

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	190B-01-09M	2010	22	54

True North
Scale: 1"=40'

BEGIN PROJECT
Project No. 190B-01-09M
Sta. 215+00

Sta. 215+00
Begin Mamalahoa Hwy Resurfacing

To Kailua

Mamalahoa Highway
19°08' → 2,167.18' (P.T. to P.C.)

Sta 223+90 o/s 30' Lt.
Adjust Top of Water Valve Box to Finish Grade

Reconstruct Monument
Sta 223+35.22

Pukala Street

M.L. # STA. 224+50

Sta 216+32 o/s 19' Rt.
Adjust Top of Water Valve Box to Finish Grade

Sta 216+25 o/s 18' Rt.
Adjust Top of WMH Frame & Cover to Finish Grade

Sta 223+93 o/s 13' Rt.
Adjust Top of Water Valve Box to Finish Grade

Sta 223+97 o/s 16' Rt.
Adjust Top of Water Valve Box to Finish Grade

Sta 224+10 o/s 16' Rt.
Adjust Top of WMH Frame & Cover to Finish Grade

P.C. # Sta. 223+35.22

Sta 228+58 to 231+67 o/s 16' Lt.
Reset 317 If W-Beam guardrail and posts (52 posts)

Sta 228+58 o/s 24' Lt.
Reset existing modified G End Treatment

Sta 231+67 o/s 24' Lt.
Construct CRM Wall. Relocate 37.5 LF of Guardrail and Modified G End Treatment. Regrade area under new guardrail

Sta 231+80 to 235+79 o/s 18' Lt.
Reset 405 If W-Beam guardrail and posts (66 posts)

Sta 231+80 o/s 24' Lt.
Construct CRM Wall. Relocate 37.5 LF of Existing Guardrail and Modified G End Treatment. Regrade area under new guardrail

Sta 235+79 o/s 24' Lt.
Reset existing modified G End Treatment.

True North
Scale: 1"=40'

RM-3 (Bi-Dir)

M.L. # STA. 224+50

Mamalahoa Highway
195°38' → 899.08'

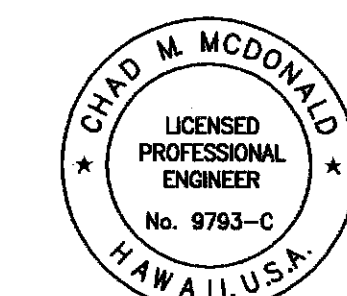
Reconstruct Monument
Sta 232+35.23

P.C. Sta. 232+35.23

Sta 224+83 o/s 15' Rt.
Adjust Top of WMH Frame & Cover to Finish Grade

# CURVE DATA	
CURVE ①	
Δ	9°00'00"
Δ/2	4°00'00"
R	5,729.58
T	450.93
C	899.08
Lc	900.00
SE	0.015

GRAPHIC SCALE:
40' 20' 0 40' 80'
SCALE: 1"= 40'



