1" = 40'
 Date: XX, 2012

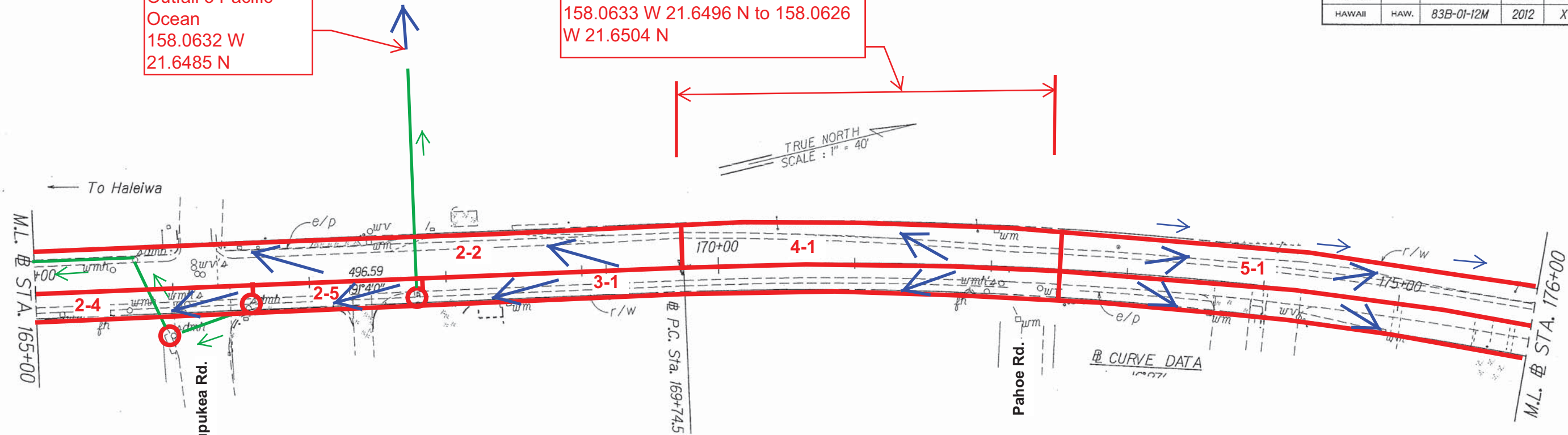
SHEET No. 1 OF 10 SHEETS

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-12M	2012	X	X

Outfall 3 Pacific Ocean
158.0632 W
21.6485 N

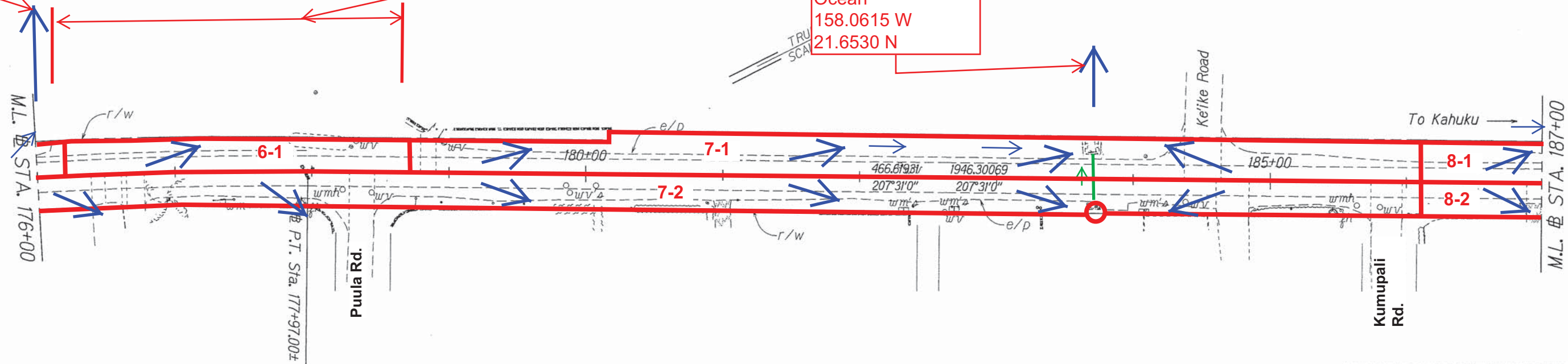
Outfall 4 Sheetflow Pacific Ocean
158.0633 W 21.6496 N to 158.0626 W 21.6504 N