This work was prepared by me or under my supervision

Chad M. McDonald
MITSUNAGA & ASSOCIATES, INC. EXP. DATE 4/30/2012

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING

Kaupulehu to Makalei Road

Project No. 190B-01-09M

Scale: As Noted Date: May 2010

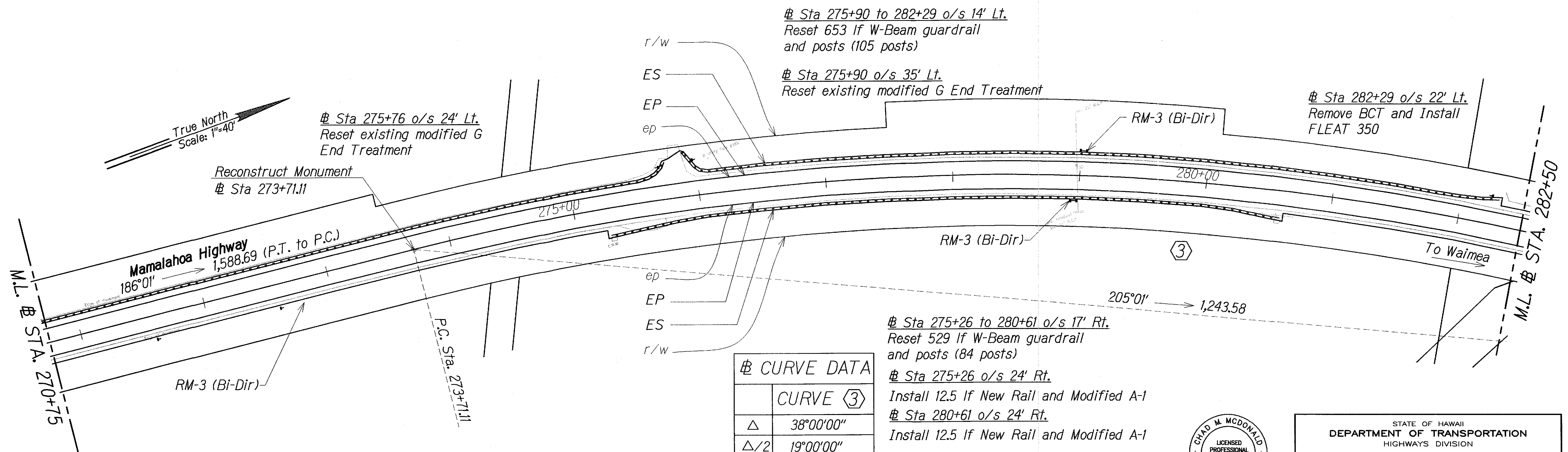
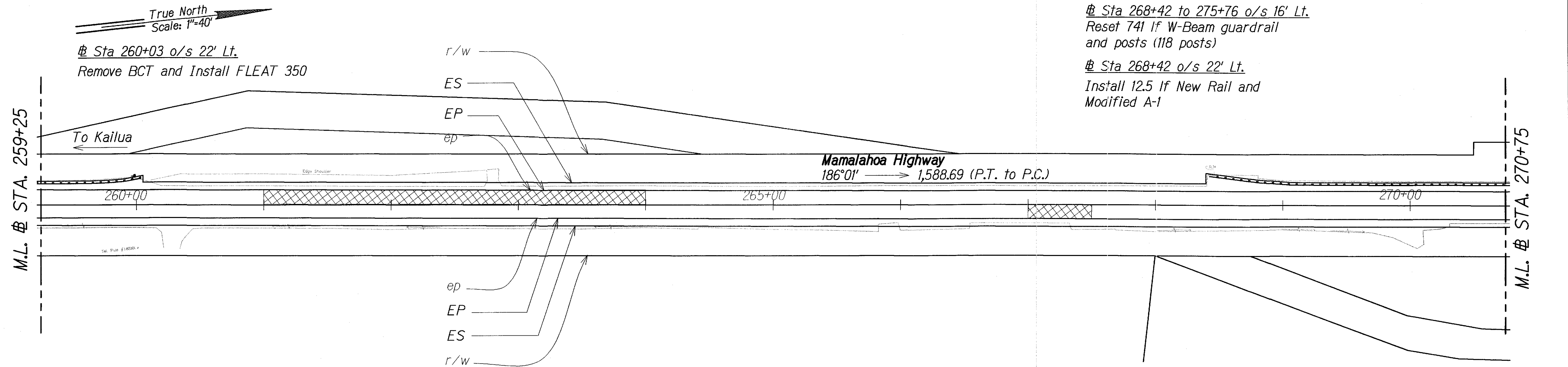
SHEET No. C-20 OF 54 SHEETS

M.L. # STA. 236+25

To Waimea

DESIGNED BY	DATE
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

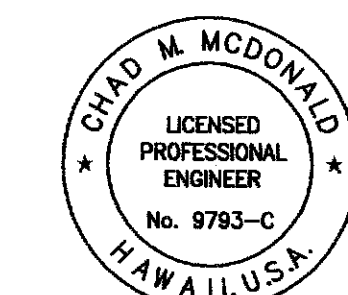
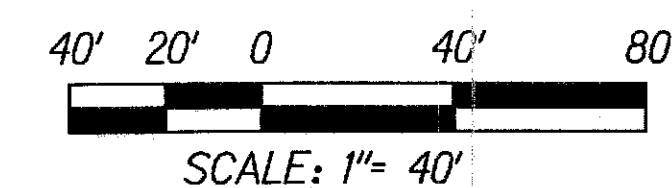
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	190B-01-09M	2010	24	54



CURVE DATA

	CURVE ③
Δ	38°00'00"
Δ/2	19°00'00"
R	1,909.86
T	657.62
C	1,243.58
Lc	1,266.67
SE	0.07

GRAPHIC SCALE:



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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING

Kaupulehu to Makalei Road

Project No. 190B-01-09M

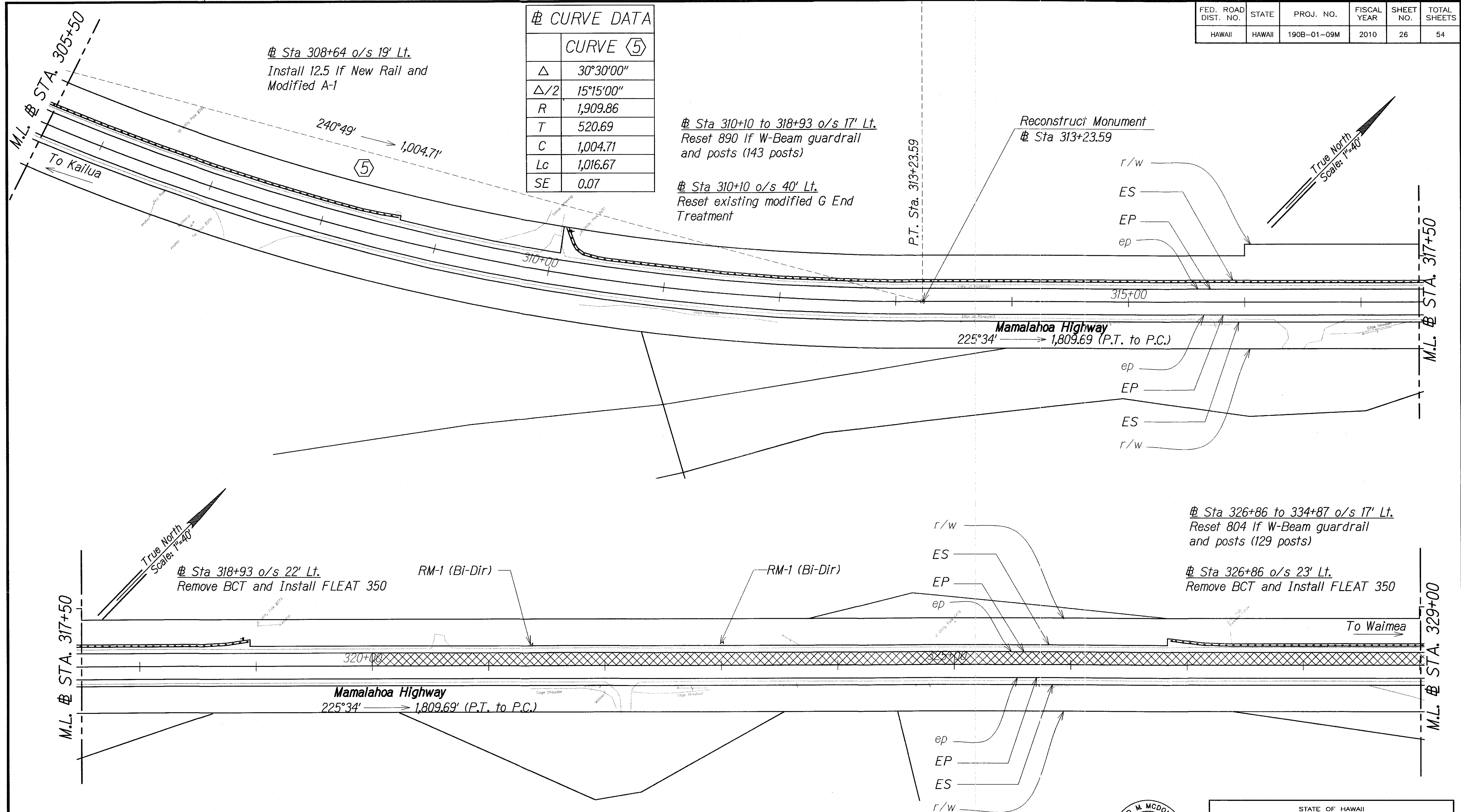
Scale: As Noted

Date: May 2010

SHEET No. C-22 OF 54 SHEETS

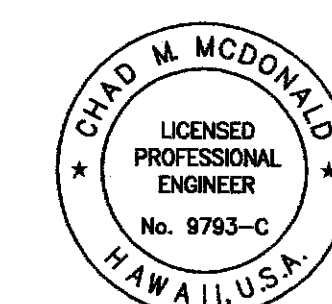
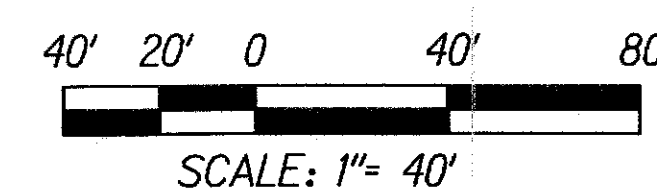
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	190B-01-09M	2010	26	54

CURVE DATA	
	CURVE 5
Δ	30°30'00"
$\Delta/2$	15°15'00"
R	1,909.86
T	520.69
C	1,004.71
Lc	1,016.67
SE	0.07



ORIGINAL PLAN	DATE
DESIGNED BY	DATE
NOTED BY	DATE
CHECKED BY	DATE

GRAPHIC SCALE:



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING

Kaupulehu to Makalei Road

Project No. 190B-01-09M

Scale: As Noted

Date: May 2010

SHEET No. C-24 OF 54 SHEETS

Reconstruct Monument
Sta 331+33.28

Sta 334+87 o/s 24' Lt.
Install 12.5 If New Rail and Modified A-1

Sta 339+18 to 348+56 o/s 16' Lt.
Reset 941 If W-Beam guardrail and posts (151 posts)

Sta 348+56 o/s 23' Lt.
Install 12.5 If New Rail and Modified A-1

Sta 329+81 to 333+62 o/s 17' Rt.
Reset 379 If W-Beam guardrail and posts (60 posts)

Sta 329+81 o/s 22' Rt.
Install 12.5 If New Rail and Modified A-1

Sta 333+62 o/s 22' Rt.
Install 12.5 If New Rail and Modified A-1

Sta 348+56 o/s 22' Lt.
Remove BCT and Install FLEAT 350

Reconstruct Monument
Sta 343+39.95

P.T. Sta. 343+39.95 BACK
P.T. Sta. 343+25.62 AHEAD

# CURVE DATA	
CURVE (6)	
Δ	30°10'00"
Δ/2	15°05'00"
R	2,291.83
T	617.67
C	1,192.78
Lc	1,206.67
SE	

GRAPHIC SCALE:
40' 20' 0 40' 80'
SCALE: 1"= 40'

CHAD M. McDONALD
LICENSED PROFESSIONAL ENGINEER
No. 9793-C
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING
Kaupulehu to Makalei Road
Project No. 190B-01-09M
Scale: As Noted Date: May 2010

Reconstruct Monument
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Sta 334+87 o/s 24' Lt.
Install 12.5 If New Rail and Modified A-1

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Lc	1,206.67
SE	

GRAPHIC SCALE:
40' 20' 0 40' 80'
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING
Kaupulehu to Makalei Road
Project No. 190B-01-09M
Scale: As Noted Date: May 2010

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ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING
Kaupulehu to Makalei Road
Project No. 190B-01-09M
Scale: As Noted Date: May 2010

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Lc	1,206.67
SE	

GRAPHIC SCALE:
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SCALE: 1"= 40'