Outfall 5 Pacific Ocean
158.0618 W
21.6511 N

Outfall 6 Sheetflow Pacific Ocean
158.0618 W 21.6511 N to 158.0617 W 21.6515 N

Outfall 7 Pacific Ocean
158.0615 W
21.6530 N



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

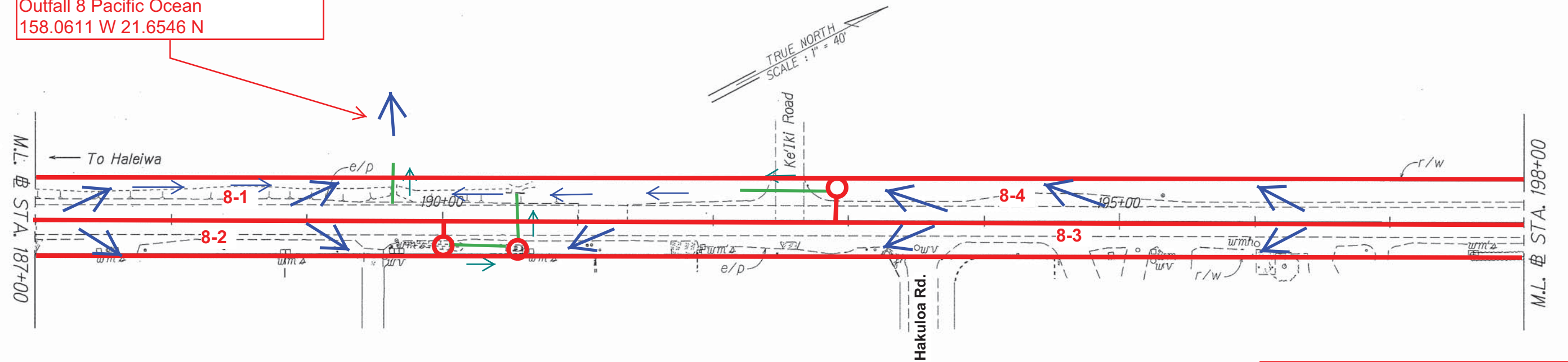
KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Waialea Bridge
Project No. 83B-01-12M

Scale: 1"=40' Date: XX, 2012

SHEET No. 2 OF 10 SHEETS

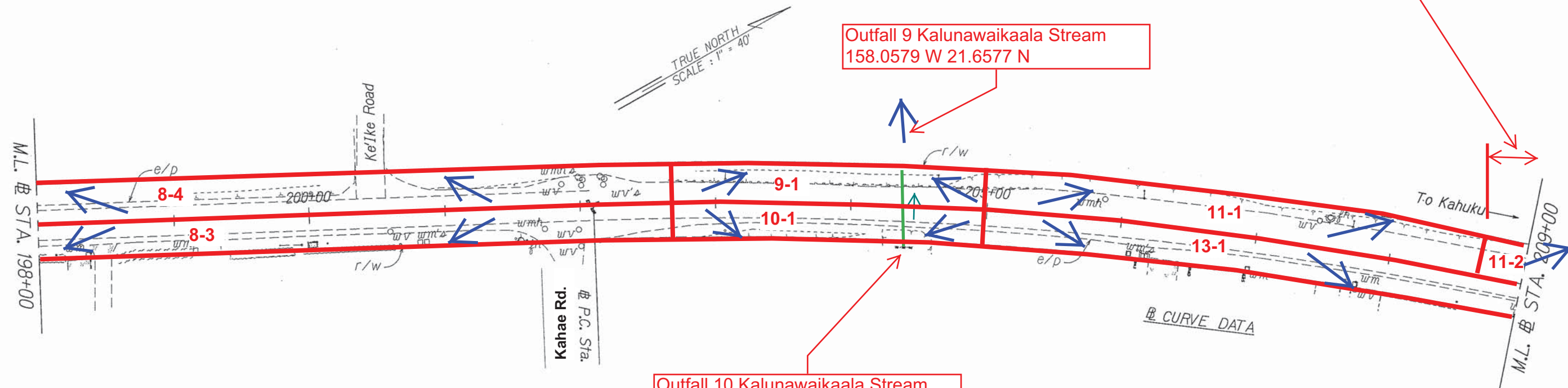
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-12M	2012	X	X

Outfall 8 Pacific Ocean
158.0611 W 21.6546 N



Outfall 11 Sheetflow Pacific Ocean
158.0582 W 21.6591 N to 158.0571 W 21.6603 N

Outfall 9 Kalunawaikaala Stream
158.0579 W 21.6577 N



Outfall 10 Kalunawaikaala Stream
158.0578 W 21.6576 N

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

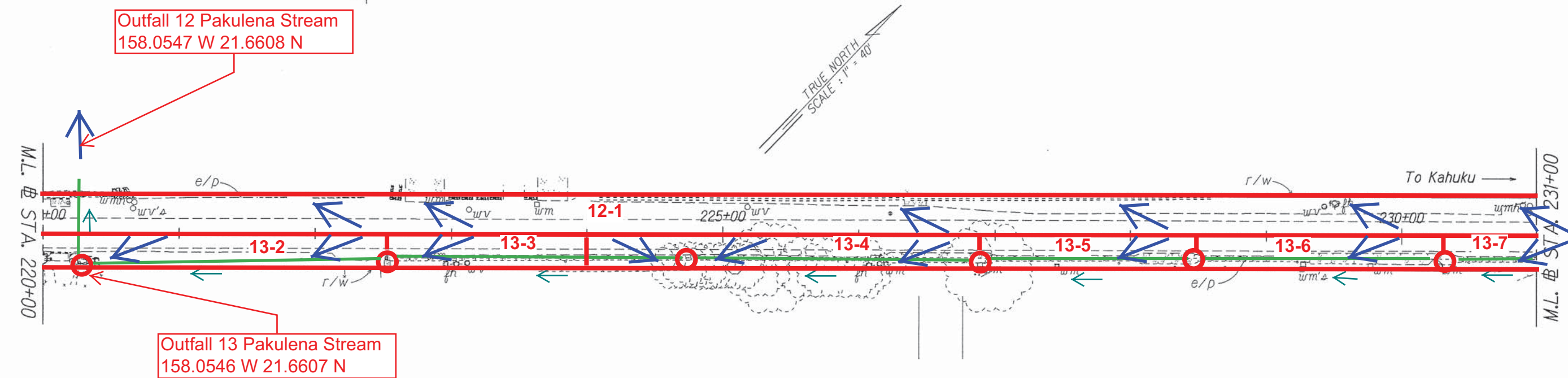
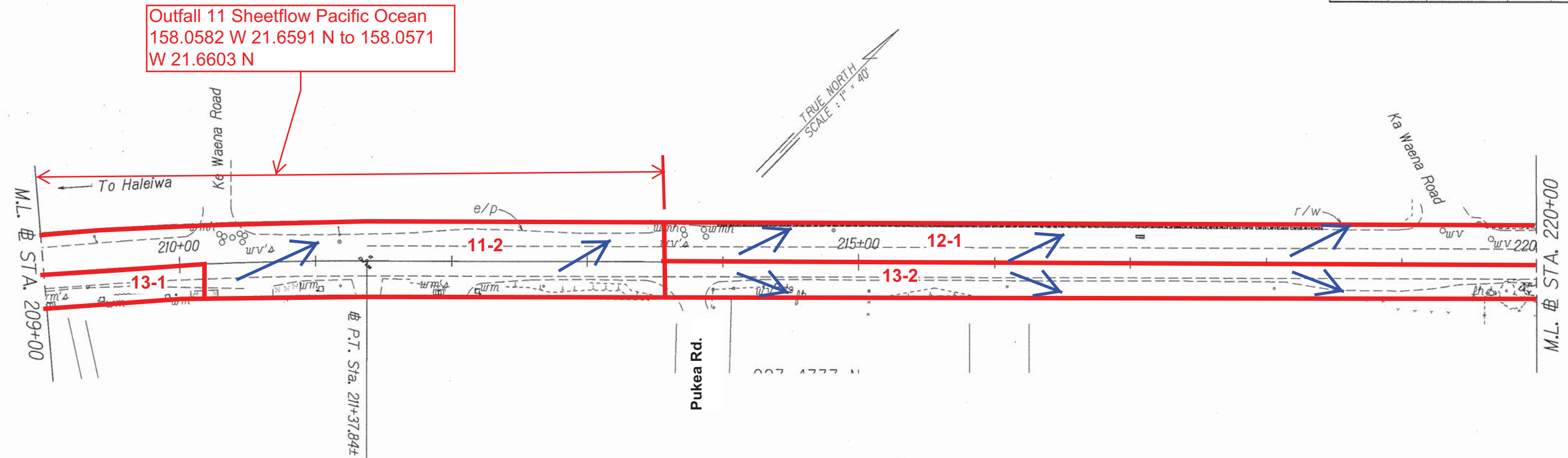
ROADWAY PLANS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Waialea Bridge
Project No. 83B-01-12M