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STATE OF HAWAII
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ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING
Kaupulehu to Makalei Road
Project No. 190B-01-09M
Scale: As Noted Date: May 2010

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C	1,192.78
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SE	

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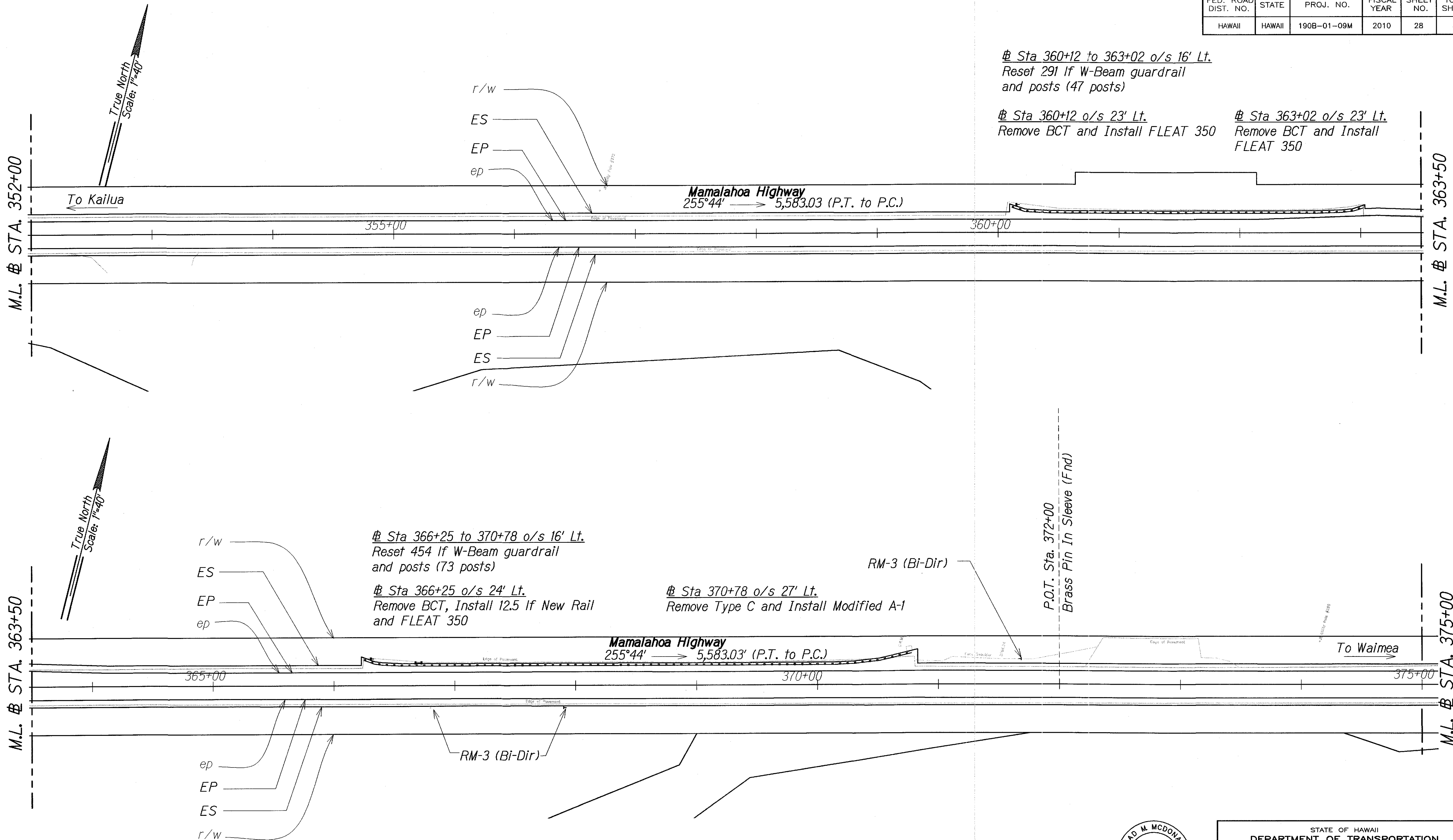
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STATE OF HAWAII
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HIGHWAYS DIVISION

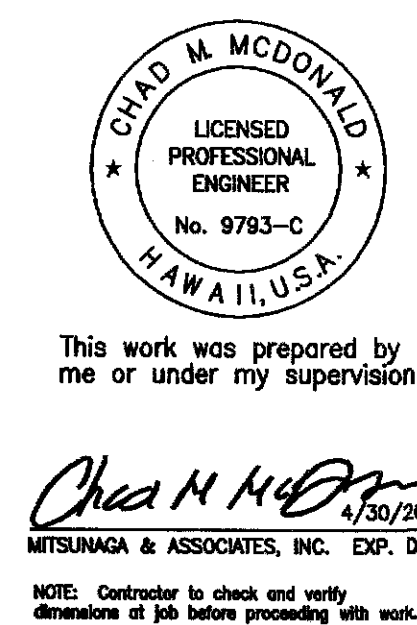
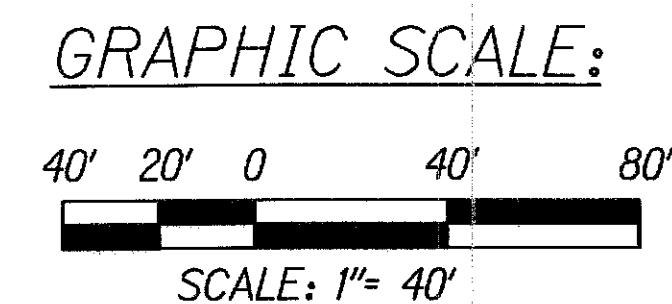
ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING
Kaupulehu to Makalei Road
Project No. 190B-01-09M
Scale: As Noted Date: May 2010