Scale: 1"=40' Date: XX, 2012

SHEET No. 3 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-12M	2012	X	X



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

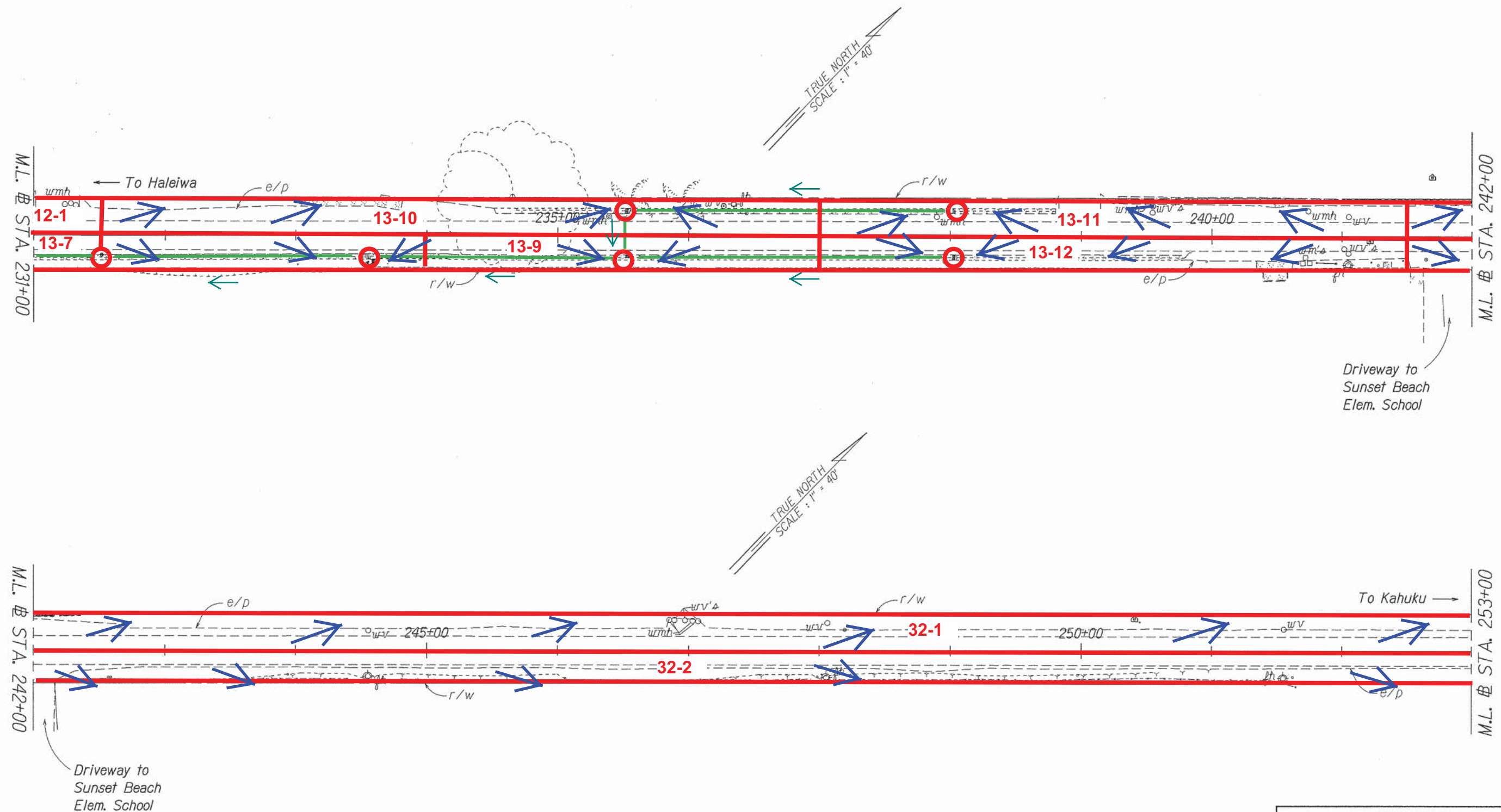
ROADWAY PLANS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Waialea Bridge
Project No. 83B-01-12M

Scale: 1"=40' Date: XX, 2012

SHEET No. 4 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-12M	2012	X	X



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
200	TRACED BY	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