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	190B-01-09M	2010	28	54



ORIGINAL PLAN	DATE
DESIGNED BY	DESIGNED BY
TRACED BY	TRACED BY
NOTE BOOK	NOTE BOOK
QUANTITIES BY	QUANTITIES BY
CHECKED BY	CHECKED BY



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

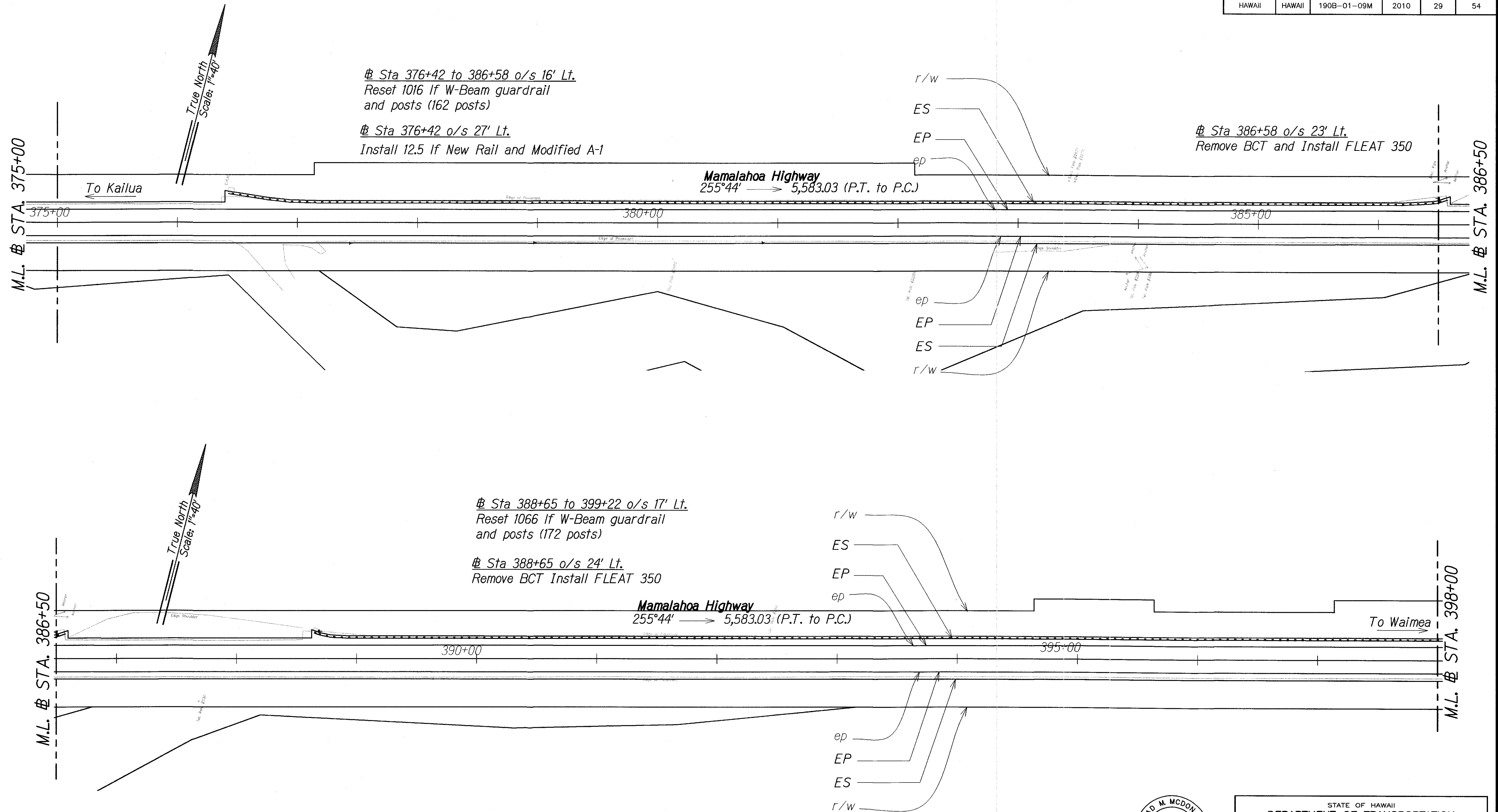
ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING
Kaupulehu to Makalei Road
Project No. 190B-01-09M

Scale: As Noted Date: May 2010

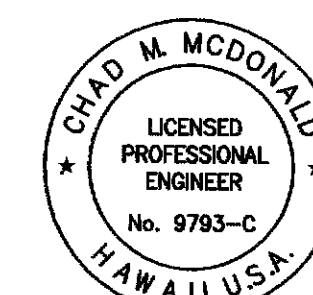
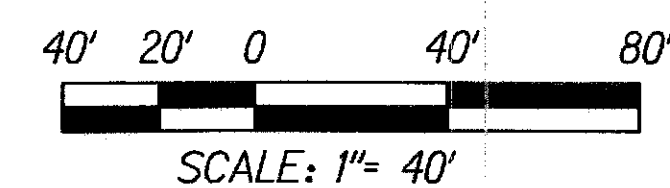
SHEET No. C-26 OF 54 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	190B-01-09M	2010	29	54



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

GRAPHIC SCALE:



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Chad M. McDonald
MITSUNAGA & ASSOCIATES, INC. EXP. DATE 4/30/2012
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

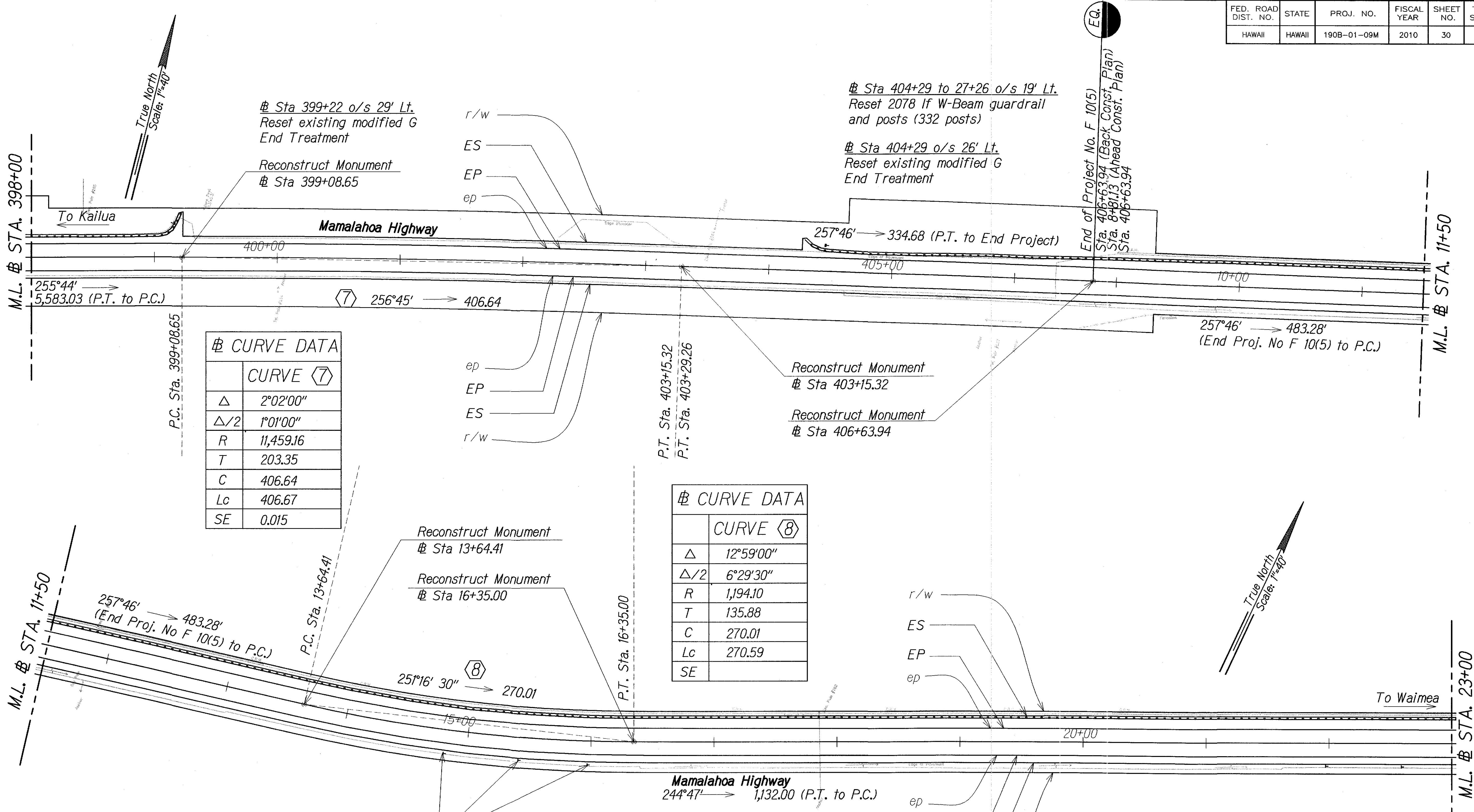
ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING
Kaupulehu to Makalei Road
Project No. 190B-01-09M

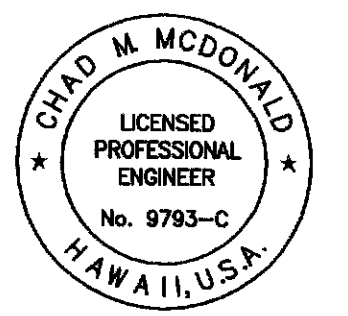
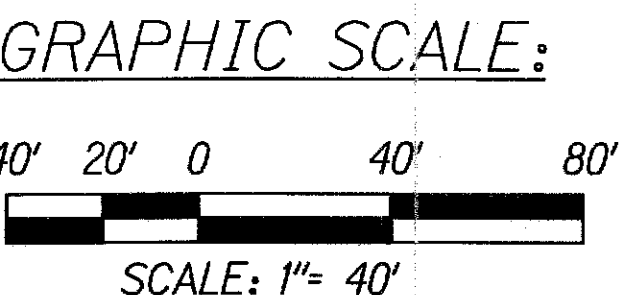
Scale: As Noted Date: May 2010