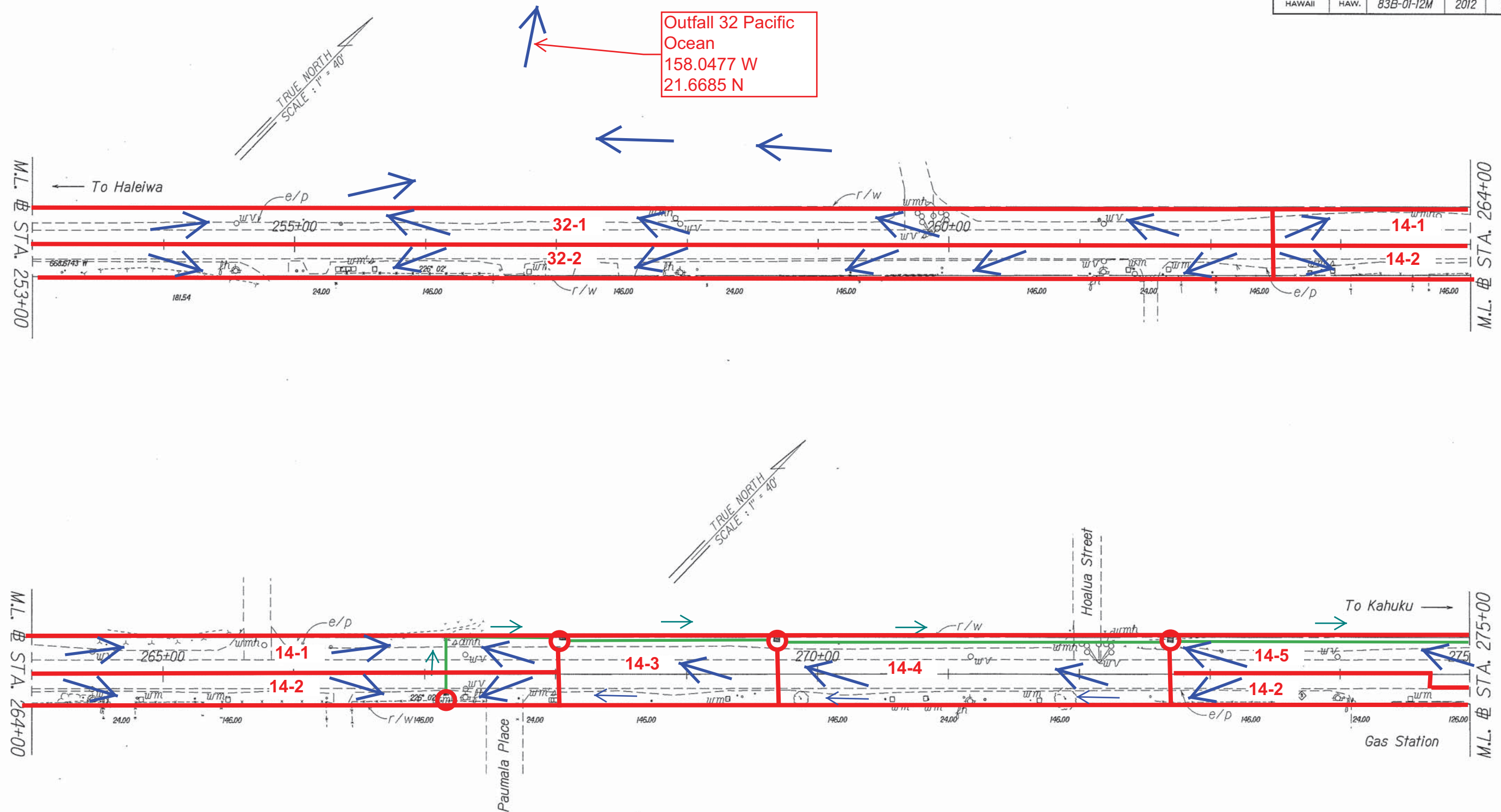
ROADWAY PLANS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Waialea Bridge
Project No. 83B-01-12M