SHEET No. C-27 OF 54 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	190B-01-09M	2010	30	54



ORIGINAL PLAN	DATE
DESIGNED BY	
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4/30/2012

MITSUMAGA & ASSOCIATES, INC. EXP. DATE

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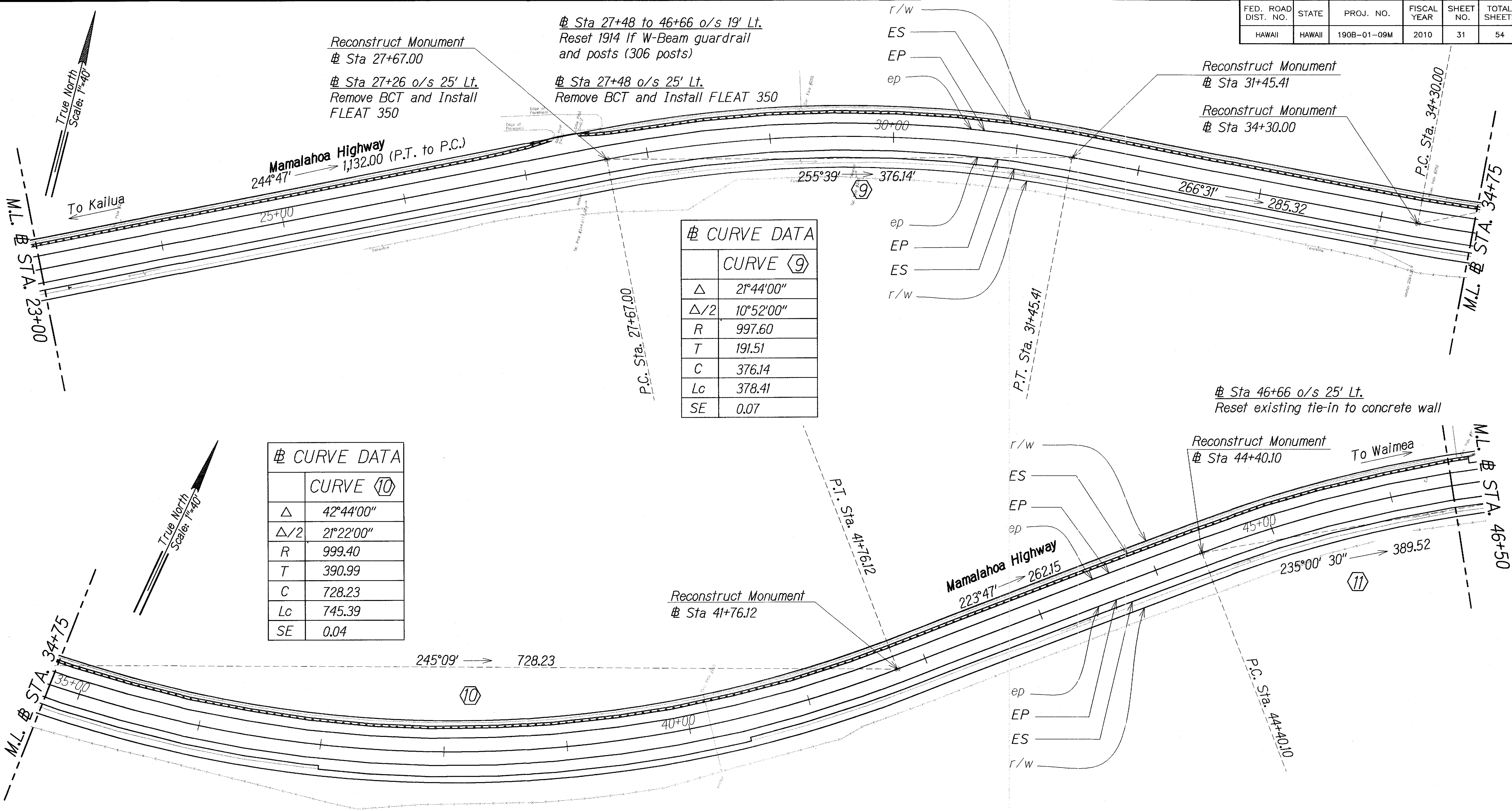
ROADWAY PLAN

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Kaupulehu to Makalei Road
Project No. 190B-01-09M

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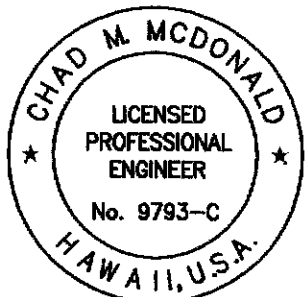
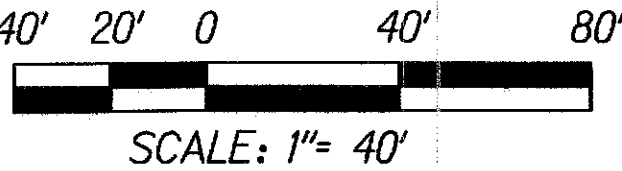
SHEET No. C-28 OF 54 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	190B-01-09M	2010	31	54



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

GRAPHIC SCALE:

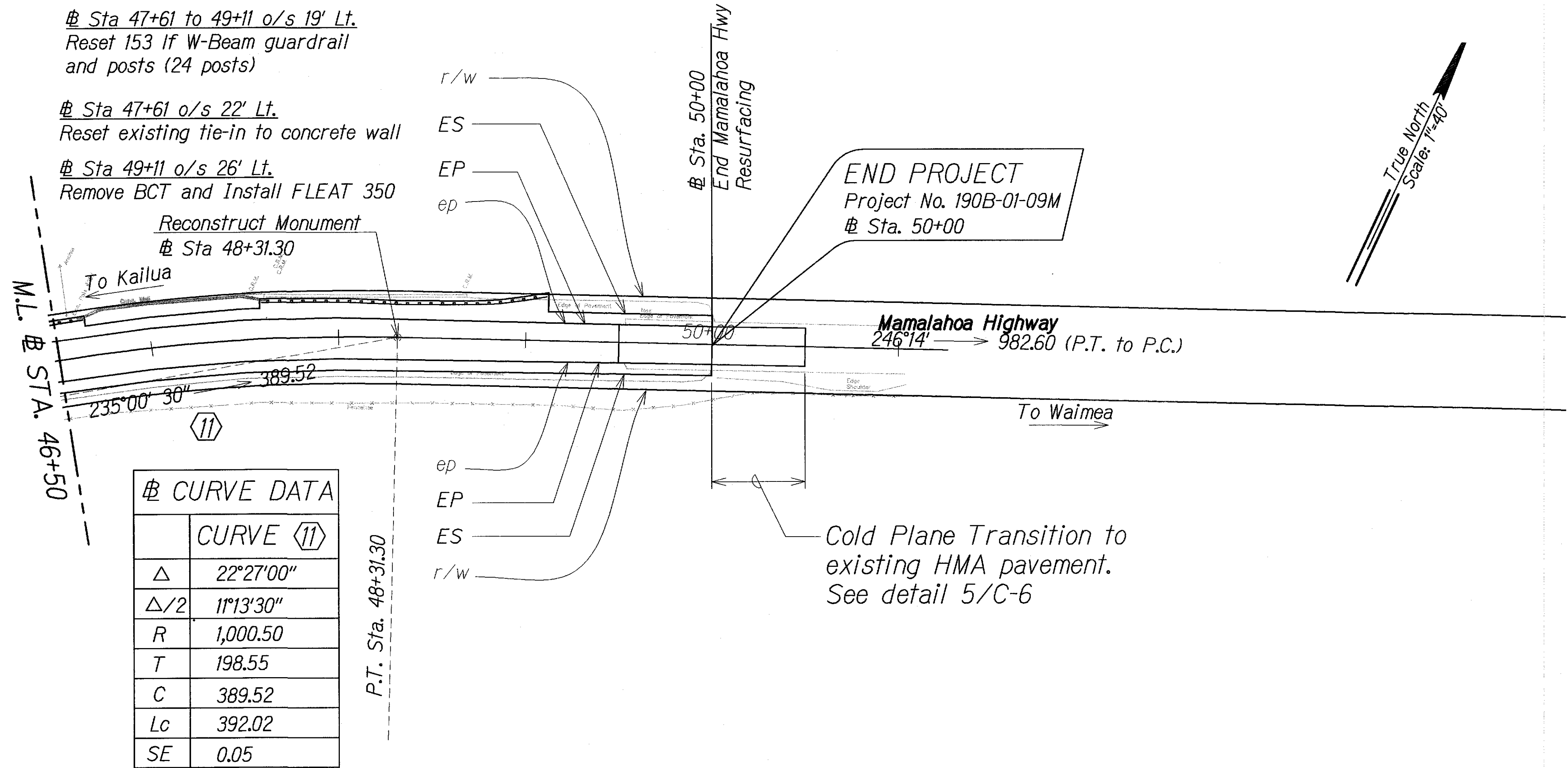


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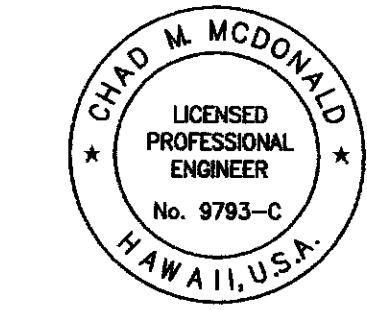
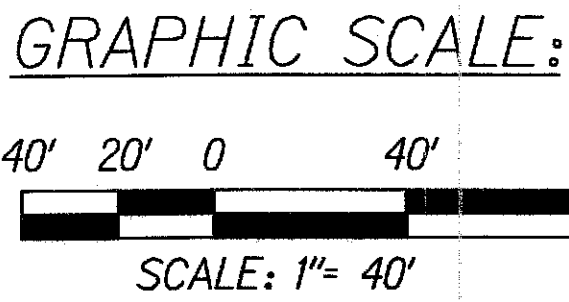
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DEPARTMENT OF TRANSPORTATION
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ROADWAY PLAN
MAMALAHOA HIGHWAY RESURFACING
Kaupulehu to Makalei Road
Project No. 190B-01-09M
Scale: As Noted Date: May 2010
SHEET No. **C-29** OF **54** SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	190B-01-09M	2010	32	54



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



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4/30/2012
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STATE OF HAWAII
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ROADWAY PLAN

MAMALAHOA HIGHWAY RESURFACING
Kaupulehu to Makalei Road
Project No. 190B-01-09M

Scale: As Noted Date: May 2010

SHEET No. **C-30** OF **54** SHEETS