Scale: 1"=40' Date: XX, 2012

SHEET No. 5 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-12M	2012	X	X



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

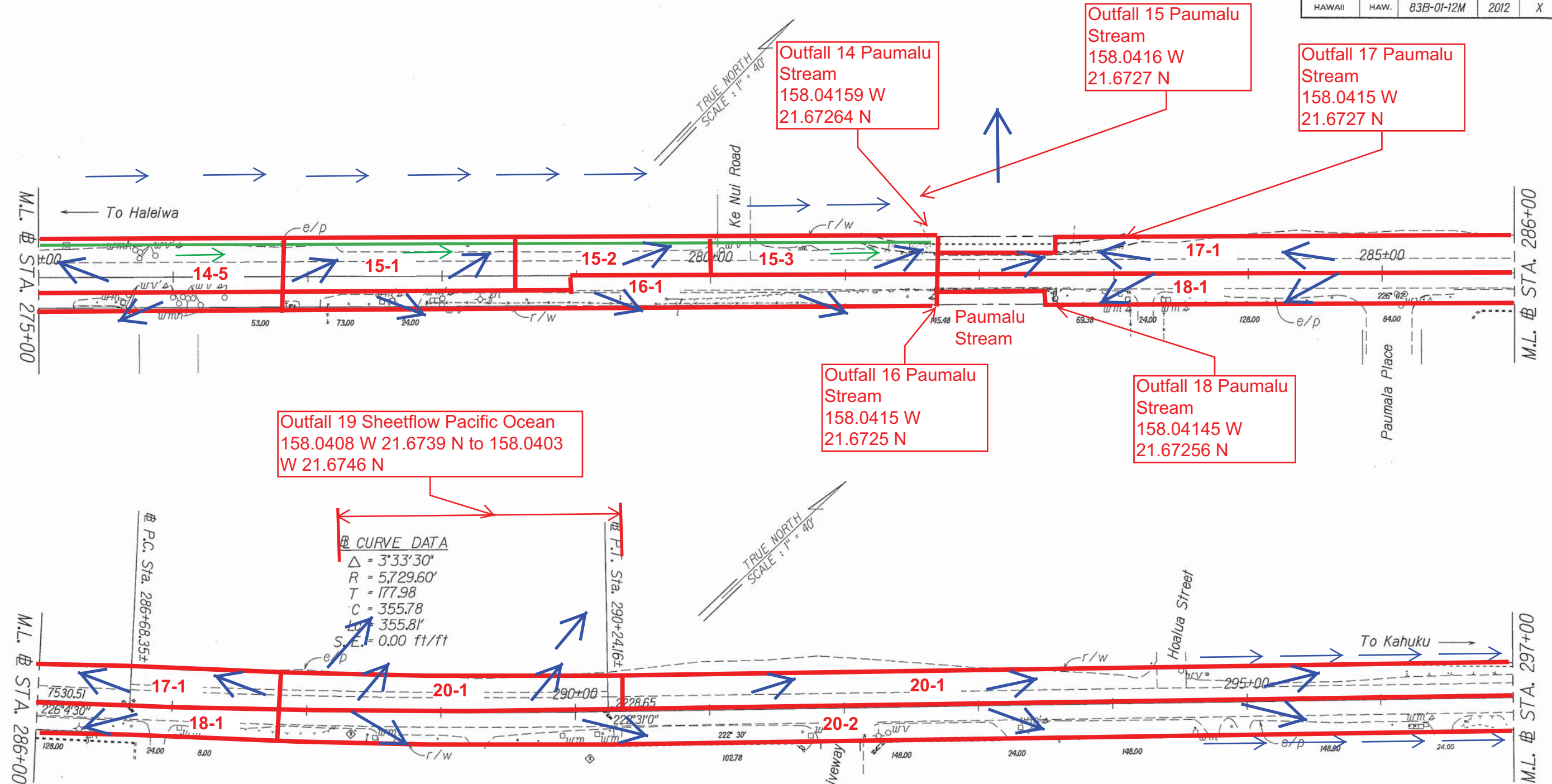
ROADWAY PLANS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Waialea Bridge
Project No. 83B-01-12M

Scale: 1"=40' Date: XX, 2012

SHEET No. 6 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-12M	2012	X	X



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

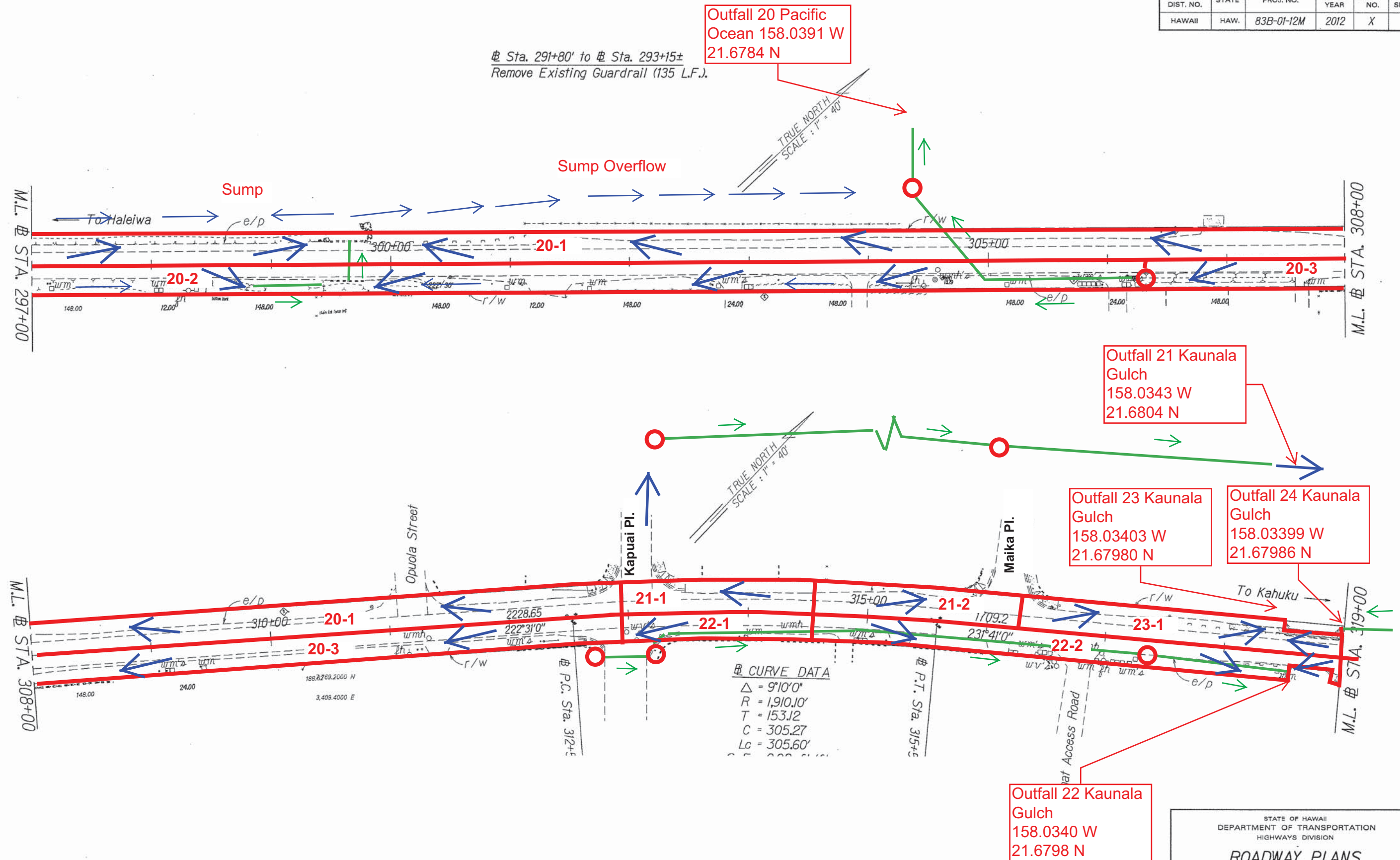
ROADWAY PLANS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Waialea Bridge
Project No. 83B-01-12M

Scale: 1"=40' Date: XX, 2012

SHEET No. 7 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-12M	2012	X	X



ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK 442	DRAWN BY <u>X</u>	<u>X</u>
	TRACED BY _____	•
	DESIGNED BY <u>X</u>	•
	QUANTITIES BY _____	•
	CHECKED BY _____	_____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Waialeale Bridge

Project No. 83B-01-12M

Scale: 1"=40' *Date: XX, 2012*

SHEET No. 8 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-12M	2012	X	X

To Outfall 26
Kaunala Gulch
158.0343 W
21.6806 N

To Outfall 25
Kaunala Gulch
158.0339 W
21.6798 N

Outfall 27
Unnamed Stream
158.0300 W
21.6834 N

Outfall 29
Unnamed Stream
158.0295 W
21.6832 N

Outfall 28
Unnamed Stream
158.0295 W
21.6830 N

CURVE DATA
 $\Delta = 00^{\circ}00'00''$
 $R = 5,729.65'$
 $T = 0.000$
 $C = 0.000$
 $L_c = 785.01'$
 $S.E. = 0.00'$

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

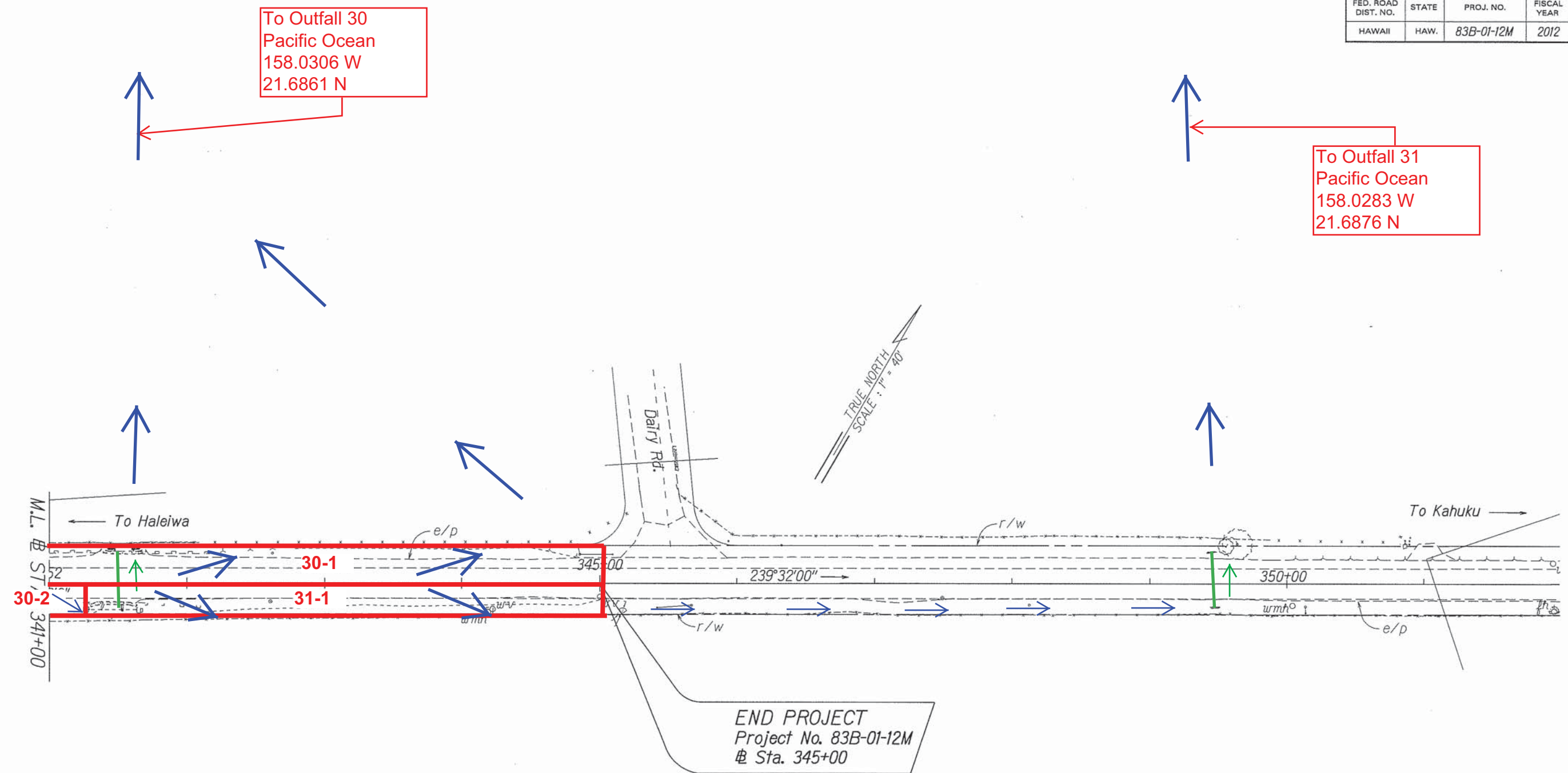
ROADWAY PLANS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Waialea Bridge
Project No. 83B-01-12M

Scale: 1"=40' Date: XX, 2012

SHEET No. 9 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83B-01-12M	2012	X	X



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLANS

KAMEHAMEHA HIGHWAY REHABILITATION
Vicinity of Kapuhi Street to Waialea Bridge
Project No. 83B-01-12M

Scale: 1"=40' Date: XX, 2012

SHEET No. 10 OF 10 SHEETS